HP Business Service Management

for the Windows and Linux operating systems

Software Version: 9.22

Getting Started with BSM

hp

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Introducing This Guide

This guide provides a high-level overview of the HP Business Service Management (BSM) platform, and a workflow for setting up the BSM end-to-end solution. It also provides details on key BSM components and concepts, and on how the BSM components complement each other. Every topic in the guide points you to where you can find more information in the BSM Help.

BSM administrators and implementers should read this guide before beginning the planning and installation of the BSM platform, to get an overview of the BSM solution and its implementation.

Other BSM guides referred to in this document are available from the Home page in the BSM Help, or from each specific BSM component. You can also access the documentation in the HP Software Support Web site.

Tip: This document is designed to be used online, where you can benefit from its interactive capabilities. The online version is available from the BSM Help.

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Introducing BSM

This chapter includes:

➤ BSM Portfolio on page 11

➤ Overview of the BSM Solution on page 16

BSM Portfolio

The HP Business Service Management (BSM) portfolio provides a set of integrated, management-layer solutions, each employing a different combination of HP products and applications. The BSM portfolio enables the integration of application, system, network, and business transaction monitoring, helping you to manage application performance and address issues before they impact customers; and connecting dynamic cloud and virtualized services to underlying infrastructure, to provide better visibility into services.

The BSM portfolio enables effective problem-solving by the various IT teams and personas in your organization, and across the different systems, network tiers, and software layers in your IT architecture.

The BSM portfolio includes the following solutions:

➤ "Service and Operations Bridge" on page 12

➤ "Application Performance Management" on page 13

➤ "Network Management" on page 15

➤ "System Management" on page 15

Service and Operations Bridge

BSM's Service and Operations Bridge solution provides consolidated service and event management through a unified BSM console in the Operations Management (OMi) application, enabling you to monitor and manage the events that occur in your IT environment, and helping you restore disrupted services and minimize service disruptions.

The Service and Operations Bridge directs reported IT-environment events to the central event console, the Event Browser. There they are automatically correlated, relating the events to the IT services that depend on the IT infrastructure, linking infrastructure management with application and business service management.

The Service and Operations Bridge combines events from BSM components, such as SiteScope, Business Process Monitor, and Service Level Management, with events from the event-monitoring components of the BSM solution, such as Operations Manager and Network Node Manager *i*, and from relevant third-party products. This consolidation enables you to keep track of all the events that occur in your monitored environment.

The events are analyzed according to the Run-time Service Model data and a set of correlation rules, to determine the underlying causal event, and are prioritized based on impact to the business. Using run book automation (through integration with HP Operations Orchestration or other products), you can then launch an automated workflow that runs through the procedures to resolve the issue without the need for human intervention.

Depending on the incident management policy, an incident ticket can be either manually or automatically opened in HP Service Manager or other ticketing tools. The ticket is enriched with status information, as well as relevant context and historical data, and events are assigned to the relevant operator for resolution.

In addition, the Service and Operations Bridge incorporates events from Service Health Analyzer. These are predictive events that can act as an early warning for an operator, enabling the operator to process an event before the full impact is felt by the business.

The Service and Operations Bridge provides a single source for what is happening in the monitored environment at any point in time. IT can pinpoint the cause of a problem, make a determination of the potential business impact, and help route the problem to the relevant group so that it gets resolved. These abilities help in avoiding duplication of effort across teams trying to deal with the same event from different perspectives, help speed up response time, and improve IT productivity.

In addition, the Service and Operations Bridge solution provides system performance management through the various dashboards available in the Service Health and MyBSM applications. The consolidation of event management with the metrics monitoring channel within BSM enables the translation of information from system events into service health resources. This consolidation is realized through usage of a shared entity called health indicators (HIs), creating a common terminology between event management and application management data.

The topology data provided by the Service and Operations Bridge data collectors is utilized by the Service Health Optimizer and Service Health Reporter components to provide capacity planning, visualization, and cross-domain reporting across your heterogeneous physical and virtual server environments.

Application Performance Management

BSM's Application Performance Management (APM) solution provides 24x7 application, service, and infrastructure monitoring, which enables you to manage your applications from an end-user perspective, realize the business impact of performance and availability issues, and diagnose application problems.

Data arriving from BSM monitoring components such as SiteScope, Business Process Monitor, Real User Monitor, and Diagnostics, as well as data arriving via integrations with other HP and third-party products, automatically populate the Run-time Service Model (RTSM), defining CIs and their relationships. In addition, you can synchronize topology between a Configuration Management System (CMS) and the RTSM, enabling topology-based integration flows with other HP or third-party centers.

APM uses the RTSM data to relate infrastructure components, business transactions, and applications to the business services and service level agreements (SLAs) they support. APM provides a unified dashboard, Service Health, for managing IT operations to meet your business objectives, enabling you to view key business process and system indicators in real time, from an end-user, business-level, and service-level perspective. Service Health also indicates when there is an anomaly on a CI, detected by Service Health Analyzer, enabling an operator to deal with a potential problem before the full impact is felt by the business.

In addition, the Service Level Management application enables you to manage your SLAs and ensure that application performance and availability meet service level goals.

The APM solution also supports Web, J2EE, .NET, SAP, and Siebel performance management, and includes alerting, diagnostics, periodic health checks, capacity management capabilities, and trend analysis.

BSM's End User Management software plays an important part in APM, by proactively monitoring application performance and availability from the end-user perspective, so that you can fix issues before customers experience problems. Real-time user information filtered to your development and QA teams can help reduce MTTR, improve service-level performance and availability, and decrease application downtime.

The APM advanced solution includes Business Transaction Management capabilities provided by Business Process Insight and TransactionVision monitoring, enabling business process and transaction tracing with an enhanced solution scale.

In addition, the consolidation of application management and event management within BSM, achieved through the common use of health indicators (HIs), enables the translation of violated thresholds from end-user monitoring into events sent to the Operations Management Event Browser.

Network Management

BSM's Network Management solution provides unified network monitoring and management coverage across network fault, availability, performance, change, configuration, and compliance enforcement. This is achieved by a set of integrated products and tools that enhance network performance, availability, and security.

Network Management component Network Node Manager *i* (NNMi) offers fault, availability, and performance monitoring, with real-time network monitoring and network incident management, for physical and virtualized network infrastructure. This network monitoring solution is integrated with change, configuration, and compliance management provided by the HP Network Automation component.

This unified approach enables integrated remediation, and diagnostic automation capabilities for the technology process workflow. The solution supports multi-tenancy network management capabilities to help improve your network availability, and helps you quickly adapt to changing network environments, including data center virtualization, cloud computing, and supporting advanced services.

System Management

BSM's System Management solution consolidates and correlates fault and performance events across your entire physical and virtual IT infrastructure, enabling you to identify and resolve problems with full visibility into that IT infrastructure.

The System Management solution synthesizes a number of HP products and tools, including Operations Manager, Operations Management (OMi), SiteScope, Service Health Optimizer (SHO), and Service Health Reporter (SHR). The integration of data from across these products enables centralized, comprehensive IT operations management, eliminating the duplication of effort that can result from separate consoles for each IT silo.

System Management provides automatic correlation of fault and performance events across disparate, heterogeneous IT domains, relating the events to business services and the underlying IT infrastructure on which they rely. It provides insight into the dependencies between applications, business services, and infrastructure—physical and virtual.

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The SHO and SHR components utilize the collected data to provide capacity planning, visualization, and cross-domain reporting across your heterogeneous physical and virtual server environments.

Overview of the BSM Solution

HP Business Service Management (BSM) provides a suite of monitoring products that offer a comprehensive methodology for monitoring and measuring IT services from a business perspective. BSM tools enable you to identify problems, understand their business impact, and prioritize the triage and remediation process. BSM thus enables your IT organization to optimize the performance and availability of applications in production, and proactively resolve problems when they arise, thus assisting your organization to deliver more effective business results with lower IT costs.

BSM contains an integrated set of applications for real-time performance and availability monitoring, providing capabilities that include Service Level Management, End User Management, System Availability Management, event handling, early-warning events, and custom reporting and alerting. These applications combine top-down, user experience management with bottom-up insight into infrastructure events and performance, by linking infrastructure to business processes, transactions, and the end-user experience. BSM is based on a common foundation of shared workflow, administration and reporting services, shared assets, and expertise.

This unified top-down and bottom-up methodology enables BSM to provide consolidated and automated service operations management for your business, reducing MTTR and helping you to more effectively honor your SLAs.

BSM's consolidated service operations approach is driven by the following processes:

➤ "Detect" on page 18

➤ "Consolidate" on page 19

➤ "Prioritize" on page 19

➤ "Isolate" on page 20

➤ "Diagnose" on page 20

➤ "Repair" on page 21

Detect

BSM detects problems before they impact the business. BSM monitoring tools discover, detect, monitor, and measure across the IT environment, reporting events and sending alerts and metrics back to the BSM applications. You configure the monitoring requirements and thresholds for the measurements to define what is a problem.

In order to create a model of what your IT environment looks like, BSM is able to discover your IT environment automatically, using monitoring tools, and using discovery techniques provided by Discovery and Dependency Mapping. BSM then helps you model your business processes and services, using the management tools provided in the Run-time Service Model (RTSM) Administration application; these tools map the complex and dynamic dependencies between applications and their supporting infrastructure.

The BSM solution monitoring options include:

➤ "Business Process Monitor (BPM)" on page 26
➤ "Diagnostics" on page 27
➤ "Network Node Manager i (NNMi)" on page 30
➤ "Operations Manager" on page 30
➤ "Real User Monitor (RUM)" on page 32
➤ "SiteScope" on page 37
➤ "TransactionVision" on page 39

Consolidate

BSM consolidates topology, events, and performance and availability metrics from across domains and monitoring systems into the BSM management centers, enabling consolidated event and service health management for IT operations. Events and metrics from third-party integrations can be included in this "single pane of glass" approach. Cross-domain events are automatically correlated by the event-based correlation engine, to correlate a symptom with its cause.

These processes help to identify the probable cause of the events and to reduce the number of escalated incidents.

The core component for this consolidated operations approach is the embedded CMDB, the Run-time Service Model (RTSM). The RTSM defines the relationships between the infrastructure components, IT services, applications, and corresponding business services, and provides a topological configuration item (CI) storage repository that is used throughout BSM.

Prioritize

BSM prioritizes events based on their business impact, and whether the associated CI is included in an SLA, enabling IT to focus on those issues first. This prioritization is achieved using the comprehensive dependency map created in the RTSM, which gives visibility into the impact of events on business services, and on how real users are being impacted by issues.

In addition, Service Level Management capabilities allow you to compare actual application availability and performance with business goals, so that you can see the remaining time until SLAs are breached, and to prioritize problem resolution based on service level compliance.

You can define role-defined dashboards in MyBSM that track KPIs specific to a high-priority business service, to help deliver the relevant information to the right people.

Isolate

BSM provides processes to help isolate the root cause of problems, speeding up resolution time. A problem can occur at any stage of the user experience; it could be infrastructure or network related, an application issue, a transaction implementation issue, a security issue, and so forth. To manage this, BSM tracks transactions in an end-to-end manner, regardless of the technologies used to complete them. The RTSM then provides a unified service health view of the relationships and dependencies between the CIs that represent your business services and IT infrastructure.

This combination provides a complete and up-to-date picture of the managed environment, and enables the impact analysis needed to quickly isolate the problem. In the Service Health application, you can identify the impacted CI, and drill down to the domain BSM applications such as End User Management, System Availability Management, and Transaction Management to determine the root cause.

In addition, Service Health Analyzer provides predictive events, so that issues can be identified and processed before the full impact is felt by the business.

The IT teams can identify and understand the technical issues at the root of events, and the impact on customers and the overall business. IT is able to trace the problem back to the physical infrastructure or virtual application environment, or trace an event back to third-party cloud service providers.

Diagnose

The BSM platform includes tools to help diagnose anomalies across the IT environment and pinpoint bottlenecks, and provides solutions for different IT teams. For example:

➤ On the applications side, Diagnostics can drill down into the application server stack, and peer into the tiers of an application as they relate to individual infrastructure components, providing both historical context and application-specific details at the time of the issue.

➤ On the network side, Network Node Manager i (NNMi) can analyze network traffic and the network path, and give visibility into the network component that may be the root cause of the problem, for example, a malfunctioning router.

➤ On the infrastructure level, Operations Manager tools can provide visibility into the infrastructure layer.

➤ On the transaction level, Transaction Management can provide a granular view of monitored transactions and report on every step taken during a problematic transaction, for example, a failed bank transfer.

Repair

BSM provides integrated run book automation (RBA) though an out-of-the-box integration with HP Operations Orchestration. This enables an isolation flow to collect additional information on the problem, and the running of automated script actions to try and remedy the problem. BSM can also integrate with other run book automation tools

In addition, BSM integrates with service desks and ticketing systems. You can set up a closed-loop bi-directional integration with HP Service Manager, so that events are transmitted and transformed into incidents, and both events and incidents are closed automatically once the problem is resolved.

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Understanding BSM

This chapter includes:

BSM Solution Components

BSM includes the following tools and solution components:

Application Management for SAP

The Application Management for SAP solution integrates data from Discovery and Dependency Mapping, SiteScope, Business Process Monitor, and your enterprise's SAP application to enable you to gain visibility and control over your SAP systems and applications.

For more details, see "Application Management for SAP Views and Reports" in the *BSM User Guide*.

Application Management for Siebel

The Application Management for Siebel solution integrates data from Discovery and Dependency Mapping, SiteScope, Business Process Monitor, and your enterprise's Siebel application to enable you to gain visibility and control over your mission-critical Siebel applications.

For more details, see "Application Management for Siebel Views and Reports" in the *BSM User Guide*.

Application Management for SOA

The Application Management for SOA solution integrates data from Discovery and Dependency Mapping, SiteScope, Business Process Monitor, HP Diagnostics, and your Service Oriented Architecture (SOA) environment, enabling you to monitor the performance of SOA components within your IT environment.

For more details, see "Application Management for SOA Views and Reports" in the *BSM User Guide*.

BSM Connector (BSMC)

BSM Connector (BSMC) integrates events, metrics, and topology data from third-party systems into BSM. BSMC uses policies to access the data sources. If the data matches the conditions defined in the policies, the data is forward in the form of events or metrics to BSM. Policies can also report topology data to BSM in order to create CIs and CI relationships in the RTSM.

You can use out-of-the box integrations that are available for BSMC, or develop your own custom integrations. You can obtain integrations with third-party systems through HP Live Network (https://hpln.hp.com/group/bsm-integrations).

BSMC integrates out-of-the box with the following third party products:

➤ IBM Tivoli

➤ Microsoft System Center Operations Manager (SCOM)

➤ Nagios

In addition, BSMC integrates with the following HP products:

➤ HP ArcSight ESM

➤ HP ArcSight Logger

➤ HP Network Node Manager i

For details, see the *Using BSM Connector Guide*.

Business Process Insight (BPI)

BPI enables you to visualize and then track the state, or health, of business processes within your organization. It takes information, in the form of events, from both business applications and from the IT infrastructure, and presents these events in business terms; for example, rate of loss of orders, backlogs accumulating, value of these backlogs, and potential impact on key customers. Using this information, you can assess the financial and business impact of delays or blockages in a process due to an IT performance problem, or other incident such as an IT outage.

Business processes are deployed data samples that can be measured using Business Process Monitor definitions. The BPI Server sends the data to BSM to use when defining status for key performance indicators (KPIs).

BPI enables you to track the duration and value associated with any user-defined scope of the business processes. To do this, you model your IT operational resources within BSM (as CIs) and then use BPI to link the CIs to process activities. BPI can then obtain status information relating to these operational resources for business processes that you have modeled within BPI. BPI collected data is mapped to CIs and displayed in System Health's views.

For more details, see "Business Process Insight Application Overview" in the *BSM User Guide*.

Business Process Monitor (BPM)

BPM is a BSM data collector that emulates end-users by running the transactions included in a business transaction flow or application, from various locations. By collecting synthetic-monitoring performance and availability data from various points throughout your infrastructure, as well as from external locations, BPM enables you to identify performance problems in real time.

The defined transactions automatically create corresponding CIs in the RTSM. When BSM receives samples for the monitored transactions, they are used to calculate status for the BPM CIs. You use the End User Management reports and other BSM applications to view and analyze the data, in order to monitor the performance of your business applications and infrastructure.

For more details, see "Introducing Business Process Monitor" in the *Business Process Monitor Administrator's Guide*.

Diagnostics

HP Diagnostics is a composite application-monitoring, triage, and diagnostics solution that provides integrated monitored topology, metrics, and events for BSM. It uses collectors and agents to collect data across multiple technology platforms, including JAVA, .NET, Oracle and SQL Server databases, SAP environments, SOA services, and virtualized environments. This data, which is displayed in the Diagnostics application in BSM, enables you to monitor and diagnose performance problems in your application infrastructure, and identify critical bottlenecks.

The functionality provided by the Diagnostics integration with BSM includes:

➤ Send metrics data to BSM; the data is used to determine status for system and software KPIs and fine-grained HIs, and enables you to track the availability and performance status of business applications monitored by Diagnostics, and reduce the MTTR of problems. Diagnostics also provides event data based on CI thresholds set in Diagnostics.

➤ Aggregate transaction monitoring, with Diagnostics providing backend-view data for business transactions generated by other BSM applications, such as BPM. You can generate high level reports in BSM about the performance of business transactions that are monitored by Diagnostics.

➤ Drill down to Diagnostics data from specific BSM configuration items and reports.

➤ View the application infrastructure information from Diagnostics in the context of a business application or business transaction.

➤ Configure business transactions for monitoring in Transaction Management by selecting top level server requests from Diagnostics. You can also view business transaction data from Diagnostics, including topologies, in the Transaction Management application.

➤ View Diagnostics information for monitored Web services and operations included in Application Management for SOA reports.

For more details, see "Diagnostics and Business Service Management" in the *Diagnostics User's Guide*, part of the HP Diagnostics documentation set.

Discovery and Dependency Mapping (DDMA)

DDMA uses the Discovery process to collect information about your IT infrastructure resources and their interdependencies. Discovery discovers resources such as applications, databases, network devices, servers, and so on. Each discovered IT resource is delivered to, and stored in, the RTSM, where the resource is represented as a managed CI.

Discovery is an ongoing, automatic process that continuously detects changes that occur in the IT infrastructure and updates the RTSM accordingly. You must install the Data Flow Probe component (supplied with BSM) to run the Discovery jobs, but you do not need to install any agents on the devices to be discovered.

Following installation, CIs are created for the Data Flow Probe network, host, and host IP. These CIs act as triggers that activate a Discovery job. Every time a job is activated, the job discovers more CIs, which in turn are used as triggers for other jobs. This process continues until the entire IT infrastructure is discovered and mapped.

You manage the Discovery process and the Data Flow Probe from the Data Flow Management (DFM) component in RTSM Administration. In addition, DFM enables you to use the Data Flow Probe to synchronize the topology between RTSM and external data sources (without the need for a DDMA license).

For more details, see "Data Flow Management Overview" in the *Data Flow Management Guide*.

End User Management (EUM)

EUM is a centralized solution for configuring and managing the applications and associated entities you want monitored by the end-user data collectors—Business Process Monitor (BPM) and Real User Monitor (RUM).

By using both BPM and RUM to monitor the same applications and associated entities, you can obtain an overall picture about your applications from both a real user (RUM) and synthetic user (BPM) perspective.

You can view the collected data in End User Management reports and in Service Health.

For more details, see "End User Management Administration Overview" in the *BSM Application Administration Guide*.

MyBSM

MyBSM is a customizable Web 2.0 user environment for working with BSM. In MyBSM, you can create role-based workspaces (dashboards) for different types of users such as operations users, and senior management. The MyBSM workspace provides smooth interactions between different BSM applications and reports.

Each page includes components based on BSM applications and reports, that are of interest to specific users or groups of users. For each page, you can define the layout of components on the page, and their interaction with other components.

For more details, see "MyBSM Overview" in the *BSM User Guide*.

Network Node Manager i (NNMi)

NNMi's data collectors and Smart Plug-In add-on modules (iSPIs) provide discovery and monitoring of your physical and virtual network infrastructure, enabling fault, availability, performance, and advanced network services management. As part of the BSM solution, NNMi integrates with the BSM environment, acting as a data source for BSM for events and topology from the BSM applications.

The integration provides the following:

➤ Display NNMi events in the Event Browser in Operations Management.

➤ Corresponding out-of-the-box health indicators for NNMi events; the health indicators affect the status of the Network CIs in applications such as Service Health and Service Level Management. The integration also provides the relevant out-of-the-box KPIs for Network CIs.

➤ Populate the RTSM with the NNMi topology. BSM stores each device in the NNMi topology as a CI.

➤ Drill down from various EUM reports, MyBSM, and other locations to NNMi, where you can display trace route information between the client and the destination machine, to gain visibility into network components that may be the root cause of problems.

➤ Connect to the NNMi Management server and further analyze incoming events in NNMi.

For details, see the *BSM - NNMi Integration Guide* in the HP Software Product Manuals Web site (http://h20230.www2.hp.com/selfsolve/manuals).

Operations Manager

Operations Manager (HPOM) uses agent-based and agentless monitoring, including application Smart Plug-Ins (SPIs) to collect events, alerts, and performance data from the monitored IT environment. As part of the BSM solution, Operations Manager integrates with the BSM environment, acting as a data source for BSM and enabling you to manage events, restore services, and minimize service disruptions from the BSM applications.

Both Operations Manager for Windows and Operations Manager for UNIX (HP-UX and Linux) are supported.

The integration provides the following:

➤ Integration of Operations Manager data into BSM:

   ➤ If you have an Event Management Foundation license, the events are displayed in the Event Browser in Operations Management. The integration uses a bi-directional synchronization of events between Operations Manager and Operations Management.

   ➤ If the Operations Manager events have corresponding health indicators, the health indicators affect the status of the relevant CIs in applications such as Service Health and Service Level Management.

   ➤ If you have the Event Management Foundation license enabled, the Operations Manager topology can synchronize with the RTSM topology.

➤ Drill down from Service Health and the Event Browser to the Operations Manager application, to run event-related actions, and to provide additional visibility into the infrastructure layer. This speeds problem resolution through the use of Operations Manager guided procedures, embedded knowledge, and tools.

➤ Enables the display of events triggered by the BSM alerts and by health indicator status changes, within Operations Manager.

For details, see the *BSM - Operations Manager Integration Guide* in the HP Software Product Manuals Web site (http://h20230.www2.hp.com/selfsolve/manuals).

Operations Management (OMi)

The Operations Management application (also known as OMi) provides a single event console for consolidated events arriving from different monitored data sources. It combines events generated within BSM (for example, events generated by EUM or SLM based on triggered alerts, or events triggered by threshold breaches of EUM or SiteScope measurements) with events arriving from the data collecting components of the BSM solution (for example, events from Operations Manager or NNMi), and other third-party applications.

In the Operations Management Event Browser, operators can see an overview of all the active events that need to be worked on in a single screen. They can see such things as the event severity, the type and category of event, the source of the event, the time and location of the event, and the affected configuration item. Additionally, BSM health data, such as event type indicators (ETIs), health indicators (HIs), and key performance indicators (KPIs) are used to evaluate the health of related CIs in the context of the events.

Events can be automatically correlated and filtered to display only those that need to be acted upon to maintain availability of your IT services. Topology-based event correlation (TBEC) enables the correlation of symptoms with cause events. When the problem reported by the cause event is solved, all related symptom events are also closed. For any device, such as a server, the severity of the problems directly associated with the server are collated, and combined with information about devices associated with the server. The combined data is passed to calculation rules that evaluate and set the KPIs that indicate the overall health of the object.

For details on the role of Operations Management as part of the BSM Service and Operations Bridge solution, see "Service and Operations Bridge" on page 12.

For more details on Operations Management, see the *Operations Manager i Concepts Guide*.

Real User Monitor (RUM)

RUM is a BSM data collector that monitors both user- and system-initiated network traffic between client machines and servers, and between servers, collecting network, server performance, and availability data in real-time.

RUM provides information on:

➤ End users from all locations, providing end-user experience.

➤ Application-related network performance.

➤ Application backend protocols.

This data enables you to pinpoint the cause of delays and quantify the business impact of detected performance issues related to end users.

For more details, see "Real User Monitor Administration" in the *BSM Application Administration Guide*.

Run-time Service Model (RTSM)

The RTSM is BSM's embedded, customized CMDB. It acts as the central repository for configuration information that is collected and updated from the various BSM data collection processes: BSM data collectors, the Discovery process, and third-party data collectors and tools. The RTSM defines the relationships among infrastructure components, IT services, applications, and corresponding business services.

The RTSM stores and handles information on the services, their components, and configuration items (CIs), as well as details about the CI attributes, history, and relationships. The RTSM also contains the object repositories used to define CIs and KPIs, which are used throughout BSM.

The RTSM supports federation with the HP CMS solution (an external configuration management system working with an HP Universal CMDB), and with third-party CMDB solutions. Consequently, it can easily be leveraged in use cases outside BSM.

For more details, see "RTSM Overview" in the *RTSM Administration Guide*.

Service Health

BSM includes two applications for managing the service health of your business processes: Service Health and CI Status.

➤ The **Service Health** application dashboards provide a central location to view and analyze performance data collected by BSM data collectors and stored in the BSM database. The collected and aggregated data is used by the Health Indicators (HIs) and Key Performance Indicators (KPIs) to provide quantifiable measurements that help you monitor how well your business is achieving objectives.

The KPIs and HIs provide real-time assessment of the present state of your business and processes, enable you to track critical performance variables over time, and help you assess the business impact of problems in the system.

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

For more details, see "Service Health Overview" in the *BSM User Guide*.

➤ The **CI Status** application enables you to analyze the performance data using reports, which display information on KPI statuses over time, and CI status alerts. For details, see "CI Status Reports" in the *BSM User Guide*.

The Service Health Administration tool services both of these applications, enabling you to customize how BSM calculates KPIs and HIs.

Service Health Analyzer (SHA)

Service Health Analyzer (SHA) enables you to be more proactive in managing your data center's physical and logical infrastructure, helping you to prevent or reduce downtime. It uses a self-learning algorithm to analyze historical and current data, and if certain criteria are met, reports on the current state of abnormal IT services and their topology location. Abnormal behavior is determined by comparing CI metrics against dynamic baseline thresholds.

SHA uses a run-time analytics engine that can anticipate IT problems before they occur, by analyzing abnormal service behavior and alerting IT managers of real service degradation before an issue impacts their business.

SHA enables you to investigate an anomaly using information from the RTSM, displaying affected IT components in their associated topologies. This assists in the remediation of SHA events. It also enables you to compare and correlate metrics in an anomaly using several algorithm types, to investigate whether abnormal metric behavior is connected.

For more details, see "Service Health Analyzer Overview" in the *BSM User Guide*.

Service Health Optimizer (SHO)

HP Service Health Optimizer software enables business-service-driven capacity management for dynamic virtualized and physical IT infrastructures. SHO provides out-of-the-box integrations with the RTSM and SHR, utilizing BSM-collected metrics and topology information, and utilizing the data from the SHR Performance Management Database, to provide capacity management, resource optimization, and workload placement from a business service perspective.

Using SHO, you can visualize heterogeneous virtual and physical server environments, optimize use of virtual resources, and forecast the impact of future growth or projected changes in the virtual IT infrastructure.

For more details, see the HP Service Health Optimizer page on the HP Software Site (http://www8.hp.com/us/en/software/software-product.html?compURI=tcm:245-937079&pageTitle=service-health-optimizer) or contact your HP sales representative.

Service Health Reporter (SHR)

HP Service Health Reporter software enables business-service-driven, cross-domain reporting in dynamic IT environments. SHR provides out-of-the-box integration with the RTSM, gathering and consolidating BSM-collected resource and response-time metrics, topology information, and business service context information. The composite data is saved in the SHR Performance Management Database (PMDB).

SHR provides comprehensive reports for a variety of heterogeneous IT infrastructure components, applications, and virtualization technologies, giving a unique understanding and perspective on the behavior of dynamic virtualized IT infrastructure and the way it impacts end users. In addition, SHR provides cross-domain linkages from these IT infrastructure reports to the business service that they support.

For more details, see the HP Service Health Reporter page on the HP Software Site (http://www8.hp.com/us/en/software/software-product.html?compURI=tcm:245-937080&pageTitle=service-health-reporter) or contact your HP sales representative.

Service Level Management (SLM)

The SLM application provides a service level management capability within BSM:

➤ SLM determines compliance with your Service Level Agreements (SLAs) by measuring your business applications. You can define business service entities (Business Service and Infrastructure Service CIs) that represent the service offerings in your service catalog, and map measurements for service-related processes and network components to each service CI. The service CIs are added to your SLAs. You can also add CIs representing service-related processes and components, directly to your SLAs.

➤ The data produced by the service-related measurements helps you determine whether the availability and performance requirements of users and infrastructure are being met. SLM calculates key performance indicator (KPI) and health indicator (HI) values from the received availability and performance data, and compares them with required service level objectives. The results are displayed in a dashboard and in reports which show you how well actual service levels compare with your goals.

For more details, see "Service Level Management Overview" in the *BSM User Guide*.

Shared Services – HP Software-as-a-Service (HP SaaS)

HP SaaS for BSM provides a managed-service solution for your enterprise applications and end-user monitoring processes. By leveraging a pre-deployed BSM infrastructure, maintained by application experts, HP SaaS provides the requisite infrastructure, resources, and expertise you need to monitor your environment, with high a level of security (ISO 27001 standards). You can use this hosted solution to manage the business impact of application issues, through a tight integration with back-end monitoring.

SaaS also helps accelerate BSM adoption through guided expertise, best practices, and ongoing mentoring, and helps you set up integrations between BSM and other products.

The SaaS solution enables you to reduce investment in infrastructure and staff training, and helps you maximize the full value of the BSM platform, with 24/7 support for your applications. The solution is delivered through the Internet, and uses system tickets to communicate with customers about problems or scheduled maintenance.

For more details on implementing HP SaaS for BSM, see the HP Software as a Service page on the HP Software Site (https://h10078.www1.hp.com/cda/hpms/display/main/hpms_content.jsp?zn=bto &cp=1-23%5E24428_4000_100__&jumpid=reg_R1002) or contact your HP sales representative.

SiteScope

SiteScope is a BSM data collector providing a Web-based, agentless monitoring solution. SiteScope monitors the availability and performance of distributed IT infrastructures—for example, servers, operating systems, network devices, services, and applications.

SiteScope has the following features:

➤ Provides individually configurable monitors for reporting key performance data on a wide range of components in the network environment.

➤ Provides alerting and reporting capabilities, along with a dashboard for a real-time picture of the monitored environments. It can also be used to create baselines and schedule specific thresholds based on a time period or date.

➤ Can generate events based on triggered alerts and metric status changes which can be managed with BSM, NNMi, or Operations Manager.

➤ Provides integrated monitored topology and metrics for BSM, and provides RTSM based-views for the monitored systems and services.

➤ Enables checking or enforcing your monitoring policies using SiteScope templates.

➤ Enables managing multiple SiteScope instances through SAM
Administration in BSM, and easy distribution of monitoring between
different SiteScope servers. For details, see "System Availability
Management (SAM)" on page 38.

For more details, see "Introduction to SiteScope" in the *HP SiteScope
Deployment Guide*, part of the SiteScope Documentation Library.

System Availability Management (SAM)

SAM Administration is a centralized solution for accessing SiteScopes from
within BSM. It enables you to register, configure and maintain your
SiteScope servers. You can configure and manage multiple SiteScopes from
within SAM Administration.

You can configure SiteScope monitors, alerts, and reports and make any
other configuration changes for the SiteScope. All the configuration changes
that are done from SAM Administration are reflected in the SiteScope itself.

The SAM application utilizes data collected by SiteScope and enables you to:

➤ Monitor system availability across the entire enterprise infrastructure
from a centralized, real-time perspective.

➤ Apply a business perspective to system management view data at the
application level rather than viewing numerous low-level system metrics.

➤ View information about events collected from external applications or
software and SiteScope events.

For more details, see "System Availability Management Overview" in the
BSM User Guide.

System Health

The System Health component uses SiteScope monitors to enable monitoring of the servers, databases, and data collectors that make up your BSM system.

You use System Health to:

➤ Measure system performance and monitor areas of the databases that influence performance.

➤ Display problematic areas for the servers, databases, and data collectors.

➤ Perform operations on your environment, such as moving and configuring backup services, and starting and stopping BSM processes.

➤ View log files and other status information on specific components in a variety of formats.

For more details, see the *System Health Guide*.

TransactionVision

TransactionVision is a BSM data collector that delivers a transaction tracing solution to the Transaction Management application. TransactionVision non-intrusively records individual events related to transactions flowing through a system. Then, TransactionVision's patented "Transaction Constructor" algorithm assembles those events into coherent business transactions.

TransactionVision collected data is mapped to configuration items (CIs) and displayed in Service Health's views.

For more details, see "TransactionVision Overview" in the *BSM Application Administration Guide*.

Transaction Management

A business transaction is a real-world transaction executed by a business application, such as ordering a book online or withdrawing money at an ATM. In BSM, a business transaction is mapped to a Business Transaction CI.

The Transaction Management application adds business context and impact to business transactions, by providing the following:

➤ **Transaction monitoring.** Provides aggregate statistics about all transaction instances in the application environment. It relies on data collected by any of TransactionVision, RUM, and HP Diagnostics. When HP Diagnostics is used, it can provide insight into all tiers of the application environment.

➤ **Transaction tracing.** Provides statistics for each individual business transaction instance across all tiers of the application environment. It relies on data collected by the TransactionVision data collector. Payload information is also captured. The reports and topologies of Transaction Management show the interaction of a business transaction among all the components of your system in tables and graphs.

When a Transaction Management report has more than one data source, it presents a combined view of the data from all of the sources. Transaction Management reports and topologies provide the following transaction information:

➤ The state of the transaction. For example, a stock buy transaction would fail if the account balance was less than $10,000, which is required to do the purchase, or a margin buy would fail if the account ratio is below a minimum balance threshold.

➤ A business value associated with the transaction.

➤ Whether the transaction has exceeded its threshold.

For more details, see "Transaction Management Overview" in the *BSM User Guide*.

User Reports

The User Reports application provides two main areas of functionality:

➤ **Report Manager.** This is a central location where you can manage selected reports from throughout BSM. In Report Manager, you can create customized reports, such as Custom Reports, Trend Reports, and Service Reports, containing user-defined data and formatting. These reports can help you focus on specific aspects of your organization's application and infrastructure performance.

In Report Manager, you can also define schedules for the automatic generation of reports, to be sent to specified recipients at set times. These can be customized reports defined in the User Reports application, or reports from other BSM applications saved as favorites.

For more details, see "Using Report Manager to Manage Reports" in the *BSM User Guide*.

➤ **Custom Query Builder.** This is a Web interface that assists in creating queries to the profile database. The queries are used to run reports, or can be used together with third-party tools or proprietary tools to extract data from the profile database.

For more details, see "Building a Custom Query Using Custom Query Builder" in the *BSM User Guide*.

Modeling

BSM includes the following modeling components:

➤ "Configuration Items (CIs)" on page 42

➤ "Content Packs" on page 43

➤ "IT Universe Model" on page 44

➤ "TQL Queries" on page 45

Configuration Items (CIs)

A configuration item (CI) is a component stored in the RTSM that represents a physical, virtual, or logical entity in your IT environment. For example, CIs can represent lines of business, applications, provided services, network hardware, users, and so on. A CI can also be a logical container for a hierarchy of CIs.

Information about each CI is recorded in a configuration record within the RTSM, which is maintained throughout the CI's lifecycle. The RTSM also contains the Configuration Item Type (CIT) model, a repository for the CIT and relationship templates used to create the CIs, CI relationships, and associated attributes.

For more details, see "Configuration Items (CI)" in the *RTSM Administration Guide*.

The link between two CIs is defined by the relationship between them. Relationships represent the dependencies and connections between the entities in your IT environment. For details, see "CI Type Relationships" in the *Modeling Guide*.

The CIs and the relationships stored in the RTSM typically include:

➤ **Business assets, business services, processes, and activities.** These include services that a business provides to another business (or one organization provides to another within a business) and that an IT organization provides to support business services or IT operations. A business service typically has an associated end user or customer, a business application, and an SLA. Examples include payment processing, backup and recovery, and self-service help desk.

➤ **Application, services, and their core components.** These support a business activity, which is seen as a whole and is known by a specific name. This group also includes infrastructure services that support business services and processes. Examples include voice and network, database, backup and restore, desktop, and Windows administration services.

➤ **Software.** This includes individual installations of software elements. These are executables that are deployed on a logical system.

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

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

Content Packs

Content packs contain information that BSM uses to describe and enrich the CIs that represent what you are monitoring in your IT environment. A content pack can contain all, or part of, what you need to monitor and manage a specific domain. Content for a specific management area is typically contained in dedicated content packs consisting of, for example, CI types, mapping rules, correlation rules, ETIs and HIs, graph family definitions, and tool definitions.

You can also use content packs to exchange customized data between instances of BSM, for example in test and production environments.

Use the Content Packs Manager to create content packs, save them, install or update them, take content from one installed instance of BSM and upload it to another using the export and import features, and manage dependencies between content packs.

BSM provides out-of-the-box content packs definitions for Smart Plug-ins (SPIs) that you can either use in the default configuration or, if necessary, modify to suit the demands of your environment.

For more details on content packs, see "Content Packs" in the *Platform Administration Guide*.

For more details on content packs for Operations Management, see "Content Packs" in the *BSM Application Administration Guide*.

IT Universe Model

The RTSM houses a map of all the technology components associated with any service your business runs or utilizes. The components are represented by configuration items (CIs), mapped to each other by their interdependencies (called relationships), and together they form a service model of the IT universe in which your business functions. This model is referred to in BSM as the IT Universe model.

Having a defined IT Universe model of your organization enables you to see what applications are being monitored, and to determine which other CIs are impacted by problems—for example, whether a service suffered outages due to a problem with its database server.

The IT Universe model can be very large, containing millions of CIs. To facilitate their management, and focus on specific IT areas, you work with the CIs in "views." Views are a subset of the overall components in the IT Universe, and contain topologies of CIs that meet the requirements for a logical grouping, defined in the templates (based on TQL Queries, below) for the views.

In the BSM applications you select a specific view to focus on, enabling you to monitor the status of the KPIs and events attached to the CIs. This enables you to manage the specific area of your business that is represented by the CIs and relationships in the view.

BSM supplies out-of-the-box views for the IT Universe, or you can define your own views, to display specific information relevant for your organization's business needs. For more details, see "Modeling Studio Overview" in the *Modeling Guide*.

TQL Queries

Topology Query Language is a language and tool that extends the standard SQL language, discovering, organizing, and managing the IT infrastructure data, and enabling you to draw conceptual relationships between CIs to represent their actual interdependencies.

The TQL queries stored in the RTSM help structure the way that CIs are organized and managed in the RTSM, creating the IT Universe model. The TQL also constantly checks for changes that impact the IT Universe model structure.

A TQL query builds a business service model that acts as a template for view content. You can create your own TQL queries to retrieve the specific business service data that you need from the RTSM, and to display the data in views.

For information on TQL queries, see "Topology Query Language (TQL) Overview" in the *Modeling Guide*.

Measurements

BSM includes the following measurement components:

➤ "Health Indicators (HIs)" on page 46

➤ "Key Performance Indicators (KPIs)" on page 47

➤ "Measurement Management" on page 48

Health Indicators (HIs)

Data collectors such as Operations Manager, RUM, SiteScope, and so forth, send event or metric samples to the BSM servers, containing information about your monitored applications and business services. Each sample is mapped in BSM to its relevant health indicator (HI), and the event or metric in the sample is used to set the HI's status.

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

There are two types of data sources that can contribute to an HI's status and value: events and metrics. Some data collectors send event samples to BSM (for example, CPU load has exceeded a threshold), while other send samples containing metrics (for example, response time = 6 milliseconds). A sample is translated to HI status as follows:

➤ **Event-based HIs.** An event sample contains an event type indicator (ETI), which is a categorization of events according to the type of occurrence (for example, CPU load passing a threshold).

In the above example, when the CPU load threshold is breached on a server, an event sample is sent to BSM. Based on the text string in the event sample, it is assigned an ETI of CPU Load. This ETI is mapped to the CPU Load HI, and the status of this HI is updated accordingly.

➤ **Metric-based HIs.** Metric-based HIs apply calculation rules to the samples generated by the data collectors, to create a calculated HI value. For example, if a data collector collects several response time samples over a 15 minute period, Service Health calculates the average response time and sets the HI's status (for example: Minor) and value (for example: 11 ms).

You can also configure HIs within the indicator repository so that when the status of a specific metric-based HI changes, an event is generated in BSM. This event then appears in the Event Browser, showing you that the HI's status has changed.

After an HI's status is set, the key performance indicator (KPI) that is associated with the HI is calculated based on the KPI's definitions.

For details, see "Health Indicators and KPIs" and "Event Type Indicators" in the *BSM User Guide*.

Key Performance Indicators (KPIs)

In the Service Health application, you can monitor status for your CIs using key performance indicators (KPIs). KPIs are high-level indicators of a CI's performance and availability. Each KPI represents an aspect of domain health such as System Performance, System Availability, Application Performance, Application Availability, and so on.

KPIs are calculated using statuses of health indicators (HIs), KPIs, or a combination of both. For example, you can specify a business rule that sets the severity of a KPI on a CI to the worst status of all the HIs assigned to that CI.

The resulting measurement for the KPI is translated into a color-coded status indicator displayed in Service Health, where the color represents a more desirable or less desirable condition for the KPI. A KPI's severity can be normal, warning, minor, major, or critical.

KPIs and HIs are also used to calculate SLA performance within Service Level Management.

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

For details, see "Health Indicators and KPI" in the *BSM User Guide*.

Measurement Management

➤ **KPI and HI assignments.** When a new CI is added to your monitored system, the assignment mechanism automatically assigns the appropriate KPIs and HIs to the CI. For details about modifying KPI and HI assignments, see "Indicator Assignments and Propagation" in the *BSM Application Administration Guide*.

➤ **Configuring indicator and rule templates.** You can view and modify the templates used to define KPIs, HIs, ETIs, and business rules, using the indicator repositories available from Service Health, SLM, and Operations Management.

The business rules associated with HIs and KPIs define how the HIs and KPIs are calculated. Some business rules are based on sample data, and are used to calculate HIs. Other rules calculate KPIs based on the status or value of HIs and of other KPIs.

For details, see "Repositories Overview" in the *BSM Application Administration Guide*.

4

BSM End-to-End Workflow

This workflow provides an overview of the major tasks required to set up Business Service Management (BSM). It is designed as a step-by-step guide for installing and configuring all the BSM components. For more information on BSM platform capabilities, see "Overview of the BSM Solution" on page 16.

Tip: This document is designed to be used online, where you can benefit from its interactive capabilities. The online version is available from the BSM Help.

This chapter includes:

➤ Step 1. Plan the BSM Deployment on page 50

➤ Step 2. Deploy Databases and Servers on page 50

➤ Step 3. Set Up Data Sources on page 52

➤ Step 4. Integrate with Other Products on page 60

➤ Step 5. Create and Enrich Data Model on page 65

➤ Step 6. Configure BSM Applications on page 71

➤ Step 7. Monitor Business Status on page 82

Step 1. Plan the BSM Deployment

Before you install BSM, you should plan your BSM deployment and order the relevant hardware and licenses.

Plan your deployment by determining your individual requirements, including addressing the following topics:

➤ Calculate hardware requirements

➤ Choose server deployment

➤ Determine number of machines

➤ Choose operating system

➤ Determine database setup and disk space requirements

➤ Determine disaster recovery options

➤ Determine network requirements

➤ Choose web server

For more information, see the *BSM Planning Guide*.

Note: If you are upgrading from a previous version, refer to the *HP Business Service Management Upgrade Guide* for detailed workflows.

Step 2. Deploy Databases and Servers

This section includes:

➤ "BSM Deployment" on page 51

➤ "System Health Deployment" on page 51

➤ "Business Process Insight Deployment" on page 52

BSM Deployment

Deploy the BSM databases and servers as specified in the *BSM Installation Guide*. This includes the following main steps:

1 Prepare hardware. All BSM servers and database servers must meet the system requirements for installation.

2 Install BSM on the servers. Install BSM using the installation, post-installation, and configuration wizards.

3 Run the Setup and Database Configuration Utility. This configures your BSM database servers.

4 Enable servers and log on. Enable the servers to allow user access and log on for the first time.

5 Perform post-installation tasks. A number of additional settings are required after installation, such as reserving specific ports and disabling your firewall on certain directories.

6 Register additional licenses. The main license is registered during the installation wizard, however certain component licenses (for example, Operations Management, HP Diagnostics) require you to manually register additional licenses using the License Manager.

System Health Deployment

The System Health component monitors the servers, databases, and data collectors that make up your BSM system. If you are going to use System Health, deploy System Health on a standalone machine with access to BSM, so that System Health continues to run if BSM servers are down.

For details, see "How to Deploy System Health" in the *System Health Guide*.

Note that System Health can also be deployed on any BSM Gateway server; this should be done only if a standalone machine is not available.

Business Process Insight Deployment

If you plan to work with Business Process Insight (BPI), you install the server used by BPI on a server machine. BPI provides you with visibility into the health and performance of the business processes that are running over your IT infrastructure.

For details, see "Summary of BPI Installation Steps" in the *Business Process Insight Server Administration Guide*.

Step 3. Set Up Data Sources

Install the following HP components (if they are not already installed) and configure them to monitor your business and communicate with BSM.

This section includes:

Business Process Monitor

Business Process Monitor (BPM) emulates end users by running the transactions included in a business transaction flow or application from various locations.

These transactions are contained within HP Virtual User Generator scripts, which are later stored in the BSM database for consumption and usage by the BPM monitors. If you own HP Software load testing tools like HP LoadRunner or HP Performance Center, you can consider reusing some of the scripts made for these tools for initial use in your BPM monitors.

 1 **Install BPM instances.** Install required number of BPM instances on host machines. For details, see "Deploying Business Process Monitor" in the *Business Process Monitor Administrator's Guide*.

 2 **Install a script recording tool.** Install either HP Virtual User Generator or HP QuickTest Professional. For details, see "Supported Recording Tools" in the *Business Process Monitor Administrator's Guide*, and in the relevant product documentation.

 3 **Configure BPM data collection.** Define BPM entities (applications, business transaction flows, and transactions) to monitor the business processes in your IT environment. For details, see "How to Set up Business Process Monitors" in the *BSM Application Administration Guide*.

Real User Monitor

Real User Monitor (RUM) monitors both user- and system- initiated network traffic between client machines and servers, and between servers. RUM passively collects network and server performance and availability data in real time.

To learn more about RUM, see "Real User Monitor (RUM)" on page 32.

1 **Install RUM engines.** Install RUM engines on host machines. For details, see "Installing the HP Real User Monitor Engine" in the *Real User Monitor Administration Guide*.

2 **Install RUM probes.** Install RUM probes on host machines to listen to network traffic. For details, see "Installing the HP Real User Monitor Probe" in the *Real User Monitor Administration Guide*.

3 **Configure RUM data collection.** Define the applications and associated entities (business transaction flows, transactions, actions, events, and so forth) that you want Real User Monitor to monitor. For details, see "How to Discover and Define Real User Monitor Applications" in the *BSM Application Administration Guide*.

SiteScope

SiteScope monitors collect key performance measurements and report topology on a wide range of back- and front-end infrastructure components.

To learn more about SiteScope, see "SiteScope" on page 37.

1 Install SiteScope: Install SiteScope on one or more server machines. For details, see the "Installing SiteScope" part of the *HP SiteScope Deployment Guide* PDF.

2 Connect SiteScope to BSM: Set up communication between SiteScope and BSM. For details, see "Integrating SiteScope with BSM" in the *Using SiteScope Guide*.

3 Configure SiteScope data collection. Create SiteScope groups and subgroups to organize the monitors to be deployed, and then create monitors in these groups.

➤ For details on configuring SiteScope to report metrics to BSM, see "HP Integration Settings" in the *Using SiteScope Guide*.

➤ For details on configuring SiteScope to send events to BSM, see "How to Configure SiteScope to Communicate with BSM" in the *BSM Application Administration Guide*.

Service Health Analyzer

Service Health Analyzer (SHA) provides predictive events, so that issues can be identified and processed before the full impact is felt by the business.

To learn more about SHA, see "Service Health Analyzer (SHA)" on page 34.

If you plan to work with SHA, you may need to install the following data collectors:

➤ SHA Data Collector for Network Node Manager i

➤ SHA Data Collector for Performance Agent

For details, see the *SHA Data Collector Installation Guide*.

TransactionVision

TransactionVision delivers a transaction tracing solution to the Transaction Management application.

1 **Plan your installation and install TransactionVision Processing Servers and Agents:** Install TransactionVision-specific components in the BSM deployment environment. For details, see the *TransactionVision Deployment Guide* PDF.

2 **Configure TransactionVision data collection:** Deploy and configure the TransactionVision Analyzers, Job Managers and Query Managers. Define communication links, data collection filters, and business transaction rules. For details, see "How to Administer TransactionVision" in the *BSM Application Administration Guide*.

Diagnostics

HP Diagnostics monitors performance and availability of your enterprise applications and BPM transactions, providing visibility across your enterprise's application infrastructure.

To learn more about HP Diagnostics, see "Diagnostics" on page 27.

1 Install HP Diagnostics. Install the HP Diagnostics servers, Java and .NET agents, and remote monitoring collectors. For details, see the *Diagnostics Installation and Configuration Guide* (supplied with the HP Diagnostics software).

2 Configure HP Diagnostics data collection. For Java agents, instrument the application servers; for .NET agents, instrument the application domains for monitoring; for collectors, define the specific instances on the remote systems to be monitored. You then configure the agent and collector data collection settings for your environment. For details, see the *Diagnostics Installation and Configuration Guide*.

3 Connect HP Diagnostics with BSM. Register and set up communication between HP Diagnostics and BSM. For details, see the *BSM - Diagnostics Integration Guide* in the HP Software Product Manuals Web site (http://h20230.www2.hp.com/selfsolve/manuals).

Operations Manager

Operations Manager (HPOM) monitors physical and virtual infrastructure, and consolidates detected fault and system performance events.

To learn more about Operations Manager, see "Operations Manager" on page 30.

1 **Install Operations Manager and configure data collection.** For details, see the Operations Manager documentation (supplied with the Operations Manager software).

2 **Connect Operations Manager with BSM.** Set up communication of events and topology between Operations Manager and BSM. For details, see the *BSM - Operations Manager Integration Guide* in the HP Software Product Manuals Web site (http://h20230.www2.hp.com/selfsolve/manuals).

Network Node Manager i

Network Node Manager i (NNMi) monitors fault, availability, performance, and advanced network services for your physical and virtualized network infrastructure.

To learn more about NNMi, see "Network Node Manager i (NNMi)" on page 30.

1 **Install NNMi and configure data collection.** For details, see the NNMi documentation (supplied with the NNMi software).

2 **Connect NNMi with BSM.** Set up communication of network performance-related events and topology between NNMi and BSM. For details, see the *BSM - NNMi Integration Guide* in the HP Software Product Manuals Web site (http://h20230.www2.hp.com/selfsolve/manuals).

BSM Connector (BSMC)

BSM Connector (BSMC) integrates events, metrics, and topology data from third-party systems into BSM.

To learn more, see "BSM Connector (BSMC)" on page 25.

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1 Install BSM Connector. Install BSM Connector locally on the third-party system that provides the integration data. Alternatively, install BSM Connector on any system that meets the installation requirements if you want to access remote data sources such as databases or log files, or receive SNMP traps or Web service messages. For details, see "How to Create a Connection to a BSM Connector Server" in the *BSM Application Administration Guide*.

2 Configure BSM Connector data collection. Within BSMC, create and activate policies that collect the integration data from the third-party domain manager or application.

Alternatively, you can set up and activate policies from within BSM using the BSM Connector Integrations user interface. For details, see "BSM Connector Integration Administration" in the *BSM Application Administration Guide*.

Data Flow Probe

The Data Flow Probe is required to run the Discovery process, which discovers the IT resources and components on your network, and saves them as CIs and relationships in the Run-time Service Model (RTSM). The Probe is also required for topology synchronization between the RTSM and other data sources, such as a CMS.

To learn more, see "Discovery and Dependency Mapping (DDMA)" on page 28.

1 **Install the Data Flow Probe.** Install the Data Flow Probe on a server machine. For details, see "Installing the Data Flow Probe on Windows" (for Windows) or "Installing the Data Flow Probe on Linux" (for Linux) in the *Data Flow Probe Installation Guide*.

2 **Configure Discovery data collection.** Launch the Data Flow Probe and activate Discovery jobs. For details, see "Get Started with the Data Flow Probe" in the *Data Flow Management Guide*.

Step 4. Integrate with Other Products

BSM integrates with additional HP and third-party products. It uses these products and applications as data sources and brings in their topologies, metrics, and events.

This section lists some of the more common integrations. For more information about supported integrations, see "Integrating with Other Applications - Overview" in the *BSM Application Administration Guide*.

You can find detailed information about supported BSM integrations in the HP Software Integrations site (http://support.openview.hp.com/sc/solutions/index.jsp#tab=tab3).

Instructions on setting up specific integrations can be found in the HP Software Product Manuals Web site (http://h20230.www2.hp.com/selfsolve/manuals).

This section includes:

➤ "HP CLIP" on page 61

➤ "CMS" on page 61

➤ "HP Service Manager" on page 62

➤ "HP Operations Orchestration" on page 63

➤ "HP Release Control" on page 64

➤ "NetScout nGenius" on page 64

HP CLIP

Closed Loop Incident Process (CLIP) is an integrated solution that brings together HP offerings for BSM, HP Service Manager, HP Universal CMDB, and HP Operations Orchestration. It helps customers achieve their major goals of: IT efficiency, increased automation levels and "focus on the business". The CLIP solution helps IT organizations achieve these goals by implementing the Event and Incident Management ITIL processes and by focusing on the inter-connection between them. CLIP addresses the business needs to reduce the MTTR, and increase the MTBF parameters allowing higher levels of Service Availability.

For details on implementing the CLIP solution, access the latest version of the CLIP documentation under the CLIP page that can be found in the Solutions Portal (http://support.openview.hp.com/sc/solutions/index.jsp#tab=tab1). To enter the site, you must log on with your HP Passport ID.

CMS

You can integrate the BSM Run-time Service Model (RTSM) with a standalone HP Configuration Management System (CMS). The integration synchronizes CIs and relations between the central HP Universal CMDB and the RTSM in BSM, while retaining the original UCMDB global IDs.

For details, see "Perform Initial Synchronization" in the *Data Flow Management Guide*, and the *HP RTSM Best Practices Guide*.

To learn more about RTSM, see "Run-time Service Model (RTSM)" on page 33.

HP Service Manager

HP Service Manager enables a lifecycle approach to IT service management, providing incident management, problem management, change, configuration and release management (CCRM), and knowledge management services.

The bi-directional integration of BSM with Service Manager can impact the following components of BSM (the actual functionality depends on how you configure the integration):

➤ **RTSM.** The relevant topology for Service Manager incidents is added to the RTSM.

➤ **Operations Management (OMi).** The integration enables the following functionality:

   ➤ Automatically or manually forward Operations Management events to the Service Manager system, and create a corresponding incident.

   ➤ Synchronize Operations Management event changes to the corresponding Service Manager incident.

   ➤ Synchronize back Service Manager incident changes to the corresponding Operations Management event, for example, closure of a Service Manager incident automatically closes the corresponding Operations Management event.

   ➤ Enable Operations Management operators to cross-launch the Service Manager Web UI from the context of an Operations Management event, displaying the corresponding Service Manager incident.

   ➤ Enable Service Manager operators to cross-launch the Operations Management Web UI from the context of a Service Manager incident, displaying the corresponding Operations Management event.

➤ **Service Health.** The integration enables the following functionality:

➤ View incident metrics in Service Health, such as number of open tickets, based on Service Manager incident data collected by SiteScope EMS monitors.

➤ View information on planned changes and incident details received from Service Manager, in the 360° View page in Service Health. This is done by federating the incidents and planned changes data from Service Manager.

➤ Drill down from Service Health CIs to the relevant incident in the HP Service Manager software.

➤ Drill down from the HP Service Manager software to the Service Health Business Impact report.

➤ **Service Level Management.** In the Service Level Management application, you can create SLAs based on Service Manager incidents, and view incident data metrics, such as mean time to repair and mean time between failures.

➤ **Alerts.** Alerts triggered in BSM can automatically open incidents in HP Service Manager.

For more details on the integration of BSM with HP Service Manager, see the *HP Service Manager Integration with Business Service Management* interactive document.

HP Operations Orchestration

The integration of BSM with HP Operations Orchestration (OO) utilizes the OO capabilities for building investigation tools or service remediation scripts. These capabilities enable an operator to validate a problem, investigate it, or automatically correct it.

BSM provides a number of predefined mappings between CIs and OO run books. This mapping and the integration procedure enable you to automatically or manually launch OO run books from the Service Health, Operations Management, and Service Health Analyzer applications.

For details about the integration with HP Operations Orchestration, see the *BSM - Operations Orchestration Integration Guide* in the HP Software Product Manuals Web site (http://h20230.www2.hp.com/selfsolve/manuals).

HP Release Control

BSM integrates with HP Release Control to enable you to view information on planned changes and change requests in BSM Service Health, and to view KPI information in Release Control.

For details about the integration with Release Control, see the *BSM - Release Control Integration Guide* in the HP Software Product Manuals Web site (http://h20230.www2.hp.com/selfsolve/manuals).

NetScout nGenius

NetScout nGenius provides network traffic analysis, monitoring networks and reporting performance metrics about applications routing through those networks. NetScout nGenius analyzes data packets for information about the routing path used by applications (which vary depending on network traffic decisions). When there is a problematic application, NetScout nGenius sends alarms to BSM with information on routers and switches used by the application.

The BSM integration with NetScout nGenius enables the following:

➤ The topology for the NetScout nGenius alarms (application and monitor CIs) is added to the RTSM.

➤ The NetScout View is created, including CIs that represent the application alarms, with appropriate KPIs. You can monitor the NetScout View in the Service Health application.

➤ You can drill down from the NetScout View to NetScout nGenius to display detailed information about the problem.

For details about the integration with NetScout nGenius, see the *BSM - NetScout nGenius Integration Guide* in the HP Software Product Manuals Web site (http://h20230.www2.hp.com/selfsolve/manuals).

Step 5. Create and Enrich Data Model

After setting up your data collection environment, the data sent to BSM populates an extensive set of application infrastructure, Web service, and business transaction CIs in the RTSM, and provides information on relationships between the CIs. Using common data models, BSM automatically creates a data model (the IT Universe Model) representing the overall monitored IT environment.

You can customize the data model implementation according to your business needs, as described in the following topics.

This section includes:

➤ "Create Business Model" on page 66

➤ "Customize Views and Performance Indicators" on page 67

➤ "Manage Downtime" on page 68

➤ "Define Custom Locations" on page 68

➤ "Customize Content Packs" on page 68

➤ "Extend the Data Model" on page 69

Create Business Model

You can manually define logical business CIs to represent your business entities, such as Business Service or Line of Business.

➤ You map the business CIs to a topology of CIs that represent the underlying processes and infrastructure supporting the business entity. The business CIs are added to your business views, so that the views display information organized according to your organization's business needs. You can manually create CIs and relationships that represent logical and physical elements of the business using IT Universe Manager in RTSM Administration. For details, see "Working with CIs" in the *Modeling Guide*.

➤ You define service CIs (Business Service and Infrastructure Service) that represent the services provided by, or consumed by, your organization, such as project management services, or directory services. These CIs are used as the basis of your model, and also to build service level agreements, and can be defined from the Service Level Management application (in addition to defining them within the RTSM Administration application). For details, see "How to Define a Service for an SLA – Use-Case Scenario" in the *BSM Application Administration Guide*.

Tip: If you have a CMS system with a central UCMDB, it is recommended that you create and model the Business Service CIs in the CMS, and then synchronize them into BSM.

Customize Views and Performance Indicators

BSM provides out-of-the-box business views containing CIs, and performance indicators (KPIs and HIs) to monitor and manage the status of your IT infrastructure and business processes. You can define customized views and performance indicators to provide the specific monitoring information required by your organization's BSM users.

➤ **Define views:** There are two types of views: global views in RTSM and local impact views.

  ➤ For details on creating global views in RTSM, see "Modeling Studio Overview" in the *Modeling Guide*.

  ➤ For details on creating local impact views, see "View Builder - Creating Global Views and Local Impact Views" in the *BSM Application Administration Guide*.

  When creating any type of view, you can use the impact perspective to see the application and its underlying transactions and infrastructure.

➤ **Define KPIs and HIs:** For details, see "Configuring KPIs and HIs - Overview" in the *BSM Application Administration Guide*. For an overview of working with KPIs and HIs, see "How to Customize Calculations in Service Health" in the *BSM Application Administration Guide*.

Manage Downtime

Downtime in your IT environment, or scheduled maintenance and other events, can skew CI data. You can exclude these periods of time from the indicator performance calculations for your applications and infrastructure.

You configure downtime for CIs in Downtime Management in Platform Administration. For details, see "How to Create and Manage Downtimes for CIs" in the *Platform Administration Guide*.

Define Custom Locations

Define geographical and logical location CIs to attach to other CIs. These locations can be used to organize and filter CIs by location. Each location can be assigned ranges of IP addresses that have been designated for use by devices in a certain geographical area.

Create the locations to monitor using Location Manager in Platform Administration. For details, see "Location Manager" in the *Platform Administration Guide*.

Customize Content Packs

Content packs contain enrichment information for configuration items (CIs) used in BSM.

BSM provides a number of content packs for Smart Plug-ins (SPIs) that help you to use data provided by Operations Manager and start monitoring your environment. You can use content packs in the default configuration or, if necessary, modify to suit the demands of your environment. Content packs placed in the content packs folders are uploaded automatically during installation and subsequent restarts of the BSM Gateway Server. For details on content packs for Operations Management, see "Content Packs" in the *BSM Application Administration Guide*.

You may need to import additional content packs for other SPIs communicating with Operations Management. You may also need to import content packs for BSM integrations with external products, or create and customize content packs for BSM according to your organization's requirements. Content packs are managed using the Content Packs Manager. For details, see "How to Create and Manage Content Packs" in the *Platform Administration Guide*.

To learn more about content packs, see "Content Packs" on page 43.

Extend the Data Model

BSM provides you with various ways to extend the data model repositories and components stored in the RTSM, and to customize the out-of-the-box RTSM modeling structures:

➤ **Enrich the topology.** You can integrate RTSM with other data sources to enrich the topological data in the RTSM. The data source can be another RTSM instance, another HP product such as HP Service Manager or HP Release Control (integrated though a CMS), or a third-party product.

For details, see "Integrating Multiple CMDBs" in the *Data Flow Management Guide*, and the *HP RTSM Best Practices Guide*.

➤ **Create TQLs.** You can create TQL queries to retrieve business service data from the RTSM, and to display the data in views.

For details, see "Define a TQL Query" in the *Modeling Guide*.

➤ **Define enrichment rules.** You can use the Enrichment Manager to define enrichment rules that add CIs, CI attributes, and relationships to the RTSM. Enrichment query nodes and relationships are created within a TQL query context, and the received data is used to insert new information, that cannot be discovered automatically by the Discovery process, into the RTSM.

For details, see "Define an Enrichment Rule – Scenario" in the *Modeling Guide*.

➤ **Create CITs and relationships.** You can use the CI Type Manager to create new CI types, and new relationships between CIs in the RTSM, to match your business needs.

Note: You should carry out a planning phase before you actually create new CITs and relationships, as they are likely to impact the rest of your data model.

For details, see "Create a CI Type" and "Create a Relationship Type" in the *Modeling Guide*.

➤ **Manage packages.** Packages are used to discover specific IT assets and CI types. You can use the Package Manager to edit packages, or create custom packages, if the factory packages do not contain the resources you need for the tools you develop or if you want to export resources from one system to another.

For details, see "Create a Custom Package" in the *RTSM Administration Guide*.

To learn more, see "Run-time Service Model (RTSM)" on page 33, and "Modeling" on page 42.

Step 6. Configure BSM Applications

Configure how BSM manages and displays the incoming data in the different BSM applications.

This section includes:

➤ "Set User Permissions" on page 72

➤ "Define Alerts" on page 72

➤ "Configure Operations Management (OMi)" on page 73

➤ "Configure Service Health" on page 74

➤ "Define MyBSM Workspaces" on page 75

➤ "Define Service Level Agreements" on page 76

➤ "Configure End User Management" on page 77

➤ "Configure System Availability Management" on page 77

➤ "Configure Service Health Analyzer" on page 78

➤ "Configure System Health" on page 79

➤ "Configure Business Process Insight" on page 79

➤ "Configure Transaction Management" on page 80

➤ "Define Customized Reports and Report Scheduling" on page 81

➤ "Advanced Configuration: Application Management Solutions" on page 81

Set User Permissions

In User Management in Platform Administration, you can define permissions and recipients:

1 Define user permissions. To restrict the scope of user access to defined areas, create users and user groups, and assign permissions for your application's views and pages, according to the type of user. For details, see "How to Configure Users and Permissions — Workflow" in the *Platform Administration Guide.*

2 Create recipients of alerts or reports. You can create the recipients of emails, pager, or SMS messages triggered by alerts, or scheduled reports, while creating the users. You can also create recipients separately and assign them to users later. For details, see "How to Configure and Manage Recipients" in the *Platform Administration Guide.*

Define Alerts

You define triggers for alerts in various BSM components, to proactively inform defined recipients when predefined performance limits are breached:

➤ **Application alerts.** There are two types of application alerts: CI Status alerts for high level information, and End User Management (EUM) alerts for low level of information. Both types of alerts can be configured to generate events (which are displayed in Operations Management).

  ➤ **CI Status alerts** are triggered by a change in status of the relevant KPI, calculated in Service Health. For details, see "How to Create a CI Status Alert Scheme and Attach it to a CI" in the *BSM Application Administration Guide*.

  ➤ **EUM alerts** can be triggered based on Business Process Monitor and Real User Monitor data, including synthetic transactions and real user transactions. For details, see "How to Create EUM Alert Schemes" in the *BSM Application Administration Guide*.

➤ **Service level agreement (SLA) alerts** are configured in Service Level Management Administration. The SLA alerts are triggered by the relevant change in SLA status. The alerts can be configured to generate events (which are displayed in Operations Management). For details, see "How to Define an SLA Alert Scheme" in the *BSM Application Administration Guide*.

➤ **SiteScope alerts** are triggered by an event or change of status in some element or system in your infrastructure. An alert definition contains settings that tell SiteScope what monitors can trigger the alert, what condition to watch for, and what information to send to recipients. For details, see "How to Configure an Alert" in the *Using SiteScope Guide* in the SiteScope Help.

Configure Operations Management (OMi)

You can customize and streamline the way Operations Management (OMi) handles events, and automate event handling. Some of the more commonly used configuration options are as follows:

➤ **Configure event forwarding to and from Operations Management.** You configure event forwarding by specifying the following as event forwarding targets: Operations Manager servers, external event-processing servers, servers connected using BSM Connector, and other BSM servers. For details, see "Connected Servers" in the *BSM Application Administration Guide*.

➤ **Configure alerts.** By default, threshold breaches of EUM and SiteScope measurements generate events in Operations Management. In addition, you can set the alerts triggered by various BSM applications to generate events that are consumed in Operations Management. For example, Operations Management can collect, view, correlate, and manage events generated from EUM alerts triggered on EUM components.

➤ **Configure topology-based event correlation rules.** BSM provides many out-of-the-box correlation rules to enable the correlation of symptoms with cause events. You can also configure additional rules that will accommodate correlating events based on customer-specific business logic. For details, see "How to Configure Topology-based Event Correlation Rules" in the *BSM Application Administration Guide*.

➤ **Configure event forwarding to users or groups**. Incoming events can automatically be assigned or forwarded to the people responsible for handling the problems. For details, see "How to Create an Event Forwarding Rule" in the *BSM Application Administration Guide*.

➤ **Configure automatic execution.** You can configure the automatic execution of tools, custom actions, performance measurements, and Run Books, to help Operations Management end-users manage the events, and to automate and streamline problem solving. For details, see "How to Create Tools", "How to Create a Custom Action Script", and "How to Create a Run Book Automation Rule" in the *BSM Application Administration Guide*.

➤ **Configure actions to be executed on events.** Actions are carried out when an event matches a user-defined set of criteria after a specified time. For details, see "How to Create a Time-Based Event Automation Rule" in the *BSM Application Administration Guide*.

➤ **Synchronize the topology.** To populate RTSM with CI topology and service data from HPOM, you need to perform Topology Synchronization. Synchronization regularly updates all specified servers with the topology and service data from the HPOM management server. For details, "How to Run Topology Synchronization" in the *BSM Application Administration Guide*.

To learn more about Operations Management, see "Operations Management (OMi)" on page 31.

Configure Service Health

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

➤ Within the repositories you can modify the templates or building blocks of Service Health calculation.

➤ Within assignment administration, you can modify the automatic KPI and HI assignments and propagations.

➤ Within a specific view, you can modify KPI and HI settings on one or more CI instances.

For details, see "How to Customize Calculations in Service Health" in the *BSM Application Administration Guide*.

To learn more about Service Health, see "Service Health" on page 33.

Define MyBSM Workspaces

In MyBSM, you can create role-based workspaces for different types of users, such as operations users, and senior management. Workspaces provide smooth interaction between different BSM applications and reports.

MyBSM contains out-of-the-box pages from different BSM applications; you can also create pages to suit your needs.

For each page, you can:

➤ Select from a list of components that are of interest to the specific users or user groups. Components include available reports, views, diagrams, graphs, summaries, and other types of data displays.

➤ Define the layout of components on the page, and their interaction with other components.

➤ Organize pages and components by categories.

For details on how to set up MyBSM, see "How to Set Up the MyBSM Workspace" in the *BSM User Guide*.

To learn more about MyBSM, see "MyBSM" on page 29.

Define Service Level Agreements

In Service Level Management (SLM) administration, you can define services and service level agreements (SLAs):

Tip: If you have a CMS system with a central UCMDB, it is recommended that you create and model your Business Service CIs in the CMS, and then synchronize them into the RTSM for consumption in the SLM module.

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1 **Define your organization's business services.** Define the services provided by, or consumed by, your organization, that represent the service offerings in your service catalog; for example, project management services, application development for departmental applications, Web development services, email services, backup services, and so forth. For details, see "How to Define a Service for an SLA – Use-Case Scenario" in the *BSM Application Administration Guide*.

2 **Create your application-related SLAs.** Create and manage SLAs, OLAs (operational level agreements), and UCs (underpinning contracts) that represent contracts entered into by your organization or department with service providers and customers. For details, see "How to Use SLM to Monitor Your Service Agreements" in the *BSM Application Administration Guide*.

To learn more about Service Level Management, see "Service Level Management (SLM)" on page 36.

Configure End User Management

In End User Management Administration, configure the applications, business transaction flows, and transactions for monitoring by Business Process Monitor, Real User Monitor, or both.

For details, see "How to Set up Business Process Monitors" and "How to Install Real User Monitor Components" in the *BSM Application Administration Guide*.

To learn more about End User Management, see "End User Management (EUM)" on page 29.

Configure System Availability Management

In System Availability Management Administration, you can access and manage SiteScopes from within BSM:

1 Add SiteScopes. You can register and configure one or more SiteScopes. For details, see "Configuring the Connection" in the *BSM Application Administration Guide*.

2 Manage multiple SiteScopes. You can configure SiteScope monitors, alerts, and reports and make any other configuration changes for the SiteScope. All the configuration changes that are done from System Availability Management Administration are reflected in the SiteScope itself. For details, see "How to Manage Multiple SiteScopes in SAM" in the *BSM Application Administration Guide*.

To learn more about System Availability Management, see "System Availability Management (SAM)" on page 38.

Configure Service Health Analyzer

Configure the following in Service Health Analyzer (SHA), so that it can analyze the current and historical data for CIs, detect anomalies, and send out SHA events.

➤ Define the CIs to be monitored by SHA. For details, see "How to Select CIs to be Monitored by Service Health Analyzer."

➤ Configure the SHA event template to determine the structure of the SHA event. For details, see "How to Configure the Service Health Analyzer Event Template."

➤ Configure verification tools to assist in identifying suspect CIs. For details, see "How to Configure Verification Tools."

The topics above can be found in the *BSM Application Administration Guide*.

Configure System Health

If you are using System Health to monitor your BSM environment, there are a number of things you can configure. These include configuring the server's remote connection, and configuring backup servers from one Data Processing Server to another if the server machine is not functioning properly or requires downtime.

For details, see "Setting Up System Health" and "Configuring a Backup Server" in the *System Health Guide*.

Configure Business Process Insight

You configure Business Process Insight (BPI) by defining business activities to represent business processes within your business. You then attach existing monitor CIs that receive data from one of the BSM data collectors, such as BPM or RUM monitors, to critical points in the business process, in order to learn about the actual metrics.

1 Use the BPI Modeler component to create and deploy business processes. For details, see "How to Model Your Business" in the *BSM Application Administration Guide*.

2 Use the BPI Monitor Definer component to map business data to your business processes and business process activities. For details, see "How to Manage the BPI Monitor Definer" in the *BSM Application Administration Guide*.

3 BPI sends data samples to BSM by configuring the **Data Sample** settings in the BPI Server Admin Console. Sending data samples to BSM enables you to use the BPI application to report and view the health of the business processes that you create. For details on configuring the Data Sample settings, see the "Component Configuration - HP Business Service Management Settings" section in the *Business Process Insight Server Administration Guide*.

To learn more about BPI, see "Business Process Insight (BPI)" on page 26.

Configure Transaction Management

In Transaction Management Administration, configure transaction monitoring and tracing for business transactions, as follows:

1 Define the Business Transaction CIs and Transaction Management workflow. Create new (or use existing) Business Transaction CIs to represent the transactions you want to monitor, and determine which products are used to collect the transaction data: Real User Monitor, Diagnostics, TransactionVision. For details, see "How To Choose a Transaction Management Workflow" in the *BSM Application Administration Guide*.

For RUM Business Transaction CIs, you must also ensure that the required Business Transaction CIs are configured for monitoring in the EUM application. For details, see "Viewing TransactionVision Data From End User Management Reports" in the *BSM User Guide*.

2 Set up transaction tracing on business transactions. Define transaction tracing rules and properties on the Business Transaction CIs. The tracing rules control the process by which unclassified transactions become business transactions. For details, see "How to Set Up a Business Transaction for Tracing" in the *BSM Application Administration Guide*.

3 Set up custom event correlation for a business transaction. Define the correlation and modification rules to expand or modify event collection criteria. For details, see "Custom Correlation" in the *BSM Application Administration Guide*.

To learn more about Transaction Management, see "Transaction Management" on page 39.

Define Customized Reports and Report Scheduling

In the User Reports application, you can:

➤ **Define customized reports for your organization's requirements.** Use the Report Manager to define Custom Reports, Trend Reports, and Service Reports, to focus on the data you are most interested in tracking. For details, see "How to Create and Manage User Reports Using Report Manager" in the *BSM User Guide*.

➤ **Send scheduled reports to recipients.** Use the Report Manager to set schedules for sending automatically generated reports to specified recipients. For details, see "Scheduling Reports" in the *BSM User Guide*.

➤ **Create queries to the profile database.** Use Custom Query Builder to assist you in creating queries to run reports. For details, see "How to Create a Custom Query" in the *BSM User Guide*.

To learn more about User Reports, see "User Reports" on page 41.

Advanced Configuration: Application Management Solutions

The following Application Management solutions can be configured for specific, advanced monitoring needs:

➤ **Application Management for Siebel.** For details on configuring the application, see "How to Deploy Application Management for Siebel" in the *BSM Application Administration Guide*. To learn more, see "Application Management for Siebel" on page 24.

➤ **Application Management for SOA.** For details on configuring the application, see "How to Monitor the SOA Environment" in the *BSM Application Administration Guide*. To learn more, see "Application Management for SOA" on page 25.

➤ **Application Management for SAP.** For details on configuring the SAP solution, see "How to View SAP Information in Service Health" in the *BSM Application Administration Guide*. To learn more, see "Application Management for SAP" on page 24.

Step 7. Monitor Business Status

View the incoming data and monitor the business status in the different BSM applications.

This section includes:

Monitor Events

The Operations Management (OMi) Event Browser is a central event console enabling you to manage the lifecycle of events. Use the Event Browser to:

➤ View an overview of all the active events that occur in the monitored environment, including event severity and type, event time and location, event source, and the affected CI.

➤ View events automatically correlated and filtered, to determine priority for actions.

➤ Display, monitor, and manage the events using graphs and tables, including display of alternative perspectives of the events.

➤ Launch HP Operations Orchestration run books.

For details, see "Transaction Management Overview" in the *BSM User Guide*.

To learn more about Operations Management, see "Operations Management (OMi)" on page 31.

Monitor Customized Role-Based Workspaces

MyBSM displays role-based workspaces that are of interest to specific users or groups of users, such as operations users, and senior management. The MyBSM workspace enables you to view:

➤ Out-of-the-box pages from different BSM applications. For details on the predefined pages, see "Predefined Pages" in the *BSM User Guide*.

➤ Customized pages containing BSM components and external components relevant to your business tasks. For details on the different applications components that can be added to MyBSM pages, see "Available Components" in the *BSM User Guide*.

To learn more about MyBSM, see "MyBSM" on page 29.

Monitor Application Status

Service Health provides an integrated view of critical applications and business processes; from there, you can drill down to the underlying IT infrastructure associated with these critical business processes.

➤ You can use Service Health directly as a stand-alone application (select **Application** > **Service Health**). For details, see "Monitoring your Environment with Service Health" in the *BSM User Guide*.

➤ You can combine Service Health components with components from other applications. These components can interact with one another, so that if for example you select a CI in a Service Health component, information on this CI can be displayed in a component from another application, such as End User Management or Operations Management. For details, see "How to Open Pages and Components in Service Health" in the *BSM User Guide*.

To learn more about Service Health, see "Service Health" on page 33.

Monitor Service Level Agreements

You monitor your service level agreements in the Service Level Management application. The Service Level Management reports show you how well actual service levels compare with your objectives.

➤ Use the reports to determine whether the availability and performance requirements of users and infrastructure are being met, by checking service level agreement (SLA) compliance.

➤ You can also get an early warning of potential problems by generating a forecast status, to determine if current service levels may lead to a future breach of the SLA. For details, see "How to View SLA and Outage Reports" in the *BSM User Guide*.

To learn more about Service Level Management, see "Service Level Management (SLM)" on page 36.

Monitor End User Experience

You use the End User Management application to view and analyze reports based on performance data collected by the end-user data collectors. The End User Management reports enable you to proactively monitor network and application performance and availability in real time, from the end-user perspective. For details, see "End User Management Reports Overview" in the *BSM User Guide*.

To learn more about End User Management, see "End User Management (EUM)" on page 29.

Monitor System Infrastructure

System Availability Management utilizes data collected by SiteScope, and enables you to monitor the health and status of the entire system infrastructure from a centralized, real-time perspective in:

➤ **System Availability Management Reports.** View reports and analyze performance data collected by the SiteScope data collector and stored in the BSM database. For details, see "System Availability Management Reports" in the *BSM User Guide*.

➤ **Event Logs.** View information about events collected by SiteScope (generated alerts and status changes in some element or system in your infrastructure), as well as events collected from external applications or software by enterprise management systems using SiteScope. For details, see "How to View the Event Log" in the *BSM User Guide*.

To learn more about System Availability Management, see "System Availability Management (SAM)" on page 38.

Monitor BSM System Health

You can use the System Health component to monitor the health of the servers, databases, and data collectors that make up your BSM system. System Health enables you to detect problematic areas, perform various operations, and view status information on your BSM environment. For details, see "Monitoring System Health" in the *System Health Guide*.

To learn more about System Health, see "System Health" on page 39.

Monitor Business Process Insight

Use the Business Process Insight reports to view and analyze the data of the deployed Business Processes. In addition, KPI status displayed in Service Health provides an indication of how well a business process or system is meeting your business objectives.

For details, see "How to View and Analyze Data Using the BPI Application Reports" in the *BSM User Guide*.

To learn more about BPI, see "Business Process Insight (BPI)" on page 26.

Monitor User Reports

Use the Report Manager in the User Reports application to view and manage selected reports, including customized reports containing user-defined data.

For details about the Report Manager, see "User Reports Overview" in the *BSM User Guide*.

Monitor Diagnostics Data

Use the HP Diagnostics integration to:

➤ **View HP Diagnostics in BSM.** You can see the performance status of applications monitored by HP Diagnostics from your BSM console (select **Application** > **Service Health**, and select the **Diagnostics View** in **Model Explorer**).

➤ **Access HP Diagnostics from BSM.** Drill down directly to Diagnostics data from BSM CIs and reports for detailed performance analysis.

For details, see the HP Diagnostics online help or the section on "Integrations" in the *Diagnostics User's Guide* (supplied with the HP Diagnostics software).

Monitor Business Transactions

The Transaction Management application provides reports and topologies to present the information that has been collected from the TransactionVision agents and processed by the TransactionVision Analyzers. Some reports and topologies can also include HP Diagnostics or RUM information related to the business transaction. When this is the case, you can drill down to the relevant page in the Diagnostics or End User Management applications.

For details about these reports and the topology, see "Transaction Management Overview" in the *BSM User Guide*.

Monitor Anomalies

Use the Service Health Analyzer application to investigate an anomaly detected for a CI, and to identify lead suspects for the issue. An anomaly represents abnormal behavior for the CI.

You can investigate the anomalies using the Topology views and the Metrics view. You use these views to investigate the root cause of an anomaly, and solve potential business performance and systems issues before they escalate.

For details, see "Investigating with the Topology View" and "Investigating with Metrics View" in the *BSM User Guide*.

Monitor Siebel Data

You can view information about the Siebel IT entities in:

➤ **Service Health.** You can view and analyze data in the Siebel Enterprises view and other views in Service Health. For details, see "How to Display Siebel Information in BSM" in the *BSM User Guide*.

➤ **Application Management for Siebel.** You can use the various Siebel diagnostics tools to process the data, and view it in the Application Management for Siebel reports. For details, see "Diagnostics Tools" in the *BSM User Guide*.

To learn more about Siebel solutions, see "Application Management for Siebel" on page 24.

Monitor SOA Data

You can view information about the SOA environment in:

➤ **Service Health.** You can view and analyze data in the SOA Monitored Web Services View and other views in Service Health. For details, see "How to View SOA Data in BSM" in the *BSM User Guide*.

➤ **Application Management for SOA**. You can view and analyze the health of Web services or operations access in the Application Management for SOA reports. For details, see "Application Management for SOA Reports" in the *BSM User Guide*.

To learn more about SOA solutions, see "Application Management for SOA" on page 25.

Monitor SAP Data

You can view SAP information in the SAP Systems view in Service Health. For details, see "How to Display SAP Information in BSM" in the *BSM User Guide*.

To learn more about SAP solutions, see "Application Management for SAP" on page 24.

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Product Interactions

This chapter includes:

➤ Product Interactions Overview on page 91

➤ Business Process Monitor (BPM) on page 92

➤ Real User Monitor (RUM) on page 94

➤ HP Diagnostics on page 96

➤ SiteScope on page 98

➤ Operations Management on page 99

➤ Transaction Management on page 100

Product Interactions Overview

Each section below shows how BSM components complement each other by:

➤ Enabling isolation and finding root cause of problems, including drilldowns, between components.

➤ Enriching the data model.

➤ Sharing configuration data to simplify the deployment process.

Business Process Monitor (BPM)

For details about the BPM application, see "Business Process Monitor (BPM)" on page 26.

BPM and the BSM components listed below complement each other by enabling isolation and finding root cause of problems, including using drilldowns between components.

Transaction Management

Enable Root Cause and Isolation Flows:

➤ Enables you to isolate problems in backend transaction instances in the BPM flow.

➤ Drill down from Transaction Management to Service Health reports and EUM reports, and from Service Health and EUM to Transaction Management reports. For details, see "Working with Other Applications in BSM" in the *BSM Application Administration Guide*.

➤ Drill down to the Transaction Management Transaction Tracking report from the following EUM reports:

➤ Performance Analysis report

➤ Triage report

➤ Triage Raw Data report

➤ Drill down to the Transaction Management Transaction Summary or Aggregated Topology report from the following EUM reports:

➤ Application Health report

➤ Performance Analysis report

➤ Triage report

HP Diagnostics

Enable Root Cause and Isolation Flows:

➤ Enables you to isolate problems in backend transaction instances in the BPM flow.

➤ Drilldowns are available from all EUM reports that provide server time breakdown. For details, see "Viewing HP Diagnostics Data From End User Management Reports" in the *BSM User Guide*.

Real User Monitor

Enable Root Cause and Isolation Flows:

Shared BPM and RUM model and reports provide a real-user and synthetic-user perspective.

SiteScope

Enable Root Cause and Isolation Flows:

➤ Enables you to monitor system and application components which influence BPM transactions.

➤ Provides common bottom-up and top-down health views.

➤ Troubleshoot transaction problems to system and application levels, to help understand the root cause of poor transaction performance.

➤ Enables you to take proactive actions when infrastructure components related to business transactions have a negative trend.

Real User Monitor (RUM)

For details about the RUM application, see "Real User Monitor (RUM)" on page 32.

RUM and the BSM components listed below complement each other by enabling isolation and finding root cause of problems, including using drilldowns between components.

Transaction Management

Enable Root Cause and Isolation Flows:

➤ Enables you to isolate problems occurring in transactions, user sessions, and pages on the server side in the RUM flow.

➤ Drill down from Transaction Management to Service Health reports and EUM reports, and from Service Health and EUM to Transaction Management. reports. For details, see "Working with Other Applications in BSM" in the *BSM Application Administration Guide*.

➤ Drill down to the Transaction Management Transaction Tracking report from the following EUM reports:

   ➤ RUM Session Analyzer report

   ➤ Session Details report

   ➤ RUM Action Summary report

   ➤ Action Raw Data report

   ➤ Action Over Time report

   ➤ End Users by Action report

   ➤ Application Infrastructure by Action report

➤ Drill down to the Transaction Management Transaction Summary or Aggregated Topology report from the following EUM reports:

   ➤ RUM Transaction Summary report

➤ Application Health report

➤ Performance Analysis report

➤ Triage report

HP Diagnostics

Enable Root Cause and Isolation Flows:

➤ Enables you to isolate problems in backend transaction instances in the RUM flow.

➤ Provides specific HIs for backend perspective for RUM transactions.

➤ Drilldowns are available from all EUM reports that provide server time breakdown (for aggregated transactions).

➤ Drill down from a RUM Session Analyzer instance (Session Details report) to a corresponding Server Request instance in HP Diagnostics.

Business Process Monitor

Enable Root Cause and Isolation Flows:

Shared model and reports provide a real user and synthetic user perspective.

SiteScope

Enable Root Cause and Isolation Flows:

➤ Enables you to actively monitor system and application components which influence transaction performance.

➤ Enables proactive or on-demand monitoring, and provides shared health views (from transaction to infrastructure and applications).

➤ Enables you to actively monitor Web transactions using URL monitors which provides additional synthetic monitoring dimensions to the data gathered by RUM.

➤ Enables you to take proactive actions when infrastructure components related to business transactions start to have a negative trend.

HP Diagnostics

For details about HP Diagnostics, see "Diagnostics" on page 27.

HP Diagnostics and the BSM components listed below complement each other by:

➤ Enabling isolation and finding root cause of problems, including using drilldowns between components.

➤ Enriching the data model.

➤ Sharing configuration data to simplify the deployment process.

Business Process Monitor

Enable Root Cause and Isolation Flows:

➤ HP Diagnostics provides specific HIs for backend perspective for a particular synthetic transaction.

➤ Drill down to HP Diagnostics for the specific synthetic transaction.

Enrich Data Model:

Links BPM transactions to the underlying infrastructure.

Share Configuration Data:

➤ BPM transaction is automatically defined as a business transaction.

➤ BPM transactions are automatically instrumented.

Real User Monitor

Enrich Data Model:

Links RUM transactions to the underlying infrastructure.

SiteScope

Enable Root Cause and Isolation Flows:

➤ SiteScope monitor information can be sent to HP Diagnostics standalone to help isolate problems (using the additional information it provides on the host).

➤ Provides a complete view of transaction performance from the overall system to detailed J2EE/.NET and system/process granularity.

Enrich Data Model:

Provides system monitoring for servers and server components, and enriches diagnostics data in BSM with system metrics and HIs.

Transaction Management

Enable Root Cause and Isolation Flows:

➤ Drill down to the HP Diagnostics Hosts view to provide system metrics such as CPU utilization and memory utilization, and determine if the problem is a system issue.

➤ Drill down to the HP Diagnostics Server Requests view to study the performance of server requests over time and application server metrics (such as JMX metrics), and determine where the issue lies.

Enrich Data Model:

➤ Both tracing and monitoring are enabled on the transaction.

➤ The TransactionVision Agent (Java or .NET) monitoring the applications is configured to act as both a Diagnostics probe and a TransactionVision Agent.

SiteScope

For details about the SiteScope application, see "SiteScope" on page 37.

SiteScope and the BSM components listed below complement each other by enabling isolation and finding root cause of problems, including using drilldowns between components.

Transaction Management

Enable Root Cause and Isolation Flows:

Enables you to see the impact of infrastructure health issues, reported by SiteScope, on your business transactions.

HP Diagnostics

Enable Root Cause and Isolation Flows:

Enables root cause analysis for issues that were isolated by SiteScope. You can drill down directly from the HP Diagnostics user interface to SiteScope data when working with HP Diagnostics and SiteScope (without Business Service Management).

For details, see the HP Diagnostics online help or the section on "Integrations" in the *Diagnostics User's Guide* (supplied with the HP Diagnostics software).

Operations Management

For details about the Operations Management application, see "Operations Management (OMi)" on page 31.

Operations Management and the BSM components listed below complement each other by enabling isolation and finding root cause of problems, including using drilldowns between components.

Transaction Management

Enables you to see the impact of events, reported by Operations Management, on your business transactions.

SiteScope

Enable Root Cause and Isolation Flows:

➤ Enables managing events and alerts generated by SiteScope in Operations Management.

➤ Enables drill down from events to their related CIs.

➤ Shows detailed view of monitoring with indicators (HIs and ETIs).

➤ Enables root cause analysis between multiple monitoring events using topology-based event correlation.

➤ Enables drill down from events generated by SiteScope to performance graphs in a CI context.

Transaction Management

For details about Transaction Management, see "Transaction Management" on page 39.

Transaction Management and the BSM components listed below complement each other by:

➤ Enabling isolation and finding root cause of problems, including using drilldowns between components.

➤ Enriching the data model.

➤ Sharing configuration data to simplify the deployment process.

HP Diagnostics

Enable Root Cause and Isolation Flows:

➤ Enables you to analyze issues that were isolated by TransactionVision.

➤ Enables drill down from a transaction instance to the corresponding (aggregate) Server Request instance. For details, see "HP Diagnostics" in the *BSM Application Administration Guide*.

Share Configuration Data:

Transaction Management leverages Diagnostics Server Requests to facilitate transaction classification.

Business Process Monitor

Enrich Data Model:

Transaction Management links BPM transactions to the underlying infrastructure.

Share Configuration Data:

Enables classification of TransactionVision transactions based on BPM transactions.

Real User Monitor

Enable Root Cause and Isolation Flows:

➤ RUM provides end user response time for transaction instances.

➤ Drill down from transaction instances to the EUM End User Summary report. For details, see "Transaction Management Reports" in the *BSM User Guide*.

Enrich Data Model:

Transaction Management links RUM transactions to the underlying infrastructure.

Share Configuration Data:

Enables classification of TransactionVision transactions based on RUM transactions.

SiteScope

Enable Root Cause and Isolation Flows:

➤ Enables you to actively monitor infrastructure and application components involved in the transaction.

➤ Provides bottom-up health status for CIs in Service Health views and Transaction Management transaction topologies.

Enrich Data Model:

SiteScope enriches TransactionVision data in Service Health views and Transaction Management transaction topologies with infrastructure metrics and health indicators.

Operations Management

Enrich Data Model:

Operations Management enriches TransactionVision data in Service Health views and Transaction Management transaction topologies with infrastructure metrics and health indicators.