

HP Business Service Management

for the Windows operating system

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Solutions and Integrations

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Acknowledgements

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

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Table of Contents

Welcome to This Guide	11
How This Guide Is Organized	11
Who Should Read This Guide	12
How Do I Find the Information That I Need?	12
Additional Online Resources.....	15
Documentation Updates	16

PART I: APPLICATION MANAGEMENT FOR SAP

Chapter 1: Application Management for SAP Administration	19
Application Management for SAP – Overview	20
Application Management for SAP License	21
Architecture	22
Collecting SAP System Information.....	23
SAP Service.....	24
How to Deploy Application Management for SAP	25
How to Deploy the SAP CCMS Monitor	27
How to Install Application Management for SAP	29
How to Create Monitors	34
How to Activate the SAP Service	35
How to Use Application, Business Transaction Flow, and Business Transaction CIs to Simulate SAP Users	35
Troubleshooting and Limitations	39
Chapter 2: Application Management for SAP Reports and Views	43
SAP Systems View	44
CCMS Counters	47
How to Display SAP Information in Service Health	48
Default CIs in the SAP Systems View	50
SAP-Related KPIs.....	53
SAP-Related Menu Options	53
Application Management for SAP User Interface	54

PART II: INTEGRATIONS

Chapter 3: Business Service Management Integration with Other Applications 65
Business Service Management Integration with Other Applications Overview 66
HP Network Node Manager (NNMi) 67
HP Operations Manager 71
SiteScope 73
HP Service Manager (SM) 77
HP Operations Orchestration (OO)..... 80
Release Control (RC) 81
CLIP 82
HP Diagnostics 83
Netscout and Third Party Applications..... 85
HP Universal CMDB 87
BSM - BSM 88

Chapter 4: HP BSM Integration Adapter 89
HP BSM Integration Adapter Overview 90
Policies 93
How to Integrate Events with HP BSM Integration Adapter 95

Chapter 5: Configure Operations Management Connections 99
Configure Operations Management Connections - Overview 100
How to Configure Operations Management Connections..... 101
How to Add Gateway Servers as Nodes to HPOM for Windows..... 103
How to Add Gateway Servers as Nodes to HPOM for UNIX..... 105
How to Establish a Trust Relationship between BSM and External Servers..... 106
How to Verify the Trusted Relationship Between the BSM Processing Server and an External Server 108
How to Configure the HPOM for Windows Forwarding Policy 109
How to Configure the HPOM for UNIX Forwarding Policy 113
How to Import Content Packs 117
How to Validate Event Synchronization..... 118
How to Limit the Number of CIs that BSM Evaluates 121
How to Synchronize the Topology 121

Chapter 6: Generate Events in HP Operations Manager when BSM Alert is Triggered	123
Generating Events in HP Operations Manager when BSM Alert is Triggered Overview.....	124
How to Configure BSM Alerts to Forward an Event When the Alert is Triggered.....	125
Chapter 7: How to Integrate HP Service Manager with Business Service Management Components	127
Chapter 8: EMS Integration Administration	129
Integration Administration Application Overview	130
Understanding Host, Business Service, or Host-Software Element Integration Types.....	131
EMS Monitor CI.....	134
Reconciliation of Hosts	135
How to Integrate Data from Third-Party Sources (EMS Data) into HP Business Service Management.....	136
Add CITs and Relationships to a Relationship Map	140
Create a Host <--> Software Element Integration – Use-Case Scenario	141
EMS Integration Administration User Interface	148
Chapter 9: NetScout nGenius Integration	163
NetScout Integration Overview.....	164
How to Display NetScout Data in BSM.....	167
Chapter 10: HP Operations Orchestration Integration	171
HP Operations Orchestration Integration Overview	172
How to Integrate BSM and OO	173
How to Integrate HP Business Service Management and HP Operations Orchestration – Use-Case Scenarios	178
Predefined Mappings.....	179
HP Operations Orchestration Integration User Interface	180
Chapter 11: HP Diagnostics and HP Business Service Management Integration	189
HP Diagnostics and BSM Integration Overview.....	190
How to Access Online Help for HP Diagnostics BSM	191
How to View HP Diagnostics Data in BSM	191
Troubleshooting and Limitations	193
Index	195

Table of Contents

Welcome to This Guide

This guide describes the various solutions and integrations available for HP Business Service Management.

This chapter includes:

- How This Guide Is Organized on page 11
- Who Should Read This Guide on page 12
- How Do I Find the Information That I Need? on page 12
- Additional Online Resources on page 15
- Documentation Updates on page 16

How This Guide Is Organized

The guide contains the following parts:

Part I Application Management for SAP

Describes how to install the Application Management for SAP application, the specific tasks involved in administering it, how the SAP discovery process discovers SAP-related CIs and general CIs (such as hosts) that are related to them, and provides information that can help troubleshoot the Application Management for SAP application.

Part II Integrations

Provides an overview of the integration of BSM with other HP products, other BSMs and third-party applications, and describes how to build new integrations or customize out-of-the-box integrations for EMS (Enterprise Management Systems) applications, how to integrate HP Operations Manager, HP Service Manager, and NetScout nGenius data into HP Business Service Management, how to set up an integration with HP Operations Orchestration (OO), enabling you to run OO run books on Business Service Management CIs, and how to configure the integration between HP Diagnostics and HP Business Service Management.

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
- ▶ HP Business Service Management integration developers

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 	<p>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:</p> <ul style="list-style-type: none"> ▶ 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. 	<ul style="list-style-type: none"> ▶ 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.
	<p>Use-case Scenario Tasks. Examples of how to perform a task for a specific situation.</p>	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/hpssoftwaresupport.

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

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Part I

Application Management for SAP

1

Application Management for SAP Administration

This chapter includes:

Concepts

- Application Management for SAP – Overview on page 20
- Application Management for SAP License on page 21
- Architecture on page 22
- Collecting SAP System Information on page 23
- SAP Service on page 24

Tasks

- How to Deploy Application Management for SAP on page 25
- How to Deploy the SAP CCMS Monitor on page 27
- How to Install Application Management for SAP on page 29
- How to Create Monitors on page 34
- How to Activate the SAP Service on page 35
- How to Use Application, Business Transaction Flow, and Business Transaction CIs to Simulate SAP Users on page 35

Troubleshooting and Limitations on page 39

Concepts

Application Management for SAP – Overview

The Application Management for SAP enable you to gain visibility and control over your SAP systems and applications.

The SAP solution provides:

- ▶ A single operation console consolidating all SAP monitoring information.
- ▶ Automatic discovery and modeling of SAP-related elements, as well as their relations to other systems in the organization's IT.
- ▶ Change discovery and notification, for quicker problem resolution.
- ▶ Display of transport deployment impact, for move-to-production risk analysis.
- ▶ Proactive monitoring of end-user experience in SAP systems.
- ▶ A bridge between IT and line-of-business people using SAP Solution Manager business processes hierarchy monitoring.
- ▶ The ability to distinguish between SAP-specific problems and general ones.
- ▶ Examination, over time, of SAP CCMS monitoring data.
- ▶ Service Level Management of SAP systems' service level commitments.

In addition, you can create SLAs centered around your SAP transaction CIs to gain visibility into performance or availability issues that affect these SLAs. For details on SLAs, see "Service Level Management - Overview" in *Using Service Level Management*.

Application Management for SAP License

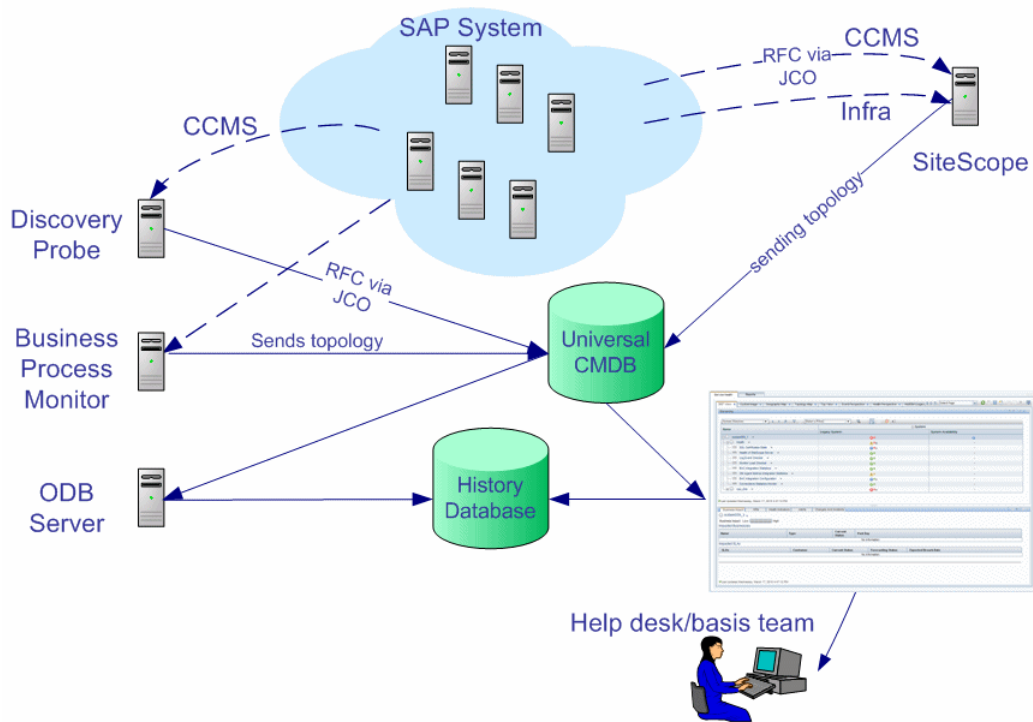
The Application Management for SAP license unlocks the following functionality in HP Business Service Management, helping to shorten time-to-value and minimize MTTR:

- ▶ The SAP Systems pattern view, displaying a hierarchical view of SAP applications and infrastructure.
- ▶ Automatic linkage of SiteScope data to their respective SAP infrastructure.
- ▶ SAP-specific KPIs that allow differentiation between SAP-related issues and non-SAP ones.
- ▶ SAP Transport Changes and SAP Transaction Changes access from Service Health views for quick visualization of change impact. For details, see "SAP Transport Changes" and "SAP Transaction Changes" in *Using Service Health*.
- ▶ SAP-specific change reports, summarizing the impact transports have on transactions in the SAP system.

For details about the views and reports, see "How to Display SAP Information in Service Health" on page 48.

Architecture

For details about the architecture of Application Management for SAP, see:



Most of the SAP CIs are created by automatic discovery. The configuration for these CIs is saved into the ODB (Operational database). Some of the relationships to Business Process Monitor and SiteScope CIs are created by automatic mechanisms unique to Application Management for SAP.

The architecture of Application Management for SAP includes the following components:

- ▶ The Data Flow Probe discovers SAP-related entities and the general entities (such as hosts) that are related to them using CCMS. The Data Flow Probe communicates with the ODB using a Remote Function Call (RFC) with a Java Connector (JCo).
- ▶ The SiteScope SAP CCMS Solution Set communicates with the SAP system and retrieves CCMS monitoring data using a Remote Function Call (RFC) with a Java Connector (JCo).
- ▶ The Business Process Monitor collects data on the performance and availability of Business Process Monitor transactions carried out on the SAP system.
- ▶ The ODB Server collects change information from the ODB and stores it in the History database.
- ▶ The Service Health tabs and reports are used as the central console for viewing all of the data and performing analysis of the data. For details, see "Introducing Service Health" in *Using Service Health*.

For details about the samples that include the data, see "Data Samples for SiteScope" and "Data Samples for Business Process Monitor" in *Reports*.

Collecting SAP System Information

The Automatic Discovery component discovers the actual SAP IT entities and stores them as CIs in the ODB.

All configuration actions of SAP CIs are performed inside the ODB Administration application. All SAP CIs appear in the SAP Systems view under the SAP Systems root CI.

All SAP system metrics are monitored by SiteScope monitors.

SAP business processes/transactions are simulated using Business Process Monitor pre-recorded VuGen scripts. Each script includes one or more Business Transactions and are executed from a specific location. All Business Process Monitor-related CIs are stored in the ODB as non-SAP-related CIs with links to the appropriate SAP-related CIs.

Similar to other information, information about the SAP System is available in Service Health in all of the relevant tabs.

The SAP Systems views includes information from the SAP IT entities, SAP system metrics monitored by SiteScope monitors, and information about the SAP business processes/transactions simulated by Business Process Monitor scripts.

SAP Service

The SAP service is assigned to the Modeling Data Processing Server. It is a configuration service that enables BSM to work with data that is in SAP format.

For details on how to view a service status using the JMX Web console, see "High Availability for the Data Processing Server" in the *HP Business Service Management Deployment Guide* PDF.

The SAP Service is responsible for the following advantages:

- ▶ Intelligent relation of monitoring information.
- ▶ Loading occurs after the ODB and Viewing System services are loaded.
- ▶ Check of the service activity in the JMX console. For details, see "How to Activate the SAP Service" on page 35.
- ▶ Automatic linkage of BPM scripts with standardized names. For details, see "Attach Business Transactions to a SAP Transaction Using the Naming Convention" on page 37.
- ▶ Creation of the Business Process and Locations containers and connection of the appropriate Business Transactions to these containers. A Business Transaction connected manually to the SAP transaction would also be connected to these containers. For details, see "Attach Business Transactions to a SAP Transaction Without Following the Naming Conventions" on page 38.

Tasks

How to Deploy Application Management for SAP

This section describes the processes to follow to display SAP information in Service Health.

This task includes the following steps:

- "Prerequisites" on page 25
- "Install Application Management for SAP" on page 26
- "Run the SAP discovery process" on page 26
- "Create Application CIs" on page 26
- "Create monitors" on page 26
- "Modify the SiteScope assignment" on page 27
- "Display SAP information in Service Health" on page 27
- "Add an application server to the SAP System" on page 27

1 Prerequisites

Ensure that the following software is installed before you install the SAP solution:

- **Data Flow Probe.** Used to perform the discovery of SAP topology in your organization. For details, see "SAP" in the *ODB Discovery and Integration Content Guide* PDF.
- **SiteScope.** Used to integrate the SiteScope data collector into the Application Management for SAP solution. For details, see the *HP SiteScope Deployment Guide* PDF.
- **Business Process Monitor.** Used to integrate the Business Process Monitor data into the Application Management for SAP solution. For details, see "Introducing Business Process Monitor" in the *Business Process Monitor Administration* PDF.

Make sure that you also have a SAP license to view the SAP Systems view in HP Business Service Management.

Consult the relevant BSM readme for details about the supported versions of SAP.

2 Install Application Management for SAP

Install Application Management for SAP.

For task details, see "How to Install Application Management for SAP" on page 29.

3 Run the SAP discovery process

You run the SAP discovery process to discover SAP elements and SAP topology. For task details, see "SAP" in the *ODB Discovery and Integration Content Guide* PDF.

4 Create Application CIs

Use Applications CIs to simulate SAP users to obtain performance and availability information on the SAP transactions.

For concept details, see "How to Use Application, Business Transaction Flow, and Business Transaction CIs to Simulate SAP Users" on page 35.

5 Create monitors

You can create a SAP CCMS monitor and general SiteScope monitors to get the complete picture: Database Query Monitor, Ping Monitor, and so on. For task details, see "How to Create Monitors" on page 34.

Note: The SAP CCMS Monitor is an optional SiteScope feature whose license is provided with the SAP solution.

6 Modify the SiteScope assignment

If required, you can modify the existing SiteScope assignments. For user interface details, see "Assignments Tab" in *Using Service Health*.

7 Display SAP information in Service Health

You can display SAP information in Service Health in different views and reports. For details, see "How to Display SAP Information in Service Health" on page 48.

8 Add an application server to the SAP System

When you add a new application server to the SAP System, you must clear the **Report topology** option, save the Monitor definition, and then select the option again and save the monitor definition, so the monitor recognizes the new application server. For details on creating a SAP CCMS Monitor, see "SAP CCMS Monitor Overview" in *Monitor Reference* in the SiteScope Help.

How to Deploy the SAP CCMS Monitor

The SAP CCMS monitor retrieves and reports data from SAP's centralized monitoring system CCMS. CCMS is used to monitor all servers, components and resources in the SAP R/3[®] System from one single centralized server, facilitating problem discovery and problem diagnosis. For concept details, see "SAP CCMS Monitor Overview" in *Monitor Reference* in the SiteScope Help.

Note: The SAP CCMS Monitor is an optional SiteScope feature whose license is provided with the SAP solution.

This task includes the following steps:

- "Deploy a CCMS monitor using the SiteScope CCMS Solution Template" on page 28
- "Attach SiteScope to BSM" on page 29
- "Check that the monitor is set to report all monitors and metrics" on page 29

1 Deploy a CCMS monitor using the SiteScope CCMS Solution Template

The **MonitorSetSSServer.mset** solution template is the most effective way to deploy a CCMS monitor.

To deploy a CCMS monitor using the SiteScope CCMS solution template:

- a** Access SiteScope using System Availability Management in HP Business Service Management or directly using the URL: **http://<SiteScope_server>:8080/<HP_BSM_web_application_context_name (usually topaz)>/**.
- b** Select **Admin > System Availability Management**.
- c** Right-click the appropriate SiteScope in the Enterprise tree, and select **New Group**.
- d** Enter the name of the group in the **Group Name** box in the Main Settings area.
- e** Click **OK**.
- f** Expand **Solution Sets**, right-click **SAPR3Solution**, and select **Copy**.
- g** Right-click the new group you have created, and select **Paste**.
- h** In the Main Settings area, enter the following information:
 - The name of the SAP System in the **TARGET_SERVER_NAME** box.
 - The user name in the **USER_NAME** box.
 - The password in the **Password** box.

- ▶ The number of the SAP system in the **SYSTEM_NUMBER** box.
- ▶ The number of the client to which you connect SiteScope in the **CLIENT_NUMBER** box.

i Click **OK**.

2 Attach SiteScope to BSM

Make sure that SiteScope is attached to HP Business Service Management. For user interface details, see "New SiteScope Page" in *Using System Availability Management*.

3 Check that the monitor is set to report all monitors and metrics

To view SiteScope metrics, you must check that the monitor is set to report all monitors and metrics information:

- a** Select **Admin > System Availability Management**.
- b** Double-click the appropriate SAP CCMS monitor under the appropriate group, select the **Properties** tab, and expand the HP Integration Settings area.
- c** Check that the setting in the **BSM Integration Data and Topology Setting** is set to **Enable reporting monitors status and metrics**.

How to Install Application Management for SAP

Deploying the SAP solution includes setting the appropriate licenses, connecting SAP Java Connector on the SiteScope machine, and setting the Data Flow Probe.

This task includes the following steps:

- ▶ "Set the license for the SAP solution" on page 30
- ▶ "Check that the jobs are deployed" on page 30
- ▶ "Install the SAP Java connector on the SiteScope machine" on page 31
- ▶ "Set the SiteScope license" on page 32

- ▶ "Perform the Data Flow Probe post-installation procedure" on page 32
- ▶ "Restart the Discovery agent" on page 33

1 Set the license for the SAP solution

If the SAP solution license was set while installing HP Business Service Management, the SAP jobs are automatically deployed and added to the ODB.

To set the license for the SAP solution.

- a** Log in to HP Business Service Management.
- b** Select **Admin > Platform > Setup and Maintenance > License Management**.
- c** Click **Add license from file** to open the **Add license** page where you can search for the relevant **.dat** file and click **Add license**.
- d** At the bottom of the License Management page, click the link in the **Note: To activate licenses, go to Server Deployment page**.
- e** In the Server Deployment page that opens, select the **SAP (Application Management for SAP)** option in the **Applications** column and click **Save**.

It is recommended to restart HP Business Service Management at this point.

2 Check that the jobs are deployed

If the SAP solution license was set after installing HP Business Service Management, you must deploy the jobs manually or restart HP Business Service Management so the SAP jobs are deployed automatically (this is the recommended procedure).

The SAP-related jobs: **SAP.zip**, **SAP_discovery.zip**, and **SAP_monitoring.zip** are at the following location on the machine where ODB is installed:
<Discovery Probe root directory>\root\lib\packages.

Select **Admin > ODB Administration > Modeling > It Universe Manager** and check that the SAP views are listed in the View list in Model Explorer.

For user interface details about Model Explorer, see "Working with the CI Selector" in *Modeling Guide*.

3 Install the SAP Java connector on the SiteScope machine

Once SiteScope is installed, install SAP Java connector on the SiteScope machine, as follows:

- a** Download the SAP JCo package from the Tools & Services window of SAP JCo in SAP Service Marketplace:
https://websmp101.sap-ag.de/~form/sapnet?_SHORTKEY=01100035870000463649
- b** Extract **sapjco-ntintel-2.0.8.zip** to a temporary directory (for example, C:\temp) on the SiteScope machine.
- c** Copy **sapjco.jar** from the temporary directory to the **<SiteScope root directory>\SiteScope\WEB-INF\lib** directory on the SiteScope machine.
- d** Copy **sapjcorfc.dll** from the temporary directory to the **<SiteScope root directory>\SiteScope\bin** directory on the SiteScope machine.
- e** Copy **librfc32.dll** from the temporary directory, in the SiteScope machine to:
 - the **%winnt%\system32** directory
 - the **<SiteScope root directory>\SiteScope\bin** directoryIf there is an old version of the **librfc32.dll** file already in the **<SiteScope root directory>\bin** or in the **%winnt%\system32** directory, you should replace it.
- f** Restart SiteScope as follows: on the SiteScope machine, go to **Start > Programs > Administration Tools > Services**, find SiteScope service and restart it.

4 Set the SiteScope license

To set the SiteScope license appropriate for your system:

- a** Launch SiteScope by entering the following URL in a browser:
http://<SiS_machine_name>:8080
- b** Choose **Preferences > General Preferences**.
- c** In the Licenses area, click **Select**.
- d** In the dialog box that opens, select the relevant file and click **Open**.
- e** In the Licenses area, click **Import from file**. The license is entered in the **License file** box.
- f** The relevant information is displayed in the **Licenses** table.

Make sure to insert a license for: EMS monitors, SAP monitors, and the SAP R/3 solution template.

- g** Click **OK** to approve the changes.

For details, see "SiteScope Licenses" in the *HP SiteScope Deployment Guide* PDF.

5 Perform the Data Flow Probe post-installation procedure

After installing the Data Flow Probe, perform the post-installation procedure (see below) and restart the Data Flow Probe. If the Data Flow Probe is already running before you perform the post-installation procedure, stop it and restart it afterwards.

To perform the Data Flow Probe post-installation:

- a** Download the SAP JCo package from the Tools & Services window of SAP JCo in SAP Service Marketplace:
https://websmp101.sap-ag.de/~form/sapnet?_SHORTKEY=01100035870000463649
- b** Extract **sapjco-ntintel-2.0.8.zip** to a temporary directory (for example: C:\temp) on the HP Business Service Management machine.
- c** Create a new **sap** directory (in lowercase) in the **C:\hp\UCMDB\DataFlowProbe\root\ext** directory on the machine where the Data Flow Probe is installed.

- d Copy **sapjco.jar** from the temporary directory to the **C:\hp\UCMDB\DataFlowProbe\root\ext\sap** directory on the machine where the Data Flow Probe is installed.
- e Copy **sapjcorfc.dll** from the temporary directory to the **%winnt%\system32** directory on the machine where the Data Flow Probe is installed. Also copy the file to the **C:\hp\UCMDB\DataFlowProbe\root\ext\dll** folder.
- f Copy **librfc32.dll** from the temporary directory to the **%winnt%\system32** directory. Also copy the file to the **C:\hp\UCMDB\DataFlowProbe\root\ext\dll** folder.
- g Verify that the **MSVCR71.dll** and **MSVCP71.dll** files are located in the **%winnt%\system32** directory.

6 Restart the Discovery agent

Perform the following steps:

- a On the Data Flow Probe machine, access: **Start > Programs > Business Service Management > Administration > Discovery Agent**
- b This starts the Data Flow Probe and opens a CMD console.
- c Wait until the console displays the following line: **Finished startup sequence**

```

Discovery Agent
Jun 1      | <2005-07-12 19:11:15,643> 4391 [INFO ] [WrapperSimpleAppMain] <ProbeTasksDistributerPull.java94> - Pull tasks distributer has started successfully
Jun 1      | <2005-07-12 19:11:15,643> 4391 [INFO ] [WrapperSimpleAppMain] <ProbeDownloader.java89> - The Probe Downloader has started successfully
Jun 1      | <2005-07-12 19:11:16,408> 5156 [INFO ] [WrapperSimpleAppMain] <DomainScopeManager.java23> - reloading document domainScopeDocument
Jun 1      | <2005-07-12 19:11:16,408> 5156 [INFO ] [WrapperSimpleAppMain] <DomainScopeManager.java47> - processing document domainScopeDocument
Jun 1      | <2005-07-12 19:11:16,440> 5188 [INFO ] [ThreadService-0] <DomainScopeManager.java23> - reloading document domainScopeDocument
Jun 1      | <2005-07-12 19:11:16,440> 5188 [INFO ] [ThreadService-0] <DomainScopeManager.java47> - processing document domainScopeDocument
Jun 1      | <2005-07-12 19:11:16,471> 5219 [INFO ] [WrapperSimpleAppMain] <ProtocolDictionaryManager.java65> - no domain_protocolist attribute for domain niceDomain
Jun 1      | <2005-07-12 19:11:16,471> 5219 [INFO ] [WrapperSimpleAppMain] <DomainScopeManager.java63> - processing document domainScopeDocument is done!
Jun 1      | <2005-07-12 19:11:16,471> 5219 [INFO ] [ThreadService-0] <ProtocolDictionaryManager.java65> - no domain_protocolist attribute for domain niceDomain
Jun 1      | <2005-07-12 19:11:16,471> 5219 [INFO ] [ThreadService-0] <DomainScopeManager.java63> - processing document domainScopeDocument is done!
Jun 1      | <2005-07-12 19:11:16,502> 5250 [INFO ] [WrapperSimpleAppMain] <MainProbeAgent.java120> - Main probe started successfully
Jun 1      | =====
Jun 1      | | Finished startup sequence
Jun 1      | | Please press <CTRL-c> for an orderly and clean exit ...
Jun 1      | | =====

```

How to Create Monitors

You create a SAP CCMS monitor and general SiteScope monitors to get the complete picture of your system.

This task includes the following steps:

- ▶ "Create a SAP CCMS monitor" on page 34
- ▶ "Create general monitors" on page 34

1 Create a SAP CCMS monitor

The SAP CCMS monitor retrieves and reports data using SAP centralized monitoring system CCMS. CCMS is used to monitor all servers, components, and resources in the SAP R/3[®] System from one single centralized server facilitating problem discovery and problem diagnosis.

For details on creating a SAP CCMS Monitor, see "SAP CCMS Monitor Overview" in *Monitor Reference* in the SiteScope Help.

SAP CCMS Monitor solution template is the most effective way to deploy a CCMS monitor. For task details, see "Deploy a CCMS monitor using the SiteScope CCMS Solution Template" on page 28.

2 Create general monitors

You create general SiteScope monitors to get the complete picture of your system. For details, see *Using System Availability Management*.

For example, you could use the Database Query monitor to monitor the availability and proper functioning of your database application, or the Ping monitor to discover if your network connection is congested.

How to Activate the SAP Service

Check that the SAP Service is activated (it is activated by default). If necessary, activate it manually. For details, see "High Availability for the Data Processing Server" in the *HP Business Service Management Deployment Guide* PDF.

- 1 In the browser, enter (using JMX login credentials):
**http://<HP Business Service Management server name>
 :8080/jmx-console/**
- 2 Double-click **service=Verticals External Enrichment Service** listed under **Topaz**.
- 3 The JMX MBean View for Verticals External Enrichment Service opens.
- 4 Specify:
 - **performLinkage**. The customer ID and the relevant linkage used to perform (CCMS/BPM AUTO/BPM manual).
 - **createTqListeners**. Use for debugging.
 - **Start**. Starts the service.
 - **Stop**. Stops the service.

How to Use Application, Business Transaction Flow, and Business Transaction CIs to Simulate SAP Users

Use Application, Business Transaction Flow, and Business Transaction CIs to simulate SAP users and obtain performance and availability information on the SAP transactions.

You can view Business Transactions under the SAP view to enable you to analyze what happens in the SAP system.

This task includes the following steps:

- "Create Application, Business Transaction Flow, and Business Transaction CIs" on page 36
- "Select the appropriate protocol" on page 36

- "Select the appropriate run-time settings" on page 36
- "Edit the script" on page 36
- "Attach Business Transactions to SAP Application components" on page 37

1 Create Application, Business Transaction Flow, and Business Transaction CIs

You create the required Application, Business Transaction Flow, and Business Transaction CIs in End User Management. For concept details, see "How to Set up Business Process Monitors" in *Using End User Management*.

2 Select the appropriate protocol

In HP HP Virtual User Generator (VuGen), SAP scripts are recorded using the SAPGUI protocol. You must select the SAPGUI protocol when you create a new script. For details, see the *HP Virtual User Generator User's Guide*.

3 Select the appropriate run-time settings

In VuGen, open the Run-Time settings window, and select the **SAPGUI:General** node. Select **Show SAP client during replay** and clear **Take Active screenshots during replay** to give more accurate user experience times. For details, see the *HP Virtual User Generator User's Guide*.

4 Edit the script

You can edit the script to make sure the password is recorded properly and to check and correct the script's connection parameters.

For details, see "Business Process Monitor Application Configuration Wizard" and "Business Transaction Flow Configuration Wizard" in *Using End User Management*.

5 Attach Business Transactions to SAP Application components

To display Performance and Availability information, Business Transactions must be attached to SAP transactions.

You can connect Business Transactions to a SAP transaction in two different ways:

Type of Connection	Description
<p>Attach Business Transactions to a SAP Transaction Using the Naming Convention</p>	<p>Following the naming convention listed below, logically connects Business Transactions to a SAP transaction.</p> <p>Use the following format for the Business Transaction name: <code><tran_name>_<sys_name>_<BPM_tran_name></code></p> <ul style="list-style-type: none"> ▶ tran_name. The name of the SAP transaction to which you want to attach the Business Transaction. ▶ sys_name. The name of the SAP System on which the transaction is run (for example, MI7). ▶ BPM_tran_name. The unique name of the Business Transaction. <p>Any set of alphanumeric and mixed case characters is supported (special characters are not allowed). It is good practice to name the transaction so that the name indicates what occurs in that set of dialog steps.</p> <p>Note: You assign the appropriate name to a Business Transaction when you record it. For details, see the <i>HP Virtual User Generator User's Guide</i>.</p> <p>Example: The names of the Business Transactions assigned to the SAP transaction VA01 in the MI7 SAP System should start with: <code>va01__mi7_</code></p> <p>In the SAP Systems View, a Business Transactions CI that is displayed under a specific SAP transaction is a container for all relevant transactions.</p> <p>It is important to split a SAP transaction into a few Business Process Monitor transactions so that you are able to pinpoint the problem. For example, if each step of the SAP transaction is a separate Business Process Monitor transaction, you can find the exact part of the SAP transaction where the problem occurs.</p>

Type of Connection	Description
<p>Attach Business Transactions to a SAP Transaction Without Following the Naming Conventions</p>	<p>If you do not want to follow the naming conventions for the Business Transactions, you must manually link a Business Transaction to a SAP transaction.</p> <ol style="list-style-type: none"> 1 Select Admin > End User Management, and build a Business Process Monitor profile. 2 To manually connect Business Transactions with SAP transactions, select Admin > ODB Administration > Modeling > IT Universe Manager, and select SAP View in the View list. Right-click the SAP transaction that you want to monitor using the BPM profile and select Attach Related CI to open the Insert Relationship dialog box. Select one of the monitor views (System Monitors view or End User Monitors view) in the Views list. Expand and select the Business Transaction to which you want to connect the SAP transaction, and select the Monitored By for SAP relationship type, as well as the Allow CI Update option. <p>For user interface details, see "Insert Relationship Dialog Box" in the <i>Modeling Guide</i>.</p>

Troubleshooting and Limitations

This section describes troubleshooting and limitations for Application Management for SAP.

This section includes the following topics:

- "The SAP KPI Status Remains Not Up to Date" on page 39
- "CCMS Does Not Manage to Monitor a SAP System" on page 40
- "The Performance and Availability KPIs Remain Uninitialized" on page 40
- "SAP Business Process Monitor Scripts Do Not Execute" on page 40
- "Unable to Log Into HP Business Service Management" on page 41

The SAP KPI Status Remains Not Up to Date



If the SAP KPI status remains **Not up to date** (indicated by this icon), check the following solutions in the order listed below:

- 1** Synchronize SiteScope and BSM. In SiteScope, select **Integration Preferences > BSM Integration Preferences Dialog Box > BSM Preferences Available Operations**. For details, see "BSM Integration Preferences Dialog Box" in *Using System Availability Management*.
- 2** Check the following file to ensure that the samples arrive to the Business Logic Engine:
`<HPBSM root directory on the Gateway Server>
\log\EJBContainer\TrinitySamples.log`
- 3** Check that the samples arrive to the bus in the following file:
`<HPBSM root directory on the Gateway Server>
\log\core\dispatcher_log.txt`
- 4** Check that the samples are sent in the following file:
`<SiteScope root directory>\logs\topaz_all.log.1`
- 5** If you see KPIs with the **Not up to date** status, check the threshold definition in System Availability Management.
- 6** Restart SiteScope, detach it, and re-attach it.
- 7** Check time synchronization between HP Business Service Management and its management database.

CCMS Does Not Manage to Monitor a SAP System

If CCMS does not manage to monitor a SAP System, check the following solutions in the order listed below:

- 1** If you are able to connect to the SAP System using SAP Logon, run the **rz20** transaction.
- 2** Open **SAP CCMS Monitor Templates > Entire System**, and check if a tree is displayed.
 - ▶ If there is no tree, there might be a problem with the job that is collecting CCMS information. Contact your SAP administrator.
 - ▶ If there is a tree, check that the names of the application server and of the system match, in content and case, the ones used in SiteScope.

The Performance and Availability KPIs Remain Uninitialized

If the Performance and Availability KPIs remain uninitialized, check the following solutions in the order listed below:

- 1** Check that the samples arrive, in the file:
<HPBSM root directory on the Gateway Server>
\\log\EJBContainer\TrinitySamples.log
- 2** Try and run Business Process Monitor as a specific user.
- 3** Check time synchronization between HP Business Service Management and its Management database.
- 4** Check the minute's synchronization between Business Process Monitor and HP Business Service Management.

SAP Business Process Monitor Scripts Do Not Execute

If the SAP Business Process Monitor scripts do not execute, check the following solutions in the order listed below:

- 1** Verify that SAP Logon is installed on the Business Process Monitor server.
- 2** Check that the SAP Business Process Monitor scripts run in HP HP Virtual User Generator (VuGen) and check the script's connection parameters. For details, see "Edit the script" on page 36.

- 3 Register DLLs under <Business_Process_Monitor_install_directory>\bin, as follows:
 - regsvr32 SapGuiActiveScreen.dll
 - regsvr32 SapGuiReplayEvents.dll
 - regsvr32 ActiveScreen.dll

Unable to Log Into HP Business Service Management

If you are unable to log into HP Business Service Management, check the following solutions in the order listed below:

- 1 Check that the last line in the following file:
<SiteScope root directory>\log\jboss_boot.log
displays the following information: Jboss started in ...
- 2 If you are able to connect using port **8080** explicitly, give the **Read and Execute** permission to **Everyone** for the following DLLs in <Windows installation directory>\System32:
 - msucr71.dll
 - msvcp71.dll
 - mfc71.dll
 - atl71.dll
- 3 If SiteScope is installed on the same machine as HP Business Service Management, check that HP Business Service Management is already running before you start SiteScope.

Note: It is not recommended to install HP Business Service Management and SiteScope on the same machine.

An existing Business Process Monitor machine can be leveraged for running SAP scripts as well.

2

Application Management for SAP Reports and Views

This chapter includes:

Concepts

- SAP Systems View on page 44
- CCMS Counters on page 47

Tasks

- How to Display SAP Information in Service Health on page 48

Reference

- Default CIs in the SAP Systems View on page 50
- SAP-Related KPIs on page 53
- SAP-Related Menu Options on page 53
- Application Management for SAP User Interface on page 54

Concepts

SAP Systems View

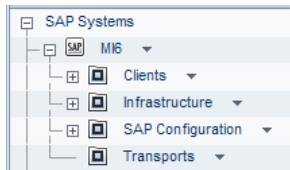
After configuring Application Management for SAP, you can view SAP information in the SAP Systems view in Service Health. For user interface details, see "Service Health Workspace" in *Using Service Health*.

For details on configuring Application Management for SAP, see "How to Deploy Application Management for SAP" on page 25.

The data displayed in the views is taken from the Business Process Monitor samples and from the SiteScope samples. For details, see "Data Samples for Business Process Monitor" and "Data Samples for SiteScope" in *Reports*.

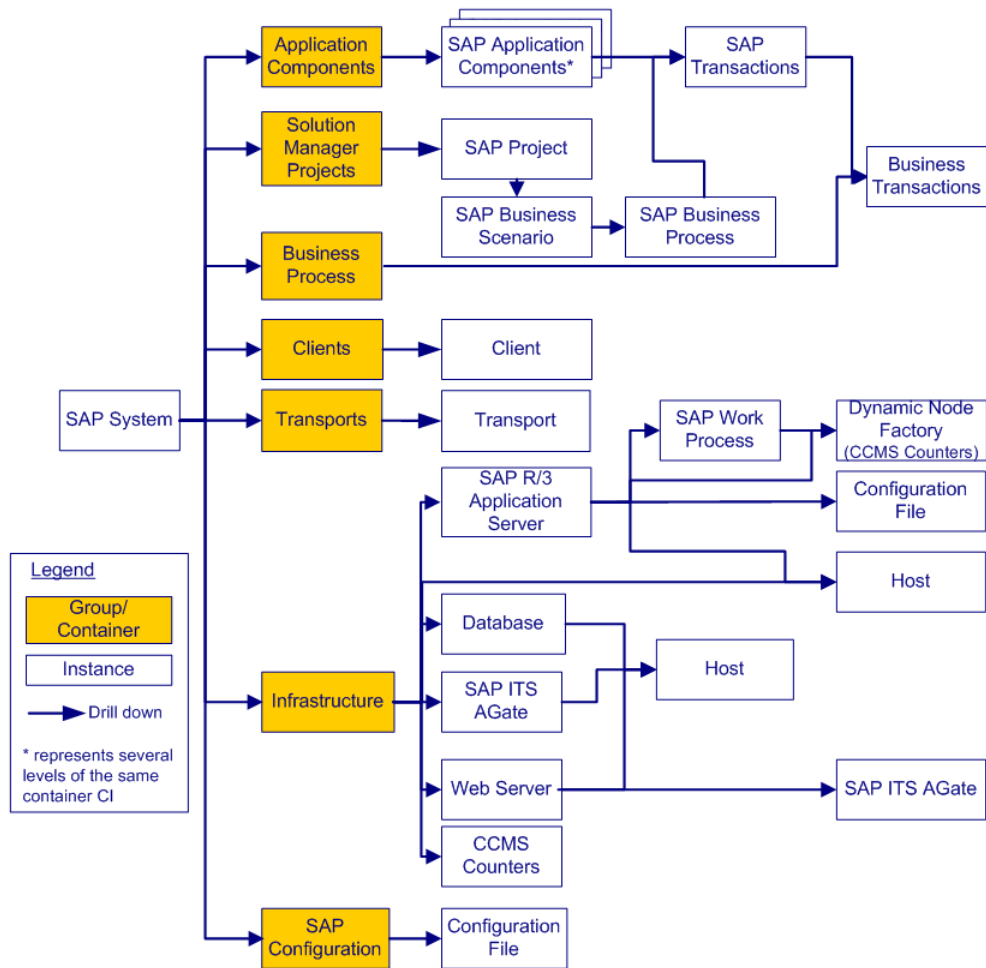
For additional information about views, see "View Topology" in *Using Service Health*.

The SAP Systems view in Model Explorer appears as follows:



To access SAP Systems TQL, select **Admin > ODB Administration > Modeling > Modeling Studio > Application > SAP > SAP Systems**.

The following graph describes the various layers and drill-downs available in the topology of the SAP Systems view:



Topologies

In addition, the SAP Systems view includes the following topologies, which are created by specific SiteScope monitors:

SAP CCMS topology discovered by SiteScope	SAP Work Processes topology discovered by SiteScope
<p>SiteScope creates the following topology for the SiteScope SAP CCMS monitor. The CIs are created only for the monitored entities according to the counters that you selected.</p>	<p>SiteScope creates the following topology for the SiteScope SAP Work Processes monitor. The CIs are created only for the monitored entities according to the counters that you selected.</p>

Limitation for the SAP CCMS topology: SiteScope does not have information about the machine on which the database is installed, therefore, in the SAP CCMS topology, it attaches the Database CI to the Node CI you specified in the Application Server field in the SiteScope monitor definition.

CCMS Counters

The CCMS Counters Dynamic Nodes collect the samples from SiteScope and display the metrics as the SAP General health indicator attached to the CIs representing the elements they are monitoring.

To view the SAP General health indicator details, select **Applications > Service Health**, click 360° View, open the SAP Systems view, select the relevant CI and click the **Health Indicator** tab in the lower pane of the 360 View. For details about the Health Indicator tab, see "Health Indicator Component User Interface" in *Using Service Health*.

Tasks

How to Display SAP Information in Service Health

You can display SAP information in Service Health using one of the following capabilities.

This task includes the following steps:

- ▶ "View SAP data in Service Health" on page 48
- ▶ "View the CIs affected by a root cause CI" on page 48
- ▶ "View changes made to SAP System CIs" on page 48
- ▶ "Display Configuration File information" on page 49

1 View SAP data in Service Health

You can view SAP information in the SAP Systems view in Service Health. For concept details, see "SAP Systems View" on page 44.

2 View the CIs affected by a root cause CI

Select a CI, which is defined by an impact rule as a root cause CI, to display all of the CIs that are affected by it. For user interface details, see "Show Impacting SAP Transport Transactions Report" on page 56.

3 View changes made to SAP System CIs

Changes made to the properties of all types of CIs are discovered by different types of discoveries. For details, see "Run the SAP discovery process" on page 26. Those changes are displayed in the Change report available as a right-click menu option for each one of the relevant CI types. For user interface details, see "CI Change Report Page" in the *Reports*.

Some of the changes made to the SAP Transactions CIs are caused by the corresponding Transport CIs. Those specific changes are processed by impact rules in discovery and are displayed in the SAP Transaction Changes report. The SAP Transaction Changes report displays and track changes made to a SAP Transaction CI when a transport was discovered. For user interface details, see "SAP Transaction Changes Report" on page 59.

4 Display Configuration File information

You can display additional information for the Configuration File CIs. For details, see "Configuration File Page" on page 55.

You can also access this information by selecting **Admin > ODB Administration > Modeling > IT Universe Manager > Properties**. For user interface details, see "Configuration Item Properties Dialog Box" in the *Modeling Guide*.

Reference

Default CIs in the SAP Systems View

The SAP System CIs are listed in the following table:

CI Type (A-Z)	Description
Application Gateway	An Internet Transaction Server (ITS) component. The CI establishes the connection to the R/3 System and performs the processing of tasks that are required to move data between R/3 applications and the Internet.
Business Transaction	These CIs are emulated SAP transactions executed on a Business Process Monitor machine. They are used to supply proactive monitoring of end user experience.
Business Transaction Flow	A logical container that contains all of the Business Transaction CIs attached to all of the SAP transactions.
CCMS Counters	These CIs are information elements, relevant to SAP, retrieved from SAP CCMS (Computer Center Management System).
Client	An organizational and legal CI in the SAP system. The main objective of the client is to keep the data isolated. The data in a client can only be visible within that client; it cannot be displayed or changed by another client. Each client on a system can represent a unique working environment.
Configuration File	The system/servers configuration parameters.
Contained Locations	These CIs are created as part of the Business Process Monitor hierarchy when working with the Transactions/locations option.

CI Type (A-Z)	Description
Database	A database management system holding the data tier, including all of the SAP elements: SAP transactions, programs, work processes, and so on. This is not a SAP-specific CI.
Node	A Node CI represents the physical machine on which a server is installed. This is not a SAP-specific element.
Monitor	SiteScope entities used to monitor the various CIs that exist in the ODB. The monitors that are most likely to appear in the SAP view are host monitors: CPU, memory, disk space, and so on. These monitors appear in the SAP view only if they are manually attached to the Node CI.
R/3 Application Server	SAP R/3 Application Server is SAP's integrated software solution for client/server and distributed open systems. R/3 Application servers and databases are displayed under Nodes. You can also have several levels of hosts under the Nodes CI, SiteScope Monitor CIs, and CCMS Monitor CIs.
SAP Application Component	May include other SAP Application Components and some SAP transactions with some common denominator.
SAP Applications	A logical unit, grouping together Application Components.
SAP System	A logical unit, grouping together SAP-related CIs (and possibly other CIs as well) into one homogeneous SAP deployment.
SAP Transaction	Part of a business process defined in the SAP System. It is comprised of request-response couples called dialog steps. The end user uses SAP transactions to carry out actions on the SAP System.
Solution Manager Projects	Includes SAP Business Project CIs, SAP Scenario CIs, SAP Business Process CIs, and SAP Business Process Step CIs. Solution Manager Projects hierarchy is specified by the user in SAP Solution Manager.

CI Type (A-Z)	Description
Transports	Represents packaged change requests that include the changes that are to be deployed on the system.
Web Gateway	An Internet Transaction Server (ITS) component. A web server extension that establishes the connection between ITS and the Web server and forwards user requests to the Application Gateway.
Work Processes	<p>A logical, single-instance representation of all of the work processes of the same type existing on the R/3 server.</p> <p>Several types of work processes are available:</p> <ul style="list-style-type: none"> ▶ Dialog Work Process. Executes dialog programs (ABAP). ▶ Update Work Process. Responsible for asynchronous database changes (controlled by a COMMIT WORK statement in a dialog work process). ▶ Update2 Work Process. Used for statistical, non-critical updates (for example, result calculations). ▶ Background Work Process. Executes time-dependent or event-controlled background jobs. ▶ Enqueue Work Process. Executes locking operations (if SAP transactions have to synchronize themselves). ▶ Spool Work Process. Performs print formatting (to printer, file, or database).

SAP-Related KPIs

Different Key Performance Indicators (KPIs) are displayed depending on the selected CI. For details on the displayed KPIs, see "Default CIs in the SAP Systems View" on page 50.

The following table lists the SAP-related KPIs displayed in the Console tab:

UI Element (A-Z)	Description
SAP	The SAP KPI indicates problems related to the SAP infrastructure that are reported by CCMS.
Transactions	At the group level, displays the worst status of all of the child CIs. At the monitor level, displays the worst status of the Performance and Availability KPIs for the CI.

The other KPIs displayed in the views are not SAP-related. For more details on those KPIs, see "List of Service Health KPIs" in *Using Service Health*.

SAP-Related Menu Options

A list of all of the shortcut menu options available in the SAP Systems view is available in "Service Health Menu Options" in *Using Service Health*.

Different menu options are available depending on the type of CIs:

- **Show SAP Transport Impact.** For details, see "Show SAP Transport Impact" in *Using Service Health*.
- **Show Impacting SAP Transports.** For details, see "Show Impacting SAP Transports" in *Using Service Health*.
- **SAP Transport Changes.** For details, see "SAP Transport Changes" in *Using Service Health*.
- **SAP Transaction Changes.** For details, see "SAP Transaction Changes" in *Using Service Health*.

Application Management for SAP User Interface

This section describes:

- ▶ Configuration File Page on page 55
- ▶ Show Impacting SAP Transport Transactions Report on page 56
- ▶ Show Impacting SAP Transports Report on page 57
- ▶ Show SAP Transport Impact Report on page 58
- ▶ SAP Transaction Changes Report on page 59
- ▶ SAP Transport Changes Report on page 61

Configuration File Page

This page displays the contents of the configuration file. Details on the SAP configuration file are provided in the SAP product documentation.

The following is an example of the Configuration File page.

```
MI6_DVEBMG500_CALDERONE (read-only)
#parameter created          by: DNISSANI  17.12.2002 20:36:03
login/system_client = 800
SAPSYSTEMNAME = MI6
INSTANCE_NAME = DVEBMG500
SAPSYSTEM = 00
SAPGLOBALHOST = calderone
rdisp/wp_no_dia = 8
rdisp/wp_no_vb = 5
rdisp/wp_no_vb2 = 2
rdisp/wp_no_enq = 1
rdisp/wp_no_btc = 4
rdisp/wp_no_spo = 1
zcsa/system_language = E
PHYS_MEMSIZE = 768

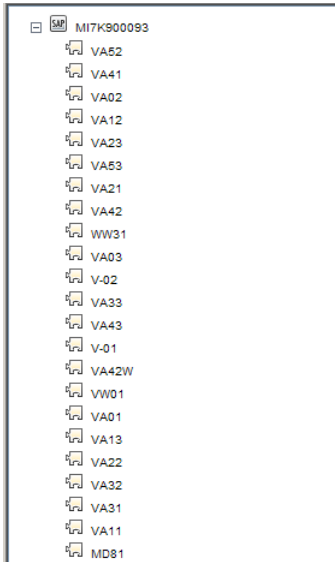
sapgui/user_scripting = TRUE
```


<p>To access</p>	<p>Select Admin > ODB Administration > Modeling > IT Universe Manager, select SAP Systems view, right-click Configuration File CI and invoke its properties, navigate to the DocumentContent property and invoke its value by pressing on the ellipsis button.</p>
-------------------------	---

Show Impacting SAP Transport Transactions Report

This report enables you to display all SAP transactions that are impacted by the selected transport.

The following is an example.



To access	In Service Health, access the SAP Systems view and click the gray arrow  to the right of the CI, or right-click the appropriate CIs and select Show Impacting SAP Transport Transactions .
Important information	For details on impact rules, see "Impact Analysis Manager" in the <i>Modeling Guide</i> .
Relevant tasks	"How to Display SAP Information in Service Health" on page 48

Show Impacting SAP Transports Report

This report enables you to display all of the selected CIs and their child CIs that were affected by any SAP Transport CIs.

The following is an example of the Impacting SAP Transports report.

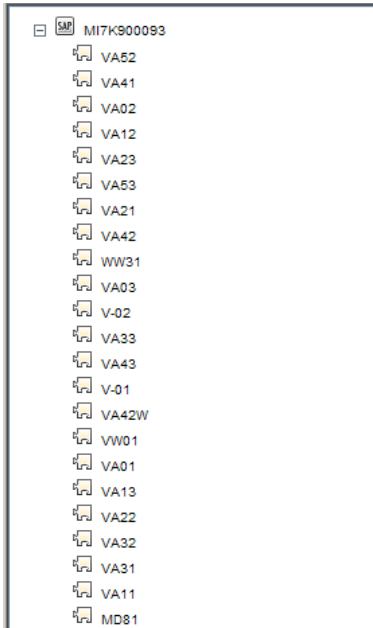



To access	In Service Health, access the SAP Systems view and click the gray arrow ▼ to the right of the CI, or right-click the appropriate CIs and select Show Impacting SAP Transports . For details about the appropriate CIs see Important information .
Important information	<p>"How to Display SAP Information in Service Health" on page 48</p> <p>This option is available for SAP-specific Transaction and group CIs.</p> <p>For Transaction CIs, it enables you to display the transports that are impacting the selected Transaction CI, with no historical limit to the information.</p> <p>Collection CIs represent the following CIs: SAP System and SAP Application Component.</p> <p>For details on impact rules, see "Impact Analysis Manager" in the <i>Modeling Guide</i>.</p>
Relevant tasks	"How to Display SAP Information in Service Health" on page 48

Show SAP Transport Impact Report

This report displays all SAP transactions that are impacted by the selected transport.

The following is an example of the SAP Transport Impact report.

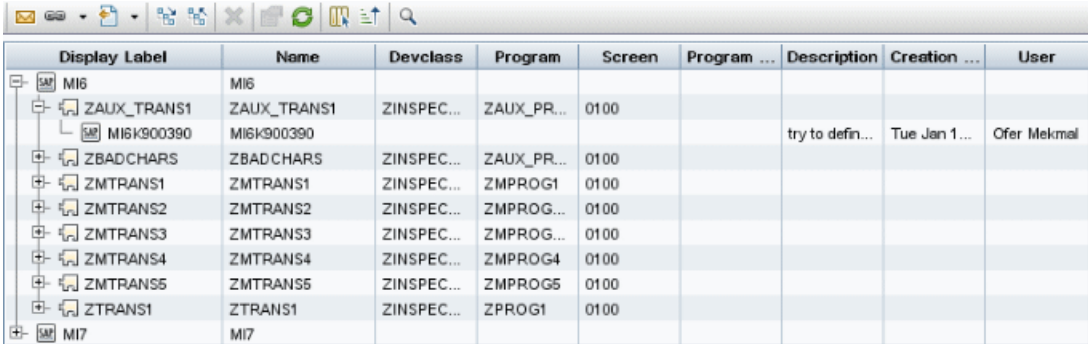


Description	In Service Health, access the SAP Systems view and click the gray arrow  to the right of the CI, or right-click the appropriate CIs and select Show SAP Transport Impact .
Important Information	For details on correlation rules, see "Impact Analysis Manager" in <i>Modeling Guide</i> .
Included in Tasks	"How to Display SAP Information in Service Health" on page 48


SAP Transaction Changes Report

This report enables you to display all the transactions and transport CIs that impact the selected SAP application.

The following is an example of the SAP Transaction Changes report.



Display Label	Name	Devclass	Program	Screen	Program ...	Description	Creation ...	User
MI6	MI6							
└─ ZAUJ_TRANS1	ZAUJ_TRANS1	ZINSPEC...	ZAUJ_PR...	0100				
└─ MI6K900390	MI6K900390					try to defin...	Tue Jan 1...	Ofer Mekmal
└─ ZBADCHARS	ZBADCHARS	ZINSPEC...	ZAUJ_PR...	0100				
└─ ZMTRANS1	ZMTRANS1	ZINSPEC...	ZMPROG1	0100				
└─ ZMTRANS2	ZMTRANS2	ZINSPEC...	ZMPROG...	0100				
└─ ZMTRANS3	ZMTRANS3	ZINSPEC...	ZMPROG...	0100				
└─ ZMTRANS4	ZMTRANS4	ZINSPEC...	ZMPROG4	0100				
└─ ZMTRANS5	ZMTRANS5	ZINSPEC...	ZMPROG5	0100				
└─ ZTRANS1	ZTRANS1	ZINSPEC...	ZPROG1	0100				
MI7	MI7							

To access	In Service Health, access the SAP Systems view and click the gray arrow  to the right of the CI, or right-click a SAP System CI or a SAP Transaction CI and select Reports > SAP Transaction Changes report .
Relevant tasks	"How to Display SAP Information in Service Health" on page 48

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

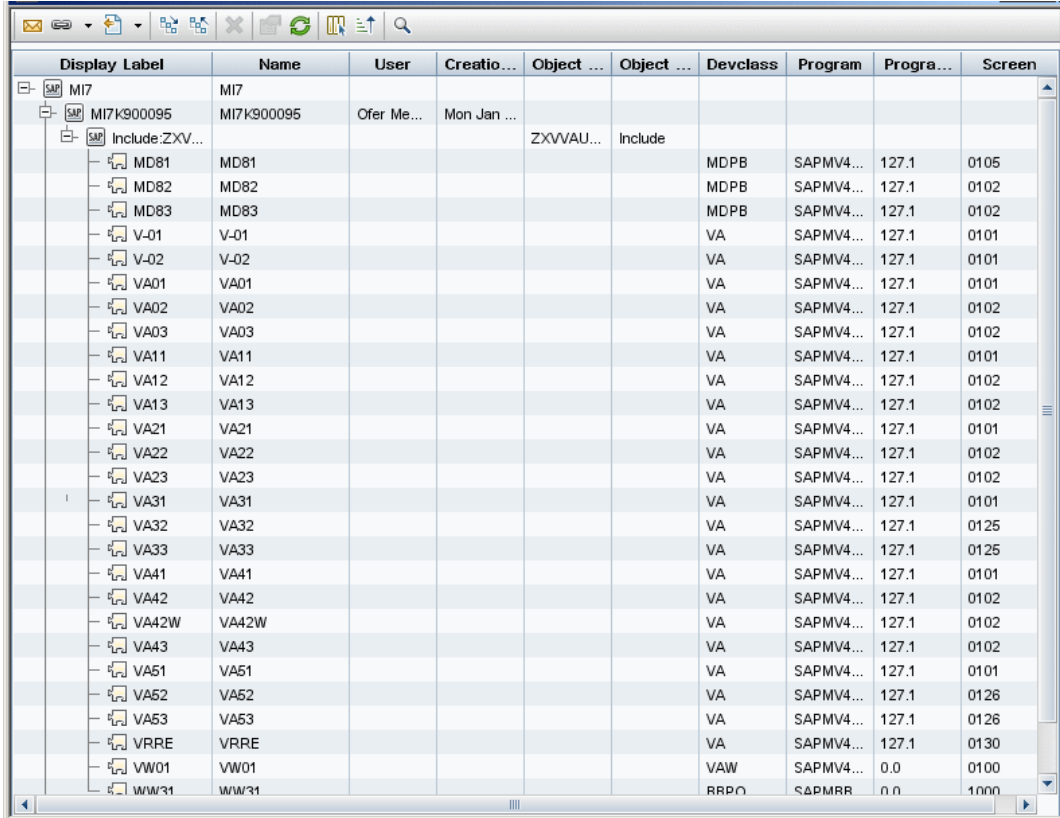
UI Elements (A-Z)	Description
<Common report settings>	See "Common Report and Page Elements" in <i>Reports</i> .
Display Label	The internal name of the CI, and the topology of Transaction and Transport CIs that impact the Application CI.

UI Elements (A-Z)	Description
Name	The name of the CI corresponding to the Application, Transaction, or Transport CI. The name of the SAP transaction that has changed. The name of the transport that has changed.
Devclass	The development class that includes the transaction.
Program	The name of the program that runs the transaction.
Screen	The first screen that opens when you load the transaction.
Description	The description of the transport.
Creation Date	The date when the transport was created.
Program Version	The version of the program that runs the transaction.
User	The name of the user who created the transport.
Target System	The target system for non-local transport.


SAP Transport Changes Report

This report enables you to display all the transport CIs that impact the selected SAP application.

The following is an example of the SAP Transaction Changes report.



Display Label	Name	User	Creatio...	Object ...	Object ...	Devclass	Program	Progra...	Screen
MI7	MI7								
MI7K900095	MI7K900095	Ofer Me...	Mon Jan ...						
Include:ZXV...				ZXVWAU...	Include				
MD81	MD81					MDPB	SAPMV4...	127.1	0105
MD82	MD82					MDPB	SAPMV4...	127.1	0102
MD83	MD83					MDPB	SAPMV4...	127.1	0102
V-01	V-01					VA	SAPMV4...	127.1	0101
V-02	V-02					VA	SAPMV4...	127.1	0101
VA01	VA01					VA	SAPMV4...	127.1	0101
VA02	VA02					VA	SAPMV4...	127.1	0102
VA03	VA03					VA	SAPMV4...	127.1	0102
VA11	VA11					VA	SAPMV4...	127.1	0101
VA12	VA12					VA	SAPMV4...	127.1	0102
VA13	VA13					VA	SAPMV4...	127.1	0102
VA21	VA21					VA	SAPMV4...	127.1	0101
VA22	VA22					VA	SAPMV4...	127.1	0102
VA23	VA23					VA	SAPMV4...	127.1	0102
VA31	VA31					VA	SAPMV4...	127.1	0101
VA32	VA32					VA	SAPMV4...	127.1	0125
VA33	VA33					VA	SAPMV4...	127.1	0125
VA41	VA41					VA	SAPMV4...	127.1	0101
VA42	VA42					VA	SAPMV4...	127.1	0102
VA42W	VA42W					VA	SAPMV4...	127.1	0102
VA43	VA43					VA	SAPMV4...	127.1	0102
VA51	VA51					VA	SAPMV4...	127.1	0101
VA52	VA52					VA	SAPMV4...	127.1	0126
VA53	VA53					VA	SAPMV4...	127.1	0126
VRRE	VRRE					VA	SAPMV4...	127.1	0130
VW01	VW01					VAW	SAPMV4...	0.0	0100
WW31	WW31					BRPO	SAPMRR	0.0	1000

To access	In Service Health, access the SAP Systems view, and click the gray arrow  to the right of the CI, or right-click a SAP System CI or a SAP Transport CI and select Reports > SAP Transport Changes report .
Relevant tasks	"How to Display SAP Information in Service Health" on page 48

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

UI Elements (A-Z)	Description
<Common report settings>	See "Common Report and Page Elements" in <i>Reports</i> .
Creation Date	The date when the transport was created.
Description	The description of the transport.
Devclass	The development class that includes the transaction.
Display Label	The internal name of the CI, and the topology of Transaction and Transport CIs that impact the Application CI.
Name	The name of the transport that has changed.
Object	The change that was made.
Object Type	The object that changed.
Program	The name of the program that runs the transaction.
Program Version	The version of the program that runs the transaction.
Screen	The first screen that opens when you load the transaction.
User	The name of the user who created the transport.

Part II

Integrations

3

Business Service Management Integration with Other Applications

This chapter includes:

Concepts

- Business Service Management Integration with Other Applications Overview on page 66
- HP Network Node Manager (NNMi) on page 67
- HP Operations Manager on page 71
- SiteScope on page 73
- HP Service Manager (SM) on page 77
- HP Operations Orchestration (OO) on page 80
- Release Control (RC) on page 81
- CLIP on page 82
- HP Diagnostics on page 83
- Netscout and Third Party Applications on page 85
- HP Universal CMDB on page 87
- BSM - BSM on page 88

Concepts

Business Service Management Integration with Other Applications Overview

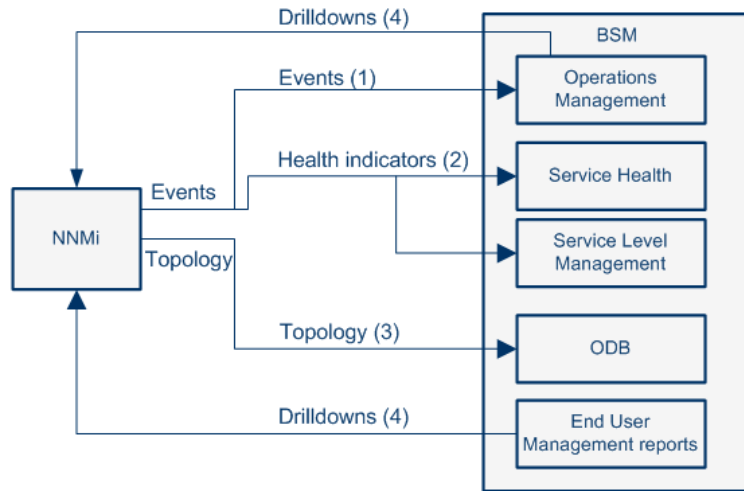
HP Business Service Management has the ability to integrate with BTO products, with applications that are part of Business Service Management, and with external applications.

These integrations enable the flow of data from application to application as well as the flow of events from the applications to Business Service Management and to its Operations Management component, depending on the applications. You can drill down from BSM to some of the relevant applications.

The matrix of supported versions is available in the BSM 9.00 readme.

HP Network Node Manager (NNMi)

This integration provides the following capabilities:



What the Integration Gives You	How the Integration Works	Where to Get the Details
<p>(1) NNMi events -> Operations Management events. If you have an Event Management Foundation license, the NNMi events are displayed in the Event Browser in Operations Management. You can also access the NNMi console from the Operations Management Event Browser.</p> <p>(If BSM is also integrated with HPOM, these events are also displayed in HPOM. You can also access the NNMi console from HPOM.)</p>	<p>The NNMi events are sent via the BSM Integration Adapter to BSM</p> <p>The agent implementation of the HP NNMi—HPOM integration is the preferred solution for integrating HPOM with NNMi.</p>	<p>"HP BSM Operations Management" in the <i>NNMi Deployment Reference</i></p> <p>"HP NNMi—HPOM Integration (Agent Implementation)" in <i>NNMi Deployment Reference</i></p> <p>"HP BSM Integration Adapter" on page 89</p>

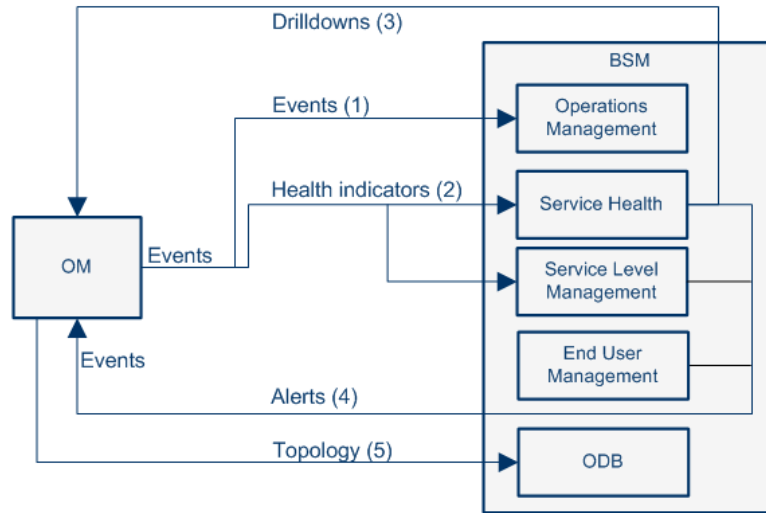
What the Integration Gives You	How the Integration Works	Where to Get the Details
<p>(2) NNMi events -> BSM health indicators. If the NNMi events have corresponding health indicators, the health indicators impact the status of the relevant CIs in applications such as Service Health and Service Level Management.</p>	<p>The NNMi events are sent via the BSM Integration Adapter to BSM</p> <p>The agent implementation of the HP NNMi—HPOM integration is the preferred solution for integrating HPOM with NNMi.</p>	<p>"HP BSM Operations Management" in the <i>NNMi Deployment Reference</i></p> <p>"HP NNMi—HPOM Integration (Agent Implementation)" in <i>NNMi Deployment Reference</i></p> <p>"HP BSM Integration Adapter" on page 89</p>

What the Integration Gives You	How the Integration Works	Where to Get the Details
<p>(3) NNMi topology -> BSM ODB topology. The topology integration populates the BSM operational database (ODB) with the NNMi topology. BSM stores each device in the NNMi topology as a Configuration Item (CI) and includes it in the relevant views.</p>	<p>The topology data flows (are pushed) one way from NNMi to BSM ODB. OMi Infrastructure Content Pack</p>	<p>"Network Node Manager i (NNMi) Integration with HP Business Service Management" in <i>ODB Discovery and Integration Content Guide</i> PDF. This document also includes information on the integration of NNMi with the ODB in BSM. "HP Business Service Management Topology" in the <i>NNMi Deployment Reference</i> "Viewing HP Network Node Manager Data From Real User Monitor Reports" in <i>Using End User Management</i> "Infrastructure Content Packs" in <i>Using Operations Management</i></p>

What the Integration Gives You	How the Integration Works	Where to Get the Details
<p>(4) BSM -> NNMi - drilldown. You can also configure a link to the NNMi management server, that enables you to drill down from various EUM reports to NNMi where you can display trace route information between the client and the destination machine.</p> <p>You can also use URL tools to launch a browser that enables you to connect to the NNMi Management server and further analyze incoming events in NNMi.</p>	<p>The topology data flows (are pushed) one way from NNMi to BSM ODB.</p> <p>OMi Infrastructure Content Pack</p>	<p>"Network Node Manager i (NNMi) Integration with HP Business Service Management" in <i>ODB Discovery and Integration Content Guide</i> PDF. This document also includes information on the integration of NNMi with the ODB in BSM.</p> <p>"HP Business Service Management Topology" in the <i>NNMi Deployment Reference</i></p> <p>"Viewing HP Network Node Manager Data From Real User Monitor Reports" in <i>Using End User Management</i></p> <p>"Infrastructure Content Packs" in <i>Using Operations Management</i></p>

HP Operations Manager

This integration provides the following capabilities:

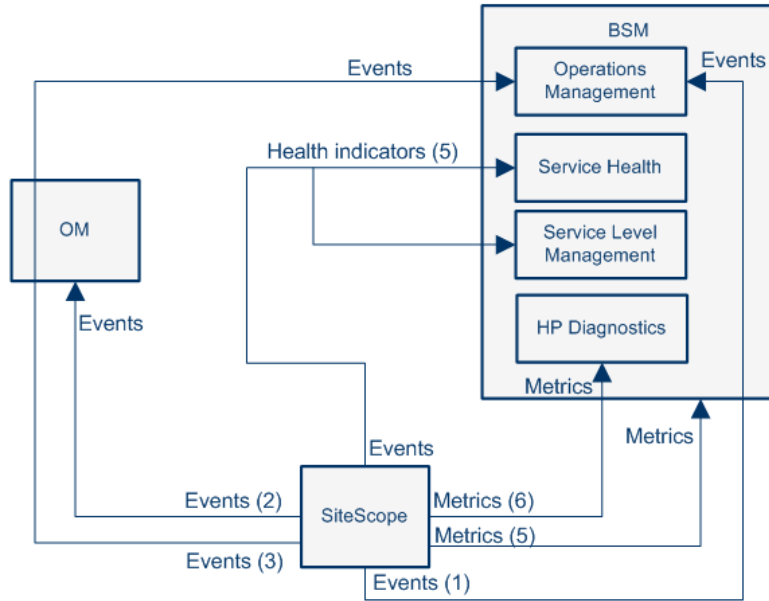


What the Integration Gives You	How the Integration Works	Where to Get the Details
(1) HPOM events -> Operations Management events. If you have an Event Management Foundation license, the events are displayed in the Event Browser in Operations Management.	There is a bi-directional synchronization of events between HPOM and OMi.	"Configure Operations Management Connections" on page 99
(2) HPOM events -> BSM health indicators. If the HPOM events have corresponding health indicators, the health indicators impact the status of the relevant CIs in applications such as Service Health and Service Level Management.	Based on the incoming events from HPOM, corresponding health indicators are set for the related CIs in BSM	"Event Management" in <i>Using Operations Manager i</i> "Service Health Menu Options" in <i>Using Service Health</i>

What the Integration Gives You	How the Integration Works	Where to Get the Details
<p>(3) BSM -> HPOM - Drilldown. In addition, you can drilldown from Service Health to the HPOM application. For details on the drilldown, see "Service Health Menu Options" in <i>Using Service Health</i>.</p>	<p>Based on the incoming events from HPOM, corresponding health indicators are set for the related CIs in BSM</p>	<p>"Event Management" in <i>Using Operations Manager i</i> "Service Health Menu Options" in <i>Using Service Health</i></p>
<p>(4) BSM alerts -> HPOM events. The alert integration enables the display of events triggered by the BSM alerts, in HPOM. When a specific BSM CI Status alert, SLA alert, or EUM alert is triggered, a corresponding event is automatically to the HPOM applications, to proactively alert the operator about a problem in the system.</p>	<p>Alerts are mapped to events using the Event Model</p>	<p>"Generate Events in HP Operations Manager when BSM Alert is Triggered" on page 123</p>
<p>(5) HPOM topology -> ODB topology. If you have the Event Management Foundation license enabled, the OM topology (OM Services) can synchronize with the BSM ODB topology.</p>	<p>OM Services are synchronized with BSM and via corresponding mapping rules transformed into CIs stored in the ODB</p>	<p>"Topology Synchronization" in <i>Using Operations Manager i</i></p>



This integration provides the following capabilities:



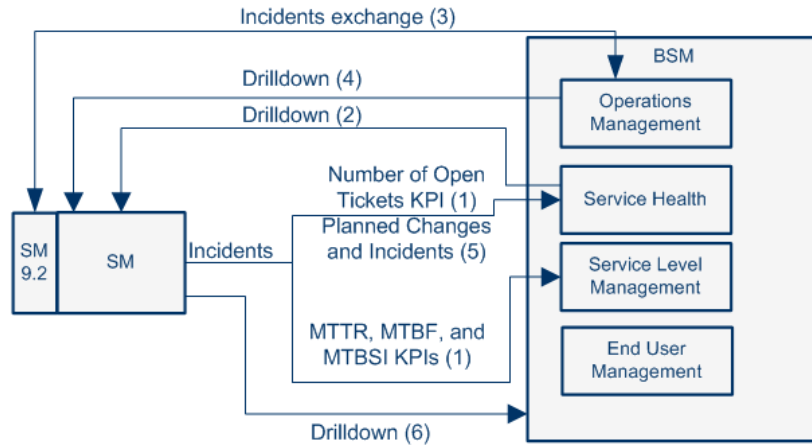
What the Integration Gives You	How the Integration Works	Where to Get the Details
<p>(1) SiteScope events -> Operations Management events. If you have an Event Management Foundation license, the events corresponding to SiteScope metrics status changes and alerts are displayed in the Event Browser in Operations Management.</p>	<p>If SiteScope is configured to report events to HPOM, SiteScope sends data about SiteScope metrics status changes and alerts to HPOM via the SiteScope HP Operations agent technology.</p> <p>The correlation mechanism works to merge the two types of events so there are no repeat events.</p> <p>The alert's data is mapped to events that are opened in HPOM using the OMi Event Model.</p>	<p>"How to Enable SiteScope to Send Events to HPOM or BSM" in <i>Using System Availability Management</i></p>
<p>(2) SiteScope events -> HPOM events. Events generated from SiteScope metrics status changes and alerts are displayed in HPOM.</p>	<p>If SiteScope is configured to report events to HPOM, SiteScope sends data about SiteScope metrics status changes and alerts to HPOM via the SiteScope HP Operations agent technology.</p>	<p>"How to Enable SiteScope to Send Events to HPOM or BSM" in <i>Using System Availability Management</i></p>

What the Integration Gives You	How the Integration Works	Where to Get the Details
<p>(3) SiteScope events -> Operations Management events via HPOM. If you have an Event Management Foundation license, events generated from SiteScope metrics status changes and alerts are sent to Operations Management via HPOM.</p>	<p>If SiteScope is configured to report events to HPOM, SiteScope sends data about SiteScope metrics status changes and alerts to HPOM via the SiteScope HP Operations agent technology.</p> <p>The correlation mechanism works to merge the two types of events so there are no repeat events.</p> <p>SiteScope HP Operations agent (built-in SiteScope).</p>	<p>"How to Enable SiteScope to Send Events to HPOM or BSM" in <i>Using System Availability Management</i></p> <p>"Configure Operations Management Connections" on page 99</p>
<p>(4) SiteScope metrics -> BSM metrics</p>	<p>SiteScope sends metrics in samples to Business Service Management Service Health and Service Level Management</p>	<p>"How to Enable SiteScope to Send Events to HPOM or BSM" in <i>Using System Availability Management</i></p>

What the Integration Gives You	How the Integration Works	Where to Get the Details
<p>(5) SiteScope events -> BSM health indicators. If the SiteScope events have corresponding event type indicators (ETIs), the health indicators impact the status of the relevant CIs in applications such as Service Health and Service Level Management.</p>	<p>SiteScope sends the data directly to Operations Management.</p> <p>The correlation mechanism works to merge the two types of events so there are no repeat events.</p> <p>SiteScope HP Operations agent (built-in SiteScope).</p>	<p>See the <i>HP Business Service Management Deployment Guide</i> PDF in the HP Business Service Management Documentation Library</p>
<p>(6) SiteScope metrics -> HP Diagnostics data. SiteScope forwards metrics to HP Diagnostics, enabling you to see a more complete view of the application servers that are monitored by Diagnostics. The metrics can provide insight into the infrastructure components onto which the application servers are deployed.</p>	<p>SiteScope forwards metrics to HP Diagnostics using Diagnostics Integration Preferences.</p>	<p>"Diagnostics Integration Preferences Dialog Box" in <i>Using SiteScope</i> in SiteScope documentation</p>

HP Service Manager (SM)

The integration of Business Service Management with HP Service Manager provides the following capabilities:



What the Integration Gives You	How the Integration Works	Where to Get the Details
<p>(1) HP Service Manager incidents -> BSM Service Health Number of Open Tickets KPI and Service Level Management MTTR, MTBF, and MTBSI KPIs. HP Service Manager incident raw data is sent to BSM to determine incident management-related metrics such as Number of Open Tickets and the MTTR, MTBF, MTBSI KPIs</p>	<p>Incident raw data is collected by SiteScope monitors and sent to BSM.</p> <p>The relevant topology is created in ODB using the HP Service Manager EMS integration.</p>	<p>"EMS Integration Administration" on page 129</p> <p>Open the main page of the online documentation library, locate the Solutions and Integration column (on the right) and click the HP ServiceCenter/ HP ServiceCenter Integration link.</p>

What the Integration Gives You	How the Integration Works	Where to Get the Details
<p>(2) BSM Service Health -> HP Service Manager - drilldown. From Service Health, the user can drill down to the HP Service Manager ticket using the right-click menu. For details, see "Service Health Menu Options" in <i>Using Service Health</i>.</p>	<p>Incident raw data is collected by SiteScope monitors and sent to BSM. The relevant topology is created in ODB using the HP Service Manager EMS integration.</p>	<p>"EMS Integration Administration" on page 129</p> <p>Open the main page of the online documentation library, locate the Solutions and Integration column (on the right) and click the HP ServiceCenter/ HP ServiceCenter Integration link.</p>
<p>(3) HP Service Manager incidents -> Operations Management incidents attached to events (incident exchange). If you have an Event Management Foundation license, HP Service Manager sends incidents, and their updates, to Operations Management. When an event occurs in Operations Management, the user can attach an incident to the event. The incident data is displayed in the External Information tab in the Event Browser in Operations Management.</p> <p>Operations Management events, and their updates, can automatically (based on rules) or manually be forwarded to HP Service Manager 9.20. The Operations Management Event Browser shows what events have been forwarded and shows detailed information about the corresponding HP Service Manager incident on the External Information tab of the corresponding events.</p>		<p>HP Service Manager documentation</p> <p><i>Using Operations Management</i></p>

What the Integration Gives You	How the Integration Works	Where to Get the Details
<p>(4) Operations Management -> HP Service Manager - drilldown. From Operations Management, the user can drill down to the HP Service Manager ticket from the event in the Event Browser, if configured to do so.</p>		<p>HP Service Manager documentation <i>Using Operations Management</i></p>
<p>(5) HP Service Manager planned changes and incidents -> BSM Service Health. HP Service Manager planned changes and incidents are queried, online, every time the user selects a CI in BSM Service Health Planned Changes and Incident tab, and the information is displayed in that tab.</p>	<p>This integration is based on federating data from HP Service Manager. Incidents and planned changes are federated on demand and presented in Business Service Management.</p>	<p>Open the main page of the online documentation library, locate the Solutions and Integration column (on the right) and click the HP ServiceCenter/ HP ServiceCenter Integration link.</p>
<p>(6) HP Service Manager -> BSM - drilldown. From HP Service Manager 9.20 you can drill down to the BSM Business Impact report.</p>		<p>HP Service Manager documentation</p>

HP Operations Orchestration (OO)

The integration between BSM and OO provides the following capabilities:

What the Integration Gives You	How the Integration Works	Where to Get the Details
<p>Launch OO runbooks from Service Health. Business Service Management provides a number of predefined mappings between CIs and OO run books.</p> <p>This mapping and the integration procedure enable you to manually launch OO run books from the Service Health applications.</p>	<p>In BSM, predefined mappings between CIs and OO run books.</p> <p>Integration procedure</p>	<p>"Predefined Mappings" on page 179</p> <p>"HP Operations Orchestration Integration" on page 171</p>
<p>Launch OO runbooks from Operations Management. If you have an Event Management Foundation license, when an event is opened in Operations Management, if the CI for this event has a run book assigned to it, you can run it manually.</p>	<p>The OO run book parameters are populated using the map to the CI or event attributes.</p>	<p>"Run Book Mapping Configuration Wizard" on page 182</p> <p>"HP Operations Orchestration Integration" on page 171</p>

Release Control (RC)

The integration between BSM and Release Control provides the following capabilities:

What the Integration Gives You	How the Integration Works	Where to Get the Details
<p>Release Control -> Service Health - data. Release Control data sent to Service Health. You can view the Number of Planned Changes, Number of Actual Changes, or Latent (unauthorized) Changes KPIs, in the last 24 hours, for the selected CI in the Changes and Incidents tab in the Service Health 360° tab, in BSM. The information is queried from Release Control every time the user selects a CI in Service Health 360° tab. For details, see "Changes and Incidents Component" in <i>Using Service Health</i>.</p>	<p>BSM receives data about the planned changes, number of actual changes, and latent changes from Release Control using the RCKpiActualChange Adapter, RCKpiLatentChange Adapter, and RCKpiPlannedChangeAdapter provided by Release Control.</p>	<p>"Configure KPIs as Federated in HP Business Availability Center 8.x or Business Service Management 9.x" in <i>HP Release Control User Guide</i></p>
<p>Service Health to Release Control - data. Service Health data is sent to Release Control. You can view the relevant Availability and Performance KPIs (from BSM), for the selected CI in Release Control in the Director module by clicking the KPI button. For details, see RC documentation.</p>	<p>Release Control receives information about all the federated KPIs (for example: availability, performance, and so on) BSM has provided with the BACKPIsAdapter.</p>	<p>"Configure KPIs as Federated in HP Business Availability Center 8.x or Business Service Management 9.x" in <i>HP Release Control User Guide</i></p>

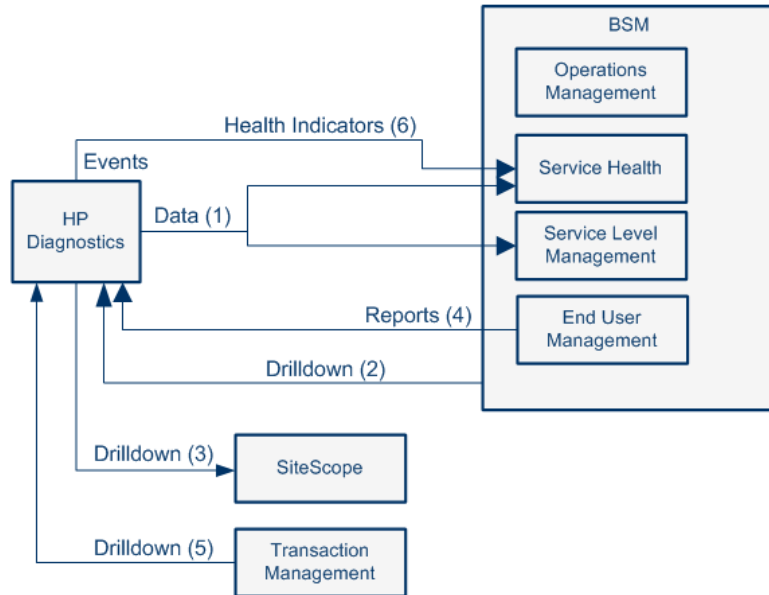
 **CLIP**

CLIP is an integrated solution that brings together HP offerings for IT Service Management (ITSM), Business Service Management (BSM), and Business Service Automation (BSA). It enables integrated processes that allow the IT operations and service desk teams to proactively and quickly predict, detect, and remedy harmful problems that could impact the business. For details, see CLIP documentation.

CLIP 9.0 includes the integrations of CMS 9.0, BSM 9.0, SM 9.2, and OO 7.6/9 (supports both versions).

HP Diagnostics

The integration of BSM applications with HP Diagnostics enables the following capabilities:



What the Integration Gives You	How the Integration Works	Where to Get the Details
(1) HP Diagnostics data -> BSM Service Health. You can view HP Diagnostics data in the Diagnostics View in Service Health and Service Level Management	Integration of HP Diagnostics with BSM	"How to View HP Diagnostics Data in BSM" on page 191
(2) BSM -> HP Diagnostics - drilldown. In BSM, you can drill down to HP Diagnostics.		"Service Health Menu Options" in <i>Using Service Health</i>

What the Integration Gives You	How the Integration Works	Where to Get the Details
<p>(3) HP Diagnostics -> SiteScope - drilldown. You can drill down directly from the HP Diagnostics user interface to SiteScope data directly when working with HP Diagnostics and SiteScope (without Business Service Management).</p>		<p>HP Diagnostics documentation</p>
<p>(4) BSM EUM reports -> HP Diagnostics - drilldown. In BSM End User Management reports, you can drill down to HP Diagnostics to display snapshots of server requests for specific pages.</p>		<p>"Viewing HP Diagnostics Data From End User Management Reports" in <i>Using End User Management</i></p>
<p>(5) BSM Transaction Management -> HP Diagnostics. You can drill down from BSM TV Event Analysis report to the Diagnostics Hosts and Diagnostics Server views.</p>		
<p>(6) Events from HP Diagnostics to health indicators in BSM. Status (coloring) for event-based health indicators is sent to BSM from HP Diagnostics when there is a threshold violation on relevant metrics. Thresholds (on CIs) are set in HP Diagnostics. Metric-based Health Indicators and KPIs use business rules to calculate status based on the data samples sent from Diagnostics.</p>	<p>The threshold violation event data is sent to BSM using the OM agent and IAPA components installed with the Diagnostics Commander Server.</p>	<p>"Integrations" in the <i>HP Diagnostics User's Guide</i></p>

Netscout and Third Party Applications

This section describes the different integrations between BSM and third party applications and points to the relevant documentation for details.

This section describes the following topics:

- "Netscout nGenius" on page 85
- "About BSM Integrations with Third-Party Applications" on page 86

Netscout nGenius

The integration between BSM and Netscout nGenius provides the following capabilities:

What the Integration Gives You	How the Integration Works	Where to Get the Details
<p>Netscout alarms -> KPIs and HIs in BSM Service Health. Packets of data about applications running through specific switches and routers are analyzed by NetScout nGenius. Alarms about problems in these applications are send by Netscout to ODB using the SiteScope NetScout Event monitor and are displayed in the Netscout view in Service Health. The Netscout EMS integration creates the appropriate topology in ODB, and the relevant view in Service Health. The Netscout view includes CIs that represent the application alarms.</p>	<p>SiteScope NetScout Event monitor</p>	<p>"NetScout nGenius Integration" on page 163</p>
<p>BSM Service Health -> Netscout - drilldown. You can drill down from Service Health to Netscout application, from the NetScout View, to view detailed information about the problem.</p>	<p>Right-click menu options</p>	<p>"NetScout nGenius Integration" on page 163</p>

About BSM Integrations with Third-Party Applications

The integration between BSM and third-party applications provides the following capabilities:

What the Integration Gives You	How the Integration Works	Where to Get the Details
<p>Third-party data -> BSM KPIs and HIs. Custom integrations of EMS third-party applications with BSM use the SiteScope Technology Integration monitor to bring metrics from the third-party EMS data sources. The relevant EMS integration creates the appropriate topology in ODB. The data is displayed in EMS-related views, System Availability Management reports, Service Health, and Service Level Management.</p>	<p>SiteScope Technology Integration monitor</p>	<p>"EMS Integration Administration" on page 129</p>
<p>Third-party data -> BSM Operations Manager. If the user has an Event Management Foundation license, third-party sources (for example Microsoft System Center Operations Manager (SCOM), Oracle Enterprise Manager, or other HP products) use the BSM Integration Adapter to configure policies that enable sending events to OMi and seeing these events in the Event Browser.</p> <p>Third-party data -> BSM health indicators. If the third-party events have corresponding health indicators, the health indicators impact the status of the relevant CI in applications such as Service Health and Service Level Management.</p>	<p>BSM Integration Adapter</p>	<p>"HP BSM Integration Adapter" on page 89</p>

 **HP Universal CMDB**

The integration between BSM and HP Universal CMDB provides the following capabilities:

What the Integration Gives You	How the Integration Works	Where to Get the Details
<p>BSM <-> HP Universal CMDB - Topology exchange. BSM integrates with HP Universal CMDB to enable sharing topologies (CIs and relationships) between instances and enabling a consistent CI ID in an environment. This feature is necessary for the integration and for resolving reconciliation issues.</p>	<p>Uses the Configuration Management System (CMS) topology.</p> <p>A single ODB instance is configured to be the CMS and the global ID generator.</p> <p>Synchronization is achieved using the topology sync two options: pull and push.</p>	<p>"Integrating Multiple ODBs" in <i>HP Universal CMDB Data Flow Management Guide</i></p> <p>"Topology Synchronization" in <i>Using Operations Management</i></p>

 **BSM - BSM**

The integration between BSM and BSM provides the following capabilities:

What the Integration Gives You	How the Integration Works	Where to Get the Details
<p>BSM events <-> BSM events. Exchange of events between the BSMs</p>	<p>Event synchronization from domains to BSM.</p> <p>Event synchronization between the tiers.</p> <p>Topology synchronization between the BSMs.</p>	<p>"Integrating Multiple ODBs" in <i>HP Universal CMDB Data Flow Management Guide</i></p> <p>"Topology Synchronization" in <i>Using Operations Management</i></p>

4

HP BSM Integration Adapter

This chapter includes:

Concepts

- ▶ HP BSM Integration Adapter Overview on page 90
- ▶ Policies on page 93

Tasks

- ▶ How to Integrate Events with HP BSM Integration Adapter on page 95

Concepts

HP BSM Integration Adapter Overview

HP BSM Integration Adapter enables you to monitor event sources, and, if certain conditions apply, to forward the detected events as Business Service Management (BSM) events directly to the BSM Operations Management event browser. For BSM Integration Adapter to be able to convert the source events to BSM events, the event sources must make their data available as SNMP traps or in XML-formatted files.

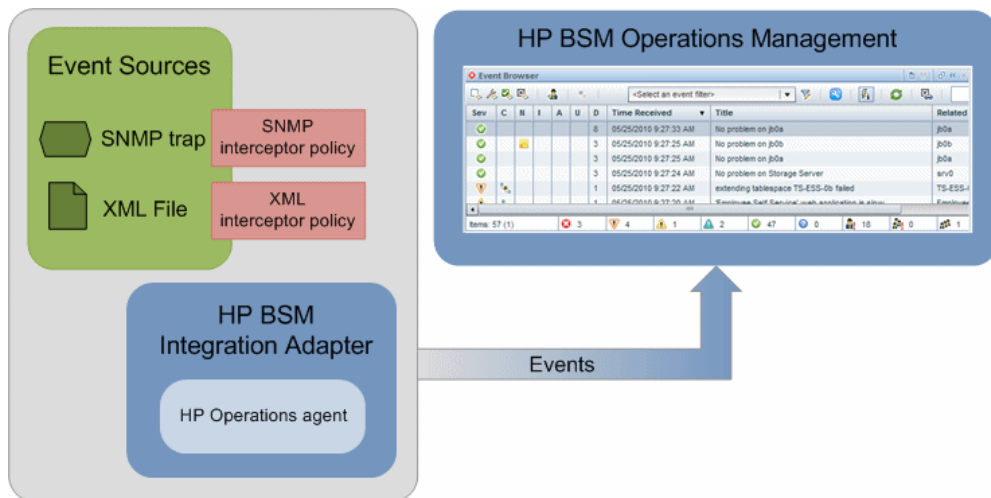
SNMP event sources can range from simple hardware devices that send SNMP traps to sophisticated network management solutions such as HP Network Node Manager i Software (NNMi). (NNMi provides an out-of-the-box integration with BSM Integration Adapter, which converts NNMi incidents to SNMPv2c traps and forwards these SNMPv2c traps as BSM events to the BSM Operations Management event browser. For more information about this integration, see the *NNMi Deployment Guide*.)

BSM Integration Adapter can also monitor XML-formatted files. Because BSM Integration Adapter is agnostic to the content and syntax of the XML files, you can monitor any XML file. (If the application that you want to monitor does not log its events in XML format, consider writing a program or script that diverts and converts the application's output to XML-formatted files.)

Note: BSM provides EMS (Enterprise Management Systems) software to facilitate the integration of data from other applications, both HP and third party. While BSM Integration Adapter is the recommended solution for integrating events into BSM, HP recommends that you use EMS to integrate other types of data, for example, metric data. See the *BSM Solutions and Integrations* for more information.

If you have the OMi license, in the context of Operations Management, the the BSM Operations Management event browser can receive events from HP Operations Manager (HPOM), or directly from BSM Integration Adapter. BSM Integration Adapter is the preferred method for sending events to Operations Management for new event integrations, if there is no need to use the HPOM event processing capabilities or console, or if HPOM is not part of the BSM deployment. For more information about deploying BSM, see the *HP Business Service Management Deployment Guide* PDF.

BSM Integration Adapter includes the HP Operations agent. The HP Operations agent collects and monitors the data on the event source, enriches these events with information that is meaningful to BSM users, and sends the events to BSM where they display in the Operations Management event browser. BSM Integration Adapter uses policies to configure the agent. For each policy, you decide what kinds of events to monitor, how often to monitor, what to look for in the events, and what to do if certain events are detected. The event flow from the event source through BSM Integration Adapter to BSM is as follows:

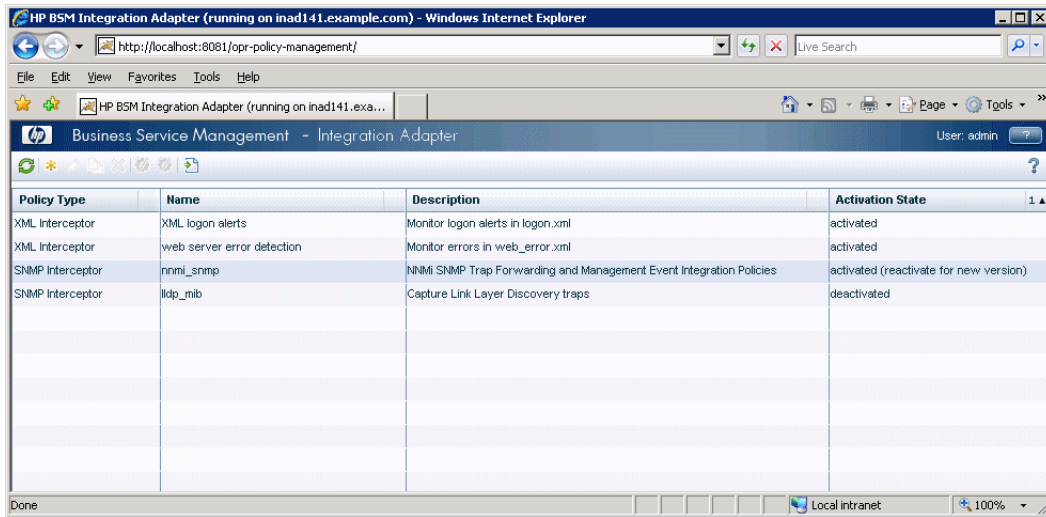


HP Operations agents and BSM communicate using HTTPS, which is secure, reliable, and simplifies firewall configuration.

You typically install BSM Integration Adapter on the computer that provides the input events. For example, to integrate NNMi events into BSM, install BSM Integration Adapter on the NNMi management server.

The BSM Integration Adapter user interface is web based; you can therefore access it from anywhere using a supported web browser.

The BSM Integration Adapter user interface is as follows:



For more information about BSM Integration Adapter, see the documentation provided with the product.

 **Policies**

Policies are collections of configuration information that BSM Integration Adapter uses to configure the HP Operations agent to perform monitoring tasks. When you develop policies, you decide what kinds of events to monitor, how often to monitor, what to look for in the events, and what to do if certain events are detected.

BSM Integration Adapter enables you to create and edit policies to capture SNMP events and monitor XML files. You can import policies developed on other servers, for example, HP Operations Manager (HPOM) management servers, HP Network Node Manager i Software (NNMi) management servers, or other BSM Integration Adapter servers.

Note: NNMi provides an SNMP interceptor policy that you can import into the BSM Integration Adapter policy repository. The policy includes an SNMPv2 trap definition for each of the management events and SNMP traps in the current NNMi configuration. For more information about the BSM Integration Adapter—NNMi integration, see the *NNMi Deployment Reference*.

Integrating Events with XML Interceptor Policies

XML interceptor policies are especially suited for integrating events from other applications. XML interceptor policies process XML files and send events to the Operations Management event browser when certain conditions apply. You can define the attributes of the BSM event based on information in the XML file. This enables you to process events generated by the applications and to convert them to BSM events.

XML interceptor policies process exactly the XML elements and attributes that you define. The XML syntax is not important to the policy, as long as the event information is embedded in XML elements and attributes.

If the application does not store its events in XML files, you may need to write a program or script that extracts the events from wherever they are stored, formats the data using XML syntax, and generates an XML file with the events. If you have control over the XML elements that are used in the XML file, choose XML elements and attributes that map to event attributes and values. This will simplify the policy.

Tasks

How to Integrate Events with HP BSM Integration Adapter

This task describes how to integrate events into BSM using BSM Integration Adapter. For more information about each task, refer to the corresponding documentation.

This task includes the following steps:

- "Install and configure BSM Integration Adapter" on page 96
- "Choose the policy type" on page 96
- "Activate the policies in BSM Integration Adapter" on page 97
- "Set up Configuration Items in BSM - optional" on page 97
- "Build an integration package - optional" on page 97

1 Install and configure BSM Integration Adapter

Use the *HP BSM Integration Adapter Installation and Configuration Guide* to install and configure BSM Integration Adapter on the computer that serves as event source. During the configuration process you establish the connection between BSM Integration Adapter and BSM.

2 Choose the policy type

BSM Integration Adapter enables you to create and edit policies to capture SNMP events and monitor XML files. You can import policies developed on other servers, for example, HP Operations Manager (HPOM) management servers, HP Network Node Manager i Software (NNMi) management servers, or other BSM Integration Adapter servers.

- Create new SNMP or XML interceptor policies in BSM Integration Adapter.

You can use the BSM Integration Adapter user interface to create new SNMP and XML interceptor policies. For more information, see the BSM Integration Adapter online help.

Note: If your event source does not provide data in XML file format, you may need to write a program or script that converts the event data to XML format. See also "Integrating Events with XML Interceptor Policies" on page 94.

- Import policies.

Policies that you import into the BSM Integration Adapter policy repository must support the XML-based policy exchange format. For more information about importing policies, see the BSM Integration Adapter online help.

3 Activate the policies in BSM Integration Adapter

When you create a new policy or import a policy, the policy exists in the BSM Integration Adapter policy repository but does not function yet. You must first activate the policy for it to start monitoring the corresponding event source. For more information, see the BSM Integration Adapter online help.

4 Set up Configuration Items in BSM - optional

BSM tries to associate the events that it receives with a configuration item (CI) using CI resolution. This is not possible if the computer on which the event occurred is not set up as a CI in BSM. For more information about CI resolution, see "CI Resolution" in *Using Operations Management*. For more information, see "Create CIs and Relationships in the ODB" in the *Modeling Guide*.

5 Build an integration package - optional

If you plan to deploy your integration to more than one system, consider creating an integration package that includes:

- If necessary for XML interceptor policies, program or script that diverts input events to an XML file.
- BSM Integration Adapter software.
- Policies. You can find the policies in the following folders on the BSM Integration Adapter server:
 - Windows: %OvDataDir%\datafiles\policymanagement\store
 - Linux: /var/opt/OV/datafiles/policymanagement/store

5

Configure Operations Management Connections

This chapter includes:

Concepts

- ▶ Configure Operations Management Connections - Overview on page 100

Tasks

- ▶ How to Configure Operations Management Connections on page 101
- ▶ How to Add Gateway Servers as Nodes to HPOM for Windows on page 103
- ▶ How to Add Gateway Servers as Nodes to HPOM for UNIX on page 105
- ▶ How to Establish a Trust Relationship between BSM and External Servers on page 106
- ▶ How to Verify the Trusted Relationship Between the BSM Processing Server and an External Server on page 108
- ▶ How to Configure the HPOM for Windows Forwarding Policy on page 109
- ▶ How to Configure the HPOM for UNIX Forwarding Policy on page 113
- ▶ How to Import Content Packs on page 117
- ▶ How to Validate Event Synchronization on page 118
- ▶ How to Limit the Number of CIs that BSM Evaluates on page 121
- ▶ How to Synchronize the Topology on page 121

Concepts

Configure Operations Management Connections - Overview

After you have installed both BSM and HP Operations Manager (HPOM), you must follow the procedures described in this chapter to connect BSM and HPOM. This connection allows bi-directional synchronization of events between the two systems. The connection configuration requires you to add the BSM Gateway Servers as HPOM nodes, establish a trust relationship between BSM and the HPOM systems, and configure a message forwarding policy.

Note: You must have an OMi license to use this functionality.

Supported HPOM versions

Operations Management can connect to these versions of HPOM:

- HPOM for Windows 8.10 or 8.16 with patches 57, 58 (or superseding)
- HPOM for UNIX 9.00 or 9.10

Patch levels can change. Refer to <http://support.openview.hp.com/> to ensure that the HPOM management server has all the latest patches.

Tasks

How to Configure Operations Management Connections

This task describes how to configure Operations Management connections

This task includes the following steps:

- "Add Gateway servers as nodes to HPOM" on page 101
- "Establish a Trust relationship between BSM and external servers" on page 102
- "Configure the HPOM forwarding policy" on page 102
- "Import content packs" on page 102
- "Validate event synchronization" on page 103
- "Limit the number of CIs that BSM evaluates" on page 103
- "Synchronize the topology" on page 103

1 Add Gateway servers as nodes to HPOM

To issue certificates to HP Business Service Management systems and establish an SSL trust relationship, you must add all Gateway Servers as nodes to HPOM.

- **HPOM for Windows.** For task details, see "How to Add Gateway Servers as Nodes to HPOM for Windows" on page 103.
- **HPOM for UNIX.** For task details, see "How to Add Gateway Servers as Nodes to HPOM for UNIX" on page 105.

2 Establish a Trust relationship between BSM and external servers

For connection and communication between BSM and external servers such as HPOM hosts, other BSM hosts where Operations Management is running, Load Balancers, or a BSM 9.00 Server with an event channel license, you must establish a trust relationship between the various machines.

For task details, see "How to Establish a Trust Relationship between BSM and External Servers" on page 106.

To verify the trusted relationship, see "How to Verify the Trusted Relationship Between the BSM Processing Server and an External Server" on page 108.

3 Configure the HPOM forwarding policy

To allow event synchronization between HPOM and BSM, you must set up a message forwarding policy on the HPOM management server with the node name of the load balancers, if configured, or one Gateway Server for each BSM installation, as appropriate for your high availability arrangement.

- **HPOM for Windows.** For task details, see "How to Configure the HPOM for Windows Forwarding Policy" on page 109.
- **HPOM for UNIX.** For task details, see "How to Configure the HPOM for UNIX Forwarding Policy" on page 113.

4 Import content packs

The Operations Management application in BSM uses content packs to exchange customized configuration data between instances of the BSM installations. You must import the relevant content packs.

For task details, see "How to Import Content Packs" on page 117.

5 Validate event synchronization

You must validate event synchronization and test the connection between HPOM and BSM.

For task details, see "How to Validate Event Synchronization" on page 118.

6 Limit the number of CIs that BSM evaluates

The fewer CIs that the CI-resolver has to process, the better performance you will experience with OMi.

For task details, see "How to Limit the Number of CIs that BSM Evaluates" on page 121.

7 Synchronize the topology

To populate the ODB with configuration item (CI) data from HPOM, you need to perform the synchronization before you have received too many events.

For task details, see "How to Synchronize the Topology" on page 121.

How to Add Gateway Servers as Nodes to HPOM for Windows

To issue certificates to HP Business Service Management systems and establish an SSL trust relationship, you must add all Gateway Servers as nodes to HPOM. This trust relationship is necessary for event synchronization and topology synchronization between the HP Business Service Management and HPOM systems.

To add the BSM Gateway Servers as nodes to HPOM for Windows, complete the following steps for each Gateway Server:

- 1** On the HPOM for Windows system, start the HPOM for Windows console as follows:
Start > Programs > HP > HP Operations Manager
- 2** Click **HP Operations Manager Console**.

- 3 Right-click **Nodes** and select **Configure > Nodes**.

The **Configure Managed Nodes** dialog box opens.

- 4 Right-click **Managed Nodes** in the right pane and select **New Node**.

The Base Settings dialog box opens.

- 5 Enter the fully qualified domain name and the display name of the BSM Server that you want to add to HPOM for Windows.

- 6 Select **Enter manually** and click **Next**.

The OS Setup dialog box opens.

- 7 In the System Type field, select **x86/x64 Compatible**.

- 8 Select the appropriate values for Operating System, Bit Length, and Version and click **Next**.

The Advanced Settings dialog box opens.

- 9 *Optional:* Enter a description for the node you are creating.

- 10 Clear the check box **Automatic deployment of policies and packages**.

- 11 Click **Finish** to close the Advanced Settings dialog box and return to the Configure Managed Nodes dialog box.

- 12 In the Configure Managed Nodes dialog box, click **OK**.

- 13 In the Agent Installation dialog box that opens, click **Cancel**.

The Agent Installation dialog box closes and the BSM system is added to the list of nodes in HPOM for Windows.

- 14 Repeat this procedure for all other BSM servers.

How to Add Gateway Servers as Nodes to HPOM for UNIX

To be able to issue certificates to BSM systems and establish an SSL trust relationship, you must add all Gateway Servers as nodes to HPOM. This trust relationship is necessary for event synchronization and topology synchronization between the BSM and HPOM systems.

When you add any BSM system as a node in HPOM, you must decide which operators should monitor this integration and to which node groups you want to add the BSM systems.

All the events that relate to the integration between BSM and HPOM and are generated on HPOM belong to the message group `OpC`.

To add the BSM Gateway Servers as nodes to HPOM, complete the following steps for each Gateway Server:

- 1** On the HPOM system, open a command shell.
- 2** Add the BSM server as a managed node to the node bank and to the required node groups with the following command:

```
opcnode -add_node node_name=<BSM server fully qualified hostname>  
net_type=NETWORK_IP mach_type=MACH_BBC_WIN2K3_X64  
group_name=hp
```

The machine type value for the supported platform (64-bit operating systems only) is:

```
MACH_BBC_WIN2K3_X64
```

Note: The fully-qualified domain name in two-machine and multi-machine deployment is the domain name of a Gateway Server, for example, `HPGwSrv.example.com`.

How to Establish a Trust Relationship between BSM and External Servers

For connection and communication between BSM and external servers such as HPOM hosts, other BSM hosts where Operations Management is running, Load Balancers, or a BSM 9.00 Server with an event channel license, you must establish a trust relationship between the various machines.

If you have a one-machine deployment, then the separate configuration for gateway server is not necessary. In this case, skip to, "To establish a trust relationship between the Processing Server and external servers."

To set up certificates on a separate Gateway Server do the following:

1 On the BSM Gateway Server, execute the following commands:

```
ovconfchg -ns sec.cm.client -set CERTIFICATE_SERVER  
<processing_server>
```

and:

```
ovcert -certreq
```

2 On the BSM Processing Server, execute the following commands:

```
ovcm -listpending -l
```

and:

```
ovcm -grant <reqid>
```

3 On the BSM Gateway Server, execute the following commands:

```
ovcert -list
```

and:

```
bbcutil -ping <processing_server>
```

To establish a trust relationship between the Processing Server and external servers, do the following:

1 On the BSM Processing Server, execute the following command:

```
ovcert -exporttrusted -file omi.cert
```

2 On the external machine, execute the following command:

```
ovcert -exporttrusted -file other.cert
```

3 Copy **other.cert** from the external machine to the BSM Processing Server.

4 Copy **omi.cert** from the BSM Processing Server to the external server.

5 On the BSM Processing Server, execute the following commands:

```
ovcert -importtrusted -file other.cert
```

and:

```
ovcert -importtrusted -file other.cert -ovrg server
```

6 On the external server, execute the following commands:

```
ovcert -importtrusted -file omi.cert
```

and:

```
ovcert -importtrusted -file omi.cert -ovrg server
```

7 On all Gateway Servers, execute the following commands:

```
ovcert -updatetrusted
```

Note: If BSM is required to issue certificates, for example, for an Integration Adapter, then the Gateway Servers must be configured to forward all incoming requests to the Processing Server. The Processing Server must be configured in the Operations Management Infrastructure Settings:

Applications > Operations Management > Certificate Server Settings > Certificate Server Host

How to Verify the Trusted Relationship Between the BSM Processing Server and an External Server

After establishing a trust relationship between the BSM Processing Server and external machines, check the connection between the two systems.

To check the connection between the BSM Processing Server and an external machine, do the following:

- 1 From the external host, verify that communication to the BSM installation is possible (the return value should be `eServiceOk`) by executing the following command on the Gateway Server for single Gateway Server deployments or the Load Balancer for multiple Gateway Server deployments:

```
bbcutil -ping https://<HP BSM load_balancer or single_gateway_server>
```

Example of the command result:

```
https://<HP BSM servername>: status=eServiceOK  
coreID=7c66bf42-d06b-752e-0e93-e82d1644cef8 bbcV=06.10.105  
appN=ovbbccb appV=06.10.105 conn=1 time=1094 ms
```

- 2 From the HP BSM Processing Server host, verify that communication with the external server host is possible (the return value should be `eServiceOk`) by executing the following command:

```
bbcutil -ping https://<external server hostname>
```

Example of the command result:

```
https://<HP BSM servername>: status=eServiceOK  
coreID=0c43c032-5c94-7535-064a-f7654a86f2d3 bbcV=06.10.070  
appN=ovbbccb appV=06.10.070 conn=7 time=140 ms
```

How to Configure the HPOM for Windows Forwarding Policy

To allow event synchronization between HPOM and HP BSM, you must set up a message forwarding policy on the HPOM management server with the node name of the load balancers, if configured, or one Gateway Server for each BSM installation, as appropriate for your high availability arrangement.

Before setting up a policy and to avoid overwriting the current settings, verify whether a policy of the type **Server-based Flexible Management** is already active on the HPOM for Windows server. If a policy does not exist, create a new policy as described in the section "Create a New Policy (New Installation Only)" on page 109. If a policy already exists and is active, adapt the policy as described in the section "Adapt an Active Policy" on page 111.

Create a New Policy (New Installation Only)

To set up a new policy on HPOM for Windows, complete the following steps:

- 1** Start the HPOM for Windows console as follows:
Start > Programs > HP > HP Operations Manager
- 2** In the left pane of the HPOM for Windows console, select the following:
Policy management > Server policies grouped by type > Server-based Flexible Management
- 3** Right-click **Server-based Flexible Management** (or a blank space in the right pane) and select **New > Policy**.

The Server-based Flexible Management Editor dialog opens.

- 4 In the **General** tab text pane, insert the following policy text:

```
TIMETEMPLATES
# none

RESPMGRCONFIGS
RESPMGRCONFIG DESCRIPTION "Forward all messages to OMi"
SECONDARYMANAGERS
ACTIONALLOWMANAGERS

MSGTARGETRULES
MSGTARGETRULE DESCRIPTION "Forward all messages rule"
MSGTARGETRULECONDS
MSGTARGETRULECOND DESCRIPTION "Forward all messages"

MSGTARGETMANAGERS
MSGTARGETMANAGER
TIMETEMPLATE "$OPC_ALWAYS"
OPCMGR IP 0.0.0.0 "<HP BSM 9.00 fully qualified host name>"
```

Note: This forwards all messages to the Operations Management application in BSM. If you want to reduce the number of messages to be sent, see “Server-based Flexible Management” in the HPOM documentation and modify the text of the policy, so that only a selected subset of messages is sent to Operations Management.

- 5 Replace *<HP BSM fully qualified host name>* in the policy text with the fully-qualified hostname of the Gateway server to receive HPOM messages (for example, HPGwSrv.example.com).

In deployments involving a load balancer, a NAT device, or a reverse proxy, use the fully qualified hostname of the system used to access the Gateway server (for example, VirtualSrv.example.com).

For details about load balancing and high availability, see "High Availability for HP Business Service Management" in the *HP Business Service Management Deployment Guide* PDF.

- 6 Click **Check Syntax** to check for syntax errors in the new policy text.

- 7** After correcting any syntax errors, click **Save and Close**.
- 8** In the Save As dialog box that opens, enter a name and description for the new policy.
- 9** Click **OK** to close the Save As dialog.
- 10** From the Policy Management folder, right-click the policy and select:
All Tasks > Deploy on
The Deploy server policy on dialog box opens.
- 11** In the Deploy server policy on dialog box, select the name of your HPOM management server.
- 12** Click **OK** to deploy the server-based flexible management policy on the HPOM for Windows management server.

Adapt an Active Policy

If a message-forwarding policy already exists on the HPOM for Windows system, perform the following instructions to edit this policy and add another message target manager to it.

- 1** Start the HPOM for Windows console as follows:
Start > Programs > HP > HP Operations Manager
- 2** In the left pane of the HPOM for Windows console, select the following:
Policy management > Server policies grouped by type > Server-based Flexible Management
- 3** In the right pane of the HPOM for Windows console, double-click the existing policy that you want to edit. The Server-based Flexible Management Editor dialog opens.

- 4 Add another message target manager as shown in the following example policy text:

```
TIMETEMPLATES
# none

RESPMGRCONFIGS
RESPMGRCONFIG DESCRIPTION "Forward all messages to OMi"
SECONDARYMANAGERS
ACTIONALLOWMANAGERS

MSGTARGETRULES
MSGTARGETRULE DESCRIPTION "Forward all messages rule"
MSGTARGETRULECONDS
MSGTARGETRULECOND DESCRIPTION "Forward all messages"

MSGTARGETMANAGERS
MSGTARGETMANAGER
TIMETEMPLATE "$OPC_ALWAYS"
OPCMGR IP 0.0.0.0 "<First Target Manager>"

MSGTARGETMANAGER
TIMETEMPLATE "$OPC_ALWAYS"
OPCMGR IP 0.0.0.0 "<HP BSM fully qualified host name>"
```

Note: This forwards all messages to the Operations Management application in BSM. If you want to reduce the number of messages to be sent, see “Server-based Flexible Management” in the HPOM documentation and modify the text of the policy, so that only a selected subset of messages is sent to Operations Management.

- 5 Replace *<HP BSM fully qualified host name>* in the text with the fully qualified hostname of the Gateway server that should receive HPOM messages (for example, HPGwSrv.example.com).

In deployments involving a load balancer, a NAT device, or a reverse proxy, use the fully-qualified hostname of the system used to access the Gateway server (for example, VirtualSrv.example.com).

For details about load balancing and high availability, see "High Availability for HP Business Service Management" in the *HP Business Service Management Deployment Guide* PDF.

6 Click **Check Syntax** to check for syntax errors in the new policy text.

7 After correcting any syntax errors, click **Save and Close**.

Redeploy the server-based flexible management policy on the HPOM for Windows management server.

How to Configure the HPOM for UNIX Forwarding Policy

To allow event synchronization between HPOM and the Operations Management application in BSM, you must set up a message forwarding policy on each HPOM management server with the node name of the load balancer, if configured, or one Gateway Server, as appropriate for your high-availability arrangement.

Before setting up a policy and to avoid overwriting the current settings, verify whether the **msgforw** message forwarding policy is already active on the HPOM server. If the **msgforw** message forwarding policy does not exist, create a new policy as described in the section "Create a New Policy (New Installation Only)" on page 113. If the **msgforw** message forwarding policy already exists and is active, adapt the policy as described in the section "Adapt an Active Policy" on page 115.

Create a New Policy (New Installation Only)

To set up a new message forwarding policy on HPOM, complete the following steps:

1 Change to the `work_respmgrs` directory as follows:
`cd /etc/opt/OV/share/conf/OpC/mgmt_sv/work_respmgrs/`

Note: Policy template files can be found in:
`/etc/opt/OV/share/conf/OpC/mgmt_sv/tmpl_respmgrs`

- 2 Create a new policy file using the following command:

```
vi <policy file name>
```

- 3 Insert the following text in new policy file:

```
TIMETEMPLATES
# none

RESPMGRCONFIGS
RESPMGRCONFIG DESCRIPTION "Forward all messages to OMi"
SECONDARYMANAGERS
ACTIONALLOWMANAGERS

MSGTARGETRULES
MSGTARGETRULE DESCRIPTION "Forward all messages rule"
MSGTARGETRULECONDS
MSGTARGETRULECOND DESCRIPTION "Forward all messages"

MSGTARGETMANAGER
TIMETEMPLATE "$OPC_ALWAYS"
OPCMGR IP 0.0.0.0 "<HP BSM fully qualified host name>"
```

Note: This forwards all messages to the Operations Management application in BSM. If you want to reduce the number of messages to be sent, see “Server-based Flexible Management” in the HPOM documentation and modify the text of the policy, so that only a selected subset of messages is sent to the Operations Management application.

- 4 Replace <HP BSM fully qualified host name> in the text with the fully qualified hostname of the Gateway server that should receive HPOM messages (for example, HPGwSrv.example.com).

In deployments involving a load balancer, a NAT device, or a reverse proxy, use the fully qualified hostname of the system used to access the Gateway server (for example, VirtualSrv.example.com).

For details about load balancing and high availability, see "High Availability for HP Business Service Management" in the *HP Business Service Management Deployment Guide* PDF.

- 5 Enter the following command to check for syntax errors in the new policy text:

```
/opt/OV/bin/OpC/opcmomchk -msgforw <policy file name>
```

- 6 After correcting any syntax errors, copy the policy to the **msgforw** policy file in the **respmgrs** directory as follows:

```
cp <policy file name> /etc/opt/OV/share/conf/OpC/mgmt_sv/  
respmgrs/msgforw
```

- 7 Restart the server processes as follows:

```
/opt/OV/bin/OpC/opcsv -stop
```

```
/opt/OV/bin/OpC/opcsv -start
```

Message forwarding from HPOM to BSM is now configured and enabled.

Adapt an Active Policy

If the message forwarding policy already exists on the HPOM system, perform the following instructions to edit this policy and add another message target manager to it:

- 1 Change to the **work_respmgrs** directory as follows:

```
cd /etc/opt/OV/share/conf/OpC/mgmt_sv/work_respmgrs/
```

Note: Policy template files can be found in:

```
/etc/opt/OV/share/conf/OpC/mgmt_sv/tmpl_respmgrs/
```

- 2 Edit the existing policy to which you want to add the BSM server as a target as follows:

```
vi <policy file name>
```

- 3 Add another message target manager as shown in the following policy text:

```
TIMETEMPLATES
# none

RESPMGRCONFIGS
RESPMGRCONFIG DESCRIPTION "Forward all messages to OMi"
SECONDARYMANAGERS
ACTIONALLOWMANAGERS

MSGTARGETRULES
MSGTARGETRULE DESCRIPTION "Forward all messages rule"
MSGTARGETRULECONDS
MSGTARGETRULECOND DESCRIPTION "Forward all messages"

MSGTARGETMANAGERS
MSGTARGETMANAGER
TIMETEMPLATE "$OPC_ALWAYS"
OPCMGR IP 0.0.0.0 "<First Target Manager>"

MSGTARGETMANAGER
TIMETEMPLATE "$OPC_ALWAYS"
OPCMGR IP 0.0.0.0 "<HP BSM fully qualified host name>"
```

Note: This policy forwards all messages to the Operations Management application in BSM. If you want to reduce the number of messages to be sent, see “Server-based Flexible Management” in the HPOM documentation and modify the text of the policy, so that only a selected subset of messages is sent to BSM.

- 4 Replace *<HP BSM fully qualified host name>* in the text with the fully qualified hostname of the Gateway Server system that should receive HPOM messages (for example, HPGwSrv.example.com).

In deployments involving a load balancer, a NAT device, or a reverse proxy, use the fully qualified hostname of the system used to access the Gateway Server system (for example, VirtualSrv.example.com).

For details about load balancing and high availability, see "High Availability for HP Business Service Management" in the *HP Business Service Management Deployment Guide* PDF.

- 5 Enter the following command to check for syntax errors in the new policy text:

```
/opt/OV/bin/OpC/opcmomchk -msgforw <policy file name>
```

- 6 After correcting any syntax errors, copy the policy to the **msgforw** policy file in the **respmgrs** directory as follows:

```
cp <policy file name> /etc/opt/OV/share/conf/OpC/mgmt_sv/  
respmgrs/msgforw
```

- 7 Restart the server processes as follows:

```
/opt/OV/bin/OpC/opcsv -stop
```

```
/opt/OV/bin/OpC/opcsv -start
```

Message forwarding from HPOM to Operations Management is now configured and enabled.

How to Import Content Packs

This section provides you with instructions about how to import content packs. These are stored on the Data Processing Server machines.

The Operations Management application in BSM uses content packs to exchange customized configuration data between instances of the BSM installations. A content pack can contain a complete snapshot of all (or any part of) rules, tools, mappings, and assignments that you define and configure.

For more details about content packs and the Content Manager, see "Content Packs" in *Platform Administration*.

To import content packs, complete the following steps:

- 1 In BSM, select:
Admin > Platform > Content Manager
- 2 In the Content Pack Definitions toolbar, click **Import a Content Pack**.

- 3 From the Import Content Pack dialog, browse to the location of the content packs (default: <HPBSM_install_dir>\conf\opr\content\en).
- 4 Select a content pack (for example, MM-INF.xml) and click **Open**.
- 5 To import the content pack, select **Overwrite** and click **Import**.
The Information dialog window appears showing you the number of artifacts (for example, health indicator definition artifacts) that you have imported.
- 6 Click **OK** to close the Information dialog.

You can load other content packs you want to work with by following the same steps.

How to Validate Event Synchronization

This section provides you with instructions about how to validate event synchronization and test the connection between HPOM and HP BSM.

Note: Ensure that you have configured HPOM to allow BSM users to use tools, actions, and instruction text. You configure this in the Connected Servers manager in BSM. Refer to "How to Create a Connection to an HPOM Server" in *Using Operations Management*.

Verify Message Forwarding from HPOM to Operations Management

In this section, you check whether the message forwarding policy for sending messages from HPOM to the Operations Management application in BSM is correctly configured.

To check whether the message forwarding policy is correctly configured, complete the following steps:

- 1** Make sure the BSM servers are running.
- 2** Make sure at least one open message interface policy is deployed on your HPOM system. For instructions and details, see the HP Operations Manager documentation.
- 3** On the HPOM system, open a command or a shell prompt.
- 4** Create a new message by executing the following command:

Windows:

```
opcmsg a=App o=Obj msg_text="Hello"
```

UNIX:

```
/opt/OV/bin/OpC/opcmsg a=App o=Obj msg_text="Hello"
```

If you have correctly configured server-based flexible management, the message arrives at the HPOM management server and is forwarded to the Operations Management application in BSM. You can view the events with the Operations Management Event Browser.

Note: If the message is sent multiple times, no new message is generated by HPOM. These messages are regarded as duplicates and only the message duplicate count is increased.

To generate a new message, modify the message text for example as follows:

Windows:

```
opcmsg a=App o=Obj msg_text="Hello_002"
```

UNIX:

```
/opt/OV/bin/OpC/opcmsg a=App o=Obj msg_text="Hello_002"
```

Synchronize Operations Management Events with HPOM Messages

In this section, you check whether a change in an event is synchronized in the Operations Management application in and HPOM.

Choose an event that has been synchronized in HPOM and in BSM earlier and change its severity, for example, from minor to major.

To change the severity of an event, complete the following steps:

- 1** Make sure the BSM platform is running.
- 2** Log on to the BSM platform management console.
- 3** Select **Applications > Operations Management**.
- 4** In the Event Browser, select the event for which you want to change the severity.
- 5** In the General tab of the Event Details pane, click **Edit**.
- 6** From the Severity drop-down list, choose another severity (for example, major) and click **Save** to change it to the selected severity.
- 7** In HPOM event browser, verify the severity of this event and make sure it has been set to the new severity value.

How to Limit the Number of CIs that BSM Evaluates

The Operations Management application tries to match events with the appropriate CIs by using a component called the CI-resolver. This component uses Topology Query Language (TQL) queries to find CIs in the ODB that are most likely to be important when matching events with CIs.

The fewer CIs that the CI-resolver has to process, the better performance you will experience with OMi. Performance is impeded at around 200,000 CIs, depending on the available RAM. If, as is likely, your ODB contains more than this number of CIs, you can improve performance by minimizing the number of CIs that the resolver tries to process. You can use the following strategies to limit the number of CIs:

- ▶ Ideally, you can configure your ODB to include only CIs that are truly interesting for your situation. Refer to the ODB documentation for best practices.
- ▶ If you know in advance that certain CI-types will never be associated with events, you can configure OMi to ignore CIs of that type. This will prevent them from being evaluated by the CI resolver. Conversely, if you know that certain CI-types will usually be associated with events, you can specifically configure OMi to allow CIs of that type, which will cause them to always be included. For more information, see "How to Limit the Number of CIs Used by CI Resolution" in *Using Operations Management*.
- ▶ Finally, you can write your own custom TQL query to use instead of the queries that OMi automatically generates.

How to Synchronize the Topology

In order to populate the ODB with configuration item (CI) data from HPOM, you need to perform one of the synchronization procedures described in "Topology Synchronization" in *Using Operations Management*. You should do this before you have received too many events.

6

Generate Events in HP Operations Manager when BSM Alert is Triggered

This chapter includes:

Concepts

- ▶ Generating Events in HP Operations Manager when BSM Alert is Triggered Overview on page 124

Tasks

- ▶ How to Configure BSM Alerts to Forward an Event When the Alert is Triggered on page 125

Concepts

Generating Events in HP Operations Manager when BSM Alert is Triggered Overview

You can configure specific CI Status alerts, SLA alerts, or EUM alerts to automatically forward a corresponding event through the Event Channel to HP Operations Manager or Operations Manager *i* or to other applications to proactively alert the operator about a problem in the system. The alerts are mapped to the events using the Event Template.

For general details about the integration of BSM with other applications, see "Business Service Management Integration with Other Applications Overview" on page 66.

For task details, see "How to Configure BSM Alerts to Forward an Event When the Alert is Triggered" on page 125.

Tasks

How to Configure BSM Alerts to Forward an Event When the Alert is Triggered

To automatically forward an event when an alert is triggered, follow the steps described in this section.

For concept details, see "Generating Events in HP Operations Manager when BSM Alert is Triggered Overview" on page 124.

This task includes the following steps:

- "Enable a CI Status Alert to be Sent as an Event" on page 125
- "Enable an SLA Alert to be Sent as an Event" on page 126
- "Enable an EUM Alert to be Sent as an Event" on page 126

Enable a CI Status Alert to be Sent as an Event

By default, a CI Status alert is mapped to an event using a default Event Template. You can modify the default Event Template or select a different Event Template as follows:

- 1** Select **Admin > Service Health > View Management > CI Status Alerts**, select a view and a CI and click **New Alert** or select an existing alert and click **Edit**.
- 2** In the Actions page, click the **New Event Generation** link in the **Generate Events** section.
- 3** In the **CI Alert Template Repository** dialog box that opens, select the template you want to use to map the alert to an event and click **Select**. The template you selected is now listed in the Generate Events section. For user interface details, see "CI Status Template Repository Dialog Box" in *Using Service Health*.



Enable an SLA Alert to be Sent as an Event

By default, an SLA alert is mapped to an event using a default Event Template. You can modify the default Event Template or select a different Event Template as follows:

- 1 Select **Admin > Service Level Management > SLA Alerts**, click **New Alert** or select an existing alert and click **Edit**.
- 2 In the Actions page, click the **New Event Generation** link in the **Generate Events** section.
- 3 In the **SLA Template Repository** dialog box that opens, select the template you want to use to map the alert to an event and click **Select**. The template you selected is now listed in the **Generate Events** section. For details, see "Event Template for SLA Alerts" in *Using Service Level Management*.

Enable an EUM Alert to be Sent as an Event

By default, an EUM alert is mapped to an event using a default Event Template. You can modify the default Event Template or select a different Event Template as follows:

- 1 Select **Admin > End User Management > Monitoring**, select the view and the CI in the left pane, click the **Alerts** tab, and click the **Press to create new alert**  button, or select one of the alerts, and click the **Press to edit alert**  button.
- 2 In the Actions page, select the **Generate Event** option. For user interface details, see "Actions Tab" in *Using End User Management*.
- 3 In the Definition Details area, in the Actions section, click the first link in the **Generate events with <template name> template and <value> values Event Type Indicator**, to select or modify the default template that maps the alert to the event in the **Template Repository** dialog box. For user interface details, see "Template Repository Dialog Box" in *Using End User Management*.
- 4 Click the second link to open the Event Type Indicator dialog box, where you specify the ETI that corresponds to the alert. For user interface details, see "Event Type Indicator Dialog Box" in *Using End User Management*.

7

How to Integrate HP Service Manager with Business Service Management Components

This chapter redirects you to the **HP Service Manager Integration with HP Business Service Management Components** document that is only available online because of the interactive nature of the document.

To access the document, open the main page of the online documentation library, locate the Solutions and Integration column (on the right) and click the HP ServiceCenter/HP ServiceCenter Integration link.

8

EMS Integration Administration

This chapter includes:

Concepts

- ▶ Integration Administration Application Overview on page 130
- ▶ Understanding Host, Business Service, or Host-Software Element Integration Types on page 131
- ▶ EMS Monitor CI on page 134
- ▶ Reconciliation of Hosts on page 135

Tasks

- ▶ How to Integrate Data from Third-Party Sources (EMS Data) into HP Business Service Management on page 136
- ▶ Add CITs and Relationships to a Relationship Map on page 140
- ▶ Create a Host <--> Software Element Integration – Use-Case Scenario on page 141

Reference

- ▶ EMS Integration Administration User Interface on page 148

Concepts

Integration Administration Application Overview

HP Business Service Management has the ability to integrate with existing Enterprise Management Systems (EMS) software and provides the capability to build new integrations, use out-of-the-box integrations (for example: HP Operations Manager, HP Service Manager, or Netscout nGenius), or customize default integrations (for example, Host, Business Service, or Host-Software Element).

This feature enables the integration of alerts generated by BSM, Service Health, and Service Level Management into your Enterprise Management Systems program.

An EMS integration is used to display, in Service Health, an overview of data from other applications. It is not a run-time solution where you can see events and errors as they occur.

Features of the Application

The EMS Integrations application provides the following features:

- ▶ **CIT relationships map.** You can sketch a CIT relationship map of the integration you are creating to help you formulate the data assignments that are described below.
- ▶ **SiteScope Integration Monitors.** You can customize the Integration Monitor configuration files. SiteScope Integration Monitors integrate measurements, open incidents, alerts, and events generated by Enterprise Management Systems software into BSM reports.

You access the System Availability Management Administration through a window in the EMS Integrations application. Using the window, you can access a SiteScope and deploy integration monitors to collect performance and availability data from your EMS system. This data, which can represent CPU, disk space, or other information, provides the global status of the EMS Monitor CI.

- **Assignments.** You can create or customize health indicator or KPI assignments for each integration CI type that you added to the CIT relationship map you sketched previously. A health indicator or a KPI assignment rule includes a condition and a task. The condition describes, where relevant, specific characteristics of a CI. The task describes the shortcut menus, health indicators, KPIs, rules, rule parameters, and selectors that are to be assigned automatically to the CI when the condition occurs, if the assignment is running. Out-of-the-box integrations already include the relevant assignments. For details on the assignment mechanism, see "Assignment Mechanism" in *Using Service Health*.

Understanding Host, Business Service, or Host-Software Element Integration Types

This section describes the main concepts of Host, Business Service, and Host-Software Element default integration types.

The out-of-the-box Host, Business Service, and Host-Software Element integration types use out-of-the-box Jython scripts to create the appropriate topology.

These integrations automatically run on all existing CIs and perform the changes described below.

The status of the Host CI in that topology is grey. To display the status of the Node CI, set the flag to Host in Jython. By default the flag is set to Application. For details, see "Topology Settings for Technology Integration Monitors" in *Monitor Reference* in the SiteScope help.

KPIs and health indicators assigned to an EMS Monitor CI, as shown below, are automatically propagated to the parent CI. The topology of the CIs is provided by the datasource.

Host

When an **EMS Monitor** CI is added to the ODB, the following happens:

- In Service Health:
 - The **System EMS Monitor** health indicator is assigned to the **EMS Monitor** CI with the **SiteScope EMS Monitor Multiple Events** rule.
 - The **Legacy System** KPI is assigned to the **EMS Monitor** CI with the **Worst Status** rule and the **EMS Measurement** menu if the **System EMS Monitor** health indicator is attached to the **EMS Monitor** CI.
- In Service Level Management:
 - The **Software Performance EMS Monitor** health indicator is assigned to the **EMS Monitor** CI with the **Application Quality** rule.
 - The **System EMS Monitor** health indicator is added to the **EMS Monitor** CI with the **System Quality** rule.
 - The **Legacy System** KPI is assigned to the **EMS Monitor** CI with the **Group Average Value** rule if the **System EMS Monitor** health indicator is attached to the **EMS Monitor** CI.
 - The **Software Performance** KPI is assigned to the **EMS Monitor** CI with the **Group Average Value** rule if the **Software Performance EMS Monitor** health indicator is attached to the **EMS Monitor** CI.

For concept details about assignments, see "Assignments" in *Using Service Health*.

Business Service

When an **EMS Monitor** CI is added to the ODB, the following happens:

- In Service Health:
 - The **Ticketing EMS Monitor** health indicator is assigned to the **EMS Monitor** CI with the **Number of Open Incidents** rule.
 - The **Number of Open Incidents** KPI is assigned to the **EMS Monitor** CI with the **Worst Status** rule if the **Ticketing EMS Monitor** health indicator is attached to the **EMS Monitor** CI.

- In Service Level Management:
 - The **Software Performance EMS Monitor** health indicator is assigned to the **EMS Monitor** CI with the **Application Quality** rule.
 - The **System EMS Monitor** health indicator is added to the **EMS Monitor** CI with the **System Quality** rule.
 - The **Legacy System** KPI is assigned to the **EMS Monitor** CI with the **Group Average Value** rule if the **System EMS Monitor** health indicator is attached to the **EMS Monitor** CI.
 - The **Software Performance** KPI is assigned to the **EMS Monitor** CI with the **Group Average Value** rule if the **Software Performance EMS Monitor** health indicator is attached to the **EMS Monitor** CI.

For concept details about assignments, see "Assignments" in *Using Service Health*.

Host-Software Element

When an **EMS Monitor** CI is added to the ODB, the following happens:

- In Service Health:
 - The **System EMS Monitor** health indicator is assigned to the **EMS Monitor** CI with the **SiteScope EMS Multiple Events** rule if the value of the **Monitored CI Type** field in the sample is **node**.
 - The **System EMS Monitor** health indicator is assigned to the **EMS Monitor** CI with the **SiteScope EMS Multiple Events** rule if the value of the **Monitored CI Type** field in the sample is **running-software**.
 - The **Legacy System** KPI is assigned to the **EMS Monitor** CI with the **Worst Status** rule if the **System EMS Monitor** health indicator is attached to the **EMS Monitor** CI and if the value of the **Monitored CI Type** field in the sample is **node**. The **EMS Measurement** menu is also assigned to the **EMS Monitor** CI.
 - The **Legacy System** KPI is assigned to the **EMS Monitor** CI with the **Worst Status** rule if the **System EMS Monitor** health indicator is attached to the **EMS Monitor** CI and if the value of the **Monitored CI Type** field in the sample is **running-software**. The **EMS Measurement** menu is also assigned to the **EMS Monitor** CI.

- ▶ In Service Level Management:
 - ▶ The **Software Performance EMS Monitor** health indicator is assigned to the **EMS Monitor** CI with the **Application Quality** rule if the value of the **Monitored CI Type** field in the sample is **node**.
 - ▶ The **System EMS Monitor** health indicator is added to the **EMS Monitor** CI with the **System Quality** rule if the value of the **Monitored CI Type** field in the sample is **node**.
 - ▶ The **Legacy System** KPI is assigned to the **EMS Monitor** CI with the **Group Average Value** rule if the **System EMS Monitor** health indicator is attached to the **EMS Monitor** CI.
 - ▶ The **Software Performance** KPI is assigned to the **EMS Monitor** CI with the **Group Average Value** rule if the **Software Performance EMS Monitor** health indicator is attached to the **EMS Monitor** CI.

For concept details about assignments, see "Assignments" in *Using Service Health*.

EMS Monitor CI

When running the EMS integration generally only one **EMS Monitor** CI is created per Node (Host) CI. In the process of the integration, if there is a problem with identifying the DNS name of the host while creating the monitor, more than one **EMS Monitor** CI can be created for the host. For example, one monitor CI has the IP address and the other monitor CI has the DNS name.

When reporting status to the Node (Host) CI, only one monitor CI receives the data and passes status onto the Node CI. The other CIs remain empty and eventually disappear due to the aging mechanism. For details, see "Removing Out of Date CIs Using the Aging Mechanism" in the *Modeling Guide*.

The integration automatically runs on all existing CIs and applies the topology changes, described above, to these CIs.

Reconciliation of Hosts

The ODB (Operational database) reconciliation service is used to reconcile incomplete hosts with complete hosts. Incomplete hosts are created in the ODB after they are discovered by the discovery process (from Discovery and Dependency Mapping) or by SiteScope (the **Enable host topology reporting** option is set by default). Complete hosts are created in the ODB after they are discovered by the discovery process.

A **complete host** is a host with the **complete** flag set. It is identified by its MAC address.

The ODB performs the following actions:

- 1** Copies each **Depends on**, **System monitor**, or **Monitored by** link that links to an incomplete Node CI to the corresponding complete Node CI (linked to the same IP), in the ODB. The default KPIs attached to the incomplete Node CIs are also copied to the complete Node CI. If an incomplete Node CI is part of an SLA, the SLA is copied to the corresponding complete Node CI.
- 2** Erases the incomplete Node CI from the ODB.

The CMDB_ID_MAPPING table in the Management database lists the pairs of the CMDB IDs of incomplete hosts to the CMDB IDs of the complete hosts that were processed by the service.

Limitations

The limitations of the reconciliation of hosts are as follows:

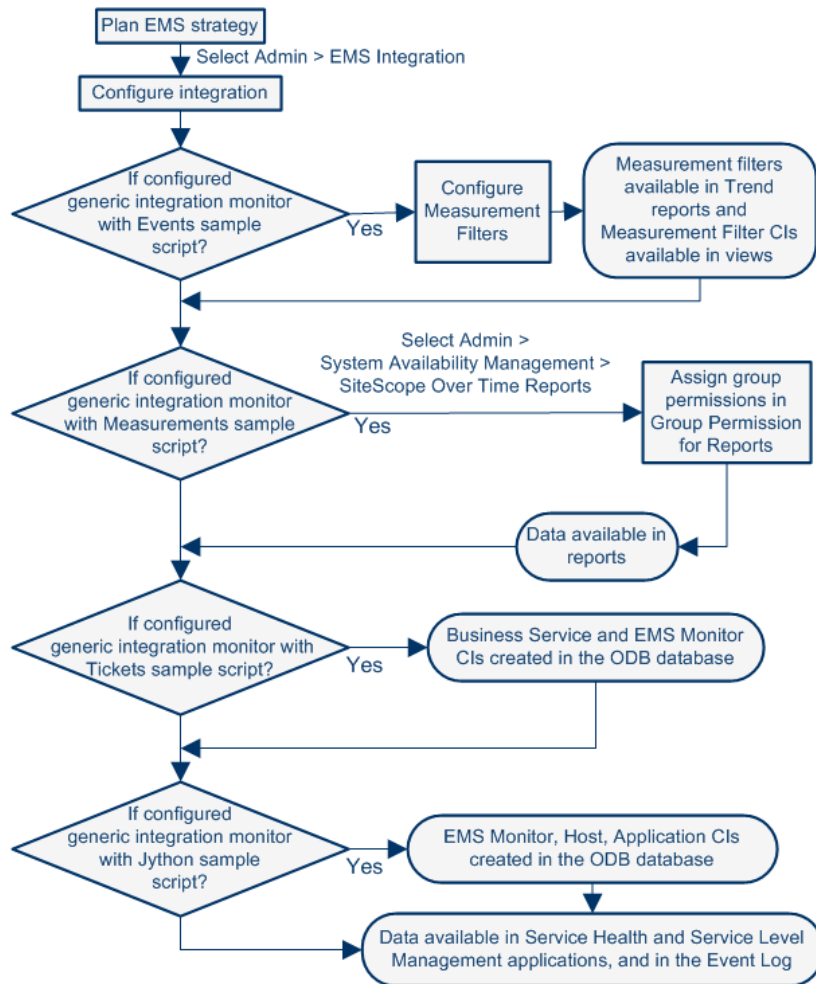
- ▶ After the reconciliation of hosts takes place, the historical reports of reconciled Node CIs display data at the level of the complete Node CI, only from the date and time when the reconciliation took place. Node CIs, which do not need reconciliation, continue to display data.
- ▶ To restore data at the level of the Node CI, you can run an SLA recalculation taking into account the recalculation limitations. For details, see "Recalculation for SLAs" in *Using Service Level Management*.
- ▶ Manually modified properties of incomplete Node CIs are not copied to the complete Node CI.

Tasks

How to Integrate Data from Third-Party Sources (EMS Data) into HP Business Service Management

This section describes the processes for integrating data from third-party sources (EMS data) into BSM.

The flowchart below describes the process required to integrate data from third-party enterprise management systems (EMS data) into HP Business Service Management using SiteScope Integration Monitors.



This task includes the following steps:

- "Plan EMS strategy" on page 138
- "Configure the integration" on page 138
- "Display data in the Event Log" on page 139
- "Assign group permissions" on page 139

1 Plan EMS strategy

Review the Integration Monitor types. Consider the type of information you want to see in HP Business Service Management from your EMS system. Determine whether one of the specific Integration Monitors meets your organization's needs or whether a generic Integration Monitor (Technology Log File, Database, SNMP Trap, Web Service) is required.

Review the Event and Metrics samples and fields to understand how the incoming EMS metadata maps to HP Business Service Management metadata.

For more information, see "Working with SiteScope Integration Monitors" in *Monitor Reference* in the SiteScope help.

2 Configure the integration

In the EMS Integrations application, configure the integration as follows:

- ▶ Sketch a CIT relationship map of the integration you are creating to help you formulate the data assignments that are described below and to understand which topology to create.
- ▶ Open the System Availability Management Administration window where you can access a SiteScope and deploy integration monitors to collect performance and availability data from your EMS system. For details, see "Working with SiteScope Integration Monitors" in *Monitor Reference* in the SiteScope help.
- ▶ Create or customize a data assignment for each integration CI type in the CIT relationship map you sketched previously. Out-of-the-box EMS assignments already include the relevant data assignments. For user interface details, see "Edit Integration Dialog Box" on page 151.

To change the logic, use one of the following options:

- ▶ For a specific CI in a specific view, modify the logic for that CI in **Admin > Service Health > View Management > CI Indicators**.
- ▶ For all the appropriate instances of a CI, retroactively, modify the logic in **Admin > Integrations > EMS Integration Admin**. This change is valid for future instances of the CI.
- ▶ You can then display the view that is created by the integration.

The view displays the following:

- ▶ EMS Monitor CIs that were created by the EMS integration.
- ▶ CIs that were created by the EMS integration and that have a relationship to the above EMS Monitor CIs.
- ▶ All hosts with a relationship to either of the CIs mentioned above.

Note: Do not edit or change the view – parts of the view are hidden in Service Health. To view the integration topology in a different way, create another view.

The HP OVO and HP ServiceCenter/HP Service Manager integrations are out-of-the-box integrations that enable the user to view HP OVO and HP ServiceCenter data in BSM.

For examples, see "Create a Host <--> Software Element Integration – Use-Case Scenario" on page 141.

3 Display data in the Event Log

After you defined monitors in System Availability Management Administration, you can see data in the Event Log and in Service Health.

Depending on whether you configure Integration Monitors that use the metrics data template or Integration Monitors that use the event data template, you proceed differently to enable the data to be viewed in HP Business Service Management.

For the step-by-step process of setting up and using SiteScope monitors, see "How to Collect Data on the Performance of an IT Resource" in *Using System Availability Management*.

4 Assign group permissions

If you configure a generic integration monitor with a Measurements sample script, you must assign for each defined user, permissions to view SiteScope groups and their subgroups in System Availability Management reports and custom reports. For more information, see "Permissions Overview" in *Platform Administration*.

Add CITs and Relationships to a Relationship Map

This section explains how to sketch the relationships map to help you when you define the assignment in the **HI and KPI Assignments** area. You sketch the map by adding CI Types (CITs) and relationships to the map.

To add CITs and relationships to a relationship map:

- 1** Select **Admin > Integrations > EMS Integrations**, and select an existing integration or create a new one.
- 2** In the Edit Integration dialog box, click **CI Relationships Map**.
- 3** In the CIT Relationships Map dialog box, you can:
 - a** Add a CIT to the map, by selecting the required CI Type from the tree in the left pane and dragging it to the right pane or by clicking the **Add selected CITs to Query** button in the toolbar of the CI Types tree in the left pane.
 - b** Add a relationship between two CITs, by selecting two CITs in the right pane and right-clicking to display a list of the available relationships, or by clicking the **Create Relationship** icon and drawing a line between the required CITs. The Select Relationship Type dialog box opens. Select the required relationship type. For details, see "Select Relationship Type Dialog Box" in *Modeling Guide*. For details about the different relationships, see "Shortcut Menu Options" in the *Modeling Guide*.
- 4** Click **OK**. The selected CITs are linked by the relationship you have selected.

For user interface details, see "CIT Relationships Map Dialog Box" on page 160

Create a Host <--> Software Element Integration – Use-Case Scenario

To create a Host-Software Element integration:

1 Integrate BSM and the appropriate SiteScope. To specify the name of the host, select **Admin > System Availability Management**. Right-click **Summary** and select **New SiteScope**. In Main Settings, enter the name of the host in the **Display Name** and **Host Name** boxes.

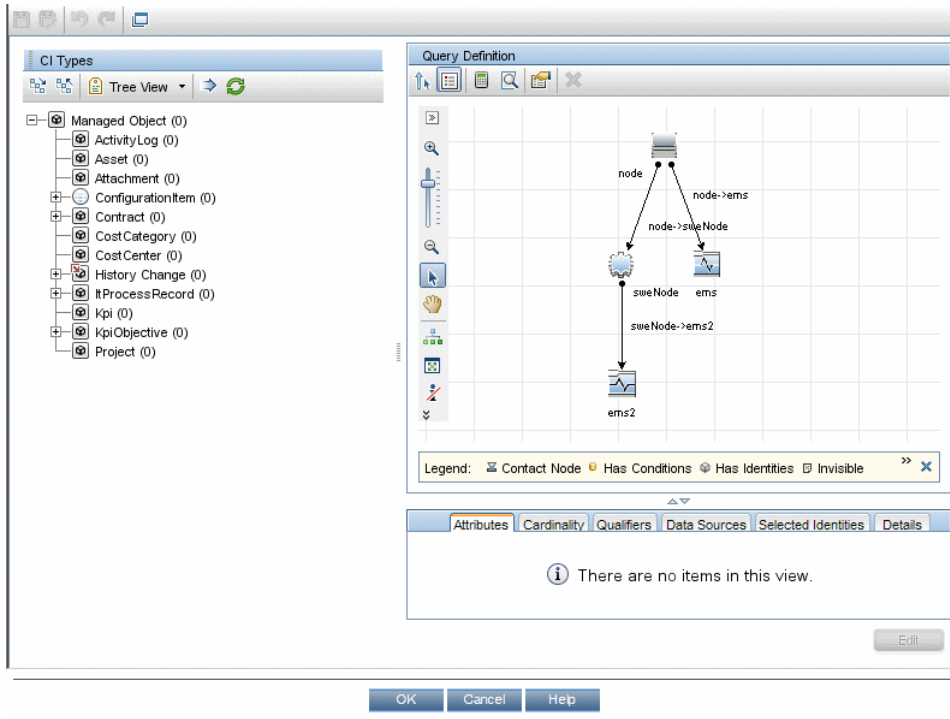


2 Select **Admin > Integrations > EMS Integration Admin**, and click to open the Add Integration dialog box. Enter **emsExample** in the **Data Source** box and in the **Name** box, select **Host <--> Software Element** in the **Type** list, and enter a description in the **Description** box.

The screenshot shows the 'Add Integration' dialog box with the following fields and values:

Field	Value
* Data Source:	emsExample
Name:	emsExample
Description:	Example of a Host <-> Software Element Integration
* Type:	Host <-> Software element

- 3 In the CI Relationships area, click **CI Relationships Map** to display the sketch of relationships for a typical Host-Software Element integration.



- 4 In the System Availability Management area, click **System Availability Management** to open the Summary page of System Availability Management in a new window. In that page, perform the following:
 - Right-click the SiteScope monitor you set up previously and select **Edit**.
 - Create a new group EMS.
 - Under the new monitor, select Integration Monitor under Categories and the Log File Integration under Technology Log File Integration to open the New Technology Log File Integration monitor page. Enter the following values:
 - In Log file path name: enter the location of the log file; c:\emsLog.txt.
 - In **Content Match**, use the following example:
/(.*)/(.*)/(.*)/(.*)/(.*)/(.*)/

It should match the structure of the log file; for example:

```
8,event8,1,espresso,emsLog,app
8,event8,1,espresso,emsLog,app
```

► In **Fields mapping**, click **Load** and enter the relevant values:

```
#####
#   EMS Integrations event config file   #
# Use this file to send events to Business Service Management #
#                                     #
# Refer to "Integration Monitor Configuration Files" in SiteScope #
#   documentation for more information.   #
#####

[$DEFAULT_PARAMETERS$]
#####
# NOTE: the following parameters are mandatory #
#####
# Time stamp in seconds since Jan 1st 1970 format.
# Use time() to get the sitescope host time or str_to_seconds() to read a value from the
input event
time_stamp:DOUBLE=time()
# Severity of event. Possible values are:
# SEVERITY_UNKNOWN , SEVERITY_INFORMATIONAL , SEVERITY_WARNING ,
SEVERITY_MINOR , SEVERITY_MAJOR, SEVERITY_CRITICAL
severity:INT=$group2

# The name of the host / device that caused this event. If the name cannot be
determined an IP address can be used instead
target_name=$group3
# Event status or type (e.g "OPEN", "ASSIGNED", "CLOSED")
status="OPEN"

# Subject of event (e.g. CPU , SAP application, Hard Disk ). Middle / High level of
hierarchy describing the event source
# The hierarchy describing an event is in the following format:
# monitor_group (optional) --> object (optional) --> subject --> instance
# More levels can be added above monitor_group by using logical_group, and attr1 - 5
subject=$group4

# Instance of subject that generated the event (e.g "D:\"). The lowest level of hierarchy
describing the event source.
# See Subject explanation above.
instance=$group4
```



```

# Event description. Up to 2000 characters.
description=$group1

# Application / Software from which this event was collected
data_source="emsExample"
#####
# NOTE: The following parameters are optional.  #
# Remove comments from entries you wish to use #
#####
# IP of the host \ device that caused this event
#target_ip=
# Object of this event (e.g. OS, Network, etc). optional level in the hierarchy describing
the event source

# See Subject explanation above.
#object=
# A unique identifier for this event
event_id=$group0
# For logical grouping
# See Subject explanation above.
#logical_group=
# Monitor group that reported this event. optional level in the hierarchy describing the
event source
# See Subject explanation above.
#monitor_group=

# Severity name in integrated system terminology
#orig_severity_name=
# Operator who acknowledged this event
#acknowledged_by=
# Operator who owns this event
#owner=
# Use with any numeric values you wish to send to Business Service Management
#value:DOUBLE=

# Additional attributes 1..5
attr1=$group5
#attr2=
#attr3=
#attr4=
# For long string values up to 2000 use attr5
#attr5=
[allRecords]
$MATCH=true
$ACTION=TOPAZ_BUS_POST(event)

```

- ▶ In **Topology Settings**, select the Host-Software Element topology and click **Load**.
- ▶ Click **Save**.
- ▶ Test the script by clicking **Test Script** to view the expected results of the monitor.
- ▶ Click **Test Script**.
- ▶ In the Topology Settings, select **Host-Software Element, Load, Test Script**, and click **OK**.

For additional information about the monitor, see "Technology Log File Integration Monitor" in *Monitor Reference* in the SiteScope help.

- 5** In the **Health Indicator and KPI Assignments** area, click the **Health Indicator Assignments** tab, and make sure the assignments are all running. Do the same with the KPI assignments in the **KPI Assignments** tab.
- 6** In the View Results area, click **Integration Results**, to display the topology of the default view named after the name you gave in the **Data Source** box in the steps above.

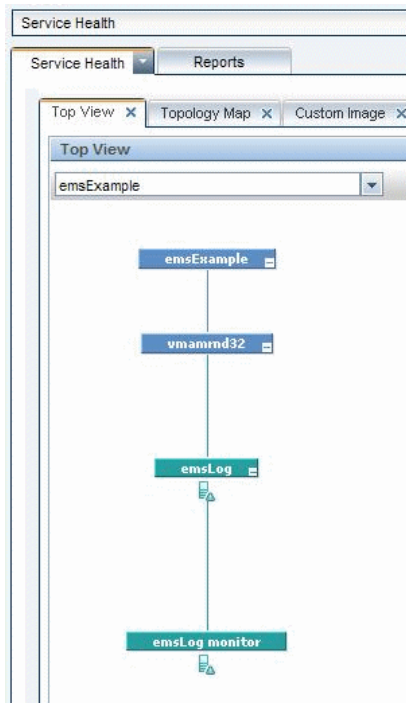


The integration is complete.

- 7** Select **Applications > Service Health**, in the 360° tab, select the **emsExample** view. The topology of the new view is displayed with data.

Hierarchy	
emsExample [Filter] [Select a Filter]	
Name	System
	Legacy System
emsExample	-
vmamrnd32	-
emsLog	⚠️ ↕️
emsLog monitor	⚠️ ↕️

- 8** Select **Applications > Service Health**, in the Top View tab, select the **emsExample** view. The topology of the new view is displayed with data.



Reference

EMS Integration Administration User Interface

This section describes:

- ▶ Add Integration Dialog Box on page 148
- ▶ Edit Integration Dialog Box on page 151
- ▶ CIT Relationships Map Dialog Box on page 160
- ▶ EMS Integrations Admin Page on page 161

Add Integration Dialog Box

This dialog box enables you to create a new integration.

To access	Admin > Integrations > EMS Integrations Admin , and click the New Integration button. For user interface details, see "EMS Integrations Admin Page" on page 161.
Relevant tasks	"How to Integrate Data from Third-Party Sources (EMS Data) into HP Business Service Management" on page 136
See also	"Integration Administration Application Overview" on page 130


The initial dialog box includes the following elements:

UI Element (A-Z)	Description
Data Source	<p>Enter the name of the integration data source when you create a custom integration.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ The same data source must be used in the mapping fields and in the topology section in the integration monitor. For details, see System Availability Management Area in "Edit Integration Dialog Box" on page 151. ▶ The sample must be part of the same data source.
Name	The name of the integration. The name of the integration is displayed in the EMS Integrations page.
Description	A description of the integration you are adding. The description of the integration is displayed in the EMS Integrations page.
OK	Opens the Edit Integration dialog box where you can enter the integration details.

UI Element (A-Z)	Description
<p>Type</p>	<p>Select the type of integration you want to create. Select:</p> <ul style="list-style-type: none"> ▶ Custom Integration. To create a custom integration. This integration includes by default a TQL that includes only EMS Monitor CIs. The default view also includes only the EMS Monitor CI. You can only assign KPIs and health indicators to EMS Monitor CIs. ▶ Host. To create a host integration that adds hosts or reconciles the new hosts with existing hosts and sends data into the hosts. For details, see "Understanding Host, Business Service, or Host-Software Element Integration Types" on page 131. ▶ Business Service. To create a business service connected to EMS monitor entities. For details, see "Understanding Host, Business Service, or Host-Software Element Integration Types" on page 131. ▶ Host <--> Software Element. To create a host-to-software-element integration. For details, see "Understanding Host, Business Service, or Host-Software Element Integration Types" on page 131. <p>Note: When you select Host, Business Service or Host <--> Software Element, the integration automatically runs the assignment rules on all the existing CIs.</p>

Edit Integration Dialog Box

This dialog box enables you to edit an existing integration or to enter the details of a new integration.

To access	Admin > Integrations > EMS Integrations Admin , select an integration, and click the Edit button  .
Important information	<ul style="list-style-type: none"> ▶ Complete each step of the procedure before starting on the next one. ▶ Do not remove the data source when editing an integration. ▶ It is recommended to work as much as possible with the out-of-the-box solutions: <ul style="list-style-type: none"> ▶ HP ServiceCenter/HP Service Manager. For details, see "How to Integrate HP Service Manager with Business Service Management Components" on page 127. ▶ HP OM. For details, see "HP Operations Manager" on page 71. ▶ Netscout. For details, see "NetScout nGenius Integration" on page 163. ▶ Host, Host-Software Element, and Business Service. For details, see "Understanding Host, Business Service, or Host-Software Element Integration Types" on page 131. <p>Limitation: For details, see "Incident Ignored by EMS" in the document accessed by "How to Integrate HP Service Manager with Business Service Management Components" on page 127.</p>
Relevant tasks	"How to Integrate Data from Third-Party Sources (EMS Data) into HP Business Service Management" on page 136
See also	"Integration Administration Application Overview" on page 130

Integration Main Settings

User interface elements are described below:

UI Element (A-Z)	Description
Data Source	The name of the integration data source.
Description	The description of the integration.
Name	The name of the integration.

HP OM Drill Down Settings

9.01 - This section is displayed only when you select the HP OM integration (the HP Operations Manager integration).

User interface elements are described below:

UI Element (A-Z)	Description
HP OM URL	<p>For HPOM integration only.</p> <ul style="list-style-type: none"> ▶ The URL of the HP Operations Manager host. ▶ This field is not mandatory. ▶ This information is used to access the HP Operations Manager application using the OVO Drill Down shortcut menu option. <p>▶ To enter the HP OVO host automatically, select Admin > Platform > Setup and Maintenance > Infrastructure Settings:</p> <ul style="list-style-type: none"> ▶ Select Foundations. ▶ Select Integrations with other application. ▶ In the Integrations with other applications - HP OVO table, locate The OVO host. Modify as required. <p>Limitation: For details about the menu option and the limitations, see "OVO Drill Down Event" in <i>Using Service Health.</i></p>

UI Element (A-Z)	Description
<p>HP OM User Name</p>	<p>For HPOM integration only.</p> <ul style="list-style-type: none"> ➤ The name of the HPOM user. ➤ This field is not mandatory. ➤ This information is used to access the HP Operations Manager application using the OVO Drill Down shortcut menu option. ➤ To enter the HPOM user name automatically, select Admin > Platform > Setup and Maintenance > Infrastructure Settings: <ul style="list-style-type: none"> ➤ Select Foundations. ➤ Select Integrations with other application. ➤ In the Integrations with other applications - HP OVO table, locate User of the OVO. Modify as required. <p>Limitation: For details about the menu option and the limitations, see "OVO Drill Down Event" in <i>Using Service Health</i>.</p>
<p>HP OM User Password</p>	<p>For HPOM integration only.</p> <ul style="list-style-type: none"> ➤ This field is not mandatory. ➤ The password of the HP Operations Manager user. ➤ This information is used to access the HP Operations Manager application using the OVO Drill Down shortcut menu option. ➤ To enter the HP OVO user password automatically, select Admin > Platform > Setup and Maintenance > Infrastructure Settings, choose Foundations, select Integrations with other application: <ul style="list-style-type: none"> ➤ Select Foundations. ➤ Select Integrations with other application. ➤ In the Integrations with other applications - HP OVO table, locate User password of the OVO. Modify as required. <p>Limitation: For details about the menu option and the limitations, see "OVO Drill Down Event" in <i>Using Service Health</i>.</p>

CI Relationship Area

Click the **CI Relationships Map** link to open the CIT relationship map dialog box where you can sketch the relationship map for the integration. This schema is useful to help you draw which CI types are created and where the EMS monitors are located so assignment rules can run on those EMS monitors. For details, see "CIT Relationships Map Dialog Box" on page 160.

System Availability Management Area

Click the **System Availability Management** link to open the System Availability Management application where you can select from where the data is extracted (for example: Database) and which type of data (measurements, events, or open incidents) are needed. For details, see "System Availability Management Administration" in *Using System Availability Management*.

- ▶ To set up the HP OM Event Monitor, see "HP OM Event Monitor" in *Monitor Reference* in the SiteScope help.
- ▶ To set up the HP ServiceCenter Monitor, see "HP Service Manager Monitor" in *Monitor Reference* in the SiteScope help.
- ▶ To set up the Netscout Event Monitor, see "NetScout Event Monitor" in *Monitor Reference* in the SiteScope help.
- ▶ To set up the Technology SNMP Trap Integration monitor, see "Technology SNMP Trap Integration Monitor Overview" in *Monitor Reference* in the SiteScope help.

Limitation: If you have previously defined a SiteScope using this option and you reopen System Availability Management, the application does not display the SiteScope you have previously defined.

HI and KPI Assignments Area


This area enables you to specify the health indicator and KPI assignments defined for the current EMS integration.

Note: It is important to validate the data assignment rule assignment and if you create a custom assignment to click the **Synchronize CI Type** button on the suitable assignments area in the Edit Integration dialog box.

CI Types Pane

This pane displays a hierarchy of CI types. You can select a CI type to view its assignments, edit an assignment, or add an assignment to the CI type.

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




UI Elements (A-Z)	Description
	Refresh. Click to refresh the CI Types pane and the Assignments pane display.
<CI Types>	Displays the hierarchy of the CI Types in the ODB. You can select only System Monitor CI Types, or EMS Monitor CI Types.
Filter	This filter enables you to display, depending on your selection: <ul style="list-style-type: none"> ▶ Show all assignments. All assignments and propagation rules (default setting). ▶ Show valid assignments only. Only valid assignments. ▶ Show invalid assignments only. Only 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.










Assignments Pane

This pane displays details regarding the KPI and health indicator assignments for the CIT selected in the **CI Types** pane. Depending on the type of CIT, the assignment can be a Service Health assignment or an SLM assignment. Each type of assignment is displayed in its own table. Each table includes two tabs: **KPI Assignments**, and **Health Indicator Assignments**. Select a tab to display and configure the corresponding assignments. Within each table, each line represents one assignment on the selected CIT.

Important information	When you do not have a Service Level Management license, the Service Level Management area is not displayed in the Assignment pane and the SLM assignments are not created for custom integrations.
------------------------------	---

User interface elements are described below:

UI Elements (A-Z)	Description
	<p>Add. Click to create:</p> <ul style="list-style-type: none"> ▶ In the Health Indicator Assignment tab, a health indicator assignment. For user interface details, see "Health Indicator Component User Interface" in <i>Using Service Health</i>. ▶ In the KPI Assignments tab, a KPI Assignment. For user interface details, see "Add/Edit KPI Assignments for CI Type Dialog Box" in <i>Using Service Health</i>.
	<p>Duplicate. Click to copy a selected assignment, and open the copy for editing.</p>
	<p>Edit. Click to edit:</p> <ul style="list-style-type: none"> ▶ In the Health Indicator Assignment tab, a new health indicator assignment. For user interface details, see "Add/Edit Health Indicator Assignments for CI Type Dialog Box" in <i>Using Service Health</i>. ▶ In the KPI Assignments tab, a new KPI Assignment. For user interface details, see "Add/Edit Health Indicator Assignments for CI Type Dialog Box" in <i>Using Service Health</i>.

UI Elements (A-Z)	Description
	Delete. Click to delete one or more selected assignments. Assignments that are inherited from parent CITs cannot be deleted on the child CIT, but only on the parent CIT.
	Restore to default. Click to restore a selected overridden assignment to its original settings.
	Select all. Select all the assignments.
	Clear Selection. Clear the selection of assignments.
	Start. Click to start running a selected assignment on existing CIs, and on new CIs.
	Stop. Click to stop running a selected assignment.
	Synchronize CI Type. Click to run assignments on the selected CIT. If you are working with the KPI Assignments tab the KPI assignments are run; if you are working with the Health Indicator Assignments tab the health indicator assignments are run. For details, see "Integration Administration Application Overview" on page 130.
	Refresh. Click to refresh the Assignments pane display.
	Change visible columns. Click to open the Choose Columns to Display dialog box where you can 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	Within the Health Indicator Assignments tab, contains a list of the health indicators that are assigned to CIs of the selected CIT, based on the assignment.

UI Elements (A-Z)	Description
KPIs	Within the KPI Assignments tab, contains a list of 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 ODB; the assignment is only applicable if the CI contains one of the listed values as its Monitored By attribute.
Status	The assignment status: <ul style="list-style-type: none"> <li data-bbox="621 527 1206 586">▶ Running. The assignment has been started and is running on the appropriate CIs. <li data-bbox="621 597 1206 656">▶ Stopped. The assignment has been stopped and is not running.

View Results Area

Click the **Integration Results** link to open the View Results page that displays the view corresponding to the integration you have created. The view includes all the CIs that were created by the integration.

Each integration corresponds to a TQL that describes the CI relationships (topology) of the integration and corresponds to the view. For custom integrations, the automatically created TQL only includes EMS Monitor CI Types, and the view includes only the EMS Monitor CI. Note that you can edit such TQLs. For concept details about TQLs, see "Topology Query Language (TQL) Overview" in *Modeling Guide*.

CIT Relationships Map Dialog Box

This dialog box enables you to add elements and relationships to the CIT relationships map.




<p>To access</p>	<p>Click Define the CIT relationships map in the Add Integration Dialog Box.</p>
<p>Important information</p>	<p>Sketch the relationships map to help you when you define the assignment in the HI and KPI Assignments area.</p> <p>For details on how to work with the relationships map, see "Add CITs and Relationships to a Relationship Map" on page 140.</p> <p>For details about the toolbar, see "Toolbar Options" in the <i>Modeling Guide</i>.</p> <p>For details about the right-click options, see "Shortcut Menu Options" in the <i>Modeling Guide</i>.</p>

EMS Integrations Admin Page

This page lists existing EMS integrations, and enables you to define new integrations or edit existing ones. In addition, the page can also display legacy integrations of type Host-Application.

To access	Admin > Integrations > EMS Integrations Admin
Important information	<p>This page also enables you to access the HP Operations Manager, HP Service Manager, and Netscout predefined SiteScope monitor definitions and assignments used in the integrations of Business Service Management with those products.</p> <p>For more information about the integration with:</p> <ul style="list-style-type: none"> ▶ HP Operations Manager. ▶ HP Service Manager, see "How to Integrate HP Service Manager with Business Service Management Components" on page 127. ▶ Netscout, see "How to Display NetScout Data in BSM" on page 167. <p>Legacy Host-Application integrations are displayed in this page, though you cannot create new integrations of that type.</p>
Relevant tasks	"How to Integrate Data from Third-Party Sources (EMS Data) into HP Business Service Management" on page 136

User interface elements are described below:

UI Element (A-Z)	Description
	<p>New. Opens the Add Integration dialog box opens where you can create a new integration.</p> <p>For user interface details, see "Add Integration Dialog Box" on page 148.</p>
	<p>Edit. Opens the Edit Integration dialog box where you can edit the selected integration.</p> <p>For user interface details, see "Edit Integration Dialog Box" on page 151.</p>
	<p>Delete. Deletes the selected integration. When you delete the integration, the assignments, view and TQLs created for it are automatically deleted as well.</p> <p>Limitation: You cannot delete out-of-the-box integrations.</p>
<p>Description</p>	<p>The description of the integration.</p>
<p>Name</p>	<p>The name of the integration.</p>

9

NetScout nGenius Integration

This chapter includes:

Concepts

- ▶ NetScout Integration Overview on page 164

Tasks

- ▶ How to Display NetScout Data in BSM on page 167

Concepts

NetScout Integration Overview

This section provides an overview of NetScout and describes the main concepts of the NetScout integration.

This section includes the following topics:

- ▶ "Overview of NetScout" on page 164
- ▶ "Netscout EMS Integration" on page 164
- ▶ "NetScout View and Topology" on page 165

Overview of NetScout

NetScout nGenius monitors network traffic and reports performance metrics about applications routing through that network. NetScout integration shows NetScout alarms in HP Business Service Management Service Health. NetScout sends SNMP traps containing information about the alerting instances that could map to existing CI types in the ODB (Operational database).

Netscout EMS Integration

The assignment of the Netscout EMS integration enriches the monitor-level Application Monitor CIs with the appropriate KPIs, rules, and shortcut menus that are to be assigned automatically to the CIs when the condition occurs, and the assignment is running.

Note: The Application Monitor CIs assignment is used only when the machine, on which NetScout nGenius is installed, is monitored using SiteScope version 10.0 and earlier.

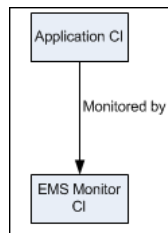
NetScout View and Topology

NetScout analyzes packets that include information about the applications running through specific routers or switches. When there is a problem, the packets can send in alarms with information about the problematic application.

The application alarms SNMP trap reports about problems discovered in an application using information analyzed from packets. The application information is not linked to the router information as the routing path is not constant and may vary depending on network traffic decisions.

The NetScout integration creates the NetScout view. The NetScout view includes CIs that represent the application alarms.

The NetScout view includes the Application CI, the EMS Monitor CI, and their relationship.



For details on integrating NetScout data in BSM, see "How to Display NetScout Data in BSM" on page 167.

All the sample information sent by NetScout is displayed by the **Application** KPIs attached to the **Application Monitor** CIs. The **SiteScope EMS Multiple Events Rule** calculates the statuses of those KPIs based on data obtained from NetScout samples.

The **EMS Show Event** shortcut menu, **Show Events** shortcut menu item, and the **SiteScope EMS Rule** tooltip corresponding to the **SiteScope EMS Multiple Events Rule**, are preconfigured to provide the appropriate infrastructure to work with the NetScout-related CIs in Service Health. For details on the Application KPI, see "Software Performance" in *Using Service Health*.

For details on:

- ▶ The **SiteScope EMS Multiple Events Rule**, see "SiteScope EMS Multiple Events Rule" in *Using Service Health*.
- ▶ The **EMS Show Event** shortcut menu, see "EMS Show Events" in *Using Service Health*.
- ▶ The **Show Events** shortcut menu item, see "Show Events" in *Using Service Health*.
- ▶ The **SiteScope EMS Rule** tooltip, see "Example of a SiteScope EMS Rule Tooltip" in *Using Service Health*.

Tasks

How to Display NetScout Data in BSM

NetScout data can be displayed in BSM using the EMS Integration tool.

For additional information about EMS integration, see "Integration Administration Application Overview" on page 130.

This task includes the following steps:

- "Prerequisite" on page 167
- "Configure the integration" on page 167
- "Customize the integration – optional" on page 168
- "View NetScout data in the NetScout View and enrich the view" on page 169
- "Access the NetScout application from BSM" on page 169

1 Prerequisite

In the NetScout nGenius server, select **Device > Global settings**, and enter, in the Server IP Addresses box, the SiteScope Server IP address of the SiteScope that reports to BSM.

2 Configure the integration

The NetScout integration is predefined. The integration retrieves the samples provided by the NetScout nGenius system, creates the appropriate topology in BSM (application CIs), creates a view, assigns the appropriate KPIs, rules, shortcut menus, shortcut menu items, and tooltips depending on the type of sample and displays the information using the created view.

To configure the NetScout integration, select **Admin > Integrations > EMS Integration Admin**, select NetScout and click **Edit**. In the Edit Integration dialog box:

- a** Add the NetScout Event Monitor to a SiteScope monitor group created for this monitor and other Integration Monitor types in **Step 2. Retrieve data from EMS system using System Availability Management**. The monitor is used to retrieve data from the NetScout server using System Availability Management Administration. It is recommended that you configure Integrations Monitors only after a connection between the SiteScope and HP Business Service Management is established. For concept details, see "How to Integrate Data From a NetScout System" in *Monitor Reference*.
- b** Activate the Application Monitor CIs data assignment rule in **Step 3. Define the data assignments rules**. The data assignment rule is automatically deactivated, by default. The data assignment rule includes the assignment rules to create the topology for the Application Monitor CIs.

For details on the assignment rules, see "Edit Integration Dialog Box" on page 151.

Note: SiteScope cannot be deployed behind a firewall. SiteScope and the monitored system must be on the same LAN or special firewall configuration might be required.

3 Customize the integration – optional

You can use the EMS Integrations application to customize a NetScout integration. The integration forwards the retrieved data captured from the NetScout system by the SiteScope NetScout Event Monitor to BSM, and creates the appropriate topology (Application CIs). For details on the available customization, see "Edit Integration Dialog Box" on page 151.

4 View NetScout data in the NetScout View and enrich the view

You can view NetScout application alarms in the NetScout view. For details, see "NetScout View and Topology" on page 165.

To enrich the view, attach IT Universe CIs to the appropriate Application Monitor CIs. For details on attaching CIs, see "Insert Relationship Dialog Box" in the *Modeling Guide*.

5 Access the NetScout application from BSM

From the NetScout view in Service Health, you can connect to the NetScout application using the **Show Event** right-click menu option on the NetScout EMS monitor CIs. The shortcut menu uses the NetScout server URL included in the samples to perform the drilldown to the NetScout server.

10

HP Operations Orchestration Integration

This chapter includes:

Concepts

- ▶ HP Operations Orchestration Integration Overview on page 172

Tasks

- ▶ How to Integrate BSM and OO on page 173
- ▶ How to Integrate HP Business Service Management and HP Operations Orchestration – Use-Case Scenarios on page 178

Reference

- ▶ Predefined Mappings on page 179
- ▶ HP Operations Orchestration Integration User Interface on page 180

Concepts

HP Operations Orchestration Integration Overview

HP Operations Orchestration (OO) provides a simple way for customers to run scripts for automatic actions. The integration with Business Service Management (BSM) utilizes the OO capabilities for building investigation tools or service remediation scripts, providing the operators with a simple way to validate a problem, investigate it, or automatically correct it. A run book can be executed manually.

For general details about the integration of BSM with other applications, see "Business Service Management Integration with Other Applications Overview" on page 66.

OO run books can be launched from the Service Health, and the Event Browser applications.

The integration of BSM and OO provides the capability of mapping CI types to OO run books.

Once you create such mappings, you can run the mapped OO run books:

- ▶ On CIs using the right-click menu option in Service Health. For details, see "Invoke Run Books" in *Using Service Health*. The OO run book parameters are populated using the map to the CI attributes defined in the "Run Book Mapping Configuration Wizard" on page 182.
- ▶ At the event level in OMi. OMi opens an event and checks if the CI for this event has a run book assigned to it and if the run book is set to run automatically. The OO run book parameters are populated using the map to the CI or event attributes defined in the "Run Book Mapping Configuration Wizard" on page 182.

BSM provides a number of predefined mappings between CIs and OO run books. For details on this topic, see "Predefined Mappings" on page 179.

Tasks

How to Integrate BSM and OO

This task describes the working order required to integrate BSM and OO.

This task includes the following steps:

- "Prerequisites" on page 173
- "Configure the link between BSM and OO" on page 173
- "Configure Lightweight Single Sign-On (LW-SSO) authentication" on page 174
- "In Windows - import OO server certificates to BSM" on page 175
- "In Linux - import OO server certificates to BSM" on page 176
- "Grant permissions" on page 177
- "Map run books to CI Types" on page 177
- "Use OO functionality from BSM applications" on page 177

1 Prerequisites

To integrate BSM and OO, you must be using the following versions:

- HP Business Service Management
- HP Operations Orchestration

For details about the supported versions, see the Readme document.

2 Configure the link between BSM and OO

To configure the integration between BSM and OO, in BSM select **Admin > Platform > Setup and Maintenance > Infrastructure Settings**:

- Select **Foundations**.
- Select **Integrations with other applications**.

- ▶ In the **HP Operation Orchestration** table, locate **Operation Orchestration application URL**. Modify the setting to the URL used to access the OO application. For example, <https://<fully qualified server name>:8443>.
- ▶ In the same table, locate **User Name**. Enter the user login name used when invoking run books in an automatic way. The user name must also be defined in OO.

3 Configure Lightweight Single Sign-On (LW-SSO) authentication

Configure Lightweight Single Sign-On (LW-SSO) authentication between BSM and OO. You must configure LW-SSO in both BSM and OO.

To configure LW-SSO:

- a Make sure that **Token Creation Key** is the same in OO and BSM. To set the parameter in BSM, select **Admin > Platform > Users and Permissions > Authentication Management**, and configure the **Token Creation Key (initString)** parameter. To set the parameter in OO, see OO documentation.
- b If OO and BSM are in different domains in the Windows operating system, you must make sure that the **Trusted Hosts/Domains** parameter is the same in OO and BSM. To set the parameter in BSM, select **Admin > Platform > Users and Permissions > Authentication Management**, and configure the **Trusted Hosts/Domains** parameter. To set the parameter in OO, see OO documentation.

For details on configuring LW-SSO in BSM, see "Authentication Strategy Page" in *Platform Administration*.

For details on configuring LW-SSO in OO, see the OO documentation.

4 In Windows - import OO server certificates to BSM

Import the server certificate from the OO server to the BSM Gateway Server so that the two systems can communicate with each other securely.

To export server certificates from OO and import them into BSM in a Windows environment, you use the **keytool** utility, which is included in Sun JRE, to export and import certificates.

- a Export the OO Server Certificate.** To export the OO server certificate, on the OO server enter:

```
C:\> "%JAVA_HOME%\jre\bin\keytool" -keystore
"%IINCLUDE_HOME%\Central\conf\rc_keystore" -export -alias pas -file
"C:\ <Operations Orchestration server fully qualified host name>.cer"
```

Note: If your `%JAVA_HOME%` environment variable points to the JRE directory instead of the JDK directory, remove **jre** from the keystore path (`C:\> "%JAVA_HOME%\bin\keytool" -keystore`) in the command.

- b Import the Server Certificate to BSM.** To import the server certificate you exported from OO to the BSM cacerts keystores, on the BSM Gateway Server enter:

```
➤ C:\> "%JAVA_HOME%\jre\bin\keytool" -keystore
"%TOPAZ_HOME%\JRE\lib\security\cacerts" -import -alias
"<Operations Orchestration fully qualified host name>" -file
"<Operations Orchestration fully qualified host name>.cer"

➤ C:\> "%JAVA_HOME%\jre\bin\keytool" -keystore
"%TOPAZ_HOME%\JRE64\lib\security\cacerts" -import -alias
"<Operations Orchestration fully qualified host name>" -file
"<Operations Orchestration fully qualified host name>.cer"
```

c Restart BSM on the Gateway server.

Note: If your `%JAVA_HOME%` environment variable points to the JRE directory instead of the JDK directory, remove `jre` from the keystore path (`C:\> "%JAVA_HOME%\bin\keytool" -keystore`) in the commands.

5 In Linux - import OO server certificates to BSM

Import the server certificate from the OO server to the BSM Gateway Server so that the two systems can communicate with each other securely.

To export server certificates from HP Operations Orchestration (OO) and import them into BSM in a Solaris environment, you use the **keytool** utility, which is included in the Sun Solaris `/usr/bin` directory, to export and import certificates.

a Export the OO Server Certificate. To export the OO server certificate, on the OO server enter:

```
Keytool -keystore "$ICONCLUDE_HOME/Central/conf/rc_keystore"
-export -alias pas -file "<Operations Orchestration fully qualified host
name>.cer"
```

b Import the Server Certificate to BSM. To import the server certificate you exported from OO to the BSM cacerts keystores, on the BSM Gateway Server, enter:

- `keytool -keystore "$TOPAZ_HOME/JRE/lib/security/cacerts" -import -alias "<Operations Orchestration fully qualified host name>" -file "<Operations Orchestration fully qualified host name>.cer"`
- `keytool -keystore "$TOPAZ_HOME/JRE64/lib/security/cacerts" -import -alias "<Operations Orchestration fully qualified host name>" -file "<Operations Orchestration fully qualified host name>.cer"`

c Restart BSM on the Gateway server.

6 Grant permissions

Grant permissions so that users can create, view, and modify the mapping between BSM CI types and OO run books, and invoke OO run books from BSM. For details on this topic, see "Permissions Overview" in *Platform Administration*.

To integrate with OO, you must set up users with specific permissions. Select **Admin > Platform > Users and Permissions**, select the user or create a new user and select the **Operations Orchestration Integration** context. For details on this topic, see "Permissions Overview" in *Platform Administration*.

7 Map run books to CI Types

You can map OO run book parameters to:

- ▶ CI type attributes. For details on the user interface, see "Run Books Configuration Page" on page 180.

The child CIs of a CI, for which you configure a run book, are also assigned that run book.

- ▶ The OMi event attributes are pre-defined in OMi. For details, see OMi documentation.

8 Use OO functionality from BSM applications

You can trigger a run book from:

- ▶ HPOM. For details, see HPOM documentation.
- ▶ From Service Health using the **Invoke Run Books** context menu option. For details, see "Service Health Menu Options" in *Using Service Health*.
- ▶ From Event browser via the context menu or from the Action panel.

How to Integrate HP Business Service Management and HP Operations Orchestration – Use-Case Scenarios

This section describes two possible scenarios to integrate HP Business Service Management (BSM) and HP Operations Orchestration (OO).

Use-Case Scenario in Service Health

In OO, the Restart a host run book is associated with a Host CI Type. The parameters of the run book are mapped to the relevant CI attributes of the Host CI.

In Service Health, the operator detects that a host has a system problem. The operator right-clicks the CI to get a list of the run books relevant to the CI. One of the run books is Restart a host. The run book can execute automatically because the values of the parameters, such as host name/IP are automatically populated by data taken from the CI context.

Use-Case Scenario in OMi

In the OMi Event Browser, the operator is going through his assigned events. He detects an event related to a lack of disk space that causes a database performance issue. From the event context he can get a list of relevant run books. He can launch the appropriate run book, manually. The run-book continue running without further input from the operator as all run book parameters are extracted from the event or related CI.

Reference

Predefined Mappings

BSM provides a number of predefined mappings between CI types and HP Operations Orchestration (OO) run books. The following table lists the CI types and the OO run books that are mapped to them:

BSM CI Type	HP Operations Orchestration Run Books
IIS	Soft Reset IIS
Weblogic AS	Restart Server
Websphere AS	Restart Server
Windows	Restart Windows Server, Restart Windows Server with Wait, Start Automatic Services

Note: In the predefined mapping, the Restart Server run book runs successfully only for Weblogic and Websphere applications that are discovered by Data Flow Management. For Weblogic and Websphere applications discovered by SiteScope, application credentials are not reported and the run book is unable to run successfully, unless you manually configure the credentials as default parameters in the Run Book Mapping Configuration wizard, manually change them for a specific invocation of a run book, or enter them when prompted during a run book invocation. For details on the Run Book Mapping Configuration wizard user interface, see "Configure Parameters Page" on page 185.

HP Operations Orchestration Integration User Interface

This section describes:




- ▶ Run Books Configuration Page on page 180
- ▶ Run Book Mapping Configuration Wizard on page 182
- ▶ Select Topology Dialog Box on page 187

Run Books Configuration Page

This page displays the mappings between BSM CI types and HP Operations Orchestration (OO) run books, and enables you to create new mappings or edit existing ones.



To access	Admin > Integrations > Operations Orchestration tab
Important information	<ul style="list-style-type: none"> ▶ To work with OO from BSM, the two systems must be integrated. For details on how to perform this task, see "How to Integrate HP Business Service Management and HP Operations Orchestration – Use-Case Scenarios" on page 178. ▶ Click a row in the table to select an existing mapping for editing or deletion. ▶ BSM provides a number of predefined mappings between CIs and OO run books. For details on this topic, see "Predefined Mappings" on page 179.
Relevant tasks	"How to Integrate HP Business Service Management and HP Operations Orchestration – Use-Case Scenarios" on page 178

User interface elements are described below:

UI Element (A-Z)	Description
	<p>New. Opens the Run Book Mapping Configuration wizard, where you configure the mapping between a CI type and OO run books. For details on the user interface, see "Run Book Mapping Configuration Wizard" on page 182.</p>
	<p>Edit. Opens the Select CI Type page of the Run Book Mapping Configuration wizard where you can edit the selected mapping. For details on the user interface, see "Select CI Type Page" on page 183.</p>
	<p>Delete. Delete the selected mapping.</p>
<p>CI Type</p>	<p>Displays the CI types to which OO run books are already mapped.</p>
<p>Operation Orchestration Flows</p>	<p>Displays the OO run books that are mapped to each CI type.</p>

Run Book Mapping Configuration Wizard

This wizard enables you to create mappings of CI Type attributes and/or event attributes and HP Operations Orchestration (OO) run book parameters.

<p>To access</p>	<p>Use one of the following:</p> <ul style="list-style-type: none"> ▶ To create a new mapping, select Admin > Integrations > Operations Orchestration tab, and click the New  button. ▶ To edit an existing mapping, select Admin > Integrations > Operations Orchestration tab, select the existing mapping, and click the Edit  button.
<p>Important information</p>	<ul style="list-style-type: none"> ▶ The child CIs of a CI, for which you configure a run book, are also assigned that run book. ▶ When using the Run Book Mapping Configuration wizard to edit a previously configured mapping: <ul style="list-style-type: none"> ▶ The Welcome and Summary pages of the wizard are not displayed. ▶ You do not have to access the wizard pages in a specific order. Click a wizard page name on the left to go directly to that page. ▶ From any of the wizard pages, click the OK button to save the mapping configuration and exit the wizard. ▶ The Welcome and Summary pages are displayed only when you create a new run book mapping.
<p>Relevant tasks</p>	<p>"How to Integrate HP Business Service Management and HP Operations Orchestration – Use-Case Scenarios" on page 178</p>
<p>Wizard map</p>	<p>The Run Book Mapping Configuration Wizard contains: Welcome Page > Select CI Type Page > Select Run Books Page > Configure Parameters Page > Summary Page</p>

Select CI Type Page

This page enables you to select a CI type to which to map HP Operations Orchestration (OO) run books.

Important Information	General information about the wizard is available at "Run Book Mapping Configuration Wizard" on page 182.
Wizard map	The Run Book Mapping Configuration Wizard contains: Welcome Page > Select CI Type Page > Select Run Books Page > Configure Parameters Page > Summary Page

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





UI Element (A-Z)	Description
<CI type tree>	Displays a list of CI types from which you select the required CI type to which to map OO run books. Click a CI type to select it. Note: <ul style="list-style-type: none"> ▶ CI types that already have run books mapped to them appear in the tree, but are disabled. ▶ When you edit an existing mapping, only the configured CI type is displayed and you cannot edit it.
<Search string>	You can search for CI types with names containing a specific string that you enter in this field. Click the Search button to run the search. Only matching results are displayed in the tree. Note: <ul style="list-style-type: none"> ▶ The search is not case sensitive. ▶ You can use the asterisk (*) wildcard in your string to match one or more words of text.
Clear	Click to clear the current search string and display all CI types.
Search	Click to display only CI types that match the search string.

Select Run Books Page

This page enables you to select the HP Operations Orchestration (OO) run books to map to the selected CI type.

Important information	General information about the wizard is available at "Run Book Mapping Configuration Wizard" on page 182.
Wizard map	The Run Book Mapping Configuration Wizard contains: Welcome Page > Select CI Type Page > Select Run Books Page > Configure Parameters Page > Summary Page

User interface elements are described below:

UI Element (A-Z)	Description
	Select run book to map. Adds the run book you selected in the Flow Library area to the list in the Selected Run Books area.
	Remove run book from mapping. Removes the run book you selected in the Selected Run Books area from the list and moves it back to the Flow Library area.
Flow Library	Displays a tree of the available run books in the OO flow library. Click a run book to highlight it for selection.
Run Book Description	Displays the description of a highlighted run book.
Selected Run Books	Displays the run books you select for mapping to the CI type and their path in the OO flow library. Click a run book to highlight it for removal from the list. Note: <ul style="list-style-type: none"> ▶ A run book that is included in an existing mapping, but that is not found in OO, is denoted by the  icon. Remove the run book from the mapping. ▶ A run book included in an existing mapping that contains different parameters than those defined in the mapping (that is, additional or deleted parameters), is denoted by the  icon.



Configure Parameters Page

This page enables you to configure the settings and default values of the parameters used by the selected HP Operations Orchestration (OO) run books.

Important information	General information about the wizard is available at "Run Book Mapping Configuration Wizard" on page 182.
Wizard map	The Run Book Mapping Configuration Wizard contains: Welcome Page > Select CI Type Page > Select Run Books Page > Configure Parameters Page > Summary Page

User interface elements are described below:

UI Element (A-Z)	Description
CI	The default CI from the selected CI type topology to use as the source for the required run book parameter. Click the arrow to open a drop-down list of all the CIs included in the CI type topology. Select a different CI if required. Note: If there is no configured topology for the selected CI type, the CI corresponding to the selected CI type itself is the only available option.
CI Attribute	The default CI attribute, of the selected CI, to use as the source for the required run book parameter. Click the arrow to open a drop-down list of all the attributes for the selected CI. Select a different attribute if required.
Default Value	A default value to be used for the CI attribute, if required.
Enable to run automatically	Select the option when you want to automatically run the run book. Note: The run book runs automatically only when all the parameters listed in the Configure Parameters page have been assigned a value, and the run book runs without user intervention.

UI Element (A-Z)	Description
<p>Event Attribute</p>	<p>The default event attributes for events that correspond to the selected CI type. The field automatically lists all the default event attributes and custom attributes that were defined in OMi. You can select one of the listed default event attributes or add your own.</p> <p>For details about the attributes, see OMi Online Help documentation.</p>
<p>Run Book/Parameter Name</p>	<p>A hierarchical list of the selected run books and the parameters they require.</p> <p>Note:</p> <ul style="list-style-type: none"> ▶ Only parameters that are configured as flow input parameters for run books are included. For example, a parameter that is included in an operation configured in a run book is not displayed and cannot be mapped. ▶ Mandatory parameters for which settings are required are denoted by a red asterisk. ▶ A parameter included in an existing mapping, but that is not found in a run book, is denoted by the  icon. ▶ A parameter found in a run book, but not included in an existing mapping, is denoted by the  icon. ▶ Additional and deleted parameters are automatically added to, or removed from the mapping when you click the OK button on the wizard page.
<p>To choose an attribute that is not part of the selected CI click here</p>	<p>Click the link to open the Select Topology dialog box, where you can select a CI from a related CI topology to use as the source for the required run book parameter. For details on the user interface, see "Select Topology Dialog Box" on page 187.</p>

Summary Page

This page summarizes the configuration of the mapping of the parameters used by the selected HP Operations Orchestration (OO) run books to the CI attributes or to the event attributes as well as the default values of the attributes.

Important information	General information about the wizard is available at "Run Book Mapping Configuration Wizard" on page 182. This page is displayed only when you create a new run book mapping.
Wizard map	The Run Book Mapping Configuration Wizard contains: Welcome Page > Select CI Type Page > Select Run Books Page > Configure Parameters Page > Summary Page

Select Topology Dialog Box

This dialog box enables you to select a different CI type or node CI from a topology related to the CI type selected in the **Run Book Mapping Configuration** wizard. This CI is used as the source for a required run book parameter for the CI type selected in the wizard.

To access	Click the Select Related CIs link in the Configure Parameters page in the Run Book Mapping Configuration wizard. For details on the user interface, see "Configure Parameters Page" on page 185.
See also	"Run Book Mapping Configuration Wizard" on page 182

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

UI Element (A-Z)	Description
<Topology map>	Displays a map of the selected CI topology.
Select the node to which the run books are mapped	Select a specific node from the selected topology to use as the source for a required run book parameter for the CI type selected in the Run Book Mapping Configuration wizard. Available nodes are those applicable for the CI type selected in the wizard, and their descendants.
Select topology	<p>Select a topology from the drop-down list of topologies that are related to the CI type selected in the Run Book Mapping Configuration wizard. Related topologies are those topologies in the Run Book folder in Modeling Studio that include a node for the CI type selected in the wizard.</p> <p>Note:</p> <ul style="list-style-type: none"> ➤ Topology names in the Run Book folder in Modeling Studio cannot contain spaces. ➤ You can create topologies using Query Manager (Admin > ODB Administration > Modeling > Modeling Studio). For details on the user interface, see "Modeling Studio Page" in the <i>Modeling Guide</i>.

11

HP Diagnostics and HP Business Service Management Integration

This chapter includes:

Concepts

- HP Diagnostics and BSM Integration Overview on page 190

Tasks

- How to Access Online Help for HP Diagnostics in HP Business Service Management on page 191
- How to View HP Diagnostics Data in HP Business Service Management on page 191

Troubleshooting and Limitations on page 193

Concepts

HP Diagnostics and BSM Integration Overview

HP Diagnostics is a composite application triage and diagnostics solution that is designed to help you improve the performance of your J2EE, .NET, and ERP/CRM enterprise applications throughout the application lifecycle.

HP Diagnostics is integrated with BSM, allowing you to monitor the availability and performance of your production enterprise application. This integration enables you to significantly reduce the Mean Time To Resolution of problems and thus increase the availability and value of the business applications.

From within BSM, you can track the performance status of your applications that are being monitored by HP Diagnostics.

The Diagnostics integration with BSM allows you to drill down to Diagnostics data from specific BSM configuration items and reports. You can also generate high level reports in BSM about the performance of applications and Business Process Monitor (BPM) transactions that are monitored by Diagnostics.

Tasks

How to Access Online Help for HP Diagnostics in BSM

Click **Help > Diagnostics Help** to access the online HP Diagnostics Documentation Library, for the Diagnostics application or for Diagnostics administration in BSM.

How to View HP Diagnostics Data in BSM

To view HP Diagnostics data in HP Business Service Management, you must register the HP Diagnostics server machine in HP Business Service Management.

This task includes the following steps:

- "Register HP Diagnostics" on page 191
- "Set up BSM to work with Diagnostics" on page 192
- "View HP Diagnostics data in BSM" on page 192
- "Access HP Diagnostics from BSM" on page 192

1 Register HP Diagnostics

Access **Admin > Diagnostics**, to open the HP Diagnostics Server Details page. Enter the details of the server as follows:

- **Diagnostics server host name.** Enter the name of the machine that is host to the HP Diagnostics Server.

Even when the Diagnostics Server is installed on the same system as BSM you must enter the actual name of the host in the box. Do not enter **localhost**.

- **Diagnostics server port number.** Accept the default port number (**2006**) or enter the port number through which HP Diagnostics listens to server traffic.

- **Diagnostics server protocol.** Select the communication protocol (HTTP or HTTPS) through which HP Business Service Management connects to HP Diagnostics.

If you select HTTPS, additional configuration steps are required. For details, see the *HP Diagnostics Installation and Configuration Guide*.

Click **Submit** to register the server with HP Business Service Management. The Diagnostics Server details are saved in BSM and BSM server details are automatically registered on the HP Diagnostics machine.

If the server name is incorrect or the server is unavailable, an error message is displayed.

If the user name with which you logged in does not have permissions for making changes on the HP Diagnostics server, a message is displayed instead of the HP Diagnostics page.

2 Set up BSM to work with Diagnostics

For help with the remainder of this procedure for registering the server, see the *HP Diagnostics Installation and Configuration Guide* (select **Help > Diagnostics HP Diagnostics Installation and Configuration Guide**).

3 View HP Diagnostics data in BSM

To view relevant Diagnostics information, select **Application > Service Health**, select the Diagnostics View in Model Explorer and click the appropriate tab.

For information on the HP Diagnostics data displayed in HP Business Service Management, see the *HP Diagnostics User's Guide* (select **Help > Diagnostics Help > HP Diagnostics User's Guide**).

4 Access HP Diagnostics from BSM

You can access HP Diagnostics from BSM using right-click options in views and drill-downs from some reports.

Troubleshooting and Limitations

This section describes troubleshooting and limitations for the integration of HP Diagnostics and BSM.

After connecting BSM to the HP Diagnostics server, a message is displayed: "Session does not exist."

You must check that Internet Explorer is set up to allow the browser to submit cookies to the HP Diagnostics server:

- a** In Internet Explorer (version 6.0), select **Tools > Internet Options > Privacy**.
- b** In the Web Sites section, click the **Edit** button.
- c** In the Per Site Privacy Actions dialog box, enter the HP Diagnostics server DNS domain name.
- d** Click **Allow, OK**, and **OK**.

Index

A

- Add Integration dialog box 148
- Application CIs
 - simulate SAP users 35
- Application Management for SAP
 - administration 19
 - architecture 22
 - deploying 29
 - deployment workflow 25
 - display in Service Health 48
 - license 21
 - overview 20
 - reports and views 43
- architecture
 - Application Management for SAP 22
- Availability dimension
 - uninitialized 40
- Availability KPI
 - no color 40

B

- backup
 - HP OMi Configuration Data 100
 - HP OMi Configuration Data Windows 109
- bi-directional event synchronization 100
- BPM transactions
 - attaching to SAP Application components 37
- BSM
 - integration with HP Service Manager and HP Service Center 127
 - unable to log on 41
- BSM alerts
 - generate events in OM 123
- BSM integrations 66

- Business Process Insight
 - overview of application 164
- Business Process Monitor
 - creating profile for SAP 36
- Business Service
 - custom integration 131
- Business Transaction
 - creating for SAP 26
- Business Transaction CIs
 - simulate SAP users 35
- Business Transaction Flow
 - creating for SAP 26
- Business Transaction Flow CIs
 - simulate SAP users 35

C

- CCMS
 - for SAP 34
- CCMS Counters CIs 47
- Choose Columns to Display dialog box 158
- CI Operations Orchestration Flows
 - Configuration page 180
- CIs
 - SAP 50
- CIT Relationships Map dialog box 160
- CLIP 82
- Configuration File 49
 - page 55
- Configure Parameters page 185, 187
- configuring
 - message forwarding policy
 - UNIX
 - active 115
- content packs
 - import 117

Index

correlation

- showing impact 48

- Create a Host -Software Element Integration scenario 141

D

data collection process

- EMS 136
- third-party data 136

Diagnostics

- online help 191

discovery

- running SAP discovery 26

Discovery Agent

- restart 33

Discovery Probe

- post-installation procedure 32

E

- Edit Integration dialog box 151

- Edit Run Book Mapping Configuration wizard 182

EMS

- process flowchart 136

- EMS Integration Admin page 161

EMS integration application

- overview 130

EMS integration tool

- Netscout 167

EMS monitor

- CIs 134

Enterprise Management Systems

- integration 129
- overview 130

event

- open in HP Operations Manager 125

event synchronization

- validate 118

events

- synchronizing 102, 103, 105, 109, 113

F

forwarding policy

- configure HPOM for UNIX 113

G

Gateway Server

- policies 110

Gateway Servers

- add as nodes to HPOM UNIX 105
- add as nodes to HPOM Windows 103

H

Host

- custom integration 131

- hosts reconciliation 135

Host-Software Element

- custom integration 131

HP Business Process Insight

- access from BSM 169

HP Diagnostics

- integration with BSM 189

HP Diagnostics and BSM integration

- overview 190

HP Diagnostics data

- view in BSM 191

HP Operations Manager

- open an event from BSM 125

HP Operations Orchestration

- integration with BSM 171

HP Operations Orchestration Central and BSM integration

- overview 172

HP Operations Orchestration integration

- workflow 173

HP OVO

- customize integration adapter 167

HP Service Manager

- integration with BSM 127

HP ServiceCenter Integration with BSM 127

HP Software Support Web site 15

HP Software Web site 16

HPOM

- deploying policies 111

- event synchronization 102, 109, 113

- message forwarding
 - policy 102, 109, 113
- SSL trust relationship 101, 102, 103, 105, 106, 108
- HPOM for UNIX
 - adding HP OMi as a node 105
 - setting up a policy 113
- HPOM for Windows
 - adding HP OMi as a node 103

I

- IA
 - Integration Adapter 89
- integration
 - Business Service 131
 - custom 131
 - EMS 131
 - events with BSM Integration Adapter 95
 - Host 131
 - Host-Software Element 131
 - Netscout 163
- Integration Adapter
 - events 95
 - IA 89
 - overview 90
- integration administration 129
- integration with applications
 - overview 66
- integrations
 - BSM and BSM 88
 - BSM and Diagnostics 83, 189
 - BSM and Netscout 85
 - BSM and NNMi 67
 - BSM and OM 71
 - BSM and Release Control (RC) 81
 - BSM and Service Manager 77
 - BSM and SiteScope 73
 - BSM and third-party applications 85
 - BSM and UCMDB 87
 - BSM Operations Orchestration (OO) 80
 - how to access Diagnostics online help 191

- summary BSM with other applications 65

K

- Knowledge Base 15

L

- license
 - SAP 30
 - SiteScope 31
- links between SAP transactions and BP steps
 - creating automatic links 37
 - creating manual links 38

M

- message forwarding policy
 - on UNIX
 - active policy 115
- message forwarding policy Windows 109
- monitors
 - creating general monitors for SAP 34
 - set to report all monitors and measurements 29

N

- naming conventions
 - BPM transaction automatically linked to SAP transactions 37
- Netscout
 - integration 163
 - integration using EMS integration tool 167
- Netscout integration
 - overview 164
- New Run Book Mapping Configuration wizard 182
- number of CIs
 - limit for BSM evaluation 121

O

- online help
 - Diagnostics 191

Index

online resources 15

OO

list of predefined mappings 179

Operations Management

configure connections 99, 101

configure overview 100

Operations Manager

generate events from BSM alerts 123

Operations Orchestration

list of predefined mappings 179

P

packages 30

Performance dimension

uninitialized 40

Performance KPI

no color 40

policies 93

policy 109

create new message forwarding Unix

113

profile

creating 35

protocol

SAPGUI 36

Q

query nodes and relationships

adding to a relationship map 140

R

reconciliation of hosts 135

relationships details 135

report

Show Impacting SAP Transports 57

Run Book Mapping Configuration wizard

182

Run Books Configuration page 180

run-time settings 36

S

SAP

CIIs 50

collecting system information 23

creating Business Transaction and
Business Transaction Flow 26

KPIs 53

menu options 53

troubleshooting 39

SAP Application components

attaching BPM transactions 37

SAP BPM scripts

not executing 40

SAP CCMS monitor 34

creating 34

using to retrieve measurements from

SAP system 27

SAP deployment

workflow 25

SAP dimension

Not up to date 39

SAP discovery

running 26

SAP Service

activating 35

administering 24

SAP system

monitoring 40

SAP Systems view 44

SAP Transaction Changes report 59

SAP transactions

automatic link to BPM transactions 37

SAP Transport report 61

SAPGUI protocol 36

scenario

Create a Host-Software Element

Integration 141

script

editing 36

Select CI Type page 183

Select Run Books page 184

Select Topology dialog box 187

Service Health

display SAP information 48

Show Impacting SAP Transports report 57

Showing Impacting SAP Transports report
56, 58

SiteScope
attaching SiteScope to Application
Management for SAP 29

license 31, 32

post-installation procedure 31

SiteScope CCMS Solution Template 28

SiteScope CCMS Solution template
using for SAP 28

SiteScope monitors
for SAP 34

Software Component File 49

Support Package File Information 49

synchronization

event 102, 103, 105, 109, 113

topology 121

T

third-party data

process flowchart 136

topology

synchronization 121

topology sync 88

topology synchronization

configuration items (CIs) 103, 121

troubleshooting

Application Management for SAP 39

Troubleshooting and Knowledge Base 15

troubleshooting and limitations

HP Diagnostics 193

trust relationship

between BSM and external servers 106

trusted relationship

verify between BSM and external
servers 108

U

use case

Create a Host-Software Element
Integration 141

V

view

SAP Systems 44

W

workflow

for deploying SAP 25

