HP Business Service Management

for the Windows and Linux operating systems

Software Version: 9.13

Using Service Health

Document Release Date: May 2012
Software Release Date: May 2012

Legal Notices

Warranty

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

The information contained herein is subject to change without notice.

Restricted Rights Legend

Confidential computer software. Valid license from HP required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

Copyright Notices

© Copyright 2005 - 2012 Hewlett-Packard Development Company, L.P.

Trademark Notices

Adobe® and Acrobat® are trademarks of Adobe Systems Incorporated.

AMD and the AMD Arrow symbol are trademarks of Advanced Micro Devices, Inc.

Google™ and Google Maps™ are trademarks of Google Inc.

Intel®, Itanium®, Pentium®, and Intel® Xeon® are trademarks of Intel Corporation in the U.S. and other countries.

iPod is a trademark of Apple Computer, Inc.

Java is a registered trademark of Oracle and/or its affiliates.

Microsoft®, Windows®, Windows NT®, Windows® XP, and Windows Vista® are U.S. registered trademarks of Microsoft Corporation.

Oracle is a registered trademark of Oracle Corporation and/or its affiliates.

UNIX® is a registered trademark of The Open Group.

Acknowledgements

This product includes software developed by the Apache Software Foundation (**http://www.apache.org**).

This product includes software developed by the JDOM Project (**http://www.jdom.org**).

This product includes software developed by the MX4J project (**http://mx4j.sourceforge.net**).

Documentation Updates

The title page of this document contains the following identifying information:

- Software Version number, which indicates the software version.
- Document Release Date, which changes each time the document is updated.
- Software Release Date, which indicates the release date of this version of the software.

To check for recent updates, or to verify that you are using the most recent edition of a document, go to:

http://h20230.www2.hp.com/selfsolve/manuals

This site requires that you register for an HP Passport and sign-in. To register for an HP Passport ID, go to:

http://h20229.www2.hp.com/passport-registration.html

Or click the **New users - please register** link on the HP Passport login page.

You will also receive updated or new editions if you subscribe to the appropriate product support service. Contact your HP sales representative for details.

Support

Visit the HP Software Support web site at:

http://www.hp.com/go/hpsoftwaresupport

This web site provides contact information and details about the products, services, and support that HP Software offers.

HP Software online support provides customer self-solve capabilities. It provides a fast and efficient way to access interactive technical support tools needed to manage your business. As a valued support customer, you can benefit by using the support web site to:

- Search for knowledge documents of interest
- Submit and track support cases and enhancement requests
- Download software patches
- Manage support contracts
- Look up HP support contacts
- Review information about available services
- Enter into discussions with other software customers
- Research and register for software training

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract. To register for an HP Passport ID, go to:

http://h20229.www2.hp.com/passport-registration.html

To find more information about access levels, go to:

http://h20230.www2.hp.com/new_access_levels.jsp

Table of Contents

Welcome to This Guide 17
How This Guide Is Organized 17
Who Should Read This Guide 18
How Do I Find the Information That I Need? 19
Additional Online Resources 21
Documentation Updates 22

PART I: COMPONENTS AND REPORTS

Chapter 1: Introducing Service Health 25
Service Health Overview 27
Monitoring your Environment Using the Service Health Application 30
Service Health Administration 34
How Service Health Works 35
View Topology 37
Health Indicators, KPIs, and KPI Domains 39
Understanding KPI Status 43
KPI Status Colors and Definitions 45
KPI Trend and History 48
Local Impact Views 49
Service Health Application Components in the Service Report 51
About Menu Options 51
How to Monitor Your Environment Using Service Health 52
How to Use Service Health - Use-Case Scenario 55
How to Open Pages and Components in Service Health 60
How to Display Data in Service Health - Prerequisites 63
How to Customize Calculations in Service Health 65
How to Manage a New CIT in Service Health - Workflow Scenario 67
How to Customize Service Health Display 69
How to View Sample Details 73
How to View the Business Impact Report 74
How to Find Visible and Hidden Child CIs 78
How to Drill Down to SiteScope from a CI or Health Indicator 79
Service Health User Interface 80
KPI Icons in Service Health 96
Service Health Menu Options 98

Chapter 2: Health Indicators and KPIs - Overview 115
Introduction to Health Indicators 116
Terminology Related to HIs and KPIs 117
The Service Health Calculation Flow 118
Health Indicator Definitions 119
Integrating the Event and Metric Channels 122
Configuring Health Indicators 125
How to Map an ETI to an HI - Use-Case Scenario 127
How to Create an HI and Trigger an Event When its Status Changes - Use-Case Scenario 135
How to Create an Event Based on CI Status Changes - Use-Case Scenario 138
How to Monitor a Specific Windows Server with Both Operations Manager and SiteScope - Use-Case Scenario 140
How to Customize an HI Monitored by SiteScope - Use-Case Scenario 142

Chapter 3: Top View 147
Top View Overview 148
How to Customize the Top View Display 151
How to Access an External Application from Top View 159
Top View Component User Interface 162

Chapter 4: Topology Map 165
Topology Map Overview 166
Topology Map in View or Graph Display 168
Plain Mode, Group Mode, and Layer Mode 168
Default Layers in Topology Map 170
How to Customize Topology Map Display 171
Topology Map User Interface 176

Chapter 5: Geographical Map 189
Geographical Maps 190
How to Display and Customize a View in Geographical Map 194
How to Display a Geographical Map With Google Earth 198
How to Customize Virtual Earth 201
How to Customize the Maps Applet 203
Geographical Map Component User Interface 205

Chapter 6: Custom Image 213
Custom Image - Overview 214
How to Display a View in a Custom Image 216
Custom Image Component User Interface 218

Chapter 7: 360° View....221
360° View Overview....223
Hierarchy Component Overview....224
Business Impact Component Overview....226
Business Impact Rating Calculation....226
Health Indicator Component Overview....228
Understanding the Health Indicator Tooltips....229
Alerts Component Overview....232
Changes and Incidents Component Overview....233
How to Customize the Hierarchy Component....234
How to Set Up Sound Notification When KPIs in Hierarchy are Critical....237
How to Create a Quick Hierarchy Filter....239
How to Create an Advanced Hierarchy Filter....240
How to Manage Advanced Hierarchy Filters....243
How to Customize the Business Impact Component....245
How to Modify Which CITs are Displayed in the Business Impact Component....247
How to Modify Which CI Relationships are Displayed in the Business Impact Component....248
How to Customize the Business Impact Rating Calculation Method....248
How to Work with the Health Indicator Component....252
How to Customize the Alerts Component....254
How to Customize the Changes and Incidents Component....255
360° View User Interface....256

Chapter 8: KPIs Component....279
KPIs Component Overview....280
How to Customize the KPIs Component....281
KPIs Component User Interface....282

Chapter 9: CI Status Alerts Reports....285
CI Status Alert Reports Overview....286
How to View the Triggered CI Status Alerts and Notifications....287
Message Examples....289
CI Status Alert Reports User Interface....293

Chapter 10: Neighborhood Map....313
Neighborhood Map Overview....314
How to Display and Customize the Neighborhood Map....317
Neighborhood Map User Interface....321

Chapter 11: Acknowledge Problems....327
Acknowledging Performance Problems Overview....328
How to Acknowledge Performance Problems....329
Acknowledge Problems User Interface....332

Chapter 12: CI Status Reports....335
CI Status Reports Overview....336
How to View KPIs Over Time Information....338
CI Status Reports User Interface....340

Chapter 13: Service Health on a Mobile Device....367
Service Health on a Mobile Device Overview....368
The BSMobile iPhone Application....369
How to View Data on a Mobile Device....371
Mobile Device User Interface....373

PART II: VIEW MANAGEMENT

Chapter 14: View Builder - Creating Global Views and Local Impact Views....379
View Builder Overview....380
Local Impact View Calculation....382
How to Create or Edit Views Using View Builder....384
How to Add or Remove KPIs Within a View....386
View Builder User Interface....389

Chapter 15: Configuring KPIs and Health Indicators 395
KPI and HI Calculation 397
KPI and HI Thresholds 401
Selectors for Metric-Based HIs 406
KPI Trend and History Calculation 408
KPI Domains 411
Persistent Data and Historical Data 411
KPIs for User Modes 412
Breakdowns 413
PNR (Point of No Return) KPI Calculation 422
How to Configure KPIs and HIs—Overview 425
How to Assign KPIs and HIs to CIs 428
How to Edit KPI or HI Properties 431
How to Define Thresholds for KPIs and HIs 433
How to Define Selectors for HIs 435
How to Set Up User Mode Functionality 439
How to Change the KPI Status Icons 441
How to Configure Breakdowns 444
How to Attach a PNR KPI to a CI 448
CI Indicators User Interface 452

Chapter 16: Custom Image Administration 489
Custom Image Administration - Overview 490
How to Assign a Custom Image to a View 491
Custom Image Page – Administration 495

Chapter 17: Administer CI Status Alerts 499
CI Status Alerts Administration Overview 500
SNMP Traps 501
Downtime 502
CI Status Alerts Attached to CIs in Local Impact Views 502
How to Create a CI Status Alert Scheme and Attach it to a CI 503
How to Configure a Notification SNMP Trap 508
SNMP-Specific Codes 510
Alerts MIB Varbinds 510
CI Status Alerts Administration User Interface 512

Chapter 18: Event Template for CI Status Alerts 539
Event Template for CI Status Alerts Overview 540
How to Configure the CI Status Alert Event Template 541
CI Status Alert Attributes 542
CI Status Template Repository Dialog Box 543

PART III: ASSIGNMENTS

Chapter 19: Indicator Assignments and Propagation 557
Assignment and Propagation Overview 558
Assignments 558
SiteScope Dynamic HI Assignment 562
Propagation Rules 563
How Propagation Rules are Implemented 566
Validation 572
How to Define a KPI or HI Assignment 574
How to Define a KPI Propagation Rule 577
How to Modify a KPI Assignment – Use-Case Scenario 579
How to Create a KPI Assignment Using an API Rule and Dynamic Rule Parameter – Use-Case Scenario 584
Indicator Assignments User Interface 590

PART IV: REPOSITORIES

Chapter 20: Repositories Overview 631
Repositories – Overview 632
Customizing Repository Elements 634
How to Customize a KPI, Rule, or Context Menu Repository Element 636
How to Create a KPI and Rule – Example 637
How to Create a Dynamic URL – Use-Case Scenario 641

Chapter 21: KPI Repository 651
KPI Repository Overview 652
How to Customize a KPI Template in the Repository 653
List of Service Health KPIs 656
KPIs Repository User Interface 665

Chapter 22: Indicator Repository 681
Indicator Repository Overview 682
Events, ETIs, and HIs - Overview 683
How the Indicator Repository is Used by BSM 685
Mapping SiteScope Severities to HI States 688
How to Create or Edit an ETI or HI Template in the Indicator Repository 689
Indicator Repository User Interface 692

Chapter 23: Business Rule Repository 709
Business Rule Repository Overview 711
Health Indicator and KPI Calculation Rules 713
Sample-Based and Time-Based Sampling 715
Understanding the Percentage Rule 716
Understanding the Generic Formula Rule 720
No Data Timeout for Transaction CIs 723
How to Customize a Business Rule Template in the Repository 724
How to Create a Customized Generic Sample Rule – Example 729
How to Create a Customized Generic Sum of Values Over Time Rule – Example 731
How to Use the Generic Two Arguments Rule – Example 732
How to Set Up Rules to Display the Last Sample Details 734
How to Save Measurements Data 736
How to Display Information from a CI Attribute in a Tooltip 737
List of Calculation Rules in Service Health 740
List of Rule Parameters 845
List of Tooltip Parameters 853
Example of EUM Weighted Average Rule 865
Examples of Tooltips 867
Business Rules User Interface 868

Chapter 24: Context Menu Repository 891
Context Menu Repository Overview 892
How to Customize a Context Menu Template in the Repository 893
Dynamic URL Parameters 897
List of Context Menus 899
List of Context Menu Actions 903
List of Pre-Processor Classes 914
List of Post-Processor Classes 920
Context Menu Repository User Interface 931

PART V: APIS

Chapter 25: Service Health Rules API 947
Rules API Overview.....948
API Group and Sibling Rule.....950
API Sample Rule.....953
API Duration-Based Sample Rule.....955
Creating Rules with the Rules API.....957
How to Define an API Rule in the CI Indicators Tab.....959
How to Create a Text File-Based API Rule.....960
How to Define an API Rule in the Rule Repository 964
How to Work with Tooltip Entries.....966
How to Write to Log Files From the Rules API Code 967
How to Include a CI Property in Rules API Calculations.....968
Examples - API Group and Sibling Rule 969
Examples - API Sample Rule 978

Chapter 26: Service Health External APIs 983
Retrieve Indicator Data.....984
Reset Health Indicator State 992
Service Health Database Query API.....994

Index 999

Welcome to This Guide

This guide describes how to use Service Health components to monitor critical applications and business processes, and how to use Service Health Administration to customize how your business environment is monitored.

This chapter includes:

- How This Guide Is Organized on page 17
- Who Should Read This Guide on page 18
- How Do I Find the Information That I Need? on page 19
- Additional Online Resources on page 21
- Documentation Updates on page 22

How This Guide Is Organized

The guide contains the following parts:

Part I Components and Reports

Describes how to use the Service Health application components to monitor critical applications and business processes. This includes the following components: Alerts, Business Impact, Changes and Incidents, Custom Image, Geographical Map, Health Indicators, Hierarchy, KPIs, Neighborhood Map, Top View, and Topology Map.

You can generate and display reports on monitored elements using the CI Status application.

You can also display Service Health data outside of Business Service Management on a mobile device.

Part II View Management

Describes how to customize the way Service Health monitors business processes and infrastructure elements, within specific views.

This includes customizing KPI and HI definitions on specific CIs, creating local impact and global views, and configuring CI status alerts.

Part III Assignments

Describes how to manage the assignments that define how KPIs, HIs, and context menus are assigned to CIs.

Part IV Repositories

Describes how to manage the templates for the key performance indicators (KPIs), health indicators (HIs), business rules, and context menus available in Service Health.

Part V APIs

Describes the Service Health Database Query API and the Service Health Rules API.

Who Should Read This Guide

This guide is intended for the following users of HP Business Service Management:

- HP Business Service Management administrators
- HP Business Service Management platform administrators
- HP Business Service Management application administrators
- HP Business Service Management data collector administrators
- HP Business Service Management end users

Readers of this guide should be knowledgeable about navigating and using enterprise applications, and be familiar with HP Business Service Management and enterprise monitoring and management concepts.

How Do I Find the Information That I Need?

This guide is part of the HP Business Service Management Documentation Library. This Documentation Library provides a single-point of access for all Business Service Management documentation.

You can access the Documentation Library by doing the following:

- In Business Service Management, select **Help** > **Documentation Library**.
- From a Business Service Management Gateway Server machine, select **Start** > **Programs** > **HP Business Service Management** > **Documentation**.

Topic Types

Within this guide, each subject area is organized into topics. A topic contains a distinct module of information for a subject. The topics are generally classified according to the type of information they contain.

This structure is designed to create easier access to specific information by dividing the documentation into the different types of information you may need at different times.

Three main topic types are in use: **Concepts**, **Tasks**, and **Reference**. The topic types are differentiated visually using icons.

Topic Type	Description	Usage
Concepts	Background, descriptive, or conceptual information.	Learn general information about what a feature does.
Tasks	**Instructional Tasks.** Step-by-step guidance to help you work with the application and accomplish your goals. Some task steps include examples, using sample data. Task steps can be with or without numbering: ➤ **Numbered steps.** Tasks that are performed by following each step in consecutive order. ➤ **Non-numbered steps.** A list of self-contained operations that you can perform in any order.	➤ Learn about the overall workflow of a task. ➤ Follow the steps listed in a numbered task to complete a task. ➤ Perform independent operations by completing steps in a non-numbered task.
	Use-case Scenario Tasks. Examples of how to perform a task for a specific situation.	Learn how a task could be performed in a realistic scenario.

Topic Type	Description	Usage
Reference	**General Reference**. Detailed lists and explanations of reference-oriented material.	Look up a specific piece of reference information relevant to a particular context.
	User Interface Reference. Specialized reference topics that describe a particular user interface in detail. Selecting **Help on this page** from the Help menu in the product generally open the user interface topics.	Look up specific information about what to enter or how to use one or more specific user interface elements, such as a window, dialog box, or wizard.
Troubleshooting and Limitations	**Troubleshooting and Limitations**. Specialized reference topics that describe commonly encountered problems and their solutions, and list limitations of a feature or product area.	Increase your awareness of important issues before working with a feature, or if you encounter usability problems in the software.

Additional Online Resources

Troubleshooting & Knowledge Base accesses the Troubleshooting page on the HP Software Support Web site where you can search the Self-solve knowledge base. Choose **Help** > **Troubleshooting & Knowledge Base**. The URL for this Web site is http://h20230.www2.hp.com/troubleshooting.jsp.

HP Software Support accesses the HP Software Support Web site. This site enables you to browse the Self-solve knowledge base. You can also post to and search user discussion forums, submit support requests, download patches and updated documentation, and more. Choose **Help** > **HP Software Support**. The URL for this Web site is www.hp.com/go/hpsoftwaresupport.

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract.

To find more information about access levels, go to:

http://h20230.www2.hp.com/new_access_levels.jsp

To register for an HP Passport user ID, go to:

http://h20229.www2.hp.com/passport-registration.html

HP Software Web site accesses the HP Software Web site. This site provides you with the most up-to-date information on HP Software products. This includes new software releases, seminars and trade shows, customer support, and more. Choose **Help** > **HP Software Web site**. The URL for this Web site is www.hp.com/go/software.

Documentation Updates

HP Software is continually updating its product documentation with new information.

To check for recent updates, or to verify that you are using the most recent edition of a document, go to the HP Software Product Manuals Web site (http://h20230.www2.hp.com/selfsolve/manuals).

Part I

Components and Reports

1

Introducing Service Health

This chapter includes:

Concepts

- Service Health Overview on page 27
- Monitoring your Environment Using the Service Health Application on page 30
- Service Health Administration on page 34
- How Service Health Works on page 35
- View Topology on page 37
- Health Indicators, KPIs, and KPI Domains on page 39
- Understanding KPI Status on page 43
- KPI Status Colors and Definitions on page 45
- KPI Trend and History on page 48
- Local Impact Views on page 49
- Service Health Application Components in the Service Report on page 51
- About Menu Options on page 51

Tasks

- How to Monitor Your Environment Using Service Health on page 52
- How to Use Service Health - Use-Case Scenario on page 55
- How to Open Pages and Components in Service Health on page 60
- How to Display Data in Service Health - Prerequisites on page 63
- How to Customize Calculations in Service Health on page 65

➤ How to Manage a New CIT in Service Health - Workflow Scenario on page 67

➤ How to Customize Service Health Display on page 69

➤ How to View Sample Details on page 73

➤ How to View the Business Impact Report on page 74

➤ How to Find Visible and Hidden Child CIs on page 78

➤ How to Drill Down to SiteScope from a CI or Health Indicator on page 79

Reference

➤ Service Health User Interface on page 80

➤ KPI Icons in Service Health on page 96

➤ Service Health Menu Options on page 98

Troubleshooting Service Health - General Topics on page 113

Concepts

Service Health Overview

Service Health enables you to monitor the availability and performance of the revenue-generating applications and services in your organization.

This section includes the following topics:

- "Collecting and Aggregating Data" on page 27
- "Prioritizing IT Operations and Maximizing Business Results" on page 28
- "Viewing Information from Service Health Together With Other BSM Application Components" on page 29
- "Viewing BSM Information in an External Portal" on page 29

Collecting and Aggregating Data

Service Health uses data collected by HP Business Service Management monitoring components, such as Business Process Monitor and SiteScope, as well as data collected from external monitoring tools. BSM collects metrics about end-user experience from a range of environments, including ERP, CRM, Web, and Citrix, and about system performance from a range of back-end infrastructure components, including web servers, J2EE applications, databases, and network and storage devices.

The collected and aggregated data is used by the Service Health health indicators (HIs) and key performance indicators (KPIs) to provide quantifiable measurements that help you monitor how well your business is achieving objectives. The KPIs and HIs provide real-time assessment of the present state of your business and processes, enable you to track critical performance variables over time, and help you assess the business impact of problems in the system.

At the top level, Service Health provides an integrated view of critical applications and business processes; from there, you can drill down to the underlying IT infrastructure associated with these critical business processes. This drill-down view can be laid out in any number of ways, such as by data centers, by technology clusters, by geographical locations, and so on.

Prioritizing IT Operations and Maximizing Business Results

Service Health helps you to prioritize IT operations and maximize business results by:

- Presenting global system component data organized into a logical and relevant framework.
- Providing integrated, scalable, cross-application views that reflect the health of mission-critical services and applications in real time. This enables IT operations teams to continuously manage the health of mission-critical services and applications from one central location.
- Providing a common view of how IT operations are meeting line-of-business goals. This enables better communication between the teams, and the alignment of management and IT operations around customer-centric values.
- Providing the ability to assess actual customer impact, so that IT teams can prioritize response according to business impact and optimize resource utilization to meet critical business objectives. The end result is better quality of service for your end users.
- Providing a big-picture perspective, enabling you to see how a performance issue affects the availability of any part of your business and to quantify the business impact of a potential failure.
- Providing operational-level service level management reporting. Service Health uses Service Level Management data to provide an indication of whether an SLA is in breach of contract, or might be in breach in the near future.

Viewing Information from Service Health Together With Other BSM Application Components

In BSM 9.x, the Service Health workspace uses Web 2.0 customization to enable you to combine information from Service Health and other BSM components on the same page.

The workspace is comprised of pages, each of which appears as a tab on your screen. A page contains one or more components, each of which is displayed as a pane within the page.

You can use Service Health as a stand-alone application (select **Application > Service Health**), or combine Service Health components with components from other applications, as described in "How to Open Pages and Components in Service Health" on page 60.

These components can interact with one another, so that (for example) if you select a CI in a Service Health component, information on this CI can be displayed in a component from another application, such as End User Management or Operations Management.

For a list of components that are available by default, see "Available Components" in *Using MyBSM*.

Viewing BSM Information in an External Portal

You can use the BSM menu command **Admin > Link to This Page** to generate a link which can be copied to an external portal in order to view BSM information. For details, see "Linking to a Specific Page" in *Platform Administration*.

Select the **Embedded link** checkbox in the **Link to this page** window. The generated URL can be used in a third-party portal, so that only the specific page is displayed, and not the entire BSM application and menus.

Note: In a third-party portal, only one Service Health or MyBSM page can be embedded in each portal page. If you need to see more information, create a page which uses tabbed components. For details, see "How to Create Your MyBSM Workspace" in *Using MyBSM*.

Monitoring your Environment Using the Service Health Application

You monitor your environment in the Service Health application using the Service Health pages and components. When you open the Service Health application, various default pages open automatically; some of these pages contain a single component, while others include a number of components.

Note: The default pages cannot be modified. For details on creating custom pages, see "How to Open Pages and Components in Service Health" on page 60.

This section includes the following topics:

➤ "Default Service Health Pages" on page 31

➤ "Additional Service Health Application Components" on page 33

➤ "Using Pages and Components in Service Health" on page 33

Default Service Health Pages

To access the Service Health pages, select **Application** > **Service Health.** The following are the default Service Health pages:

- **Custom Image.** Displays icons representing CIs in the view on a custom image. Select CIs in the View Selector to display them within the custom image. For details, see "Custom Image Component User Interface" on page 218.
- **Geographical Map.** Displays an association between geographical locations and status indicators within a geographical map. Select one or more CIs in the View Selector to display them within the geographical map. For details, see "Geographical Map" on page 189.
- **Top View.** Displays the CIs within a view in a hierarchical, top-down graphic. For details, see "Top View" on page 147.
- **Topology Map.** Display an interactive topological map of CIs in a view, according to the CI links defined in the Run-time Service Model. Topology Map display links between CIs, and enables you to view CIs divided into layers or groups. For details, see "Topology Map" on page 165.
- **360° View.** Displays comprehensive data in one central location regarding a view, and selected CIs. Select a view to display its CIs in the **Hierarchy** component. Select a CI in the Hierarchy component to display CI details, and click the CI detail links to open the **Business Impact**, **Health Indicators, Alerts**, and **Changes and Incidents** components.

The following table describes the components that can be accessed from the 360° View:

360° View Components (A-Z)	Description
Alerts	Displays the CI status alerts triggered by the selected CI. For details, see "Alerts Component Overview" on page 232.
Business Impact	Displays the business CIs and SLAs that are affected by the selected CI. In addition, each CI's business impact is calculated on a scale from zero to 5, showing how much of an affect the CI has on the business CIs and SLAs in your monitored environment. For details, see "Business Impact Component Overview" on page 226.
Changes and Incidents	Displays the incidents opened for the selected CI, as well as requests for change and actual changes made to the CI. For details, see "Changes and Incidents Component Overview" on page 233.
Health Indicators	Displays details regarding the health indicators that are used to calculate and set the current status of a selected CI. For details, see "Health Indicator Component Overview" on page 228. For an introduction to health indicators see "Health Indicators and KPIs - Overview" on page 115.
Hierarchy	Displays a hierarchy of CIs in a view, the KPIs assigned to each CI, and their KPI statuses. You can select a CI in the Hierarchy component to display CI details, and click the CI detail links to open the Business Impact, Health Indicators, Alerts, and Changes and Incidents components. For details, see "Hierarchy Component Overview" on page 224.

Additional Service Health Application Components

In addition to monitoring your environment using the default pages, you can also create custom pages to suit your needs. For details, see "How to Open Pages and Components in Service Health" on page 60.

Custom pages can include any of the components that are used in the default pages, as well as the following additional components:

Component (A-Z)	Description
KPIs	Displays KPI status over time for a selected CI. For details, see "KPIs Component Overview" on page 280.
Neighborhood Map	Displays an interactive hierarchical graphic showing a CI's immediate neighborhood CIs, according to the TQL defined for the CIT in **Operations Management Administration** > **View Mapping**. For details, see "Neighborhood Map" on page 313.
Reports	Displays the Service Health reports: KPIs Distribution Over Time, KPIs Over Time, KPIs Summary, KPIs Trend, and CI Alert Report. For details, see "CI Status Reports User Interface" on page 340.

Using Pages and Components in Service Health

Each page is displayed as a tab within the Service Health application. A page can contain one or more application components.

The default pages contain predefined components; you can also create pages as described in "How to Open Pages and Components in Service Health" on page 60.

Service Health Administration

Service Health administration includes view-specific administration tasks, and cross-view administration tasks which affect all views. To access the Service Health administration tabs, select **Admin** > **Service Health.**

This section includes the following topics:

➤ "View-Specific Administration" on page 34

➤ "Cross-View Administration" on page 35

View-Specific Administration

You can use Service Health administration to configure the following settings within a specific view:

➤ **CI Indicators.** You can attach new KPIs and health indicators to CIs, and edit the KPIs and HIs attached to CIs. The KPIs and HIs are displayed in Service Health components to help you monitor how well the business is achieving its objectives, and assess the business impact of problems in your system. For details, see "CI Indicators Tab" on page 453.

➤ **View Builder.** The View Builder enables you to create or edit global views and local impact views. Within a global view, when you assign a KPI or HI to a CI your changes are reflected in all views which contain the CI. A local impact view is independent of other views, so that definitions on a CI within a local impact view have no effect on other views. For details, see "View Builder - Creating Global Views and Local Impact Views" on page 379.

➤ **Custom Image.** You can define a custom image to represent a view, and then place CIs within that image. The Custom Image component in Service Health will then display this view with real-time CI status icons, in the context of this background image. For details, see "Custom Image Administration" on page 489.

➤ **CI Status Alerts.** You can configure the CI status alert mechanism, which sends alert messages to pre-defined recipients, and executes actions defined for the alert. Alerts can be sent regarding specific KPIs or CIs, based on a pre-defined status change. For details, see "Administer CI Status Alerts" on page 499.

Cross-View Administration

Service Health administration also enables you to configure settings across views, using the following:

- **Repositories.** The repositories provide template definitions for KPIs, HIs, and the business rules used to calculate these indicators. Many of these definitions can be customized as required by your organization. For details, see "Repositories Overview" on page 631.
- **Assignments.** When a new CI is added to your monitored system, the assignment mechanism automatically assigns the appropriate KPIs and HIs to the CI, as well as rules, rule parameters, and context menus. For details about modifying KPI and HI assignments, see "Indicator Assignments and Propagation" on page 557.

How Service Health Works

Business Service Management offers an extensive range of monitoring tools, which measure performance and availability of multiple hardware and software technologies such as servers, databases, J2EE applications, and network devices.

The physical and logical entities in your system such as hardware, software, services, business processes, and so on, are represented in Service Health by configuration items (CIs). The CIs are stored in the Run-time Service Model, and organized into hierarchical format based on the interdependencies in your organization's IT environment.

A view can also include logical CIs that represent your business services, applications, LOBs, or any other type of business-related grouping. These CIs get their statuses from the underlying monitored CIs within the view.

The assignment mechanism assigns KPIs and health indicators to each CI, showing current operational status or business impact over time.

Status propagates according to the relationships between the CIs and according to the impact direction from the monitored CIs, through parent CIs, and up to the highest CI. KPI status on CIs is based on an aggregation of HI statuses, and other KPI statuses (the calculation method used for this aggregation varies, according to the KPI's business logic). For details about the propagation, see "Assignment and Propagation Overview" on page 558.

You can view a subsection of CIs in different views in Service Health. Each view provides a different aspect of your organization's IT universe, enabling you to focus on the IT area that is of interest.

Data sources send data on varying schedules. Service Health checks for new data every 5 seconds by default and updates its display accordingly, so that the information displayed in Service Health represents the real-time availability and performance of your organization's infrastructure components and business processes.

This section also contains the following topics:

➤ "Monitoring Performance Problems" on page 36

➤ "Monitoring Service Level Agreements With the PNR KPI" on page 37

Monitoring Performance Problems

When a KPI on a CI shows a performance problem (for example, Availability is low), you can drill down to the source of the problem, view reports, and track problem handling. You can use Service Health to view additional information offered by the monitoring domain (for example, using the BPM Triage Report), display performance graphs by Performance Manager, or view external HP products such as Release Control (for planned changes), HP Service Manager (for incidents).

Monitoring Service Level Agreements With the PNR KPI

Service Level Management enables you to verify that service level agreements that were signed with internal and external customers are met.

In Service Health, you can view a **Point of No Return** KPI that is calculated based on SLA data. This gives you advanced warning of any potential breaches of contract, and you can act proactively to fix a problem before the SLA is breached. For details, see "PNR (Point of No Return) KPI Calculation" on page 422.

View Topology

The CIs and relationships discovered by the various CI-generating tools that operate within Business Service Management, are stored in the Run-time Service Model (RTSM).

The service views displayed in Service Health are built from CIs contained in the RTSM. These CIs are mapped together to build views that meet your business requirements and objectives, and monitor what is important to you. For a detailed explanation of how views are built, see "Working with Views in IT Universe Manager" in the *Modeling Guide*.

Note: User access to Service Health views is limited by the viewing permissions specified for the user. If you cannot see a view, contact your administrator. For details, see "Permissions Overview" in *Platform Administration*.

Certain views defined in the RTSM are not available by default in Service Health or Service Level Management, because these applications filter for a view bundle named **service health**. To display a view that is not visible in Service Health or Service Level Management, open the view in the RTSM administration or in the Service Health View Builder, and assign the view to the **service health** bundle.

This section contains the following topics:

➤ "Impact Modeling" on page 38

➤ "CIs in Views" on page 38

➤ "CIs and Infrastructure Changes" on page 39

Impact Modeling

In Service Health, views show the topology of the CIs that were selected in the RTSM as being part of the view definition. The views also display the status of the KPIs attached to the CIs in the view.

A KPI's status is propagated from a child CI to a parent CI according to the propagation definition, when the parent CI and the child CI are linked by either an **Impacted By (Directly)** or an **Impacted By (Potentially)** calculated relationship. For details about these relationships, see "Impact Modeling Overview" in the *Modeling Guide*.

Each view has a specific set of CIs, and a topology that provides a hierarchy of CIs. Each CI has only one instance in the RTSM. Different views can look at the same CI.

Details on specific views are provided in subject-related documentation; for example EUM views are detailed in "Predefined Views for End User Management" in *Using End User Management*.

CIs in Views

The view structure typically includes a hierarchy of monitored CIs, grouped into logical groups that represent different domains, technologies, application, and services.

You can use the CI hierarchies created in the predefined monitoring views as the building blocks for defining your own customized views.

Service Health also enables you to create or edit global and local impact views. Within a global view, when you assign a KPI or HI to a CI or modify indicator definitions, your changes are reflected in all views which contain the CI. A local impact view is independent of other views, so that indicator definitions on a CI within a local impact view have no effect on other views. For details, see "View Builder Overview" on page 380.

CIs and Infrastructure Changes

When changes are made to your organization's infrastructure, they are detected by the discovery component that exists in each of the monitoring tools. Service Health checks every 10 seconds (by default) for configuration changes received from the external sources. The structure and content of the CI hierarchies are then automatically updated and displayed within Service Health.

In addition, changes made within HP Business Service Management, by changing the configuration in End User Management Administration or manually updating CIs in RTSM Administration, are also automatically deployed to Service Health.

Health Indicators, KPIs, and KPI Domains

BSM contains an array of default monitoring capabilities to collect information on various aspects of your system. When you install BSM, out-of-the-box content packs contain the necessary definitions to automatically monitor the health of each of your domains. Without needing initial configuration, BSM contains data regarding which health measurements are relevant to your monitored environment.

Within Service Health, Key Performance Indicators (KPIs) and health indicators (HIs) are automatically assigned to the CIs representing your business and processes, to help you monitor in real-time how well your business is achieving its objectives. The statuses and values of these indicators enable you to assess the business impact of problems in the system.

For further details, see "Health Indicators and KPIs - Overview" on page 115.

This section contains the following topics:

➤ "Health Indicators" on page 40

➤ "KPIs (Key Performance Indicators)" on page 41

➤ "KPI Domains, CITs, and Indicators" on page 41

Health Indicators

Health indicators (HIs) provide fine-grained measurements on the CIs that represent your monitored applications and business services. Some HIs provides business metrics such as backlog and volume, while others monitor various aspects of performance and availability such as CPU load or disk space.

There are two types of data sources that can contribute to an HI's status and value: events, and metrics. Some data collectors such as SiteScope send events to Service Health (for example, CPU load exceeded threshold), while other such as Real User Monitor send samples containing metrics (for example, response time = 6 milliseconds).

When an event is sent to Service Health, it is sent with an ETI (event type indicator). The ETI includes a name and a state, for example CPU_Load:exceeded. Using HI definitions in the indicator repository, Service Health translates the ETI state into one of the standard Service Health statuses (Critical, Major, Minor, and so on).

Metric-based HIs apply calculation rules to the samples generated by the data collectors, to create a calculated HI value. For example, Business Process Insight can collect several response time samples over a 15 minute period. A calculation rule will calculate the average of all those samples, and set the HI's status and value accordingly.

The indicator repository enables you to define that when the status of a specific metric-based HI changes, an event is generated. This event then appears in the Event Browser, showing that the HI status has changed.

KPIs (Key Performance Indicators)

KPIs are high-level indicators of CI performance and availability, which apply calculation rules to the data provided by HIs to determine CI status. KPIs can be calculated using statuses of HIs, KPIs, or a combination of these. For example, you can specify a rule that sets the severity of the KPI to the worst severity status of any assigned HI, or to the average severity status of all child KPIs.

The value that results from the calculation is used to set a severity level for the KPI based on the KPI definitions; KPI severity can be normal, warning, minor, major, or critical. The resulting measurement for the KPI is translated into a color-coded status indicator displayed in Service Health, where the color represents a more desirable or less desirable condition for the KPI.

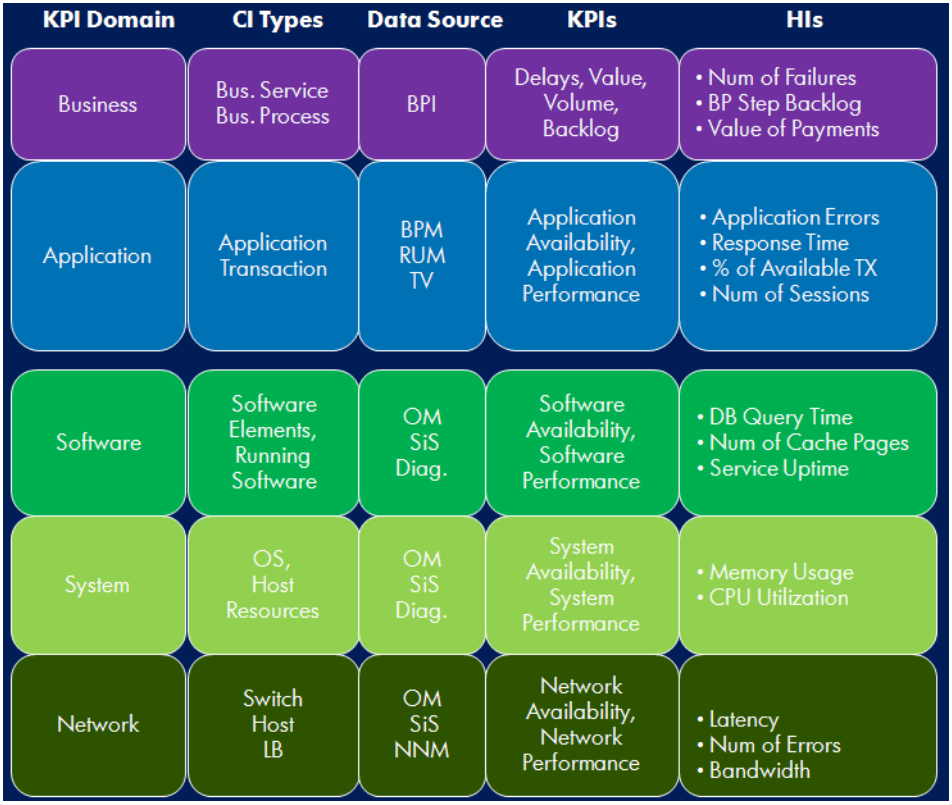
You can define a KPI to only use specific HIs that are of interest to you. For example, the BPI Backlog KPI has two HIs: Backlog Value and Backlog Count. If you are interested only in the financial aspects, you can set the KPI to only include the Backlog Value HI in its calculation.

Note: In Business Service Management versions earlier than 9.0, KPIs were calculated for monitor CIs (also known as leaf CIs). From version 9.0, HIs are calculated directly on monitored CIs, and KPIs are calculated either based on HIs, or based on other KPIs, as described above.

KPI Domains, CITs, and Indicators

Domains are groups of KPIs that monitor similar functions; for example, the Network domain contains the Network Availability and Network Performance KPIs, while the Business Health and Business Impact KPIs are assigned to the Business domain.

The following diagram illustrates the relationship between KPI domains, CITs, and indicators. Note that this diagram shows typical indicators for each domain. For the full list of indicators on each CIT, access the indicator repository.



In this example, you can see that the Business domain includes KPIs and HIs that monitor Business Service and Business Process CITs. The data collector monitoring these CIs is Business Process Insight. The HIs monitored for these CITs include Number of Failures, BP Step Backlog, and Value of Payments. These HIs are used to calculate the following KPIs: Delays, Value, Volume, and Backlog.

Understanding KPI Status

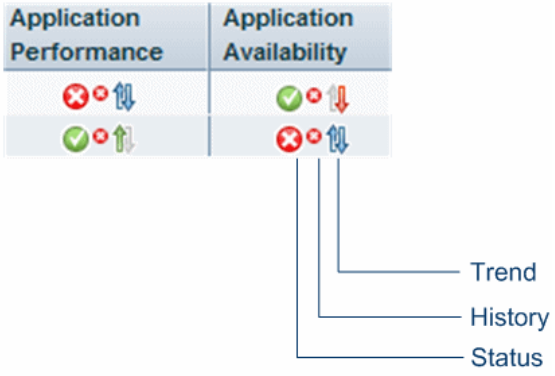
For each CI, the Service Health Hierarchy component displays real-time status in one or more KPI columns in the view. For details, see "Hierarchy Component Overview" on page 224.

This section contains the following topics:

- "KPI Icons: Status, Trend and History" on page 43
- "KPI Calculation Rule" on page 44
- "KPI Tooltip" on page 44

KPI Icons: Status, Trend and History

Each KPI can include three icons: Status, Trend, and History.



A color-coded icon is displayed for each KPI in a view, representing the KPI's status. In addition to the main status icon for a KPI, the KPI column can contain additional icons showing trend and history for the CI under that KPI.

The status of a KPI in Service Health provides an indication of how well a business process or system is meeting your business objectives. Based on traffic light colors (with additions), the Service Health shows you whether the KPI measurement is meeting the objective requirements (green), is critically failing (red), or is at some business risk level between the two (aqua, yellow, orange). For more details on thresholds, see "KPI and HI Thresholds" on page 401.

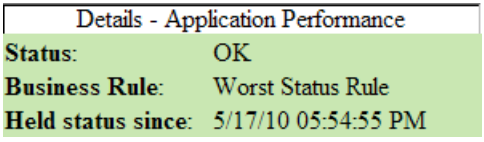
For details on KPI status colors, see "KPI Status Colors and Definitions" on page 45. For details on Trend and History, see "KPI Trend and History" on page 48.

KPI Calculation Rule

The status of each KPI is calculated using a business rule, which is applied on selected HIs, and on KPIs of child CIs. A different business rule may be used for a parent CI and a child CI with the same KPI attached. The business rules are defined for the KPI in Service Health Administration. For details on the rules, see "List of Calculation Rules in Service Health" on page 740.

KPI Tooltip

The Details tooltip for each status icon provides additional information regarding the following: the calculation method in use for the KPI, the KPI status, the time and date when the status was changed to its current value, as well as additional information depending on the CI and the KPI.



Tip: If the status of a KPI indicates a problem on a CI, you can access the Health Indicator component to see if there are problematic HIs on the CI itself, or look at the KPIs calculation rule (for example **Worst Status**) to understand the root of the problem.

If the KPI is on a higher-level logical CI, you can also use the CI's menu commands to drill down to the source of the problem. For details, see "Service Health Menu Options" on page 98.

KPI Status Colors and Definitions

The following shows the main status levels that are used to show status for KPIs in Service Health:

Icon	Description	Status Name	Numerical Code	Definition
	Red circle with "X"	Critical	0	The measurement calculated for the KPI fell within the value range for the **Critical** threshold.
	Orange triangle with exclamation mark	Major	5	The measurement calculated for the KPI fell within the value range for the **Major** threshold.
	Yellow triangle with exclamation mark	Minor	10	The measurement calculated for the KPI fell within the value range for the **Minor** threshold.
	Aqua triangle with exclamation mark	Warning	15	The measurement calculated for the KPI fell within the value range for the **Warning** threshold.
	Green circle with check mark	OK	20	The measurement calculated for the KPI fell within the value range for the **OK** threshold.

Icon	Description	Status Name	Numerical Code	Definition
	Dark blue circle with lowercase **i**	Informational	-1	The KPI has a value and no status. The reason is that the KPI's thresholds have not yet been specified. For details on setting the thresholds, see "How to Define Thresholds for KPIs and HIs" on page 433.
	Light blue circle with question mark	Not up to date (Decay)	-2	The following cases might be the cause of the KPI's status: ➤ The KPI has passed a timeout period during which no new information has been received. The default timeout period is 15 minutes, and the default decay status color is light blue. ➤ No performance measurement data has yet been received for this KPI. This may be the case if no measurements have been taken for the CI in the period since starting Service Health or Business Process Monitor.
	Brown octagon with white square	Stopped	-3	The corresponding profile/group/monitor for the CI is currently disabled. When the stopped period finishes, the status icon changes to Not up to Date until data is received for the CI.

Icon	Description	Status Name	Numerical Code	Definition
	White circle with gray outline and gray back slash	Downtime	-4	The corresponding profile/group/monitor for the CI is currently disabled. When the downtime period finishes, the status icon changes to Not up to Date until data is received for the CI. **Note:** HIs do not have Downtime status.
	Gray with white center	Not applicable for this CI	N/A	This KPI is not applicable for the CI.

The numerical code is used in HP Business Service Management files to perform calculation instead of the corresponding status.

The color displayed for a CI icon in Service Health represents a summary of interim status values for a predefined duration (the default duration value is generally 300 seconds). The calculation of status values is an ongoing process, using samples collected every 60 seconds (default granularity value), thus the interim status may actually change several times over the duration without causing any change in the color of the icon. For example, if the icon for a transaction is red at the beginning of a duration, and during the duration the interim status changes from red to green and back to red, at the end of the duration the icon is still red.

To change the color of the icons used at each status level, you can customize some of the icons, or complete sets of icons. For details, see "How to Change the KPI Status Icons" on page 441.

KPI Trend and History

The following status levels are used to show historical and trend status for monitored CIs in the Service Health Hierarchy component:

➤ **Trend Status**

The trend status has three positions: up, down, and no change. It shows the trend of the real-time status.

Icon	Description	Status	Status Definition
	Red downward arrow	Downward trend	Real-time status shows a downward trend.
	Blue double-sided arrow	Stable trend	Real-time status shows a stable trend.
	Green upward arrow	Upward trend	Real-time status shows an upward trend.

➤ **History Status**

The history status can display the worst status or the average status over a time period.

Icon	Description	Status	Status Definition
	Small green circle with checkmark	Historical OK	All performance measurements fell within the **OK** threshold level over a time period up to the present.
	Small yellow triangle with exclamation mark	Historical Minor	At least one performance measurement fell within the **Minor** threshold level, but no measurements fell within the **Major** threshold level, over a time period up to the present.

Icon	Description	Status	Status Definition
	Small orange triangle with exclamation mark	Historical Major	At least one performance measurement fell within the **Major** threshold level, but no measurements fell within the **Warning** threshold level, over a time period up to the present.
	Small aqua triangle with exclamation mark	Historical Warning	At least one performance measurement fell within the **Warning** threshold level, but no measurements fell within the **Critical** threshold level, over a time period up to the present.
	Small red with "X"	Historical Critical	At least one performance measurement fell within the **Critical** threshold level, over a time period up to the present.

Note: When a CI has no history or trend data (for example, the CI status is uninitialized or stopped) or when history or trend data is not relevant for the CI's KPI, the history or trend icons are not displayed.

For details on how trend and history are calculated, see "KPI Trend and History Calculation" on page 408.

Local Impact Views

The default views within Business Service Management are global views. Within a global view, when you modify KPI or health indicator definitions on a CI, your changes are reflected in all views which contain the CI, across Business Service Management.

Service Health Administration includes a View Builder, which enables you to create local impact views, which are independent of all other views. When you modify indicator definitions on a CI within a local impact view, this has no effect on this CI in all other views.

For details on creating views, see "View Builder Overview" on page 380.

Local Impact Views

Local impact views operate on a WYSIWYG (what you see is what you get) principle. For example, suppose you have a global view which contains a number of CIs representing business transactions, and you are only interested in the data coming from two or three significant transactions. You can create a local impact view based on the global view, remove the less important transactions from the local impact view, and the calculations within the view are performed using only those transactions that are visible within the view.

In contrast, within a global view you can hide CIs from being displayed, but calculations within the view are performed using all of the CIs that exist in the view, including those that are hidden from display.

Configuring Breakdowns

Some data collectors collect information based on many dimensions (application, transaction, location, and so on), but Service Health generally displays aggregated data of the CIs.

Within local impact views, you can configure data breakdowns on CIs, so that data is displayed according to a particular dimension.

For example, if you want to monitor application performance in different locations, you can define a breakdown by location to calculate KPIs in smaller granularity. When an application by location breakdown is defined, each application contains group CIs representing the locations where transactions are running. KPIs are then calculated separately for each location.

Breakdowns are only available in local impact views. For details on how to define breakdowns, see "How to Configure Breakdowns" on page 444.

Service Health Application Components in the Service Report

You can build Service reports based on data from data sources from the Service Health application. You can add Service reports as components in MyBSM or in Report Manager. After you have added Service reports to the Report Manager, you can add the reports as Custom report components to benefit from all the Custom report capabilities. For details, see "Service Report Overview" or "Report Manager Overview" in *Reports*.

About Menu Options

Within Service Health you can access context menu options for a CI by right-clicking on the CI, or by clicking the gray arrow button to the right of the CI in some application components.

Depending on the selected view and selected CI, you can, among other possibilities, drill down to other HP Business Service Management applications or to SiteScope, or open standalone reports or views. For example, you can view a trend report on the End User Management page, including measurement data for the CI over a specified time period.

The menu options that are displayed depend on the selected view and the selected CI. They can be a subset of the available options.

For details on the options, see "Service Health Menu Options" on page 98.

For advanced information on the various menu options, see "Context Menu Repository" on page 891.

Tasks

How to Monitor Your Environment Using Service Health

You can display different aspects of the data collected in BSM regarding the health of the infrastructure elements and business processes in your monitored environment, using the Service Health application components.

The following sections describe how you can display different types of data using the Service Health application components.

Some components are contained within the out-of-the-box Service Health pages, while others can be added to pages as needed. For details on how to work with the Service Health pages and components, see "How to Open Pages and Components in Service Health" on page 60.

Note: If you cannot see data in your Service Health components, refer to "How to Display Data in Service Health - Prerequisites" on page 63.

The following steps are optional, and can be performed in any order:

- "Display information on the CIs in an active view, using components on the 360° View page" on page 53
- "Display a visual representation of CIs and their statuses in a hierarchical image, using the Top View component" on page 54
- "Display a visual representation of CIs and their statuses in an interactive graphic representation, using the Topology Map component" on page 54
- "Display an association between geographical locations and CI status indicators" on page 54
- "Display icons representing the view's CIs on a custom image" on page 54
- "Display the parent CIs and child CIs of a selected CI, in an interactive hierarchical graphic" on page 55

➤ "Display KPI over time data" on page 55

➤ "View the CI status reports" on page 55

Display information on the CIs in an active view, using components on the 360° View page

You can use application components within the 360° View page to display various types of information on your monitored CIs. The 360° View page is one of the default pages in Service Health, and it enables you to do the following:

➤ To display the hierarchy of the CIs in a view, and the real-time status of each of the KPIs assigned to these CIs, select **Applications** > **Service Health** > **360° View** > **Hierarchy.** You can also filter the display to only show CIs with KPIs of a specific status, or specific CI types. For user interface details, see "Hierarchy Component User Interface" on page 258.

➤ To display business CIs and SLAs impacted by CIs in the active view, select **Applications** > **Service Health** > **360° View** > **Hierarchy.** Select a CI, and click **Business Impact.** For user interface details, see "Business Impact Component User Interface" on page 268.

➤ To display details regarding the health indicators assigned to a CI, their associated KPIs, and their values and statuses, select **Applications** > **Service Health** > **360° View** > **Hierarchy.** Select a CI, and click **Indicators**. For user interface details, see "Health Indicator Component User Interface" on page 271.

➤ To display CI status alerts triggered by CIs in the active view, select **Applications** > **Service Health** > **360° View** > **Hierarchy.** Select a CI, and click **Alerts**. For user interface details, see "Alerts Component User Interface" on page 274.

➤ Display requests for change and actual changes made to CIs, and incidents opened for CIs. Select **Applications** > **Service Health** > **360° View** > **Hierarchy.** Select a CI, and click one of the following: **Actual Changes, Planned Changes,** or **Incidents.** For user interface details, see "Changes and Incidents Component User Interface" on page 276.

Display a visual representation of CIs and their statuses in a hierarchical image, using the Top View component

Select **Applications** > **Service Health** > **Top View**; the Top View page is one of the default pages in Service Health. For user interface details, see "Top View Component User Interface" on page 162.

Display a visual representation of CIs and their statuses in an interactive graphic representation, using the Topology Map component

Select **Applications** > **Service Health** > **Topology Map**; the Topology Map page is one of the default pages in Service Health. Topology Map enables you to arrange CIs in groups (either divided by CIT or by similar applications), or in functional layers. For user interface details, see"Topology Map Component" on page 176.

Display an association between geographical locations and CI status indicators

Select **Applications** > **Service Health** > **Geographical Map**; the Geographical Map page is one of the default pages in Service Health. For details, see "How to Display and Customize a View in Geographical Map" on page 194.

Display icons representing the view's CIs on a custom image

Select **Applications** > **Service Health** > **Custom Image**; the Custom Image page is one of the default pages in Service Health. For details, see "How to Display a View in a Custom Image" on page 216.

Display the parent CIs and child CIs of a selected CI, in an interactive hierarchical graphic

The Neighborhood Map component is a Service Health application component that is not opened by default. To display a Neighborhood Map, add this component to a page, as described in "How to Open Pages and Components in Service Health" on page 60.

Display KPI over time data

The KPI component, which displays KPI over time status and federated KPI values for CIs, is a Service Health application component that is not opened by default. To display the KPI component, add this component to a page, as described in "How to Open Pages and Components in Service Health" on page 60.

View the CI status reports

Select **Applications** > **CI Status**, and select one of the following reports: KPIs Distribution Over Time, KPIs Over Time, KPIs Summary, KPIs Trend reports, and CI Status Alerts. For details, see "CI Status Reports User Interface" on page 340.

How to Use Service Health - Use-Case Scenario

This use-case scenario describes how Sarah, an application owner at ACME Savings and Loan, uses Service Health to identify a problem in ACME's online banking division, and quickly pinpoint its source.

This scenario includes the following:

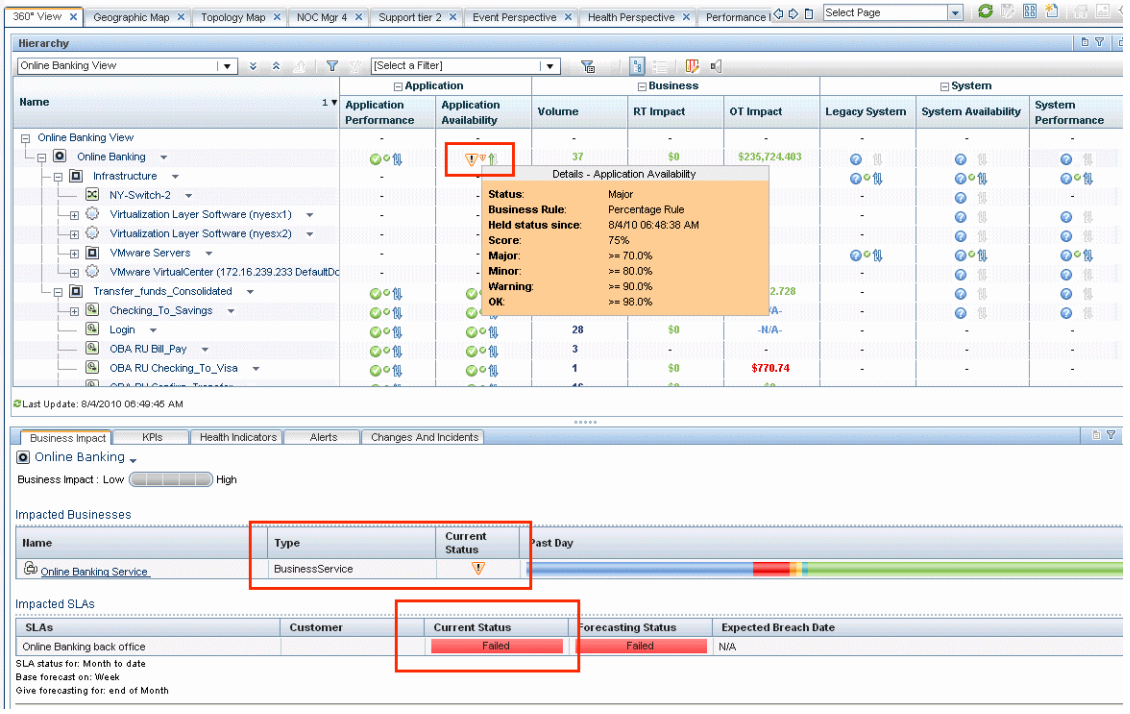
- "A problem is detected in the online banking division" on page 56
- "The KPIs tab shows that the problem is not new" on page 57
- "The Health Indicators tab shows more details about the problem" on page 58
- "A likely solution is found using the Changes and Incidents tab" on page 59

1 A problem is detected in the online banking division

Sarah has created a page based on the 360° View to monitor the CIs that represent ACME's online banking application. In her page, she puts the Hierarchy component in the upper area, and the following components in tabs in the lower area: Business Impact, KPIs, Health Indicators, and Changes and Incidents.

In the Hierarchy component, she sees that the Application Availability KPI of the Online Banking CI has a problematic status.

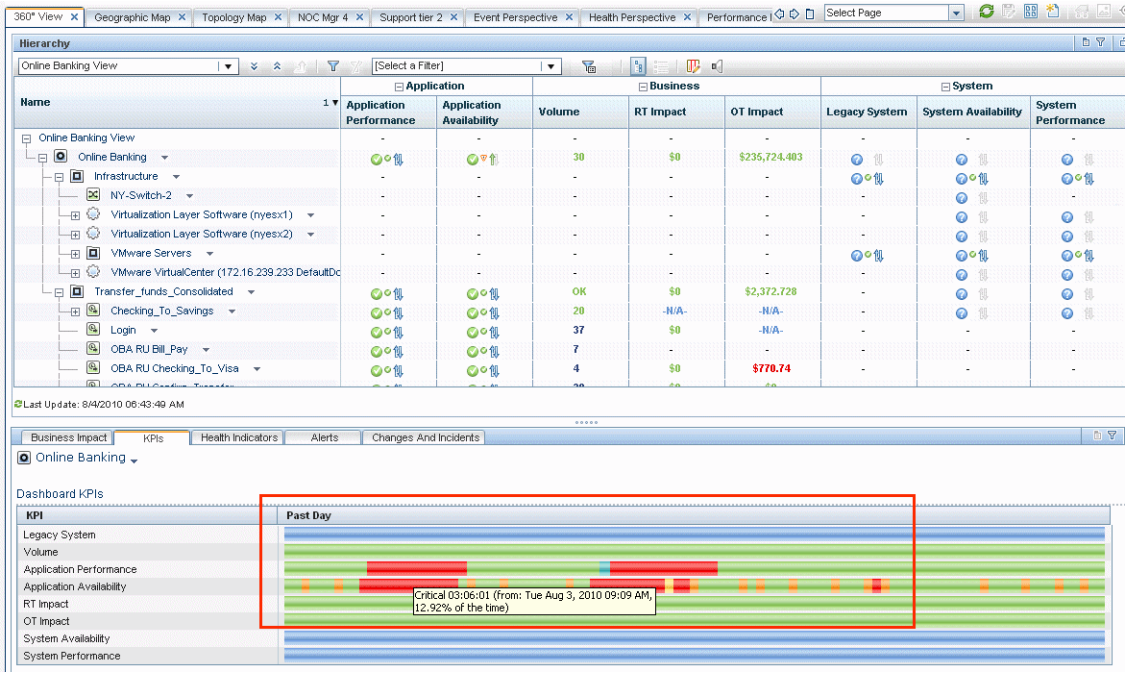
Sarah then looks at the Business Impact tab to decide what priority to assign the problem. She sees that this CI has an impact on an SLA which is currently breached; this tells her that the problem should be assigned a high priority.



2 The KPIs tab shows that the problem is not new

Sarah wants to see if the problem with this CI is new, or if it is ongoing. She looks at the KPIs tab to see the status of the problematic KPI over the past day.

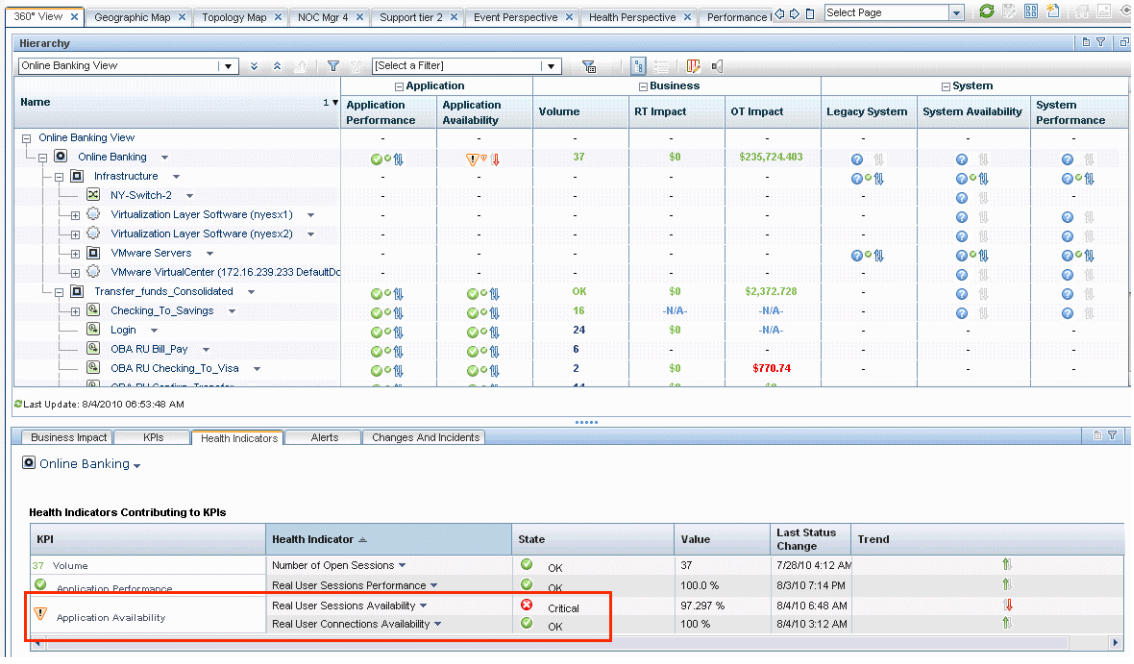
She sees that during the last 24 hours, the status of this KPI has been Critical during a significant part of the day.



3 The Health Indicators tab shows more details about the problem

Sarah knows that some KPIs are calculated based on health indicator values, and she wants to drill down and see which HIs are related to the problematic KPI.

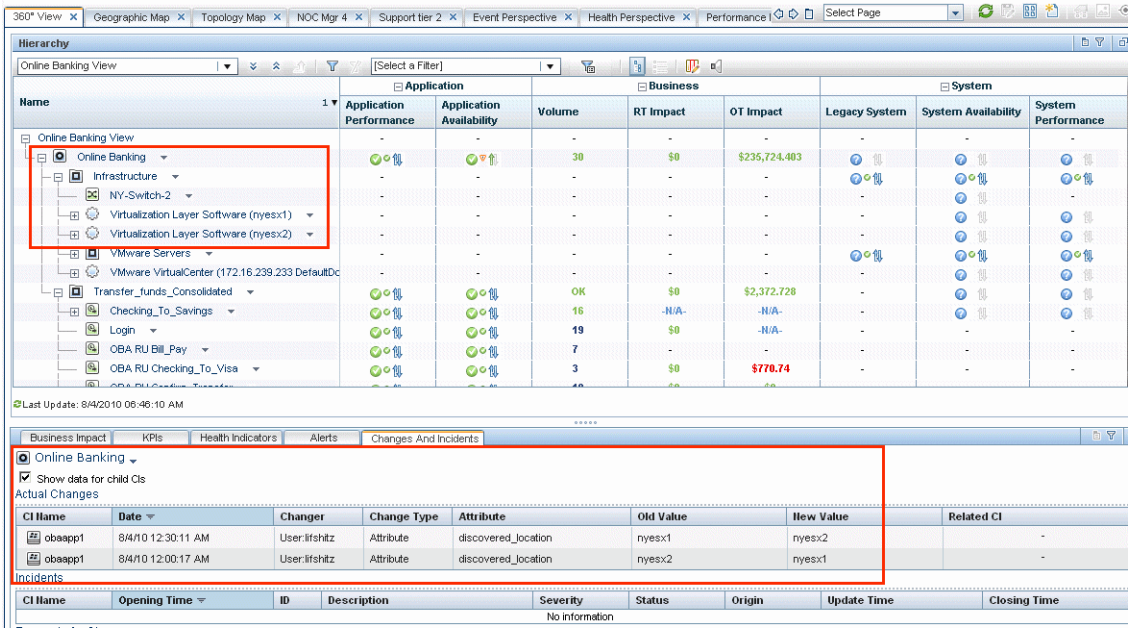
She opens the Health Indicators tab, and sees that this KPI is based on two HIs; one of which, Real User Sessions Availability, is Critical. This gives her another indication about the importance of the problem.



4 A likely solution is found using the Changes and Incidents tab

Sarah now wants to see if anything has recently changed relating to the Online Banking application, which might explain its poor availability. She looks at the Changes and Incidents tab, and sees that two changes have been recently logged regarding this CI.

In the Hierarchy component, Sarah sees that the online banking application which had utilized one virtual server was switched to another server. Sarah concludes that the changes to these virtual machines probably caused the problem with application availability, and she can now open a ticket to the specific user who authorized these changes.



How to Open Pages and Components in Service Health

The Service Health workspace enables you to view default Service Health pages, and to create new pages containing components from Service Health and other applications. Each page is displayed as a tab within the workspace. For a list of default Service Health pages and components, see "Monitoring your Environment Using the Service Health Application" on page 30.

The Service Health workspace and the MyBSM workspace both enable you to manage pages and components in the same way. The following section provides a brief explanation of how to open pages and components within Service Health. For more details on how to use your workspace to manage pages and components, see "How to Create Your MyBSM Workspace" in *Using MyBSM*.

For user interface details, see "Service Health Workspace" on page 81.

Note: By default, up to 10 pages can be open at the same time. If you have multiple pages open, up to 5 pages are refreshed automatically; any additional open pages are refreshed when you select them. To modify these limits, see "How to Modify the Maximum Number of Pages" in *Using MyBSM*.

The following tasks are optional, and can be performed in any order.

- "Open a page" on page 61
- "Configure the layout of a new page (optional)" on page 61
- "Add application components to a page" on page 61
- "Set up communication (wiring) between components" on page 62
- "Add an external component to the component gallery" on page 62
- "Modify categories of pages and components" on page 62
- "Access online help for a component" on page 62

Open a page

Service Health contains the following out-of-the-box pages: 360° View, Custom Image, Geographical Map, Top View, and Topology Map.

➤ To open a page that is not open in your workspace, select the page from the Page Selector dropdown list. This is on the Page Management toolbar, in the upper right area of your workspace. This list contains the most recently opened pages.

➤ To open a page that is not in the dropdown list, click the **Page Gallery** button on the Page Management toolbar.

➤ To create a new page, click the **New Page** button on the Page Management toolbar.

Configure the layout of a new page (optional)

When you create a page, you can configure how the components will be arranged on the page. You can define each layout as horizontal (components are displayed side by side), vertical (components are displayed one above the other), or in tabbed areas.

Use the layout tools in the upper left area of a blank layout to define the layout of a new page. For user interface details, see "Layout Tools" on page 83.

Add application components to a page

To add an application component to a page, open a page and click the **Components** button on the Page Management toolbar. Select a component, and drag it to an area on the page.

Tip: If the target area is hidden by the Component Gallery dialog box, click the dialog box title bar and drag it to another location on your screen.

Add an external component to the component gallery

You can add any URL as a component within Service Health. Open a page, and click the **Components** button on the Page Management toolbar.

Click the **Add External Component** button, and define the component as described in "How to Create an External Component" in *Using MyBSM*. The new component is added to the Component Gallery, and can then be added to any page.

Set up communication (wiring) between components

After you place components on a page, you can define how components react to one another; for example, when you select a CI in one component, the other components will display information relevant for that CI.

Default pages have wiring predefined; you can also modify default wiring definitions. For details, see "How to Set Up Wiring Between Components" in *Using MyBSM*.

Modify categories of pages and components

The Page Gallery and the Components Gallery contain default categories to help you organize pages and components. You can add categories, edit or delete user-defined categories, and add or remove pages and components from categories.

For details, see "How to Modify the Maximum Number of Pages" in *Using MyBSM*.

Access online help for a component

To access online help regarding a BSM component, click the Component Menu button on the component toolbar, and select Help. For user interface details, see "Component Toolbar" on page 85.

How to Display Data in Service Health - Prerequisites

To display data in Service Health, you must have data sources set up to collect data from your monitored CIs, and you must set up views. BSM collects data about end-users, business processes, and systems, and displays the data in topologies (views) relevant to your organization.

The following tasks are optional, and can be performed in any order.

- "Deploy monitors" on page 63
- "Discover your IT environment" on page 63
- "Define views" on page 64
- "Integrate with other applications" on page 64

Deploy monitors

Depending on your environment, you can deploy monitors to collect performance and availability data, using any of the BSM monitoring solutions.

For example, SiteScope monitors collect network and system data which is displayed in the system-related views. Business Process and Real User Monitor profiles and monitors collect performance data, which is displayed in the End-User views.

For details, refer to the documentation of the relevant monitoring solutions.

Discover your IT environment

Each of the monitoring solutions perform automatic discovery of various aspects of your monitored environment. You can also collect information about your system by running Data Flow Management to enable you to discover the IT infrastructure resources and their interdependencies, such as applications, databases, network devices, servers, and so on.

Each discovered IT resource is delivered to, and stored in, the Run-time Service Model, where the resource is represented as a managed configuration item (CI). For details, refer to the *RTSM Data Flow Management Guide*.

Define views

The IT Universe model in the RTSM can be very large, holding thousands of configuration items (CIs). A view enables you to build a subset of the overall IT Universe model, containing only those CIs relating to a specific area of interest. Some views are automatically created when you use standard SiteScope, Business Process Monitor, and Real User Monitor profiles and monitors.

You can define your own views to display only the information that is relevant to your organization's business needs. For details, see "Working with Views in IT Universe Manager" in the *Modeling Guide*.

You can also create and modify views from within Service Health Administration. For details, see "How to Create or Edit Views Using View Builder" on page 384.

Integrate with other applications

You can enrich your Service Health data by integrating BSM with other applications. For details, see "Business Service Management Integration with Other Applications" in *Solutions and Integrations*.

How to Customize Calculations in Service Health

You can customize the way HP Business Service Management calculates information in Service Health. This customization can be done on different levels:

- Within the repositories you can modify the templates or building blocks of Service Health calculation.
- Within assignment administration, you can modify the automatic KPI and HI assignments and propagations.
- Within a specific view, you can modify KPI and HI settings on one or more CI instances.

The following tasks are optional, and can be performed in any order.

- "Modify template definitions for KPIs, HIs, business rules, and context menus in the repositories" on page 65
- "Modify automatic indicator assignments and propagations across views" on page 66
- "Customize KPI and HI definitions within a specific view" on page 66

Modify template definitions for KPIs, HIs, business rules, and context menus in the repositories

The repositories provide template definitions for KPIs, HIs, business rules, and context menus, used across views. Many of these definitions can be customized as required by your organization. You can create or modify templates for indicators, rules, and context menus, and create new rules using the Rules API.

To customize templates, select **Admin** > **Service Health** > **Repositories**.

- For details on customizing KPI templates, see "How to Customize a KPI Template in the Repository" on page 653.
- For details on customizing HI templates, see "How to Create or Edit an ETI or HI Template in the Indicator Repository" on page 689.
- For details on customizing calculation rule templates, see "How to Customize a Business Rule Template in the Repository" on page 724.

- For details on creating rules, see "Creating Rules with the Rules API" on page 957.
- For details on customizing context menu templates, see "How to Customize a Context Menu Template in the Repository" on page 893.

Modify automatic indicator assignments and propagations across views

CIs associated with default data sources generally have default KPIs and HIs. For example, Business Process Monitor, Real User Monitor, and SiteScope CIs that you configure in End User Management Administration or System Availability Management Administration, all have default KPIs and HIs.

When a new CI is added to the RTSM, the assignment mechanism is automatically triggered. This mechanism assigns the appropriate KPIs, HIs, and context menus to the CI, based on the CI's CI type (CIT). To customize assignments, select **Admin** > **Service Health** > **Assignments**. For details on customizing assignments, see "How to Define a KPI or HI Assignment" on page 574.

By default, when a KPI is assigned to a CI the KPI is automatically propagated to the CI's parents. Propagation rules enable you to define exceptions to the default KPI propagation, and to propagate other KPIs, the same KPI using a different rule, or no KPIs. For details about customizing KPI propagation, see "How to Define a KPI Propagation Rule" on page 577.

Customize KPI and HI definitions within a specific view

You can manually attach KPIs and HIs to CIs in a view, and edit definitions of KPIs and HIs attached to specific CIs.

To manually change indictor definitions in a view, **Admin** > **Service Health** > **CI Indicators**. For details, see "CI Indicators Tab" on page 453.

How to Manage a New CIT in Service Health - Workflow Scenario

In the following scenario, John (a BSM administrator) has added a new CI type to his monitored system. He is now configuring how Service Health monitors this CIT.

Note: This scenario provides a high-level workflow to illustrate various aspects of Service Health customization. Many of the steps are optional, and can be performed in a different order.

---

1 John creates new indicator templates for his CIT.

John uses the repositories to create a new KPI, HI, business rule, and context menu relevant for the new CIT. These indicators will then be assigned to all CIs with the new CIT, and will be calculated using the new rule; the CIs will have the menu options John defines in the repository for the CIT. For details, see:

- **KPI.** "How to Customize a KPI Template in the Repository" on page 653.
- **HI.** "How to Create or Edit an ETI or HI Template in the Indicator Repository" on page 689.
- **Business rule.** "How to Customize a Business Rule Template in the Repository" on page 724.
- **Context menu.** "How to Customize a Context Menu Template in the Repository" on page 893.

2 He then modifies KPI and HI assignments.

Within the Assignments tab, John now performs two types of tasks:

- He creates assignments for the new CIT so that relevant predefined KPIs and HIs are automatically assigned to all CIs with this CIT.
- He also edits existing assignments on other CITs, so that they are assigned with the new KPI and HI he created in the repository.

For details on customizing assignments, see "How to Define a KPI or HI Assignment" on page 574.

3 John creates a local impact view with a breakdown.

The new CIT will be displayed in a number of existing views, but John also wants to create a view which will include the new CIT, and calculate its indicator values based on a breakdown by location.

John creates a local impact view where the CIT's indicators are calculated differently than in the global views, and he creates a breakdown in this view so the CIT is displayed by location.

For details, see:

- **Local impact view.** "Local Impact View Calculation" on page 382.
- **Breakdowns.** "How to Configure Breakdowns" on page 444.

4 Finally, John modifies KPI and HI definitions on CI instances.

Within the CI Indicators tab, John opens a view, and selects specific CI instances within that view. He then manually edits definitions of the KPIs and HIs that are attached to those CIs. For details, see "CI Indicators Tab" on page 453.

How to Customize Service Health Display

You can customize the way information is displayed in Service Health. The following tasks are optional, and can be performed in any order.

- "Create or modify global views or local impact views" on page 69
- "Create a custom image to represent your monitored environment" on page 70
- "Configure CI status alerts for a view" on page 70
- "Modify the maximum length of CI names" on page 70
- "Modify the maximum number of CIs to be displayed in Service Health" on page 71
- "Modify the Service Health tabs refresh rate" on page 71
- "Customize tooltips and icons" on page 72
- "Customize the timestamp" on page 73

Create or modify global views or local impact views

The View Builder enables you to create or edit global views and local impact views. Within a global view, when you assign a KPI or HI to a CI your changes are reflected in all views which contain the CI.

A local impact view is independent of other views, so that indicator definitions on a CI within a local impact view have no effect on other views.

To create or modify global views or local impact views, access **Admin** > **Service Health** > **View Builder.** For details, see "How to Create or Edit Views Using View Builder" on page 384.

Create a custom image to represent your monitored environment

You can define a custom image to represent a view, and then place CIs within that image. The Custom Image component in Service Health will then display this view with real-time CI status icons, in the context of this background image. The custom image can be useful for representing data centers, geographical distribution of IT resources, and so on.

To create a custom image, access **Admin > Service Health > Custom Image.** For details, see "How to Assign a Custom Image to a View" on page 491.

Configure CI status alerts for a view

You can configure the CI status alert mechanism, which sends alert messages to pre-defined recipients, and executes actions defined for the alert. Alerts can be sent regarding specific KPIs or CIs, based on a pre-defined status change.

To configure CI status alerts, access **Admin > Service Health > CI Status Alerts.** For details, see "How to Create a CI Status Alert Scheme and Attach it to a CI" on page 503.

Modify the maximum length of CI names

To change the default length (40 characters) of the CI name, select **Admin > Platform > Setup and Maintenance > Infrastructure Settings**, choose **Applications**, select **Service Health Application**, and in the Service Health Application - Service Health Layout Properties table, modify the **CI name maximum character length** entry. When the CI name is longer than this value, it is shortened in the display and a tooltip displays the complete name.

Modify the maximum number of CIs to be displayed in Service Health

To change the default number of CIs that can be displayed in a view, select **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**, choose **Applications**, select **Service Health Application**, and in the Service Health Application - Service Health Layout Properties table, modify the **Displayed CI limit** entry. Default is **3000**.

Note: This limit is independent of the number of CIs actually displayed by a filter. The limit is the number of CIs that can be in a view.

Modify the Service Health tabs refresh rate

When you open a Service Health tab for a view tree with a large infrastructure, you may experience a short delay while Service Health builds the view.

The Hierarchy, Top View, and Topology Map tabs are refreshed every 30 seconds. If no change is made to the view, the display remains the same. If changes have been made to a view, or if CIs have been deleted from the view, that view's information in the tab is automatically reloaded after 30 seconds and displays the changes.

While reloading, the following message is displayed in the top right corner of the screen: **The model has changed. Reloading...** After reloading is complete, the following message is displayed in the top right corner of the screen: **<Component> has been updated with model changes**. **Last Update** in the bottom left corner of the screen indicates the last time an update of the top view was reloaded.

The refresh rate of the view can be modified. Click the **Component Menu** button on the component toolbar, select **Preferences**, and change the refresh rate as needed.

Tip: Within the Top View, Topology Map, and Hierarchy components, if there have been major changes in the model and new CIs are discovered over an extended period of time, every 5 seconds the view is rebuilt. This stops when all the CIs are discovered. To prevent this, change the refresh rate to a higher value (for example, every 5 minutes). However, note that statuses are not updated until the next refresh occurs.

Customize tooltips and icons

You can customize some aspects of the user interface.

- **Modify Tooltip Colors.** By default, the tooltip body color is white, and the border color is blue. To change the default colors, edit the entry **CI Tooltip Body Color Property** or **CI Tooltip Border Color Property** in the Service Health Application - Tooltip Properties table.
- **Modify Tooltip Font Size.** The size of the fonts in tooltips is 8 by default. To change the default font size, edit the **Top View Tooltip font size** entry in the Service Health Application - Tooltip Properties table.
- **Modifying Tooltip Colors for Specific KPIs.** A KPI tooltip border and header have a default color that you can modify, per KPI. For details, see the KPI Parameters Area in "New KPI/Edit KPI Dialog Box" on page 668.
- **Specifying a Different Icon Set.** A different icon is used for each KPI status. You can replace the KPI status icons displayed in the Service Health application components, as well as the Trend and History icons. For details, see "How to Change the KPI Status Icons" on page 441.

Note: The following formats are supported for custom icons: .png, .jpg and .gif.

Customize the timestamp

Service Health uses the timestamp of the database machine hosting the BSM database. The times displayed in the tooltips reflect the time zone setting on that computer. If you customize the time zone setting in BSM using the **Admin** > **Personal Settings** > **User Account** option, then the customized time zone is also used in Service Health.

How to View Sample Details

If required, you can set up Service Health to provide data from the last sample that arrived for a monitored CI. This data is viewed in the Sample Details dialog box for the CI. The Sample Details dialog box displays all of the parameters for the CI, and provides the values of the parameters at the last update.

This task includes the following steps:

➤ "Set up display of last sample details" on page 73

➤ "Display the last sample information" on page 73

1 Set up display of last sample details

You can define an individual rule attached to an HI, or all calculation rules, to save the last sample details in memory.

For details, see "How to Set Up Rules to Display the Last Sample Details" on page 734.

2 Display the last sample information

Right-click a CI to open its context menus, and select **Show** > **HIs**. Within the Health Indicator component, click an HI's status link to open the Sample Details dialog box.

For user interface details, see "Sample Details Page" on page 90.

How to View the Business Impact Report

The Business Impact report displays information about how a CI impacts the Business Services and SLAs it belongs to. Data about the affected Business Service, Application, and Business Process CIs includes KPI data, over-time data, and SLA data. For example, if a host CI has critical status, you can use the report to display the status of the Business Service CIs to which the host CI is attached.

This task includes the following steps:

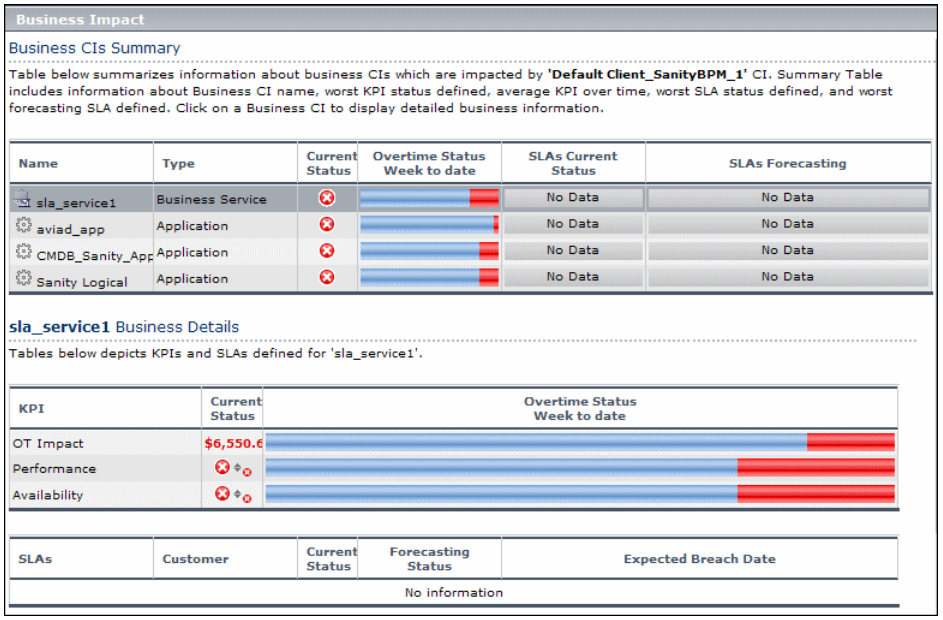
- "Access the Business Impact report for a CI" on page 74
- "Modify the default KPIs and rules used to display data in Business Impact" on page 75
- "Open a Business Impact report URL using direct login" on page 76
- "Send a Business Impact report URL with the login page" on page 77

1 Access the Business Impact report for a CI

To view the Business Impact report for a CI, right-click the CI and select the **Show Business Impact** option. For user interface details, see "Business Impact Report" on page 92.

Example:

The following Business Impact report lists the Business Service CIs impacted by the DefaultClient_SanityPBPM_1 CI. It also indicates, in the Business Details area, the status of the KPIs, the current and forecasting statuses of the SLAs that include the Business CI selected in the Business CIs Summary table.



2 Modify the default KPIs and rules used to display data in Business Impact

The system derives the parameters needed to get the data displayed in Business Impact from default KPIs and rules. For example, from the **Number of Open Incidents Rule** the system derives the state and severity of tickets to be counted in the over time number of open incidents.

If you change the KPI or rule to be used in the Business Impact report, you must configure the new KPI ID in Infrastructure Settings.

To modify the settings, select **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**, choose **Applications**, select **Service Health Application**, and locate the relevant entries in the **Service Health Application - Business Impact** table. Modify the value of the following parameters:

- **Number of Open Incidents KPI.** Sets the Id number of the KPI that defines open incidents in the report. The default is 2600 for the Open Incidents KPI.
- **Number of Open Incidents Rule.** Sets the Id number of the rule that defines open incidents in the report. The default is 2600 for the Open Incidents rule.

3 Open a Business Impact report URL using direct login

You can send a Business Impact report to a recipient using one of the following options:

- **An XML file containing all the relevant data for generating the report in any application.** The information included in the report can then be used by another application, like Release Control or HP operation applications (Network Node Manager, Service Desk, and so on).

  Use the following URL:
  http://<server_name>/<HP_BSM_web_application_context_name (usually topaz)>/TopazSiteServlet?createSession=true &requestType=login&directLogin=true&directLoginEncrypted=true &userlogin=<user_name>&userpassword=<password> &applicationId=bam&customerId=<customer_id> & portlet_url=/service-impact/main/xml.do?ciId=<CI_id>

- **A URL that accesses the HTML report.**

  Use the following URL:
  http://<server_name>/<HP_BSM_web_application_context_name (usually topaz)>/TopazSiteServlet?createSession=true &requestType=login&directLogin=true&directLoginEncrypted=true &userlogin=<user_name>&userpassword=<password> &applicationId=bam&customerId=<customer_id> &portlet_url=/service-impact/main/page.do?ciId=<CI_id>

The following parameters are used in the URLs:

- **<user_name>** and **<password>** are the HP Business Service Management user name and password and must be encrypted according to what HP Business Service Management is using.
- **<customer_id>** is the code of the customer.
- **<CI_id>** is the internal identifier of the CI. To see a CI's ID, right-click a CI within the Service Health application and select **Show > Properties**. The value of the property **Cmdb ID** is the internal ID.

4 Send a Business Impact report URL with the login page

You can send a Business Impact report to a recipient using the following options:

- **An XML file containing all the relevant data for generating the report in any application.** The information included in the report can then be used by another application, like Release Control or HP operation applications (Network Node Manager, Service Desk, and so on).

  Use the following URL, to display the login page:
  http://<server_name>/<HP_BSM_web_application_context_name (usually topaz)>/login.jsp?portlet_url=/service-impact/main/xml.do?ciId=<CI_id>

- **A URL that accesses the HTML report, included in an alert notification.** For example, if an alert assigned to a host CI is triggered and the alert includes the URL of the Business Impact report for the host CI, the user can view information about the impact of the host CI on the Business Service CI. For details, see "How to Create a CI Status Alert Scheme and Attach it to a CI" on page 503.

  Use the following URL, to display the login page:
  http://<server_name>/<HP_BSM_web_application_context_name (usually topaz)>/login.jsp?portlet_url=/service-impact/main/page.do?ciId=<CI_id>

The URL displays the login page and, after you enter the user name and password information, opens the report.

How to Find Visible and Hidden Child CIs

A CI's child CIs can be specified as included (visible) or excluded (hidden) in a specific view. The status of any child CI, visible or hidden, has an impact on the status of its parent CI in any view where the parent CI appears. For details on including or excluding child CIs, see the **Hide CIs from View** option in "Perspective-based View Editor" in the *Modeling Guide*.

Within Service Health, right-click a CI and select the **Find Visible and Hidden Child CIs** option, to show the visible and hidden child CIs that appear in the RTSM. Note that hidden child CIs are only displayed if they have KPIs.

For details, see "Find Visible and Hidden Child CIs Dialog Box".

Note: This option is not relevant in local impact views, where excluded CIs by definition do not influence the visible CIs.

For example, you might have the situation where, in a specific view, the Application Availability KPI's status of the parent CI's is Critical while the Application Availability KPI's status of the CI's child CIs are OK. When this happens, you would like to know what caused the status of the Application Availability KPI to be Critical.

Use the **Find Visible and Hidden Child CIs** option to list all of the child CIs of the selected CI in the RTSM. After the list of child CIs is displayed, you can search for the views the child CI belongs to and then display the child CIs details in the specific view.

The Find Visible and Hidden Child CIs page displays the following information:

- The name of the selected CI, whose child CIs you want to list, the CI's KPIs, and their status in the current view.
- A list of the child CIs (visible and hidden) that appear in the RTSM, their KPIs and their status. In the **Visible** column, a checkmark indicates that the child CI is visible in the view and an X indicates that the child is hidden in the view.

How to Drill Down to SiteScope from a CI or Health Indicator

When SiteScope monitors are used to set the status of a CI, you can drill down from the CI (or from a health indicator on the CI) to a SiteScope monitor that contributes to the health indicator's status.

1 Access menu commands from a CI in a component such as Top View, or from an HI in the Health Indicator component, and select **Go to SiteScope**.

The Drilldown to SiteScope dialog box displays the following hierarchy:

- The root level shows **health indicators**.
- The level below the root shows the **SiteScopes** that have monitors contributing to the health indicator.
- The lowest level shows the **SiteScope monitors** that contribute to the health indicator.

For user interface details, see "Drilldown to SiteScope Dialog Box" on page 95.

2 Select a SiteScope monitor, and click **Drilldown**. SiteScope opens to the parent group of the selected monitor.

Reference

Service Health User Interface

This section includes:

- Service Health Workspace on page 81
- Find Visible and Hidden Child CIs Dialog Box on page 86
- View Selector on page 87
- Sample Details Page on page 90
- Business Impact Report on page 92
- Drilldown to SiteScope Dialog Box on page 95

Service Health Workspace

The Service Health workspace enables you to view default Service Health pages, and to create new pages containing components from Service Health and other applications. Each page is displayed as a tab within the workspace.

The Service Health workspace and the MyBSM workspace both enable you to manage pages and components in the same way. The following section provides a brief explanation of the Service Health workspace user interface. For details on how to use your workspace to manage pages and components, see "How to Create Your MyBSM Workspace" in *Using MyBSM*.

To access	Select **Applications** > **Service Health**
Important information	➤ This help topic appears if you create a non-default page and access **Help** > **Help on this page** in the BSM menu bar. ➤ Components from different applications can be added to pages within Service Health. For descriptions of these components, see "Available Components" in *Using MyBSM*.
Relevant tasks	"How to Open Pages and Components in Service Health" on page 60
See also	For a list of default Service Health pages and components, see "Monitoring your Environment Using the Service Health Application" on page 30.

Page Management Toolbar

The Page Management toolbar on the upper right of the workspace, enables you to create pages, add components to pages, and define how components interact between one another.

User interface elements are described below:

UI Element	Description
<Page Selector>	Select a page from this dropdown list to open the page in your workspace. The list contains the pages that are defined in the page gallery. If you start typing a page name in this box, the list is narrowed.
	Refresh. Refresh the page.
	Save or Save As. Save the current page to the page gallery. A dialog box enables you to name the page, give the page a description, and select a category for the page. The description appears as a tooltip for the page, within the page gallery.
	Page Gallery. Open the page gallery. The page gallery contains default pages, as well as pages you have saved. You can then edit page definitions, or open pages.
	New Page. Create a new page. After opening a new page you can configure its layout, add components to the page, and define wiring between the components. For task details, see "How to Open Pages and Components in Service Health" on page 60.
	Edit Page Layout. Modify the layout of an existing page. Use the Layout tools in the top left corner of each layout to modify the layout areas.

UI Element	Description
	Components. Open the component gallery, which contains default components, as well as components you have added. You can then edit component definitions, or add components to a page.
	Page Wiring. Define the wiring between components; this determines how components interact with one another.
	Start/Stop Slideshow. Start a slideshow of open pages. A dialog box enables you to define how often the pages are rotated. Pages are refreshed before they are displayed. If a slideshow is running, click this button to stop the slideshow.

Layout Tools

When a layout is empty, the layout tools on the upper left area enable you to define the layout. Icons in the center of the layout indicate the type of layout: horizontal, vertical, or tabbed.

User interface elements are described below:

UI Element	Description
Layout Tools	
	Remove Layout. Remove a layout from the page.
	Add Component. Open the component gallery. You can then double-click a component to place it in the layout area.
	Split. Divide a vertical layout into two layouts, one above the other.
	Split. Divide a horizontal layout into two layouts, side by side.

UI Element	Description
	Switch to Horizontal. Change the layout from vertical or tabbed to horizontal. Components placed in this area will be added side by side.
	Switch to Vertical. Change the layout from horizontal or tabbed to vertical. Components placed in this area will be added one above the other.
	Switch to Tabs. Change the layout from vertical or horizontal, to a tab layout. Components placed in this area will be added as tabs.
Layout Icons	
	<Horizontal layout>. This icon in the center of a layout indicates that the layout is horizontal. Components placed in this area will be added side by side.
	<Vertical layout>. This icon in the center of a layout indicates that the layout is vertical. Components placed in this area will be added one above the other.
	<Tabbed layout>. This icon in the center of a layout indicates that the layout is horizontal. Components placed in this area will be added as tabs.

Component Toolbar

The component toolbar on the upper right of each component enables you to administer the component.

User interface elements are described below:

UI Element	Description
	Open one of the following: ➤ **Preferences.** Enables you to rename a component, and customize refresh rates. ➤ **Wiring.** Enables you to customize how this component interacts with the other components on the page. ➤ **Refresh.** Manually refresh the component. ➤ **Help.** Access help on the component. **Note:** Depending on the component, some of these options may not be available.
	Define filtering for the component, when a component supports internal filtering.
	Display the component in a separate popup window. **Note:** The popup window that opens does not support wiring.
	Temporarily collapse a component (the button on the left is for horizontal components; the button on the right is for vertical components).
	Restore a collapsed component (the button on the left is for horizontal components; the button on the right is for vertical components). **Note:** When you collapse a horizontal layout, it collapses into a narrow stripe. Click the stripe to restore the component.
	In a vertical or horizontal layout, click to close a component and remove it from the page. In a tabbed layout each tab has a button which closes the tab; the main close button removes the layout.

Find Visible and Hidden Child CIs Dialog Box

This dialog box enables you to list the selected CI's child CIs that appear in the RTSM (visible and hidden).

To access	In Service Health components, right-click a CI and select the **Find Visible and Hidden Child CIs** option.
Important information	➤ A CI's child CIs can be specified as included (visible) or excluded (hidden) in a specific view. The status of any child CI, visible or hidden, has an impact on the status of its parent CI in any view where the parent CI appears. For details on including or excluding child CIs, see the **Hide CIs from View** option in "Perspective-based View Editor"in the *Modeling Guide*. ➤ Hidden child CIs are only displayed if they have KPIs. ➤ This option is not relevant in local impact views, where excluded CIs by definition do not influence the visible CIs.
Relevant tasks	"How to Find Visible and Hidden Child CIs" on page 78

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<KPI>	The name of the child CI's KPI and its status.
<Top part of page>	Displays the name of the selected CI, whose child CIs you want to list, the CI's KPIs, and their status in the current view.
Name	The name of the child CIs (visible and hidden) that appear in the RTSM.
Visible	A checkmark indicates that the child CI is visible in the view. An X indicates that the child is hidden in the view.

View Selector

The View Selector component presents the elements in the view. When you select a view in the View Selector, the configuration items (CIs) contained in the view are displayed in a hierarchical tree format according to the relationships defined between the CIs.

The interaction between the View Selector component and the information presented in the other components on a page varies, according to the context. For example, the Geographical Map page by default contains both the View Selector and the Geographical Map component. When you select a CI or multiple CIs in the View Selector, they are selected in the Geographical Map.

Some components such as Top View or Topology Map have built-in view selectors, but you may want to add the View Selector component to a page with one of these components, for ease of navigation within a complex view.

To access	Some pages in **Application** > **Service Health** (such as Geographical Map) include the View Selector by default. You can also add the View Selector component to a page where you have another component for which you want to select views or CIs, such as Reports.

Important information	The View Selector includes the Browse Views and the Search CIs tabs. ➤ In Browse Views you can search for and display a view, and browse through the view to locate a particular CI. You can also perform operations for the CI from a context menu. ➤ In Search CIs you can search for one or more CIs in the views or the RTSM by name or by CI type. **Unavailable Views and CIs:** The View list in the View Selector may not display all views in the RTSM, or it may not display the contents of a view, because it includes: ➤ Only the views for which you have the necessary permissions. To set permissions, select **Admin** > **Platform** > **Users and Permissions**, select a user or a group and select **Permissions**. For more information, see "How to Assign Permissions" in *Platform Administration*. ➤ Only the views that are assigned to the application. ➤ Inactive views (appear in red) that cannot be selected. ➤ Out-of-the-box views for which you do not have a license. These views do not contain CIs. For information about the out-of-the-box views, see "Predefined Folders and Views" in the *Modeling Guide*.

Browse Views Tab

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<CIs>	The CIs contained in the currently selected view.

UI Element (A-Z)	Description
<Tooltip>	Hold the cursor over a CI to display a tooltip with the relevant CI type.
<View>	The **View** box displays the currently selected view. To select a view to display, click the down arrow on the right side of the View box; this displays an abridged list of views, containing the most recently accessed views. Click the arrow at the bottom of the list to scroll through the entire list. Alternatively, place the cursor in the list and begin typing the view name. If the first few letters that you type match an existing entry, the view name is completed. If the names of several views begin with those letters, all matching views are displayed in the list.

Search CIs Tab

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<Context sensitive menu options>	The View Selector shortcut menu contains different options in each of the pages in which it appears. For details, see "Service Health Menu Options" on page 98.
<Search results>	After you run the search, the results are listed in the lower part of the View Selector component. The results are shown in two columns: ➤ **Name.** Contains the name of the CI. ➤ **Type.** Contains the CI type of the CI. If the CI or view name is abbreviated, resize the table columns. You can sort the search results by clicking the appropriate heading.
Name	To search for a CI by name, enter the name of the CI for which to search.

UI Element (A-Z)	Description
Search	Performs the search.
Type	To search for CIs by CI type, enter the CI type for which to search.

Sample Details Page

This page enables you to display data from the last sample that arrived for a monitored CI; this includes all of the parameters for the CI, and the parameter values at the last update.

To access	In Service Health components, right-click a CI to open its context menus, and select **Show** > **HIs**. Within the Health Indicator component, click an HI's status link to open the Sample Details dialog box.
Important information	To view the Sample Details dialog box for CIs, you must configure Service Health to save the last sample for the CI. You can configure this per rule (so that you only see sample details for a monitored CI with that HI), or for all rules. For details, see "How to Set Up Rules to Display the Last Sample Details" on page 734. **Note:** Storing last sample details may require use of a large amount of memory, slowing down Service Health performance.
Relevant tasks	"How to View Sample Details" on page 73

User interface elements are described below:

UI Element (A-Z)	Description
Sample Message area	Displays the details for the CI (according to the KPI) at the last update. **Note:** The Sample Details dialog box is not automatically refreshed when there is a new update for the CI. You can refresh by right-clicking in the dialog box (outside of the **Sample Message** panel) and selecting **Refresh**, or by closing and reopening the dialog box.
Sample Source area	Contains parameters providing information on the KPI (in the **KPI name** field) for which the event details are relevant, the date and time of the last update to the CI, and the CI status at that update.

Business Impact Report

This report displays information about the Business CIs impacted by the selected CI.

To access	In Service Health components, right-click the relevant CI and select **Show Business Impact**.
Important information	➤ If there are no Business CIs attached to the CI, the report is empty. ➤ You can hide KPIs so they do not appear in the report. To hide KPIs, select **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**, choose **Applications**, select **Service Health Application**, and locate the **KPIs to hide in the report** entry in the Service Health Application - Business Impact table and add the KPI numbers separated by a comma. For example, to remove the **Performance** and **Availability** KPIs, enter 6,7. Removing KPIs has an impact on the value/status of the CIs to which those KPIs are assigned.
Relevant tasks	"How to View the Business Impact Report" on page 74

Business Services Summary Area

User interface elements are described below:

UI Element (A-Z)	Description
Current Status	The worst status of the KPI assigned to the selected Business CI.
Name	The name of the Business CI impacted by the selected CI. Click one of the Business CI in the list to display KPIs and SLA details in the <service> Service Details area.

UI Element (A-Z)	Description
Over Time Status Week to Date	The average status of the KPI over a predefined time period (the default is **week to date**). To modify the predefined time period, select **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**, choose **Applications**, select **Service Health Application**, and locate the **Default Over-Time Period** entry in the Service Health Application - Business Impact table and modify the entry value.
SLAs Current Status	The worst status of all the SLAs where the Business CI is included. If the SLA Current Status is **No Data** and the SLAs table below the main table indicates: **No information**, the Business CI is not included in any SLA. If the SLA Current Status is **No Data** and the SLAs table below the main table indicates: **No Data**, the Business CI is included in the SLA and the SLA worst status is **No Data**.
SLAs Forecasting	The worst expected status of the SLAs where the Business CI is included. If the SLA Forecasting Status is **No Data** and the SLAs table below the main table indicates: **No information**, the Business CI is not included in any SLA. If the SLA Forecasting Status is **No Data** and the SLAs table below the main table indicates: **No Data**, the Business CI is included in the SLA and the SLA Forecasting worst status is **No Data**.

Service Details Area

The area includes the KPI and the SLAs tables.

KPI Table

User interface elements are described below:

UI Element (A-Z)	Description
Current Status	The current status of the KPI assigned to the selected Business CI, as it appears in Service Health.
KPI	The list of KPIs attached to the selected Business CI.
Over Time Status	The status of the KPI over a predefined time period, as it appears in the KPI Over TIme Report in Service Health.

SLAs Table

User interface elements are described below:

UI Element (A-Z)	Description
Current Status	The current status of the SLA.
Customer	The customer related to the SLA.
Expected Breach Date	The expected breach date of the SLA.
Forecasting Status	The expected status of the SLA, based on extrapolation. For additional information, see "Business Services Summary Area" on page 92.
SLAs	The list of SLAs where the selected Business CI is included. For additional information, see "Business Services Summary Area" on page 92.

Drilldown to SiteScope Dialog Box

This dialog box enables you to drill down from a CI or health indicator to a specific SiteScope monitor which is contributing to an HI's status.

To access	➤ In a component displaying CIs (such as Top View or Topology Map), access a CI's menu commands and select **Go to SiteScope**. ➤ In the Health Indicator component, access an HI's menu commands and select **Go to SiteScope**.
Important information	➤ In the System Monitors View, if you select **Go to SiteScope** from a monitored CI, SiteScope opens to the monitor's parent group. If you select this from a group CI, SiteScope opens directly to the group. ➤ If you select **Go to SiteScope** from a CI or health indicator that has only one monitor contributing to health indicator status, SiteScope opens directly to the parent group of the relevant monitor.
Relevant tasks	"How to Drill Down to SiteScope from a CI or Health Indicator" on page 79

User interface elements are described below:

UI Element (A-Z)	Description
<Health Indicator, SiteScope, and Monitor Hierarchy>	➤ The root level shows **health indicators**. If you open the dialog box for a CI, one or more HIs that contribute to the CI's status are listed. If you open the dialog box for an HI, this HI appears as the root. ➤ The level below the root shows the **SiteScopes** that have monitors that contribute to the HI. ➤ The lowest level shows the **SiteScope monitors** that contribute to the HI.
Drilldown	Select a SiteScope monitor in the displayed hierarchy, and click **Drilldown** to open SiteScope. SiteScope opens to the parent group of the selected monitor. For details on working with SiteScope, see *Using SiteScope* in the SiteScope Help.

KPI Icons in Service Health

A CI can have the following KPI icons (shown with OK status):

Icon	Description
	All other KPIs
	Application Availability KPI
	Application Performance KPI
	Backlog KPI
	Business Impact KPI
	Delays KPI
	Duration KPI
	Exceptions KPI
	Failures KPI
	Network Availability
	OT Impact KPI
	PNR KPI
	RT Impact KPI
	Security KPI
	Siebel

Icon	Description
	Siebel Errors
	Siebel Sessions
	Throughput KPI
	Value KPI
	Volume KPI

Tip: You can customize the set of icons used in Service Health. For details, see "How to Change the KPI Status Icons" on page 441.

Service Health Menu Options

The default menu options displayed in Service Health tabs depend on the selected view and the selected CI. They can be a subset of the options described in this section. For more information, see "About Menu Options" on page 51.

The default menu options are grouped into the following categories:

- "Drill to Diagnostics" on page 98
- "Go To" on page 99
- "Invoke" on page 102
- "Operations" on page 102
- "Reports" on page 103
- "SAP Alert Acknowledgement" on page 109
- "Show" on page 109

Drill to Diagnostics

These menu actions enable you to open specific pages in the HP Diagnostics application filtered by the selected CI. This option is displayed only if you have HP Diagnostics installed. For more information, see the *HP Diagnostics User's Guide*.

The following menu actions are available:

Context Menu Action	Description
Any Users Transaction Paths View	Drills down to the Transactions - Business Transactions Paths view.
Any Users Transactions View	Drills down to the Transactions - Business Transactions view.
Diagnostics Agent/J2EE Server Summary View	Drills down to the Probes view.

Context Menu Action	Description
Diagnostics Probe Group Summary View	Drills down to the Probe Group Summary view.
Host Summary View	Drills down to the Hosts view.
Oracle Server Summary View	Drills down to the Oracle Database - Oracle Probes view.
SAP R3 Summary View	Drills down to the SAP - ABAP SAP Probes view.
SQL Server Instance Summary View	Drills down to the SQL Server Database - SQL Server Probes view.
SQL Server Summary View	Drills down to the SQL Server Database - SQL Server Probes view.
Synthetic Users Transactions Layers View	Drills down to the Transactions - Synthetic Transactions Layers view.
Synthetic Users Transactions View	Drills down to the Transactions - Synthetic Transactions view.
WMQ Server Summary View	Drills down to the MQ - Queue Managers view.

Go To

These menu actions enable you to go to specific locations in various applications related to the selected CI. The following menu actions are available:

Context Menu Action	Description
Application Health Tab	Opens the Health page in the Business Process Insight application. For details, see "BPI Application Health User Interface" in *Using Business Process Insight*.
Go to Service Health Analyzer	If you have Service Health Analyzer installed, this option enables you to drill down directly to the Anomaly Highlights page for the selected CI. For details, see Anomaly Highlights Page documentation in *Using Service Health Analyzer*.

Context Menu Action	Description
Go to Service Health Console	Opens the Service Health 360 View page. For details, see "360° View" on page 257.
Go to SiteScope	This option enables you to drill down to SiteScope directly from SiteScope CIs and their health indicators. In the System Monitors View, if you select Go to SiteScope from a monitor CI, SiteScope opens directly to the monitor's parent group. If you select this from a group CI, SiteScope opens directly to the group. In other views, this opens the Drilldown to SiteScope dialog box. This enables you to select a SiteScope monitor, and then open the monitor's parent group in SiteScope. For details, see "Drilldown to SiteScope Dialog Box" on page 95. For details on working with SiteScope, see *Using SiteScope* in the SiteScope Help.
Locate CI in View	Displays the Search pane where you can specify the CI you want to locate. For details about the search feature, see "How to Search for CIs in Search Mode" in the *Modeling Guide*.
Siebel Processes	This option is available for Siebel Application Server, Siebel Component Group, and Siebel Component CIs. This option opens the Task Diagnostics Tool filtered by: ➤ The selected site, and server for Siebel Application CIs. ➤ The selected site, server, and selected Component Group CI for Component Group CIs. ➤ The selected site, server, selected Component Group CI, and Component CI for Component Group CIs. For details on the Siebel Task Diagnostics Tool, see "Siebel Views" in *Solutions and Integrations*. For details on the Siebel CIs, see "Default CITs in the Siebel View" in *Solutions and Integrations*. For details on the Process Diagnostics Tool, see "Siebel Views" in *Solutions and Integrations*.

Context Menu Action	Description
Siebel running tasks	This option is for Siebel Application Server, Siebel Component Group, and Siebel Component CIs. Opens a separate page with the Task Diagnostics Tool filtered by: ➤ The selected site, server, **Running** status, and **Session** type for Siebel Application CIs. ➤ The selected site, server, selected Component Group CI, **Running** status, and **Session** type for Component Group CIs. ➤ The selected site, server, selected Component Group CI, selected Component CI, **Running** status, and **Session** type for Component CIs. For details on the Siebel CIs, see "Default CITs in the Siebel View" in *Solutions and Integrations*. For details on the Siebel Task Diagnostics Tool, see "Siebel Views" in *Solutions and Integrations*.
Siebel tasks in error	This option is for Siebel Application Server, Siebel Component Group, and Siebel Component CIs. Opens a separate page with the Task Diagnostics Tool filtered by: ➤ The selected site, server, and **Exited with Error** status for Siebel Application CIs. ➤ The selected site, server, selected Component Group CI, and **Exited with Error** status for Component Group CIs. ➤ The selected site, server, selected Component Group CI, selected Component CI, and **Exited with Error** status for Component CIs. For details on the Siebel CIs, see "Default CITs in the Siebel View" in *Solutions and Integrations*. For details on the Siebel Task Diagnostics Tool, see "Siebel Views" in *Solutions and Integrations*.
Siebel Database Breakdown	This option is for the Siebel Site, Siebel Application, and Siebel Enterprise CIs. Opens the Database Breakdown tab in BSM for Siebel to enable you to create and analyze database logs that record the SQL activity between Siebel components and the Siebel database. For details, see "Siebel Views" in *Solutions and Integrations*.

Context Menu Action	Description
Siebel SARM	This option is for the Siebel Site, Siebel Application, and Siebel Enterprise CIs. Opens the SARM - User Trace Breakdown tab in BSM for Siebel to enable you to create and record the SQL activity in each monitored Siebel site. For details, see "Siebel Views" in *Solutions and Integrations*.

Invoke

This menu is available for all CIs whose CI type is mapped to an HP Operations Orchestration (OO) run book. The following menu action is available:

Context Menu Action	Description
Invoke Run Books	Opens the **Related Run Books** page in a new window, where you can view the mapped run books and invoke them in OO. For details on integrating Business Service Management with OO, see "HP Operations Orchestration Integration Overview" in *Solutions and Integrations*. **Note:** To invoke run books from the Related Run Books page, you must have the necessary permissions for OO in Business Service Management. To access the Permissions page, select **Admin** > **Platform** > **Users and Permissions**. For details on this topic, see "Permissions Overview" in *Platform Administration*.

Operations

This menu enables you to perform actions related to the selected entity. The following menu actions are available (depending on your context):

Context Menu Action	Description
Acknowledgment Details	Enables you to view the details of the current acknowledgment or the acknowledgment history of the CI. For details, see "Acknowledgment History and Details Dialog Box" on page 332.

Context Menu Action	Description
Collaborate	If you are working with the HP Enterprise Collaboration (EC) application, this menu command opens EC with the selected CI as the context of the conversation. For details on EC, contact your HP representative. **Note:** ➤ To enable this BSM > EC integration, select **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**, choose **Foundations** > **Enterprise Collaboration**, and enter the URL of the EC server. ➤ This collaboration requires that BSM and EC use the same SSO token. To modify the token in BSM, select **Admin** > **Platform** > **Users and Permissions** > **Authentication Management**, and edit the **Token Creation Key**.
Delete	Opens the Delete Folder dialog box in the Modeling Studio, to enable you to delete a folder. For details, see "Modeling Studio User Interface" in the *Modeling Guide*.
Delete CI	Opens a dialog box to confirm that you want to delete the relevant CI in IT Universe Manager.
New Folder	Opens the New Folder dialog box in the Modeling Studio, to enable you to create a new folder. For details, see "Modeling Studio User Interface" in the *Modeling Guide*.
Rename Folder	Opens the Rename Folder dialog box to enable you to rename a folder. For details, see "Modeling Studio User Interface" in the *Modeling Guide*.
Reset Health Indicator	Restores the selected HI to its default state and value. For details, see "Health Indicator Component Overview" on page 228.
Set/Unset Acknowledgment	Enables you to set or unset acknowledgment of a problem on a CI. For details, see "Acknowledgments Details Dialog Box" on page 333.

Reports

This option is available for all CIs. This menu lists options that enable you to access all types of reports that display information about the selected CI.

The following menu actions are available:

Context Menu Action	Description
Aggregate Transaction Topology	Opens the Aggregated Topology report in the Transaction Management application.
Application Summary	Opens the application summary report for the selected CI. For details, see "Application Summary Report" in *Using End User Management*.
BPI Monitors Over Time	This option is available for all BPI Duration, Value, or Custom Monitor CIs. Opens the BPI Monitors Over Time report. For details, see "BPI Monitors Over Time Report" in *Using Business Process Insight*.
BPM Application Health	Opens the application health report filtered for synthetic user data, and filtered for the parent application. For details, see "Application Health Report" in *Using End User Management*.
BPM Performance Analysis	Opens the performance analysis report filtered for synthetic user data, and filtered for the selected transaction. For details, see "Performance Analysis Report" in *Using End User Management*.
BPM Triage for Application	Opens the triage report filtered for synthetic user data, and filtered for the selected application. For details, see "Triage Report" in *Using End User Management*.
BPM Triage for Transaction	Opens the triage report filtered for synthetic user data, and filtered for the selected transaction. For details, see "Triage Report" in *Using End User Management*.
Business Process Over Time Report	This option is available for all BPI Business Process Step Monitor or BPI Business Process Monitor CIs. Opens the Business Process Over Time report. For details, see "Business Process Over Time Report" in *Using Business Process Insight*.
Change Report	This option is available for all CIs whose properties have changed. Opens the Change report for the CI. The Change report displays information about the changes made to the properties of CIs for all CIs that were assigned to keep this information. For details, see "CI Change Report" in *Reports*.
CI Impact Report	Opens the Related Change Request report in Service Health.

Context Menu Action	Description
Configuration Item Status Alerts	This option is for all CIs. Opens the Configuration Item Status Alerts report for the CI. The Configuration Item Status Alerts report lists all of the alerts that occurred in the specified period of time. For details on the report, see "CI Status Alerts Reports" on page 285.
Diagnostics Web Service Topology	This option is for Web Service CIs. Opens the Diagnostics Service Topology view for the selected Web Service CI, for the past half hour. For details on the report, see the *HP Diagnostics User's Guide*.
End User Summary	This option is for Real User Monitor-specific CIs. Opens the End User Summary report. The End User Summary report displays data for specific end users configured for Real User Monitor in End User Management Administration. For details, see "RUM End User Group Summary Report" in *Using End User Management*.
Event Log Report	Moves to the Event Log report in End User Management. The Event Log report displays a log of the occurrences of a specific event type for a selected time frame. For details, see "Event Log" in *Using End User Management*.
Infrastructure Summary	Opens the infrastructure summary report filtered for the selected application. For details, see "RUM Application Infrastructure Summary Report" in *Using End User Management*.
KPIs Over Time Report	This option is for all CIs. Opens the KPIs Over Time report for the CI. The KPIs Over Time report shows the status or value, over time, of selected CIs and KPIs that are accessible from the Service Health application. For details on the report, see "KPIs Over Time Report".
Location Summary	Opens the location summary report filtered for the selected location. For details, see "Location Summary Report" in *Using End User Management*.
Performance Matrix for Application	Opens the BPM performance matrix report filtered for the selected application. For details, see "BPM Performance Over Time Report" in *Using End User Management*.

Context Menu Action	Description
Performance Matrix for Transaction	Opens the BPM performance matrix report filtered for the selected transaction. For details, see "BPM Performance Over Time Report" in *Using End User Management*.
RUM Performance Analysis	Opens the performance analysis report filtered for real user data, and filtered for the selected transaction. For details, see "Performance Analysis Report" in *Using End User Management*.
RUM Triage for Application	Opens the triage report filtered for real user data, and filtered for the selected application. For details, see "Triage Report" in *Using End User Management*.
RUM Triage for Transaction	Opens the triage report filtered for real user data, and filtered for the selected transaction. For details, see "Triage Report" in *Using End User Management*.
SAP Transaction Changes	This option is for SAP-specific CIs. Opens the SAP Transaction Changes report. The SAP Transaction Changes report displays the SAP transactions and SAP transports and the impact of transports on each transaction. For details on the report, see "SAP Transaction Changes Report" in *Solutions and Integrations*. For details on the SAP System view, see "SAP Systems View" in *Solutions and Integrations*.
SAP Transport Changes	This option is for SAP-specific CIs. Opens the SAP Transport Changes report. The SAP Transport Changes report displays the changes inside the Transport and the impact on the SAP transaction. For details on the report, see "Application Management for SAP User Interface" in *Solutions and Integrations*. For details on the SAP System view, see "SAP Systems View" in *Solutions and Integrations*.

Context Menu Action	Description
Session Analyzer	This option is for Real User Monitor-specific CIs. Opens the Session Analyzer report. The Session Analyzer report displays session data for specific applications configured for Real User Monitor in End User Management Administration. For details, see "RUM Session Analyzer Report" in *Using End User Management*.
Show Impacting SAP Transports	This option is available for SAP-specific Transaction and group CIs. For Transaction CIs, enables you to display all of the selected CIs and their child CIs that were affected by any SAP Transport CIs. For details, see "Show Impacting SAP Transports Report" in *Solutions and Integrations*. Groups CIs represent the following CIs: SAP System, and SAP Application Component.
Show Impacting SAP Transports Transactions	Enables you to display the transactions that are impacting the selected CI.
Show SAP Transport Impact	This option is available for SAP-specific Transport CIs. Enables you to display all SAP transactions that are impacted by the selected transport. For details, see "Show Impacting SAP Transport Transactions Report" in *Solutions and Integrations*.
SiteScope Cross-Performance	This option is for SiteScope Profile, SiteScope Group, and SiteScope Monitor CIs. Opens the Cross-Performance report. For details, see "Cross-Performance Report" in *Using System Availability Management*.
SiteScope Quick Report	This option is for SiteScope Group and SiteScope Monitor CIs. Opens SiteScope Quick Report. For details, see *Using SiteScope* in the SiteScope Help.
SiteScope Server Centric Report	This option is for Windows Resource Monitor and Unix Resource Monitor CIs under specific conditions described in the report description. Opens SiteScope Server Centric Report. For details, see *Using SiteScope* in the SiteScope Help.

Context Menu Action	Description
Systinet Web Service Data	This option is for Business Unit CIs, Web Service CIs, and Web Service Operation CIs, when there is an integration between HP Business Service Management and HP SOA Systinet. Opens the HP SOA Systinet application, focused on the relevant Web service. For details, see the HP SOA Systinet documentation. For details on the integration with HP SOA Systinet, see "Integration of HP SOA Systinet" in *Solutions and Integrations*.
Tier Summary	Opens the RUM tier summary report filtered for the selected application. For details, see "RUM Tier Summary Report" in *Using End User Management*.
Transaction Over Time	This option is available for TV Monitor CIs. Opens the Transaction Over Time report. For details, see "Transaction Over Time Report" in *Using Transaction Management*.
Transaction Summary	Opens the Transaction Summary report relevant for the CI. For details, see "Transaction Summary Report" in *Using Transaction Management*.
Transaction Tracking	Opens the Transaction Tracking report in the Transaction Management application. For details, see "Transaction Tracking Report" in *Using Transaction Management*.
Trend	Opens the trend report for the CI. Trend reports enable you to compare multiple measurements from several profiles. This menu command enables you to compare data collected by Business Process Monitor only. You can use the User Reports application to generate trend reports from other data collectors. For details, see "Trend Reports" in *Reports*.
Triage	Opens the Triage report. The Triage report displays transaction data for Business Process Monitor, and Real User Monitor profiles for the past day. For details, see "Triage Report" in *Using End User Management*.
Triage Raw Data	Opens the Triage Raw Data report. For details about the report, see "Triage Raw Data Report" in *Using End User Management*.

SAP Alert Acknowledgement

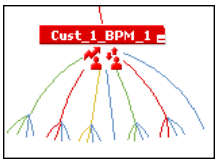
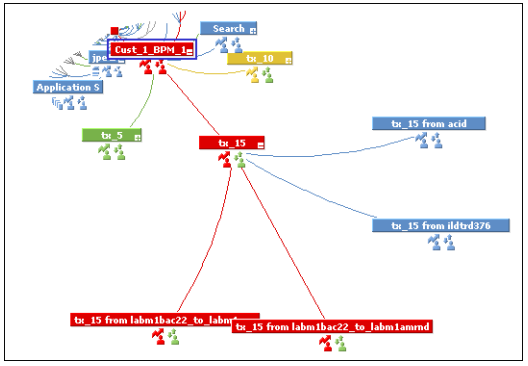
These actions are for SAP Alerts. The following menu actions are available:

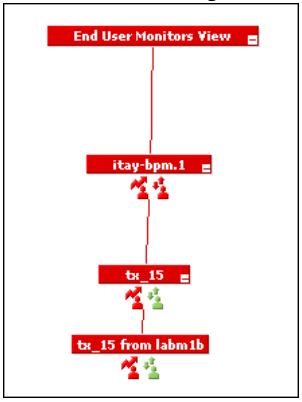
Context Menu Action	Description
Complete Alert	Activates a URL call to the relevant SAP system and completes the selected SAP alert.
<Common menu actions>	For details on KPIs Over Time Report, Change Report, and Configuration Item Status Alerts, see "Reports" on page 103. For details on Service Impact, Path to Root, Problematic Subtree, Errors, Properties, and Find Visible and Child CIs, see "Show" on page 109. For details on Invoke Run Books, see "Invoke" on page 102.

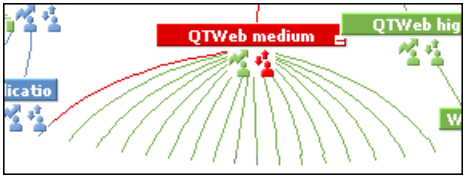
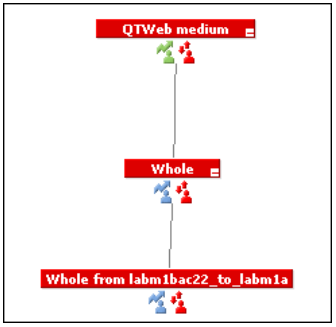
Show

This menu enables you to access various details related to the selected CI. The following menu actions are available:

Context Menu Action	Description
Errors	Opens the Service Health Hierarchy component, filtered for CIs in Error status. For details, see "Hierarchy Component Overview" on page 224.
Expand more levels	**Note:** This option is only available in Top View. Opens a number of levels (7 by default) below the selected level of the Top View tree.

Context Menu Action	Description
Expand to problem	**Note:** This option is only available in Top View. Collapses the branches where CIs do not have **Critical** or **Major** statuses. **Example:** In the End User Monitors view, Cust_1_BPM_1 is red.  Right-click Cust_1_BPM_1 and select the **Expand to problem** option to get more information about the problem by displaying lower levels of the view and by collapsing non-problematic branches. 
Find Visible and Hidden Child CIs	This option is available for all CIs. Returns all of the visible and hidden child CIs of the selected CI as they appear in the RTSM. For details, see "How to Find Visible and Hidden Child CIs" on page 78.
HIs	Opens the Service Health Health Indicators component, showing the HIs related to the selected CI. For details, see "Health Indicator Component Overview" on page 228.
HP Service Manager	A context menu option available from EMS Monitor CIs under Business Service CIs, to open the HP Service Manager application.

Context Menu Action	Description
Operation Manager	This option is available for HP Operations Manager-related CIs in Service Health and Service Level Management views. It enables you to access the HP Operations Manager application. For details on this topic, see "HP Operations Manager" in *Solutions and Integrations*.
Path to Root	This option is available for all CIs. Opens a Top View page that displays the path from the selected CI to the root CI. For example: 

Context Menu Action	Description
Problematic Subtree	This option is available for all CIs. Opens a popup with the same capabilities as the Top View tab. The popup displays all of the child CIs with **Critical**, **Major**, or **Minor** status and enables you to find the problematic child CI that causes the selected parent CI to have a status other than **OK**. It is enabled only for CIs that have at least one KPI with a status other than **OK**. Example: The QTWeb medium CI has the following children:  Select the **Problematic Subtree** option for the CI to display the following children: 
Properties	This option is available for all CIs. Opens the CI Properties dialog box which displays details on the CI.
Service Impact	Opens the Business Impact report that displays the impact of the current CI on the services that depend on that CI. If there are no services attached to the CI, the report is empty. For details, see "Business Impact Report" on page 92.
Show Business Activity Over Time Report	Opens the Business Activity Over Time report in the Business Process Insight application.
Show Contributing Events	Shows which events contributed to the HI's status and value.

Context Menu Action	Description
Show Related CIs	Performs a search for related CIs; for details see "How to Search for CIs in Search Mode" in the *Modeling Guide*.
Show Top View	Opens the Service Health Top View in a popup window, with the view's tree centered on the selected CI.

Troubleshooting Service Health - General Topics

This section describes general troubleshooting for Service Health.

Service Health pages and components are missing

If you modified databases on a running BSM deployment, Service Health will no longer contain any pages and components. To restore pages and components:

1. Open the following directory: **<Gateway server root directory>\conf\uimashup\import**. This contains two directories: **\loaded**, and **\toload**.
2. Copy the contents of the **\loaded** directory into the **\toload** directory.
3. Restart BSM.

2

Health Indicators and KPIs - Overview

This chapter includes:

Concepts

- Introduction to Health Indicators on page 116
- Terminology Related to HIs and KPIs on page 117
- The Service Health Calculation Flow on page 118
- Health Indicator Definitions on page 119
- Integrating the Event and Metric Channels on page 122
- Configuring Health Indicators on page 125

Tasks

- How to Map an ETI to an HI - Use-Case Scenario on page 127
- How to Create an HI and Trigger an Event When its Status Changes - Use-Case Scenario on page 135
- How to Create an Event Based on CI Status Changes - Use-Case Scenario on page 138
- How to Monitor a Specific Windows Server with Both Operations Manager and SiteScope - Use-Case Scenario on page 140
- How to Customize an HI Monitored by SiteScope - Use-Case Scenario on page 142

Concepts

Introduction to Health Indicators

Service Health enables IT staff such as service managers and application support to monitor the organization's business services and application health, in order to help them understand the impact of problems and act to restore service operation as fast as possible.

Service Health uses **health indicators** (HIs) to consolidate between two legacy modes of operations: event management, and application management.

IT operations are usually organized into two separate groups:

- Operations bridge operators act upon events; events are received in a central event console, which focuses primarily on system problems.
- Applications support specialists act upon end-user availability or performance problems with applications. Application support staff can use one of the Service Health real-time components (Top View, 360° View, Custom Image, and so on) to monitor application health, or they can be notified about problems by email alerts or ticket assignments.

By unifying these two monolithic approaches - **event management** and **application management**, BSM now offers IT operations a single pane of glass covering both the system and end user aspects in a unified method.

BSM translates information from system events into Service Health resources, and displays them in the different Service Health views. In addition, BSM sends events to the event browser when thresholds of end-user monitored applications are breached.

The consolidation of the event subsystem and the Service Health subsystems is realized by usage of HIs - shared entities that creates a common terminology between event management and application management.

An HI represents a certain measurement of the monitored CI. It may be CPU load for a computer, Real user performance for a login page, or Value of business process transactions that are under risk.

Terminology Related to HIs and KPIs

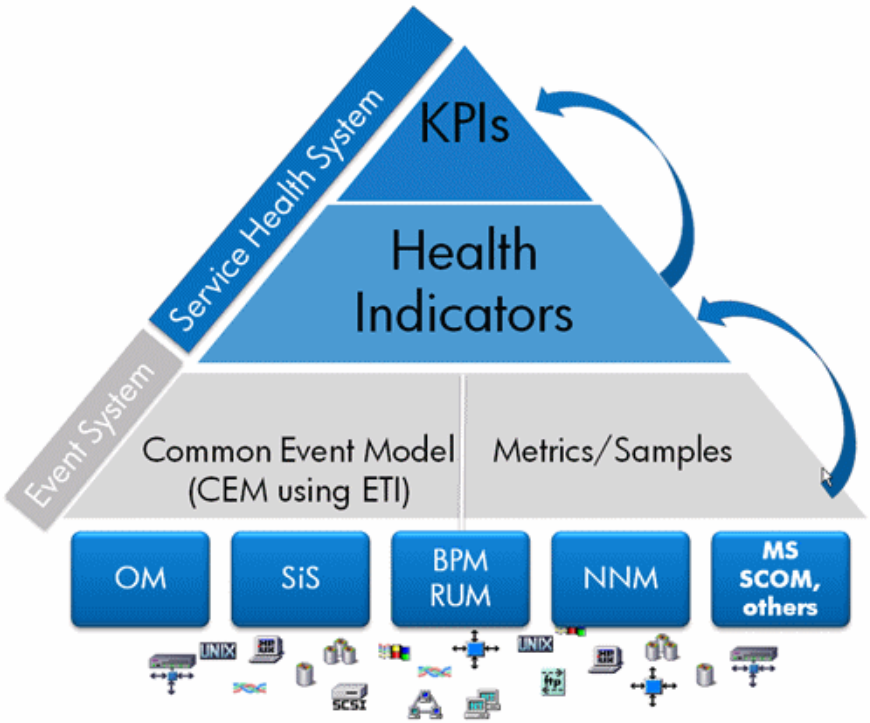
The following table describes the basic terms related to HIs and KPIs.

Concept	Description
Event	An event contains data which includes monitoring information about a CI, according to the rule which triggers the event. The event includes the CI name, the measurement name (specified as the event type indicator) and the measurement's severity.
Metric sample	A sample includes metrics reported for one or more measurements of a monitored CI. To extract information from the sample, the BSM Service Health engine executes some logic (in Java or Groovy) upon the sample string.
ETI (event type indicator)	The ETI is a field in the event that indicates the problem type, and its descriptive severity. The ETI structure includes the ETI name and ETI state (for example: System Restart: occurred, or CPU Load: Abnormal).
HI (health indicator)	An HI describes the health of a specific measurement (similar to an ETI), but it also affects the Service Health calculation for the monitored CI.
HI business rule	An HI calculation rule or business rule is code written in Java or Groovy; it extracts metric data from a sample, performs business logic on the metric, and assigns it to the relevant HI. The rule provides a status (for example **Critical**) that represents the metric's severity.
KPI (key performance indicator)	A KPI is a higher level indicator than an HI, and it represents an aspect of domain health such as System Performance, System Availability, Application Performance, Application Availability, and so on.

Concept	Description
KPI business rule	A KPI rule determines how HI statuses are aggregated to calculate KPI status (worst, best, average, and so on).
KPI calculation scope	The scope defines the type of resources that contribute to KPI calculation: HIs and KPIs on child CIs, HIs only, or KPIs on child CIs only.

The Service Health Calculation Flow

The following section describes the Service Health data calculation flow.



1 BSM monitoring applications such as Operations Manager (HPOM), BPM, RUM, and so on, provide full coverage for monitoring the IT world. Each monitoring application sends values or statuses of the monitored CI as an event or metric sample.

   - **Events.** HPOM, SiteScope, NNMi and 3rd party tools (using the BSM integration adapter) send their data in the form of events.
   - **Metrics.** BPM, RUM, TransactionVision, and BPI send their data as metric samples.

2 Any measurement within an event or sample is mapped to an HI, as follows:

   - **Events channel.** An HI is created according to the ETI field in the event structure.
   - **Metric samples channel**. An HI is created according to a business rule logic that applies to the CI.

3 After the information from the events or samples is transformed to the relevant HI status, KPIs that are associated with the HI are calculated based on the KPI rule, and the KPI's calculation scope definition.

Note: Not all HIs contribute to a KPI's status.

All definitions required for performing the above logic are provided out of the box as part of the BSM product content. You can also create or modify HIs, KPIs, or calculation rules to suit your particular needs.

Health Indicator Definitions

The following section describes HIs in further detail; for an overview see "Introduction to Health Indicators" on page 116.

This section includes the following topics:

- "CI types and HIs" on page 120
- "HIs and their data sources" on page 120

➤ "HI attributes" on page 121

➤ "HI state and status" on page 121

➤ "HIs generating events" on page 121

➤ "Service Health and SLM default rules" on page 121

➤ "ETI mapping rules" on page 122

➤ "HIs and ETIs" on page 122

CI types and HIs

An HI describes a certain measurement of a CI, and is associated with a specific CI type. For example, the Windows CI type will have HIs such as **CPU Load** and **Memory Utilization**, and the Business Transaction CI type will have **Real user performance** and **Volume** HIs.

A CI type may inherit HIs from its parent CI type; for example HIs assigned to the Database CI type also apply to the Oracle or DB2 CI types, and are applied to any Oracle and DB2 database CI.

HIs and their data sources

HIs can be created by events, or by samples and rules. The first type of HI is created when an event carries an ETI that matches the HI definition, while the second type of HI is created as part of the Service Health HI assignment mechanism.

HIs which are fed by events do not require a rule to define how they are calculated, and no assignment or view-level configuration can change their calculation logic; they are simply assigned their state by their corresponding ETIs.

Some HIs are fed by both events and samples; these will carry a rule attribute which is used when generated by samples.

An HI can be generated by multiple monitoring domains; for example **Network Latency** can be fed by both an HPOM agent and by the RUM engine.

HI attributes

HIs are defined in the Indicator Repository. In addition to general attributes such as name and description, for each HI you can define if the HI is applicable for SLM and/or Service Health. This offers the flexibility to have dedicated HIs for each application; by default all HIs are set to be calculated for both applications.

HI state and status

An HI's severity is represented by a combination of state and a status. The **state** contains descriptive information of the value or the situation (for example overloaded or much higher than normal). The **status** represent the severity in the typical Service Health levels: OK, Warning, Minor, Major, Critical.

Each state is mapped to a status; one status can be translated into more than one state. For example, the states overloaded and much higher than normal can both be mapped to Major severity. If there is more than one state mapped to a given severity, you can specify which state is used by default.

ETIs use **states** to describe the problem severity, whereas business rules use **status** to display metric-based HI severity. When HIs are fed by ETIs, Service Health translates ETI state to HI status for further calculation of KPI status. When HIs are generated due to threshold violations based on measurements in metric samples, the severity determined by the rule is translated to the HI's state.

HIs generating events

Within the HI definition, you can determine whether HI status changes for metric-based HIs trigger an event to the event browser, to notify the operator about threshold violations. This is typically used for end user experience issues.

Service Health and SLM default rules

The attributes for default rules define the default business rule used to calculate metric-based HIs.

ETI mapping rules

This defines HI to ETI mapping by defining a filter on the event attributes.

If an event does not contain an ETI attribute specifying a severity from HPOM, you can define indicator mapping rules to set indicator states. For details, see "How to Map an ETI to an HI - Use-Case Scenario" on page 127.

HIs and ETIs

HIs correlate to ETIs according to common names. The ETI is used as a reference to create the related HI in Service Health (for the first event carrying the ETI), and it assigns the HI state according to the ETI state. A **CPU Load** HI is fed by events carrying the **CPU Load** ETI.

ETIs that do not have corresponding HIs are not processed by the Service Health engine, and only appear in the event browser.

An HI's status is independent of the event lifecycle; for example a **CPU load** HI remains **Critical** even if the event that was triggered for the problem was closed by the operator.

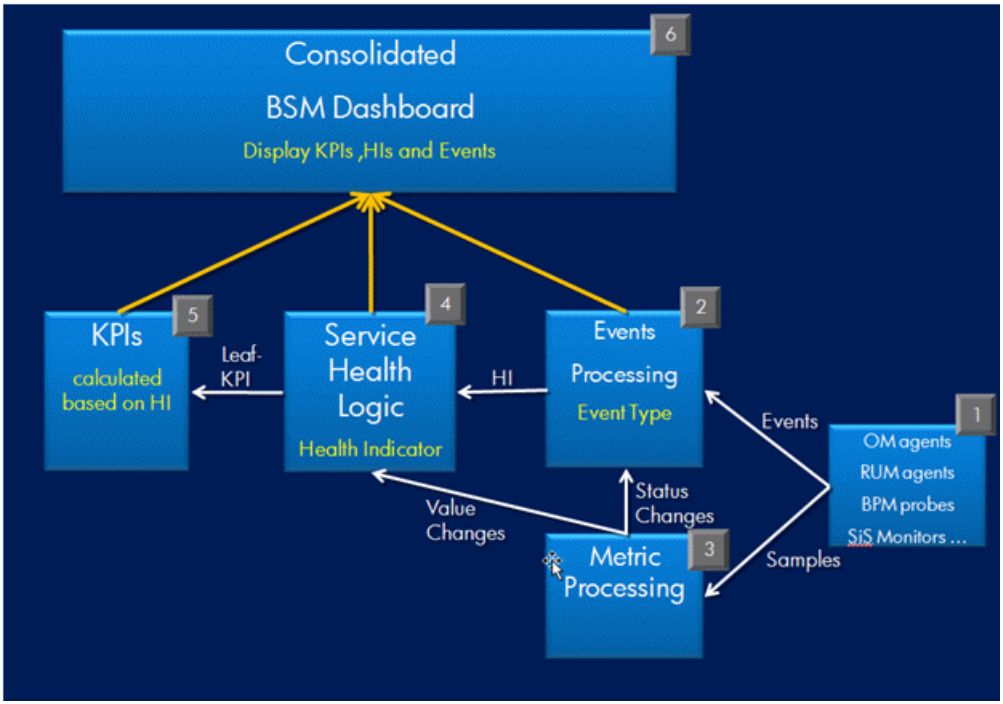
Integrating the Event and Metric Channels

Agent-based and agentless monitoring domains (HPOM, SiteScope, BPM, and so on) send information on monitored CIs using events or samples. The following section describes how this data is integrated, depending on the type of data sent by the data collector.

This section includes the following topics:

➤ "Metric Sample Workflow" on page 123

➤ "Event Workflow" on page 124



Metric Sample Workflow

Each metric sample is processed by the Metric Processing engine. This engine extracts a value from the sample using a dedicated business rule, according to the sample type.

Each value is compared against a set of objectives.

1. If the calculation shows that the HIs status has changed, an event is fired to the Events channel (for example, if the **Transaction real user availability** HI becomes Critical and the HI is configured in the Indicators repository to generate events). The HI is translated to an ETI in the event, and other fields in the CMA (common event model) are set according to the definition of the HI in the repository.
2. If the metric processing engine did not encounter a status change, the new value is reported to the Service Health logic engine to be reflected in the relevant HI information. For example, assuming **Transaction real user availability** is considered critical if the value is less than 70%, and the value changes from 68% to 66%, no event is fired but the new value (66%) is displayed in the relevant HI in Service Health.

Event Workflow

Each event that is reported to BSM is processed by the event processing engine, which activates event-related logic such as CI resolution, de-duplication, and so on.

1. The Service Health logic component translates the ETI to an HI, creates an HI if it is not yet present in the system, and maps the HI state to its status. At this stage the HI instance is ready to be used for further calculation.
2. The KPI engine calculates the KPI status based on the status change in the HI, according to the KPI business rule and calculation scope.
3. The information that has been processed (events, HIs, and KPIs) is displayed in the consolidated operation workspace.

Configuring Health Indicators

HI configuration in Service Health administration is done in the repositories, assignment definitions, and view management tabs.

This section includes the following topics:

- "Repositories" on page 125
- "Assignments" on page 125
- "View Management > CI Indicators" on page 126

Repositories

The repositories includes the meta-data definitions for Service Health calculations, such as indicator types, KPI types, and rules. If you need to create a new KPI or HI in BSM, its definition must be added to the relevant repository.

For more information about working with the repositories, see "Repositories Overview" on page 631.

Assignments

The assignments contain automatic rules that create the KPI and HIs instances that are associated with any new CI, when a CI is discovered and reported by any of the monitoring applications or by the RTSM discovery.

- HI assignment rules are required for HIs that are fed by metric samples. The mechanism of creating HIs fed by events is data driven, meaning the HI instance is created by the first event that affects the HI. The mechanism for HIs fed by metrics is configuration driven, meaning the HI instances must be created in advance.
- KPI assignment rules are required for all HI types; these rules determine the logic of the KPI based on the CI's HIs, and/or child CI's KPIs.

Within the assignments, the **Monitored by** attribute enables you to set different assignment rules for the same HI or KPI according to the monitoring application. For example, you may want to calculate the Application Availability KPI using the Worst Status Rule if the data is monitored by BPM, and using the Average Status Rule if the data is monitored by RUM.

For more information about Assignment configuration, see "Indicator Assignments and Propagation" on page 557.

View Management > CI Indicators

You can define specific HIs and KPIs at the view level for specific CIs, using the CI Indicators tab. You can choose one or more CIs and adjust their list of assigned HIs, change business rules, change KPI calculation logic by removing or adding HIs, and change the KPI rule or calculation scope. For details, see "How to Assign KPIs and HIs to CIs" on page 428.

Tasks

How to Map an ETI to an HI - Use-Case Scenario

The purpose of this use-case scenario is to configure an ETI in HPOM so that it is mapped to an HI, which then contributes to the **System Availability** KPI's status in Service Health.

For this example, the monitored data relates to the **Printer Spooler** on Windows servers. This ETI has two statuses: Down (Printer Spooler service is stopped), and Up (Printer Spooler service is running).

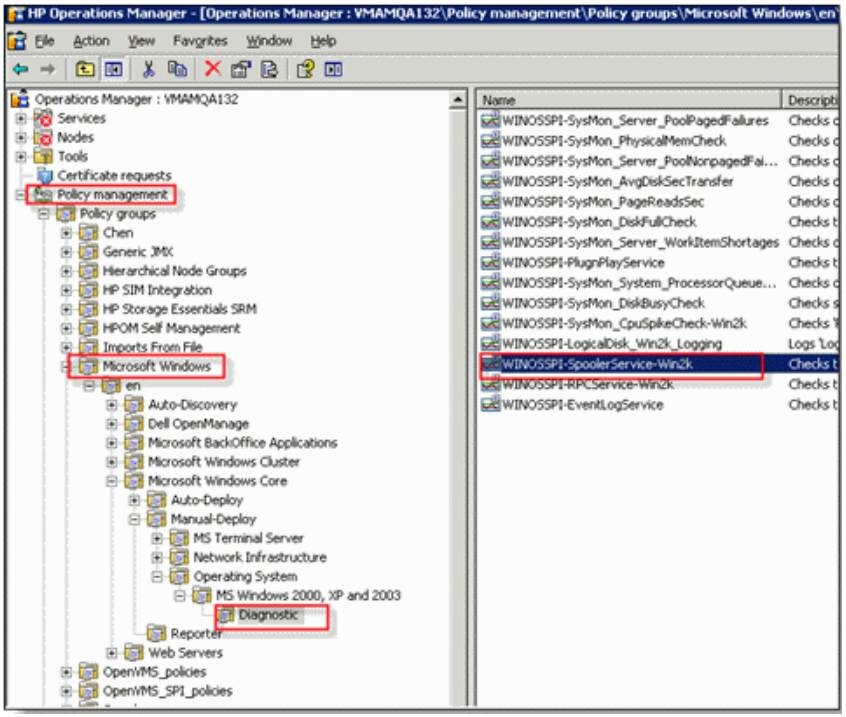
Based on this ETI, a new HI is configured in Service Health. This new HI is then related to the **System Availability** KPI. This configuration must be applied to any Windows server CI, using the KPI assignments.

Before you begin this scenario, servers must be defined in HPOM, and the relevant SPI must be running on those servers.

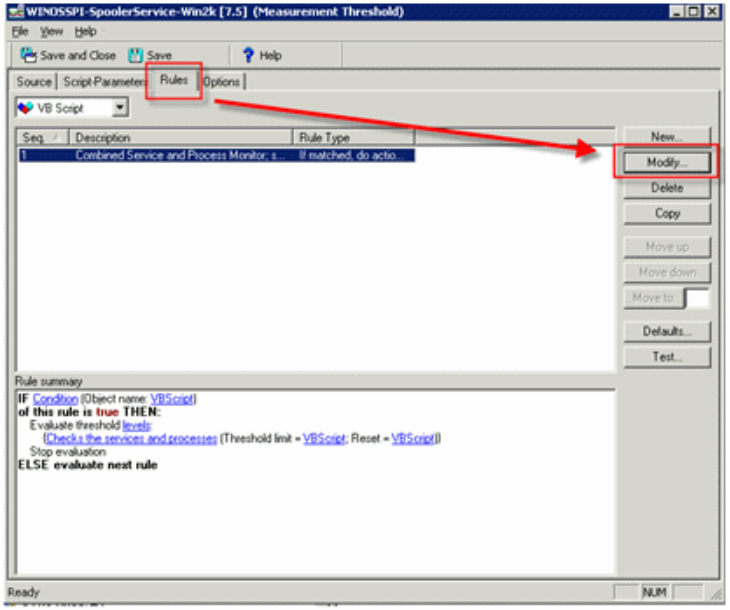
To map an ETI to an HI:

1 Open HPOM and select the **Windows spooler** policy.

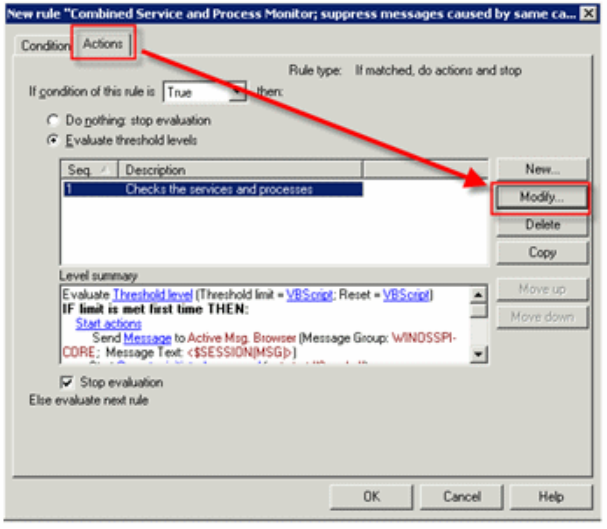
2 Create your own folder, and copy this policy to your folder.



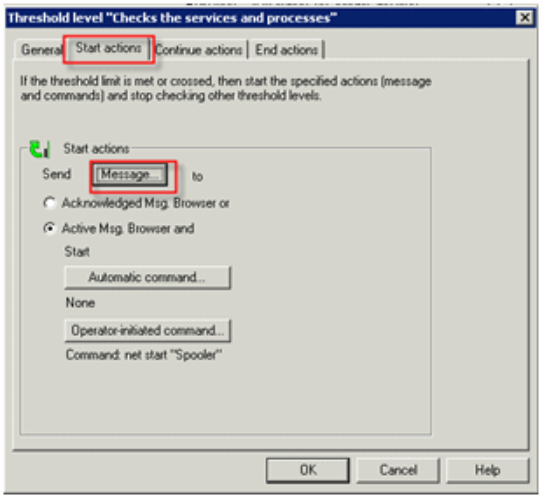
3 Open the policy and edit the ETI. Select the **Rules** tab and click **Modify**.



4 Select the **Actions** tab and click **Modify**.

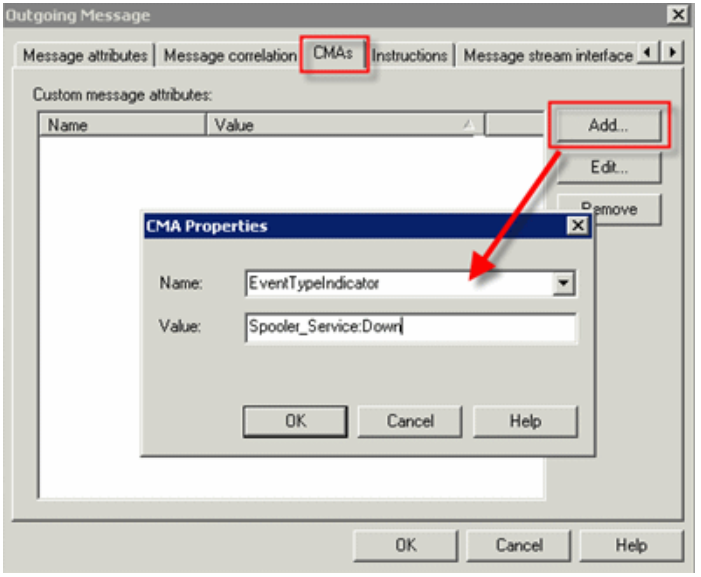


5 Select the **Start Actions** tab and click **Message**.

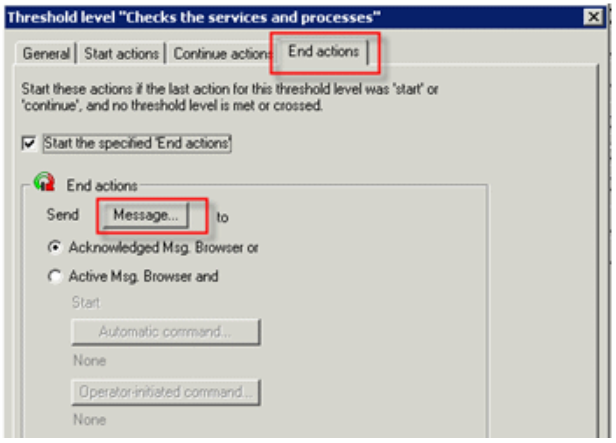


6 Select the **CMAs** tab and click **Add**.

7 In the **CMA Properties** dialog box, select **EventTypeIndicator**, and enter the relevant values (use the ETI name and value shown below).

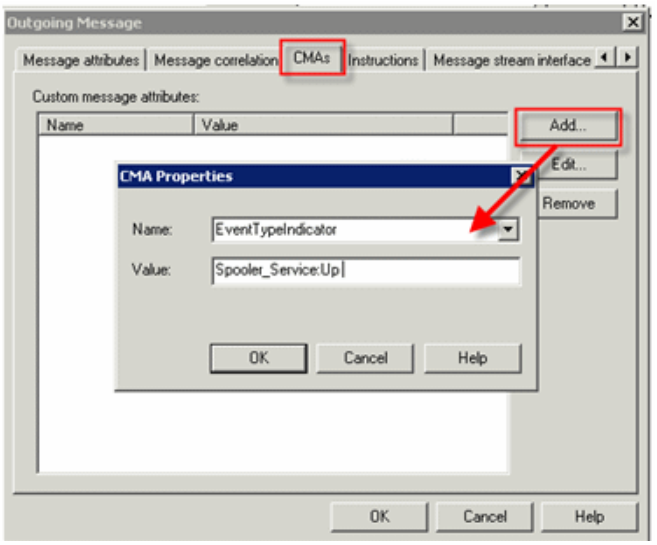


8 Click **OK** to close the **CMA Properties** dialog box, and click **OK** to close the **Outgoing Message** dialog box. Select the **End Actions** tab in the **Threshold Level...** dialog box.



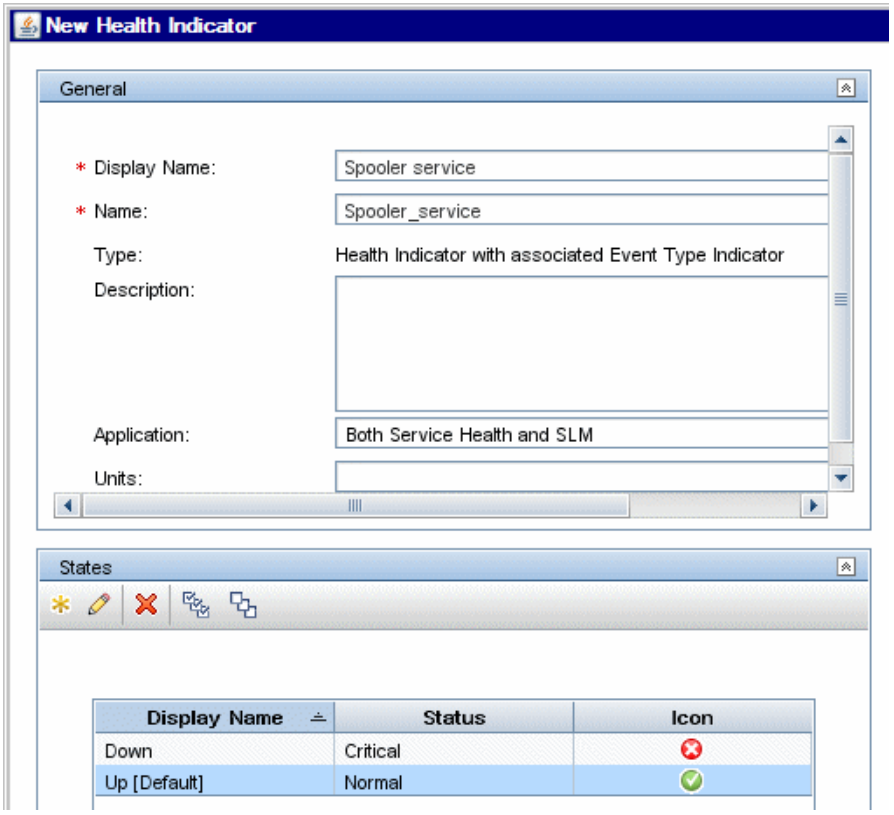
9 Select the **CMAs** tab and click **Add**.

10 In the **CMA Properties** dialog box, select **EventTypeIndicator**, and enter the relevant values (use the ETI name and value shown below).



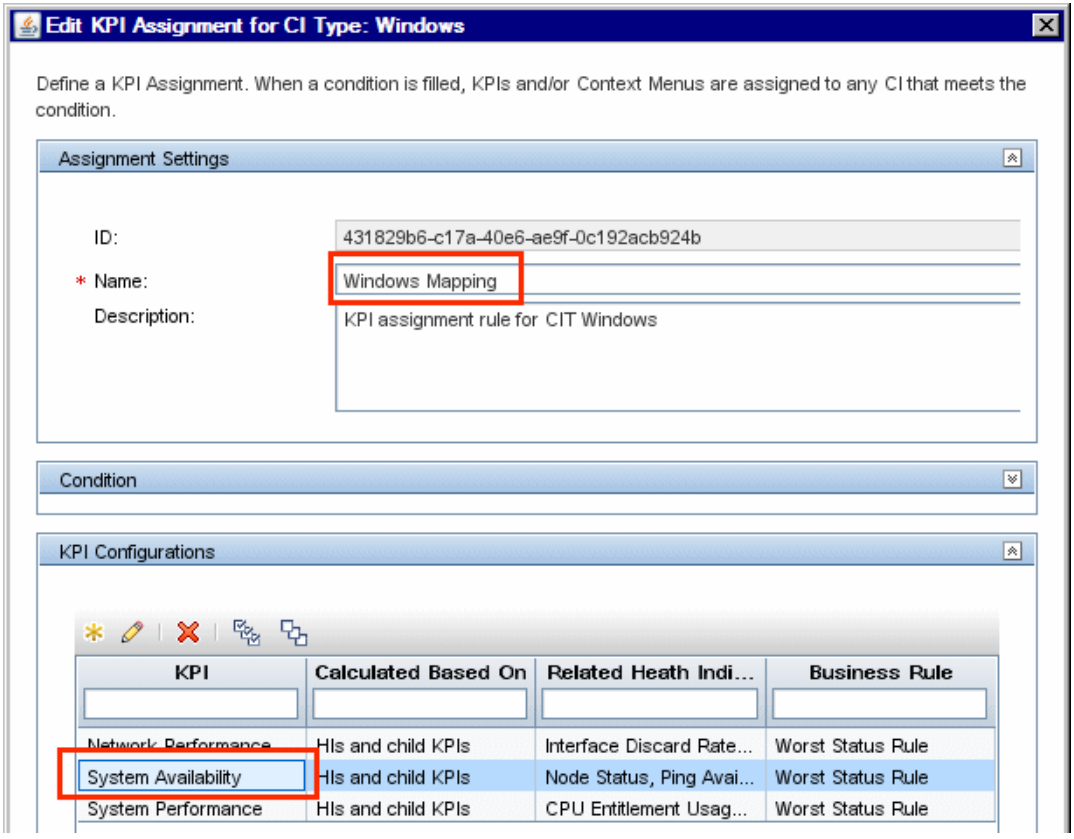
11 Within Service Health Administration, open the Indicators Repository. Select the **Windows** CI type and create a new HI.

12 Enter general information; add the states that you have defined in the ETI's CMA configuration, and map each state to a status: Up (Normal), Down (Critical). Since this HI is fed only by events, there is no need to define a rule.

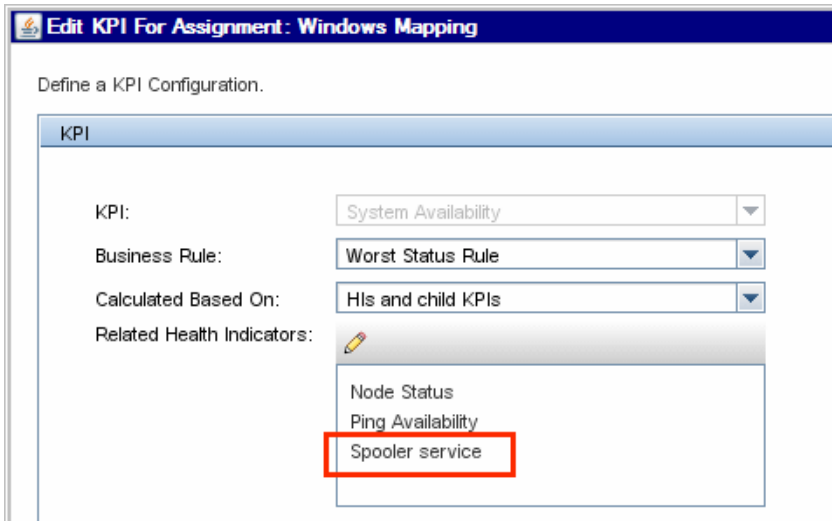


13 In order for this HI to contribute to the System Availability KPI status of Windows servers, you need to create a KPI assignment. Within Service Health Administration, open the KPI Assignments tab.

14 Select the **Windows** CI type, and open the **Windows Mapping** assignment. Edit the KPI configuration for **System Availability**.



15 Add the **Spooler Service** HI to the related Health Indicators list.



The System Availability KPI is now assigned to all Windows servers. Among the HIs contributing to its status is the Spooler Service HI.

How to Create an HI and Trigger an Event When its Status Changes - Use-Case Scenario

This use-case scenario shows how to create a new HI for business transaction CIs, and trigger an event every time the HI's status changes. The event is then assigned automatically to EUM administrators.

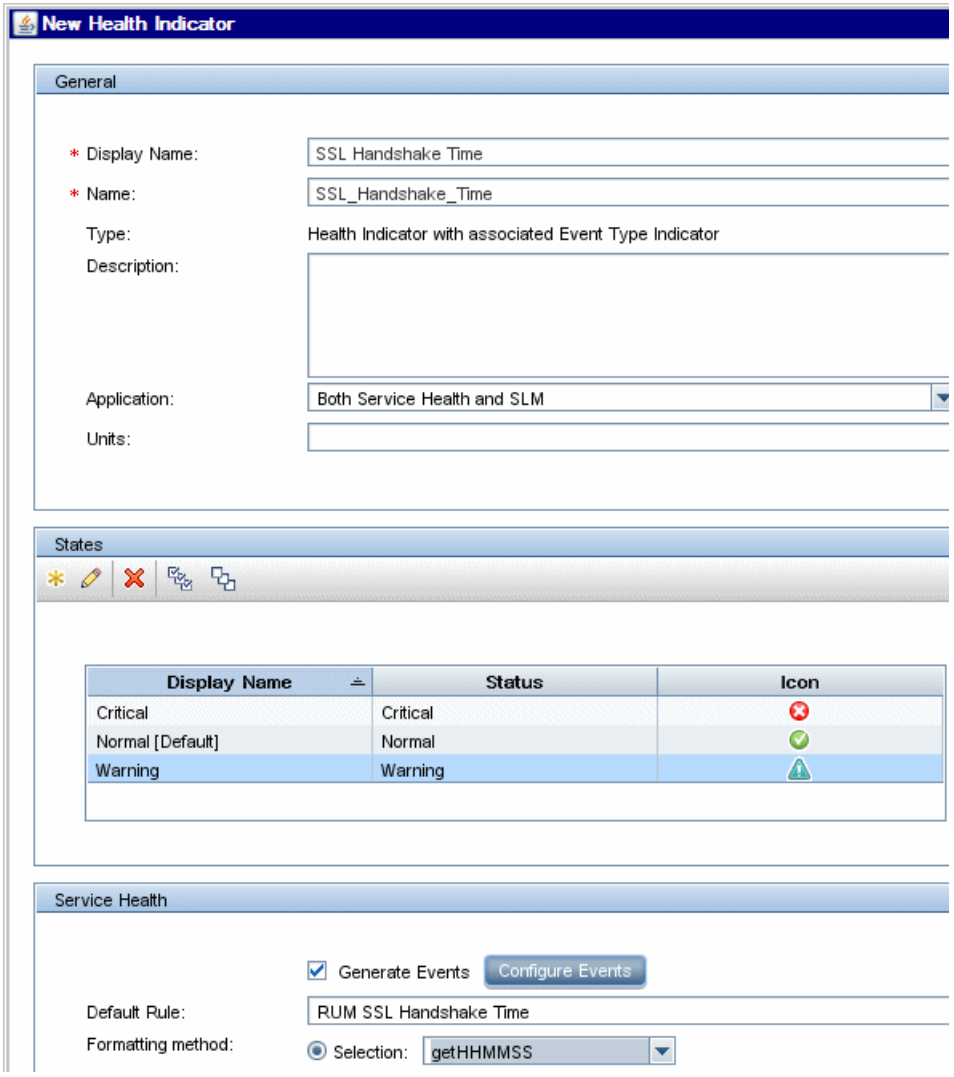
The following prerequisites must be filled:

- The application must be monitored by RUM.
- A rule must retrieve a new metric from business transactions monitored by RUM; for this example we will monitor SSL handshake time.
- The event browser license is required.

To create an HI and trigger events when its status changes

1 Within Service Health Administration, open the Indicators Repository. Select the **Business Transaction** CI type.

2 Create a new HI called **SSL Handshake Time**. Define its general properties and three statuses: Normal, Warning and Critical. Select the rule that will extract the SSL handshake time.

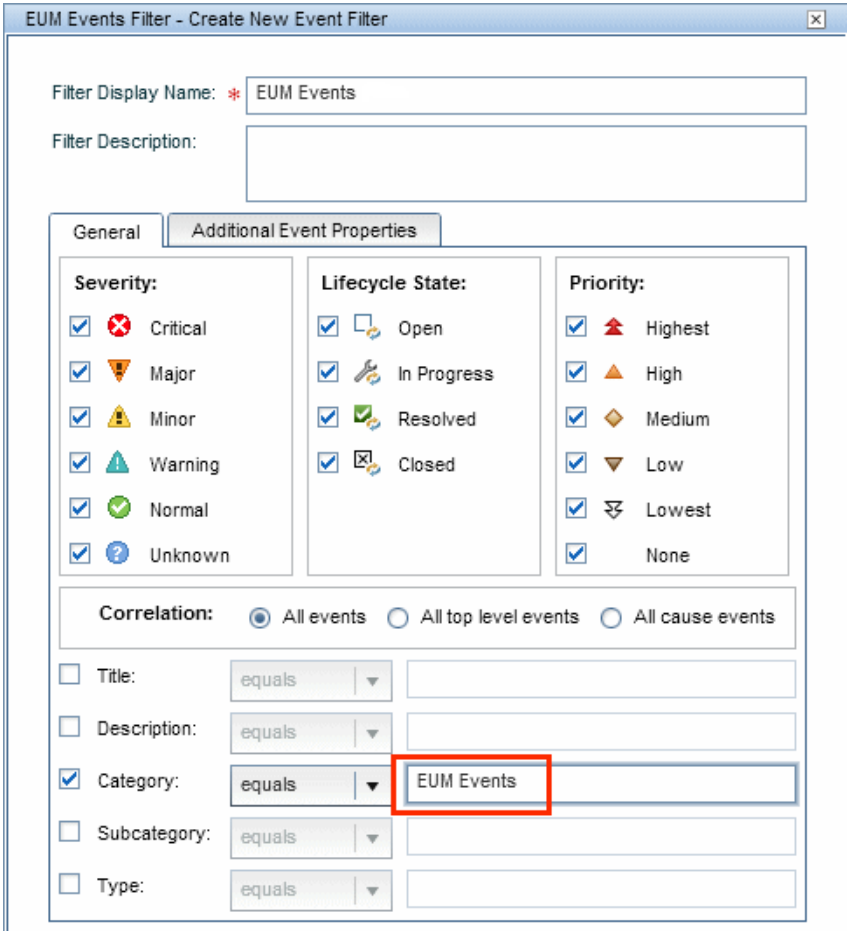


3 Select the **Generate Events** check box, and click **Configure Events**.

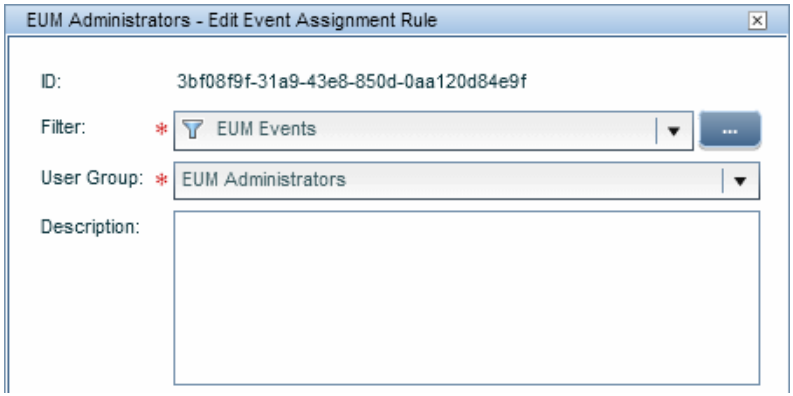
4 Within the Event Configuration dialog box, in the **General** > **Category** field, type **EUM Events**, and save.

5 Within Operations Management Administration, select **Tune Operations Management** > **User Groups Assignments.**

6 Create an new rule called EUM Events. Create a filter called EUM Events which filters for the **EUM Events** category (this is the category of the events triggered by the HI's status change).



7 Select the **EUM Administrators** user group to receive event notifications.



When the **SSL Handshake Time** HI changes status, an event is triggered, and it is sent to the EUM administrators.

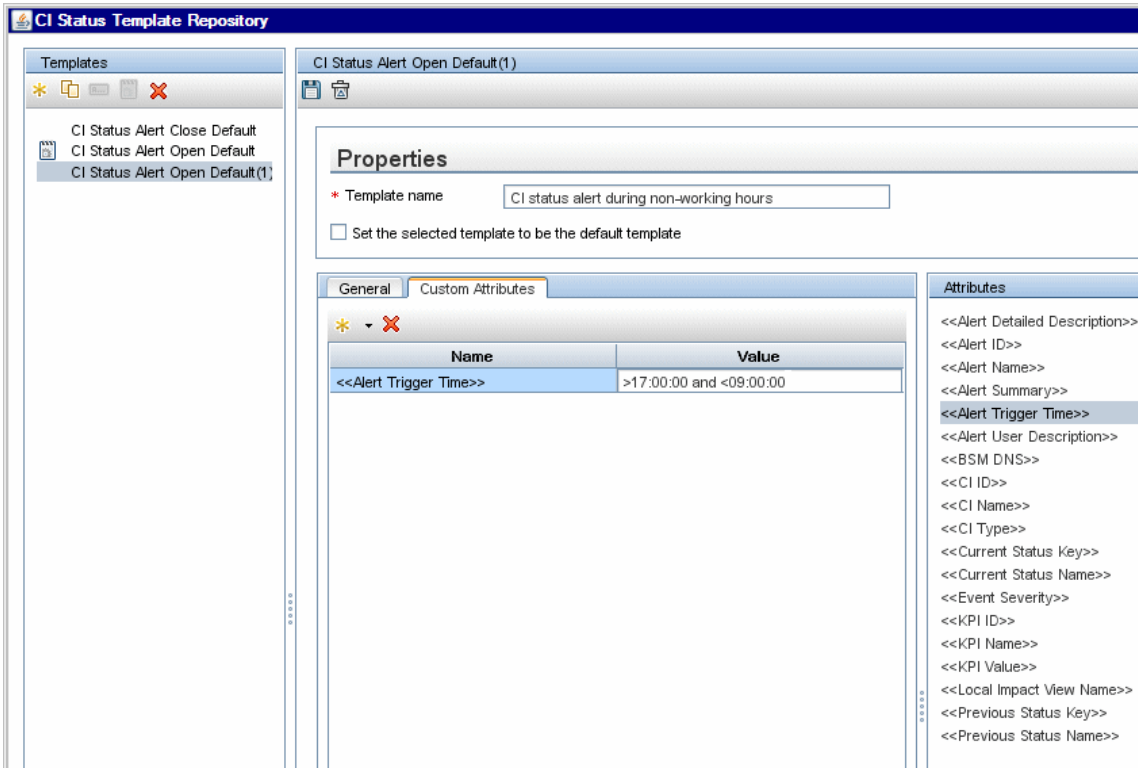
How to Create an Event Based on CI Status Changes - Use-Case Scenario

This use-case scenario shows how to generate events based on CI status changes. This use-case can be beneficial for an application manager who receives CI status alerts when the application's status gets worse. However, during the night he is not available, and he wants the operator to be notified when the application's status changes.

1 Within Service Health Administration, select **CI Status Alerts**, and click **Open Template Repository Manager**.

2 Duplicate the **CI status alert open default** template, and save it as **CI status alert during non-working hours**.

3 In the **Custom Attributes** area, click **New Key**. Drag and drop the **Alert trigger time** attribute, and set the values for non-working hours shown below.



4 Select the relevant view and CI, and create an alert with the required attributes. In the **Action** page, click **New Event Generation**, and select the **CI status alert during non-working hours** event template.

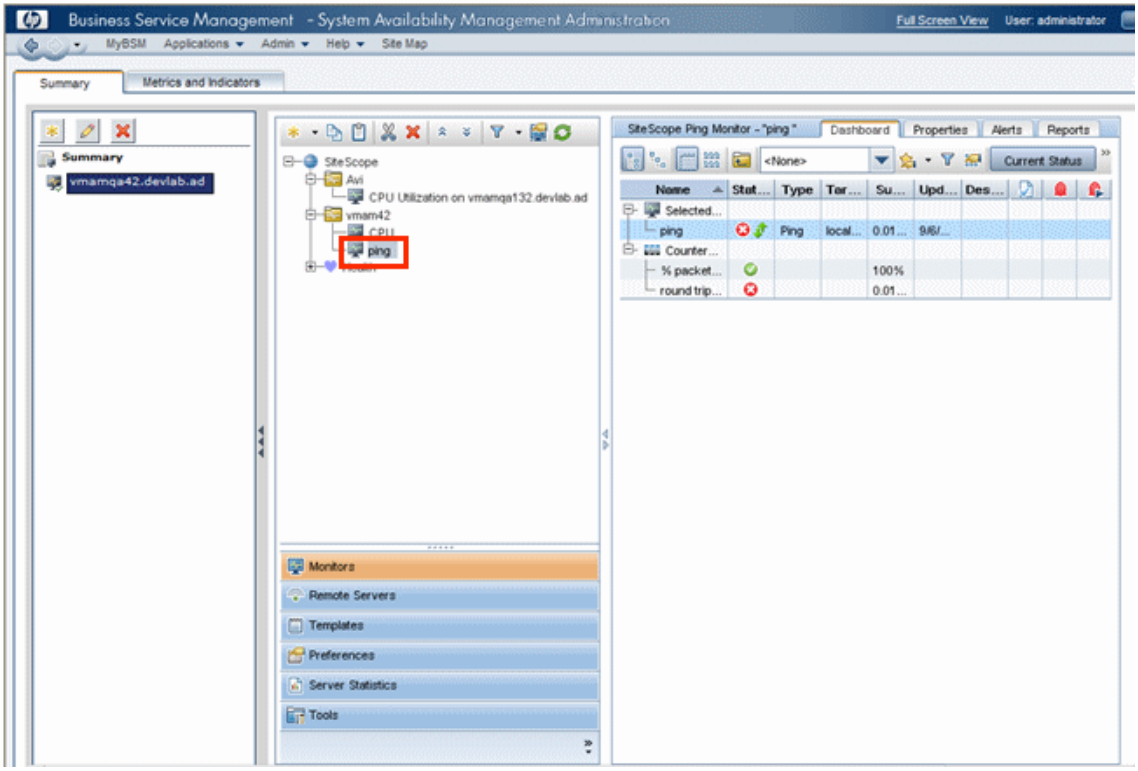
When the CI's status changes during non-working hours and an alert is generated, the alert is now sent to the operator and not to the application manager.

How to Monitor a Specific Windows Server with Both Operations Manager and SiteScope - Use-Case Scenario

This use-case scenario shows how to monitor a Windows server with both HPOM (agent-based monitoring) and SiteScope (agentless monitoring). HPOM will monitor the **Printer Spooler** service on the server, and SiteScope will monitor its availability; both of these HIs will then contribute to the **System Availability** KPI.

1. Within Service Health Administration, open the Indicators Repository and select the **Windows** CI type.
2. Create a new HI called **Ping Windows Servers**, and map the **Ping** monitor to this HI.
3. For the same CI type, create a new HI called **Printer Spooler**, which will be monitored by HPOM. For details, see "How to Map an ETI to an HI - Use-Case Scenario" on page 127.

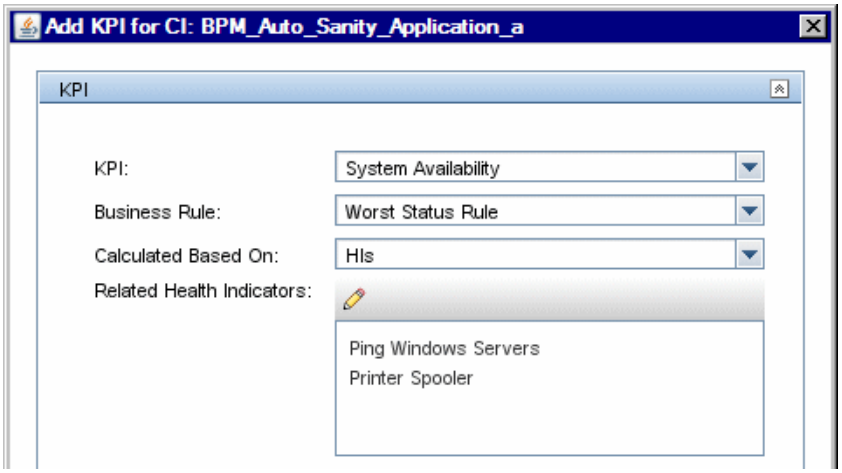
4 In System Availability Management Administration, open the **Summary** tab. Select the related SiteScope installation, and create the Ping monitor under the desired group.



5 Within Service Health Administration, open the CI Indicators tab. Select a view that contains the relevant Windows server; for example you can open the **System Hardware Monitoring** view.

6 Add the System Availability KPI to the CI. Define it as calculated based on HIs, and add the two HIs you created earlier to the **Related HIs** list.

7 Select a business rule (for example Worst Status Rule) and save.



The System Availability KPI on this CI is now calculated based on the HIs generated by HPOM, and by SiteScope.

Note: You can apply this to all Windows-type CIs using the Service Health KPI assignments.

How to Customize an HI Monitored by SiteScope - Use-Case Scenario

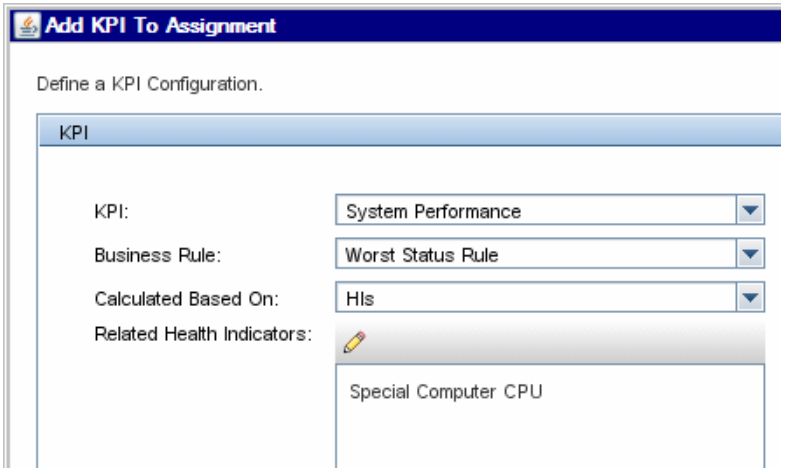
This use-case scenario shows how to associate a custom HI with a SiteScope monitor. This use-case helps you enrich the default HI content provided by SiteScope with additional metrics monitored by SiteScope.

1 Within Service Health Administration, open the Indicators Repository. Select the **Computer** CI type.

2 Create a new HI named **Special Computer CPU**, and set its states to **Critical**, **Minor**, and **OK**. Select **SiteScope Worst Status Rule** as its default rule.

3 Within Service Health Administration, open the KPI Assignments tab. Select the **Computer** CI type, and clone the **SiteScope related KPIs assignments**.

4 Open the cloned assignment for editing. Add the **System Performance** KPI to the KPI configuration, and define it as calculated based on the new HI.

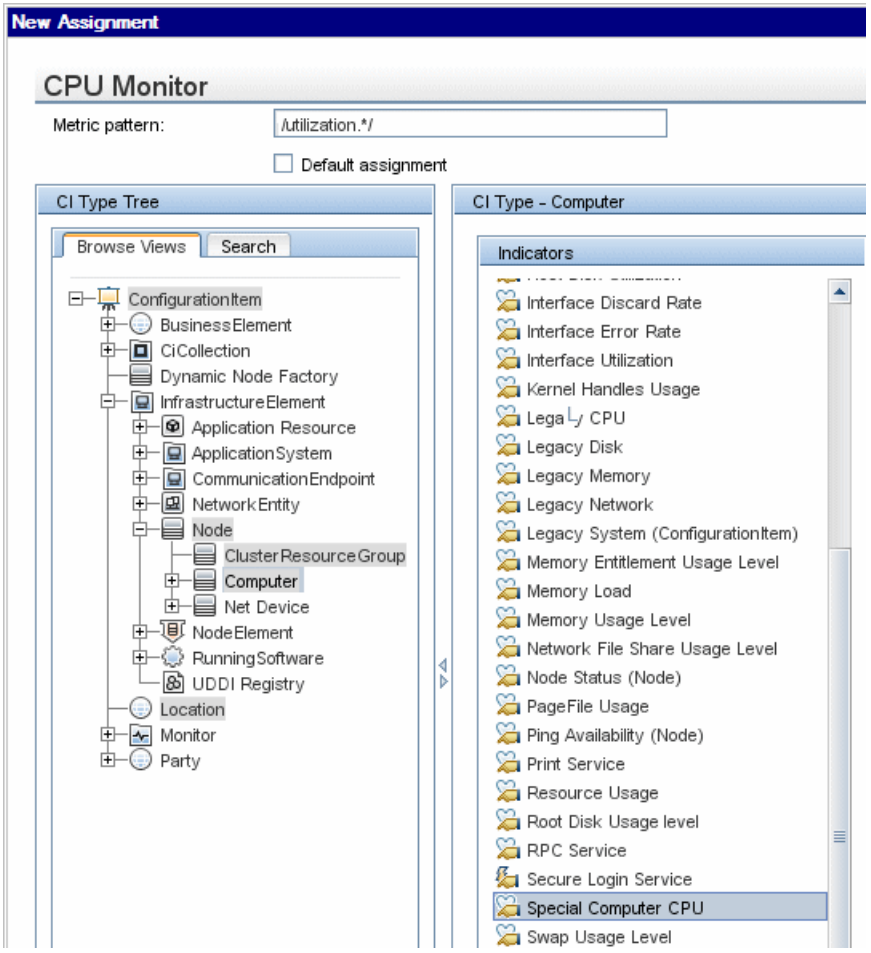


5 Within System Availability Management Administration, open the **Metrics and Indicators** tab.

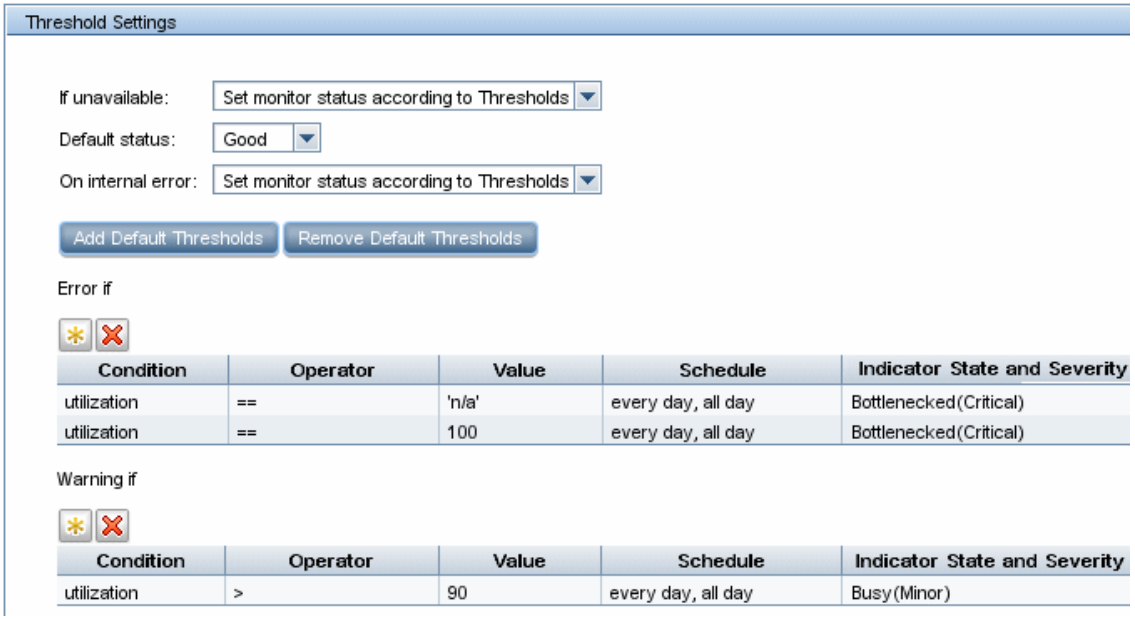
6 Select the **CPU** monitor in order to map it to the **Special Computer CPU** HI.

7 Click **New Assignment**. In the Metric Pattern field, enter the following string: **/utilization.*/**.

8 Select the Computer CIT, and select Special Computer CPU from the list of HIs.



9 Within the Summary tab, create a CPU monitor on the SiteScope server. In the monitor's **Properties** > **Threshold Settings** area, define the indicator's states and severities. When you finish, run the monitor.



10 Within the Service Health application, open Top View. Select the System Hardware Monitoring view, and verify that the monitored CI has the correct HI, and the correct HI value and color.

Tip: You can now change the HI, and modify its thresholds. Within SiteScope, open the CPU monitor's **Properties** > **HP Integration Settings**, and choose a different HI. You can then redefine the HI's values in the **Threshold Settings** area. You will see the new HI, with its status based on the new thresholds, within the Service Health application.

3

Top View

This chapter includes:

Concepts

➤ Top View Overview on page 148

Tasks

➤ How to Customize the Top View Display on page 151

➤ How to Access an External Application from Top View on page 159

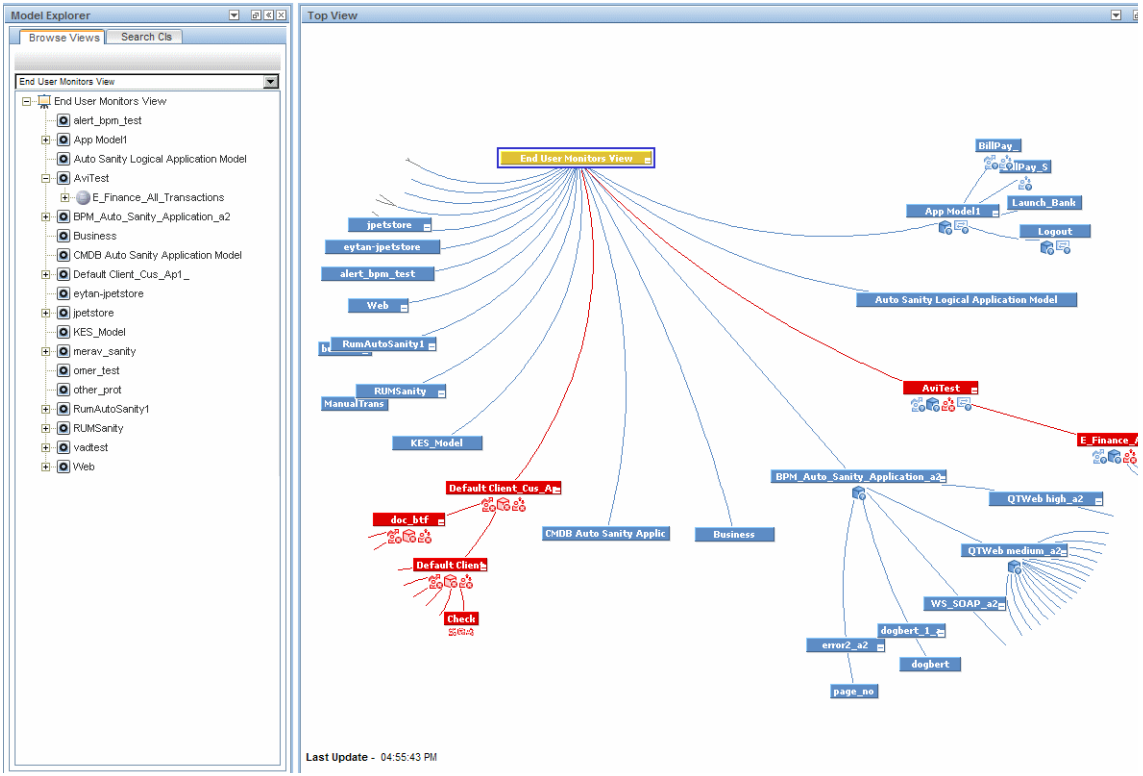
Reference

➤ Top View Component User Interface on page 162

Concepts

Top View Overview

Top View enables you to see the business availability of your system components at a glance. The CI bars in the component provide a visual representation of real-time IT performance metrics mapped onto business applications, based on the hierarchy tree structure defined for each view. The connecting lines between the bars define the relationships between the CIs. For a detailed description of Top View, see "Top View Component User Interface" on page 162.



By presenting an integrated, single view of essential applications and business processes, Top View provides you with an overall perspective on the health of your business services, and enables you to instantly assess how a performance issue impacts the availability of any part of your business. Each CI in the active view is color coded to indicate the worst status held by the CI's KPIs.

This section also includes the following topics:

➤ "Interactive Map" on page 149

➤ "Understanding the Colors and the Icons" on page 149

➤ "Virtual Containers" on page 150

Interactive Map

The Top View component presents an interactive map of the CIs that can be intuitively manipulated using the mouse, enabling you to drill down to specific branches of the tree and to focus on particular business areas or problem areas.

By default, the Top View component displays four levels of CIs. The rest of the CIs are collapsed. You can expand CIs from the fourth level and see their child CIs.

The lines connecting the bars represent the branches of the tree. The bars and lines can be manipulated to change the amount of information displayed and the overall layout of the diagram, as described in "Top View Component User Interface" on page 162.

Understanding the Colors and the Icons

Each CI contained in the view is displayed as a bar, color-coded according to the current worst operational status for that CI. For details on color coding, see "KPI Status Colors and Definitions" on page 45.

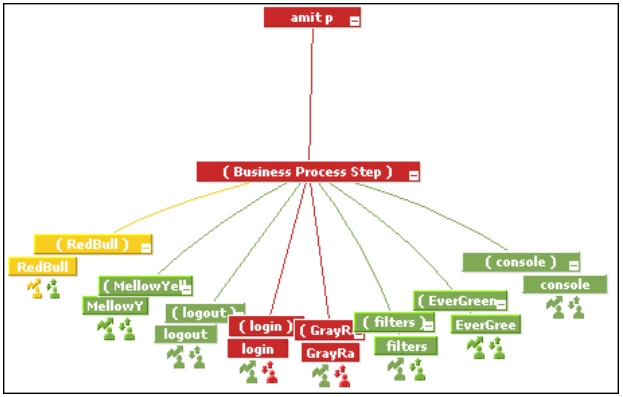
The icons displayed under a CI bar identify the relevant KPIs for the CI. These icons are also color coded to indicate the status of that KPI.

Note: The root CI does not display KPI icons because it is a container and not a real CI.

For a list of the KPIs used in Service Health, see "List of Service Health KPIs" on page 656.

Virtual Containers

Virtual container CIs are displayed in Top View in regular CI bars, but their names appear between brackets. The bar is color-coded according to the current worst operational status for the group CI's children CIs. You cannot right-click the bar to display context menu options.



Tasks

How to Customize the Top View Display

To customize Top View display, select **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**:

- Select **Applications**.
- Select **Service Health Application**.
- In the **Service Health Application - Top View Properties** area, modify the entries as described in the following sections.

The following steps are optional and can be performed in any order:

- "Customize the layout of the hierarchy in Top View" on page 152
- "Modify the default refresh rate of Top View" on page 155
- "Change the text color in Top View bars" on page 155
- "Change fonts in Top View" on page 155
- "Change the caption font size in Top View" on page 155
- "Modify the number of CIs displayed in Top View" on page 155
- "Specify the maximum length of the line between two CIs" on page 156
- "Change the number of CI levels displayed in Top View" on page 156
- "Change the number of CI Levels that can be expanded in Top View" on page 156
- "Hide or display the view bar in Top View when the view has a single root CI" on page 157
- "Change the color of the CI bar in Top View when the CI status is OK" on page 157
- "Customize the background image for Top View" on page 158

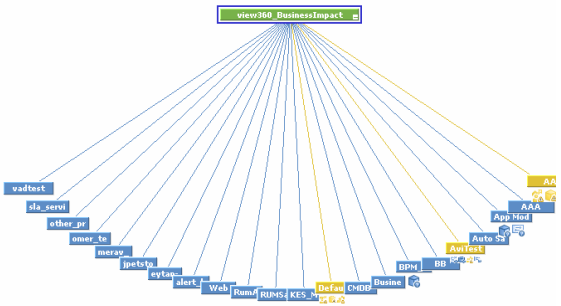
➤ "Customize Top View tooltips" on page 158

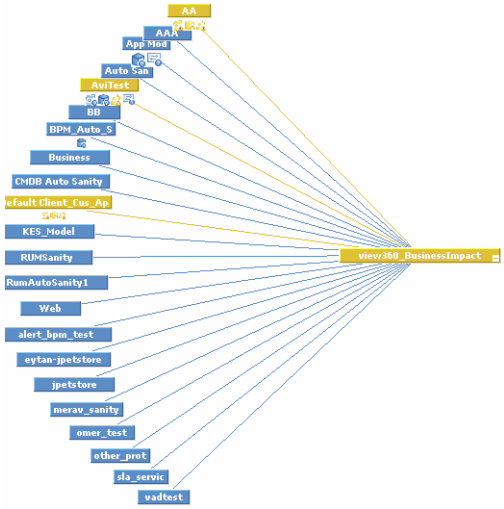
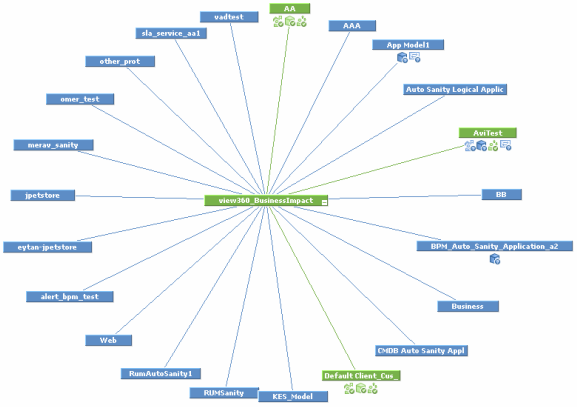
➤ "Set up the Top View debugging mechanism" on page 159

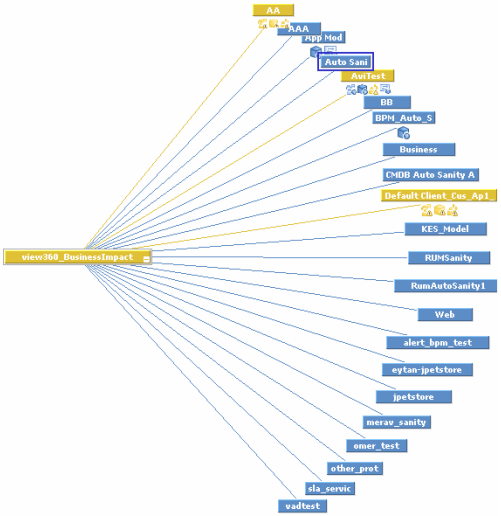
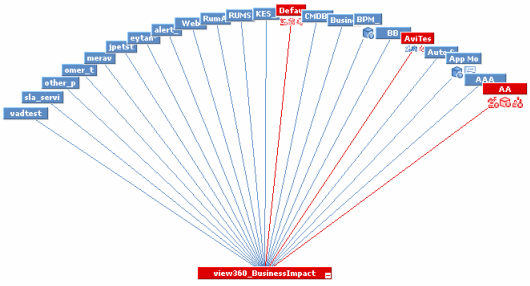
Customize the layout of the hierarchy in Top View

You can customize the layout of the hierarchy in the Top View component. By default, the parent CI is displayed above the child CIs and the child CIs are close to the bottom part of the Top View component.

To customize the layout of the hierarchy, locate the **Top View Graph Layout** entry in the Service Health Application - Top View Properties table. Select the type of layout (listed below in alphabetical order).

Type of Layout	Description
BOTTOM	Default. The parent CI is above the child CIs and is centered on the component. 

Type of Layout	Description
LEFT	The child CIs are to the left of the parent CI and the parent CI is centered on the component. 
RADIAL	The second level of the tree is distributed around the parent and the parent is centered on the component. 

Type of Layout	Description
RIGHT	The child CIs are to the right of the parent CI and the parent CI is centered on the component. 
TOP	The parent CI is under the child CIs and is centered on the component. 

Modify the default refresh rate of Top View

The default refresh rate for Top View is 5 seconds. To modify the refresh rate, click the **Preferences** button in the component toolbar (in the upper right area of the component) and enter the new refresh rate.

Change the text color in Top View bars

You can improve readability or customize Top View by changing the color of the text in Top View bars.

Locate the **Top View Text Color Property** entry in the Service Health Application - Top View Properties table. Enter the appropriate color in the **Value** box, using the #RRGGBB format. Default is white (#FFFFFF).

You must close all browser instances for the change to take effect.

Change fonts in Top View

To change the font displayed in Top View for all locales, locate the **Top View Font Name** entry in the Service Health Application - Top View Properties table. Enter the appropriate font name in the **Value** box.

You must close all browser instances for the change to take effect.

Change the caption font size in Top View

By default the size of the fonts used for Top View CI names (in the bars) is 9.

To change the default size, enter the required value in the **Top View caption font size** entry in the Service Health Application - Top View Properties table.

The change is immediate.

Modify the number of CIs displayed in Top View

The maximum number of CIs displayed in Top View is 3000 by default.

To change the default value, edit the **Maximum number of nodes** entry in the Service Health Application - Top View Properties table.

The change is immediate.

Specify the maximum length of the line between two CIs

The default percentage by which you can extend the line between two CIs is 1.5.

To modify the default percentage, edit the **Top View Line Extension Percentage** entry in the Service Health Application - Top View Properties table. This change is performed during the next log in.

Change the number of CI levels displayed in Top View

By default, the Top View component displays four levels of CIs. The rest of the CIs are collapsed. You can then expand a CI at the fourth level and see its children.

To modify the number of levels displayed when you open the Top View component, edit the **Top View Number of Levels** entry in the Service Health Application - Top View Properties table. Valid values are 2 to 100. This change is performed during the next log in. If you select 2, the name of the view and the top level CIs are displayed.

Change the number of CI Levels that can be expanded in Top View

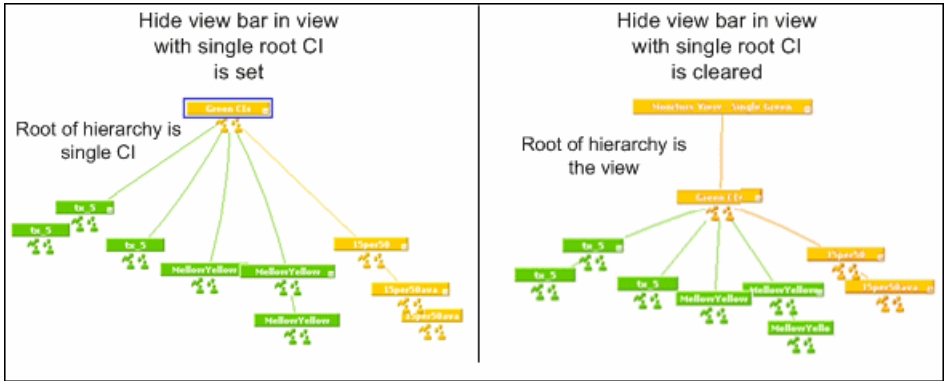
To change the default setting (7) for the number of levels of CIs that are displayed when you select the **Expand more levels** context menu item, edit the **Top View expand levels** entry in the Service Health Application - Top View Properties table. Valid values are 2 to 12. This change is performed during the next log in.

Hide or display the view bar in Top View when the view has a single root CI

You can select to hide or display the view bar in the Top View component, when the view has a single root CI.

To hide or display the view bar in Top View when the view has a single root CI, locate the **Hide view bar in Top View** entry in the Top View Properties table. Set the parameter to:

- **true.** The view bar is not displayed as the root of the hierarchy, the root of the hierarchy is the single root CI.
- **false**. The view bar is the root of the hierarchy.



Change the color of the CI bar in Top View when the CI status is OK

You can modify the default green color (#78B24A) of the CI bar when the CI status is OK to another color or a different green.

To modify the color, edit the **Top View Green Color Property** entry in the Service Health Application - Top View Properties table.

Customize the background image for Top View

To change the background color or add a background image to the Top View component or to the NOC standalone page, locate the following in the Service Health Application - Top View table:

- **Top View Background Color Property.** Modify the default value to change the color of the Top View component background or of the NOC standalone page background. For example, you can display the Top View component with a black background (#000000). You must close all browser instances for the change to take effect.
- **Top View Background Image.** Enter the name of the image you want to use as a background image for the Top View component or the NOC standalone page and put the appropriate image in the following location: **<Gateway server root directory>/AppServer/webapps/site.war/bam/**

  You must close all browser instances for the change to take effect.

Customize Top View tooltips

You can:

- **Limit the number of lines displayed in the tooltip**

  If the tooltip includes more lines than the default number of lines, **More...** is displayed on the last line.

  To change the default number of lines (8) displayed in the tooltip, edit the **Max lines in tooltip** entry in the Service Health Application - Top View Properties table.

- **Display the weight information in the tooltip**

  You can add the weight of a CI's KPIs to the CI's tooltip for any CI in Top View.

  Locate the **Show weight property in tooltip** entry in the Service Health Application - Top View Properties table, and modify the value to **true**. Default is **false** (weight is hidden).

Note:

- Using this option might affect the performance since additional TQLs are required to get this information.
- Adding a weight to a CI is explained in "Insert Relationship Dialog Box" in the *Modeling Guide*.

Set up the Top View debugging mechanism

To debug Top View, set the debug mode. Log messages are printed to the Java console.

To debug Top View, set the **Top View Debug** entry in the Service Health Application - Top View Properties table to **true**. Default is **false**.

How to Access an External Application from Top View

You can configure Service Health Top View so that a user can open an external application from the right-click menu.

This task includes the following steps:

- "Specify the URL of the external application" on page 160
- "Attach the Open in New Window context menu item to the Top View context menu" on page 161
- "Result" on page 161

1 Specify the URL of the external application

The **Open in New Window** option calls the specified URL in another window and supplies it with the values of the parameters you specified in the URL. The URL page uses the values of the parameters to display what is necessary.

To specify the URL of the external application, select **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**, choose **Applications**, select **Service Health Application**, and locate the **Top View URL to Open** entry in the Top View Properties table. Enter the appropriate URL:

- Enter the URL of the application.
- Enter a dynamic URL that can be used, for example, to integrate external tools with BSM.

  Use the following syntax (HTTP GET format):

  ```
  http://<URL>?nodeName=NODE.NAME&nodeId=NODE.ID
  &nodeStatus=NODE.STATUS&nodeParentId=NODE.PARENTID
  &nodeChildId=NODE.CHILDIDS
  ```

  Use only the parameters you need in any combination. For details about the parameters, see "Dynamic URL Parameters" on page 897.

  For example:
  http://<URL>?nodeName=NODE.NAME&nodeParentId=NODE.PARENTID
  adds the CI name and the ID of the parent CI to the URL.
- To reset the URL to the default (empty), click **Restore Default**.

Note:

- The change takes place immediately.
- You must disable your browser's pop-up blockers to open a window with the external application.

---

2 Attach the Open in New Window context menu item to the Top View context menu

By default, the **Open in New Window** option does not appear in the context menus in Top View. To enable it you must assign it to the **Top View** context menu.

a Select **Admin** > **Service Health** > **Repositories** > **Context Menus**, and open the **Top View** context menu for editing.

b Select the **Show** group, click **Add Action**, and select **Open in a new window**. Save your change.

3 Result

The **Open in New Window** option is added to the right-click menu available in Top View.

Reference

Top View Component User Interface

This component enables you to see the business availability of your system components at a glance. The CI bars in the component provide a visual representation of real-time IT performance metrics mapped onto business applications, based on the hierarchy tree structure defined for each view. The connecting lines between the bars define the relationships between the CIs.

To access	Select **Applications** > **Service Health** > **Top View**, then select a view from the list in the upper left corner of the component.
Important information	➤ Click anywhere in the component to change the emphasis of the graphic. ➤ Click and drag anywhere in the component to move and rotate the graphic around that point. ➤ Increase or reduce the gap between each branch by holding down the ALT button on the keyboard and dragging the relevant bar. ➤ When you open the Top View component, it displays by default the active view at the root level, centered around the view name bar. Any manipulation you do to the graphic is not saved; if you move to another component, then when you return to Top View, the graphic reverts to the default display format.
Relevant tasks	"How to Customize the Top View Display" on page 151
See also	"Top View Overview" on page 148

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<CIs>	When you select a view, Top View displays the selected view bar centered in the tree with all its root CIs expanded. ➤ Expand and collapse the branches of a subtree by clicking the expand (+) or collapse (-) symbols, displayed in the bottom right corner of the bar. ➤ When branches are too long to fit on the screen, Top View displays lines emerging from the bar, to indicate the number of branches and leaves that are hidden. Click the end of one of these lines to display the hidden branch. Hold the cursor over a bar to display the following: ➤ The bar is outlined. ➤ If the CI has a long name, the bar expands to display the full name. ➤ When you hold the cursor over a CI a tooltip shows the CI name and CI type. ➤ When you hold the cursor over a KPI icon, a tooltip provides status and performance data for the KPI.
<KPIs and their statuses/values>	For each CI, Service Health displays the CI's KPIs and their real-time status as a color-coded icon. For details, see "KPI Status Colors and Definitions" on page 45.
<right-click menu options>	Right-click a CI bar to list the available menu options. For details, see "Service Health Menu Options" on page 98.

UI Element (A-Z)	Description
Last Update	Displays when the information in the component was last updated. To manually update the information in the component, click the **Refresh** icon.

4

Topology Map

This chapter includes:

Concepts

- Topology Map Overview on page 166
- Topology Map in View or Graph Display on page 168
- Plain Mode, Group Mode, and Layer Mode on page 168
- Default Layers in Topology Map on page 170

Tasks

- How to Customize Topology Map Display on page 171

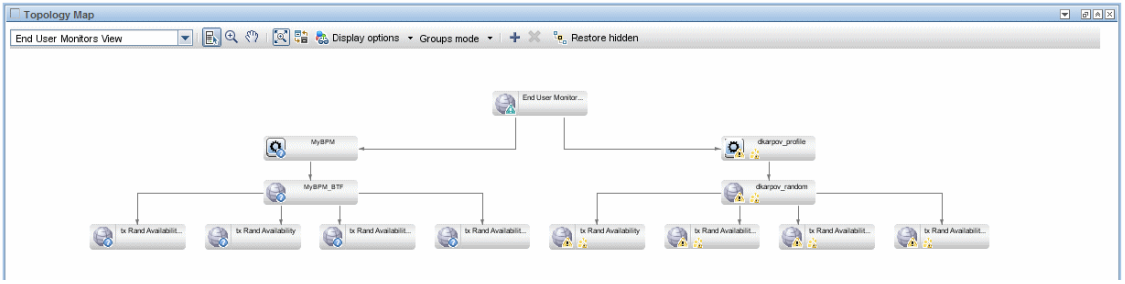
Reference

- Topology Map User Interface on page 176

Concepts

Topology Map Overview

Topology Map provides you with an interactive graphic representation of CIs in a view, enabling you to see the business availability of your system components at a glance. The CI bars in the map provide a visual representation of real-time IT performance metrics mapped onto business applications, based on the hierarchy structure defined for each view. Connecting lines between the bars represent the relationships between the CIs.



By presenting an integrated, single view of essential applications and business processes, Topology Map provides you with an overall perspective on the health of your business services, and enables you to quickly assess how a performance issue impacts the availability of any part of your business.

The structure of CIs in a Topology Map can be defined according to view folding, or according to the CI definitions in the Run-time Service Model (RTSM). For details, see "Topology Map in View or Graph Display" on page 168.

Topology Map enables you to arrange CIs in groups (either divided by CIT or by similar applications), or in functional layers. For details, see "Plain Mode, Group Mode, and Layer Mode" on page 168.

For a detailed description of the Topology Map user interface, see "Topology Map Component" on page 176.

This section also includes the following topics:

- "Interactive Map of CIs" on page 167
- "Understanding the Colors and the Icons" on page 167
- "Annotation" on page 168

Interactive Map of CIs

Topology Map presents an interactive map of CIs that can be easily manipulated, enabling you to focus on particular business areas or trouble spots.

Lines between the CI bars represent links between CIs, and show the CI hierarchy in the selected view. The CI bars and lines can be manipulated to change the amount of information displayed and the overall layout of the map, as described in "How to Customize Topology Map Display" on page 171.

Understanding the Colors and the Icons

Each CI in the view is displayed as a bar, with a color-coded icon overlaid on top of the CIT icon indicating the current worst operational status for that CI. For details on color coding, see "KPI Status Colors and Definitions" on page 45.

The icons displayed below the name of the CI identify the relevant KPIs for the CI. These icons are also color coded to indicate the status of that KPI.

Annotation

Within Topology Map, you can click the **Capture Result and Add Annotations** button on the toolbar to access the annotation tool. You can use annotation to create and save a snapshot of the image you are viewing, and highlight important areas of the image. For details, see "Annotation Tool Dialog Box" on page 183.

Topology Map in View or Graph Display

The basic structure of the CIs in a Topology Map can be defined in one of two ways:

- **View Display.** This shows the topology of the view based on the View Folding, with a single root node, and child CIs that have no recursive loops. Such loops are resolved by copying CIs, so that a CI can appear a few times in a view.

  The view display follows the Impact model, so all the links between CIs are either Impact (Dependency) or Impact (Containment). By default, link labels are not shown in view display.

- **Graph Display.** This shows the topology of the view as defined in the RTSM, without View Folding. The links between the CIs represent their physical links as they appear in the RTSM. By default, Topology Map shows link labels in the graph display.

Plain Mode, Group Mode, and Layer Mode

You can view CIs in Topology Map in one of three modes:

- **Plain mode.** In plain mode, the graphic display of CIs does not include groups or layers.

- **Group mode.** In group mode, the Topology Map graphic display can include groups of CIs. CIs can be automatically grouped either by CIT, or based on their Classification attribute in the RTSM. For example, when CIs are grouped by Classification attributes, CIs related to SAP or Siebel are included in a group named ERP.

You can also create user-defined groups, and move CIs into and out of groups, to fill your organizational needs.

In group mode, a status icon shows the worst status of all CIs in the group, as follows:

➤ **Layer mode.** In layer mode CIs are divided into functional layers, such as Business Enablement, Infrastructure, or Software. CIs are assigned to the layers based on their Layer attribute in the RTSM. For example, in layer mode the Application Resource and Application System CITs are assigned to the Software layer, based on their Layer attribute.

In layer mode you can move CIs in and out of layers. You can also create additional layers using the Layer attribute in RTSM administration. For details on each of the default layers, see "Default Layers in Topology Map" on page 170.

Groups are only available in group mode; layers are only visible in layer mode.

Note: If you create a new layer, click the **Restore Default View** button to display the layer properly in Topology Map.

Default Layers in Topology Map

Within the layer mode, CIs are assigned to default layers based on their CIT attributes within the RTSM. The following section describes each of the layers that are defined out-of-the-box.

- **Business Enablement.** This layer contains business services, processes, and activities. These include both business services which a business provides to another business (or one organization provides to another within a business), and IT services which an IT organization provides to support business services or IT operations.

  A Business Service typically has an associated end-user or customer, a business application, and a service level agreement. Examples include payment processing, backup and recovery, and self-service help desk.

- **Application and Services.** This layer contains applications and their core components, not including elements that are deployable. An application is a set of components which supports a business activity, which is seen as a whole, and is known by a specific name.

  The Application and Services layer also includes business transactions, as well as infrastructure services that support business services and processes. Examples include voice and network services, database services, backup and restore services, desktop services, and Windows administration services.

- **Software.** This layer includes individual installations of software elements. These are executables that can be deployed, or are deployed, on a logical system.

- **Infrastructure.** This layer includes logical systems such as virtualization and clustering, and physical systems such as storage devices, network devices, and servers.

- **Facilities.** This layer includes locations, sites, buildings, rooms, racks, and so on.

Tasks

How to Customize Topology Map Display

You can customize the Topology Map display using the following options:

- "Select a view to be displayed in Topology Map" on page 171
- "Switch between view or graph display" on page 172
- "Organize Topology Map in plain, group, or layer mode" on page 172
- "Resize the display or navigate within Topology Map" on page 172
- "Display minimal information or detailed information for each CI" on page 173
- "Display links between CIs" on page 173
- "Hide CIs or restore hidden CIs" on page 173
- "Move CIs or groups" on page 174
- "Create or delete a group" on page 174
- "Modify a group" on page 174
- "Rearrange layers" on page 175
- "Restore Topology Map to its default settings" on page 175

Note: Customizing the Topology Map display (hiding CIs, moving CIs in and out of layers, and so on) has no effect at all on the RTSM topology; your customizations only influence how CIs are displayed in this component.

Select a view to be displayed in Topology Map

To select a view from within Topology Map, choose a view from the view selector drop-down list on the top left area of the toolbar.

Switch between view or graph display

In View display, Topology Map shows the topology of the view based on the Impact model. In Graph Display, Topology Map shows the topology of the view as defined in the RTSM (without View Folding).

To switch from one display to another, click the **View/Graph Display** button in the Topology Map toolbar.

Organize Topology Map in plain, group, or layer mode

Topology Map can be displayed in three modes:

- **Plain Mode.** Each CI stands on its own, not as part of a group or layer.
- **Group Mode.** CIs are grouped by similar applications (for example ERP). In group mode you can create groups, add or remove CIs from groups, and delete groups. In group mode, a status icon shows the worst status of all CIs in the group.
- **Layer Mode.** CIs are divided into functional layers (for example Business Enablement, Infrastructure, or Software). In layer mode you can move CIs in and out of the default layers, but you cannot rename or delete a layer.

To switch from one mode to another, select a mode from the drop-down list in the Topology Map toolbar.

Resize the display or navigate within Topology Map

Some CIs may have a large Topology Map, based on the number of parent and child CIs to which they are connected. You can use the following buttons in the toolbar to help you navigate within the Topology Map display:

- **Fit to screen.** Click to fit the image to the pane, either by expanding it or by reducing it.
- **Interactive Zoom** Click to activate Zoom mode. In Zoom mode, click within Topology Map and drag up or down (or use your mouse wheel) to zoom in and out of the image.
- **Pan.** Click this button, then click within Topology Map and drag the image to move it.

➤ **Display Minimap.** Click to display the full Topology Map in a small window (minimap), which is overlaid on top of the standard Topology Map image.

A highlighted area within the minimap image shows which part of the Topology Map is displayed in the larger image. You can resize or move this highlighted area to focus on the part of Topology Map which is of interest to you. To close the minimap window, click within the larger image.

Display minimal information or detailed information for each CI

Topology Map can be displayed either in minimal presentation, which displays only CI icons and worst statuses, or in detailed presentation, which displays CI names and KPI statuses. To switch between minimal and detailed presentation, click the **Toggle Presentation Type** button in the Topology Map toolbar.

Display links between CIs

Topology Map can display arrows between CIs that are linked, as well as link labels showing the relationship between two CIs (for example, Contains or Depends on).

➤ To see links, select **Display Options** > **Show Links** in the Topology Map toolbar.

➤ To see link labels, select **Display Options** > **Show Link Labels**. Note that if the Show links option is de-selected, this option is disabled.

Hide CIs or restore hidden CIs

Topology Map enables you to hide CIs from your display, and to restore hidden CIs. Note that calculations performed within a view do include any hidden CIs.

➤ To hide CIs or groups, select them and click **Hide Selection** in the Topology Map toolbar.

➤ To restore hidden CIs, click **Restore Hidden** in the Topology Map toolbar. All previously hidden items are restored.

Move CIs or groups

To move CIs or groups you must be in Selection mode. To activate Selection mode, click the **Select** button in the Topology Map toolbar.

Click one or more CIs or groups and drag them to a new location. If your Topology Map displays links between CIs, the arrows attached to these CIs will be moved as well.

Create or delete a group

In group mode, perform the following:

- To create a group, select one or more CIs and click the **New Group** button in the Topology Map toolbar. The selected CIs are now contained within a new group container.
- To delete a group, select the group and click the **Delete Group** button in the Topology Map toolbar. The CIs are now located in their original locations.

Modify a group

To modify a group you must be in Selection mode. To activate Selection mode, click the **Select** button in the Topology Map toolbar.

- To rename a group, double-click the group name and type a new name for the group.
- To add CIs to a group or remove CIs from a group, drag them into the group or out of the group.
- To nest one group within another, drag one group inside another group.
- To collapse or expand a group, click the **Collapse** or **Expand** icons in the upper right corner of the group container.

Rearrange layers

In layer mode, if you have moved CIs in and out of layers and want to neatly organize your display, click **Rearrange Layers** to rearrange the display so that the CIs and their links are neatly organized.

If you have moved CIs in and out of layers, this action does not restore them to their original layers. If you have emptied a layer of all its CIs, this action removes the layer.

Restore Topology Map to its default settings

To restore a Topology Map to its original settings without customizations, click **Restore Default View**.

Reference

Topology Map User Interface

This section includes:

➤ Topology Map Component on page 176

➤ Annotation Tool Dialog Box on page 183

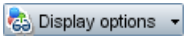
Topology Map Component

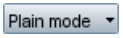
Topology Map enables you to assess the business availability of your system components at a glance, using an interactive graphic representation of the CIs in a view. In group mode, CIs are grouped according to CIT, or in groups of similar applications (for example ERP). In layer mode CIs are divided into layers, enabling you to focus attention on the layer which interests you the most (for example Business Enablement, Infrastructure, or Software).

To access	Select **Applications** > **Service Health** > **Topology Map**
Important information	Topology Map can be used as an independent component using its built-in view selector, or together with another component which selects views such as Model Explorer.
Relevant tasks	"How to Customize Topology Map Display" on page 171
See also	"Topology Map Overview" on page 166

User interface elements are described below (unlabeled elements are shown in angle brackets):

Topology Map Toolbar

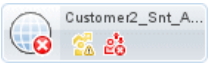
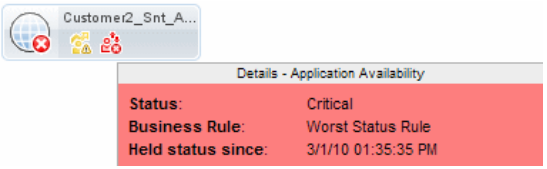
UI Element	Description
<View Selector>	Select a view from the dropdown list to display the view in Topology Map.
	Select. In Select mode, you can select CIs or groups to perform actions on the selected elements. For details, see "How to Customize Topology Map Display" on page 171.
	Interactive Zoom. In Zoom mode, click within Topology Map and drag up or down (or use your mouse wheel) to zoom in and out of the image.
	Pan. In Pan mode, if your Topology Map image is scrollable you can click and drag the image to move it. (If the entire image fits within your screen this feature has no effect.)
	Fit to screen. Click to fit the graph to the pane, either by expanding it or by reducing it. Relative proportions of the image are maintained.
	Toggle Presentation Type. Click to switch between minimal view, which displays only CI icons and worst statuses, and detailed view, which also displays CI names and KPI statuses.
	Click to open a dropdown list of display options. You can select or de-select each of the following options: ➤ **Show links.** If you select this option, Topology Map displays arrows between CIs that are linked. ➤ **Show link labels.**If you select this option, Topology Map displays each link together with its link type (for example, Contains or Depends on). If the **Show links** option is de-selected, this option is disabled.

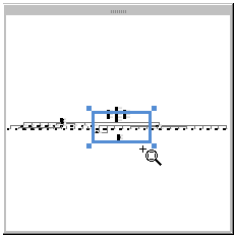
UI Element	Description
	Click to select between the following display modes: ➤ **Plain Mode.** Each CIs is displayed standing on its own, not in a layer or group. ➤ **Group Mode.** Topology Map displays related lower-level CIs in groups; for example, within the Application System hierarchy, CIs related to SAP or Siebel are grouped within ERP. In group mode you can create groups, add or remove CIs from groups, and delete groups, as described in "How to Customize Topology Map Display" on page 171. In group mode, a status icon shows the worst status of all CIs in the group. ➤ **Layer Mode.** Topology Map displays related higher-level CIs in layers; for example, Business Element CIs are displayed in the Business Enablement layer, while Node and Node Element CIs are displayed in the Infrastructure layer. For details, see "Plain Mode, Group Mode, and Layer Mode" on page 168.
	Hide Selection. Click to hide selected CIs or groups from the display. Note that hidden CIs are still included in view calculations.
	Restore Hidden. Click to restore any hidden CIs or groups to Topology Map.
	New Group. In group mode, perform one of the following: ➤ Click the New Group button to create a new (empty) group; you can then drag CIs into this new group. ➤ Select one or more CIs, then click the New Group button to create a group which contains these CIs. This button is only active in group mode.

UI Element	Description
	Delete Group. Select a group and click the Delete Group button to delete the group container. If the deleted group was nested within another group, the CIs are moved to the parent group; if the deleted group was not nested, the CIs are moved to their original location in the view hierarchy. This button is only active in group mode.
	Rearrange Layers. In layer mode, click to rearrange the graphic display so that the CIs and their links are neatly organized. This is useful if you have moved CIs in and out of layers, and want to neatly rearrange the display. Note that if you have moved CIs in and out of layers, this action does not restore them to their original layers. This button is only active in layer mode.
	Restore Default View. Click to restore Topology Map to its original, pre-customization settings. **Note:** If you create a new layer, click Restore Default View to display the layer properly in Topology Map.
View Display/Graph Display	Select one of the following ways to build a Topology Map: ➤ **View Display.** This shows the topology of the view based on View Folding, using the Impact model, with a single root node, and child CIs that have no recursive loops. ➤ **Graph Display.** This shows the topology of the view as defined in the RTSM, without View Folding. The links between the CIs represent their physical links as they appear in the RTSM.

UI Element	Description
	Display Minimap. Click to display the Topology Map image in a small window (minimap), which is overlaid on top of the standard Topology Map. Drag the magnifying glass icon within the minimap to focus Topology Map to show the area which is of interest to you. You can move the minimap by clicking and dragging its header bar. To close the minimap window, click within the larger Topology Map image.
	Capture Result and Add Annotations. Click to open the Annotation Tool, which creates a snapshot of the Topology Map and enables you to annotate the snapshot to highlight important areas. The tool enables you to draw in the snapshot, or add lines or text to the image. For details, see "Annotation Tool Dialog Box" on page 183.

Topology Map Display

UI Element (A-Z)	Description
<CI nodes> 	Each CI in the selected view is displayed as a bar within Topology Map, which contains the following elements: ➤ The left side of the bar shows an icon indicating the CI's CI type, as represented in the RTSM. ➤ CI aggregated status is overlaid on top of the CIT icon. ➤ If Topology Map is in detailed view, the CI name and KPI statuses are also displayed. **Tooltips:** The tooltip for a CI shows the CI name and CI type. The tooltip for a KPI shows status and performance data for the KPI:  CI and KPI status are displayed as color-coded icons. For details, see "KPI Status Colors and Definitions" on page 45. For details on customizing display settings, see "How to Customize Topology Map Display" on page 171.
<groups of CIs>	In group mode, groups of related CIs are displayed within a border. Some CIs are assigned to groups by default; you can also create groups to fit your needs. You can add or remove CIs from a group, collapse or expand a group, move a group, and edit the group name. For details on these options, see "How to Customize Topology Map Display" on page 171.

UI Element (A-Z)	Description
<layers of CIs>	In layer mode, high-level CIs are displayed within layers that are divided by functionality, such as Business Enablement or Infrastructure. Each layer is shown in a separate shaded area, labeled by the layer name. Layers cannot be renamed or deleted; CIs can be removed from layers, or added to them.
<links between CIs>	In the list of **Display options**, if you select **Show links**, Topology Map displays arrows between CIs that are linked within the RTSM. If you also select the **Show link labels** option, Topology Map also displays the link type (for example, Contains or Depends on). **Note:** If a CI outside a group links to a number of CIs inside a group, when the group is collapsed no link label is shown; when the group is expanded link labels are shown for each link.
<minimap image> 	If you click the **Display Minimap** button, the Topology Map image appears in a small window (minimap), overlaid on top of the standard Topology Map. The highlighted area shows which part of the Topology Map is displayed in the larger image. Resize or move the highlighted area to focus on the part of Topology Map which is of interest to you.
<right-click menu options>	Right-click a CI bar to list the available menu options. For details, see "Service Health Menu Options" on page 98.
Last Update	Displays when the information in the component was last updated. To manually update the information in the component, click the **Refresh** icon.

Annotation Tool Dialog Box

This page enables you to annotate a snapshot of the topology map you are viewing, to highlight important areas.

The annotation tool is identical in the Topology Map and Neighborhood Map components.

To access	Click the **Annotate** button on the topology map or neighborhood map toolbar.
Important information	➤ The annotation options are located on the left side of the annotation window. ➤ When saving the annotation: ➤ The snapshot is saved in .png format. ➤ You cannot select the **New Folder** icon when saving in the **My Documents** directory or any of its subdirectories.

Annotation Options

The elements that enable you to annotate your snapshot.

User interface elements are described below:

UI Element (A–Z)	Description
	Pan Tool. Click to navigate the snapshot.
	Select Tool. Click and drag to select a specific area of the snapshot.
	Shape Tool. Click and drag to add a shape to the snapshot. Clicking the shape tool button enables the following shape buttons: ➤ **Rectangle.** Click and drag to mark an area of the snapshot with a rectangle. ➤ **Filled Rectangle.** Click and drag to mark an area of the snapshot with a filled rectangle. ➤ **Oval.** Click and drag to mark an area of the snapshot with an oval. ➤ **Filled Oval.** Click and drag to mark an area of the snapshot with a filled oval. ➤ **Rounded Rectangle.** Click and drag to mark an area of the snapshot with a round rectangle. ➤ **Filled Rounded Rectangle.** Click and drag to mark an area of the snapshot with a filled round rectangle. **Customization.** After selecting this button, you can customize your line appearance through the following parts of the interface: ➤ **Line Type.** Choose the type of line you want to add. Options include: ➤ Solid Line ➤ Jagged Line ➤ **Line Width.** Select the width of the line, in pixels, in the annotation.

UI Element (A–Z)	Description
	Line Tool. Click and drag to enable the line tool, which marks the selected area of the snapshot with a line. **Customization.** After selecting this button, you can customize your line appearance through the following parts of the interface: ➤ **Line Style.** Choose the style of line you want to add. Options include: ➤ Regular line ➤ Line with endpoints ➤ Line with arrows ➤ **Line Type.** Choose the type of line you want to add. Options include: ➤ Solid Line ➤ Jagged Line ➤ **Line Width.** Select the width of the line, in pixels, in the annotation.
	Text Tool. Click and drag to open a box where you can add text to the snapshot. **Example:** Add the syntax: This is the problematic transaction above a line marking an area of the snapshot.

UI Element (A–Z)	Description
Border and Fill Colors	Select the relevant square to choose the color of the border and fill of your annotations. The available squares are: ➤ **Upper Square.** Click to choose the color of lines, as generated by the line tool and displayed in unfilled shapes. ➤ **Lower Square.** Click to choose the color to fill shapes. Clicking either of the squares generates a dialog box with the following tabs where you choose the color: ➤ Swatches ➤ HSB ➤ RGB
Opacity	Slide the opacity bar to choose the darkness level of the selected shape line, text line, or shape color in the annotation. **Note:** ➤ A higher opacity percentage means that the selection appears darker. A lower opacity percentage means that the selection appears lighter. ➤ This field is enabled when either the shape tool, line tool, or text tool button is selected.

Menu Bar

Displays the elements which enable you to perform selected actions on your snapshot.

Important information	The menu bar contains elements which enable you to: ➤ Change the appearance of the snapshot. ➤ Save or print the snapshot. ➤ Customize the appearance of text annotated onto your snapshot. These elements are enabled only when the **Text Tool** button is selected.

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A–Z)	Description
	Save. Saves the snapshot on your local machine. **Note:** ➤ The snapshot is saved in .png format. ➤ You cannot select the **New Folder** icon when saving in the **My Documents** directory or any of its subdirectories.
	Select All. Selects all of the annotations added to your snapshot.
	Clear Selected. Clears all annotations.
	Undo. Rolls back the most recent action performed on the snapshot.
	Redo. Cancels the roll back of the most recent action performed on the snapshot.
	Zoom In. Brings the snapshot view closer.
	Zoom Out. Sets the snapshot view further away.
	Restore original size. Restores the snapshot to its original size.
	Print. Prints the snapshot.
	Help. Displays online documentation help for the page you are currently viewing.
The following fields are enabled when selecting the Text Tool button **:**	
	Bold. Makes the text bold.
	Italic. Italicizes the text.

UI Element (A–Z)	Description
	Underline. Underlines the text.
	Anti-aliasing. Adjusts the pixel reading of text or annotation lines so that they appear smoother.
<Font Family>	Select the font for the text in the report.
<Font Size>	Select the size of the font in the report.

5

Geographical Map

This chapter includes:

Concepts

➤ Geographical Maps on page 190

Tasks

➤ How to Display and Customize a View in Geographical Map on page 194
➤ How to Display a Geographical Map With Google Earth on page 198
➤ How to Customize Virtual Earth on page 201
➤ How to Customize the Maps Applet on page 203

Reference

➤ Geographical Map Component User Interface on page 205

Concepts

Geographical Maps

In Service Health, you can associate a geographical map with a view. If you have specified geographical locations for the view's CIs, real-time status indicators representing the CIs statuses are displayed on the map at those locations. For details on the geographical map user interface, see "Geographical Map Component User Interface" on page 205.

If you have an Internet connection, geographical maps are displayed by default using Virtual Earth. For details, see "Understanding Virtual Earth" on page 192.

If you do not have an Internet connection, geographical maps can be displayed using a Maps applet. For details, see "Understanding the Maps Applet" on page 193.

Note: The Virtual Earth map is only available in English and cannot be translated. For localization, use the Maps applet. The Maps Applet does not display the names of cities or countries.

Tip: If you need a zoom level of a specific area that is not available in the Geographical Map, create a picture of the map and use the Custom Image feature instead.

This section also includes the following topics:

➤ "Location Status Information" on page 191

➤ "Understanding Google Earth" on page 191

➤ "Understanding Virtual Earth" on page 192

➤ "Understanding the Maps Applet" on page 193

Location Status Information

The map displays color-coded status indicators that represent the worst KPI status for all CIs attached to the location at each geographical location. The color coding is the same as for other icons in Service Health. For more information about color coding, see "KPI Status Colors and Definitions" on page 45.

You can specify the CI location when you define a new CI or when you edit a CI's properties. For details, see "Configuration Item Properties Dialog Box" in the *Modeling Guide*. If you do not specify a geographical location for at least one CI in the view, the Geographical Map tab displays only the map.

Each status indicator in the map can represent one or more CIs from the view with the same location. If you select a CI in Model Explorer, the geographical map is redisplayed automatically and shows only the selected CI and the CI's children status indicators if a location is specified for them. If you select another view, the geographical map reloads automatically to show the view's CI status indicators in the appropriate locations.

If you search for a specific CI in Model Explorer and you click the result of the search, the geographical map is not automatically redisplayed. The map is redisplayed only when you go back to browser mode. It shows only the selected CI and the CI's children status indicators if a location is specified for them.

Understanding Google Earth

Note to HP Software-as-a-Service users: This feature is not available when working with HP Software-as-a-Service.

You can also view the geographical map information in a three-dimensional map, using the Google Earth application.

Understanding Virtual Earth

If you have an Internet connection you can display the geographical map using Microsoft MSN Virtual Earth. HP Business Service Management integrates Virtual Earth online mapping functionality, available over MSN, to enable you to use the geographical map of a view. If the view's CIs are assigned geographical locations, real-time status indicators are displayed on the map at those geographical locations.

Virtual Earth geographical maps are based on Microsoft Network (MSN) technology and use dynamic HTML.

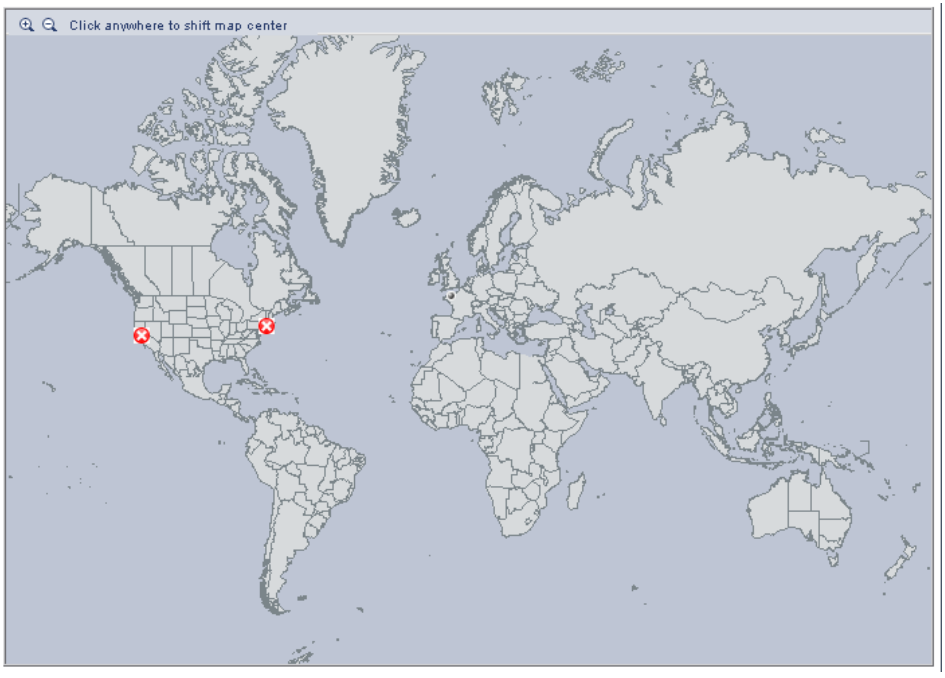
The Virtual Earth geographical map presents a flat geopolitical view of the planet where you can display the country borders, the geographical features, or both.

When you magnify the view, the main cities appear for the part of the map that is displayed on the screen.

Understanding the Maps Applet

The Maps applet presents a flat geopolitical view of the planet.

You can use the Maps applet to display the geographical map of a view. The map displays the worst status at each geographical location and detailed information about the CI's KPIs.



Tasks

How to Display and Customize a View in Geographical Map

This section describes the processes to view real-time status indicators in a geographical map, and gives examples.

This task includes the following steps:

- "Setup requirements for the Map applet" on page 194
- "Assign a geographical location to the appropriate CIs" on page 195
- "Select the display technology" on page 195
- "Assign a geographical map to a view" on page 196
- "Refine the geographical map" on page 197
- "Save changes" on page 197

1 Setup requirements for the Map applet

The Maps applet requires that Sun JRE plug-in 1.6.0_x (latest version recommended) be installed on the client machine.

The city names use UTF8 format. If HP Business Service Management is working with a Microsoft SQL Server, or an Oracle Server that is not configured for UTF8 support, non-English characters (for example, é) are displayed as empty square brackets [ ].

2 Assign a geographical location to the appropriate CIs

To view the real-time status indicators corresponding to a view's CI on the map, you must assign a geographical location to the relevant CIs in the view.

Note: This step is not required for CIs where location (longitude and latitude) and KPIs are already defined. For example, in the End User Locations view where a Real User Monitor Agent is running, locations are already assigned to the CIs.

Select **Admin** > **RTSM Administration** > **Modeling** > **It Universe Manager**. Select a CI in the topology map or Model Explorer. From the CI's menu commands, choose **Relate to CI**. In Model Explorer, open the **Locations** view and select the location to which the CI will be assigned. Click the **Relationship** button, select the **Membership** link, and click **Save**.

3 Select the display technology

You can display a geographical map using Virtual Earth, a Maps applet, or Google Earth.

a Select **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**.

b Select **Applications**.

c Select **Service Health Applications**.

d In the **Service Health Application - Maps Management Properties** table, perform the following (depending on which display you want to use):

- **Virtual Earth.** If you have an Internet connection, use Virtual Earth to display the geographical map. Locate the **Use Virtual Earth** entry, and set the property value to **true**. This is the default.
- **Maps Applet.** If you do not have Internet access, use the Maps applet to display the geographical map. Locate the **Use Virtual Earth** entry, and set the property value to **false**.

➤ **Google Earth.** If you have Internet access, you can use Google Earth to display the geographical map. By default, the **Export to Google Earth** button appears in the Geographical Map component. To remove this button, locate the **Enable Export to Google Earth button** entry and set the property value to **false** (the default is **true**).

Note to HP Software-as-a-Service users: The **Export to Google Earth** button is not available when working with HP Software-as-a-Service.

---

4 Assign a geographical map to a view

Assign a map to a view by selecting a view in the Geographical Map and saving the map.

To assign a geographical map to a view, open the **Geographical Map** component. By default, this opens together with the View Selector component. Select the appropriate view in the View Selector, and click **Save**.

If you assigned geographical location to a view's CIs, the corresponding status indicators are displayed on the map as soon as you assign a map to the view.

Note: To remove CI icons from the map, you must delete their geographical location.

Example:

A map shows the status of the jpetstore CI in the Cayman Islands.

5 Refine the geographical map

You can also refine the geographical display depending on the type of display you have selected. You can:

- Adjust the geographical map using the elements described for each type of map. For details, see "Geographical Maps" on page 190.
- Customize the map. For details on Virtual Earth, see "How to Customize Virtual Earth" on page 201. For details on the Map Applet, see "How to Customize the Maps Applet" on page 203.

6 Save changes

When you finish adjusting the map to fit your needs, click the **Save** button. The map is then saved for this view based on the adjustments you have made.

How to Display a Geographical Map With Google Earth

Note to HP Software-as-a-Service users: This feature is not available when working with HP Software-as-a-Service.

You can view the geographical map information in a three-dimensional map using the Google Earth feature. This section describes the processes to view status indicators in Google Earth.

This task includes the following steps:

- "Select the Appropriate Display Technology" on page 198
- "Import Location Status into Google Earth" on page 198
- "Set the Refresh Rate for the View" on page 200
- "View Indicators by Status" on page 200

1 Select the Appropriate Display Technology

To use Google Earth you must select the appropriate display technology. For details, see "Select the display technology" on page 195.

2 Import Location Status into Google Earth

You can import the location status information shown in the geographical map for the current view into a local Google Earth application. After importing the information, Google Earth displays all the CI status indicators in the appropriate geographical locations.

To list all the views you create in the same folder, create a new folder (for example, an HP Business Service Management folder) in the **Places** folder in Google Earth, and then add to that folder all the views you create.

You can create a view in Google Earth by creating a network link using the view's URL. This creates a container folder and a sub-folder.

To import location status into Google Earth:

a If you have not already installed Google Earth on your local computer, open the Google Earth site (http://earth.google.com/) and download the application.

b Click the **View in Google Earth** button. Follow the instructions in the **Integration with Google Earth** page.

c Open the Google Earth application.

d Click the **My Places** directory in the **Places** area.

e If this is the first time you are creating a view in Google Earth, in the **Create In** area, click **New Folder** and enter **HP Business Service Management** to create a new folder called HP Business Service Management.

If the HP Business Service Management folder already exists in the **Create In area** tree, select the folder.

f Select **Add** > **Network Link**.

g The Google Earth - New Network Link dialog box opens.

h Enter the view name in the **Name** box.

i Paste the URL displayed in the **Integration with Google Earth** page to the **Location** box.

Note: This URL creates a container folder called by the name you specified in the **Name** box, and a sub-folder called by the name of the view.

---

j Click **OK** to close the New Network Link dialog box.

The Google Earth page displays the HP Business Service Management folder in the Places area.

k Open the HP Business Service Management directory to list the views you have added.

3 Set the Refresh Rate for the View

You can set the refresh rate of the view sub-folder.

To set the refresh rate for the view:

a Right-click the view sub-folder.

b Select **Properties**.

c Click the **Refresh** tab.

d In the **Time-Based Refresh** area, select **Periodically** from the **When** list and select **1** minute in the Time.

e Click **OK**.

4 View Indicators by Status

You can filter the status indicators that are displayed in Google Earth to include specific statuses.

To view the indicators by status:

a In the **Places** area, expand the **HP Business Service Management** folder.

b Select the view you want to display. The folder displays the list of statuses of the CIs in the view.

c Select one or more of statuses. Only the CIs with the selected statuses are displayed in Google Earth.

How to Customize Virtual Earth

You can customize a Virtual Earth map using the following options. All the steps in this task are optional and can be performed in any order.

This task includes the following:

- "Adjust the Virtual Earth Map" on page 201
- "Specify the Size of the Indicators" on page 201
- "Specify the Statuses to Be Displayed" on page 202
- "Specify the Time Delay" on page 202

Adjust the Virtual Earth Map

You can zoom or shift the Virtual Earth map so that it shows the information you require. For details, see "Geographical Map Component User Interface" on page 205.

Specify the Size of the Indicators

You can modify the default size (19 pixels) of the indicators that are displayed on the Virtual Earth map.

To modify the size of the indicators, select **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**, click **Applications**, select **Service Health Applications**, and enter the indicator size (in pixels) in the **Indicator size in Virtual Earth** entry in the **Service Health Application - Maps Management Properties** table.

Specify the Statuses to Be Displayed

You can select the statuses you want to display in the Virtual Earth map.

To specify the statuses to be displayed, select **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**, click **Applications**, select **Service Health Applications**, and locate the **Ignore gray statuses** entry in the **Service Health Application - Maps Management Properties** table. Select one of the following options:

- **ALL.** Locations with gray statuses (downtime, stopped, no data and uninitialized) are not displayed on the map.
- **NO.** Locations with gray status are displayed on the map.

Specify the Time Delay

You can modify the default time delay between the completion of new location download from the server and the display of the information by Virtual Earth (in seconds). Use larger values if user has slower connection.

To modify the time delay, select **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**, click **Applications**, select **Service Health Applications**, and locate the **Wait after getting data** entry in the **Service Health Application - Maps Management Properties** table. Enter the delay (in seconds). The default is 4.

How to Customize the Maps Applet

You can customize the Maps applet using the following options. All the steps in the task are optional and can be performed in any order.

This task includes the following:

- "Adjust the Maps Applet" on page 203
- "Specify the Map Refresh Rate" on page 203
- "Specify the Maximum Number of CIs Displayed in a Location's Tooltip" on page 203

Adjust the Maps Applet

You can adjust the Maps applet so that it shows the required information. For details, see "Geographical Map Component User Interface" on page 205.

Specify the Map Refresh Rate

You can modify the map refresh rate. The default is 30 seconds. To modify the map refresh rate, select **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**:

- Select **Applications**.
- Select **Service Health Applications**.
- In the **Service Health Application - Maps Management Properties** table, locate the **Maps Applet Refresh Rate** entry. Change the refresh rate as needed.

Specify the Maximum Number of CIs Displayed in a Location's Tooltip

You can specify the maximum number of CIs that can be displayed in the tooltip for a location in the Geographical Map. The default is 10.

Keep in mind that the CIs are displayed in the Caused by section in the tooltip, so do not specify more than can be accommodated.

To modify the maximum number of CIs displayed in a location's tooltip, select **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**:

- Select **Applications**.
- Select **Service Health Applications**.
- In the **Service Health Application - Maps Management Properties** table, locate the **Maximum CIs in tooltip for location** entry. Enter the new maximum.

Reference

Geographical Map Component User Interface

This component enables you to display real-time status indicators on a geographical map, with the view's CIs at the geographical locations they were assigned. The status indicator shows the worst status of the CIs at the geographical location. You can also access detailed information about the CI's KPIs.

To access	Select **Applications** > **Service Health** > **Geographical Map**
Important information	The geographical map display can be rendered using: ➤ **Virtual Earth.** For details, see "Geographical Map in Virtual Earth" on page 206. ➤ **A Maps applet.** For details, see "Geographical Map in the Map Applet" on page 209. ➤ **Google Earth.** For details, see "Geographical Map in Google Earth" on page 211. For details on choosing these displays, see "Select the display technology" on page 195.
Relevant tasks	"How to Display and Customize a View in Geographical Map" on page 194
See also	"Geographical Maps" on page 190

Geographical Map in Virtual Earth

If you have an Internet connection, the geographical map is displayed by default using Microsoft MSN Virtual Earth (Version 4.0). Virtual Earth presents a flat geopolitical view of the planet where you can display only the country borders, only the geographical features, or both.

See also	"Understanding Virtual Earth" on page 192

User interface elements are described below (unlabeled elements are shown in angle brackets):

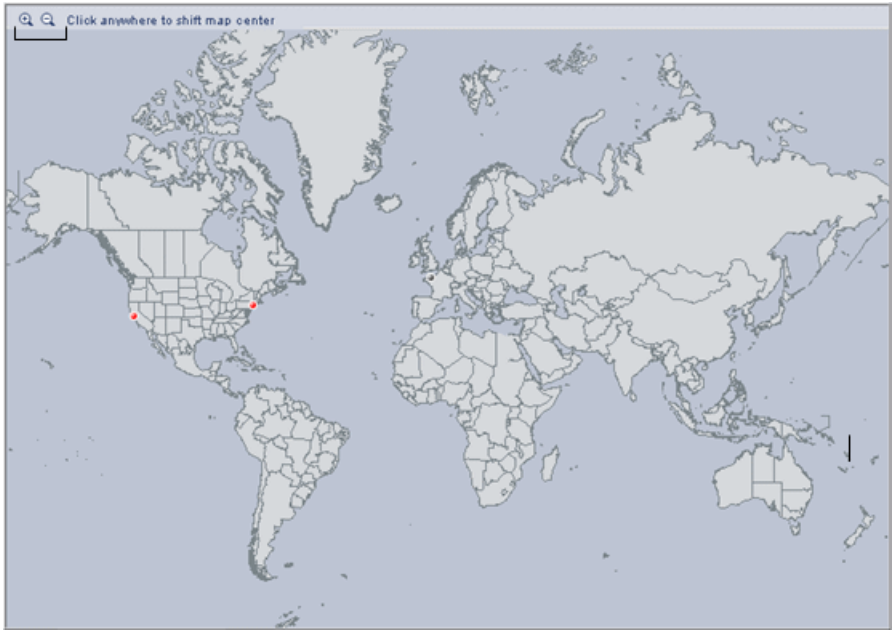
UI Element (A-Z)	Description
	Click to zoom out completely.
	Click to save changes to the geographical map display.
	If you made changes to your map which you do not want to save, click to revert to the last saved version of the map.
	Click to open the geographical map for the view using Google Earth.

UI Element (A-Z)	Description
	Enable you to zoom in and out to enlarge or shrink the map.
	Click to shift the center of the map to the nearest CI.
	Click to zoom out completely.
<Adjustments>	Click the map and drag to move the map in the window. Double-click the map to zoom in.
<Status of a location> 	The geographical map of the view displays the worst status at each geographical location. The color coding is the same as for other icons in Service Health. For more information about color coding, see "KPI Status Colors and Definitions" on page 45.
<Tooltip>	Move the cursor above a status icon to display the location tooltip that provides the worst status for all KPIs associated with the location. A KPI is associated with a location if that KPI is assigned to at least one of the CIs attached to the location. The tooltip includes the following information: ➤ **KPI Name.** The name of the KPI. The color of the header indicates the worst status of the KPI. ➤ **Location.** The name of the location (country, city, and state, if applicable). ➤ **Status.** The status of the KPI. ➤ **Held status since.** The time and date when the KPI status changed to the current status. ➤ **Caused by.** The names of the CIs where the problem occurred.

UI Element (A-Z)	Description
Last Update	Displays when the information in the component was last updated. To manually update the information in the component, click the **Refresh** icon.
Road/Aerial/Bird's Eye/Hybrid/Labels	Click: ➤ **Road** to display the map with the country borders. ➤ **Aerial** to display the map with the topographical features. ➤ **Bird's Eye** (inactive) ➤ **Hybrid** to display the map with both the country borders and the topographical features. ➤ **Labels** to remove all labeling on the map other than CI status indicators.
Search	Use this feature to perform a search in Microsoft MSN Virtual Earth (outside of HP Business Service Management).

Geographical Map in the Map Applet

If you do not have an Internet connection, the Geographical Map page displays a Maps applet graphic. The Map applet presents a flat geopolitical view of the planet.



See also	"Understanding the Maps Applet" on page 193

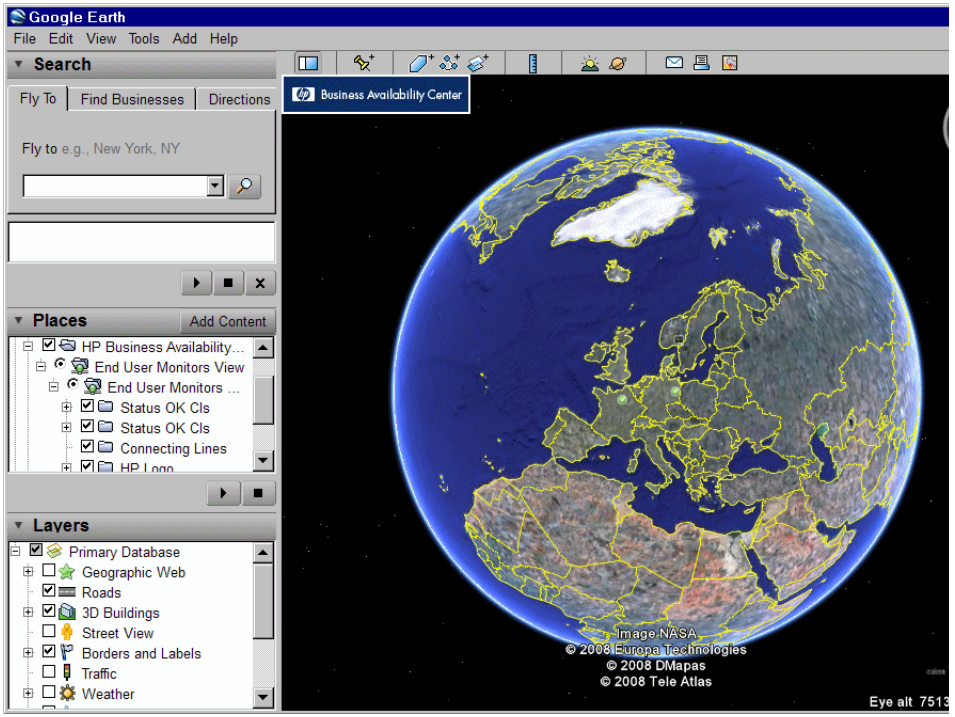
User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
	Click to zoom out completely.
	Click to save changes to the geographical map display.

UI Element (A-Z)	Description
	If you made changes to your map which you do not want to save, click to revert to the last saved version of the map.
	Click to open the geographical map for the view using Google Earth.
	Enable you to zoom in and out to enlarge or shrink the map.
<Adjustments>	Click the area that interests you. The map shifts to make the location you clicked the new center of the map.
<Status of a location> 	The geographical map of the view displays the worst status at each geographical location. The color coding is the same as for other icons in Service Health. For more information about color coding, see "KPI Status Colors and Definitions" on page 45.
<Tooltip>	Move the cursor above a status icon to display the location tooltip that provides the worst status for all KPIs associated with the location. A KPI is associated with a location if that KPI is assigned to at least one of the CIs attached to the location. The tooltip includes the following information: ➤ **KPI Name.** The name of the KPI. The color of the header indicates the worst status of the KPI. ➤ **Location.** The name of the location (country, city, and state, if applicable). ➤ **Status.** The status of the KPI. ➤ **Held status since.** The time and date when the KPI status changed to the current status. ➤ **Caused by.** The names of the CIs where the problem occurred.

Geographical Map in Google Earth

Displays the worst status at each geographical location and detailed information about the CI's KPIs. Google Earth presents a three-dimensional view of the planet. When you magnify the view, the main cities appear for the part of the map that is displayed on the screen.



Important information	**Note to HP Software-as-a-Service:** This feature is not available when working with HP Software-as-a-Service.
See also	"Understanding Google Earth" on page 191 "How to Display a Geographical Map With Google Earth" on page 198

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<Places area>	Select the view and filter the CIs you want to display.
<Status of a location>	The geographical map of the view displays the worst status at each geographical location. The map presents color-coded status indicators that represent the worst status at each geographical location. The color coding is the same as for other icons in Service Health. For more information about color coding, see "KPI Status Colors and Definitions" on page 45.
<Tooltip>	Move the cursor above a status icon to display the location tooltip that provides the worst status for all KPIs associated with the location. A KPI is associated with a location if that KPI is assigned to at least one of the CIs attached to the location. The tooltip includes the following information: ➤ **KPI Name.** The name of the KPI. The color of the header indicates the worst status of the KPI. ➤ **Location.** The name of the location (country, city, and state, if applicable). ➤ **Status.** The status of the KPI. ➤ **Held status since.** The time and date when the KPI status changed to the current status. ➤ **Caused by.** The names of the CIs where the problem occurred.
<Zoom and direction tools>	Enables you to zoom in or out of the current display.

6

Custom Image

This chapter includes:

Concepts

➤ Custom Image - Overview on page 214

Tasks

➤ How to Display a View in a Custom Image on page 216

Reference

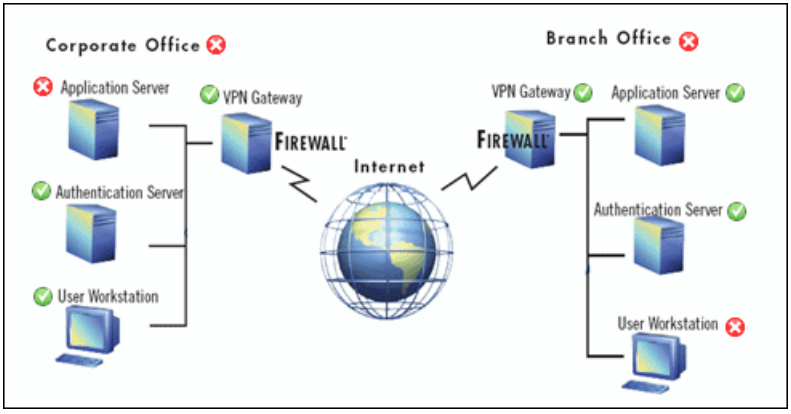
➤ Custom Image Component User Interface on page 218

Concepts

Custom Image - Overview

The Custom Image component enables you to associate a view's CIs represented by real-time status indicators with a custom image that describes the real world that your view represents. The graphical representation of a view used by your organization can be a logical network diagram, business logic, or any other graphic image.

For example, you can associate a graph representing your company's network with real-time data coming from different parts of the network.



One custom image can be defined for each view. The image shown is the one defined for the active view. When you select a different view, the corresponding image is automatically displayed. If you do not define a custom image for a view, users accessing the Custom Image component see a message stating that there is no defined image for the view.

Working With Custom Images

You work with Custom Images in two stages:

1. Within Service Health Administration, you associate an image with a view, and specify where each CI is located in the image. For details, see "Custom Image Administration" on page 489.
2. You can then access the Custom Image application component, and see the CI statuses in the view, within your custom image. For details on the custom image user interface, see "Custom Image Component User Interface" on page 218.

Note: When a CI is removed from the IT universe model, the corresponding CI icon (in Service Health Administration) and the corresponding status indicators (in Service Health) are automatically removed from the relevant custom images.

Tasks

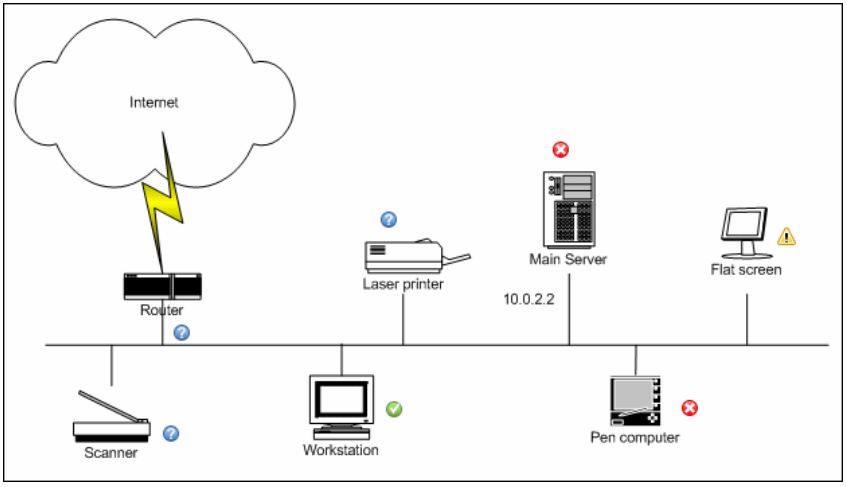
How to Display a View in a Custom Image

Within Service Health Administration, assign a custom image to a view, and add CIs to the image, as described in "How to Assign a Custom Image to a View" on page 491.

After you have created a custom image, display it in the Service Health Custom Image component. Open the view for which you defined a custom image, and monitor the CI's status in the appropriate location in the diagram.

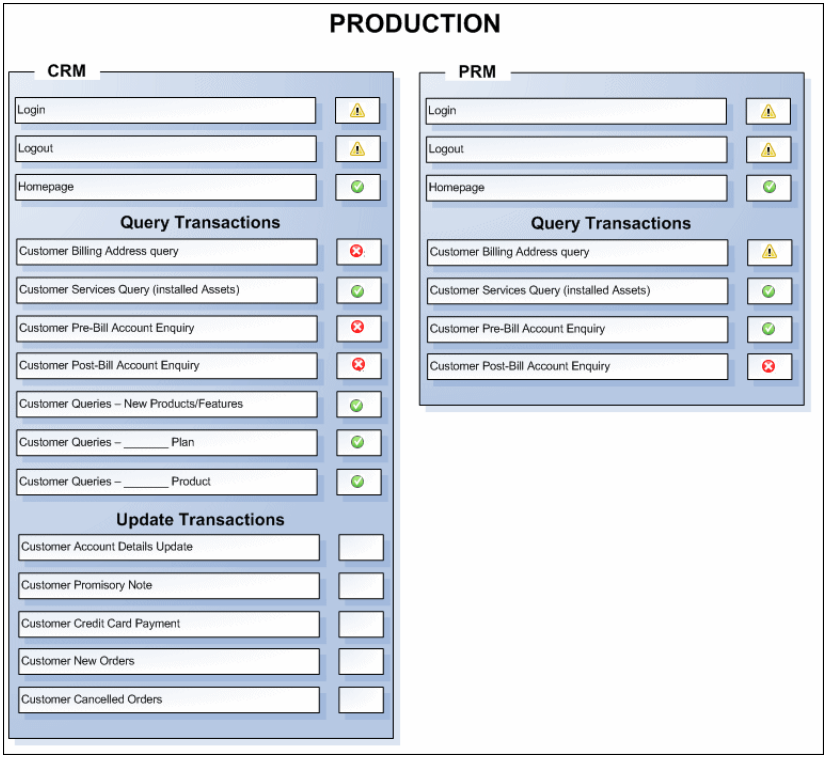
Example – View a Custom Image

A custom image display the status of each element in the network:



Example – Different Styles of Images

Other examples of custom images can be:



Reference

Custom Image Component User Interface

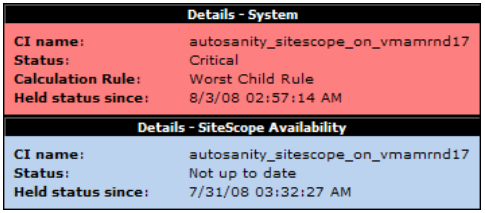
This component enables you to display a custom image for a selected view including the view's CIs represented by real-time status indicators and a background custom image.

The custom image is defined in Service Health Administration. For details, see "Custom Image Administration" on page 489.

To access	Select **Applications** > **Service Health** > **Custom Image**
Relevant tasks	"How to Display a View in a Custom Image" on page 216
See also	"Custom Image - Overview" on page 214

User interface elements are described below (unlabeled elements are shown in angle brackets):

<status indicator>	The status indicator indicates the worst status (worst of all KPIs) of the CI. The status indicator can be a standard status icon, or a CI type icon with status colors, as defined for the custom image. For details on the statuses, see "KPI Status Colors and Definitions" on page 45.

<Tooltip>	Move the cursor above the status icon of the CI to display additional information about each KPI attached to the CI in a separate section. The tooltip associated with a CI status indicator displays information about each KPI attached to the CI in a separate section. The color of each section represents the color of the corresponding KPI's status. For details on the colors, see "KPI Status Colors and Definitions" on page 45.  **Details - System** **CI name:** autosanity_sitescope_on_vmamrnd17 **Status:** Critical **Calculation Rule:** Worst Child Rule **Held status since:** 8/3/08 02:57:14 AM **Details - SiteScope Availability** **CI name:** autosanity_sitescope_on_vmamrnd17 **Status:** Not up to date **Held status since:** 7/31/08 03:32:27 AM The tooltip can display any of the following information, depending on the KPI: ➤ the header of each section displays **Details** followed by the name of the KPI. ➤ **CI name.** The name of the CI. ➤ **Status.** The status of the KPI. ➤ **Held status since.** The date and time when the status changed to the current status. ➤ **Historical worst.** The tooltip of the historical status of the CI. For details, see "KPI Trend and History Calculation" on page 408.

7

360° View

This chapter includes:

Concepts

- 360° View Overview on page 223
- Hierarchy Component Overview on page 224
- Business Impact Component Overview on page 226
- Business Impact Rating Calculation on page 226
- Health Indicator Component Overview on page 228
- Understanding the Health Indicator Tooltips on page 229
- Alerts Component Overview on page 232
- Changes and Incidents Component Overview on page 233

Tasks

- How to Customize the Hierarchy Component on page 234
- How to Set Up Sound Notification When KPIs in Hierarchy are Critical on page 237
- How to Create a Quick Hierarchy Filter on page 239
- How to Create an Advanced Hierarchy Filter on page 240
- How to Manage Advanced Hierarchy Filters on page 243
- How to Customize the Business Impact Component on page 245
- How to Modify Which CITs are Displayed in the Business Impact Component on page 247
- How to Modify Which CI Relationships are Displayed in the Business Impact Component on page 248

➤ How to Customize the Business Impact Rating Calculation Method on page 248

➤ How to Work with the Health Indicator Component on page 252

➤ How to Customize the Alerts Component on page 254

➤ How to Customize the Changes and Incidents Component on page 255

Reference

➤ 360° View User Interface on page 256

Concepts

360° View Overview

The 360° View page contains the Hierarchy component which provides KPI data regarding the CIs in a selected view. If you select a CI within the Hierarchy component you can see its detail links; when you click the detail links, you can access additional components which provide comprehensive data regarding the CI.

The following components can be accessed from the 360° View page:

- **Hierarchy.** Displays a hierarchy of CIs in a view, the KPIs assigned to each CI, and their KPI statuses. For details, see "Hierarchy Component Overview" on page 224.
- **Business Impact.** Displays business CIs and SLAs that are impacted by the CI selected in the active view. In addition, an icon shows how much of an impact the CI has on monitored business CIs and SLAs. For details, see "Business Impact Component Overview" on page 226.
- **Health Indicators.** Displays details regarding the health indicators (HIs) that are used to calculate and set the status of the CI selected in the active view. For details, see "Health Indicator Component Overview" on page 228.
- **Alerts.** Displays CI status alerts triggered by the CI selected in the active view. For details, see "Alerts Component Overview" on page 232.
- **Changes and Incidents.** Displays incidents opened for the CI selected in the active view, as well as requests for change and actual changes made to the CI. For details, see "Changes and Incidents Component Overview" on page 233.

Hierarchy Component Overview

The Hierarchy component displays a hierarchy of CIs in a view, the KPIs assigned to each CI, and their KPI statuses. When you select a CI in the Hierarchy component, its CI details are displayed. You can then click the detail links to display additional information regarding the selected CI.

For customization options, see "How to Customize the Hierarchy Component" on page 234.

For user interface details, see "Hierarchy Component User Interface" on page 258.

This section also includes the following topics:

- "Hierarchy Columns" on page 224
- "Filtering CIs in the Hierarchy Display" on page 225
- "Drilling Down to CI Details" on page 225

Hierarchy Columns

The **Status** column shows the worst status held by each CI's KPIs.

The **Business Impact** column shows each CI's business impact, using a rating from zero (no impact) to 5 (high impact). The rating shows how much of an impact the CI has on the business CIs and SLAs in your monitored environment. For details, see "Business Impact Rating Calculation" on page 226.

The **KPI** columns display KPI status for each CI; when you select a CI its KPI trend and history are also displayed. For details, see "KPI Trend and History Calculation" on page 408.

Within the Hierarchy component, KPIs are sorted by **domains**. Domains are groups of KPIs that monitor similar functions; for example the Network domain contains the Network Availability and Network Performance KPI. You can display all KPIs, the worst KPI in a domain, or only show domains that are of interest to you. For details see "KPI Domains" on page 411.

You can also **acknowledge** problems on CIs in the Hierarchy component, to help you keep a record of when a problem was acknowledged and by which user. For details, see "Acknowledge Problems" on page 327.

Filtering CIs in the Hierarchy Display

You can also use the Hierarchy **filter** to focus on operational status of specific segments of your business. If you activate a filter, the component displays only those CIs which have at least one KPI with the status specified in the filter. For details, see "How to Create a Quick Hierarchy Filter" on page 239 and "How to Create an Advanced Hierarchy Filter" on page 240.

Drilling Down to CI Details

When you select a CI in the Hierarchy component, CI details are displayed. You can click detail links to access the following information about the selected CI:

- **Business Impact.** Displays business CIs and SLAs that are impacted by the CI selected in the active view. For details, see "Business Impact Component Overview" on page 226.
- **Health Indicators.** Displays details regarding the health indicators (HIs) that are used to calculate and set the status of the CI selected in the active view. For details, see "Health Indicator Component Overview" on page 228.
- **Alerts.** Displays CI status alerts triggered by the CI selected in the active view. For details, see "Alerts Component Overview" on page 232.
- **Changes and Incidents.** Displays incidents opened for the CI selected in the active view, as well as requests for change and actual changes made to the CI. For details, see "Changes and Incidents Component Overview" on page 233.

Business Impact Component Overview

The Business Impact component enables you to see the business CIs and SLAs that are impacted by the CI selected in the active view.

In addition, a bar icon indicates each CI's business impact, using a rating from zero (no impact) to 5 (high impact). This rating shows how much of an impact the CI has on the business CIs and SLAs in your monitored environment, helping you to prioritize your tasks when problems are detected. For details on this rating, see "Business Impact Rating Calculation" on page 226.

The following impacted CI types are monitored by default: Business Services, Business Processes, and Applications. For details on how to customize business impact information, see "How to Customize the Business Impact Component" on page 245.

From this component you can also access the selected CI's corresponding Business Impact Report. For details, see "Business Impact Report" on page 92.

For user interface details, see "Business Impact Component User Interface" on page 268.

Business Impact Rating Calculation

Within the Business Impact component, a bar icon indicates each CI's business impact, using a rating from zero (no impact) to 5 (high impact).

Within the monitored environment represented by the RTSM, a CI can impact business entities and SLAs, either via a direct **Impact** link to them, or if one of the CI's ancestors is a business entity or SLA. If a CI impacts another CI, all its descendants also impact the CI.

How the Business Impact Rating is Calculated

The business impact rating can be calculated based on the following metrics:

- The criticality of the impacted business CIs, as defined by the **Criticality** attribute on these CIs.
- The number of business services impacted by the CI.
- The number of SLAs impacted by the CI.

By default, the rating is calculated based on the average of each of these metrics. For example, if the individual ratings (criticality, number of business CIs, and number of SLAs) are 2,3, and 4, the business impact rating of the CI is 3.

If you choose to only use the criticality factor, the impact is calculated as follows: Within the RTSM, each business CI can have a **BusinessCriticality** attribute defined, with a value of 1-5. If a CI has an impact on one or more CIs that have this attribute defined, the CI's business impact rating is the highest criticality of the CIs that it impacts.

For example, if CI-a has Impact links to CI-b and CI-c, and these two CIs have a criticality of 1 and 3 respectively, the business impact rating for CI-a displayed in the Business Impact component is 3, based on the highest criticality of the CIs that it impacts.

You can also choose to calculate the rating based on the number of impacted business entities or SLAs. For example, if you choose SLAs only, the rating is based on the number of SLAs a CI impacts, divided by the number of SLAs in the RTSM. This is then translated to a rating of 1-5. For example, if a CI impacts 2 SLAs out of 10 SLAs in the model, (20% of the SLAs), this translates to a rating of 1 (out of 5) on the business impact rating scale.

Customizing the Business Impact Rating

You can customize how the business impact rating is calculated by:

- Including or excluding any of the above metrics (criticality, number of business CIs, or SLAs) in the calculation.
- Calculating criticality based on average criticality, or highest criticality (default).
- Assigning each metric a specific weight; for example you can make one of the metrics more significant in the calculation than the others.
- Assigning thresholds to the metrics that count business entities and SLAs, so that instead of calculating based on simple average, different values are used.

  For example, if you choose to calculate the rating based on the number of impacted SLAs, and a CI impacts 2 SLAs out of 10 SLAs in the model, the CI has a rating of 1 (out of 5) on the rating scale.

  However, you can define custom thresholds so that if a specific number of CIs or SLAs are impacted by a CI, this is mapped to a specific rating (for example, 5 CIs can be mapped to a rating of 3), helping you to define the rating system to fit your needs.

These customizations are defined within an XML file in the infrastructure settings, as described in "How to Customize the Business Impact Rating Calculation Method" on page 248.

Health Indicator Component Overview

The Health Indicator component displays details regarding the health indicators that are used to calculate and set the current status of a selected CI. Each health indicator's status and value are displayed. The component displays the health indicators grouped by two categories: health indicators that are used to calculate KPIs, and health indicators that are not used in any KPI calculation.

For an introduction to health indicators, see "Health Indicators and KPIs - Overview" on page 115.

Within Service Health, you can access the Health Indicator component via the **Show** > **HIs** menu command from a CI.

- For details on working with the Health Indicator component, see "How to Work with the Health Indicator Component" on page 252.
- For details on the Health Indicator component user interface, see "Health Indicator Component User Interface" on page 271.

Note: When a metric-based HI generates an event, the Health Indicator component and the Event Console show the same date and time for the HI's status change. If this HI also generates a change in a KPI, the KPI shows this date and time for the KPI change as well.

When an event-based HI is created, the HI and Event Console display the same date and time. However, if the HI generates a change in a KPI, the KPI shows a delay of a few seconds until it is updated with the data from the HI.

Understanding the Health Indicator Tooltips

The content and structure of an HI's tooltip depends on the its data source:

- **Metric-based HI.** When an HI is based on sample data, the HI tooltip fields correspond to the business rule which calculates the HI. For details on the tooltips for each rule, see "List of Calculation Rules in Service Health" on page 740.
- **Event-based HI.** When an HI is based on events, the tooltip shows information on the specific event which contributed to the HI's latest status change. For details, see "Event-Based HI Tooltip Fields" on page 273.

  When an HI is impacted by several events (for example in CIs monitored by SiteScope), the tooltip displays general information regarding the events and their severities. The Affected By field shows a list of the measurements which influenced the HI. When an HI is in OK status, no event data is displayed. The tooltip shows the events which have the same status as the HI itself.

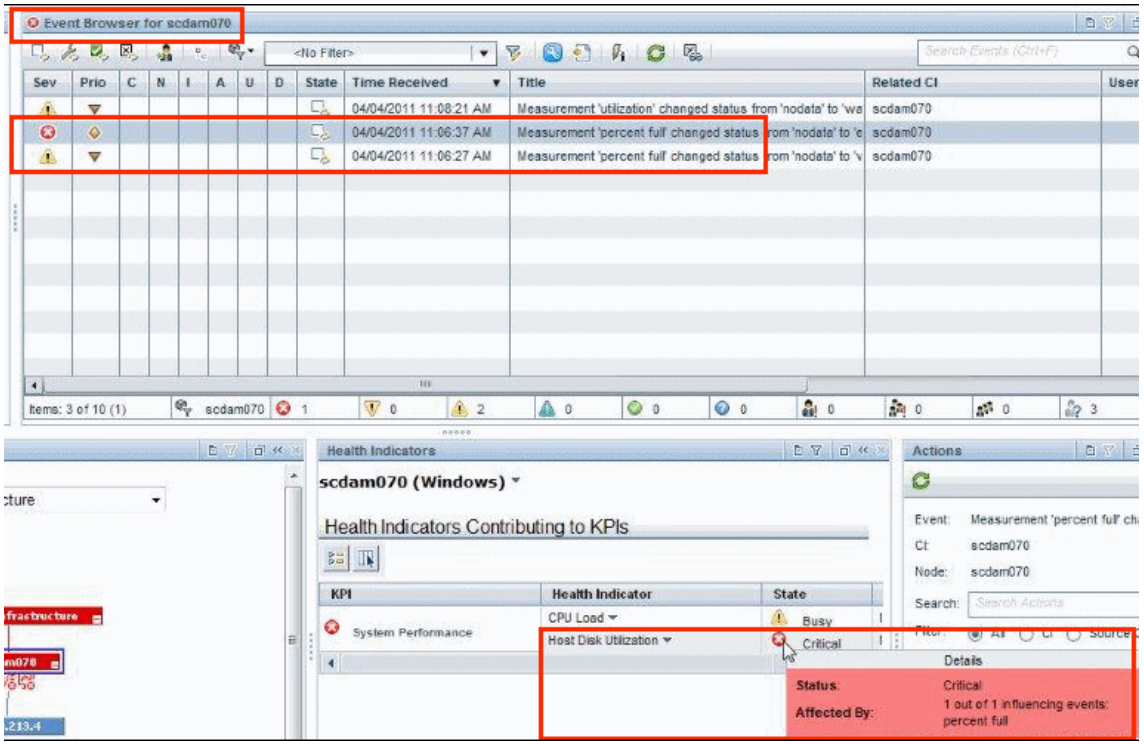
Note: If you restart the Business Logic Engine, the data in the tooltip is reset.

This section also includes the following topics:

- "Examples of HI tooltips impacted by several events" on page 230
- "Rule parameters influencing the HI tooltip" on page 232

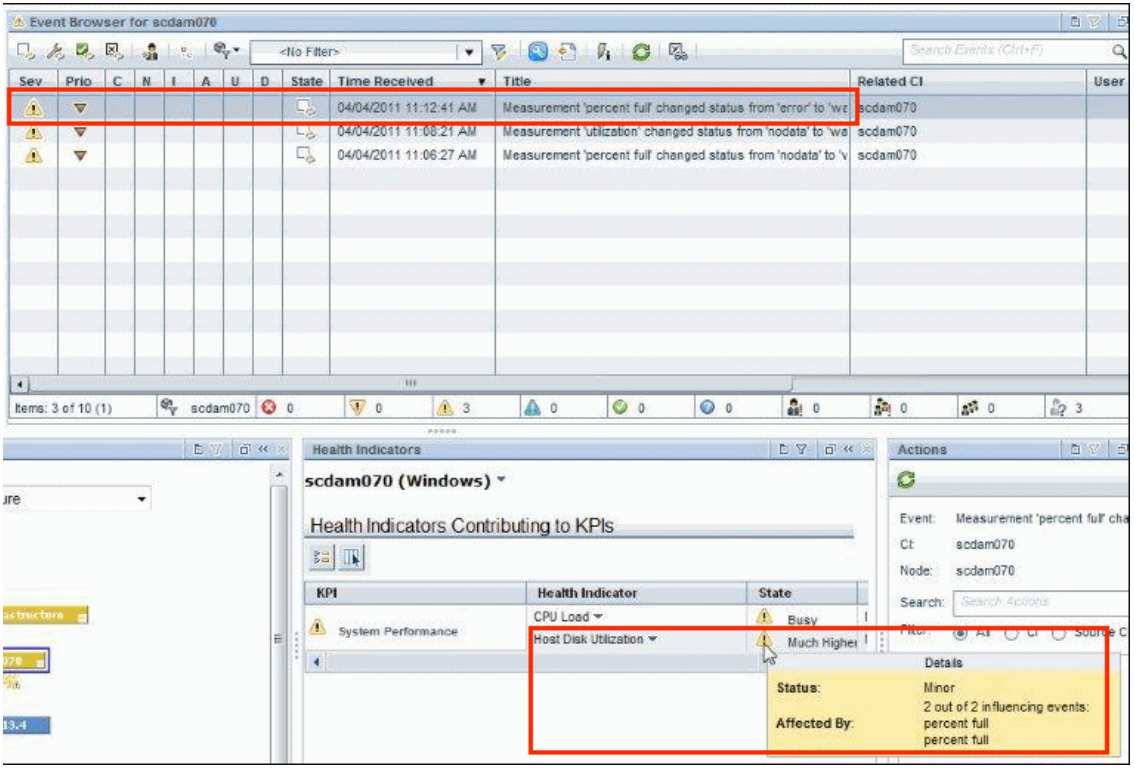
Examples of HI tooltips impacted by several events

In the following image, two SiteScope monitors are monitoring disk utilization on two disks, on a single server. The System Performance KPI is fed by the Host Disk Utilization HI, which is fed by both of these monitors. (The image focuses on the relevant areas.)



In this example, the HI is critical, and one of the two events feeding the HI is critical. The tooltip shows **1 out of 1 influencing events**, meaning one of the events which influences this HI has the same status as the HI.

In the following image, the severity of the monitor that had been Critical has changed to Minor:



The HI changes to Minor as well. Since both of the events feeding the HI are Minor, the tooltip shows **2 out of 2 influencing events**.

In the above examples, the subcategory of the events feeding the HI is **percent full**; this subcategory is displayed in the tooltip for each influencing event.

Rule parameters influencing the HI tooltip

Event-based HIs are calculated by the Generic Health Indicator Sub-component rule. By default, this rule uses the following rule parameters which influence the tooltip's behavior; modifying these defaults increases memory usage.

- **clearNormalStatuses.** By default, events with Normal status are not included in event-based HI calculation.
- **reportNormalStatusesEvents.** By default, events with Normal status are not displayed in event-based HI tooltips. Note that if the setting of **clearNormalStatuses** is false, the setting of **reportNormalStatusesEvents** is ignored.
- **maxNumOfDisplayedEvents.** By default, up to 8 events can be displayed in an event-based HI tooltip. As a result, if there are 10 events which influence an HI, by default the HI's tooltip will list 8 out of 10 influencing events.

Alerts Component Overview

The Alerts component enables you to see the CI status alerts triggered by the CI selected in the active view.

To view information on the action taken following the alert, you can access the selected CI's Status Alerts Report directly from this component. For details, see "CI Status Alerts Reports" on page 285.

For customization options, see "How to Customize the Alerts Component" on page 254.

For user interface details, see "Alerts Component User Interface" on page 274.

Changes and Incidents Component Overview

This component enables you to see the incidents opened for the CI selected in the active view, as well as requests for change and actual changes made to the CI.

The following information is displayed:

- **Incidents and Requests for Change.** Information on incidents and requests for change is collected from RTSM Federation Adapters. Federation adapters may be set up within HP Business Service Management (such as the out-of-the-box adapter History Data Source), or outside HP Business Service Management (such as Release Control or HP Service Manager).

  For details on setting up federation, see "Federation Framework Overview" in the *RTSM Developer Reference Guide*. For details on the integration with HP Service Manager, see "How to Integrate HP Service Manager with Business Service Management Components" in *Solutions and Integrations*.

- **Actual Changes.** Information on actual changes is collected for CIs on the local machine, directly from the RTSM. The types of changes displayed are History Attribute Change, and History Relation Change.

  Attribute changes are displayed for each attribute marked as Change Monitored. For details, see "Add/Edit Attribute Dialog Box" in the *Modeling Guide*.

  Relationship changes are displayed if a relationship has been defined with a **TRACK_LINK_CHANGES** qualifier. For details, see "Qualifiers Page" in the *Modeling Guide*.

For customization options, see "How to Customize the Changes and Incidents Component" on page 255.

For user interface details, see "Changes and Incidents Component User Interface" on page 276.

Tasks

How to Customize the Hierarchy Component

You can customize the Hierarchy component using the following options:

- "Select a view for display" on page 234
- "Filter which CIs are displayed" on page 234
- "Display filtered CIs in a hierarchy or list format" on page 235
- "Select specific KPIs and CI acknowledgement for display" on page 235
- "Display all KPIs or group KPIs by domains" on page 236
- "Personalize the Hierarchy component per user" on page 236
- "Modify the refresh rate" on page 236
- "Modify the number of levels displayed in the Hierarchy component" on page 237
- "Display children collapsed in the Hierarchy component" on page 237

Select a view for display

The Hierarchy component has a built-in view selector.

Select a view from the view selector to display KPI data for the CIs in the view.

Filter which CIs are displayed

The Hierarchy component has a filter mechanism that enables you to display only those CIs that have at least one KPI in a given status. You can create a quick filter based on KPI status, or an advanced filter based on statuses of specific KPIs, and CI types.

For details, see "How to Create a Quick Hierarchy Filter" on page 239, and see "How to Create an Advanced Hierarchy Filter" on page 240.

Display filtered CIs in a hierarchy or list format

When filtering is active, you can choose to display the CIs that fill the filter conditions within a hierarchical structure (in the context of their parent CIs), or in a list format (without displaying their parent CIs).

Click the **Filter Hierarchial Mode** button to display the CIs within a hierarchical structure, or click the **Filter Flat Mode** button to display the CIs that fill the filter conditions in a list format.

Select specific KPIs and CI acknowledgement for display

By default, each of the KPIs in the view is displayed in a separate column. To remove KPIs from the display, click the **Select Columns** button. In the Select Columns dialog box, use the arrows to add or remove KPIs from the display.

This can be done for the Acknowledgement column as well; for details, see "How to Acknowledge Performance Problems" on page 329.

Tip: This type of KPI selection is only for the Hierarchy display. To remove a KPI from all Service Health components, access Service Health Administration > View Builder. Right-click a view in the View Selector, and select **Properties**. In the popup window, deselect the KPI in the **Include in View** list. For details, see "How to Add or Remove KPIs Within a View" on page 386.

Display all KPIs or group KPIs by domains

Within the Hierarchy display, KPIs are grouped by domains; for example, the Application domain contains the Application Performance KPI and Application Availability KPI. For details, see "KPI Domains" on page 411.

You can view the status of all of the KPIs separately, or you can collapse a domain to view the worst status of all the KPIs in the domain. To collapse or expand a domain, click the - and + signs next to the domain name.

Personalize the Hierarchy component per user

The following changes can be made in the Hierarchy component and are saved for future sessions (per user, per component):

- column order
- column width
- visible/hidden columns
- collapsed/expanded KPI domains
- collapsed/expanded CIs
- sound on/off (if sound mode is set to **True**; see "How to Set Up Sound Notification When KPIs in Hierarchy are Critical" on page 237.)

If you make changes in a user-defined page, click **Save** to retain the changes in the current session. To save your settings in future sessions, click **Logout** when you are ready to exit the browser. (If you close the browser without logging out, your changes are not saved.)

Modify the refresh rate

By default, the Hierarchy component is refreshed every 5 seconds.

If you are using the Hierarchy component outside the 360° View, you can modify the refresh rate using the **Preferences** button in the component toolbar (in the upper right area of the component).

In the 360° View you cannot modify the refresh rate.

Modify the number of levels displayed in the Hierarchy component

By default, the Hierarchy component displays two levels of hierarchy display. For example, when you select a view, the component displays the view name (as the hierarchy root), and its top-level CIs. When you drill down from a selected CI, the selected CI is displayed as the root, and its child CIs are also shown.

To modify the number of levels that can be displayed in the Hierarchy component, drill down to the following: **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** > **Applications**, and select **Service Health Application.**

Locate the **Business Console - Number of display levels** entry in the Service Health Layout Properties table. You can select a value between 1 and 4. If you specify 1, the child CIs are displayed but cannot be expanded.

Display children collapsed in the Hierarchy component

To display child CIs collapsed rather than expanded (by default), drill down to the following: **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** > **Applications**, and select **Service Health Application.**

In the Service Health Application - Service Health Layout Properties table, change the value of the **Hierarchy - Default state** property to **collapsed**.

How to Set Up Sound Notification When KPIs in Hierarchy are Critical

You can set up Service Health to play an alert sound when the status of a KPI changes to **Critical** in the Hierarchy component.

When a view is loaded for the first time, no sound is played for the KPIs that are loaded at Critical status.

When the sound is switched on, a sound alert is played when a KPI in the view changes status to **Critical** (red). The Critical status icon flashes until you roll your mouse over it. If a CI in a hidden part of the view has changed to **Critical** but does not change the status of any of the CIs in the currently displayed branches, no sound is heard.

This task includes the following steps:

- "Permanently enable or disable sound notification" on page 238
- "Temporarily mute or restore sound notification" on page 238
- "Modify the alert sound" on page 238

Permanently enable or disable sound notification

Select **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**, choose **Applications**, select **Service Health Application**, and locate the **Sound Notification** entry in the Service Health Application - Sound Notification table. Modify the value to **true** to enable the sound notification or to **false** to disable it. The change takes effect immediately.

Temporarily mute or restore sound notification

You can temporarily turn the sound option on or off using the **Sound On/Off** button in the Hierarchy toolbar. For details, see "Changes and Incidents Component User Interface" on page 276.

Modify the alert sound

The alert sound is an mp3 file downloaded by the browser.

To use another alert sound for Service Health, if you have administrative permissions, access **<Gateway server root directory>\AppServer\webapps\site.war\static\dash\sounds** and replace the **ding.mp3** file with your own .mp3 file (you must rename your file **ding.mp3**). The change takes effect after you clear your browser cache.

How to Create a Quick Hierarchy Filter

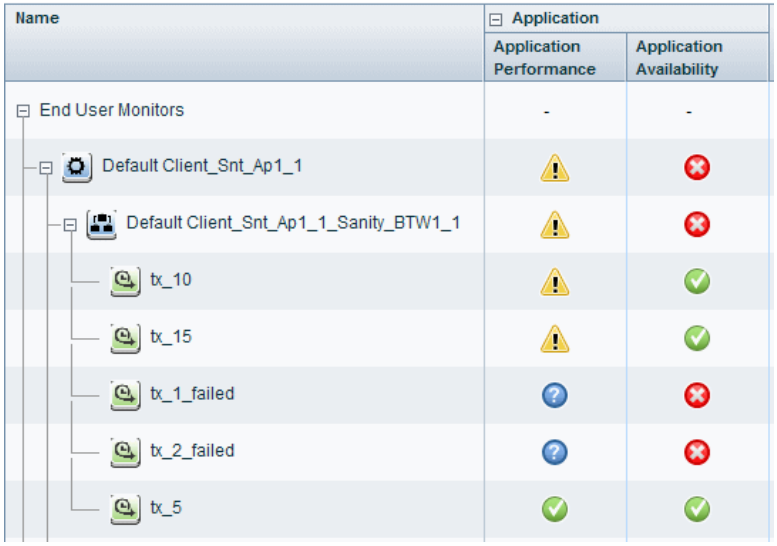
The Hierarchy component has a quick filter mechanism that enables you to display only those CIs that have at least one KPI in a given status. This creates a temporary filter that persists until you log off, until you change the selection of statuses, or until you select another filter. The filter returns all of the CIs in the view which fill the filter conditions.

- To temporarily display only those CIs whose KPIs have specific statuses, click the **Filter** button in the Hierarchy toolbar, select one or more statuses in the filter bar that opens, and click **Filter**.
- To disable filtering, click the **Remove Filter** button.

Tip: You can also create a more complex filter, which enables you to filter statuses of specific KPIs and CI types, and to create permanent filters. For details, see "How to Create an Advanced Hierarchy Filter" on page 240.

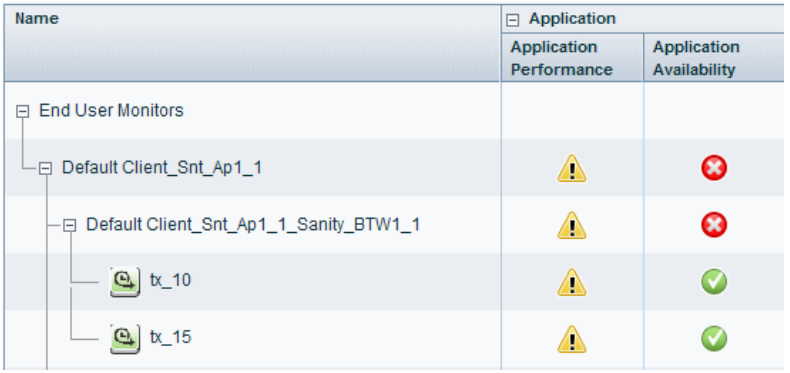
Example:

Without filtering, the Hierarchy component includes all KPI statuses.



To temporarily display only those CIs whose KPIs have Minor statuses, click the **Filter** button, select the Minor status icon in the filter bar, and click **Filter**.

The Hierarchy display now includes only those CIs whose KPIs have Minor status.



How to Create an Advanced Hierarchy Filter

Advanced filters enable you to focus on specific problematic areas by filtering CIs according to specific KPI statuses, using either temporary or permanent filters. For example, the predefined **Show Errors** filter displays only those CIs which have one or more KPIs in Critical status.

You can also create an advanced filter which combines filtering according to both KPI status, and CI type. For example, you can create a filter that only shows hosts (Node CIT) with one or more KPIs in Critical status.

The filter returns all of the CIs in the view which fill the filter conditions.

1 To create a temporary advanced filter, click the **Filter** button in the Hierarchy toolbar, and then click **Advanced** in the filter bar.

To create a permanent advanced filter, click the **Favorite Filters Menu** button, and then click **New**.

2. In the **Status Selection** pane, select check boxes for each KPI status that you want to include in the filter.
3. (Optional) In the **Type Selection** pane, select a CI type to filter which CIs will appear in the Hierarchy display.

   If you select a higher-level CIT, its descendant CITs are included in the filter as well.
4. To activate a temporary filter, click **Filter**.

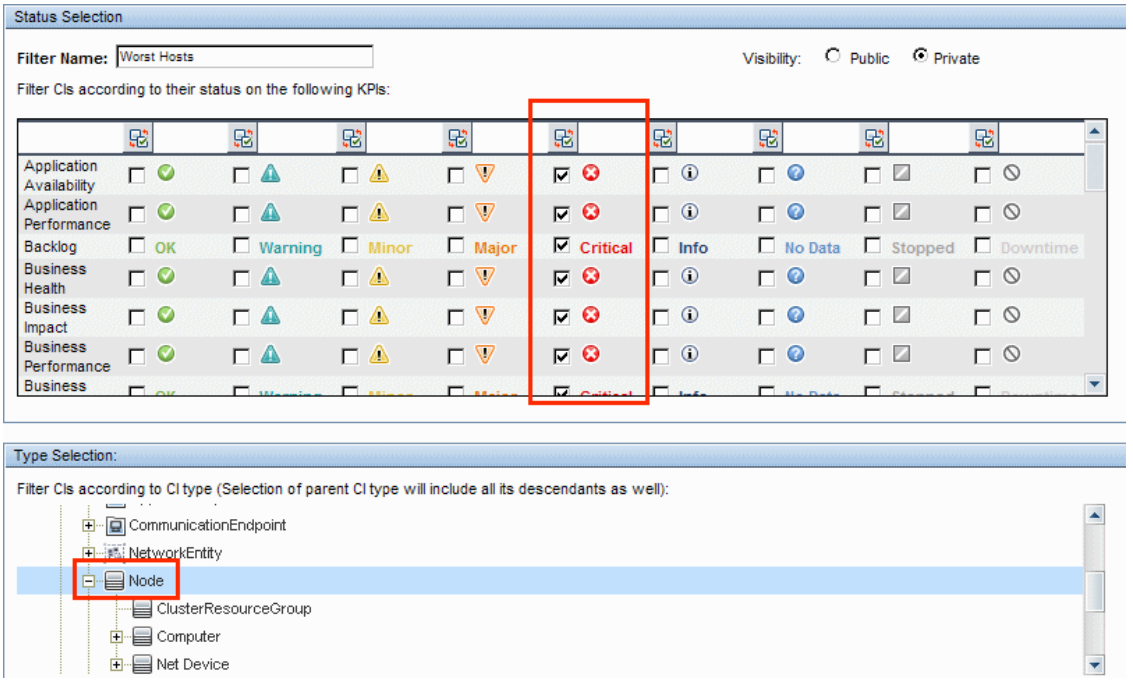
   To activate a filter and save its settings, click **Filter and Save**.

For details on how to work with advanced filters, see "How to Manage Advanced Hierarchy Filters" on page 243.

For user interface details, see "Defining/Editing Filters Dialog Box" on page 265.

Example:

The **Worst Hosts** filter shown below is created to display only those CIs whose CIT is Node, with at least one KPI in Critical status.



How to Manage Advanced Hierarchy Filters

The **Favorite Filters** list in the Hierarchy component toolbar contains predefined filters (labeled **global:**) and any additional advanced filters that you create and save. The currently active filter is displayed in the **Favorite Filters** box. If no filter is currently active, this box displays the text **[Select Filter]**.

For details on how to create an advanced filter, see "How to Create an Advanced Hierarchy Filter" on page 240.

For user interface details, see "Defining/Editing Filters Dialog Box" on page 265.

You can perform the following actions to manage advanced filters:

- "Change the active filter" on page 243
- "Create a temporary advanced filter" on page 243
- "Create a permanent advanced filter" on page 243
- "Clone and edit a filter" on page 244
- "Edit or delete a custom filter" on page 244

Change the active filter

To change the active filter, select a different filter from the **Favorite Filters** box.

Create a temporary advanced filter

To create a temporary advanced filter, click the **Filter** button in the Hierarchy toolbar, and then click **Advanced** in the filter bar. After defining the filter, click **Filter**.

Create a permanent advanced filter

To create a permanent advanced filter, click the **Favorite Filters Menu** button, and then click **New**. After defining the filter, click **Filter and Save**.

Clone and edit a filter

To use an existing filter as the basis for a new filter, select the filter name in the **Favorite Filters** box. Click the **Favorite Filters Menu** button, and then click **Clone**. Give the new filter a relevant name, and modify its settings as needed.

Edit or delete a custom filter

To edit or delete a custom filter, select the filter name in the **Favorite Filters** box. Click the **Favorite Filters Menu** button, and then click **Edit** or **Delete**.

Predefined filters cannot be edited or deleted.

- To disable a temporary filter, click the **Remove Filter** button.
- To disable a permanent filter, select **[Select Filter]** in the **Favorite Filters** box.

How to Customize the Business Impact Component

You can customize the Business Impact component using the following options:

- "Select CIs for display in the Business Impact component" on page 245
- "Modify duration settings" on page 245
- "Modify refresh rates" on page 246
- "Modify which CITs and CI relationships are monitored by the Business Impact component" on page 246
- "Customize how the business impact rating is calculated" on page 246

Select CIs for display in the Business Impact component

If your workspace contains a component where you can select CIs (such as Model Explorer, Top View, Topology Map, or Hierarchy), and also contains the Business Impact component, you can select a CI to display its business impact. For details, see "Service Health Workspace" on page 81.

If you want to use the Business Impact component independent of other components, you can select a CI from within the component itself. Click the **Filter** button in the Business Impact component toolbar, and then click **Configuration Items**. Open a view within the Configuration Items dialog box, and select a CI to display its business impact data.

Modify duration settings

By default, the Business Impact component displays data for the previous week. You can change this setting to previous week, day, or hour (up to the current time).

- If you are using the Business Impact component outside of the 360° View page, click the **Filter** button in the component toolbar (in the upper right area of the component), and enter the new duration setting.
- If you are drilling down to Business Impact from the Hierarchy component, click the **Filter** button in the Hierarchy component toolbar and enter the new duration setting. This setting is shared by all of the Hierarchy CI detail drill-downs.

Modify refresh rates

By default, the component is refreshed every five minutes. To modify this refresh rate, click the **Preferences** button in the component toolbar (in the upper right area of the component) and enter the new refresh rate.

Modify which CITs and CI relationships are monitored by the Business Impact component

By default, the Business Impact component can show the following CI types (CITs), if they have an **Impact** relationship with the selected CI: Business Services, Business Processes, and Applications.

These settings can be modified, as described in "How to Modify Which CITs are Displayed in the Business Impact Component" on page 247, and "How to Modify Which CI Relationships are Displayed in the Business Impact Component" on page 248.

Customize how the business impact rating is calculated

By default, the business impact rating is based on the criticality of impacted business CIs. This rating can also be calculated based on the number of impacted business CIs and SLAs; you can also assign each metric relative weights and thresholds. For details, see "How to Customize the Business Impact Rating Calculation Method" on page 248.

How to Modify Which CITs are Displayed in the Business Impact Component

By default, the Business Impact component can show the following CI types (CITs), if they are have an **Impact** relationship with the selected CI: Business Services, Business Processes, and Applications.

The following section describes how to modify which CITs can be displayed in the Business Impact component.

Note: If you make changes using the following procedure, these changes are also reflected in the Business Impact Report. For example, if you add a CIT to be displayed in the Business Impact component, this CIT also appears in the Business Impact Report. For details on this report, see "Business Impact Report" on page 92.

---

1 Select **Admin** > **RTSM Administration** > **Modeling Studio**. In the **Resources** tab, select **Queries**, and open the **SearchForBusinessImpact** query.

   Within this query, the **ITU_Triggered** node represents the CI selected in a view, and the **Business_Impacted** node represents the CITs which can be impacted by this CI.

2 Right-click the **Business_Impacted** node and select **Node Element Properties** to open the Node Element Properties dialog box.

   Within the **Attribute** tab, modify the query to add or remove CITs. When modifying the query, use an **Or** relationship between CIs, rather than an **And** relationship. For details, see "How to Define a TQL Query" in the *Modeling Guide*.

   Note: Do not change the name of the **SearchForBusinessImpact** query, or the name of the **ITU_Triggered** node.

How to Modify Which CI Relationships are Displayed in the Business Impact Component

By default, the Business Impact component can show the following CI types (CITs), if they are have an **Impact** relationship with the selected CI: Business Services, Business Processes, and Applications.

The following section describes how to modify which relationships are displayed in this component.

Note: If you make changes using the following procedure, these changes are also reflected in the Business Impact Report. For example, if you add a CIT to be displayed in the Business Impact component, this CIT also appears in the Business Impact Report. For details on this report, see "Business Impact Report" on page 92.

---

1. Select **Admin** > **RTSM Administration** > **Modeling Studio**. In the **Resources** tab, select **Queries**, and open the **SearchForBusinessImpact** query.
2. Right-click the **Virtual Compound** relationship and select **Edit Compound Relationship**. Within the **Edit Compound Relationship** dialog box, modify the relationships monitored by the query. For details, see "Compound Relationship" in the *Modeling Guide*.

How to Customize the Business Impact Rating Calculation Method

By default, the business impact rating is based on the average of three metrics: criticality, number of business CIs, and number of SLAs. For an overview of this rating system, see "Business Impact Rating Calculation" on page 226.

To customize how the business impact rating is calculated, access the following: **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** > **Applications** > **Business Impact Service**.

Open the **Configuration** XML file for editing. Within the XML file, each section beginning with **metric id** defines one of the calculation options, as follows:

- **metric id="BasedOnNumOfBusinessEntities".** This defines the parameters used to calculate CI impact, based on the number of business CIs that a CI impacts.
- **metric id="BasedOnNumOfSLAs".** This defines the parameters used to calculate CI impact, based on the number of SLAs that a CI impacts.
- **metric id="BasedOnCriticality".** This defines the parameters used to calculate CI impact, based on the criticality of the business CIs that a CI impacts.

You can perform the following customizations to modify how the ratings are calculated:

- "Define which metrics are used in the calculation" on page 249
- "Calculate based on highest degree of criticality or on average criticality" on page 250
- "Define relative weights for each of the metrics used in the calculation" on page 250
- "Assign thresholds to the metrics that count impacted business CIs and SLAs" on page 251

Define which metrics are used in the calculation

Within one of the lines beginning with **metric id**, locate the string **weight="<value>"**. If this value is zero, the metric is not used in calculating the rating; if this value is 1, the factor is used to calculate the rating.

For example, by default: metric id="BasedOnNumOfSLAs" class="com.hp.am.bac.bis.evaluators.calculators.CalculatorBasedOnNumOfSLAs" weight="1">. This means that the number of SLAs that a CI impacts is included in the business impact rating.

Modify these weights to include (1) or exclude (0) specific metrics in the calculation.

Calculate based on highest degree of criticality or on average criticality

By default, the business impact rating is based on the highest degree of criticality of the impacted business CIs. You can modify which rule is used to calculate the rating based on criticality, and use average criticality instead.

Locate the line beginning with **metric id**="**BasedOnCriticality**" **ruleId**="**1**". The string **ruleId**="**1**" defines that the highest degree of criticality is used to calculate the rating.

To calculate the rating based on the average criticality of business CIs that are impacted by the CI, modify this to **ruleId**="**3**".

Define relative weights for each of the metrics used in the calculation

If you include more than one metric in the calculation, you can assign relative weights to each metric.

Within one of the lines beginning with **metric id**, locate the string **weight**="**<value>**". This value defines the relative weight of each metric in the overall calculation, so that if you define the weight of one metric as 1, and of another metric as 2, the first metric defines 1/3 of the overall rating and the second metric defines 2/3 of the overall rating.

For example, suppose you define that ratings are based on criticality with a weight of 5, and on the number of SLAs with a weight of 2. If a given CI's rating based on criticality alone would be 4, and based on SLAs alone would be 1, the overall rating is calculated as (4x5) + (1x2) / 7 = 3.14. The business impact rating is therefore 3 (medium).

Assign thresholds to the metrics that count impacted business CIs and SLAs

By default, if you choose to calculate the rating based on the number of impacted business CIs or SLAs, the rating is based on the percentage of impacted CIs from the total number of relevant CIs in your environment. For example, if a CI impacts 2 SLAs out of 10 SLAs in the model, the CI has a rating of 1 (or 20% on the rating scale of 1 to 5).

You can define custom thresholds so that if a specific number of CIs or SLAs are impacted by a CI, this is mapped to a specific rating, as follows:

1. Within the XML file, locate the metric for which you want to define thresholds, either in the section headed **metric id="BasedOnNumOfBusinessEntities"** (based on the number of business CIs that a CI impacts), or in **metric id="BasedOnNumOfSLAs"** (based on the number of SLAs that a CI impacts).
2. Within the area headed **<thresholds>**, define thresholds according to the following format:

   <threshold value="<number of impacted CIs>" valueMapping="<rating percentage mapped to this threshold value>" />

For example, suppose you define thresholds as follows:

```
- <thresholds>
- <!--
<threshold value="1" valueMapping="20" />
<threshold value="2" valueMapping="40" />
<threshold value="3" valueMapping="60" />
<threshold otherwise="80" />
-->
</thresholds>
```

This means that if a CI impacts one CI, its business impact is mapped to 20%, giving it a rating of 1 (out of 5). If this CI impacts 2 or 3 CIs, it rating is 2 or 3 respectively. If the CI impacts more than 3 CIs, it is mapped to 80%, with a rating of 4.

Note that this mapping defines the business impact rating, independent of the total number of business CIs or SLAs in your environment.

How to Work with the Health Indicator Component

The following tasks can be used to work with the Health Indicator component.

- "Select CIs for display in the Health Indicator component" on page 252
- "Reset an HI's state to default" on page 252
- "Access HI menu commands in the Health Indicator component" on page 253

Note: For an introduction to health indicators and KPIs, see "Health Indicators and KPIs - Overview" on page 115.

Select CIs for display in the Health Indicator component

If your workspace contains a component where you can select CIs (such as Model Explorer, Top View, Topology Map, or Hierarchy), and also contains the Health Indicator component, you can select a CI to display its related health indicators. For details, see "Service Health Workspace" on page 81.

If you want to use the Health Indicator component independent of other components, you can select a CI from within the component itself. Click the **Filter** button in the Health Indicator component toolbar, and then click **Configuration Items**. Open a view within the Configuration Items dialog box, and select a CI to display its health indicator data.

Reset an HI's state to default

In some workflows, you might have an HI showing that a problem has occurred, but when you deal with the problem you might want to reset the HI's state to **Normal** (default).

To reset an HI to its default state, access the menu command on an HI and select **Operations** > **Reset Health Indicator**. The HI's default state is restored immediately, and the new status is reflected in the component when it is next refreshed.

The **Reset Health Indicator** menu command is generally used for event-based HIs, and not for metric-based HIs.

HIs cannot be reset to default within local impact views.

Tip: You can also reset HIs to default outside of BSM, using the Reset HIs API. For details, see "Reset Health Indicator State" on page 992.

Access HI menu commands in the Health Indicator component

You can drill down from the Health Indicator component to the following:

- If you are working with SiteScope, you can drill down from a SiteScope HI to a SiteScope monitor that contributes to the health indicator's status. From the HI's menu commands, select **Go To** > **Go to SiteScope**. For details, see "How to Drill Down to SiteScope from a CI or Health Indicator" on page 79.
- If you have a license for the Event Browser, you can drill down from an HI to the corresponding event in the Event Browser. From the HI's menu commands, select **Show** > **Show Contributing Events**.

How to Customize the Alerts Component

You can customize general settings of the Alerts component using the following options:

Select CIs for display in the Alerts component

If your workspace contains a component where you can select CIs (such as Model Explorer, Top View, Topology Map, or Hierarchy), and also contains the Alerts component, you can select a CI to display its related alerts. For details, see "Service Health Workspace" on page 81.

If you want to use the Alerts component independent of other components, you can select a CI from within the component itself. Click the **Filter** button in the Alerts component toolbar, and then click **Configuration Items**. Open a view within the Configuration Items dialog box, and select a CI to display its alerts data.

Modify duration settings

By default, the Alerts component displays data for the previous day. You can change this setting to previous week, day, or hour (up to the current time).

- If you are using the Alerts component outside of the 360° View page, click the **Filter** button in the component toolbar (in the upper right area of the component), and enter the new duration setting.
- If you are drilling down to Alerts from the Hierarchy component, click the **Filter** button in the Hierarchy component toolbar and enter the new duration setting. This setting is shared by all of the Hierarchy CI detail drill-downs.

Modify refresh rates

By default, the component is refreshed every five minutes. To modify this refresh rate, click the **Preferences** button in the component toolbar (in the upper right area of the component) and enter the new refresh rate.

How to Customize the Changes and Incidents Component

You can customize the Changes and Incidents component using the following options:

Select CIs for display in the Changes and Incidents component

If your workspace contains a component where you can select CIs (such as Model Explorer, Top View, Topology Map, or Hierarchy), and also contains the Changes and Incidents component, you can select a CI to display its related changes and incidents data. For details, see "Service Health Workspace" on page 81.

If you want to use the Changes and Incidents component independent of other components, you can select a CI from within the component itself. Click the **Filter** button in the Changes and Incidents component toolbar, and then click **Configuration Items**. Open a view within the Configuration Items dialog box, and select a CI to display its changes and incidents data.

Modify duration settings

By default, the Changes and Incidents component displays data for the previous week. You can change this setting to previous week, day, or hour (up to the current time).

- If you are using the Changes and Incidents component outside of the 360° View page, click the **Filter** button in the component toolbar (in the upper right area of the component), and enter the new duration setting.
- If you are drilling down to Changes and Incidents from the Hierarchy component, click the **Filter** button in the Hierarchy component toolbar and enter the new duration setting. This setting is shared by all of the Hierarchy CI detail drill-downs.

Modify refresh rates

By default, the component is refreshed every five minutes. To modify this refresh rate, click the **Preferences** button in the component toolbar (in the upper right area of the component) and enter the new refresh rate.

Reference

360° View User Interface

This section describes:

- 360° View on page 257
- Hierarchy Component User Interface on page 258
- Defining/Editing Filters Dialog Box on page 265
- Business Impact Component User Interface on page 268
- Health Indicator Component User Interface on page 271
- Event-Based HI Tooltip Fields on page 273
- Alerts Component User Interface on page 274
- Changes and Incidents Component User Interface on page 276

360° View

The 360° View page contains the Hierarchy component which provides KPI data regarding the CIs in a selected view. If you select a CI you can see its detail links; when you click the detail links, you can access additional components which provide comprehensive data regarding the CI.

To access	Select **Application** > **Service Health** > **360° View**

User interface elements are described below:

UI Element	Description
Hierarchy	Displays a hierarchy of CIs in a view, the KPIs assigned to each CI, and their KPI statuses. For details, see "Hierarchy Component User Interface" on page 258.
Business Impact	Displays business CIs and SLAs that are impacted by the CI selected in the active view. In addition, an icon shows how much of an impact the CI has on monitored business CIs and SLAs. For details, see "Business Impact Component User Interface" on page 268.
Health Indicators	Displays details regarding the health indicators (HIs) that are used to calculate and set the status of the CI selected in the active view. For details, see "Health Indicator Component User Interface" on page 271.
Alerts	Displays CI status alerts triggered by the CI selected in the active view. For details, see "Alerts Component User Interface" on page 274.
Changes and Incidents	Displays incidents opened for the CI selected in the active view, as well as requests for change and actual changes made to the CI. For details, see "Changes and Incidents Component User Interface" on page 276.

Hierarchy Component User Interface

The Hierarchy component displays the hierarchy of the CIs in a view, and the real-time status of each of the KPIs assigned to the CIs. KPIs are grouped into domains; you can collapse a domain and display the worst status of all the KPIs in a domain. You can also filter the display to only show CIs with KPIs of a specific status, or specific CI types.

When you select a CI in the Hierarchy component, CI details are displayed. You can then click the detail links to display additional information regarding the selected CI.

To access	Select **Applications** > **Service Health** > **360° View.** Note: There are also default pages in MyBSM which contain this component. You can also create your own pages and include this component; for details see "Service Health Workspace" on page 81.
Related task	"How to Customize the Hierarchy Component" on page 234
See also	➤ "How to Create a Quick Hierarchy Filter" on page 239 ➤ "How to Create an Advanced Hierarchy Filter" on page 240

Hierarchy Toolbar

The toolbar enables you to customize how data is displayed in the Hierarchy table, and to create filters that define which KPIs are displayed.

User interface elements are described below:

UI Element	Description
<View Selector>	Select a view from the dropdown list to display information on the CIs in the view.

UI Element	Description
	Menu. Select one of the following options: ➤ **Expand Available Levels/Collapse All.** Click to expand or collapse the CIs displayed in the Hierarchy component. These buttons are enabled when one or more of the currently displayed CIs can be expanded or collapsed. ➤ **Drill Down**. Select a CI and click to drill down to its child CIs. This button is only enabled when a CI is selected. ➤ **Up One Level**. Click to display the parent CI of the CI currently displayed in the Hierarchy component. This button is only enabled when the currently displayed CI has a parent CI. ➤ **Select Columns**. Click to open the Select Columns dialog box, which enables you to select which KPIs are displayed. Use the arrows to add or remove KPIs from the display.
	Filter. Click to open the filter bar, which enables you to only display CIs with at least one KPI of a given status (for example, only display CIs with at least one KPI with Critical status). When the Filter button has a yellow and red border, a filter is currently active.
	Remove Filter. If a filter is active, click to cancel filtering and show all KPI statuses for all CIs.

UI Element	Description
<Filter Bar>	After you press the **Filter** button, this bar appears directly below the Hierarchy toolbar. Select a combination of KPI statuses, to only display CIs which have at least one KPI with a given status. The filter bar includes the following buttons: ➤ **Filter.** After selecting statuses, click to activate filtering. ➤ **Clear.** Click to de-select all of the statuses. ➤ **Advanced.** Click to create an advanced filter. This enables you to filter specific KPIs or CI types, and to create a permanent filter. For details, see "Defining/Editing Filters Dialog Box" on page 265. **Note:** The filter created using the filter bar is a temporary filter that persists until you log off, until you change its selection of statuses, or until you select another filter.
<Favorite Filters List>	This list contains the predefined filters, and the filters you have created using the Advanced Filter. ➤ Select a filter to apply it to the Hierarchy display. ➤ To edit, clone, or delete a filter, select the filter from this list, then click the **Favorite Filters Menu** button. **Note:** The prefix of each filter indicates its type: global (predefined), public, and private. For details, see "Visibility Levels" on page 267. Predefined filters are useful in displaying commonly required information; they cannot be modified or deleted. For details, see "Predefined Filters" on page 264.

UI Element	Description
	Favorite Filters Menu. This opens a drop-down menu, which enables you to perform the following actions: ➤ To create an advanced filter, click **New**. ➤ To edit or delete a filter, select the filter from the Favorite Filters list, and click **Edit** or **Delete**. Note that predefined filters cannot be modified or deleted. ➤ To clone a filter, select the filter from the Favorite Filters list, and click **Clone**. For details on defining advanced filters, see "Defining/Editing Filters Dialog Box" on page 265.
	Filter Hierarchial Mode. When filtering is active, click to display the CIs that fill the filter conditions within a hierarchical structure, in the context of their parent CIs.
	Filter Flat Mode. When filtering is active, click to display the CIs that fill the filter conditions in a non-hierarchical, list format, without displaying their parent CIs.
	Sound On/Off. You can set up Service Health to issue an alert sound when the status of a KPI changes to Critical. Click to toggle the sound on or off.

Hierarchy Table Columns

User interface elements are described below as they appear in the UI (unlabeled elements are shown in angle brackets):

UI Element	Description
Name	This column displays the CIs in the selected view in a hierarchical structure. You can select a CI and click the Drill-down button to drill down to its child CIs.
Status	Displays the worst KPI status for the CI.

UI Element	Description
Business Impact	This bar indicates the CI's business impact, using a rating from zero (no impact) to 5 (high impact). The rating shows how much of an impact the CI has on the business CIs and SLAs in your monitored environment. By default, the rating is based on the criticality of impacted business CIs. Within the RTSM, each CI can have a **Criticality** attribute defined, with a value of 1-5. If a CI has an impact on one or more CIs which have this attribute defined, the CI's business impact rating is the worst criticality of the CIs that it impacts. You can customize which metrics are used to calculate this rating. For details, see "Business Impact Rating Calculation" on page 226.
<KPIs>	Each of the KPI columns displays the status and value of a specific KPI, for each of the CIs displayed in the table.
<KPI Domains>	KPIs are grouped by domains. For example, the Application domain contains the Application Performance and Application Availability KPIs. For details, see "KPI Domains" on page 411. You can view all the KPIs in a domain, or you can collapse a domain to view the worst status of all the KPIs in the domain.
Ack	Set or unset acknowledgement for a CI by clicking an icon in this column; a check mark indicates that acknowledgement has been set. For details, see "How to Acknowledge Performance Problems" on page 329.

Hierarchy Table Rows

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element	Description
<**CI name**>	Each row in the table shows the KPI statuses of a given CI.
	Click the down arrow next to a CI name to access the menu options for the CI. Available options depend on the type of CI and the context menu defined for the CI. If no context menu is defined for the CI, the menu arrow is not displayed. If one of the menu options is not supported for the selected CI, that option is disabled. For details on the menu options, see "Service Health Menu Options" on page 98.
<**KPI status/value**>	Displays text or an icon indicating the current status or value of the KPI. For an explanation of the color coding for status icons, see "KPI Status Colors and Definitions" on page 45. Tooltip: ➤ **Status.** The status of the CI (calculated according to one of the status calculation methods). It may also display: ➤ **Not up to date.** For decayed CIs, indicating that the CI has passed its timeout period. (For a SiteScope CI, this status is displayed after a SiteScope monitor is disabled.) ➤ **Stopped**. When a Business Process profile is stopped. ➤ **Business Rule.** The name of the rule that calculates the KPI status or value. ➤ **Held Status Since.** The date and time since which this CI has held its current operational status.

UI Element	Description
<KPI History>	When you select a CI, the history status icon displays either the worst status or the average status for the KPI during a specified time period. For details, see "KPI Trend and History Calculation" on page 408. Tooltip: ➤ **History Type.** The type of history (worst status or average status) used when calculating history status. ➤ **Historical Event.** The worst or average status of the KPI in the selected time period.
<KPI Trend>	When you select a CI, the trend status icon shows the trend in real-time status for the KPI, using three directions: up, down, and no change. For details, see "KPI Trend and History Calculation" on page 408. Tooltip: ➤ **Trend.** The trend of the KPI in the selected time period.

Predefined Filters

The predefined filters are:

Predefined Filter Name	Description
global: Show Errors	Displays the CIs whose KPIs have a **Critical** status.
global: Show Errors and Warnings	Displays the CIs whose KPIs have a **Minor**, **Major**, or **Critical** status.
global: Show PNR	Displays, for all CI types, only the CIs whose **PNR** KPI has an **OK**, **Warning**, **Minor**, **Major**, **Critical**, or **No Data** status.

Defining/Editing Filters Dialog Box

This dialog box enable you to define new filters or customize existing filters.

To access	Select **Application** > **Service Health** > **360° View** > **Hierarchy.** In the Hierarchy component, click **Filter** to open the filter bar and then click **Advanced**, or click the **Favorite Filters Menu** button.
Important information	The **Favorite Filters Menu** button enables you to perform the following actions: ➤ To create an advanced filter, click **New**. ➤ To edit or delete a filter, select the filter from the Favorite Filters list, and click **Edit** or **Delete**. Predefined filters (labeled **global**) cannot be modified or deleted. ➤ To clone a filter, select the filter from the Favorite Filters list, and click **Clone**. **Note:** If more than one user is logged in at the same time using the same user name (for example, admin), then every time one of the users saves a change to the filters, the associated filters file is updated with a copy of that user's filters.
Relevant tasks	"How to Create an Advanced Hierarchy Filter" on page 240

User interface elements are described below:

UI Element (A-Z)	Description
	Invert Selection. Click to select or deselect one of the statuses, for all the KPIs.
<Status check boxes>	Select the check box for each KPI status that you want to include in the filter. The Hierarchy display shows all the CIs that have at least one KPI that fills the filter criteria.

UI Element (A-Z)	Description
Cancel	Click to exit the Defining/Editing Filters dialog box without saving changes.
Filter	Click to apply the filter (without saving filter settings).
Filter and Save	Click to apply the filter, and save your changes to the filter.
Filter Name	Type the name of the filter you are creating.
Type Selection	This displays a CI type hierarchy, which you can use to filter specific CI types. Select a CI type to only display CIs of this type in the Hierarchy display. The CI type filtering is combined with the Status filtering. For example, suppose you select critical status for all KPIs in the Status Selection pane, and the Business Element CIT in the Type Selection pane. The Hierarchy display will only show CIs of this CIT (and its descendant CITs), which have at least one KPI in critical status. **Note:** If you select a higher-level CIT, all its descendant CITs are included in the filter as well.
Visibility	Select the required visibility option: ➤ **Private** to create a private filter. ➤ **Public** to create a public filter. **Note:** Visibility is displayed only to the administrator or to a user with the appropriate permissions. Different levels of visibility are available. For details, see "Visibility Levels" on page 267.

Visibility Levels

The visibility levels you can select when defining a filter include:

Visibility Level	Filter Description
Global	Global filters are predefined and built-in. They are available for all customer users. They cannot be modified. You can use them as templates to build public or private active filters. Their names have the following syntax: **global:<name>**. For a list of global active filters, see "Predefined Filters" on page 264.
Public	Administrators or users with the appropriate permissions can build public active filters. Those filters are available for all users at the specific customer. You can use the global active filters as templates to build public active filters. Their names have the following syntax: **public:<name>**.
Private	Users can build their own private active filters. Those filters are available only to the user who created them. You can use the global and public active filters as templates to build private active filters. Their names have the following syntax: **private:<name>**. For each user name used when logging on to HP Business Service Management, Service Health creates an associated filters file. When you log on to HP Business Service Management using a specific user name, you can only view and modify the filters contained in the associated filters file. The file is updated with the filter modifications made by each user who logs in under this user name, so any changes you make to the filters may overwrite modifications made by previous users.

Business Impact Component User Interface

This component displays current and over-time KPI status for business CIs impacted by the CI selected in the active view. The over-time data is aggregated according to status.

If you have configured SLAs, this component also shows status details of any SLAs impacted by the selected CI. Impacted SLAs can only appear if a Service Level Management license has been installed.

To access	Select **Applications** > **Service Health** > **360° View** > **Hierarchy**. Select a CI, and click **Business Impact.** Note: You can also create your own pages and include this component; for details see "Service Health Workspace" on page 81.
Related task	"How to Customize the Business Impact Component" on page 245
See also	"How to Customize the Business Impact Rating Calculation Method" on page 248

User interface elements are described below:

Business Impact Rating Area

UI Element (A-Z)	Description
Business Impact (Low to High)	This bar indicates the CI's business impact, using a rating from zero (no impact) to 5 (high impact). The rating shows how much of an impact the CI has on the business CIs and SLAs in your monitored environment. By default, the rating is based on the criticality of impacted business CIs. Within the RTSM, each CI can have a **Criticality** attribute defined, with a value of 1-5. If a CI has an impact on one or more CIs which have this attribute defined, the CI's business impact rating is the worst criticality of the CIs that it impacts. You can customize which metrics are used to calculate this rating. For details, see "Business Impact Rating Calculation" on page 226.

Impacted Businesses Area

UI Element (A-Z)	Description
Current Status	The worst status of the KPI assigned to the impacted CI.
Name	The name of the impacted CI. You can click a CI to access its corresponding Business Impact Report. For details, see "Business Impact Report" on page 92.
Past <Hour/Day/Week>	The status of the impacted CI over a predefined time period (default: **Past week**). To modify the predefined time period, see "How to Customize the Business Impact Component" on page 245. **Tooltip**: The tooltip displays a text string containing the name of the status, and the percentage of time that the KPI held this status.

UI Element (A-Z)	Description
Type	CI type of the impacted CI. **Note:** By default the available CITs are Business Services, Business Processes, and Applications. To modify the default types, see "How to Modify Which CITs are Displayed in the Business Impact Component" on page 247.

Impacted SLAs Area

UI Element (A-Z)	Description
Base forecast on:	Time frame used by the Expected Breach Date column (default: Week).
Current Status	The current status of the impacted SLA.
Customer	The customer related to the impacted SLA.
Expected Breach Date	The expected breach date of the impacted SLA.
Forecasting Status	The expected status of the impacted SLA, based on extrapolation. For details, see "Status Forecast for SLAs" in *Using Service Level Management*.
Give forecasting for:	Time frame used by the Forecasting Status column (default: end of Month).
SLAs	The list of SLAs where the selected CI is included.
SLA status for:	Time frame used by the Current Status column (default: Month to date).

Health Indicator Component User Interface

The Health Indicator component displays details regarding the health indicators that are used to calculate and set the current status of a selected CI. For an introduction to health indicators, see "Health Indicators and KPIs - Overview" on page 115.

To access	Select **Applications** > **Service Health** > **360° View** > **Hierarchy**. Select a CI, and click **Indicators**. To view HI details from another Service Health component, select a CI, then select the **Show** > **HIs** menu command. Note: You can also create your own pages and include this component; for details see "Service Health Workspace" on page 81.
Important information	Health indicators that are used in calculating multiple KPIs are listed multiple times, under each of the KPIs to which they contribute.

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<CI name>	Name of the CI to which the displayed health indicators are assigned.
	Click the arrow next to a CI name to access the menu options for that CI. Available options depend on the type of CI and the context menu defined for the CI. For details, see "Service Health Menu Options" on page 98. Click the arrow next to an HI name to access the menu options for that HI. For details, see "How to Work with the Health Indicator Component" on page 252.
	Reset columns width. Click to restore the width of the columns in the table to the default widths.
	Select columns. Click to select the columns you want to display in the table.

UI Element (A-Z)	Description
Health Indicator	Display name of the health indicator. For details on HI tooltips, see "Understanding the Health Indicator Tooltips" on page 229.
Health Indicators Contributing to KPIs	List of the health indicators that are assigned to the selected CI, and are used to calculate KPIs for the CI.
Health Indicators Not Contributing to KPIs	List of the health indicators that are assigned to the selected CI, but are not used to calculate any KPIs.
KPI	Name of the KPI which uses the health indicator in calculating its status, and current KPI status displayed by a status icon. The tooltip displays the status of the KPI, its calculation rule, the date when its status last changed, and additional tooltip parameters depending on the rule of selected KPI.
Last Status Change	Time stamp indicating the last time the current status was updated.
State	Current status of the health indicator. The state is a text label, such as Success or Failed, and the status assigned to this state is displayed by a status icon. The tooltip displays the state of the health indicator, its calculation rule, the date when its status last changed, and additional information depending on the rule used to calculate the HI.
Trend	Arrows pointing up, down, or up and down to indicate the trend of the health indicator since the last update: — Positive — Neutral — Negative HI trend is generated by comparing the previous status of the HI with the current status of the HI.

UI Element (A-Z)	Description
Value	Current value of the health indicator. This is only displayed when applicable for the health indicator (for example, response time). When an HI does not have a value (for example if it is event-based), this displays a dash (-).

Event-Based HI Tooltip Fields

When a health indicator is fed by events, its tooltip can contain the following fields by default.

If custom attributes are defined in OMi, these are displayed as well.

Tooltip Field	Description
Assigned User	Name of the user responsible for solving the event's underlying problem.
Category	Name of the logical group to which the event belongs, (for example, Database, Security, or Network).
Event Type Indicator	Display name of the event type indicator (ETI) used to calculate the status reported by the selected event and the current value, (for example, Web application state:Slow).
Lifecycle State	Point in the event lifecycle that the selected event has reached: Open, In Progress, Resolved, or Closed.
Priority	The priority assigned to the selected event (for example, Low, Medium, or High).
Severity	Severity assigned to the selected event.
Time State Changed	Date and time when the last lifecycle state change took place.
Time Received	The time when the event was received on the management server.

Tooltip Field	Description
Title	Brief description of the nature of the selected event.
Type	String used to organize different types of events within an event category or subcategory (for example, users or applications, accounts, and security).
Subcategory	Name of the logical subgroup (category) to which the event belongs; for example, Oracle (database), Accounts (security), or Routers (network).
Solution	Text field used to document solutions to help operators solve the problem indicated by the event.
Description	Optional information about the original event, in addition to the event's original title and the text captured from the event source.

Alerts Component User Interface

This component displays a log of the CI status alerts that were triggered during the past hour, for the CI selected in the active view.

To access	Select **Applications** > **Service Health** > **360° View** > **Hierarchy**. Select a CI, and click **Alerts.** Note: You can also create your own pages and include this component; for details see "Service Health Workspace" on page 81.
Important information	By default, alerts are shown for the past day. To modify this setting, see "How to Customize the Alerts Component" on page 254.

User interface elements are described below:

UI Element (A-Z)	Description
	Click the down arrow next to a CI name to access the menu options for that CI. Available options depend on the type of CI and the context menu defined for the CI. For details on the menu options, see "Service Health Menu Options" on page 98.
<CI name>	Displays the name of the CI selected in the active view.
Alert Description	Description of the status change that triggered the alert.
Alert Name	The name of the alert.
Alert Time	The time and date when the alert was triggered. The format is: dd/mm/yy hh:mm GMT[<offset>].
Alerts Over Time report	Click to access the selected CI's Status Alerts Report, which includes information on the action taken following the alert. For details, see "Configuration Item Status Alerts Report" on page 309.
KPI	The KPI that triggered the alert.
Status	The status which the KPI entered when the alert was issued, represented by a status icon. For details about the icons, see "KPI Status Colors and Definitions" on page 45.

Changes and Incidents Component User Interface

The Changes and Incidents component shows incidents opened for the CI selected in the active view, requests for change for the CI, and actual changes made to the CI.

To access	Select **Applications** > **Service Health** > **360° View** > **Hierarchy**. Select a CI, and click one of the following: **Actual Changes, Planned Changes**, or **Incidents.** Note: You can also create your own pages and include this component; for details see "Service Health Workspace" on page 81.
Important information	By default, data is also displayed for the child CIs which have an **Impact** relationship with the selected CI. If you deselect the **Show data for child CIs** check box, data is only shown for the selected CI. By default, actual changes and incidents are shown for the past week. The requests for change area shows the changes planned during the previous week, and those that are planned for the coming week. To modify these settings, see "How to Customize the Changes and Incidents Component" on page 255.

User interface elements are described below:

Actual Changes area

UI Element (A-Z)	Description
Attribute	The name of the CI attribute that was changed.
Change Type	The type of change that occurred.
Changer	Description of the user or event that modified the CI's property (for example, user name or Discovery).
CI Name	The name of the CI that was changed.
Date	The date and time at which the change occurred.
New Value	The new value of the CI attribute.

UI Element (A-Z)	Description
Old Value	The previous value of the CI attribute (before the change).
Related CI	If the change involves a changed relationship between CIs, this field shows the name of the CI whose relationship with the selected CI was changed.

Incidents area

UI Element (A-Z)	Description
CI Name	The name of the CI that triggered the incident.
Closing Time	The date and time at which the incident was closed.
Description	Description of the incident.
ID	Incident ID, as it appears in the source application (for example, within HP Service Manager).
Opening Time	The date and time at which the incident was opened.
Origin	The source of the incident.
Severity	The severity of the incident as it appears in the source application (for example, within HP Service Manager).
Status	The status of the incident as it appears in the source application.
Update Time	The date and time at which the incident was updated.

Requests for Change area

UI Element (A-Z)	Description
	If you have resized columns, click to restore all the columns to their original width.
	Click to open a dialog box which enables you to select which columns are displayed in the table.
CI Name	The name of the CI for which the change is planned.

UI Element (A-Z)	Description
Contact Person	The name of the contact person regarding the change.
ID	Change request ID, as it appears in the source application (such as Release Control).
Impact Severity	The degree of impact of the change, as it appears in the source application (such as Release Control).
Opened By	The name of the person who opened the change request.
Planned End Date	The time at which the change is scheduled to end.
Planned Start Date	The time at which the change is scheduled to start.
Risk	The degree of risk of the change, as it appears in the source application.
Status	The status of the planned change, as it appears in the source application.
Summary	A description of the planned change.

8

KPIs Component

This chapter includes:

Concepts

➤ KPIs Component Overview on page 280

Tasks

➤ How to Customize the KPIs Component on page 281

Reference

➤ KPIs Component User Interface on page 282

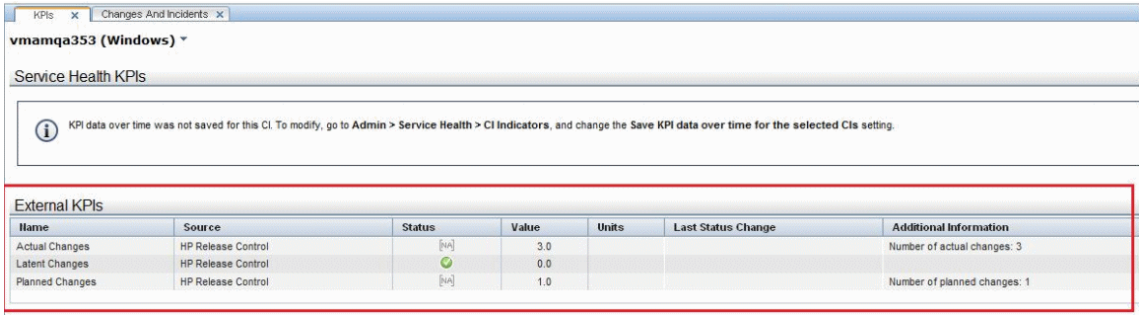
Concepts

KPIs Component Overview

The KPIs component enables you to see KPI status over time for the CI selected in the active view. This requires that KPI data over time be saved for the CI, using the Service Health Administration > CI Indicators > **Save KPI Data Over Time** setting. For details, see "Persistent Data and Historical Data" on page 411.

In addition, if you have configured federation adapters to collect KPI values for this CI from outside HP Business Service Management, this component also displays the federated KPI's status, last status change, and the source of the federated KPI. For details on setting up federation, see "Federation Framework Overview" in the *RTSM Developer Reference Guide*.

The following image shows an example of this component displaying information on external KPIs. (In this example, Service Health KPI data over time was not saved.)



For user interface details, see "KPIs Component User Interface" on page 282.

Tasks

How to Customize the KPIs Component

You can customize general settings of the KPIs component using the following options:

Modify duration settings

By default, the KPIs component displays data for the previous week. You can change this setting to previous week, day, or hour (up to the current time).

To modify, click the **Filter** button in the component toolbar (in the upper right area of the component), and enter the new duration setting.

Modify refresh rates

By default, the component is refreshed every five minutes. To modify this refresh rate, click the **Preferences** button in the component toolbar (in the upper right area of the component) and enter the new refresh rate.

Reference

KPIs Component User Interface

This component displays KPI status over time for the CI selected in the active view.

If you have configured federation adapters to collect KPI values for this CI from outside BSM, the External KPIs area displays information about these federated KPIs. For details on setting up federation, see "Federation Framework Overview" in the *RTSM Developer Reference Guide*.

To access	Add this component to a user-defined page; for details see "Service Health Workspace" on page 81.
Related task	"How to Customize the KPIs Component" on page 281.

User interface elements are described below:

Service Health KPIs Area

UI Element (A-Z)	Description
KPI	The list of KPIs attached to the selected CI.
Past <Hour/Day/Week>	The status of the KPI over a predefined time period (default: **Past week**). To modify the predefined time period, see "How to Customize the KPIs Component" on page 281. **Tooltip**: The tooltip displays a text string containing the name of the status, the amount of time the KPI held this status during the time frame, and the percentage of time that the KPI held this status. Status duration can be given in hours, minutes, and seconds (for example, 01:10:48) or in days and hours (for example, 30 days, 9 hours).

External KPIs Area

UI Element (A-Z)	Description
Additional Information	Description of the KPI. This is taken from the KPI's Additional Information attribute; if this attribute is blank no information appears.
Last Status Changes	The date and time from when this KPI has held its current operational status.
Name	The name of the KPI which is assigned to the selected CI.
Source	The source outside HP Business Service Management, from which the federation adapter retrieved the KPI.
Status	The current status of the KPI assigned to the selected CI.

9

CI Status Alerts Reports

This chapter includes:

Concepts

➤ CI Status Alert Reports Overview on page 286

Tasks

➤ How to View the Triggered CI Status Alerts and Notifications on page 287

Reference

➤ Message Examples on page 289

➤ CI Status Alert Reports User Interface on page 293

Concepts

CI Status Alert Reports Overview

CI Status alerts are triggered by a pre-defined status change for the selected CI.

In the Alerts application, the CI Status Alert report provides information about the CI Status alerts that were triggered in the past. For user interface details, see "Configuration Item Status Alerts Report" on page 309.

Any changes you make to the alert schemes for a CI—adding new alert schemes, deleting alert schemes, or editing alert scheme properties— is propagated to any view that includes the CI.

In the CI Status alert administration, you can create and manage one or more alert schemes for a CI, using the Alert Wizard. In each alert scheme, you define a unique set of alert properties. For user interface details, see "Create New Alert Wizard" on page 516.

When an alert is triggered, it sends a predefined notification (using email, SMS, or Pager) to a predefined recipient, and may trigger a predefined action (exe file, URL, SMNP trap, or other).

Whenever a notification is sent, information related to the notification is logged into the profile database. You can view the log in the Alert report. For details, see "Audit Log" on page 538.

Tasks

How to View the Triggered CI Status Alerts and Notifications

You can view information about the CI Status alerts that were triggered in the CI Status Alerts report and in the CI Status Alert Notifications report. Recipients can view the alert details in the emails, SMS messages, or Pager messages that are sent to them when the alert is triggered.

This task includes the following steps:

- "View the CI Status Alerts report" on page 287
- "View the CI Status Alert Notifications report" on page 287
- "View the CI Status Alert details in email, SMS, or pager messages" on page 288

1 View the CI Status Alerts report

To display alert information, select **Applications** > **CI Status** > **Reports** > **CI Status Alerts report**.

The report is a log of CI Status alerts that occurred in the specified period of time. For user interface details, see "Configuration Item Status Alerts Report" on page 309.

An alert is also attached to the CI in any view where the CI is included.

2 View the CI Status Alert Notifications report

To display detailed alert information, access the Configuration Item Status Alerts page, and click the **Details** button for the relevant alert to open the Configuration Item Status Alert Notifications report. For user interface details, see "Configuration Item Status Alert Notifications Report" on page 295.

The Configuration Item Status Alert Notifications report includes details on the alert, the notification, the notification message, and the type of message followed by the text of the message.

HTML is encoded in the report. The text of the email received by the recipient is decoded and is similar to the Pager message text. For more information on the different formats available to send emails or pager messages, see "Message Examples" on page 289.

You can also see whether the event corresponding to the alert in the Operation Manager (OM) was created (when the integration with HP Operation Manager is enabled).

3 View the CI Status Alert details in email, SMS, or pager messages

Recipients can view the CI Status alert details in the emails, SMS messages, or Pager messages that are sent to them when the alert is triggered.

For details, see "Message Examples" on page 289.

Reference

Message Examples

The syntax used in the Notification Message area of an alert notification, is a subset of a long or short HTML template or long or short text template. For details on the contents of the messages, see "Configuration Item Status Alert Notifications Report" on page 295.

This section provides examples of such messages.

The email messages that the user receives depend on the format you select in the **Email Message Template**, **SMS Template**, or **Pager Template** list.

Example of a Long HTML Email, SMS, or Pager Message

From: HP_BSM_Notification_Manager@illabmail01.devlab.ad

Date: 04/06/10 11:31:24

To: johnd@lab.lab

Subject: bpm1 on Local Impact View: private_monitors Status improved. Status is Major (Reported by HP Business Service Management)

bpm1 on Local Impact View: private_monitors Status improved. Status is **Major**.

Status Change Time:	5/20/10 8:59 AM (Eastern Daylight Time) -0400
KPI Name:	Application Availability
KPI is Calculated By:	Health indicators and child KPIs
Calculation Value is:	N/A
Previous Status:	Critical
Time Since Condition Threshold Met:	N/A

Alert Name:	private
Alert Description:	
Local Impact View:	private_monitors

Health indicators information:

Health Indicator Name	Health Indicator Status	Health Indicator Value	ETI Name
HI1	Major	1.0 dollars	-
HI 2	Major	1.0 pounds	-

The alert was triggered for the following CI:

Name:	**bpm1**
CI Type:	Business Application

The CI impacts the following Business Services:

Service2
Service3

The CI does not impact any **Business Processes**.

The CI does not impact any **Applications**.

Over Time Report:

Business Impact Report:

Click to display the CI details in the HP BSMobile application (only for iPhone)

For more details log into HP Business Service Management

Example of a Long Text Email, SMS, or Pager Message

From: HP_BSM_Notification_Manager@illabmail01.devlab.ad

Date: 04/06/10 11:31:24

To: johnd@lab.lab

Subject: bpm1 on Local Impact View: private_monitors Status improved. Status is Major (Reported by HP Business Service Management)

bpm1 on Local Impact View: private_monitors Status improved. Status is **Major**.

Status Change Time: 5/20/10 8:59 AM (Eastern Daylight Time) -0400

KPI Name: Application Availability

KPI is Calculated By: Health indicators and child KPIs

Calculation Value is: N/A

Previous Status: Critical

Time Since Condition Threshold Met: N/A

Alert Name: private

Alert Description:

Local Impact View: private_monitors

Health indicators information:

Health Indicator Name	Health Indicator Status	Health Indicator Value	ETI Name
HI1	Major	1.0 dollars	-
HI 2	Major	1.0 pounds	-

The alert was triggered for the following CI:

Name: bpm1

CI Type: Business Application

The CI impacts the following Business Services:

Service2

Service3

The CI does not impact any **Business Processes**.

The CI does not impact any **Applications**.

Over Time Report
http://<gateway_machine_name>/topaz/TopazSiteServlet?createSession=true&requestType=login&directLogin=true&userlogin=&userpassword=&customerId=1&selectedMenuItemId=kpis_over_time&applicationId=bam&helpContextId=bam&helpTopicId=kpis_over_time&filter.reportType=statuses_report&openedVTFrame=false&autoGenerate=true&filter.timeBarBean.view=custom&filter.timeBarBean.from=1286157948671&filter.timeBarBean.to=1286161548671&populateAnyway=true&filter.selectedVTIds=78ef8643bf78b75a0d922c1890e9bd1f&filter.viewId=&filter.translateVTIdsToCmdbIds=false&filter.fromDashboard=true

Business Impact Report
http://<gateway_machine_name>/topaz/TopazSiteServlet?createSession=true&requestType=login&directLogin=true&userlogin=&userpassword=&customerId=1&portlet_url=/service-impact/main/page.do?ciId=78ef8643bf78b75a0d922c1890e9bd1f&viewName=

Click to display the CI details in the HP BSMobile application (only for iPhone)
<hp_bsmobile_application_on_iphone>:///?viewName=CI%20Alerts%20View&ciName=bpm1,ciId=1;;78ef8643bf78b75a0d922c1890e9bd1f&

For more details log into HP Business Service Management

Example of a Short HTML Email, SMS, or Pager Message

From: HP_BSM_Notification_Manager@illabmail01.devlab.ad

Date: 04/06/10 11:31:24

To: johnd@lab.lab

Subject: bpm1 on Local Impact View: private_monitors Status improved. Status is Major (Reported by HP Business Service Management)

bpm1 on Local Impact View: private_monitors Status improved. Status is **Major**.
For more details log into HP Business Service Management

Example of a Short Text Email, SMS, or Pager Message

From: HP_BSM_Notification_Manager@illabmail01.devlab.ad

Date: 04/06/10 11:31:24

To: johnd@lab.lab

Subject: bpm1 on Local Impact View: private_monitors Status improved. Status is Major (Reported by HP Business Service Management)

bpm1 on Local Impact View: private_monitors Status improved. Status is Major.
For more details log into HP Business Service Management

CI Status Alert Reports User Interface

This section describes:

- Configuration Items Dialog Box on page 294
- Configuration Item Status Alert Notifications Report on page 295
- Configuration Item Status Alerts Report on page 309
- KPIs Dialog Box on page 312

Configuration Items Dialog Box

This dialog box enables you to select the CIs to be included in the CI Status Alerts report, for the duration of a Web session. The report provides information based on the selected CIs.

To access	In the CI Status Alerts report, click **Configuration Items** in the reports settings area.
Relevant tasks	"How to View the Triggered CI Status Alerts and Notifications" on page 287

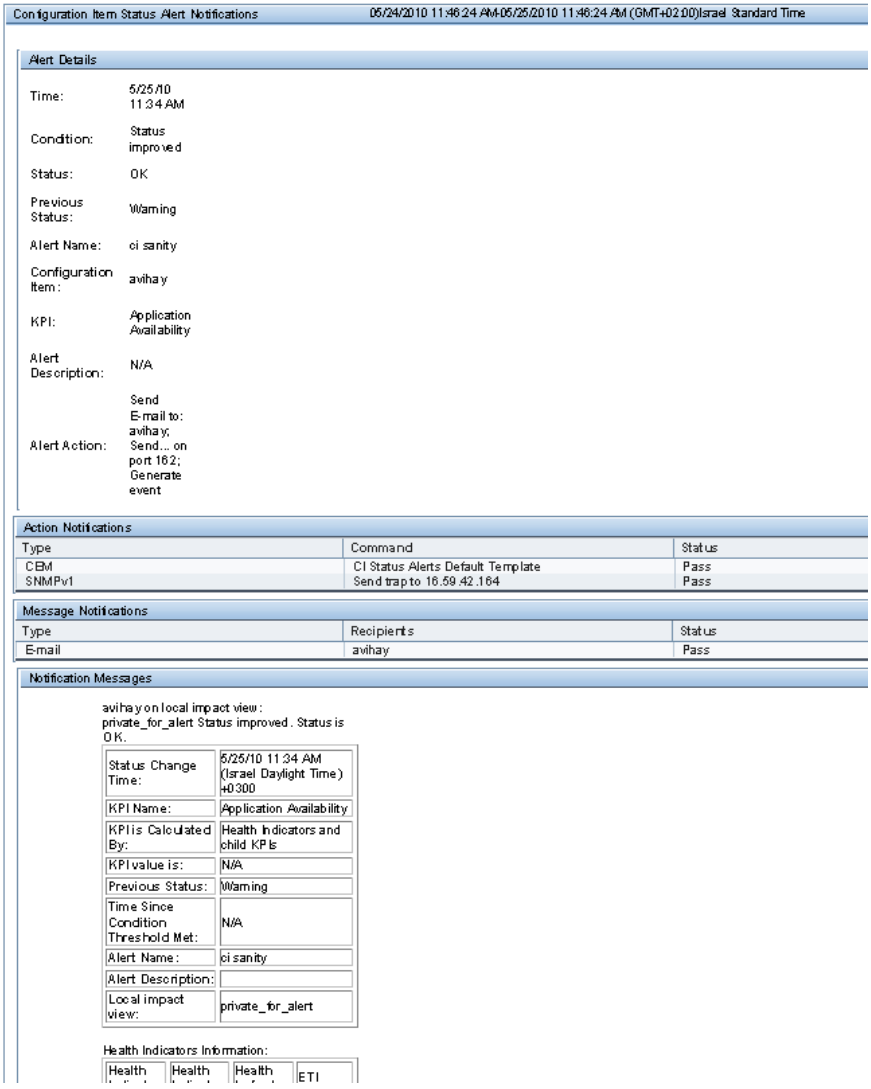
User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<View tree>	Displays the CIs that belong to the selected view. Select the required CIs.
Browse	The default mode for the Configuration Items dialog box, enabling you to select a view and CIs.
Search	Moves to Search mode, where you can search for CIs. For details, see "CI Selector Overview" in the *Modeling Guide*.
View	Select the relevant view from the dropdown list (start typing in the view name to filter the list), or click the ellipsis button to open the Select View dialog box, where you can select a view from the view folders tree. **Note:** Only the CIs selected in the currently displayed view are saved for the report filter when you click **OK**. If you select another view before clicking **OK**, all previous CI selections are discarded.

Configuration Item Status Alert Notifications Report

This report enables you to display detailed alert information.

The following is an example of the Configuration Item Status Alert Notifications report.



Configuration Item Status Alert Notifications 05/24/2010 11:46:24 AM-05/25/2010 11:46:24 AM (GMT+02:00)Israel Standard Time

Alert Details

Time:	5/25/10 11:34 AM
Condition:	Status improved
Status:	OK
Previous Status:	Warning
Alert Name:	ci sanity
Configuration Item:	avihay
KPI:	Application Availability
Alert Description:	N/A
Alert Action:	Send E-mail to: avihay; Send... on port 162; Generate event

Action Notifications

Type	Command	Status
CEM	CI Status Alerts Default Template	Pass
SNMPv1	Send trap to 16.59.42.164	Pass

Message Notifications

Type	Recipients	Status
E-mail	avihay	Pass

Notification Messages

avihay on local impact view: private_for_alert Status improved. Status is OK.

Status Change Time:	5/25/10 11:34 AM (Israel Daylight Time) +0300
KPI Name:	Application Availability
KPI is Calculated By:	Health Indicators and child KPIs
KPI value is:	N/A
Previous Status:	Warning
Time Since Condition Threshold Met:	N/A
Alert Name:	ci sanity
Alert Description:	
Local impact view:	private_for_alert

Health Indicators Information:

Health	Health	Health	ETI

To access	Select: ➤ **Applications** > **Service Health** > **360° View** > **Hierarchy.** Select a CI, click **Alerts**, and click the **Details** button. ➤ **Applications** > **CI Status** > **CI Status Alerts report**.
Relevant tasks	"How to View the Triggered CI Status Alerts and Notifications" on page 287

Alert Details Area

User interface elements are described below:

UI Element	Description
Time	The time when the alert was triggered.
Condition	The condition that caused the alert to be triggered.
Status	The current status of the alert.
Previous Status	The previous status of the KPI.
Alert Name	The name of the alert.
Configuration Item	The name of the CI to which the alert is attached.
KPI	The name of the KPI whose change of status triggered the alert.
Alert Description	The description of the alert.
Alert Action	The action that has been assigned to the alert.

Action Notifications Area

User interface elements are described below:

UI Element (A-Z)	Description
Command	The action that was executed: ➤ For executables: the command line ➤ For URLs: the URLs ➤ For SNMP traps: **Send SNMP trap to <address>** ➤ For Open incidents in HP ServiceCenter: **Open incident** ➤ For Open event in HP Operations Manager (OM)
Status	The status of the action: ➤ **Pass** when the action has been performed. ➤ **Fail** when the action failed.
Type	The type of action notification: **Executable**, **URL**, **SNMP trap**, **OM**, or **Service Center.**

Message Notifications Area

User interface elements are described below:

UI Element (A-Z)	Description
Recipients	The names of the recipients who receive the notification that the alert has been triggered and that the alert scheme has been executed.
Status	The status of the message: ➤ **Pass.** When the message has been sent. ➤ **Fail.** When the message was not sent.
Type	The type of message notification: email, SMS message, or Pager message.

Notification Messages Area

This area displays details about the notification message and the email message sent to the recipients when the alert was triggered. Depending on the definition of the CI Status alert, the report may display only a subset of these fields. The following sections detail each area of the message separately.

For detailed examples of the message syntax and examples of the message for different message formats, see "Message Examples" on page 289.

Notification Messages Area: First Section

➤ **Format for a Long or Short HTML Template:**

➤ **For a CI in a Global View:**

ci_name status has changed to/remained/has improved.
Status is *current_status*.

Status Change Time:	*trigger_time*
KPI Name:	*kpi_name*
KPI is Calculated By/Assigned Health Indicators/KPIs assigned to child CI:	*relevant health indicators, KPIs, or both*
Calculation Value is:	*KPI_value*
Previous Status:	*previous_status*
Time Since Condition Threshold Met:	*time-period + time since end of time-period*
Alert Name:	*alert_name*
Alert Description:	*alert_description*
Local Impact View	*N/A*

➤ **For a CI in a Local Impact View:**

ci_name on local impact view: *view_name*
status changed to/was/improved.
Status *is current_status*.

Status Change Time:	*trigger_time*
KPI Name:	*kpi_name*
KPI is Calculated By/Assigned Health Indicators/KPIs assigned to child CI:	*relevant_health_indicators or relevant_KPIs*
Calculation Value is:	*KPI_value*
Previous Status:	*previous_status*
Time Since Condition Threshold Met:	*time-period + time since end of time-period*
Alert Name:	*alert_name*
Alert Description:	*alert_description*
Local Impact View	*name_of_local_impact_view*

➤ **Format for a Long or Short Text Template**:

➤ **For a CI in a Global View:**

ci_name status has changed to/remained/has improved.
Status is *current_status*.
Status Change Time: *trigger_time*
KPI Name: *kpi_name*
KPI is Calculated By/Assigned Health Indicators/KPIs assigned to child CI: *relevant_health_indicators or relevant_KPIs*
Calculation Value is: *KPI_value*
Previous Status: *previous_status*
Time Since Condition Threshold Met: *time-period + time since end of time-period*
Alert Name: *alert_name*
Alert Description: *alert_description*
Local Impact View*: N/A*

➤ **For a CI in a Local Impact View:**

ci_name on local impact view: *view_name*
status changed to/was/improved.
Status is *current_status*.
Status Change Time: *trigger_time*
KPI Name: *kpi_name*
KPI is Calculated By/Assigned Health Indicators/KPIs assigned to child CI: *relevant_health_indicators or relevant_KPIs*
Calculation Value is: *KPI_value*
Previous Status: *previous_status*
Time Since Condition Threshold Met: *time-period + time since end of time-period*
Alert Name: *alert_name*
Alert Description: *alert_description*
Local Impact View: *name_of_local_impact_view*

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
ci_name **on local impact view:** *view_name* **status changed to/was/improved.** **Status is** *current_status*.	**<ci-name>.** The name of the CI whose change of status triggered the alert. **<condition>.** The condition that triggered the alert. For example: Status improved. **<current-status>.** The new status of the CI. **<view_name>.** The name of the local impact view.
Alert Description	The description of the alert.
Alert Name	The name of the alert.
KPI is Calculated By/Assigned Health Indicators/KPIs assigned to child CI	Relevant health indicators, KPIs, or both.
KPI Name	The name of the KPI whose status changes triggered the alert.
Calculation Value is	The value of the KPI only for KPIs that do have values; otherwise the parameter displays: N/A.
Local Impact View	If the alert is assigned to a CI that is part of a Local Impact View, the field displays the name of that view.
Status Change Time	The time and date when the alert was triggered. The format is: dd/mm/yy hh:mm AM/PM (<region>) <offset>. For example: 5/20/10 8:59 AM (Eastern Daylight Time) -0400.
Time Since Condition Threshold Met	The time that has passed since the condition that triggered the alert occurred, in minutes.

Notification Messages Area: Second Section

➤ **Format for a Long HTML Template:**

Health indicators information:

Health Indicator Name	Health Indicator Status	Health Indicator Value	ETI Name
health indicator name	*health indicator status*	*health indicator value*	*ETI name*

➤ **Format for a Long Text Template:**

Health indicators information:

Health Indicator Name *health indicator name*

Health Indicator Status *health indicator status*

Health Indicator Value *health indicator value*

ETI Name *ETI name*

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
ETI Name	The name of the Event Type Indicator.
Health Indicator Name	The name of the health indicator.
Health Indicator Status	The status of the health indicator
Health Indicator Value	The value of the health indicator.

Notification Messages Area: Third Section

➤ **Format for a Long HTML Template:**

The alert was triggered for the following CI:

Name	*ci_type*
CI Type	*ci_name*

➤ **Format for a Long Text Template:**

The alert was triggered for the following CI:

Name *ci_type*

CI Type *ci_name*

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
CI Type	The type of the CI whose change of status triggered the alert.
Name	The name of the CI whose change of status triggered the alert.
The alert was triggered for the following CIs	Provides the details of the CI that triggered the alert: ➤ **CI Type.** The display name of the CI type. ➤ **Name.** The code name of the CI.

Notification Messages Area: Fourth Section

➤ **Format for a Long HTML Template:**

The CI impacts the following Business Services/Business Processes/Applications:

business_services/business_processes/applications
business_services/business_processes/applications

The CI does not impact any *Business Services/Business Processes/Applications*

➤ **Format for a Long Text Template:**

The CI impacts the following Business Services/Business Processes/Applications:

business_services/business_processes/applications

business_services/business_processes/applications

The CI does not impact any *Business Services/Business Processes/Applications*

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
Due to a large number of alerts at current time, impact calculations were not performed	This message is displayed when a large number of alerts was issued, and in this case the **CI impacts the following Applications**, the **CI impacts the following Business Processes**, and the **CI impacts the following Business Service** sections are not displayed in the report.

UI Element (A-Z)	Description
The CI does not impact any Business Service/Business Process/Application	Displayed when the CI has no impact on any Business Service/Business Process/Application CIs.
The CI impacts the following Applications	Lists the Application CIs impacted by the CI.
The CI impacts the following Business Processes	Lists the Business Process CIs impacted by the CI.
The CI impacts the following Business Services	Lists the Business Service CIs impacted by the CI.

Notification Messages Area: Fifth Section

➤ **Format for a Long HTML Template:**

Over Time Report

Business Impact Report

Click to display the CI details in the HP BSMobile application (only for iPhone)

For more details log into <url>

➤ **Format for a Long Text Template:**

Over Time Report:
http://<machine_name>/topaz/TopazSiteServlet?createSession=true&requestType=login&directLogin=true&userlogin=&userpassword=&customerId=1&selectedMenuItemId=kpis_over_time&applicationId=bam&helpContextId=bam&helpTopicId=kpis_over_time&filter.reportType=statuses_report&openedVTFrame=false&autoGenerate=true&filter.timeBarBean.view=custom&filter.timeBarBean.from=1286157948671&filter.timeBarBean.to=1286161548671&populateAnyway=true&filter.selectedVTIds=78ef8643bf78b75a0d922c1890e9bd1f&filter.viewId=&filter.translateVTIdsToCmdbIds=false&filter.fromDashboard=true

Business Impact Report:
http://<machine_name>/topaz/TopazSiteServlet?createSession=true&requestType=login&directLogin=true&userlogin=&userpassword=&customerId=1&portlet_url=/service-impact/main/page.do?ciId=78ef8643bf78b75a0d922c1890e9bd1f&viewName=

Click to display the CI details in the HP BSMobile application (only for iPhone)
<hp_bsmobile_application_on_iphone>:///?viewName=CI%20Alerts%20View&ciName=bpm1,ciId=1;;78ef8643bf78b75a0d922c1890e9bd1f&

For more details log into HP Business Service Management

For more details log into <url>

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
Business Impact Report	Click to open the Business Impact report for the selected CI. This link only works in a browser. For user interface details, see "Business Impact Report" on page 92.

UI Element (A-Z)	Description
Click to display the CI details in the HP BSMobile application (only for iPhone)	Click the link to open the selected CI in the iPhone application. This link only works when you have HP BSMobile installed on your iPhone. For details, see "The BSMobile iPhone Application" on page 369.
For more details log into *url*	Click the link to the URL of the HP Business Service Management Data Processing Server to open the application where the CI Status alert was triggered.
Over Time Report	Click to open the KPIs Over Time report for the triggering KPI for a period of one day. If the relevant CI is part of a local impact view, the report is opened with the relevant local impact view selected in its filter. For user interface details, see "KPIs Over Time Report" on page 347.

Additional Parameters

The additional parameters are:

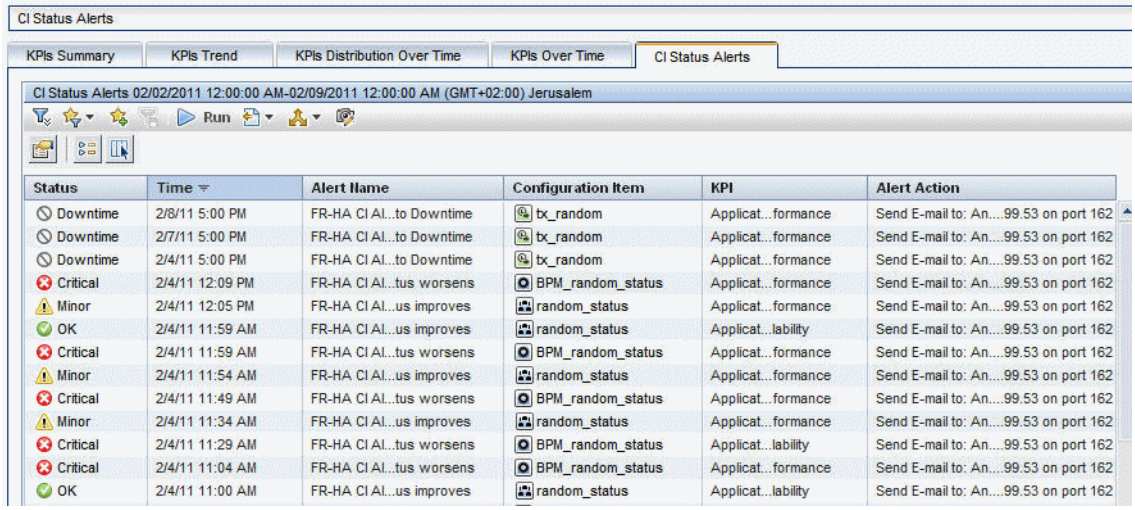
CI Type	Parameter
Business Unit	**Contact information.** The business unit contact information.
Host	➤ **IP.** The IP number of the host. ➤ **Vendor.** The name of the vendor. ➤ **Operating system.** The type of operating system.
Siebel Application Server	➤ **Version.** The Siebel version that is in use. ➤ **Language.** The language that is in use.
SAP Application Server	➤ **Version.** The SAP version that is in use. ➤ **IP.** The IP number that is in use. ➤ **Port.** The number of the port that is in use.

CI Type	Parameter
Database	➤ **Type.** The type of database. ➤ **Version.** The version that is in use. ➤ **Port.** The number of the port that is in use.
Service	➤ **Service Operating Status.** The status of the operating system· ➤ **Service Description.** A description of the service.

Configuration Item Status Alerts Report

This report enables you to list all of the alerts that occurred in the specified period of time.

The following is an example of the Configuration Item Status Alerts report.



Status	Time	Alert Name	Configuration Item	KPI	Alert Action
Downtime	2/8/11 5:00 PM	FR-HA CI Al...to Downtime	tx_random	Applicat...formance	Send E-mail to: An....99.53 on port 162
Downtime	2/7/11 5:00 PM	FR-HA CI Al...to Downtime	tx_random	Applicat...formance	Send E-mail to: An....99.53 on port 162
Downtime	2/4/11 5:00 PM	FR-HA CI Al...to Downtime	tx_random	Applicat...formance	Send E-mail to: An....99.53 on port 162
Critical	2/4/11 12:09 PM	FR-HA CI Al...tus worsens	BPM_random_status	Applicat...formance	Send E-mail to: An....99.53 on port 162
Minor	2/4/11 12:05 PM	FR-HA CI Al...us improves	random_status	Applicat...formance	Send E-mail to: An....99.53 on port 162
OK	2/4/11 11:59 AM	FR-HA CI Al...us improves	random_status	Applicat...lability	Send E-mail to: An....99.53 on port 162
Critical	2/4/11 11:59 AM	FR-HA CI Al...tus worsens	BPM_random_status	Applicat...formance	Send E-mail to: An....99.53 on port 162
Minor	2/4/11 11:54 AM	FR-HA CI Al...us improves	random_status	Applicat...formance	Send E-mail to: An....99.53 on port 162
Critical	2/4/11 11:49 AM	FR-HA CI Al...tus worsens	BPM_random_status	Applicat...formance	Send E-mail to: An....99.53 on port 162
Minor	2/4/11 11:34 AM	FR-HA CI Al...us improves	random_status	Applicat...formance	Send E-mail to: An....99.53 on port 162
Critical	2/4/11 11:29 AM	FR-HA CI Al...tus worsens	BPM_random_status	Applicat...lability	Send E-mail to: An....99.53 on port 162
Critical	2/4/11 11:04 AM	FR-HA CI Al...tus worsens	BPM_random_status	Applicat...formance	Send E-mail to: An....99.53 on port 162
OK	2/4/11 11:00 AM	FR-HA CI Al...us improves	random_status	Applicat...lability	Send E-mail to: An....99.53 on port 162

To access	Select: ➤ **Applications** > **CI Status** > **CI Status Alerts** ➤ **Applications** > **Service Health** > **360° View**, left-click a CI, and select **Reports** > **Configuration Item Status Alerts** in the context menu.
Relevant tasks	"How to View the Triggered CI Status Alerts and Notifications" on page 287

Report Settings

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<Common report elements>	See "Common Report and Page Elements" in *Reports*.
Configuration Items	Lists the CIs that are included in the report. To select CIs, click the **Configuration Items** link. For details, see "Configuration Items Dialog Box" on page 341.
KPIs	Lists the KPIs that are included in the report. To select KPIs, click the **KPIs** link. For details, see "KPIs Dialog Box" on page 342.

Table Area

User interface elements are described below:

UI Element (A-Z)	Description
	Details. Opens the Configuration Item Status Alert Notification report for the selected alert, where you can see the alert notification details. For details, see "Configuration Item Status Alert Notifications Report" on page 295.
Alert Action	The action that is triggered by the alert. **Note: Open an incident in Operations Manager** indicates that the alert should have opened an incident in Operations Manager when the alert was triggered and communication with OM was established. For details about establishing communication with OM, see "How to Configure BSM Alerts to Forward an Event When the Alert is Triggered" in *Solutions and Integrations*. To see whether the incident was opened in Operations Manager, click the **Detail** button to go to the alert notification report.
Alert Name	The name of the alert.
Configuration Item	The name of the CI the alert is attached to.
KPI	The name of the KPI.
Status	The current status of the KPIs represented by a status icon. The change from previous status to current status triggers the alerts. For details about the statuses, see "KPI Status Colors and Definitions" on page 45.
Time	The time and date when the alert was triggered. The format is: dd/mm/yy hh:mm AM/PM (<region>) <offset>. For example: 5/20/10 8:59 AM (Eastern Daylight Time) -0400.

KPIs Dialog Box

This dialog box enables you to select the KPIs to be included in a CI Status Alerts report, for the duration of a Web session. The report provides information based on the selected KPIs.

To access	In the CI Status Alerts report, click **KPIs** in the reports settings area.
Relevant tasks	"How to View the Triggered CI Status Alerts and Notifications" on page 287

User interface elements are described below:

UI Element (A-Z)	Description
KPIs	Lists the KPIs that are attached to the selected CIs. Availability and Performance are listed first, then all other KPIs in alphabetical order. Select the check boxes for the required KPIs.

10

Neighborhood Map

This chapter includes:

Concepts

➤ Neighborhood Map Overview on page 314

Tasks

➤ How to Display and Customize the Neighborhood Map on page 317

Reference

➤ Neighborhood Map User Interface on page 321

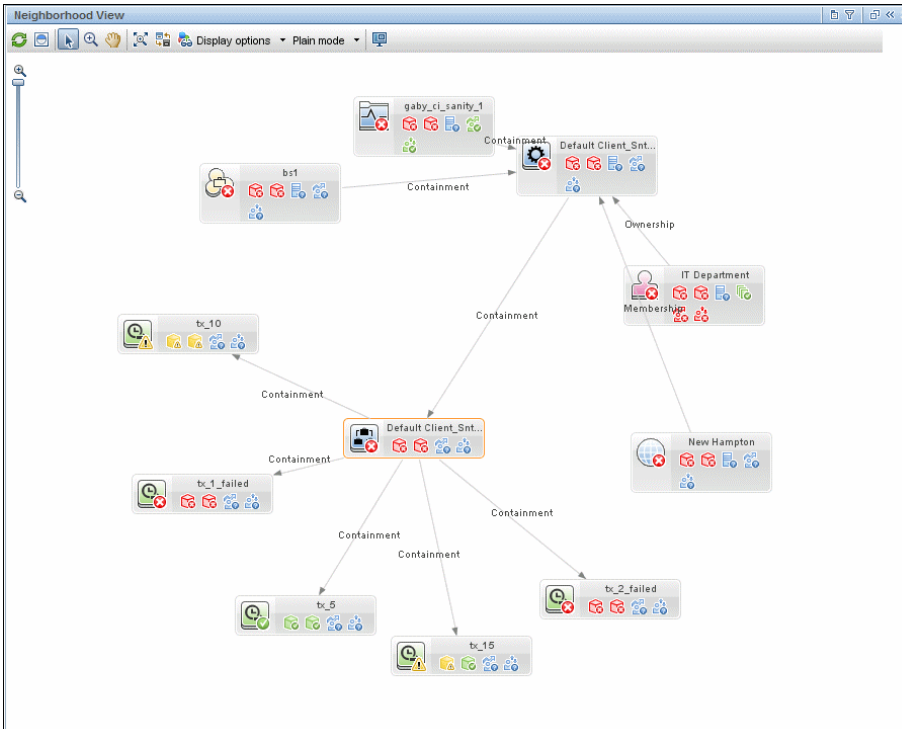
Concepts

Neighborhood Map Overview

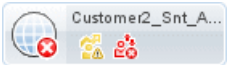
Neighborhood Map displays the parent CIs and child CIs of a selected CI, in an interactive graphic. The CI bars in the map provide a visual representation of real-time IT performance metrics mapped onto business applications. Connecting lines between the bars represent the relationships between the CIs.

Links between the CIs are shown as defined in the RTSM, without View Folding. These links represent physical links, as they appear in the RTSM.

Tip: The Neighborhood Map is particularly useful if, for example, you want to explore the source of a problem which may come from a CI outside your monitored view.



Each CI in the view is displayed as a bar, with a color-coded icon overlaid on top of the CIT icon indicating the current worst operational status for that CI. The icons displayed below the name of the CI identify the relevant KPIs for the CI. These icons are also color coded to indicate the status of that KPI. For details on color coding, see "KPI Status Colors and Definitions" on page 45.



The display of CI bars and links between CIs can be manipulated to change the amount of information displayed and the overall layout of the map, as described in "How to Display and Customize the Neighborhood Map" on page 317.

For UI details, see "Neighborhood Map User Interface" on page 321.

Plain Mode and Layer Mode

You can view CIs in Neighborhood Map in one of two modes:

- **Plain mode.** In plain mode, each CI is displayed on its own.
- **Layer mode.** In layer mode CIs are divided into functional layers, such as Business Enablement, Infrastructure, or Software. CIs are assigned to the layers based on their Layer attribute in the RTSM. For example, in layer mode the Application Resource and Application System CITs are assigned to the Software layer, based on their Layer attribute.

  In layer mode you can move CIs in and out of layers. You can also create additional layers using the Layer attribute in RTSM administration.

  The layers in Neighborhood Map are identical to the layers in Topology Map; for details on each of the default layers, see "Default Layers in Topology Map" on page 170.

Annotation

Within Neighborhood Map, you can click the **Capture Result and Add Annotations** button on the toolbar to access the annotation tool. You can use annotation to create and save a snapshot of the image you are viewing, and highlight important areas of the image.

The annotation tool is identical in Neighborhood Map and Topology Map. For details on the tool, see "Annotation Tool Dialog Box" on page 183.

Tasks

How to Display and Customize the Neighborhood Map

Create a page containing both Neighborhood Map and a component where CIs can be selected, such as View Selector or Top View. Select a CI to show its neighboring CIs in Neighborhood Map.

You can customize Neighborhood Map using the following options:

- "Move CIs within Neighborhood Map" on page 318
- "Change focus from one CI to another" on page 318
- "Organize Neighborhood Map in plain or layer mode" on page 318
- "Resize the display or navigate within Neighborhood Map" on page 319
- "Display minimal information or detailed information for each CI" on page 319
- "Display links between CIs" on page 320
- "Refresh the CI topology" on page 320
- "Modify the number of child and parent CI levels shown in Neighborhood Map" on page 320

Note: Customizing the Neighborhood Map display has no effect at all on the RTSM topology; your customizations only influence how CIs are displayed in this component.

Move CIs within Neighborhood Map

To move CIs you must be in Selection mode. To activate Selection mode, click the **Select** button in the Neighborhood Map toolbar.

Click one or more CIs and drag them to a new location. If your Neighborhood Map displays links between CIs, the arrows attached to these CIs will be moved as well.

Change focus from one CI to another

When you select a CI, Neighborhood Map shows that CI with a highlighted border, together with its parent and child CIs. To change Neighborhood Map's focus from the selected CI to a different CI, select the CI which you want to focus on, and click the **Refocus** button in the Neighborhood Map toolbar. You can also double-click a CI to change focus to that CI.

After you change focus, Neighborhood Map will highlight the CI which you are now focusing on, together with its parent and child CIs.

Organize Neighborhood Map in plain or layer mode

Neighborhood Map can be displayed in two modes:

- **Plain Mode.** Each CI stands on its own, not as part of a layer.
- **Layer Mode.** CIs are divided into functional layers (for example Business Enablement, Infrastructure, or Software). In layer mode you can move CIs in and out of the default layers, but you cannot rename or delete a layer.

To switch from one mode to another, select a mode from the drop-down list in the Neighborhood Map toolbar.

Resize the display or navigate within Neighborhood Map

Some CIs may have a large Neighborhood Map, based on the number of parent and child CIs to which they are connected. You can use the following buttons in the toolbar to help you navigate within the Neighborhood Map display:

- **Fit to screen.** Click to fit the image to the pane, either by expanding it or by reducing it.
- **Interactive Zoom** Click to activate Zoom mode. In Zoom mode, click within Neighborhood Map and drag up or down to zoom in and out of the image.
- **Pan.** Click this button, then click within Neighborhood Map and drag the image to move it.
- **Display Minimap.** Click to display the Neighborhood Map image in a small window (minimap), which is overlaid on top of the standard Neighborhood Map.

  A highlighted area within the minimap image shows which part of the Neighborhood Map is displayed in the larger image. You can resize or move this highlighted area to focus on the part of Neighborhood Map which is of interest to you. To close the minimap window, click within the larger image.

Display minimal information or detailed information for each CI

Neighborhood Map can be displayed either in minimal presentation, which displays only CI icons and worst statuses, or in detailed presentation, which displays CI names and KPI statuses. To switch between minimal and detailed presentation, click the **Toggle Presentation Type** button in the Neighborhood Map toolbar.

Display links between CIs

Neighborhood Map can display arrows between CIs that are linked, as well as link labels showing the relationship between two CIs (for example, Containment or Ownership).

- To see links, select **Display Options** > **Show Links** in the Neighborhood Map toolbar.
- To see link labels, select **Display Options** > **Show Link Labels**. Note that if the Show links option is de-selected, this option is disabled.

Refresh the CI topology

To enhance performance, Neighborhood Map does not reflect changes made to the CI topology within the RTSM.

If you have made changes to CI topology in the RTSM, click **Refresh** to update the CI topology display.

Modify the number of child and parent CI levels shown in Neighborhood Map

By default, when a CI is selected, Neighborhood Map shows two levels of its parent CIs and two levels of its child CIs. In other words, Neighborhood Map shows the selected CI in the context of its parent CIs and their parent CIs, as well as its child CIs and their child CIs.

You can modify this setting to display one, two, or three levels of CIs, using the following infrastructure setting: **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** > **Applications** > **Service Health Application**. Locate the **Neighborhood map depth** entry in the Service Health Application - Service Health Layout Properties table, and modify as required.

Reference

Neighborhood Map User Interface

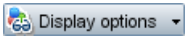
Neighborhood Map displays the parent CIs and child CIs of a selected CI, in an interactive graphic. The links between the CIs are shown as defined in the RTSM, without View Folding; links between the CIs represent their physical links as they appear in the RTSM. CIs can be displayed within Neighborhood Map divided into layers, enabling you to focus attention on the layer which interests you the most (for example Business Enablement, Infrastructure, or Software).

To access	Select **Applications** > **Service Health** > **Neighborhood Map**
Important information	Neighborhood Map is used together with another component which enables you to select a CI, such as View Selector or Top View.
Relevant tasks	"How to Display and Customize the Neighborhood Map" on page 317
See also	"Neighborhood Map Overview" on page 314

User interface elements are described below (unlabeled elements are shown in angle brackets):

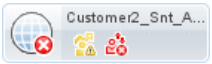
Neighborhood Map Toolbar

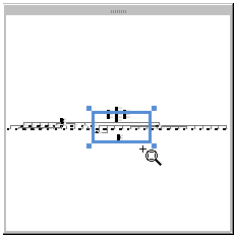
UI Element (A-Z)	Description
	Refresh. To enhance performance, Neighborhood Map does not reflect changes made to the CI topology within the RTSM. If you have made changes to CI topology in the RTSM, click **Refresh** to update the CI topology display.

UI Element (A-Z)	Description
	Refocus. To change Neighborhood Map's focus from the selected CI to a different CI, select a CI and click **Refocus**. Neighborhood Map changes focus to highlight the selected CI, and shows its parent and child CIs.
	Select. In Select mode, you can select CIs or groups to perform actions on the selected elements. For details, see "How to Display and Customize the Neighborhood Map" on page 317.
	Interactive Zoom. In Zoom mode, click within Neighborhood Map and drag up or down to zoom in and out of the image.
	Pan. In Pan mode, if your Neighborhood Map image is scrollable you can click and drag the image to move it. (If the entire image fits within your screen this feature has no effect.)
	Fit to screen. Click to fit the graph to the pane, either by expanding it or by reducing it. Relative proportions of the image are maintained.
	Toggle Presentation Type. Click to switch between minimal view, which displays only CI icons and worst statuses, and detailed view, which also displays CI names and KPI statuses.
	Click to open a dropdown list of display options. You can select or de-select each of the following options: ➤ **Show links.** If you select this option, Neighborhood Map displays arrows between CIs that are linked. ➤ **Show link labels.**If you select this option, Neighborhood Map displays each link together with its link type (for example, Containment or Ownership). If the **Show links** option is de-selected, this option is disabled.

UI Element (A-Z)	Description
Plain mode	Click to select between the following display modes: ➤ **Plain Mode.** Each CIs is displayed standing on its own. ➤ **Layer Mode.** Neighborhood Map displays related higher-level CIs in layers; for example, Business Element CIs are displayed in the Business Enablement layer, while Node and Node Element CIs are displayed in the Infrastructure layer. For details, see "Neighborhood Map Overview" on page 314.
	Display Minimap. Click to display the Neighborhood Map image in a small window (minimap), which is overlaid on top of the standard Neighborhood Map. A highlighted area within the minimap image shows which part of the Neighborhood Map is displayed in the larger image. You can resize or move this highlighted area to focus on the part of Neighborhood Map which is of interest to you. To close the minimap window, click within the larger image.
	Capture Result and Add Annotations. Click to open the Annotation Tool, which creates a snapshot of the Neighborhood Map and enables you to annotate the snapshot to highlight important areas. The tool enables you to draw in the snapshot, or add lines or text to the image. For details, see "Annotation Tool Dialog Box" on page 183.

Neighborhood Map Display

UI Element (A-Z)	Description
<CI nodes> 	Each CI in the selected view is displayed as a bar within Neighborhood Map, which contains the following elements: ➤ The left side of the bar shows an icon indicating the CI's CI type, as represented in the RTSM. ➤ CI aggregated status is overlaid on top of the CIT icon. ➤ If Neighborhood Map is in detailed view, the CI name and KPI statuses are also displayed. **Tooltips:** The tooltip for a CI shows the CI name and CI type. The tooltip for a KPI shows status and performance data for the KPI: CI and KPI status are displayed as color-coded icons. For details, see "KPI Status Colors and Definitions" on page 45. For details on customizing display settings, see "How to Display and Customize the Neighborhood Map" on page 317.
<layers of CIs>	In layer mode, high-level CIs are displayed within layers that are divided by functionality, such as Business Enablement or Infrastructure. Each layer is shown in a separate shaded area, labeled by the layer name. Layers cannot be renamed or deleted; CIs can be removed from layers, or added to them.

UI Element (A-Z)	Description
<links between CIs>	In the list of **Display options**, if you select **Show links**, Neighborhood Map displays arrows between CIs that are linked within the RTSM. If you also select the **Show link labels** option, Neighborhood Map also displays the link type (for example, Containment or Ownership).
<minimap image> 	If you click the **Display Minimap** button, the Neighborhood Map image appears in a small window (minimap), overlaid on top of the standard Neighborhood Map. The highlighted area shows which part of the Neighborhood Map is displayed in the larger image. Resize or move the highlighted area to focus on the part of Neighborhood Map which is of interest to you.
Last Update	Displays when the information in the component was last updated. To manually update CI statuses, click the **Refresh** icon.

11

Acknowledge Problems

This chapter includes:

Concepts

➤ Acknowledging Performance Problems Overview on page 328

Tasks

➤ How to Acknowledge Performance Problems on page 329

Reference

➤ Acknowledge Problems User Interface on page 332

Concepts

Acknowledging Performance Problems Overview

The Acknowledgment utility enables you to track performance problems identified in your system and network infrastructure by keeping a record of when the problem was acknowledged and by which user.

For details on how to perform the task, see "How to Acknowledge Performance Problems" on page 329.

Note: Acknowledgement is linked to a CI and not to a view. If you clone a global view and create a local impact view with different indicator definitions, a KPI may have **Critical** status in the local impact view and **OK** status in the global view. When you add acknowledgement to the CI which has a **Critical** KPI in the local impact view, this acknowledgment is visible in the global view, even though the KPI has **OK** status there.

Tasks

How to Acknowledge Performance Problems

This section describes how to acknowledge a problem in Service Health.

This task includes the following steps:

- "Acknowledge a problem" on page 329
- "View a problem's history" on page 330
- "Display/hide the acknowledgement column in the Hierarchy component – optional" on page 331

1 Acknowledge a problem

You can acknowledge a problem in the following ways:

- **Hierarchy.** In the Hierarchy component, set or unset acknowledgement for a CI by clicking the icon in the **Ack** column; a check mark indicates that acknowledgement has been set. For user interface details, see "Acknowledgments Details Dialog Box" on page 333.
- **CI context menus.** In components which contain context menus on CIs, you can use the following CI context menus to work with acknowledgement: **Operations** > **Set/Unset Acknowledgement**, and **Operations** > **Acknowledgement Details**.

- **Top View.** In Top View, the acknowledgement icon is displayed for CIs which have been acknowledged, with a tooltip containing details.

2 View a problem's history

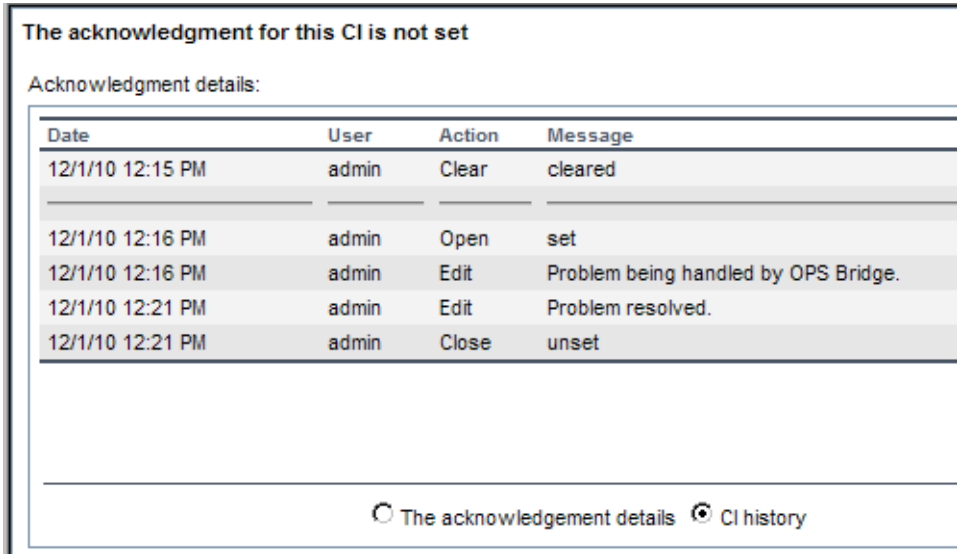
After a problem CI is acknowledged, or the acknowledged status is cleared, you can view the CI's history in the Acknowledgment History and Details dialog box.

A tooltip for the **Ack** icon displays the current status of the CI's acknowledgment.

To view the details of the current acknowledgment or the acknowledgment history of the CI, access a CI's menu commands and select **Operations** > **Acknowledgment Details**. You can then select one of the following options:

- **Acknowledgment details.** Displays the details of the currently opened acknowledgment.
- **CI history.** Displays the details of all of the acknowledgments over time.

In the following example, the CI history shows that a problem was acknowledged on a CI at 12:16, and marked as resolved at 12:21.



The **Acknowledgment details** box displays the date and time when the acknowledgment status was modified, the name of the user who modified the status, and the type of action that was performed. For user interface details, see "Acknowledgment History and Details Dialog Box" on page 332.

You can add information about the actions you are going to perform to solve the problem in the **Add details** box, and then click **Add** to add the information you entered to the acknowledgment history.

3 Display/hide the acknowledgement column in the Hierarchy component – optional

By default, the acknowledgement column (**Ack**) is displayed in the Hierarchy component. The column can be hidden by users with administrative permissions. To hide/display the **Ack** column, select **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings:**

- Select **Applications**.
- Select **Service Health Application**.
- In the **Service Health Layout Properties** area, locate **Show CI Acknowledgment column**. Change the value to **false** (hide the Ack column), or **true** (display the Ack column). The change takes effect immediately.

Note: When you hide the **Ack** column, the Acknowledgment-related context menu options remain available. For details, see "Service Health Menu Options" on page 98.

Reference

Acknowledge Problems User Interface

This section includes:

➤ Acknowledgment History and Details Dialog Box on page 332

➤ Acknowledgments Details Dialog Box on page 333

Acknowledgment History and Details Dialog Box

This dialog box enables you to view the details of the current acknowledgment or the acknowledgment history of the CI.

To access	Access menu commands for a CI and select **Operations** > **Acknowledgment details**.
Relevant tasks	"How to Acknowledge Performance Problems" on page 329

User interface elements are described below:

UI Element (A-Z)	Description
Acknowledgment details	Select to display the details of the currently opened acknowledgment in the **Acknowledgment details** box.
Action	The type of action that was performed: ➤ **Clear.** When the acknowledgment history was cleared. ➤ **Unset.** When the acknowledgment was unset. ➤ **Info.** Details were added to the acknowledgment without changing the acknowledgment status. ➤ **Open.** When the acknowledgment was set. ➤ **Edit.** When details were added to the acknowledgment.

UI Element (A-Z)	Description
Add	Click the **Add** button to add the contents of the **Add details** box to the acknowledgment history.
Add details	Add information about the actions you are going to perform to solve the problem. You can add information whether the acknowledgment is **Open** or **Closed**.
CI history	Select to display the details of all of the acknowledgments over time in the **Acknowledgment details** box.
Clear	Click the **Clear** button to clear the acknowledgment history.
Date	The date and time when the acknowledgment status was modified.
Message	Displays the status of the acknowledgment or the information that was entered in the **Add details** box.
User	The name of the user who modified the status.

Acknowledgments Details Dialog Box

This dialog box enables you to set or unset a CI acknowledgment.

To access	➤ Access menu commands for a CI, and select **Operations** > **Set/Unset Acknowledgment**. ➤ Click the **Ack** icon to the right of a CI.
Important information	The **Ack** icon is enabled only if there is at least one KPI defined for the CI. A tooltip for the **Ack** icon displays the current status of the CI's acknowledgment. The dialog box is a toggle dialog box. If you have acknowledged the CI, the top line in the dialog box is: **The acknowledgment will be unset**. If you have not acknowledged the CI, the top line in the dialog box displays: **The acknowledgment will be set**.

User interface elements are described below:

UI Element (A-Z)	Description
Add details	Add information about the actions you are going to perform to solve the problem. You can add information whether the acknowledgment is **Open** or **Closed**.
OK	Click the **OK** button to set or unset the acknowledgment depending on the previous status of the dialog box.

12

CI Status Reports

This chapter includes:

Concepts

➤ CI Status Reports Overview on page 336

Tasks

➤ How to View KPIs Over Time Information on page 338

Reference

➤ CI Status Reports User Interface on page 340

Troubleshooting the Reports on page 365

Concepts

CI Status Reports Overview

CI Status reports enable you to view and analyze performance data collected by BSM data collectors and stored in the BSM database.

The CI Status reports are:

- **KPIs Summary.** Displays a summary of KPI status distribution over time for each selected KPI. For details, see "KPIs Summary Report" on page 358.
- **KPIs Trend.** Displays the trend for changes in KPI status over time, for selected statuses. For details, see "KPIs Trend Report" on page 361.
- **KPIs Distribution Over Time.** Displays KPI status distribution over time for selected statuses. For details, see "KPIs Distribution Over Time Report" on page 343.
- **KPIs Over Time.** Displays the status or value, over time, of selected CIs and KPIs that are accessible from the Service Health application. For details, see "KPIs Over Time Report" on page 347.
- **CI Status Alert.** Provides information about the CI Status alerts that were triggered in the past. For user interface details, see "Configuration Item Status Alerts Report" on page 309.

You can print the generated report, send the report by email, open the report in different formats, publish the report in different formats, or save the report to the report repository. For details, see "Working in Reports - Overview" in *Reports*.

Generating KPI Summary, Trend, and Distribution Over Time Reports

The KPI Summary, KPI Trend, and KPI Distribution Over Time reports are available for CIs that fill the following conditions:

1. By default, these reports can only be generated for CIs which have the **Store KPI History For Over Time Reports** attribute value of **true** in RTSM. You can enable or disable this ability within RTSM administration, using the **Store KPI History For Over Time Reports** attribute on each CIT.
2. To save status changes for a KPI for over time reports, the KPI must be attached to a CI whose **Save KPI data over time for the selected CIs** option has been selected. For details, see "CI Data Pane > CI Properties Tab" on page 460.

   This option is selected by default for logical CIs, and for CIs that are important for problem isolation, such as **Business Application, Business Process**, **Business Service,** and **Host.**
3. If you also want to save data on actual measurements for KPIs (and not just status changes), you must activate the **saveValuesToPersistency** global parameter in the Business Rule Repository. For details, see "Persistent Data and Historical Data" on page 411.

Note:

- Data is displayed in a report starting from the point that data was collected for the selected CIs. For example, if you set the report to show data every week for the past month, but data was collected only for the past two weeks, the report shows data starting from two weeks ago to the present date.
- HP Business Service Management records in a reports log errors that occur when generating reports. The reports log can also include the following activities: creating a new report, generating a report, modifying the report filters, drilling down in reports, and so on. For details on the reports log, see "Reports Log" in *Reports*.

Tasks

How to View KPIs Over Time Information

The steps below describe the process used to set up to view KPIs over time information in Service Health.

This task includes the following steps:

- "Save KPI status information for the KPIs Over Time reports" on page 338
- "Access KPIs Over Time reports" on page 338
- "Drill down to HP Diagnostics" on page 339
- "Access KPIs Distribution Over Time report" on page 339
- "Access the KPIs Summary report" on page 339
- "Access the KPIs Trend report" on page 339

1 Save KPI status information for the KPIs Over Time reports

Persistent data is used to produce KPIs Over Time reports with status information, as described in "KPIs Over Time Report" on page 347. Set the **Save KPI data over time for this CI** option to save the calculated measurement for each of the CI KPIs, at 15 minute intervals (default value). This is done by activating the **saveValuesToPersistency** global attribute in the Business Rule Repository. For concept details, see "Persistent Data and Historical Data" on page 411.

This option is selected, by default, for Business Services, Applications, Business Processes and others. This option is not available for Monitor type CIs.

2 Access KPIs Over Time reports

You can access the KPIs Over Time reports from different locations in HP Business Service Management.

For user interface details, see "KPIs Over Time Report" on page 347.

Note: The context menu includes the **KPIs Over Time Report** option for all CIs, but the report displays data only for CIs whose KPIs are persistent. For details, see "Persistent Data and Historical Data" on page 411.

---

3 Drill down to HP Diagnostics

If HP Diagnostics integrates with HP Business Service Management, you can drill down to HP Diagnostics views from the KPIs Over Time report for Business Transaction CIs in the End User Monitors views, and for the Diagnostics Probe Group, and Diagnostics Probe CIs in the Diagnostics View. For user interface details, see "KPIs Over Time Report" on page 347.

4 Access KPIs Distribution Over Time report

KPIs Distribution Over Time report enables you to analyze KPI trend by viewing KPI status distribution over time for selected statuses. For user interface details, see "KPIs Distribution Over Time Report" on page 343.

5 Access the KPIs Summary report

KPIs Summary report enables you to view a summary of KPI status distribution over time for each selected KPI. For user interface details, see "KPIs Summary Report" on page 358.

6 Access the KPIs Trend report

KPIs Trend report enables you to analyze the trend for changes in KPI status over time, for selected statuses. For user interface details, see "KPIs Trend Report" on page 361.

Reference

CI Status Reports User Interface

This section includes (in alphabetical order):

- Configuration Items Dialog Box on page 341
- KPIs Dialog Box on page 342
- KPIs Distribution Over Time Report on page 343
- KPIs Over Time Report on page 347
- KPIs Summary Report on page 358
- KPIs Trend Report on page 361
- Statuses Dialog Box on page 365

Configuration Items Dialog Box

This dialog box enables you to select the CIs to be included in a Service Health report, for the duration of a Web session. The report provides information based on the selected CIs.

To access	In a Service Health report, click **Configuration Items** in the reports settings area.
Important information	Only CIs that meet the following criteria are available for selection: ➤ CIs with attached KPIs. ➤ CIs that are flagged to save KPI data over time (historical data). ➤ CIs whose CIT attributes in RTSM have the **Store KPI History For Over Time Reports** attribute value of **true**. For details, see "Persistent Data and Historical Data" on page 411.

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<View tree>	Displays the CIs in the selected view. Select the check boxes for the required CIs.
Browse	The default mode for the Configuration Items dialog box, enabling you to select a view and CIs.

UI Element (A-Z)	Description
Search	Click the **Search** link to move to Search mode, where you can search for CIs. For details, see "How to Search for CIs in Search Mode" in the *Modeling Guide*.
View	Select the relevant view from the dropdown list (start typing in the view name to filter the list), or click the ellipsis button to open the Select View dialog box, where you can select a view from the view folders tree. **Note:** Only the CIs selected in the currently displayed view are saved for the report filter when you click **OK**. If you select another view before clicking **OK**, all previous CI selections are discarded.

KPIs Dialog Box

This dialog box enables you to select the KPIs to be included in a Service Health report, for the duration of a Web session. The report provides information based on the selected KPIs.

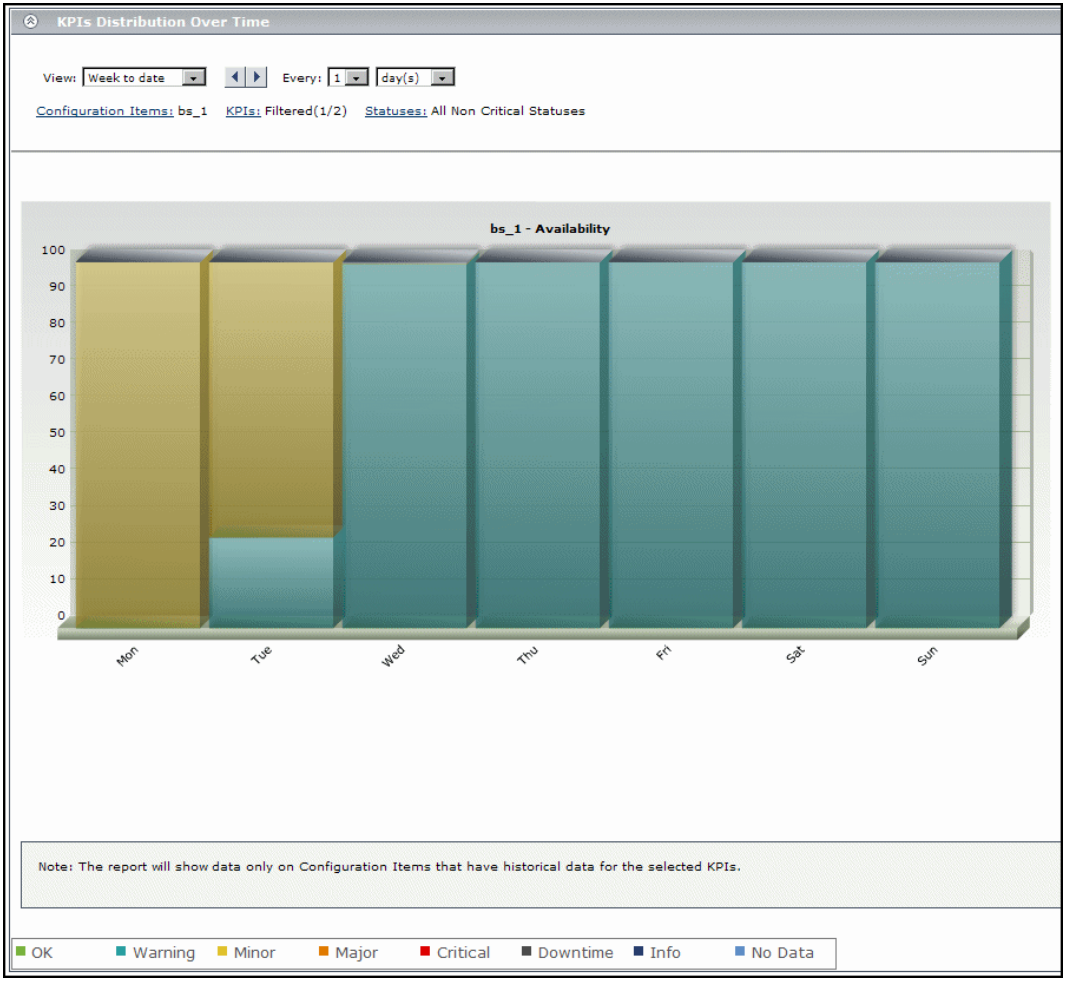
To access	In a Service Health report, click **KPIs** in the reports settings area.
Important information	You must define at least one CI for the report before you can select KPIs.

User interface elements are described below:

UI Element (A-Z)	Description
KPIs	Lists the KPIs that are attached to the selected CIs. Application Availability and Application Performance are listed first, then all other KPIs in alphabetical order. Select the check boxes for the required KPIs.

KPIs Distribution Over Time Report

This report displays KPI status distribution over time for selected statuses.



To access	Select **Applications** > **CI Status** > **KPIs Distribution Over Time**
Important information	This report is produced only for certain CIs with historical KPI data. For details, see "Configuration Items Dialog Box" on page 341.
See also	"Configuration Items Dialog Box" on page 341

Report Settings

UI Element (A-Z)	Description
<Common report settings>	See "Common Report and Page Elements" in *Reports*.
Configuration Items	Displays the name of the selected CI for the report, and if more than one CI is selected, indicates the number of CIs that the report is based on. For example, **Filtered (4)** means that four CIs are selected for inclusion in the report. Click the **Configuration Items** link to open the Configuration Items dialog box where you can select CIs.

UI Element (A-Z)	Description
KPIs	Indicates the number of KPIs that are included in the report, and the total number of KPIs that are attached to the selected CIs separated by a slash; for example, **Filtered (1/3)**. **All** is displayed when all available KPIs are selected. Click the **KPIs** link to open the KPIs dialog box where you can select KPIs. **Default value:** All KPIs are selected automatically.
Statuses	Indicates the number of statuses that are included in the report and the 7 possible statuses separated by a slash; for example, **Filtered (5/7)**. Click the **Statuses** link to open the Statuses dialog box where you can select statuses. **Default value:** All statuses that are defined as non-critical are selected, and **All Non-Critical Statuses** is displayed. For details, see "Statuses Dialog Box" on page 365.

Report Content

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element	Description
<Bar chart>	Each KPI instance for each CI is displayed in a separate bar chart (as long as there is relevant data for the KPI on that CI). Each chart shows status distribution (in percentage) for the KPI over the selected time frame.
<Bar>	Each bar in a chart represents a time interval, according to the granularity selected for the report. For example, if the selected granularity is every 1 week, then each bar represents a week during the overall time frame. The legend for the x-axis shows the time interval for each bar. Each bar is divided into colored status sections, according to the statuses selected for inclusion in the report, so that each section represents the percentage of time that the status was held by the KPI during that time interval. **Tooltip:** Hold the pointer over a bar section to display a tooltip containing the following information: ➤ **Status.** The name of the status represented by the section. ➤ **Status Duration.** Amount of time that the KPI held this status during the time interval. This can be given in hours, minutes, and seconds (for example, 01:10:48) or in days and hours (for example, 30 days, 9 hours). ➤ **Status Percentage.** Percentage of the time interval that the KPI held this status.

KPIs Over Time Report

This report enables you to view the status or the value, over time, of selected KPIs and CIs, in table or graph format.

For example, when you encounter a problem with a specific CI while viewing the Service Health, and the Application Performance and Application Availability KPIs are attached to that CI, you can view the KPIs Over Time report of that CI's **Application Performance** and **Application Availability**. You can also receive a daily report showing all CIs statuses in the past day.

To access	Select **Applications** > **CI Status** > **KPIs Over Time**. The report is also available from the context menu of CIs in Service Health.

Important information	The report displays the status or value of each CI and each instance of the attached KPIs. For example, when you select one CI with the Application Availability and Application Performance KPIs, and another CI with the Application Availability KPI the report has only three rows. ➤ You can: ➤ Add this report to a custom report. For details, see "Customizing Reports" in *Reports*. ➤ Schedule when to run the report. For details, see "Report Schedule Manager Main Page" in *Platform Administration*. ➤ The report provides KPI information for higher level CIs such as Business Services, Application, and Business Processes CIs. To obtain similar information about monitored CIs, see "CI Status Reports User Interface" in *Using End User Management*, or "Trend Reports" in *Reports*. ➤ The context menu of all CIs except monitor CIs includes the **KPIs Over Time Report** option. ➤ The report displays data only for CIs with persistent KPIs. For details, see "Persistent Data and Historical Data" on page 411. ➤ There is no limit to the number of lines that can be displayed in the table. If displaying the table slows performance, limit the time period or the number of CIs and KPIs to be displayed. ➤ If a CI has no valid child CIs, the drill to children option is disabled. If a CI has no valid parent CI, the drill to parent option is disabled.
Relevant tasks	"How to View KPIs Over Time Information" on page 338

Report Settings

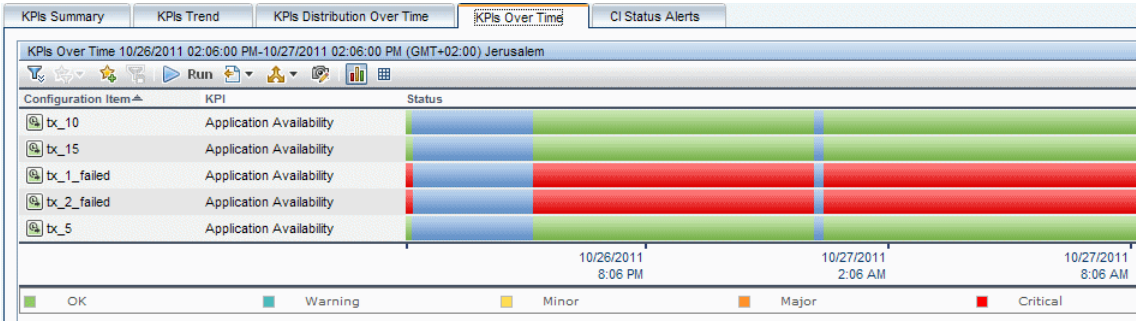
User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<Common report settings>	See "Common Report and Page Elements" in *Reports*.
Configuration Items	Indicates the number of CIs that are included in the report. For example, **Filtered (4)** means that four CIs are selected for inclusion in the report. To select CIs, click the **Configuration Items** link. For details, see "Configuration Items Dialog Box" on page 341.
KPIs	Indicates the number of KPIs that are included in the report, and the total number of KPIs that are defined for the selected CIs separated by a slash, for example, **Filtered (1/3)**. **All** is displayed when all available KPIs are selected. To select KPIs, click the **KPIs** link. For details, see "KPIs Dialog Box" on page 342. **Default value:** When you select one or more CIs and the Application Performance and Application Availability KPIs are assigned to those CIs, the KPIs are automatically selected.

UI Element (A-Z)	Description
Report type	Select: ➤ **Statuses.** To display the status information in the report. For details, see "KPIs Over Time Report with Status Data" on page 350. The KPIs Over Time report with status data displays only the status of the selected KPIs for the selected CIs. Those KPIs may also have values in the RTSM but the report does not show the values. ➤ **Values.** To display the value information in the report. For details, see "KPIs Over Time Report with Value Data" on page 355. The KPIs Over Time report with values data displays only the value of the selected KPIs for the selected CIs. Those KPIs may also have statuses in the RTSM but the report does not show the statuses.

KPIs Over Time Report with Status Data

The following is an example of the KPI Over Time report with status data.



Important information	The report displays data only for CIs whose KPIs are persistent. For details, see "Persistent Data and Historical Data" on page 411. Ensure that the **Save KPI data over time for this CI** option has been selected for the CI. For details, see "CI Indicators Tab" on page 453. **Note:** The statuses are shown over time, starting with the event and ending with the next event. The report displays only the status of the relevant KPIs. Those KPIs may also have values in the RTSM but the status report does not show those values.

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
	Click to display status information about the children that contribute to the status of the selected CI's KPI. **Note:** Drilling down to the level of the monitored CIs is unavailable as there is no calculated status for those CIs and only raw data is available. To obtain similar information about the KPIs of monitored CIs, see "Status Reports User Interface" in *Using End User Management*, or "Trend Reports" in *Reports*. If the selected CI and KPI do not have influencing children, then the report displays the message: **No influencing children found**.

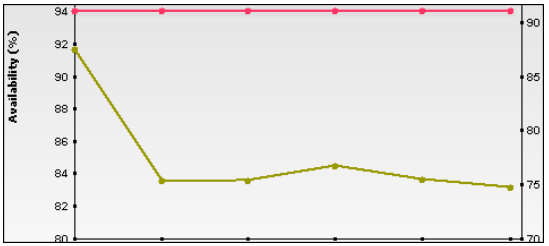
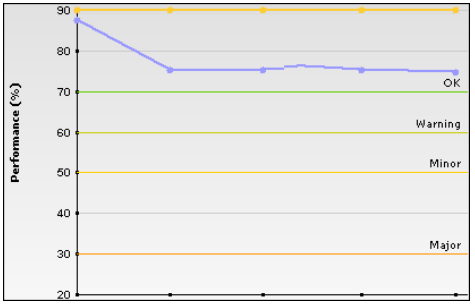
UI Element (A-Z)	Description
	Click to display status information about the parents of the CI whose status is influenced by the status of the selected CI's KPI. A CI may have more than one parent but the parent CIs that are displayed in the report are the parent CIs that are part of the view. **Note:** You can drill up to influenced parents only when the CIs have persistent data. If the selected CI and KPI do not have influenced parents, then the report displays the message: **No influenced parents found**.
<Drill down>	This capability is available only in graph format. Click any time segment in the graph time footer to drill down (zoom) on all of the CI and KPI information for that period of time. The time segment you zoom on is split into four equal parts that can also be zoomed until each time segment is one minute long. The **From** date and time of the segment you select becomes the **From** date and time of the whole time footer and the **To** date and time of the segment you select become the **To** date and time of the whole time footer. **Example:** If the time period you selected is from 7/13/05 8:51 AM till 7/13/05 4:44 PM, the time footer is split into four equal segments. If you drill down on the first segment of the time footer, the From date and time of that segment is 7/13/05 8:51 AM, and its To date and time is what is indicated under the second tick of the time footer: 7/13/05 11:29 AM. The drilled down report time **From** and **To** fields display those dates and times, and the time footer of the report displays this period of time split into four equal parts: (11:29-8:51)/4=39 mn. The first part starts at 8:51 AM, and ends at 8:51+:39=9:30, the second part starts at 9:30 and ends at 9:30+:39=10:09, and so on.

UI Element (A-Z)	Description
<Drill down to Diagnostics>	If HP Diagnostics is enabled, you can drill down to HP Diagnostics views from the KPIs Over Time report. To access the drill down options, click the down arrow to the right of a Business Transaction CIs in the End User Monitors View, and of the Diagnostics Probe Group, and Diagnostics Probe CIs in the Diagnostics View and select one of the options. For information about the available options, see "Drill Down to HP Diagnostics" on page 356. The context menu options that are available from the KPIs Over Time report are a subset of the Drill to Diagnostics options available in Service Health. For details, see "Drill Down to HP Diagnostics" on page 356.
<Tooltip>	Move the cursor above the graph to display more information about the KPI. The background of the tooltip reflects the color of the status calculated by the rule attached to the KPI and according to the KPI's objectives. The tooltip displays the name of the KPI in the tooltip title and the following information: ➤ **Configuration Item.** The name of the CI to which the current KPI is assigned. ➤ **Status.** The status of the KPI. ➤ **Start Time.** The time when an event occurred, starting the sampling period for that event. ➤ **End Time.** The time when a new event occurred, ending the sampling period of the previous event. ➤ **Duration.** The duration of the sampling period.
Configuration Item	The name of the selected configuration item.
Duration	**Note:** This field appears only when the report is in table format. The duration of the sampling period.

UI Element (A-Z)	Description
End Time	**Note:** This field appears only when the report is in table format. The time when a new event occurred, ending the sampling period of the previous event.
KPI	The name of the KPI.
Start Time	**Note:** This field appears only when the report is in table format. The time when an event occurred, starting the sampling period for that event.
Status	When the report is in table format, **Status** displays the status of each KPI of each CI, according to the selected granularity, during the selected time period. When the report is in graph format, **Status** displays the status of the KPI as a background color during the selected time period. A tooltip is available for each cell in the graph (see <Tooltip> for details).

KPIs Over Time Report with Value Data

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<Graph>	Displays the value of the KPI assigned to a specific CI at the specified time (indicated by a colored line). When you select two KPIs and more than one CI, each pair of KPIs is displayed in a separate graph. The left y-axis displays the scale of the first KPI and the right y-axis displays the scale of the second KPI.  When you select one KPI, the Y-axis displays the scale for the KPI, a line displays the value of the KPI over time, and faint colored horizontal lines show the KPI objectives (the colors correspond to the objective colors of the KPI).  A legend lists the name of the CI, the name of the KPI and the color used to represent the KPI value.

UI Element (A-Z)	Description
<Time period>	This field appears only in table format. Each column represents a time segment corresponding to the selected granularity of the selected time period. The table displays the value of the KPI in the time segment.
<Tooltip>	This field appears only in graph format. Move the pointer over any dot in the graph to display the value of the KPI at this point.
Configuration Item	This field appears only in table format. The name of the selected configuration item.
KPI	This field appears only in table format. The name of the KPI. Each selected KPI is displayed in a separate line.

Drill Down to HP Diagnostics

The following table displays the Diagnostics drill down options for CIs in KPIs Over Time reports:

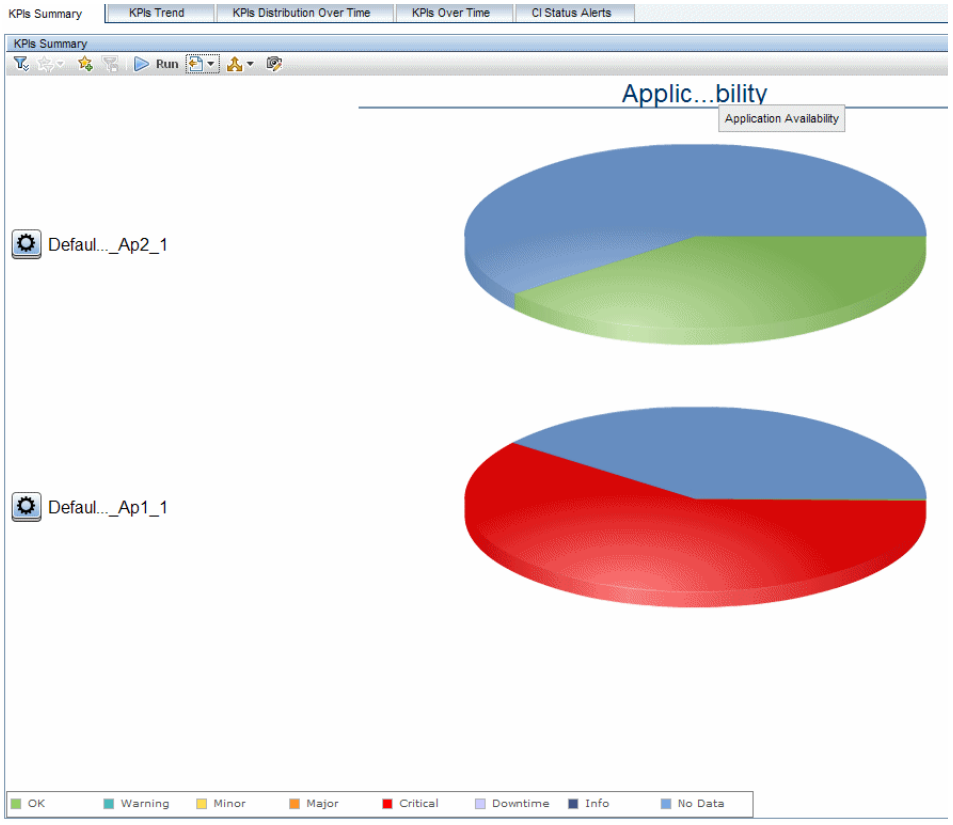
CI Type	Diagnostics Drilldown Options
Diagnostics Probe Group	➤ **Summary View** (Probe Group Summary) ➤ **Layers View** (Load)
Diagnostics Probe	➤ **Summary View** (Probe Summary) ➤ **Layers View** (Load)
Business Transaction	➤ **Transactions View** ➤ **Layers View**

The HP Diagnostics views accessed with the context menu options that are available from the KPIs Over Time report are as follows:

HP Diagnostics Views	Description
Summary View	**Note:** This option is available for all Diagnostics Probe CIs. This option is displayed only if you have Diagnostics installed. Opens the Probe Summary View in the HP Diagnostics application, for the probe group and for the time frame specified in the View box in the KPIs Over Time report. For more information about Diagnostics, see the *HP Diagnostics User's Guide*.
Layers View	**Note:** This option is available for all Business Process Monitor, and Diagnostics Probe CIs. This option is displayed only if you have Diagnostics installed. The Layers (Load) view displays the performance metrics for the Diagnostics layers where processing has taken place in your application, for the transaction that corresponds to the Business Process Monitor CI or for the selected Probe CI and for the time frame specified in the View box in the KPIs Over Time report. For more information about Diagnostics, see the *HP Diagnostics User's Guide*.
Transactions View	**Note:** This option is available for all Business Transaction CI. This option is displayed only if you have Diagnostics installed. The Transactions view displays performance metrics for the transactions that are being executed by your applications, with the transaction corresponding to the Business Transaction CI highlighted, and for the time frame specified in the View box in the KPIs Over Time report. For more information about Diagnostics, see the *HP Diagnostics User's Guide*.

KPIs Summary Report

This report displays a summary of KPI status distribution over time for each selected KPI.



To access	Select **Applications** > **CI Status** > **KPIs Summary**
Important information	This report is produced only for certain CIs with historical KPI data. For details, see "Configuration Items Dialog Box" on page 341.
See also	"Configuration Items Dialog Box" on page 341

Report Settings

UI Element (A-Z)	Description
<Common report settings>	See "Common Report and Page Elements" in *Reports*.
Configuration Items	Displays the name of the selected CI for the report, and if more than one CI is selected, the number of CIs that the report is based on. For example, **Filtered (4)** means that four CIs are selected for inclusion in the report. Click the **Configuration Items** link to open the Configuration Items dialog box where you can select CIs.
KPIs	Indicates the number of KPIs that are included in the report, and the total number of KPIs that are attached to the selected CIs separated by a slash; for example, **Filtered (1/3)**. **All** is displayed when all available KPIs are selected. Click the **KPIs** link to open the KPIs dialog box where you can select KPIs. **Default value:** If the **Application** KPI is attached to any of the selected CIs, this KPI is selected automatically.

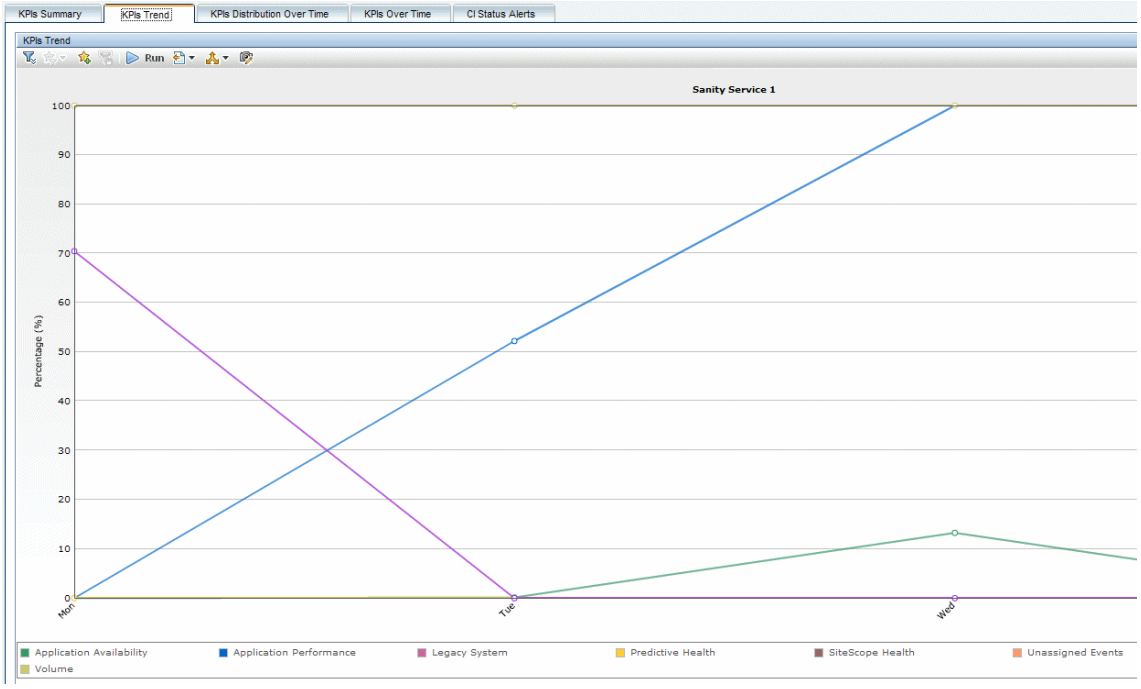
Report Content

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element	Description
<Pie chart>	Each pie chart represents a KPI instance (name displayed at the top) for a CI (name displayed on the left), and summarizes the statuses for the KPI over the selected time frame (as long as there is relevant data for the KPI on that CI). Each pie chart is divided into colored status slices, so that each slice represents the percentage of time that a particular status was held by the KPI. **Tooltip:** Hold the pointer over a pie slice to display a tooltip containing the following information: ➤ **Status.** The name of the status represented by the slice. ➤ **Status Duration.** The amount of time that the KPI held this status during the time frame. This can be given in hours, minutes, and seconds (for example, 01:10:48) or in days and hours (for example, 30 days, 9 hours). ➤ **Status Percentage.** The percentage of the time that the KPI held this status **Functionality:** Right-click a pie for animation functionality. For more information, see "Adobe Flash Player in Reports" in *Reports*.

KPIs Trend Report

This report displays the trend for changes in KPI status over time, for selected statuses.



To access	Select **Applications** > **CI Status** > **KPIs Trend**
Important information	➤ This report is produced only for certain CIs with historical KPI data. For details, see "Configuration Items Dialog Box" on page 341. ➤ Data is displayed in the report starting from the point that data was collected for the selected CIs. For example, if you set the report to show data every week for the past month, but data was collected only for the past two weeks, the report shows data from two weeks ago to the present date.
See also	"Configuration Items Dialog Box" on page 341

Report Settings

UI Element (A-Z)	Description
<Common report settings>	See "Common Report and Page Elements" in *Reports*.
Configuration Items	Displays the name of the selected CI for the report, and if more than one is selected, indicates the number of CIs that the report is based on. For example, **Filtered (4)** means that four CIs are selected for inclusion in the report. Click the **Configuration Items** link to open the Configuration Items dialog box where you can select CIs.
Group by	Select a radio button to determine how the data is organized: ➤ **CIs.** A separate chart is displayed for each CI, containing trend data for all relevant KPIs. ➤ **KPIs.** A separate chart is displayed for each KPI, containing trend data for all relevant CIs.

UI Element (A-Z)	Description
KPIs	Indicates the number of KPIs that are included in the report, and the total number of KPIs that are attached to the selected CIs separated by a slash; for example, **Filtered (1/3)**. **All** is displayed when all available KPIs are selected. Click the **KPIs** link to open the KPIs dialog box where you can select KPIs. **Default value:** If the **Application** KPI is attached to any of the selected CIs, this KPI is selected automatically.
Statuses	Indicates the number of statuses that are included in the report, and the seven possible statuses separated by a slash; for example, **Filtered (5/7)**. Click the **Statuses** link to open the Statuses dialog box where you can select statuses. **Default value:** All statuses that are defined as non-critical are selected, and **All Non-Critical Statuses** is displayed. For details, see "Statuses Dialog Box" on page 365.

Report Content

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<Chart in report>	A separate chart is displayed for each included CI, or for each included KPI, depending on the **Group by** filter selection. Each chart shows status trend (in percentage) over time, within the selected time frame (as long as there is relevant data for the KPI on that CI).

UI Element (A-Z)	Description
<Line on chart>	Each line on the chart represents the status trend for a specific KPI on a specific CI, based on a compilation of all statuses selected in the **Statuses** filter. A legend is given to distinguish each KPI or CI. The points for the line are plotted at the intervals defined by the report granularity (the legend for the x-axis shows the time interval for each point), so that each point represents a period of time during the overall time frame. Each point shows the percentage of time that the KPI held all included statuses during that time interval. For example, if the KPI had **OK** status for 10% of the time interval, and **Warning** status for 20%, and both of these statuses are included in the **Statuses** filter, then both periods are included in the total percentage (adding 30% to the total). **Tooltip:** Hold the pointer over a point on the line to display a tooltip containing the following information: ➤ **Status Duration.** The total time that the KPI held the included statuses during the time interval. This can be given in hours, minutes, and seconds (for example, 01:10:48) or in days and hours (for example, 30 days, 9 hours). ➤ **Status Percentage.** Percentage of the time interval that the KPI held the included statuses. **Note:** When one line is on top of another, the information is the same for both lines.

Statuses Dialog Box

This dialog box enables you to select the KPI statuses to be included in a Service Health report, for the duration of a Web session. The report provides information based on the selected statuses.

To access	In a Service Health report, click **Statuses** in the reports settings area.
Important information	➤ You must define at least one CI for the report before you can select statuses. ➤ When you first select the CIs for the report or open the report, the default status selection is automatically applied. The default selection is for all statuses that are defined as non-critical, meaning all statuses other than **Critical**. You can modify the definition of non-critical statuses in the Infrastructure Settings page: Select **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**, choose **Applications**, select **Service Health Application**, and locate the **Default Non-Critical Statuses** entry in the **Business Report Properties** table. Modify the value to include or exclude the required statuses.

Troubleshooting the Reports

HP Business Service Management records, in a reports log, errors that occur when generating reports. The reports log can also include information about the following activities: creating a new report, generating a report, modifying the report filters, drilling down in reports, and so on. For details on the reports log, see "Reports Log" in *Reports*.

13

Service Health on a Mobile Device

This chapter includes:

Concepts

➤ Service Health on a Mobile Device Overview on page 368

➤ The BSMobile iPhone Application on page 369

Tasks

➤ How to View Data on a Mobile Device on page 371

Reference

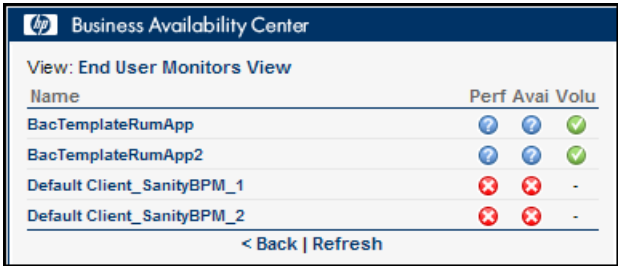
➤ Mobile Device User Interface on page 373

Concepts

Service Health on a Mobile Device Overview

You can display the operational status of components of your business using mobile devices with a browser that supports standard HTML.

Note: When using the Legacy Mobile Console to communicate with BSM, use secure communication (https). If you use unsecured communication (http), authentication credentials (user and password) are transmitted to BSM using clear text. Note that this is only related to the Legacy Mobile Console, and is not relevant for the BSMobile iPhone application.



The configuration items (CIs) are shown in layers where each parent CI is a link to the layer of its children CIs. The status of the CI's Key Performance Indicators (KPIs) is displayed on the right of the screen. For details, see "How to View Data on a Mobile Device" on page 371, and "Mobile Device User Interface" on page 373.

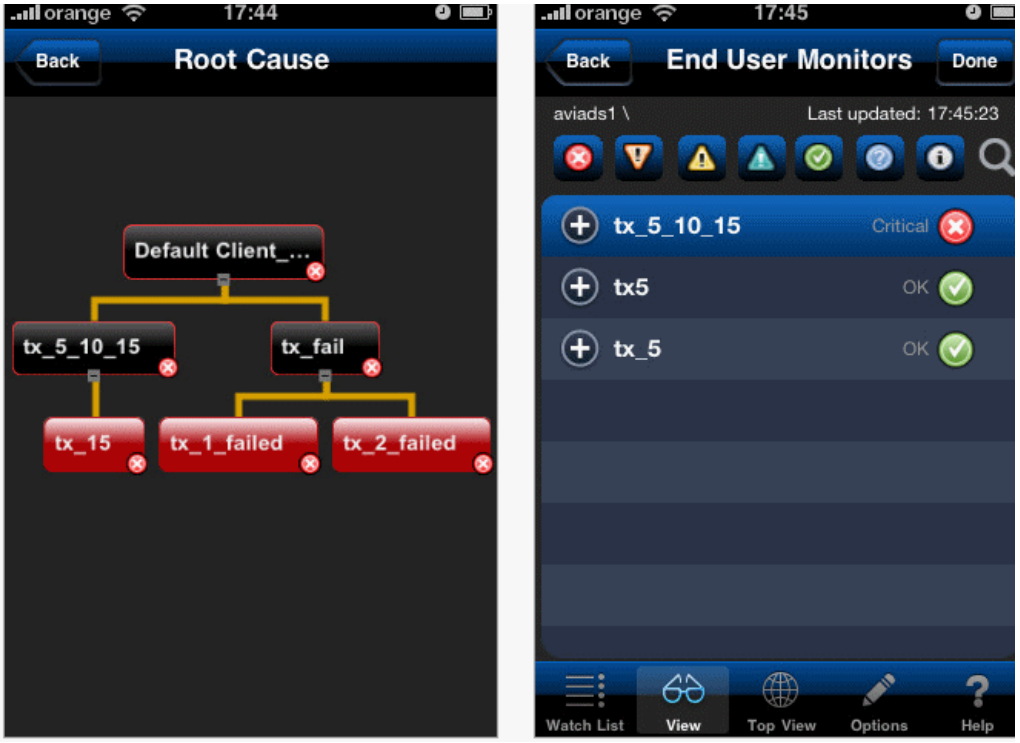
Note: For information on viewing Service Health information on an iPhone, iPad, or iPod Touch, see "The BSMobile iPhone Application" on page 369.

The BSMobile iPhone Application

The BSMobile iPhone application is a free download that enables you to keep track of your monitored CIs while away from your computer, using iPhone, iPad, or iPod Touch.

BSMobile enables you to:

- Track real time CI statuses; you can monitor views with a UI similar to the Hierarchy or Top View components, or you can create a quick access CI **Watch List**.
- See full KPI details, and filter CIs by status.
- Find the root cause problematic CI or KPI.
- Email or send an SMS to a CI's owner with details regarding the problematic CI.
- Receive alerts to your iOS device from BSM with a quick link to the BSMobile application. Note that this requires choosing the iPhone alert template in the alerts configuration; for details, see "How to Create a CI Status Alert Scheme and Attach it to a CI" on page 503.



To start using BSMobile, access the Apple AppStore from your iOS device (iPod/iPhone/iPad), or download the application from http://itunes.apple.com/us/app/hp-bsmobile/id383025746?mt=8.

Note: BSMobile uses the BAMOpenAPI; for additional information on APIs see "Service Health External APIs" on page 983.

Tasks

How to View Data on a Mobile Device

You can display a view's data on a mobile device using the steps described in this section.

This task includes the following steps:

- "Prerequisites" on page 371
- "Access the server URL" on page 372
- "Change display characteristics – optional" on page 372
- "Navigate to the view and display the data" on page 372

1 Prerequisites

Ensure that the server you want to access is open to Internet.

Ensure that the browser of the mobile device you want to use supports standard HTML.

2 Access the server URL

Enter the following URL in your mobile device:
http://<HP Business Service Management server>/<HP_BSM_web_application_context_name (usually topaz)>/mobileConsole.do

---

Tip:

- In the mobile device, you can add the URL to your Favorites at any stage (login, view, or drill down). Depending on the stage, clicking the **Back** button might not access higher hierarchy levels or the view selection page.
- You must click **Refresh** to refresh the display as the refresh feature is not automatic and the data becomes obsolete.

---

3 Change display characteristics – optional

The display characteristics of the mobile console are controlled by an XSL file. To modify any aspect of the display using non-Latin characters (for example, displaying the view and button names: **Back** and **Refresh**), contact HP Software Support for help in writing an XSL to support this feature.

Note: The characters used for KPI names depend on the user's locale and not on the browser's locale.

---

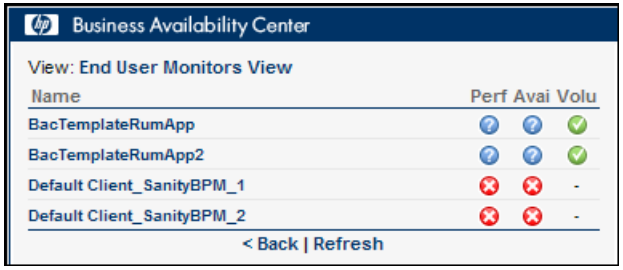
4 Navigate to the view and display the data

Enter the appropriate information in the login screen, and select a view. For user interface details, see "Mobile Device User Interface" on page 373.

Reference

Mobile Device User Interface

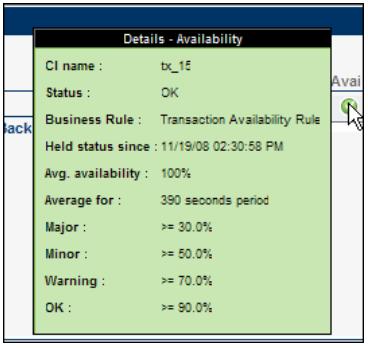
This page enables you to display a view on a mobile device.



To access	Enter the appropriate information in the login screen, and select a view.
Important information	➤ When more than a few KPIs are attached to the CI (depending on the device's screen resolution), the display becomes scrollable. ➤ Long CI names are wrapped. **Note:** Only the first four letters of the KPI names are displayed in the view. You might have to clone or rename some of the KPIs if their first four letters are the same; for example SAP and SAP Alert KPIs. All the feature's visual aspects are controlled by the following XSL file: **\AppServer\webapps\site.war\mobile\dash\console.xsl** You can modify the XSL file so the mobile device can display longer labels. Contact HP Software Support for help in writing an XSL to support that feature. This XSL file transforms the XML returned from HP Business Service Management server to the mobile-like HTML file that is displayed on the mobile device.

Relevant tasks	"How to View Data on a Mobile Device" on page 371

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<KPI>	The status of the KPIs attached to the CIs. For details on the displayed status, see "KPI Status Colors and Definitions" on page 45. **Note:** Only the first four letters of the KPI names are displayed on the mobile device. You may want to rename the KPIs if their first four letters are the same; for example SAP and SAP Alert KPIs. You can rename KPIs in the KPIs Repository (**Admin** > **Service Health** > **Repositories** > **KPIs**). **Tooltip:** Click an icon to display the relevant tooltip. To hide the tooltip, click anywhere else in the page or wait 5 seconds.  The tooltip displays the name of the CI, the status of the KPI, the rule used to calculate the status, and the date when the status changed, and additional information depending on the type of KPI. For example, **Avg. response time** displays the value for the Performance KPI, **Average for** displays over how long the average was calculated, **Minor** and **OK** are the objectives of the Performance KPI (the objective).
Back	Click **Back** to go back to the login page.

UI Element (A-Z)	Description
Name	The name of the CIs in the view. **Note:** To drill down to a child CI, move the cursor to the CI, and click.
Refresh	Click **Refresh** to refresh the view.
View	The name of the view you selected in the login page.

Part II

View Management

14

View Builder - Creating Global Views and Local Impact Views

This chapter includes:

Concepts

➤ View Builder Overview on page 380

➤ Local Impact View Calculation on page 382

Tasks

➤ How to Create or Edit Views Using View Builder on page 384

➤ How to Add or Remove KPIs Within a View on page 386

Reference

➤ View Builder User Interface on page 389

Concepts

View Builder Overview

The View Builder enables you to create or modify views directly within Service Health Administration. You can create or modify pattern views, template based views, and perspective based views, as well as templates and perspectives. For details on each of these formats, see "View Formats" in the *Modeling Guide*.

For each view, the View Builder enables you to define which KPIs are displayed in the view, and which are included in CI calculations.

Within Service Health Administration, you can use the View Builder to create or edit two types of views: global views, and local impact views.

This section includes the following:

➤ "Global Views" on page 380

➤ "Local Impact Views" on page 381

Global Views

The default views within Business Service Management are global views. Within a global view, when you modify KPI or health indicator definitions on a CI, your changes are reflected in all views which contain the CI, across Business Service Management.

In a global view, KPIs are calculated based on the view topology in the RTSM. For example, suppose you have a CI with 2 child CIs, and the parent CI has a KPI that is also found on both of the child CIs. The KPI on the parent CI is calculated based on the KPIs on both of the children, even if one of the children is hidden in the view. For details on hidden children, see "How to Find Visible and Hidden Child CIs" on page 78.

Local Impact Views

View Builder enables you to also create local impact views, which are independent of all other views. When you modify indicator definitions on a CI within a local impact view, this has no effect on this CI in all other views.

For example, if you modify a rule parameter for an indicator on a CI in a local impact view, the CI in all other views will not have this parameter modified. In contrast, if you modify an indicator on a CI in a global view, the indicator is modified on this CI in all other views as well.

Local impact views operate on a WYSIWYG (what you see is what you get) principle. For example, suppose you have a global view which contains a number of CIs representing business transactions, and you are only interested in the data coming from two or three significant transactions. You can create a local impact view based on the global view, remove the less important transactions from the local impact view, and the calculations within the view are performed using only those transactions that are visible within the view.

In contrast, within a global view you can hide CIs from being displayed, but calculations within the view are performed using all of the CIs that exist in the view, including those that are hidden from display.

For more details on local impact views, see "Local Impact View Calculation" on page 382.

Note: You can create up to 100 local impact views. Each local impact view can contain up to 1000 CIs. To modify these limits, contact HP Support.

Local Impact View Calculation

Local impact views are independent of other views; when you modify indicator definitions on a CI in a local impact view, this has no effect on the CI in other views. The following section describes various aspects of local impact view calculation.

This section includes the following:

➤ "Breakdowns" on page 382

➤ "HI and KPI Calculations in Local Impact Views" on page 382

➤ "Creating or Deleting Indicators in a Local Impact View" on page 383

Breakdowns

Some data collectors collect information based on many dimensions (application, transaction, location, and so on), but KPIs are calculated and displayed within Service Health according to a specific dimension. For example, if BPM is monitoring a transaction which runs from three different locations, Service Health displays the average time of all three locations.

Within local impact views, you can configure data breakdowns on CIs, so that data on their child CIs is broken down according to a particular dimension. For example, if you want to monitor transaction performance in specific locations, you can define a breakdown by location to calculate KPIs in smaller granularity.

Breakdowns are only available in local impact views. For details on how to configure breakdowns, see "How to Configure Breakdowns" on page 444.

HI and KPI Calculations in Local Impact Views

➤ When you create a local impact view, HI and KPI statuses and values are copied from the model, and are identical to the statuses and values of these indicators in global views.

The **Last Status Change** setting for HIs in a local impact view reflects the time the view is created, until the next time statuses are updated.

Trend and **History** data for indicators are not copied from the model, but are calculated from when the view is created.

- When you create a local impact view based on another local impact view (using the **Save As** option), the new view copies statuses and values from the model, and not from the original local impact view.
- KPI calculation within a local impact view (as in a global view) is based on the Impact links between the CIs in the view, and not based on the View Folding. For example, suppose CI1 has a child CI (CI2) defined via an Impact link, and these CIs are inverted within a view so that CI2 appears to be the parent and CI1 appears to be the child. Their KPIs are calculated according to the Impact link, and not according to their appearance in the view (View Folding), so CI1 is still the parent CI when calculating KPIs.
- If a CI is removed from a local impact view (for example if hidden from the view, or excluded by pattern conditions), any customized indicator definitions on the CI are deleted. If the CI is restored to the view, its default indicator settings are restored.

Creating or Deleting Indicators in a Local Impact View

The following functionalities in local impact views differ from global views:

- HIs and KPIs cannot be deleted from a local impact view. You can remove an HI from a KPI's calculation, but you cannot delete it from the view.
- Since event-based HIs are not configurable, you cannot create a new event-based HI in a local impact view.

Tasks

How to Create or Edit Views Using View Builder

This section describes the main tasks used to create or edit views using View Builder.

This section includes the following:

- "Manage folders in View Selector" on page 384
- "Edit or delete an existing view" on page 384
- "Clone and edit an existing view" on page 385
- "Create a view, template, or perspective" on page 385

Manage folders in View Selector

Within View Builder, the View Selector pane enables you to organize views within folders as follows:

- To add a folder at the top level of the hierarchy, select the **Root** folder, and click **Create a New Folder**.
- To add a folder within an existing folder, select the existing folder and click **Create a New Folder**.
- To delete a folder, select it and click **Delete**. A folder can only be deleted if the user has delete and edit permissions for all the views within the folder.

Edit or delete an existing view

To edit a view, select the view in the View Selector pane, and edit its details in the panes on the right side of the View Builder. For user interface details, see "View Builder Tab" on page 389.

To delete a view, select the view in the View Selector pane and click **Delete**.

Note: Within the view selector, you can only see those views for which you have edit permissions.

Clone and edit an existing view

You can clone an existing view to create a view that is based on the original view. For example, if you have a global view which you want to customize but still leave the global view intact, you can clone the global view and save it as a local view. You can then make changes to the CIs and indicators on the local view, without having an effect on other views.

To clone a view and open the copy for editing, select a view, and click the **Save As** button. Note the following:

- If you are cloning a global view, you can create a global view or a local impact view based on the original view.
- If you are cloning a local impact view, you can only create another local impact view based on the original local impact view.

Create a view, template, or perspective

To create a view, template, or perspective, click the **New Local Impact View** or **New Global View** button, and select the type of view you want to create.

- For an overview of local impact views and global views, see "View Builder Overview" on page 380.
- For details on pattern views, template based views, and perspective based views, see "View Formats" in the *Modeling Guide*.
- For details on templates and perspectives, see "Templates and Perspectives" and "Predefined Folders and Views" in the *Modeling Guide*.

When you create a view, template, or perspective within View Builder, you use the RTSM Modeling Studio interface.

For details on how to define each type of view, refer to the following sections:

Pattern View	"How to Create a Pattern View" in the *Modeling Guide*
Template-Based View	"How to Create a Template Based View" in the *Modeling Guide*
Perspective-Based View	"How to Build a Perspective-based View Based on a Model" in the *Modeling Guide*
Template	"How to Create a Template" in the *Modeling Guide*
Perspective	"How to Create a Perspective" in the *Modeling Guide*

How to Add or Remove KPIs Within a View

The **View Properties** dialog box displays a list of KPIs that are assigned within a selected view, and enables you to define whether each KPI is included in the view, included in the CI status calculation, or both. You can also view each KPI's user mode (Business, Operation, or both). The following section describes how to display KPI properties for a view, and how to modify these properties.

Tip: The user mode columns (**Business User** and **Operations User**) are read-only, and are determined by the KPI's settings within the KPI repository. For details on changing user mode settings for a KPI, see "How to Set Up User Mode Functionality" on page 439.

This section includes the following:

➤ "Display KPI properties for a view" on page 387

➤ "Modify which KPIs are included in the view" on page 387

➤ "Modify which KPIs are included in CI calculation" on page 388

Display KPI properties for a view

In the **View Selector** pane, select a view and click the **View Properties** button. The View Properties dialog displays a detailed list of the KPIs in the selected view; for user interface details, see "View Properties Dialog Box" on page 393.

Modify which KPIs are included in the view

The **Include in View** column in the View Properties dialog box defines which KPIs are included in the view. By default all KPIs are included; to remove a KPI, deselect the check-box corresponding to the KPI.

Tip: You can use this to remove the Unassigned Events KPI and the Unresolved Events KPI, if they are not relevant to your monitored system.

For example, suppose you create a view for a business service, but you are interested only in the infrastructure data. In this case, you can de-select the Application domain KPIs, and you will not see these KPIs in the Service Health components.

Note: The **End User Monitors** perspective and the **System Monitors Only** perspective define which KPIs are included in views that are based on these perspectives. Although KPIs can be manually excluded from a view using the View Properties dialog box, if the view perspectives are modified, the KPI exclusion list is reset according to the applied perspectives.

Modify which KPIs are included in CI calculation

The **Include in CI Status** column in the View Properties dialog box defines which KPIs are included in the CI status calculation based on all KPIs on the CI. By default all KPIs are included; to remove a KPI, clear the check-box corresponding to the KPI.

For example, suppose you want the status of the CIs in Top View to be set based only on infrastructure KPIs since they are important to you, but you still want to see the Application domain KPIs. In this case, you can de-select the Application domain KPIs, and they will not be used to set CI status in Top View.

Reference

View Builder User Interface

This section includes:

➤ View Builder Tab on page 389

➤ View Properties Dialog Box on page 393

View Builder Tab

The View Builder enables you to create or modify views, templates, and perspectives using Service Health Administration.

You can define two types of views using View Builder: global views and local impact views. For details on global and local impact views, see "View Builder Overview" on page 380.

To access	Select **Admin** > **Service Health** > **View Builder**
Important information	View Builder uses the RTSM Modeling Studio interface. For details, see "Modeling Studio Overview" in the *Modeling Guide*. ➤ For details on pattern views, template based views, and perspective based views, see "View Formats" in the *Modeling Guide*. ➤ For details on templates and perspectives, see "Templates and Perspectives" in the *Modeling Guide*.
Relevant tasks	"How to Create or Edit Views Using View Builder" on page 384

View Selector Pane

The left side of the View Builder contains the View Selector pane, which displays a hierarchy of views, and folders which contain views. You can add, edit, or remove a view, or display view properties.

User interface elements are described below:

UI Element (A-Z)	Description
	New Folder. Click to create a new folder, in which you can create views.
	New Local Impact View. Click to create a new local impact view. Use the drop-down selection to create one of the following: ➤ Pattern view ➤ Template-Based view ➤ Perspective-Based view
	New Global View. Click to create a new global view. Use the drop-down selection to create one of the following: ➤ Pattern view ➤ Template-Based view ➤ Perspective-Based view ➤ Template ➤ Perspective

UI Element (A-Z)	Description
	Save As. Select a view, and click to create a copy of the view. If you are cloning a global view, you can create a global view or a local impact view based on the original view. If you are cloning a local impact view, you can only create another local impact view based on the original local impact view. **Note:** ➤ For templates, the save as global view option is labeled "Save template as..." ➤ For perspectives the save as global view option is labeled "Save perspective as..." ➤ For perspectives and templates (which cannot be saved as local impact views), the "Save as local impact view" option is disabled.
	View Properties. Select a view, and click to display its properties. For details, see "View Properties Dialog Box" on page 393.
	Delete. Select a folder or view, and click to delete. A folder can only be deleted if the user has delete and edit permissions for all the views within the folder.
	Expand All. Click to display all the views and folders in the hierarchy.
	Collapse All. Click to display only the highest level views and folders in the hierarchy.
	Refresh. Click to refresh the display.
<Folder>	A folder can contain views, or other folders. Folders help you organize views.
<View>	Each view is displayed with an icon indicating the type of view. To edit a view, select the view and edit its details in the panes on the right side of View Builder. You can only see those views for which you have edit permissions.

<Additional Panes>

The right side of the View Builder displays additional panes depending on your actions within the View Selector pane, as follows:

Selecting a Folder	When you select a folder in View Selector, the right pane displays an introduction to View Builder, and provides links to actions that you can take. When you select the **Local Impact Views** folder in View Selector, you can create local impact views only; from all other folders you can create local impact and global views.
Creating a Pattern View, Template, or Perspective	When you create or edit a pattern view, or when you create a template or perspective, the following panes appear: ➤ **CI Types** ➤ **Query Definition** ➤ **Hierarchy** ➤ **Advanced Tabs** The **CI Types** pane corresponds to the CI Types tab in the left pane of Modeling Studio. You can use this pane to drag CI types into the Query Definition pane. For user interface details on the **CI Types** pane, see "Left Pane" in the *Modeling Guide*. The other panes are components of the Pattern View Editor in Modeling Studio. For user interface details on these panes, see "Pattern View Editor" in the *Modeling Guide*.

Creating a Perspective-Based View	When you create or edit a perspective-based view, the following panes appear: ➤ **CI Selector** ➤ **Content** ➤ **Perspective** ➤ **View Results** The **CI Selector** pane corresponds to the CI Selector tab in the left pane of Modeling Studio. You can use this pane to drag CIs into the Content pane. For user interface details on the **CI Selector** pane, see "Left Pane" in the *Modeling Guide*. The other panes are components of the Perspective-Based View Editor in Modeling Studio. For user interface details on these panes, see "Perspective-based View Editor" in the *Modeling Guide*.
Creating a Template-Based View	When you create a template-based view, the **Template-based View Wizard** opens. For user interface details, see "Template-based View Wizard" in the *Modeling Guide*.

View Properties Dialog Box

This dialog box displays the KPIs in the selected view, and enables you to select whether each KPI is included in the view, included in the CI status calculation, or both. Each KPI's user mode (Business or Operation) is also displayed.

To access	In View Builder, select a view in the **View Selector** pane, and click the **View Properties** button.
Relevant tasks	"How to Add or Remove KPIs Within a View" on page 386

User interface elements are described below:

UI Element (A-Z)	Description
Business User	A check mark indicates that the KPI is defined for the Business user mode. For details on user mode, see "KPIs for User Modes" on page 412.
Domain	The KPI's domain, as defined in the KPI repository. For details, see "KPI Domains" on page 411.
Include in CI Status	When this option is selected, the KPI is used in calculating CI status, when CI status is calculated using all the CI's KPIs. To exclude a KPI from CI calculation, de-select this option for the KPI. **Note:** The **Include in CI Status** option is automatically cleared when the **Include in View** option is cleared.
Include in View	When this option is selected, the KPI is displayed in Service Health views and tooltips, and the KPI is used in calculating the CI's status. To exclude a KPI from views and tooltips and from CI calculation, de-select this option for the KPI. **Note:** The **Include in CI Status** option is automatically cleared when the **Include in View** option is cleared.
KPI	The name of the KPI.
Operations User	A check mark indicates that the KPI is defined for the Operations user mode. For details on user mode, see "KPIs for User Modes" on page 412.

15

Configuring KPIs and Health Indicators

This chapter includes:

Concepts

- KPI and HI Calculation on page 397
- KPI and HI Thresholds on page 401
- Selectors for Metric-Based HIs on page 406
- KPI Trend and History Calculation on page 408
- KPI Domains on page 411
- Persistent Data and Historical Data on page 411
- KPIs for User Modes on page 412
- Breakdowns on page 413
- PNR (Point of No Return) KPI Calculation on page 422

Tasks

- How to Configure KPIs and HIs—Overview on page 425
- How to Assign KPIs and HIs to CIs on page 428
- How to Edit KPI or HI Properties on page 431
- How to Define Thresholds for KPIs and HIs on page 433
- How to Define Selectors for HIs on page 435
- How to Set Up User Mode Functionality on page 439
- How to Change the KPI Status Icons on page 441
- How to Configure Breakdowns on page 444
- How to Attach a PNR KPI to a CI on page 448

Reference

➤ CI Indicators User Interface on page 452

Concepts

KPI and HI Calculation

Each CI has KPIs and HIs (health indicators) that define what is monitored for that specific CI. The status and value of these indicators show how well the CI is performing. The following sections describe how KPIs and HIs are assigned to CIs, and how these indicators are calculated.

- "How KPIs and HIs are Attached to CIs" on page 397
- "HI and KPI Definitions" on page 398
- "How HIs and KPIs are Calculated" on page 399
- "About Business Rules" on page 399
- "Notes and Limitations for KPIs and HIs" on page 400

Note: For an introduction to health indicators and KPIs, see "Health Indicators and KPIs - Overview" on page 115.

How KPIs and HIs are Attached to CIs

A KPI or HI can be attached to a CI in one of the following ways:

- **Assignment.** KPIs and HIs may be assigned to a CI as part of the CI creation. CIs are automatically assigned default KPIs and HIs according to the nature of the CI, using the Assignment mechanism. You can edit an HI assignment or a KPI assignment to define additional indicators that you want added to the CIs.

  For more information on HI and KPI assignments and how they define the default indicators, see "Assignments" on page 558.

- **Propagation.** KPIs may be attached to a CI as a result of propagation from child CIs. Most KPIs propagate up through the hierarchy, so that parent CIs have the same KPIs as all their child CIs.

Each KPI added by propagation has its own business rule and properties. For example, the Application Availability KPI for a child CI may use the Worst Child Rule (taking the worst status of all the HIs on the CI), while the same KPI for the parent CI (added by propagation from the child CI) may use the Percentage Rule.

For more information on the propagation mechanism and how it defines the default KPIs, see "Propagation Rules" on page 563.

- **Manual Administration.** KPIs and HIs can be manually attached to a CI in the Service Health Administration CI Indicators tab. You may want to attach new KPIs and HIs to a CI, in addition to the default/propagated KPIs, to broaden the information displayed on the CI. For example, you can add an OT Impact KPI to assess the ongoing cost of an application that is not available.

  You can also use the CI Indicators tab to edit KPIs and HIs that are assigned to a CI, and remove KPIs and HIs from a CI. For details, see "CI Indicators Tab" on page 453.

HI and KPI Definitions

HP Business Service Management provides a selection of predefined KPIs and HIs to work with Service Health. HI and KPI definitions come from content providers that send information to HP Business Service Management, such as Business Process Insight or Real User Monitor. These content packs contain the default parameters for each HI and KPI.

HI and KPI definitions generally include the following:

- The business rule which calculates status and value of the HI and KPI. (Event-based HIs do not use business rules.)
- The calculation source: HIs are calculated from monitored CI data samples; KPIs are calculated based on HIs, other KPIs, or both. For example, a KPI's metrics might be generated from HIs on child CIs (for example, when using the Summary of Values rule), or from other KPIs attached to the same CI (for example, when using the Impact Over Time rule).

- The thresholds (objective values) that the HI and KPI measurement is compared against; and the status (color) allocated to the HI and KPI based on the defined thresholds.
- Where and how to display the status indicator for the HI and KPI in Service Health, and where to store KPI measurements.

How HIs and KPIs are Calculated

HIs and KPIs are calculated as follows:

- Some HIs get their status directly from events. In this case, an event is sent to the BSM event manager, and the event manager assigns the corresponding HI its status based on the event definitions.
- Other HIs are metric-based; a data collector sends a data sample related to a monitored CI to the Business Logic Engine. The Business Logic Engine identifies the sample using the HI selector, as relevant for a specific monitored CI. Based on the HI definitions, the Business Logic Engine uses a business rule to calculate the HI status and value for the monitored CI.
- After an HI is calculated, the Business Logic Engine calculates the KPIs which are based on this HI, using the KPI business rule definitions. If this calculation causes a change in the status of a KPI, the Business Logic Engine recalculates the corresponding KPI of each parent CI, using the new status information. If the new measurement causes a change in the status for that KPI, the new status is again passed up the hierarchy to the corresponding KPI instances for the parent CIs, and so on.

Note: Some monitoring solutions include a value for the HI along with its status, while others only set the HI's status.

About Business Rules

Metric-based HIs and KPIs always have an associated business rule that defines how the indicator is calculated. These rules are defined in the Business Rule Repository, where you can edit predefined rules, or create customized rules. For details, see "List of Calculation Rules in Service Health" on page 740.

Some rules are specific to a particular KPI or HI, while others can be used for a variety of indicators. In the Indicator and KPI Repositories, each indicator has a defined default rule, and a list of rules that can be used with that indicator. HIs are calculated using rules for metrics from monitored CIs, while KPIs are calculated using group rules.

Notes and Limitations for KPIs and HIs

- Any change you make to the KPIs and HIs for a CI—adding new indicators, deleting indicators, or editing indicator properties—are seen in any view that includes the CI.
- There are no restrictions on the type of KPI that can be attached to a CI. HIs and business rules are restricted to specific CI types by their definitions in the repositories. You must ensure that you select KPIs, HIs, and business rules that are appropriate for the CI type.
- KPIs added to a CI as part of an SLA definition in Service Level Management Administration have no relevance to the Service Health KPIs and do not appear in the CI Indicators tab. Conversely, KPIs added to a CI in the CI Indicators tab have no relevance for the CI when it is included in an SLA, and do not appear for the CI in Service Level Management.
- Deleting a KPI may impact other KPIs that are dependent on the deleted KPI. For example, OT Impact is calculated based on the status of another KPI, such as Application Availability; in this case, deleting the Application Availability KPI would prevent calculation of OT Impact.
- Unlike KPIs, HIs do not have **Downtime** status. HI behavior is dependent on the centralized Downtime configuration setting: If samples are sent for the HI, its status continues to be updated even if the related KPI is in downtime. If no samples are sent, the HI will enter **No Data** status when the No Data Timeout has passed.

KPI and HI Thresholds

KPI and HI (health indicator) thresholds define the standards for allocating business status to the indicators. The following sections describe thresholds and how to define them for an indicator.

- "About Status and Thresholds" on page 401
- "Defining Logical Thresholds" on page 404
- "Excluding Statuses" on page 405
- "Units of Measurement for Thresholds" on page 406

About Status and Thresholds

The status displayed for a KPI or HI in Service Health provides an indication of how well a business process or system is meeting your business objectives. Based on traffic light colors (with some additional colors), the Service Health shows you if the KPI or HI measurement is acceptable (green), critically failing (red), or is at some business risk level between the two.

Five statuses are available in Service Health for active status, each representing a different level of business performance. Depending on the CI and indicator types, active status may be represented in Service Health using from two to all five of these status levels:

- **OK** (green)
- **Warning** (aqua)
- **Minor** (yellow)
- **Major** (orange)
- **Critical** (red)

Assigning Statuses to HIs and KPIs

Some HIs take their status directly from an event (event-based HIs), while others use Service Health or Service Level Management business rules to calculate status (metric-based HIs).

Definitions of HIs are contained in the Indicator Repository. **Event-based HIs** map an event's state to the corresponding HI's severity. For example, suppose you create an HI called CPU Load for an event named CPULoad, and you assign this HI a severity of Critical if the event's state is High. In this case, the HI's status is Critical when such an event occurs (event = CPULoad, state = High). For further details, see "Indicator Repository Overview" on page 682.

Metric-based HIs and **KPIs** use business rules to calculate their status, as follows:

- A business rule calculates a measurement for the KPI or HI.
- The calculated measurement is compared with defined threshold values.
- The KPI or HI is assigned a status according to where the measurement falls within the threshold levels. For example, if a KPI measurement of 50% falls within the definition of the **Minor** threshold, the KPI is assigned Minor status (yellow).

Note: If an HI has no thresholds defined, its status is **Informational**. For example, if you are monitoring Business Process Insight, and the Backlog HI has a calculated value of $1000, this indicator has **Informational** status unless you set thresholds to define whether this value is OK, Minor, and so on.

The threshold values used for each KPI or HI can originate from various sources:

- The business rule definitions in the Business Rule Repository provide default threshold values for every rule that uses thresholds. The business rules generally define different threshold values for each of the five statuses used in Service Health. You can define new default threshold values for a business rule, as described in "New Rule/Edit Rule Dialog Box" on page 871.
- The Assignment mechanism may specify specific threshold values to be used with the business rule for a KPI or HI. These values override the values from the Business Rule Repository.

- The Assignment mechanism may specify reference values for the threshold parameters, so that the threshold values are taken from the threshold values defined in End User Management Administration. These values override the values from the Business Rule Repository.
- You can modify the threshold values for an individual KPI or HI in the Service Health Administration CI Indicators tab, while adding or editing a KPI or HI. The new values override values from the Assignment mechanism or from the business rule. For details, see "CI Indicators Tab" on page 453.

HIs on SiteScope Monitor CIs

For HIs on SiteScope monitor CIs, status is based on the status received from SiteScope (calculated according to the thresholds defined in SiteScope). Three status levels are used in Service Health:

- **OK** (green) in Service Health corresponds to **Good** or **OK** status in SiteScope
- **Minor** (yellow) in Service Health corresponds to **Warning** status in SiteScope
- **Critical** (red) in Service Health corresponds to **Error** status in SiteScope

The SiteScope status definitions cannot be changed in Service Health, so the business rules for HIs on SiteScope monitors do not include threshold values.

BTM (Business Transaction Management) CIs

For BTM CIs (from Business Process Monitor, Real User Monitor, Business Process Insight, and TransactionVision), HI and KPI status is calculated by comparing the indicator measurement with threshold values.

For the BTM CIs, you can edit these threshold values in the CI Indicators tab to use as many of the status levels as you require, as described in "Defining Logical Thresholds" on page 404.

Note: KPIs and HIs created for CIs by the Assignment mechanism templates, frequently have threshold values that differ from the default ones used by the business rule. However, when editing one of these indicators in the CI Indicators tab, if you select a different rule and then revert to the original rule, the original threshold values are replaced with the rule default values.

Defining Logical Thresholds

The thresholds values for a KPI or HI should cover the whole spectrum of possible active measurements for that indicator, which correspond to the **OK**, **Critical**, **Major**, **Minor**, and **Warning** statuses. The thresholds do not include the indicator values corresponding to the **No Data**, **Downtime**, **Stopped**, and **Informational** statuses.

The KPI or HI measurement is evaluated against each threshold level, starting from **OK** (green), and continuing (in order) to **Critical** (red). This process stops at the first threshold level into which the measurement fits.

For example, suppose you set thresholds of **OK** < 8 seconds and **Minor** < 12 seconds. If the value is 9 seconds, it does not match the **OK** threshold but it does match the **Minor** threshold, so the indicator's status is **Minor**.

To define where the boundaries of each threshold level falls, each threshold from **OK** to **Major** is associated with an **Operator**. (The **Critical** threshold definition is always **Otherwise**, meaning that this status is applied to all measurements that fall beyond the **Major** threshold limit.) You can select the operator that matches your requirements; the same operator is applied to all threshold levels.

The available operators are:

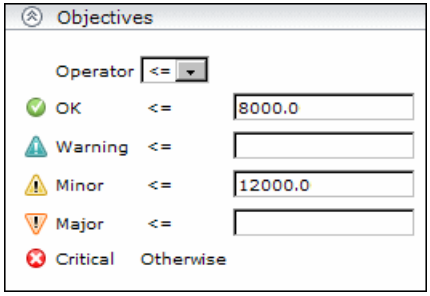
>
>=
<
<=

You must ensure that the thresholds contain logical values (according to the data type) and are correctly ordered, and that the operator is logical for the order.

Excluding Statuses

Not all the statuses need be used for a KPI; for example, the OT Impact KPI by default uses only **OK** (green) and **Critical** (red) status.

When the threshold value for a status is left blank, Service Health ignores that status during KPI status calculation. For example, an HI for a transaction may have the following thresholds defined (taken from the threshold settings for the transaction in End User Management Administration):

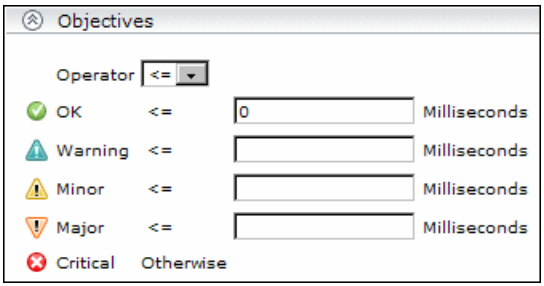


In this case, if the measurement for the HI does not fall into the **OK** threshold level, then **Warning** is skipped and the measurement is evaluated against the **Minor** threshold level. If it does not fall into that level, **Major** is also skipped, and the HI is assigned **Critical** status.

Tip: If you want to exclude statuses when editing the threshold values for a KPI or HI, it is recommended that you use this method.

Units of Measurement for Thresholds

The threshold use a unit of measurement, shown after the threshold value box:



The unit is part of the business rule definition, and indicates the format of the calculated measurement. This format may reflect the units used by the incoming data (for example, **milliseconds** for performance time data), or it may be a new format applied as a result of the business rule calculations (for example, **dollars** for a financial loss calculation). If required, the default unit for a rule can be changed in the rule definition (as described in "New Rule/Edit Rule Dialog Box" on page 871).

Selectors for Metric-Based HIs

HP Business Service Management receives real-time data from data samples for monitored CIs, sent by external systems. The data samples contain information collected by a monitoring system (either HP or third-party), and are supplied to HP Business Service Management over the bus.

When a monitored CI has a metric-based HI (health indicator) assigned, the HI properties include a **selector**. A selector is a filter definition that defines which samples are relevant for the HI calculation.

The Business Logic Engine filters the data samples arriving on the bus using selectors. The selector identifies and catches the data that is relevant for each CI and its HIs. The HI's business rule is applied to those data samples which pass the selector filtering. Different selectors can be used by different HIs (with corresponding rules), enabling the use of different samples for each HI.

For a task that shows how to define selectors, see "How to Define Selectors for HIs" on page 435.

Selectors can be defined in the following ways:

HI Assignments

You can create or customize an HI assignment rule for each CI type. An assignment rule includes a condition and a task. The condition describes specific characteristics of a CI. The task describes the HIs, rules, rule parameters, thresholds, and selectors that are to be assigned automatically to the CI when the condition occurs, if the assignment is running. For details, see "Add/Edit Health Indicator Assignments for CI Type Dialog Box" on page 612.

EMS

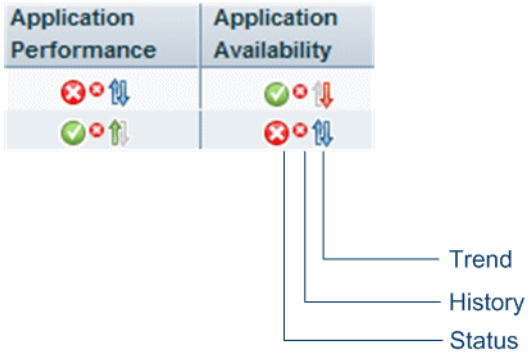
The mechanism used to integrate EMS (Enterprise Management Systems) software into HP Business Service Management includes an assignment rule mechanism. The assignment rule mechanism is triggered when a specific CI attribute is updated. An assignment rule includes a condition and a task. The condition describes specific characteristics of a CI. The task describes the HIs, KPIs, rules, rule parameters, thresholds, and selectors that are assigned automatically to the CI when the condition occurs, if the assignment is running. This task description includes a selector. For details, see "Edit Integration Dialog Box" in *Solutions and Integrations*.

HI Definitions in Service Health

If required, you can edit the default HI selectors using the Service Health Admin > CI Indicators tab. You can attach new HIs to a CI, assign rules, and manually define HI selectors. For more information about defining selectors, see "How to Define Selectors for HIs" on page 435.

KPI Trend and History Calculation

Each KPI can include three icons: Status, Trend, and History.



For information about status, see "Understanding KPI Status" on page 43 and "KPI Status Colors and Definitions" on page 45.

The way the trend and history status is determined is described in the following sections:

- "History Calculation" on page 409
- "Trend Calculation" on page 410
- "Modifying the Trend and History Status Calculations" on page 410

History Calculation

The history status icon displays either the worst status or the average status for the CI's KPI during a specified time period.

The calculation method for history status is determined by the value set for the **HistoryType** parameter (one of the global parameters in the Business Rule Repository, described in "Global Parameters Dialog Box" on page 880). The possible calculation methods are **Worst** (default value) or **Average**. Whichever calculation method is used, only status scores that have meaning (scores 0 to 20—the non-gray icons) are taken into consideration.

- **Worst.** Takes the worst status over the period of time specified in the **HistorySize** parameter (also one of the global parameters).

  For example: if HistorySize is one hour (default value) and the KPI's values for the last hour are: 10, 10, 5, 0, -2, 20, the worst status is 0, so the history icon is red.

- **Average.** Takes the average status over the period of time specified in the **HistorySize** parameter (Simple Moving Average). The calculation result is rounded to the nearest of the following values: 0, 5, 10, 15, or 20.

  For example: if HistorySize is one hour and the KPI's values for the last hour are: 10, 10, 5, 0, -2, 20, the Average status is 10 (rounded from (10+10+5+0+20)/5=9), so the history icon is yellow.

Trend Calculation

The trend status icon shows the trend in real-time status for the CI KPI, using three directions: up, down, and no change.

Trend analysis is performed by comparing the Simple Moving Average (SMA) value for a long window with the SMA for a short window. If the short window SMA is higher than the long window SMA, the trend is considered to be up. If the long window SMA is higher, the trend is considered to be down. The SMA is calculated only on status scores that have meaning (scores 0 to 20—the non-gray icons).

- **Long window SMA.** Based on the mean status of a KPI over the period of time specified in the **HistorySize** parameter (default = 1 hour), one of the global parameters in the Business Rule Repository, described in "List of Calculation Rules in Service Health" on page 740.
- **Short window SMA.** Based on the mean status of a KPI over the period of time defined by (**TrendRate * HistorySize**). The **TrendRate** parameter (default = 0.3) represents the time rate between the long and short window, and is defined in the hidden parameters described in "Modifying the Trend and History Status Calculations" on page 410.

Modifying the Trend and History Status Calculations

You can modify the way the trend and history statuses are calculated and displayed, by editing certain rule parameters. A rule parameter can be set as follows:

- As part of the global rule parameters that apply to all rules and affect all CIs. For details on editing global parameters, see "Global Parameters Dialog Box" on page 880.
- Directly for a rule, so that it affects all CIs that use this rule. For details on editing rule parameters, see "New Rule/Edit Rule Dialog Box" on page 871.

Some parameters for trend and history statuses are predefined and can be viewed and edited in the Business Rule Repository page; others are hidden, but can be manually added on the Repositories tab if you want to override the parameter default value.

KPI Domains

Domains are groups of KPIs that monitor similar functions; KPIs are assigned to domains within the KPI repository. For example, the Network domain contains the Network Availability and Network Performance KPIs, while the Business Health and Business Impact KPIs are assigned to the Business domain. For details, see "Health Indicators, KPIs, and KPI Domains" on page 39.

Within the Service Health Hierarchy component you can filter according to domains, enabling you to view KPIs that are of particular interest to you. A network administrator may choose to only display the KPIs in the Network and System domains, while another user may choose to view the KPIs in the Application and Business domains. For details on the Hierarchy component, see "Hierarchy Component Overview" on page 224.

Within the KPI repository you can create a domain to suit your organization's needs. For example, an SAP administrator may edit the SAP and SAP Alert KPIs in the repository and assign them to a new domain named MySAP. The Hierarchy component will then display these KPIs under the MySAP domain, and the SAP administrator can filter to view these KPIs only.

Persistent Data and Historical Data

To save status changes for a KPI (persistent data), the KPI must be attached to a CI whose **Save KPI data over time for this CI** option has been selected. For details, see "CI Indicators Tab" on page 453.

The option is selected by default for logical CIs, and for CIs that are important for problem isolation, such as **Business Application, Business Process**, **Business Service,** and **Host.**

When this option is selected, all status changes are saved. If you also want to save data on actual measurements for KPIs, you must activate the **saveValuesToPersistency** global parameter in the Business Rule Repository. You can also change the default interval by modifying the value of the **saveValuesToPersistencyInterval** option. For details, see "How to Save Measurements Data" on page 736.

If you select the **Save KPI data over time for this CI** option, and also activate the **saveValuesToPersistency** global parameter, the following information is stored in the database:

- Every status change for each KPI
- The current calculated value for each KPI, read at regular time intervals (the default time interval is 15 minutes)

Tip: Saving historical data for long periods of time or for many CIs and KPIs should be used with care; using this option can require a lot of database disk space and affect overall performance. When you no longer require data to be saved for a CI, clear the **Save KPI data over time for this CI** check box for that CI. Alternatively, make sure to define purging by the Partition Manager according to your retention policy. For details, see "Database Administration" in *Platform Administration*.

This capability is used in the Service Health reports. For details, see "CI Status Reports" on page 335.

KPIs for User Modes

HP Business Service Management provides the option to define Service Health KPIs for two different user types (modes): **operations** and **business**. This option enables the creation of two versions of a single KPI, where each KPI version is geared towards the particular viewing requirements of one of the user types. Each user type sees the appropriate version of the KPI in the Service Health views.

For example: You might want to create two versions of the Application Availability KPI, so that the Application Availability KPI for an operations user shows Critical status (red) when transaction availability is below 30%, and the Application Availability KPI for a business user shows Critical status when transaction availability is below 20%.

For details, see "How to Set Up User Mode Functionality" on page 439.

Breakdowns

Some data collectors collect measurements based on many dimensions (application, transaction, location, and so on), but KPIs are calculated and displayed within Service Health according to a specific dimension. For example, if Business Process Monitor collects measurements of a transaction's response time from three different locations, Service Health displays the average time of all three without distinguishing between them.

Within local impact views, you can configure data breakdowns on CIs, so that data on their child CIs is broken down according to a particular dimension. For example, if you want to monitor transaction performance in specific locations, you can define a breakdown by location to calculate KPIs in smaller granularity.

Breakdowns can only be defined in local impact views. After you define a breakdown, you can see it displayed in the following components: Hierarchy, Top View, and Topology Map.

For details on how to define breakdowns, see "How to Configure Breakdowns" on page 444.

This section also contains the following:

➤ "Example: Application by Location Breakdown" on page 414

➤ "Breakdown Topologies" on page 416

➤ "Breakdown Display in Service Health" on page 417

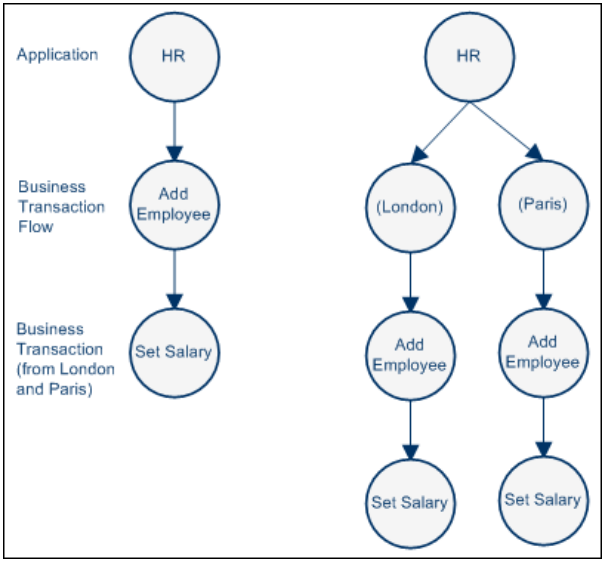
➤ "Building Blocks of a Breakdown" on page 420

Example: Application by Location Breakdown

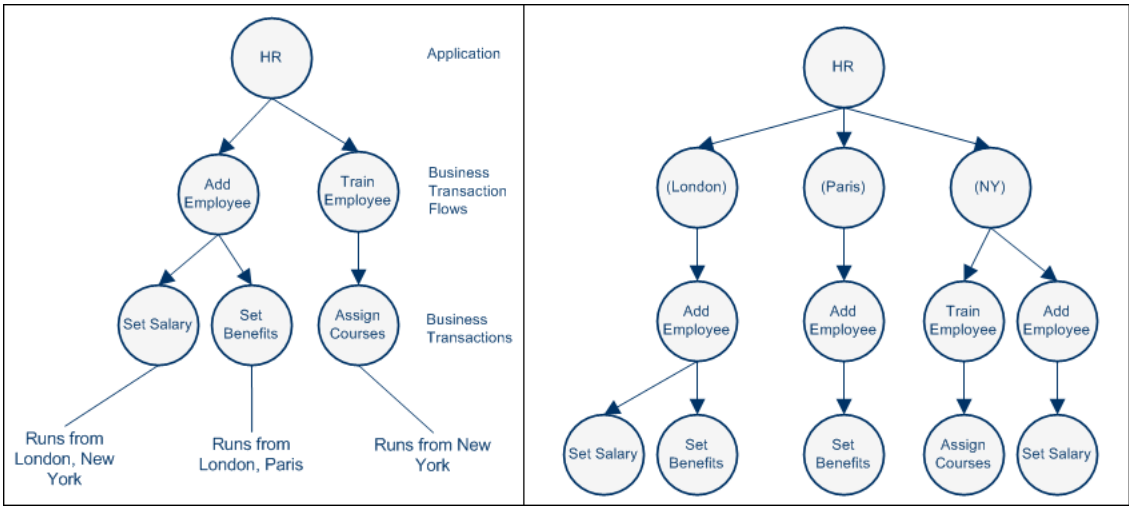
The following image shows two CI hierarchies: the one on the left has no breakdown, and the one on the right has a breakdown of **Application by Location**. In these hierarchies, the HR application contains the Add Employees business transaction flow, which contains the Set Salary business transaction.

When an **Application by Location** breakdown is defined, each application contains group CIs representing the locations where transactions are running (London, Paris); these are not actual CIs but are created only as containers. The names of these containers are displayed in the UI in parentheses, for example **(London)**.

KPIs assigned to the Add Employees (BTF) CI are calculated separately for each location. The container CIs (London, Paris) represent the HR (application) CI, with data and status only from the relevant location. The HR CI is calculated from its newly created child CIs, with worst status rule (by default).



The following images show this CI hierarchy when the application contains an additional BTF (Train Employee) and additional BTs (Set Benefits, Assign Courses). The image on the left side has no breakdown, while the image on the right has a breakdown of **Application by Location**.



Breakdown Topologies

The following table shows the effects of each type of breakdown to CI topology, based on the root CI where the breakdown is applied. In this table, BTF indicates a business transaction flow; BT indicates a business transaction, and EUG indicates an end user group. Note that the resulting topology may change according to the view definition; if the BTF is not part of the view, it will not be shown.

Root CI (where breakdown is applied)	Type of breakdown	Resulting topology
Application	Application by Device	Application > Mobile Device > BTF > BT
	Application by Location	Application > Location > BTF (if it exists) > BT
	BPM Application by Location	Application > Location > BTF > BT
	BPM Location by Application	Location > Application > BTF > BT
	BPM Transaction by Location	Application > BTF > BT > Location
	Location by Application	Location > Application > BTF or CI collection (if it exists) > BT
	Location by Transaction	Application > BTF or CI collection (if it exists) > Location > BT
	RUM Application by End User Group	Application > EUG Subnet
	RUM Application by Server	Application > Node
	RUM End User Group by Application	EUG > Application
	RUM Transaction by End User Group	Application > BTF or CI collection (if it exists) > BT > EUG
	Transaction by Location	Application > BTF or CI collection (if it exists) > BT > Location

Root CI (where breakdown is applied)	Type of breakdown	Resulting topology
BTF	BPM Transaction by Location	Application > BTF > Transaction > Location
	Location by Transaction	Application > BTF or CI collection (if it exists) > Location > BT
	RUM Transaction by End User Group	Application > BTF or CI collection (if it exists) > BT > EUG
	Transaction by Device	Application > BTF > Mobile Device > BT
	Transaction by Location	Application > BTF or CI collection (if it exists) > BT > Location
BT	BPM Transaction by Location	Application > BTF > BT > Location
	Location by Transaction	Application > BTF or CI collection (if it exists) > Location > BT
	RUM Transaction by End User Group	Application > BTF or CI collection (if it exists) > BT > EUG
	Transaction by Device	Application > BTF > BT > Mobile Device
	Transaction by Location	Application > BTF or CI collection (if it exists) > BT > Location

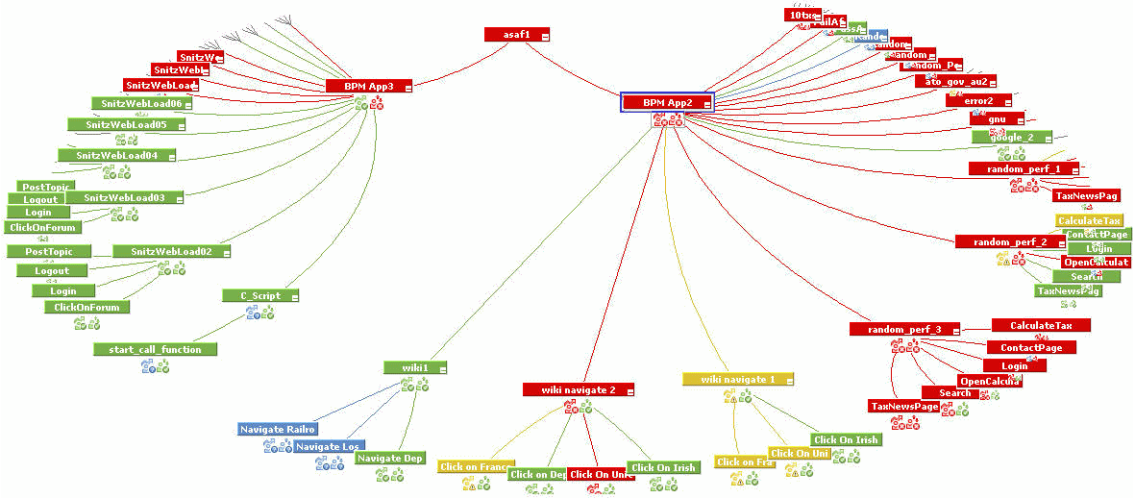
Breakdown Display in Service Health

Breakdowns are data driven, meaning that after you define a breakdown, each container CI is created when a sample arrives that is relevant for that container.

For example, if you define an **Application by Location** breakdown and you have transactions monitored in London and Paris, when a sample from Paris comes in to BSM a container named (Paris) is created, and when a sample from London comes in, a container named (London) is created.

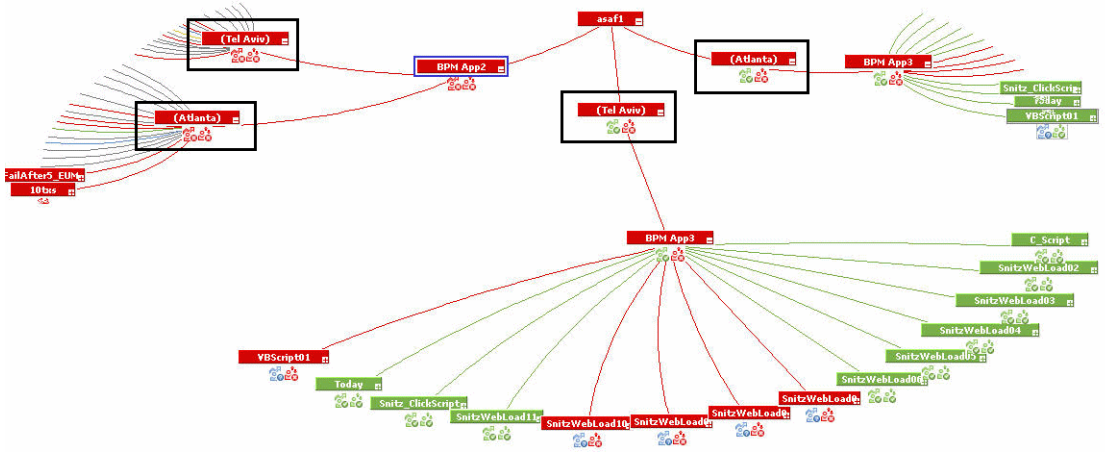
The following examples show how data is displayed in Service Health without breakdowns, and with breakdowns.

- **No Breakdown Defined.** The following image shows a local impact view monitoring two applications, BPM App2 and BPM App3. Each of these contains business transaction flows, which contain business transactions. In this image, no breakdown is defined.



- **Breakdown Defined.** The following image shows the same view, with two different breakdowns defined:
  - BPM App3 is configured with a **Location by Application** breakdown, so the CI hierarchy is **Location** > **Application** > **BTF** > **BT**.
  - BPM App2 is configured with a **Application by Location** breakdown, so the CI hierarchy is **Application** > **Location** > **BTF** > **BT**.

Any additional BTFs or BTs that are added to this application are contained within their respective locations. In this image, each of the container CIs created by the breakdown configuration is indicated by a black rectangle.



Note: In the Hierarchy component, when you filter by CI status (using the quick or advanced filters), breakdowns are not supported in the filter. Data-driven container CIs such as locations are not included in the filter results, and the filter relates to each CI's status as it would without any breakdown configuration.

For example, if a transaction's status is Critical from London but OK from Paris, if the aggregated status from all locations of this CI is Critical, the filter returns this CI as **Critical** without relating to the breakdown configuration.

Building Blocks of a Breakdown

Each breakdown is comprised of the following elements:

1 **Breakdown components.** Each breakdown is defined according to a structure of **x by y**. The order of these two elements defines where the container CI is located in the CI hierarchy. For example:

   - In a **Transaction by Location** breakdown, the CI hierarchy is **Application** > **BTF** > **BT** > **Location**. In this case, you are breaking down your business transactions according to their respective locations.
   - In a **Location by Transaction** breakdown, the CI hierarchy is **Application** > **BTF** > **Location** > **BT**. In this case, you are breaking down your locations according to their respective transactions.

2 **Root CI.** A breakdown is defined on a root CI; this means that CIs beneath this CI in the view hierarchy are included within the breakdown, if they are applicable for the breakdown.

   For example, if you define a breakdown of **Transaction by Location** from a root CI of an application, business transactions added to the view within the application are included automatically in the breakdown. If you define this breakdown with a transaction as the root CI, business transactions added to the view within the application are not included in the breakdown.

3 **Applicable CIs.** Based on their CITs, different CIs can have different breakdown configurations applied to them, while some CIs cannot have any breakdown applied to them.

   When you select a root CI in the CI Indicators tab, the Breakdown tab in the CI Data pane shows which breakdown configurations can be applied to that CI.

4 **Leaf CIs.** Based on internal definitions, each breakdown takes HI sample data from a particular CIT. For example, **Transaction by Location** breakdowns always take sample data from business transactions, while **Application by Location** breakdowns can take sample data from business transactions, or from applications.

5 **Breakdown calculation rule.** This defines which calculation rule (worst, best, or average status) is applied to the child CIs for each breakdown root. For example, if you have a transaction running in three locations with transaction by location breakdown, if you use the worst status rule the status of the transaction is the worst status of all three locations.

6 **Virtual Placement.** This refers to whether the virtual CI is located before or after the root CI. When two broken CIs share a common parent, you cannot have one CI with a breakdown type <A by B> and the other CI with <X by Y>, where <X by Y> has a different Virtual Placement than <A by B>.

   For example, within one BTF, you cannot set breakdowns on one transaction as **Transaction by Location**, and another as **Location by Transaction.**

PNR (Point of No Return) KPI Calculation

Service Level Management data can be displayed within Service Health using the Service Health PNR (Point of No Return) KPI, which monitors how well agreement objectives are being met.

Service level agreements regularly include a clause covering unavailability, that is, the period of time that a system may be down. For example, if availability must be 98.5%, then a system may be unavailable 1.5% of the time.

When configuring the Service Health PNR KPI, you define which SLA, calendar, tracking period and Service Level Management KPI the Service Health PNR KPI is monitoring. The PNR KPI then tracks how long the CI has been unavailable during the specified period based on the status of the specified SLM KPI, and how much time it can be unavailable before the SLA is breached.

PNR Calculation Example

In the following example, a breach threshold is defined in the SLA as 90%, and the calculation period is from 7 AM to 5 PM (10 hours). The CI can therefore be unavailable for up to one hour total before the SLA is breached. The PNR KPI is defined to use the SLM Application Availability KPI.

The Service Health PNR KPI objectives are set at >= 80% (OK), 60% (Warning), 40% (Minor), 20% (Major). This means that when the CI is unavailable for less than 12 minutes the KPI is OK, when the CI has been unavailable for 12 minutes (20% of one hour) the KPI enters Warning, when it has been unavailable for 24 minutes (40% of one hour) the KPI enters Minor, and so on. When the CI has been unavailable for a total of one hour the KPI enters Breached status, since the SLA can no longer be met.

The following table provides a detailed example of the PNR KPI calculation mechanism:

Time	Availability to time (%)	Total time unavailable	Time until breach	PNR KPI calculated value	Service Health PNR KPI status
8:00	100	0	60	100	OK
9:00	80	24	36	60	Warning
10:00	80	36	24	40	Minor
11:00	85	36	24	40	Minor
12:00	88	36	24	40	Minor
13:00	90	36	24	40	Minor
14:00	88	50.4	9.6	16	Critical
15:00	87	62.4	-2.4	-4	Breached
16:00	87	70.2	-10.2	-17	Breached
17:00	87	78	-18	-30	Breached

- At 8:00 the CI has 100% availability, and the PNR KPI status is OK.
- At 9:00 the CI has 80% availability, meaning it was unavailable for 24 minutes out of two hours. Since the CI was unavailable for 40% of the total time that it can be unavailable (one hour), the PNR KPI enters Warning.
- At 10:00 the CI has 80% availability, meaning it was unavailable for 36 minutes out of three hours. The CI has now been unavailable for 60% of the total time it can be unavailable (one hour), and the PNR KPI enters Minor.
- At 14:00 the CI has 88% availability, meaning it was unavailable for 50.4 minutes out of seven hours. The CI has now been unavailable for 86% of the total time it can be unavailable (one hour), and the PNR KPI enters Major.

➤ At 15:00 the CI has 87% availability, meaning it was unavailable for a total of 62.4 minutes. Since the SLA allows the CI to be unavailable for no more than one hour, the PNR KPI enters BREACHED, and stays in that state until the end of the calculation period.

For details on working with the PNR KPI, see "How to Attach a PNR KPI to a CI" on page 448.

Tasks

How to Configure KPIs and HIs—Overview

This section describes the main tasks used to configure KPIs and HIs (health indicators).

This section includes the following options:

- "Edit a template of a KPI, HI, or rule in the repositories" on page 426
- "Modify KPI or HI assignments" on page 426
- "Add KPI or HI instances to CIs" on page 426
- "Edit a KPI or HI on a CI or on multiple CIs" on page 427
- "Define thresholds for a KPI or HI" on page 427
- "Define a selector for an HI" on page 427
- "Modify the user mode for a KPI" on page 427
- "Edit specific rule parameters" on page 427
- "Customize KPI, Trend And History, and Top View status icons" on page 428

Note: For an introduction to health indicators, see "Health Indicators and KPIs - Overview" on page 115.

Edit a template of a KPI, HI, or rule in the repositories

Template definitions for KPIs, HIs, and the business rules used to calculate these indicators, are defined in the repositories. If you want to globally edit a KPI, HI, or business rule, access one of the following:

- **KPI Repository.** For details, see "KPIs Repository page" on page 666.
- **Indicator Repository.** For details, see "Indicator Repository page" on page 693.
- **Business Rule Repository.** For details, see "Business Rules Repository page" on page 869.

Note: Tooltips are configured within the rule repository.

Modify KPI or HI assignments

KPIs, HIs, and business rules, are assigned to CIs using the assignment mechanism. When a new CI is added to your monitored system, the assignment mechanism assigns the appropriate KPIs and HIs to the CI. When you assign a KPI or HI to a CI, or when you attach a CI to another CI, the propagation mechanism propagates the appropriate KPIs to the parent CIs.

For details about modifying KPI and HI assignments, see "Indicator Assignments and Propagation" on page 557.

Add KPI or HI instances to CIs

You can add KPI or HI instances to one or more CIs, using the CI Indicators tab. For example, you may want to add the OT Impact KPI to a number of CIs in your view.

You can add a default KPI or HI provided with HP Business Service Management, or add a custom KPI or HI that you defined within the repositories. For details on adding an indicator to a CI, see "How to Assign KPIs and HIs to CIs" on page 428.

Edit a KPI or HI on a CI or on multiple CIs

You can modify KPI or HI definitions on one or more CIs, using the CI Indicators tab. For example, you may want to edit definitions of the Application Availability KPI on a specific CI, or across a number of CIs.

For details on editing a KPI or HI on a CI, see "How to Edit KPI or HI Properties" on page 431.

Define thresholds for a KPI or HI

KPIs and HIs are assigned statuses by a comparison between their values, and their threshold definitions. For details on how to define thresholds, see "How to Define Thresholds for KPIs and HIs" on page 433.

Define a selector for an HI

Within HI definitions, selector expressions filter data samples to target only those samples that are relevant for the HI. You can combine selectors expressions into groups, to create complex filters.

For details on how to define selectors, see "How to Define Selectors for HIs" on page 435.

Modify the user mode for a KPI

HP Business Service Management provides the option to define Service Health KPIs for two different user types (modes): **operations** and **business**. This option enables the creation of two versions of a single KPI, where each KPI version is geared towards the particular viewing requirements of one of the user types.

For details on working with User Modes, see "How to Set Up User Mode Functionality" on page 439.

Edit specific rule parameters

Each business rule uses various rule parameters that can be customized, either globally in the rule repository, or on a specific instance of a KPI or HI using the CI Indicators tab. For details on each of the rule parameters, see "List of Calculation Rules in Service Health" on page 740.

The following are examples of rule parameters that you can customize:

- **No Data Timeout.** HI rules (for example, the Transaction Availability Rule) includes the **No data timeout** rule parameter. This parameter defines the number of seconds from the time the last sample was received, until the HI is timed out—at which point the HI changes to decay status (gray).
- **Trend and History Calculation.** You can modify the way the trend and history statuses are calculated and displayed, by editing the hidden rule parameters. For details, see "Hidden Parameters" on page 883.

Customize KPI, Trend And History, and Top View status icons

You can customize the set of KPI, Trend and History, and Top View status icons. For details, see "How to Change the KPI Status Icons" on page 441.

How to Assign KPIs and HIs to CIs

This task describes how to assign a KPI or HI (health indicator) to one or more CIs. For general information on how indicators work, see "KPI and HI Calculation" on page 397.

The default properties of KPIs and HIs are defined within the Repositories. For details on the KPI repository, see "KPI Repository Overview" on page 652. For details on the Indicator repository, see "Indicator Repository Overview" on page 682.

When you assign a KPI or HI to a CI, you can use the default indicator properties as they are defined in the repository, or you can modify properties for the indicator, as described in the following section.

Note: Attaching an indicator to a CI, and defining the indicator properties, must be undertaken with care; these actions can result in KPIs and HIs that give an inaccurate performance assessment in Service Health. Read notes and limitations before proceeding. For details, see "Notes and Limitations for KPIs and HIs" on page 400.

This section includes the following steps:

➤ "Select CIs in the CI Indicators tab" on page 429

➤ "Add a new KPI or Health Indicator to the selected CI" on page 429

➤ "Define the new KPI or HI" on page 430

➤ "Result" on page 431

1 Select CIs in the CI Indicators tab

Within the CI Indicators tab, select one or more CIs in the upper pane. You can use the keyboard CTRL key to select multiple CIs.

2 Add a new KPI or Health Indicator to the selected CI

The CI Data pane shows the KPIs and HIs that are assigned to all of the selected CIs (for example, if a KPI is assigned to one of the CIs but not to another, it will not appear in this pane).

Within the CI Data pane, select the **KPIs** or **Health Indicators** tab (depending on the type of indicator you want to add), and click the **Add** button.

3 Define the new KPI or HI

Define the properties of the new KPI or HI as follows:

➤ **KPIs.** Within the **KPI** area, specify the KPI and its business rule, calculation method, and related HIs (when relevant). In the **KPI Properties** area, define information required by the rule such as rule parameters or API script, as well as the thresholds used to calculate KPI status. For details on the UI fields, see "Add KPI/Edit KPI Dialog Box" on page 464.

Note: Adding a related HI to a KPI does not assign the HI to the CI itself; this means that if the HI is assigned to the CI, this KPI will include the HI in its calculation.

➤ **Health Indicators.** Within the **Health Indicator** area, select an HI for assignment.

If the HI is event-based and not metric-based, select **Health Indicator Fed By** > **Events Only**; no further configuration is required. For details on the different types of HIs, see "Events, ETIs, and HIs - Overview" on page 683.

If the HI is also metric-based, select **Health Indicator Fed By** > **Metrics and Events**, and specify the HI's business rule. In the **Health Indicator Properties** area, define information required by the rule such as rule parameters or API script, as well as the thresholds used to calculate HI status. Use selector definitions to filter the samples relevant for the HI. For details on the UI fields, see "Add Health Indicator/Edit Health Indicator Dialog Box" on page 470.

Note: If an HI has a default rule defined in the repository this rule is initially selected for the HI; otherwise the first applicable rule in alphabetical order is selected. If there is no applicable rule for the HI, no rule is selected.

When you add an HI to a CI, its selector is taken by default from the HI Assignments, if there is an assignment that matches this HI. If not, you are prompted to define the HI's selector.

---

4 Result

The KPI or HI is added to all of the selected CIs that do not already have that indicator attached. All instances of the indicator on these CIs will use the same defined business rule and properties.

If one of the selected CIs already has the indicator assigned, a dialog box enables you to either add the indicator only to those CIs where it was not originally assigned, or override the original assignments on all the CIs.

How to Edit KPI or HI Properties

The following task describes how to edit properties for KPIs and HIs (health indicators) that are assigned to one or more CIs. Editing KPI and HI properties must be undertaken with care; the changes can result in Indicators that give an inaccurate performance assessment in Service Health. Read notes and limitations before proceeding. For details, see "Notes and Limitations for KPIs and HIs" on page 400.

This section includes the following steps:

- "Select CIs in the CI Indicators tab" on page 432
- "Select a KPI or HI to edit its properties" on page 432
- "Edit properties of the selected KPI or HI" on page 432
- "Result" on page 432

1 Select CIs in the CI Indicators tab

Within the CI Indicators tab, select one or more CIs in the upper pane. You can use the keyboard CTRL key to select multiple CIs.

2 Select a KPI or HI to edit its properties

The CI Data pane shows the KPIs and HIs that are assigned to all of the selected CIs (for example, if a KPI is assigned to one of the CIs but not to another, it will not appear in this pane).

a Within the CI Data pane, select the **KPIs** or **Health Indicators** tab depending on the type of indicator you want to modify.

b Select the indicator whose properties you want to modify, and click the **Edit** button.

3 Edit properties of the selected KPI or HI

You can modify any of the KPI or HI properties.

➤ For details on KPI properties, see "Add KPI/Edit KPI Dialog Box" on page 464.

➤ For details on HI properties, see "Add Health Indicator/Edit Health Indicator Dialog Box" on page 470.

To remove an indicator from one or more CIs, select the indicator in the CI Data pane, and click the **Delete** button.

When you delete an HI, it is also removed from the Related HIs list of the KPIs which are calculated by that HI.

4 Result

The KPI or HI properties are changed for all of the selected CIs. If one of the selected CIs already has the indicator attached using different definitions (for example, with a different rule applied), a dialog box enables you to either keep the old definitions or to apply the new definitions to the CI. For details on the UI fields, see "Modified Values Dialog Box" on page 483.

How to Define Thresholds for KPIs and HIs

The status displayed for a KPI or HI (health indicator) provides an indication of how well a business process or system is meeting your business objectives.

In most cases, KPIs and HIs are assigned a status as follows: A business rule calculates a measurement for the indicator. This measurement is compared with the threshold definitions, and the indicator is assigned a status according to how the measurement compares to the thresholds.

The following task describes how to define thresholds for a KPI or HI assigned to one or more CIs. For more details on how thresholds work, see "KPI and HI Thresholds" on page 401.

To define thresholds for a KPI or HI:

1. Within the CI Indicators tab, select one or more CIs in the upper pane. You can use the keyboard CTRL key to select multiple CIs.
2. Within the CI Data pane, select the **KPIs** or **Health Indicators** tab depending on the type of indicator whose thresholds you want to define.
3. Open an indicator for editing, and define the thresholds as described in "KPI and HI Thresholds" on page 401.

   For KPI user interface details, see "Add KPI/Edit KPI Dialog Box" on page 464.

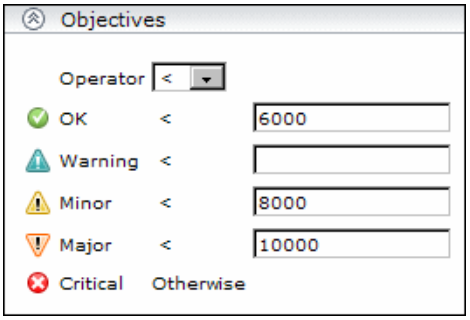
   For HI user interface details, see "Add Health Indicator/Edit Health Indicator Dialog Box" on page 470.
4. The KPI or HI thresholds are changed for all of the selected CIs. If one of the selected CIs already has different thresholds defined for this indicator, a dialog box enables you to either keep the old thresholds or to apply the new thresholds to the CI. For details on the UI fields, see "Modified Values Dialog Box" on page 483.

Example:

An HI is assigned to monitor transaction performance on a CI, using the Transaction Performance Rule to set its status. For this transaction, the required thresholds are as follows:

- Acceptable average performance time is under 6000 milliseconds.
- Performance time that exceeds 6000 milliseconds is of concern.
- Performance time of 8000 milliseconds is seriously problematic.
- Performance time of 10000 milliseconds is critical.
- In addition, **Warning** status is not required for this KPI.

In the Edit Health Indicator window, the threshold levels and operator are set as follows:



When a measurement is calculated for the HI from the incoming performance data, the measurement is compared with the thresholds assigned to the HI as follows:

- For a measurement under 6000 milliseconds, status = **OK**
- For a measurement of 6000 milliseconds or more, but under 8000 milliseconds, status = **Minor**
- For a measurement of 8000 milliseconds or more, but under 10000 milliseconds, status = **Major**
- For a measurement of 10000 milliseconds or more, status = **Critical**

How to Define Selectors for HIs

When you assign an HI (health indicator) to a CI, you can define selector expressions to filter data samples to target only those samples that are relevant for the HI. A selector expression requires a **Field**, an **Operator**, a **Type,** and a **Value**, defined in that order. For user interface details, see "Add New/Edit Selector Field Dialog Box" on page 479.

You can combine selectors expressions into groups, to create complex filters.

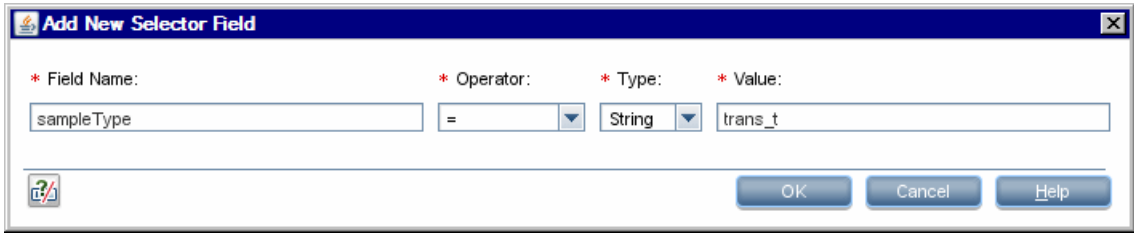
This section includes the following options:

- "Define a selector" on page 435
- "Define an additional selector expression within a block" on page 437
- "Define an alternative expression block" on page 437
- "Combine blocks that have internal conditions" on page 438

Define a selector

1. Within the CI Indicators tab, select one or more CIs in the upper pane. You can use the keyboard CTRL key to select multiple CIs.
2. Within the CI Data pane, select the **Health Indicators** tab, and open an HI for editing.
3. Within the Add Health Indicator/Edit Health Indicator dialog box, locate the **Selector** area and perform the following actions:
   - To add a new expression group, click **Add Row** > **Add OR Clause**.
   - To add a selector expression to an existing group, select a row within a group and click **Add Row** > **Add Selector Expression**.
4. Define one or more selector expressions to build your selector, as follows:
   - Enter the required reference property in the **Field** box and select an operator from the **Operator** list. Enter details regarding the required value for the property in the **Type** and **Value** box.
   - Every selector must include the definition of the sample type required for the HI, so when manually defining a selector, at least one selector expression must contain this information.

For example, for an HI that relates to transaction measurements, the selector must catch transaction samples, which are defined by the sample type **trans_t** in the selector. For details on these samples, see "Sample: BPM Transaction (trans_t)" in *Reports*.



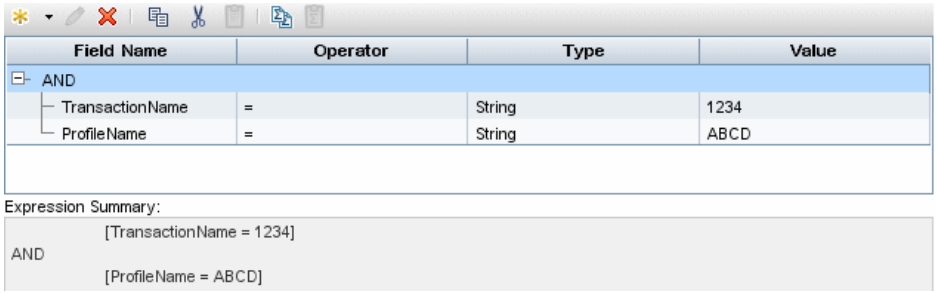
Tip: The **Field** and **Value** properties are case sensitive and must be entered precisely as used in the data samples from the data source, or the selector fails. The recommended method is to take the values from the samples published on the bus. For details, see "Data Samples" in *Reports*.

- Narrow the filter by using a logical **And** operator to attach additional selector expressions to an expression block.
- Widen the filter by using a logical **Or** operator to add alternative expression blocks (each containing one or more selector expressions).

You can define as many selector expressions and blocks of selector expressions as required.

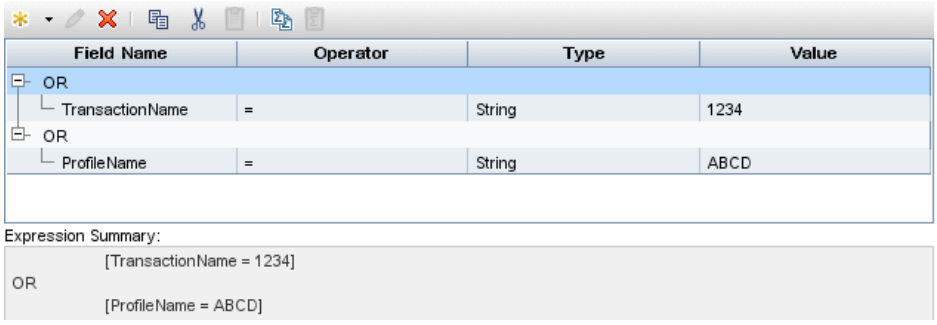
Define an additional selector expression within a block

To define an additional selector expression within a block, click the **Add Row** button and select **Add Selector Expression**. For example, you can define a filter that looks for transaction samples that contain both profile name X *and* transaction name Y.



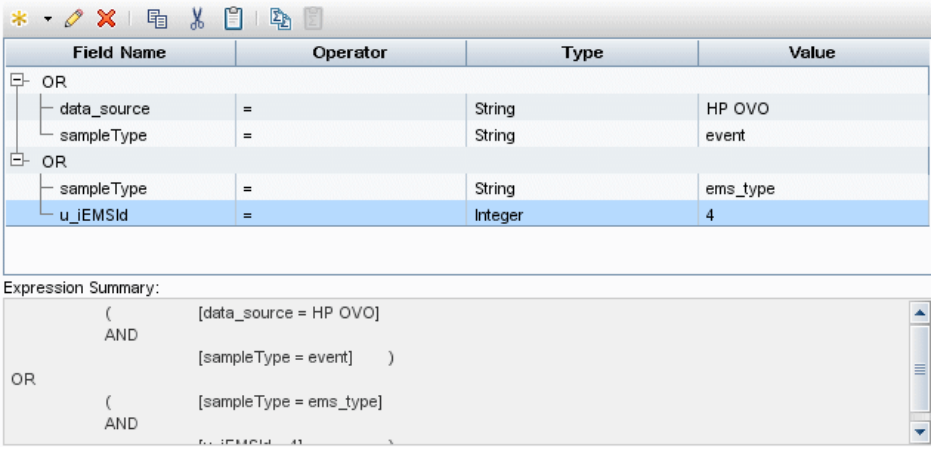
Define an alternative expression block

To define an alternative expression block, click the **Add Row** button and select **Add OR Clause**. For example, you can define a filter that looks for transaction samples that contain either profile name X *or* transaction name Y.



Combine blocks that have internal conditions

You can also combine blocks which use internal conditions. For example, a data sample qualifies for the following selector if the selector expressions **a** and **b** in block 1 are both true, or if the selector expressions **c** and **d** in block 2 are both true.



How to Set Up User Mode Functionality

You can set up user mode functionality in HP Business Service Management by defining the mode for users, defining the KPI versions for each mode, and attaching the KPI versions to the CIs.

This task includes the following steps:

- "Assign a user mode" on page 439
- "Define KPI versions for the user modes" on page 440
- "Attach KPI versions to CIs" on page 441

1 Assign a user mode

There are two ways to assign a user mode to a user:

- The system administrator, when defining new users in the **Admin** > **Platform** > **Users and Permissions** > **User Management** page, can set **User Mode** to **Undefined**, **Operations User**, or **Business User**. By default, all new/existing users are set as **Unspecified** (meaning that they see KPIs for both modes in Service Health).
- Users can change their own user mode in the **Admin** > **Personal Settings** > **User Account** page. Select the required mode from the **User mode** list.

  After changing the mode in the User Account page, you must log out of HP Business Service Management and log in again to see the mode filtering work.

2 Define KPI versions for the user modes

The following steps describe how to define different versions of a KPI to use with each user mode. You can assign user modes to a new KPI that you define, or to an existing KPI by cloning or overriding the KPI. For more information, see "KPIs Repository page" on page 666.

a Access the **Admin** > **Service Health** > **Repositories** > **KPIs** page.

b Define the business user version of the KPI:

- Either create a new KPI, clone an existing KPI, or edit an existing KPI based on your needs.
- Give the KPI an appropriate name; for example, add the suffix **_biz** (as in Availability_biz).
- Select **Business** in the **Applicable for User Mode** list.

c Define the operations user version of the KPI:

- Either create a new KPI, clone an existing KPI, or edit an existing KPI based on your needs.
- Give the KPI an appropriate name; for example, add the suffix **_ops** (as in Availability_ops).
- Select **Operations** in the **Applicable for User Mode** list.

Note: If you edit a KPI, the edited KPI replaces the original KPI throughout Service Health, so all CIs that are assigned the original KPI (for example, Availability) are automatically updated to the new version (for example, Availability_ops).

d Edit the details for each KPI version, according to your requirements. For example, you might want different business rules to apply to each version. For more information, see "New KPI/Edit KPI Dialog Box" on page 668.

e To use a different version of a business rule with each KPI version, you must define the rule versions in the Business Rule Repository. For example, for two versions of the Application Availability KPI, you may require two versions of the Transaction Availability Rule, each with different default objective values.

For details on defining business rules, see "How to Customize a Business Rule Template in the Repository" on page 724.

3 Attach KPI versions to CIs

You can manually attach the KPI versions to the CIs to which you want them to apply.

- If the original KPI is already attached to CIs (for example, the Application Availability KPI is automatically attached to transaction CIs), then the edited KPI (for example, Availability_ops) is automatically attached to the CIs instead. You can manually attach the second KPI version (for example, Availability_biz).
- If there are two new KPI versions, one for business and one for operations then for every applicable CI you manually attach the two versions (and delete the original KPI if it is not required).

To attach the KPI versions to CIs, select **Admin** > **Service Health** > **CI Indicators** page, and add the KPI versions to each CI where they are required. You can add the KPI to multiple CIs in one operation. For details, see "CI Indicators Tab" on page 453.

How to Change the KPI Status Icons

Different icons are used for the KPI status for each range specified in the **From**/**To** fields in the Parameter Details dialog box. For details, see "New/Edit KPI Parameter Dialog Box" on page 678.

If you want to customize the KPI status icons, create a new set of icons and, where applicable, add your icons to the appropriate directories and redirect the KPI's status parameters to those icons or replace the default icons with your customized icons using the same names.

Note: The following formats are supported for custom icons: .png, .jpg and .gif.

The recommended size for an icon should be 16x16 pixels.

For details on the default icons, see "KPI Status Colors and Definitions" on page 45.

This section includes the following options:

- "Change the KPI status icons" on page 442
- "Change the Trend and History status icons" on page 443
- "Change the Top View status icons" on page 443

Change the KPI status icons

You can do one of the following:

- Add your icons to the appropriate directory and specify their names in each one of the status parameters for the KPIs. For details on the user interface, see "New KPI/Edit KPI Dialog Box" on page 668.
- Replace the icon or icon set with the customized icons and give them the names of the default icons.

  To find the location of the icon you want to replace, right-click the icon in the appropriate tab in Service Health, select **Properties**, and view the icon's location in the **Address (URL)** field.

Make sure that you replace the icons set in the following directories:

- **<Gateway root directory>\AppServer\webapps\site.war\bam\pages\images\gui\indicator**
- **<Gateway root directory>\AppServer\webapps\site.war\images\gui\indicator**

Change the Trend and History status icons

You cannot change the names of the trend and history icons that appear in the Top View tab. To customize those icons, you can only replace the default images with your customized images.

The directory where the Trend and History Status icons are located is:
<Gateway root directory>\AppServer\webapps\site.war\static\dash\images\indicator

For details on the Trend and History icons, see "KPI Trend and History Calculation" on page 408.

Change the Top View status icons

You cannot change the names of the Top View icons. To customize those icons, you can only replace the images with your customized images.

The directory where the icons are located is:
<Gateway root directory>\AppServer\webapps\site.war\bam\pages\images\icons\dimensionIcons

The location of a specific icon uses the following naming scheme: **dimensionIcons/<kpi_id>/<status_id>.gif** where **<status_id>** is the value specified in the **From** field of the status parameter defined for the KPI. For example: the value of the **From** field of the **OK** (green) status is 20 therefore the icon for the **Application Availability** KPI is located at: dimensionIcons/7/20.gif. For details on the user interface, see "New/Edit KPI Parameter Dialog Box" on page 678.

For details on the status icons, see "KPI Icons in Service Health" on page 96.

How to Configure Breakdowns

Within local impact views, you can configure data breakdowns on CIs, so that data on their child CIs is broken down according to a particular dimension. For an overview of breakdowns, see "Breakdowns" on page 413.

Tip: If you want to see a breakdown of location by transaction across several applications, select all the relevant applications and configure **BPM Location by Application** or **Location by Application** breakdowns on all of them.

This task includes the following steps:

- "Select CIs in the CI Indicators tab" on page 444
- "Define a breakdown or display breakdown details in the CI Data pane" on page 445
- "Filter breakdown elements on a root CI" on page 446
- "Modify general breakdown settings (Optional)" on page 447

1 Select CIs in the CI Indicators tab

Within the **CI Indicators** tab, select one or more CIs in the upper pane. The **Breakdown** column indicates one of four possible states for each CI in a local impact view:

- **Not Assigned.** A breakdown can be defined on this CI.
- **Assigned.** A breakdown has been defined, using this CI as the root CI.
- **Derived.** This CI is included in a defined breakdown (not as the root CI).
- **Not Applicable.** No breakdown can be defined on this CI.

Note: Each CI can only be included in one breakdown per view; once a CI is included in a breakdown, it cannot be included in another within that view. If you want to create another breakdown using the same CI, you can clone the view in View Builder, and create a new breakdown in the new view.

Two breakdowns conflict with each other when a CI is defined as belonging to two different breakdowns. This occurs when you try to define a breakdown on top of a topology that already has at least one CI with a breakdown definition of any kind on it. When a conflict occurs, the following message is displayed: **Breakdown assignment has failed as a result of the following conflict** (followed by a description of the conflict). In this case, decide which of the breakdowns you want to apply.

---

2 Define a breakdown or display breakdown details in the CI Data pane

Withinthe **CI Data** pane, select the **Breakdown** tab . This enables you to perform the following actions:

a **Define a breakdown on a CI.** If you have selected one or more CIs where no breakdown has been defined, and these CIs can be used as root CIs, select a breakdown from the **Breakdown Configurations** list. This contains all the breakdown configurations that can be applied to the selected CIs, using these CIs as the breakdown root.

Note that to modify a breakdown, you must select the root CI.

For details on the UI fields, see "CI Indicators Tab" on page 453.

b **Display breakdown details on non-root CIs.** If you have selected CIs which are included in a breakdown but are not root CIs, the **Root CI** field shows the root CI of the breakdown where they are included, and the **Breakdown Configurations** field shows the breakdown type.

c **Disable a breakdown.** If you have selected a root CIs where a breakdown has been defined, you can disable the breakdown by selecting **None** from the **Breakdown Configurations** list.

d **Define the breakdown calculation rule.** For each breakdown root, define which calculation rule (worst, best, or average status) is applied to the child CIs. For example, if you have a transaction running in three locations with transaction by location breakdown, if you use the worst status rule the status of the transaction is the worst status of all three locations.

Note that you cannot use different rules for two CIs on the same hierarchy level. For example, if an application is a breakdown root, within that application you cannot calculate one transaction by worst status (of its locations), and another transaction by best status. However, you can use different rules for different transactions within two different applications.

3 Filter breakdown elements on a root CI

If you have selected a CI which is the root CI of a breakdown, you can include or exclude specific CIs in the breakdown, using the **Filter** > **Edit** button.

Click **Edit** to open the **Edit Breakdown Filter** dialog box, and specify which CIs to include or exclude from the breakdown. The **Available Elements** list is automatically populated with the elements that can be included in the breakdown.

For example, if you specify **Transaction by Location**, you can include or exclude specific locations based on your organizational needs.

For details on the UI fields, see "Edit Breakdown Filter Dialog Box" on page 486.

4 Modify general breakdown settings (Optional)

You can modify the following breakdown settings:

a **Number of containers.** Due to performance considerations, BSM supports the creation of 50 different CI containers using breakdowns, per instance. For example, if you define **Transaction by Location**, and you have more than 50 locations, only 50 locations are displayed.

You can modify this limit using the following infrastructure setting: **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** > **Applications** > **Service Health Application**, and locate the **Maximum number of breakdown values** entry in the Service Health Application - Breakdown table.

b **Container purging.** By default, when a breakdown container has been in **No Data** status for one week, it is automatically removed from the display until the next time data is received for this container.

You can modify this period using the following infrastructure setting: **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** > **Applications** > **Service Health Application**, and locate the **Breakdown values purging period** entry in the Service Health Application - Breakdown table.

How to Attach a PNR KPI to a CI

The PNR (Point of No Return) KPI enables you to view how well Service Level Management agreement objectives are being met. When the PNR KPI is defined for a CI, a bar is displayed in Service Health indicating how much longer the CI can be unavailable before the agreement is in breach of contract. For details, see "PNR (Point of No Return) KPI Calculation" on page 422.

Perform the following procedure to view Service Level Management data in an information bar in Service Health.

This task includes the following steps:

➤ "Prerequisites in Service Level Management" on page 448

➤ "Define a PNR KPI in Service Health" on page 449

➤ "Results in Service Health" on page 450

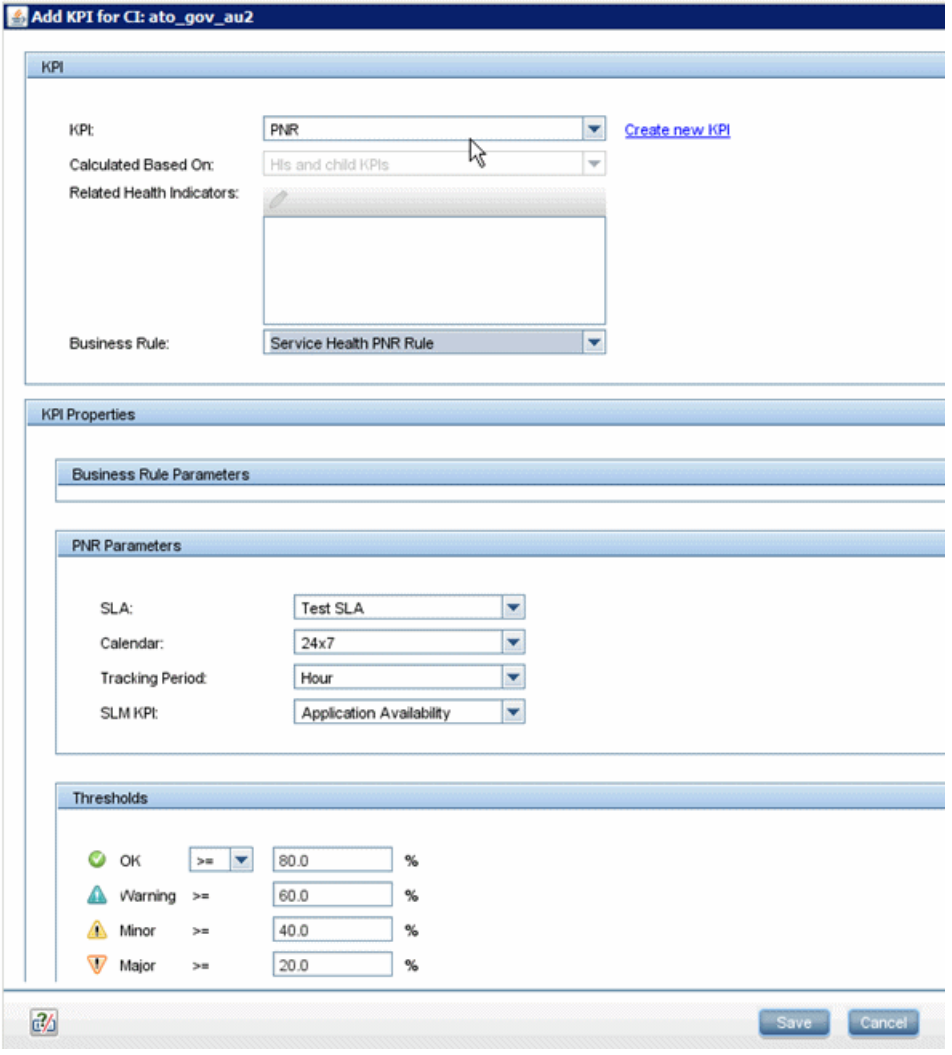
1 Prerequisites in Service Level Management

Create an agreement within Service Level Management. The SLA must include a CI with an attached KPI that can be used to calculate the PNR KPI. The rule assigned to the KPI in Service Level Management must be enabled to send PNR data to Service Health; the rule must be time-based, and it must calculate values using a range of 0-100.

For details on these prerequisites, see "Enabling PNR (Point of No Return) Display within Service Health" in *Using Service Level Management*.

2 Define a PNR KPI in Service Health

In Service Health Administration, attach a PNR KPI to the same CI. During KPI creation, select the PNR KPI and the Service Health PNR rule.



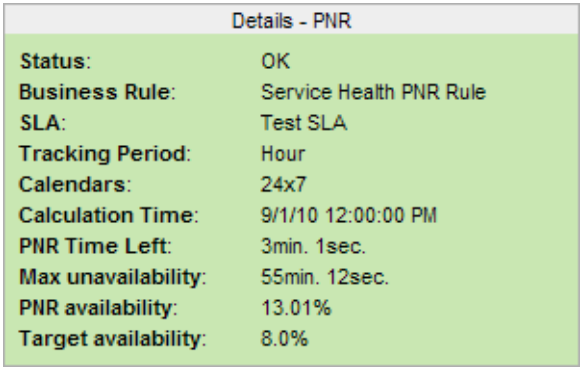
a In the PNR Parameters area:

- Select the agreement whose data is to be used for the Service Health PNR KPI.
- Select the calendar and tracking period as defined when creating the agreement. For details, see "Define SLA Properties Page" in *Using Service Level Management*.
- Select the Service Level Management KPI whose data is used to calculate the PNR KPI.

b Add the objectives that Service Health uses to calculate when unavailability time approaches breach of contract levels.

3 Results in Service Health

View the results in Service Health: **Applications** > **Service Health** > **360 View**. Choose the view and select the CI. The tooltip shows the following PNR-related information:



- **Status.** The status of the PNR KPI.
- **Business Rule.** The Service Health business rule used for PNR KPI calculation.
- **SLA.** The SLA which includes this CI.
- **Tracking Period.** The SLA tracking period defined during PNR KPI configuration.
- **Calendars.** The SLA calendar defined during PNR KPI configuration.
- **Calculation Time.** The time of the last SLA calculation.

- **PNR Time Left.** The amount of time the CI can still be unavailable in the calculation period before the agreement is breached. This is a result of the following calculation: Maximum unavailability - Unavailability to current time = PNR Time left.
- **Max Unavailability.** The total time the CI can be unavailable during the calculation period before the agreement is breached, based on the specified SLM KPI.
- **PNR Availability.** The current percentage of availability in Service Level Management.
- **Target Availability.** The availability breach threshold as defined in the SLA.

Reference

CI Indicators User Interface

This section includes:

- CI Indicators Tab on page 453
- CI Data Pane > KPIs Tab on page 457
- CI Data Pane > Health Indicators Tab on page 459
- CI Data Pane > CI Properties Tab on page 460
- CI Data Pane > Breakdown Tab on page 462
- Add KPI/Edit KPI Dialog Box on page 464
- Edit Health Indicators in KPI Calculation Dialog Box on page 469
- Add Health Indicator/Edit Health Indicator Dialog Box on page 470
- Add New/Edit Selector Field Dialog Box on page 479
- Selector Expression Operators - Reference on page 480
- Confirm CI Changes Dialog Box on page 482
- Modified Values Dialog Box on page 483
- Edit Context Menus Dialog Box on page 485
- Edit Breakdown Filter Dialog Box on page 486

CI Indicators Tab

The CI Indicators tab enables you to attach KPIs, HIs (health indicators), and context menus to specific CIs within a view. In addition, this tab enables you to define CI breakdowns in local impact views. Select one or more CIs in the **<View Name>** pane, and modify the CI's settings using the **CI Data** pane.

To access	Select **Admin** > **Service Health** > **CI Indicators**
Important information	Select a view in the upper left corner of the tab, then configure indicators for the CIs that are in the selected view.
Relevant tasks	"How to Configure KPIs and HIs—Overview" on page 425

<View Name> Pane

The **<View Name>** pane in the upper part of the tab displays CIs and their assigned KPIs. After you select a view, this pane shows the view name as its title. The pane displays a hierarchy of the CIs in the view, their CI types, and their assigned KPIs. Each row in the table represents a CI in the view hierarchy.

In local impact views, this pane also indicates whether a breakdown has been defined, for each CI in the view.

After you select one or more CIs in this pane, the KPIs and HIs that are shared by the selected CIs appear in the **CI Data** pane. You can modify these details as required.

Important information	➤ Within the CI hierarchy a CI may appear more than once. If you select a CI, all instances of that CI are automatically selected. ➤ Virtual CIs (defined in the RTSM as **Group By** CIs) cannot have indicators or context menus assigned to them, and cannot have breakdowns defined on them. You cannot select virtual CIs in the CI Indicators tab.

User interface elements are described below:

UI Element (A-Z)	Description
<Filter Box>	At the top of each column there is a box which enables you to filter specific elements in the column; for example you can select a CIT, or one or more KPIs to be displayed. To filter by CI Name, press Enter to activate the filter. When a CI matches a filter, its parent CIs are displayed as well. To select the CIs which match a filter (for example for a bulk action), click the **Select by Filter** button.
<View List>	Select a view from this dropdown list to display information on the CIs in this view. The icons next to the view names indicate the type of view; for details see "View Builder Overview" on page 380.
	Select all. Select all the CIs.
	Clear Selection. De-select all the CIs.
	Select by Filter. Select the CIs which match the filter (defined in the filter box at the top of a column).
	Expand all. Display all the CIs in the hierarchy.
	Collapse all. Display only the highest level CIs in the hierarchy.
	Refresh. Refresh the display.

UI Element (A-Z)	Description
Breakdown	In local impact views, this column shows one of the following regarding each CI: ➤ A breakdown can be defined on this CI (no icon). ➤ A breakdown has been defined, using this CI as the root CI. ➤ This CI is included in a defined breakdown (not as the root CI). ➤ No breakdown can be defined on this CI; a tooltip provides details. To define a breakdown or display details on a breakdown that has been defined, select one or more CIs and open the **Breakdown** tab in the **CI Data** pane. **Note:** If you have selected a view which is not a local impact view, the breakdown column is not visible, and the breakdown tab in the CI Data pane is disabled.
CI Name	The name of the CI.
CI Type	The CIT of the CI.
Hide KPIs	If KPIs are displayed, click the **Hide KPIs** button to remove the list of KPIs from the display.
KPIs	Icons representing each of the KPIs assigned to the CI; a tooltip shows the KPI name and its associated business rule. (The **Legend** pane on the lower right side of the **CI Indicators** tab also provides definitions of these icons.) To edit, add, or remove KPIs, select one or more CIs and modify its KPI definitions within the **CI Data** pane.
Show KPIs	If KPIs are not displayed, click the **Show KPIs** button to display the list of KPIs assigned to the CIs.

Legend Pane

The **Legend** pane on the bottom right side of the tab provides full names for the KPIs displayed in the upper pane.

CI Data Pane

The CI Data pane on the lower left side of the tab displays details regarding the CIs that you selected in the upper pane of the **CI Indicators** tab, and enables you to modify CI details. This pane enables you to perform the following:

- Within the **KPIs** and **Health Indicators** tabs, you can edit, add or remove KPIs and HIs on these CIs. For user interface details, see "CI Data Pane > KPIs Tab" on page 457, and "CI Data Pane > Health Indicators Tab" on page 459.
- Within the **CI Properties** tab, you can modify the context menus and CI data over time settings for these CIs. For user interface details, see "CI Data Pane > CI Properties Tab" on page 460.
- Within the **Breakdown** tab, you can define CI breakdowns in local impact views. For user interface details, see "CI Data Pane > Breakdown Tab" on page 462. For details on breakdowns, see "How to Configure Breakdowns" on page 444.

If more than one CI is selected in the upper pane, the **CI Data** pane shows the information that is shared by all the selected CIs. For example, if two CIs are selected in the CIs pane: one CI has Application Availability and Application Performance KPIs assigned, and the other CI has only Application Availability assigned, the **KPIs** tab shows the Application Availability KPI only.

CI Data Pane > KPIs Tab

The KPIs tab within the **CI Data** pane enables you to edit, add or remove KPIs on the CIs selected in the **<View Name>** pane.

To access	Select **Admin** > **Service Health** > **CI Indicators.** In the **CI Data** pane, select the **KPIs** tab.
Relevant tasks	"How to Configure KPIs and HIs—Overview" on page 425

User interface elements are described below:

UI Element (A-Z)	Description
	Add KPI. Create a new KPI.
	Edit KPI. Edit the details of a selected KPI.
	Delete KPIs. Delete one or more selected KPIs.
	Export to Excel. Export the table to an Excel file.
	Export to PDF. Export the table to a PDF file.
Business Rule	The business rule used to calculate the measurement and status for the KPI. If you have selected multiple CIs and these CIs use different rules to calculate this KPI, **[Mixed Values]** is displayed in this field. For an explanation of the role of the rules, see "About Business Rules" on page 399. For information about each individual rule, see "List of Calculation Rules in Service Health" on page 740.

UI Element (A-Z)	Description
Calculated Based On	This indicates if the KPI is calculated by: ➤ **Health indicators and child KPIs.** The KPI is calculated by the HIs assigned to the CI, and by the KPIs assigned to the child CIs. ➤ **Assigned health indicators.** The KPI is calculated by the HIs assigned to the CI. ➤ **KPIs assigned to child CIs.** The KPI is calculated by the KPIs assigned to the child CIs. ➤ **HIs; if none, use child KPIs.** The KPI is calculated by the HIs assigned to the CI; if there are no HIs assigned, the KPI is calculated by the KPIs assigned to the child CIs. If you have selected multiple CIs and these CIs use different methods to calculate the KPI, **[Mixed Values]** is displayed in this field.
Domain	The domain which contains this KPI. Domains are groups of KPIs which monitor similar functions (for example Application or Network); this enables you to filter KPIs according to these groupings. For details see "KPI Domains" on page 411.
KPI Name	The name of the KPI assigned to the selected CI. For information about each KPI, see "List of Service Health KPIs" on page 656.
Related Health Indicators	The list of HIs whose values are used in calculating this KPI. If multiple CIs are selected, this field can show one of the following: ➤ The names of the HIs that are used to calculate this KPI on all of the selected CIs. Note that if an HI is used for only some of the CIs, it is not displayed. ➤ **No health indicators**. None of the selected CIs use HIs to calculate this KPI. ➤ **No health indicators in common**. None of the selected CIs use the same HIs to calculate this KPI.

CI Data Pane > Health Indicators Tab

The Health Indicators tab within the **CI Data** pane enables you to edit, add or remove HIs on the CIs selected in the **<View Name>** pane.

To access	Select **Admin** > **Service Health** > **CI Indicators.** In the **CI Data** pane, select the **Health Indicators** tab.
Relevant tasks	"How to Configure KPIs and HIs—Overview" on page 425

User interface elements are described below:

UI Element (A-Z)	Description
	Add Health Indicator. Create a new HI.
	Edit Health Indicator. Edit the details of a selected HI.
	Delete Health Indicators. Delete one or more selected HIs.
	Export to Excel. Export the table to an Excel file.
	Export to PDF. Export the table to a PDF file.
Business Rule	The business rule used to calculate the measurement and status for the HI. If you have selected multiple CIs and these CIs use different rules to calculate this shared HI, **[Mixed Values]** is displayed in this field. For an explanation of the role of the rules, see "About Business Rules" on page 399. For information about each individual rule, see "List of Calculation Rules in Service Health" on page 740.
Health Indicator Name	The name of the HI assigned to the selected CI.

UI Element (A-Z)	Description
Related KPIs	The list of KPIs which use this HI in their calculations.
Scope	This displays one of the following: ➤ **Global.** The HI exists in the global view and has not been overridden in the local impact view. In a global view all HIs are global. ➤ **Local.** The HI was overridden or created in the local impact view.

CI Data Pane > CI Properties Tab

The CI Properties tab within the **CI Data** pane enables you to modify the context menus and CI data over time settings for the CIs selected in the **<View Name>** pane.

To access	Select **Admin** > **Service Health** > **CI Indicators.** In the **CI Data** pane, select the **CI Properties** tab.
Relevant tasks	"How to Configure KPIs and HIs—Overview" on page 425

User interface elements are described below:

UI Element (A-Z)	Description
	Add Context Menu. Add a context menu to the selected CIs. A dialog box enables you to assign context menus; for details see "Edit Context Menus Dialog Box" on page 485.
	Delete Context Menu. Delete one or more selected context menus from the selected CIs.
	Export to Excel. Export the table to an Excel file.

UI Element (A-Z)	Description
	Export to PDF. Export the table to a PDF file.
<Context menu>	The name of the context menus assigned to the selected CIs. For details, see "List of Context Menus" on page 899.
Save KPI data over time for the selected CIs	Select the option to set HP Business Service Management to save KPI data for CIs, as described in "Persistent Data and Historical Data" on page 411. The option is selected by default for logical CIs and for CIs that are important for problem isolation, such as **Business Application, Business Process**, **Business Service,** and **Host.** If you select this option, status changes are saved by default. If you also want to save data on the actual measurements for the KPIs, you must change the default settings for Service Health in the Repositories, as described in "How to Save Measurements Data" on page 736. Saving historical data for long periods of time or for many CIs and KPIs should be used with care; using this option can require a lot of database disk space and affect overall performance. When you no longer require data to be saved for a CI, clear the **Save KPI data over time for the selected CI** check box for that CI. Alternatively, make sure to define purging by the Partition Manager according to your retention policy. For details, see "Database Administration" in *Platform Administration*. **Note:** The **Save KPI data over time** option is not available in local impact views.

CI Data Pane > Breakdown Tab

The Breakdown tab within the **CI Data** pane enables you to configure breakdowns on the CIs selected in the **<View Name>** pane, in local impact views.

To access	Select **Admin** > **Service Health** > **CI Indicators.** In the **CI Data** pane, select the **Breakdown** tab.
Important information	The contents of this tab depend on which CIs you have selected in the upper pane. If you have selected one or more CIs that are already included in a breakdown, this tab shows information on the breakdown in which they are included. If you have selected CIs that are not included in a breakdown, but can be used as root CIs, this tab enables you to define a breakdown using the selected CIs as root CIs. If you have selected a view which is not a local impact view, the Breakdown column is not visible in the upper pane, and the Breakdown tab in the CI Data pane is disabled.
Relevant tasks	"How to Configure Breakdowns" on page 444
See also	"Breakdowns" on page 413

User interface elements are described below:

UI Element (A-Z)	Description
Breakdown Calculation Rule	This defines which calculation rule (worst, best, or average status) is applied to the child CIs for each breakdown root. For example, if you have a transaction running in three locations with transaction by location breakdown, if you use the worst status rule the status of the transaction is the worst status of all three locations.
Breakdown Configuration	➤ If you have selected CIs that are already included in a breakdown, this shows (in read-only mode) the type of breakdown in which the selected CIs are included. ➤ If you have selected CIs that can be defined as root CIs, and are not already included in a breakdown, this contains a list of the possible breakdown configurations that can be applied to the selected CIs. The list of possible breakdowns is based on the CITs of the selected CIs. Select a breakdown to apply it to the selected CIs, with these CIs defined as the breakdown root.
Filter	This enables you to include or exclude specific elements in a breakdown, if the selected CIs are the root CIs of a breakdown. For example, if you specify **Transaction by Location**, you can include or exclude specific locations based on your organizational needs. Click **Edit** to define the breakdown filter; the filter can include specific CIs, or exclude specific CIs. For details, see "Edit Breakdown Filter Dialog Box" on page 486.
Root CI	A breakdown is defined on a root CI; CIs beneath this CI in the view hierarchy are included within the breakdown, if they are applicable for the breakdown. ➤ If the selected CIs are not included in any breakdown, this shows **None**. ➤ If a breakdown has been defined which includes the selected CIs, this shows the root CI of the breakdown.

Add KPI/Edit KPI Dialog Box

This dialog box enables you to assign KPIs to CIs or to edit the properties of a CI's KPIs.

To access	In the **CI Indicators tab**, select one or more CIs in the upper <**View Name**> pane. The **CI Data pane** > **KPIs tab** displays the KPIs assigned to the selected CIs. If you select multiple CIs, the KPIs tab displays the KPIs that are shared by all of the selected CIs. ➤ To add a KPI to the selected CIs, click the **Add KPI** button in the KPIs tab. ➤ To edit the properties of a KPI displayed in the KPIs tab, select a KPI and click the **Edit KPI** button.
Important information	There can be only one instance of each KPI for a CI. For each new KPI, you define the KPI type and business rule. Where relevant, you also define additional information required by the rule. You can attach a KPI that exists in the KPI Repository, or create a new KPI. When you attach a KPI to multiple CIs, the KPI is added to all CIs that do not already have that KPI attached. All instances of the KPI have the same defined business rule and properties.
Relevant tasks	"How to Configure KPIs and HIs—Overview" on page 425
See also	➤ "KPI and HI Calculation" on page 397 ➤ "KPI Repository Overview" on page 652

KPI Area

User interface elements are described below:

UI Element (A-Z)	Description
	Add or remove HIs from the list of Related Health Indicators which are used to calculate the KPI. For details, see "Edit Health Indicators in KPI Calculation Dialog Box" on page 469. Note: Adding a related HI to a KPI does not assign the HI to the CI itself; this means that if the HI is assigned to the CI, this KPI will include the HI in its calculation.
Business Rule	After selecting a KPI, the **Business Rule** list is automatically updated to display all business rules that are applicable for the selected KPI. Applicable rules are those that are applicable to the CI Type and to the KPI, as defined in the Rule Repository. For information about each individual rule, see "List of Calculation Rules in Service Health" on page 740. Select the required rule from the list. The rule is used to calculate the measurement and status for the KPI. If you have selected multiple CIs and these CIs use different rules to calculate this shared KPI, **[Mixed Values]** is displayed. **Note:** After selecting a rule, the dialog box is automatically updated to display the areas (**Business Rule Parameters, API Rule Definitions, Objective**, and so on) that are relevant for the selected rule.

UI Element (A-Z)	Description
Calculated Based On	Select one of the following calculation methods: ➤ **Health indicators.** The KPI is calculated by the HIs assigned to the CI. ➤ **Child KPIs.** The KPI is calculated by the KPIs assigned to the child CIs. ➤ **Health indicators and child KPIs.** The KPI is calculated by the HIs assigned to the CI, and by the KPIs assigned to the child CIs. ➤ **HIs; if none, use child KPIs.** The KPI is calculated by the HIs assigned to the CI; if there are no HIs assigned to the CI, the KPI is calculated by the KPIs assigned to the child CIs.
Create New KPI	Click this link to create a new KPI in the KPI Repository; you can then save changes to apply this new KPI to the selected CIs. For details, see "New KPI/Edit KPI Dialog Box" on page 668.
KPI	Select a KPI from the KPI list. The list contains the names of all available KPIs (KPIs that are already attached to the CI are not included in the list). For an explanation of each individual KPI, see "List of Service Health KPIs" on page 656. **Note:** When defining a KPI for multiple CIs, the **KPI** list contains all KPI types (except those already assigned to the CIs).
Related Health Indicators	This shows which HIs will be used to calculate the KPI on the selected CIs. To modify, click the buttons to the right of this field, as described in the button descriptions above.

KPI Properties Area

After you select a rule, the KPI Properties area displays the areas (**Business Rule Parameters, PNR Parameters, API Rule Definitions,** and **Thresholds**) that are relevant for the selected rule, as described in the following sections.

Business Rule Parameters Area

This area enables you to view and modify rule parameters for the selected rule. All parameters have default values.

If required, modify the parameter values by entering a new value in the appropriate boxes. The information after each box indicates the type of value that can be entered (for example, **Any Number**, **Text**, or **Boolean**).

For information about rule parameters and possible values, refer to the relevant rule as described in "List of Calculation Rules in Service Health" on page 740.

PNR Parameters Area

This area enables you to define parameters relevant for the PNR KPI. For details, see "How to Attach a PNR KPI to a CI" on page 448.

User interface elements are described below:

UI Element (A-Z)	Description
Calendar	Select the calendar for which the PNR KPI is calculated.
SLA	Select the agreement for which the PNR KPI is calculated.
SLM KPI	Select the Service Level Management KPI for which the PNR KPI is calculated.
Tracking Period	Select the tracking period for which the PNR KPI is calculated.

API Rule Definitions Area

This area is displayed when you select an API rule in the Business rule list. For details, see "Rules API Overview" on page 948.

User interface elements are described below:

UI Element (A-Z)	Description
KPI Calculation Script	Enter the KPI calculation script for the rule you are creating using the Rules API. The contents of the script depends on the rule type, as follows: ➤ API Group and Sibling Rule. See "API Group and Sibling Rule" on page 950. ➤ API Sample Rule. See "API Sample Rule" on page 953. ➤ API Duration-Based Rule. See "API Duration-Based Sample Rule" on page 955.
Sample Fields	Enter the names of the sample fields you want to use in the script. Separate between the sample names with a comma. **Note:** Displayed only when you select the **API Sample** rule or the **API Duration-Based** rule in the **Business rule** list.

Thresholds Area

This area enables you to define value ranges that are used to determine status for the KPI. The measurement for the KPI (calculated by the business rule) is compared with the thresholds, and a color status is assigned accordingly.

The thresholds are defined in a unit of measurement appropriate to the type of data dealt with by the rule. The unit is indicated after the thresholds value box.

This area is displayed when relevant. If required, you can modify the default values for the thresholds. For details, see "KPI and HI Thresholds" on page 401.

User interface elements are described below:

UI Element (A-Z)	Description
OK, Warning, Minor, Major, Critical	Enter the required threshold value for each status in the appropriate box. Ensure that the numbers you enter are logically ordered.
Operator	Select the required operator. This operator is applied for all the thresholds.

Edit Health Indicators in KPI Calculation Dialog Box

This dialog box enables you to add or remove HIs (health indicators) from the list of HIs which are used to calculate a KPI, on one or more CIs.

To access	In the **CI Indicators tab**, select one or more CIs in the upper **<View Name>** pane. In the **CI Data pane > KPIs tab,** open a KPI for editing, or add a new KPI. In the **Add/Edit KPI** dialog box, click the Edit button next to the **Related Health Indicators** field.
Important information	➤ The list of Available Health Indicators that can be used to calculate the KPI on the selected CIs is based on their CI Types. The Indicator Repository defines which HIs are applicable to each CI Type. For details, see "Indicator Repository Overview" on page 682. ➤ Adding a related HI to a KPI does not assign the HI to the CI itself; this means that if the HI is assigned to the CI, this KPI will include the HI in its calculation.

User interface elements are described below:

UI Element (A-Z)	Description
	Move all HIs to the **Selected Health Indicators** list.
	Select an HI from the **Available Health Indicators** list, and click to add it to the **Selected Health Indicators** list.
	Select an HI from the **Selected Health Indicators** list, and click to remove it.
	Remove all HIs from the **Selected Health Indicators** list.
Available Health Indicators	This shows the list of HIs that can be used to calculate the KPI on the selected CIs, based on their CI Types.
Selected Health Indicators	This shows which HIs will be used to calculate the KPI on the selected CIs.

Add Health Indicator/Edit Health Indicator Dialog Box

This dialog box enables you to assign HIs (health indicators) to CIs, or to edit the properties of a CI's HIs.

To access	In the **CI Indicators tab**, select one or more CIs in the upper <**View Name**> pane. The **CI Data pane** > **Health Indicators tab** displays the HIs assigned to the selected CIs. If you select multiple CIs, this tab displays the HIs that are shared by all of the selected CIs. ➤ To add an HI to the selected CIs, click the **Add Health Indicator** button in the Health Indicators tab. ➤ To edit the properties of an HI displayed in the Health Indicators tab, select an HI and click the **Edit Health Indicator** button.

Important information	There can be only one instance of each HI for a CI. For each new HI, you define the HI type and business rule. Where relevant, you also define additional information required by the rule. When you attach an HI to multiple CIs, it is added to all CIs that do not already have that HI attached. All instances of the HI have the same defined business rule and properties.
Relevant tasks	"How to Configure KPIs and HIs—Overview" on page 425
See also	"KPI and HI Calculation" on page 397

Health Indicator Area

User interface elements are described below:

UI Element (A-Z)	Description
Business Rule	After selecting an HI, the **Business Rule** list is automatically updated to display all business rules that are applicable for the selected HI. Applicable rules are those that are applicable to the CI Type, as defined in the Indicator Repository. For information about each individual rule, see "List of Calculation Rules in Service Health" on page 740. Select the required rule from the list. The rule is used to calculate the measurement and status for the HI. If you have selected multiple CIs and these CIs use different rules to calculate this shared HI, **[Mixed Values]** is displayed. **Note:** After selecting a rule, the dialog box is automatically updated to display the areas (**Business Rule Parameters, API Rule Definitions, Objective**, and so on) that are relevant for the selected rule.

UI Element (A-Z)	Description
Health Indicator	Select an HI from the Health Indicator list. The list contains the names of all available HIs based on CI Types; the Indicator Repository defines which HIs are applicable to each CI Type. For details, see "Indicator Repository Overview" on page 682. HIs that are already attached to the CI are not included in the list. **Note:** When defining an HI for multiple CIs, this list contains the HIs that are applicable for all of the CIs (according to their CI Types).
Health Indicator Fed By	This shows one of the following: ➤ **Events Only.** The status of the HI is event-based, taken from an ETI. In this case, this dialog box only shows the areas that are relevant for defining event-based HIs. ➤ **Metrics and Events.** The status of the HI may be metric-based (from samples), or event-based (from an ETI). In this case, you must also specify the rule used to calculate the HI, and any required rule parameters. ➤ **{Mixed Values}.** The HI is assigned to more than one CI, and in one CI (or more) it is based on events only, and in one CI (or more) it is based on metrics and events. In this case, you must also specify the rule used to calculate the HI, and any required rule parameters. Select one of these options to define the source of the HI's status. For details on the types of HIs, see "Events, ETIs, and HIs - Overview" on page 683.

Health Indicator Properties Area

If your HI is metric-based, after you select a rule the Health Indicator Properties area displays the areas (**Business Rule Parameters, API Rule Definitions, Thresholds,** and **Selectors**) that are relevant for the selected rule, as described in the following sections.

Business Rule Parameters Area

This area enables you to view and modify rule parameters for the selected rule. All parameters have default values.

If required, modify the parameter values by entering a new value in the appropriate boxes. The information after each box indicates the type of value that can be entered (for example, **Any Number**, **Text**, or **Boolean**).

For information about rule parameters and possible values, refer to the relevant rule in "List of Calculation Rules in Service Health" on page 740.

API Rule Definitions Area

This area is displayed when you select an API rule in the Business rule list. For details, see "Rules API Overview" on page 948.

User interface elements are described below:

UI Element (A-Z)	Description
KPI Calculation Script	Enter the KPI calculation script for the rule you are creating using the Rules API. The contents of the script depends on the rule type, as follows: ➤ **API Group and Sibling Rule.** See "API Group and Sibling Rule" on page 950. ➤ **API Sample Rule.** See "API Sample Rule" on page 953. ➤ **API Duration-Based Rule.** See "API Duration-Based Sample Rule" on page 955.
Sample Fields	Enter the names of the sample fields you want to use in the script. Separate between the sample names with a comma. **Note:** Displayed only when you select the **API Sample** rule or the **API Duration-Based** rule in the **Business rule** list.

Thresholds Area

This area enables you to define value ranges that are used to determine status for the HI. The measurement for the HI (calculated by the business rule) is compared with the thresholds, and a color status is assigned accordingly.

The thresholds are defined in a unit of measurement appropriate to the type of data dealt with by the rule. The unit is indicated after the thresholds value box.

This area is displayed when relevant. If required, you can modify the default values for the thresholds. For details, see "KPI and HI Thresholds" on page 401.

User interface elements are described below:

UI Element (A-Z)	Description
OK, Warning, Minor, Major, Critical	Enter the required threshold value for each status in the appropriate box. Ensure that the numbers you enter are logically ordered.
Operator	Select the required operator. This operator is applied for all the thresholds.

Selector Area

This area enables you to define a selector that identifies which data samples are relevant for this health indicator on this CI. The selector acts as a filter for the incoming data, so that the Service Health engine can map the incoming data samples that match the filter, to the HI and CI.

If you select **Use Default**, the selector is taken from the HI Assignments, if there is an assignment that matches this CI and HI. If not, you are prompted to define the HI's selector.

For details on selector functionality, see "Selectors for Metric-Based HIs" on page 406. For details on each of the selector expression fields, see "Add New/Edit Selector Field Dialog Box" on page 479.

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
	Add Row. The dropdown list contains two options: ➤ **Add Selector Expression.** Enables you to define a selector expression to add to the selector filter currently selected in the Selector table. The added selection expression has an AND relationship. ➤ **Add OR Clause.** Enables you to define a selector expression to add to the selector table, as the first expression in a new selector filter. The new selector filter has an OR relationship with other selector filters in the Selector.
	Edit. Opens the Edit Selector Field dialog box for the currently selected selector expression row, where you can edit the expression details.
	Delete. Deletes one or more selected selector expressions rows. The button deletes a whole selector filter if the AND or OR heading for the filter is selected.
	Copy. Use to copy one or more selector expression rows, or a whole selector filter, to the clipboard. The copied expressions are then available to paste within the current selector.
	Cut. Use to cut one or more selector expression rows and paste them elsewhere within the selector. **Note:** The rows continue to appear until you click Paste.
	Paste. Pastes the selector expression rows on the clipboard to the Selector table. The expressions are pasted after the selected row in the table. If you are pasting a whole selector filter, it is pasted as a new filter (with OR relationship).
AND	Group heading for a single selector filter in the Selector table.

UI Element (A-Z)	Description
Copy Selector to Clipboard	Copies the entire contents of the Selector table to the clipboard, for use in other HI selectors.
Expression Summary	When you have defined a selector, this area displays a summary of the selector conditions.
Field Name	The field that is searched for in the incoming data samples, to compare with the selector expression. For details on the sample fields, see "Data Samples" in *Reports*.
Operator	The relational operator that is used to compare the actual value for the referenced field against the value defined in the selector expression. For details on each operator usage, see "Selector Expression Operators - Reference" on page 480.
OR	Group heading for each selector filter in the Selector table, when there are two or more filters.
Paste Selector from Clipboard	Pastes the selector on the clipboard to the Selector table. **Note:** The pasted selector overwrites any information previously in the Selector table.
Type	The data type for the specified value (can be String, Double, Integer, Long, Boolean, Float, or Binary).
Use Default	Select this check box to use the default selector definition. If there is an HI assignment that matches this CI and HI, the default from the assignment is used. If not, you are prompted to define the HI's selector. To define a non-default selector, clear this check box.
Value	The value that is compared with the actual field value in the data samples.

Add New/Edit Selector Field Dialog Box

This dialog box enables you to define a selector expression, as part of the selector for an HI or an Outage KPI. The selector expression is compared against each incoming data sample, generating a result of either TRUE or FALSE.

To access	In the **Add Health Indicator/Edit Health Indicator** dialog box, in the **Selector Area**, click **Add Row** > **Add Selector Expression** or **Add OR Clause** (or click the **Edit** button for an existing selector expression).
Relevant tasks	"How to Define Selectors for HIs" on page 435
See also	"Selectors for Metric-Based HIs" on page 406

User interface elements are described below:

UI Element (A-Z)	Description
Field Name	The field that is searched for in the incoming data samples, to compare with the selector expression. For details on the sample fields, see "Data Samples" in *Reports*.
Operator	The relational operator, used to compare the value defined in the **Value** box in the selector expression, against the actual field value in the data sample. For example, if the selected operator is **notPrefix**, then the text entered in the **Value** box is compared with the beginning of the value for the relevant field in each data sample. When the prefix value in the sample does not match, the selector expression gives a TRUE result. Select the required operator from the dropdown list. For details on each operator usage, see "Selector Expression Operators - Reference" on page 480.
Type	The data type used in the samples for the specified value, for example, **String**, **Integer**, and so forth.
Value	The value that is compared with the actual field value in the data sample, to establish if the sample qualifies as TRUE for this selector expression.

Selector Expression Operators - Reference

The following table describes the relational operators used in the selector expressions for HIs. The operators are used to compare the value defined in the selector expression against the property value in the data sample.

To access	Operators for selector expressions are defined in the **Add New Selector Field** dialog box or **Edit Selector Field** dialog box.
Relevant tasks	"How to Define Selectors for HIs" on page 435
See also	"Selectors for Metric-Based HIs" on page 406

User interface elements are described below:

UI Element	Description
=	The value for the specified property in the data sample must exactly **equal** the value defined in the selector expression.
! =	The value for the specified property in the data sample must **not be equal** to the value defined in the selector expression.
in	The value for the specified property in the data sample must be one of the values (separated by commas) defined in the selector expression. For example, if sample S1 has an attribute A1 with the value V1, the following is true: A1 in V1,V2,V3.
not in	The value for the specified property in the data sample must not be one of the values (separated by commas) defined in the selector expression.
>	The value for the specified property in the data sample must be **greater than** the value defined in the selector expression.
<	The value for the specified property in the data sample must be **smaller than** the value defined in the selector expression.

UI Element	Description
matches	The value for the specified property in the data sample must **match** the value defined in the selector expression. This uses the Java Regex language. For details see: http://java.sun.com/developer/technicalArticles/releases/1.4regex/ http://www.regexplanet.com/advanced/java/index.html
doesn't match	The value for the specified property in the data sample must be **different from** the value defined in the selector expression. This uses the Java Regex language. For details see: http://java.sun.com/developer/technicalArticles/releases/1.4regex/ http://www.regexplanet.com/advanced/java/index.html
>=	The value for the specified property in the data sample must be **more than or equal to** the value defined in the selector expression.
<=	The value for the specified property in the data sample must be **less than or equal to** the value defined in the selector expression.
prefix	The value for the specified property in the data sample must **start with** the string defined in the selector expression.
notPrefix	The value for the specified property in the data sample must **not start with** the string defined in the selector expression.
suffix	The value for the specified property in the data sample must **end with** the string defined in the selector expression.
notSuffix	The value for the specified property in the data sample must **not end with** the string defined in the selector expression.

Confirm CI Changes Dialog Box

This dialog box appears if you add a KPI or HI (health indicator) to multiple CIs, and this indicator is already assigned to one or more of the CIs. The dialog box enables you to add the indicator to the CIs where it was not originally assigned, or to override the original assignments on all the CIs. Each row in the table represents a CI where the indicator is already assigned.

To access	Select **Admin** > **Service Health** > **CI Indicators.** Select multiple CIs using the upper pane, and add a KPI or HI using the **CI Data** pane.
Important information	After you click **Show Details**, the dialog box contains the user interface elements described below.
Relevant tasks	"How to Configure KPIs and HIs—Overview" on page 425

User interface elements are described below:

UI Element (A-Z)	Description
	Export to Excel. Export the table to an Excel file.
	Export to PDF. Export the table to a PDF file.
Business Rule	The business rule used to calculate the KPI or HI that is already assigned to the specified CI.
CI	The name of the CI where the indicator is already assigned.
CI Type	The CI Type (CIT) of the CI where the indicator is already assigned.
Hide Details	Collapse the dialog box and hide details.
Keep Existing	Keep the original indicator assignments, and add the indicator only to those CIs where it was not originally assigned.

UI Element (A-Z)	Description
Override Existing	Replace the original indicator assignments on all of the selected CIs with the new indicator assignments.
Show Details	Expand the dialog box and display details on each of the CIs where the indicator is already assigned.

Modified Values Dialog Box

You can modify KPI or HI (health indicator) settings using the CI Data pane. If you select a few CIs in the upper pane and edit an indicator assigned to these CIs using the lower pane, this dialog box appears when a field changes from **[Mixed Values]** to a specific value. For example, if a KPI has a Warning threshold of 80% on one CI and on another CI it has a threshold of 90%, and you modify both to 95%, this dialog box enables you to specify which CI to change.

Each row in the table shows a field for a particular CI, and its corresponding values.

Note: When you change a KPI's business rule from **[Mixed Values]** to a specific rule this dialog box does not appear, unless you have changed the **Calculated Based On** or **Related Health Indicators** field to a specific value.

To access	Select **Admin** > **Service Health** > **CI Indicators** Select multiple CIs using the upper pane, and change settings of a KPI or HI assigned to these CIs, using the **CI Data** pane.

Important information	If you click **Save**, your changes are implemented for all the selected CIs. To implement changes for specific CIs but not for others, click **Show Details**. This is particularly useful when changing settings for a large number of CIs at once, if you want to leave one or two CIs with their original settings.
Relevant tasks	"How to Configure KPIs and HIs—Overview" on page 425

After you click **Show Details**, the dialog box contains the user interface elements described below:

UI Element (A-Z)	Description
	Override all. Override the original settings on all the CIs. This selects the Override check boxes on the current page; if there are additional pages in the table they are not selected.
	Override none. Keep the original settings on all the CIs. This clears the Override check boxes on the current page; if there are additional pages in the table they are not cleared.
	Show Details. Select a row and click to show details of the fields in an expanded window. This is useful if you want to view details such as selectors or API scripts which generally do not fit within a table cell.
	Export to Excel. Export the table to an Excel file.
	Export to PDF. Export the table to a PDF file.
	When the table contains multiple pages, use the page scroller to move forwards and backwards through the pages.
CI Name	The name of the CI where the selected indicator is assigned.

UI Element (A-Z)	Description
Field Name	The name of the field that was modified within the indicator definitions.
Hide Details	Collapse the dialog box and hide details.
New Value	The new value that you have defined for the indicator.
Old Value	The original value that was defined for the indicator.
Override	Select this box to change the indicator definition from the old value to the new value on a specific CI. By default all rows are selected; if you de-select this box, the old value is used for the CI.
Section	The area within the KPI or HI definition where the value was modified (for example, Threshold).
Show Details	Expand the dialog box and display details, to specify which CI to change.

Edit Context Menus Dialog Box

This dialog box enables you to assign context menus to CIs.

To access	Select **Admin** > **Service Health** > **CI Indicators** Select CIs in the upper pane. In the **CI Data** pane > **CI Properties** tab, click the **Add** button.
See also	"List of Context Menus" on page 899

User interface elements are described below:

UI Element	Description
	Select a context menu from the Available Context Menus list, and click to add it to the Active Context Menus list.
	Select a context menu from the Active Context Menus list and click to remove it.

UI Element	Description
Available Context Menus	The context menus that can be added to the selected CIs.
Active Context Menus	The context menus that are assigned to the selected CIs.

Edit Breakdown Filter Dialog Box

This dialog box enables you to define which elements to include in a breakdown, or to exclude from a breakdown.

To access	Select **Admin** > **Service Health** > **CI Indicators.** Select CIs in the upper pane. In the **CI Data** pane > **Breakdown** tab, within the **Filter** area click **Edit**.
Relevant tasks	"How to Configure Breakdowns" on page 444
See also	"Breakdowns" on page 413

User interface elements are described below:

UI Element (A-Z)	Description
	Select an element from the Available Elements list, and click to add it to the Filtered Elements list.
	Select an element from the Filtered Elements list and click to remove it.
Available Elements	This displays the elements that can be included in the breakdown. For example, if your breakdown includes locations, this shows all the locations defined in the Locations view.

UI Element (A-Z)	Description
Filter Type	A filter can either include specific elements, or exclude specific elements. Select **Included** to create a breakdown that only contains selected elements, or **Excluded** to create a breakdown that does not include selected (excluded) elements. For example, if you are defining a **Transaction by Location** breakdown and you only want to break down transactions from London and New York, select **Included** and move London and New York to the **Filtered Elements** list. To exclude these locations, select **Excluded**.
Filtered Elements	This contains the elements that are included or excluded in the breakdown, as defined by the filter type.

16

Custom Image Administration

This chapter includes:

Concepts

➤ Custom Image Administration - Overview on page 490

Tasks

➤ How to Assign a Custom Image to a View on page 491

Reference

➤ Custom Image Page – Administration on page 495

Concepts

Custom Image Administration - Overview

The Custom Image feature enables you to display a view's CIs represented by real-time status indicators within a custom image that describes the real world that your view represents. The graphical representation of a view used by your organization can be a logical network diagram, business logic, or any other graphic image.

You work with Custom Images in two stages:

1. Within Service Health Administration, you associate an image with a view, and specify where each CI is located in the image.
2. You can then access the Custom Image application component, and see the CI statuses in the view, within your custom image. For more details on the Custom Image component, see "Custom Image - Overview" on page 214.

When you create a custom image in Service Health Administration, you can:

- Use any diagram or picture as an image, provided that the format is supported by the browser. Recommended formats are GIF, JPG, or PNG. You can resize the image to fit your screen.
- Define your custom image to display standard status icons, or CI type icons with status colors.
- Save your custom image locally to BSM, or use a URL to access an external image.

For details on defining a custom image in Service Health Administration, see "How to Assign a Custom Image to a View" on page 491. For user interface details, see "Custom Image Page – Administration" on page 495.

Tasks

How to Assign a Custom Image to a View

This section describes how to set up a custom image. For further examples, see "How to Display a View in a Custom Image" on page 216.

This task includes the following steps:

- "Assign a custom image to a view" on page 491
- "Add CIs to the custom image" on page 492
- "Display a view's custom image" on page 494

1 Assign a custom image to a view

a Within Service Health Administration, open the **Custom Image** tab. Select a view in the **View Selector** pane.

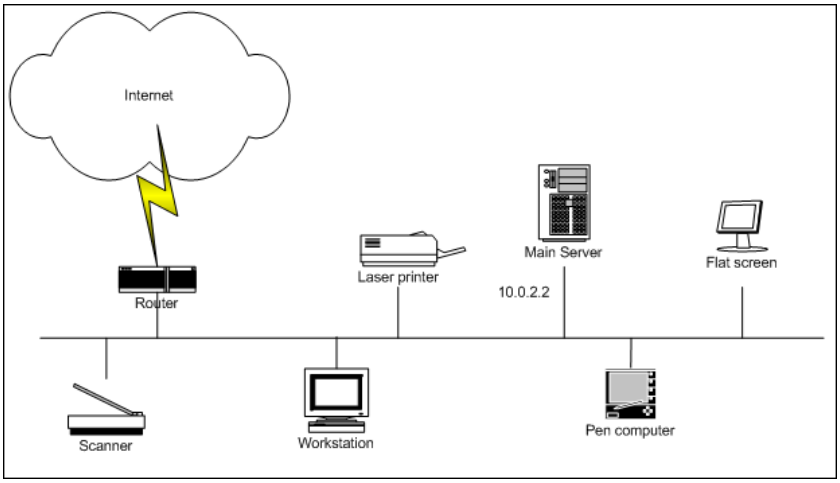
b In the **Custom Image** pane on the right side, click the **Open Image** button, and select one of the following:

- **Local.** Specify an image saved on your file system.
- **From URL.** Specify an image using a URL. Note that any type of image supported by the browser can be loaded from any URL (including HTTP protocol and HTTP authentication), but the URL must be available at all times to display the custom image.

For user interface details, see "Custom Image Page – Administration" on page 495.

Example:

You want to use a picture of your network to display the status of each element in the network:



2 Add CIs to the custom image

a Select a CI from the CI tree in the left pane, and drag it to the required location in the image.

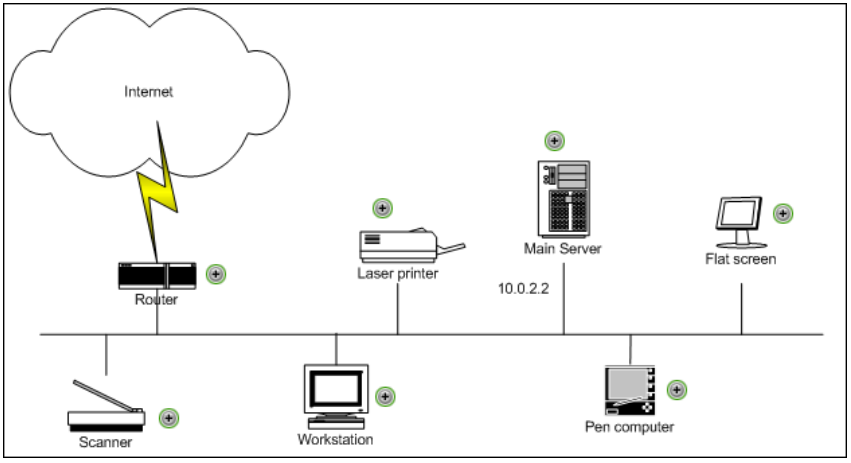
b From the **Display Type** dropdown, select one of the following:

- **Status icons**. Display standard status icons in the Custom Image component.
- **CI type icons.** Display CI type icons which use status colors in the Custom Image component.

c Add additional CIs as required. When you finish adding CIs, click **Save** to save the custom image locally, or click **Link to URL** to save the URL of the image.

Example – Add CIs to Custom Image

You add the appropriate CI to the custom image:

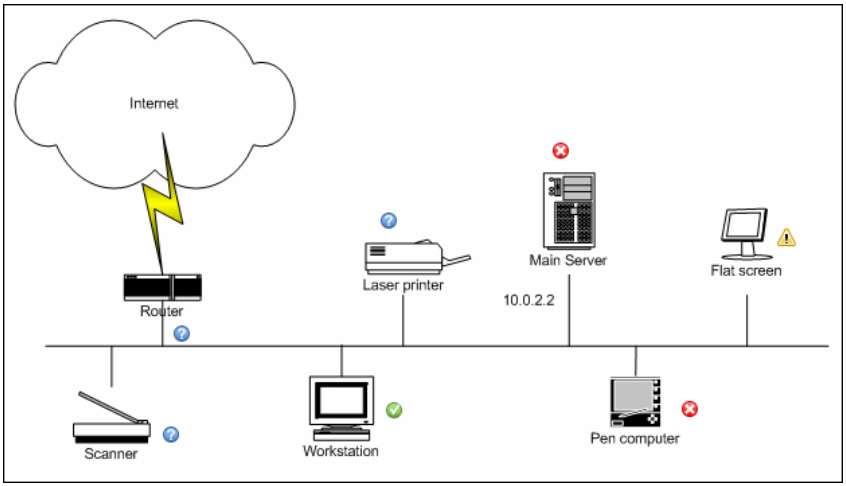


3 Display a view's custom image

After you complete the custom image, you can display it in the Service Health application, to view the CI's status in the appropriate location in the diagram.

Example – View a Custom Image

The custom image displayed for the user is as follows:



Reference

Custom Image Page – Administration

This page enables you to create a map for the selected view including the view's CIs represented by real-time status indicators and a background custom image. This image is then displayed in the Service Health Custom Image component. For details, see "Custom Image Component User Interface" on page 218.

To access	Select **Admin** > **Service Health** > **Custom Image**
Important information	➤ Do not overlap CI icons. When icons do overlap, only the top status indicator is visible in the custom image. ➤ After setting a CI icon on the diagram, you can move the cursor over it to display the CI name in a tooltip. ➤ To select multiple CIs, click and drag your cursor, or press the keyboard CTRL key and click the CIs you want to select.
Relevant tasks	"How to Assign a Custom Image to a View" on page 491
See also	"Custom Image - Overview" on page 214

User interface elements are described below:

UI Element	Description
View pane (left side)	Enables to select a view, then select CIs and drag them to the image. For details, see "How to Assign a Custom Image to a View" on page 491.
Custom Image pane (right side)	
	Clear. Deletes both the image and the CI icons from the custom image associated with the current view.

UI Element	Description
	Add CI. Select a CI in the left pane, and click **Add CI** to add the selected CI to the custom image. The CI icon is displayed in the left top corner of the diagram with a blue outline. Drag the CI to the required location in the diagram. The CI icon is set at that position. **Note:** You can also select a CI in the left pane and drag it directly to the image.
	Select All. Selects all the CIs in the custom image. You can then drag all the CIs together to new locations, or click Delete to delete all the CIs.
	Delete CI. Removes one or more selected CIs from the custom image.
	Fit to Screen. Fits the image within the screen; relative proportions of the image are maintained.
	Stretch to Fit Screen. Stretches the image and fills the screen; relative proportions of the image are not maintained.
	Marks the location of the CI within the custom image.
Display Type	Select one of the following options for displaying the CI icons: ➤ **CI type icons.** The custom image displays CI type icons (for example for transactions). ➤ **Status icons.** The custom image displays standard status icons.
Link to URL	Click the **Link to URL** button to save the URL of the image, and to save the CI icons within the image. The custom image will only display the image if it can access the URL. Only one URL or one image is saved per view.

UI Element	Description
Open Image	Select one of the following options for selecting an image to use as a background for the custom image: ➤ **Local.** Click to browse the local file system and select an image. ➤ **From URL.** Click to open the **Enter URL** dialog box. Enter the URL of the image you want to use, in the format: **<protocol>://<hostname>/<path_to_image>** The protocol can be HTTP or HTTPS. To use a local machine as the location of the image, enter the URL with the following format: **file:///<path_to_image>** This results in an image that cannot be displayed for a user working outside the local network. You can also use a file-sharing path as follows: **\\server\<path_to_image>** When you enter a URL, the **Link to URL** button is enabled.
Save	Click the **Save** button to save the image and the CI icons within the image. **Note:** ➤ Only one URL or one image is saved per view. ➤ If you enter a URL and click the **Save** button, the image itself is locally saved.

17

Administer CI Status Alerts

This chapter includes:

Concepts

- CI Status Alerts Administration Overview on page 500
- SNMP Traps on page 501
- Downtime on page 502
- CI Status Alerts Attached to CIs in Local Impact Views on page 502

Tasks

- How to Create a CI Status Alert Scheme and Attach it to a CI on page 503
- How to Configure a Notification SNMP Trap on page 508

Reference

- SNMP-Specific Codes on page 510
- Alerts MIB Varbinds on page 510
- CI Status Alerts Administration User Interface on page 512

Troubleshooting CI Status Alerts on page 538

Concepts

CI Status Alerts Administration Overview

CI Status alerts are triggered by a pre-defined status change for the selected CI. The status change is detected by the Business Logic Engine.

For a detailed introduction to alerts, see "Alerts Overview" in *Platform Administration*.

In the CI Status alert administration, you can create and manage one or more alert schemes and attach them to a CI in a view, using the Alert Wizard. The decision to send an alert is handled by the rules attached to the CI's KPIs. The alert engine sends alert messages (notifications) to pre-defined recipients, and executes the actions, executable files, and SNMP traps defined for the alert. For user interface details, see "Create New Alert Wizard" on page 516.

You can define the CI Status alert to apply to a specific KPI so that any change to the status of the KPI triggers the alert. You can also define the CI Status alert to apply to all the KPIs attached to the CI, so that any change to the status of one of the KPIs triggers the alert. You can attach more than one CI Status alert to a CI or share the same CI Status alert scheme definition between several CIs. You can also send the same CI Status alert notification to different recipients according to the CI status.

For user interface details, see "Create New Alert Wizard" on page 516.

For details on how to define recipients, see "Recipient Management" in *Platform Administration*.

You can monitor the triggered alerts using the Configuration Item Status Alert report. For user interface details, see "Configuration Item Status Alerts Report" on page 309.

You can customize alerts. For details, see "How to Customize Alerts" in *Platform Administration*.

If you have the Event Management Foundation license, and a CI Status alert is triggered in BSM, an event corresponding to the alert is automatically forwarded to Operations Management.

If BSM integrates with HP Operations Manager, an event is automatically forwarded to HP Operations Manager (OM), when a CI Status alert is triggered in BSM. For details, see "HP Operations Manager" in *Solutions and Integrations*.

If BSM integrates with HP Service Manager, an incident is automatically forwarded to HP Service Manager when a CI Status alert is triggered in BSM. For details, see "Business Service Management Integration with Other Applications" and "How to Integrate HP Service Manager with Business Service Management Components" in *Solutions and Integrations*.

SNMP Traps

You can configure a Simple Network Management Protocol (SNMP) trap and attach it to an alert. The SNMP trap includes Object Identifiers (OIDs) and their values based on the alert's data.

The SNMP trap is sent when the alert criteria is met and the alert is triggered.

You can then view the alert notice with any SNMP management console. For detail on setting SNMP traps, see "How to Configure a Notification SNMP Trap" on page 508.

The MIB file, located at **<HPBSM root directory on the Data_processing Server>\HPBAC\SNMP_MIBS\CIAlerts.mib**, contains the mapping of Object Identifiers (OIDs) to alert-related data. The mapping is detailed in "Alerts MIB Varbinds" on page 510.

The alert type and its SNMP-specific code is detailed in "SNMP-Specific Codes" on page 510.

To configure SNMP traps, see "How to Configure a Notification SNMP Trap" on page 508. The SNMP trap is sent when the alert criteria is met and the alert is triggered. You can view the alert notice with any SNMP management console in your organization.

Downtime

When you configure a CI Status alert scheme, downtime can affect the CIs and skew the CI's data.

You can configure downtime so that an EUM alert scheme or a CI status alert is triggered or not when the CI attached to the alert is in downtime.For concept details, see "Alerts and Downtime" in *Platform Administration*.

For task details, see "How to Set Up an Alert Delivery System" in *Platform Administration*.

CI Status Alerts Attached to CIs in Local Impact Views

You can select a local impact view and create a CI Status alert for a CI in that view in the same way you create a CI Status alert for a CI in a global view. For details on building a local impact view, see "How to Create or Edit Views Using View Builder" on page 384.

The CI Status alerts assigned to a CI in a local impact view are only attached to the CI in that view, they are not attached to the CI in global views. For example, if you add alert A to CI A in a global view, and then you want to add alerts to CI A in a local impact view, you do not see alert A attached to CI A in the local impact view. In the same way, if you add alert B to CI B in a local impact view, and you want to add alerts to CI B in a global view, you do not see alert B in the global view.

For task details on adding CI Status alerts to a local impact view, see "How to Create a CI Status Alert Scheme and Attach it to a CI" on page 503.

Tasks

How to Create a CI Status Alert Scheme and Attach it to a CI

You can create new alert schemes and attach them to any CI. You can attach more than one alert scheme to a CI. You can also attach the same alert scheme to more than one CI.

An alert attached to a CI in a specific view, is also attached to the CI in any view where the CI is included.

This task includes the following steps:

- "Prerequisite" on page 504
- "Create an alert scheme" on page 504
- "Add a CIT's additional parameters to a CI Status Alert – optional" on page 506
- "Set up to open incidents in HP Service Manager corresponding to CI Status alerts triggered in BSM – optional" on page 507
- "Customize the alert features – optional" on page 507
- "Schedule the Configuration Item Status Alerts report – optional" on page 507
- "Results" on page 507

1 Prerequisite

Perform the steps described in "How to Set Up an Alert Delivery System" in *Platform Administration*.

2 Create an alert scheme

Attach an alert scheme to a CI using the Create New Alerts wizard where you specify:

- The conditions that cause the CI Status alert to be triggered.
- The CIs and KPIs to which you want to attach to the alert scheme.
- The alert recipients and templates.
- The user-defined alert handlers (actions) that are triggered by the alert.

To access the wizard, select **Admin** > **CI Status** > **CI Status Alerts**, select a view in View Selector and a CI in the CI Selector, and click **New Alert**. For details on the Alerts Wizard, see "Create New Alert Wizard" on page 516.

Tip: You can also select a local impact view and create a CI Status alert for a CI in that view in the same way you create a CI Status alert for a CI in a global view. For concept details, see "CI Status Alerts Attached to CIs in Local Impact Views" on page 502. For details on building a local impact view, see "How to Create or Edit Views Using View Builder" on page 384.

While creating the alert or afterwards, you can attach to an alert:

➤ **A notification URL.** The notification URL is sent when the alert criteria is met and the alert is triggered. It passes alert information to external systems, such as a customer Web application.

Example - Create a Notification URL:

To include the name of the CI and the current status of the CI in the URL, access the Create New/Edit URL dialog box and perform the following steps:

1. Enter the following string in the **Enter URL** box: http://dogbert.com/myjsp
2. At the end of the string in the **Enter URL** box, enter: entityname=
3. Select **CI Name** in the **Field** box, and press **Insert Field** to insert the <<**CI Name**>> variable. The string in the **Enter URL** box is now: http://dogbert.com/myjsp entityname=<<CI Name>>
4. At the end of the string in the **Enter URL** box, enter: severity=
5. Select **Current Status** in the **Field** box, and press **Insert Field** to insert the <<**Current Status**>> variable.

   The string in the **Enter URL** box is now: http://dogbert.com/myjsp entity name <<CI Name>> severity =<<Event Severity>>

➤ **An executable file.** The executable file is sent when the alert criteria is met and the alert is triggered. It writes information in special logs or to insert information into external databases. For user interface details, see "Create New/Edit Executable File Dialog Box" on page 530.

Example - Create an Executable File:

To include the name of the CI in the command, access the Create New/Edit Executable File dialog box and proceed as follows:

1. Enter the following string in the **Enter command** box: \\servername\myfolder\run.exe -name
2. Select **CI Name** in the **Field** box and press **Insert Field** to insert the <<**CI Name**>> variable.

   The string in the **Enter command** box is now: \\servername\myfolder\run.exe -name <<CI Name>>

➤ **An SNMP trap.** The SNMP trap is sent when the alert criteria is met and the alert is triggered. You can view the alert notice with any SNMP management console in your organization. For concept details, see "SNMP Traps" on page 501. For user interface details, see "How to Configure a Notification SNMP Trap" on page 508.

3 Add a CIT's additional parameters to a CI Status Alert – optional

---

Note to HP Software-as-a-Service customers: This capability is not available for HP Software-as-a-Service customers.

If you create a new CI Type (CIT), you can add the CIT's additional parameters to a CI Status alert. For details, see "Configuration Item Status Alert Notifications Report" on page 295.

To add additional parameters to a CIT:

a Recommended. Save the original package under a different name before modifying the original package.

b Open the **<CIT_package>.zip** file at the following location: **<uCMDB root directory on the Data_processing Server>\mamlib\packages** or at the location where the CIT package is located.

c Open the **<CIT>.xml** file, locate the parameter you want to display, and add the following line between the **<Attribute-Qualifiers>** tags: **<Attribute-Qualifier name="ALERT_NOTIFICATION_ATTRIBUTE"/>**

Example

For example, add the line as follows:

```
<Attribute name="database_dbversion" display-name="Version" description="The
database version" type="string" size="25">
    <Attribute>
        <Attribute-Qualifiers>
            <Attribute-Qualifier name="ALERT_NOTIFICATION_ATTRIBUTE"/>
        </Attribute-Qualifiers>
    </Attribute>
```

d Save and re-deploy the package.

4 Set up to open incidents in HP Service Manager corresponding to CI Status alerts triggered in BSM – optional

You can set up to open incidents in HP Service Manager that correspond to CI Status alerts triggered in Business Service Management. For task details, see "How to Integrate HP Service Manager with Business Service Management Components" in *Solutions and Integrations*.

5 Customize the alert features – optional

You can customize some features. For details, see "How to Customize Alerts" in *Platform Administration*.

6 Schedule the Configuration Item Status Alerts report – optional

You can schedule the Configuration Item Status Alerts report. For details, see "How to Schedule a Report" in *Reports*.

7 Results

You can view the alert schemes you have created in the Configuration Item Alerts page. For details, see "Configuration Item Status Alerts Page (Administration)" on page 534.

You can manage the alert schemes. For details, see "Configuration Item Status Alerts Page (Administration)" on page 534.

You can view a list of the CI Status alerts that were triggered in the Configuration Item Status Alerts report and in the Configuration Item Status Alert Notifications report. For details, see "How to View the Triggered CI Status Alerts and Notifications" on page 287.

How to Configure a Notification SNMP Trap

You can configure an SNMP trap and attach it to an alert. This SNMP trap is sent when the alert criteria is met. The alert notice can be viewed with any SNMP management console in the organization.

This task includes the following steps:

- "Set up the appropriate administrative privileges" on page 508
- "Specify the host address of the SNMP trap" on page 509
- "Check the mapping of the OIDs to the alert data and configure the Alerts MIB – optional" on page 509

1 Set up the appropriate administrative privileges

You can set the appropriate administrative privileges to create a command that can be attached to an alert scheme and run when the alert it is attached to is triggered.

To set the appropriate administrative privileges:

a Select **Admin** > **Platform** > **Users and Permissions** > **User Management**.

b Select the appropriate user in the left column, and click the **Permissions** tab.

c Select the **Monitors** context, and under Active user, click **Alerts - Run executable file**.

d Click the **Operations** tab, and select the **Change** option.

2 Specify the host address of the SNMP trap

You specify the default host address of the SNMP trap in the Create New/Edit SNMP Trap dialog box. For user interface details, see "Create New/Edit SNMP Trap Dialog Box" on page 531.

You can also specify a global default host address in the Infrastructure Settings. For details, see the **Default SNMP Target Address/Default SNMP Port** in "Modify the alerts triggering defaults" in "How to Customize Alerts" in *Platform Administration*.

3 Check the mapping of the OIDs to the alert data and configure the Alerts MIB – optional

If you enabled alerts through SNMP traps in your alert schemes, it is recommended that you configure your SNMP management console to read the alerts MIB. This configuration enables you to see a name, rather than an Object ID (OID), when working in the management console.

Note: HP Business Service Management uses the AM alerts MIB 5.0 by default.

To configure the alerts MIB in your SNMP management console:

a Copy the **<HPBSM root directory on the Data_processing Server>\HPBAC\SNMP_MIBS\CIAlerts.mib file** from the HP Business Service Management Documentation and Utilities DVD to your SNMP management console.

b To view the alerts varbinds, use your SNMP management console's MIB browser. For a list of varbinds and their descriptions, see "Alerts MIB Varbinds" on page 510.

c Using your SNMP management console's event configuration utility, configure the notification content and method for the various alert types. For a list of alert types and their corresponding SNMP-specific codes, see "SNMP-Specific Codes" on page 510.

Reference

SNMP-Specific Codes

The SNMP-specific code for a CI Status alert is **1**. Its type is: **CI Status Alert**.

Use this code when configuring CI Status alerts in your SNMP management console. For details, see "How to Configure a Notification SNMP Trap" on page 508.

Alerts MIB Varbinds

The tables list the varbinds used in the alerts MIB. For task details, see "How to Configure a Notification SNMP Trap" on page 508.

Object Identifier	MIB Label	Description
1.3.6.1.4.1.5233	HP	Company name
1.3.6.1.4.1.5233.6	ciAlerts	Subject
1.3.6.1.4.1.5233.6.1	alerted	Unique alert ID
1.3.6.1.4.1.5233.6.2	alertName	Alert name
1.3.6.1.4.1.5233.6.3	alertDescription	Alert description
1.3.6.1.4.1.5233.6.4	alertEventTime	Time when the event occurred. This is the event that triggered the alert.
1.3.6.1.4.1.5233.6.5	alertCIId	The ID of the CI whose status change triggered the alert
1.3.6.1.4.1.5233.6.6	alertCIName	The name of the CI whose status change triggered the alert

Object Identifier	MIB Label	Description
1.3.6.1.4.1.5233.6.7	alertKPIId	The ID of the KPI whose status change triggered the alert. The KPI is attached to the CI related to the alert.
1.3.6.1.4.1.5233.6.8	alertKPIName	The name of the KPI whose status change triggered the alert. The KPI is attached to the CI related to the alert.
1.3.6.1.4.1.5233.6.9	detailedDescription	The detailed description of the alert.
1.3.6.1.4.1.5233.6.10	alertPrevious Severity	Previous severity of the CI
1.3.6.1.4.1.5233.6.11	alertNextSeverity	Current severity of the CI (the change from previous severity to current severity is what triggered the alert).
1.3.6.1.4.1.5233.6.12	alertBACURL	The URL of the BSM Gateway server.
1.3.6.1.4.1.5233.6.13	actualTime	When the triggering condition is related to time, this is the actual time when the CI has breached the condition. For other condition types, this value is N/A.
1.3.6.1.4.1.5233.6.14	conditionDescription	The description of the condition that triggered the alert.
1.3.6.1.4.1.5233.6.15	localImpactView	The name of the view when the CI that triggered the alert is part of the local impact view.

CI Status Alerts Administration User Interface

This section describes:

- CI Selector Pane on page 512
- Create New Alert Wizard on page 516
- Create New/Edit Executable File Dialog Box on page 530
- Create New/Edit SNMP Trap Dialog Box on page 531
- Create New/Edit URL Dialog Box on page 533
- Configuration Item Status Alerts Page (Administration) on page 534
- New Event Generation Dialog Box on page 536

CI Selector Pane

The CI Selector presents the view you selected and the configuration items (CIs) contained in that view in a hierarchical tree format according to the relationships defined between the CIs.

You can use the CI Selector to select a CI in the view. You can browse through the list of CIs in the selected view, or you can search for a CI.

Information is presented, in the right-pane, for the selected view and the selected CI. The shortcut menu options depend on the selected CI.

To access	Appears in the middle pane of the page.
Important information	The interaction between the CI Selector pane and the information presented in the right pane varies, according to the context. The CI Selector includes the Browse Views and the Search CI tabs. ➤ In Browse Views mode, you can browse through the view to locate a particular CI. You can also perform operations for the CI using a context menu. ➤ In Search CIs mode you can search for one or more CIs in the view, by name or by CI type. **Unavailable Views and CIs:** The View list in View Selector may not display all views in the RTSM, or it may not display the contents of a view, because it includes: ➤ Only the views for which you have the necessary permissions. To set permissions, select **Admin** > **Platform** > **Users and Permissions**, select a user or a group and select **Permissions**. For more information, see "How to Assign Permissions" in *Platform Administration*. ➤ Only the views that are assigned to the application. ➤ Inactive views (appear in red) that cannot be selected. ➤ Out-of-the-box views for which you do not have a license. These views do not contain CIs. For information about the out-of-the-box views, see "Predefined Folders and Views" in the *Modeling Guide*.
Relevant tasks	"How to Create a CI Status Alert Scheme and Attach it to a CI" on page 503

Browse Views Tab

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
	Refresh. Click to refresh the display.
	Clear all. Click to unselect previously selected CIs.
	Collapse/Expand. Click to collapse or expand the tree.
<CIs>	The CIs contained in the currently selected view.
<view selector>	Click on the arrow to display a list of the available views. You can also click on the ellipsis (...) button to display the Select a view from the tree dialog box where you can select the required view.
<Tooltip>	Hold the cursor over a CI to display a tooltip with the relevant CI type.

Search CIs Tab

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<Context sensitive menu options>	The CI Selector shortcut menu contains different options in each of the pages in which it appears. For details, see "Service Health Menu Options" on page 98.
<Search results>	After you run the search, the results are listed in the lower part of the CI Selector pane. The results are shown in two columns: ➤ **Name.** Contains the name of the CI. ➤ **CI Type.** Contains the CI type of the CI. If the CI name is abbreviated, hold the pointer over the entry to see the full name. You can sort the search results by clicking the appropriate heading.
Name	To search for a CI by name, enter the name of the CI for which to search.
Search	Performs the search.
Type	To search for CIs by CI type, click the ellipsis button to select a CI from the Select Configuration Item Type dialog box.

Create New Alert Wizard

This wizard enables you to create new alert schemes and attach them to any CI. You can attach more than one alert scheme to a CI. You can also attach the same alert scheme to more than one CI.

An alert attached to a CI in a view is attached to the CI in any view where the CI is included.

To access	Select **Admin** > **CI Status** > **CI Status Alerts**, select a view and a CI and click **New Alert**.
Important information	➤ If you have an Event Management Foundation license, and you create a CI Status alert without specifying a recipient or an action for the alert. When you complete the definition of such an alert, the message: **The alert you just defined opens an event in Operations Manager i when the communication with Operations Manager i is enabled** is displayed in the Summary page. ➤ Set up specific parameters to enable the communication with OM. For details, see "How to Configure BSM Alerts to Forward an Event When the Alert is Triggered" in *Solutions and Integrations*. Use the Model Explorer pane (on the left) to select the CI to which you want to attach the alert. For user interface details, see "View Selector" on page 87.
Relevant tasks	"How to Create a CI Status Alert Scheme and Attach it to a CI" on page 503
Wizard map	The Create New Alert Wizard includes: Welcome Page > General Page > Related Configuration Items Page > Templates and Recipients Page > Actions Page > Summary Page

General Page

This page enables you to define the alert scheme general information including the triggering conditions.

Important information	General information about the wizard is available at "Create New Alert Wizard" on page 516.
Wizard map	The Create New Alert Wizard includes: Welcome Page > **General Page** > Related Configuration Items Page > Templates and Recipients Page > Actions Page > Summary Page

User interface elements are described below:

UI Element (A-Z)	Description
Alert Type	Select one of the following options: ➤ **All KPIs** if you want the alert to be triggered by the specified status change in any of the KPIs attached to any of the selected CIs ➤ **Selected KPIs** if you want the alert to be triggered by the specified status change in the selected KPIs attached to any of the selected CIs You select CIs and KPIs in the next step of the wizard.
Description	Enter the alert scheme's description. **Limitation:** The string should be less than 1000 characters.
Name	Enter the name of the alert scheme. **Limitation:** The string should be less than 250 characters.
Notification frequency	Select one of the following options: ➤ **Send alert for every trigger occurrence** to send an alert notification every time an alert is triggered. ➤ **Send no more than one alert per <time_period>** and specify the time period and unit to send an alert notification every time period.

UI Element (A-Z)	Description
Send alert if	Select one of the following options: ➤ **Status is equal to or** <condition> **than** <status> **for** <value><time unit> to trigger the alert when the status of the CI is equal to or better/worse than the selected status (**Critical**, **Major**, **Minor**, **Warning**, or **OK**) for the specified time period (minutes, hours, or days). For detailed examples, see "Examples of Status is equal to or <condition> than <status> for <value><time unit>" on page 519. ➤ **Status worsens (not including "No Data" and "Downtime")** to trigger the alert when the current status of the KPIs is worse than the previous status. The **No Data** and **Downtime** statuses are not taken into consideration. For example, the alert is triggered when the status changes from Warning to Minor. ➤ **Status improves (not including "No Data" and "Downtime")** to trigger the alert when the current status of the KPIs is better than the previous status. The **No Data** and **Downtime** statuses are not taken into consideration. For example, the alert is triggered when the status changes from Warning to OK. ➤ **Status value was changed from** <status> **to** <status> to set the appropriate conditions for sending an alert. Select the appropriate status in the **from** box, and in the **to** box. The available statuses are: **Any Status** (only available in the **from** box), **Critical, Major, Minor, Warning, OK, No Data, Downtime, Stop, Info**, and **Uninitialized**. If you select **Any Status**, the alert is triggered when the CI status changes from any status to the target status.

Examples of Status is equal to or <condition> than <status> for <value><time unit>

➤ You specify the following condition: "**Send alert if status is equal to or worse than Major for 15 minutes**" and the following scenarios occur:

CI's KPI	Status changes to	What happens
Availability	Major for 15 minutes	The alert is sent
Availability	Critical for 20 minutes	The alert is not sent (status is still worse than Major for over 15 minutes). **Note:** Before the alert is triggered again, the alert must be reset. To reset the alert, the status must return to a value within the status threshold (better than Major). After the alert is reset, it can be triggered as before (when the status changes to worse or equal to Major for 15 minutes).
Performance	Critical for 20 minutes	The alert is sent (another KPI status becomes worse than Major for over 15 minutes).
Availability	Minor	The alert is not sent (status is better than Major and counter is reset)
Availability	Critical for 20 minutes	Another alert is sent after 15 minutes

➤ You specify the following condition: "**Send alert if status is equal to or better than Minor for 30 minutes**" and "**Send no more than one alert per 60 minutes**", and the following scenarios occur:

CI's KPI	Status changes to	What happens
Availability	OK for 45 minutes	The alert is sent
Performance	OK for 30 minutes	The alert is not sent (it was already sent 15 minutes ago)
Availability	Minor for 15 minutes	The alert is not sent (it was already sent for the Availability KPI 15 minutes ago)
Availability	OK for 20 minutes	The alert is not sent
Availability	No Data for 15 minutes	The status of the alert is reset.
Availability	OK for 10 minutes	The status of the alert is not sent as the time interval condition is not met (30 minutes)

Related Configuration Items Page

This page enables you to specify the CIs and KPIs to which you want to attach the alert scheme.

Important information	➤ General information about the wizard is available at "Create New Alert Wizard" on page 516. ➤ If you selected **All KPIs** in the **General** page, then, in the Related Configuration Items page, select the CIs to which you want to attach the alert scheme. The alert is triggered by the specified status change in any of the KPIs attached to any of the selected CIs. ➤ If you selected **Selected KPIs** in the **General** page, then, in the Related Configuration Items page, select the CIs to which you want to attach the alert scheme. You must also select one or more of the KPIs that are listed in the KPIs area. The KPIs area lists all the types of KPIs that are attached to the selected CIs. The alert is triggered by the specified status change in the selected KPIs attached to any of the selected CIs. ➤ You can assign the same CI Status alert scheme definition to several CIs, at the same time, when you select more than one CI in the Related Configuration Items page.
Wizard map	The Create New Alert Wizard includes: Welcome Page > General Page > **Related Configuration Items Page** > Templates and Recipients Page > Actions Page > Summary Page

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
	Moves your selections to the **Selected Configuration Items** list. You can select multiple CIs using the CTRL key. To remove a CI from the **Selected Configuration Items** list, select it in the **Selected Configuration Items** list and click the left arrow button.
	Unselect all. Unselects the CIs you have selected in the active view.
<Tree>	In the tree of CIs corresponding to the view you selected in Model Explorer, select the CIs to which you want to attach the alert scheme (you can expand the tree if needed), and click the right arrow button to move your selections to the Selected Configuration Items list. You can select multiple CIs using the Ctrl key. To remove a CI from the Selected Configuration Items list, select it and click the left arrow button. The alert is triggered by any change in any of the KPIs attached to the CI to which the alert scheme is assigned. For user interface details, see "View Selector" on page 87.
KPIs	If you selected **Selected KPIs** in the **General** page, select the KPIs whose change of status triggers the alert.

Templates and Recipients Page

This page enables you to define the alert recipients and templates. When an alert is triggered, an email, SMS message, or Pager message is sent to a predefined recipient. The email, SMS message, or Pager messages have predefined templates.

Important information	General information about the wizard is available at "Create New Alert Wizard" on page 516. The notification method that is used to notify a recipient depends of the recipient definition. You cannot use customized templates for emails, SMS messages, or Pager messages with the CI Status alerts.
Wizard map	The Create New Alert Wizard includes: Welcome Page > General Page > Related Configuration Items Page > **Templates and Recipients Page** > Actions Page > Summary Page

User interface elements are described below:

UI Element (A-Z)	Description
	Moves your selections to the **Selected Recipients** list. You can select multiple recipients using the CTRL key. To remove a recipient from the **Selected Recipients** list, select it and click the left arrow button.
Available recipients	Select the recipients to whom you want notifications sent, and click the right arrow button to move your selections to the Selected recipient list. You can select multiple recipients using the Ctrl key. To remove a recipient from the Selected recipient list, select it and use the left arrow button.

UI Element (A-Z)	Description
Email message template	Select one of the following options: ➤ **Short HTML email message, short text email message.** These messages include the change in status only. ➤ **Long HTML email message, long text email message.** These messages include a subject line and body. For examples of HTML or text messages, see "Message Examples" on page 289. For details on modifying the message character set, see **Email alerts charset / SMS alert charset / Pager alert charset** in "Modify the alerts triggering defaults" in *Platform Administration*. For details on the structure of the email, SMS, and Page message templates, see "Add a CIT's additional parameters to a CI Status Alert – optional" on page 506. **Note:** The text displayed in email messages can only be in English except for the contents of fields inserted by the user that can be in any supported and relevant language. Those fields can be for example: Alert Name, Alert description, KPI name, and so on.
New recipient	Click the **New Recipient** button to define a new recipient. For details, see "New or Edit Recipient Dialog Box" in *Platform Administration*.

UI Element (A-Z)	Description
Pager template	Pager messages are sent through email to the service provider. The pager messages use the same templates as the SMS messages. The email address is: **<Pager provider access number>@<Pager provider email address>**. Select one of the following options: ➤ **Long SMS/Pager message.** The message includes the change in status and information about the SLA. ➤ **Short SMS/Pager message.** The message includes the change in status only. For examples of HTML or text messages, see "Message Examples" on page 289. For details on modifying the message character set, see **Email alerts charset / SMS alert charset / Pager alert charset** in "Modify the alerts triggering defaults" in *Platform Administration*. For details on the structure of the email, SMS, and Page message templates, see "Add a CIT's additional parameters to a CI Status Alert – optional" on page 506. **Note:** The text displayed in pager messages can only be in English except for the contents of fields inserted by the user that can be in any supported and relevant language. Those fields can be for example: Alert Name, Alert description, KPI name, and so on.
Selected recipient	Lists the recipients that you have selected.

UI Element (A-Z)	Description
SMS template	SMS messages are sent through email to the service provider. The pager messages use the same templates as the SMS messages. The email address is: **<SMS provider access number>@<SMS provider email address>** Select one of the following options: ➤ **Long SMS/Pager message.** The message includes the change in status and information about the SLA. ➤ **Short SMS/Pager message.** The message includes the change in status only. For examples of HTML or text messages, see "Message Examples" on page 289. The structure of the messages is described in "Configuration Item Status Alert Notifications Report" on page 295. For details on modifying the message character set, see **Email alerts charset / SMS alert charset / Pager alert charset** in "Modify the alerts triggering defaults" in *Platform Administration*. For details on the structure of the email, SMS, and Page message templates, see "Add a CIT's additional parameters to a CI Status Alert – optional" on page 506.

Actions Page

This page enables you to define the user-defined alert handlers (actions) that is triggered by the alert.

Important information	General information about the wizard is available at "Create New Alert Wizard" on page 516.
Wizard map	The Create New Alert Wizard includes: Welcome Page > General Page > Related Configuration Items Page > Templates and Recipients Page > **Actions Page** > Summary Page

User interface elements are described below:

UI Element (A-Z)	Description
	Click to Edit Event/URL/Executable File/SNMP Trap. Depending on the element you want to edit, the following dialog box opens: ➤ The Event Generation dialog box, to select a different template for the event. For details, see "New Event Generation Dialog Box" on page 536. ➤ The Edit URL dialog box for the selected URL. For details, see "Create New/Edit URL Dialog Box" on page 533. ➤ The Edit Executable File dialog box for the selected Executable file. For details, see "Create New/Edit Executable File Dialog Box" on page 530. ➤ The Edit SNMP Trap dialog box for the selected SNMP Trap. For details, see "Create New/Edit SNMP Trap Dialog Box" on page 531.
	Click to Delete Event/URL/Executable File/SNMP Trap. Deletes the selected item.
Executable Files	Lists the executable files that are to execute when the alert is issued. **New Executable File button.** Defines a new executable file. The **Create Executable File** page opens. For details, see "Create New/Edit Executable File Dialog Box" on page 530.

UI Element (A-Z)	Description
Generate Events	Lists the events that are created when the alert is issued. **New Event Generation button.** Enables you to select an event template, which is used to generate an event when an alert is triggered. For details, see "New Event Generation Dialog Box" on page 536. The event is accessed by HP Operations Manager, Operations Manager *i*, and other applications. **Open Incident in HP Service Manager option.** Select the option to automatically open an incident for the alert in HP Service Manager when the alert is triggered. Clear the option to disable the feature. For information about the feature prerequisite steps, see "How to Integrate HP Service Manager with Business Service Management Components" in *Solutions and Integrations*.
SNMP Traps	Lists the SNMP traps that are to be sent when the alert is issued. **New SNMP Trap button.** Configures a new SNMP trap. The Create New SNMP Trap page opens. For details, see "Configuration Item Status Alerts Page (Administration)" on page 534.
URLs	Lists the URLs that are to open when the alert is issued. **New URL button.** Creates a new URL. The **Create New URL** page opens. For details, see "Create New/Edit URL Dialog Box" on page 533.

Summary Page

This page displays a summary of the alert scheme definition.

Important information	General information about the wizard is available at "Create New Alert Wizard" on page 516.
Wizard map	The Create New Alert Wizard includes: Welcome Page > General Page > Related Configuration Items Page > Templates and Recipients Page > Actions Page > **Summary Page**

User interface elements are described below:

UI Element (A-Z)	Description
Cancel	Closes the wizard and returns to the Configuration Item Status Alerts page. The alert scheme is not saved.
Finish	Closes the wizard and returns to the Configuration Item Status Alerts page. The alert scheme is saved.

Create New/Edit Executable File Dialog Box

This dialog box enables you to create or edit an executable file and embed predefined alert parameters in the file. The parameters are used as placeholders when the message is formatted and are replaced by real values when the alert is triggered.

Note to HP Software-as-a-Service customers: To create an executable file, contact HP Software-as-a-Service Support.

To access	Click **New Executable File** or the appropriate button in the Executable File area in the Actions page of the Alerts wizard.
Important information	Only users with administrative privileges can create an executable file. The executable file is run when the attached alert is triggered. The executable file writes information in special logs or inserts information into external databases. To set the appropriate administrative privileges: **1** Select **Admin** > **Platform** > **Users and Permissions** > **User Management**. **2** Select the appropriate user in the left column, and click the **Permissions** tab. **3** Select the **Platform** context. **4** Select **Run executable file**. **5** Click the **Operations** tab, and select the **Change** option.
Relevant tasks	"How to Create a CI Status Alert Scheme and Attach it to a CI" on page 503

User interface elements are described below:

UI Element (A-Z)	Description
Enter command	Displays the command and the selected fields. The selected field appears between double angle brackets.
Field	In the list, select the name of the field and click **Insert Field**. For a list of the parameters you can use, see "CI Status Alert Attributes" on page 542.
Insert Field	Select the name of a field in the Field box and click the **Insert Field** button to copy the field to the Enter command box.

Create New/Edit SNMP Trap Dialog Box

This dialog box enables you to create or edit an SNMP trap to attach to an alert. This SNMP trap is sent when the alert criteria is met. The alert notice can be viewed with any SNMP management console in the organization.

To access	Click **New SNMP Trap** or the appropriate button in the SNMP Trap area in the Actions page of the Alerts Wizard.

Important information	**Note:** HP Business Service Management uses the CI alerts MIB by default and supports SNMP V2. To enable alerts through SNMP trap, it is recommended that you configure your SNMP management console to read the alerts MIB. For details, see "How to Configure a Notification SNMP Trap" on page 508. This enables you to see names, rather than Object IDs (OIDs), when working in the management console. The MIB file is located at **<HPBSM root directory on Data_processing Server>\HPBAC\SNMP_MIBS\CIAlerts.mib**.
Relevant tasks	"How to Configure a Notification SNMP Trap" on page 508

User interface elements are described below:

UI Element (A-Z)	Description
Destination host IP	Enter the host address. You can use different formats: ➤ If you work with alerts for profiles, use the following format: ➤ <target_host_IP_address> ➤ <target_host_IP_address>[:<port_number>] ➤ If you work with RTSM, use the following format: ➤ <target_host_name|target_host_IP_address> ➤ <target_host_name|target_host_IP_address>[:<port_number>]
Enter custom destination host IP	Select to use the host IP specified in the **Destination host IP** box.
Use general destination host IP	Select to use the host IP specified in the Infrastructure Settings. For details on the default host address, see **Default SNMP Target Address / Default SNMP Port** in "How to Customize Alerts" in *Platform Administration*.

Create New/Edit URL Dialog Box

This dialog box enables you to create or edit a notification URL to attach to an alert. The URL is executed when the attached alert is triggered.

To access	Click **New URL** or the appropriate button in the URL area in the Actions page of the Alerts Wizard.
Important information	➤ The notification URL is used to pass alert information to external systems, such as a customer Web application. ➤ You can embed predefined alert parameters in the notification URL. The parameters are used as placeholders when the message is formatted and are replaced by real values when the alert is triggered. ➤ You can modify the default URL that appears in the notifications. This URL represents the URL of the Data Processing Server. For examples of URLs, see "Example - Create a Notification URL" in "How to Create a CI Status Alert Scheme and Attach it to a CI" on page 503.
Relevant tasks	"How to Create a CI Status Alert Scheme and Attach it to a CI" on page 503

User interface elements are described below:

UI Element (A-Z)	Description
Enter URL	Displays the URL and the selected fields. The selected field appears between double angle-brackets. For examples of URLs, see "Example - Create a Notification URL" in "How to Create a CI Status Alert Scheme and Attach it to a CI" on page 503.
Field	Select the name of a field and click **Insert Field**. For a list of the alert parameters, see "CI Status Alert Attributes" on page 542.
Insert Field	Select the name of a field in the Field box and click the **Insert Field** button to copy the field to the Enter URL box.

Configuration Item Status Alerts Page (Administration)

This page enables you to manage existing CI Status alerts

To access	Select **Admin** > **CI Status** > **CI Status Alert**
Important information	**Note:** The left-pane displays the View Selector where you can select a view, and the CI Selector pane where you can select a CI in the selected view. The alerts listed in the right-pane are attached to the selected CI in the selected View. For user-interface details, see "CI Selector Pane" on page 512.
Relevant tasks	"How to Create a CI Status Alert Scheme and Attach it to a CI" on page 503

User interface elements are described below:

UI Element (A-Z)	Description
	New alert. Opens the Create New Alert wizard where you can create a new CI Status alert. For details, see "Create New Alert Wizard" on page 516.
	Click to clone. Clones the selected alerts. BSM adds a copy of the alert scheme to the profile tree, with a new name. Rename and edit the alert scheme as required.
	Click to edit. Select an alert and click the button to open the Alert Wizard where you can edit the relevant alert properties. The Alert Wizard opens. For details, see "Create New Alert Wizard" on page 516.
	Click to delete. Deletes the selected alerts.
	Activate (enable) alert. Activates the selected alert if it is disabled. **Note:** ➤ If an alert is activated, BSM sends an alert notice when the trigger conditions defined in the alert occur. ➤ To activate multiple alerts simultaneously, click and drag from the first alert to the last alert you want to select, and click the button.
	Deactivate (disable) alert. Deactivates the selected alert. **Note:** ➤ When an alert is deactivated, BSM does not send an alert notice when the trigger conditions defined in the alert occur. ➤ To deactivate multiple alerts simultaneously, click and drag from the first alert to the last alert you want to select, and click the button.

UI Element (A-Z)	Description
	Refresh. Click to refresh the display.
	Open Template Repository Manager. Opens the Template Repository dialog box where you can manage a user notification or an event (using the Event Template) based on a defined alert triggering condition. When the alert is triggered, the event template is used to map the alert information to the event information. For details, see "Template Repository Dialog Box" on page 651.
<Common report elements>	See "Common Report and Page Elements" in *Reports*.
Alert Name	The name of the alert scheme.
Condition	A description of the condition.
Recipients	The names of the recipients.
Status	Indicates if the alert scheme is active (enabled) or inactive (disabled).

New Event Generation Dialog Box

This dialog box enables you to select an event template, which is used to generate an event when an alert is triggered.

To access	Click the **New Event Generation** button in the Generate Events area, in the Actions page of the Alerts Wizard.
Relevant tasks	"How to Create a CI Status Alert Scheme and Attach it to a CI" on page 503

User interface elements are described below:

UI Element	Description
<**List of templates**>	Select an event template and click OK. **Note:** This list contains the event templates defined in the CI Status Template Repository. For details on how to create a new template or modify an existing template, see "CI Status Template Repository Dialog Box" on page 543.

Troubleshooting CI Status Alerts

This section describes troubleshooting and limitations for CI Status alerts.

Audit Log

This section describes how to troubleshoot CI Status alerts.

Each change you make to a CI Status alerts is logged into the CI Status Alert Administration log.

To access that information click **Admin** > **Platform** > **Setup and Maintenance** > **Audit Log** and select **CI Status Alert Administration** in the **Context** list. For details about the user interface, see "Audit Log Page" in *Platform Administration*.

Example: The audit log provides information about the date the alert definition was modified, the user who made the modification, the type of action that was performed followed by the contents of the Definition Details area of the alert definition. For details about the Definition Details area, see "Create New Alert Wizard" on page 516.

18

Event Template for CI Status Alerts

This chapter includes:

Concepts

➤ Event Template for CI Status Alerts Overview on page 540

Tasks

➤ How to Configure the CI Status Alert Event Template on page 541

Reference

➤ CI Status Alert Attributes on page 542

➤ CI Status Template Repository Dialog Box on page 543

Concepts

Event Template for CI Status Alerts Overview

The Event Template maps an event triggering condition (for example, the triggering condition of a CI Status alert scheme) to an event attributes. The attributes are specific to the application (for example, the CI Status alert attributes).

CI Status alerts have a default Event Template. You can create a template by modifying the default Event Template.

When the event trigger condition is met (meaning that the CI Status alert is triggered), and if you have configured the CI Status alert to send an event, the event attributes are populated by the relevant triggered CI Status alert conditions, and create an event corresponding to the alert. The event is then available to HP Operations Manager, or Operations Management.

For task details, see "How to Configure the CI Status Alert Event Template" on page 541.

For user interface details, see "CI Status Template Repository Dialog Box" on page 543.

Tasks

How to Configure the CI Status Alert Event Template

This task describes how to configure the Event Template so events are created when CI Status alerts are triggered.

This task includes the following steps:

- "Configure the alerts" on page 541
- "Configure an Event Template" on page 541
- "Results" on page 541

1 Configure the alerts

Configure the alert schemes that, when triggered, create the relevant events.

For details about creating CI Status alerts, see "How to Create a CI Status Alert Scheme and Attach it to a CI" on page 503.

2 Configure an Event Template

You can modify the default Event Template or you can configure a new template that maps an alert's attributes to the corresponding event attributes. You can create several templates for each type of alert.

For user interface details, see "CI Status Template Repository Dialog Box" on page 543.

3 Results

You can view the events corresponding to the triggered alerts in HPOM, or Operations Management.

Reference

CI Status Alert Attributes

The table lists the attributes you can use in the General tab for CI Status alerts:

Attribute	Description
Alert Detailed Description	A collection of the alert's parameters that form an overall description of the alert. The template for this description appears in the default log notification template of the alert.
Alert ID	The unique ID assigned to the alert scheme. **Example:** a148edca593f423aa36c256e687ad58f
Alert Name	The alert name specified in the alert scheme.
Alert Summary	A short description of the alert as specified in the alert scheme definition.
Alert Trigger Time	The time when the alert was triggered. **Example:** Tue Jan 05 6:07:29 PM 2010 (IST) (+0200)
Alert User Description	The description of the alert you provided when you created the alert.
BSM DNS	The name of the machine on which BSM is installed. **Example:** machineName.devlab.ad
CI ID	The ID of the CI for which the alert scheme was created. **Example:** cfe0e1157c28513f2c10c008e543c5cb
CI Name	The name of the CI for which the alert scheme was created.

Attribute	Description
CI Type	The type of the CI for which the alert scheme was created.
Current Status Key	The current status key of the CI related to the alert.
Current Status Name	The displayed name of the status key of the CI related to the alert.
Event Severity	The severity of the event corresponding to the CI Status Alert. You can set it to correspond exactly to the alert's severity or to another value. **Example:** major, or critical.
KPI ID	The ID of the KPI whose change of status triggers the CI Status alert.
KPI Name	The name of the KPI whose change of status triggers the CI Status alert.
KPI Value	The value of the KPI whose change of status triggers the CI Status alert.
Previous Status Key	The key of the previous status of the KPI before the change that triggered the CI Status alert.
Previous Status Name	The name of the status of the KPI before the change that triggered the CI Status alert.

CI Status Template Repository Dialog Box

This dialog box enables you to map a CI Status alert's attributes to an event's attributes.

To access	Within **Admin** > **Service Health** > **CI Status Alerts**, click the **Open Template Repository Manager** button.

Important information	➤ To modify the existing default template or to create a new template, duplicate the existing template and edit the duplicated copy. You can then modify the new or edited template as the default template. ➤ When an alert is triggered, the values of the event template attributes are changed into the relevant values of the alert attributes.
Relevant tasks	"How to Configure the CI Status Alert Event Template" on page 541
See also	➤ "Event Template for CI Status Alerts Overview" on page 540 ➤ "Attributes Area" on page 550

Templates Area

This area lists the existing templates. It enables you to add new templates, duplicate existing templates, edit template names, and delete existing templates.

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
	New template. Empties the boxes in the currently displayed template to enable you to create a new event template.
	Duplicate selected template. Duplicates the selected template.
	Rename selected template. Enables you to edit the name of the selected template.
	Set selected template to be the default template. Sets the selected template as the default template. In the tree of templates, the icon also indicates the default template.

UI Element (A-Z)	Description
	Delete selected template. Deletes the selected template.
<**Template**>	Lists the existing event templates. **Default:** CI Status Alert Open Default or CI Status Alert Close Default

Properties Area

This area enables you to give a name or to change the name of the active template.

User interface elements are described below:

UI Element (A-Z)	Description
	Discard changes. Resets the values entered in the template fields to their original values.
Select	This button is displayed only when you create or edit an existing alert. It is not displayed when you access the alert template from the Template Repository button in the CI Status Alerts page. (Administration). Click **Select** to enable the creation of an event when the CI Status alert is triggered. The event is mapped to the CI Status alert using the template you selected. The template is used to generate events in HP Operations Manager. For details, see "Generate Events in HP Operations Manager when BSM Alert is Triggered" in *Solutions and Integrations*.
Set the selected template to be the default template	Select to make the current template the default template.
Template Name	The name of the active template.

General Tab

This area enables you to define a new Event Template or to edit an existing one.

Important information	Select the relevant attribute in the Attributes area and drag it into the relevant box in the General tab. You can also select a specific attribute and click ALT+I while editing text to insert that attribute in the text.

User interface elements are described below:

UI Element (A-Z)	Description
Category	Used to organize or group events. Out-of-the-box categories are provided. You can specify your own categories, as part of the event creation rules. **Default:** CI Alert **Note:** Depending on your permissions, you can define your own categories. Permissions are configured in **Admin** > **Platform** > **User and Permissions**.
CI hint	Information about the CI that is related to the event. This attribute is used for providing hints to enable the event processing to find the correct related CI (RTSM ID of the related CI). **Add the attributes using the following format:** UCMDB: <<CI ID>>:* **Example:** ➤ UCMDB as hint "UCMDB:3bcbb67a6233cfdd0e400e7c1e637db5" ➤ A set of natural identifiers: "oracle:database:987"

UI Element (A-Z)	Description
Close key pattern	Enables the event that is sent to close all the events whose Key attribute matches the Close Key Pattern expression. You can use the asterisk (*) wildcard in your string. **Add the attributes using the following format:** <<Alert Name>>: <<Entity ID>>:* **Example:** host1.hp.com:DB_ess1:ConnectionPoolUtilization:* closes all the events whose key starts with host1.hp.com:DB_ess1:ConnectionPoolUtilization.
Description	Detailed information describing the event. **Add the attributes using the following format:** Alert Name:<<Alert Name>> CI Name: <<Entity Name>> <<Alert User Description>>
Event Type Indicator	Links between the event and the health indicator/KPI so information about the health indicator/KPI can be updated as a result of submitting the event. **Add the attributes using the following format:** <<ETI/HI Name>>[:<<ETI/HI State>>[:ETI Numeric Value]]] **Default**: CIAlert:<<Current Status Key>>. **Example:** ➤ Health indicator with state and numeric value for a Database CI: ConnectionPoolUtilization:High:0.88 ➤ Health indicator with state for a Node CI: MemoryBottleneck:Active ➤ Event Type Indicator (ETI) without a state (does not trigger a health indicator): RebootOccurred

UI Element (A-Z)	Description
Generating source hint	Information about the monitoring application and the corresponding probe/agent that is responsible for creating the event. **Add the attributes using the following format:** <<BSM>> **Example:** BSM:BSMserver1.hp.com, OM:omserver32.deu.hp.com:agentId0c9da6d8-3e08-45cd-9b12-b49a1ca4de20
Host hint	Information about the CI of type **Node** that is hosting the CI related to the event. The host can be identified by **RTSM Id**, **DNS name**, **IPv4 Address**, **IPv6 Address**, **MAC Address**, **HP L-Core Core ID**. **Example:** IPV4:15.15.12.13, DNS:h1.mercury.il; CoreId: 0c9da6d8-3e08-45cd-9b12-b49a1ca5de20
Key	A unique string representing the type of event that occurred. Two events have the same key if, and only if, the two events represent the same situation in the managed environment. Events with the same key are treated as duplicates. **Add the attributes using the following format:** <<Alert Name>>:<<Entity>>:<<Event Severity>> **Example:** host1:hp.com:DB_ess1:ConnectionPoolUtilitzation:High

UI Element (A-Z)	Description
Log only	Assign the value: ➤ **true** to send the event to the history event browser as a close event. Such an event goes through the complete event processing, but has its **Life Cycle State** set to **close** so it closes itself. ➤ **false** to send the event if the alert is configured to send an event. **Add the attributes using the following format:** true or false **Example:** Typical examples are events that result in resetting a health indicator to a normal or good state, or an event signaling that a previous problem no longer exists (where the problem was reported in another event). **Default value: True**. Depending on your permissions, you can modify the default.
Severity	The severity of the event. It represents the translation of the alert CI status into the event severity. The severity levels can be: **Unknown**, **Normal**, **Warning**, **Minor**, **Major**, **Critical.** This information enables you to map the triggering event status to the event severity level. **Add the attributes using the following format:** <<Event Severity>> **Example:** Warning
Subcategory	More detailed organization of events that have the same category. Used for event standards and external event sources that are using subcategories. **Add the attributes using the following format:** <<CI Type>>
Submit close key condition	When you select the option, you must enter a value in the **Close key pattern** box.

UI Element (A-Z)	Description
Title	Describes the occurrence represented by the event. The title should include information about what threshold has been crossed (or other trigger conditions), and the current values. **Add the attributes using the following format for CI Status alerts:** <<Alert Name>> Triggered on CI: <<Entity Name>> Trigger condition **Note:** Since the text is typically shown within a single line in the event browser, it is recommended that the most relevant information is at the beginning of the text.

Attributes Area

Use this area to specify the attributes.

Important information	If necessary, select the relevant attribute in the Attributes area and drag it to the relevant box in the General tab. You can also select a specific attribute and click ALT+i while editing text to insert the selected attribute in the text. For a detailed list of attributes, see "CI Status Alert Attributes" on page 542.

Custom Attributes Tab

Use this tab to add custom attributes.

When you create or edit a mapping in the Event Template dialog box, you can chose an attribute that was configured in Operations Management, or you can create a custom attribute. The custom attributes configured in Operations Management provide additional features for the events mapped using these attributes. For details about the difference between the Operations Management custom attributes and the Event Template custom attributes, see *Using Operations Management*.

Important information	A custom attribute consists of a key and a value (both are strings). The value can be any string and is used by the Event Template mapping as any other value. **Limitations:** ➤ Make sure that the name of the custom attribute you are defining is unique and does not already exist in the list of factory attributes. ➤ If you add to a template a custom attribute with a key similar to a constant attribute's key, the custom attribute is ignored. For details about the constant attributes, see "Constant Attributes" on page 553. ➤ Duplicate keys are not allowed. You cannot create a key that already exists or you cannot use an existing key more than once in the same template. ➤ Event Template attributes are changed into the value of the relevant attribute of the triggered alert. When the attribute does not correspond to existing alert attributes (when it is a custom attribute), then the value specified in the Custom Attributes tab for the relevant attribute is used.

User interface elements are described below:

UI Element	Description
	Lists the options available for creating a new Event Template. You can select: ➤ **New key.** To create a new key. A new row opens in the Name/Value table. ➤ **Known key.** Opens a submenu with the known keys as options. You can select the relevant key. A new row opens in the Name/Value table, with the name of the selected key in the Name column. You can then enter the value of the key in the corresponding Value column. **Note:** The known keys are defined in Operations Management. Such keys have additional capabilities. Keys defined in the CI Status Template Repository dialog box only have a name and are used as strings.
	Deletes the selected attributes from the table.
Name and Value	Each event can have any number of custom attributes. You use custom attributes to provide additional event information that is not provided by any of the other Event Template attributes or that is contained in any of the other attributes. Each custom attribute is a **Name-Value** pair, where you enter the name of the attribute in the **Name** field and the value of the attribute in the **Value** field. This feature may be used when you manage the environment of multiple customers using one instance of the product. The multiple customers might be handled by a custom attribute object. For details about the available attributes, see "Attributes Area" on page 550. **Example:** Name = "Customer" ; Value = "XYZ Company"

Constant Attributes

The Event Template uses the constant attributes to represent the fields that appear in the General tab (title, category, subcategory, and more).

Note: Do not use these attribute's keys as the keys to custom attributes.

The constant attribute's keys are:

- Category
- RelatedCiHint
- CloseKeyPattern
- TimeCreated
- Description
- EtiHint
- NodeHint
- Key
- LogOnly
- OriginalData
- Severity
- SubmitCloseKey
- SourceCiHint
- SubCategory
- Title

Part III

Assignments

19

Indicator Assignments and Propagation

This chapter includes:

Concepts

- Assignment and Propagation Overview on page 558
- Assignments on page 558
- SiteScope Dynamic HI Assignment on page 562
- Propagation Rules on page 563
- How Propagation Rules are Implemented on page 566
- Validation on page 572

Tasks

- How to Define a KPI or HI Assignment on page 574
- How to Define a KPI Propagation Rule on page 577
- How to Modify a KPI Assignment – Use-Case Scenario on page 579
- How to Create a KPI Assignment Using an API Rule and Dynamic Rule Parameter – Use-Case Scenario on page 584

Reference

- Indicator Assignments User Interface on page 590

Troubleshooting the Assignment Mechanism on page 627

Concepts

Assignment and Propagation Overview

When a new CI is added to the Run-time Service Model (RTSM), the assignment mechanism is automatically triggered. This mechanism assigns the appropriate KPIs, HIs, and context menus to the CI, based on the CI's CI type (CIT).

When a KPI is assigned to a CI, or when a CI is attached to another CI, the propagation mechanism propagates the appropriate KPIs to the parent CIs. By default, when a KPI is assigned to a CI the KPI is automatically propagated to the CI's parents. Propagation rules enable you to define exceptions to the default KPI propagation, and to propagate other KPIs, the same KPI using a different rule, or no KPIs.

For details about the assignment mechanism, see "Assignments" on page 558. For details about the propagation mechanism, see "Propagation Rules" on page 563.

Note: To access the Assignments tab in Service Health administration, you must have user permissions of **Admin** or higher.

Assignments

An assignment includes a condition and a task, as follows:

- Condition. This describes a CI, or sets conditions on the attributes of a CI.
- Task. This describes the context menus, KPIs or HIs, and business rules that are assigned to the CIs that match the assignment condition.

The task is automatically performed when the condition occurs, and the assignment is running.

For details on creating assignments, see "How to Define a KPI or HI Assignment" on page 574.

This section also includes the following topics:

➤ "Assignment Mechanism" on page 559

➤ "Inheriting and Overriding Assignments" on page 560

➤ "Assignment Types" on page 560

➤ "Synchronizing Assignments" on page 561

➤ "How Assignments Respond to Manual Changes on a CI" on page 561

Assignment Mechanism

The assignment mechanism receives notification from the RTSM about the creation of new CIs.

The assignment mechanism is also activated when a specific attribute of the CI is updated, and the assignment conditions for that CI are based on the updated attribute.

The assignment mechanism performs the following actions:

➤ Attaches the relevant KPIs or HIs to the CI.

➤ Assigns business rules for the KPIs or HIs.

➤ Assigns thresholds for the KPIs or HIs.

➤ (*For KPI assignments only:*) Adds the context menus to the CI.

➤ (*For HI assignments only:*) Assigns selectors for the HI.

For general information on KPI and HI functionality, see "KPI and HI Calculation" on page 397. For details on specific KPIs, see "List of Service Health KPIs" on page 656.

The assignment mechanism is a BSM service named KPI_ENRICHMENT. The service completes the missed assignments as soon as BSM is restarted, after it has been stopped. The assignment mechanism is deployed on the Data Processing server.

Inheriting and Overriding Assignments

Assignments on higher level CITs are inherited by their descendant CITs. When an assignment is inherited, the name of the source CIT appears in parentheses after the assignment name on the child CIT.

An inherited assignment cannot be deleted on a child CIT. If you override an inherited assignment, you can delete the overriding assignment on the child CIT. If you delete an assignment on a parent CIT, it is deleted on its descendant CITs as well.

When you edit an inherited assignment, the edited assignment appears in bold text in the assignments table. You can a restore an overriding assignment to its original inherited definitions.

Inherited assignments are not displayed if they are invalid, because these assignments are not relevant for the child CIT. An invalid assignment is only shown on the CIT where it can be fixed. Once it is no longer invalid, it appears on the descendant CITs.

Tip: Each assignment rule defined on an upper level CI type is inherited by all child CI types. If you need to define a specific assignment for a child CI type, create a new rule with the same condition as an inherited rule, and change the HI or KPI configuration accordingly. You can also stop some of the running assignment rules, and activate more specific rules for specific CI types.

Assignment Types

There are three types of KPI and HI assignments:

- **Predefined.** Out-of-the-box assignments that have not been modified. These assignments can be edited but not deleted. If you edit a predefined assignment, it is labeled Predefined (Customized).
- **Predefined (Customized).** Out-of-the-box assignments that have been edited. These assignments cannot be deleted, but you can restore them to their default settings.
- **Custom.** New assignments that you have created.

Synchronizing Assignments

After making changes to assignments for a CIT, you can synchronize the assignments mechanism to run assignments on the CIT as if a new CI was just added. You can synchronize KPI assignments, HI assignments, or all assignments on the CIT.

When you synchronize all assignments, the assignments mechanism first assigns HIs based on the HI assignments, then KPIs based on the KPI assignments.

Synchronizing HI assignments can also have an effect on KPIs. For example, if an HI is added to a CI based on an HI assignment, a KPI assignment that is already running may add a new KPI to the CI based on this new HI.

Synchronizing can also delete KPIs or HIs. For example, if an assignment assigns two HIs (H1 and H2), and you modify it to only assign one of them (H1) and then synchronize, the assignment will delete the HI (H2) from the CI. If a KPI assignment has the deleted HI as its only related HI, the KPI will be removed from the CI as well.

Note: Synchronization is resource-intensive, and may impair performance. Only perform synchronization when necessary.

How Assignments Respond to Manual Changes on a CI

When an HI is manually attached to a CI using the CI Indicators tab (for details, see "How to Assign KPIs and HIs to CIs" on page 428), the assignment mechanism may then add KPIs to the CI based on the KPI assignment definitions.

If a KPI or HI is assigned to a CI using the assignment mechanism, and you then manually change the KPI or HI, the assignment mechanism no longer makes changes to this indicator. For example, if you manually modify an assigned KPI, and you then change the business rule used within the KPI assignment, this change will not affect the modified KPI. In addition, synchronization does not remove a modified indicator, even if the CI no longer fills the assignment condition.

However, if you manually remove an assigned KPI or HI, and then synchronize assignments, the KPI or HI will again be assigned to the CI by the assignment mechanism.

Tip: If you change a CI so that it no longer fills any assignment conditions, its HIs and KPIs are not removed automatically by the assignment mechanism. You can delete these indicators manually using the CI Indicators tab, or perform synchronization in the Assignments tab on the relevant CI Type.

SiteScope Dynamic HI Assignment

Service Health contains a default assignment named **SiteScope Dynamic Health Indicator Assignment**, which assigns HIs to the CIs monitored by SiteScope. This assignment dynamically assigns HIs to these CIs based on the metrics you have chosen to monitor within SiteScope. If you change the definitions of what is monitored on a CI within SiteScope, the assignment automatically updates which HIs are assigned to this CI.

You **cannot** perform the following:

- Create another dynamic assignment.
- Delete this assignment.
- Add HIs to this dynamic assignment, or remove HIs from the assignment.
- Modify the condition, selector, or priority defined for an HI in this assignment.

You **can** make the following changes within the dynamic assignment:

- Change the HI calculation rule. Note that the new rule is used to calculate *all* of the HIs assigned via this assignment.
- Change the rule parameters and rule thresholds (where relevant).
- Stop the assignment if necessary.

Propagation Rules

By default, when a KPI is assigned to a CI the KPI is automatically propagated to the CI's parents. The business rule used to calculate the propagated KPI on the CI's parents is the default group rule defined in the KPI repository. KPIs are propagated from child CIs to parent CIs; HIs are not propagated to parent CIs.

Note: In the context of propagations, the relationship between a CI and its parent CI is defined by the CI's Impact links.

Propagation rules enable you to define exceptions to the default KPI propagation. Using propagation rules you can specify that when a KPI is assigned to a CI one of the following occurs:

- No KPI is propagated to the CI's parent CI.
- The same KPI is propagated to the parent CI, but with a business rule that is not the default group rule.
- One or more different KPIs are propagated to the CI's parent CI.

Each propagation rule is defined per CI type, and includes a condition and a task, as follows:

- **Condition.** The condition describes the CIT of the child CI, the CIT of the parent CI, and the KPI assigned to the child CI. When these conditions are met, the task is then applied.
- **Task.** The task describes which KPIs and business rules are propagated to the parent CI. The task may also include custom thresholds for the business rule used to set the status of the KPI.

You can define and view propagation rules using the Propagation Rules tab, which is part of the Service Health Administration Assignments tab. For user interface details, see "Assignments Tab" on page 590.

Note: If a parent CI is already assigned a specific KPI, and the propagation is defined as propagating the same KPI from the child CI, the KPI is not propagated from the child CI.

Some limitations apply when the same KPIs are propagated to the parent CI from multiple child CIs. For details, see "Propagation Limitations" on page 571.

This section also includes the following topics:

- "Default Propagation" on page 564
- "When is the Propagation Mechanism Activated" on page 565
- "Inheriting Propagation Rules" on page 565
- "Recommended Procedure" on page 565

Default Propagation

By default, KPIs are propagated as follows:

- Each KPI attached to any child CI of any parent CI is automatically propagated to the parent CI.
- The KPI is assigned the KPI's default group business rule and rule parameters, as defined in the KPI definition in the KPI repository. For details, see Default Group Rule in "New KPI/Edit KPI Dialog Box" on page 540.
- The thresholds are defined in the business rule repository, if they exist.
- The default propagation is not visible in the user interface. You cannot modify it.

Note: Propagation rules respond to changes within the KPI and rule repositories. For example, if you have defined a propagation rule using a particular KPI, and this KPI is removed from the repository, the propagation rule becomes invalid.

When is the Propagation Mechanism Activated

The propagation mechanism is triggered when:

- A link between two CIs is added or removed, in the RTSM.
- You assign a KPI to a CI or you detach a KPI from a CI in Service Health administration.

Inheriting Propagation Rules

Propagation rules on higher level CITs are inherited by their descendant CITs. When a propagation rule is inherited, the name of the source CIT appears in parentheses after the propagation rule name on the child CIT.

An inherited propagation rule cannot be deleted on a child CIT. If you delete a propagation rule on a parent CIT, it is deleted on its descendant CITs as well.

If there are two rules on a CIT; one inherited from a parent CIT, and one assigned to the CIT itself, then the one assigned to the CIT itself will be applied.

Recommended Procedure

You create a set of propagations for a topology, meaning that for each level of parent CI in the hierarchy, you must create a set of propagations. A lot of the propagations are repetitive so the correct procedure is to:

1. Create a set of general propagations of **Type 1** for a specific parent CI.
2. Create a set of more specific propagations of **Type 2** for a specific KPI and a specific parent CI.

3 Create a set of more specific propagations of **Type 3** for a specific KPI, a specific child CI, and a specific parent CI.

4 Create a set of non-propagations of **Type 4** for a specific KPI, a specific child CI, and a specific parent CI.

The propagations are then sorted and applied to each parent CI. For details, see "How Propagation Rules are Implemented" on page 566.

How Propagation Rules are Implemented

The matcher of the propagation mechanism considers all the propagation definitions and sorts them before applying them. All the customized propagations that you define are added to a list of existing propagations that is already sorted.

This section includes the following topics:

➤ "Propagation Definitions and Sorting" on page 566

➤ "De-propagation" on page 569

➤ "Propagation Limitations" on page 571

Propagation Definitions and Sorting

A propagation is defined per triplet (parent CI type, child CI type, and KPI attached to the child CI type). The matcher sorts the complete list of propagations according to the algorithm described below.

1 Parent sorting:

- A comparison triplet parent CI that is equal to the propagation parent CI (the number of hierarchy levels is 0 in the model hierarchy) is better than a comparison triplet parent CI that is derived – with a larger number of hierarchy levels – from the propagation parent CI.
- A comparison triplet parent CI that is derived, in the class model, from the propagation parent CI with a smaller number of hierarchy levels is better than a comparison triplet parent CI that is derived from the propagation parent CI, with a larger number of hierarchy levels.

2 Child sorting:

The mechanism performs the same type of sorting as the parent CI sorting on the child CI.

3 KPI sorting:

The sorting is performed on the KPI where the KPI corresponding to the triplet KPI is better than **Any KPI**.

For each KPI that is propagated from a child CI type to a parent CI type (comparison triplet), the matcher scans the list of sorted propagations to find the propagation that most closely matches the triplet. A propagation is considered a match when:

- The parent CI type and the child CI type in the propagation correspond exactly to the comparison triplet parent CI or child CI, **OR** the child CI class in the comparison triplet is derived (in the class model hierarchy) from the child CI type in the propagation and the same for the parent CI type.

  AND

- The propagation KPI has the same ID number as the comparison triplet KPI **OR** the propagation condition specifies **Any KPI**.

The first propagation in the sorted list is used.

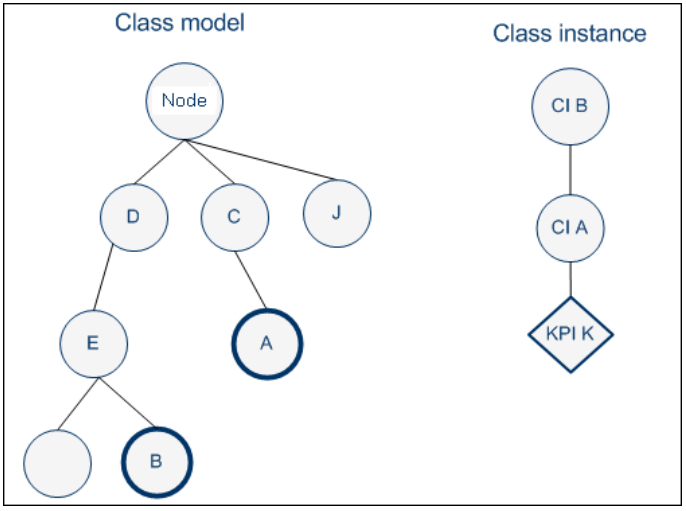
Example:

The predefined and customized propagations defined are as follows:

No	Propagation Condition			How does the propagation match the triplet (parent CI=B, child CI=A, and KPI=K)?
	Parent CI	Child CI	KPI	
1	Node	Node	All	The propagation includes the triplet.
2	J	Node	All	The propagation does not include the triplet.
3	D	C	All	CI B is derived from CI E, CI D and CI A is derived from CI C in the class model, and the propagation is for all KPIs, so the propagation includes the triplet.

No	Propagation Condition			How does the propagation match the triplet (parent CI=B, child CI=A, and KPI=K)?
	Parent CI	Child CI	KPI	
4	E	Node	K	CI B is derived from CI E and CI A is included in Node in the class model, and the propagation is for the K KPI, so the propagation includes the triplet.
5	E	C	All	CI B is derived from CI E and CI A is derived from CI C in the class model, and the propagation is for all KPIs, so the propagation includes the triplet.
6	E	C	K	CI B is derived from CI E and CI A is derived from CI C in the class model, and the propagation is for the K KPI, so the propagation includes the triplet.

The class model is provided in the picture below.



The result of the sorting procedure is as follows:

1. Propagation 6 is at the top of the list as its parent CI type is E (most specific), child CI type C (most specific) and KPI type is K (explicit type).
2. Propagation 5 comes after propagation 6 as its only difference with 6 is its generic KPI type.

3 Propagation 4 comes after as its child CI type (Node) is more generic than propagation 5's child CI type (C).

4 Propagations 3, 2, and 1 are listed afterwards (in this order), as their parent type is less specific (higher in the hierarchy) than type E.

5 Propagation 1 goes to the bottom of the list as it is the most generic propagation.

When the propagation mechanism tries to find the closest matching propagation definition to the triplet (parent=CI B, child=CI A and KPI=KPI K) propagation 6 is at the top of the list and is therefore selected.

De-propagation

The de-propagation mechanism is activated:

1 When a CI is deleted from the impact model.

2 When a link between two CIs is deleted from the impact model.

3 When a KPI is deleted from a CI of the impact model.

For details on the impact model, see "Impact Modeling Overview" in the *Modeling Guide*.

There are two cases of de-propagation:

➤ Case A: KPI is deleted.

➤ Case B: CI is deleted OR the link between two CIs is deleted.

In case A, the de-propagation mechanism performs the following steps:

1 Finds the matching propagation for the deleted KPI according to its triplet (child CI, parent CI, and KPI type). For details, see "How Propagation Rules are Implemented" on page 566.

The selected propagation includes the set of KPIs that might have been previously propagated by the deleted KPI.

2 Retains from the potential KPIs only the KPIs that are currently attached to the parent CI.

3 Finds the propagations that match the KPIs attached to the child CI and its siblings.

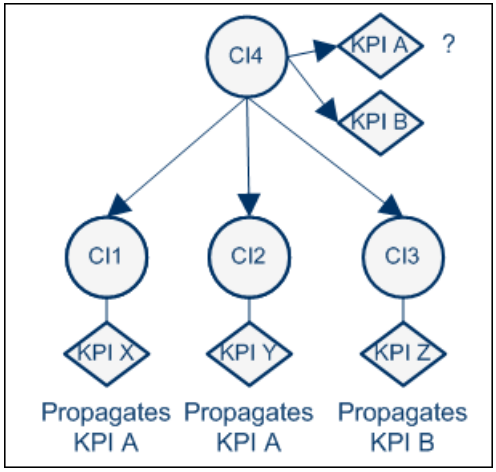
4. Builds a set of the KPIs that might have been previously propagated by the matching propagations from step 3.
5. Removes the KPIs of step 4 from the set of KPIs of step 2.
6. The remaining KPIs are deleted from the parent CI.
7. The de-propagation mechanism is then applied to the next level of the impact model topology for each one of the KPIs deleted in step 6.

In case B, the de-propagation mechanism performs the following steps:

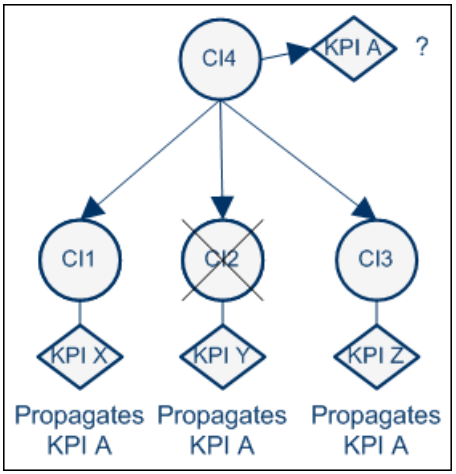
1. Finds all the matching propagations for all of the KPIs attached to all of the siblings of the deleted (or detached) CI.
2. Builds a set of KPIs attached to the parent CI that were not propagated by any of the propagations from step 1.
3. Deletes from the parent CI all of the KPIs from step 2.
4. Activates the de-propagation mechanism described in case A starting with the parent CI and the set of KPIs deleted from it in step 3.

Propagation Limitations

➤ If you propagate the same KPI A from different child CIs (CI1 and CI2) with a different propagation, the propagation that affects the parent CI (CI4) regarding KPI A can be either one of the propagations (from CI1 or CI2). Because of this uncertainty, it is recommended to avoid specifying different propagations that propagate the same KPI but with different rules, thresholds, or both.



➤ According to the previous limitation, if you propagate the same KPI A from different child CIs (CI1, CI2, or CI3), the propagation that affects the parent CI (CI4) regarding KPI A can be either one of the propagations. If you delete one of the CIs (CI2) or one of its KPIs, the configuration of KPI A (rule and thresholds) is updated and propagated from either CI1 or CI3. The update is not performed if the KPI was customized by the user.



Note: Propagation rules have no retroactive effects; if you make any changes to propagation rules, the changes only affect from that point on.

Validation

The validation mechanism checks that each assignment rule is valid. A tooltip on the CIT tree shows the number of valid and invalid assignments for each CIT.

The CIT toolbar contains a filter to enable you to focus attention on invalid assignments; when you select **Invalid Assignments Only**, the CIT tree expands all the CIT nodes that have invalid assignments.

If there is a problem with an assignment (for example, if an invalid business rule is defined, if an assignment is not unique, or if a referenced property does not exist for the CIT in the RTSM), you can open the assignment for editing. The dialog box that appears contains details regarding which area in the assignment definition is problematic, and should be fixed.

Tasks

How to Define a KPI or HI Assignment

The following section describes how to configure KPI or HI assignments.

Note: When you stop a default assignment and then restart it, the assignment type changes from **Predefined** to **Predefined (Customized)**. To restore the original Predefined type, click **Restore to Default**.

This task includes the following steps:

- "Create an assignment or open an assignment for editing" on page 574
- "Configure the assignment condition and task" on page 575
- "Override an inherited assignment" on page 576

1 Create an assignment or open an assignment for editing

To create a new assignment or open an existing assignment for editing, select **Admin** > **Service Health** > **Assignments**. Depending on the type of assignment you are defining, select the **KPI Assignments** or **Health Indicator Assignments** tab. For user interface details, see "Assignments Tab" on page 590.

Assignments are defined according to CI type (CIT). Select a CIT in the **CI Types** pane, and perform one of the following actions in the **Assignments for CI type** pane:

- To create a new assignment on the CIT, click the **Add** button.
- To clone an existing assignment on the CIT, select an assignment and click the **Duplicate** button. The original assignment is still available, and the new cloned assignment opens automatically for editing.
- To edit an existing assignment on the CIT, select an assignment and click the **Edit** button.

2 Configure the assignment condition and task

An assignment definition includes a condition and a task. The condition describes specific characteristics of a CI. The task describes the KPIs or HIs that are to be assigned automatically to the CI when the condition occurs.

For KPI assignment user interface details, see "Add/Edit KPI Assignments for CI Type Dialog Box" on page 603. For HI assignment user interface details, see "Add/Edit Health Indicator Assignments for CI Type Dialog Box" on page 612.

a In the **Assignment Settings** area, define general assignment information.

b In the **Condition** area, specify the application which is monitoring the CI; this is the value of the CI's **Monitored By** attribute within the RTSM. This field is mandatory for HI assignments, for all CITs except for Monitor CITs (and their descendant CITs).

Note: You can add a value to the dropdown list of possible **Monitored By** values using the following infrastructure setting: **Admin** > **Platform** > **Infrastructure Settings** > **Foundations** > **Sources Configuration** > **Possible Values for Monitored By**.

---

c (Optional) To add additional conditions based on CI properties, click the **Add** button in the **Condition** area, and define one or more property conditions. All of the property conditions must be true for the condition to be met. To edit property conditions, click the field that you want to modify, and edit its contents.

d In the **KPI Configurations** area (for KPI assignments) or the **Health Indicator Configurations** area (for HI assignments), define the following:

- For KPI assignments, define the KPIs that you want assigned to the CIs when the condition is met. For each KPI, specify its business rule, rule thresholds, calculation method, and which HIs it uses in its calculation. Note that if the CI has none of the specified HIs assigned, the KPI will not be assigned to the CI. For user interface details, see "Add/Edit KPI to Assignment Dialog Box" on page 608.

- For HI assignments, define the HIs that you want assigned to the CIs when the condition is met. For each HI, specify its priority, business rule, rule thresholds, and the selector that defines which data samples are relevant for the HI. For user interface details, see "Add/ Edit Health Indicator to Assignment Dialog Box" on page 616.

e (Optional) If you are defining a KPI assignment, you can use the **Context Menus** area to define which context menus are assigned to the CI when the condition is met. This does not override existing context menus, but enables you to define additional ones.

3 Override an inherited assignment

When an assignment is inherited from a parent CIT, the name of the source CIT appears in parentheses after the assignment name on the child CIT. When overriding an inherited assignment, note the following:

- When you override an inherited assignment, the edited assignment appears in bold text in the assignments table. To restore an overriding assignment to its original inherited definitions, select the assignment and click the **Restore From Parent CIT** button.
- The condition of an inherited assignment cannot be edited. To edit the condition, clone the inherited assignment, edit the clone, and delete the original inherited assignment.
- An inherited assignment cannot be deleted on a child CIT. If you override an inherited assignment, you can delete the overriding assignment on the child CIT. If you delete an assignment on a parent CIT, it is deleted on its descendant CITs as well.

How to Define a KPI Propagation Rule

The following section describes how to configure a KPI propagation rule.

1 Create a propagation rule or open a propagation rule for editing

To create a new propagation rule or open an existing propagation rule for editing, select **Admin** > **Service Health** > **Assignments** > **Propagation Rules**.

Propagation rules are defined according to CI type (CIT). Select a CIT in the **CI Types** pane to show its defined assignments and propagations. Perform one of the following actions in the **Assignments for CI type** pane:

- To create a new propagation rule on the CIT, click the **Add** button.
- To clone an existing propagation rule on the CIT, select a propagation rule and click the **Duplicate** button. The original propagation rule is still available, and the new propagation rule opens automatically for editing.
- To edit an existing propagation rule on the CIT, select a propagation rule and click the **Edit** button.

For user interface details, see "Propagation Rules Page" on page 600.

2 Configure the propagation rule's condition and task

A propagation rule definition includes a condition and a task. The condition describes specific characteristics of a CI: its CIT, the CIT of its parent CI, and the KPI assigned to the CI. The task describes the KPIs and business rules that are propagated to the parent CI when the condition occurs.

For user interface details, see "Add/Edit Propagation Rule for CI Type Dialog Box" on page 622.

a In the **Rule Settings** area, define general propagation rule information.

b In the **Condition** area, specify the CIT of the parent CI, and the KPIs assigned to the child CI.

If you select **Any KPI**, the condition is filled if the CI has any KPIs assigned. For example, if you do not want any KPI propagated to the parent CI, select this option, and define the task as **Do Not Propagate the KPI**.

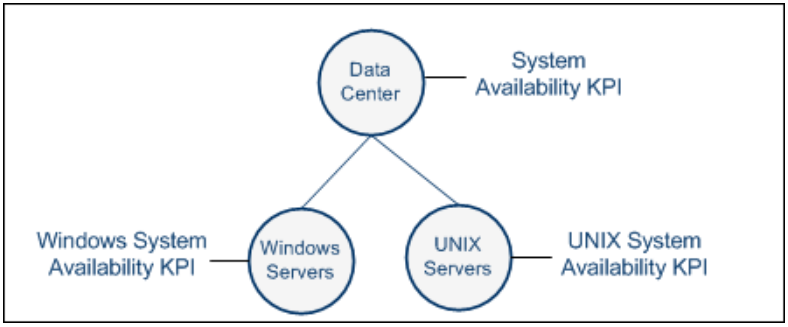
c In the **Task** area, specify one of the following:

- **Do not propagate the KPI.** Select this option if you do not want the KPI propagated from the child CI to the parent CI.
- **Propagate the KPI using another rule.** Select this option if you want the KPI propagated, but using a business rule that is not the default group rule defined for this KPI. Specify the business rule that you want used for the KPI on the parent CI.
- **Propagate custom KPIs.** Select this option if you want different KPIs propagated to the parent CI, or if you want to propagate the same KPI and rule, but using different rule thresholds. For each KPI, specify the business rule that you want used on the parent CI, and rule thresholds if relevant. For user interface details, see "Add/Edit KPI for Propagation Rule Dialog Box" on page 625.

Note: Propagation rules have no retroactive effects; if you make any changes to propagation rules, the changes only affect from that point on.

Example:

A Service Health administrator wants to set up custom KPIs to monitor availability of her data center's CIs. She creates two KPIs to show system availability for Windows and UNIX data servers, but she does not want these KPIs to propagate up to the parent Data Center CI. Instead, she wants the Data Center CI to have a different KPI (System Availability), with a rule combining the availability of both child CIs.



She therefore specifies a propagation rule on each of the child CIs (Windows and UNIX servers). The rule is defined so that when the parent CI is Data Center, a custom KPI (System Availability) is propagated, using a rule that combined the values of the two KPIs on the child CIs.

How to Modify a KPI Assignment – Use-Case Scenario

John is a Service Health administrator for ACME corporation, which uses Real User Monitor to monitor their business transactions.

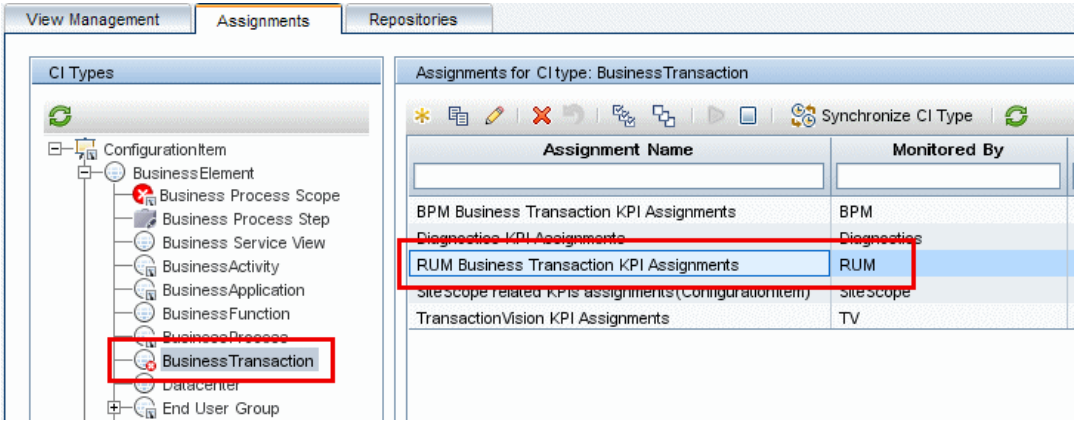
Each of their business transactions has the Application Availability KPI assigned by default. John wants to also assign the OT Impact KPI to the business transaction CIs, to calculate the dollar value of unavailable transactions over time. He assigns this KPI the Impact Over Time rule, and defines the rule so that each minute a transaction is unavailable, the financial impact reflects a $600 loss.

The scenario includes the following steps:

- "Open the RUM Business Transaction KPI assignment for editing" on page 580
- "Add the OT Impact KPI to the RUM Business Transaction KPI assignments" on page 581
- "Result" on page 582

1 Open the RUM Business Transaction KPI assignment for editing

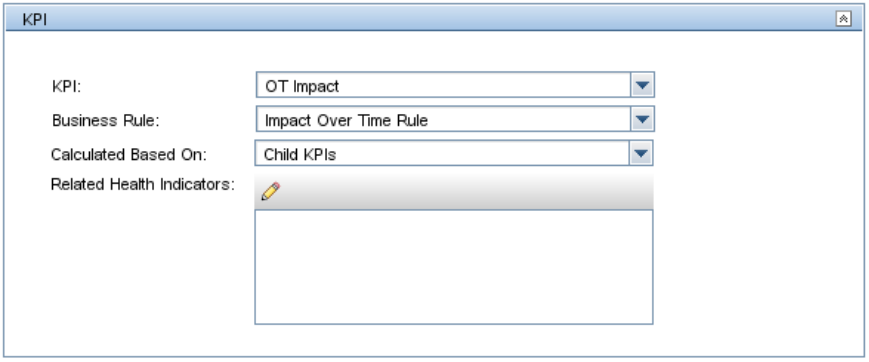
John accesses **Admin** > **Service Health** > **Assignments**, and selects the **Business Transaction** CIT in the CI Types pane. In the KPI Assignments tab, he opens the **RUM Business Transaction KPI Assignments** for editing.



2 Add the OT Impact KPI to the RUM Business Transaction KPI assignments

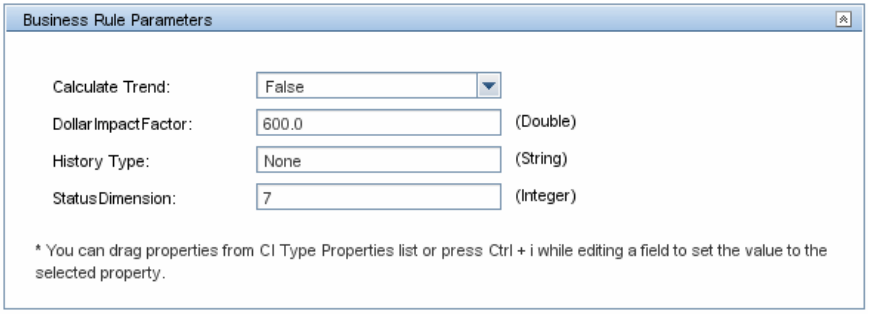
a In the KPI Configurations area, he clicks **New** to add a new KPI to the assignment.

b He selects the **OT Impact KPI**, using the **Impact Over Time Rule**, calculated based on **Child KPIs**.

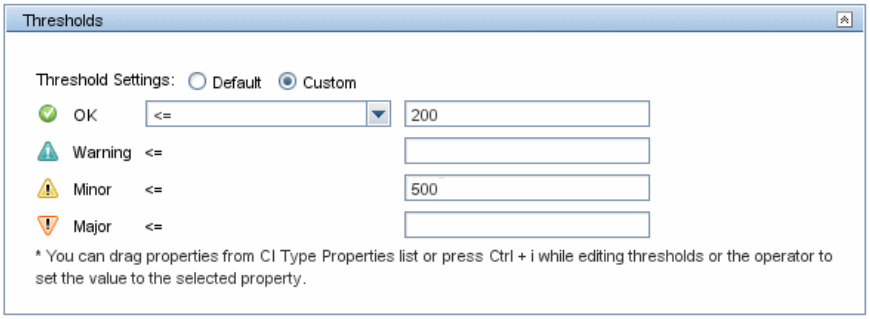


c He defines the **Dollar Impact** (financial loss in dollars per minute) as 600. He links this to the Application Availability KPI (whose ID in the KPI repository is 7), by typing 7 in the **StatusDimension** rule parameter.

This means that for every minute the Application Availability KPI is red, the value of the OT Impact KPI increases by $600.



d He defines thresholds for the OT Impact KPI so that when the value of the KPI is less than or equal $200, the status of the KPI is **OK;** when it is less than or equal $500 it is **Minor**, and when it is over $500 it is **Major**.

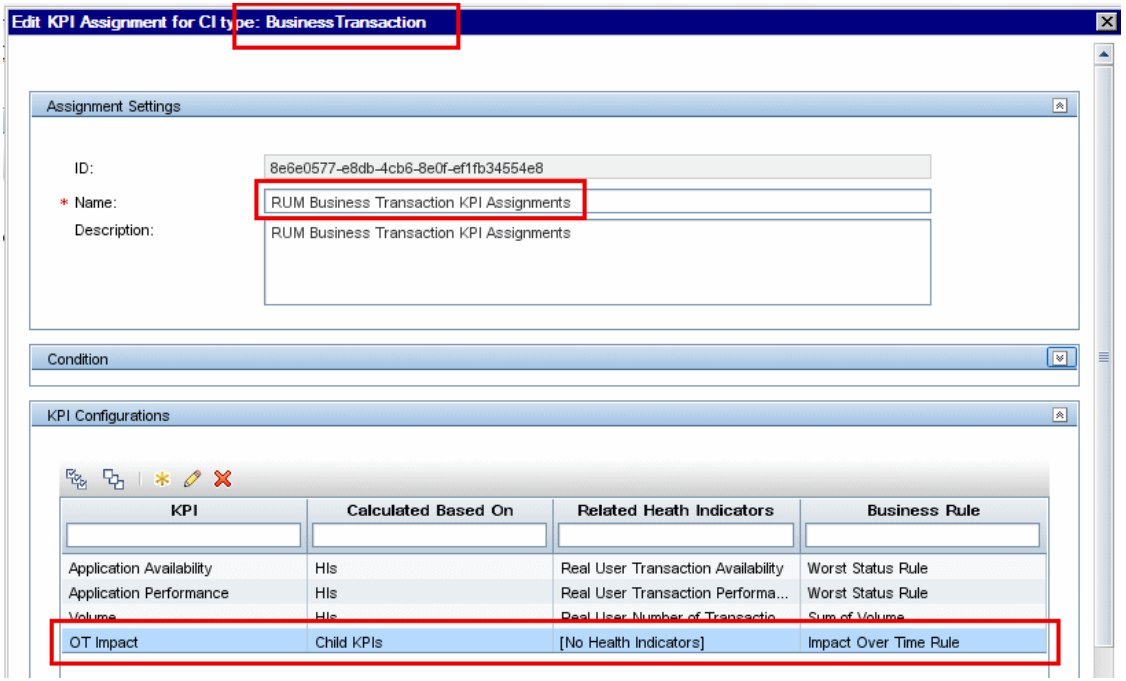


e He then clicks **Save** to save the KPI assignment.

3 Result

The RUM Business Transaction KPI assignment, on the Business Transaction CIT, now includes the OT Impact KPI.

This KPI is now automatically assigned to all business transactions monitored by Real User Monitor. The value of this KPI is $600 for every minute a business transaction is not available.



How to Create a KPI Assignment Using an API Rule and Dynamic Rule Parameter – Use-Case Scenario

The following scenario provides a high-level illustration of how you can use the Rules API to create a custom rule, and then assign a KPI with this rule to various CIs.

In this scenario, you create a KPI assignment so that a KPI will automatically be assigned to all hosts and databases monitored by SiteScope. The KPI will use a custom API rule, so that whenever the KPI is assigned to a host CI the rule performs one action, and when the KPI is assigned to a database CI the rule performs another action.

First, within the rule repository you define a rule for a specific CI type, using a Rule API script. You then make this rule applicable to a KPI, within the KPI repository.

You create a KPI assignment to assign this KPI using the custom rule, within the KPI assignment administration. Finally, you define the rule within the KPI assignment administration, so that the rule dynamically takes the CI type from the CI and performs different actions depending on the CI type (host or database).

The scenario includes the following steps:

- "Clone the API Group and Sibling business rule and define rule parameters" on page 584
- "Make the new rule applicable for the Generic KPI" on page 586
- "Create a KPI assignment using the new rule" on page 586
- "Result" on page 589

1 Clone the API Group and Sibling business rule and define rule parameters

a Access **Admin** > **Service Health** > **Repositories** > **Business Rules**; select the **API Group and Sibling** business rule, and click **Clone**.

The new rule is named **API Group and Sibling Rule (1).** Open the rule for editing.

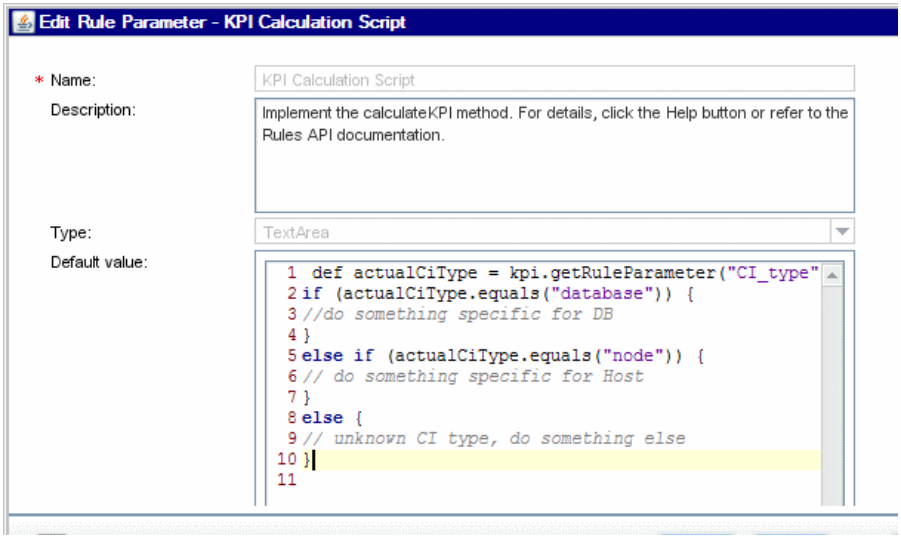
b In the **Advanced Rule Settings** area, define the rule as applicable for the Configuration Item CI type.

c In the **Rule Parameters** area, create a new rule parameter named **CI_type**, of type **String**. You do not need to modify any other fields.

This rule parameter will be used to define the API script, using the CI type taken dynamically from the CI.

d In the **Rule Parameters** area, open the parameter **KPI Calculation Script** for editing, and define the script which will be run on the KPI. For details on how to define custom rules using the rules API, see "Service Health Rules API" on page 947.

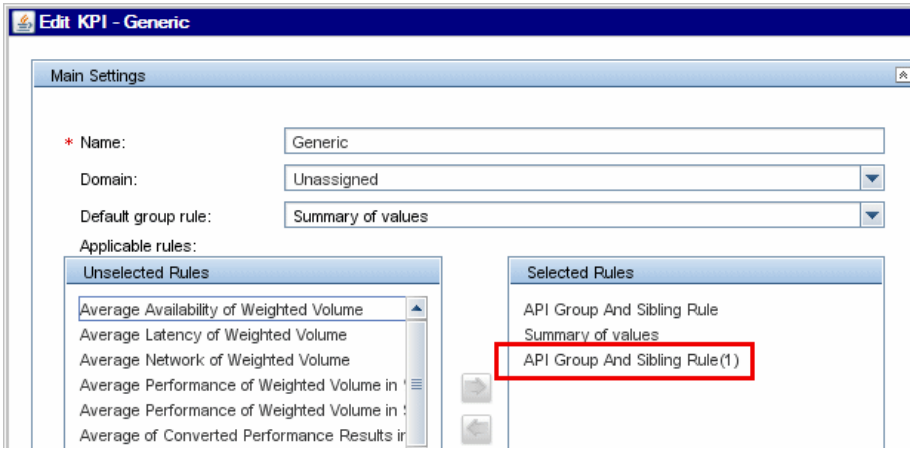
The following image illustrates a calculation script which performs one action if the CI type is a database, another action if the CI type is a host, and a third action for other CITs.



2 Make the new rule applicable for the Generic KPI

a Access **Admin** > **Service Health** > **Repositories** > **KPIs**, and open the **Generic** KPI for editing.

b In the **Applicable Rules** area, define the new rule **API Group and Sibling Rule (1)** as applicable for the KPI.



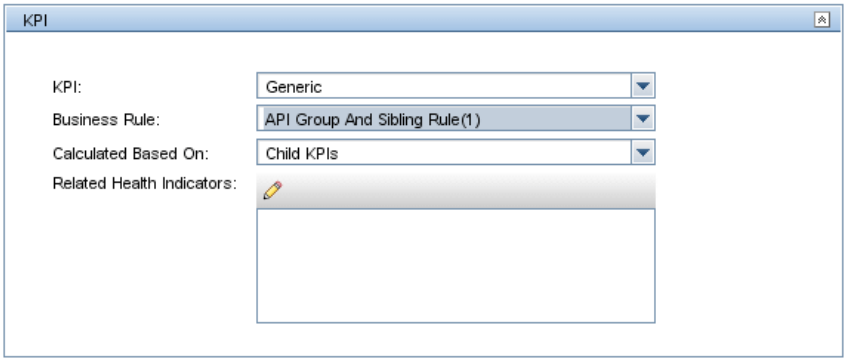
3 Create a KPI assignment using the new rule

a Access **Admin** > **Service Health** > **Assignments**, and select the **Infrastructure Element** CIT in the CI Types pane. Using the KPI Assignments tab, create a new assignment named **Host and Database Assignment**.

b Within the Condition area, define the assignment condition as monitored by **SiteScope**.

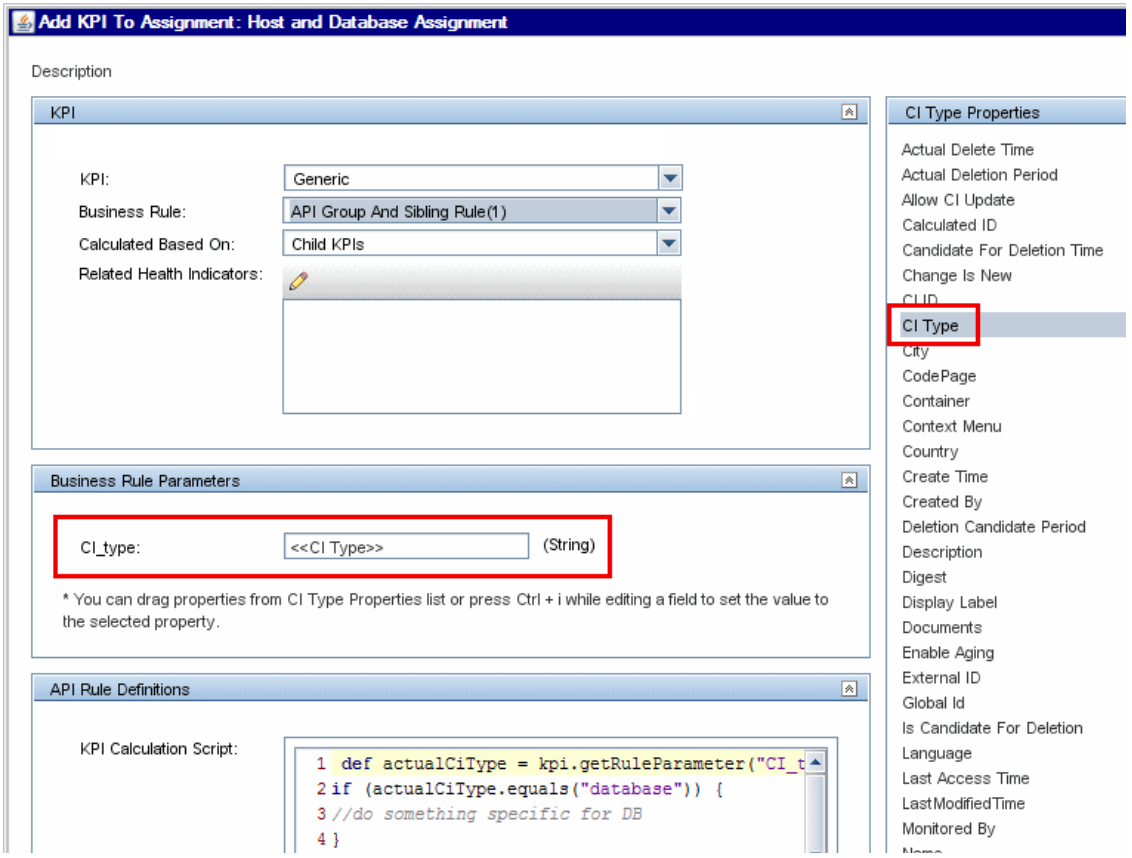
c Within the KPI Configurations area, click **New** to add a KPI to the assignment.

d In the KPI area, select the **Generic KPI**, using the **API Group and Sibling Rule (1)**, calculated based on **Child KPIs**.



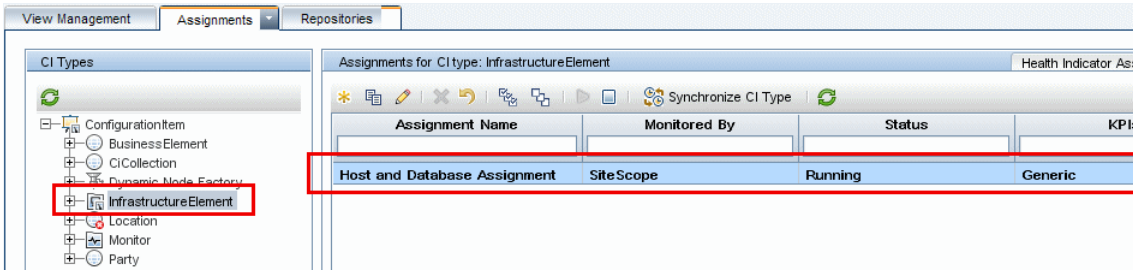
e From the **CI Type Properties** list, drag the property **CI Type** to the **CI_type** rule parameter, within the **Business Rule Parameters** area.

This means that the CI_type rule parameter that is part of the calculation script is filled dynamically from the CI information itself: for a host CI this parameter gets the value **node**, and for a database CI it gets the value **database**.



4 Result

The Host and Database assignment, on the Infrastructure Element CIT, assigns the Generic KPI to all infrastructure element CIs (and their child CIs). When this KPI is on a host CI, the API rule performs one action, and when it is on a database CI it performs another action.



Reference

Indicator Assignments User Interface

This section includes:

- Assignments Tab on page 590
- Health Indicator Assignments Page on page 592
- KPI Assignments Page on page 596
- Propagation Rules Page on page 600
- Add/Edit KPI Assignments for CI Type Dialog Box on page 603
- Add/Edit KPI to Assignment Dialog Box on page 608
- Edit Related Health Indicators Dialog Box on page 611
- Add/Edit Health Indicator Assignments for CI Type Dialog Box on page 612
- Add/Edit Health Indicator to Assignment Dialog Box on page 616
- Add/Edit Propagation Rule for CI Type Dialog Box on page 622
- Add/Edit KPI for Propagation Rule Dialog Box on page 625

Assignments Tab

This tab enables you to create or edit KPI and HI assignments for each CI type, and to create or edit non-default KPI propagation rules for each CI type.

To access	Select **Admin** > **Service Health** > **Assignments**
Relevant tasks	➤ "How to Define a KPI or HI Assignment" on page 574 ➤ "How to Define a KPI Propagation Rule" on page 577
See also	"Assignment and Propagation Overview" on page 558

User interface elements are described below:

UI Element (A-Z)	Description
Health Indicator Assignments	When a new CI is added to the RTSM, the assignment mechanism assigns the appropriate HIs to each CI, based on its CI type (CIT). Click to open the Health Indicator Assignments page, to create or edit HI assignments. For details, see "Health Indicator Assignments Page" on page 592.
KPI Assignments	When a new CI is added to the RTSM, the assignment mechanism assigns the appropriate KPIs to each CI, based on its CI type (CIT). Click to open the KPI Assignments page, to create or edit KPI assignments. For details, see "KPI Assignments Page" on page 596.
Propagation Rules	By default, when a KPI is assigned to a CI the KPI is automatically propagated to the CI's parents. Propagation rules enable you to define exceptions to the default KPI propagation, and to propagate other KPIs, the same KPI using a different rule, or no KPIs. Click to open the Propagation Rules page, to create or edit KPI propagation rules. For details, see "Propagation Rules Page" on page 600.

Health Indicator Assignments Page

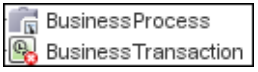
This page enables you to create or edit HI assignments for a CI type. When a new CI is added to the RTSM, the assignment mechanism assigns the appropriate HIs to each CI, based on its CI type (CIT).

To access	Select **Admin** > **Service Health** > **Assignments** > **Health Indicator Assignments**
Relevant tasks	"How to Define a KPI or HI Assignment" on page 574
See also	➤ "Assignment and Propagation Overview" on page 558 ➤ "Assignments" on page 558

CI Types Pane

This pane displays a hierarchy of CI types; select a CI type to manage its HI assignments.

User interface elements are described below:

UI Element (A-Z)	Description
	Refresh. Click to refresh the CI Types pane and the Assignments pane display.
<CI Type>	Each CI type is displayed with its CIT icon. If a CIT has an assignment or propagation rule defined, the CIT icon has a small overlay icon in its lower right corner. If there are invalid assignments or propagation rules, the overlay icon indicates this. In the following image, the BusinessProcess CIT has one or more assignments or propagation rules defined, while the Business Transaction CIT has an invalid assignment or propagation rule.  A tooltip shows the number of KPI assignments, HI assignments, and propagation rules for the CIT. The tooltip also indicates which category contains any invalid definitions. If you have invalid definitions, you can select the relevant tab (KPI Assignments, HI Assignments, or Propagation Rules). The user interface will indicate the source of the problem, and you can fix it if necessary.
Filter	This filter enables you to display all assignments and propagation rules (default setting); only valid assignments; or only invalid assignments. When you select **Invalid Assignments Only**, the CIT tree expands all the CIT nodes that have invalid assignments. If you want to resolve invalid assignments, open each assignment for editing. The dialog box that appears contains details on what needs to be fixed in the assignment definitions.

Health Indicator Assignments Tab

This tab displays details regarding the HI assignments for the CIT selected in the **CI Types** pane. You can use this tab to add, edit, or remove assignments. Each line represents one assignment on the selected CIT.

User interface elements are described below:

UI Element (A-Z)	Description
	Add. Click to create a new HI assignment.
	Duplicate. Click to copy a selected HI assignment, and open the copy for editing.
	Edit. Click to edit the details of a selected HI assignment.
	Delete. Click to delete one or more selected HI assignments. Assignments that are inherited from parent CITs cannot be deleted on the child CIT, but only on the parent CIT.
	Restore From Parent CIT. Click to restore a selected overridden assignment to its original settings. For details, see "How to Define a KPI or HI Assignment" on page 574.
	Restore to Default. Click to restore a selected edited assignment, whose Type is Predefined (Customized), to its original settings. For details, see "How to Define a KPI or HI Assignment" on page 574.
	Select all. Select all the HI assignments.
	Clear Selection. Clear the selection of HI assignments.

UI Element (A-Z)	Description
	Start. Click to start running a selected HI assignment on existing CIs, and on new CIs. You can only start an assignment if you have selected it on the CIT where it is defined, and not on one of that CIT's descendants.
	Stop. Click to stop running a selected HI assignment. You can only stop an assignment if you have selected it on the CIT where it is defined, and not on one of that CIT's descendants.
	Click to run HI assignments on the selected CIT. For details, see "Assignments" on page 558.
	Refresh. Click to refresh the Assignments display.
	Change visible columns. Click to select the columns you want to display in the table.
Assignment Name	The name of the assignment.
Description	The description of the assignment.
Health Indicators	The HIs that are assigned to CIs of the selected CIT, based on the assignment.
Monitored By	List of values of the **Monitored By** attribute within the RTSM; the assignment is only applicable if the CI contains one of the listed values as its **Monitored By** attribute.

UI Element (A-Z)	Description
Status	The assignment status: ➤ **Running.** The assignment has been started and is running on the appropriate CIs. ➤ **Stopped.** The assignment has been stopped and is not running.
Type	Indicates one of the following assignment types: ➤ **Custom.** New assignments. ➤ **Predefined.** Out-of-the-box assignments that have not been modified. ➤ **Predefined (Customized).** Out-of-the-box assignments that have been modified. You can restore such an assignment to its original settings using the **Restore to Default** button.

KPI Assignments Page

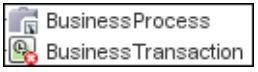
This page enables you to create or edit KPI assignments for each CI type. When a new CI is added to the RTSM, the assignment mechanism assigns the appropriate KPIs to each CI, based on its CI type (CIT).

To access	Select **Admin** > **Service Health** > **Assignments** > **KPI Assignments**
Relevant tasks	"How to Define a KPI or HI Assignment" on page 574
See also	➤ "Assignment and Propagation Overview" on page 558 ➤ "Assignments" on page 558

CI Types Pane

This pane displays a hierarchy of CI types; select a CI type to manage its KPI assignments.

User interface elements are described below:

UI Element (A-Z)	Description
	Refresh. Click to refresh the CI Types pane and the Assignments pane display.
<CI Type>	Each CI type is displayed with its CIT icon. If a CIT has an assignment or propagation rule defined, the CIT icon has a small overlay icon in its lower right corner. If there are invalid assignments or propagation rules, the overlay icon indicates this. In the following image, the BusinessProcess CIT has one or more assignments or propagation rules defined, while the Business Transaction CIT has an invalid assignment or propagation rule.  A tooltip shows the number of KPI assignments, HI assignments, and propagation rules for the CIT. The tooltip also indicates which category contains any invalid definitions. If you have invalid definitions, you can select the relevant tab (KPI Assignments, HI Assignments, or Propagation Rules). The user interface will indicate the source of the problem, and you can fix it if necessary.
Filter	This filter enables you to display all assignments and propagation rules (default setting); only valid assignments; or only invalid assignments. When you select **Invalid Assignments Only**, the CIT tree expands all the CIT nodes that have invalid assignments. If you want to resolve invalid assignments, open each assignment for editing. The dialog box that appears contains details on what needs to be fixed in the assignment definitions.

KPI Assignments Tab

This tab displays details regarding the KPI assignments for the CIT selected in the **CI Types** pane. You can use this pane to add, edit, or remove assignments. Each line represents one assignment on the selected CIT.

User interface elements are described below:

UI Element (A-Z)	Description
	Add. Click to create a new KPI assignment.
	Duplicate. Click to copy a selected KPI assignment, and open the copy for editing.
	Edit. Click to edit the details of a selected KPI assignment.
	Delete. Click to delete one or more selected KPI assignments. Assignments that are inherited from parent CITs cannot be deleted on the child CIT, but only on the parent CIT.
	Restore From Parent CIT. Click to restore a selected overridden assignment to its original settings. For details, see "How to Define a KPI or HI Assignment" on page 574.
	Restore to Default. Click to restore a selected edited assignment, whose Type is Predefined (Customized), to its original settings. For details, see "How to Define a KPI or HI Assignment" on page 574.
	Select all. Select all the KPI assignments.
	Clear Selection. Clear the selection of KPI assignments.

UI Element (A-Z)	Description
	Start. Click to start running a selected KPI assignment on existing CIs, and on new CIs. You can only start an assignment if you have selected it on the CIT where it is defined, and not on one of that CIT's descendants.
	Stop. Click to stop running a selected KPI assignment. You can only stop an assignment if you have selected it on the CIT where it is defined, and not on one of that CIT's descendants.
	Synchronize. Click to run KPI assignments on the selected CIT. For details, see "Assignments" on page 558.
	Refresh. Click to refresh the Assignments display.
	Change visible columns. Click to select the columns you want to display in the table.
Assignment Name	The name of the assignment.
Description	The description of the assignment.
KPIs	The KPIs that are assigned to CIs of the selected CIT, based on the assignment.
Monitored By	List of values of the **Monitored By** attribute within the RTSM; the assignment is only applicable if the CI contains one of the listed values as its **Monitored By** attribute.

UI Element (A-Z)	Description
Status	The assignment status: ➤ **Running.** The assignment has been started and is running on the appropriate CIs. ➤ **Stopped.** The assignment has been stopped and is not running.
Type	Indicates one of the following assignment types: ➤ **Custom.** New assignments. ➤ **Predefined.** Out-of-the-box assignments that have not been modified. ➤ **Predefined (Customized).** Out-of-the-box assignments that have been modified. You can restore such an assignment to its original settings using the **Restore to Default** button.

Propagation Rules Page

This page enables you to create or edit non-default KPI propagation rules for each CI type. By default, when a KPI is assigned to a CI the KPI is automatically propagated to the CI's parents. Propagation rules enable you to define exceptions to the default KPI propagation, and to propagate other KPIs, the same KPI using a different rule, or no KPIs.

To access	Select **Admin** > **Service Health** > **Assignments** > **Propagation Rules**
Relevant tasks	"How to Define a KPI Propagation Rule" on page 577
See also	➤ "Assignment and Propagation Overview" on page 558 ➤ "Propagation Rules" on page 563

CI Types Pane

This pane displays a hierarchy of CI types; select a CI type to manage its KPI propagation rules.

User interface elements are described below:

UI Element (A-Z)	Description
<CI Type>	Each CI type is displayed with its CIT icon. If a CIT has an assignment or propagation rule defined, the CIT icon has a small overlay icon in its lower right corner. If there are invalid assignments or propagation rules, the overlay icon indicates this. In the following image, the BusinessProcess CIT has one or more assignments or propagation rules defined, while the Business Transaction CIT has an invalid assignment or propagation rule. A tooltip shows the number of KPI assignments, HI assignments, and propagation rules for the CIT. The tooltip also indicates which category contains any invalid definitions. If you have invalid definitions, you can select the relevant tab (KPI Assignments, HI Assignments, or Propagation Rules). The user interface will indicate the source of the problem, and you can fix it if necessary.
	Refresh. Click to refresh the CI Types pane and the Assignments pane display.
Filter	This filter enables you to display all assignments and propagation rules (default setting); only valid assignments; or only invalid assignments. When you select **Invalid Assignments Only**, the CIT tree expands all the CIT nodes that have invalid assignments. If you want to resolve invalid assignments, open each assignment for editing. The dialog box that appears contains details on what needs to be fixed in the assignment definitions.

Propagations Rule Tab

This pane displays the non-default KPI propagation rules for the CIT selected in the **CI Types** pane. You can use this pane to add, edit, or remove propagation rules. Each line represents one propagation rule on the selected CIT.

A propagation rule defines (based on CITs) that if a specified KPI is assigned on a CI, the CI's parent CIs will either be assigned this KPI with a different rule, no KPIs, or one or more other KPIs.

User interface elements are described below:

UI Element (A-Z)	Description
	Add. Click to create a new propagation rule.
	Duplicate. Click to copy a selected propagation rule, and open the copy for editing.
	Edit. Click to edit the details of a selected propagation rule.
	Delete. Click to delete one or more selected propagation rules.
	Select all. Select all the propagation rules.
	Clear Selection. Clear the selection of propagation rules.
	Refresh. Click to refresh the Assignments pane display.
	Change visible columns. Click to select the columns you want to display in the table.
Assigned KPI	When this KPI is assigned to the selected CIT, the propagation rule is applied to the parent CIT.
Description	The description of the propagation rule.

UI Element (A-Z)	Description
Parent CI Type	The parent CIT on which the propagation rule is applied.
Propagated KPIs	This indicates one of the following: ➤ **<KPI names>.** The listed KPIs are propagated to the parent CIT (and not the KPI which is assigned to the child CIT). ➤ **None.** No KPIs are propagated to the parent CIT. ➤ **Same KPI with <business rule name>.** The KPI that is assigned to the child CIT is propagated to the parent CIT, but with a different business rule.
Propagation Rule Name	The name of the propagation rule.

Add/Edit KPI Assignments for CI Type Dialog Box

This dialog box enables you to add or edit a KPI assignment on a CIT.

To access	Select **Admin** > **Service Health** > **Assignments.** In the **Assignments** tab, select a CIT in the **CI Type** pane. Within the **Assignments for CI Type** pane, the **KPI Assignments** tab displays the KPI assignments for the selected CIT. ➤ To add a KPI assignment to the selected CIT, click the **Add** button. ➤ To edit a KPI assignment, select the assignment and click the **Edit** button.
Important information	When an assignment is inherited from a parent CIT, the name of the source CIT appears in parentheses after the assignment name. If you edit an inherited assignment, the edited assignment is displayed in bold text. The condition of an inherited assignment cannot be edited; to edit, clone the inherited assignment, edit the clone, and delete the original inherited assignment.
Relevant tasks	"How to Define a KPI or HI Assignment" on page 574

Assignment Settings Area

User interface elements are described below:

UI Element (A-Z)	Description
Description	(Optional) Enter a description for the assignment.
ID	Displays the internal ID of the assignment.
Name	Enter a name for the assignment.

Condition Area

The condition defines which characteristics a CI must have so that the KPI assignment is relevant for the CI. Each line in the table represent a property condition; the assignment is relevant if all the property conditions are filled. If no property conditions are defined, the KPIs are assigned to all CIs of the CIT with the specified Monitored By attribute.

User interface elements are described below:

UI Element	Description
	Select all. Select all the property conditions.
	Clear Selection. Clear the selection of property conditions.
	Add. Click to add a new property condition.
	Delete. Click to delete a selected property condition.

UI Element	Description
Monitored By	Specify the value of the **Monitored By** attribute within the RTSM; the assignment is only applicable to a CI if the CI contains this value as its **Monitored By** attribute. This field is mandatory for all CITs except for Monitor CITs (and their descendant CITs). **Note:** You can add a value to the dropdown list of possible values using the following infrastructure setting: **Admin** > **Platform** > **Infrastructure Settings** > **Foundations** > **Sources Configuration** > **Possible Values for Monitored By**.
Operator	Relational operator that the condition uses when comparing the actual value for the property against the value defined in the condition. The expression gives a result of TRUE or FALSE for each CI. For details on the possible operators, see "Property Condition Operator" on page 607.
Property Name	This drop-down list contains all of the attributes of the RTSM class for the selected CIT. Select an attribute to define the condition, using the **Operator** and **Value** fields.
Value	Enter the required value for the property. This is the property value that the condition compares with the value in the RTSM class attribute.

KPI Configurations Area

This area enables you to define which KPIs will be assigned to the CIs which fill the assignment condition.

User interface elements are described below:

UI Element (A-Z)	Description
	Select all. Select all the KPIs.
	Clear Selection. Clear the selection of KPIs.
	Add KPI. Click to create a new KPI.
	Edit KPI. Click to edit the details of a selected KPI.
	Delete KPIs. Click to delete one or more selected KPIs.
Business Rule	The business rule used to calculate the KPI. For information about each rule, see "List of Calculation Rules in Service Health" on page 740.
Calculated Based On	This indicates if the KPI is calculated by: ➤ **Health indicators and child KPIs.** The KPI is calculated by the HIs assigned to the CI, and by the KPIs assigned to the child CIs. ➤ **Health indicators.** The KPI is calculated by the HIs assigned to the CI. ➤ **HIs; if none, use child KPIs.** The KPI is calculated by the HIs assigned to the CI; if there are no HIs assigned, the KPI is calculated by the KPIs assigned to the child CIs.

UI Element (A-Z)	Description
KPI	The name of the KPI assigned to the selected CI. For information about each KPI, see "List of Service Health KPIs" on page 656.
Related Health Indicators	The list of HIs whose values are used in calculating this KPI. The KPI will *only* be assigned if one (or more) of these HIs exists on the CI. If none of the HIs exist on the CI, the KPI is not assigned.

Context Menus Area

This area enables you to define which context menus are assigned to the CIs which fill the assignment condition. For details on the context menus, see "List of Context Menus" on page 899.

The list of **Available Context Menus** contains the context menus that are applicable to the CIT. The list of **Selected Context Menus** shows which context menus are assigned to the CIs which fill the condition. You can use the arrows to move the context menus between the lists, or drag context menus from one list to another.

Note that this does not override existing context menus, but enables you to define additional ones.

Property Condition Operator

Use one of the following values:

Value	Description
Equals	Returns **true** when the value of the RTSM class attribute equals the value specified in the **value** attribute of the property condition.
Does not equal	Returns **true** when the value of the RTSM class attribute does not equal the value specified in the **value** attribute of the property condition.

Value	Description
Is like	Returns **true** when the value of the RTSM class attribute matches the string in the **value** attribute of the property condition. The string of the **value** attribute can contain % as a wildcard. % may represent 0 or more characters.
Is not like	Returns **true** when the value of the RTSM class attribute does not match the string in the **value** attribute of the property condition. The string of the **value** attribute can contain % as a wildcard. % may represent 0 or more characters.
Contains	Returns **true** when the value of the RTSM class attribute equals one of the elements that is listed in the **value** attribute of the property condition. The elements in the list should be separated with a comma.
Is contained in	Returns **true** when the **value** attribute of the property condition equals one of the elements listed in the value of the RTSM class attribute, when the RTSM attribute type is **string_list**.
Is NULL	Checks where the CI attribute was not assigned a value. Returns **true** when the RTSM class attribute is empty.
Is not NULL	Checks where the CI attribute was assigned a value. Returns **true** when the RTSM class attribute is not empty.
Is true	Returns true when the RTSM class attribute value is **true**.
Is false	Returns true when the RTSM class attribute value is **false**.

Add/Edit KPI to Assignment Dialog Box

This dialog box enables you to add or edit a KPI within a KPI assignment.

To access	In the **Add/Edit KPI Assignments for CI Type** dialog box, in the **KPI Configurations** area, click **Add,** or select a KPI and click **Edit**.
Relevant tasks	"How to Define a KPI or HI Assignment" on page 574

KPI Area

User interface elements are described below:

UI Element (A-Z)	Description
	Click to add or remove HIs from the list of Related Health Indicators which are used to calculate the KPI. For details, see "Edit Related Health Indicators Dialog Box" on page 611. Note: Adding a related HI to a KPI does not assign the HI to the CI itself; this means that if the HI is assigned to the CI, this KPI will include the HI in its calculation.
Business Rule	The business rule used to calculate the KPI. For information about each rule, see "List of Calculation Rules in Service Health" on page 740.
Calculated Based On	This indicates if the KPI is calculated by: ➤ **Health indicators and child KPIs.** The KPI is calculated by the HIs assigned to the CI, and by the KPIs assigned to the child CIs. ➤ **Health indicators.** The KPI is calculated by the HIs assigned to the CI. ➤ **HIs; if none, use child KPIs.** The KPI is calculated by the HIs assigned to the CI; if there are no HIs assigned, the KPI is calculated by the KPIs assigned to the child CIs.
KPI	The name of the KPI assigned to the selected CIT. For information about each KPI, see "List of Service Health KPIs" on page 656.
Related Health Indicators	The list of HIs whose values are used in calculating this KPI. The KPI will *only* be assigned if one (or more) of these HIs exists on the CI. If none of the HIs exist on the CI, the KPI is not assigned.

CI Type Properties Area

This area contains a list of the attributes of the RTSM class for the selected CIT. If you are defining KPI thresholds or you are creating an API rule, you can drag attributes from this area to the threshold or API area.

Thresholds Area

This area enables you to modify the default thresholds used for the KPI's business rule; for details, see "KPI and HI Thresholds" on page 401. This area only appears if you select a rule that requires thresholds; for example, if you select the Worst Status rule this area does not appear.

User interface elements are described below:

UI Element (A-Z)	Description
OK, Warning, Minor, Major, Critical	Enter the required threshold value for each status in the appropriate box. Ensure that the values you enter are logically ordered. You can use RTSM class attributes of type **float** or **integer** to define threshold values. Drag an attribute from the **CI Type Properties** area to the threshold value fields.
Operator	Select the required operator. This operator is applied for all the thresholds. You can use RTSM class attributes of type **string** to define operators. Drag an attribute from the **CI Type Properties** area to the operator field.
Threshold Settings	Select one of the following: ➤ **Default.** Use the thresholds that are defined in the business rule repository. If you select this option, you cannot edit the threshold settings. ➤ **Custom.** Use non-default thresholds for the business rule. Select this option if you want to modify the default thresholds.

API Rule Definitions Area

This area is displayed when you select the API Group and Sibling rule in the Business Rule list. Enter the KPI calculation script for the rule you are creating; for details, see "API Group and Sibling Rule" on page 950.

Edit Related Health Indicators Dialog Box

This dialog box enables you to add or remove HIs from the list of HIs which are used to calculate a KPI.

To access	In the **Add/Edit KPI to Assignment** dialog box, click the button next to the **Related Health Indicators** field.
Important information	The list of applicable HIs, that can be used to calculate the KPI on the selected CIT, is based on the Indicator Repository definitions. For details, see "Indicator Repository Overview" on page 682.

User interface elements are described below:

UI Element (A-Z)	Description
	Select an HI from the **Applicable Health Indicators** list, and click to add it to the **Selected Health Indicators** list.
	Select an HI from the **Selected Health Indicators** list, and click to remove it.
Applicable Health Indicators	This shows the list of HIs that can be used to calculate the KPI, on the selected CIT.
Selected Health Indicators	This shows which HIs will be used to calculate the KPI on the selected CIT

Add/Edit Health Indicator Assignments for CI Type Dialog Box

This dialog box enables you to add or edit an HI assignment on a CIT.

To access	Select **Admin** > **Service Health** > **Assignments.** In the **Assignments** tab, select a CIT in the **CI Type** pane. Within the **Assignments for CI Type** pane, the **Health Indicator Assignments** tab displays the HI assignments for the selected CIT. ➤ To add an HI assignment to the selected CIT, click the **Add** button. ➤ To edit an HI assignment, select the assignment and click the **Edit** button.
Important information	When an assignment is inherited from a parent CIT, the name of the source CIT appears in parentheses after the assignment name. If you edit an inherited assignment, the edited assignment is displayed in bold text. The condition of an inherited assignment cannot be edited; to edit, clone the inherited assignment, edit the clone, and delete the original inherited assignment.
Relevant tasks	"How to Define a KPI or HI Assignment" on page 574

Assignment Settings Area

User interface elements are described below:

UI Element (A-Z)	Description
Description	(Optional) Enter a description for the assignment.
ID	Displays the internal ID of the assignment.
Name	Enter a name for the assignment.

Condition Area

The condition defines which characteristics a CI must have so that the HI assignment is relevant for the CI. Each line in the table represent a property condition; the assignment is relevant if all the property conditions are filled. If no property conditions are defined, the HIs are assigned to all CIs of the CIT with the specified Monitored By attribute.

User interface elements are described below:

UI Element (A-Z)	Description
Monitored By	Specify the value of the **Monitored By** attribute within the RTSM; the assignment is only applicable to a CI if the CI contains this value as its **Monitored By** attribute. This field is mandatory for all CITs except for Monitor CITs (and their descendant CITs). **Note:** You can add a value to the dropdown list of possible values using the following infrastructure setting: **Admin** > **Platform** > **Infrastructure Settings** > **Foundations** > **Sources Configuration** > **Possible Values for Monitored By**.
	Select all. Select all the property conditions.
	Clear Selection. Clear the selection of property conditions.
	Add. Click to add a new property condition.
	Delete. Click to delete a selected property condition.
Operator	Relational operator that the condition uses when comparing the actual value for the property against the value defined in the condition. The expression gives a result of TRUE or FALSE for each CI. For details on the possible operators, see "Property Condition Operator" on page 607.

UI Element (A-Z)	Description
Property Name	This drop-down list contains all of the attributes of the RTSM class for the selected CIT. Select an attribute to define the condition, using the **Operator** and **Value** fields.
Value	Enter the required value for the property. This is the property value that the condition compares with the value in the RTSM class attribute.

Health Indicator Configurations Area

This area enables you to define which HIs will be assigned to the CIs which fill the assignment condition.

User interface elements are described below:

UI Element (A-Z)	Description
	Select all. Select all the HIs.
	Clear Selection. Clear the selection of HIs.
	Add Health Indicator. Click to create a new HI.
	Edit Health Indicator. Click to edit the details of a selected HI.
	Delete Health Indicator. Click to delete one or more selected HIs.
Business Rule	The business rule used to calculate the HI. For information about each rule, see "List of Calculation Rules in Service Health" on page 740.
Health Indicator	The name of the HI assigned to the selected CI.

Property Condition Operator

Use one of the following values:

Value	Description
Equals	Returns **true** when the value of the RTSM class attribute equals the value specified in the **value** attribute of the property condition.
Does not equal	Returns **true** when the value of the RTSM class attribute does not equal the value specified in the **value** attribute of the property condition.
Is like	Returns **true** when the value of the RTSM class attribute matches the string in the **value** attribute of the property condition. The string of the **value** attribute can contain % as a wildcard. % may represent 0 or more characters.
Is not like	Returns **true** when the value of the RTSM class attribute does not match the string in the **value** attribute of the property condition. The string of the **value** attribute can contain % as a wildcard. % may represent 0 or more characters.
Contains	Returns **true** when the value of the RTSM class attribute equals one of the elements that is listed in the **value** attribute of the property condition. The elements in the list should be separated with a comma.
Is contained in	Returns **true** when the **value** attribute of the property condition equals one of the elements listed in the value of the RTSM class attribute, when the RTSM attribute type is **string_list**.
Is NULL	Checks where the CI attribute was not assigned a value. Returns **true** when the RTSM class attribute is empty.
Is not NULL	Checks where the CI attribute was assigned a value. Returns **true** when the RTSM class attribute is not empty.
Is true	Returns true when the RTSM class attribute value is **true**.
Is false	Returns true when the RTSM class attribute value is **false**.

Add/Edit Health Indicator to Assignment Dialog Box

This dialog box enables you to add or edit an HI within an HI assignment.

To access	In the **Add/Edit Health Indicator Assignments for CI Type** dialog box, in the **Health Indicator Configurations** area, click **Add,** or select an HI and click **Edit**.
Relevant tasks	"How to Define a KPI or HI Assignment" on page 574

Health Indicator Area

User interface elements are described below:

UI Element (A-Z)	Description
Business Rule	The business rule used to calculate the HI. For information about each rule, see "List of Calculation Rules in Service Health" on page 740.
Health Indicator	The name of the HI assigned to the selected CIT.
Priority	By default, each HI has a priority of zero (0). If the assignment mechanism runs a number of assignments on a CI, and more than one assignment assigns the same HI, the priority can be used to fine-tune which to assign. For example, if an HI is supposed to be assigned to a CI based on two different assignments, and the HI in one assignment has a higher priority than in the other, the definitions of the higher priority one will be assigned.

CI Type Properties Area

This area contains a list of the attributes of the RTSM class for the selected CIT. If you are defining HI selector or thresholds, or you are creating an API rule, you can drag attributes from this area to the API, threshold or selector area.

The attributes listed under the heading **General Properties** are grouped according to attribute type (for example binary or string). In addition, when defining a selector, the following attributes are available under the heading **Selector Related Properties**:

- **CI ID.** The ID of the CI in the RTSM.
- **HI Type ID.** The HI's internal ID in the Indicator Repository.
- **ETI Name.** The name of the ETI related to the HI.

API Rule Definitions Area

This area is displayed when you select an API rule in the Business rule list. For details, see "Rules API Overview" on page 948.

User interface elements are described below:

UI Element (A-Z)	Description
KPI Calculation Script	Enter the KPI calculation script for the rule you are creating. The contents of the script depends on the rule type, as follows: ➤ **API Sample Rule.** See "API Sample Rule" on page 953. ➤ **API Duration-Based Rule.** See "API Duration-Based Sample Rule" on page 955.
Sample Fields	Enter the names of the sample fields you want to use in the script. Separate between the sample names with a comma.

Thresholds Area

This area enables you to modify the default thresholds used for the HI's business rule; for details, see "KPI and HI Thresholds" on page 401. This area only appears if you select a rule that requires thresholds; for example, if you select a Worst Status rule this area does not appear.

User interface elements are described below:

UI Element (A-Z)	Description
OK, Warning, Minor, Major, Critical	Enter the required threshold value for each status in the appropriate box. Ensure that the values you enter are logically ordered. You can use RTSM class attributes of type **float** or **integer** to define threshold values. Drag an attribute from the **CI Type Properties** area to the threshold value fields.
Operator	Select the required operator. This operator is applied for all the thresholds. You can use RTSM class attributes of type **string** to define operators. Drag an attribute from the **CI Type Properties** area to the operator field.
Threshold Settings	Select one of the following: ➤ **Default.** Use the thresholds that are defined in the business rule repository. If you select this option, you cannot edit the threshold settings. ➤ **Custom.** Use non-default thresholds for the business rule. Select this option if you want to modify the default thresholds.

Selector Area

This area enables you to define the selector for the HI. The selector catches data samples from the incoming data that meet the filter criteria.

For an overview of selectors, see "Selectors for Metric-Based HIs" on page 406. For details on defining selectors, see "How to Define Selectors for HIs" on page 435.

User interface elements are described below (unlabeled elements are shown in angle brackets):

Selector Toolbar

UI Element	Description
	Select one of the following: ➤ **Add Selector Expression.** Add a selector expression to an expression group; each selector expression that you add narrows the filter. ➤ **Add OR Clause.** Add an expression group (which can contains one or more selector expressions). **Note.** When the first expression group is added it is labeled AND; when additional groups are added all the groups are labeled OR.
	Delete. Click to delete one or more selected selector expressions or groups.
	Copy. Select one or more selector rows and click to copy the rows to the clipboard.
	Cut. Select one or more selector rows and click to cut the rows to the clipboard.

UI Element	Description
	Paste. Click to paste rows from the clipboard to a new location. If you are pasting a selector *group*, it is pasted as a new group. If you are pasting a selector *expression*, there are two Paste options: ➤ If you select a row before you click Paste, the expression is pasted after the selected row. ➤ If you do not select a row but just click Paste, a new group is created containing the expression.
Copy Selector to Clipboard	Copy the entire selector definition to the clipboard. You can then paste the selector into specific HI instances within the CI Indicators tab. For details, see "Add Health Indicator/Edit Health Indicator Dialog Box" on page 470.
Paste Selector From Clipboard	Paste the entire selector definition from the clipboard. You can copy a selector from an HI definition within the CI Indicators tab. For details, see "Add Health Indicator/Edit Health Indicator Dialog Box" on page 470.

Selector Definitions

UI Element	Description
Field Name	Enter the name of a reference property that the selector expression searches for in the incoming data samples. For details on the samples, see "Data Samples" in *Reports*.
Operator	The relational operator that the selector expression uses when comparing the actual value for the property against the value defined in the selector. The expression gives a result of TRUE or FALSE for each data sample. Select an option from the list. The option can be: ➤ = or **!=.** Filters the samples where the value of the sample field specified in the **Field** box equals or is not equal to the value specified in the **Value** box. ➤ > or **<.** Filters the samples where the value of the sample field specified in the **Field** box is less or more than the value specified in the **Value** box. ➤ **in** or **not In.** Use the **|!|** separator **Value** box. The value specified in the **Value** box can only be 100 characters long. ➤ >= or **<=.** Filters the samples where the value of the sample field specified in the **Field** box is more or equal to or less or equal to the value specified in the **Value** box. ➤ **prefix** or **notPrefix.** Filters in the samples where the sample field value starts with the string entered in the **Value** box. ➤ **suffix** or **notSuffix.** Filters in the samples where the sample field value ends with the string entered in the **Value** box. ➤ **like** or **notLike**. The expression you enter in the **Value** box should follow the Java standard for regular expression. **Note:** It is recommended to use the **suffix** or **notSuffix** operators instead of the **like** and **notLike** operators that are performance intensive.

UI Element	Description
Type	The type of value in the data sample (can be String, Double, Integer, Long, Boolean, Float, or Binary).
Value	The property value that the expression compares with the value in the data sample. You can use RTSM class attributes to define selector values; drag an attribute from the **CI Type Properties** area to the selector value field. **Example:** An HI is assigned for a business transaction monitored by Business Process Monitor. The selector defines which samples will be used to calculate HI instances of this type, using the following selector definition: sampleType = trans_t AND u_iTransactionId = <<CI ID>> The selector determines which samples are valid based on the transaction ID, which is the CI ID. **Note:** If your assignment contains referenced properties (Ref Prop) in the selector, the attribute on the CI should not contain any of the following characters: " **&** ' < >
Expression Summary	When you have defined a selector, this area displays a summary of the selector conditions.

Add/Edit Propagation Rule for CI Type Dialog Box

This dialog box enables you to add or edit a KPI propagation rule on a CIT.

To access	Select **Admin** > **Service Health** > **Assignments.** In the **Assignments** tab, select a CIT in the **CI Type** pane. Within the **Assignments for CI Type** pane, the **Propagation Rules** tab displays the KPI propagation rules for the selected CIT. ➤ To add a propagation rule to the selected CIT, click the **Add** button. ➤ To edit a propagation rule, select the propagation rule and click the **Edit** button.

Relevant tasks	"How to Define a KPI Propagation Rule" on page 577

Rule Settings Area

User interface elements are described below:

UI Element (A-Z)	Description
Description	(Optional) Enter a description for the propagation rule.
Name	Enter a name for the propagation rule.

Condition Area

The condition defines which characteristics a CI must have so that the KPI propagation rule is relevant for the CI. The condition includes the CIT of the CI, the CIT of its parent CI, and the KPI assigned to the child CI. When these conditions are met, the task is then applied.

User interface elements are described below:

UI Element (A-Z)	Description
KPI assigned to source CI type	This drop-down list contains the KPIs that can be assigned to the child CI. Select a KPI to define the condition. If you select **Any KPI,** the condition is filled if the CI has any KPIs assigned. For example, if you do not want any KPI propagated to the parent CI, select this option, and define the task as **Do Not Propagate the KPI**.
Parent CI type	This contains a CIT hierarchy. Type the name of a CIT or select a CIT from the hierarchy, to define the CIT of the parent CI.
Source CI type	This is the CI type which you selected in the CI Types pane. When the specified KPI is assigned to a CI with this CI type, and its parent CI is the specified parent CIT, the condition is met.

Task Area

This area enables you to define which KPIs and business rules are propagated to the parent CI, when the condition is met.

User interface elements are described below:

UI Element	Description
Do not propagate the KPI	Select this option if you do not want the KPI propagated to the parent CI.
Propagate the KPI using a different rule	Select this option if you want the KPI propagated to the parent CI, using a rule that is not the KPI's default group rule. Select a rule from the drop-down list. The list contains the rules that are applicable for the KPI and for the parent CIT. If you selected **Any KPI** in the condition area, the list contains the rules that are applicable for the parent CIT.
Propagate custom KPIs	Select this option if you want different KPIs propagated to the parent CI, or if you want to propagate the same KPI and rule, but using different rule thresholds. After selecting this option, add one or more KPIs for propagation. If you select this option and do not add any KPIs, no KPIs are propagated.
	New. Click to add a new KPI for propagation.
	Edit. Click to edit the details of a selected KPI.
	Delete. Click to delete one or more selected KPIs.
	Select all. Select all the KPIs.
	Clear Selection. Clear the selection of KPIs.

UI Element	Description
KPI	The name of the KPI propagated to the parent CIT. For information about each KPI, see "List of Service Health KPIs" on page 656.
Business Rule	The business rule used to calculate the KPI. For information about each rule, see "List of Calculation Rules in Service Health" on page 740.

Add/Edit KPI for Propagation Rule Dialog Box

This dialog box enables you to add or edit a KPI within a KPI propagation rule.

To access	In the **Add/Edit KPI Propagation Rule for CI Type** dialog box, in the **Task** area, click **New** or select a KPI and click **Edit**.
Relevant tasks	"How to Define a KPI Propagation Rule" on page 577

KPI Area

User interface elements are described below:

UI Element (A-Z)	Description
Business Rule	The business rule used to calculate the KPI. For information about each rule, see "List of Calculation Rules in Service Health" on page 740.
KPI	The name of the KPI propagated to the parent CIT. For information about each KPI, see "List of Service Health KPIs" on page 656.

Thresholds Area

This area enables you to modify the default thresholds used for the KPI's business rule; for details, see "KPI and HI Thresholds" on page 401. This area only appears if you select a rule that requires thresholds, such as the Percentage Rule.

User interface elements are described below:

UI Element (A-Z)	Description
OK, Warning, Minor, Major, Critical	Enter the required threshold value for each status in the appropriate box. Ensure that the values you enter are logically ordered.
Operator	Select the required operator. This operator is applied for all the thresholds.
Threshold Settings	Select one of the following: ➤ **Default.** Use the thresholds that are defined in the business rule repository. If you select this option, you cannot edit the threshold settings. ➤ **Custom.** Use non-default thresholds for the business rule. Select this option if you want to modify the default thresholds.

API Rule Definitions Area

This area is displayed when you select the API Group and Sibling rule in the Business Rule list.

Enter the KPI calculation script for the rule you are creating; for details, see "API Group and Sibling Rule" on page 950.

Troubleshooting the Assignment Mechanism

If the Assignment Mechanism is not working properly, you can use the following System Health monitors to help locate the source of the problem:

- **KES Availability.** Monitors that the Assignment Mechanism is up and running for each customer.
- **KES Content.** Monitors that the Assignment Mechanism content is valid.

For details, see "Data Processing Server Monitors" in *Platform Administration*.

Part IV

Repositories

20

Repositories Overview

This chapter includes:

Concepts

- Repositories – Overview on page 632
- Customizing Repository Elements on page 634

Tasks

- How to Customize a KPI, Rule, or Context Menu Repository Element on page 636
- How to Create a KPI and Rule – Example on page 637
- How to Create a Dynamic URL – Use-Case Scenario on page 641

Concepts

Repositories – Overview

HP Business Service Management repositories provide definitions for objects in the HP Business Service Management system. Many of these definitions can be customized as required by your organization.

The Repository page provides a convenient user interface for viewing and customizing the definitions contained in the repository XML definition files. These files define the templates that are used throughout HP Business Service Management to determine how source data is imported and handled, and to determine appearance and functionality for the CIs in the presentation layer.

This section includes the following:

- "Repositories" on page 632
- "Permissions" on page 633
- "Advanced Users" on page 633
- "Repositories in Service Health, SLM, and Operations Management" on page 633

Repositories

The Repository page enables you to access the following repositories:

- **KPIs.** Provides template definitions for the key performance indicators (KPIs) used in Service Health. For details, see "KPI Repository Overview" on page 652.
- **Indicators.** Provides template definitions for the event type indicators (ETIs) and health indicators (HIs) used in Service Health, SLM, and Operations Management. For details, see "Indicator Repository" on page 681.

➤ **Rules.** Provides template definitions for the business rules used with the KPIs in Service Health, and the tooltips used to display CI information. For details, see "Business Rule Repository Overview" on page 711.

The Rules API can be used to create new rules; for details see "Service Health Rules API" on page 947.

➤ **Context menus.** Provides definitions for the context menus used in Service Health. For details, see "Context Menu Repository Overview" on page 892.

Permissions

To view the repositories you must have the **Add permission for Sources** permission. To set up the permissions, select **Admin** > **Platform** > **Users and Permissions** > **Permissions Management**.

Advanced Users

Advanced users can modify existing repository objects and create new ones. This may be necessary when you want to customize the way information is presented in Service Health to fit the needs of your organization; or when you need to create new objects when integrating data from a new external system into Service Health.

Repositories in Service Health, SLM, and Operations Management

Some of the repositories are application-specific, while others are shared by different applications, as follows:

➤ **Context Menus.** The context menu repository in Service Health defines the menu commands which are used in Service Health only.

- **KPIs and Rules.** Service Health and Service Level Management use different KPIs and rules, and therefore contain two separate, independent sets of repositories for KPI and rule templates. Changing KPI or rule templates in Service Health has no effect on Service Level Management (and vice versa). For details on the Service Level Management repositories, see "KPI Repository" and "Business Rule Repository" in *Using Service Level Management*.
- **Event Type Indicators (ETIs) and Health Indicators (HIs).** The indicators repository is a shared repository for Service Health, SLM, and Operations Management. Any changes you make to ETI and HI template definitions in one of these applications will impact the other applications as well. For details, see "How the Indicator Repository is Used by BSM" on page 685.

Customizing Repository Elements

Tip: HP Professional Services offers best practice consulting; it is recommended that you use this service before making any changes to the repositories. For information about how to obtain this service, contact your HP Software Support representative.

The following repository elements can be customized:

KPIs, Rules, or Context Menus

Within the KPIs, Rules, or Context Menus repository pages there are three types of repository elements:

- **Predefined.** Out-of-the-box elements that have not been modified.
- **Predefined (Customized).** Out-of-the-box elements that have been edited.
- **Custom.** New or cloned repository elements.

You can customize KPI, Rule, or Context Menu templates in the repository page in the following ways:

- **New Item.** Creates a new repository element that is not based on an existing element. This element is labeled Custom in the Repository page.
- **Clone**. Creates a new repository element by cloning an existing element. The original element is still available, and the new cloned element can be modified.
- **Edit**. Edit an existing element. If you edit a predefined element it is labeled Predefined (Customized) in the Repository page. If you delete this element, the predefined element is automatically restored.

For details, see "How to Customize a KPI, Rule, or Context Menu Repository Element" on page 636.

Event Type Indicators or Health Indicators

You can create new ETI and HI templates, or edit existing templates, using the Indicators repository. For details, see "How to Create or Edit an ETI or HI Template in the Indicator Repository" on page 689.

Tasks

How to Customize a KPI, Rule, or Context Menu Repository Element

This task provides general instructions for creating and editing a KPI, Rule, or Context Menu repository element. For scenarios illustrating how to customize specific types of elements, see:

- **KPIs and Business Rules.** "How to Create a KPI and Rule – Example" on page 637.
- **Context Menus.** "How to Create a Dynamic URL – Use-Case Scenario" on page 641.

For details on customizing an event type indicator or health indicator, see "How to Create or Edit an ETI or HI Template in the Indicator Repository" on page 689.

Note: Changes made to the repositories may adversely affect functionality. Only administrators with advanced knowledge of Service Health should perform changes.

To customize a KPI, rule, or context menu repository element:

1 Open the **Admin** > **Service Health** > **Repository page** and select the KPIs, Business Rules, or Context Menus repository.

2 Perform one of the following actions:

- To create a new element, click the **New** button.
- To clone an existing element, select an element and click **Clone**. A clone of the original element appears in the repository, labeled **Custom**. Select the Custom element, and click the **Edit** button.
- To edit an existing element, select the element and click the **Edit** button.

3 In the dialog box that appears, define the repository element as described in the following sections:

- "New KPI/Edit KPI Dialog Box" on page 668
- "New Rule/Edit Rule Dialog Box" on page 871
- "New Context Menu/Edit Context Menu Dialog Box" on page 935

4 Click **OK** to save the changes.

How to Create a KPI and Rule – Example

This example illustrates how to create a KPI with corresponding rule.

This task includes the following steps:

- "Create a KPI" on page 637
- "Create a rule" on page 639

1 Create a KPI

Create a clone of the OT Impact KPI.

a Select **Admin** > **Service Health** > **Repositories** > **KPIs** to open the KPIs page.

b Select the **OT Impact** KPI you want to clone.

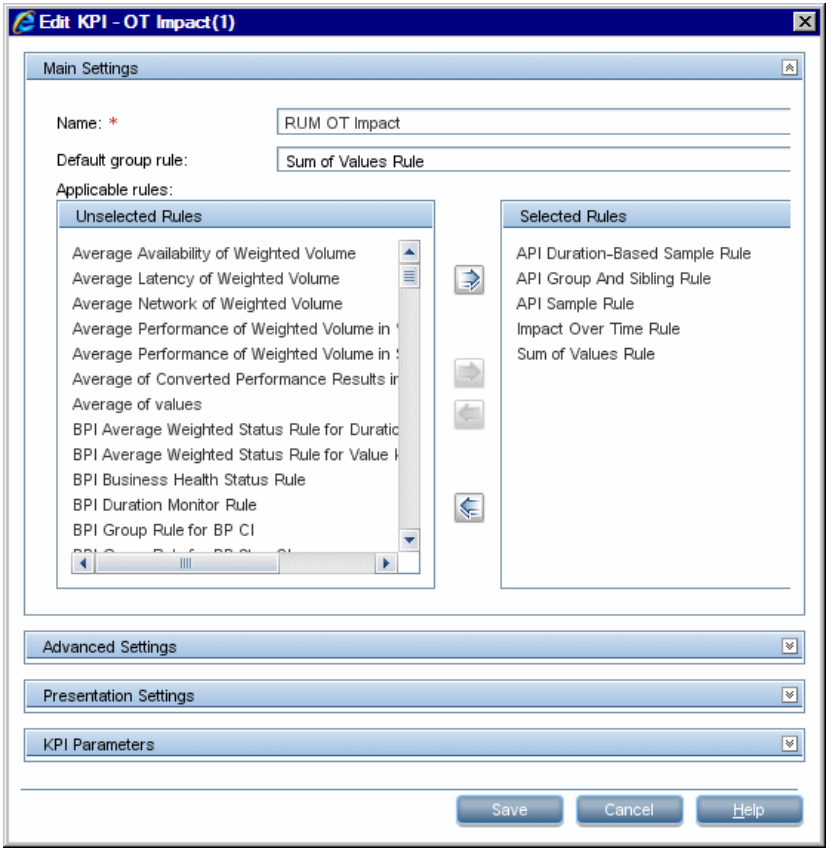
Operational Status	615	Predefined	BPI Operational Status Rule
OT Impact	13	Predefined	Sum of Values Rule
Performance	6	Predefined	Worst Child Rule

c Click the **Clone** button. The cloned KPI appears, labeled **Custom.**

Operational Status	615	Predefined	BPI Operational Status Rule
OT Impact	13	Predefined	Sum of Values Rule
OT Impact(1)	2001	Custom	Sum of Values Rule
Performance	6	Predefined	Worst Child Rule

d Click the **Edit** button to open the **Edit KPI** dialog box. For details, see "New KPI/Edit KPI Dialog Box" on page 668.

e Change the name of the KPI to **RUM OT Impact,** and click **Save**.



The result is as follows:

RT Impact	11	Predefined	Sum of Values Rule
RUM OT Impact	2001	Custom	Sum of Values Rule
SAP	305	Predefined	Worst Child Rule

2 Create a rule

Create a new rule: RUM Impact Over Time. This is a clone of the Impact Over Time rule, and uses different criteria to calculate the financial loss of downtime.

a Select **Admin** > **Service Health** > **Repositories** > **Business Rules** tab menu option to open the Business Rules page.

b Select the **Impact Over Time Rule** that you want to clone.

HP Worst Child Rule	Predefined	Calculates the status for the HP System KPI bas
Impact Over Time Rule	Predefined	Calculates the financial loss due to non-availabil
Locations Grouped Parent Rule	Predefined	When a SAP System CI or a Siebel Enterprise C

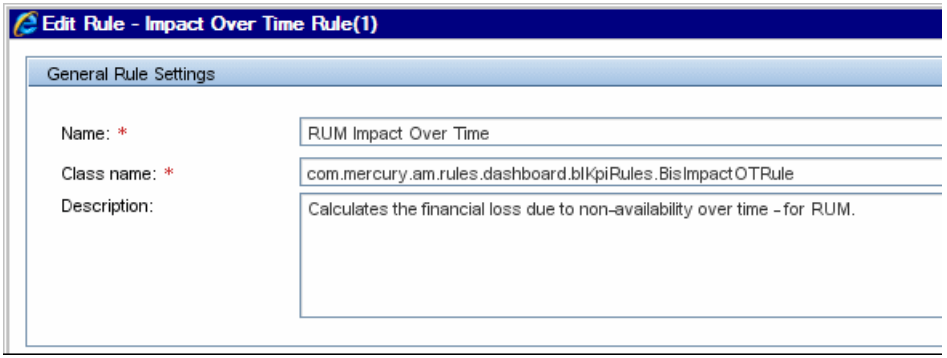
c Click the **Clone** button. The cloned rule appears in the **Custom Business Rules** area.

HP Worst Child Rule	Predefined	Calculates the status for the HP System KPI ba
Impact Over Time Rule	Predefined	Calculates the financial loss due to non-availabi
Impact Over Time Rule(1)	Custom	Calculates the financial loss due to non-availabi
Locations Grouped Parent Rule	Predefined	When a SAP System CI or a Siebel Enterprise

d Click the **Edit** button to open the Edit Rule dialog box.

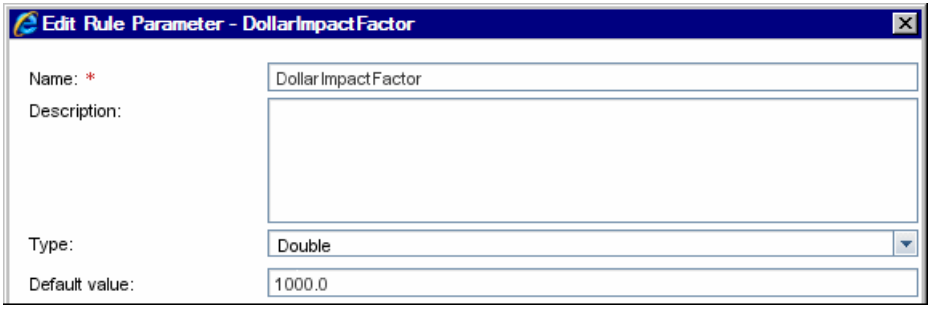
e Change the name of the rule to **RUM Impact Over Time**.

f In the **General Rule Settings** area, add **- for RUM** at the end of the description to indicate that the rule is for Real User Monitor.

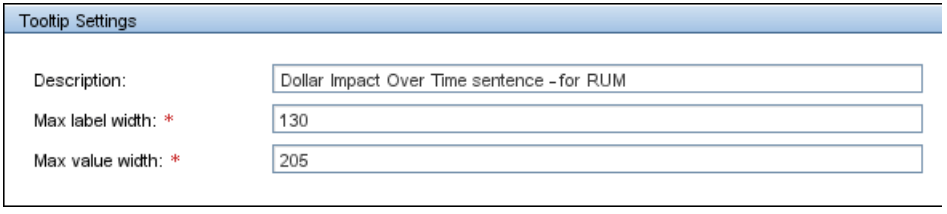


g In the **Rule Parameters** area, select the **DollarImpactFactor** parameter and click the **Edit** button to open the Edit Rule Parameter dialog box.

h Change 600 to 1000 in the **Default Value** field, and save the change.



i In the **Tooltip Settings** area, add **- for RUM** at the end of the tooltip name.



j Click **Save** to save the changes to the rule.

The result is as follows:

RUM Event Monitor Volume Rule	Predefined	Displays the total number of times that a defined event or error (monitored by
RUM Impact Over Time	Custom	Calculates the financial loss due to non-availability over time - for RUM.
RUM Location Session Statistics Monitor Availa...	Predefined	Displays 100% * (total number of active sessions - number of active sessions

---

Tip: Because the new rule is a clone of a rule that was applicable to the original KPI, the cloned rule is automatically applicable to the cloned KPI. If you need to make a rule applicable to a KPI, open the KPI for editing, and add the rule to the Selected Rules list. For details, see "New KPI/Edit KPI Dialog Box" on page 668.

How to Create a Dynamic URL – Use-Case Scenario

This use-case scenario describes how to create a dynamic URL context menu item and add it to a context menu.

You want to create new context menu options for CIs in Service Health. These options launch the NNMi views from Service Health.

This scenario includes the following steps:

- "Identify the URLs for your context menus" on page 642
- "Create a new context menu" on page 643
- "Create a new context menu group (optional)" on page 643
- "Create the individual context menu actions" on page 643
- "Add the definition for each parameter of the URL" on page 645
- "Create the other URLs" on page 646
- "Assign the NNMi context menu to the NNMi CIs" on page 647
- "Test the context menu" on page 647
- "Results" on page 649

1 Identify the URLs for your context menus

The URLs you want to access have the following format:

- showForm:
  http://unv08nnm:8004/nnm/launch?cmd=showForm&objtype=Node&nodename=unv08nnm&j_username=admin&j_password=admin.
- showLayer2:
  http://unv08nnm:8004/nnm/launch?cmd=showLayer2Neighbors&objtype=Node&nodename=unv08nnm&j_username=admin&j_password=admin
- showLayer3:
  http://unv08nnm:8004/nnm/launch?cmd=showLayer3Neighbors&objtype=Node&nodename=unv08nnmj_username=admin&j_password=admin
- showView:
  http://unv08nnm:8004/nnm/launch?cmd=showView&objtype=Node&j_username=admin&j_password=admin

Unv08nnm is the Network Node Manager server in the Business Service Management (BSM) hosted solution.

The first part of the URL – before the question mark – is the static part of the dynamic URL used to create the context menu option and the second part of the URL consists of parameters used by the dynamic URL. Each parameter and its value is separated from the others by an ampersand (**&)**.

To create the context menu item in the Service Health Repositories, you can either add a completely new menu item, or clone an existing one that is similar to what you need and edit its properties. The new menu option (NNMi) is added to the context menus used for the NNMi CIs.

2 Create a new context menu

Create a context menu named NNMi. This will be used to attach the menu actions to the relevant CIs. For details, see "Assign the NNMi context menu to the NNMi CIs" on page 647.

a Select **Admin** > **Service Health** > **Repositories** > **Context Menus** to open the Context Menus page.

b In the **Context Menus** tab, click **New Context Menu**. The New Context Menu dialog box is displayed.

c Enter a name for the context menu you are creating (for example, NNMi).

3 Create a new context menu group (optional)

Create a context menu group named NNMi. This is optional, and enables you to group all the related menu actions together.

a In the New Context Menu - NNMI dialog box, select **New** > **Group**. The New Group dialog box is displayed.

b Enter a name for the context menu group you are creating (for example, NNMi).

4 Create the individual context menu actions

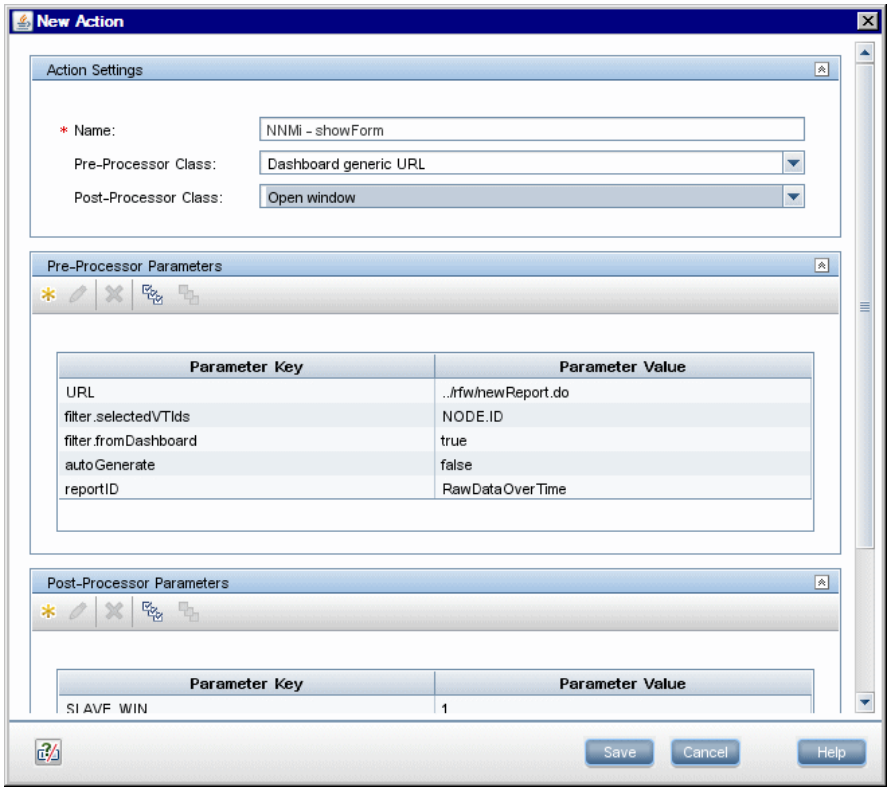
For each one of the URLs above, create an individual context menu action. For example, for the showForm URL:

a In the New Group dialog box, select **New Action**. The New Action dialog box is displayed.

b Enter the following information:

- **Name.** Enter a name for the context menu you are creating, for example, NNMi - showForm.
- **Pre-processor Class.** Select **Dashboard generic URL** from the list.

➤ **Post-processor Class**. Select **Open Window** from the list.

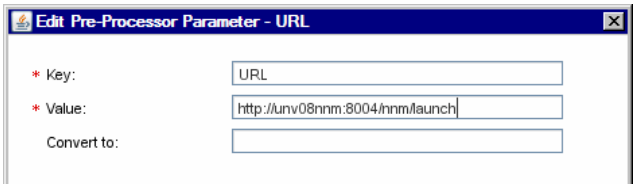


When you select the **Pre-processor Class** and **Post-processor Class** options, the default parameters for each selection are automatically added in the **Pre-processor Parameters** and **Post-processor Parameters** areas.

c Delete the following default parameters: **filter.selectedVTIds**, **filter.fromDashboard**, **autoGenerate**, and **reportID**.

d Click the **Edit** button for the URL parameter and in the Pre-processor Parameter Details dialog box, enter the following information:

- **Value.** Enter the static part of the URL: **http://unv08nnm:8004/nnm/launch**.
- **Convert to.** Leave empty.



Tip: For static URLs you can enter the complete URL in the Value field.

---

5 Add the definition for each parameter of the URL

For each one of the URLs above, add the definition for each parameter of the URL. For example, the **showForm** URL has the following parameters:

http://unv08nnm:8004/nnm/launch?cmd=showForm&objtype=Node&nodename=unv08nnm&j_username=admin&j_password=admin.

You must define separately each pre-processor parameter.

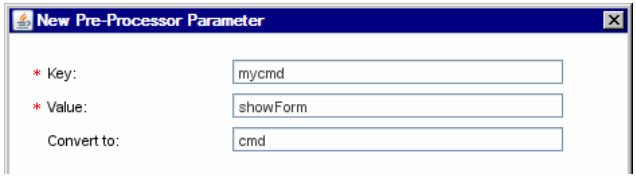
In the New Action Details dialog box, enter the information for each parameter as listed in the table below and click **OK**.

	cmd= showForm	**objtype= code**	**nodename= unv08nnm**	**j_username= admin**	**j_password= admin**
Key	mycmd	mysubcmd	mysubsubcmd	username	password
Value	showForm	Node	NODE.PROPS.display_label	admin	admin
Convert to	cmd	objtype	nodename	j_username	j_password

NODE.PROPS.display_label returns the name of the CI that you right-click to use the NNMi context menu action. It searches for the CI (NODE) where the cursor is located, and then for the CI Property (PROPS) that corresponds to the CI name (data_name). The name of the CI that you right-click is then changed into the nodename parameter that is used by the URL to access the correct information.

You can also use:

- NODE.ID to return the CI ID Symbol in the view.
- NODE.CMDB.ID to return the CI CMDB ID.
- NODE.PROPS.data_name to return the CI name.



a In the **Post-processor Parameters** area:

- Click the **Edit** button for **WIN_NAME** to open the Post-processor Parameter Details dialog box. In the **Value** box, enter a name for the window opened by the menu action, for example, NNMi.
- Click the **Edit** button for **SLAVE_WIN** to open the Post-processor Parameter Details dialog box. Make sure that the value of the **SLAVE_WIN** parameter is 0 to open a new window.

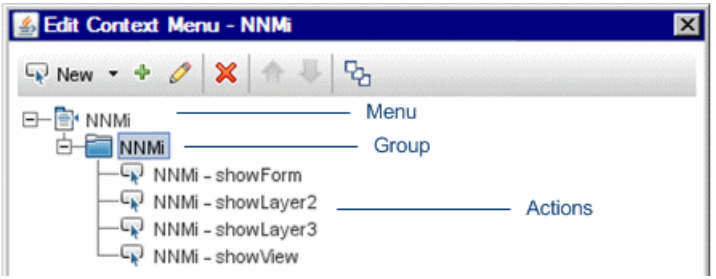
b Click **Save** to close the New Action dialog box.

6 Create the other URLs

In the same way as explained in "Create the individual context menu actions" on page 643 and "Add the definition for each parameter of the URL" on page 645, create the context menu actions for each URL.

Within the NNMi context menu group, create the following menu actions: NNMi - showForm, NNMi - showLayer2, NNMi - showLayer3, and NNMi - showView.

Note: showView menu action does not need a **mysubsubcmd** parameter.



7 Assign the NNMi context menu to the NNMi CIs

In the relevant view, select the NNMi CIs and assign the context menu to the CIs.

a Select **Admin** > **Service Health** > **CI Indicators.**

b Select the appropriate view to assign the Context Menu to the view's CIs.

c Select the NNMi CIs in the **CI Indicators** tab, and click the **CI Properties** tab in the lower pane.

d Click **Add Context Menu** in the Context Menus area, and move **NNMi** from the **Available Context Menus** list to the **Active Context Menus** list.

The NNMi context menu is displayed in the Context Menus area of the KPIs page.

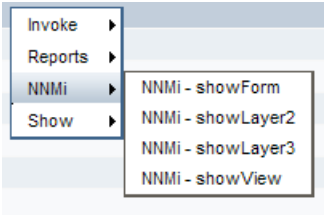
8 Test the context menu

When you right-click the NNMi CI in the defined view, the display name of the CI is passed to the URL you select.

Check that the context menu and context menu actions are displayed for the appropriate CI in the relevant view and that they open the correct URL.

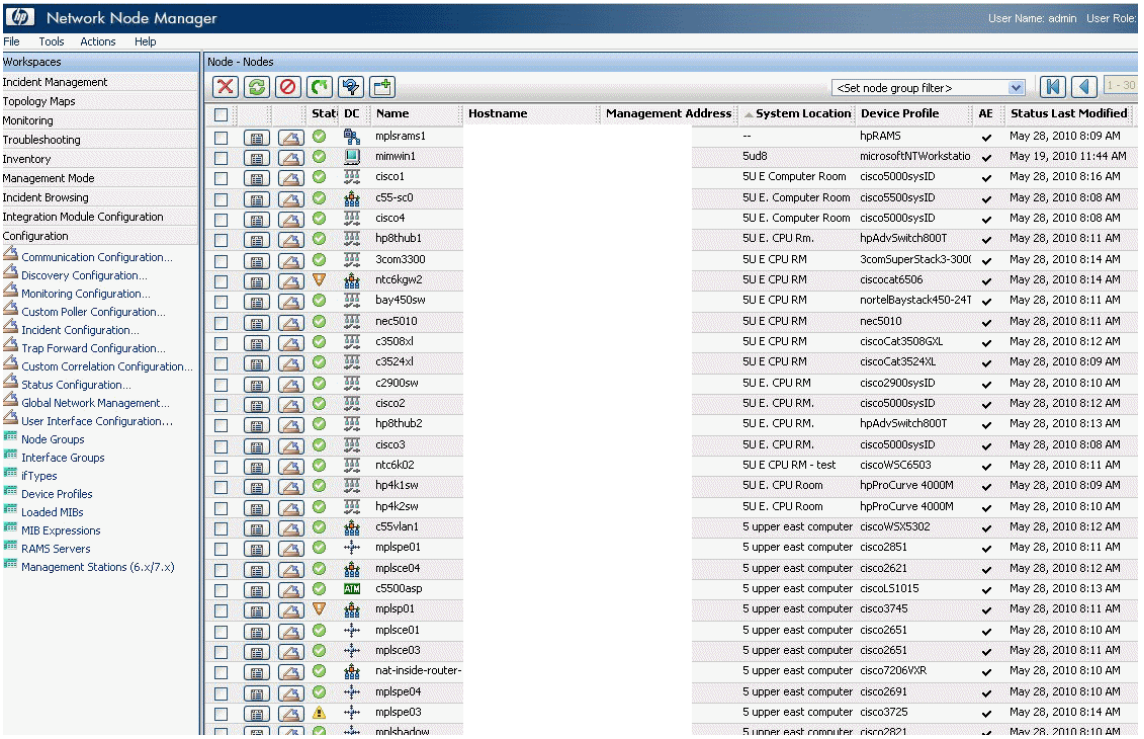
a Select **Applications** > **Service Health**.

b In one of the Service Health application tabs, open the view where you added the context menu, and access the menu commands for the CI. The following menu appears:



9 Results

The URL shows all the neighbors of the selected CI in the NNM map.



21

KPI Repository

This chapter includes:

Concepts

➤ KPI Repository Overview on page 652

Tasks

➤ How to Customize a KPI Template in the Repository on page 653

Reference

➤ List of Service Health KPIs on page 656

➤ KPIs Repository User Interface on page 665

Concepts

KPI Repository Overview

KPIs (Key Performance Indicators) provide quantifiable measurements to help you monitor real-time business performance, and assess the business impact of problems in the system. For more information about KPIs, see "HI and KPI Definitions" on page 398.

The Service Health KPI Repository includes templates of all of the KPIs that can be used within Service Health. Each KPI template is assigned a default business rule, and is defined by an internal ID number. For a list of out-of-the-box KPIs, see "List of Service Health KPIs" on page 656.

Advanced users can modify the predefined KPI templates and create new KPI templates to customize how information is presented. For example, you may want to create new KPI templates when integrating data from a new external system into Service Health.

Within the KPI Repository, KPIs are categorized as follows:

- **Predefined.** Out-of-the-box KPIs.
- **Predefined (Customized).** Out-of-the-box KPIs that have been edited.
- **Custom.** New or cloned KPIs.

For instructions on how to edit KPI templates in the repository, see "How to Customize a KPI Template in the Repository" on page 653. For details on the user interface, see "KPIs Repository page" on page 666.

Tasks

How to Customize a KPI Template in the Repository

The following section describes how to customize a KPI template in the KPI Repository.

For an example illustrating how to customize a KPI template, see "How to Create a KPI and Rule – Example" on page 637.

Tip: HP Professional Services offers best practice consulting; it is recommended that you use this service before making any changes to the repositories. For information about how to obtain this service, contact your HP Software Support representative.

This task includes the following steps:

- "Create a customized KPI" on page 654
- "Edit KPI details" on page 654
- "Specify KPI parameter details" on page 654
- "Set a KPI and its parameters back to default" on page 655

1 Create a customized KPI

To customize a KPI in the KPI Repository, select **Admin**> **Service Health** > **Repositories** > **KPIs**. Open a KPI template for editing using one of the following methods:

- **New KPI.** Creates a KPI that is not based on an existing KPI. To create a new KPI, click the **New KPI** button in the KPI Repository page.
- **Clone KPI**. Creates a KPI by cloning an existing KPI. The original KPI is still available, and the new cloned KPI can be modified. To clone a KPI, select a KPI in the KPI Repository page and click the **Clone KPI** button. The new KPI will be labeled **Custom**. Select the new KPI and click the **Edit KPI** button to open it for editing.
- **Edit KPI**. Modifies an existing KPI. To edit a KPI, select a KPI in the KPI Repository page and click the **Edit KPI** button. If you edit a predefined KPI, it will be labeled **Predefined (Customized)**.

For user interface details, see "KPIs Repository page" on page 666.

2 Edit KPI details

After you open a KPI template for editing, define the KPI's settings as required. For user interface details, "New KPI/Edit KPI Dialog Box" on page 668.

3 Specify KPI parameter details

In the Parameter Details dialog box, modify existing information or enter new information about the predefined KPI parameters. For user interface details, see "New/Edit KPI Parameter Dialog Box" on page 678.

4 Set a KPI and its parameters back to default

If you have edited a KPI, you might want to return it to its default settings. Note that this is only applicable for KPIs whose type is **Predefined (Customized)**. There are two ways to restore KPI elements to default:

- **Restore all default settings of a KPI.** Within the KPI Repository page, select a KPI whose type is Predefined (Customized), and click the **Restore to Default** button. The KPI is returned to its default settings, and its type reverts to Predefined.
- **Restore specific settings of a KPI.** Within the KPI Repository page, open a predefined (customized) KPI for editing, and click the **Restore Defaults** button. The elements that have been modified are automatically selected. Select the elements which you want to restore to default, and click **Save**.

  For details on the user interface, see "Restore Defaults Dialog Box" on page 679.

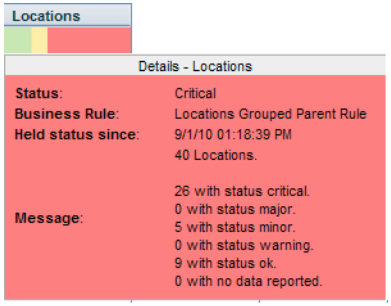
Reference

List of Service Health KPIs

This section provides information about the KPI templates available in the KPI repository.

KPI (KPI #)	Description
Application Availability (7)	Measures availability of End User CIs (for example: Applications, BTFs, and Business Transactions).
Application Performance (6)	Measures performance on End User CIs (for example: Applications, BTFs, and Business Transactions).
Backlog (600)	**Backlog KPI for Business Process Insight Data** Displays the backlog information of the business process, business activity or business process monitor, from the Business Process Insight application.
	Backlog KPI for TransactionVision Data Displays information on the number of backlogged (in-process) transactions on the target machine, as determined by TransactionVision.
Business Health (620)	Displays the worst status of the following KPIs monitored by HP Business Process Insight, for the process, and its children: **Backlog**, **Business Impact**, **Business Performance**, **Value**, and **Volume**. (This can be modified in **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings Manager** > **Applications** > **Business Process Insight** > **List of Business KPIs**.) The **Business Health** KPI provides a high-level indication of how the business process is currently performing; if the KPI indicates a problem, drill down into the process to locate the underlying problematic KPI.
Business Impact (602)	Displays the health of the process monitored by the HP Business Process Insight application.

KPI (KPI #)	Description
Business Performance (631)	Displays information on the amount of time taken to complete the business process, business activity or business process duration monitor.
Delays (1313)	Displays information on the delayed (late) transactions on the target machine, as determined by TransactionVision. A transaction is defined as late when its response time exceeds a defined threshold in TransactionVision.
Duration (601)	Displays different information depending on the rule associated with the Duration KPI. A tooltip indicates which metric is involved.
Efficacy (630)	The Efficacy KPI is a custom KPI for measuring the efficiency and capacity of a business process. You can create a custom API rule for the **Process Efficacy** health indicator, and assign this health indicator to this KPI. For more details, see "Service Health Rules API" on page 947.
Exceptions (1310)	Displays information on transactions that did not follow the expected flow path on the target machine, and are therefore classified as exceptions in TransactionVision.
Failures (1312)	Displays information on the failed transactions on the target machine, as determined by TransactionVision. A transaction is classified as "failed" when it does not match the attribute or pattern defined as failure in TransactionVision.
Generic (1500)	Displays information calculated by the Generic Formula rule or by the Summary of Values rule.
Legacy System (1)	Displays information relating to SiteScope metrics which are not aligned with existing health indicators, as well as data for SiteScope monitors, measurements, and groups in the System Monitor view. For Siebel CIs, this KPI indicates physical problems with this CI or underlying CIs, provided by SiteScope physical monitors (for example: CPU monitor, disk space monitor, and so forth). SiteScope is the source of the data. For SAP CIs, this KPI indicates physical problems with underlying hosts, provided by SiteScope physical monitors (for example: CPU monitor, disk space monitor, and so on). By default, the System KPI does not appear in the view. If you are using a regular SiteScope monitor (which creates the System KPI) and you want to display the System KPI in the view, you have to add the System KPI manually to the CI.

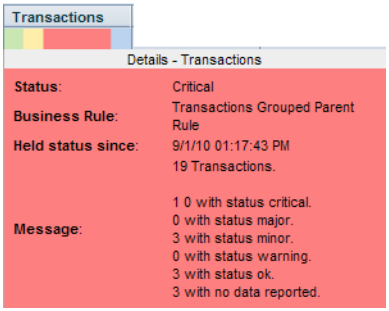
KPI (KPI #)	Description
Locations (303)	**Deprecated.** The Locations KPI is a bar that includes up to six colored sections. Each colored section represents the relative amount of Business Process Steps with the end-user experience status (the worst status between **Application Performance** and **Application Availability**) that corresponds to the color, at that location. The colors correspond to the Business Process Monitor Application Performance/Application Availability colors. For example, if there are ten SAP Business Process Steps under the Locations container, five with **OK** end-user experience, two with **Minor** status, two with **Critical** status, and one with **No Data** status, the bar displays: 50% green, 20% yellow, 20% red, and 10% light blue. **Tooltip:** The KPI's tooltip displays how many locations have each status, and the total number of locations. The tooltip's color represents the worst location status. For example: 
Network Availability (308)	Displays information relating to availability of network devices.
Network Performance (1077)	Displays information relating to performance measurements of network devices.
Number of Open Incidents (2600)	Displays the number of incidents that exist in HP Service Manager, and that currently have the initial status and final status defined in the rule parameter and are associated with the business service. Tickets can have any status between Initial Status and Final Status as long as they had the initial status after the integration and that they are not currently closed.

KPI (KPI #)	Description
Operational Status (615)	Displays the worst status of all operational (non-business) KPIs monitored by Business Process Insight, for the process, and its children. (The business KPIs include **Backlog**, **Business Impact**, **Business Performance**, **Value**, and **Volume.** This can be modified in **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings Manager** > **Applications** > **Business Process Insight** > **List of Business KPIs**. Their worst status is displayed in the Business Health KPI.) The **Operational Status** KPI provides a high-level indication of how the operational (non-business) KPIs are currently performing; if the KPI indicates a problem, drill down into the process activities and any linked system CIs to locate the underlying problematic KPI.
OT Impact (13)	Displays information relating to the financial loss caused to the organization when an item is unavailable over time. By default, the calculation is based on the Application Availability KPI. At the leaf CI level, you should attach the Impact Over Time rule to the OT Impact KPI and the Application Availability KPI to the same CI. The Impact Over Time rule measures the total time the Application Availability KPI attached to the same CI has the red status, and then calculates the financial loss using the rule parameter: **DollarImpactFactor**. This parameter represents the amount of dollars lost in an hour if the system is unavailable.At the group level, you should attach the Sum of Values rule to the OT impact KPI. The Sum of Values rule calculates the sum of all of the values of the OverTime Impact KPI of its children.The OT Impact rule calculates financial loss as you add the OT Impact KPI. The calculation has no time limitation. To restart the calculation you can: ➤ change the rule's objectives ➤ delete the OT Impact KPI and add it again Restarting HP Business Service Management might restart the financial loss calculation, but because of Service Health calculation persistency, the last known financial value might be recovered instead.

KPI (KPI #)	Description
Performance Analytics (635)	Displays information collected from Service Health Analyzer (SHA), indicating the severity of an anomaly on the selected CI (and its child CIs), as follows: ➤ **Critical.** The CI has an anomaly with BPM or RUM metrics, meaning the anomaly has a business impact. ➤ **Major.** The CI has an anomaly without BPM or RUM metrics, meaning the anomaly does not have a business impact. ➤ **Normal.** There are no open anomalies on the CI. Other severities are defined by patterns that SHA has identified as an anomaly type.
PNR (215)	Displays information collected from Service Level Management, regarding how much more time a CI can be unavailable before the SLA is in breach of contract, based on any SLM KPI. When configuring a Service Health PNR KPI, you define the SLA, tracking period, calendar, and SLM KPI which are used to calculate the Service Health PNR value. For example, if the SLA defines that availability must be 98.5%, the system may be unavailable 1.5% of the time. If the total time monitored is 100 hours, the PNR KPI can be set to enter Warning state when the system has been unavailable for one hour (or 1% of the total time), and to enter Critical state when the system has been unavailable for 1 1/2 hours. At this point the SLA is in breach, and the agreement can no longer be met. For details on how the PNR KPI is calculated, see "PNR (Point of No Return) KPI Calculation" on page 422.
RT Impact (11)	Displays information relating to the financial loss caused to the organization in real time; the calculation is based on the Application Availability KPI. At the leaf CI level, you should attach the Real Time Impact rule to the RT impact KPI and the Application Availability KPI to the same CI. The Real Time Impact rule measures the time the Application Availability KPI attached to the same CI has the red status, and then calculates the financial loss using the rule parameter: **DollarImpactFactor**. This parameter represents the amount of dollars lost in an hour if the system is unavailable. If the Application Availability KPI status is not red, then the Real Time Impact value is 0.0$.At the group level, you should attach the Sum of Values rule to the RT Impact KPI. The Sum of Values rule calculates the sum of all of the values of the Real Time Impact KPI of its children. When availability status returns to green, the value for this KPI reverts to 0.

KPI (KPI #)	Description
SAP (305)	Indicates problems related to the SAP infrastructure. The data that is reported by this KPI comes from CCMS measurements from SiteScope.
SAP Alert (306)	SAP Alerts are created by the SAP system for various reasons; for example, an incorrect user login, exceeded CCMS thresholds, and so on. SAP alerts are retrieved from the SAP system by the SiteScope CCMS Alerts monitor. They can be displayed in the Service Health using a SAP Alert KPI whose color is determined by the SAP system. After you have handled the problem that triggered the alert, perform an alert completion procedure. This causes the alert to be acknowledged.
Security (307)	Displays the status of the security in the Operations Manager application. This is an optional KPI. It is displayed when you select **Create Network and Security KPIs** in the HP Operations Manager integration definition. For details, see "Understanding Node, Tickets, or Node - Running Software Integration Types" in *Solutions and Integrations*.
Siebel (300)	This KPI's color is provided by Siebel-specific monitoring information. It separates Siebel problems from more general, infrastructure-related problems. It provides Siebel-specific data, such as number of tasks, processes, and so. The SiteScope Siebel monitor is the source of the data.
Siebel Errors (301)	Displays the number of tasks that are in error, provided by the SiteScope **Number of Tasks in Error** measurement. The source of the data is the Siebel monitor. This is a Siebel-specific KPI.
Siebel Sessions (304)	Displays the number of sessions that are running in a Siebel application server. A session is a task that is in running mode and interactive. The value of the number of sessions come from a measurement that is provided by the SiteScope Siebel monitor. This KPI does not propagate up in the hierarchy.
SiteScope Health (1003)	A SiteScope Health KPI is attached to each SiteScope Profile CI. It displays the availability of the SiteScope. SiteScope periodically (every minute) sends a heartbeat to BSM. If the heartbeat is received by BSM, the status of the SiteScope Health KPI is green. If the heartbeat is not received, the status of the KPI is blue (No data). This indicates that there is no communication between SiteScope and BSM. In this case, the status of all the SiteScope monitor and group CIs is also blue.

KPI (KPI #)	Description
Software Availability (15)	Displays information relating to availability of software element CIs (for example, databases, J2EE servers, and web servers).
Software Performance (1075)	Displays information relating to performance on software element CIs (for example, databases, J2EE servers, and web servers).
System Availability (1001)	Displays information relating to availability of system element CIs, such as servers and disks.
System Performance (1002)	Displays information relating to performance measurements of monitored system element CIs, such as servers and disks.
Throughput (400)	**For SOA.** Displays the number of calls to the item per minute.

KPI (KPI #)	Description
Transactions (302)	The Transactions KPI is a bar that includes up to six colored sections. Each colored section represents the relative amount of Business Process Steps with the end-user experience status (the worst status between **Application Performance** and **Application Availability**) that corresponds to the color. The colors correspond to the Business Process Monitor Application Performance/Application Availability colors. For example, if there are ten SAP Business Process Steps under the Transactions container, five with **OK** end-user experience, two with **Minor** status, two with **Critical** status, and one with **No Data** status, the bar displays: 50% green, 20% yellow, 20% red, and 10% light blue. The KPI's tooltip displays a list of how many transactions have each status, and the total number of transactions. The tooltip's color is set according to the worst transaction status. For example: 
Unassigned Events (10005)	Displays information relating to the number of unassigned events on the CI, which are not handled in the event lifecycle. **Note:** When there is new information on a CI, Operations Management automatically sends an HI value for this KPI. These HIs are hidden and cannot be deleted; a hidden KPI assignment creates this KPI. To remove this KPI from Service Health display, access Service Health Administration > View Builder. Right-click a view in the View Selector, and select **Properties**. In the popup window, deselect the KPI in the **Include in View** list. This configuration is for a specific view.

KPI (KPI #)	Description
Unresolved Events (10004)	Displays information relating to the number of events on the CI whose status in not normal. **Note:** When there is new information on a CI, Operations Management automatically sends an HI value for this KPI. These HIs are hidden and cannot be deleted; a hidden KPI assignment creates this KPI. To remove this KPI from Service Health display, access Service Health Administration > View Builder. Right-click a view in the View Selector, and select **Properties**. In the popup window, deselect the KPI in the **Include in View** list. This configuration is for a specific view.
Value (1311)	**Value KPI for Business Process Insight Data** Displays information on the monetary value of the business process, business activity or business process value monitor. The default rule is Worst Status Rule, which calculates the KPI based on the worst status (or value) of the associated health indicators.
	Value KPI for TransactionVision Data Displays information on the monetary value of the transactions on the target machine, as determined by TransactionVision. This KPI uses, by default, the In-process Transaction Value for CIs monitored by TV. To see data on *completed* transactions, change the HI in the KPI assignment for the KPI. For details on KPI assignments, see "Indicator Assignments and Propagation" on page 557. **Note:** This KPI does not include predefined objectives, and so displays **Informational** (blue) status in Service Health. To calculate KPI status, define meaningful objectives for the KPI using the **Admin** > **Service Health** > **CI Indicators tab**.
	Note: This KPI does not include predefined objectives, and so displays **Informational** (blue) status in Service Health. To calculate KPI status, define meaningful objectives for the KPI using the **Admin** > **Service Health** > **CI Indicators** tab.

KPI (KPI #)	Description
Volume (1050)	**Volume KPI for Business Process Insight Data** Displays the value or count of the number of completed instances for the business process, business activity or business process monitor. The default rule is Worst Status Rule, which calculates the KPI status based on the worst status of the associated health indicators.
	Volume KPI for Real User Monitor Data Displays information on traffic volume, such as transaction runs, amount of sessions, errors, and events.
	Volume KPI for TransactionVision Data Displays information on the volume of completed transactions on the target machine, as determined by TransactionVision.
	Note: This KPI does not include predefined objectives, and so displays **Informational** (blue) status in Service Health. To calculate KPI status, define meaningful objectives for the KPI using the **Admin** > **Service Health** > **CI Indicators** tab.

KPIs Repository User Interface

This section includes:

- KPIs Repository page on page 666
- New KPI/Edit KPI Dialog Box on page 668
- New/Edit KPI Parameter Dialog Box on page 678
- Restore Defaults Dialog Box on page 679

KPIs Repository page

This page displays the list of KPI templates available in Service Health. The KPI repository enables an advanced user to modify existing KPIs and create new ones.

To access	Select **Admin** > **Service Health** > **Repositories** > **KPIs**
Important information	To modify a KPI, select the KPI and click the **Edit** button, or right-click the KPI and access the **Edit** menu command. For details, see "New KPI/Edit KPI Dialog Box" on page 668. For a list of predefined KPIs, their descriptions, and the rules attached to the KPIs, see "List of Service Health KPIs" on page 656.
Relevant tasks	"How to Customize a KPI Template in the Repository" on page 653

User interface elements are described below:

UI Element (A-Z)	Description
	New KPI. Click to create a new KPI.
	Clone KPI. Select a KPI and click the **Clone KPI** button to create a new KPI using the selected KPI as a template. The original KPI does not change. The new KPI's type is Custom.
	Edit KPI. Click to edit the details of a selected KPI.
	Delete KPI. Click to delete one or more selected Custom KPI. If you delete a Predefined (Customized) KPI, it is restored to default. Predefined KPIs cannot be deleted.

UI Element (A-Z)	Description
	Restore to Default. Select an edited KPI whose Type is Predefined (Customized), and click to restore it to its original settings.
	Click to refresh the page.
	Click to display help on predefined KPIs.
	Export to Excel. Click to export the table to an Excel file.
	Export to PDF. Click to export the table to a PDF file.
	Change visible columns. Opens the Choose Columns to Display dialog box, where you select the columns you want to display in the table. By default, the ID column which contains internal KPI ID numbers is not displayed.
Default Group Rule	This specifies the group rule that is defined by default for this KPI.
Domain	The domain which contains this KPI. Domains are groups of KPIs which monitor similar functions (for example Application or Network); this enables you to filter KPIs according to these groupings. For details see "KPI Domains" on page 411.
ID	The ID number used to identify the KPI in the source adapter templates.

UI Element (A-Z)	Description
Name	The name of the KPI.
Type	Indicates one of the following KPI types: ➤ **Custom.** New or cloned KPIs. ➤ **Predefined.** Out-of-the-box KPIs that have not been modified. ➤ **Predefined (Customized).** Out-of-the-box KPIs that have been edited. You can restore such a KPI to its original settings using the **Restore to Default** button.

New KPI/Edit KPI Dialog Box

This dialog box enables you to define KPI details.

To access	In the KPI Repository page, click the **New KPI** button, or select a KPI and click the **Edit KPI** button.
Important information	A list of the KPIs, their descriptions, and the rules attached to the KPIs is available in "List of Service Health KPIs" on page 656.
Relevant tasks	"How to Customize a KPI Template in the Repository" on page 653

Main Settings Area

This area enables you to define the KPI name, default group rule, and which rules can be applied to the KPI.

User interface elements are described below:

UI Element (A-Z)	Description
	Click this button to move all rules to the **Selected Rules** list.
	Select a rule and click to add it to the **Selected Rules** list. Select multiple rules by holding down the CTRL key.
	Select a rule and click to remove it from the **Selected Rules** list.
	Click this button to remove all rules from the **Selected Rules** list.
Applicable Rules	Define which rules can be applied for this KPI, using the two lists: ➤ **Unselected Rules.** The list of rules which are not applicable to the KPI. ➤ **Selected Rules.** The list of rule which can be applied to the KPI. Use the arrow buttons to move rules from one list to the other. For details on the rule applicable for each KPI by default, see "List of Service Health KPIs" on page 656.
Default Group Rule	Select the group rule to be used for the next level up in the hierarchy. This list displays all of the available group rules for the applicable rule you selected in the **Applicable Rules** list. When a KPI is defined for a CI, it is usually added to a parent CI. The parent item uses the group rule to calculate the KPI status. For the list of rules, see "List of Calculation Rules in Service Health" on page 740.
Domain	Define the domain to which this KPI is assigned; for details see "KPI Domains" on page 411. Either select an existing domain, or enter a new domain name for this KPI.
Name	The name of the KPI as it is displayed in the UI.

Advanced Settings Area

This area enables you to define KPI calculation and display order, trend, and user mode.

User interface elements are described below:

UI Element (A-Z)	Description
Applicable for User Mode	Select the type of user. You can define two versions of a single Service Health KPIs for two different user types (modes): **Operations** and **Business**, where each KPI version is geared towards the particular viewing requirements of one of the user types. For details, see "KPIs for User Modes" on page 412. Select **Both** if you want to have one version of the KPI. If you select **Operations** and **Business**, it is recommended to modify the KPI's name to reflect the type of user role. For example, rename OT Impact: OT Impact - Operations.
Calculation Order	Select the KPI position. That number represents the position of the KPI in the ordered list used by Service Health when it calculates the topology. Service Health calculates the higher priority KPIs first, and then the lower priority KPIs. A KPI is dependent on another KPI when the rule that calculates the value of the first KPI uses the results of the second KPI's rule. For example, if the RT Impact KPI and the Application Availability KPI are attached to a CI, the value of the RT Impact KPI depends on the values of the Application Availability KPI. These KPIs must therefore be calculated in a specific order.

UI Element (A-Z)	Description
Display Order	Select the order in which the KPIs are displayed in Service Health.
The KPI is Critical if...	Define the trend for the KPI, as described in "KPI Trend and History Calculation" on page 408. Select: ➤ **values are smaller.** When the values are small, the KPI is critical. ➤ **no different.** When the values are not different, the KPI is critical. ➤ **values are bigger.** When the values are large, the KPI is critical.

Presentation Settings Area

This area enables you to define various aspects of how the KPI result is displayed, including formatting method, unit, value prefix and postfix.

The Status and Value fields should be changed following instructions from HP Software Support.

User interface elements are described below:

UI Element (A-Z)	Description
Formatting Method	Define the method for formatting the value of the KPI (for example: toLowerCase), using the following options: ➤ **Selection.** Select a formatting method from the list of available methods (leave blank if not required). For details, see "List of Formatting Methods" on page 676. ➤ **Other.** Specify a method that you have defined, which is not on the list of available methods. If you need to create a new method, contact HP Software Support.
Status	Represents the key used to access the appropriate KPI results map. If you create a new rule whose key is not **Status**, you must enter the new key in the **Status** box. To create a new rule with a different key, contact HP Software Support. **Default Value:** Status
Units	Enter the type of unit applicable to the rule results displayed in the KPI. The default units of measurement for objectives are: ➤ **<No unit>.** For rules that handle volume, where KPI measurements represent a simple numerical count; for example, the RUM Transaction Monitor Volume Rule. ➤ **Financial ($).** For rules that determine financial loss for a CI; for example, the Impact Over Time Rule. ➤ **Milliseconds or Seconds.** For rules that handle performance time data for a transaction or monitor; for example, the Transaction Performance Rule. ➤ **Percentage (%).** For rules that handle availability over time data for a transaction like the Transaction Availability Rule, and the PNR Rule where the KPI measurement represents percentage of time remaining for CI unavailability before the SLA is in breach of contract.

UI Element (A-Z)	Description
Value	Represents the value of the key used to access the appropriate KPI results map. This field should be changed following instructions from HP Software Support.
Value Postfix	Enter the row value postfix. This can remain blank if it is not required. For example, to indicate that the value of the KPI is in Euros, enter EUR.
Value Prefix	Enter the row value prefix. This can remain blank if it is not required. For example, to indicate that the value of the KPI is negative, enter a minus sign (-).

KPI Parameters Area

This area enables you to customize tooltip colors, text colors, and status icons for KPIs.

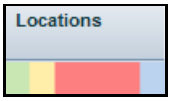
To modify a parameter, select the parameter and click the **Edit** button. For details, see "New/Edit KPI Parameter Dialog Box" on page 678.

Note: Fields regarding internal KPI parameters should only be changed following instructions from HP Software Support.

User interface elements are described below:

UI Element (A-Z)	Description
	New KPI Parameter. Click to create a new KPI parameter.
	Edit KPI Parameter. Click to edit the details of a selected KPI parameter.
	Delete KPI Parameter. Deletes one or more selected KPI parameters.

UI Element (A-Z)	Description
	Select all. Select all the KPI parameters.
	Clear Selection. Clear the selection of KPI parameters.
Bar Icon	The bar icon that is assigned to the KPI.
Key	The internal name of the parameter. For details on the default parameters, see "KPI and HI Thresholds" on page 401.

UI Element (A-Z)	Description
Presentation Type	Select how you want the KPI to be presented in Service Health. **icon**, **Text,** and **Resource text** formats display data using icons or text colored by status. **PNR bar** format is used for the PNR KPI; for details see "How to Attach a PNR KPI to a CI" on page 448. **Group bar** displays: ➤ **Transactions KPIs.** When one or more of the CI's children have the Business Transaction type, then the **Transactions** KPI is displayed as a **GROUPBAR**. ➤ **Locations KPIs.** When one or more of the CI's children has the Locations type, then the **Locations** KPI is displayed as a **GROUPBAR**. For example:  ➤ **Business Health KPIs.** ➤ At all CI levels, the groupbar displays the number of instances for each one of the Business Process Insight statuses without consideration of the Weight. At the level above the business process CI, an icon represents the status of the worst child KPI. The Weight information is displayed in the tooltip. The tooltip color matches the color of the status. The status is calculated by the rule assigned to the KPI. ➤ Above the business process CI level, the KPI displays an icon that shows the worst child status of the child CIs level. **Note:** The default type for the Business Health KPI is **GROUPBAR**.
Status Icon	The icon assigned to the KPI parameter.
Text Color	The color of the text in the tooltip.
Tooltip Color	The color of the tooltip's header and border.

List of Formatting Methods

The formatting methods that are available are used to format the result that is displayed in Service Health:

Formatting Methods	Description
analyzeSiteScopeMessage	If, in a message, a long word overlaps the end of the line, the word is truncated. The rest of the word and the rest of the message are wrapped.
encode	Inserts a back slash (\) before special characters.
formatDecimalNumber	Returns as a formatted decimal number. The number of digits after the decimal point is indicated by numAfterDot.
formatDateTime	Returns formatted as date and time: DDMMMYYYY hh:mm:ss
formatPnrValue	Formats the pnr time left in the PNR format.
getHHMMSS	Convert a string representing number of seconds to the format HH:MM:SS.
getIntValue	Returns an int number as string.
getMilliAsSec	Returns a millisecond value as seconds by dividing the value by 1000.
getMustValue	Returns ! if there is a value, otherwise returns nothing.
getRemedyETTR	Deprecated. Use the EMS integration feature. For details, see "Integration Administration Application Overview" in *Solutions and Integrations*.
getRemedyResource	Deprecated. Use the EMS integration feature. For details, see "Integration Administration Application Overview" in *Solutions and Integrations*.
getResourceString	Returns the corresponding resource string to the given string.
getStatusString	Returns the corresponding resource string to the given status string.

Formatting Methods	Description
getWeightValue	Returns the value if there is a value, otherwise returns 1.
ifEndCheck	Changes an empty string into a comment line. Inserts "--->" at the end of the string.
ifStartCheck	Changes an empty string into a comment line. Inserts "**<!--**" at the end of the string.
numberToTime	Converts a string that can represent a period of time in seconds into a more readable format.
resourceFromKey	Used to get the resource of the ticketing sample field.
returnDateAsString	Returns the given date in milliseconds in the date format as it appears in the **.resources** file.
returnDateAsStringInSec	Returns the given date in seconds in to the date format as it appears in the **.resources** file.
returnNumOfDigitAfter Point	Formats the given string and returns a string that shows only 3 digit after the point.
returnNumOfDigitAfter Point(digits)	Formats the given string and returns a decimal number. The number of digits after the decimal point is specified in **(digits)**.
returnNumOfDigitAfter PointWithDollar	Converts the given string into a decimal number with 3 digits after the decimal point preceded by a dollar sign.
returnNumOfDigitAfter PointWithEuro	Converts the given string into a decimal number with 3 digits after the decimal point followed by a Euro sign.
returnWithPercentSign	Converts the given string into a decimal number with 3 digits after the decimal point followed by a percentage sign.
toLowerCase	Returns the lowercase of the given string.
toLowerCase_encode	Works in the same way as toLowerCase but adds escaping on the return value.

New/Edit KPI Parameter Dialog Box

This dialog box enables you to customize tooltip colors, text colors, and status icons for KPIs.

To access	In the Edit KPI dialog box > KPI Parameters area, click the **New** button to enter new parameters or click the relevant **Edit** button to modify an existing parameter.
Important information	The KPI parameter details vary depending on the presentation type (bar, text, or icon), as described in the following section. The Key, From, and To fields should be changed following instructions from HP Software Support.
Relevant tasks	"How to Customize a KPI Template in the Repository" on page 653

User interface elements are described below:

UI Element (A-Z)	Description
Bar Icon	**If presentation type is a bar:** Select the bar icon that is assigned to the KPI when the KPI value is within the range specified in the **From**/**To** fields, using the following options: ➤ **Selection.** Select a bar from the list of predefined bar icons. ➤ **Other.** Enter the path to a custom bar icon. For details, see "How to Change the KPI Status Icons" on page 441.
From/To	Internal calculation values for the KPI. When the calculated value of a KPI is in the range indicated by the **From** and **To** fields, the tooltip for the KPI is assigned the color specified in the **Color** field, and the KPI is assigned the status icon specified in the **Icon** field.
Key	Internal name of the KPI parameter.

UI Element (A-Z)	Description
Status Icon	**If presentation type is an icon:** Select the icon that is assigned to the KPI when the KPI value is within the range specified in the **From**/**To** fields, using the following options: ➤ **Selection.** Select an icon from the list of predefined icons. ➤ **Other.** Enter the path to a custom status icon. For details, see "How to Change the KPI Status Icons" on page 441.
Text Color	**If presentation type is text:** Select a color for the text in the tooltip using the drop-down color palette.
Tooltip Color	Select a color for the tooltip's header and border using the drop-down color palette.

Restore Defaults Dialog Box

This dialog box enables you to restore predefined KPI settings, for KPIs whose type is Predefined (Customized).

To access	In the Edit KPI dialog box, click the **Restore Defaults** button.
Relevant tasks	"How to Customize a KPI Template in the Repository" on page 653

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<**Modified fields**>	The KPI definition fields that have been modified are automatically selected. Select the fields which you want restored to default, and click **Save**.

22

Indicator Repository

This chapter includes:

Concepts

- Indicator Repository Overview on page 682
- Events, ETIs, and HIs - Overview on page 683
- How the Indicator Repository is Used by BSM on page 685
- Mapping SiteScope Severities to HI States on page 688

Tasks

- How to Create or Edit an ETI or HI Template in the Indicator Repository on page 689

Reference

- Indicator Repository User Interface on page 692

Concepts

Indicator Repository Overview

The indicator repository contains templates for the event type indicators (ETIs) and health indicators (HIs) associated with each of the CI types (CITs) in your system. These templates include the names of the indicators that can be assigned to a CI based on its CIT, possible states and statuses for each indicator, as well as other details. HI definitions in the repository also determine whether an event is displayed in the Event Browser when an HI is assigned to a CI, or when its status is updated.

For an introduction to health indicators, see "Health Indicators and KPIs - Overview" on page 115.

BSM uses HI status and value to set KPI status and value for your monitored CIs. For details, see "KPI and HI Calculation" on page 397.

When an HI is created via the Assignment mechanism, or when it is manually assigned to a CI, its definitions are taken from the HI templates in the indicator repository.

Advanced users can modify these ETI or HI templates, and add new indicator templates to CITs, to customize how this information is calculated and presented in BSM.

- For an introduction to these indicator types see "Events, ETIs, and HIs - Overview" on page 683.
- For an overview of how the indicator repository is used to assign ETIs and HIs to CIs, and to set an indicator's status, see "How the Indicator Repository is Used by BSM" on page 685.

Note: The indicator repository contains templates for creating ETIs that can be viewed in Operations Manager *i*, and for creating HIs in Service Health and Service Level Management. You can therefore access the indicator repository from within Operations Manager *i*, Service Health, and Service Level Management administration. The repository is identical in each of these applications.

Because HIs and ETIs can be added to your BSM environment at any time using content packs, a complete list of HIs and ETIs is beyond the scope of this documentation. To see which HIs and ETIs are defined in your system, open the indicator repository as described in the following chapter. This chapter presents an overview of these indicators, and describes how to work with the indicator repository.

Events, ETIs, and HIs - Overview

The following section provides an overview of events, event type indicators (ETIs), and health indicators (HIs).

For details on how the indicator repository is used to set ETI or HI status, see "How the Indicator Repository is Used by BSM" on page 685.

This section includes the following:

➤ "Events" on page 684

➤ "ETIs" on page 684

➤ "HIs" on page 685

Events

When a significant event occurs in your environment, monitoring tools such as Operations Management and NNMi may send an event sample containing details about the event to the BSM event subsystem. The event subsystem is the part of BSM that handles events, assigns status to events, and displays events in the Event Browser.

For example, suppose the CPU load on a server in your environment exceeds a predefined threshold of 80%. If this machine is monitored by monitoring tools (such as SiteScope), one or more of these tools may send an event sample to BSM containing details on the event.

ETIs

Multiple data collectors may send event samples regarding a single event to BSM. The event subsystem generalizes these events into a common language using ETIs; ETIs are categorizations of events according to the type of occurrence (for example, CPU load passing a threshold).

Each CI type (CIT) has various ETI templates within the indicator repository, which define which things on a CI are of interest, and may be monitored by BSM.

ETI mapping rules within Operations Manager *i* map events to ETIs. In the above example, when the CPU load threshold is breached on your server, an event sample is sent to BSM. Based on the text strings in this event sample, it is assigned an ETI of CPU Load.

For details, refer to "Event Type Indicators" in *Using Operations Management*.

HIs

HIs provide fine-grained measurements for the CIs that represent your monitored business elements and processes. Some HIs display business metrics such as backlog and volume, while others display various measurements of performance and availability.

HI status is set by two types of data: event samples (for example, CPU load exceeded threshold), and metric samples (for example, response time = 6 milliseconds). Some data collectors such as SiteScope send event samples to BSM, while other such as Real User Monitor send samples containing metrics. Status for HIs is set as follows:

- Event-based HIs use event data to generate HI status; for example, using the indicator repository you can define that if the state of a particular event is Major, the corresponding HI status is Warning.
- Metric-based HIs apply calculation rules to the metrics sent by the data collectors, to create an aggregated HI value. For example, an HI can collect response times for a CI over a collection cycle, and calculate average response time for the cycle.

Within the indicator repository, you can configure an HI to send an event to the Event Browser when its status changes, showing that the HI's status has changed on a CI.

How the Indicator Repository is Used by BSM

When an event occurs in your monitored environment, a monitoring tool sends an event sample to the BSM event subsystem. Each event sample identifies the CI where the event occurred, and has a name and a state; for example, Event name = CPULoad; State = High.

When an event comes to BSM it is associated with a CI. Within the indicator repository, if the CIT of this CI does not have a corresponding ETI or HI template, the event is considered informational, and no indicator is assigned.

If the CIT has a corresponding ETI or HI template defined in the indicator repository, and the event's state is one of the states defined in the repository, the event is assigned an ETI or HI with a corresponding status.

This section includes the following:

➤ "Mapping Events to ETIs and Event-Based HIs" on page 686

➤ "Mapping Events to Metric-Based HIs" on page 687

Note: Definitions for each CIT also include inheritance patterns, so that indicator definitions on a parent CIT are also relevant for all its descendant CITs.

Mapping Events to ETIs and Event-Based HIs

An event is mapped to an ETI or an event-based HI as follows:

➤ **ETI.** An event can match an ETI definition either if a text string in the event sample has an explicit ETI field, or if ETI mapping rules in Operations Manager *i* define that this event sample is mapped to a particular ETI.

If an event matches an ETI definition but not an HI definition, the event is assigned an ETI, and it is displayed in the Event Browser. This has no impact on the CI's status in BSM.

➤ **Event-Based HIs.** If an event's ETI also has a corresponding HI definition, an HI is assigned to the CI. If the HI already exists on the CI, its status is updated. The HI gets a state and status as defined in the HI definition in the indicator repository.

Mapping Events to Metric-Based HIs

When an HI is based on an event, the state and status of the HI are taken directly from the corresponding ETI. When an HI is based on a metric sample, the state and status of the HI are based on business rule calculations performed on the sample data.

When working with Service Health or Service Level Management, the indicator repository enables you to modify an HI's default business rule, as well as state and status mappings, as follows:

- Each HI template in the indicator repository is defined as applicable for Service Health, for Service Level Management, or for both applications.
- The indicator repository also specifies the default business rule of the HI, for the application where the HI is applicable. The rule's thresholds are defined in the business rule repository.

  For details on the Service Health rules, see "List of Calculation Rules in Service Health" on page 740. For details on the Service Level Management rules, see "List of Service Level Management Business Rules" in *Using Service Level Management*.
- The indicator repository provides mapping between the status generated by the rule, and the HI's state. You can assign any text to these states; for example you might assign the HI state of Very Low Availability with the status level of Warning.

HI definitions in the indicator repository also determine whether an event is created within BSM when a metric-based HI is assigned to a CI within Service Health, or when the status of an HI changes on a CI.

Mapping SiteScope Severities to HI States

Metrics in SiteScope can have three possible severities: **Error**, **Warning**, and **Good**.

HIs in Service Health can have many states; for example, when measuring CPU Load an HI's state might be Bottlenecked or Busy, whereas when measuring Memory Load an HI's state might be Paging or Starving for Memory.

In addition, each HI can have one of the following status levels: **Critical**, **Major**, **Minor**, **Warning**, **Normal**, and **Unknown**.

It is therefore necessary to map the severity of each SiteScope metric to its corresponding HI's state and status, as follows:

SiteScope monitors that have a defined topology and default mapping, also have an HI state and status that is assigned to the metric status by default. Indicator states are assigned to the metric status according to the closest available status that exists in the states, for the indicator associated with the metric.

For example, when measuring percent used on a Memory monitor, the metric is mapped to **Major** status in the Error threshold, since **Critical** status is not available for the Memory Load indicator. When measuring round trip time on a Ping monitor, the closest status level in the Warning threshold is **Major**, since the **Minor** status level does not exist for this indicator state. The Good threshold is always mapped to the **Normal** status level.

Indicator mapping for each monitor is defined within SiteScope in the HP Integration Settings pane. For details, refer to the SiteScope Help. For general information about metric to HI mapping in BSM, see "Indicator Assignments Overview" in *Using System Availability Management*.

Tasks

How to Create or Edit an ETI or HI Template in the Indicator Repository

The following section describes how to customize an ETI or HI template in the indicator repository.

Note: The indicator repository contains templates for creating ETIs that can be viewed in Operations Management, and for creating HIs in Service Health and Service Level Management. You can therefore access the indicator repository from within Operations Management, Service Health, and Service Level Management administration. The repository is identical in each of these applications.

This task includes the following steps:

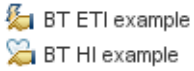
- "Open an ETI or HI template for editing" on page 689
- "Define ETI or HI details" on page 691
- "Results" on page 691

1 Open an ETI or HI template for editing

a Select **Admin> Service Health / Service Level Management > Repositories > Indicators**. The left side of the page contains a CIT hierarchy.

b Select a CIT from the left pane to display its assigned indicators in the **Indicators** pane. When you select an indicator, its details are displayed in the right pane.

ETIs and HIs have different icons; the following image shows an example of an ETI, and of an HI.



c Add a new ETI or HI template to the selected CIT, or edit an assigned indicator template, as follows:

- To add a new indicator template, click the **New Indicator** button, and select one of the dropdown options: Health Indicator or Event Type Indicator.
- To edit an indicator template, select an ETI or HI from the **Indicators** pane and click the **Edit Indicator** button.
- To convert an ETI to an HI or an HI to an ETI, select the indicator and click the corresponding button: **Convert to Health Indicator and Edit**, or **Convert to Event Type Indicator and Edit**.

  For example, this is useful if a predefined ETI is indicative of CI health within your particular environment (ETI > HI), or if a predefined HI is not indicative of CI health in your environment (HI > ETI).

Note: Each indicator in a subtree must have a unique name. For example, if you create an indicator on the **Node** CIT, you cannot use the same name for another indicator on the **Computer** CIT.

---

2 Define ETI or HI details

Within the dialog box labeled **New/Edit Event Type Indicator/Health Indicator**, define possible states for the indicator, as well as other indicator details, as follows:

- **ETIs.** Each ETI must have at least one state defined. When creating a new ETI, one state is automatically created (Normal); you can modify this as needed. For ETI user interface details, see "New ETI/Edit ETI Dialog Box" on page 696.
- **HIs.** Each HI must have at least two states defined; a state with Normal status must be defined as the default state. When creating a new HI, two states are automatically created: Normal, and Critical. You can modify this as needed.

  When defining an HI, specify which application will consume the HI: Service Health, Service Level Management, or both. For each application consuming the HI, define the default HI calculation rule. For HI user interface details, see "New Health Indicator/Edit Health Indicator Dialog Box" on page 698.

  If you are defining an HI in Service Health, and you want to send an event to the Event Browser when the HI's status changes, select the **Generate Events** check box. The event parameters are defined by default; to view or modify the event parameters click **Configure Events**. For user interface details, see "Event Configuration Dialog Box" on page 703.

3 Results

After you save the indicator, it is assigned to the selected CIT (and to its child CITs). The indicator details appear in the **Details** pane.

Reference

Indicator Repository User Interface

This section includes:

- Indicator Repository page on page 693
- New ETI/Edit ETI Dialog Box on page 696
- New Health Indicator/Edit Health Indicator Dialog Box on page 698
- New Indicator State/Edit Indicator State Dialog Box on page 702
- Event Configuration Dialog Box on page 703

Indicator Repository page

This page displays the ETIs and health indicators (HIs) assigned to each of the CITs in your system. The Indicator repository enables an advanced user to modify existing indicator definitions, and to create new ones.

To access	The indicator repository can be accessed from one of the following: ➤ **Admin** > **Service Health** > **Repositories** > **Indicators** ➤ **Admin** > **Service Level Management** > **Repositories** > **Indicators**
Important information	Select a CIT in the left pane to display its assigned ETIs and HIs in the **Indicators** pane. Select an ETI or HI in the **Indicators** pane to display its details in the **Details** pane on the right side of the page. To modify an indicator, select it in the **Indicators** pane and click the **Edit Indicator** button, or right-click the indicator and access the **Edit Indicator** menu command. For user interface details, see "New ETI/Edit ETI Dialog Box" on page 696, or "New Health Indicator/Edit Health Indicator Dialog Box" on page 698.
Relevant tasks	"How to Create or Edit an ETI or HI Template in the Indicator Repository" on page 689
See also	➤ "Indicator Repository Overview" on page 682 ➤ "Events, ETIs, and HIs - Overview" on page 683

CIT Hierarchy

The left area of the Indicator Repository page contains a hierarchy of the CITs in your system. Select a CIT to view or modify its assigned ETIs and HIs.

CITs with a grey background have one or more indicators that are assigned directly to them; CITs without a grey background either have no indicators, or have indicators inherited from higher-level CITs.

Indicators Pane

This pane displays the ETIs and HIs assigned to the selected CIT.

User interface elements are described below:

UI Element (A-Z)	Description
	New Indicator. Click to create a new indicator; a dropdown menu enables you to define a new HI or a new ETI.
	Edit Indicator. Click to edit the details of a selected HI or ETI.
	Convert to Health Indicator and Edit. Select an ETI, then click to convert the ETI to an HI. A dialog box opens to define the HI. For user interface details, see "New Health Indicator/Edit Health Indicator Dialog Box" on page 698.
	Convert to Event Type Indicator and Edit. Select an HI, then click to convert the HI to an ETI. A dialog box opens to define the ETI. For user interface details, see "New ETI/Edit ETI Dialog Box" on page 696.
	Delete Indicator. Deletes the selected indicator. If you delete an indicator on a child CIT that was inherited from a parent CIT, you are actually deleting it from the parent CIT. As a result, this indicator is no longer inherited on the child CITs. **Note:** Only user-defined (custom) indicators can be deleted.
	Restore to Default. Select an edited indicator whose Type is Predefined (Customized), and click to restore it to its original settings.

UI Element (A-Z)	Description
	Refresh. Click to refresh the display.
<ETI or HI>	Each line in the pane shows an ETI or HI assigned to the selected CIT (this label is defined by the indicator's Display Name field). Select an indicator to display or modify its definitions. For user interface details, see "New ETI/Edit ETI Dialog Box" on page 696, or "New Health Indicator/Edit Health Indicator Dialog Box" on page 698. **Note:** If a CIT inherits an indicator from its parent CIT, the name of the parent CIT appears in parentheses after the indicator name. For example, the Node CIT is the parent of the Computer CIT. If the Node CIT is assigned the **CPU Load** ETI, the Computer CIT will contain an ETI labeled **CPU Load (Node)**.

Details Pane

This pane displays details regarding the ETI or HI selected in the **Indicators** pane. The contents of this pane vary depending on the Indicator definitions. The following section provides a general description of this pane. For details on ETI-related fields, see "New ETI/Edit ETI Dialog Box" on page 696. For details on the HI-related fields, see "New Health Indicator/Edit Health Indicator Dialog Box" on page 698.

User interface elements are described below:

UI Element	Description
General area	General information regarding the ETI or HI: ➤ Name, type, and description are defined for all indicators. ➤ Application and units are relevant for HIs only.
States area	Table showing the possible states for each indicator, the status that corresponds to each state, and the icon that corresponds to each status.

UI Element	Description
Service Health area	If an HI is applicable for the Service Health application, this section shows whether the indicator generates events, and which rule is used to calculate the indicator.
SLM area	If an HI is applicable for the Service Level Management application, this section displays the rule used to calculate the indicator.
ETI Mapping Rules area	If an ETI uses mapping rules, they are displayed in this section. For details, refer to *Using Operations Management*.

New ETI/Edit ETI Dialog Box

This dialog box enables you to define ETI details.

To access	In the Indicators Repository page, perform one of the following: ➤ Click the **New Event Type Indicator** button. ➤ Select an ETI and click the **Edit Indicator** button. ➤ Select an HI and click the **Convert to Event Type Indicator and Edit** button.
Relevant tasks	"How to Create or Edit an ETI or HI Template in the Indicator Repository" on page 689

General Area

User interface elements are described below:

UI Element (A-Z)	Description
Description	Optional text describing the ETI.
Display Name	The external name of the ETI, as it is displayed in the UI (for example CPU Load).

UI Element (A-Z)	Description
ID	The ETI's internal unique identifier (this only appears when you edit an existing ETI).
Name	The internal name of the ETI, as defined in the event generating the ETI (for example CPULoad).
Type	The indicator type (automatically defined as Event Type Indicator.)

States Area

This area shows the possible ETI states, and the mappings between each state and its corresponding status and icon. Each ETI must have at least one state defined.

User interface elements are described below:

UI Element (A-Z)	Description
	New Indicator State. Click to create a new state for the ETI.
	Edit Indicator State. Click to edit the details of a selected state.
	Delete Indicator State. Click to delete one or more selected states.
	Select all. Select all the ETI states.
	Clear Selection. Clear the selection of ETI states.
Display Name	The state of the ETI as defined in the event (for example, Very high CPU).

UI Element (A-Z)	Description
Icon	The icon corresponding to the ETI severity. Standard icons appear by default; if you want to use custom icons, place them in the following directory: **<Gateway server root directory>\AppServer\webapps\site.war\images\gui\severities** **Note:** The following formats are supported for custom icons: .png, .jpg and .gif.
Severity	The severity corresponding to the ETI's state (for example, Warning).

New Health Indicator/Edit Health Indicator Dialog Box

This dialog box enables you to define HI details.

To access	In the Indicators Repository page, perform one of the following: ➤ Click the **New Health Indicator** button. ➤ Select an HI and click the **Edit Indicator** button. ➤ Select an ETI and click the **Convert to Health Indicator and Edit** button.
Relevant tasks	"How to Create or Edit an ETI or HI Template in the Indicator Repository" on page 689

General Area

User interface elements are described below:

UI Element (A-Z)	Description
Application	Specify which application displays this HI: Service Health, Service Level Management, or both. For details, see "How the Indicator Repository is Used by BSM" on page 685.
Description	Optional text describing the HI.

UI Element (A-Z)	Description
Display Name	The external name of the HI, as displayed in the UI (for example CPU Load).
ID	The HI's internal unique identifier (this only appears when you edit an existing HI).
Name	The internal name of the HI, as defined in the event generating the HI (for example CPULoad). **Note:** The name cannot contain blank spaces.
Type	The indicator type (automatically defined as **HI with associated ETI**).
Units	The type of unit applicable to the rule results displayed in the HI. Typical units are: ➤ **<No unit>.** For rules that handle volume, where measurements represent a simple numerical count. ➤ **Financial ($).** For rules that determine financial loss for a CI. ➤ **Milliseconds or Seconds.** For rules that handle performance time data for a transaction or monitor. ➤ **Percentage (%).** For rules that handle availability over time data.

States Area

This area shows the possible HI states, and the mappings between each state and its corresponding status and icon. Each HI must have at least two states. A state with Normal status must be defined as the default state.

User interface elements are described below:

UI Element (A-Z)	Description
	New Indicator State. Click to create a new state for the HI.
	Edit Indicator State. Click to edit the details of a selected state.

UI Element (A-Z)	Description
	Delete Indicator State. Click to delete one or more selected states.
	Select all. Select all the HI states.
	Clear Selection. Clear the selection of HI states.
Icon	The icon corresponding to the HI status. Standard icons appear by default; if you want to use custom icons, place them in the following directory: **<Gateway server root directory>\AppServer\webapps\site.war\images\gui\severities** **Note:** The following formats are supported for custom icons: .png, .jpg and .gif.
State	The state or the HI as defined in the event (for example, Very high CPU). This field also indicates which is the default state for the HI; each HI must have a default state.
Status	The status corresponding to the HI's state (for example, Warning).

Service Health Area

This area appears if you select **Service Health** or **both** in the Application field.

User interface elements are described below:

UI Element (A-Z)	Description
Configure Events	This button is enabled when you select the **Generate Events** check box. Click to open the Event Configuration dialog box, which enables you to define the event sent to the Event Browser when the HI's status changes. For details, see "Event Configuration Dialog Box" on page 703.
Default Rule	Select the rule which is used to calculate the HI's status. For descriptions of the default rules available in Service Health, see "List of Calculation Rules in Service Health" on page 740.
Formatting Method	Define the method for formatting the value of the HI (when relevant), using the following options: ➤ **Selection.** Select a formatting method from the list of available methods (leave blank if not required). For details, see "List of Formatting Methods" on page 676. ➤ **Other.** Specify a method that you have defined, which is not on the list of available methods.
Generate Events	Select this check box if you want the HI to generate an event to the Event Browser whenever its status changes.
Status and Default State	If you have assigned more than one state to a specific status in the State area, you must specify which is the default state for the status. For example, the status Critical might be assigned to two different states (in two different state definitions): Very High and Very Low. In this case, use the drop-down menu to select which state is assigned by default when the HI's status is Critical.

Service Level Management Area

This area appears if you select **Service Level Management** or **both** in the Application field.

User interface element described below:

UI Element (A-Z)	Description
Default Rule	Select the rule which is used to calculate the HI's status. For descriptions of the default rules, see "List of Service Level Management Business Rules" in *Using Service Level Management*.

New Indicator State/Edit Indicator State Dialog Box

This dialog box enables you to add or modify HI states. Each state is mapped to a status.

To access	Open the New/Edit Health Indicator dialog box. Within the **State** area, click **New** to enter a new state, or click **Edit** to modify a state.
Relevant tasks	"How to Create or Edit an ETI or HI Template in the Indicator Repository" on page 689

User interface elements are described below:

UI Element (A-Z)	Description
Default	Select this check box to define the HI's default state. This is the state that is used by Operations Manager *i* when you restore the HI to default.
Display Name	The external name of the state, as it is displayed in the UI.

UI Element (A-Z)	Description
Icon	The icon corresponding to the state's status. Standard icons appear by default; if you want to use custom icons, place them in the following directory: **<Gateway server root directory>\AppServer\webapps\site.war\images\gui\severities** **Note:** The following formats are supported for custom icons: .png, .jpg and .gif.
ID	The state's unique internal identifier (this only appears when you edit an existing state).
Name	The internal name of the state, as defined in the event generating the HI.
Status	The HI state's status (for example, Warning).

Event Configuration Dialog Box

This dialog box enables you to modify the definitions of the event sent to the Event Browser when the status of a metric-based HI changes in Service Health.

To access	In the **New Health Indicator/Edit Health Indicator** dialog box, select the **Generate Events** check box and click the **Configure Events** button.
Important information	You can drag attributes from the Attributes area or click Ctrl+i while editing text to insert the selected attribute. When an event is triggered, these attributes are changed into the relevant value of the attribute of the event.
Relevant tasks	"How to Create or Edit an ETI or HI Template in the Indicator Repository" on page 689
See also	"CI Status Template Repository Dialog Box" on page 543

General Tab

This tab enables you to edit an existing event template. Select the relevant attribute in the Attributes area and drag it into the relevant box in the General tab.

UI Element (A-Z)	Description
General area	
Category	Used to organize or group events; by default this is blank.
Description	Information describing the event; by default this is blank.
Event Type Indicator	Assigns an ETI to the event. **Default**: <<health_indicator_name>>:<<health_indicator_state>>:<<health_indicator_value>>
Log only	By default this is **false;** the event is sent to the Event Subsystem as a regular event. Assign **true** to set the event's **Life Cycle State** to **close** from the beginning of its life cycle.
Severity	The severity of the event is taken by default from the severity of the ETI. **Default:** <<eti_severity>>
Subcategory	More detailed organization of events that have the same category; by default this is blank.
Title	Text describing the occurrence represented by the event. **Default:** <<ci_name>>:<<health_indicator_display_label>> status changed from <<health_indicator_previous_status>> to <<health_indicator_new_status>>
Correlation area	
Close key pattern	Enables the event that is sent, to close all the events whose Key attribute matches the Close Key Pattern expression. You can use wildcards (*). **Default:** <<ci_id>>:<<health_indicator_name>><*>

UI Element (A-Z)	Description
Key	A unique string representing the type of event that occurred. Two events have the same key if, and only if, the two events represent the same situation in the managed environment. Events with the same key are treated as duplicates. **Default:** <<bsm_server_name>>:<<ci_id>>:<<health_indicator_name>>:<<health_indicator_new_status_value>>
Submit close key condition	By default this is selected; you must enter a value in the **Close key pattern** box.
Advanced Parameters area	
CI hint	Information about the CI that is related to the event. **Default:** UCMDB:<<ci_id>>
Generating source hint	Information about the monitoring application. **Default:** <<bsm_server_name>>
Host hint	Information about the CI of type **Host** that is hosting the CI related to the event; by default this is blank.

Custom Attributes Tab

Use this tab to add custom attributes.

Important information	A custom attribute consists of a key and a value (both are strings). The value can be any string and is used by the event mapping as any other value. For details about custom attributes, see *Using Operations Management*.

User interface elements are described below:

UI Element	Description
Name and Value	Each event can have any number of custom attributes. Custom attributes can be used to provide additional information with the event that is not provided in any of the other event attributes or that is contained in any of the other attributes. Each custom attribute is a **Name-Value** pair, where you enter the name of the attribute in the **Name** field and the value of the attribute in the **Value** field.
	Creates a new event template. You can select: ➤ **New key.** To create a new key. A new row opens in the Name/Value table. ➤ **Known key.** Opens a submenu with the known keys as options. You can select the relevant key. A new row opens in the Name/Value table, with the name of the selected key in the Name column. You can then enter the value of the key in the corresponding Value column. **Note:** The known keys are defined in Operations Manager *i*. For details, see *Using Operations Management*.
	Deletes the selected attributes from the table.

Attributes Area

Select the relevant attribute and drag it into the relevant box in the General tab or in the Custom Attribute tab.

The event attributes for events triggered by metric-based HIs in Service Health are as follows:

Attribute	Description
<<bsm_server_name>>	The name of the Business Service Management server where the event is generated.
<<ci_id>>	The ID of the CI where the HI is assigned.
<<ci_name>>	The name of the CI where the HI is assigned.
<<health_indicator_display_label>>	The external name of the HI.
<<health_indicator_name>>	The internal identifier of the HI.
<<health_indicator_new_status>>	The current status of the HI in Service Health.
<<health_indicator_new_status_value>>	The current value of the HI's status in Service Health (for example Very Slow).
<<health_indicator_previous_status>>	The previous status of the HI.
<<eti_severity>>	The current severity of the ETI.
<<health_indicator_state>>	The current state of the HI in Service Health.
<<health_indicator_value>>	The current value of the HI in Service Health (for example 18 ms. response time).

23

Business Rule Repository

This chapter includes:

Concepts

- Business Rule Repository Overview on page 711
- Health Indicator and KPI Calculation Rules on page 713
- Sample-Based and Time-Based Sampling on page 715
- Understanding the Percentage Rule on page 716
- Understanding the Generic Formula Rule on page 720
- No Data Timeout for Transaction CIs on page 723

Tasks

- How to Customize a Business Rule Template in the Repository on page 724
- How to Create a Customized Generic Sample Rule – Example on page 729
- How to Create a Customized Generic Sum of Values Over Time Rule – Example on page 731
- How to Use the Generic Two Arguments Rule – Example on page 732
- How to Set Up Rules to Display the Last Sample Details on page 734
- How to Save Measurements Data on page 736
- How to Display Information from a CI Attribute in a Tooltip on page 737

Reference

- List of Calculation Rules in Service Health on page 740
- List of Rule Parameters on page 845

➤ List of Tooltip Parameters on page 853

➤ Example of EUM Weighted Average Rule on page 865

➤ Examples of Tooltips on page 867

➤ Business Rules User Interface on page 868

Troubleshooting and Limitations on page 890

Concepts

Business Rule Repository Overview

A business rule is the basic object that receives events (either samples or application messages), deals with processing the data, and holds the process results. Some business rules are based on sample data, and are used to calculate health indicators (HIs). Other rules calculate key performance indicators (KPIs), based on the status or value of HIs and of other KPIs.

The Business Rule Repository page contains templates for the rules available throughout Service Health. These rule templates are implemented by Service Health, so that when the assignment mechanism assigns a specific HI or KPI to a discovered CI, the KPI or HI is calculated based on the rule template in the repository. For details, see "Assignment and Propagation Overview" on page 558.

Advanced users can modify existing rules and create new rules to customize how information is presented. For example, you may want to create new rules when integrating data from a new external system into Service Health.

Within the Business Rule Repository, rules are categorized as follows:

- **Predefined.** Out-of-the-box rules.
- **Predefined (Customized).** Out-of-the-box rules that have been edited.
- **Custom.** New or cloned rules.

For a list of the out-of-the-box rules, see "List of Calculation Rules in Service Health" on page 740. For details on editing rules, see "How to Customize a Business Rule Template in the Repository" on page 724.

Some rules are for use only by Service Health, and are not available for use in custom views.

You can use the Rules API to create new rules; for details see "Service Health Rules API" on page 947.

This section also includes the following topics:

➤ "Rule Parameters" on page 712

➤ "Global Rule Parameters" on page 712

➤ "Tooltips" on page 712

Rule Parameters

Each rule's parameters are used to define input for the rule. The values used for the parameters can be fixed values (defined within the parameter definition) or referenced values taken from the samples.

The rule parameters are defined in the Business Rule Repository, as part of each rule definition. For a list of rule parameters, see each rule parameter description in "List of Rule Parameters" on page 845.

Global Rule Parameters

You can modify various global parameters for trend and history status in the Business Rule Repository, as follows:

➤ You can specify if you want trend, history, or both displayed for CIs.

➤ You can change the window of time used for trend and history calculations.

➤ You can specify the calculation type for history status.

For details, see "Global Parameters Dialog Box" on page 880.

Note that the global parameters can be overridden by defining a different value for the relevant parameter within a specific rule.

Tooltips

Each indicator on a CI has a Details tooltip to display additional information for the CI. Tooltips are assigned to CIs according to the rule used for the indicator.

Each tooltip includes parameters which correspond to the type of information displayed in the tooltip. For a list of tooltip parameters and their descriptions, see "List of Tooltip Parameters" on page 853.

The order of the parameters in the tooltip definition corresponds to the order of the information in the displayed tooltip. For information about defining/editing tooltip parameters, see "New/Edit Tooltip Parameter Dialog Box" on page 878.

Health Indicator and KPI Calculation Rules

There are two types of business rules. Some rules are used for calculating health indicators, and others are used for calculating KPIs, as described in the following sections.

This section includes the following topics:

- "Health Indicator Calculation Rules" on page 713
- "KPI Calculation Rules" on page 713
- "The calc_method and hi_list Rule Parameters in KPI Rules" on page 714

Health Indicator Calculation Rules

HI calculation rules calculate a measurement for an HI based on original sample data that is caught by the HI selector. BSM receives incoming metrics using one of the data collectors such as SiteScope, Business Process Monitor, or Real User Monitor.

The content packs for each of these data collectors defines the assignment, which determines which indicators are relevant for each CI type. Based on their CI types, each monitored CI has a default set of HIs that include a rule, and a predefined selector.

KPI Calculation Rules

KPI calculation rules, also known as group rules, determine KPI status based on data received from other KPIs or HIs, rather than from original sample data. The received data can come from the KPIs of child CIs, or from other KPIs or HIs associated with the same CI.

The group rules vary in the type of logic they use to arrive at a status result. For example:

- The rule may select a KPI status held by one of the child CIs, and apply that status to the parent, as done by the **Worst Status Rule**.
- The rule may aggregate the received data to calculate a measurement, and compare the measurement with defined thresholds, as done by the **Sum of Values Rule**.
- The rule may calculate a measurement based on the status of another KPI for the CI, and compare the measurement with defined thresholds, as done by the **Real Time Impact Rule** when receiving status from the **Application Availability** KPI.

Each KPI has been assigned a default business rule that is used when you attach a new KPI to a CI; the default is generally one of the group rules for that KPI. When editing a KPI or attaching a new KPI, you can select a different rule from the list of rules that are applicable for that KPI.

If a KPI is associated with a logical CI then the rule that calculates the status and value of this KPI is probably a group rule – it uses the KPIs of other CIs to calculate its own status and value (for example: Worst Status rule).

The calc_method and hi_list Rule Parameters in KPI Rules

KPIs are calculated using group rules, based on data received from other KPIs or HIs. Group rules must always contain the following rule parameters: calc_method and hi_list.

The **calc_method** parameter defines how the rule calculates the KPI. The parameter should be of type Integer, and it can contain values from 0-3, as follows:

- **0**. The KPI is set by HIs and child KPIs; this is the default value for out-of-the-box group rules.
- **1**. The KPI is set by HIs only.
- **2**. The KPI is set by child KPIs.
- **3**. The KPI is set by HIs; if none exist, use child KPIs.

The **hi_list** parameter defines which HIs are used in the KPI calculation. This parameter should be of type String; by default this field is empty. If you enter HIs in this field make sure you use valid HI names, and separate HIs with commas.

If you create a new group rule you must add these rule parameters; the parameter names are case sensitive.

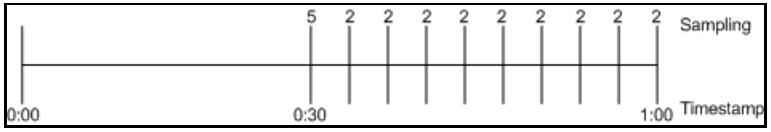
Note: In the New/Edit Rule Parameter dialog box, you define whether each rule parameter is configurable; this means that the parameter is displayed in the Assignments and in the CI Indicators tabs. For details, see "New/Edit Rule Parameter or New/Edit Rule Threshold Dialog Box" on page 877.

Unlike other rule parameters, the **hi_list** and **calc_method** parameters are not affected by this Configurable flag; they are always configurable if they exist.

Sample-Based and Time-Based Sampling

HI rules are time-based or sample-based. The time-based sampling is more accurate than the sample-based sampling when samples are not taken regularly; for example, SiteScope sampling accelerates when a problem occurs. When samples are taken regularly, time-based and sample-based sampling provide the same results.

If you have the following sample:



The result of the first part of the sampling period is 5. After that the result of each sampling period is 2.

The sample-based result is calculated as follows:
(5+8x2)/9= 2.33
The samplings are as follows: 1 sampling with the value 5 and 8 samplings with the value 2. The total number of samplings is 9.

The time-based result is calculated as follows:
(30x5+30x2)/60=3.5
During 30 seconds the value was 5. During the next 30 seconds the value was 2. The total sampling time was 60 seconds.

Note: There is also a time and amount-based calculation method that works on the same basis as time-based, but takes into account the amount (value) received in the sample as a proportion of the total amount.

Understanding the Percentage Rule

When the Percentage rule is defined as the KPI rule for a parent group, the group is assigned a KPI status based on a percentage calculated from the child CIs in the group. If required, significant relationships between CIs (usually between the parent CI and one of the child CIs) can be weighted (**Weight** option), so that they have more impact on the percentage calculation. You can also define dominant status (**Must** option) for a relationship between CIs (usually between the parent CI and one of the child CIs), so that a child CI with low status in the dominant relationship influences the status of the group.

Note: For all percentage calculation methods, the number of gray child CIs (**Informational**, **No data**, **Stopped**, or **Downtime** statuses) is ignored in the final calculation of the parent group score.

The different applications of the Percentage Rule are described in the following sections.

This section includes the following topics:

➤ "Basic Percentage Rule" on page 717

➤ "Weighted Percentage" on page 718

➤ "Dominant Child" on page 719

Basic Percentage Rule

When using the Percentage Rule, parent group status is based on a percentage (the **score** for the group), calculated from the number of child CIs with red, orange, olive, green, or yellow status. Gray statuses are not taken into consideration. (Note that if any of the child CIs are weighted, this influences the percentage calculation, as described in Weighted Percentage, below.)

Each status has a value, as follows:

Status	Value
red	0
orange	5
yellow	10
olive	15
green	20

Each value is multiplied by the number of children in the group that have that status, and the results are totaled and divided by the number of children in the calculation, to give an average result. For example, in a group of four CIs, two with red status and two with yellow status, the calculation would be as follows:

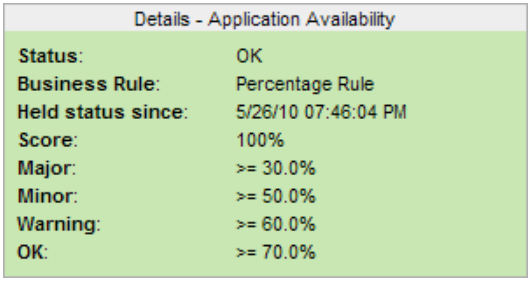
```
2 x 0 (red)
2 x 10 (yellow)
Total = 20/4 (number of red and yellow children) = 5 (average result
```

The average result is then divided by 20 (corresponding to the green status value) and multiplied by 100, to give the percentage score for the group:

```
(5/20) x 100 = 25% (score)
```

The score determines the status for the parent group according to thresholds defined for the KPI. For details, see "KPI and HI Thresholds" on page 401.

When you assign the Percentage rule to a KPI, the tooltip for the KPI in Service Health displays the percentage score for the group and the Percentage rule thresholds.



Weighted Percentage

By default relationships are not weighted (**weight = 1**). You can change the default weight for a relationship in the **weight** box, accessed in the Define Configuration Item Relationship window (described in "New CI/New Related CI Dialog Box" in the *Modeling Guide*).

When a child CIs in a group, is in a relationship with a weight greater than 1, then the percentage calculations described in Basic Percentage Rule, are adjusted to take the weight into account. Each CI status value is multiplied by the weight assigned to the CI, and the total is divided by the total weight values, to give the average result.

For example, taking the same group that was used for the basic percentage example (four CIs, two with red status and two with yellow status), if one of the red CIs has a weight of 4 and one of the yellow CIs has a weight of 2, then the average result calculation looks like this:

1 x 4 x 0 (red with weight=4)
1 x 1 x 0 (red with weight=1)
1 x 2 x 10 (yellow with weight=2)
1 x 1 x 10 (yellow with weight=1)
Total = 30/(4+1+2+1) (total weight values for red and yellow children) = 3.75 (average result)

The percentage score for the group is then calculated in the same way as for the basic Percentage Rule: average result is divided by 20 and multiplied by 100:

(3.75/20) x 100 = 18.75% (score)

Note that CI weights are relevant only when the parent group status is calculated using the Percentage Rule.

Tip: You can display the weight information in the KPI tooltip in Top View. For details, see "Customize Top View tooltips" on page 158.

Dominant Child

By default, all CIs are in non-dominant relationships (**must** is cleared). You can change the setting for a relationship to dominant in the Define Configuration Item Relationship window (described in "New CI/New Related CI Dialog Box" in the *Modeling Guide*).

When a child CIs in a group is in a dominant relationship, then status is calculated for the group by comparing the results from the following two status calculation methods:

- Service Health determines the lowest status held among all dominant CIs.
- Service Health determines group status according to the percentage rule calculation (as described in Basic Percentage Rule above).

The worst status from the two calculations becomes the status for the group.

When the group status has been taken from the lowest status held by a dominant CI, the tooltip for the parent group displays **Score: n/a (Using dominant child)**.

Note:

- Dominant CIs are only relevant when the group is using the Percentage Rule to calculate status.
- When a CI has both dominant and weighted child CIs only the dominant CI is taken into consideration when calculating the status of the parent CI using the Percentage rule.

Understanding the Generic Formula Rule

This rule can be used to add new business logic behavior to calculate HIs in Service Health. You can use the rule to create a set of calculation methods (sum, count, average, and so on) that can be applied to every type of sample: legacy (SiteScope, Business Process Monitor, and Real User Monitor) and Enterprise Management Systems (EMS) samples.

In Service Health, the rule is time-based and the formula calculates a single aggregated result of all of the specified data collected during the period specified in the **duration** parameter.

Note:

- Using the Generic Formula rule might have an impact on performance as the rule parses and evaluates string expressions. Using this rule should be considered carefully only when no other rule answers the requirements and when the application does not include large amounts of monitor nodes.
- There is no automatic validation to check if the formula supports the collected sample structure. There is no automatic validation for the correctness or syntax of the formula. If there is a mistake in the formula, the status of the HI appears as a gray icon in Service Health.

For example, use this rule to calculate the average of a sample field over a period of time multiplied by 2, or the sum of the values of a sample field over the specified period of time, divided by the number of values of another field.

Using the Generic Formula Rule

To use the Generic Formula rule, clone it and give the clone a meaningful name. You can then customize the cloned rule, attach the rule to an HI, and assign the HI to a CI in a view.

To edit the formula, click the Edit button for the Formula parameter, and enter the formula that you want the rule to use in the **Default Value** field. For more details, see "New/Edit Rule Parameter or New/Edit Rule Threshold Dialog Box" on page 877.

The formula is based on operands, operators, functions, constants, and sample field values. The formula must use only fields from the selected samples; you must know the name of the variables in the sample on which you want to run the formula. The samples for the rule depend on the specific HI's selector, therefore the formula must support the collected sample structure.

The rule takes values from the specified samples during the time period specified in the **duration** parameter, puts those values in the aggregated formula, and compares the result with the specified thresholds.

Any valid Service Health sample is valid for this rule.

The formula language is based on the Generic Reporting Engine parser language to be consistent with the open formula writing. For more information, see "Working with the Generic Reporting Engine API" in *Reports*.

The formula must always be an aggregated formula. It should contain aggregation functions and mathematical operators between them. The operands can either be constant numbers or aggregation functions.

The formula elements are:

- supported operators: *****, +, -, /, **( )**
- supported aggregation functions: **sum**, **min**, **max**, **avg**, **count**, **stddev**, **sumofsqr**
- supported manipulation function: **if**

The rule calculates a single numeric value based on the samples collected during the duration. The value is then evaluated according to the given thresholds and the status is set accordingly.

For an example of how to create a customized Generic Formula rule, see "Examples – Generic Formula Rule" on page 726.

No Data Timeout for Transaction CIs

Rules that calculate HIs contain a **No data timeout** property in their rule parameters. This property defines the number of seconds from the time the last sample was received for the HI, until the HI is timed out—at which point the HI changes to decay status (gray).

The default value for the **No data timeout** property is generally taken from the rule definitions as defined in the Business Rule Repository. However, for Business Process Monitor transaction CIs, Service Health calculates a **No data timeout** value based on the schedule for running the transaction. The calculation takes the schedule interval (defined in End User Management Administration) for the business process profile that contains the transaction (default value = 15 minutes) and adds an additional 90 seconds. For example, for a transaction with a schedule interval of 15 minutes, the **No data timeout** value is 990 seconds. (For details on defining the profile schedule, see "Edit Data Collector Settings Dialog Box" in *Using End User Management*.)

This calculation method means that the timeout value is automatically adjusted to align with changes made to the profile schedule interval in End User Management Administration, so that the KPI is not incorrectly timed out. If there is more than one scheduling scheme in effect, the following rules are used for the calculation:

- If multiple schedules are defined for a profile running on a Business Process Monitor instance, the largest schedule interval is used (all schedules are treated equally, whether they apply to the whole week or part of the week).
- If the profile is assigned to several locations, each with a different schedule, the smallest interval from the locations is used (after first applying the rule above).

Tasks

How to Customize a Business Rule Template in the Repository

The following section describes how to customize a business rule template in the Rule Repository.

Tip: HP Professional Services offers best practice consulting; it is recommended that you use this service before making any changes to the repositories. For information about how to obtain this service, contact your HP Software Support representative.

This section also includes the following:

- "Open a rule template for editing" on page 725
- "Define a rule's name, description, or class" on page 725
- "Select applicable CI types" on page 725
- "Modify rule parameters or thresholds" on page 726
- "Modify global rule parameters" on page 727
- "Modify tooltip settings" on page 727
- "Set a rule and its parameters back to default" on page 729

1 Open a rule template for editing

Select **Admin> Service Health** > **Repositories** > **Business Rules**. Open a rule template for editing using one of the following:

- **New Rule.** Creates a rule that is not based on an existing rule. The new rule will be labeled **Custom**. To create a new rule, click the **New Rule** button in the Business Rule Repository page.
- **Clone Rule**. Creates a rule by cloning an existing rule. The original rule is still available, and the new cloned rule can be modified. To clone a rule, select a rule in the Business Rule Repository page and click the **Clone Rule** button. The new rule will be labeled **Custom**. Select the new rule and click the **Edit Rule** button to open it for editing.
- **Edit Rule**. Modifies an existing rule. To edit a rule, select a rule in the Business Rule Repository page and click the **Edit Rule** button. If you edit a predefined rule, it will be labeled **Predefined (Customized)**.

For user interface details, see "New Rule/Edit Rule Dialog Box" on page 871.

2 Define a rule's name, description, or class

Define a rule's name or description in the **New Rule/Edit Rule** dialog box > **General Rule Settings** area.

If you create a new rule which uses a new Java class, define the class in this area as well.

3 Select applicable CI types

In the **New Rule/Edit Rule** dialog box > **Advanced Rule Settings** area, you can select the CI types for which the rule can be applied.

For example, if you clone a rule and the new rule is applicable for business transactions, select the Business Transaction CIT and click the corresponding arrow to move it to the **Selected CI Types** list.

4 Modify rule parameters or thresholds

You can modify existing information or enter new information about the parameters and thresholds for a specific rule, using the **New Rule/Edit Rule** dialog box > **Rule Parameters** and **Rule Thresholds** area. For user interface details, see "New/Edit Rule Parameter or New/Edit Rule Threshold Dialog Box" on page 877.

Note: If you are creating a customized Generic Sample rule, a Generic Sum of Values Over Time rule, or a Generic Two Arguments rule, and the name of the time stamp field in the sample is not time_stamp, in the Rule Parameters area click **Edit** for the **Time Stamp Field** parameter. In the **Default Value** box, enter the name of the sample's time stamp field. The type of the sample's time stamp field must be **time**.

Examples – Generic Formula Rule

The following formula calculates the average of the dResponseTime sample field value over the specified period of time, multiplied by 2:

```
Avg(dResponseTime)*2
```

In the following formula, you want to sum only the response time of the successful transactions, therefore only the response time for samples with u_iStatus=0 is taken into consideration. u_iStatus=1 when the transaction fails, and u_iStatus=0 when the transaction is successful.

The formula calculates the sum of the values of the dResponseTime sample field value over the specified period of time, where the value of dResponseTime is set to 0 every time the value of the u_iStatus sample field equals 1. This sum is divided by the sum of values calculated as follows: the value is equal to 1 when the u_iStatus field value is 0, and the value equals 0 when the u_iStatus field value is different from 0. This formula calculates the performance of a certain transaction by aggregating the response time of all of the successful transaction and dividing it by the number of successful transactions:

```
sum(if(u_iStatus,=,0,dResponseTime,0))/sum(if(u_iStatus,=,0,1,0)
```

5 Modify global rule parameters

To globally edit a parameter for all predefined rules, click the **Edit Globals** button on the Rule Repository page, and modify the appropriate parameters. For user interface details, see "Global Parameters Dialog Box" on page 880.

Tip: To override global parameter values for an individual rule, add the relevant parameter to the rule, and modify its value.

---

6 Modify tooltip settings

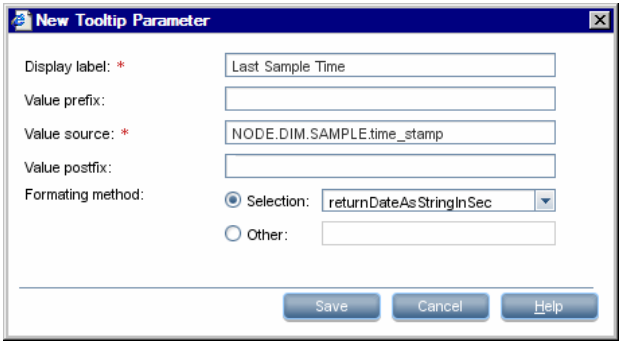
- **Basic Settings.** You can modify a tooltip's description or maximum length in the **New Rule/Edit Rule** dialog box > **Tooltip Settings** area.
- **Tooltip Parameters.** In the **New Rule/Edit Rule** dialog box > **Tooltip Parameters** area, you can modify existing information or enter new information about a tooltip's parameters. For user interface details, see "New/Edit Tooltip Parameter Dialog Box" on page 878.

Example: Add a Last Sample Time Entry in a Tooltip

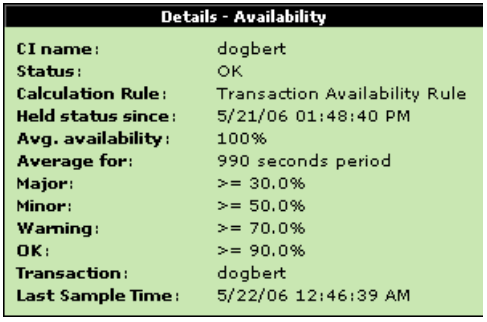
To display the last time the sampling was made in a tooltip, the last sample information must be available. For details, see "How to Set Up Rules to Display the Last Sample Details" on page 734.

Note: The last sample time is not necessarily the same as the last update time because the last sampling might not have any impact on the status. Last Sample Time can only be added to the tooltip of monitor rules.

1. Within the Rule Repository, select the rule whose tooltip you want to modify, and open it for editing. In the Tooltip Parameters area, click **New** to open the New Tooltip Parameter dialog box.
2. In the **Display Label** box, enter Last Sample Time.
3. In the **Value Source** box, enter NODE.DIM.SAMPLE.time_stamp.
4. in the **Formatting Method** box, select returnDateAsStringInSec.



The tooltip displays the following information:



7 Set a rule and its parameters back to default

If you have modified a predefined rule (for example if you changed the applicable CI types), you might want to return the rule and its parameters to their defaults.

Note that this is only applicable for rules whose type is **Predefined (Customized)**.

a Within the Business Rule Repository page, open a predefined (customized) rule for editing, and click the **Restore Defaults** button.

For details on the user interface, see "Restore Defaults Dialog Box" on page 880.

b The rule definition fields that have been modified are automatically selected. Select the fields which you want to restore to default, and click **Save**.

How to Create a Customized Generic Sample Rule – Example

This example shows how to use the Generic Sample rule. In this example, the value of a selected value field in the event sample and specific thresholds are compared, so the status of the HI is gray when the value of the sample field is less than 1 and larger than 5.

To display the comparison, clone and edit the Generic Sample Rule, and assign this rule to an HI on the appropriate CI.

To create a clone of the Generic Sample rule:

1 Select **Admin**> **Service Health** > **Repositories** > **Business Rules**. Select the **Generic Sample Rule** and click **Clone**.

2 Open the new rule for editing.

3 In the **Name** box, enter Value Event rule as the name of the cloned rule.

4 In the Rule Parameters area, open the **Field Name** parameter for editing.

5 In the **Default Value** box, specify the name of the sample field (value) on which to apply the rule. The field must have a numeric value. Save the change.

Note: The units of the thresholds and of the field value must be the same. The result is provided with the same unit too.

---

6 If required, modify the default thresholds in the Rule Thresholds area (values from 1 to 5 are colored, values less than 1 or more than 5 are colored gray). Click the **Edit** button for each threshold parameter and enter the threshold value in the Default Value box (**critical,** 5; **major**, 4; **minor**, 3; **warning**, 2; **OK**, 1). For details, see "New/Edit Rule Parameter or New/Edit Rule Threshold Dialog Box" on page 877.

To attach the custom rule to an HI assigned to a CI:

1 Select **Admin**> **Service Health** > **CI Indicators**.

2 Select a view.

3 Select the CI to which you want to attach the HI.

4 In the **CI Data** pane, select the **Health Indicators** tab, and click **Add Health Indicator**.

5 Select an HI, and in the **Business Rule** list, select the Value Event rule you just created.

6 In the **Business Rules Parameters** area, if required, specify the rule parameters.

7 in the **Thresholds** area, enter the thresholds.

8 In the **Selector** area, enter event as the name of the sample in the Value box that corresponds to the **sampleType** Field, and enter the other values corresponding to the other reference properties that the selector expression searches for in the incoming data samples sent from the data source. For details on the event sample, see "Sample: Event (event)" in *Reports*. When done, save your changes.

How to Create a Customized Generic Sum of Values Over Time Rule – Example

You want to add the value of the u_iSumNetTime field in the trans_t sample for all the trans_t samples that arrive during the time period specified in the **duration** parameter. To display the value you must clone and edit the Generic Sum of Values Over Time rule, and assign the new rule to an HI on the appropriate CI.

To create a clone of the Generic Sum of Values Over Time rule:

1. Select **Admin> Service Health** > **Repositories** > **Business Rules**. Select the **Generic Sum of Values Over Time Rule** and click **Clone**.
2. Open the new rule for editing.
3. In the **Name** box, enter u_iSumNetTime Sum rule as the new name for the cloned rule.
4. In the Rule Parameters area:
   a. Open the **Field Name** parameter for editing. In the **Default Value** box, specify the name of the field (u_iSumNetTime) on which to apply the rule. The field must have a numeric value. Save the change.

   Note: The units of the thresholds and of the field value must be the same. The result is provided with the same unit too.

   ---

   b. If required, modify the **duration** parameter to define the sampling duration, in seconds. The default is 15 minutes (900 seconds).
5. If required, modify thresholds in the Threshold Parameters area. For details, see "New/Edit Rule Parameter or New/Edit Rule Threshold Dialog Box" on page 877. The units of the thresholds and of the field value must be the same. The result is provided with the same unit too.
6. Save the changes.

To attach the customized rule to an HI on a CI:

1 Select **Admin> Service Health** > **CI Indicators**.

2 Select a view.

3 Select the CI to which you want to attach the HI.

4 In the **CI Data** pane, select the **Health Indicators** tab, and click **Add Health Indicator**.

5 Select an HI, and in the **Business Rule** list, select the u_iSumNetTime Sum rule you just created.

6 Save the changes.

How to Use the Generic Two Arguments Rule – Example

You want to display the sum of Sum of component connection times in the transaction breakdown and Sum of component DNS times in the transaction breakdown sample field values from the trans_t sample. To display the sum you must clone and edit the Generic Two Arguments Rule rule, and assign the rule to an HI on the appropriate CI.

To create a customized Generic Two Arguments Rule:

1 Select **Admin> Service Health** > **Repositories** > **Business Rules**. Select the **Generic Two Arguments Rule** and click **Clone**.

2 Open the new rule for editing.

3 In the **Name** box, enter Sum_Connect_DNS_Time rule as the new name for the cloned rule.

4 In the Rule Parameters area:

   a Open the **First Field Name** parameter for editing. In the **Default Value** box, specify u_iSumConnectionTime as the name of the first sample field on which to apply the rule. The field must have a numeric value. Save the change.

   b Open the **Second Field Name** parameter for editing. In the **Default Value** box, specify u_iSumDnsTime as the name of the second sample field on which to apply the rule. The field must have a numeric value. Save the change.

Note: The units of the thresholds and of the field value must be the same. The result is provided with the same unit too.

---

c If required, modify the **duration** parameter to define the sampling duration, in seconds. The default is 15 minutes (900 seconds).

d Open the **Operator** parameter for editing, and in the **Default value** box, specify the operator (+) you want to use.

5 Modify thresholds in the Threshold Parameters area as needed. For details, see "New/Edit Rule Parameter or New/Edit Rule Threshold Dialog Box" on page 877.

Note: The units of the thresholds and of the field value must be the same. The result is provided with the same unit too.

---

6 Save the changes.

To assign the customized rule to an HI on a CI:

1 Select **Admin**> **Service Health** > **CI Indicators**.

2 Select a view.

3 Select the CI to which you want to attach the HI.

4 In the **CI Data** pane, select the **Health Indicators** tab, and click **Add Health Indicator**.

5 Select an HI, and in the **Business Rule** list, select the Sum_Connect_DNS_Time rule you just created.

6 Save the changes.

How to Set Up Rules to Display the Last Sample Details

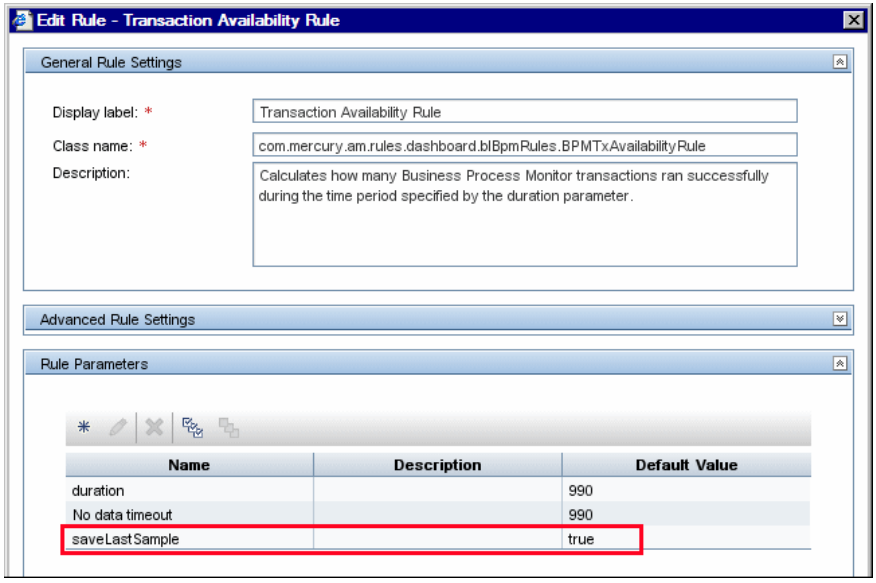
You can set up rules to save details from the last sample received for a CI, so that these details can be viewed in the Sample Details window for the CI or in tooltips in Service Health. For details on how to display the last sample information, see "How to View Sample Details" on page 73.

Note: Storing last sample details may require use of a large amount of memory, slowing down Service Health performance.

Last sample details are kept in memory using the **saveLastSample** property. You can use this property to store sample details only for specific CI KPIs, or for all KPIs.

To save the last sample details, you can:

➤ **Set the property for an individual business rule.** Edit the rule in the Business Rule Repository. In the **Edit Rule** dialog box > **Rule Parameters** area, add the parameter **saveLastSample** with Type=**Boolean** and Default Value=**true**.



➤ **Set the property for all business rules.** Click the **Edit Globals** button in the Business Rule Repository to view the Global Parameters list. Edit the **saveLastSample** parameter to change its value to **true** (default setting is **false**).

For details on editing global parameters, see "Global Parameters Dialog Box" on page 880.

How to Save Measurements Data

If required, the **Save KPI data over time for this CI** option (see "CI Indicators Tab" on page 453) can be used to save calculated measurements for each of the CI KPIs, at 15 minute intervals.

This is done by activating the **saveValuesToPersistency** global parameter in the Business Rule Repository. You can also change the default interval by modifying the value of the **saveValuesToPersistencyInterval** option.

For user interface details, see "New/Edit Global Parameter Dialog Box" on page 885.

Example:

1. Access the **Service Health Administration** > **Repositories** > **Business Rules** page.
2. Click **Edit Globals**.
3. In the **Global Parameters** list, select **saveValuesToPersistency** and click the **Edit** button.
4. In the displayed Edit Global Parameter window, change the **Value** parameter from false to **true**.
5. Click **OK**.
6. To change the default interval (900 seconds) for collecting measurements data, in the **Global Parameters** list, select **saveValuesToPersistencyInterval**. Click the **Edit** button, and modify the value.

   Note: To avoid overloading the database storage, it is recommended that you do not define a shorter default interval value.

How to Display Information from a CI Attribute in a Tooltip

You can edit tooltip definitions of a CI or a calculation rule, so that the tooltip displays information contained in a CI's attribute in the RTSM.

For example, if you have an attribute defined in the RTSM for contact information or CI description, you can use the following procedure to display this information in the CI's tooltip.

1. Access **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** > **Foundations** > **RTSM**.
2. In the **RTSM General Settings** table, edit the **Object Root** parameter and define its value as **root**.
3. Log in to BSM again.
4. Access **Admin** > **RTSM Administration** > **Modeling** > **CI Type Manager**.
5. Right-click the **Data** CIT (below Root), and select **Export to XML**.
6. Open the exported file in a text editor, and locate the attribute you want displayed in the tooltip. For example, if you want the Description attribute displayed, locate the following section:

```
<Attribute name=""description" type="string" display-name="Description"
description="Description" size="1000">
    <Attribute-Qualifiers>
        <Attribute-Qualifier name="BDM_SCOPE"/>
    </Attribute-Qualifiers>
</Attribute>
```

7. To enable Service Health to display the attribute, add the **DASH_ATTRIBUTE** qualifier:

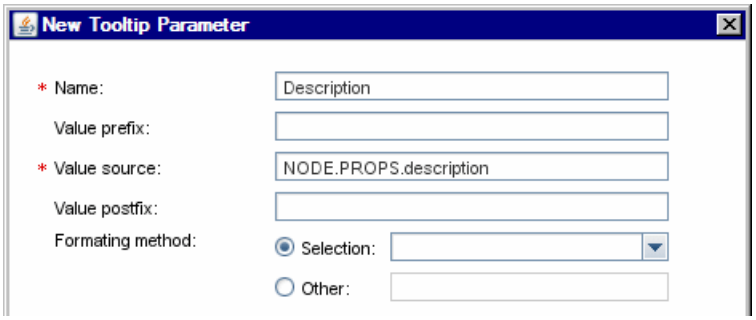
```
<Attribute-Qualifiers>
    <Attribute-Qualifier name="BDM_SCOPE"/>
    <Attribute-Qualifier name="DASH_ATTRIBUTE"/>
</Attribute-Qualifiers>
```

8. Save the edited XML, and import the file back to the RTSM.

9 Within Service Health Administration, open the Business Rules Repository, and proceed as follows:

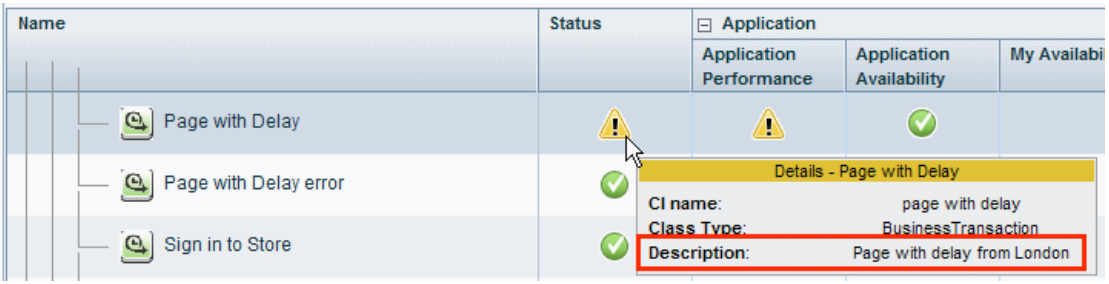
- To add the attribute to CI status tooltips, click **Edit Global Tooltips**, and open the **cidata** tooltip for editing.
- To add the attribute to tooltips of KPIs calculated with a specific rule (for example Worst Status rule), open the rule for editing.

10 In the **Tooltip Parameters** area, create a new parameter. Use a relevant name (for example Description). In Value source, enter NODE.PROPS.<attribute name>. For example:

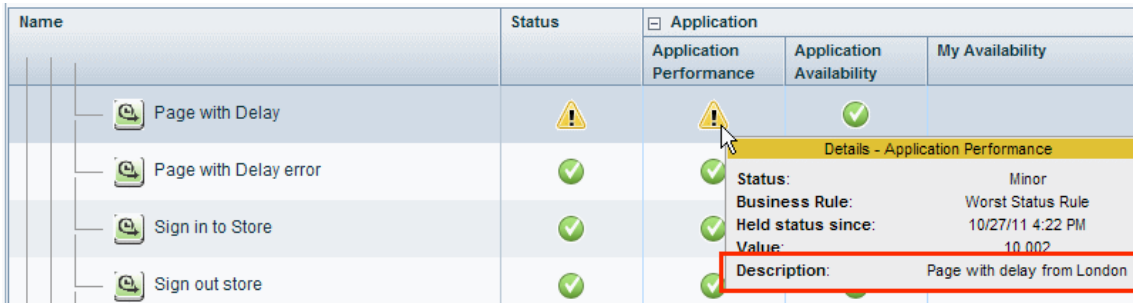


11 Save your changes.

If you added the parameter to global CI tooltips, the attribute now appears on CI status tooltips:



If you added the parameter to a business rule's tooltip, the attribute now appears on KPI tooltips which use this rule:



Reference

List of Calculation Rules in Service Health

Within the Business Rule Repository, each of the out-of-the-box rules is assigned to a domain, based on the data for which it is relevant. The following section provides details for each of the rules. The rules are divided according to their domains.

For details on rule parameters, see "List of Rule Parameters" on page 845. For details on tooltip parameters, see "List of Tooltip Parameters" on page 853.

This section includes the following:

- "Business Process Insight Calculation Rules" on page 741
- "BTM Calculation Rules" on page 764
- "Diagnostics Calculation Rules" on page 778
- "End User Management Calculation Rules" on page 783
- "General Calculation Rules" on page 810
- "Integrations Calculation Rules" on page 822
- "SAP Calculation Rules" on page 825
- "SAP/Siebel Calculation Rules" on page 826
- "Service Manager Calculation Rules" on page 828
- "Siebel Calculation Rules" on page 829
- "SiteScope Calculation Rules" on page 830
- "SOA Calculation Rules" on page 839

Business Process Insight Calculation Rules

<table>
<tr><th>Rule (Rule #)</th><th>Description</th></tr>
<tr><td>BPI Active Status Percentage Rule for Duration Monitor
(629)</td><td>Calculates the percentage of active BPI monitor instances with a status equal or better than the status specified in the PassedStatus parameter of the rule, relative to the number of backlog instances in the sample; the status is derived from the objectives set for the rule.
Example: If PassedStatus is defined as 10 (minor), all instances with status 10 or more are PassedStatus instances. In the following example, the instances that correspond to the criteria are: 1 instance with OK status, 10 instances with the warning status, and 5 instances with the minor status. The rule returns: (1+10+5)/(1+10+5+15+10)=40%.
<table>
<tr><th></th><th>Instances</th><th>Weight</th><th>Value</th></tr>
<tr><td>critical</td><td>10</td><td>1</td><td>0</td></tr>
<tr><td>major</td><td>15</td><td>1</td><td>5</td></tr>
<tr><td>minor</td><td>5</td><td>1</td><td>10</td></tr>
<tr><td>warning</td><td>10</td><td>1</td><td>15</td></tr>
<tr><td>OK</td><td>1</td><td>1</td><td>20</td></tr>
</table>
Rule Parameters:
"PassedStatus" on page 850

Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Score" on page 861
"Status for" on page 862
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"OK" on page 860
"Min Status" on page 859</td></tr>
</table>

Rule (Rule #)	Description	
BPI Average Active Weighted Status Rule for Duration Monitor (628)	Calculates the average weighted status of active BPI duration monitor instances.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Status for" on page 862 "Critical instances" on page 855 "Major instances" on page 858 "Minor instances" on page 859 "Warning instances" on page 864 "OK Instances" on page 860
BPI Average Duration (3000)	Calculates the average duration for the instances completed in the last measurement period for a business process, business activity or duration business process monitor.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Status for" on page 862 "Value" on page 863 "Count" on page 855 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860

<table>
<tr><th>Rule (Rule #)</th><th>Description</th></tr>
<tr><td>BPI Average Weighted Status Rule for Duration Monitor
(623)</td><td>
You can specify status weights using the rule parameters in the rule definition. The rule calculates the following value:
sum (instances x x weight x status) / sum (instances x weight)
The resulting value is a number between 0 and 20 that is translated to the closest status and represented by a colored icon.
Example: Information about the number of instances per status is provided by Business Process Insight. The weights are the rule parameters. The value for each status is calculated by the BPI Average Weighted Status rule.
<table>
<tr><th></th><th>Number of Instances</th><th>Weight</th><th>Status</th></tr>
<tr><td>critical</td><td>20</td><td>1</td><td>0</td></tr>
<tr><td>major</td><td>15</td><td>1</td><td>5</td></tr>
<tr><td>minor</td><td>5</td><td>1</td><td>10</td></tr>
<tr><td>warning</td><td>10</td><td>1</td><td>15</td></tr>
<tr><td>OK</td><td>1</td><td>1</td><td>20</td></tr>
</table>
The result of the rule calculation is:
(20*1*0+15*1*5+5*1*10+10*1*15+1*1*20)/
(20*1+15*1+5*1+10*1+1*1)=5,784 -> 5 is the nearest status which is Major.
</td></tr>
<tr><td></td><td>
Rule Parameters:
"OK weight" on page 849
"Warning Weight" on page 852
"Minor weight" on page 848
"Major weight" on page 848
"Critical weight" on page 846
</td><td>
Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Critical instances" on page 855
"Major instances" on page 858
"Minor instances" on page 859
"Warning instances" on page 864
"OK Instances" on page 860
</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th>Description</th></tr>
<tr><td>BPI Average Weighted Status Rule for Value Monitor
(611)</td><td>
You can specify status weights using the rule parameters in the rule definition. The rule calculates the following value:
sum (instances x weight x status)/
sum (instances x weight)
The resulting value is a number between 0 and 20 that is translated to the closest status and represented by a colored icon.
Example: Information about the value of instances per status is provided by Business Process Insight. The weights are the rule parameters. The value for each status is calculated by the BPI Average Weighted Status rule.
<table>
<tr><th></th><th>Number of Instances</th><th>Weight</th><th>Status</th></tr>
<tr><td>critical</td><td>20</td><td>1</td><td>0</td></tr>
<tr><td>major</td><td>15</td><td>1</td><td>5</td></tr>
<tr><td>minor</td><td>5</td><td>1</td><td>10</td></tr>
<tr><td>warning</td><td>10</td><td>1</td><td>15</td></tr>
<tr><td>OK</td><td>1</td><td>1</td><td>20</td></tr>
</table>
The result of the rule calculation is:
(20*1*0+15*1*5+5*1*10+10*1*15+1*1*20)/(20*1+15*1+5*1+10*1+1*1)=5,
784 -> 5 is the nearest status which is Major.
<table>
<tr><td>Rule Parameters:
"OK weight" on page 849
"Warning Weight" on page 852
"Minor weight" on page 848
"Major weight" on page 848
"Critical weight" on page 846</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Critical instances" on page 855
"Major instances" on page 858
"Minor instances" on page 859
"Warning instances" on page 864
"OK Instances" on page 860</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">BPI Backlog Count Rule
(604)</td><td colspan="2">Calculates the number of instances that are currently passing through one of the following:
➤ One Business Activity (when the Backlog KPI is assigned to a BPI Business Activity CI).
➤ A group of BP Activities (when the Backlog KPI is assigned to a Business Process Scope CI representing a BPI Value Monitor, a BPI Duration Monitor, or a BPI Custom Monitor).
➤ A Business Process (when the Backlog KPI is assigned to a Business Process CI).</td></tr>
<tr><td>Rule Parameters:
None</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Count" on page 855
"Value" on page 863
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"OK" on page 860</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">BPI Backlog Value Rule
(605)</td><td colspan="2">Calculates the value/cost of the instances that are currently passing through one of the following:
➤ One Business Activity (when the Backlog KPI is assigned to a BPI Business Activity CI).
➤ A group of BP Activities (when the Backlog KPI is assigned to a Business Process Scope CI representing a BPI Value Monitor, a BPI Duration Monitor, or a BPI Custom Monitor).
➤ A Business Process (when the Backlog KPI is assigned to a Business Process CI).</td></tr>
<tr><td>Rule Parameters:
None</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Count" on page 855
"Value" on page 863
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"OK" on page 860</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th>Description</th></tr>
<tr><td>BPI Business Impact Average Weighted Status Count Rule
(614)</td><td>
You can specify status weights using the rule parameters in the rule definition. The rule calculates the following value:
sum (instances x weight x status)/sum (instances x weight)
The resulting value is a number between 0 and 20 that is translated to the closest status and displayed as the color of the tooltip.
A group bar displays the number of instances per instance status up to the Business Process CI level.
Example: The number of instances per BPI status and the BPI statuses are provided by Business Process Insight. The weight information is taken from the values of the rule parameters. The value for each status is calculated by the rule.
<table>
<tr><th></th><th>Number of Instances</th><th>Weight</th><th>Status</th></tr>
<tr><td>Healthy</td><td>3</td><td>1</td><td>20</td></tr>
<tr><td>At Risk</td><td>5</td><td>2</td><td>10</td></tr>
<tr><td>Blocked</td><td>4</td><td>1</td><td>0</td></tr>
</table>
The result of the rule calculation is:
(3*1*20 + 5*2*10 + 4*1*0)/(3*1+5*2+4*1) = 160/17 = 9.411 which is converted into 10 = Minor Service Health status and displayed in the tooltip.
The groupbar displays the number of instances with each status (3 Healthy, 5 At Risk, 4 Blocked).
<table>
<tr><td>Rule Parameters:
"HealthyWeight" on page 847
"AtRiskWeight" on page 845
"BlockedWeight" on page 845</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Blocked backlog" on page 854
"At risk backlog" on page 853
"Healthy backlog" on page 857</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th>Description</th></tr>
<tr><td>BPI Business Impact Average Weighted Status Value Rule
(617)</td><td>
You can specify status weights using the rule parameters in the rule definition. The rule calculates the following value:
sum (instances x weight x status) / sum (instances x weight)
The resulting value is a number between 0 and 20 that is translated to the closest status and displayed as the color of the tooltip.
A group bar displays the sum of values of the instances per status up to the Business Process CI level.
Example: The number of instances per BPI status and the BPI statuses are provided by Business Process Insight. The weight information is taken from the values of the rule parameters. The cost for each status is calculated by the rule.
<table>
<tr><th></th><th>Sum of Value</th><th>Weight</th><th>Status</th></tr>
<tr><td>Healthy</td><td>$1000</td><td>1</td><td>20</td></tr>
<tr><td>At Risk</td><td>$1500</td><td>2</td><td>10</td></tr>
<tr><td>Blocked</td><td>$700</td><td>1</td><td>0</td></tr>
</table>
The result of the rule calculation is:
(1000*1*20 + 1500*2*10 + 700*1*0)/
(1000*1+1500*2+700*1) = 10.63 which is converted into 10 = Minor Service Health status.
The groupbar displays the sum of values per status (1000 for instances with Healthy status, 1500 for instances with At Risk status, and 700 for instances with Blocked status).
<table>
<tr><th>Rule Parameters:</th><th>Tooltip Parameters:</th></tr>
<tr><td>"HealthyWeight" on page 847
"AtRiskWeight" on page 845
"BlockedWeight" on page 845</td><td>"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Blocked backlog" on page 854
"At risk backlog" on page 853
"Healthy backlog" on page 857</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">BPI Business Impact Status Percentage Count Rule
(615)</td><td colspan="2">The rule calculates the percentage of instances with a status equal or better than the status specified in the PassedStatus parameter of the rule, relative to the total number of instances in the sample; the status is derived from the thresholds set for the rule.
A group bar displays the sum of values of the instances per status up to the Business Process CI level.
Example: If PassedStatus is defined as 20 (OK/Healthy), all instances with status 20 or more are PassedStatus instances. In the example, 10 instances match the criteria. The rule returns: (10)/(10+12+8)=25% which is then compared to the thresholds and translated into a status.
<table>
<tr><th>BPI Statuses from HP Business Process Insight</th><th>Number of Instances</th></tr>
<tr><td>Healthy (20 OK)</td><td>10</td></tr>
<tr><td>At Risk (10 Minor)</td><td>12</td></tr>
<tr><td>Blocked (0 Critical)</td><td>8</td></tr>
</table></td></tr>
<tr><td>Rule Parameters:
"PassedStatus" on page 850</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Score" on page 861
"Status for" on page 862
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"OK" on page 860
"Min Status" on page 859</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th>Description</th></tr>
<tr><td>BPI Business Impact Status Percentage Value Rule
(618)</td><td>
The rule calculates the number of instances with a status equal or better than the status specified in the PassedStatus parameter of the rule, relative to the total number of instances in the sample; the status is derived from the thresholds set for the rule.

A group bar displays the sum of values per instance status up to the Business Process CI level.

Example: If PassedStatus is defined as 20 (OK/Healthy), all instances with status 20 or more are PassedStatus instances. The rule returns: ($1000)/(1000+5000+500)=15% which is then compared to the thresholds and translated into a status.
<table>
<tr><th>BPI Statuses from HP Business Process Insight</th><th>Cost</th></tr>
<tr><td>Healthy (20 OK)</td><td>$1000</td></tr>
<tr><td>At Risk (10 Minor)</td><td>$5000</td></tr>
<tr><td>Blocked (0 Critical)</td><td>$500</td></tr>
</table>
Rule Parameters:
"PassedStatus" on page 850

Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Score" on page 861
"Status for" on page 862
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"OK" on page 860
"Min Status" on page 859
</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">BPI Business Impact Worst Process Instances Count Rule
(613)</td><td colspan="2">The samples sent by Business Process Insight, includes the number of instances for each status (Healthy, At Risk and Blocked), where the statuses are calculated by Business Process Insight.
The rule searches for the worst status in the sample.
Example: If the sample contains instances with status:
➤ Blocked then the rule returns Critical status.
➤ At Risk then the rule returns Minor status.
If the sample contains instances with other statuses, the status returned is OK.</td></tr>
<tr><td>Rule Parameters:
None</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Blocked backlog" on page 854
"At risk backlog" on page 853
"Healthy backlog" on page 857</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">BPI Business Impact Worst Process Instances Value Rule
(616)</td><td colspan="2">The samples sent by Business Process Insight, includes the number of instances for each status (Healthy, At Risk and Blocked), where the statuses are calculated by Business Process Insight.
The rule searches for the worst status in the sample.
Example: If the sample contains instances with status:
➤ Blocked and a non-zero value then the rule returns Critical status.
➤ At Risk and a non-zero value then the rule returns Minor status.
If the sample contains instances with other statuses, the status returned is OK.</td></tr>
<tr><td>Rule Parameters:
None</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Blocked backlog" on page 854
"At risk backlog" on page 853
"Healthy backlog" on page 857</td></tr>
<tr><td rowspan="2">BPI Maximum Duration
(3002)</td><td colspan="2">Calculates the maximum duration for the instances completed in the last measurement period for a business process, business activity or duration business process monitor.</td></tr>
<tr><td>Rule Parameters:
None</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Count" on page 855
"Value" on page 863
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"OK" on page 860</td></tr>
</table>

Rule (Rule #)	Description	
BPI Minimum Duration (3001)	Calculates the minimum duration for the instances completed in the last measurement period for a business process, business activity or duration business process monitor.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Status for" on page 862 "Count" on page 855 "Value" on page 863 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860
BPI Process Average Value (3003)	Calculates the average value for the instances completed in the last measurement period for a business process or business activity.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Status for" on page 862 "Count" on page 855 "Value" on page 863 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860

Rule (Rule #)	Description	
BPI Process Maximum Value Rule (3005)	Calculates the maximum value for the instances completed in the last measurement period for a business process or business activity.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Status for" on page 862 "Count" on page 855 "Value" on page 863 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860
BPI Process Minimum Value Rule (3004)	Calculates the minimum value for the instances completed in the last measurement period for a business process or business activity.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Status for" on page 862 "Count" on page 855 "Value" on page 863 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860

Rule (Rule #)	Description	
BPI Scope Average Value (3007)	Calculates the average value for the instances completed in the last measurement period for a value or custom business process monitor.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Status for" on page 862 "Count" on page 855 "Value" on page 863 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860
BPI Scope Maximum Value Rule (3010)	Calculates the maximum value for the instances completed in the last measurement period for a value or custom business process monitor.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Status for" on page 862 "Count" on page 855 "Value" on page 863 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860

Rule (Rule #)	Description	
BPI Scope Minimum Value Rule (3009)	Calculates the minimum value for the instances completed in the last measurement period for a value or custom business process monitor.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Status for" on page 862 "Count" on page 855 "Value" on page 863 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860
BPI Scope Weighted Average Duration (3006)	Calculates the weighted average duration for the instances completed in the last measurement period for a duration business process monitor.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Status for" on page 862 "Count" on page 855 "Value" on page 863 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860

Rule (Rule #)	Description	
BPI Scope Weighted Average Value (3008)	Calculates the weighted average value for the instances completed in the last measurement period for a value or custom business process monitor.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Status for" on page 862 "Count" on page 855 "Value" on page 863 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860

<table>
<tr><th>Rule (Rule #)</th><th>Description</th></tr>
<tr><td rowspan="2">BPI Status Percentage Rule for Duration Monitor
(624)</td><td>The rule calculates the percentage of instances with a status equal or better than the status specified in the PassedStatus parameter of the rule, relative to the total number of instances in the sample; the status is derived from the thresholds set for the rule.
Example: If PassedStatus is defined as 10 (minor), all instances with status 10 or more are PassedStatus instances. In the following example, the instances that correspond to the criteria are: 1 instance with OK status, 10 instances with the warning status, and 5 instances with the minor status. The rule returns: (1+10+5)/(1+10+5+15+10)=40%.
<table>
<tr><th></th><th>Instances</th><th>Weight</th><th>Value</th></tr>
<tr><td>critical</td><td>10</td><td>1</td><td>0</td></tr>
<tr><td>major</td><td>15</td><td>1</td><td>5</td></tr>
<tr><td>minor</td><td>5</td><td>1</td><td>10</td></tr>
<tr><td>warning</td><td>10</td><td>1</td><td>15</td></tr>
<tr><td>OK</td><td>1</td><td>1</td><td>20</td></tr>
</table></td></tr>
<tr><td>Rule Parameters:
"PassedStatus" on page 850</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Score" on page 861
"Status for" on page 862
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"OK" on page 860
"Min Status" on page 859</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th>Description</th></tr>
<tr><td>BPI Status Percentage Rule for Value Monitor
(612)</td><td>The rule calculates the percentage of instances with a status equal or better than the status specified in the PassedStatus parameter of the rule, relative to the total number of instances in the sample; the status is derived from the thresholds set for the rule.

Example: If PassedStatus is defined as 10 (minor), all instances with status 10 or more are PassedStatus instances. In the following example, the instances that correspond to the criteria are: 1 instance with OK status, 10 instances with the warning status, and 5 instances with the minor status. The rule returns: (1+10+5)/(1+10+5+15+10)=40%.

<table>
<tr><th></th><th>Instances</th><th>Weight</th><th>Value</th></tr>
<tr><td>critical</td><td>10</td><td>1</td><td>0</td></tr>
<tr><td>major</td><td>15</td><td>1</td><td>5</td></tr>
<tr><td>minor</td><td>5</td><td>1</td><td>10</td></tr>
<tr><td>warning</td><td>10</td><td>1</td><td>15</td></tr>
<tr><td>OK</td><td>1</td><td>1</td><td>20</td></tr>
</table>
Rule Parameters:
"PassedStatus" on page 850

Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Score" on page 861
"Status for" on page 862
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"OK" on page 860
"Min Status" on page 859</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">BPI Volume Count Rule
(606)</td><td colspan="2">The sample contains the number of completed instances in the most recent collection interval.
Calculates the number of the instances in the sample, that completed passing through one of the following:
➤ One Business Activity (when the Backlog KPI is assigned to a BPI Business Activity CI).
➤ A group of BP Activities (when the Backlog KPI is assigned to a Business Process Scope CI representing a BPI Value Monitor, a BPI Duration Monitor, or a BPI Custom Monitor).
➤ A Business Process (when the Backlog KPI is assigned to a Business Process CI).</td></tr>
<tr><td>Rule Parameters:
None</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Count" on page 855
"Value" on page 863
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"OK" on page 860</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">BPI Volume Value Rule
(607)</td><td colspan="2">Calculates the value/cost of the instances that are currently passing through one of the following:
➤ One Business Activity (when the Backlog KPI is assigned to a BPI Business Activity CI).
➤ A group of BP Activities (when the Backlog KPI is assigned to a Business Process Scope CI representing a BPI Value Monitor, a BPI Duration Monitor, or a BPI Custom Monitor).
➤ A Business Process (when the Backlog KPI is assigned to a Business Process CI).</td></tr>
<tr><td>Rule Parameters:
None</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Count" on page 855
"Value" on page 863
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"OK" on page 860</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">BPI Worst Active Violated Instances Rule for Duration Monitor
(627)</td><td colspan="2">Displays the number of active BPI monitor instances for the worst status (Minor, Major, and so on), where the statuses are calculated by Business Process Insight.</td></tr>
<tr><td>Rule Parameters:
None</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Critical instances" on page 855
"Major instances" on page 858
"Minor instances" on page 859
"Warning instances" on page 864
"OK Instances" on page 860</td></tr>
<tr><td rowspan="2">BPI Worst Violated Instances Rule for Duration Monitor
(622)</td><td colspan="2">The samples sent by Business Process Insight, includes the number of instances for each status (Minor, Major, and so on), where the statuses are calculated by Business Process Insight.
The rule searches for the worst status in the sample.</td></tr>
<tr><td>Rule Parameters:
None</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Critical instances" on page 855
"Major instances" on page 858
"Minor instances" on page 859
"Warning instances" on page 864
"OK Instances" on page 860</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">BPI Worst Violated Instances Rule for Value Monitor
(610)</td><td colspan="2">The samples sent by Business Process Insight, includes the number of instances for each status (Minor, Major, and so on), where the statuses are calculated by Business Process Insight.
The rule searches for the worst status in the sample.</td></tr>
<tr><td>Rule Parameters:
None</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Critical instances" on page 855
"Major instances" on page 858
"Minor instances" on page 859
"Warning instances" on page 864
"OK Instances" on page 860</td></tr>
</table>

BTM Calculation Rules

Rule (Rule #)	Description	
TransactionVision Backend Average Duration Rule (Completed Transactions) (1432)	Calculates status for an HI based on the average backend duration for successful, completed transactions in TransactionVision, using the sample fields sum_tv_response_time/(tx_count - failed_tx_count).	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Backend Average Response" on page 854 "Number of transactions" on page 860 "Value For" on page 863 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860

Rule (Rule #)	Description	
TransactionVision Backend Maximum Duration Rule (Completed Transactions) (1434)	Assigns status for an HI based on the maximum backend duration for successful, completed transactions in TransactionVision, using the sample field max_tv_response_time.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Backend Maximum Response" on page 854 "Value For" on page 863 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860
TransactionVision Backend Minimum Duration Rule (Completed Transactions) (1433)	Assigns status for an HI based on the minimum backend duration for successful, completed transactions in TransactionVision, using the sample field min_tv_response_time.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Backend Minimum Response" on page 854 "Value For" on page 863 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860

Rule (Rule #)	Description	
TransactionVision Backlog Rule (In-Process Transactions) (1426)	Calculates status for an HI based on the number of backlogged (in-process) transactions in TransactionVision, using the sample field curr_tx_count.	
	Rule Parameters: None	**Tooltip Parameters:** "Backlog count" on page 854 "Business Rule" on page 854 "Held status since" on page 857 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "OK" on page 860 "Status" on page 862 "Value For" on page 863 "Warning" on page 864
TransactionVision Delayed Rate Rule (Completed Transactions) (1411)	Calculates status for an HI based on late completed transactions divided by total completed transactions, using the sample fields late_tx_count/tx_count.	
	Rule Parameters: None	**Tooltip Parameters:** "Business Rule" on page 854 "Delays Value" on page 855 "Held status since" on page 857 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Number of transactions" on page 860 "OK" on page 860 "Status" on page 862 "Value For" on page 863 "Warning" on page 864

Rule (Rule #)	Description	
TransactionVision Delayed Rate Rule (In-Process Transactions) (1421)	Calculates status for an HI based on late in-process transactions divided by total in-process transactions, using the sample fields curr_late_tx_count/curr_tx_count.	
	Rule Parameters: None	**Tooltip Parameters:** "Business Rule" on page 854 "Delays Value" on page 855 "Held status since" on page 857 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Number of transactions" on page 860 "OK" on page 860 "Status" on page 862 "Value For" on page 863 "Warning" on page 864
TransactionVision Delayed Value Rule (Completed Transactions) (1412)	Calculates status for an HI based on the financial value of the late completed transactions, using the sample field tot_late_tx_value.	
	Rule Parameters: None	**Tooltip Parameters:** "Business Rule" on page 854 "Delays Value" on page 855 "Held status since" on page 857 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "OK" on page 860 "Status" on page 862 "Value For" on page 863 "Warning" on page 864

Rule (Rule #)	Description	
TransactionVision Delayed Value Rule (In-Process Transactions) (1422)	Calculates status for an HI based on the financial value of the late in-process transactions, using the sample field curr_tot_late_tx_value.	
	Rule Parameters: None	**Tooltip Parameters:** "Business Rule" on page 854 "Delays Value" on page 855 "Held status since" on page 857 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "OK" on page 860 "Status" on page 862 "Value For" on page 863 "Warning" on page 864
TransactionVision End User Average Duration Rule (Completed Transactions) (1435)	Calculates status for an HI based on the average end user duration for successful, completed transactions in TransactionVision, using the sample fields sum_eu_response_time/(tx_count - failed_tx_count).	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "End User Average Response" on page 855 "Number of transactions" on page 860 "Value For" on page 863 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860

Rule (Rule #)	Description	
TransactionVision End User Maximum Duration Rule (Completed Transactions) (1437)	Assigns status for an HI based on the maximum end user duration for successful, completed transactions in TransactionVision, using the sample field max_eu_response_time.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "End User Maximum Response" on page 855 "Value For" on page 863 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860
TransactionVision End User Minimum Duration Rule (Completed Transactions) (1436)	Assigns status for an HI based on the minimum end user duration for successful, completed transactions in TransactionVision, using the sample field min_eu_response_time.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "End User Minimum Response" on page 856 "Value For" on page 863 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">TransactionVision End-to-end Average Duration Rule (Completed Transactions)
(1410)</td><td colspan="2">Calculates status for an HI based on the average duration for successful, completed transactions in TransactionVision, using the sample fields sum_response_time/(tx_count - failed_tx_count).</td></tr>
<tr><td>Rule Parameters:
None</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"End-to-end Average Response" on page 856
"Number of Valid Transactions" on page 860
"Value For" on page 863
"Last update" on page 858
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"OK" on page 860</td></tr>
</table>

Rule (Rule #)	Description	
TransactionVision End-to-end Maximum Duration Rule (Completed Transactions) (1431)	Assigns status for an HI based on the maximum duration for successful, completed transactions in TransactionVision, using the sample field max_response_time.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "End-to-end Maximum Response" on page 856 "Value For" on page 863 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860
TransactionVision End-to-end Minimum Duration Rule (Completed Transactions) (1430)	Assigns status for an HI based on the minimum duration for successful, completed transactions in TransactionVision, using the sample field min_response_time.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "End-to-end Minimum Response" on page 856 "Value For" on page 863 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">TransactionVision Exceptions Rate Rule (Completed Transactions)
(1414)</td><td colspan="2">Calculates status for an HI based on completed transactions marked as exceptions, divided by total completed transactions, using the sample fields exp_tx_count/tx_count.</td></tr>
<tr><td>Rule Parameters:
None</td><td>Tooltip Parameters:
"Business Rule" on page 854
"Exceptions Rate" on page 856
"Held status since" on page 857
"Last update" on page 858
"Major" on page 858
"Minor" on page 859
"Number of transactions" on page 860
"OK" on page 860
"Status" on page 862
"Value For" on page 863
"Warning" on page 864</td></tr>
</table>

Rule (Rule #)	Description	
TransactionVision Exceptions Rate Rule (In-Process Transactions) (1424)	Calculates status for an HI based on completed transactions marked as exceptions, divided by total in-process transactions, using the sample fields curr_exp_tx_count/curr_tx_count.	
	Rule Parameters: None	**Tooltip Parameters:** "Business Rule" on page 854 "Exceptions Rate" on page 856 "Held status since" on page 857 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Number of transactions" on page 860 "OK" on page 860 "Status" on page 862 "Value For" on page 863 "Warning" on page 864
TransactionVision Exceptions Value Rule (Completed Transactions) (1413)	Calculates status for an HI based on the financial value of completed transactions marked as exceptions, using the sample field tot_exp_tx_value.	
	Rule Parameters: None	**Tooltip Parameters:** "Business Rule" on page 854 "Exceptions Value" on page 856 "Held status since" on page 857 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "OK" on page 860 "Status" on page 862 "Value For" on page 863 "Warning" on page 864

Rule (Rule #)	Description	
TransactionVision Exceptions Value Rule (In-Process Transactions) (1423)	Calculates status for an HI based on the financial value of in-process transactions marked as exceptions, using the sample field curr_tot_exp_tx_value.	
	Rule Parameters: None	**Tooltip Parameters:** "Business Rule" on page 854 "Exceptions Value" on page 856 "Held status since" on page 857 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "OK" on page 860 "Status" on page 862 "Value For" on page 863 "Warning" on page 864
TransactionVision Failures Rate Rule (Completed Transactions) (1418)	Calculates status for an HI based on failed completed transactions divided by total completed transactions, using the sample fields failed_tx_count/tx_count.	
	Rule Parameters: None	**Tooltip Parameters:** "Business Rule" on page 854 "Failures rate" on page 856 "Held status since" on page 857 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Number of transactions" on page 860 "OK" on page 860 "Status" on page 862 "Value For" on page 863 "Warning" on page 864

Rule (Rule #)	Description	
TransactionVision Failures Rate Rule (In-Process Transactions) (1428)	Calculates status for an HI based on failed in-process transactions divided by total completed transactions, using the sample fields curr_failed_tx_count/curr_tx_count.	
	Rule Parameters: None	**Tooltip Parameters:** "Business Rule" on page 854 "Failures rate" on page 856 "Held status since" on page 857 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Number of transactions" on page 860 "OK" on page 860 "Status" on page 862 "Value For" on page 863 "Warning" on page 864
TransactionVision Failures Value Rule (Completed Transactions) (1419)	Calculates status for an HI based on the financial value of the failed completed transactions, using the sample field tot_failed_tx_value.	
	Rule Parameters: None	**Tooltip Parameters:** "Business Rule" on page 854 "Held status since" on page 857 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "OK" on page 860 "Status" on page 862 "Value" on page 863 "Value For" on page 863 "Warning" on page 864

Rule (Rule #)	Description	
TransactionVision Failures Value Rule (In-Process Transactions) (1429)	Calculates status for an HI based on the financial value of the failed in-process transactions, using the sample field curr_tot_failed_tx_value.	
	Rule Parameters: None	**Tooltip Parameters:** "Business Rule" on page 854 "Held status since" on page 857 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "OK" on page 860 "Status" on page 862 "Value" on page 863 "Value For" on page 863 "Warning" on page 864
TransactionVision Value Rule (Completed Transactions) (1415)	Calculates status for an HI based on the financial value of the completed transactions, using the sample field tot_tx_value.	
	Rule Parameters: None	**Tooltip Parameters:** "Business Rule" on page 854 "Held status since" on page 857 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "OK" on page 860 "Status" on page 862 "Value" on page 863 "Value For" on page 863 "Warning" on page 864

Rule (Rule #)	Description	
TransactionVision Value Rule (In-Process Transactions) (1425)	Calculates status for an HI based on the financial value of the in-process transactions, using the sample field curr_tot_tx_value.	
	Rule Parameters: None	**Tooltip Parameters:** "Business Rule" on page 854 "Held status since" on page 857 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "OK" on page 860 "Status" on page 862 "Value" on page 863 "Value For" on page 863 "Warning" on page 864
TransactionVision Volume Rule (Completed and In-Process Transactions) (1416)	Calculates status for an HI based on the financial value of the completed and in-process transactions in TransactionVision, using the sample fields tx_count + curr_tx_count.	
	Rule Parameters: None	**Tooltip Parameters:** "Business Rule" on page 854 "Held status since" on page 857 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "OK" on page 860 "Status" on page 862 "Transactions volume" on page 863 "Value For" on page 863 "Warning" on page 864

Diagnostics Calculation Rules

Rule (Rule #)	Description	
Diagnostics Backend Transaction Application Exceptions Rule (50013)	Returns transaction application exceptions, as seen in HP Diagnostics. Reports metrics for transactions that have been created in the Transaction Management Administration > Monitoring tab.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Application Exceptions" on page 853 "Status for" on page 862 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860

Rule (Rule #)	Description	
Diagnostics Backend Transaction Average Response Time Rule (50010)	Calculates average transaction response time, as seen in HP Diagnostics. Reports metrics for transactions that have been created in the Transaction Management Administration > Monitoring tab.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Average Response Time" on page 853 "Status for" on page 862 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860
Diagnostics Backend Transaction Count Rule (50015)	Returns transaction count, as seen in HP Diagnostics. Reports metrics for transactions that have been created in the Transaction Management Administration > Monitoring tab.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Status for" on page 862 "Transaction Count" on page 863 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Diagnostics Backend Transaction Maximum Response Time Rule
(50012)</td><td colspan="2">Calculates maximum transaction response time, as seen in HP Diagnostics. Reports metrics for transactions that have been created in the Transaction Management Administration > Monitoring tab.</td></tr>
<tr><td>Rule Parameters:
None</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Max Response Time" on page 858
"Status for" on page 862
"Last update" on page 858
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"OK" on page 860</td></tr>
<tr><td rowspan="2">Diagnostics Backend Transaction Minimum Response Time Rule
(50011)</td><td colspan="2">Calculates minimum transaction response time, as seen in HP Diagnostics. Reports metrics for transactions that have been created in the Transaction Management Administration > Monitoring tab.</td></tr>
<tr><td>Rule Parameters:
None</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Min Response Time" on page 859
"Status for" on page 862
"Last update" on page 858
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"OK" on page 860</td></tr>
</table>

Rule (Rule #)	Description	
Diagnostics Backend Transaction SOAP Faults Rule (50014)	Returns transaction SOAP faults, as seen in HP Diagnostics. Reports metrics for transactions that have been created in the Transaction Management Administration > Monitoring tab.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Application Exceptions" on page 853 "Status for" on page 862 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860
Diagnostics Synthetic User Backend Application Exceptions Rule (50001)	Returns application exceptions for BPM transactions, as seen by HP Diagnostics.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Application Exceptions" on page 853 "Status for" on page 862 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860

Rule (Rule #)	Description	
Diagnostics Synthetic User Backend Average Response Time Rule (50000)	Calculates the average response time for BPM transactions, as seen by HP Diagnostics	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Average Response Time" on page 853 "Status for" on page 862 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860
Diagnostics Synthetic User Backend Max Server Request Duration Rule (50002)	Returns the maximum server request duration for BPM transactions, as seen by HP Diagnostics.	
	Rule Parameters: None	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Max Response Time" on page 858 "Status for" on page 862 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "OK" on page 860

End User Management Calculation Rules

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Average Availability of Weighted Volume
(55)</td><td colspan="2">This KPI rule calculates the weighted average availability of child CIs, based on the Volume and Application Availability KPIs. The rule generates a status for the KPI based on this calculation. The rule can be used for a KPI on a CI collection, BTF, or application.
This rule is applicable for Real User Monitor, which uses the Volume KPI.
For example, if the KPI is on an application which has BTs as child CIs, the rule looks at the Volume and Application Availability KPIs on the BTs, and calculates the weighted average for the application.
If there is no volume on a child CI, its volume is calculated as 1.
If the rule is on an application, and the application also has HIs contributing to the Application Availability KPI, the rule calculates the weighted average based on the child CIs. The rule then compares that to the HIs on the CI, and shows the worst status between the calculated value and the values of all contributing HIs.
For an example of weighted average calculation, and details on changing weights, see "Example of EUM Weighted Average Rule" on page 865.</td></tr>
<tr><td>Rule Parameters:
"calc_method" on page 845
"Calculate Volume By KPI" on page 845
"hi_list" on page 847
"volumeKPI" on page 852</td><td>Tooltip Parameters:
"Availability" on page 853
"Business Rule" on page 854
"Held status since" on page 857
"Major" on page 858
"Minor" on page 859
"OK" on page 860
"Status" on page 862
"Warning" on page 864</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Average Network of Weighted Volume
(93)</td><td colspan="2">This KPI rule calculates the weighted average network availability of child CIs, based on the Volume (number of sessions) and Network KPIs. The rule generates a status for the KPI based on this calculation. The rule can be used for a KPI on an end user group. This rule is applicable for Real User Monitor, which uses the Volume KPI.

For example, if the KPI is on an EUG which has subnets as child CIs, the rule looks at the Volume and Network KPIs on the subnets, and calculates the weighted average network availability for the end user group. If there is no volume on a child CI, its volume is calculated as 1.

If the rule is on an EUG, and the EUG also has HIs contributing to the Network KPI, the rule calculates the weighted average based on the child CIs. The rule then compares that to the HIs on the CI, and shows the worst status between the calculated value and the values of all contributing HIs.

For an example of weighted average calculation, and details on changing weights, see "Example of EUM Weighted Average Rule" on page 865.</td></tr>
<tr><td>Rule Parameters:
"calc_method" on page 845
"Calculate Volume By KPI" on page 845
"hi_list" on page 847
"volumeKPI" on page 852</td><td>Tooltip Parameters:
"Business Rule" on page 854
"Held status since" on page 857
"Major" on page 858
"Minor" on page 859
"Network Availability" on page 859
"OK" on page 860
"Status" on page 862
"Warning" on page 864</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Average Performance of Weighted Volume
(65)</td><td colspan="2">This KPI rule calculates the weighted average performance of child CIs, based on the Volume and Performance KPIs. The rule generates a status for the KPI based on this calculation. The rule is applicable for Real User Monitor, which uses the Volume KPI.

The rule can be used for a KPI on an end user group, CI collection, BTF, or application. If the rule is used on a transaction it looks at the volume of all transaction hits; if it is on an end user group it looks at all sessions or connections.

For example, if the KPI is on an application which has BTs as child CIs, the rule looks at the Volume and Performance KPIs on the BTs, and calculates the weighted average for the application. If there is no volume on a child CI, its volume is calculated as 1.

If the rule is on an application and the application also has HIs contributing to the Performance KPI, the rule calculates the weighted average based on the child CIs, compares that to the HI on the CI, and shows the worst of these two statuses.

For an example of weighted average calculation, and details on changing weights, see "Example of EUM Weighted Average Rule" on page 865.</td></tr>
<tr><td>Rule Parameters:
"calc_method" on page 845
"Calculate Volume By KPI" on page 845
"hi_list" on page 847
"volumeKPI" on page 852</td><td>Tooltip Parameters:
"Business Rule" on page 854
"Held status since" on page 857
"Major" on page 858
"Minor" on page 859
"OK" on page 860
"Performance" on page 860
"Status" on page 862
"Warning" on page 864</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Average Performance of Weighted Volume (Available Hits)
(64)</td><td colspan="2">This rule calculates the weighted average performance status of child CIs, based on the Volume (total available hits) and Performance KPIs, using available transaction hits only. The rule generates a status for the KPI based on this calculation. The rule can be used for a KPI on a CI collection, BTF, or application; the rule is applicable for Real User Monitor, which uses the Volume KPI.

For example, if the KPI is on an application which has BTs as child CIs, the rule looks at the Volume (total available hits) and Performance KPIs on the BTs, and calculates the weighted average for the application. If there is no volume on a child CI, its volume is calculated as 1.

If the rule is on an application and the application also has HIs contributing to the Performance KPI, the rule calculates the weighted average of available hits on the child CIs, compares that to the HI on the CI, and shows the worst of these two statuses.

Note: If this rule is used for a KPI on a CI collection which contains CI collections as child CIs, the child CIs must also have a KPI which uses this rule in order for the parent to use the rule.

For an example of weighted average calculation, and details on changing weights, see "Example of EUM Weighted Average Rule" on page 865.</td></tr>
<tr><td>Rule Parameters:
"calc_method" on page 845
"Calculate Volume By KPI" on page 845
"hi_list" on page 847
"volumeKPI" on page 852</td><td>Tooltip Parameters:
"Business Rule" on page 854
"Held status since" on page 857
"Major" on page 858
"Minor" on page 859
"OK" on page 860
"Performance" on page 860
"Status" on page 862
"Warning" on page 864</td></tr>
</table>

Rule (Rule #)	Description	
EUM Sum of Volumes (4000)	This KPI rule calculates the sum of the volume in the HIs and KPIs on which the calculation is based. Its status is always informational or no data. The rule is used on a transaction to measure total transaction hits; it is not used on an application.	
	Rule Parameters: "calc_method" on page 845 "hi_list" on page 847	**Tooltip Parameters:** "Business Rule" on page 854 "Max Time" on page 858 "Minor" on page 859 "OK" on page 860 "Status" on page 862 "Total" on page 862 "Warning" on page 864
Real User Application Actions Volume Rule (3806)	Counts the total number of actions on the application, during the time period specified by the **duration** parameter.	
	Rule Parameters: "Field Name" on page 846 "Time Stamp Field" on page 852 "duration" on page 846 "No data timeout" on page 849	**Tooltip Parameters:** "Number of Actions" on page 859 "Business Rule" on page 854 "Held status since" on page 857 "Calculation duration" on page 854

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Real User Application Open Sessions Rule
(3815)</td><td colspan="2">The rule counts the number of sessions open on the application, based on the last sample received from Real User Monitor.</td></tr>
<tr><td>Rule Parameters:
"sample_group_by_fields" on page 851
"relevant_samples" on page 850
"Time Stamp Field" on page 852
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Number of Open Sessions" on page 860
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Calculation duration" on page 854
"Major" on page 858
"OK" on page 860</td></tr>
<tr><td rowspan="2">Real User Application Sessions Availability Rule
(3822)</td><td colspan="2">Based on the last sample received from Real User Monitor, the rule calculates average availability of sessions on the application.
Availability is calculated based on the percentage of sessions with errors out of the total number of sessions, using the following sample fields:
(1 – sum (op_se_with_err_count) / sum (active_session_count)) * 100
If the value is greater than the threshold (98% by default), the status is OK; otherwise it is Critical.
Note: This threshold can be changed in Admin > Platform > Setup and Maintenance > Infrastructure Settings > Applications > End User/System Availability Management > Data > Real User Monitor sessions availability threshold (%).</td></tr>
<tr><td>Rule Parameters:
"sample_group_by_fields" on page 851
"relevant_samples" on page 850
"Time Stamp Field" on page 852
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Last update" on page 858
"Availability (%)" on page 853</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Real User Application Sessions Performance Rule
(3819)</td><td colspan="2">Based on the last sample received from Real User Monitor, the rule calculates average performance of sessions on the application. A session is considered to have a performance event if any of its pages or actions had a performance event.
Performance is calculated based on the percentage of sessions with performance events, out of the total number of sessions, using the following sample fields:
(1 – sum (op_se_with_perf_count) / sum (active_session_count))*100
If the value is greater than the threshold (98% by default), the status is OK; otherwise it is Critical.
Note: This threshold can be changed in Admin > Platform > Setup and Maintenance > Infrastructure Settings > Applications > End User/System Availability Management > Data > Real User Monitor sessions performance threshold (%).</td></tr>
<tr><td>Rule Parameters:
"sample_group_by_fields" on page 851
"relevant_samples" on page 850
"Time Stamp Field" on page 852
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Last update" on page 858
"Performance (%)" on page 861</td></tr>
<tr><td rowspan="2">Real User Bandwidth Rule
(3818)</td><td colspan="2">Displays the amount of TCP traffic between the application server and clients, during the time period specified by the duration parameter. TCP traffic is in megabytes, and includes traffic in both directions.</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Bandwidth" on page 854
"Business Rule" on page 854
"Held status since" on page 857
"Calculation duration" on page 854</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Real User Connections Availability Rule
(3814)</td><td colspan="2">Calculates the average availability of connections monitored by Real User Monitor, during the time period specified by the duration parameter.
➤ Availability status is calculated based on the sum of the sample field tot_conn_success_color; if the value is > 0 the status is OK, otherwise the status is Critical.
➤ Availability value is calculated based on the number of successful and unsuccessful connections, using the following sample fields:
Availability = sum (tot_conn) - sum (tot_conn_refused) - sum (tot_conn_timeout) / sum (tot_conn) * 100 (to give a percentage).</td></tr>
<tr><td>Rule Parameters:
"No data timeout" on page 849
"duration" on page 846</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Last update" on page 858
"Availability (%)" on page 853</td></tr>
<tr><td rowspan="2">Real User Connections Volume Rule
(3807)</td><td colspan="2">Counts the total number of connections during the time period specified by the duration parameter.</td></tr>
<tr><td>Rule Parameters:
"Field Name" on page 846
"Time Stamp Field" on page 852
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Number of Connections" on page 859
"Business Rule" on page 854
"Held status since" on page 857
"Calculation duration" on page 854</td></tr>
</table>

Rule (Rule #)	Description	
Real User EUG Subgroup Latency Rule (3808)	Displays the average roundtrip time for a packet, between the client and the server for an end user group monitored by Real User Monitor, during the time period specified by the **duration** parameter.	
	Rule Parameters: "Latency Color field" on page 848 "duration" on page 846 "No data timeout" on page 849	**Tooltip Parameters:** "Status" on page 862 "Latency" on page 858 "Business Rule" on page 854 "Held status since" on page 857 "Calculation duration" on page 854
Real User EUG Subgroup Open Sessions Rule (3816)	The rule counts the number of sessions open on the end-user group subgroup, based on the last sample received from Real User Monitor.	
	Rule Parameters: "sample_group_by_fields" on page 851 "relevant_samples" on page 850 "Time Stamp Field" on page 852 "duration" on page 846 "No data timeout" on page 849	**Tooltip Parameters:** "Number of Open Sessions" on page 860 "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Calculation duration" on page 854 "Major" on page 858 "OK" on page 860

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Real User EUG Subgroup Sessions Availability Rule
(3823)</td><td colspan="2">Based on the last sample received from Real User Monitor, the rule calculates average availability of sessions on the end-user group subgroup.
Availability is calculated based on the percentage of sessions with errors out of the total number of sessions, using the following sample fields:
(1 – sum (op_se_with_err_count) / sum (active_session_count)) * 100
If the value is greater than the threshold (98% by default), the status is OK; otherwise it is Critical.
Note: This threshold can be changed in Admin > Platform > Setup and Maintenance > Infrastructure Settings > Applications > End User/System Availability Management > Data > Real User Monitor sessions performance threshold (%).</td></tr>
<tr><td>Rule Parameters:
"sample_group_by_fields" on page 851
"relevant_samples" on page 850
"Time Stamp Field" on page 852
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Last update" on page 858
"Availability (%)" on page 853</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Real User EUG Subgroup Sessions Performance Rule
(3820)</td><td colspan="2">Based on the last sample received from Real User Monitor, the rule calculates average performance of sessions on the end-user group subgroup. A session is considered to have a performance event if any of its pages or actions had a performance event.
Performance is calculated based on the percentage of sessions with performance events, out of the total number of sessions, using the following sample fields:
(1 – sum (op_se_with_perf_count) / sum (active_session_count))*100
If the value is greater than the threshold (98% by default), the status is OK; otherwise it is Critical.</td></tr>
<tr><td>Rule Parameters:
"sample_group_by_fields" on page 851
"relevant_samples" on page 850
"Time Stamp Field" on page 852
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Last update" on page 858
"Performance (%)" on page 861</td></tr>
<tr><td rowspan="2">Real User Error Events Rule
(3804)</td><td colspan="2">Counts the total number of error events during the time period specified by the duration parameter.</td></tr>
<tr><td>Rule Parameters:
"Field Name" on page 846
"Time Stamp Field" on page 852
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Number of Error Events" on page 859
"Business Rule" on page 854
"Held status since" on page 857
"Calculation duration" on page 854</td></tr>
</table>

Rule (Rule #)	Description	
Real User Information Events Rule (3803)	Counts the total number of information events during the time period specified by the **duration** parameter.	
	Rule Parameters: "Field Name" on page 846 "Time Stamp Field" on page 852 "duration" on page 846 "No data timeout" on page 849	**Tooltip Parameters:** "Number of Information Events" on page 860 "Business Rule" on page 854 "Held status since" on page 857 "Calculation duration" on page 854
Real User Location Latency Rule (3809)	Displays the average roundtrip time for a packet, between the client and the server for a location monitored by Real User Monitor, during the time period specified by the **duration** parameter.	
	Rule Parameters: "Latency Color field" on page 848 "duration" on page 846 "No data timeout" on page 849	**Tooltip Parameters:** "Status" on page 862 "Latency" on page 858 "Business Rule" on page 854 "Held status since" on page 857 "Calculation duration" on page 854
Real User Location Open Sessions Rule (3817)	The rule counts the number of sessions open on the location, based on the last sample received from Real User Monitor.	
	Rule Parameters: "sample_group_by_fields" on page 851 "relevant_samples" on page 850 "Time Stamp Field" on page 852 "duration" on page 846 "No data timeout" on page 849	**Tooltip Parameters:** "Number of Open Sessions" on page 860 "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Calculation duration" on page 854 "Major" on page 858 "OK" on page 860

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Real User Location Sessions Availability Rule
(3824)</td><td colspan="2">Based on the last sample received from Real User Monitor, the rule calculates average availability of sessions on the location.
Availability is calculated based on the percentage of sessions with errors out of the total number of sessions, using the following sample fields:
(1 – sum (op_se_with_err_count) / sum (active_session_count)) * 100
If the value is greater than the threshold (98% by default), the status is OK; otherwise it is Critical.
Note: This threshold can be changed in Admin > Platform > Setup and Maintenance > Infrastructure Settings > Applications > End User/System Availability Management > Data > Real User Monitor sessions availability threshold (%).</td></tr>
<tr><td>Rule Parameters:
"sample_group_by_fields" on page 851
"relevant_samples" on page 850
"Time Stamp Field" on page 852
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Last update" on page 858
"Availability (%)" on page 853</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Real User Location Sessions Performance Rule
(3821)</td><td colspan="2">Based on the last sample received from Real User Monitor, the rule calculates average performance of sessions on the location. A session is considered to have a performance event if any of its pages or actions had a performance event.
Performance is calculated based on the percentage of sessions with performance events, out of the total number of sessions, using the following sample fields:
(1 – sum (op_se_with_perf_count) / sum (active_session_count))*100
If the value is greater than the threshold (98% by default), the status is OK; otherwise it is Critical.
Note: This threshold can be changed in Admin > Platform > Setup and Maintenance > Infrastructure Settings > Applications > End User/System Availability Management > Data > Real User Monitor sessions performance threshold (%).</td></tr>
<tr><td>Rule Parameters:
"sample_group_by_fields" on page 851
"relevant_samples" on page 850
"Time Stamp Field" on page 852
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Last update" on page 858
"Performance (%)" on page 861</td></tr>
</table>

Rule (Rule #)	Description	
Real User Number of Transaction Hits Rule (3802)	Counts the total number of times that a transaction monitored by Real User Monitor was completed, during the time period specified by the **duration** parameter.	
	Rule Parameters: "Availability Field" on page 845 "Field Name" on page 846 "Time Stamp Field" on page 852 "duration" on page 846 "No data timeout" on page 849	**Tooltip Parameters:** "Number of Transaction Hits" on page 860 "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Calculation duration" on page 854 "Major" on page 858 "OK" on page 860
Real User Performance Events Rule (3805)	Counts the total number of performance events during the time period specified by the **duration** parameter.	
	Rule Parameters: "Field Name" on page 846 "Time Stamp Field" on page 852 "duration" on page 846 "No data timeout" on page 849	**Tooltip Parameters:** "Number of Performance Events" on page 860 "Business Rule" on page 854 "Held status since" on page 857 "Calculation duration" on page 854

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Real User Transaction Availability Rule
(3812)</td><td colspan="2">Calculates availability of a transaction monitored by Real User Monitor, during the time period specified by the duration parameter.
The samples contain information on how many transactions were available (passed) and how many were not available (failed).
The rule calculates availability status using the following calculation: Number of available transactions - (total number of transactions * availability threshold).
For example, suppose the threshold is 98%. For each available transaction the rule calculates: 1 - (1 * 0.98) = 0.02, and for each unavailable transaction it calculates: 0 - (1*0.98) = -0.98.
These values are then added together for the time period specified in the duration parameter. If the result is positive, the health indicator status is OK; if the result is negative, its status is Critical.</td></tr>
<tr><td>Rule Parameters:
"No data timeout" on page 849
"duration" on page 846</td><td>Tooltip Parameters:
"Status" on page 862
"Availability (%)" on page 853
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Last update" on page 858</td></tr>
</table>

Rule (Rule #)	Description	
Real User Transaction Performance Rule (3813)	Calculates the average performance of a transaction monitored by Real User Monitor, during the time period specified by the duration parameter. The samples contain information on how many sessions had acceptable response time (OK status) and how many were problematic (Critical status). For an example of weighted average calculation, and details on changing weights, see "Example of EUM Weighted Average Rule" on page 865. **Note:** Although Real User Monitor sends samples with either OK or Critical status (and not Minor), the rule result can be Minor based on the average of the statuses in the sample.	
	Rule Parameters: "No data timeout" on page 849 "duration" on page 846	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Status for" on page 862 "Last update" on page 858 "Critical samples" on page 855 "Minor samples" on page 859 "OK samples" on page 860 "Average Net Time" on page 853
Real User Transaction Server Time Rule (3811)	Displays the average server time of a transaction monitored by Real User Monitor, during the time period specified by the **duration** parameter.	
	Rule Parameters: "Sum field" on page 852 "Divide by field" on page 846 "duration" on page 846 "No data timeout" on page 849	**Tooltip Parameters:** "Transaction Server Time" on page 863 "Business Rule" on page 854 "Held status since" on page 857 "Calculation duration" on page 854

Rule (Rule #)	Description	
Real User Transaction Total Time Rule (3810)	Displays the average total time of a transaction monitored by Real User Monitor, during the time period specified by the **duration** parameter.	
	Rule Parameters: "Sum field" on page 852 "Divide by field" on page 846 "duration" on page 846 "No data timeout" on page 849	**Tooltip Parameters:** "Transaction Total Time" on page 863 "Business Rule" on page 854 "Held status since" on page 857 "Calculation duration" on page 854
RUM Application Session Statistics Monitor Availability Rule (pre-9.0) (56)	**Note:** This rule uses calculation logic based on BSM pre-9.x versions. Calculates the result as follows: **100% x (total number of active sessions - number of active sessions with availability events)/total number of active sessions**. If more than one sample is used for the calculation, the sum is weighted, where the weight is the total number of sessions (volume).	
	Rule Parameters: "duration" on page 846 "No data timeout" on page 849 "relevant_samples" on page 850 "sample_group_by_fields" on page 851 "volumeKPI" on page 852	**Tooltip Parameters:** "Availability" on page 853 "Business Rule" on page 854 "Held status since" on page 857 "Major" on page 858 "Minor" on page 859 "OK" on page 860 "Status" on page 862 "Warning" on page 864

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">RUM Application Session Statistics Monitor Performance Rule (pre-9.0)
(66)</td><td colspan="2">Note: This rule uses calculation logic based on BSM pre-9.x versions.
Calculates the result as follows: 100% x (total number of active sessions - number of active sessions with performance events)/total number of active sessions. If more than one sample is used for the calculation, the sum is weighted, where the weight is the total number of sessions (volume).</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849
"relevant_samples" on page 850
"sample_group_by_fields" on page 851
"volumeKPI" on page 852</td><td>Tooltip Parameters:
"Business Rule" on page 854
"Held status since" on page 857
"Major" on page 858
"Minor" on page 859
"OK" on page 860
"Performance" on page 860
"Status" on page 862
"Warning" on page 864</td></tr>
<tr><td rowspan="2">RUM End User Monitor Latency Rule (pre-9.0)
(92)</td><td colspan="2">Note: This rule uses calculation logic based on BSM pre-9.x versions.
Calculates the average roundtrip time for a packet, between the end users and the server monitored by the Real User Monitor, during the time period specified by the duration parameter for the rule. The status is calculated based on the defined threshold.</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"first_choice_sample" on page 847
"No data timeout" on page 849
"relevant_samples" on page 850
"sample_group_by_fields" on page 851
"volumeKPI" on page 852</td><td>Tooltip Parameters:
"Business Rule" on page 854
"Held status since" on page 857
"Latency" on page 858
"Major" on page 858
"Minor" on page 859
"OK" on page 860
"Status" on page 862
"Warning" on page 864</td></tr>
</table>

Rule (Rule #)	Description	
RUM End User Monitor Network Rule (pre-9.0) (91)	**Note:** This rule uses calculation logic based on BSM pre-9.x versions. Calculates the network availability, based on successful TCP connections. Connection resets and timeouts are considered unsuccessful connections.	
	Rule Parameters: "duration" on page 846 "No data timeout" on page 849 "volumeKPI" on page 852	**Tooltip Parameters:** "Business Rule" on page 854 "Held status since" on page 857 "Major" on page 858 "Minor" on page 859 "Network Availability" on page 859 "OK" on page 860 "Status" on page 862 "Warning" on page 864
RUM End User Session Statistics Monitor Availability Rule (pre-9.0) (57)	**Note:** This rule uses calculation logic based on BSM pre-9.x versions. Calculates the result as follows: **100% x (total number of active sessions - number of active sessions with availability events)/total number of active sessions**. If more than one sample is used for the calculation, the sum is weighted, where the weight is the total number of sessions (volume).	
	Rule Parameters: "duration" on page 846 "No data timeout" on page 849 "relevant_samples" on page 850 "sample_group_by_fields" on page 851 "volumeKPI" on page 852	**Tooltip Parameters:** "Availability" on page 853 "Business Rule" on page 854 "Held status since" on page 857 "Major" on page 858 "Minor" on page 859 "OK" on page 860 "Status" on page 862 "Warning" on page 864

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">RUM End User Session Statistics Monitor Performance Rule (pre-9.0)
(67)</td><td colspan="2">Note: This rule uses calculation logic based on BSM pre-9.x versions.
Calculates the result as follows: 100% x (total number of active sessions - number of active sessions with performance events)/total number of active sessions. If more than one sample is used for the calculation, the sum is weighted, where the weight is the total number of sessions (volume).</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849
"relevant_samples" on page 850
"sample_group_by_fields" on page 851
"volumeKPI" on page 852</td><td>Tooltip Parameters:
"Business Rule" on page 854
"Held status since" on page 857
"Major" on page 858
"Minor" on page 859
"OK" on page 860
"Performance" on page 860
"Status" on page 862
"Warning" on page 864</td></tr>
<tr><td rowspan="2">RUM Location Session Statistics Monitor Availability Rule (pre-9.0)
(58)</td><td colspan="2">Note: This rule uses calculation logic based on BSM pre-9.x versions.
Calculates the result as follows: 100% x (total number of active sessions - number of active sessions with availability events)/total number of active sessions. If more than one sample is used for the calculation, the sum is weighted, where the weight is the total number of sessions (volume).</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849
"relevant_samples" on page 850
"sample_group_by_fields" on page 851
"volumeKPI" on page 852</td><td>Tooltip Parameters:
"Availability" on page 853
"Business Rule" on page 854
"Held status since" on page 857
"Major" on page 858
"Minor" on page 859
"OK" on page 860
"Status" on page 862
"Warning" on page 864</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">RUM Location Session Statistics Monitor Performance Rule (pre-9.0)
(68)</td><td colspan="2">Note: This rule uses calculation logic based on BSM pre-9.x versions.
Calculates the result as follows: 100% x (total number of active sessions - number of active sessions with performance events)/total number of active sessions. If more than one sample is used for the calculation, the sum is weighted, where the weight is the total number of sessions (volume).</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849
"relevant_samples" on page 850
"sample_group_by_fields" on page 851
"volumeKPI" on page 852</td><td>Tooltip Parameters:
"Business Rule" on page 854
"Held status since" on page 857
"Major" on page 858
"Minor" on page 859
"OK" on page 860
"Performance" on page 860
"Status" on page 862
"Warning" on page 864</td></tr>
<tr><td rowspan="2">RUM Transaction Monitor Availability Rule (pre-9.0)
(51)</td><td colspan="2">Note: This rule uses calculation logic based on BSM pre-9.x versions.
Calculates the percentage of available transactions (out of the total number of transactions), over the time period specified in the duration parameter for the rule. A transaction is considered available when all pages accessed by the transaction are available.</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849
"volumeKPI" on page 852</td><td>Tooltip Parameters:
"Availability" on page 853
"Business Rule" on page 854
"Held status since" on page 857
"Major" on page 858
"Minor" on page 859
"OK" on page 860
"Status" on page 862
"Warning" on page 864</td></tr>
</table>

Rule (Rule #)	Description	
RUM Transaction Monitor Performance Rule (pre-9.0) (61)	**Note:** This rule uses calculation logic based on BSM pre-9.x versions. Calculates the percentage of transactions (out of the total number of transactions) that do not have pages with a performance problem. A page is considered to have a performance problem when page time is over the threshold.	
	Rule Parameters: "duration" on page 846 "No data timeout" on page 849 "volumeKPI" on page 852	**Tooltip Parameters:** "Business Rule" on page 854 "Held status since" on page 857 "Major" on page 858 "Minor" on page 859 "OK" on page 860 "Performance" on page 860 "Status" on page 862 "Warning" on page 864
RUM Transaction Monitor Volume Rule (pre-9.0) (71)	**Note:** This rule uses calculation logic based on BSM pre-9.x versions. Counts the total number of times that a transaction monitored by Real User Monitor was completed, during the time period specified by the **duration** parameter for the rule.	
	Rule Parameters: "duration" on page 846 "No data timeout" on page 849	**Tooltip Parameters:** "Business Rule" on page 854 "Held status since" on page 857 "Major" on page 858 "Minor" on page 859 "OK" on page 860 "Status" on page 862 "Volume" on page 863 "Warning" on page 864

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Synthetic User Transaction Availability Rule
(3800)</td><td colspan="2">Calculates availability of Business Process Monitor transactions during the time period specified by the duration parameter.
The samples contain information on how many transactions were available (passed) and how many were not available (failed).
The rule calculates availability status using the following calculation: Number of available transactions - (total number of transactions * availability threshold).
For example, suppose the threshold is 98%. For each available transaction the rule calculates: 1 - (1 * 0.98) = 0.02, and for each unavailable transaction it calculates: 0 - (1*0.98) = -0.98.
These values are then added together for the time period specified in the duration parameter. If the result is positive, the health indicator status is OK; if the result is negative, its status is Critical.</td></tr>
<tr><td>Rule Parameters:
"No data timeout" on page 849
"duration" on page 846</td><td>Tooltip Parameters:
"Status" on page 862
"Availability (%)" on page 853
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Last update" on page 858</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Synthetic User Transaction Performance Rule
(3801)</td><td colspan="2">Calculates the average performance of Business Process Monitor transactions, during the time period specified by the duration parameter.
The samples contain information on how many transactions had acceptable response times (OK status) and how many were problematic (Critical status).
For an example of weighted average calculation, and details on changing weights, see "Example of EUM Weighted Average Rule" on page 865.</td></tr>
<tr><td>Rule Parameters:
"No data timeout" on page 849
"duration" on page 846</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Status for" on page 862
"Last update" on page 858
"Critical samples" on page 855
"Minor samples" on page 859
"OK samples" on page 860
"Average Response Time" on page 853</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Transaction Availability Rule (pre-9.0)
(5)</td><td colspan="2">Note: This rule uses calculation logic based on BSM pre-9.x versions.
Calculates how many Business Process Monitor transactions ran successfully during the time period specified by the duration parameter.</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Average For" on page 853
"Avg. Availability" on page 854
"Business Rule" on page 854
"Held status since" on page 857
"Last update" on page 858
"Major" on page 858
"Minor" on page 859
"OK" on page 860
"Status" on page 862
"Transaction" on page 863
"Warning" on page 864</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Transaction Performance Rule (pre-9.0)
(13)</td><td colspan="2">Note: This rule uses calculation logic based on BSM pre-9.x versions.
Calculates the average response time of the Business Process Monitor transactions that ran during the time period specified by the duration parameter.</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Average For" on page 853
"Average Response Time" on page 853
"Business Rule" on page 854
"Held status since" on page 857
"Last update" on page 858
"Major" on page 858
"Minor" on page 859
"OK" on page 860
"Status" on page 862
"Transaction" on page 863
"Warning" on page 864</td></tr>
</table>

General Calculation Rules

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">API Duration-Based Sample Rule
(501)</td><td colspan="2">Use this to create a customized rule using the Rules API, to calculate health indicator values based on values of samples. The calculation is based on the samples collected during a defined duration.
For details on how the rule works, see "API Duration-Based Sample Rule" on page 955.</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849
"Sample Fields" on page 850
"KPI Calculation Script" on page 848
"Rule Template Setting Key" on page 850
"isGroovyRuleType" on page 848</td><td>Tooltip Parameters:
"Status" on page 862
"Value" on page 863
"Business Rule" on page 854
"Held status since" on page 857</td></tr>
<tr><td rowspan="2">API Group and Sibling Rule
(500)</td><td colspan="2">Use this to create a customized rule using the Rules API, to calculate KPIs based on indicator values of sibling KPIs or of child CIs.
For details on how the rule works, see "API Group and Sibling Rule" on page 950.</td></tr>
<tr><td>Rule Parameters:
"KPI Calculation Script" on page 848
"Rule Template Setting Key" on page 850
"isGroovyRuleType" on page 848</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857</td></tr>
</table>

Rule (Rule #)	Description	
API Sample Rule (502)	Use this to create a customized rule using the Rules API, to calculate health indicator values based on values of samples. The calculation is based on a maximum number of samples. For details on how the rule works, see "API Sample Rule" on page 953.	
	Rule Parameters: "Maximum number of samples" on page 848 "Sample Fields" on page 850 "KPI Calculation Script" on page 848 "Rule Template Setting Key" on page 850 "isGroovyRuleType" on page 848	**Tooltip Parameters:** "Status" on page 862 "Value" on page 863 "Business Rule" on page 854 "Held status since" on page 857
Average of Values (31)	Calculates the average of the values of the HIs and KPIs which are used to calculate the KPI.	
	Rule Parameters: "calc_method" on page 845 "hi_list" on page 847	**Tooltip Parameters:** "Status" on page 862 "Value" on page 863 "Business Rule" on page 854 "Total" on page 862 "Max Time" on page 858 "Minor" on page 859 "Warning" on page 864 "Informational" on page 857

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Best Status Rule
(2)</td><td colspan="2">Calculates the KPI's status based on the highest status of all the HIs and KPIs which are used to calculate the KPI.
For example, if at least one child CI has green status, then the parent CI also displays green status.
Note: A KPI using this rule will only have a value if it is calculated based on one HI or one child KPI. If it is based on more than one HI or child KPI, the KPI will only have a status.</td></tr>
<tr><td>Rule Parameters:
"calc_method" on page 845
"hi_list" on page 847</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Invisible Children" on page 858</td></tr>
<tr><td rowspan="2">Generic Formula Rule
(1510)</td><td colspan="2">Use this rule to add new business logic behavior to Service Health for calculating health indicator values.
You can use the rule to create a set of calculation methods (sum, count, average, and so on) that can be applied to both legacy samples such as SiteScope and Real User Monitor, and Enterprise Management Systems (EMS) samples.
For details on how the rule works, see "Understanding the Generic Formula Rule" on page 720.
For an example of a customized Generic Formula rule, see "Examples – Generic Formula Rule" on page 726.</td></tr>
<tr><td>Rule Parameters:
"Formula" on page 847
"duration" on page 846
"Time Stamp Field" on page 852
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Formula" on page 856
"Value" on page 863
"Average" on page 853
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"Informational" on page 857</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Generic Health Indicator Sub-component Rule
(332211)</td><td colspan="2">This rule is for internal use; the rule calculates health indicator status when a single HI on a CI is calculated from a number of CI sub-components.
For example, suppose an HI is monitoring CPU load on a host CI, and SiteScope has monitors for a number of CPUs on this CI. The rule calculates a status for each of the monitored CPUs (for example OK, OK, and Warning), and takes the worst of these (Warning) as the HI's status on the CI.
For details, see "Understanding the Health Indicator Tooltips" on page 229.</td></tr>
<tr><td>Rule Parameters:
"clearNormalStatuses" on page 846
"reportNormalStatusesEvents" on page 850
"maxNumOfDisplayedEvents" on page 848</td><td>Tooltip Parameters:
None</td></tr>
<tr><td rowspan="2">Generic Sample Rule
(21)</td><td colspan="2">Use this rule to create a customized rule for calculating health indicator values. The rule compares the value of a selected field from a sample to the thresholds, and returns the result of the comparison.
To use the Generic Sample Rule, you must first customize the rule, and then attach the rule to a health indicator, and then attach the health indicator to a CI.
For an example of a customized Generic Sample Rule, see "How to Create a Customized Generic Sample Rule – Example" on page 729.
The tooltip of the Generic Sample Rule is empty.</td></tr>
<tr><td>Rule Parameters:
"No data timeout" on page 849
"Field Name" on page 846
"Time Stamp Field" on page 852</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Value" on page 863
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"Informational" on page 857</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Generic Sample Rule With Baseline
(332212)</td><td colspan="2">Use this rule to create a customized rule for calculating health indicator values. The rule compares the value of a selected field from a sample to the baseline values, and returns the result of the comparison.
Using the rule parameters you specify the following sample fields:
➤ The field whose values you want to use in the calculation.
➤ The field whose values are used as the mean in calculating the baseline.
➤ The field whose values are used as the standard deviation in calculating the baseline.
The thresholds you enter for the rule are the number of standard deviations from the mean assigned to each status; for example you can define that 1 standard deviation is Warning, and two standard deviations is Critical.</td></tr>
<tr><td>Rule Parameters:
"No data timeout" on page 849
"Field Name" on page 846
"Time Stamp Field" on page 852
"mean_value_field_name" on page 848
"std_field_name" on page 851</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Value" on page 863
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"Informational" on page 857</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Generic Sum of Values Over Time Rule
(1501)</td><td colspan="2">Use this rule to create a customized rule for calculating health indicator values. The rule adds the values of the selected sample field for all of the samples that arrive during the time period specified in the duration parameter.

To use the Generic Sum of Values Over Time rule, you must first customize the rule, and then attach the rule to a health indicator, and then attach the health indicator to a CI.

For a detailed example of how to create a customized Generic Sum of Values Over Time rule, see "How to Create a Customized Generic Sum of Values Over Time Rule – Example" on page 731.

The tooltip for the Generic Sum of Value Over Time Rule is empty.</td></tr>
<tr><td>Rule Parameters:
"No data timeout" on page 849
"Field Name" on page 846
"Time Stamp Field" on page 852
"duration" on page 846</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Value" on page 863
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"Informational" on page 857</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Generic Two Arguments Rule
(1500)</td><td colspan="2">Use this rule to perform a specific calculation for calculating health indicator values, based on the values of two specific fields. The calculation is performed as follows: calculate a value based on an operation (specified by the arithmetic operator) and two fields that are the sample's keys, multiply the result by a factor, and then compare the result with specified thresholds.

You must create a health indicator, and attach the Generic Two Arguments Rule rule to the health indicator.

The tooltip for the Generic Two Arguments Rule is empty.

For an example of a customized Generic Two Arguments rule, see "How to Use the Generic Two Arguments Rule – Example" on page 732.</td></tr>
<tr><td>Rule Parameters:
"No data timeout" on page 849
"First Field Name" on page 847
"Second Field Name" on page 851
"Operator" on page 850
"Time Stamp Field" on page 852
"Factor" on page 846</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Value" on page 863
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"Informational" on page 857</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Impact Over Time Rule
(24)</td><td colspan="2">Calculates the financial loss due to non-availability of the CI over time, based on sibling KPIs monitoring availability.
Financial loss for a CI is calculated by multiplying the total hours the CI is not available by an hourly $ amount (defined by the DollarImpactFactor parameter for the rule).
Note: The granularity of this rule's calculation is maximum one minute. If the status of the Application Availability KPI changes, the rule is calculated ad hoc; if it does not change, it is calculated once every minute.</td></tr>
<tr><td>Rule Parameters:
"DollarImpactFactor."
"StatusDimension" on page 851</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"Informational" on page 857
"Description" on page 855
"Business Loss" on page 854</td></tr>
<tr><td rowspan="2">Nevada - Event Based Alerts Rule (Internal)
(1600)</td><td colspan="2">This rule is used internally for event-based alerts, to determine whether or not the alert trigger notification will be sent.</td></tr>
<tr><td>Rule Parameters:
None</td><td>Tooltip Parameters:
None</td></tr>
</table>

Rule (Rule #)	Description	
Percentage Rule (17)	Calculates in percentage the weighted average of statuses of the HIs and KPIs that are used to calculate the KPI. For details on understanding the rule, see "Understanding the Percentage Rule" on page 716.	
	Rule Parameters: "calc_method" on page 845 "hi_list" on page 847	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Score" on page 861 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "Informational" on page 857 "Invisible Calculated Children" on page 857
Real Time Impact (19)	Calculates financial loss due to non-availability of the CI over the last hour, based on sibling KPIs monitoring availability. Financial loss for a CI is calculated by multiplying the total minutes the CI was not available during the last hour, by an hourly $ amount (defined by the **DollarImpactFactor** parameter for the rule), divided by 60. **Note:** The granularity of this rule's calculation is maximum one minute. If the status of the Application Availability KPI changes, the rule is calculated ad hoc; if it does not change, it is calculated once every minute.	
	Rule Parameters: "DollarImpactFactor" on page 846 "StatusDimension" on page 851	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "Informational" on page 857 "Description" on page 855 "Business Loss" on page 854

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Service Health PNR Rule
(352)</td><td colspan="2">Produces status to be presented in Service Health, based on Point of No Return (PNR) samples created by the internal SLM PNR. For details, see "PNR (Point of No Return) KPI Calculation" on page 422. The KPI status is displayed in bar form in Service Health.
The PNR samples measure unavailability of a CI based on any SLM KPI during the period of time that has elapsed, and how much time remains before the agreement is in breach of contract.</td></tr>
<tr><td>Rule Parameters:
"No data timeout" on page 849
The following parameters are for internal use, and should not be modified:
SLA, TRACKING_PERIOD, TIME_INTERVAL and SOURCE_KPI_ID.</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"SLA" on page 862
"Tracking Period" on page 863
"Calendar" on page 854
"Calculation Time" on page 854
"PNR Time Left" on page 861
"Max Unavailability" on page 858
"PNR Availability" on page 861
"Target Availability" on page 862</td></tr>
<tr><td rowspan="2">Service Health PNR Rule for HI (Internal)
(351)</td><td colspan="2">Internal rule used to calculate PNR based on SLM data.</td></tr>
<tr><td>Rule Parameters:
"No data timeout" on page 849
The following parameters are for internal use, and should not be modified:
SLA, TRACKING_PERIOD, TIME_INTERVAL and SOURCE_KPI_ID.</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"SLA" on page 862
"Tracking Period" on page 863
"Calendar" on page 854
"Calculation Time" on page 854
"PNR Time Left" on page 861
"Max Unavailability" on page 858
"PNR Availability" on page 861
"Target Availability" on page 862</td></tr>
</table>

Rule (Rule #)	Description	
Service Level Management Tracking Period Alert (Internal) (361)	Internal rule which receives samples from SLM, and changes KPI status for Tracking Period alerts.	
	Rule Parameters: "No data timeout" on page 849 The tracking period id parameter is for internal use, and should not be modified.	**Tooltip Parameters:** None
Sum of Values Rule (20)	Calculates the sum of the values of the HIs and KPIs which are used to calculate the KPI. For example, if the **Impact Over Time** rule is used to calculate the OT Impact KPI on child CIs, you can use the **Sum of Values** rule on the parent CI to view the sum of the children's over time impact values.	
	Rule Parameters: "calc_method" on page 845 "hi_list" on page 847	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Total" on page 862 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "Informational" on page 857
Sum of Volume (74)	Group rule that calculates the sum of the users accessing a page or encountering an error on a page.	
	Rule Parameters: "calc_method" on page 845 "hi_list" on page 847	**Tooltip Parameters:** "Business Rule" on page 854 "Held status since" on page 857 "Major" on page 858 "Minor" on page 859 "OK" on page 860 "Status" on page 862 "Volume" on page 863 "Warning" on page 864

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Summary of Values
(30)</td><td colspan="2">Calculates the sum of the values of the HIs and KPIs which are used to calculate the KPI.
Note that this rule uses different units and thresholds than the Sum of Values rule.</td></tr>
<tr><td>Rule Parameters:
"calc_method" on page 845
"hi_list" on page 847</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Total" on page 862
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"Informational" on page 857</td></tr>
<tr><td rowspan="2">Worst Status Rule
(1)</td><td colspan="2">Calculates KPI status based on the lowest status held by any of the HIs and KPIs which are used to calculate the KPI.
For example, if at least one child CI has red status, the parent CI also displays red status.
Note: A KPI using this rule will only have a value if it is calculated based on one HI or child KPI. If it is based on more than one HI or child KPI, the KPI will only have a status.</td></tr>
<tr><td>Rule Parameters:
"calc_method" on page 845
"hi_list" on page 847</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Invisible Children" on page 858</td></tr>
</table>

Integrations Calculation Rules

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">EMS Simple Rule
(0)</td><td colspan="2">Displays the Health Indicator status arriving from the EMS system through SiteScope.
Use this rule to display SiteScope status if your EMS monitor is measurement-based.
If your EMS monitor is event-based, use the EMS Multiple Events Rule. For details, see "SiteScope EMS Multiple Events Rule" on page 824.</td></tr>
<tr><td>Rule Parameters:
"No data timeout" on page 849
"Number of Problematic Samples" on page 849
"Total Number of Samples" on page 852</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Description" on page 855
"Severity" on page 862
"Held status since" on page 857
"Message" on page 859
"Last update" on page 858</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th>Description</th></tr>
<tr><td>HP OpenView Service Navigator Rule
(22)</td><td>Calculates the KPI status based on metrics collected from UDX event samples or old format HP OpenView samples for an HP OpenView Service Navigator measurement CI.
Status is assigned according to the following values:
<table><tr><th>KPI Status</th><th>Value for an HP Sample</th><th>Value for an old format HP OpenView Sample</th></tr><tr><td>Uninitialized</td><td>0</td><td>0</td></tr><tr><td>OK</td><td>1</td><td>10</td></tr><tr><td>Warning</td><td>2</td><td>20</td></tr><tr><td>Minor</td><td>3</td><td>30</td></tr><tr><td>Major</td><td>4</td><td>40</td></tr><tr><td>Critical</td><td>5</td><td>50</td></tr></table></td></tr>
<tr><td></td><td>Rule Parameters:
"Time Stamp Field" on page 852
"Number of Problematic Samples" on page 849
"Total Number of Samples" on page 852</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Description" on page 855
"Severity" on page 862
"Held status since" on page 857
"Message" on page 859
"Last update" on page 858
"owned By" on page 860</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">SiteScope EMS Multiple Events Rule
(36)</td><td colspan="2">The rule handles the samples sent to BSM by the EMS system. It aggregates all the samples received from a specified CI. The rule saves up to 10 events. If there are more than 10 events, the rule discards samples with the lowest severity (critical is highest) and then the oldest samples.
If the CI has more than one HI, you must define a SiteScope EMS Multiple Events rule for each HI by using the rule parameters to specify the sample field you are interested in. Specify information about the field in the sample to look at (in the KPI Type field name parameter) and the value of that field (in the KPI type parameter).
The EMS Show Events context menu displays the data retrieved from the HP Operations Manager system. For details, see "EMS Show Events" on page 901.</td></tr>
<tr><td>Rule Parameters:
"No data timeout" on page 849
Max tooltip events. The maximum number of events to show in the tooltip. The maximum is 10.
KPI type field name. The name of the field in the sample.
KPI type. The valid value of the field in the sample</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"EMS Events" on page 856
"Last update" on page 858</td></tr>
</table>

SAP Calculation Rules

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">SAP Alerts Rule
(1111)</td><td colspan="2">Displays the SAP samples from SiteScope as is. The SAP Alerts include the name of the alert and its status.
HP Business Service Management displays two types of SAP Alerts:
➤ Dialog alerts under a Dialog work process
➤ Syslog alerts under a SAP R/3 server.
The status of an alert is displayed by the color of the SAP alert KPI (red or yellow), assigned by the SAP system. For details on the colors, see "KPI Status Colors and Definitions" on page 45.</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Alert Description" on page 853
"Short Name" on page 862
"Business Rule" on page 854
A number indicating the severity of the alert as it appears in the SAP system.
"State" on page 862
"Open Time" on page 860
"Held status since" on page 857
"Last update" on page 858</td></tr>
</table>

SAP/Siebel Calculation Rules

Rule (Rule #)	Description	
Locations Grouped Parent Rule (1110)	When a SAP System CI or a Siebel Enterprise CI has Locations group child CIs, the rule uses the results of the Locations Grouped rule for each child CI and calculates and displays the sum of each status. For each result, the tooltip displays the amount of children for each status. Example: If a CI has three child CIs, the Locations Parent Group rule summarizes the bars for its children. The rule aggregates the bars calculated by the Locations Grouped Rule for all of the children into one bar. The tooltip displays for each status how many children have that specific status.	
	Rule Parameters: "Time Stamp Field" on page 852 "duration" on page 846	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Message" on page 859 "Last update" on page 858
Locations Grouped Rule (1105)	For a Locations group CI with child CIs, the rule selects the worst status of Performance and Availability for each child CI, calculates the sum of children with each specific status and displays that information in a bar. The tooltip displays for each status the sum of all of the CI's children with that status. Example: The rule calculates the status of the Locations CI by taking for each child the worst status of Performance and Availability. It then calculates the sum of children with each specific status and displays that information in a bar.	
	Rule Parameters: "No data timeout" on page 849 "duration" on page 846	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Message" on page 859 "Last update" on page 858

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Transactions Grouped Parent Rule
(1109)</td><td colspan="2">When a SAP System CI or a Siebel Enterprise CI has Transactions group child CIs, the rule uses the results of the Transactions Grouped rule for each child of the CI and calculates and displays the sum of each status. For each result, the tooltip displays how many of the children have a critical status, how many have the OK status, and so on.

Example: If the CI has three child CIs, the Transactions Parent Group rule summarizes the bars for its children. The rule aggregates the bars calculated by the Transactions Grouped rule for all of the children into one bar. The tooltip displays for each status how many children have that specific status.</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Message" on page 859
"Last update" on page 858</td></tr>
<tr><td rowspan="2">Transactions Grouped Rule
(1103)</td><td colspan="2">For a Transactions group CI with child CIs, the rule selects the worst of Performance and Availability for each child CI, calculates the sum of children with each specific status and displays the information in a bar. The tooltip displays for each status the sum of all of the CI's children with that status.</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Message" on page 859
"Last update" on page 858</td></tr>
</table>

Service Manager Calculation Rules

Rule (Rule #)	Description	
Number of Open Incidents (2600)	Returns the total number of incidents whose current state is the state specified in the Initial State parameter and whose severity is lower or equal to the value specified in the Severity parameter. Incidents whose current state corresponds to the Final State or whose Severity is higher than the value specified in the Severity parameter are not included in the calculation.	
	Rule Parameters: "Initial State" on page 847 "Final State" on page 847 "Severity" on page 851	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Number of tickets" on page 860 "Grouping" on page 857 "Last update" on page 858 "Major" on page 858 "Minor" on page 859 "Warning" on page 864 "Informational" on page 857 "Transaction" on page 863
Sum of Open Incidents (2601)	Calculates the sum of all the incidents of the children in the group.	
	Rule Parameters: "calc_method" on page 845 "hi_list" on page 847	**Tooltip Parameters:** None

Siebel Calculation Rules

Rule (Rule #)	Description	
Number of Running Sessions Rule (1107)	The rule receives the number of sessions from the SiteScope Number of Running Sessions measurement and compares that result with the thresholds set for the rule. The result is the number of running sessions colored according to the thresholds set for the rule. This rule is used by the Application Management for Siebel solution.	
	Rule Parameters: "No data timeout" on page 849	**Tooltip Parameters:** "Status" on page 862 "Held status since" on page 857 "Message" on page 859 "Last update" on page 858 "Measurement" on page 859 "Monitor" on page 859 "Historical Worst" on page 857 "Historical Average" on page 857 "Trend" on page 863
Number of Tasks in Error Rule (1101)	The rule receives the value of SiteScope Number of Tasks in Error measurement and compares that result with the thresholds set for the rule. The result is the number of tasks in error colored according to the thresholds set for the rule. This rule is used by the Application Management for Siebel solution.	
	Rule Parameters: "No data timeout" on page 849	**Tooltip Parameters:** "Status" on page 862 "Held status since" on page 857 "Message" on page 859 "Last update" on page 858 "Measurement" on page 859 "Monitor" on page 859 "Historical Worst" on page 857 "Historical Average" on page 857 "Trend" on page 863

Rule (Rule #)	Description	
Sessions Custom Data Rule (1106)	Calculates the number of running sessions for a CI and all its child CIs.	
	Rule Parameters: "No data timeout" on page 849	**Tooltip Parameters:** "Status" on page 862 "Held status since" on page 857 "Message" on page 859 "Last update" on page 858 "Measurement" on page 859 "Monitor" on page 859 "Historical Worst" on page 857 "Historical Average" on page 857 "Trend" on page 863

SiteScope Calculation Rules

Rule (Rule #)	Description	
SiteScope Best Status Rule (3918)	A Health Indicator can receive multiple measurements from multiple SiteScope monitors. This rule calculates the best status of all of the measurements sent to the Health Indicator. For example, if at least one measurement has green status, then the Health Indicator also displays green status.	
	Rule Parameters: "No data timeout" on page 849 "Tooltip show all measurements" on page 852	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Measurement" on page 859 "Last update" on page 858 "Monitor" on page 859 "Host" on page 857

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">SiteScope Consecutive Worst Status Rule
(3919)</td><td colspan="2">A Health Indicator can receive multiple measurements from multiple SiteScope monitors. This rule calculates the worst status of all the measurements sent to the Health Indicator, using two rule parameters:
➤ Number of Consequent Samples defines the number of consecutive occurrences that are required in order for a measurement's status to change.
For example, if the parameter is set to 3 and there are three consecutive critical measurements, the status of the measurements is set to critical.
If the measurement's status is critical and a single measurement with OK status (green) is received, the measurement stays red. The status changes to green if two more consecutive OK measurements are received.
➤ Strict policy calculation defines if a measurement's status will change only when the full number of consecutive statuses are received (as in the previous example), or if a single "better" measurement can change the measurement's status.
For example, if the second option is defined, if the measurement's status is red and an OK measurement is received, the status changes to green (since a single "better" measurement is sufficient to change its status). However, the measurement's status will only change back to red if there are three consecutive critical measurements.</td></tr>
<tr><td>Rule Parameters:
"No data timeout" on page 849
"Number of Consequent Samples" on page 849
"Strict policy calculation" on page 852
"Tooltip show all measurements" on page 852</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Measurement" on page 859
"Last update" on page 858
"Monitor" on page 859
"Host" on page 857</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">SiteScope Measurement Rule
(3)</td><td colspan="2">Calculates the status based on metrics for a SiteScope measurement CI for sampleType: ss_t, monitored by the SiteScope Monitor. The following statuses correspond to the following values:
➤ Normal (1)
➤ Minor (2)
➤ Critical (3)
For details on the sample, see "Sample: SiteScope Measurement (ss_t)" in Reports.</td></tr>
<tr><td>Rule Parameters:
"No data timeout" on page 849
"Number of Problematic Samples" on page 849
"Total Number of Samples" on page 852</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Message" on page 859
"Error Message" on page 856
"Last update" on page 858
"Measurement" on page 859
"Monitor" on page 859</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">SiteScope Measurement Siebel Processes Rule
(1104)</td><td colspan="2">Calculates the status based on metrics for a SiteScope measurement CI for time sampleType: ss_t, monitored by the SiteScope Monitor. The following statuses correspond to the following values:
➤ Normal (1)
➤ Minor (2)
➤ Critical (3)
The value displayed corresponds to the number of processes. The color of the value is determined by the thresholds on the number of sessions (which can be 25, 64, and so on).
For details on the sample, see "Sample: SiteScope Measurement (ss_t)" in Reports.</td></tr>
<tr><td>Rule Parameters:
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Message" on page 859
"Last update" on page 858
"Measurement" on page 859
"Monitor" on page 859
"Historical Worst" on page 857
"Historical Average" on page 857
"Trend" on page 863</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">SiteScope Measurement Time-Based Rule
(33)</td><td colspan="2">Calculates the status based on metrics for a SiteScope measurement CI for time sampleType: ss_t, monitored by the SiteScope Monitor. The following statuses correspond to the following values:
➤ Normal (1)
➤ Minor (2)
➤ Critical (3)
For details on the sample, see "Sample: SiteScope Measurement (ss_t)" in Reports.</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Message" on page 859
"Last update" on page 858
"Measurement" on page 859
"Monitor" on page 859
"Average For" on page 853</td></tr>
<tr><td rowspan="2">SiteScope Measurement with Custom Data Rule
(1100)</td><td colspan="2">Displays the number of tasks that are in error taken from the SiteScope samples with sub-samples listing all of the tasks.</td></tr>
<tr><td>Rule Parameters:
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Message" on page 859
"Last update" on page 858
"Measurement" on page 859
"Monitor" on page 859
"Historical Worst" on page 857
"Historical Average" on page 857
"Trend" on page 863</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">SiteScope Monitor Rule
(4)</td><td colspan="2">Calculates the status based on metrics for a SiteScope measurement CI for time sampleType: ss_monitor_t, monitored by the SiteScope Monitor. The following statuses correspond to the following values:
➤ Normal (1)
➤ Minor (2)
➤ Critical (3)
For details on the sample, see "Sample: SiteScope Measurement (ss_t)" in Reports.</td></tr>
<tr><td>Rule Parameters:
"No data timeout" on page 849
"Number of Problematic Samples" on page 849
"Total Number of Samples" on page 852</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Message" on page 859
"Last update" on page 858
"Monitor" on page 859
"Host" on page 857</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">SiteScope Monitor Time-Based Rule
(34)</td><td colspan="2">Calculates the status based on metrics for a SiteScope measurement CI for time sampleType: ss_monitor_t, monitored by the SiteScope Monitor. The following statuses correspond to the following values:
➤ Normal (1)
➤ Minor (2)
➤ Critical (3)
For details on the sample, see "Sample: SiteScope Monitor (ss_monitor_t)" in Reports.</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Message" on page 859
"Average For" on page 853
"Last update" on page 858
"Monitor" on page 859
"Host" on page 857</td></tr>
<tr><td rowspan="2">SiteScope Profile Rule
(35)</td><td colspan="2">Calculates the status of the SiteScope Availability HI. SiteScope periodically (every minute) sends a heartbeat to BSM. If the heartbeat is received by BSM, the status of the SiteScope Availability HI is green. If the heartbeat is not received, the status of the SiteScope Availability HI is gray (No data). This indicates that there is no communication between SiteScope and BSM. The statuses of all the SiteScope CIs is also gray.
Note: The SiteScope Availability HI displays values for the supported versions of SiteScope (9.0 and up) and of BSM (7.0 and up).</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Last update" on page 858</td></tr>
</table>

Rule (Rule #)	Description	
SiteScope Vertical Measurement (Deprecated) (1102)	**Deprecated.** Takes samples arriving from the Computer Center Management System (CCMS) monitor through SiteScope and displays them, as is, under SAP General HI. It also takes samples from Siebel Application Server or Siebel Web Server monitors and displays them as is under Siebel HIs.	
	Rule Parameters: "No data timeout" on page 849	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Message" on page 859 "Last update" on page 858 "Measurement" on page 859 "Historical Worst" on page 857 "Historical Average" on page 857 "Trend" on page 863 "Monitor" on page 859
SiteScope Vertical Rule (Deprecated) (1108)	**Deprecated.** Takes samples arriving from the Computer Center Management System (CCMS) monitor through SiteScope and displays them as is under the SAP General HI.	
	Rule Parameters: "No data timeout" on page 849 "Number of Problematic Samples" on page 849 "Total Number of Samples" on page 852	**Tooltip Parameters:** "Status" on page 862 "Business Rule" on page 854 "Held status since" on page 857 "Message" on page 859 "Last update" on page 858 "Measurement" on page 859 "Monitor" on page 859

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">SiteScope Worst Status Rule
(3917)</td><td colspan="2">A Health Indicator can receive multiple measurements from multiple SiteScope monitors. This rule calculates the worst status of all of the measurements sent to the Health Indicator.
For example, if at least one measurement has red status, then the Health Indicator also displays red status.</td></tr>
<tr><td>Rule Parameters:
"No data timeout" on page 849
"Tooltip show all measurements" on page 852</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Message" on page 859
"Last update" on page 858
"Monitor" on page 859
"Host" on page 857</td></tr>
</table>

SOA Calculation Rules

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Real WS Operation Percentile Performance Rule
(1302)</td><td colspan="2">Calculates the percentile performance of a Web service operation defined as the percentage of calls that did not pass the diagnostics threshold out of available calls.
The rule works as follows:
1 Sums the number of available calls into sumOfAvailableCalls. The calculation for each sample is:
calls_count - error_count
2 Sums the number of calls that did not pass the diagnostics threshold into sumOfNotOverThresholdCalls. The calculation for each sample is:
calls_count - error_count - over_threshold_server_time
3 The result is calculated as:
(sumOfNotOverThresholdCalls x 100) / sumOfAvailableCalls
calls_count, error_count, and over_threshold_server_time are sample fields.</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
(Status can be defined as OK, Warning or Critical.)
"Business Rule" on page 854
"Held status since" on page 857
"Under threshold calls" on page 863
"Average For" on page 853
"Last update" on page 858
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"Informational" on page 857</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Real WS Operation Performance Rule
(1301)</td><td colspan="2">Calculates the performance of a Web service operation defined as the average server time (ms) of available calls. The average server time data is obtained from diagnostics samples.

The rule works as follows:
1 Sums the number of available calls into sumOfAvailableCalls. The calculation for each sample is:
calls_count - error_count
2 Sums the server time of available calls into sumOfAvailableCallsTime.
3 The result is calculated as:
sumOfAvailableCallsTime / sumOfAvailableCalls
calls_count, error_count, and avg_server_time are sample fields.</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Average Response Time" on page 853
"Average For" on page 853
"Last update" on page 858
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"Informational" on page 857</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Real WS Operation Throughput Rule
(1303)</td><td colspan="2">Calculates the throughput of a Web service operation defined as the total number of calls divided by the time frame. The total number of calls is obtained from the Diagnostics sample. The time frame is defined in minutes, each time the rule is calculated according to the following formula: number of samples in the sample container x sample aggregative time. The aggregative sample time is 5 minutes.

The rule works as follows:
1 Sums the calls_count filed into sumOfTotalCalls.
sumOfTotalCalls / (sampleContainerSize x 5)
2 The result is calculated as:
calls_count is a sample field.</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Calls per minute" on page 854
"Average For" on page 853
"Last update" on page 858
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"Informational" on page 857</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Synthetic WS Operation Percentile Performance Rule
(1307)</td><td colspan="2">Calculates the percentile performance of a Web service operation defined as the percentage of calls that did not pass the Business Process Monitor threshold out of available calls.
The rule works as follows:
1 Sums the number of available calls into sumOfAvailableCalls. The calculation for each sample is:
calls_count - error_count
2 Sums the number of calls that did not pass the SiteScope threshold into sumOfNotOverThresholdCalls. The calculation for each sample is:
calls_count - error_count - over_threshold_server_time
3 The result is calculated as:
(sumOfNotOverThresholdCalls x 100) / sumOfAvailableCalls
calls_count, error_count, and over_threshold_client_time are sample fields.</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Under threshold calls" on page 863
"Average For" on page 853
"Last update" on page 858
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"Informational" on page 857</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">Synthetic WS Operation Performance Rule
(1306)</td><td colspan="2">Calculates the performance of a Web service operation defined as the average client time (ms) of available calls. The average server time data is obtained from Business Process Monitor samples.
The rule works as follows:
1 Sums the number of available calls into sumOfAvailableCalls. The calculation for each sample is:
calls_count - error_count
2 Sums the number of available calls into sumOfAvailableCallsTime.
3 The result is calculated as:
sumOfAvailableCallsTime/sumOfAvailableCalls
calls_count, error_count, and avg_server_time are sample fields.</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Under threshold calls" on page 863
"Average Response Time" on page 853
"Average For" on page 853
"Last update" on page 858
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"Informational" on page 857</td></tr>
</table>

<table>
<tr><th>Rule (Rule #)</th><th colspan="2">Description</th></tr>
<tr><td rowspan="2">WS Operation Availability Rule
(1300)</td><td colspan="2">Calculates the availability of a Web service operation defined as the percentage of available calls out of total calls.
The rule works as follows:
1 Sums the calls_count field into sumOfTotalCalls.
2 Sums the number of available calls into sumOfAvailableCalls. The calculation for each sample is:
calls_count - error_count
3 The result is calculated as:
(sumOfAvailableCalls x 100) / sumOfTotalCalls
calls_count and error_count are sample fields.</td></tr>
<tr><td>Rule Parameters:
"duration" on page 846
"No data timeout" on page 849</td><td>Tooltip Parameters:
"Status" on page 862
"Business Rule" on page 854
"Held status since" on page 857
"Avg. Availability" on page 854
"Average For" on page 853
"Last update" on page 858
"Major" on page 858
"Minor" on page 859
"Warning" on page 864
"Informational" on page 857</td></tr>
</table>

List of Rule Parameters

The rule parameters are as follows:

Parameter	Description
AtRiskWeight	The weight assigned to **At Risk** instances to provide more importance to a specific status. You can assign any appropriate number with the following specific cases: **1** is the default, **0** causes the status to be ignored in the rule calculation, or a negative number is considered to be 1.
Availability Field	Internal parameter for the sample field used to calculate availability; do not modify this value.
BlockedWeight	The weight assigned to **Blocked** instances to provide more importance to a specific status. You can assign any appropriate number with the following specific cases: **1** is the default, **0** causes the status to be ignored in the rule calculation, or a negative number is considered to be 1.
calc_method	For KPI rules, defines which indicators are used to calculate the KPI: 0 - HIs and child KPIs 1 - HIs only 2 - Child KPIs 3 - HIs; if none exist, use child KPIs **Default/Mandatory:** 0/No
Calculate Volume By KPI	Internal parameter showing which KPI the rule uses for calculation; do not modify this value.

Parameter	Description
clearNormalStatuses	If true, events with **Normal** status are not included in event-based HI calculation. Note that if this is false, the setting of **reportNormalStatusesEvents** is ignored. **Default:** true; changing this default increases use of memory.
Critical weight	The weight assigned to the **Critical** status. You can assign any appropriate number with the following specific cases: **1** is the default, **0** causes the status to be ignored in the rule calculation.
Divide by field	The name of the sample field whose sum is used together with the **Sum field** parameter to generate a rule calculation result as follows: Sum of <Sum field> / Sum of <Divide by field> = rule result.
DollarImpactFactor	The financial loss factor per hour. The financial loss factor is used to calculate the financial impact of a CI non-availability.
duration	Service Health calculates CI status based on the samples received during the duration period (defined in seconds). For example, if a CI has a duration of 5 minutes, status is calculated based on the samples received during the past 5 minutes. **Default:** 15 minutes
Factor	The factor used to multiply the result of the operation performed on the two fields, before comparing the result to the thresholds.
Field Name	The name of the sample field with a numeric value which is used to calculate the rule result.

Parameter	Description
Final State	The final status of the incident received in the sample. **Default:** Closed.
first_choice_sample	The sample type to be used when calculating data regarding sessions or connections. By default, the following samples are used: rum_eu_t, rum_tcp_eu_t, rum_server_t, and rum_tcp_server_t.
First Field Name	The name of the first field on which to apply the rule. The field must have a numeric value.
Formula	The formula to be used to calculate the value or the status of the KPI to which the Generic Formula rule is attached, for the time period specified in the **duration** parameter.
HealthyWeight	The weight assigned to **Healthy** instances to provide more importance to a specific status. You can assign any appropriate number with the following specific cases: **1** is the default, **0** causes the status to be ignored in the rule calculation, or a negative number is considered to be 1.
hi_list	For KPI rules, this is the list of HIs used to calculate the KPI. **Default/Mandatory:** (empty list)/No
Initial State	The initial status of the incident received in the sample. **Default**: Open.
InitStatus	Defines a different initial status of a group level CI's KPI until samples are received. The default KPI status for rules that do not include an InitStatus parameter is **No data**.

Parameter	Description
isGroovyRuleType	Internal for API rules; do not modify.
KPI Calculation Script	For API rules, defines the calculateKPI method implementation. **Default/Mandatory:** (no default)/Yes
Latency Color field	The name of the sample field which contains latency data.
logic	Specifies the type of calculation the rule should perform. The valid values can be a subset of: **maximum**, **minimum**, **average**, or **weighted-average**.
Major weight	The weight assigned to the **Major** status. You can assign any appropriate number with the following specific cases: **1** is the default, **0** causes the status to be ignored in the rule calculation, or a negative number is considered to be **1**.
Maximum number of samples	The number of most recent samples to be included in the API Sample Rule calculation.
maxNumOfDisplayedEvents	The maximum number of events that can be displayed in an event-based HI tooltip. **Default:** 8; raising this default increases use of memory.
mean_value_field_name	The name of the sample field whose values are used as the mean in calculating the baseline.
Minor weight	The weight assigned to the **Minor** status. You can assign any appropriate number with the following specific cases: **1** is the default, **0** causes the status to be ignored in the rule calculation.

Parameter	Description
No data timeout	The timeout period for a KPI. Defines the number of seconds from the time the last sample was received for the KPI, until the KPI is timed out - at which point the KPI changes to **No data**). The default value for this property should be changed with caution. Note that a different default value may actually be used for Business Process Monitor transaction CIs.
Number of Consequent Samples	The number of consecutive occurrences that are required in order for a measurement's status to change. For example, if the parameter is set to 3 and there are three consecutive critical measurements, the status of the measurements is set to critical.
Number of Problematic Samples	The number of samples that have the required status. A specified number of samples (specified in the **Total Number of Samples** parameter) is accumulated. The status of the rule changes to a new status only when, among the accumulated samples, the specified number of samples (specified in the **Number of Problematic Samples** parameter) has the new status. For example, **Total Number of Samples**=5, **Number of Problematic Samples**=3; if three samples in the accumulated samples have a red status, the rule status changes to red.
OK weight	The weight assigned to the **OK** status. You can assign any appropriate number with the following specific cases: **1** is the default, **0** causes the status to be ignored in the rule calculation.

Parameter	Description
Operator	The operator used to calculate the result of the first and second fields. It can be: +, -, *, or /.
PassedStatus	Status level that is set to serve as the lowest limit above which the instances are considered for the status calculation. **Example:** If **PassedStatus** is defined as 15 (Warning), all instances with status 15 or more (**OK**, or **Warning**) are **PassedStatus** instances. The instances with lower levels (**Minor**, **Major**, or **Warning**) are not taken into consideration in the status calculation.
relevant_samples	Provides information about the sample on which the rule's calculations are based. This parameter is used only in RUM Application / End User / Locations Session Statistics Monitor Availability / Performance / Volume rules.
reportNormalStatusesEvents	If true, events with **Normal** status are displayed in event-based HI tooltips. Note that if the setting of **clearNormalStatuses** is false, the setting of **reportNormalStatusesEvents** is ignored. **Default:** false; changing this default increases use of memory.
Rule Template Setting Key	Internal for API rules; do not modify.
Sample Fields	For API rules, defines the list of sample fields whose values can be included in the calculation. **Default/Mandatory:** (no default)/No

Parameter	Description
sample_group_by_fields	Provides information about the fields by which the samples are grouped. Samples are sent for each engine ID, location ID, end-user subgroup, and application. When a rule is calculated for one of these (for example for application), this parameter contains details regarding the other three elements. Samples are then aggregated based on the intersection of application with each of the three elements (engine, location, end-user).
Second Field Name	The name of the second field on which to apply the rule. The field must have a numeric value.
Severity	The severity of the sample incident that is used in the calculations. The values are: 5 – very low 4 – low 3 – medium 2 – urgent 1 – critical
StatusDimension	Defines the ID of the KPI for which the other rule parameters apply when you want to use KPIs other than Availability.
std_field_name	The name of the sample field whose values are used as the standard deviation in calculating the baseline.

Parameter	Description
Strict policy calculation	Defines if a measurement's status will change only when the full number of consecutive statuses are received, or if a single "better" measurement can change the measurement's status. For example, if the second option is defined, if the measurement's status is red and an OK measurement is received, the status changes to green.
Sum field	The name of the sample field whose sum is used together with the **Divide by field** parameter to generate a rule calculation result as follows: Sum of <Sum field> / Sum of <Divide by field> = rule result.
Time Stamp Field	The name of the time stamp field in the external source sample, if its name is not **time_stamp**.
Tooltip show all measurements	Defines whether the HI tooltip shows values of all the measurements that contributed to the HIs status (default: false).
Total Number of Samples	The total number of samples. See **Number of Problematic Samples** parameter for more details.
tracking period id	Internal. This parameter must not be modified.
volumeKPI	The KPI number of the Volume KPI (in EUM). Used to calculate rules in EUM group rules.
Warning Weight	The weight assigned to the **Warning** status. You can assign any appropriate number with the following specific cases: **1** is the default. **0** causes the status to be ignored in the rule calculation.

List of Tooltip Parameters

The following table lists the tooltip parameters and their descriptions:

Parameter	Description
% Available TX	The percentage of available transactions.
Affected By	The measurements which influenced the HI.
Alert Description	The full description of the alert.
Application Exceptions	The number of application exceptions monitored by HP Diagnostics.
At risk backlog	The number of instances with **At risk** status.
Availability	In EUM, the weighted average availability based on the total number of users accessing a page.
Availability (%)	The availability of a Business Process Monitor or Real User Monitor transaction.
Average	The average status of the CI.
Average Duration	The duration of the completed transactions minus the duration of the failed transactions divided by the total number of transactions.
Average For	The time period for which the average response time/average availability was calculated. This time period is defined in the file for the CI.
Average Net Time	The average net time (total time minus user time) of a transaction monitored by Real User Monitor.
Average Response Time	The average response time for a transaction.
Average Time	The average latency of all of the server requests on the Virtual Machine monitored by the Probe over the last five minute period.

Parameter	Description
Avg. Availability	The percentage of successful runs for the parent transaction during a time period up to the last received update.
Backend Average Response	The average backend duration for successful, completed transactions.
Backend Maximum Response	The maximum backend duration for successful, completed transactions.
Backend Minimum Response	The minimum backend duration for successful, completed transactions.
Backlog count	The number of backlogged (in-process) transactions.
Bandwidth	The number of bytes that represents the traffic between the Real User Monitor application server and clients.
Blocked backlog	The number of instances with **Blocked** status.
Business Loss	The financial loss calculated for the CI.
Business Rule	The name of the rule that calculates the KPI status or value.
Calculation Logic	The value of **logic** rule parameter.
Calculation duration	Status status is calculated based on the samples received during the specified duration.
Calculation Time	The last calculation time on the Business Logic Engine machine.
Calendar	The calendar used for calculating PNR. For details, see "Calendars for SLAs" in *Using Service Level Management*.
Calls per minute	The number of calls per minute to the selected Web services or Operations.

Parameter	Description
Caused By	The name of the KPIs that caused unavailability.
CI Name	The name of the CI.
Class Type	The CI's CI Type.
Component Availability	The availability of the Real User Monitor (for a monitor CI) or the status of the monitor with the worst status (for a group CI).
Count	The number of instances that completed the monitored step or group of steps in the most recent collection interval for the tooltip.
Critical instances	The number of instances with **Critical** status.
Critical samples	The number of samples with **Critical** status.
Delays Rate	The percentage of failed in-process transactions out of the total completed transactions. Delays ValueThe total value of failed in-process transactions.
Delays Value	The total value of failed in-process transactions.
Description	A description of the CI (the first one represents UDX and the second one represents EMS). Only the value relevant to the context is displayed.
Downtime Until	The date and time that downtime is due to finish for a CI.
End User Average Response	The average end user duration for successful, completed transactions.
End User Maximum Response	The maximum end user duration for successful, completed transactions.

Parameter	Description
End User Minimum Response	The minimum end user duration for successful, completed transactions.
End-to-end Average Response	The average duration for successful, completed transactions.
End-to-end Maximum Response	The maximum duration for successful, completed transactions.
End-to-end Minimum Response	The minimum duration for successful, completed transactions.
EMS Events	The samples description. The samples are separated from each other by a horizontal line.
Error Message	The error message that appears in the sample.
Exceptions Count	The amount of exceptions generated over the last five minute period.
Exceptions Rate	The percentage of transactions that did not follow the expected flow path on the target machine, out of the total in-process transactions.
Exceptions Value	The total value of transactions that did not follow the expected flow path on the target machine.
Failed TX Count	The number of transactions that failed.
Failed TX Impact	The financial loss (in $) due to transactions that failed.
Failures rate	The percentage of failed completed transactions out of the total number of completed transactions.
Formula	The formula that is used to calculate the KPI status and value.

Parameter	Description
Grouping	List the number of tickets with the specified status.
Healthy backlog	The number of instances with **Healthy** status.
Held status since	The date and time of the last status (color) change of the CI.
Hidden Child CIs	Child CIs not currently displayed.
Historical Average	The average status for the CI over a period of time.
Historical Worst	The worst status for the CI over a period of time.
History Type	The history calculation type to be used when calculating history status. Values can be: **Worst**, **Average**, or **None** (no history status displayed). The value of the parameter is assigned to the **HistoryType** rule global parameter. For details, see "Modify global rule parameters" on page 727. If the value is **none**, the historical information is not displayed.
Host	The name of the machine associated with the monitor.
Informational	One of the thresholds used when defining status for the CI. The CI changes to Informational (green) status when the CI's score is equal to or smaller than this value.
Informational instances	The number of instances with status **Informational**.
Invisible Calculated Children	All of the child CIs belonging to other views, which are connected to this CI but do not belong to this view.

Parameter	Description
Invisible Children	The number of child CIs of the selected CI, that exist in the RTSM, are hidden in the current view, and have at least one KPI assigned to them. This parameter is displayed as: **Hidden child CIs (with attached KPIs)** in the tooltip itself. For details on Invisible Children, see "How to Find Visible and Hidden Child CIs" on page 78.
Last update	The date and time that the last update for the CI was received by Service Health.
Late TX Impact	The financial loss (in $) due to transactions that were late.
Latency	The average round trip time for a packet. (The time it takes for a packet to go from the client to the server and back from the server to the client). The latency information is provided by the Real User Monitor sample.
Location	The location of the CI if a location has been specified.
Major	One of the thresholds used when defining status for the CI. The CI changes to Major (orange) status when the CI's score is equal to or smaller than this value.
Major instances	The number of instances with **Major** status.
Major samples	The number of samples with **Major** status.
Max Response Time	The maximum response time for a transaction.
Max Time	The maximal time an HP Diagnostics transaction has run in seconds.
Max Unavailability	The maximum time that the item may be unavailable, according to the SLA.

Parameter	Description
Maximum	The maximum value of the instances that passed through the monitored step or group of steps, during the last collection interval.
Measurement	The name of the measurement from SiteScope.
Message	One or more values returned by the monitor the last time it ran, as displayed in SiteScope. This may simply be the retrieval time and file size or it may include specific parameters for a server component.
Min Response Time	The minimum response time as provided by the Deep Transaction Tracing sample.
Min Status	The value of the **PassedStatus** rule parameter.
Minimum	The minimum duration of the instances that passed through the monitored step or group of steps, during the last collection interval
Minor	One of the thresholds used when defining status for the CI. The CI changes to Minor (yellow) status when the CI's score is equal to or smaller than this value.
Minor instances	The number of instances with **Minor** status.
Minor samples	The number of samples with **Minor** status.
Monitor	The monitor type that the CI represents.
Network Availability	The percentage of successful connections.
Number of Actions	The number of actions on the application.
Number of Connections	The number of connections monitored by Real User Monitor.
Number of Error Events	The number of error-type events monitored by Real User Monitor.

Parameter	Description
Number of Information Events	The number of informational events monitored by Real User Monitor.
Number of instances	The number of instances that completed the monitored step or group of steps.
Number of Open Sessions	The number of open sessions on the application, EUG subgroup, or location.
Number of Performance Events	The number of performance-type events monitored by Real User Monitor.
Number of tickets	The number of current ticket that have the specified initial and final state.
Number of Transaction Hits	The number of times a transaction was completed successfully.
Number of transactions	The total number of successful, completed transactions.
Number of Valid Transactions	The number of successful, completed transactions monitored by TransactionVision.
OK	One of the thresholds used when defining status for the CI. The CI changes to OK (green) status when the CI's score is equal to or smaller than this value.
OK Instances	The number of instances with **OK** status.
OK samples	The number of samples with **OK** status.
Open Time	The date and time when the alert was issued.
owned By	The owner of the CI in HP OpenView (the first one represents UDX and the second one represents EMS). Only the value relevant to the context is displayed.
Performance	The average download time, for a Real User Monitor CI.

Parameter	Description
Performance (%)	The percentage of Real User Monitor sessions without performance events.
Platform	Indicates the platform (J2EE or .NET) on which the monitored application is running.
PNR Availability	The item's SLA availability percentage the last time data was polled.
PNR Time Left	The amount of time left for that measurement before the SLA is in breach of contract.
Response Time Threshold	The threshold of the response time as provided by the Deep Transaction Tracing sample.
Score	The percentage of green and yellow child CIs. This is a weighted percentage if any of the child CIs have a weight > 1 (check this by viewing the tooltips for the child CIs). Note that Service Health is calculating status using the refined percentage method if a percentage is displayed for **Score** and the group or subgroup status is yellow. If Service Health is calculating status for the group/subgroup using the dominant child method, the message **n/a (Using dominant child)** is displayed.
Server Requests Count	(BPM Transaction tooltips only.) The amount of server requests over the last five minute period.
Server Time	(BPM Transaction tooltips only.) The average time taken for the server to process the transaction.

Parameter	Description
Severity	The severity of the SiteScope measurement (the first one represents UDX and the second one represents EMS). Only the value relevant to the context is displayed.
Short Name	The name of the SAP CCMS measurement where the alert occurred.
SLA	The name of the SLA attached to this CI
State	The SAP state of the alert: **Active**.
Status	CI or indicator status (calculated according to one of the status calculation methods). It may also display: **Not up to date** for decayed CIs, indicating that the CI has passed its timeout period. (For a SiteScope CI, this status is displayed after a SiteScope monitor is disabled.) **Stopped** when a Business Process profile is stopped.
Status	Can be defined as OK, Warning or Critical.
Status for	The value of the rule's duration parameter.
Target Availability	The percentage of time that the item must be available to match the 'Exceeded' threshold, according to the SLA.
Timeout Count	The amount of timeouts that occurred during the last five minute period.
Total	The total number of hits/transactions for Real User Monitor.
Total number of incidents	The total number of incidents.

Parameter	Description
Total TX Count	The total of the number of transactions that failed and the number of late transactions.
Total TX Impact	The financial loss (in $) due to transactions that failed added to the transactions that were late.
Tracking Period	The tracking period used to calculate the PNR. For details, see "Tracking Periods Dialog Box" in *Using Service Level Management*.
Transaction	The name of the parent transaction for the CI.
Transaction Count	The number of transactions monitored by HP Diagnostics.
Transaction Server Time	The average server time of a transaction monitored by Real User Monitor.
Transaction Total Time	The average total time of a transaction monitored by Real User Monitor.
Transactions volume	The number of completed transactions.
Trend	The trend of the KPI's status.
Under threshold calls	The number of calls that are under the threshold defined for the Application Availability KPI.
Value	The value of the field in the sample.
Value	The sum of the values of the fields in the sample.
Value For	The collection interval for which the HI is calculated.
Volume	The number of hits in Real User Monitor.

Parameter	Description
Warning	One of the thresholds used when defining status for the CI. The CI changes to Warning (light green) status when the CI's score is equal to or smaller than this value.
Warning instances	The number of instances with **Warning** status.
Warning samples	The number of samples with **Warning** status.
Weighted Average	The value of the weighted average duration calculated by the rule.

Example of EUM Weighted Average Rule

The following section shows an example of an EUM weighted average rule. This example uses the Average Performance of Weighted Volume rule. Similar calculation logic is used by the following weighted average rules:

- Average Availability of Weighted Volume
- Average Performance of Weighted Volume
- Average Network of Weighted Volume
- Average Performance of Weighted Volume (Available Hits)
- Real User Transaction Performance Rule
- Synthetic User Transaction Performance

Example of the Average Performance of Weighted Volume rule

In the following example, the Average Performance of Weighted Volume rule is used to calculate the Performance KPI on an application, which has three transactions as child CIs (T1, T2, and T3).

Each of these child CIs has two KPIs assigned: Volume (number of hits), and Performance.

The following table shows the statuses of the child CIs:

Child CI	Status	Volume	Weight (default)
T1	Minor (2)	7	1
T2	Critical (3)	5	1
T3	OK (1)	10	1

The rule calculates the weighted average as follows:

(2*7*1) + (3*5*1) + (1*10*1) / (7+5+10) = 1.77

The weighted average value (1.77) exceeds the Minor threshold (1.66), so the status of the Performance KPI on the application is Minor.

Rule calculation logic

The rule's calculation logic is as follows:

(Critical value (3) * Number of Critical hits * Weight) +
(Minor value (2) * Number of Minor hits * Weight) +
(OK value (1) * Number of OK hits * Weight)

divided by

(Number of Critical hits * Weight) +
(Number of Minor hits * Weight) +
(Number of OK hits * Weight)

Critical threshold = 2.33; Minor threshold = 1.66.

Changing status weights in the Infrastructure Settings

The rule calculates the average status, weighted by the values specified in the **Reports Status Average Rule - <OK/Minor/Critical> Status weight** infrastructure settings. If one of those weights is set to **0**, the status is not included in the calculation of the average.

By default, the weights are set to **1**. To modify the weight of a status, select **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**:

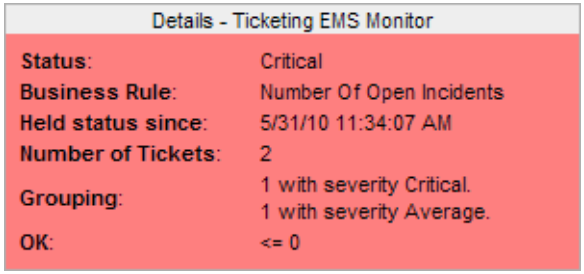
- Select **Applications**.
- Select **End User/System Availability Manager**.
- In the **Data** table, locate the following entries and change to the required weight:
  - **Reports Status Average Rule - Critical Status weight**
  - **Reports Status Average Rule - Minor Status weight**
  - **Reports Status Average Rule - OK Status weight**

Examples of Tooltips

The following section shows examples of tooltips.

Example of a Number of Open Incidents Tooltip

The tooltip is displayed for an HI whose associated rule is "Number of Open Incidents" on page 828.



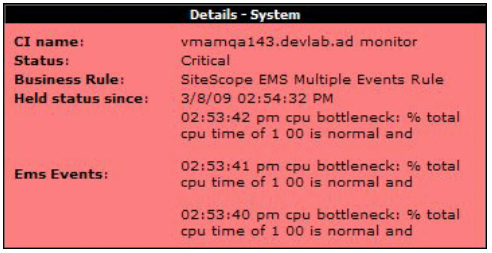
The tooltip displays the following information:

- **Status.** The status of the CI.
- **Business Rule.** The name of the rule used to calculate the status of the CI.
- **Held Status Since.** The date and time of the last status (color) change of the CI.
- **Number of Tickets.** The number of incidents whose current state is the state specified in the Initial State parameter, and whose severity is lower or equal to the value specified in the Severity parameter.
- **Grouping.** Lists the number of incidents with the specified status.
- **OK.** The threshold definition for the **OK** status.

Example of a SiteScope EMS Rule Tooltip

The tooltip is displayed for an Application, Network, Security, or System KPI whose associated rule is "SiteScope EMS Multiple Events Rule" on page 824.

The SiteScope EMS Rule tooltip is displayed for an Application, Network, Security, or System KPI whose associated rule is the SiteScope EMS Multiple Event rule.



The tooltip displays the following information:

- **Status.** The severity of the event.
- **Business Rule.** The name of the rule that calculates the KPI status or value.
- **Held status since.** The date and time of the last status (color) change of the CI.
- **Ems Events.** Messages sent by the HP Operations Manager server.

Business Rules User Interface

This section includes:

- Business Rules Repository page on page 869
- New Rule/Edit Rule Dialog Box on page 871
- New/Edit Rule Parameter or New/Edit Rule Threshold Dialog Box on page 877
- New/Edit Tooltip Parameter Dialog Box on page 878
- Restore Defaults Dialog Box on page 880

➤ Global Parameters Dialog Box on page 880

➤ New/Edit Global Parameter Dialog Box on page 885

➤ Global Tooltips Dialog Box on page 886

➤ Edit Global Tooltip Dialog Box on page 888

Business Rules Repository page

This page displays the list of predefined and customized rules. These rules are available throughout HP Business Service Management to determine how source data is imported. The repository enables an advanced user to modify existing repository rules and create new ones.

Note: For details on each of the rules, see "List of Calculation Rules in Service Health" on page 740.

To access	Select **Admin** > **Service Health** > **Repositories** > **Business Rules**
Important information	To modify a rule, select the rule and click the **Edit** button, or right-click the rule and access the **Edit** menu command. For details, see "New Rule/Edit Rule Dialog Box" on page 871. In the text box under each of the column titles, you can enter text or select options from a drop-down list to filter the information displayed. For example, if you enter EUM in the text box under the **Domain** column title, the table only shows rules related to End User Management.
Relevant tasks	"How to Customize a Business Rule Template in the Repository" on page 724

User interface elements are described below:

UI Element (A-Z)	Description
	New Rule. Click to create a new rule.
	Edit Rule. Click to edit the details of a selected rule.
	Clone Rule. Select a rule and click the **Clone Rule** button to create a new rule, using the selected rule as a template. Select multiple rules by holding down the CTRL key.
	Delete Rule. Deletes one or more selected custom rules. If you delete a Predefined (Customized) Rule, it is restored to its Predefined settings. Predefined rules cannot be deleted.
	Restore to Default. Select an edited rule whose Type is Predefined (Customized), and click to restore it to its original settings.
	Click to refresh the page.
	Click to display help on predefined rules.
	Edit Globals. Click to edit global rule attributes. For details, see "Global Parameters Dialog Box" on page 880.
	Edit Global Tooltips. Click to edit global tooltips. For details, see "Global Tooltips Dialog Box" on page 886.
	Export to Excel. Click to export the table to an Excel file.
	Export to PDF. Click to export the table to a PDF file.

UI Element (A-Z)	Description
	Change visible columns. Opens the Choose Columns to Display dialog box, where you select the columns you want to display in the table. By default, the Rule ID column which contains internal Rule ID numbers is not displayed.
Description	The description of the rule.
Domain	The domain which uses the rule (for example BPI, EUM, and so on). You can type a domain in the text box under the Domain column title, to only display rules in a specific domain.
Name	The name of the rule.
Type	Indicates one of the following rule types: ➤ **Custom.** New or cloned rules. ➤ **Predefined.** Out-of-the-box rules. ➤ **Predefined (Customized).** Out-of-the-box rules that have been edited. You can restore such a rule to its original settings using the **Restore to Default** button.

New Rule/Edit Rule Dialog Box

This dialog box enables you to create or modify rule properties.

To access	In the Business Rule Repository page, click the **New Rule** button, or select a rule and click the **Edit Rule** button.
Relevant tasks	"How to Customize a Business Rule Template in the Repository" on page 724

General Rule Settings Area

User interface elements are described below:

UI Element (A-Z)	Description
Class Name	The name of the class the rule belongs to. If you create a new rule using a new class, edit this field to include the full qualified name of the Java class that implements the rule, with the full path to the root.
Description	The description of the rule.
Domain	The domain which uses the rule (for example BPI, or EUM). You can select one of the default domains from the **Selection** drop-down list, or select **Other** and type a new domain name. In the Business Rule Repository page, you can filter by domain to only see rules that are relevant to you.
Name	The name of the rule.

Advanced Rule Settings Area

This area enables you to select the CI types for which a rule can be applied, and to define rule units.

User interface elements are described below:

UI Element (A-Z)	Description
	Select a CIT and click this button to add it to the **Selected CI Types** list. If you select an upper-level (parent) CIT, the rule will be applicable for all of its descendant (child) CITs as well.
	Select a CIT and click to remove it from the **Selected CI Types** list.

UI Element (A-Z)	Description
Applicable for CI Types	Define the CI types for which the rule is applicable, using the two areas: ➤ **CI Types.** Tree of CI types that contains the CITs to which you can make the rule applicable. ➤ **Selected CI Types.** The CITs for which the rule is applicable. When a CIT is selected, all its descendants are applicable to the rule as well. Use the arrow buttons to move CITs from one list to the other.
Rule Type	Select one of the following options: ➤ **Health Indicator.** The rule can be used to calculate health indicators. ➤ **KPI.** The rule can be used to calculate KPIs. ➤ **Sibling.** The rule can be used to calculate both KPIs and health indicators. For details, see "Health Indicator and KPI Calculation Rules" on page 713.
Units	Enter the type of unit applicable to the rule results. For details, see "Units of Measurement for Thresholds" on page 406.

Rule Parameters Area

This area enables you to modify existing information or enter new information about a rule's parameters.

To modify a parameter, select the parameter and click the **Edit** button. For details, see "New/Edit Rule Parameter or New/Edit Rule Threshold Dialog Box" on page 877.

User interface elements are described below:

UI Element (A-Z)	Description
	New Rule Parameter. Click to create a new rule parameter.
	Delete Rule Parameter. Deletes one or more selected rule parameters.
	Edit Rule Parameter. Click to edit the details of a selected rule parameter.
	Select all. Selects all the rule parameters.
	Clear Selection. Clears the selection of rule parameters.
Configurable	If true, the parameter is visible and open for editing in the Assignments and CI Indicators tabs. If false, the parameter can only be edited in the repository.
Default value	The default value of the parameter.
Description	The parameter description.
Name	The name of the parameter.

Rule Thresholds Area

This area enables you to modify existing information or enter new information about a rule's thresholds.

To modify a threshold, select the threshold and click the **Edit** button. For details, see "New/Edit Rule Parameter or New/Edit Rule Threshold Dialog Box" on page 877.

User interface elements are described below:

UI Element (A-Z)	Description
	New Rule Threshold. Click to create a new rule threshold.
	Delete Rule Threshold. Deletes one or more selected rule thresholds.
	Edit Rule Threshold. Click to edit the details of a selected rule threshold.
	Select all. Selects all the rule thresholds.
	Clear Selection. Clears the selection of rule thresholds.
Default value	The default value of the threshold.
Description	The threshold description.
Name	The name of the threshold.

Tooltip Settings Area

User interface elements are described below:

UI Element (A-Z)	Description
Description	The name of the tooltip.
Max Label Width	The maximum width for a tooltip parameter name.
Max Value Width	The maximum width for a tooltip parameter value.

Tooltip Parameters Area

This area enables you to modify existing information or enter new information about a rule's tooltip parameters. For a list of tooltips and their default parameters, see "Examples of Tooltips" on page 867.

User interface elements are described below:

UI Element (A-Z)	Description
	New Tooltip Parameter. Click to create a new tooltip parameter. For details, see "New/Edit Tooltip Parameter Dialog Box" on page 878.
	Delete Tooltip Parameter. Deletes one or more selected tooltip parameters.
	Edit Tooltip Parameter. Click to edit the details of a selected tooltip parameter. For details, see "New/Edit Tooltip Parameter Dialog Box" on page 878.
	Select all. Selects all the tooltip parameters.
	Clear Selection. Clears the selection of tooltip parameters.
Name	The display label of the tooltip parameter (this appears exactly as written).
Source	The source of the value to display.

New/Edit Rule Parameter or New/Edit Rule Threshold Dialog Box

This dialog box enables you to modify existing information or enter new information about a rule's parameters or thresholds.

To access	In the New Rule or Edit Rule dialog box, in the **Rule Parameters** or **Rule Thresholds** area; click the **New** button to enter new parameters or thresholds, or click the **Edit** button to modify a parameter or threshold.
Important information	➤ For a list of rule parameters and their default values, see each rule description in "List of Calculation Rules in Service Health" on page 740. If the **CalculationGranularity** parameter is not changed when there is a heavy calculation load, this does not cause wrong results, but note that calculations are done on a longer time scale (for example, calculation may be done on a history size of three hours instead of one hour). ➤ Default threshold values are defined for every rule that uses thresholds. For details, see "KPI and HI Thresholds" on page 401.
Relevant tasks	"How to Customize a Business Rule Template in the Repository" on page 724

User interface elements are described below:

UI Element (A-Z)	Description
Default value	The default value of the parameter or threshold in Service Health. Note that for some of the rules, the default values can be: **sampleBased** or **timeBased** and indicates if the calculation performed by the rule is based on the sample values or is calculated.
Description	The parameter or threshold description.
Name	The name of the parameter or threshold.

UI Element (A-Z)	Description
Parameter value is configurable	If the check box is checked, the parameter is visible and open for editing in the Assignments and CI Indicators tabs. If it is unchecked, the parameter can only be edited in the repository.
Presentation class	The name of the presentation class. For future use.
Type	The type of parameter or threshold. Possible values are: **Boolean** (can be false or true), **Integer**, **Long**, **Double** (can be a decimal number), or **String**.
Units	The type of unit applicable to the rule parameter or threshold (for example, **milliseconds** for performance time data). For details, see "Units of Measurement for Thresholds" on page 406.

New/Edit Tooltip Parameter Dialog Box

This dialog box enables you to modify existing information or enter new information about a tooltip parameter.

To access	In the New Rule or Edit Rule dialog box, in the Tooltip Parameters area; click the **New** button to enter new parameters, or click the **Edit** button to modify a parameter.
Important information	A list of the parameters and their details is available in "List of Tooltip Parameters" on page 853.
Relevant tasks	"How to Customize a Business Rule Template in the Repository" on page 724

User interface elements are described below:

UI Element (A-Z)	Description
Formatting Method	Define the method for formatting the value of the tooltip parameter using the following options: ➤ **Selection.** Select a formatting method from the list of available methods (leave blank if not required). For details, see "List of Formatting Methods" on page 676. ➤ **Other.** Specify a method that you have defined, which is not on the list of available methods. **Example:** toLowerCase
Name	The name of the parameter as it is displayed in the tooltip.
Value Postfix	The text that appears after the value of the tooltip parameter. **Example:** %
Value Prefix	The text that appears before the value of the tooltip parameter. **Example:** Greater than
Value Source	The source of the value to display. It can be retrieved from the CI using the escaping sequence form - if so, the **[[%]]** string must appear before the escaping sequence. **Example:** If the CI holds a field named **country**, type [[%]] NODE.PROPS.country. The tooltip displays **country: <country name>**.

Restore Defaults Dialog Box

This dialog box enables you to restore predefined business rule settings, for rules whose type is Predefined (Customized).

To access	In the Edit Rule dialog box, click the **Restore Default** button.
Relevant tasks	"How to Customize a Business Rule Template in the Repository" on page 724

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<Modified fields>	The rule definition fields that have been modified are displayed. Select the fields which you want to restore to default, and click **Save**.

Global Parameters Dialog Box

This dialog box enables you to modify the global parameters shared by all the rules. For details, see "List of Global Rule Parameters" on page 882.

To access	In the Business Rule Repository page, click the **Edit Globals** button.

Important information	To modify a global parameter, select the parameter and click the **Edit** button, or right-click the parameter and access the **Edit** menu command. For details, see "New/Edit Global Parameter Dialog Box" on page 885. To override a global parameter value for an individual rule, add the parameter to the relevant rule, and then modify its value.
Relevant tasks	"How to Customize a Business Rule Template in the Repository" on page 724

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
	New Global Parameter. Click to create a new global parameter.
	Delete Global Parameter. Deletes one or more selected global parameters.
	Edit Global Parameter. Click to edit the details of a selected global parameter.
	Select all. Selects all the global parameters.
	Clear Selection. Clears the selection of global parameters.
<Name>	The name of the global parameter. For details on each of the global parameters, see "List of Global Rule Parameters" on page 882.
<Value>	The value of the global parameter.

List of Global Rule Parameters

Display Name	Usual Default Value	Description
saveLastSample	false	Defines whether the last sample is presented in Service Health when clicking on the status icon. For details, see "How to Set Up Rules to Display the Last Sample Details" on page 734.
HistoryType	Worst	Defines the type of history calculation to be used when calculating history status. Values can be: **Worst**, **Average**, or **None** (no history status displayed). For details, see "History Calculation" on page 409.
HistorySize	1 hour	Defines a time period (in hours) used when calculating history and trend status. The range is 1 to 6 hours. For details, see "History Calculation" on page 409.
saveValuesToPersistency	false	Set **saveValuesToPersistency** to **true** if you want Service Health to save CIs and KPIs value data to be displayed in the KPI Over Time with Value report. For details, see "KPIs Over Time Report" on page 347.
saveValuesToPersistencyInterval	900	Defines the periodicity (in minutes) with which the value of the KPI is saved to the RTSM (to be used in KPI Over Time with Value reports). For details, see "KPIs Over Time Report" on page 347.
Calculate Trend	true	Defines whether the trend should be calculated (and displayed) or not. For details, see "Trend Calculation" on page 410.

Hidden Parameters

The history and trend statuses use the following hidden parameters. These are parameters with default values that are not visible to the user. However, if necessary, they can be overridden by defining the parameter in the global parameters for the Business Rule Repository. For details on the Trend and History statuses, see "KPI Trend and History Calculation" on page 408.

Name	Default Value	Description
TrendRate	0.3	Sets the time rate between the long window (period of time defined by the **HistorySize** parameter) and a short window.

Name	Default Value	Description
CalculationGranularity	20	Sets the time difference, in seconds, between recalculating statuses for a view. This knowledge is shown in **<Data Processing Server root directory> \log\EJBcontainer\TrinityStatistic.log**. This determines how many calculations are performed for a CI in a certain period of time. During normal functioning, Service Health perform the calculation approximately every 20 seconds (~180 calculations/hour) and there is no reason to change the default value. If Service Health has a heavy calculation load, causing the calculations to take more time (for example, calculations may be done on a history size of three hours instead of one hour), Service Health might automatically adjust the granularity to calculate less often. For example, calculation may take place every minute or more, meaning 60 or less calculations an hour. If this calculation rate presents a problem, you can define the **CalculationGranularity** parameter above, to override the automatic granularity rate; however, this modification should be made with great caution, and only by advanced users. Contact HP Software Support for assistance.

New/Edit Global Parameter Dialog Box

This dialog box enables you to define settings of a global parameter.

To access	In the Global Parameter dialog box, click the New button, or select a global parameter and click the Edit button.
Important information	The global parameters are listed in "List of Global Rule Parameters" on page 882. To override the global parameter value for an individual rule, add the parameter to the relevant rule, and then modify its value.
Relevant tasks	"How to Customize a Business Rule Template in the Repository" on page 724

User interface elements are described below:

UI Element (A-Z)	Description
Name	The name of the global parameter.
Type	The type of parameter; select **Boolean**, **Number**, or **String**.
Value	The value of the global parameter.

Global Tooltips Dialog Box

This dialog box enables you to modify general tooltips that can be applicable to all relevant rules. For details, see "List of Global Tooltips" on page 887.

To access	In the Business Rule Repository page, click the **Edit Global Tooltips** button.
Important information	To modify a global tooltip, select the tooltip and click the **Edit** button, or right-click the tooltip and access the **Edit** menu command. For details, see "Edit Global Tooltip Dialog Box" on page 888. You cannot create a new global tooltip.
Relevant tasks	"How to Customize a Business Rule Template in the Repository" on page 724

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
	Edit Global Tooltip. Click to edit the details of a selected global tooltip.
	Delete Global Tooltip. Select a modified tooltip labeled **Predefined (Customized)**, and click Delete to restore the tooltip to its out-of-the-box settings.
	Clear Selection. Clears the selection of global tooltips.
Description	The user-facing name of the global tooltip. For details on each of the global tooltips, see "List of Global Tooltips" on page 887.

UI Element (A-Z)	Description
Tooltip Name	The internal name of the global tooltip. For details on each of the global tooltips, see "List of Global Tooltips" on page 887.
Type	Either **Predefined** for out-of-the-box tooltips, or **Predefined (Customized)** for tooltips that have been edited.

List of Global Tooltips

Tooltip	Description	Tooltip Parameters
CI Data	Defines the tooltip used for CI information.	➤ CI Name ➤ Class Type ➤ Hidden Child CIs
Downtime	Defines the tooltip used for CIs in downtime.	➤ Status ➤ Held status since ➤ Downtime Until ➤ Location ➤ Caused By
Event Based HI	Defines the tooltip used for event-based health indicators. This tooltip shows event details, when a single event impacts a single HI.	See "Event-Based HI Tooltip Fields" on page 273.
HI Impacted by Several Events	Defines the tooltip used for health indicators which are influenced by several events.	➤ Status ➤ Affected By
History	Defines the tooltip used for the History KPI. For details, see "KPI Trend and History Calculation" on page 408. **Note:** The information that is displayed depends on the value assigned to the **HistoryType** rule global parameter.	➤ History Type ➤ Historical Worst ➤ Historical Average

Tooltip	Description	Tooltip Parameters
No Data	Defines the tooltip used for CIs with **No data** status.	➤ Status ➤ Held status since ➤ Warning ➤ Last update ➤ Location ➤ Caused By ➤ Error Message
Stopped	Defines the tooltip used for stopped CIs.	➤ Status ➤ Held status since ➤ Location ➤ Caused By
Subcomponent HI Tooltip	Defines the tooltip used for health indicators which are influenced by several events, when HI status is OK.	➤ Status
Trend	Defines the tooltip used for the Trend KPI. For details, see "KPI Trend and History Calculation" on page 408.	➤ Trend

Edit Global Tooltip Dialog Box

This dialog box enables you to define settings of a global tooltip.

To access	In the Global Tooltip dialog box, select a global tooltip and click the Edit button.
Important information	The global tooltips are listed in "List of Global Tooltips" on page 887.
Relevant tasks	"How to Customize a Business Rule Template in the Repository" on page 724

Tooltip Settings Area

User interface elements are described below:

UI Element (A-Z)	Description
Description	The name of the tooltip.
Max Label Width	The maximum width for a tooltip parameter name.
Max Value Width	The maximum width for a tooltip parameter value.

Tooltip Parameters Area

This area enables you to modify existing information or enter new information about a global tooltip's parameters.To modify a tooltip parameter, select the parameter and click the **Edit** button. For details, see "New/Edit Tooltip Parameter Dialog Box" on page 878.

User interface elements are described below:

UI Element (A-Z)	Description
	New Tooltip Parameter. Click to create a new tooltip parameter.
	Delete Tooltip Parameter. Deletes one or more selected tooltip parameters.
	Edit Tooltip Parameter. Click to edit the details of a selected tooltip parameter.
	Select all. Selects all the tooltip parameters.
	Clear Selection. Clears the selection of tooltip parameters.
Name	The display label of the tooltip parameter (this appears exactly as written).
Source	The source of the value to display.

Troubleshooting and Limitations

This section includes troubleshooting for Service Health calculation rules.

KPI Status is Always No Data

Problem: If your RTSM model contains CIs in a cyclic loop of impact relationships (for example, CI1 > CI2 > CI1 and so on), KPI status on the CIs in this loop, and on the CIs impacted by them, is always **No Data**. This indicates a modeling problem, since the business logic engine is designed to process a-cyclic graphs.

Solution: Within Platform > System Health, the BLE Online Monitor contains a measurement called **Cyclic Impact Detector**, which can show you if you have such a loop. For details, see "Data Processing Server Monitors" in *Platform Administration*.

In addition, you can use the following entries in the JMX Console to resolve the problem. Enter the following URL:

http://<Data Processing Server>:29800/mbean?objectname=BSM-Platform%3Aservice%3DCalculation+Adapter

Use the following entries:

- **getRejectedNodes**. Gets a list of nodes (CIs) that meet the above description.
- **getCyclicLinks**. Gets the links that form a cyclic loop. To form a valid model you can removing these physical links, or re-define the impact relationships to meet your modeling requirements, as long as there are no impact cycles in the model.

24

Context Menu Repository

This chapter includes:

Concepts

➤ Context Menu Repository Overview on page 892

Tasks

➤ How to Customize a Context Menu Template in the Repository on page 893

➤ Dynamic URL Parameters on page 897

Reference

➤ List of Context Menus on page 899

➤ List of Context Menu Actions on page 903

➤ List of Pre-Processor Classes on page 914

➤ List of Post-Processor Classes on page 920

➤ Context Menu Repository User Interface on page 931

Concepts

Context Menu Repository Overview

The Context Menu Repository page displays the list of context menus and menu actions available throughout Service Health, to determine appearance and functionality for the CIs in the presentation layer.

A context menu defines the menu options that are available for a KPI or a CI in the Service Health application. The adapter template assigns every configuration item type (CIT) a default context menu.

Context menus contain context menu actions, which can be nested within groups. Within the Context Menu Repository, menus and actions are categorized as follows:

- **Predefined.** Out-of-the-box menus and actions.
- **Predefined (Customized).** Out-of-the-box menus and actions that have been edited.
- **Custom.** New or cloned menus and actions.

Advanced users can modify existing context menus, groups, or actions, and create new ones, using the Context Menu Repository. For details about creating or editing context menus, see "How to Customize a Context Menu Template in the Repository" on page 893.

For a list of default context menus, see "List of Context Menus" on page 899. For a list of default context menu actions, see "List of Context Menu Actions" on page 903.

Tasks

How to Customize a Context Menu Template in the Repository

The following section describes how to customize a context menu in the Context Menu Repository.

For a detailed scenario that includes adding context menu actions to a context menu, see "How to Create a Dynamic URL – Use-Case Scenario" on page 641 and view the appropriate steps.

This task includes the following steps:

- "Create a customized context menu" on page 893
- "Edit context menu details" on page 894
- "Edit context menu actions" on page 895
- "Set a context menu or action back to default" on page 896

1 Create a customized context menu

To customize a context menu in the Context Menu Repository, select **Admin**> **Service Health** > **Repositories** > **Context Menus**. Open a menu for editing using one of the following methods:

- **New Context Menu.** Creates a context menu that is not based on an existing menu. To create a new context menu, click the **New Context Menu** button in the Context Menu Repository page.
- **Clone Context Menu**. Creates a context menu by cloning an existing menu. The original context menu is still available, and the new cloned menu can be modified. To clone a context menu, select a menu in the Context Menu Repository page and click the **Clone Context Menu** button. The new menu will be labeled **Custom**. Select the new menu and click the **Edit Context Menu** button to open it for editing.

➤ **Edit Context Menu**. Modifies an existing context menu. To edit a context menu, select a menu in the Context Menu Repository page and click the **Edit Context Menu** button. If you edit a predefined context menu, it will be labeled **Predefined (Customized)**.

For user interface details, see "Context Menu Repository page" on page 931.

2 Edit context menu details

In the **New/Edit Context Menu Details** page, you can modify information or enter new information for the context menu.

You can perform the following changes:

➤ Create a new group or a new action and assign it to the context menu.

➤ Add an action that already exists within the repository to the context menu.

➤ Edit the name of a context menu or group.

➤ Remove groups or actions from the context menu.

➤ Change the order of groups and actions within the context menu.

For user interface details, see "New Context Menu/Edit Context Menu Dialog Box" on page 935.

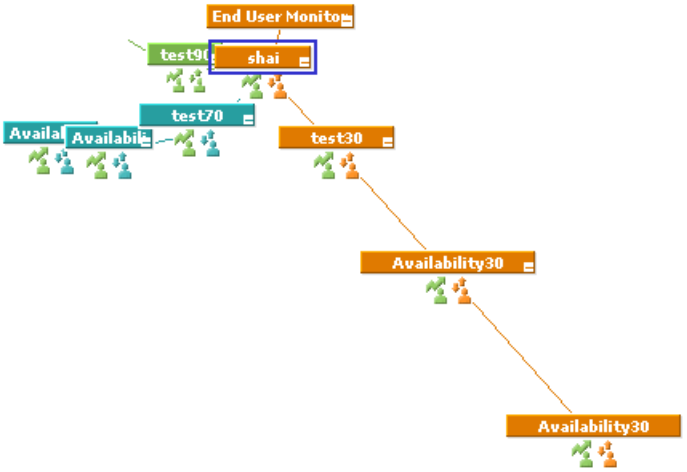
Example:

You want to add the Expand More Levels menu action to the Business Process Insight Top View context menu.

- ➤ In the Context Menus tab, open the Business Process Insight menu for editing. Select the Top View group and click the Add Action button. From the list of available actions select Expand more levels, and save your changes.
- ➤ In the CI Indicators tab, add the context menu to one or more CIs, as described in "How to Assign KPIs and HIs to CIs" on page 428.

The Business Process Insight Top View context menu now contains the Expand more levels menu action.

This enables you to quickly drill down to the related child CIs:



3 Edit context menu actions

Using the **Actions** tab, you can modify existing information or enter new information about the pre- and post-processor classes and the class parameters that define the action.

For user interface details, see "New/Edit Action Dialog Box" on page 939.

Note: Do not add new pre- or post-processor parameters, or make changes to a pre- or post-processor class, without consulting with HP Software Support. Classes are built for specific context menus, and making changes to a class may change its behavior.

---

4 Set a context menu or action back to default

If you have edited predefined context menus or actions, you might want to return them to their default settings. Note that this is only applicable for context menus or actions whose type is **Predefined (Customized)**. There are two ways to restore context menu elements to default:

- **Restore all default settings of a context menu or action.** Within the Context Menu Repository page, select the customized context menu or action, and click **Restore to Default**. The context menu or action is returned to its default settings, and its type reverts to Predefined.
- **Restore specific settings of a menu action.** Within the Actions tab, open a predefined (customized) action for editing, and click the **Restore Defaults** button. The elements that have been modified are automatically selected. Select the elements which you want to restore to default, and click **Save**.

Dynamic URL Parameters

The parameters for a dynamic URL are:

Constant	Description	
NODE.NAME	The name of the CI. When the URL is executed, **NODE.NAME** is replaced by the name of the CI from which you want to open the URL. The page specified in the URL opens and is filtered to display only information related to the CI.	
NODE.ID	The ID number of the CI. When the URL is executed, **NODE.ID** is replaced by the ID number of the CI from which you want to open the URL. The page specified in the URL opens and is filtered to display only information related to the CI.	
NODE.STATUS	The status of the CI. When the URL is executed, **NODE.STATUS** is replaced by the status of the CI from which you want to open the URL. The page specified in the URL opens and is filtered to display only information related to status. The available statuses are:	
	-4	downtime
	-3	stop
	-2	no data
	-1	uninitialized
	0	critical
	5	major
	10	minor
	15	warning
NODE.PARENTID	The ID of the parent CI. When the URL is executed, **NODE.PARENTID** is replaced by the ID of the parent of the CI from which you want to open the URL. The page specified in the URL opens and is filtered to display only information related to the parent CI.	

Constant	Description
NODE.CHILDIDS	The ID number of the CI's children. When the URL is executed, **NODE.CHILDIDS** is replaced by a list of the IDs of the children of the CI from which you want to open the URL. The page specified in the URL opens and is filtered to display only information related to the child CIs.
NODE.NAME	The name of the node.
NODE.ID	The ID number of the node.
NODE.STATUS	To filter by status, use **NODE.STATUS**.
NODE.PARENTID	The ID of the parent CI.
NODE.CHILDIDS	The ID number of the child CIs.

Reference

List of Context Menus

This section provides descriptions of the context menus available in the Context Menu Repository. For details about configuring the context menus, see "Context Menu Repository User Interface" on page 931.

The context menu actions are described in "List of Context Menu Actions" on page 903.

Context Menu	Description
BMC Measurement Menu	Context menu for measurement CIs originating from a BMC PATROL system.
BPI Business Activity Menu	This Context menu is available for Business Transaction CIs, from the Business Processes view.
BPI Business Process Menu	Context menu for Business Process CIs and BPI Monitor CIs.
BPI Scope Menu	Context menu for Business Process Scopes (aka Business Process Monitors)
BPM Application Reports	Group of context menus for reports on an application monitored by Business Process Monitor.
BPM BTF Reports	Group of context menus for reports on a business transaction flow monitored by Business Process Monitor.
BPM Transaction Reports	Group of context menus for reports on a transaction monitored by Business Process Monitor.
Business Process Insight Flow Map Menu	Context menu available from the Process Diagram in the BPI application Health page
Business Process Insight Scorecard Menu	Context menu available from the Scorecard page in the BPI application
Business Unit Menu	Internal.
CI Neighbors	Context menu used in RTSM administration.

Context Menu	Description
CI Properties	Context menu used in RTSM administration.
Config File Menu	Not in use.
Default Menu	Displays the context menu in Service Health.
Delete CI	Context menu used in RTSM administration.
Diagnostics BPM Menu	Context menu that is used in Service Health in monitoring views, to drill from a specific transaction to the Diagnostics transaction screen.
Diagnostics Business Transaction Menu	Context menu that is used to drill down from a business transaction CI to the Diagnostics Business Transactions view.
Diagnostics Host Menu	Context menu that is used to drill down from a host CI to the Diagnostics Hosts view.
Diagnostics J2EE Application Menu	Deprecated.
Diagnostics Monitor Menu	Deprecated.
Diagnostics MQ Manager Menu	Context menu that is used to drill down from a WebSphere MQ CI to the Diagnostics Queue Managers view.
Diagnostics Oracle Menu	Context menu that is used to drill down from an Oracle CI to the Diagnostics Oracle Probes view.
Diagnostics Probe Group Menu	Context menu that is used to drill down from a Probe Group CI to the Diagnostics Probe Group view.
Diagnostics Probe Menu (New)	Context menu that is used to drill down from Probe CIs and application server CIs such as WebSphere Application Server or .NET AppDomain) to the Diagnostics Probes view.
Diagnostics SAP R3 ABAP Menu	Context menu that is used to drill down from an SAP ABAP Server CI to the Diagnostics ABAP SAP Probes view.
Diagnostics SqlServer Instance Menu	Context menu that is used to drill down from an SQL Server CI to the Diagnostics SQL Server Probes view.
Diagnostics SqlServer Menu	Context menu that is used to drill down from an SQL Database CI to the Diagnostics SQL Server Probes view.

Context Menu	Description
Diagnostics Synthetic Business Transaction Menu	Context menu that is used to drill down from a Business Transaction CI to the Diagnostics Synthetic Transactions views.
EMS Measurement Menu	Context menu for measurement CIs originating from an Enterprise Management Systems (EMS) source.
EMS Show Events	Context menu for CIs: ➤ Originating from the Operations Manager source adapter. ➤ Originating from NetScout.
Go to Application Summary Report	Drill to Application Summary report filtered on the selected application.
Go to End User Summary Report	Go to End User Summary Report filtered on the selected end user
Go to Infrastructure Summary Report	Go to Infrastructure Summary Report filtered on the Node/Running software
Go to Location Summary Report	Go to Location Summary Report filtered on the selected location
Group Menu	The default context menu for most of the business configuration item types (CITs).
HI Context Menu	Context menu for drilling down from an HI in Service Health.
HP SC Menu	Context menu for EMS Monitor CIs under Business Service CIs.
Locate CI	Context menu after a search operation in IT Universe.
Locate CI in SLA	Internal.
Monitored by SiteScope Menu	Context menu for drilling down from a CI or HI, to a SiteScope monitor which contributes to the CI's or HI's status.

Context Menu	Description
Operation Manager	Context menu that enables drilling down to the HP Operations Manager application. **Limitations:** ➤ You must have specified the user name, password, and host machine in the EMS integration definition. For details, see "Add Integration Dialog Box" in *Solutions and Integrations*. ➤ This capability is only supported for one HP Operations Manager application. If more than one Operations Manager integration exists, the drill down feature works only for one of them.
RUM Application Reports	Group of context menus for reports on an application monitored by Real User Monitor.
RUM BTF Reports	Group of context menus for reports on a business transaction flow monitored by Real User Monitor.
RUM Transaction Reports	Group of context menus for reports on a transaction monitored by Real User Monitor.
SAP Alert Acknowledgment	Context menu for a SAP Alert CI.
SAP Menu	Context menu for a SAP-related CI.
SAP System Menu	Context menu for a SAP System CI.
SAP Transaction Menu	Context menu for a Transaction CI.
SAP Transport Menu	Context menu for a Transport CI.
Service Menu	Internal.
Service Mng Menu	Internal.
Service Mng Root Menu	Internal.
Siebel Database Breakdown Diagnostics Menu	Context menu for Siebel-specific CIs.
Siebel Diagnostics Menu	Context menu for Siebel-specific CIs.
Siebel Menu	Context menu for Siebel-specific CIs.

Context Menu	Description
Siebel SARM and DBBD Diagnostics Menu	Context menu for Siebel-specific CIs.
SiteScope Group Menu	Context menu for SiteScope group CIs.
SiteScope Measurement Menu	Context menu for measurements CIs originating from SiteScope.
SiteScope Monitor Menu	Context menu for SiteScope monitor CIs when there is no measurement level for the monitor.
SiteScope Web Service Monitor Menu	Context menu for SiteScope Web Service Monitor CIs.
Top View	Context menu for CIs in Top View, appended to the CI's standard context menu.
TransactionVision Menu	Context menu for Business Transactions that are monitored by TV
VM Context Menu	Context menu in Modeling Studio in RTSM Administration.
Web Service Menu	Context menu for Web Service CIs.
Web Service Operation Menu	Context menu for Web Service Operation CIs.

List of Context Menu Actions

This section provides details about the context menu actions available in the Context Menu Repository.

For details about configuring the context menu actions, see "New/Edit Action Dialog Box" on page 939.

For a description of pre- and post-processor classes and class parameters, see "List of Pre-Processor Classes" on page 914 or "List of Post-Processor Classes" on page 920.

Note: Do not add new pre- or post-processor parameters, or make changes to a pre- or post-processor class, without consulting with HP Software Support. Classes are built for specific context menus, and making changes to a class may change its behavior.

Context Menu Group or Action	Description
Acknowledgement Details	Opens the Acknowledgment details window relevant to the CI. For details, see "Acknowledgment History and Details Dialog Box" on page 332.
Aggregate Transaction Topology	Opens the Aggregated Topology report in the Transaction Management application.
Any Users Transaction Paths View	Drills down to the Transactions - Business Transactions Paths view in the HP Diagnostics application.
Any Users Transactions View	Drills down to the Transactions - Business Transactions view in the HP Diagnostics application.
Application Health Tab	Opens the Health page in the Business Process Insight application.
Application Summary	Opens the application summary report for the selected CI. For details, see "Application Summary Report" in *Using End User Management*.
BPI Monitors Over Time	Opens the BPI Monitors Over Time report relevant for the CI.
BPM Application Health	Opens the application health report filtered for synthetic user data, and filtered for the parent application. For details, see "Application Health Report" in *Using End User Management*.
BPM Performance Analysis	Opens the performance analysis report filtered for synthetic user data, and filtered for the selected transaction. For details, see "Performance Analysis Report" in *Using End User Management*.
BPM Triage for Application	Opens the triage report filtered for synthetic user data, and filtered for the selected application. For details, see "Triage Report" in *Using End User Management*.

Context Menu Group or Action	Description
BPM Triage for Transaction	Opens the triage report filtered for synthetic user data, and filtered for the selected transaction. For details, see "Triage Report" in *Using End User Management*.
Business Process Over Time Report	Opens the BPI Monitors Over Time report relevant for the CI.
Change Report	Opens the Change report in Service Health. For details, see "CI Change Report" in *Reports*.
CI Impact Report	Opens the Related Change Request report in Service Health.
Collaborate	If you have set up an integration with HP Enterprise Collaboration, opens EP with the selected CI as the context of the conversation. For details see "Operations" on page 102.
Complete Alert	Activates a URL call to the relevant SAP system and completes the selected SAP alert.
Configuration Item Status Alerts	Opens the Configuration Item Status Alert report relevant to the CI. For details, see "CI Status Alerts Reports" on page 285.
Console	Opens the 360° View in the Service Health Application.
Create New Business Service	Available in the Service Level Management application. It opens the SLA wizard where you can create a new Business Service CI. For details, see "New Business or Infrastructure Service/Edit Service Dialog Box" in *Service Level Management*.
Create New SLA from Business Service	Available in the Service Level Management application. It enables you to create a new SLA for the selected Business Service CI. It opens the Create Agreement wizard with the selected Business Service CI already attached. For details, see "New SLA/Edit SLA Wizard" in *Service Level Management*.
Custom Image	Opens the Custom Image tab in Service Health.
Customer	This context menu option is available in the Service Level Management application. It displays the customer defined for the selected service.
Delete	Opens the Delete Folder dialog box in the Modeling Studio, to enable you to delete a folder. For details, see "Modeling Studio User Interface" in the *Modeling Guide*.

Context Menu Group or Action	Description
Delete Business Service	This context menu option is available in the Service Level Management application. It deleted the selected Business Service CI.
Delete CI	Opens a dialog box to confirm that you want to delete the relevant CI in IT Universe Manager.
Diagnostics Agent/J2EE Server Summary View	Drills down to the Probes view in the HP Diagnostics application.
Diagnostics Probe Group Summary View	Drills down to the Probe Group Summary view in the HP Diagnostics application.
Diagnostics Web Service Topology View	Drills down to the Service Topology view in the HP Diagnostics application.
Edit Business Service	Available in the Service Level Management application. It opens the SLA wizard where you can edit the selected Business Service CI. For details, see "New Business or Infrastructure Service/Edit Service Dialog Box" in *Using Service Level Management*.
End User Summary	Moves to the End User Summary Report in End User Management. The End User Summary report displays data for specific end-users that were configured for the Real User Monitor in System Availability Management. For details, see "RUM End User Group Summary Report" in *Using End User Management*.
Errors	Opens the Service Health Hierarchy component, filtered for CIs in Error status. For details, see "Hierarchy Component Overview" on page 224.
Event Log Report	Moves to the Event Log report in End User Management. The Event Log report displays a log of the occurrences of a specific event type for a selected time frame. For details, see "Event Log" in *Using End User Management*.
Expand More Levels	Expands the Top View display to show the default maximum number of hierarchy levels for the CI.
Expand to Problem	Expands the Top View display to show the source of a problematic CI.
Filters	Opens the Hierarchy filter in Service Health.

Context Menu Group or Action	Description
Find Visible and Hidden Child CIs	Returns all of the visible and hidden child CIs of the selected CI that appear in the RTSM. For details, see "Find Visible and Hidden Child CIs Dialog Box" on page 86.
Geographical Map	Opens the Geographical Map tab in Service Health. For details about the Geographical Map tab, see "Geographical Map Component User Interface" on page 205.
Go to Console	Opens the Service Health 360° View page.
Go to Service Health Analyzer	If you have Service Health Analyzer installed, this opens the Anomaly Highlights page in Service Health Analyzer for the selected CI.
Go to SiteScope	Displays the relevant SiteScope Web page for this CI in a new SiteScope browser window, enabling you to view more detailed SiteScope parameters and measurements. See the SiteScope documentation for directions on using SiteScope. **Note:** By default, Service Health accesses the SiteScope machine using the machine host name. If you want access through IP, edit the **SiteScope** context menu action, by changing the value for the pre-processor parameter **HOST_BY** from **NAME** to **IP**.
Go to Top View	Opens the Service Health Top View tab, with the view's tree centered on the selected CI.
Group Load View	Deprecated.
HIs	Opens the Service Health Health Indicators component, showing the HIs related to the selected CI. For details, see "Health Indicator Component Overview" on page 228.
Host Summary View	Drills down to the Hosts view in the HP Diagnostics application.
HP Service Manager	A context menu option available from EMS Monitor CIs under Business Service CIs, to open the HP Service Manager application.
Infrastructure Summary	Opens the infrastructure summary report filtered for the selected application. For details, see "RUM Application Infrastructure Summary Report" in *Using End User Management*.
Invoke Run Books	For CIs whose CI type is mapped to an HP Operations Orchestration (OO) run book, opens the **Related Run Books** page in a new window. You can then view the mapped run books and invoke them in OO.

Context Menu Group or Action	Description
J2EE Application Summary View	Deprecated.
KPIs Over Time Report	Opens the KPI Over Time report relevant to the CI. For details, see "KPIs Over Time Report" on page 347.
Load View	Internal.
Locate CI in SLA	Displays the Search pane where you can specify the CI you want to locate in SLA. For details about the search feature, see "How to Search for CIs in Search Mode" in the *Modeling Guide*.
Locate CI in View	Displays the Search pane where you can specify the CI you want to locate. For details about the search feature, see "How to Search for CIs in Search Mode" in the *Modeling Guide*.
Location Summary	Opens the location summary report filtered for the selected location. For details, see "Location Summary Report" in *Using End User Management*.
Monitor to Operations Health	For future use.
New Folder	Opens the New Folder dialog box in the Modeling Studio, to enable you to create a new folder. For details, see "Modeling Studio User Interface" in the *Modeling Guide*.
Open in New Window	Opens an external application from Top View. For details on configuring this menu action, see "How to Access an External Application from Top View" on page 159.
Operations Health	For future use.
Oracle Server Summary View	Drills down to the Oracle Database - Oracle Probes view in the HP Diagnostics application.
Operation Manager	Enables you to access the HP Operations Manager application. For limitations, see "Operation Manager" on page 902.
Path to Root	Moves to the Top View tab with the Show Path to Root option selected for the CI in the Service Health application. For details, see "Service Health Menu Options" on page 98.

Context Menu Group or Action	Description
Performance Matrix for Application	Opens the BPM performance matrix report filtered for the selected application. For details, see "BPM Performance Over Time Report" in *Using End User Management*.
Performance Matrix for Transaction	Opens the BPM performance matrix report filtered for the selected transaction. For details, see "BPM Performance Over Time Report" in *Using End User Management*.
Probe Group Summary	Moves to HP Diagnostics reports. For details, see *HP Diagnostics User's Guide*.
Probe Summary	Moves to HP Diagnostics reports. For details, see *HP Diagnostics User's Guide*.
Problematic Subtree	Moves to the Top View tab with the Expand to Problem option selected for the CI in the Service Health application. For details, see "Service Health Menu Options" on page 98.
Properties	Opens the Properties dialog box relevant to the CI. For details, see "Working with CIs" in the *Modeling Guide*.
Provider	This context menu option is available in the Service Level Management application. It displays the provider of the selected service.
Rename Folder	Opens the Rename Folder dialog box to enable you to rename a folder. For details, see "Modeling Studio User Interface" in the *Modeling Guide*.
Reset Health Indicator	Restores the selected HI to its default state and value. For details, see "Health Indicator Component Overview" on page 228.
RUM Application Health	For future use.
RUM Performance Analysis	Opens the performance analysis report filtered for real user data, and filtered for the selected transaction. For details, see "Performance Analysis Report" in *Using End User Management*.
RUM Triage for Application	Opens the triage report filtered for real user data, and filtered for the selected application. For details, see "Triage Report" in *Using End User Management*.
RUM Triage for Transaction	Opens the triage report filtered for real user data, and filtered for the selected transaction. For details, see "Triage Report" in *Using End User Management*.

Context Menu Group or Action	Description
SAP R3 Summary View	Drills down to the SAP - ABAP SAP Probes view in the HP Diagnostics application.
SAP Transaction Changes Report	Opens the SAP Transaction Changes report that tracks changes made to a SAP Transaction CI when a transport was modified. For details, see "SAP Transaction Changes Report" in *Solutions and Integrations*.
SAP Transport Changes	Opens the SAP Transport Changes report that track changes made to the properties of a SAP Transport CI. For details, see "SAP Transaction Changes Report" in *Solutions and Integrations*.
SAR Compliancy Report	For future use.
Service Impact	Opens the related Business Impact report in Service Health. For details, see "Business Impact Report" on page 92.
Session Analyzer	Moves to the Session Analyzer report in End User Management filtered on the selected transaction (or child transactions in the case of a transaction group entity) and the **Past Hour** time period. The Session Analyzer report displays session data for specific applications that were configured for the Real User Monitor in System Availability Management. For details, see "RUM Session Analyzer Report" in *Using End User Management*.
Set/Unset Acknowledgement	Internal.
Show Business Activity Over Time Report	Opens the Business Activity Over Time report in the Business Process Insight application.
Show Contributing Events	Shows which events contributed to the HI's status and value.
Show Events	Activates a popup window that lists the events. Select the appropriate event and click the **Show events** button to clear the event from HP Business Service Management. A **clear event** is then published on the bus.

Context Menu Group or Action	Description
Show Impacting SAP Transports	Available for SAP-related Transaction CIs and for group CIs. For Transaction CIs, enables you to display the transports that are impacting the selected Transaction CI, with no historical limit to the information. Groups CIs represent the following CIs: SAP Site, SAP Business Process, SAP Business Scenario, SAP J2EE Dispatcher, SAP J2EE Server Process, SAP Process Step, SAP Project, SAP Transaction, SAP Transport Change, Application Component, SAP R/3 Application Server, SAP System, SAP Application Server, SAP J2EE Application Server, SAP R/3 Application Server, and SAP Gateway.
Show Impacting SAP Transports Transactions	Enables you to display the transactions that are impacting the selected CI.
Show Processes	For future use.
Show Related CIs	Opens the Related CIs tab, in IT Universe Manager. For details, see "How to Search for CIs in Search Mode" in the *Modeling Guide*.
Show Running Tasks	For future use.
Show SAP Transport Impact	Available for SAP-related Transport CIs. Enables you to display information for all the transactions in the system that impact the selected transport, with no historical limit to the information.
Show Tasks in Error	For future use.
Show Top View	Opens the Service Health Top View in a popup window, with the view's tree centered on the selected CI.
Siebel Cross-Performance	Opens the SiteScope Cross-Performance report for Siebel-specific entities. For details, see "Group Performance Report" in *Using System Availability Management*.
Siebel Database Breakdown	For future use.
Siebel SARM	For future use.

Context Menu Group or Action	Description
SiteScope Cross-Performance	Opens the SiteScope Cross-Performance report relevant to the CI. For details, see "Cross-Performance Report" in *Using System Availability Management*.
SiteScope Quick Report	Available for SiteScope Group and SiteScope Monitor CIs. Opens the SiteScope Quick Report. For details, refer to the SiteScope Help.
SiteScope Server Centric Report	Available for Windows Resource Monitor and Unix Resource Monitor CIs under specific conditions described in the report description. Opens the Server-Centric Report. For details, refer to *Using SiteScope* in the SiteScope Help.
SQL Server Instance Summary View	Drills down to the SQL Server Database - SQL Server Probes view in the HP Diagnostics application.
SQL Server Summary View	Drills down to the SQL Server Database - SQL Server Probes view in the HP Diagnostics application.
Synthetic Users Transactions Layers View	Drills down to the Transactions - Synthetic Transactions Layers view in the HP Diagnostics application.
Synthetic Users Transactions View	Drills down to the Transactions - Synthetic Transactions view in the HP Diagnostics application.
Systinet Web Service Data	Opens the HP SOA Systinet application for the Web Service. For details, see HP SOA Systinet documentation.
Tier Summary	Opens the RUM tier summary report filtered for the selected application. For details, see "RUM Tier Summary Report" in *Using End User Management*.
Transaction Over Time	Opens the Transaction Over Time report relevant for the CI.
Transaction Summary	Opens the Transaction Summary report relevant for the CI.

Context Menu Group or Action	Description
Transaction Summary	Moves to the Transaction Summary Reports area for that CI in the End User Management User Reports application. The Transaction Summary report displays data for specific transactions that were configured for the Real User Monitor in System Availability Management. For details, see "RUM Transaction Summary Report" in *Using End User Management*. By default, appears under the **Go to Report** shortcut menu.
Transaction Tracking	Opens the Transaction Tracking report in the Transaction Management application.
Trend	Moves to the Trend Reports area for that CI in the End User Management User Reports application. The Trend Report Wizard generates a trend report that provides a graphical representation of measurement data over a specific time period. This menu command enables you to compare data collected by Business Process Monitor only. You can use the User Reports application to generate trend reports from other data collectors. For details, see "Trend Reports" in *Reports*.
Triage	Moves to the Triage Reports area for that CI in the End User Management User Reports application. The Triage report displays transaction data for Business Process Monitor, and Real User Monitor profiles for the past day. The data is organized by location. For details, see "Triage Report" in *Using End User Management*. By default, appears under the **Go to Report** shortcut menu.
Triage Raw Data	Opens the Triage Raw Data report. For details about the report, see "Triage Raw Data Report" in *Using End User Management*.
Web Service Health	For future use.
WMQ Server Summary View	Drills down to the MQ - Queue Managers view in the HP Diagnostics application.

List of Pre-Processor Classes

Pre-processor classes correspond to specific menus. In addition, a pre-processor class specifies the actions performed before accessing the database.

Note: Do not add new pre-processor parameters or make changes to a pre-processor class, without consulting with HP Software Support.

This section includes the following topics:

- "Dashboard Generic URL" on page 914
- "Goto Trend Report" on page 916
- "Goto SiteScope" on page 917
- "ITU Internal (Open Modal Window)" on page 918
- "NetScout URL" on page 918
- "Prepare Parameters (Dashboard)" on page 918
- "RunBookPreprocessor" on page 918
- "Show Properties in VT" on page 919
- "View Manager (New Folder) Processor" on page 919

Dashboard Generic URL

Builds a generic URL using the following parameters (context menu actions might use a subset of the listed parameters):

Parameter	Definition
ack.ackID	The location of the acknowledgment ID.
ack.closeDialog	Internal. This parameter must not be modified.
ack.cmdbObjectID	The location of the RTSM object ID.
autoGenerate	Internal.

Parameter	Definition
COMMAND	Internal.
CMDB_NODE_ID	Internal. This parameter must not be modified.
CiID	Internal. This parameter must not be modified.
DATA_MODEL_SET_ TO_VALUE	Internal.
filter.fromDashboard	Used to add a dynamic value to the URL.
filterId	The ID of the filter. Internal. This parameter must not be modified.
filter.selectedVTIds	Used to add a dynamic value to the URL.
filter.timeBarBean.view	Internal.
FROM_DASHBOARD	Internal.
GRAPH_PROVIDER	Internal.
isFullScreen	Opens a popup window with the path to root. This parameter must not be modified.
LoginBtn	Internal. This parameter must not be modified.
LoginName	The name of the user used to login the Deep Transaction Tracking application.
loginURL	The URL of the Deep Transaction Tracking application.
NODE_ID	Converts to **nodeId**.
parentCmdbId	Internal.
Password	The password used to login to the Deep Transaction Tracking application.
pm.CMDBObjectID	Internal.
pm.VTObjectID	Internal.
popUp	Internal. This parameter must not be modified.

Parameter	Definition
reportID	The ID number of the report.
REPORT_ID	Internal.
selectedCI	Internal.
selectedTxnClasses	Internal.
SELECTED_MEASUREMENTS1	Internal.
SELECTED_MEASUREMENTS2	Internal.
TX_NAME	Internal.
targetNodeIds	The ID of the target node.
URL	The URL of the new window.

Goto Trend Report

Context menu processor that deals with the Trend report drill down functions. It uses the following parameters (context menu actions might use a subset of the listed parameters).

Parameter	Description
actionProcessorClass	Internal. This parameter must not be modified.
PROFILE_ID	Internal. This parameter must not be modified.
URL	The URL of the new window.
REQUEST_TYPE	Internal. This parameter must not be modified.
NODE_ID	Converts to **nodeId**.
MEASUREMENT_1_ID_PREFIX	Internal. Used to control if the report is filtered by location or by transaction for Business Process Monitor CIs.

Parameter	Description
MAX_MEASUREMENT_NUM	Maximum limit of measurements to filter in both SiteScope and Business Process Monitor.
actionForward	Internal. This parameter must not be modified.
REPORT_NAME	Internal. This parameter must not be modified.
DIMENSION_ID_PREFIX	Internal. Specifies to which report to drill down in the Trend report not from the Availability and Response Time of Business Process Monitor but for other KPIs, such as Download Time or DNS Time.
MEASUREMENT_0_ID_PREFIX	Internal. Specifies to which report to drill down in the Trend report not from the Availability and Response Time of Business Process Monitor but for other KPIs, such as Download Time or DNS Time.

Goto SiteScope

Opens the SiteScope Application using the following parameters (context menu actions might use a subset of the listed parameters):

Parameter	Description
GROUP_NODE_NAME	The CIs group in SiteScope.
HOST_BY	The SiteScope host.
PATH	The path that includes all of the SiteScope groups.
POST_FIX	The post fix expression to be added to the all URLs.
PROFILE_ID	The SiteScope profile to be used when opening SiteScope.
ROOT_PATH	The root path to SiteScope.
ROOT_POSTFIX	The SiteScope root.html document.

ITU Internal (Open Modal Window)

ITU represents the View manager tab in the RTSM application. The class deals with the View Manager tab. The parameter is:

Parameter	Description
IURL	The URL of the HP Business Service Management machine.

NetScout URL

Deals with NetScout URL. The class does not use parameters.

Prepare Parameters (Dashboard)

Prepares parameters, in JavaScript. Those parameters are used by Service Health. Context menu actions might use a subset of the listed parameters. The parameters are:

Parameter	Description
NODE_ID	Converts to **nodeId**.
nodeType	This parameter must not be modified.
selectFilterID	Dynamic parameter used by the class.
strutsAction	Dynamic parameter used by the class.
viewType	Dynamic parameter used by the class.

RunBookPreprocessor

For CIs whose CI type is mapped to an HP Operations Orchestration (OO) run book, opens the Related Run Books page in a new window using the following parameters:

Parameter	Description
FROM_DASHBOARD	Internal. This parameter must not be modified.
CMDB_NODE_ID	Internal. This parameter must not be modified.

Parameter	Description
SUSPECT_NAME	Internal. This parameter must not be modified.
CI_TYPE	Internal. This parameter must not be modified.
URL	The URL of the new window.

Show Properties in VT

When you select the Properties option in the Model Explorer context menu, the Properties dialog box of the selected CI is displayed. The parameter is:

Parameter	Description
URL	The URL of the new window.

View Manager (New Folder) Processor

Deals with the View Manager tab. The parameter is:

Parameter	Description
URL	The URL of the new window.

List of Post-Processor Classes

Post-processor classes are build to correspond to specific menus. In addition, a post-processor class specifies the actions that are performed after accessing the database.

Note: Do not add new post-processor parameters or make changes to a post-processor class, without consulting with HP Software Support.

This section includes the following topics:

- "CallJSOnPagePostProcessor" on page 921
- "Edit View (ITU)" on page 921
- "General View-manager Context Menu" on page 921
- "Goto KPIs Over Time Report" on page 921
- "Goto Trend Report" on page 922
- "Goto Triage Reports" on page 922
- "Goto RUM Event Analysis Reports" on page 922
- "Goto RUM Reports" on page 923
- "Goto SOA Health Reports" on page 925
- "ITU Internal (Open Modal Window)" on page 925
- "Locate Search Result Elements in the View Traverse" on page 926
- "Open the Properties Page From the View Traverse" on page 926
- "Open Window" on page 927
- "Show All the Element Neighbors" on page 929
- "Switch Application in BAC" on page 929
- "Switch Dashboard Tabs" on page 929
- "Switch Dashboard Tabs with Parameters" on page 930
- "Window" on page 930

CallJSOnPagePostProcessor

Context menu processor to expand Top View levels. The parameters are:

Parameter	Description
JS_CALL_PARAMS	Internal. This parameter must not be modified.
JS_METHOD_NAME	Internal. This parameter must not be modified.

Edit View (ITU)

Context menu processor that deals with the View Manager tab in the RTSM application. The parameter is:

Parameter	Description
PERMISSION_TYPE	Internal. This parameter must not be modified.

General View-manager Context Menu

Context menu processor that deals with the View Manager tab in the RTSM application. Context menu actions might use a subset of the listed parameters. The parameters are:

Parameter	Description
HEIGHT	The opened window height, in pixels.
RESIZE	If set to **1**, the window can be resized. If set to **0**, the window cannot be resized.
SCROLL	If set to **1**, a scrolling tab is added to the opened window, if required. If set to **0**, no scrolling tab is added to the open window.
WIDTH	The opened window width, in pixels.

Goto KPIs Over Time Report

Context menu processor that deals with opening the KPIs Over Time report. This class does not have parameters.

Goto Trend Report

Context menu processor that deals with the Trend report drill down functions. This class does not have parameters.

Goto Triage Reports

Context menu processor that deals with opening the Triage report. Context menu actions might use a subset of the listed parameters. The parameters are:

Parameter	Description
application_id	The ID of the application to be used when opening Diagnostics.
filter.selectedProfileId	Internal. This parameter must not be modified.
menu_item_id	The ID of the menu action.
menu_item_url	The location where the parameters are calculated. This parameter must not be modified.
reportID	The ID number of the report.

Goto RUM Event Analysis Reports

Context menu processor that deals with opening the RUM Event Analysis report. Context menu actions might use a subset of the listed parameters. The parameters are:

Parameter	Description
autoGenerate	Internal parameter of the RUM Event Analysis report.
filter.performance	Internal. This parameter must not be modified.
filter.selectedApplication	Internal. This parameter must not be modified.
filter.timeBarBean.view	Internal. This parameter must not be modified.
popUp	Internal. This parameter must not be modified.

Parameter	Description
reportID	The ID number of the report.
selectedEventId	Internal. This parameter must not be modified.
URL	Internal. This parameter must not be modified.

Goto RUM Reports

Context menu processor that deals with opening the Real User Monitor report. Context menu actions might use a subset of the listed parameters. The parameters are:

Parameter	Description
application_id	The ID of the application to be used.
autoGenerate	Internal parameter of the Raw Data Over Time report.
EUM_DIMENSION_ID	The CI type which is filtered in the report (for example BTF or transaction).
filter.applicationErrors	Internal. This parameter must not be modified.
filter.events	Internal. This parameter must not be modified.
filter.httpErrors	Internal. This parameter must not be modified.
filter.performance	Internal. This parameter must not be modified.
filter.httpErrors	Internal. This parameter must not be modified.
filter.selectedApplication	Internal. This parameter must not be modified.
filter.selectedApplication Errors	Internal. This parameter must not be modified.
filter.selectedcmdbidsfro mOuter Application	Internal. This parameter must not be modified.

Parameter	Description
filter.server FilterBean.serverName WildCard	Internal. This parameter must not be modified.
filter.vttTree Type4Thecmdbidsfrom OuterApplication	Internal. This parameter must not be modified.
filter.selectedEvents	Internal. This parameter must not be modified.
filter.selectedHttpErrors	Internal. This parameter must not be modified.
isContainer	Internal. This parameter must not be modified.
IS_POPUP	Internal. This parameter must not be modified.
menu_item_id	The ID of the menu action.
menu_item_url	The location where the parameters are calculated. This parameter must not be modified.
monitorName	Internal. This parameter must not be modified.
problematicCI	Internal.
reportID	The ID number of the report.
reportType	Defines which of the results to take from the PNR KPI that relays in the SLM tab.
selectedApplication	Internal. This parameter must not be modified.
selectedActionId	Internal. This parameter must not be modified.
selectedTab	Internal. This parameter must not be modified.
time_view	Internal. This parameter must not be modified.
__UIF_FORM	Internal. This parameter must not be modified.
__UIF_APPLICATION	Internal. This parameter must not be modified.

Goto SOA Health Reports

Context menu processor that deals with opening the HP Business Service Management for SOA reports. Context menu actions might use a subset of the listed parameters. The parameters are:

Parameter	Description
application_id	The ID of the application to be used when opening Diagnostics.
autoGenerate	Internal parameter of the Raw Data Over Time report.
filter.fromDashboard	Internal. This parameter must not be modified.
menu_item_id	The ID of the menu action.
menu_item_url	The location where the parameters are calculated. This parameter must not be modified.
reportID	The ID number of the report.
VT_NODES_ SYMBOL_IDS_KEY	Internal. The symbol ID of the CI, to which the context menu action is attached, in the view.
filter.selectedCIsType	Internal.

ITU Internal (Open Modal Window)

Context menu processor that deals with the View Manager tab in the RTSM application. Context menu actions might use a subset of the listed parameters. The parameters are:

Parameter	Description
HEIGHT	The opened window height, in pixels.
PARAM0	This parameter is for internal use only. This parameter must not be modified.

Parameter	Description
PARAM1	This parameter is for internal use only. This parameter must not be modified.
PARAM2	This parameter is for internal use only. This parameter must not be modified.
PARAM3	This parameter is for internal use only. This parameter must not be modified.
PARAM4	This parameter is for internal use only. This parameter must not be modified.
PERMISSION_TYPE	Internal. This parameter must not be modified.
RESIZE	If set to **1**, the window can be resized. If set to **0**, the window cannot be resized.
SCROLL	If set to **1**, a scrolling tab is added to the opened window, if required. If set to **0**, no scrolling tab is added to the open window.
WIDTH	The opened window width, in pixels.

Locate Search Result Elements in the View Traverse

Context menu processor that deals with the search capability in Model Explorer. This class does not have parameters.

Open the Properties Page From the View Traverse

When you select the Properties option in the Model Explorer context menu, the Properties dialog box of the selected CI is displayed. Context menu actions might use a subset of the listed parameters. The parameters are:

Parameter	Description
HEIGHT	The opened window height, in pixels.
RESIZE	If set to **1**, the window can be resized. If set to **0**, the window cannot be resized.

Parameter	Description
SCROLL	If set to **1**, a scrolling tab is added to the opened window, if required. If set to **0**, no scrolling tab is added to the open window.
SLAVE_WIN	If set to **1**, it checks that the window closes when the application is closed.
WIDTH	The opened window width, in pixels.

Open Window

General post processor to open a request in a new window, rather than in the application frame. Context menu actions might use a subset of the listed parameters. The parameters are:

Parameter	Description
ALERTDATE	The date when the selected SAP alert occurred.
ALERTTIME	The time of the selected SAP alert.
ALINDEX	The internal handle for the SAP alert.
ALSYSID	The SAP system which the alert came from.
ALUNIQNUM	The Id number of the SAP alert, as appears on the SAP system.
HEIGHT	The opened window height, in pixels.
MSEGNAME	Contains the type of the monitor and connection parameters (for example: SAP_CCMS_calderone_MI6_00).
MSG	The name of the SAP alert.
RESIZE	If set to **1**, the window can be resized. If set to **0**, the window cannot be resized.

Parameter	Description
SapConnId	Uses the following syntax: <host name>:<user name> to connect to a specific SiteScope monitor to retrieve the SAP alert. host name is the name of the host that contains the R3 server where the SAP alert originated. user name is the name of the user used to access the server to which the SiteScope monitor is connected.
SCROLL	If set to **1**, a scrolling tab is added to the opened window, if required. If set to 0, no scrolling tab is added to the open window.
SLAVE_WIN	If set to **1** it checks that the window closes when the application is closed.
szTargetHostIP	The IP of the SiteScope that sent the sample.
szTargetHostName	The name of the SiteScope host that sent the sample.
WIDTH	The opened window width, in pixels.
WIN_NAME	Specifies the window name.

SapProblemIsolationPostProcessor

Context menu processor that deals with Advanced Analytics in Application Management for SAP. The parameters are:

Parameter	Description
Base URL	The location of the file **/<HP_BSM_web_application_context_name (usually topaz)>/jsps/dash/ClearEventContextMenu.jsp**
timeInterval	The period of time for which the historical information is kept for group CIs. **Default:** 1 week

Parameter	Description
HEIGHT	The opened window height, in pixels.
RESIZE	If set to **1**, the window can be resized. If set to **0**, the window cannot be resized.
SCROLL	If set to **1**, a scrolling tab is added to the opened window, if required. If set to 0, no scrolling tab is added to the open window.
SLAVE_WIN	If set to **1** it checks that the window closes when the application is closed.
WIDTH	The opened window width, in pixels.

Show All the Element Neighbors

Context menu processor that deals with Model Explorer. This class does not have parameters.

Switch Application in BAC

Context menu processor for drilling down from one application to another. This class does not have parameters.

Switch Dashboard Tabs

Context menu processor that switches tabs in the Service Health application. The parameter is:

Parameter	Description
TAB_ID	The ID of the tab. The tab ID is available in the application framework. If you change the tab ID, it is recommended to change the name of the context menu action to match the name of the tab that is opened by this option.

Switch Dashboard Tabs with Parameters

Context menu processor that passes internal parameters when switching from one tab to another in Service Health. The parameter is:

Parameter	Description
TAB_ID	The ID of the tab. The tab ID is available in the application framework. If you change the tab ID, it is recommended to change the name of the context menu action to match the name of the tab that is opened by this option.

Window

Context menu processor that deals with opening new windows. Context menu actions might use a subset of the listed parameters. The parameters are:

Parameter	Description
HEIGHT	The opened window height, in pixels.
RESIZE	If set to **1**, the window can be resized. If set to **0**, the window cannot be resized.
SCROLL	If set to **1**, a scrolling tab is added to the opened window, if required. If set to 0, no scrolling tab is added to the open window.
SLAVE_WIN	If set to **1** it checks that the window closes when the application is closed.
WIDTH	The opened window width, in pixels.
WIN_NAME	Specifies the window name.

Context Menu Repository User Interface

This section includes:

- Context Menu Repository page on page 931
- New Context Menu/Edit Context Menu Dialog Box on page 935
- New/Edit Group Dialog Box on page 937
- Add Actions Dialog Box on page 938
- New/Edit Action Dialog Box on page 939
- Pre-Processor Parameter Details Dialog Box on page 942
- Post-Processor Parameter Details Dialog Box on page 943
- Restore Defaults Dialog Box on page 944

Context Menu Repository page

This page displays the list of context menus and menu actions available in Service Health.

To access	Select **Admin** > **Service Health** > **Repositories** > **Context Menus**
Relevant tasks	"How to Customize a Context Menu Template in the Repository" on page 893

Context Menu Tab

This tab enables an advanced user to modify existing context menus and to create new ones.

Important information	To modify a context menu, select the context menu in the **Context Menus** tab and click the **Edit** button, or right-click the context menu and access the **Edit** menu command. For details, see "New Context Menu/Edit Context Menu Dialog Box" on page 935. A list of the predefined context menus and their descriptions is available in "List of Context Menus" on page 899.

User interface elements are described below:

UI Element (A-Z)	Description
	Click the **New Context Menu** button to create a new context menu.
	Click the **Edit Context Menu** button to edit the details of a selected context menu.
	Click the **Clone Context Menu** button to create a new context menu, using a selected context menu as a template.
	Click the **Delete Context Menu** button to delete one or more selected custom context menu. If you delete a Predefined (Customized) context menu, it is restored to default.
	Restore to Default. Select an edited menu whose Type is Predefined (Customized), and click to restore it to its original settings.
	Click to refresh the page.
	Export to Excel. Click to export the table to an Excel file.

UI Element (A-Z)	Description
	Export to PDF. Click to export the table to a PDF file.
Name	The name of the context menu.
Type	Indicates one of the following context menu types: ➤ **Custom.** New or cloned context menus. ➤ **Predefined.** Out-of-the-box context menus that have not been modified. ➤ **Predefined (Customized).** Out-of-the-box context menus that have been edited. You can restore such a menu to its original settings using the **Restore to Default** button.

Actions Tab

This tab enables an advanced user to modify existing context menu actions, and to create new ones.

Important information	To modify a context menu action, select the action in the **Actions** tab and click the **Edit** button, or right-click the action and access the **Edit** menu command. For details, see "New/Edit Action Dialog Box" on page 939. A list of the predefined context menu actions and their descriptions is available in "List of Context Menu Actions" on page 903.

User interface elements are described below:

UI Element (A-Z)	Description
	Click the **New Action** button to create a new context menu action.
	Click the **Edit Action** button to edit the details of a selected context menu action.
	Click the **Clone Action** button to create a new context menu action, using a selected action as a template.

UI Element (A-Z)	Description
	Click the **Delete Action** button to delete one or more selected custom context menu actions. If you delete a Predefined (Customized) action, it is restored to default.
	Restore to Default. Select an edited action whose Type is Predefined (Customized), and click to restore it to its original settings.
	Click to refresh the page.
	Export to Excel. Click to export the table to an Excel file.
	Export to PDF. Click to export the table to a PDF file.
Name	The name of the context menu action.
Type	Indicates one of the following context menu action types: ➤ **Custom.** New or cloned context menu actions. ➤ **Predefined.** Out-of-the-box context menu actions that have not been modified. ➤ **Predefined (Customized).** Out-of-the-box context menu actions that have been edited. You can restore such an action to its original settings using the **Restore to Default** button.

New Context Menu/Edit Context Menu Dialog Box

This dialog box enables you to modify information or enter new information for a context menu, its groups, and its actions.

To access	In the Context Menu Repository page, click the **New Context Menu** button, or select a context menu and click the **Edit Context Menu** button.
Important information	When creating a new context menu, type the name of the context menu in the New Context Menu dialog box. After you click **Save**, the New Context Menu dialog box contains the fields described below. A detailed list of context menus and their details is available in "List of Context Menus" on page 899.
Relevant tasks	"How to Customize a Context Menu Template in the Repository" on page 893

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<Menu entity>	Displays a hierarchical view of the context menu. The highest level is that of the context menu itself. Context menus can contain menu actions and groups; groups are containers for menu actions.
	The **New** button contains the following options: ➤ **New Action.** Create a new menu action (default). For details, see "New/Edit Action Dialog Box" on page 939. ➤ **Group.** Create a new group, and add menu actions to the group. For details, see "New/Edit Group Dialog Box" on page 937.

UI Element (A-Z)	Description
	Click the **Add Action** button to add a menu action to the context menu. You can add an action that is already defined in the Context Menu Repository, or create a new action. For details, see "Add Actions Dialog Box" on page 938. A detailed list of actions is available in "List of Context Menu Actions" on page 903.
	At the context menu level, click the **Edit Item** button to edit the name of the context menu. At the group level, click the **Edit Item** button to edit the details of the group. For more details, go to "New/Edit Group Dialog Box" on page 937. **Note:** To edit an action, access the **Actions** tab. For details, refer to the Actions Tab section in "Context Menu Repository page" on page 931.
	Click the **Delete** button to delete a group or action. **Note:** Custom context menus can be deleted from the **Context Menu** tab itself.
	Click the **Move Up** button to move a group or action higher in the menu hierarchy.
	Click the **Move Down** button to move a group or action lower in the menu hierarchy.
	Click the **Clear Selection** button to clear the selection.

New/Edit Group Dialog Box

This dialog box enables you to modify existing information or enter new information about a menu group.

To access	In the New/Edit Context Menu dialog box, click the **New Group** button, or select an existing group and click the **Edit Item** button.
Relevant tasks	"How to Customize a Context Menu Template in the Repository" on page 893

User interface elements are described below:

UI Element	Description
<**Group Name area**>	Select a name for the group using the following options: ➤ **New group name.** Enter a name for the group. ➤ **Predefined names.** Select one of the predefined group names. Note that selecting one of these names does not automatically select any actions.
<**Add Actions area**>	Add actions to the group using the following options: ➤ **Available Actions.** Select one or more actions to add to the group, using the CTRL key for multiple selection. For details about the available actions, see "List of Context Menu Actions" on page 903. ➤ **New Action**. Click the **New Action** button to create a new action and add it to the group. The new action is also added to the Context Menu Repository. For details, see "New/Edit Action Dialog Box" on page 939. **Note:** Actions can be deleted from a group using the **Edit Context Menu** dialog box.

Add Actions Dialog Box

This dialog box enables you to add menu actions to a context menu or group. You can add actions that already exist in the Context Menu Repository, or create a new action.

To access	In the New/Edit Context Menu dialog box, click the **Add Action** button.
Relevant tasks	"How to Customize a Context Menu Template in the Repository" on page 893

User interface elements are described below:

UI Element (A-Z)	Description
Available Actions	Select menu actions that exist in the Context Menu Repository to add to the context menu or group. Select multiple actions by holding down the CTRL key. For details about the default actions, see "List of Context Menu Actions" on page 903.
New Action	Click the **New Action** button to create a new menu action and add it to the context menu or group. The new action is also added to the Context Menu Repository. For details, see "New/Edit Action Dialog Box" on page 939.

New/Edit Action Dialog Box

This dialog box enables you to modify information or enter new information for a context menu action.

To access	In the **Actions** tab on the Context Menu Repository page, click the **New** button, or select an action and click the **Edit** button.
Important information	Do not add new pre- or post-processor parameters, or make changes to a pre- or post-processor class, without consulting with HP Software Support. Classes are built for specific context menus, and making changes to a class may change its behavior.
Relevant tasks	"How to Customize a Context Menu Template in the Repository" on page 893

Common Settings

User interface elements are described below:

UI Element (A-Z)	Description
Restore Defaults	Enables to restore modified menu action settings to their defaults. This is only applicable for Predefined (Customized) actions. For details, see "Restore Defaults Dialog Box" on page 944.

Action Settings Area

User interface elements are described below:

UI Element (A-Z)	Description
Context	(Optional) You can use this field to categorize actions with labels that are meaningful to you; by default this field is empty. If you have a number of actions with the same name, you can add an additional label in the Context field. This label is appended to the action name, and the action is displayed in the repository as **<action name> (<context>)**. The context is only displayed in the Actions tab, and in the list of actions used when creating a context menu.
Name	The name of the action.
Post-Processor Class	The name of the post-processor class to be used to perform the corresponding action **after** accessing the database, when this menu option is selected. The list of parameters used by the post-processor class for the current context menu action is provided in the Post-Processor Parameters area. For details, see "Post-Processor Parameters Area" on page 941. For details about the post-processor classes and their parameters, see "List of Post-Processor Classes" on page 920.
Pre-Processor Class	The name of the pre-processor class to be used to perform the corresponding action **before** accessing the database, when this menu option is selected. The list of parameters used by the pre-processor class for the current context menu action is provided in the Pre-Processor Parameters area. For details, see "Pre-Processor Parameters Area" on page 941. For details about the pre-processor classes and their parameters, see "List of Pre-Processor Classes" on page 914.

Pre-Processor Parameters Area

Important information	The parameters listed in this area belong to the class listed in the Pre-Processor Class field. For details about the pre-processor classes and their parameters, see "List of Pre-Processor Classes" on page 914.

User interface elements are described below:

UI Element (A-Z)	Description
	Click to create a new pre-processor parameter. For details, see "Pre-Processor Parameter Details Dialog Box" on page 942.
	Click to edit the details of a selected pre-processor parameter. For details, see "Pre-Processor Parameter Details Dialog Box" on page 942.
	Click to delete one or more selected pre-processor parameters.
	Click the **Select all** button to select all the pre-processor parameters.
	Click the **Clear Selection** button to clear the selection.

Post-Processor Parameters Area

Important information	The parameters listed in this area belong to the class listed in the Post-processor Class field. For details about the post-processor classes and their parameters, see "List of Post-Processor Classes" on page 920.

User interface elements are described below:

UI Element (A-Z)	Description
	Click to create a new post-processor parameter. For details, see "Post-Processor Parameter Details Dialog Box" on page 943.
	Click to edit the details of a selected post-processor parameter. For details, see "Post-Processor Parameter Details Dialog Box" on page 943.
	Click delete one or more selected post-processor parameters.
	Click the **Select all** button to select all the post-processor parameters.
	Click the **Clear Selection** button to clear the selection.

Pre-Processor Parameter Details Dialog Box

This dialog box enables you to modify existing information or enter new information about the pre-processor parameter.

To access	In the New/Edit Action dialog box, click **New Pre-Processor Parameter** or click the **Edit** button for the appropriate parameter.
Important information	Do not add new pre- or post-processor parameters, or make changes to a pre- or post-processor class, without consulting with HP Software Support. For details about the pre-processor classes and their parameters, see "List of Pre-Processor Classes" on page 914.
Relevant tasks	"How to Customize a Context Menu Template in the Repository" on page 893

User interface elements are described below:

UI Element (A-Z)	Description
Convert To	This key is used if the key is a parameter in the URL. In this case, the URL is added with the converted key and the value.
Key	The parameter's key. The **GenericURLPreprocess** parameter has certain predefined keys: **URL_SUFFIX** and **URL** (or a composition of **PROTOCOL**, **HOST**, and **PORT**).
Value	The parameter's value. In case of a URL key, it can be a certain URL (for example: http://www.hp.com) The value can also be retrieved from the CI using an Escaping sequence form; for example: NODE-ID to get the CI Id.

Post-Processor Parameter Details Dialog Box

This dialog box enables you to modify existing information or enter new information about the post-processor parameter.

To access	In the New/Edit Action dialog box, click **New Post-Processor Parameter** or click the **Edit** button for the appropriate parameter.
Important information	Do not add new post-processor parameters, or make changes to a post-processor class, without consulting with HP Software Support. For details about the post-processor classes and their parameters, see "List of Post-Processor Classes" on page 920.
Relevant tasks	"How to Customize a Context Menu Template in the Repository" on page 893

User interface elements are described below:

UI Element (A-Z)	Description
Key	The parameter's key.
Value	The parameter's value. The value can also be retrieved from the CI using an Escaping sequence form; for example: NODE-ID to get the CI Id.

Restore Defaults Dialog Box

This dialog box enables you to restore predefined settings, for menu actions whose type is Predefined (Customized).

To access	In the Edit Action dialog box, click the **Restore Defaults** button.
Relevant tasks	"How to Customize a Context Menu Template in the Repository" on page 893

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<Modified fields>	The menu action definition fields that have been modified are automatically selected. Select the fields which you want restored to default, and click **Save**.

Part V

APIs

25

Service Health Rules API

This chapter includes:

Concepts

- Rules API Overview on page 948
- API Group and Sibling Rule on page 950
- API Sample Rule on page 953
- API Duration-Based Sample Rule on page 955
- Creating Rules with the Rules API on page 957

Tasks

- How to Define an API Rule in the CI Indicators Tab on page 959
- How to Create a Text File-Based API Rule on page 960
- How to Define an API Rule in the Rule Repository on page 964
- How to Work with Tooltip Entries on page 966
- How to Write to Log Files From the Rules API Code on page 967
- How to Include a CI Property in Rules API Calculations on page 968

Reference

- Examples - API Group and Sibling Rule on page 969
- Examples - API Sample Rule on page 978

Concepts

Rules API Overview

Note: In BSM versions 9.00 and later, the rules that calculate indicator statuses and values based on samples ("API Sample Rule" on page 953 and "API Duration-Based Sample Rule" on page 955) are used to calculate metric-based health indicators (HIs).

Throughout the Rules API documentation, you will see references to various methods used to calculate KPIs. In BSM versions 9.00 and later, when calculating sample-based values, these methods are used to calculate metric-based HIs.

This chapter describes how to use the Rules API to create new business rules. Business rules are used to calculate Key Performance Indicators (KPIs). A KPI must have an associated business rule that defines how the KPI is calculated. The default Service Health rules appear in the section "List of Calculation Rules in Service Health" on page 740.

The recommended way to create new rules is with the Rules API. The Rules API enables you to create rules using the Groovy scripting language. Users of the Rules API should be familiar with Groovy and Java, and with BSM administration and applications.

The Rules API classes are documented in Javadoc format in the *HP Rules API Reference*. These files are located in the following folder:
\\<HP Business Service Management Gateway Server root directory>\AppServer\webapps\site.war\amdocs\eng\doc_lib\Service_Health\Rules_API\index.html

This section also includes the following topics:

➤ "Service Health API Rules" on page 949

➤ "Creating API Rules" on page 949

➤ "Tooltips and Log Files" on page 950

Note: Extensive use of rules which use the Rules API will affect performance.

Service Health API Rules

There are three types of Service Health API rules:

➤ **Group and Sibling Rule**. This rule calculates KPIs based on data received from other KPIs, rather than from original sample data. For details, see "API Group and Sibling Rule" on page 950.

➤ **Sample Rule**. This rule calculates KPIs based on original data taken from sample fields; the number of samples included in the calculation is limited by a maximum number of samples rule parameter. For details, see "API Sample Rule" on page 953.

➤ **Duration-Based Sample Rule**. This rule calculates KPIs based on original data taken from sample fields; a duration parameter defines which samples are included in the calculation. For details, see "API Duration-Based Sample Rule" on page 955.

Creating API Rules

Rules can be created using the Rules API in three ways:

➤ Using the CI Indicators tab to create a rule for a specific KPI.

➤ Using a text file to create a new rule for multiple KPIs.

➤ Using a clone of an API rule in the Rule Repository to create a new rule.

These methods are described in "Creating Rules with the Rules API" on page 957.

Tooltips and Log Files

To display KPI information in tooltips when working with the Rules API, see "How to Work with Tooltip Entries" on page 966.

You can write to log files from the Rules API code, as described in "How to Write to Log Files From the Rules API Code" on page 967.

API Group and Sibling Rule

An API Group and Sibling Rule calculates KPIs based on data received from other indicators, rather than from original sample data. The received data can come from the KPIs of child CIs, or from other KPIs or HIs associated with the same CI.

Note: If you are creating a sibling rule, make sure that the KPI is calculated after its sibling KPIs, as defined by the KPI's Calculation Order field. For details, see "KPIs Repository page" on page 666.

This section includes the following topics:

- "Group and Sibling Rule Methods and Fields" on page 950
- "Defining a Group and Sibling Rule in the CI Indicators tab or Rule Repository" on page 952
- "Accessing a Specific Child KPI in the CI Indicators Tab" on page 952
- "Defining a Group and Sibling Rule Using a Text File" on page 952

Group and Sibling Rule Methods and Fields

The Group and Sibling rule implements the Rules API Interface **GroupAndSiblingCalculator**, using the following guidelines:

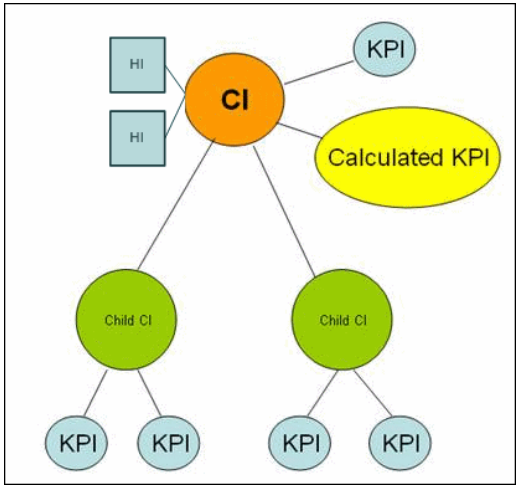
- In this interface, the only method is **calculateKPI**. The method signature is:

  ```
  public void calculateKPI(CI ci, KPI kpi)
  ```

- The **calculateKPI** method includes the parameters **ci** and **kpi**, which represent the current CI, and the KPI whose value the API rule calculates.
  - The **ci** parameter type is **CI**, and is used as an accessor to KPIs of child CIs or sibling KPIs, or HIs on the CI.
  - The **kpi** parameter type is **KPI**, and is used to set calculation results.

In the following illustration, the Calculated KPI is calculated based on the sibling or child KPIs, and it is represented by the **kpi** parameter.

The CI to which the Calculated KPI is assigned, is represented by the **ci** parameter, and it is an accessor to the other KPIs or HIs.



The Rules API classes are documented in Javadoc format in the *HP Rules API Reference*. These files are located in the following folder:
\\<HP Business Service Management Gateway Server root directory>\AppServer\webapps\site.war\amdocs\eng\doc_lib\Service_Health\Rules_API\index.html

For detailed examples of Group and Sibling rules, see "Examples - API Group and Sibling Rule" on page 969.

API rules can be defined within the Service Health CI Indicators tab or Rule Repository, or using a text file template, as described in "Creating Rules with the Rules API" on page 957.

Defining a Group and Sibling Rule in the CI Indicators tab or Rule Repository

To define a Group and Sibling rule using the CI Indicators tab or within the Rule Repository, enter the **calculateKPI** method implementation in the **KPI Calculation Script** area.

The parameters **ci** and **kpi** of the **calculateKPI** method are available for use in this script.

For detailed instructions, see "How to Define an API Rule in the CI Indicators Tab" on page 959 or "How to Define an API Rule in the Rule Repository" on page 964.

Accessing a Specific Child KPI in the CI Indicators Tab

When creating a Group rule for a specific KPI in the CI Indicators tab, to access a specific child KPI, the API includes a mechanism to simplify the code. When defining your KPI Calculation Script, you can enter the format "<**CI name**>"."<**KPI name**>".

For an example of this, see Example - Specific Child CI Group Rule in "Examples - API Group and Sibling Rule" on page 969.

Defining a Group and Sibling Rule Using a Text File

To define a Group and Sibling rule using a text file, use the **DashboardGroupAndSiblingTemplate.groovy** template as described in "How to Create a Text File-Based API Rule" on page 960.

Within the text file, enter the **calculateKPI** method body.

API Sample Rule

A Sample rule calculates KPIs based on original data taken from sample fields; the number of samples included in the calculation is limited by a maximum number of samples parameter.

This section includes the following topics:

- "Sample Rule Methods and Fields" on page 953
- "Defining a Sample Rule in the CI Indicators tab or Rule Repository" on page 954
- "Defining a Sample Rule Using a Text File" on page 954

Sample Rule Methods and Fields

The Sample rule implements the Rules API Interface **LeafCalculator**, using the following guidelines:

- In this interface, the only method is **calculateKPI.** The method signature is:

  ```
  public void calculateKPI(CI ci, KPI kpi, List<Sample> samples)
  ```

- The **calculateKPI** method includes the parameters **ci**, **kpi, and samples.** These represent the current CI, the KPI whose value the rule calculates, and the samples to be used in the rule calculation based on the **Maximum number of samples** parameter. (If this parameter value is 1, list one sample in this field.)
  - The **kpi** parameter type is **KPI**, and is used to set calculation results.
  - The **samples** parameter is a **List** of **Sample** objects, which hold sample field values.
- The rule must also set the **sampleFields** field to define which sample fields are held by the **Sample** object. These values are the values used by the rule.

For detailed examples of Sample rules, see "Examples - API Sample Rule" on page 978.

API rules can be defined within the Service Health CI Indicators tab or the Rule Repository, or using a text file template, as described in "Creating Rules with the Rules API" on page 957.

The Rules API classes are documented in Javadoc format in the *HP Rules API Reference*. These files are located in the following folder:
\\<HP Business Service Management Gateway Server root directory>\AppServer\webapps\site.war\amdocs\eng\doc_lib\Service_Health\Rules_API\index.html

Defining a Sample Rule in the CI Indicators tab or Rule Repository

To define a Sample rule using the CI Indicators tab or within the Rule Repository, fill in the fields as follows:

- **Sample Fields**. List the sample fields which are held by the **Sample** object; separate between the sample names with a comma (for example: "u_iStatus", "dResponseTime").
- **KPI Calculation Script**. Enter the **calculateKPI** method implementation; do not enter the method signature. The parameters **ci**, **kpi, and samples** of the **calculateKPI** method are available for use in this script.
- **Maximum number of samples**. By default only the most recent sample is included (default=1). You can use this field to change this setting.

For detailed instructions, see "How to Define an API Rule in the CI Indicators Tab" on page 959 or "How to Define an API Rule in the Rule Repository" on page 964.

Defining a Sample Rule Using a Text File

To define a Sample rule using a text file template, use the **DashboardSampleRuleTemplate.groovy** template file as described in "How to Create a Text File-Based API Rule" on page 960.

Within the text file, enter the **calculateKPI** method body, and define the **sampleFields** field.

API Duration-Based Sample Rule

A Duration-Based Sample rule calculates KPIs based on original data taken from sample fields; the duration rule parameter defines which samples are included in the calculation. For example, if duration is defined as fifteen minutes, all samples collected during the last fifteen minutes are included in the calculation.

This section includes the following topics:

- "Duration-Based Sample Rule Methods and Fields" on page 955
- "Defining a Duration-Based Sample Rule in the CI Indicators tab or Rule Repository" on page 956
- "Defining a Duration-Based Sample Rule Using a Text File" on page 956

Duration-Based Sample Rule Methods and Fields

The Duration-Based Sample rule implements the Rules API Interface **LeafCalculator**, using the following guidelines:

- In this interface, the only method is **calculateKPI**. The method signature is:

  ```
  public void calculateKPI(CI ci, KPI kpi, List<Sample> samples)
  ```

- The **calculateKPI** method includes the parameters **ci**, **kpi, and samples.** These represent the current CI, the KPI whose value the rule calculates, and the list of samples to be used in the rule calculation.
  - The **kpi** parameter type is **KPI**, and is used to set calculation results.
  - The **samples** parameter is a **List** of **Sample** objects, which hold sample field values.
- The rule must also set the **sampleFields** field to define which sample fields are held by the **Sample** object. These values are the values used by the rule.

For detailed examples of this rule, see "Examples - API Sample Rule" on page 978.

API rules can be defined using the Service Health CI Indicators tab, using a text file, or within the Rule Repository, as described in "Creating Rules with the Rules API" on page 957.

The Rules API classes are documented in Javadoc format in the *HP Rules API Reference*. These files are located in the following folder:
\\<HP Business Service Management Gateway Server root directory>\AppServer\webapps\site.war\amdocs\eng\doc_lib\Service_Health\Rules_API\index.html

Defining a Duration-Based Sample Rule in the CI Indicators tab or Rule Repository

To defining a Duration-Based Sample rule using the CI Indicators tab or within the Rule Repository, fill in the fields as follows:

- **Sample Fields**. List the sample fields which are held by the **Sample** object; separate between the sample names with a comma (for example: "u_iStatus", "dResponseTime").
- **KPI Calculation Script**. Enter the method implementation; do not enter the method signature. The parameters **ci**, **kpi, and samples** of the **calculateKPI** method are available for use in this script.
- **No data timeout** and **duration**. (Optional) You can define the timeout period and duration parameters, as described in "List of Rule Parameters" on page 845.

For detailed instructions, see "How to Define an API Rule in the CI Indicators Tab" on page 959 or "How to Define an API Rule in the Rule Repository" on page 964.

Defining a Duration-Based Sample Rule Using a Text File

To define a Duration-Based Sample rule using a text file template, use the **DashboardDurationBasedSampleRuleTemplate.groovy** template file as described in "How to Create a Text File-Based API Rule" on page 960.

Within the text file, enter the **calculateKPI** method body, and define the **sampleFields** field.

Creating Rules with the Rules API

There are a number of ways to create rules using the Rules API, as described in the following section.

This section includes the following topics:

- "Define a rule for a specific KPI using the CI Indicators tab" on page 957
- "Create a rule using a text file" on page 957
- "Define a rule within the Rule Repository" on page 958

Define a rule for a specific KPI using the CI Indicators tab

Each Service Health KPI has three applicable API rules: API Group and Sibling Rule, API Sample Rule, or API Duration-Based Sample Rule. From the CI Indicators tab, you can assign one of the API rules to a KPI, and enter a calculation script (and other rule details) to define rule logic for that KPI.

You can then edit the rule details in the CI Indicators tab at any time to change the rule logic for the KPI.

For details, see "How to Define an API Rule in the CI Indicators Tab" on page 959.

Create a rule using a text file

For each of the three API rules (Group and Sibling Rule, Sample Rule, or Duration-Based Sample Rule) there is a corresponding template file, located in the **<Data Processing server root directory>\BLE\rules\groovy\templates** directory. You can use one of the template files to create a text file defining a new rule. You then add this rule to the Rule Repository, and it can be applied like any out-of-the-box rule.

The API code cannot be seen or changed within Service Health, but only within the text file. If you make changes to the code within the text file, these changes are applied to all instances where the rule has been assigned, after you reload Service Health rules.

For details, see "How to Create a Text File-Based API Rule" on page 960.

Define a rule within the Rule Repository

The Rule Repository contains three API rules: API Group and Sibling Rule, API Sample Rule, or API Duration-Based Sample Rule. You can use the Rule Repository to clone an API rule and enter a calculation script (and other rule details) to define the rule logic.

After the rule is applied to a KPI, you can edit rule details within the CI Indicators tab at any time to change the rule logic for a specific KPI.

For details, see "How to Define an API Rule in the Rule Repository" on page 964.

Tasks

How to Define an API Rule in the CI Indicators Tab

Each KPI has three applicable API rules. Within the CI Indicators tab, assign one of the API rules to a KPI, and enter the calculation script (and other rule details) to define the rule logic for that KPI.

This task includes the following steps:

- "Assign an API rule to a KPI" on page 959
- "Define the KPI's rule logic" on page 959

1 Assign an API rule to a KPI

To assign an API rule for a specific KPI assigned to a CI, select **Admin** > **Service Health** > **CI Indicators**. Select **New KPI** to assign a new KPI to the CI, or **Edit KPI** to modify an existing KPI. For details on this process, see "How to Assign KPIs and HIs to CIs" on page 428.

From the list of applicable business rules, select one of the API rules: API Group and Sibling Rule, API Sample Rule, or API Duration-Based Sample Rule. For a description of the rule types see "Rules API Overview" on page 948.

2 Define the KPI's rule logic

Depending on the type of rule you are creating, define the rule methods and fields as described in:

- "API Group and Sibling Rule" on page 950
- "API Sample Rule" on page 953
- "API Duration-Based Sample Rule" on page 955

How to Create a Text File-Based API Rule

There are three rule template files corresponding to the three API rules; each template implements the rule's interface.

Create a text file defining a new rule using one of the templates, and then add the new rule to the Business Rule Repository. The rule can then be applied like any out-of-the-box rule.

The API code cannot be seen or changed within Service Health, but only within the text file. If you make changes to the code within the text file, these changes are applied to all instances where the rule has been assigned, after you reload Service Health rules.

This task includes the following steps:

- "Create a text file for a rule" on page 960
- "Add a rule in the rule repository" on page 961
- "Add the rule to the KPI's applicable rules list" on page 963
- "Add tooltip parameters to the new tooltip" on page 963
- "Reload rules after editing the text file" on page 964

1 Create a text file for a rule

Based on the type of rule you want to create, copy and rename one of the template files located in the **<Data Processing server root directory>\BLE\rules\groovy\templates** directory.

Within your copy of the template, define the rule methods and fields as described in:

- "API Group and Sibling Rule" on page 950
- "API Sample Rule" on page 953
- "API Duration-Based Sample Rule" on page 955

Save the file to the **<Data Processing server root directory>\BLE\rules\groovy\rules** directory.

You must now add a rule in the Rule Repository that uses the rule logic in the text file.

2 Add a rule in the rule repository

a Select **Admin**> **Service Health** > **Repositories** > **Business Rules** > **New Rule**. For details on adding rules, see "How to Customize a Business Rule Template in the Repository" on page 724.

b In the **Name** field, type the name of the rule you want to create (mandatory).

c In the **Class Name** field, type **groovy:** <file name>. Note that the file name must be identical (case sensitive) to the file name in the **<Data Processing server root directory>\BLE\rules\groovy\rules** directory.

d Create Rule parameters depending on your API rule type, as follows:

➤ In the **Rule parameters** area, click **New**.

➤ For API Sample rules:

In the **Name** field type **Maximum number of samples**. In the **Type** field, select **Integer**. In the **Default Value** field, type **1**.

Click **OK** to Save.

➤ For API Duration-Based Sample rules:

In the **Name** field type **duration**. In the **Type** field, select **Long**. In the **Default Value** field, type **990**.

Click **OK** to Save.

Repeat these steps to add the **No Data Timeout** rule parameter (Type: Long; Default Value = 990).

e Create Threshold parameters: critical, major, minor, warning, informational, and operator. (Skip this step if you are defining a Group and Sibling rule that does not have Thresholds, where status is calculated by the rule code.)

➤ In the **Threshold parameters** area, click **New**.

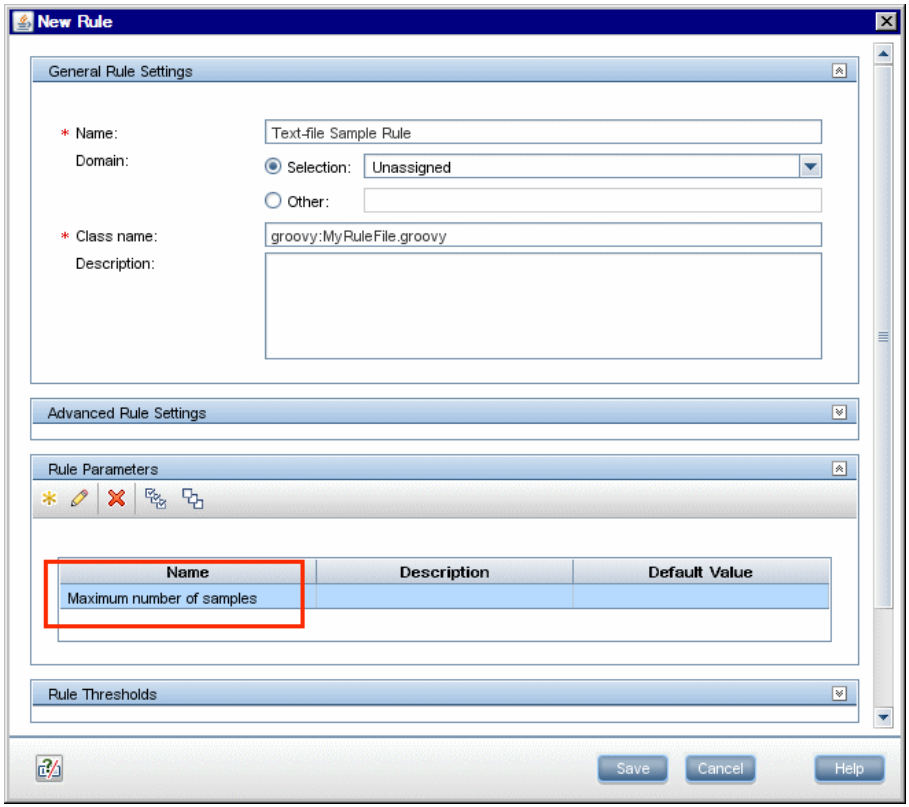
➤ In the **Name** field, type **critical**. In the **Type** field, select **Float**.

When defining the **operator** parameter, select **String** in the **Type** field.

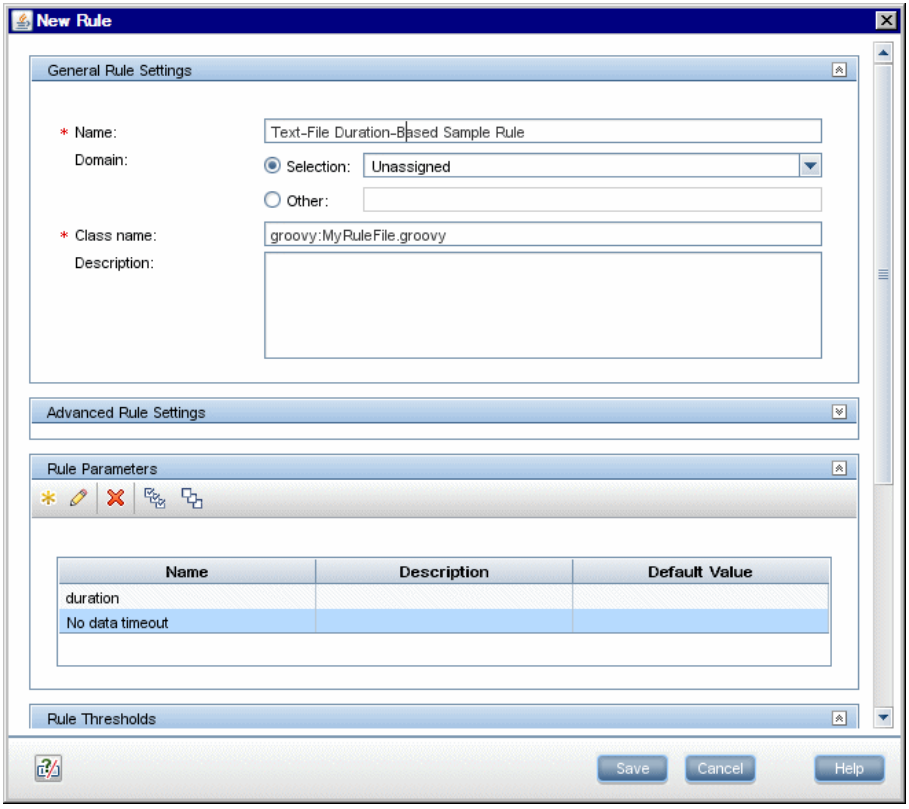
➤ Click **OK** to save.

Repeat the above steps for each of the other Threshold parameters (major, minor, warning, informational, and operator).

The following image shows a Sample rule after the rule parameter has been added:



The following image shows a Duration-Based Sample rule after the rule parameters have been added:



3 Add the rule to the KPI's applicable rules list

Add the new rule to the list of applicable rules already attached to the relevant KPI. For details, see the Main Settings Area > Applicable Rules parameter in "New KPI/Edit KPI Dialog Box" on page 668.

4 Add tooltip parameters to the new tooltip

When a rule is created using this procedure, a corresponding tooltip is with no tooltip parameters. For instructions on adding tooltip parameters to the new tooltip, see "How to Work with Tooltip Entries" on page 966.

5 Reload rules after editing the text file

If you make changes to the text file at any time after the rule is created, perform the following steps to apply the changes.

a In the browser, access JMX port <29810 + workerID> (for example, 29811 for worker _1).

b Within **BSM-Platform**, select the service called **MarbleWorker** and invoke the **reloadRules** method. This method is applied to all the customers served by this worker.

How to Define an API Rule in the Rule Repository

Within the Business Rule Repository, create an API rule that can be applied to multiple KPIs. This is done by cloning one of the three API rules, and setting default rule values for specific rule parameters. After the rule is applied to a KPI, you can edit its script within the CI Indicators tab at any time to change the rule logic for the specific KPI.

This task includes the following steps:

➤ "Clone an API rule" on page 964

➤ "Edit rule details" on page 965

➤ "Add the rule to the KPI's applicable rules list" on page 965

1 Clone an API rule

Select **Admin> Service Health > Repositories > Business Rules**. In the Business Rule Repository page, clone one of the following rules: API Group and Sibling Rule, API Sample Rule, or API Duration-Based Sample Rule.

For details on cloning a rule, see "How to Customize a Business Rule Template in the Repository" on page 724.

2 Edit rule details

a Open the new rule for editing.

b In the **Name** field, rename the cloned rule.

c Edit the **KPI Calculation Script** rule parameter. In the **Default Value** field, enter the rule calculation script. The code that you enter is the default code for this rule, and appears in the CI Indicators tab for all KPIs assigned this rule. (Do not change any other fields.)

d If you are creating a Sample rule or Duration-Based Sample rule, edit the **Sample Fields** rule parameter. The sample fields that you enter are the default sample fields for this rule, and appear in the CI Indicators tab for all KPIs assigned this rule. (Do not change any other fields.)

For details on these rule parameters, see the following sections (depending on the type of rule you are creating):

➤ "API Group and Sibling Rule" on page 950

➤ "API Sample Rule" on page 953

➤ "API Duration-Based Sample Rule" on page 955

The Rules API classes are documented in Javadoc format in the following location *HP Rules API Reference*. These files are located in the following folder:
\\<HP Business Service Management Gateway Server root directory>\AppServer\webapps\site.war\amdocs\eng\doc_lib\Service_Health\Rules_API\index.html

3 Add the rule to the KPI's applicable rules list

Add the new rule to the list of applicable rules already attached to the relevant KPI. For details, see the Applicable Rules parameter in "New KPI/Edit KPI Dialog Box" on page 668.

How to Work with Tooltip Entries

The following section describes how to work with tooltip entries to display information calculated by the Rules API.

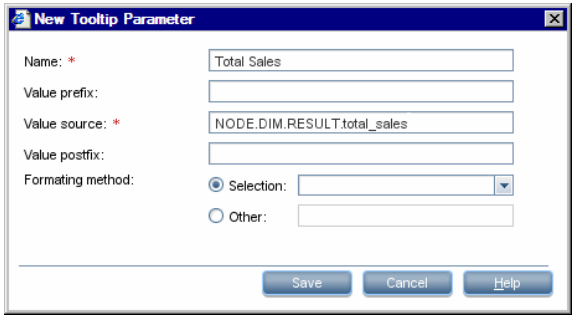
1 Select **Admin> Service Health > Repositories > Business Rules**. In the Rule Repository page, add any required tooltip entries for the new rule. The following table lists common tooltip entries and their corresponding value sources and formatting methods:

Tooltip Parameter	Value Source	Formatting Method
Business Rule	NODE.DIM.RULE.ID_CUST	ruleIDtoString
CI name	NODE.PROPS.BamNodeNameKey	toLowerCase
Held status since	NODE.DIM.RESULT.LastStatusChange	returnDateAsString
Status	NODE.DIM.RESULT.Status	getStatusString
Value	NODE.DIM.RESULT.Value	returnNumOfDigitAfterPoint

For details, see "New/Edit Tooltip Parameter Dialog Box" on page 878.

2 If you have used the **kpi.setTooltip** method, you must set a corresponding tooltip entry in the Rule Repository as described above. In the **Value Source** field, type the name of the tooltip entry exactly as used in the code, and leave the **Formatting Method** field empty.

For example, if your code contains the method invocation **kpi.setTooltip("total_sales", value),** type **NODE.DIM.RESULT.total_sales** in the **Value Source** field.



How to Write to Log Files From the Rules API Code

Within your API rules, you can write to log files from rule methods using a **logger** object. There are five log levels: debug, info, warn, error and fatal. Each of these uses a specific logger method.

By default, only log method invocations of error and fatal severity are written to the log files. You can modify this within the log configuration files.

To write to log files using the Rules API:

1 Within the rule method, implement one of the following methods (listed in ascending order of severity):

- **logger.debug("<API rule name> : log message");**
- **logger.info("<API rule name> : log message");**
- **logger.warn("<API rule name> : log message");**
- **logger.error("<API rule name> : log message");**
- **logger.fatal("<API rule name> : log message");**

Type the name of your API rule inside the log message to identify each log message with its source rule.

2 The Rules API log files are found in the **<Data Processing server root directory>\HPBSM\log\marble_worker_<worker#>\RulesAPI** directory.

Open one of the following files to view the log messages (depending on your rule type):

- **groupAndSiblingRule.log** (for API Group and Sibling rules)
- **sampleRule.log** (for API Sample rules)
- **durationBasedSampleRule.log** (for API Duration-Based sample rules)

To modify the severity level written to a log file:

1 By default, only log method invocations of error and fatal severity are written to log files. To modify this setting, open the log configuration file located in **<Data Processing server root directory>HPBSM\conf\core\Tools\log4j\marble_worker\dashboard_rules.properties**.

2 In the line corresponding with your rule type, replace the string **${loglevel}** with the severity level you want logged (either DEBUG, INFO, WARN, ERROR, or FATAL). Edit one of the following lines, depending on your rule type:

- Group and Sibling rules:
  log4j.category.com.mercury.am.rules.dashboard.blDashboardRules.simplifiedRule.groupAndSiblingRule.DashboardGroupAndSiblingRule = **${loglevel}**, bam.app.rules.api.group.appender
- Sample rules:
  log4j.category.com.mercury.am.rules.dashboard.blDashboardRules.simplifiedRule.leaf.DashboardSimplifiedSampleBasedRule = **${loglevel}**, bam.app.rules.api.leafsample.appender
- Duration-Based Sample rules:
  log4j.category.com.mercury.am.rules.dashboard.blDashboardRules.simplifiedRule.leaf.DashboardSimplifiedTimeBasedRule = **${loglevel}**, bam.app.rules.api.leafduration.appender

How to Include a CI Property in Rules API Calculations

Within your API rules, you can include CI properties using the CI class **getPropertyValue** method, and the KPI class **getCiProperty** method. Only CI properties with one of the following qualifiers can be accessed with this method:

- **BLE_ATTRIBUTE** - SLM and Service Health
- **BLE_ONLINE_ATTRIBUTE** - Service Health only

To add this attribute to a CI class you must export the class, edit the class definition, and import it back to the server. When you open the exported class for editing, add the following xml to the required attribute:

```
<Attribute name="<attribute-name>" type="double" display-name="<attribute-display-name>">
    <Attribute-Qualifiers>
        <Attribute-Qualifier name="BLE_ATTRIBUTE"/>
    </Attribute-Qualifiers>
</Attribute>
```

Reference

Examples - API Group and Sibling Rule

This section provides examples of API Group and Sibling Rules. The following examples are described:

- "Example - Worst Child Rule" on page 970
- "Example - Worst Sibling Status Rule" on page 971
- "Example - Specific Child CI Group Rule" on page 972
- "Example - Sibling Rule Based on Availability and Performance KPIs" on page 973
- "Example - Group Average Value by CI Type" on page 974
- "Example - Worst Health Indicator Rule" on page 975
- "Example - Using Groovy Closure" on page 976

Example - Worst Child Rule

The following rule finds the worst status from all of the KPIs of the calculated CI's child CIs, which are of the same type as the calculated KPI, based on active statuses only. Active statuses are **Critical**, **Major**, **Minor**, **Warning**, and **OK**.

```
public void calculateKPI(CI ci, KPI kpi) {

    // Get the calculated KPI's type ID (as defined in the Service Health KPI Repository).
    int kpiId = kpi.getType();
    // Get a list of all of the KPIs of the calculated CI’s child CIs, which are of the same
    // type as the calculated KPI.
    List<KPI> childKpiList = ci.getChildrenKPIsByID(kpiId);
    // Create a variable to set the status of the calculated KPI,
    // only if an active status is found.
    boolean isActiveStatusFound = false;
    // Set the current worst status to OK; if a worse status is found this will be updated.
    Status worstStatus = Status.OK;
    // Go over the list of child KPIs.
    childKpiList.each{KPI childKPI->
        // Get the child KPI's status.
        Status childKpiStatus = childKPI.status;
        // Check if the child KPI's status is an active status.
        if(childKpiStatus.isActive()){
            // Mark that an active status was found.
            isActiveStatusFound = true;
            // Check if the child KPI's status is worse than the current worst status.
            if(childKpiStatus.isWorse(worstStatus)){
                // Update the worst status.
                worstStatus = childKpiStatus;
            }
        }
    }
    // Check if an active status was found in the child KPI.
    if(isActiveStatusFound){
        // Set the calculated KPI status.
        kpi.setStatus(worstStatus);
    }

}
```

Example - Worst Sibling Status Rule

The following rule finds the worst status from sibling KPIs, based on active statuses only. Active statuses are **Critical**, **Major**, **Minor**, **Warning**, and **OK**.

```
public void calculateKPI(CI ci, KPI kpi) {

    // Get a list of all the KPIs for the CI.
    List<KPI> ciKpiList = ci.getAllKPIs();
    /**
     * Create a variable to set the status of the calculated KPI,
     * only if an active status is found.
     */
    boolean isActiveStatusFound = false;
    // Set the current worst status to OK; if a worse status is found this will be updated.
    Status worstStatus = Status.OK;
    // Go over the list of the CI's KPIs.
    ciKpiList.each {KPI ciKPI ->
        /**
        * Check that the CI's KPI is not the calculated KPI.
        * This is needed because getAllKPIs method returns all the KPIs for the CI.
        */
        if (ciKPI !=  kpi) {
            /**
             * The ciKPI represents a sibling KPI of the calculated KPI.
             * Get the sibling KPI's status.
             */
            Status siblingKpiStatus = ciKPI.status;
            // Update worstStatus if necessary.
            if (siblingKpiStatus.isActive()) {
                isActiveStatusFound = true;
                if (siblingKpiStatus.isWorse(worstStatus)) {
                    worstStatus = siblingKpiStatus;
                }
            }
        }
    }
    // Check if an active status was found in the sibling KPI.
    if (isActiveStatusFound) {
       // Set the calculated KPI's status.
       kpi.setStatus(worstStatus);
    }
}
```

Example - Specific Child CI Group Rule

The following rule calculates KPI status based on the Availability KPI of a specific child CI (RTSM ID = "96c2df2b544683c7f79bb382d1d7b3a9").

If the child CI's Availability KPI value is 100, the calculated KPI's status is set to OK. All other values set the KPI's status to **Critical**.

Status is set only if the child CI exists, has the Availability KPI, and its Availability KPI has value.

```
public void calculateKPI(CI ci, KPI kpi) {

    /**
    * Get the Availability KPI for the child CI "tx_10 from virtual_host_3".
    * The RTSM ID of "tx_10 from virtual_host_3" is
"96c2df2b544683c7f79bb382d1d7b3a9".
    *
    * Note: Within the UI, the following line can be written as
    * KPI childKPI = "tx_10 from virtual_host_3"."Availability"
    */
    KPI childKPI = ci.getChildKpiByChildId(KpiType.Availability,
"96c2df2b544683c7f79bb382d1d7b3a9");

    // Check if childKPI is not null. It is null if no child CI with this RTSM ID exists, or if
this CI does not have the Availability KPI.
    if (childKPI != null) {

        // Check if the child KPI has a value.
        if (childKPI.valueExist) {
            if (childKPI.value == 100.0) {
                kpi.status = Status.OK
        }
        else {
                kpi.status = Status.CRITICAL
            }
        }
    }
}
```

Example - Sibling Rule Based on Availability and Performance KPIs

The following rule calculates KPI status based on the status of sibling Availability and Performance KPIs.

If these KPIs do not exist or do not have active status, no status is set.

If these sibling KPIs exist and are both OK, the calculated KPI status is set to OK. Otherwise, its status is set to **Critical**. (Active statuses are **Critical**, **Major**, **Minor**, **Warning**, and **OK**.)

```
public void calculateKPI(CI ci, KPI kpi) {

    /**
     * Get the sibling KPI of type Availability.
     * If Availability KPI does not exist, null will be returned.
     */
    KPI availabilityKPI = ci.getKPI(KpiType.Availability);
    // Get the sibling KPI of type Performance.
    KPI performanceKPI = ci.getKPI(KpiType.Performance);

    if (availabilityKPI != null && performanceKPI != null) {
        // Both KPIs exist for this CI. Check if the KPIs status is active.
        if (availabilityKPI.status.isActive() && performanceKPI.status.isActive()) {
            // Check the KPI's status.
            if (availabilityKPI.status == Status.OK &&
                performanceKPI.status == Status.OK) {
                /**
                 * Both statuses are active and both are OK. Set this KPI's status to OK.
                 */
                kpi.status = Status.OK
            }
            else {
                /**
                 * Both statuses are active, and not both are OK.
                 * Set this KPI's status to CRITICAL
                 */
                kpi.status = Status.CRITICAL
            }
        }
    }
}
```

Example - Group Average Value by CI Type

The following rule calculates the average status of the KPIs of child CIs, which are of the same CI type as the calculated KPI.

Only child CIs of type "bpm_tx_from_location" are used in the calculation. If there are no child CIs of this type, or no child CI KPIs have value, no value is set for the KPI.

```
public void calculateKPI(CI ci, KPI kpi) {

    // Get the calculated KPI's type ID (as defined in the Service Health KPI Repository).
    int kpiId = kpi.getType();
    // Get a list of the KPIs of the child CIs, which are of the same CI type as the
calculated
    // KPI, whose CI type is  "bpm_tx_from_location".
    List<KPI> bpmTxFromLocationChildKpiList =
ci.getChildrenKPIsByIDAndCiType(kpiId, "bpm_tx_from_location")

    // Create a variable to sum the total values from child KPIs.
    // If no child exists or no child has value the variable will remain null.
    Double totalChildValue = null;
    // Write information to the log file.
    logger.debug("DashboardGroupAvgValueByCiTypeRule : number of child CIs with
type bpm_tx_from_location: " + bpmTxFromLocationChildKpiList.size())
    // Go over the list of child KPIs.
    bpmTxFromLocationChildKpiList.each {KPI childKPI ->
        // Sum values of the child KPIs using the Utils class, which handles null values.
        totalChildValue = Utils.sum(totalChildValue, childKPI.value);
    }
    // Set the calculated KPI's value to the average value, using the Utils class.
    // If totalChildValue is null, null value will be set.
    kpi.value = Utils.divide(totalChildValue, bpmTxFromLocationChildKpiList.size());
}
```

Example - Worst Health Indicator Rule

The following rule finds the worst status from all of the health indicators (HIs) of the calculated CI, based on active statuses only. Active statuses are **Critical**, **Major**, **Minor**, **Warning**, and **OK**.

```
public void calculateKPI(CI ci, KPI kpi) {
    // Get all health indicators.
    List<HI> his = ci.getHIs();

    // Create a variable to set the status of the calculated KPI,
    // only if an active status is found.
    boolean isActiveStatusFound = false;

    // Set the current worst status to OK;
    // if a worse status is found this will be updated.
    Status worstHiStatus = Status.OK;

    his.each {HI hi ->
        Status hiStatus = hi.getStatus();
        // Check if the current HI status is an active status.
        if (hiStatus.isActive()) {
            // Mark that an active status was found.
            isActiveStatusFound = true;

            // Check if the child KPI's status is worse than the current worst status.
            if (hiStatus.isWorse(worstHiStatus)) {
                // Update the worst status.
                worstHiStatus = hiStatus;
            }
        }
    }

    // Check if an active status was found in the child KPI.
    if (isActiveStatusFound) {
        // Set the calculated KPI status.
        kpi.setStatus(worstHiStatus);
    }
}
```

Example - Using Groovy Closure

The following rule sets the calculated KPI's status to Critical, if at least one Availability KPI with Major status exists for the calculated CI's child CIs.

This rule illustrates Groovy Closure. Refer to http://groovy.codehaus.org/Closures for more information.

```
public void calculateKPI(CI ci, KPI kpi) {

    /**
     * Use Groovy Closure with the CI class getChildrenKPIs method,
     * to get List of KPIs from the CI`s child CIs, where
     * 1. KPI type is Availability
     * 2. Status is MAJOR

     Closure description:

     { KPI childKPI ->
         childKPI.type == KpiType.Availability.getID("DASHBOARD") && childKPI.status
== Status.MAJOR
     }

     The Closure defines one parameter named childKPI of type KPI.

     Each KPI from the CI`s child CIs will be passed to the Closure by the
getChildrenKPIs method.

     The Closure body returns a boolean value based on the logical expression result.
     Each KPI that the Closure body will return true for, will be part of the returned List

     The expression KpiType.Availability.getID("DASHBOARD") returns an int
representing the Availability KPI ID from the Service Health KPI Repository.
     */
```

```
    List<KPI> kpiList = ci.getChildrenKPIs {KPI childKPI ->
        childKPI.type == KpiType.Availability.getID("DASHBOARD") && childKPI.status
== Status.MAJOR
    }
    // Check if such a KPI exists.
    if (kpiList.isEmpty()) {
        // No such KPI exists.
        // Write to a log file at debug level.
        logger.debug "Closure Rule: no Availability KPI with  MAJOR status exist"
    }
    else {
        //  At least one Availability KPI with MAJOR status exists.
        logger.debug("Closure Rule: At least one Availability KPI  with  MAJOR status
exist")
        // Set calculated KPI status to CRITICAL.
        kpi.status = Status.CRITICAL;
    }
}
```

Examples - API Sample Rule

This section provides examples of API Sample Rules. The following examples are described:

- "Example - Average Availability Rule" on page 978
- "Example - Average Performance Rule" on page 979
- "Example - Average Performance Rule Using a Rule Parameter Filter" on page 980

Example - Average Availability Rule

The following rule calculates average availability of samples, based on the u_iStatus sample field.

The rule logic is (available samples / total samples) * 100.

```
// This rule uses the u_iStatus sample field.
def sampleFields = ["u_iStatus"];

public void calculateKPI(CI ci, KPI kpi, List<Sample> samples) {
    // Keep total number of samples for this calculation cycle.
    def totalSamples = samples.size();
    // Create a variable to count available samples.
    def availableSamples = 0;
    /**
    * Go over the given samples. If a sample's u_iStatus is equal to 0,
    * the sample is considered available.
    */
    samples.each {Sample currentSample->
    if (currentSample.u_iStatus == 0) {
        // Increase the count of available samples.
        availableSamples++;
        }
    }
    if (totalSamples > 0) {
        // Set KPI value, converted to percentage.
    kpi.setValue ((availableSamples/totalSamples)*100.0);
    }
}
```

Example - Average Performance Rule

The following rule calculates average performance in seconds, based on the dResponseTime and u_iStatus sample fields.

Only samples with a u_iStatus value of 0 (available samples) are used in the calculation. The rule logic is: sum(dResponseTime) / available samples.

```
// This rule uses the u_iStatus and dResponseTime sample field.
def sampleFields = ["u_iStatus", "dResponseTime"];

public void calculateKPI(CI ci, KPI kpi, List<Sample> samples) {

    // Create a variable to count available samples.
    def availableSamples = 0;
    // Create a variable to sum response times of available samples.
    def totalResponseTime = 0;
    /**
     * Go over the given samples. If a sample's u_iStatus is equal to 0,
     * the sample is considered available.
     */
    samples.each {Sample currentSample ->
        if (currentSample.u_iStatus == 0) {
            // Increase the count of available samples.
            availableSamples++;
            // Add the current sample's dResponseTime value to totalResponseTime.
            totalResponseTime += currentSample.dResponseTime
        }
    }
    if (availableSamples > 0) {
        // Set KPI value, converted to percentage.
        kpi.setValue((totalResponseTime / availableSamples))
    }
}
```

Example - Average Performance Rule Using a Rule Parameter Filter

The following rule calculates average performance in seconds, based on the dResponseTime and u_iStatus sample fields.

Only samples with a u_iStatus value of 0 (available samples) are used in the calculation.

The rule uses an optional rule parameter: Response time limit. If this rule parameter value has been set in the Service Health Admin, samples with a dResponseTime value greater then the rule parameter value are not used in the calculation.

Note: A rule parameter with the same name must be set for the rule in the Rule Repository. For details, see "New/Edit Rule Parameter or New/Edit Rule Threshold Dialog Box" on page 877.

The rule logic is: sum(dResponseTime) / available samples.

```
/ This rule use the u_iStatus and dResponseTime sample fields.
def sampleFields = ["u_iStatus", "dResponseTime"];

public void calculateKPI(CI ci, KPI kpi, List<Sample> samples) {

    // Create a variable to count available samples.
    def availableSamples = 0;
    // Create a variable to sum response times of available samples.
    def totalResponseTime = 0;
    /**
     * Get the value of the rule parameter named "Response time limit"
     * from the KPI, as defined for the KPI in Service Health Admin.
     * This rule parameter is optional, so responseTimeLimit can be null.
     */
    Long responseTimeLimit = kpi.getRuleParameter("Response time limit")
```

```
    /**
     * Go over the given samples. If a sample's u_iStatus is equal to 0,
     * the sample is considered available.
     */
    samples.each {Sample currentSample ->
        if (currentSample.u_iStatus == 0) {
            /**
            * Check the value of the rule parameter.
            * If it is not null (meaning the user has set a value),
            * and the sample's dResponseTime is greater than the
            * rule parameter value, the value is not valid.
            */
            boolean isSampleValid = true;
            if (responseTimeLimit != null) {
                // Check if ResponseTime exceeds the rule parameter value.
                if (currentSample.dResponseTime > responseTimeLimit) {
                    // The sample is not valid.
                    isSampleValid = false;
                }
            }
            if (isSampleValid) {
                // Increase the count of available samples.
                availableSamples++;
                // Add the sample's dResponseTime value to totalResponseTime.
                totalResponseTime += currentSample.dResponseTime
            }
        }
    }
    if (availableSamples > 0) {
        // Set KPI value, converted to percentage.
        kpi.setValue((totalResponseTime / availableSamples))
    }
}
```

26

Service Health External APIs

This chapter includes:

Concepts

- Retrieve Indicator Data on page 984
- Reset Health Indicator State on page 992
- Service Health Database Query API on page 994

Concepts

Retrieve Indicator Data

The following external API can be used to access KPI over time statuses, KPI definitions, and indicator statuses.

This section includes the following topics:

- "Get KPI Over Time Statuses" on page 984
- "Get KPI Definitions" on page 988
- "Get Indicator Statuses" on page 990

The service log file is located under: **<Gateway server root directory>\log\EJBContainer\serviceHealthExternalAPI.log**.

Return values are supported in XML and JSON formats.

Authentication should be done using basic access authentication method. For details and examples refer to http://en.wikipedia.org/wiki/Basic_access_authentication.

Get KPI Over Time Statuses

You can use the following to get KPI over time statuses.

API Syntax

```
http://<Gateway Server>/topaz/servicehealth/customers/<Customer Id>/
kpiOverTime?ciIds=<CI ID>&startDate=<Start Date>&endDate=<End Date>
```

The API uses the following parameters:

- **customerId.** Customer ID (use **1** for non-HP SaaS deployment).
- **ciId**. Mandatory; use comma-separated CI IDs.
- **startDate.** Mandatory; start time for the KPI status (value representing the date in seconds since January 1 1970).

- **endDate**. Mandatory; end time for the KPI status (value representing the date in seconds since January 1 1970).
- **view.** Optional; retrieve the results in the context of a local impact view (default is global view). For details, see "Local Impact Views" on page 49.
- **kpiId.** Optional; use comma separated KPI internal IDs as in the repository UI (default is empty for all KPIs). For details, see "List of Service Health KPIs" on page 656.

The following is an example of the API and its output:

```
http://host.devlab.ad/topaz/servicehealth/customers/1/
kpiOverTime?ciIds=0b656ce308022a6739e3e726497fda6a&startDate=1296499370&e
ndDate=1296501466
```

```
<kpiStatuses>
    <kpiStatus>
        <ciId>0b656ce308022a6739e3e726497fda6a</entityId>
        <ciDisplayLabel>ATM 1610</ciDisplayLabel>
        <kpiType>6</kpiType>
        <kpiDisplayName>Application Performance</kpiDisplayName>
        <timeStamp>1296499370</timeStamp>
        <status>20</status>
        <statusDisplayName>OK</statusDisplayName>
        <duration>311</duration>
    </kpiStatus>
    <kpiStatus>
        <ciId>0b656ce308022a6739e3e726497fda6a</entityId>
        <ciDisplayLabel>ATM 1610</ciDisplayLabel>
        <kpiType>6</kpiType>
        <kpiDisplayName>Application Performance</kpiDisplayName>
        <timeStamp>1296499681</timeStamp>
        <status>-2</status>
        <statusDisplayName>No Data</statusDisplayName>
        <duration>1785</duration>
    </kpiStatus>
    <kpiStatus>
        <ciId>0b656ce308022a6739e3e726497fda6a</entityId>
        <ciDisplayLabel>ATM 1610</ciDisplayLabel>
        <kpiType>6</kpiType>
        <kpiDisplayName>Application Performance</kpiDisplayName>
        <timeStamp>1296501466</timeStamp>
        <status>20</status>
        <statusDisplayName>OK</statusDisplayName>
        <duration>13334</duration>
    </kpiStatus>
    <kpiStatus>
        <ciId>0b656ce308022a6739e3e726497fda6a</entityId>
        <ciDisplayLabel>ATM 1610</ciDisplayLabel>
        <kpiType>7</kpiType>
        <kpiDisplayName>Application Availability</kpiDisplayName>
        <timeStamp>1296428400</timeStamp>
        <status>0</status>
        <statusDisplayName>Critical</statusDisplayName>
        <duration>69663</duration>
    </kpiStatus>
</kpiStatuses>
```

The output fields are as follows:

Field	Description
ciId	CI ID
ciDisplayLabel	CI display label
kpiType	KPI ID (see "Get KPI Definitions" on page 988)
kpiDisplayName	KPI display name
timeStamp	Start time for the KPI status; value representing the date in seconds since January 1 1970
status	KPI status (see "Get Indicator Statuses" on page 990)
statusDisplayName	KPI status display name
duration	Duration of the KPI's status in seconds.

Return Codes

The API returns the following return codes:

Name	Error Code	Description
BAD_REQUEST	400	➤ Start date is after the end date ➤ Start date is in the future ➤ startDate, endDate or ciIDs are missing
UNAUTHORIZED	401	User has no permission for the selected view
INTERNAL_ SERVER_ERROR	500	➤ Result size has exceeded the maximum quota ➤ General failure

Get KPI Definitions

You can use the following to retrieve the KPIs defined in the system.

API Syntax

```
http://<Gateway Server>/topaz/servicehealth/customers/<CustomerId>/repositories/
indicators/kpis/<kpiId>
```

The API uses the following parameters:

- **customerId.** Customer ID (use **1** for non-HP SaaS deployment).
- **kpiIds.** Optional; leave empty for all KPIs (default), or enter a KPI internal ID as in the repository UI, to select a specific KPI. For details, see "List of Service Health KPIs" on page 656.

The following is an example of the API and its output:

```
http://host.devlab.ad/topaz/servicehealth/customers/1/repositories/indicators/kpis/
```

```
<kpis>
    <kpi>
        <id>1</id>
        <name>Legacy System</name>
    </kpi>
    <kpi>
        <id>1311</id>
        <name>Value</name>
    </kpi>
    <kpi>
        <id>1310</id>
        <name>Exceptions</name>
    </kpi>
</kpis>
```

The output fields are as follows:

Field	Description
id	KPI internal ID as in the repository UI; for details see "List of Service Health KPIs" on page 656.
name	KPI name

Return Codes

The API returns the following return codes:

Name	Error Code	Description
NOT_FOUND	404	KPI not found
INTERNAL_ SERVER_ERROR	500	General failure

Get Indicator Statuses

You can use the following to retrieve indicator statuses.

API Syntax

```
http://<Gateway Server>/topaz/servicehealth/customers/<CustomerId>/repositories/
indicators/statuses
```

The API uses the following parameters:

➤ **customerId.** Customer ID (use **1** for non-HP SaaS deployment).

The following is an example of the API and its output:

```
http://host.devlab.ad/topaz/servicehealth/customers/1/repositories/indicators/statuses
```

```
<targets>
    <target>
        <id>20</id>
    <name>OK</name>
    </target>
    <target>
        <id>15</id>
        <name>Warning</name>
    </target>
    <target>
        <id>10</id>
        <name>Minor</name>
    </target>
    <target>
        <id>5</id>
        <name>Major</name>
    </target>
    <target>
        <id>0</id>
        <name>Critical</name>
    </target>
    <target>
        <id>-1</id>
        <name>Info</name>
    </target>
    <target>
        <id>-2</id>
        <name>No Data</name>
    </target>
    <target>
        <id>-4</id>
        <name>Downtime</name>
    </target>
</targets>
```

The output fields are as follows:

Field	Description
id	KPI status internal ID
name	KPI status name

Return Codes

The API returns the following return codes:

Name	Error Code	Description
INTERNAL_ SERVER_ERROR	500	General failure

Reset Health Indicator State

In certain event flows, you might have an HI showing that a problem has occurred but no event has closed the problem, even though the problem was fixed. After dealing with the problem, you might want to reset the HI's state to **Normal** (default). For details on resetting HI state within Service Health, see "How to Work with the Health Indicator Component" on page 252.

The Reset HI State API enables users outside of the BSM user interface to reset event-based HIs to their default state, using the HTTP-based REST protocol.

You can reset all HIs on a specific CI, or reset a specific HI.

This REST API is case-sensitive, and uses the **PUT** method.

Note: This API can impact the overall performance of your system; consult with HP Professional Services before using the API.

API Syntax

➤ To reset all HIs related to a CI:

```
http://<Gateway Server>/topaz/servicehealth/customers/<CustomerId>/cis/<CI ID>/his/reset
```

➤ To reset a specific HI:

```
http://<Gateway Server>/topaz/servicehealth/customers/<CustomerId>/cis/<CI ID>/his/<HI name>/reset
```

➤ To reset a specific subcomponent of an HI:

```
http://<Gateway Server>/topaz/servicehealth/customers/<CustomerId>/cis/<CI ID>/his/<HI name>/reset?subcomponent=<subcomponent name>
```

HI name refers to the name of the HI as defined in the indicator repository, and not to the HI's display label.

Return Codes and Log File

The API returns the following return codes:

Name	Error Code	Description
OK	200	Success
UNAUTHORIZED	401	The user is not authorized for the customer

Name	Error Code	Description
NOT_FOUND	404	➤ CI not found ➤ HI not found ➤ Bad request (syntax error)
INTERNAL_ SERVER_ERROR	500	➤ RTSM error ➤ Repositories error ➤ Online engine error

The service log file is located under: **<Gateway server root directory>\log\EJBContainer\serviceHealthExternalAPI.log.**

In addition, the service writes to the Audit log on each HI reset.

Service Health Database Query API

You can use the Service Health API to query the database and return a list of views in XML format.

Tip: You can use XSLT to convert the XML output into any other format (commonly text or HTML). For example, using basic XSLT transformations, you can produce HTML reports that are formatted to fit on mobile devices. These reports can be served via a mobile portal to display critical Business Service Management views on users' mobile phones.

This section also includes the following topics:

➤ "Query Syntax" on page 995

➤ "Main Parameters Used in the Query" on page 995

➤ "Query Examples" on page 997

Query Syntax

The basic syntax of the query is as follows:

```
http://<Gateway Server>/topaz/bam/BAMOpenApi?customerId=<customer ID>&userName=<user name>&password=<password>&command=<command parameter>
```

Depending on the **command** parameter defined, additional parameters may also be included.

Main Parameters Used in the Query

The following table lists the parameters that must be defined in the query.

Parameter	Description
customerID	BSM customers should specify **1**. HP Software-as-a-Service customers should specify their unique customer ID.
userName	Specify a user name defined in BSM. The query does not encrypt the login credentials.
password	Specify the password for the user name provided. The query does not encrypt the login credentials.
command	Specify one of the following values: **getViews** – Specify to retrieve all views from the Run-time Service Model (RTSM). No other parameters are required. **getNodes** – Specify to retrieve all child nodes of a specified view (you must also specify the view for which to retrieve child nodes in the **viewName** parameter); if using this command parameter you can also set the following parameters: **showTooltip**, **depth**, **layout**, **xsltURL**, **responseContentType**

Parameter	Description
viewName	If the **getNodes** command parameter is defined, include this parameter in the query and specify the view to retrieve. You can set the value to **ticker_all_views** to retrieve all views and their nodes.
showTooltip	If the **getNodes** command parameter is defined, you can include this parameter in the query to specify whether to display Service Health's KPI tooltip data, either **true** to display data or **false** to not. The default value is **false**.
depth	If the **getNodes** command parameter is defined, you can include this parameter in the query to specify the number of levels in the view to display. The default value is **1**.
layout	If the **getNodes** command parameter is defined, you can include this parameter in the query to specify the layout for the query results, either **hierarchical** or **flat.** In flat mode all nodes are retrieved in a flat list, and in hierarchical mode nodes are retrieved in the same hierarchy as in the view. The default value is **flat**.
xsltURL	If the **getNodes** command parameter is defined, you can include this parameter in the query to specify a URL to an .xslt file that transforms the .xml-format result of the query.
responseContentType	If the **getNodes** command parameter is defined, and the **xsltURL** parameter is included in the query, you can include this parameter in the query to specify the response MIME type.

Query Examples

The following query returns a flat list of all views in the Run-time Service Model (RTSM):

```
http://myserver/topaz/bam/
BAMOpenApi?customerId=1&userName=admin&password=admin&command=getVie
ws
```

The following query returns a hierarchical tree showing KPI status and tooltip information for the Service Measurements view, to a depth of three child nodes.

```
http://myserver/topaz/bam/
BAMOpenApi?customerId=1&userName=admin&password=admin&command=getNod
es&viewName=Service%20Measurements&showTooltip=true&depth=3&layout=hierarc
hical
```

Index

Numerics

360 View 221
  components 257
  overview 223

A

Acknowledge Problems
  user interface 332
acknowledge utility 328
  setting for CI 127, 135, 138, 140, 142, 329
Acknowledgement Details, context menu item 904
Acknowledgment Details, context menu item 102
Acknowledgment History and Details dialog box 332
Acknowledgments Details
  dialog box 333
actions
  context menu 903
Add Actions dialog box 938
Add Health Indicator Assignments for CI Type dialog box 612
Add Health Indicator dialog box 470
Add Health Indicator to Assignment dialog box 616
Add KPI Assignments for CI Type dialog box 603
Add KPI dialog box 464
Add KPI for Propagation Rule dialog box 625
Add KPI to Assignment dialog box 608
Add New Selector Field dialog box 479
Add Propagation Rule for CI Type dialog box 622
administration 534
administrative privileges
  settings 508
Aggregate Transaction Topology, context menu item 104, 904
alert schemes
  creating and attaching to CI 503
  creating SNMP trap 508
alerts
  audit log in CI Status alerts 538
  creating SNMP trap 508
  process flowchart 541
  SNMP-specific codes 510
Alerts component
  customizing 254
  modifying refresh rates 254
  overview 232
Any Users Transaction Paths View, context menu item 98, 904
Any Users Transactions View, context menu item 98, 904
API
  Service Health 983
API Duration-Based Sample rule 955
API Duration-Based Sample, rules 810
API Group and Sibling rule 950
  examples 969
API Group and Sibling, rules 810
API Sample rule 953
  examples 978
API Sample, rules 811
applet
  maps 193
Application Availability (Service Health) KPI 656
Application Health Tab, context menu item 99, 904

Application Performance (Service Health), KPI 656
Application Summary, context menu item 104, 904
assignment
  managing scenario 579, 584
assignment rule
  mechanism 559, 560, 561
assignment rule mechanism 558
assignment types 560
attributes
  CI Status alerts 542
audit log
  CI Status alerts 538
Average Availability of Weighted Volume 783
Average Network of Weighted Volume 784
Average Performance of Weighted Volume 785
Average Performance of Weighted Volume (Available Hits) 786

B

Backlog, KPI 656
Best Child Rule 812
BMC Measurement Menu, context menu 899
BPI Active Status Percentage Rule for Duration Monitor
  rule 741
BPI Average Active Weighted Status Rule for Duration Monitor, rule 742
BPI Average Duration Rule 742
BPI Average Weighted Status Rule for Duration Monitor
  rule 743
BPI Average Weighted Status Rule for Value Monitor
  rule 744
BPI Backlog Count Rule 745
BPI Backlog Value Rule 746, 761
BPI Business Impact Average Weighted Status Count Rule
  rule 747
BPI Business Impact Average Weighted Status Value Rule
  rule 748
BPI Business Impact Status Percentage Count Rule
  rule 749
BPI Business Impact Status Percentage Value Rule
  rule 750
BPI Business Impact Worst Process Instances Count Rule
  rule 751
BPI Business Impact Worst Process Instances Value Rule
  rule 752
BPI Business Process Menu, context menu 899
BPI Maximum Duration Rule 752
BPI Minimum Duration Rule 753
BPI Monitors Over Time, context menu item 904
BPI Process Average Value Rule 753
BPI Process Maximum Value Rule 754
BPI Process Minimum Value Rule 754
BPI Scope Average Value Rule 755
BPI Scope Maximum Value Rule 755
BPI Scope Minimum Value Rule 756
BPI Scope Weighted Average Duration Rule 756
BPI Scope Weighted Average Value Rule 757
BPI Status Percentage Rule for Duration Monitor 758
BPI Status Percentage Rule for Value Monitor 759
BPI Volume Value Rule 760
BPI Worst Active Violated Instances Rule for Duration Monitor 762
BPI Worst Violated Instances Rule for Duration Monitor 762
BPI Worst Violated Instances Rule for Value Monitor 763
BPM Application Health, context menu item 104, 904
BPM Performance Analysis, context menu item 104, 904

BPM Triage for Application, context menu item 104, 904
BPM Triage for Transaction, context menu item 104, 905
breakdown
  configure 444
Breakdown values purging period 447
breakdowns
  overview 413
BSMobile 369
Business Health KPI 656
Business Impact
  modify KPIs and rules 75
Business Impact calculation 226
Business Impact component
  customizing 245
  customizing the rating calculation 248
  modifying CI relationships displayed 248
  modifying CI types displayed 247
  modifying duration settings 245
  modifying refresh rates 246
  overview 226
Business Impact KPI 656
Business Impact report 92
  access 74
  send as a URL 76, 77
  view 74
Business Performance (Service Health), KPI 657
Business Process Insight Scorecard Menu, context menu 899
Business Process Over Time Report
  CI menu option 104
Business Process Over Time Report, context menu item 905
business rule
  clone 724
  set up 724
business rules
  group rule type 713
  monitor rule type 713
  repository 711
  working with KPIs 399
Business Rules API 947
Business Rules Repository 709
Business Rules Repository global parameters 712
Business Rules Repository page 869
business user mode 412

C

calc_method rule parameter 714
calculateKPI
  API Duration-Based Sample rule 955
  API Group and Sibling rule 950
  API Sample rule 953
Calculation Granularity 884
calculation of group status 43
Change Report
  CI menu option 104
Change report, context menu item 905
Changes and Incidents Component
  overview 233
Changes and Incidents component
  customizing 255
  modifying duration settings 255
  modifying refresh rates 255
CI Data, tooltip 887
CI Impact Report, context menu item 104, 905
CI Indicators
  user interface 389, 452
CI Indicators tab 453
CI levels
  changing in Top View 156
CI menu option
  Business Process Over Time Report 104
  Change Report 104
  Configuration Item Status Alerts 105
  Diagnostics Web Service Topology 105
  End User Summary 105
  Expand more levels 109
  Find Visible and Hidden Child CIs 78, 110
  Go to Service Health Analyzer 99
  Invoke Run Books 102
  KPIs Over Time Report 105

Properties 112
SAP Transaction Changes 106
SAP Transport Changes 106
Service Health 51, 98
Session Analyzer 107
Show Impacting SAP Transports 107
Show Path to Root 111
Show Problematic Subtree 112
Show Processes 100
Show Related CIs 113
Siebel Database Breakdown 101
Siebel Running Tasks 101
Siebel SARM 102
Siebel Tasks in Error 101
SiteScope 100
SiteScope Quick Report 107
SiteScope Server Centric Report 107
Systinet Web Service Data 108
Trend 108
Triage 108
CI name
modify length 70
CI Neighbors, context menu 899
CI Properties, context menu 900
CI Selector Pane 512
CI status
alert reports 285
alerts 285, 499
selecting statuses displayed in map 202
CI Status Alert
overview 286, 500
CI Status alert
local impact view 502
CI Status alerts
attributes 542
downtime 502
event template 539
CIs
acknowledge utility for performance problems 127, 135, 138, 140, 142, 329
assign geographical location 195
history statuses 48, 408
modify maximum number displayed CIs 71
Sample Details window 73
saving KPIs measurement data 736
selectors 406
trend statuses 48, 408
clone
KPI 653
rules 711
Collaborate, context menu item 103
Complete Alert, context menu item 109, 905
components
Service Health 33
Config File Menu, context menu 900
Configuration Item Status Alert Notifications report 295
Configuration Item Status Alerts
CI menu option 105
Configuration Item Status alerts 285, 499
Configuration Item Status Alerts page 534
Configuration Item Status Alerts report 309
Configuration Item Status Alerts, context menu item 905
Configuration Items dialog box 294, 341
configuring Health Indicators 395
configuring KPIs 395
Confirm CI Changes dialog box 482
Console page
modifying KPI over time 254
Console, context menu item 905
context menu
BMC Measurement Menu 899
BPI Business Process Menu 899
Business Process Insight Scorecard Menu 899
CI Neighbors 899
CI Properties 900
Config File Menu 900
Default Menu 900
Diagnostics BPM Menu 900
Diagnostics Monitor Menu 900
Diagnostics Probe Group Menu 900
editing using override 894
EMS Measurement Menu 901
EMS Show Events 901
Group Menu 901

HP SC Menu 901
Locate CI 901
Locate CI in SLA 901
repository 899
SAP Alert Acknowledgment 902
SAP Menu 902
SAP System Menu 902
SAP Transaction Menu 902
SAP Transport Menu 902
Service Menu 902
Service Mng Menu 902
set up 893
Siebel Database Breakdown Diagnostics Menu 902
Siebel Diagnostics Menu 902
Siebel Menu 902
Siebel SARM and DBBD Diagnostics Menu 903
SiteScope Group Menu 903
Sitescope Measurement Menu 903
Sitescope Monitor Menu 903
SiteScope Web Service Monitor Menu 903
Top View 903
TransactionVision Menu 903
VT Menu 903
Web Service Menu 903
Web Service Operation Menu 903
context menu actions
detailed description 903
context menu item
Acknowledgement Details 904
Acknowledgment Details 102
Aggregate Transaction Topology 104, 904
Any Users Transaction Paths View 98, 904
Any Users Transactions View 98, 904
Application Health Tab 99, 904
Application Summary 104, 904
BPI Monitors Over Time 904
BPM Application Health 104, 904
BPM Performance Analysis 104, 904
BPM Triage for Application 104, 904
BPM Triage for Transaction 104, 905
Business Process Over Time Report 905
Change report 905
CI Impact Report 104, 905
Collaborate 103
Complete Alert 109, 905
Configuration Item Status Alerts 905
Console 905
Create New Business Service 905
Create New SLA from Business Service 905
Custom Image 905
Customer 905
Delete 103, 905
Delete Business Service 906
Delete CI 103, 906
Diagnostics Agent/J2EE Server Summary View 98, 906
Diagnostics Probe Group Summary View 99, 906
Diagnostics Web Service Topology View 906
Edit Business Service 906
End User Summary 906
Errors 109, 906
Event Log Report 105, 906
Expand More Levels 906
Expand to Problem 906
Filters 906
Find Visible and Hidden Child CIs 907
Geographical Map 907
Go to Console 907
Go to Service Health Console 100
Go to Top View 907
Group Load View 907
HIs 110, 907
Host Summary View 99, 907
HP Service Manager 110, 907
Infrastructure Summary 105, 907
Invoke Run Books 907
J2EE Application Summary View 908
KPIs Over Time 908
Load View 908
Locate CI in SLA 908
Locate CI in View 100, 908

Location Summary Report 105, 108, 908, 912
Monitor to Operations Health 908
New Folder 103, 908
Open in New Window 908
Operations Health 908
Oracle Server Summary View 99, 908
Performance Matrix for Application 105, 909
Performance Matrix for Transaction 106, 909
Probe Group Summary 909
Probe Summary 909
Problematic Subtree 909
Properties 909
Provider 909
Rename Folder 103, 909
Reset Health Indicator 103, 909
RUM Application Health 909
RUM Performance Analysis 106, 909
RUM Triage for Application 106, 909
RUM Triage for Transaction 106, 909
SAP R3 Summary View 99, 910
SAP Transaction Changes Report 910
SAP Transport Changes 910
SAR Compliancy Report 910
Service Impact 112, 910
Session Analyzer 910
Set/Unset Acknowledgement 910
Set/Unset Acknowledgment 103
Show Business Activity Over Time Report 112, 910
Show Contributing Events 112, 910
Show Events 910
Show Impacting SAP Transports 107, 911
Show Impacting SAP Transports Transactions 107, 911
Show Path to Root 908
Show Processes 911
Show Related CIs 911
Show Running Tasks 911
Show SAP Transport Impact 107, 911
Show Tasks in Error 911
Show Top View 113, 911
Siebel Cross-Performance 911
Siebel Database Breakdown 911
Siebel SARM 911
SiteScope 907
SiteScope Cross-Performance 912
SiteScope Quick Report 912
SiteScope Server Centric Report 912
SQL Server Instance Summary View 99, 912
SQL Server Summary View 99, 912
Synthetic Users Transactions Layers View 99, 912
Synthetic Users Transactions View 99, 912
Systinet Web Service Data 912
Transaction Over Time 912
Transaction Summary 108, 912, 913
Transaction Tracking 108, 913
Trend 913
Triage 913
Triage Raw Data 108, 913
Web Service Health 913
WMQ Server Summary View 99, 913
Context Menu Repository page 931
Context Menus
user interface 931
context menus 899
context menus repository 891, 892
Create Edit URL dialog box 533
Create New Alert Wizard 516
Create New Business Service, context menu item 905
Create New Executable File dialog box 530
Create New SLA from Business Service, context menu item 905
Create New SNMP Trap dialog box 531
Create New URL dialog box 533
custom icons
changing 441
Custom Image
add CIs 492
administration overview 490
creating 491
display a view 216
displaying view 494
Service Health Administration 489
setting up 491

Custom Image administration
user interface 495
Custom Image component 214
user interface 218
Custom Image, context menu item 905
Customer, context menu item 905
customized 727
customized rule 727

D

Dashboard
general information 115, 327
data over time
saving measurements data 736
Default Menu, context menu 900
Defining Filters dialog box 265
Delays KPI 657
Delete Business Service, context menu item 906
Delete CI, context menu item 103, 906
Delete, context menu item 103, 905
dependent KPIs 652
Diagnostics
drilling down to HP Diagnostics 339, 356
Diagnostics Agent/J2EE Server Summary View, context menu item 98, 906
Diagnostics Backend Transaction Application Exceptions Rule 778
Diagnostics Backend Transaction Average Response Time Rule 779
Diagnostics Backend Transaction Count Rule 779
Diagnostics Backend Transaction Maximum Response Time Rule 780
Diagnostics Backend Transaction Minimum Response Time Rule 780
Diagnostics Backend Transaction SOAP Faults Rule 781
Diagnostics BPM Menu, context menu 900
Diagnostics Monitor Menu, context menu 900
Diagnostics Probe Group Menu, context menu 900
Diagnostics Probe Group Summary View, context menu item 99, 906
Diagnostics Synthetic User Backend Application Exceptions Rule 781
Diagnostics Synthetic User Backend Average Response Time Rule 782
Diagnostics Synthetic User Backend Max Server Request Duration Rule 782
Diagnostics Web Service Topology CI menu option 105
Diagnostics Web Service Topology View, context menu item 906
domains, KPI 411
dominant child status calculation method 719
downtime
CI Status alerts 502
Downtime Sentence, tooltip 887
drill down
Layers View 339, 356
Summary View 339, 356
to HP Diagnostics 339, 356
Transactions View 339, 356
drill down to SiteScope 79
Drilldown to SiteScope 95
Duration
KPI 657
dynamic URL parameters 897

E

Edit Action dialog box 939
Edit Breakdown Filter dialog box 486
Edit Business Service, context menu item 906
Edit Context Menu dialog box 935
Edit Context Menus dialog box 485
Edit ETI dialog box 696
Edit Executable File dialog box 530
Edit Global Parameter dialog box 885
Edit Global Tooltip dialog box 888
Edit Group dialog box 937
Edit Health Indicator Assignments for CI Type dialog box 612
Edit Health Indicator dialog box 470, 698
Edit Health Indicator to Assignment dialog box 616

Edit Health Indicators in KPI Calculation dialog box 469
Edit Indicator State dialog box 702
Edit KPI Assignments for CI Type dialog box 603
Edit KPI dialog box 464, 668
Edit KPI for Propagation Rule dialog box 625
Edit KPI Parameter dialog box 678
Edit KPI to Assignment dialog box 608
Edit Propagation Rule for CI Type dialog box 622
Edit Related Health Indicators dialog box 611
Edit Rule dialog box 871
Edit Rule Parameter dialog box 877
Edit Rule Threshold dialog box 877
Edit Selector Field dialog box 479
Edit SNMP Trap dialog box 531
Edit Tooltip Parameter dialog box 878
Editing Filters dialog box 265
Efficacy, KPI 657
EMS
  integration application overview 558
EMS Measurement Menu, context menu 901
EMS Show Events, Context Menu 901
EMS Simple Rule 822
End User Monitoring CIs 403
End User Summary
  CI menu option 105
End User Summary context menu item 906
Enterprise Management Systems
  overview 558
Errors context menu item 109, 906
ETI
  customize 689
EUM Sum of Volumes 787
Event Based HI Tooltip, tooltip 887, 888
event channel 122
Event Configuration dialog box 703
Event Log Report context menu item 105, 906
event template
  CI Status alert 540
  CI Status alerts 539
Exceptions, KPI 657
exclude statuses 405
Expand more levels
  CI menu option 109
Expand More Levels context menu item 906
Expand to Problem context menu item 906
external portal 29

F

Failures, KPIs 657
favorite filter
  hierarchy 240
filter
  Hierarchy 239
filters
  predefined 264
Filters, context menu item 906
Find Visible and Hidden Child CIs
  CI menu option 78, 110
Find Visible and Hidden Child CIs dialog box 86
Find Visible and Hidden Child CIs, context menu item 907
formatting methods
  KPIs 676

G

Generic Formula Rule 812
Generic Health Indicator Sub-component Rule 813
Generic Sample Rule 813
Generic Sample Rule With Baseline 814
Generic Sum of Values Over Time, rule 815
Generic Two Arguments, rule 816
Generic, KPIs 657
geographical location
  CIs 195
geographical map 189
  assign to view 196
  display technology 195
  for Service Health 190
  navigating 206
  refining 197
  using applet 209
  view real-time status indicators 194
  working with applet 193

Geographical Map tab 205
Geographical Map, context menu item 907
global parameter list 882
global parameters 727
  Business Rules Repository 712
Global Parameters dialog box 880
Global Tooltips dialog box 886
global tooltips list 887
global views 380
Go to Console, context menu item 907
Go to Service Health Analyzer
  CI menu option 99
Go to Service Health Console, context menu item 100
Go to Top View, context menu item 907
Google Earth 196
  display geographical map 198
  importing location status 198
  indicators by status 200
  refresh rate 200
  understanding 191
  working with 211
gray icon 45
green icon 45
Group Load View, context menu item 907
Group Menu, context menu 901
group rules 713
GroupAndSiblingCalculator interface 950
groups
  calculation of status 43
  dominant child calculation for status 719
  percentage threshold calculation for status 717
  weighted percentage calculation for status 718

H

Health Indicator
  configure 425
  customize 689
Health Indicator Assignments Page 592
Health Indicator calculation 398, 399
Health Indicator Component
  menu commands 253
  reset to default 252
  select CIs 245, 252, 254, 255
  working with 252
Health Indicator component
  overview 228
  user interface 271
Health Indicator configuration
  overview 397
health indicator tooltip 229, 273
Health Indicators
  configuring 395
  overview 39
  selectors for 406
health indicators
  assigning to CI 428
  defining selectors 435
  defining thresholds 433
  editing properties 431
health indicators, calculation 118
health indicators, configuring 125
health indicators, overview 116
health indicators, terminology 117
health indicators, understanding 119
HI assignments 558
hi_list rule parameter 714
hidden child 78
hidden parameters
  for business rules 883
Hierarchy
  advanced filter 240
  display child CIs collapsed 237
  displaying KPIs by domains 236
  favorite filters 240
  filtering CIs 234
  managing filters 243
  modifying refresh rates 236
  modifying the number of levels 237
  quick filter 239
  selecting a view 234
  selecting KPIs to display 235
Hierarchy component
  customizing 234
  overview 224
  user interface 258
HIs context menu item 110, 907

history icon
calculating status 409
history status 410
history statuses
changing the icons 48, 408
for CIs 48, 408
History, tooltip 887
Host Summary View, context menu item 99, 907
HP Diagnostics
drilling down 339, 356
HP OpenView Service Navigator Rule 823
HP SC Menu, context menu 901
HP Service Manager context menu item 110, 907
HP Software Support Web site 21
HP Software Web site 22

I

icon
gray 45
green 45
olive 45
orange 45
red 45
yellow 45
icons
changing color 441
changing icon set 72
changing image 441
customizing 441
Impact Over Time Rule 817
Indicator Repository 681
ETIs and health indicators 683
working with 682, 685
Indicator Repository page 693
indicator size
modifying 201
Infrastructure changes
detection 39
Infrastructure Summary, context menu item 105, 907
invisible child 78
Invoke Run Books
CI menu option 102
Invoke Run Books, context menu item 907
iPhone 369

J

J2EE Application Summary View, context menu item 908

K

Knowledge Base 21
KPI
cloning 652, 653
configure 425
dependent 652
numerical code of KPI status 45
overriding 652
set up 653
status name 45
Trend 652
type 652
value 652
KPI Assignment
management 558
KPI assignment
validation 572
KPI assignments 558
KPI Assignments Page 596
KPI calculation 398, 399
KPI Calculation Script
API Duration-Based Sample rule 956
API Group and Sibling rule 952
API Sample rule 954
KPI configuration
overview 397
KPI domains 411
KPI icons 96
KPI propagation 559, 560, 561
mechanism 566
overview 563
validation 572
KPI propagation rules 558
inheriting 565
KPI Repository 651
working with 652

KPI versions
for user mode 440
KPIs 655
Application Availability (Service Health) 656
Application Performance (Service Health) 656
assigning to CI 428
Backlog 656
Business Health 656
Business Impact 656
Business Performance (Service Health) 657
business rules functionality for 399
configuring 395
creating KPIs example 637
creating KPIs scenario 641
defining thresholds 433
Delays 657
displaying properties 386
Duration 657
editing properties 431
Efficacy 657
Exceptions 657
Failures 657
formatting methods 676
Generic 657
Legacy System 657
Locations 658
Network 658
Network Availability 658
Network Performance 658
Operational Status 659
OT Impact 659
overview 39
parameters back to default 655
Performance Analytics 660
PNR 448
PNR (Service Health) 660
RT Impact 660
SAP 661
SAP Alerts 661
saving measurements data over time 736
Security 661
Siebel 661
Siebel Errors 661
Siebel Sessions 661
SiteScope Health 661
Software Availability 662
Software Performance 662
status and objectives 401
System Availability 662
System Performance 662
Throughput 662
Transactions 663
Unassigned Events 663
Unresolved Events 664
Value 664
Volume 665
KPIs Component 279
KPIs component
customizing 281
modifying KPI over time 281
modifying refresh rates 281
overview 280
KPIs dialog box 312, 342
KPIs Distribution Over Time report 343
access 339
KPIs Over Time
view 338
KPIs Over Time context menu item 908
KPIs Over Time Report
CI menu option 105
KPIs Over Time reports 347
accessing 338
collecting data 411
drill down to HP Diagnostics 339, 356
save KPI status information 338
KPIs Repository page 666
KPIs Summary report 358
access 339
KPIs Trend report 361
access 339

L

Last Sample
tooltip parameter 734
last sample time 728
Last Update
tooltip parameter 734

last update 728
layers in Topology Map 170
Layers View
  drill down 339, 356
LeafCalculator interface 953, 955
Legacy System, KPI 657
Link to this page 29
Load View, context menu item 908
local impact view
  CI Status alert 502
local impact views 381
Locate CI in SLA, context menu 901
Locate CI in SLA, context menu item 908
Locate CI in View, context menu item 100, 908
Locate CI, context menu 901
location status
  importing into Google Earth 198
  information 191
Location Summary Report, context menu item 105, 108, 908, 912
location tooltip
  maximum number of CIs displayed 203
Locations Grouped Parent, rule 826
Locations Grouped, rule 826
Locations, KPI 658

M

map
  indicator size 201
  location tooltip 203
  statuses to be displayed in 202
  time delay 202
map applet 193, 195
  customize 203
  refresh rate 203
maps
  for Service Health 190
  Virtual Earth 201, 203
Maximum number of breakdown values 447
menu entity
  specifying details 895
message syntax 289
metric channel 122
MIBs 501
missing pages,Service Health 113
mobile console
  view Service Health 367
Mobile Device
  display 373
mobile device
  view data on 371
Modified Values dialog box 483
modifying 410
monitor rules 713
Monitor to Operations Health, context menu item 908

N

Neighborhood Map 313
  display in layers 318
  display links 320
  display minimap 319
  display minimized or detailed CIs 319
  modify number of layers displayed 320
  move CIs 318
  overview 314
  pan 319
  plain mode and layer mode 316
  refocus 318
  reload CI topology 320
  resize 319
  user interface 321
Network Availability, KPI 658
Network Performance, KPI 658
Network, KPI 658
Nevada - Event Based Alerts Rule (Internal) 817
New Action dialog box 939
New Context Menu dialog box 935
New ETI dialog box 696
New Event Generation dialog box 536
New Folder, context menu item 103, 908
New Global Parameter dialog box 885
New Group dialog box 937
New Health Indicator dialog box 698
New Indicator State dialog box 702
New KPI dialog box 668

New KPI Parameter dialog box 678
New Rule dialog box 871
New Rule Parameter dialog box 877
New Rule Threshold dialog box 877
New Tooltip Parameter dialog box 878
No data timeout
  Transaction CIs 723
No Update Sentence, tooltip 888
Number of Open Incidents, rule 828
Number of Running Sessions, rule 829
Number of Tasks in Error, rule 829
numerical code 45

O

objectives
  defining 404
  units of measurement 406, 672
olive icon 45
online resources 21
Open in New Window context menu item 908
Operational Status KPI 659
Operations Health context menu item 908
operations user mode 412
Oracle Server Summary View, context menu item 99, 908
orange icon 45
OT Impact, KPI 659
override
  context menu 894
  rules 711

P

Percentage Rule 818
percentage, rule 717, 719
  weighted percentage status calculation method 718
performance
  monitoring 36
Performance Analytics KPI 660
Performance Matrix for Application, context menu item 105, 909
Performance Matrix for Transaction, context menu item 106, 909
performance problems
  monitoring 35
PNR (Point of No Return) calculation 422
PNR (Service Health), KPI 660
PNR KPI 448
portal 29
Post-Processor Parameter Details dialog box 943
predefined filters 264
predefined rule 727
pre-processor classes 914
Pre-Processor Parameter Details dialog box 942
Probe Group Summary context menu item 909
Probe Summary context menu item 909
Problematic Subtree, context menu item 909
Propagation Rules Page 600
Properties
  CI menu option 112
Properties, context menu item 909
Provider, context menu item 909

R

Real Time Impact, rule 818
Real User Application Actions Volume Rule 787
Real User Application Open Sessions Rule 788
Real User Application Sessions Availability Rule 788
Real User Application Sessions Performance Rule 789
Real User Bandwidth Rule 789
Real User Connections Availability Rule 790
Real User Connections Volume Rule 790
Real User Error Events Rule 793
Real User EUG Subgroup Latency Rule 791
Real User EUG Subgroup Open Sessions Rule 791
Real User EUG Subgroup Sessions Availability Rule 792
Real User EUG Subgroup Sessions Performance Rule 793
Real User Information Events Rule 794

Real User Location Latency Rule 794
Real User Location Open Sessions Rule 794
Real User Location Sessions Availability Rule 795
Real User Location Sessions Performance Rule 796
Real User Number of Transaction Hits Rule 797
Real User Performance Events Rule 797
Real User Transaction Availability Rule 798
Real User Transaction Performance Rule 799
Real User Transaction Server Time Rule 799
Real User Transaction Total Time Rule 800
Real WS Operation Percentile Performance rule 839
Real WS Operation Performance rule 840
Real WS Operation Throughput rule 841
recipients
  process flowchart 541
red icon 45
refresh rate
  Google Earth 200
  map applet 203
  modify Service Health tabs 71
Rename Folder, context menu item 103, 909
reporting
  Service Health APIs 983
reports
  Business Impact 74
  Service Health 335
repositories
  context menu 899
  customization process 636
  customizing 634
  overview 632
Repository
  Business Rules 709
  Business Rules API 947
repository
  context menu 891
Reset Health Indicator, context menu item 103, 909
Restore Defaults dialog box
  business rules 880
  context menu actions 944
  KPIs 679
roles of selector 406
RT Impact, KPI 660
rule 727, 758, 759
  predefined 727
rules 729, 896
  API Duration-Based Sample 810
  API Group and Sibling 810
  API Sample 811
  Average Availability of Weighted Volume 783
  Average Network of Weighted Volume 784
  Average Performance of Weighted Volume 785
  Average Performance of Weighted Volume (Available Hits) 786
  Best Child Rule 812
  BPI Active Status Percentage Rule for Duration Monitor 741
  BPI Average Active Weighted Status Rule for Duration Monitor 742
  BPI Average Duration Rule 742
  BPI Average Weighted Status Rule for Duration Monitor 743
  BPI Average Weighted Status Rule for Value Monitor 744
  BPI Backlog Count Rule 745
  BPI Backlog Value Rule 746, 761
  BPI Business Impact Average Weighted Status Count Rule 747
  BPI Business Impact Average Weighted Status Value Rule 748
  BPI Business Impact Status Percentage Count Rule 749
  BPI Business Impact Status Percentage Value Rule 750
  BPI Business Impact Worst Process Instances Count Rule 751
  BPI Business Impact Worst Process Instances Value Rule 752
  BPI Maximum Duration Rule 752
  BPI Minimum Duration Rule 753
  BPI Process Average Value Rule 753
  BPI Process Maximum Value Rule 754
  BPI Process Minimum Value Rule 754
  BPI Scope Average Value Rule 755

BPI Scope Maximum Value Rule 755
BPI Scope Minimum Value Rule 756
BPI Scope Weighted Average Duration Rule 756
BPI Scope Weighted Average Value Rule 757
BPI Status Percentage Rule for Duration Monitor 758
BPI Status Percentage Rule for Value Monitor 759
BPI Volume Value Rule 760
BPI Worst Active Violated Instances Rule for Duration Monitor 762
BPI Worst Violated Instances Rule for Duration Monitor 762
BPI Worst Violated Instances Rule for Value Monitor 763
cloning 711
Delayed Value Rule (Completed Transactions) 767
Delayed Value Rule (In-Process Transactions) 768
Diagnostics Backend Transaction Application Exceptions Rule 778
Diagnostics Backend Transaction Average Response Time Rule 779
Diagnostics Backend Transaction Count Rule 779
Diagnostics Backend Transaction Maximum Response Time Rule 780
Diagnostics Backend Transaction Minimum Response Time Rule 780
Diagnostics Backend Transaction SOAP Faults Rule 781
Diagnostics Synthetic User Backend Application Exceptions Rule 781
Diagnostics Synthetic User Backend Average Response Time Rule 782
Diagnostics Synthetic User Backend Max Server Request Duration Rule 782
editing global parameters 727
EMS Simple Rule 822
EUM Sum of Volumes 787
Generic Formula Rule 812
Generic Health Indicator Sub-component Rule 813
Generic Sample Rule 813
Generic Sample Rule With Baseline 814
Generic Sum of Values Over Time 815
Generic Two Arguments 816
global parameter list 882
global parameters 727
global tooltips 887
HP OpenView Service Navigator Rule 823
Impact Over Time Rule 817
Locations Grouped 826
Locations Grouped Parent 826
modify parameters 727
Nevada - Event Based Alerts Rule (Internal) 817
Number of Open Incidents 828
Number of Running Sessions 829
Number of Tasks in Error 829
overriding 711
parameters back to default 729, 896
Percentage Rule 818
Real Time Impact 818
Real User Application Actions Volume Rule 787
Real User Application Open Sessions Rule 788
Real User Application Sessions Availability 788
Real User Application Sessions Performance 789
Real User Bandwidth 789
Real User Connections Availability Rule 790
Real User Connections Volume Rule 790
Real User Error Events Rule 793
Real User EUG Subgroup Latency Rule 791
Real User EUG Subgroup Open Sessions Rule 791
Real User EUG Subgroup Sessions Availability 792

Real User EUG Subgroup Sessions Performance 793
Real User Information Events Rule 794
Real User Location Latency Rule 794
Real User Location Open Sessions Rule 794
Real User Location Sessions Availability 795
Real User Location Sessions Performance 796
Real User Number of Transaction Hits Rule 797
Real User Performance Events Rule 797
Real User Transaction Availability Rule 798
Real User Transaction Performance Rule 799
Real User Transaction Server Time Rule 799
Real User Transaction Total Time Rule 800
Real WS Operation Percentile Performance 839
Real WS Operation Performance 840
Real WS Operation Throughput 841
RUM Application Session Statistics Monitor Availability Rule (pre-9.0) 800
RUM Application Session Statistics Monitor Performance Rule (pre-9.0) 801
RUM End User Monitor Latency Rule (pre-9.0) 801
RUM End User Monitor Network Rule (pre-9.0) 802
RUM End User Session Statistics Monitor Availability Rule (pre-9.0) 802
RUM End User Session Statistics Monitor Performance Rule (pre-9.0) 803
RUM Location Session Statistics Monitor Availability Rule (pre-9.0) 803
RUM Location Session Statistics Monitor Performance Rule (pre-9.0) 804
RUM Transaction Monitor Availability Rule (pre-9.0) 804
RUM Transaction Monitor Performance Rule (pre-9.0) 805
RUM Transaction Monitor Volume Rule (pre-9.0) 805
SAP Alerts 825
Service Health PNR Rule 819
Service Health PNR Rule for HI (Internal) 819
Service Level Management Tracking Period Alert (Internal) 820
Sessions Custom Data Rule 830
SiteScope Consecutive Multiple Measurements Rule 831
Sitescope Measurement Rule 832
Sitescope Measurement Siebel Processes Rule 833
Sitescope Measurement Time Based Rule 834
Sitescope Measurement with Custom Data Rule 834
Sitescope Monitor Rule 835
Sitescope Monitor Time Based Rule 836
SiteScope Multiple Measurements Best Status Rule 830
SiteScope Multiple Measurements Worst Status Rule 838
SiteScope Profile 836
SiteScope Vertical 837
SiteScope Vertical Measurement 837
Sum of Open Incidents Rule 828
Sum of Values Rule 820
Sum of Volume 820
Summary of Values 821
Synthetic User Transaction Availability Rule 806
Synthetic User Transaction Performance Rule 807
Synthetic WS Operation Percentile Performance Rule 842

Synthetic WS Operation Performance Rule 843
Transaction Availability Rule (pre-9.0) 808
Transaction Performance Rule (pre-9.0) 809
Transactions Grouped 827
Transactions Grouped Parent 827
TransactionVision Backend Average Duration Rule (Completed Transactions) 764
TransactionVision Backend Maximum Duration Rule (Completed Transactions) 765
TransactionVision Backend Minimum Duration Rule (Completed Transactions) 765
TransactionVision Backlog Rule (In-Process Transactions) 766
TransactionVision Delayed Rate Rule (Completed Transactions) 766
TransactionVision Delayed Rate Rule (In-Process Transactions) 767
TransactionVision End User Average Duration Rule (Completed Transactions) 768
TransactionVision End User Maximum Duration Rule (Completed Transactions) 769
TransactionVision End User Minimum Duration Rule (Completed Transactions) 769
TransactionVision End-to-end Average Duration Rule (Completed Transactions) 770
TransactionVision End-to-end Maximum Duration Rule (Completed Transactions) 771
TransactionVision End-to-end Minimum Duration Rule (Completed Transactions) 771
TransactionVision Exceptions Rate Rule (Completed Transactions) 772
TransactionVision Exceptions Rate Rule (In-Process Transactions) 773
TransactionVision Exceptions Value Rule (Completed Transactions) 773
TransactionVision Exceptions Value Rule (In-Process Transactions) 774
TransactionVision Failures Rate Rule (Completed Transactions) 774
TransactionVision Failures Rate Rule (In-Process Transactions) 775
TransactionVision Failures Value Rule (Completed Transactions) 775
TransactionVision Failures Value Rule (In-Process Transactions) 776
TransactionVision Value Rule (Completed Transactions) 776
TransactionVision Value Rule (In-Process Transactions) 777
TransactionVision Volume Rule (Completed and In-Process Transactions) 777
Worst Child Rule 821
WS Operation Availability Rule 844
Rules API 947
CI Indicators tab workflow 959
creating rules 957
Group and Sibling rule examples 969
log files 967, 968
overview 948
repository workflow 964
Sample rule examples 978
text file workflow 960
tooltips 966
rules repository
working with 711
RUM Application Health, context menu item 909
RUM Application Session Statistics Monitor Availability Rule (pre-9.0) 800
RUM Application Session Statistics Monitor Performance Rule (pre-9.0) 801
RUM End User Monitor Latency Rule (pre-9.0) 801
RUM End User Monitor Network Rule (pre-9.0) 802
RUM End User Session Statistics Monitor Availability Rule (pre-9.0) 802

RUM End User Session Statistics Monitor Performance Rule (pre-9.0) 803
RUM Location Session Statistics Monitor Availability Rule (pre-9.0) 803
RUM Location Session Statistics Monitor Performance Rule (pre-9.0) 804
RUM Performance Analysis, context menu item 106, 909
RUM Transaction Monitor Availability Rule (pre-9.0) 804
RUM Transaction Monitor Performance Rule (pre-9.0) 805
RUM Transaction Monitor Volume Rule (pre-9.0) 805
RUM Triage for Application, context menu item 106, 909
RUM Triage for Transaction, context menu item 106, 909

S

Sample Details page 90
sample time 728
sample-based calculations 715
sample-based sampling 715
samples
  saving details for Service Health CIs 734
  viewing details for Service Health CIs 73
SAP Alert Acknowledgment
  context menu 902
SAP Alerts, KPI 661
SAP Alerts, rule 825
SAP Menu
  context menu 902
SAP R3 Summary View, context menu item 99, 910
SAP System Menu
  context menu 902
SAP Transaction Changes
  CI menu option 106
SAP Transaction Changes Report, context menu item 910
SAP Transaction Menu
  context menu 902
SAP Transport Changes
  CI menu option 106
SAP Transport Changes, context menu item 910
SAP Transport Menu
  context menu 902
SAP, KPI 661
SAR Compliancy Report, context menu item 910
scenario
  using Service Health 55
Security, KPI 661
selector expression operators 480
selectors
  defining 435
  for Health Indicators 406
  role 406
Service Center
  alert scheme 503
Service Health
  360 View page 221
  administration 34
  alerts 285, 499
  application 30
  CI menu options 51, 98
  CI Status alert reports 285
  CI Status alerts administration 499
  components 30, 60
  customizing calculation 65, 67
  customizing display 69
  display data 52
  general information 25
  how Service Health works 35
  opening pages and components 60
  overview 27
  pages 30, 60
  prerequisites 63
  reports 335
  toolbars 81
  Top View 147
  user interface 80
  view on mobile console 367
  viewing last sample 73
  workspace 81
Service Health Administration
  Assignments tab 590

Service Health API
query examples 997
Service Health APIs 983
building queries 984, 992, 994
Service Health application components
in Service Report 51
Service Health assignments
troubleshooting 627
Service Health calculation
troubleshooting 890
Service Health components
Neighborhood Map 313
Topology Map 165
Service Health display
customizing 72
Service Health KPIs
description 656
Service Health PNR Rule 819
Service Health PNR Rule for HI (Internal) 819
Service Health repositories
context menus repository 892
Service Health tabs
modify refresh rate 71
Service Impact, context menu item 112, 910
Service Level Management Tracking Period
Alert (Internal) 820
Service Menu
context menu 902
Service Mng Menu
context menu 902
Service Report
Service Health application
components 51
service-level agreements
monitoring 37
Session Analyzer
CI menu option 107
Session Analyzer context menu item 910
Sessions Custom Data Rule 830
Set/Unset Acknowledgement, context menu
item 910
Set/Unset Acknowledgment, context menu
item 103
setting back to default 655, 729, 896
sharepoint 29
Show Business Activity Over Time Report,
context menu item 112, 910
Show Contributing Events, context menu
item 112, 910
Show Events, Context Menu Item 910
Show Impacting SAP Transports
CI menu option 107
Show Impacting SAP Transports
Transactions, context menu item 107,
911
Show Impacting SAP Transports, context
menu item 107, 911
Show Path to Root
CI menu option 111
Show Path to Root, context menu item 908
Show Problematic Subtree
CI menu option 112
Show Processes
CI menu option 100
Show Processes, context menu item 911
Show Related CIs
CI menu option 113
Show Related CIs, context menu item 911
Show Running Tasks, context menu item
911
Show SAP Transport Impact, context menu
item 107, 911
Show Tasks in Error, context menu item 911
Show Top View, context menu item 113, 911
Siebel Cross-Performance context menu item
911
Siebel Database Breakdown
CI menu option 101
Siebel Database Breakdown context menu
item 911
Siebel Database Breakdown Diagnostics
Menu
context menu 902
Siebel Diagnostics Menu
context menu 902
Siebel Errors, KPI 661
Siebel Menu
context menu 902
Siebel Running Tasks
CI menu option 101

Siebel SARM
CI menu option 102
Siebel SARM and DBBD Diagnostics Menu
context menu 903
Siebel SARM context menu item 911
Siebel Sessions, KPI 661
Siebel Tasks in Error
CI menu option 101
Siebel, KPI 661
SiteScope
CI menu option 100
Sitescope
drill down 79
SiteScope Consecutive Multiple Measurements Rule 831
SiteScope Cross-Performance context menu item 912
SiteScope dynamic assignment 562
SiteScope Group Menu
context menu 903
SiteScope Health, KPI 661
Sitescope Measurement Menu
context menu 903
Sitescope Measurement Rule 832
Sitescope Measurement Siebel Process Rule 833
Sitescope Measurement Time Based Rule 834
Sitescope Measurement with Custom Data Rule 834
Sitescope Monitor Menu
context menu 903
Sitescope Monitor Rule 835
Sitescope Monitor Time Based Rule 836
SiteScope Monitoring CIs 403
SiteScope Multiple Measurements Best Status Rule 830
SiteScope Multiple Measurements Worst Status Rule 838
SiteScope Profile, rule 836
SiteScope Quick Report
CI menu option 107
SiteScope Quick Report context menu item 912
SiteScope Server Centric Report
CI menu option 107
SiteScope Server Centric Report context menu item 912
SiteScope severities 688
SiteScope Vertical Measurement, rule 837
SiteScope Vertical, rule 837
SiteScope Web Service Monitor Menu
context menu 903
SiteScope, context menu item 907
SLAs
monitoring 35
SNMP
using SNMP traps 501
SNMP trap
creating an SNMP trap for an alert 508
SNMP traps 501
SNMP-specific codes 510
Software Availability, KPI 662
Software Performance, KPI 662
SQL Server Instance Summary View, context menu item 99, 912
SQL Server Summary View, context menu item 99, 912
Stage 2
Add the Menu Item to a Context Menu 646
status
calculating for history icon 409
calculating for trend icon 410
calculations for KPIs 45
calculations for monitor CIs 43
for geographical locations 190
status calculations
dominant child 719
percentage threshold 717
weighted percentage 718
status icons
changing the status icons 45
status indicators
Google Earth 200
status name
KPI 45
status of KPI 45
Statuses dialog box 365
Stopped Sentence, tooltip 888
Sum of Open Incidents Rule 828
Sum of Values Rule 820

Sum of Volume rule 820
Summary of Values, rule 821
Summary View
drill down 339, 356
Sun JRE plug-in 194
Synthetic User Transaction Availability Rule 806
Synthetic User Transaction Performance Rule 807
Synthetic Users Transactions Layers View, context menu item 99, 912
Synthetic Users Transactions View, context menu item 99, 912
Synthetic WS Operation Percentile Performance Rule 842
Synthetic WS Operation Performance Rule 843
System Availability, KPI 662
System Performance, KPI 662
Systinet Web Service Data
CI menu option 108
Systinet Web Service Data, context menu item 912

T

Template Repository dialog box 543
threshold status calculation method 717
thresholds
blank 405
defining 433
overview 401
Throughput, KPI 662
time delay
for maps 202
time-based calculations 715
time-based sampling 715
tooltip
health indicator 273
No Update Sentence 888
tooltip parameter
Status 862
tooltips
CI Data 887
customizing border and header 72
detailed description 867
details 727
Downtime Sentence 887
Event Based HI Tooltip 887, 888
History 887
Stopped Sentence 888
Trend 888
Worst Child Sentence 888
Top View 147
access external application 159
change color of CI bar with OK status 157
change fonts 155
change number of displayed CI levels 156
change number of expanded CI levels 156
change text color 155
context menu 903
customize background image 158
display weight in tooltip 158
hide view bar when single root CI 157
layout hierarchy customizing 152
modify number of CIs 155
overview 148
user interface 162
Topology Map 165
create or delete a group 174
customize display 171, 317
default layers 170
display in groups or layers 172
display links 173
display minimized or detailed CIs 173
group mode and layer mode 168
hide or restore CIs 173
modify a group 174
overview 166
rearrange layers 175
resize 172
restore to default 175
user interface 176
view or graph display 168
Transaction Availability Rule (pre-9.0) 808
Transaction CIs
No data timeout 723
Transaction Over Time context menu item 912

Transaction Performance Rule (pre-9.0) 809
Transaction Summary context menu item 108, 912, 913
Transaction Tracking, context menu item 108, 913
Transactions Grouped Parent, rule 827
Transactions Grouped, rule 827
Transactions View
drill down 339, 356
Transactions, KPI 663
TransactionVision Backend Average Duration Rule (Completed Transactions) 764
TransactionVision Backend Maximum Duration Rule (Completed Transactions) 765
TransactionVision Backend Minimum Duration Rule (Completed Transactions) 765
TransactionVision Backlog Rule (In-Process Transactions) 766
TransactionVision Delayed Rate Rule (Completed Transactions) 766
TransactionVision Delayed Rate Rule (In-ProcessTransactions) 767
TransactionVision Delayed Value Rule (Completed Transactions) 767
TransactionVision Delayed Value Rule (In-Process Transactions) 768
TransactionVision End User Average Duration Rule (Completed Transactions) 768
TransactionVision End User Maximum Duration Rule (Completed Transactions) 769
TransactionVision End User Minimum Duration Rule (Completed Transactions) 769
TransactionVision End-to-end Average Duration Rule (Completed Transactions) 770
TransactionVision End-to-end Maximum Duration Rule (Completed Transactions) 771
TransactionVision End-to-end Minimum Duration Rule (Completed Transactions) 771
TransactionVision Exceptions Rate Rule (Completed Transactions) 772
TransactionVision Exceptions Rate Rule (In-Process Transactions) 773
TransactionVision Exceptions Value Rule (Completed Transactions) 773
TransactionVision Exceptions Value Rule (In-Process Transactions) 774
TransactionVision Failures Rate Rule (Completed Transactions) 774
TransactionVision Failures Rate Rule (In-Process Transactions) 775
TransactionVision Failures Value Rule (Completed Transactions) 775
TransactionVision Failures Value Rule (In-Process Transactions) 776
TransactionVision Menu, context menu 903
TransactionVision Value Rule (Completed Transactions) 776
TransactionVision Value Rule (In-Process Transactions) 777
TransactionVision Volume Rule (Completed and In-Process Transactions) 777
Trend
CI menu option 108
Trend context menu item 913
trend icon
calculating status 410
Trend Rate 883
trend status
modifying 410
trend statuses
changing the icons 48, 408
for CIs 48, 408
Trend, tooltip 888
Triage
CI menu option 108
Triage context menu item 913
Triage Raw Data context menu item 108, 913
troubleshooting
Service Health 113
Service Health assignments 627
Service Health calculation 890

Troubleshooting and Knowledge Base 21
types
    assignments 560

U

Unassigned Events, KPI 663
Unresolved Events, KPI 664
update time 728
URL
    dynamic parameters 897
user modes 439
    define KPI versions 440
    for kpis 412
using Service Health 55
UTF8 194

V

validation
    KPI propagation and assignment 572
Value, KPI 664
view
    assign geographical map 196
View Builder 379
    editing KPI properties 386
    overview 380, 382
    using 384
View Builder tab 389
View Explorer
    unavailable views 88, 513
View Properties dialog box 393
View Selector 87
views
    creating 379
    unavailable views 88, 513
    working with 37
Virtual Earth 195
    adjusting map 201, 203
    customizing 201
    understanding 192
Volume, KPI 665
VT Menu
    context menu 903

W

Web Service Health context menu item 913
Web Service Menu
    context menu 903
Web Service Operation Menu
    context menu 903
Weighted Average rule 865
WMQ Server Summary View, context menu
        item 99, 913
Worst Child Rule 821
Worst Child Sentence, tooltip 888
WS Operation Availability Rule 844

Y

yellow icon 45