HP System Health

For the Windows and Linux operating systems

Software Version: 9.22

Using System Health

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HP System Health Overview

System Health uses the SiteScope monitoring system to enable you to monitor the servers, databases, and data collectors running as part of your BSM system.

This guide includes the following topics:

- "Setting Up System Health" on page 8

  Describes how to set up System Health, including deploying System Health and creating remote connections to servers.

- "Synchronizing System Health" on page 21

  Describes how to synchronize System Health with a current model of the BSM model, or to reset all or part of System Health's configuration.

- "Enabling Smart Card Enforcement in System Health" on page 22

  Describes how to enable smart card enforcement in System Health.

- "Configuring a Backup Server" on page 23

  Describes how to reconfigure a backup server, in case the server machine is not functioning properly or requires downtime for servicing.

- "Monitoring BSM" on page 25

  Describes how to monitor the performance of the servers, databases, and data collectors running as part of your BSM system, and how to understand the System Health user interface.

- "Adding Monitors to System Health" on page 106

  Describes how to add monitors to System Health and view the overall health of the BSM system in one place.

- "Managing BSM Processes" on page 108

  Describes how to start or stop various BSM processes.

- "Reassigning Services" on page 111

  Describes how to move services from one server to another of the same type, in case the server machine is not functioning properly or requires downtime for servicing.

- "System Health Reports" on page 114

  Describes how to view information on components and monitors in a variety of formats.

- "HP CLIP Integration" on page 119

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- "Troubleshooting and Limitations" on page 121

Chapter 1

Setting Up System Health

To set up System Health:

1. **Install System Health.** Includes installing System Health in a secured environment and securing the JMX Channel used for BSM communication.

   For details, see "Installing System Health" below.

2. **Create remote connections to BSM servers.** Enable full monitoring of BSM and database servers by System Health.

   For details, see "Creating Remote Connections to Servers" on page 12.

Installing System Health

Before installing System Health, you must ensure that the Gateway server and the Management database are up and running. System Health must be installed in the same domain as BSM, and any firewalls must be open.

Note:

- To upgrade to the latest version of System Health, you must uninstall the existing version and install the latest version. For details on uninstalling, see "Uninstalling System Health" on page 18.
- For system requirements, see the BSM System Requirements and Support Matrixes Guide at http://support.openview.hp.com/selfsolve/document/KM00318731/binary/BSM_922_SysReqs_SupportMatrixes.pdf.
- If you plan to enable smart card enforcement in BSM, you should install System Health on the BSM Gateway server.

You install System Health in one of the following ways:

- On a standalone machine with access to BSM (recommended so that System Health continues to run if BSM servers are down).
- On the BSM Gateway server (should be done only if a standalone machine is not available or if smart card enforcement is enabled in BSM).

How to install System Health

1. Uninstall the existing version of System Health from your machine.
2. Run the System Health installation according to your operating system from the System Health installation disk or access it from the Software Patches Site (support.openview.hp.com/selfsolve/patches).

   For Windows:

Enter the location from which you are installing System Health according to your operating system and architecture, followed by **SystemHealth_9.22_setup.exe**.

For Linux:

a. Log into the server as user **root**.

b. Move to the directory where the installation files can be found according to your operating system and architecture.

c. Run the script **./SystemHealth_9.22_setup.bin**.

> **Note:** Installation in console mode is not supported.

3. If the Installer detects any anti-virus program running on your system, it prompts you to examine the warnings before you continue with the installation. Read the warnings, if any, that appear in the **Application requirement check warnings** screen and follow the instructions as described in the screen.

   Click **Continue** to continue with the installation.

4. In the **Introduction (Install)** screen that opens, click **Next**.

5. To install System Health, you must accept the terms of the license agreement by clicking **Next**.

6. The **Install Checks** screen opens and runs verification checks. After the free disk space verification is complete, click **Next**.

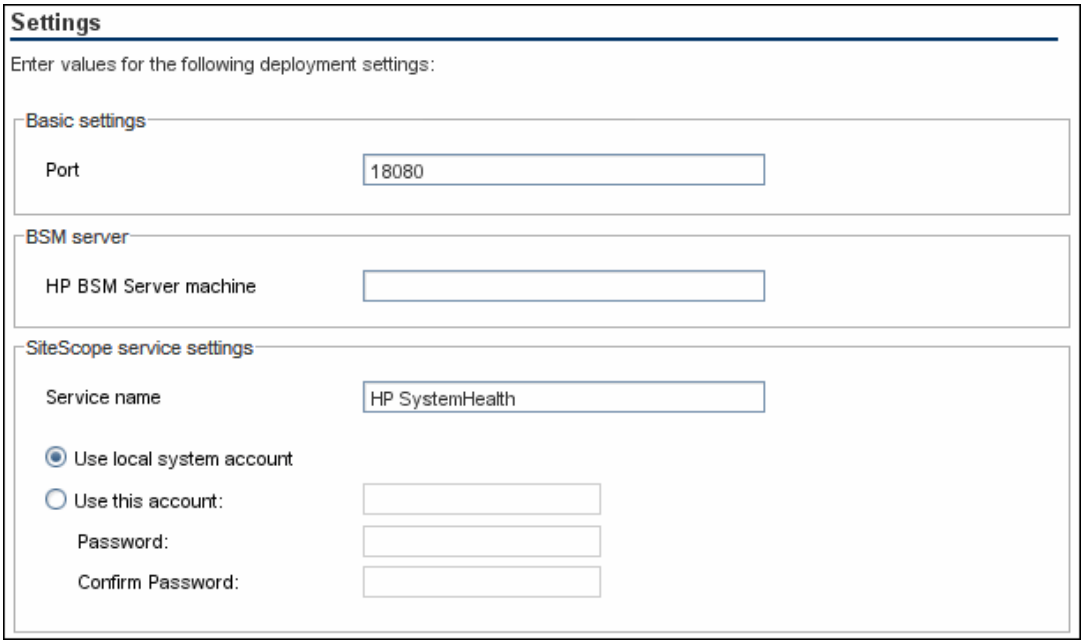
   If the free disk space verification is not successful, free up disk space (for example, by using the Windows Disk Cleanup utility) and repeat this step.

7. In the Pre-Install Summary screen, click **Install**.

   The Installer selects and installs the required System Health software components. The progress of each software component appears on your screen during installation.

8. After installing the System Health components, the Introduction screen of the System Health Configuration Wizard opens. Click **Next**.

9. The Settings page of the System Health Configuration Wizard opens.



Enter the required configuration information and click **Next**:

- **Port.** The System Health port number. Accept the default port number of 18080, or choose another port that is free. If the port number is already in use, an error message appears.
- **HP BSM Server machine.** The fully qualified domain name (FQDN) of the BSM Gateway server. For example, **http://<server_name>.<domain_name>**.

  Note: If you are connecting System Health to an environment with a Load Balancer, enter the hostname of the BSM Gateway server, not the Load Balancer.

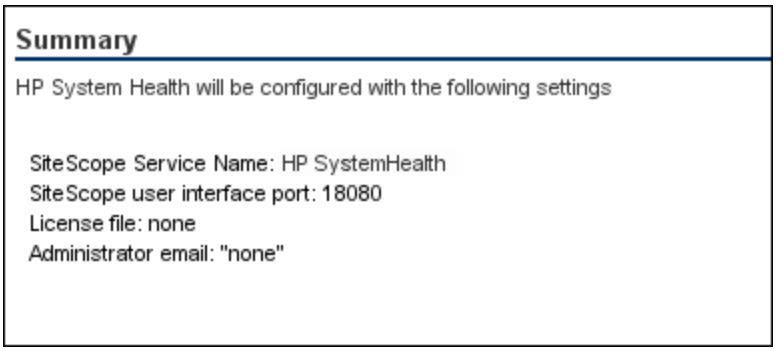
- **Service name.** The name of the System Health service. If the machine has a previous version of System Health installed, enter another name for the System Health service. The default service name is `HP SystemHealth`.
- **Use local system account.** By default, System Health is installed to run as a Local System account. This account has extensive privileges on the local computer, and has access to most system objects. When System Health is running under a Local System account, it attempts to connect to remote servers using the name of the server.
- **Use this account.** Select to change the user account of the System Health service. You can set the System Health service to log on as a user with domain administration privileges. This gives System Health access privileges to monitor server data within the domain. Enter an account and password (and confirm the password) that can access the remote servers. If System Health is installed to run as a custom user account, the account used must have **Log on as a service** rights.

The JMX Encryption data settings page opens.

10. On the JMX Encryption data settings page, you can enter the login and password for the JMX Server, the JMX HTTP Server, and the URL Server. To enable System Health to communicate with a BSM system in which smart card enforcement is enabled, select the **Smart Card** check box.

If you do not enable smart card enforcement when installing System Health, you can enable it later. For details, see "Enabling Smart Card Enforcement in System Health" on page 22.

11. The Summary screen opens.



Check that the information is correct and click **Next** to continue, or **Back** to return to previous screens to change your selections.

12. In the Done screen, click **Finish** to close the System Health Configuration Wizard.
13. When the installation finishes, the Installation Complete window opens displaying a summary of the installation paths used and the installation status.

    If the installation was not successful, review the installation log file for any errors by clicking the **View log file** link in the **Installation Complete** window to view the log file in a web browser.

    For more information about the installed packages, click the **Details** tab.

    Click **Done** to close the installation program.

    If the installation program determines that the server must be restarted, it prompts you to restart the server.

How to install System Health in a secured environment

To connect System Health to BSM in a secured environment, you must connect directly to the BSM Gateway server, not the reverse proxy. You must then:

1. Click the SiteScope link at the top left corner of the System Health interface. SiteScope opens.
2. Configure SiteScope to connect to the BSM server. For details, see "Configuring SiteScope to Connect to a BSM Server That Requires a Client Certificate" in the HP SiteScope Deployment Guide.
3. Configure the topology discovery agent in SiteScope to report topology to the BSM server. For details, see "Configuring the Topology Discovery Agent in SiteScope When BSM Server Requires a Client" in the HP SiteScope Deployment Guide.

Note: The HP SiteScope Deployment Guide is available from the HP SSO Product Manuals site at http://h20230.www2.hp.com/selfsolve/manuals.

When installing System Health in a secured environment, note the following:

- On the System Health Dashboard, Reverse Proxy components appear in the left pane, together with the Load Balancer components, called **mediators**.
- The WDE URL monitor appears red until you enter the monitor's username and password in SiteScope.
- When accessing System Health from within BSM, you must enter a username and password to view the System Health interface. For more details, see "Accessing System Health in BSM" on page 20.
- If you connect System Health to BSM using the secured Gateway server, the following URL-based monitors do not work because their URLs use the HTTP protocol, not the HTTPS protocol:
  - Web Data Entry Availability
  - BSM Application Server Response

  To enable these monitors to work:

  a. Click the SiteScope link at the top left corner of the System Health interface. SiteScope opens.

  b. In the monitor tree in the left pane of the SiteScope interface, click the monitor name.

  c. Open the URL Monitor Settings panel in the Properties tab.

  d. In the URL field under Main Settings, replace **http** with **https** and save the change. For example, replace the monitor URL `http://ourcompany.com/SiteScope/services` with `https://ourcompany.com/SiteScope/services`.

How to secure the JMX Channel used for BSM communication

System Health uses JMX monitors and JMX calls to collect information from the BSM system it is monitoring. The JMX channel in BSM can be protected by configuring a user name and password (see the section on Securing JMX-RMI Channel Used for Internal BSM Communications in the BSM Hardening Guide). Those credentials also need to be provided to System Health.

Creating Remote Connections to Servers

You can use the System Health Setup Wizard to:

- Create remote connectivity to the BSM servers and databases for full monitoring by System Health
- Configure recipients to receive predefined System Health email alerts

If remote connections are not created, the only monitors to provide data are those that do not require credential authorization to access the System Health.

The System Health Setup Wizard opens automatically the first time you access System Health on a machine running BSM.

You can access the System Health Setup Wizard on future occasions by performing a synchronization. For details, see "Synchronizing System Health" on page 21.

For details on using the System Health Setup Wizard, see "System Health Setup Wizard" on page 14.

Note: It is not possible for another user to access the System Health interface while you are configuring the System Health Setup Wizard.

System Health Setup Wizard

This wizard enables you to establish remote connectivity to the BSM servers and databases for full System Health monitoring, and to configure recipients to receive predefined System Health email alerts.

To access	Select **Admin > Platform > Setup and Maintenance > System Health** **Note:** • The System Health Setup Wizard opens automatically the first time you access the application after installation. To access the System Health Setup Wizard on future occasions, synchronize System Health. For more details, see Synchronizing System Health. • The user whose remote connection information you enter into the System Health Setup Wizard can perform only those actions for which they have permissions.
Important information	• If you do not enter remote connection details for the server, System Health retrieves information only for monitors that do not require credential authorization to access the BSM servers. • The left pane of the System Health Setup Wizard indicates the page of the wizard on which you are currently working.
Wizard map	This wizard contains: "Remote Servers Setup Page" on next page > "Remote Databases Setup Page" on page 16 > "Recipients Setup Page" on page 18
See also	• "Creating Remote Connections to Servers" on page 12 • "Installing System Health" on page 8 • "System Health Monitors" on page 43

Status and Description

When creating remote connections through the System Health Setup Wizard, a colored icon indicates the connection status.

The following table describes each color and its status:

Status	Description
	A green icon indicates that the credentials entered are sufficient for all of the monitors to access the BSM servers.

Status	Description
	A red icon indicates that remote connectivity to the selected server has failed, due to one of the following reasons: • The permissions level of the user entered in the wizard are not sufficient for the monitors to retrieve information from the specified server. • The user entered in the wizard does not exist on the BSM machine running on the specified server. • A mistake has been made in the user credentials entered in the wizard.
	A gray icon indicates that no attempt was made to establish remote connectivity to the specified server.

Remote Servers Setup Page

This wizard page enables you to create a remote connection to BSM servers for System Health to monitor.

Important information	• This wizard page is part of the System Health Setup Wizard. General information about this wizard is available at "System Health Setup Wizard" on previous page. • You can configure different settings for each server, or apply the same settings to all servers. • You must configure the remote connection details for the server in order for System Health to run all of the server's available monitors. If you do not enter remote connection details for the server, System Health retrieves information only for monitors that do not require credential authorization to access the BSM servers.
See also	"Creating Remote Connections to Servers" on page 12

User interface elements are described below:

UI Element (A-Z)	Description
	Displays descriptions of the Remote connection details fields. Click again to hide descriptions.
	Click to select all, clear all, or invert your selection in the server list.
Apply	Applies the remote connection configurations for the selected servers.
Encoding	The encoding used by the server. **Example:** Cp1252, UTF-8

UI Element (A-Z)	Description
Login	The login name to be used for establishing remote connectivity between the monitors and the specified servers. The user whose login name is entered must have the appropriate permission level for the monitors to run on the server. The format for entering information into this cell is **DOMAINNAME\login**.
Method	The method of communication for connecting to the BSM components. **Example:** NetBIOS, SSH
OS Type	The Operating System running on the server. **Example:** Windows, UNIX **Note:** This field is visible only if System Health does not identify an operating system on the server.
Password	The password of the login name to be used for establishing remote connectivity with the specified servers. The user whose password is entered must have the appropriate permission level for the monitors to run on the server.

Remote Databases Setup Page

This wizard page enables you to create a remote connection to databases for System Health to monitor.

Important information	• This page is part of the System Health Setup Wizard. General information about this wizard is available at "System Health Setup Wizard" on page 14. • You can configure different settings for each server, or apply the same settings to all servers. • You must configure the remote connection details for the database in order for System Health to run all of the database's available monitors. If you do not enter remote connection details for the database, System Health retrieves information only for monitors that do not require credential authorization to access the BSM servers.
See also	"Creating Remote Connections to Servers" on page 12

User interface elements are described below:

UI Element (A-Z)	Description
	Displays descriptions of the Remote connection details fields. Click again to hide descriptions.
	Click to select all, clear all, or invert your selection in the server list.
Apply	Applies configurations for the selected database.
Encoding	Indicate the encoding used by the server running the database. **Example:** Cp1252, UTF-8
Initialize Shell Environment	(Optional) Enter any shell commands to be executed at the beginning of the session. Separate multiple commands with a semicolon (;). This option specifies shell commands to be executed on the remote machine directly after a Telnet or SSH session has been initiated.
Login	The login name used to access the operating system running on the server on which the database is installed. **Note:** The format for entering information into this cell is **DOMAINNAME\login**.
Login Prompt	The prompt output when the system is waiting for the login to be entered. **Default:** `login:`
Method	The method of communication between System Health and the database. **Example:** NetBIOS, SSH
Operating System	The Operating System running on the server. **Example:** Windows, UNIX **Note:** This field is only visible if System Health does not identify an operating system on the server.
Password	The password used to access the operating system running on the server on which the database is installed.
Password Prompt	The prompt output when the system is waiting for the password to be entered. **Default:** `password:`
Prompt	The prompt output when the remote system is ready to handle a command. **Default:** `#`
Secondary Prompt	The secondary prompts if the telnet connection to the remote server causes the remote server to prompt for more information about the connection. Separate multiple prompt string with commas (,).
Secondary Response	The responses to any secondary prompts required to establish connections with this remote server. Separate multiple responses with commas (,).

Recipients Setup Page

This wizard page enables you to configure recipients to receive predefined System Health alerts through email.

Important information	This page is part of the System Health Setup Wizard. General information about this wizard is available at "System Health Setup Wizard" on page 14.
See also	"Creating Remote Connections to Servers" on page 12

User interface elements are described below:

UI Element (A-Z)	Description
	Displays descriptions of the Recipient Details fields. Click again to hide descriptions.
<Recipients Pane>	Displays a list of recipients configured to receive predefined System Health alerts through email. • Click the recipient's name to edit their details. • Click **Add new recipient** to configure a new recipient.
BSM Databases	Select to receive alerts on the status of BSM Databases.
BSM servers, services, and applications	Select to receive alerts on status of BSM servers, services, and applications.
Create	Adds the configured recipient to the recipient list pane.
Email	The recipient's email address.
Mediators	Select to receive alerts on status of BSM Mediators and Load Balancers.
Name	The recipient's name.

Uninstalling System Health

How to uninstall System Health on a Windows Platform

On the machine from which you are uninstalling System Health:

1. Go to **Start > All Programs > HP System Health > Uninstall HP System Health**. The Uninstall or change a program dialog box opens.
2. Follow the displayed instructions to complete uninstalling System Health.

How to uninstall System Health on a Linux Platform

For System Health running on Linux platforms, the System Health installation includes a script to uninstall the System Health software from your machine. If you are unable to run the script, you can delete the System Health files and directories manually.

To uninstall System Health on a Linux platform:

1. Log in to the machine on which System Health is running using the account authorized to execute scripts in the System Health directory. Normally, this is the account under which System Health is running.
2. Stop System Health running the `stop shell` script included in the **<install_path>/System_Health** directory. An example command line to run the script is:

   `./opt/HP/SiteScope/stop`

   A message is displayed indicating that System Health is stopped.
3. Run the uninstall script in the **<install_path>/SiteScope/Uninstall/SystemHealth** directory. Examples of command lines to run the script are:

   `./opt/HP/SiteScope/Uninstall/SystemHealth/setup.bin` or
   `./opt/HP/SiteScope/Uninstall/SystemHealth/setup.bin -i console`

   At any point during the uninstall procedure, you can cancel the uninstallation by clicking **Cancel**, or `CTRL+C` in console mode.

Accessing System Health

You can access System Health:

- Directly, through a web browser using the syntax: **http://<server_name>.<domain_name>:<System Health Server port number>/**, where **<server_name>** is the name of the Gateway or dedicated server that System Health is deployed on, depending on the type of deployment you are using. For details, see "Accessing System Health Directly" below.
- As an application embedded in BSM, after configuring the appropriate URL in the **Infrastructure Settings** section of Platform Administration. For details, see "Accessing System Health in BSM" on next page.

The System Health application can be accessed only by users with Superuser or Administrator permissions.

Note: If you are accessing System Health for the first time, see Synchronizing System Health.

Accessing System Health Directly

To access System Health directly, through a web browser:

1. Enter the following link into your browser window:

   http://<machine name>:<port number>

   Where:

   <machine name> = The machine System Health is installed on.

   <port number> = 18080 by default, or you can choose another port that is free.

   Note: It can take several minutes for the System Health application to appear on your

screen.

2. Enter your login name and password in the appropriate boxes to log into System Health.
   - Initial access can be gained using the following default login parameters:

     Login Name = **systemhealth**, Password = **systemhealth**
   - Administrator level access can be gained using the following default login parameters:

     Login Name = **administrator**, Password = **syshealthadmin**

     It is recommended that you change the password immediately to prevent unauthorized entry. To change the password, click the **Change Password** link on the System Health login page.

     Note: After changing your password on the System Health login page, you must enter your System Health username and password when accessing System Health in BSM. After you have done this, BSM does not require you to re-enter this information to access System Health until the next time your password is changed on the System Health login screen.

Accessing System Health in BSM

To enable BSM to access System Health:

You must perform the following steps once, to enable BSM to connect to System Health:

1. Log in to your BSM machine. For details, see the section on logging in to BSM in the BSM Platform Administration Guide in the BSM Help.
2. Select **Admin > Platform > Setup and Maintenance > Infrastructure Settings**, choose **Foundations**, select **System Health**, and locate the **URL** entry in the **System Health - URL** table. Modify the value to the following URL:

   http://<machine name>:<port number>/SiteScope/SH/Main.do

   Where:

   <machine name> = The machine System Health is installed on.

   <port number> = 18080 by default, or you can choose another port that is free.
3. Click **Save** to register the URL for accessing System Health in BSM.

To access System Health from within BSM:

1. Log in to your BSM machine. For details, see the section on logging in to BSM in the BSM Platform Administration Guide in the BSM Help.
2. Select **Admin > Platform > Setup and Maintenance > System Health** to access the System Health interface.

Chapter 2

Synchronizing System Health

After you have accessed System Health for the first time, you should synchronize System Health.

Synchronization resets the configuration of the selected component of the System Health configuration, including all monitors and their status. If no specific component is selected, the entire System Health configuration is reset.

You synchronize System Health by using the System Health Setup Wizard. When the System Health Setup Wizard opens, you must reconfigure the connection of all system monitors to the servers.

Note: If an BSM component was down while synchronization was performed, System Health may not have configured the full monitoring solution onto these components. To prevent this from happening, ensure that all components are up and running during the System Health Setup Wizard configuration, and while performing synchronization.

To perform synchronization, click the **Full Model Synchronization**  button on the System Health Dashboard toolbar or the Inventory tab toolbar, when no specific component is selected.

For details on creating remote connections to BSM servers, see "Creating Remote Connections to Servers" on page 12.

Enabling Smart Card Enforcement in System Health

If smart card enforcement is enabled in System Health, you can access System Health only from the localhost machine. Access requests from other machines are rejected. Therefore, if smart card enforcement is enabled in System Health, to enable communication between BSM and System Health, System Health must be on the same server as BSM.

Note: To enable System Health to communicate with BSM when BSM is hardened for smart card enforcement, see "How to install System Health in a secured environment" on page 11.

You can enable smart card enforcement in System Health either while installing System Health or after installation.

To enable smart card enforcement during the installation process, see step 10 in "Installing System Health" on page 8.

To enable smart card enforcement after installing System Health:

1. Run the System Health Configuration Wizard:

   For Windows:

   Run **Start** > **HP System Health** > **Configuration Wizard**.

   For Linux:

   Run the **sh_config.sh** file in the **%SYSH_HOME%/bin** directory.
2. In the System Health Configuration Wizard, skip to the JMX Encryption data settings page.
3. On the JMX Encryption data settings page, select the **Smart Card** check box.
4. Click **Next**.
5. Click **Finish**. Smart card enforcement is enabled.

For more information about smart card enforcement, see the Smart Card Authentication Configuration Guide (http://support.openview.hp.com/selfsolve/document/KM00379783/binary/BSM_922_SmartCardGuide.pdf).

Chapter 3

Configuring a Backup Server

System Health enables you to configure a backup server in case the server machine is not functioning properly or requires downtime for servicing, using the Backup Server Setup Window.

External machines, such as CMDB, cannot be defined as backup servers.

To access

Click the **Backup Server Setup** button  on the Toolbar.

This button is enabled only if you have configured more than one Data Processing server.

You must click the **Enable Automatic Failover** box for the backup server to be enabled.

Monitoring service reassignments

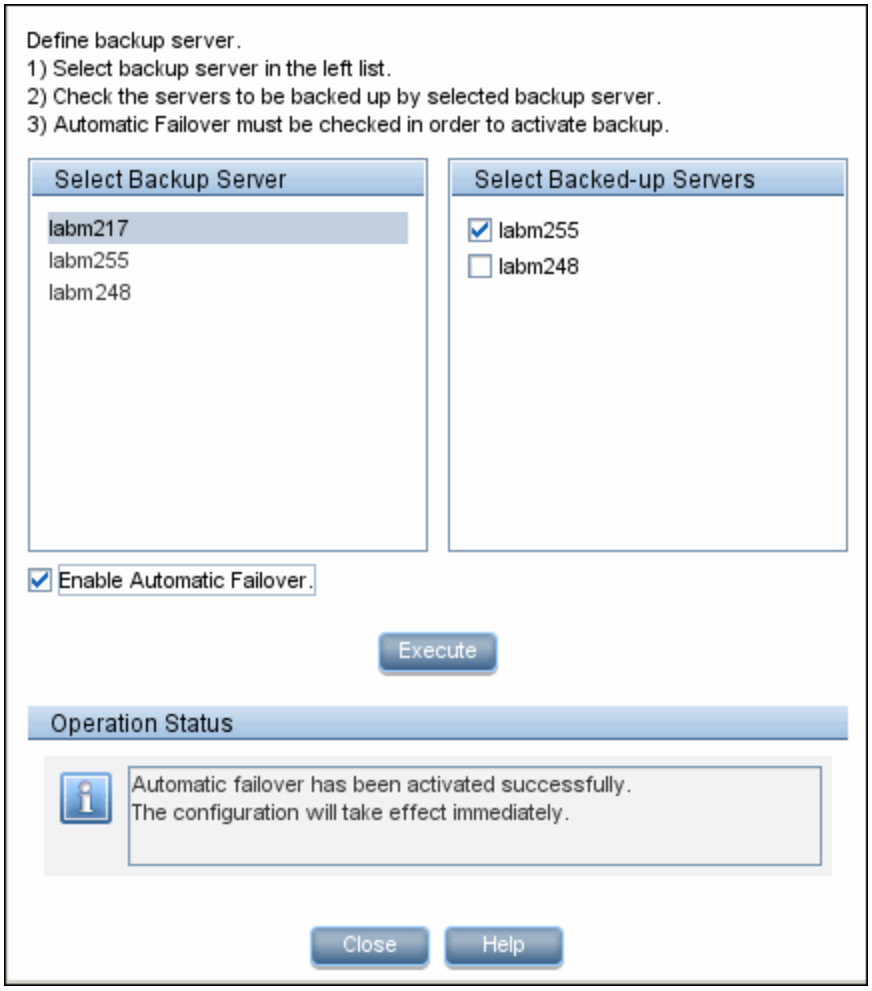
You can monitor the service reassignments using System Health, or in the hac-manager JMX. The relevant logs are:

- **<HPBSM root directory>\log\EJBContainer\hac-locator.log.** Contains the location changes for each service.
- **<HPBSM root directory>\log\EJBContainer\hac-launcher.log**. Contains information about the relevant services for the process, and errors in case the service fails to start.

How to Configure a Backup Server:

1. On the Toolbar on the System Health Dashboard or the Inventory tab, click the **Backup Server Configuration**  button.
2. In the left pane, select a backup server (to be used when the original server is down).
3. In the right pane, select a server to be backed-up.
4. Click the **Enable Automatic Failover** check box to activate your backup server selection.
5. Click **Execute** to register your backup server. The **Operation Status** window indicates whether or not the operation succeeded.

   In the following image, when server lab255 is down, it is backed-up by server lab217:



Backup Server Setup Window

User interface elements are described below:

UI Element (A-Z)	Description
Enable Automatic Failover	Select to activate the selected server as the backup server.
Execute	Defines the selected server as the backup server.
Operation Status	Displays the status of the performed operation.
Select Backed-up Servers	Select the servers to be backed up.
Select Backup Server	Select the backup server.

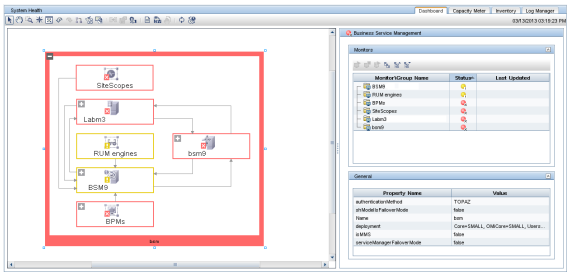
Chapter 4

Monitoring BSM

You can monitor the performance of the servers, databases, and data collectors running as part of your BSM system and view the results using the following UI elements:

- "Monitoring BSM Using the Dashboard Tab" on next page
- "Monitoring BSM Using the Capacity Meter Tab" on page 37
- "Monitoring BSM Using the Inventory Tab" on page 37
- "Toolbar" on page 39
- "BSM Components" on page 43
- "System Health Monitors" on page 43

This is the default display when you access System Health:



Monitoring BSM Using the Dashboard Tab

You can monitor BSM using the System Health Dashboard tab. This tab contains views of BSM components and their status, including information on the properties and monitors associated with the components.

You can perform actions on the Dashboard tab using the toolbar above the left pane. For details, see "Toolbar" on page 39.

The left pane of the Dashboard tab includes the following:

- **Database** components appear to the left of this pane. For details, see "Database components" on page 29.
- **Server** components appear to the right of the database components.
- **Load Balancer** components (if deployed) appear to the right of the server components.

  Note: When System Health is deployed in a secured environment, Reverse Proxy components appear with the Load Balancer components.

- **Data collector** components appear on the right side of this pane. For details, see "Data collector components" on page 31.

The right pane of the Dashboard tab contains information on components selected in the left pane. This pane includes the following:

- **Monitors Table.** Displays information about the monitors and subcomponents on the highlighted component in the left pane. For details, see "Monitors Table" on page 32.
- **General Table.** Displays information about the properties of the highlighted server in the left pane. For details, see "General Table" on page 35.
- **Data Collector Details Table.** Displays information about the data collector highlighted in the left pane. For details, see "Data Collector Details Table" on page 36.

To access

Select **Admin > Platform > Setup and Maintenance > System Health**

Learn More

Component status and descriptions

You can view the status of the components monitored by System Health based on their color on the Dashboard.

The color of all component outlines reflects the lowest functioning level subcomponent or monitor contained in the component, known as the **worst child rule**. The exception to this rule is the gray outlined components, which do not automatically cause their parent components to be outlined in gray.

The following table displays a sample icon and a description of its outlined color and status, as displayed on the Dashboard:

Status	Description
	A green outline indicates that the component and its subcomponents are working properly.
	A red outline indicates that a critical problem exists in the component, in one of its subcomponents, or both. It is recommended that you drill down in the component to identify its specific problematic monitors.
	A yellow outline indicates one of the following: • A non-critical problem exists either in the component, in one or more of its subcomponents, or both. • The component's monitors were unable to connect with the server.
	A gray outline indicates that there are currently no monitors scheduled to run for the component.
	A jagged blue outline, together with the component's status color, represents the currently highlighted component.

Tasks

How to see and disable obsolete hosts

You may see obsolete hosts that are no longer running BSM. To disable these obsolete hosts:

1. Browse to the URL **http://<Gateway Server machine name>.< domain_ name>/topaz/systemConsole/displayBACHosts.do**
2. Disable all obsolete hosts.

UI Descriptions

Component and monitor status indicators

The following table displays colored icons and descriptions of their status, as displayed on both the Inventory tab and the Monitors table in the Dashboard right pane:

Status	Description
	The component and all subcomponents are working properly (status is **good**).
	The component or a subcomponent has a critical problem (status is **error**). It is recommended that you drill down in the component to identify its specific problematic monitors.
	The component or a subcomponent has a non-critical problem, or did not receive an answer from the server (status is **warning**).
	There is no data available for the monitors. Displayed if the monitors have not yet run.

Note: After deploying System Health, the monitor colors appear gradually as each monitor runs according to its schedule.

Database components

Database components are described below:

UI Element	Description
RTSM Database	A central repository for configuration information.
Management Database	Stores system-wide and management-related metadata for the BSM environment.
History Database	Used for storage of data, over time, of the RTSM configuration items (CIs).
Profile Database	Stores raw and aggregated measurement data obtained from the BSM data collectors.

Icons and buttons

The component icons and buttons on the left of the Dashboard tab are described below:

UI Element	Description
	Expands the component and displays its subcomponents. **Important:** You must select the cursor button  on the System Health Dashboard toolbar to operate the **Expand** button.
	Hides the subcomponents contained within the selected component. **Important:** You mupst select the cursor button  on the System Health Dashboard toolbar to operate the **Hide** button.
	Database server
	Database
	Gateway Server
	Data Processing Server
	Group of processes
	Group of server monitors
	Bus component
	Logical group **Example:** Alerts Engine
	Application **Example:** Service Health
	Group of applications
	Service **Example:** Service Level Management Engine
	Group of Business Process Monitor data collectors

UI Element	Description
	Group of SiteScopes
	Group of Discovery Probes
	Group of Real User Monitor data collectors
	Indicates the flow of data. **Note:** Click the **Navigation** button  and then click anywhere on an arrow line to find the arrow's destination or origin.

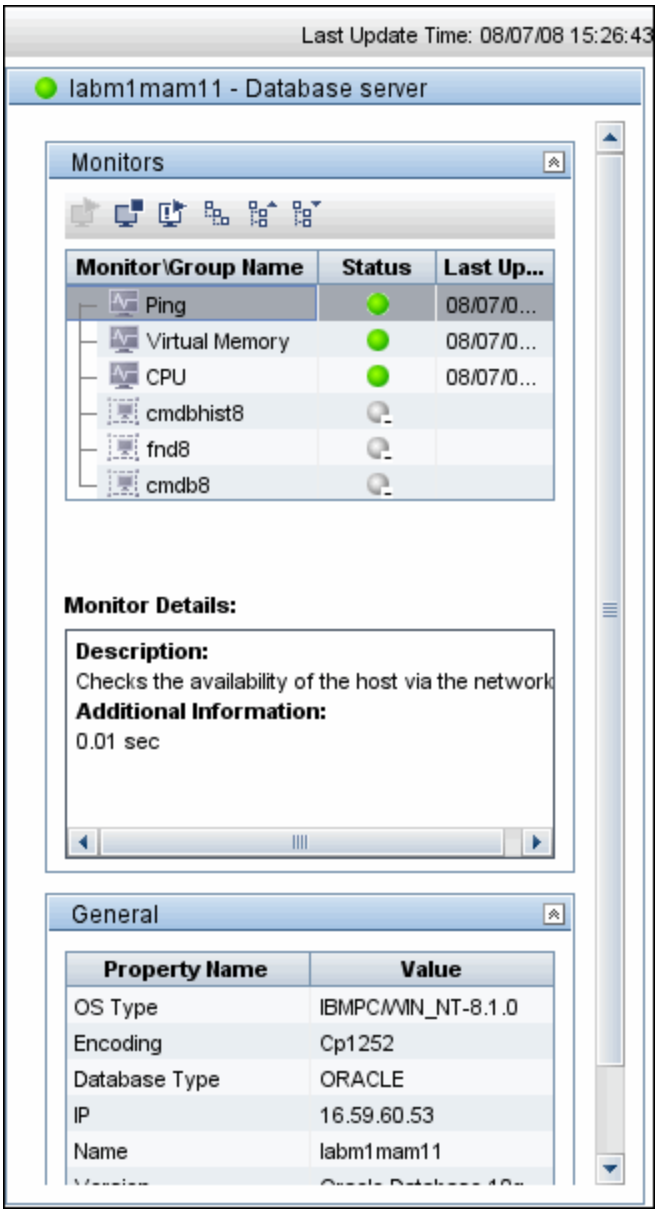
Data collector components

User interface elements are described below:

UI Element (A-Z)	Description
BPMs	Displays the status of the Business Process Monitor (BPM) data collectors. Since BPM has the option to monitor different agents, all BPM instances are displayed as separate entities, with a separate status for each instance. If more than one Business Process Monitor data collector is connected, you can drill down on the BPM node to see how many BPM data collectors are connected and the health of each BPM.
Discovery Probes	Displays the status of the Discovery Probes.
RUM Engines	Displays the status of the Real User Monitor engines.
SiteScopes	Displays the status of the SiteScopes.

Monitors Table

The **Monitors** table displays information on the monitors running on the component selected in the Dashboard.



See also	"BSM Components" on page 43

Note: Click the arrows in the header to expand or collapse the table.

The color of the component box outline, as well as the status icon's color in the **Monitors** table, determines the component status. For details on the components' outline colors, see Component

Status and Description. For details on the status icon colors, see "Component and monitor status indicators" on page 29.

After you have drilled down to a specific monitor in the Monitors table, you can:

- Enable the monitor
- Disable the monitor
- Run the monitor immediately, instead of waiting for it to run according to its schedule

The monitor groups correspond to the components contained in the highlighted component in the System Health Dashboard left pane. Additional information on the individual monitors is displayed in the **Monitor Details** pane.

You can double-click a group in the Monitors table to open the monitor's parent component on the System Health Dashboard.

For details on the System Health monitors that are run by the SiteScope application, click the **SiteScope** link at the top left corner of the System Health interface.

User interface elements are described below:

UI Element (A-Z)	Description
	Disables the selected monitor.
	Reactivates the selected monitor's schedule.
	Runs the selected monitor immediately. The monitor must first be enabled for you to use this option.
	Expands the list of monitors to list all monitors and measurements for that object. This is the default view.
	Collapses the list of monitors to display only the monitors and hide the monitor measurements.
	Refreshes the list of monitors to display the latest status for the monitors.
	An individual monitor that is running on the selected component.
	A group of monitors that are running on the selected component.
Last Updated	Indicates the last time that the monitor ran.

UI Element (A-Z)	Description
Monitor Details	Contains the following fields: • **Description.** Describes the selected monitor. • **Additional Information.** Displays a text string result of the selected monitor's output. • **Value.** Displays a numerical result of the selected monitor's output. **Note:** Not all fields are displayed for every monitor.
Monitor/Group Name	The name of the monitor or group of monitors running on the component selected in the left pane.
Status	Indicates the monitor or monitor group's status, displayed as a colored ball icon. For details on these icons, see "Component and monitor status indicators" on page 29.

General Table

The **General** table displays information about the properties associated with the selected server in the left pane.

Important information	• This table appears only when a server is selected in the Dashboard. • Click the arrows in the header to collapse and expand the table. • Click the header name to sort by the header's value.

User interface elements are described below:

UI Element (A-Z)	Description
Property Name	Lists the properties associated with the selected component, such as: • IP Address • Build number • Operating system type
Value	Lists the value of the specified property.

Data Collector Details Table

Displays information, in tree form, about the data collector selected in the left pane.

Important information	• This table appears only when a data collector is selected in the System Health Dashboard. • Click the arrows in the header to collapse and expand the table.

User interface elements are described below:

UI Element (A-Z)	Description
	Discovery Probe.
	Business Process Monitor (BPM) data collector.
	Real User Monitor (RUM) data collector.
	SiteScope (SiS) data collector.
	Displayed next to the IP address of the machine on which the Discovery Probe is running.
	Displayed next to the IP address of the machine on which the Business Process Monitor (BPM) data collector is running.
	Displayed next to the IP address of the machine on which the Real User Monitor (RUM) data collector is running.
	Displayed next to the IP address of the machine on which the SiteScope (SiS) data collector is running.
	Denotes an instance of a Discovery Probe.
	Denotes an instance of a Business Process Monitor (BPM) data collector.
	Denotes an instance of a Real User Monitor (RUM) data collector.
	Denotes an instance of a SiteScope (SiS) data collector.
Property Name	Lists the properties associated with the selected data collector, such as: • Build number • Port number • Version number
Value	Lists the value of the specified property.

Monitoring BSM Using the Capacity Meter Tab

You can monitor the capacities of BSM applications by using the System Health Capacity Meter tab. The Capacity Meter tab displays BSM metrics data, for example, the number of active TQLs in RTSM and the number of currently running SLAs.

The Capacity Meter tab consists of tiles which display the metrics data in both graphic and numerical format.

Each tile includes:

- **Metric description.** Describes the metric in BSM whose data appears in the tile. To see more details about the metric description, click the tile. The details appear under the metric description.
- **Machine name.** The name of the machine which System Health is monitoring.
- **Gauge.** Displays the metrics data relevant to the metric description of the tile. The gauge is color-coded. To see a legend which explains the color-coding scheme for that tile, click the tile. The legend appears under the metric description details.

Note: The metrics data thresholds in the Capacity Meter tab come from the Excel sheet named **BSM_9_Deployment_and_Capacities.xls** in your BSM installation media. For more details about this Excel sheet, see "Using the Capacity Calculator" in the BSM Planning Guide.

Monitoring BSM Using the Inventory Tab

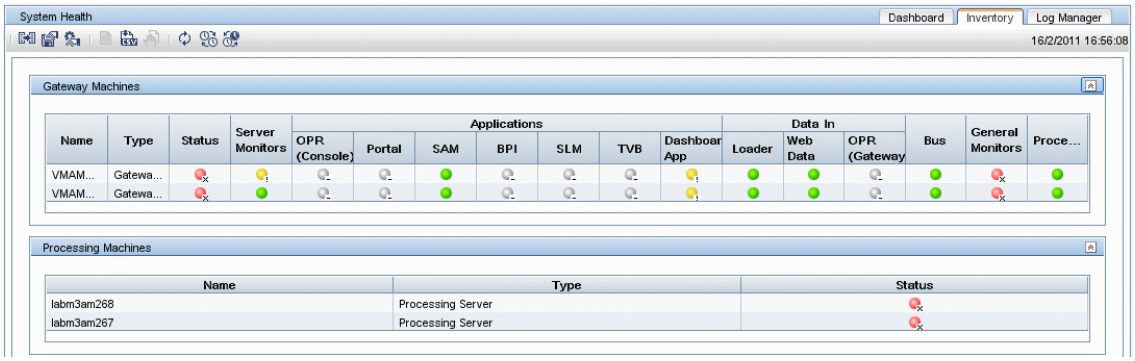
You can view information on Gateway Server and Data Processing Server components and their subcomponents, in table format, using the Inventory tab.

The Inventory tab enables you to compare the performance of the subcomponents and monitors on multiple servers by presenting their statuses in a single, flat view, rather than in the hierarchical view of the Dashboard.

The Inventory tab includes the following tables:

- **Gateway Machines.** Displays the status of the various components running on the BSM Gateway machines.
- **Processing Machines.** Displays the status of the various components running on the BSM Data Processing machines.
- **<Subcomponent Name> Details**. Displays information about the selected components' monitors. The **Monitor Details** area provides additional information on the subcomponents' monitors, if applicable.

Note: The **<Subcomponent Name> Details** table appears only when a specific component is selected on either the Gateway Machines or Processing Machines tables on the Inventory tab.



The component and monitor status is indicated on both the monitors table in the System Health Dashboard, and in the Inventory tab tables as a colored icon. For details on the colored icons, see Component and Monitor Status Indicators.

To access	Click the **Inventory** tab on the System Health interface.
Important information	In addition to fields representing the monitors and components displayed on the System Health Dashboard, the tables contain the following fields: • **Name.** The name of the server. • **Type.** The type of server (appears only for Gateway and Processing server tables). • **Status.** The overall status of the machine, indicated by a colored icon. For details on the colored icons, see Component and Monitor Status Indicators. Descriptions of the monitors are displayed on the **Monitor Details** pane.
See also	• "System Health Monitors" on page 43 • "Component and monitor status indicators" on page 29

Gateway Machines Table

Displays information about the Gateway machines being monitored by System Health, and their subcomponents.

To access	Click the **Inventory** tab on the System Health interface.
Important information	• Click the arrows in the header to expand or collapse the table. • The subcomponents' status is indicated by a colored ball icon. For details on the status represented by each color, see "Component and monitor status indicators" on page 29. • Details on the selected subcomponent appear in the **<Subcomponent Name> Details** table. **Note:** The cell names are identical to the corresponding component or subcomponent displayed on the System Health Dashboard.
See also	"System Health Monitors" on page 43

Processing Machines Table

Displays information about the Data Processing machines being monitored by System Health, and their subcomponents.

To access	Click the **Inventory** tab on the System Health interface.
Important information	• Click the arrows in the header to expand or collapse the table. • The subcomponents' status is indicated by a colored ball icon. • Details on the selected subcomponent appear in the **<Subcomponent Name> Details** table. **Note:** The cell names are identical to the corresponding component or subcomponent displayed on the System Health Dashboard.
See also	• "BSM Components" on page 43 • "System Health Monitors" on page 43

<Subcomponent Name> Details Table

Displays information about the specific component or subcomponent selected in the Gateway Machines table or the Processing Machines table.

To access	Click the **Inventory** tab on the System Health interface.
Important information	• The status of the subcomponent and its monitors are indicated by a either a colored icon, or, where applicable, a numerical value in the color indicating its status. For details on the colors' status, see "Component and monitor status indicators" on page 29. • The cell headings correspond to the monitors running on the selected component. The **Name** and **Status** cell headings display the name of the machine and its overall status, respectively. • The **Monitor Details** pane provides additional information on the monitor selected in the **<Subcomponent Name> Details** table.
See also	• "System Health Monitors" on page 43 • "Monitors Table" on page 32

Toolbar

The Toolbar enables you to customize the display of the BSM components on the System Health Dashboard, perform actions on the components, perform management operations on the components, and synchronize the status and model of the components.

To access	The Toolbar is located at the top of the System Health Dashboard and the Inventory tab.

Important information	Buttons that customize the display of the BSM components (Dashboard Customization Buttons) appear only on the System Health Dashboard. All other buttons appear on both the System Health Dashboard and the Inventory tab.
See also	• "Reassigning Services" on page 111 • "Configuring a Backup Server" on page 23 • "Managing BSM Processes" on page 108 • "Quick Reports" on page 114

Dashboard Customization Buttons

These buttons enable you to customize the appearance of the components on the System Health Dashboard.

Important information	The buttons that customize the display of the BSM components appear only on the System Health Dashboard, and do not appear on the Inventory tab.

User interface elements are described below:

UI Element	Description
	**Select.** Enables selecting a component on the System Health Dashboard left pane. **Note:** This button is selected by default upon entering the System Health Dashboard.
	**Pan.** Pans the System Health Dashboard left pane.
	**Zoom.** Zooms on a specific area of the System Health Dashboard left pane. You zoom by holding down the left click button on your pointer. Move the pointer down to zoom in; move the pointer up to zoom out.
	**Navigation.** Enables navigating between components of the Dashboard. You click the **Navigation** button and then click a line connecting two components or subcomponents. Depending on where on the line you click, the cursor navigates to either the original or endpoint component, whichever is further.
	**Fit.** Fits all open components and subcomponents into the visible area.
	**Undo.** Undoes your previous action and goes back to the previous display on the System Health Dashboard left pane. **Note:** This button is enabled only if you have generated more than one view on the System Health Dashboard left pane.

UI Element	Description
	**Redo.** Redoes an action that has been undone with the **Undo** button  . **Note:** This button is enabled only if you have generated more than one view on the System Health Dashboard, and are not currently resting on the most recent view.
	**Realign.** Realigns System Health Dashboard left pane components, so that the components are aligned in their original order, which is (left to right): • Databases • Servers • Load Balancers (if deployed) • Data Collectors
	**Rearrange.** Returns the System Health Dashboard left pane to its default view. This includes closing open components and realigning component boxes to their original state.
	**Overview.** Displays an overview map of all the component boxes on the System Health Dashboard left pane. The Overview Map appears in a separate window, with blue lines denoting the boundaries of the System Health Dashboard left pane. **Note:** You cannot perform other functions on the System Health Dashboard while the Overview Map is open.

Action Buttons

These buttons enable you to perform actions on the BSM components monitored by System Health.

User interface elements are described below:

UI Element	Description
	**Service Manager.** Opens the Service Manager dialog box. This option enables you to move backend services from one server to another of the same type if the server machine is not functioning properly, requires downtime for servicing, or is overloaded. For details on the Service Manager dialog box, see "Service Manager Dialog Box" on page 113. **Note:** You must have more than one server of the same type configured in your BSM environment for this button to be enabled.

UI Element	Description
	**Backup Server Configuration.** Used to define a backup server, in case the current server is not functioning properly or requires downtime for servicing. **Note:** You must have more than one server of the same type configured in your BSM environment for this button to be enabled.
	**Process Manager.** Stops or starts processes on selected servers, for maintenance purposes or in case these processes display a problematic status on the System Health Dashboard or the Inventory tab.

Information Buttons

These buttons enable you to retrieve information on the BSM components monitored by System Health.

User interface elements are described below:

UI Element	Description
	**Quick Report.** Generates a Quick Report on data collected over the past 24 hours for the selected component. For details on Quick Reports, see "Quick Reports" on page 114.
	**Export to CSV.** Exports a report detailing the current status of the System Health monitors' and BSM to a **.csv** file.
	**Grab Log Files.** Generates a **.zip** file containing the log files of a specific server. **Note:** You must select a server component on the System Health Dashboard left pane for this button to be enabled.

Synchronization Buttons

These buttons enable you to synchronize the status and model of the BSM components monitored by System Health. For more detail about synchronization, see Synchronizing System Health.

User interface elements are described below:

UI Element	Description
	**Refresh Statuses.** Refreshes the selected component and retrieves its current status, without running the component's monitors.
	**Full Model Synchronization.** Resets the configuration of the selected component, including resetting of all monitors and their status. If no specific component is selected, the entire System Health configuration is reset, and the System Health Setup Wizard is opened, where you must reconfigure the connection of all system monitors to the servers. For details, see "System Health Setup Wizard" on page 14.

BSM Components

The System Health interface displays the following components:

- **Data Collectors.** These include:
  - **BPMs.**
  - **RUM Engines.**
  - **SiteScopes.**
- **Discovery Probes.**
- **BSM Servers.** Server components are displayed on both the System Health Dashboard and the Inventory tab. Servers include:
  - **Gateway Machines.**
  - **Data Processing Machines.**
- **Load Balancing Machines.**
- **Business Process Insight Machines.**
- **Databases.**
- **Reverse Proxy Server.** Displayed only when System Health is configured in a secure environment. For details on reverse proxies, see the BSM Hardening Guide.

System Health Monitors

System Health uses SiteScope monitors to measure the performance of your components. Some of these monitors are available in the SiteScope application and some are configured specifically for System Health.

Monitors are displayed in the **Monitors** table, located in the right pane of the System Health Dashboard. For details on the Monitors table, see "Monitors Table" on page 32.

For monitors available in the SiteScope application, see the HP SiteScope Monitor Reference in the SiteScope Help. You can access the SiteScope Help from the directory where your System Health is installed (**<System Health root directory>\sisdocs\doc_lib**), or from a SiteScope server by selecting **Help > SiteScope Help**, and navigating to the Help page for the specific SiteScope monitor in the Monitor Reference guide.

This section describes the monitors configured specifically for System Health:

Machine Hardware Monitors

The following group of monitors monitor the hardware and databases (where indicated) on which the BSM applications run:

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Ping	Checks the availability of the host using the network. Runs on BSM and Database servers. If BSM includes a proxy server or load balancer, this monitor runs on the mediator or load balancer. **Included Measurements:** • **Round Trip Time** • **Loss Percentage** **Threshold Configured In:** SiteScope (Ping monitor)	**Effect on BSM:** This monitor is in error when the host is inaccessible from the System Health server. **Troubleshooting:** Check to see if: • The host is down • The network is down • Network security prevents System Health from accessing the host (which means no monitoring can be done on this server)
Server Virtual Memory	Tracks how much virtual memory is currently in use on the server. Runs on BSM and Database servers. **Threshold Configured In:** SiteScope (Memory monitor)	**Troubleshooting:** If a server is running low on virtual memory, you can: • Restart the server (this may provide a temporary fix) • Upgrade the server's memory (might be required for a long term solution)
Server CPU	Tracks how much CPU is currently in use on the server. Runs on BSM and Database servers. **Threshold Configured In:** SiteScope (CPU monitor)	**Troubleshooting:** For high CPU usage: • Check which processes are running on the server • See if any of the processes can be removed or moved to another server

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Server Disk Space	Tracks how much disk space is currently in use on the hard disk drive where BSM is installed. Runs only on the server. **Threshold Configured In:** SiteScope (Disk Space monitor)	**Troubleshooting:** To free up disk space, you can: • Delete unnecessary files on the server • Remove installed programs that require a lot of space • Upgrade the server disk to a larger hard drive

Database Monitors

The following monitors run on the database servers. There can be multiple databases running on a server, and there is a monitor instance for each database:

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
DB Statistics	Verifies that database statistics have been collected for all tables created more than 24 hours ago.	**Effect on BSM:** Poor database engine performance, incorrect execution plans used by the database optimizer, or a connection pool timeout ending the transaction. **Troubleshooting:** Run statistics collection against BSM databases on a regular basis by creating a job, or have the product database administrator run it manually.
Database Connectivity	Verifies the connection between BSM and the database.	**Effect on BSM:** Failure in BSM to start up or run, no persistency data in the database, or the reports fail to run or contain no data. **Troubleshooting:** • On the database side, check that the instance is up, and verify there are no database server errors such as running out of storage, database corruption, or running out of connections. • On the BSM side, check the network between the BSM client and the database server for issues such as network delays, firewall problems, IP/DNS resolution, and packet loss.

BSM Server Monitors

The following monitors run on the Gateway Server, the Data Processing server, or, if not otherwise indicated, both:

General Monitors

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Out of Memory in Log	Searches for unexpected behavior due to the server being out of memory, displayed as instances of `Out of Memory` in **topaz_all.ejb.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Some data might not be available in Service Health and in reports, and some of the applications might not work. **Troubleshooting:** • Check for other monitors in error when trying to resolve out of memory issues • Verify the BSM deployment and expected load using the BSM Capacity calculator • Based on information found in the other monitors, you might need to restart the Gateway Server or upgrade your hardware
Nanny Manager Process	Monitors whether BSM server processes are up and running. **Threshold Configured In:** SiteScope (Service monitor)	**Effect on BSM:** If a process is down, the Nanny Manager Process monitor tries to start it automatically. **Troubleshooting:** Contact HP Software Support if the monitor cannot start the process.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Log Level for <configuration directory>	Checks if any of the log files in the specified directory are configured to debug log level (that is, searches for the string **loglevel=debug**). **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Debug log level affects the amount of output in the log which consumes more disk space and slows down the application. **Troubleshooting:** Change the configuration back to **loglevel=ERROR**.
BSM Application Server Response	Checks that the BSM Application server is responsive. Information goes straight to the application server and does not travel by way of the web server. This monitor runs only on the Gateway Server. **Threshold Configured In:** SiteScope (URL monitor)	**Effect on BSM:** BSM is not accessible if the application server is not responsive. Responsiveness issues with the BSM Application server are usually a symptom of other problems. **Troubleshooting:** Check for monitors in error when trying to resolve application server response issues.
Logged In Users	Displays the percentage and number of total users logged into BSM.	**Effect on BSM:** This can result in responsiveness issues in a number of different applications. **Troubleshooting:** Make sure that the total number of logged in users does not exceed the recommended amount of users.
Web Server Status	Displays the current status of the Web server indicating its availability.	**Effect on BSM:** BSM is unable to accept samples from the data collector or communicate with other servers. Applications may be unavailable. **Troubleshooting:** • Try to find and resolve the problem on the Web server • Restart the Web server

Process Monitors

For descriptions of the processes, see "Managing BSM Processes" on page 108.

The two JVM monitors listed in the table below monitor only the Java processes, which include:

- analytics_loader
- DataUpgrade
- mercury_db_loader
- mercury_offline_engine
- mercury_online_engine
- mercury_wde
- MercuryAS
- MessageBroker
- pi_engine
- pmanager
- RTSM

The <process name> monitor monitors both the Java and non-Java processes. For details on the processes, see "BSM Processes" on page 108.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
<process name> JVM Statistics Memory Monitors	Monitors the memory measurements for a Java process. **Included Measurements:** • **Heap Free.** Displays the amount of Heap Free space in JVM. • **Permanent Heap Free Memory.** Displays the amount of Permanent Heap Free space in JVM.	**Effect on BSM:** Some data might not be available in Service Health and in reports. **Troubleshooting:** Verify the BSM deployment type, memory (RAM), and expected load (reported samples per second) using the BSM capacity calculator. This type of exception usually occurs if BSM is installed on hardware that has insufficient resources for the current load.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
<process name> JVM Statistics Threads Monitors	Monitors the threads measurements for a Java process. The process name is in the name of the monitor. **Included Measurements:** • **Dead Locked Threads.** Number of deadlocked threads in the process.	**Effect on BSM:** Some data might not be available in Service Health and in reports. **Troubleshooting:** Verify the BSM deployment type, memory (RAM), and expected load (reported samples per second) using the BSM capacity calculator. This type of exception usually occurs if BSM is installed on hardware that has insufficient resources for the current load.
<process name>	Verifies whether the **<process name>** process is running, its CPU, and virtual memory utilization. Uses the SiteScope Service monitor.	**Effect on BSM:** The effect on BSM depends on which process is running. **Troubleshooting:** Verify the BSM deployment type, memory (RAM), and expected load (reported samples per second) using the BSM capacity calculator. This type of exception usually occurs if BSM is installed on hardware that has insufficient resources for the current load.
Baseline Engine Monitor	Monitors the baseline engine to indicate if baseline data is available and accurate. **Included Measurements:** • **Delayed Tasks.** Indicates whether there are baseline calculation tasks idle for 4 days or longer. • **Failed Tasks.** Indicates whether there are baseline calculation tasks that have failed.	**Effect on BSM:** Baseline data may be inaccurate (out of date) or not available at all. The consumers of baseline data (for example SHA) are therefore receiving inaccurate or insufficient data. **Troubleshooting:** Check for error messages in the baseline engine logs (log\baseline_engine) and try to resolve the problem from the information provided.

Bus

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Subscriber Group	Monitors the number and size of messages waiting for regular subscribers. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** If the number or size of messages waiting for processing is high, the bus may suffer from low performance. This may also cause out of memory exceptions. **Troubleshooting:** Contact your system administrator if the message threshold is met.
Broker Group	Monitors the overall measurements of the broker (bytes and number of messages). **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** If the number or size of messages waiting for processing is high, the bus may suffer from low performance. This may also cause out of memory exceptions. **Troubleshooting:** Contact your system administrator if the message threshold is met.
Durable Subscriber Group	Monitors the number and size of messages waiting for durable subscribers in the broker. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** If the number of messages waiting for durable subscribers is high, this affects the size and performance of the local database. The bus may suffer from low performance and may get stuck when the database files grow by more than a few gigabytes. **Troubleshooting:** Contact your system administrator if the message threshold is met.

UCMDB/RTSM

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Model Objects Quota and Count	Compares current CI count with the CI quota. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** If the quota is exceeded, no more CIs and links can be added. **Troubleshooting:** • Increase the CI quota • Delete unnecessary CIs • Refine the discovery process so it discovers less data
TQL Quota and Count	Compares current TQL count with the TQL quota. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** If the quota is exceeded, no new active TQLs can be added. **Troubleshooting:** • Increase the quota • Delete unnecessary TQLs
Oversized TQLs	Displays TQLs that are larger than the size permitted by the configured threshold. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** If the TQL result is larger than the threshold, the TQL is deactivated. **Troubleshooting:** Change the TQL definition.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Availability and Performance	Checks system availability and response time. **Included Measurements:** • **Run AdHoc TQL.** Checks how long the Run AdHoc TQL operation takes. • **Load ClassModel.** Checks how long the Load ClassModel operation takes. If response time exceeds 2 seconds, monitor status changes to Warning. If response time exceeds 15 seconds, monitor status changes to Error. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** System availability issues and slow response time affect BSM performance. **Troubleshooting:** Check the log files, and try to resolve the problem from the information provided.
DB - Could not reset timeout because the object is not monitored	Searches for `Couldn't reset timeout because the object isn't monitored` in **cmdb.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Troubleshooting:** If this error is registered in the log file, there are problems in the database. Contact your database administrator for assistance.
DB - Failed to borrow object from pool	Searches for `Failed to borrow object from pool` in **cmdb.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Troubleshooting:** If this error is registered in the log file, there are problems in the database. Contact your database administrator for assistance.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
DB - Failed to create a connection	Searches for `Failed to create a connection for` in **cmdb.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Troubleshooting:** If this error is registered in the log file, there are problems in the database. Contact your database administrator for assistance.
Notification - Cannot Publish	Searches for `cannot publish` in **cmdb.log.** **Threshold Configured In:** SiteScope (Log File monitor)	There are no notifications about active TQLs or model updates, and BSM applications and Service Health are not notified about changes in topology (such as added hosts or business transactions). **Troubleshooting:** Check the bus log file to determine what caused the problem.
Notification - Cannot get notifications from the BUS	Searches for `error occurred during receive of JMS message` in **cmdb.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM if this error is registered in the log file:** There are no notifications about active TQLs or model updates, and BSM applications and Service Health are not notified about changes in topology (such as added hosts or business transactions). **Troubleshooting:** Check the bus log file to determine what caused the problem.
Performance - Request Timeout	Searches for `Request Timeout` in **cmdb.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM if this error is registered in the log file:** This error may indicate a general problem, or it may have been caused by a temporary issue such as running a large number of TQLs. **Troubleshooting:** Check the log file to determine what caused the problem.

Modeling/Viewing System

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
All Symbols Quota and Count	Compares current symbols count with symbols quota. You can create a view on top of a TQL. Each element in the view tree is called a symbol. The quota is determined in the settings. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** If the quota is exceeded, no new active views can be created. **Troubleshooting:** Deactivate unnecessary views or increase the quota.
Views Quota and Count	Compares current views count with views quota. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** If the quota is exceeded, no new views can be created. **Troubleshooting:** Deactivate unnecessary views or increase the quota.
Oversized Views	Checks for views that are larger than the threshold configured in Infrastructure Settings. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** Oversized views are deactivated. **Troubleshooting:** Change the view definition.

Gateway Server Monitors

The following monitors run on the Gateway Server:

Data In/Web Data Entry

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Web Data Entry Status	Determines the overall status of the Web Data Entry component. **Included Measurements:** • **Bus Status.** Determines Web Data Entry connection to the bus. • **Gateway Status.** Determines Gateway availability. • **Failures to Publish.** Indicates number of samples which failed to publish. • **Output EPS.** Determines the number of published samples per second.	**Effect on BSM:** Samples arriving to Web Data Entry are discarded or are not published to the bus. This means there is no sample data in BSM. • Problems with the bus result in the Web Data Entry component rejecting samples arriving from data collectors • Samples are rejected if the Gateway Server is unavailable **Troubleshooting:** Check following logs that are located in the **<HPBSM root directory>\log\mercury_wde** directory: • **wde.log** • **wdeIgnoredSamples.log** • **wdeStatistics.log** • **wde.all.log**

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Baseline Cache Monitor	Monitors the cache of the Baseline Engine, which determines whether or not baseline enrichment is available. **Included Measurements:** • **Late Arrivals.** Indicates if any samples arrived late; samples that arrive more than 1 hour late might not be enriched with baseline data. • **Cache Time-frame.** Indicates if the cache contains enough historical data to enable baseline enrichment.. • **Last Refresh Status.** Indicates if the most recent baseline cache refresh was successful.	**Effect on BSM:** All or some of the incoming samples are not enriched with baseline data; the consumers of baseline data (for example SHA) are therefore receiving inaccurate or insufficient data. **Troubleshooting:** Check for error messages in the following directory: **<HPBSM root directory>\log\mercury_wde** directory.
Out of Memory Exception in Log	Searches for unexpected behavior, displayed as instances of the string `OutofMemoryExceptionInLog` in the **wde.log** file. This is caused by samples or buffers arriving to WDE with too much data. Uses the SiteScope Log File monitor.	**Effect on BSM:** Some data might not be available in the Service Health and in reports. **Troubleshooting:** Verify the BSM deployment type, memory (RAM), and expected load (reported samples per second) using the BSM Capacity Calculator. This type of exception usually occurs if BSM is installed on hardware that has insufficient resources for the current load.
Class Not Found Exception in Log	Searches for unexpected behavior, displayed as instances of the string `ClassNotFoundException` in the **wde.log** file. This might be caused by a bug in the system or the incorrect probe version being connected to the BSM server. Uses the SiteScope Log File monitor.	**Effect on BSM:** Some data might not be available in the Service Health and in reports. **Troubleshooting:** Make sure that the correct version of the probe is connected to the BSM server. If the correct probe version is being used, contact HP Software Support.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Web Data Entry Availability	Determines if Web Data Entry is up and running. Uses the SiteScope Log File monitor. The default port is 443 (for a secure HTTPS connection) or 80 (for a non-secure HTTP connection). To use a different port, you must add the port number manually.	**Effect on BSM:** No data is arriving to BSM. **Troubleshooting:** Check the following logs in the **<HPBSM root directory>\log\mercury_wde** directory: • **wde.log** • **wde.all.log**

Data In/Loader

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Main Flow	Measures flow of data in component. **Included Measurements:** • **Number of Samples in Queues.** Used to control memory usage of the loader. • **Bus Connection Status.** Checks loader connectivity to the bus.	**Effect on BSM:** No data in the BSM database (the loader is unable to collect samples from the bus). • Problems with the bus indicate no persistency data in the database, and the reports show no data • Too many samples in queues indicate a backlog, or unavailability of the profile database **Troubleshooting:** • Check the status of the bus • Contact your database/network administrator for assistance on connectivity to the profile database and database load

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
EPS ratio in main flow	Enables you to evaluate the ratio of the average insert rate to the loader with the average data insert rate to the database from the loader. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings > Foundations > Loader**.	**Effect on BSM:** A high EPS value may cause a delay in the data being written to the database, and increase the disk space being used by recovery persistency data files.
Connection to DB	Checks connection to the database from loader process.	**Effect on BSM:** Reports are displayed without data. This indicates that no data persisted in the database. **Troubleshooting:** Check **dbloader** logs for the connectivity error, and contact your database administrator for assistance.
Average Insert Rate to DB (Recovery Flow)	Monitors the average insert rate to the database from the recovery persistency folder. A long insert rate indicates database performance problems. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Troubleshooting:** Contact your database administrator for assistance.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Out of Memory Exception in Log	Searches for the string `Out of Memory` in **Loader.log**. This is caused by samples or buffers arriving to the loader with too much data. Uses the SiteScope Log File monitor.	**Effect on BSM:** Some data might not be available in Service Health and reports. **Troubleshooting:** Verify the BSM deployment type, memory (RAM), and expected load (reported samples per second) using the BSM Capacity Calculator. This type of exception usually occurs if BSM is installed on hardware that has insufficient resources for the current load.
Class Not Found Exception in Log	Searches for errors in **Loader.log**. This might be caused by a bug in the system or the incorrect probe version being connected to the BSM server. Uses the SiteScope Log File monitor.	**Effect on BSM:** Some data might not be available in Service Health and reports. **Troubleshooting:** Make sure that the correct version of the probe is connected to the BSM server. If the correct probe version is being used, contact HP Software Support.
Max Files in Queue in Recovery Persister	Displays the number of files in the longest queue in the recovery persister directory. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** No data is displayed in reports if too many files are in the recovery persistency queue. This can be caused by: • A high number of EPS • Slow database insert rate • Limited database availability **Troubleshooting:** Contact your database/network administrator for assistance on connectivity to the profile database and database load.

Data In/Operations Management Gateway

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
OPR Webapp	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\EJBContainer\opr-webapp.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Operations Management Application UI might not function correctly. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
OPR Webapp.properties	Scans the **\EJB\opr-webapp.properties** file. Log level with values of "Debug", "All", or "Off" are considered inappropriate for production environments and therefore will report error. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Debug log level affects the amount of output in the log which consumes more disk space and slows down the application. **Troubleshooting:** Change the configuration back to **loglevel=ERROR**.
OPR Gateway	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\wde\opr-gateway.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Forwarding, receiving and synchronizing events with third-party applications might not function correctly. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.
OPR Gateway Flowtrace	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\wde\opr-gateway-flowtrace.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Flow of events between Operations Management and third-party applications might not function correctly. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.
OPR Gateway.properties	Scans the **\wde\opr-gateway.properties** file. Log level with values of "Debug", "All", or "Off" are considered inappropriate for production environments and therefore will report error. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Debug log level affects the amount of output in the log which consumes more disk space and slows down the application. **Troubleshooting:** Change the configuration back to **loglevel=ERROR**.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
OPR Event Sync Adapter WDE	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\wde\opr-event-sync-adapter.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Event flow to connected servers. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.
OPR Event Sync Adapter WDE.properties	Scans the **\wde\opr-event-sync-adapter.properties** file. Log level with values of "Debug", "All", or "Off" are considered inappropriate for production environments and therefore will report error. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Debug log level affects the amount of output in the log which consumes more disk space and slows down the application. **Troubleshooting:** Change the configuration back to **loglevel=ERROR**.
OPR SVCDiscServer	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\wde\opr-svcdiscserver.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Dynamic topology synchronization might not function correctly. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.
OPR SVCDiscServer Flowtrace	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\wde\opr-svcdiscserver-flowtrace.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Flow of dynamic topology information might not function correctly. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.
OPR SVCDiscServer. properties	Scans the **\wde\opr-svcdiscserver.properties** file. Log level with values of "Debug", "All", or "Off" are considered inappropriate for production environments and therefore will report error. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Debug log level affects the amount of output in the log which consumes more disk space and slows down the application. **Troubleshooting:** Change the configuration back to **loglevel=ERROR**.

Data In/Analytics Loader

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Main Flow	Measures flow of data in component. **Included Measurements:** • **Number of Samples in Queues.** Used to control memory usage of the loader. • **Bus Connection Status.** Checks loader connectivity to the bus.	**Effect on BSM:** No data in the BSM database (the loader is unable to collect samples from the bus). • Problems with the bus indicate no persistency data in the database, and the reports show no data • Too many samples in queues indicate a backlog, or unavailability of the profile database **Troubleshooting:** • Check the status of the bus • Contact your database/network administrator for assistance on connectivity to the profile database and database load
Baseline Cache Monitor	Monitors the cache of the Baseline Engine, which determines whether or not baseline enrichment is available. **Included Measurements:** • **Late Arrivals.** Indicates if any samples arrived late. Samples that arrive more than 1 hour late might not be enriched with baseline data. • **Cache Time-frame.** Indicates if the cache contains enough historical data to enable baseline enrichment. • **Last Refresh Status.** Indicates if the most recent baseline cache refresh was successful.	**Effect on BSM:** All or some of the incoming samples are not enriched with baseline data; the consumers of baseline data (for example SHA) are therefore receiving inaccurate or insufficient data. **Troubleshooting:** Check for error messages in the Analytics Loader log files.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
EPS ratio in main flow	Enables you to evaluate the ratio of the average insert rate to the loader with the average data insert rate to the database from the loader. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin > Platform > Setup and Maintenance > Infrastructure Settings > Foundations > Loader**.	**Effect on BSM:** A high EPS value may cause a delay in the data being written to the database, and increase the disk space being used by recovery persistency data files.
Connection to DB	Checks connection to the database from loader process.	**Effect on BSM:** Reports are displayed without data. This indicates that no data persisted in the database. **Troubleshooting:** Check **dbloader** logs for the connectivity error, and contact your database administrator for assistance.
Average Insert Rate to DB (Recovery Flow)	Monitors the average insert rate to the database from the recovery persistency folder. A long insert rate indicates database performance problems. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin > Platform > Setup and Maintenance > Infrastructure Settings** and search under **System Health** or the applicable component application.	**Troubleshooting:** Contact your database administrator for assistance.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Out of Memory Exception in Log	Searches for the string Out of Memory in **Loader.log**. This is caused by samples or buffers arriving to the loader with too much data.	**Effect on BSM:** Some data might not be available in Service Health and reports. **Troubleshooting:** Verify the BSM deployment type, memory (RAM), and expected load (reported samples per second) using the BSM Capacity Calculator. This type of exception usually occurs if BSM is installed on hardware that has insufficient resources for the current load.
Class Not Found Exception in Log	Searches for errors in **Loader.log**. This might be caused by a bug in the system or the incorrect probe version being connected to the BSM server.	**Effect on BSM:** Some data might not be available in Service Health and reports. **Troubleshooting:** Make sure that the correct version of the probe is connected to the BSM server. If the correct probe version is being used, contact HP Software Support.
Max Files in Queue in Recovery Persister	Displays the number of files in the longest queue in the recovery persister directory. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin > Platform > Setup and Maintenance > Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** No data is displayed in reports if too many files are in the recovery persistency queue. This can be caused by: • A high number of EPS Slow database insert rate • Limited database availability **Troubleshooting:** Contact your database/network administrator for assistance on connectivity to the profile database and database load.
Analytics Loader log monitor	Searches for unexpected behavior, displayed as instances of error.	**Effect on BSM:** Process may not function correctly. **Troubleshooting:** Check the log file and try to resolve the problem from the error message provided.
Analytics Loader General log monitor	Searches for unexpected behavior, displayed as instances of error.	**Effect on BSM:** Process may not function correctly. **Troubleshooting:** Check the log file and try to resolve the problem from the error message provided.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Loader log monitor	Searches for unexpected behavior, displayed as instances of error.	**Effect on BSM:** Process may not function correctly. **Troubleshooting:** Check the log file and try to resolve the problem from the error message provided.
Analytics Loader Statistics log monitor	Monitors the statistics for the analytics_loader process.	**Effect on BSM:** Some data might not be available in SHA. **Troubleshooting:** Verify the BSM deployment type, memory (RAM), and expected load (reported samples per second) using the BSM capacity calculator. This type of exception usually occurs if BSM is installed on hardware that has insufficient resources for the current load.
Analytics CIs	Shows the number of Analytics CIs	**Effect on BSM:** Some data may not be inserted into the Analytics DB. **Troubleshooting:** Contact HP Software Support in case of error (99% occupied).
SHA Plugin	Shows the number of traced metrics.	For information only.

Service Health Application

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Service Health Admin	Searches for unexpected behavior, displayed as instances of `ERROR,` in **bam.admin.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Service Health Administration may not function correctly. This could be caused by problems in Service Health Administration backend (for example, KPI administration, or Geographical Map administration, Service Health administration actions), if some administration configuration action failed or could not be performed.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Service Health Application	Searches for unexpected behavior, displayed as instances of `ERROR`, in **bam.app.log.** The log reports problems in the Service Health application user interface. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** This may result in tabs not being available, or system logout. **Troubleshooting:** Try to resolve the problem from the error messages reported in the Service Health application.
Service Health Application Front-end	Searches for unexpected behavior, displayed as instances of `ERROR`, in **bam.app.frontend.log.** The log reports problems in the Service Health application user interface. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** This may result in tabs not being available, or system logout. **Troubleshooting:** Try to resolve the problem from the error messages reported in the Service Health application.
Service Health Front-end Actions	Searches for unexpected behavior, displayed as instances of `ERROR`, in **bam.actionbase.log.** This log reports problems that impact the Service Health application. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** This may result in tabs not being available, or system logout. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.
Service Health BLE Plug-in	Searches for unexpected behavior, displayed as instances of `ERROR`, in **bam.ble.plugin.log.** This indicates a problem in the Business Logic Engine online loading. **Threshold Configured In:** SiteScope (Log File monitor)	**Troubleshooting:** Check Service Health for visual errors. If you find any, contact HP Software Support.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Service Health Rules	Searches for unexpected behavior, displayed as instances of `ERROR`, in **bam.app.rules.log.** **Threshold Configured In:**SiteScope (Log File monitor)	**Effect on BSM:** Some KPIs may not be calculated correctly. This could be caused by problems in Service Health Administration backend (for example, KPI administration, or Geographical Map administration, Service Health administration actions), if some administration configuration action failed or could not be performed.
Service Health Business Reports	Searches for unexpected behavior, displayed as instances of `ERROR`, in **bzd.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Problems generating Service Health reports, such as KPI Summary Report and KPI Trend Report. **Troubleshooting:** Check the reports for visual errors. If you find any, contact HP Software Support.
Service Health Open API	Searches for unexpected behavior, displayed as instances of `ERROR`, in **bam.open.api.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Errors in this log can impact the Service Health Ticker application and mobile console (handheld devices) users. **Troubleshooting:** Verify that you are able to use the mobile console. No other action is required. An error might indicate a Ticker client trying to retrieve a view or CI that is no longer in the RTSM.
Service Health Context Menu UI	Searches for unexpected behavior, displayed as instances of `ERROR`, in **context.menu.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Problems in Service Health repositories context menu or menu items (for example, when creating new menu items, editing context menus, or cloning context menus). Problems may also occur while creating or editing the context menu or menu items. **Troubleshooting:** Check for visual errors. If you find any, contact HP Software Support.
Center High Availability	Searches for unexpected behavior, displayed as instances of `ERROR`, in **bac.ha.centers.log.** This log is for sticky sessions. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** BSM goes down. **Troubleshooting:** When one BSM goes down, you can use your data with another center. Check the log file, and try to resolve the problem from the information provided.

Operations Management Application

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
OPR Webapp	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\EJBContainer\opr-webapp.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Operations Management Application UI might not function correctly. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.
OPR Webapp.properties	Scans the **\EJB\opr-webapp.properties** file. Log level with values of "Debug", "All", or "Off" are considered inappropriate for production environments and therefore will report error. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Debug log level affects the amount of output in the log which consumes more disk space and slows down the application. **Troubleshooting:** Change the configuration back to **loglevel=ERROR**.
OPR Event	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\EJBContainer\opr-event-ws.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Operations Management Event Web service maight not function correctly. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.
OPR Event.properties	Scans the **\EJB\opr-event-ws.properties** file. Log level with values of "Debug", "All", or "Off" are considered inappropriate for production environments and therefore will report error. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Debug log level affects the amount of output in the log which consumes more disk space and slows down the application. **Troubleshooting:** Change the configuration back to **loglevel=ERROR**.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
OPR Event Sync Adapter WDE	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\wde\opr-event-sync-adapter.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Event flow to connected servers. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.
OPR Event Sync Adapter WDE.properties	Scans the **\wde\opr-event-sync-adapter.properties** file. Log level with values of "Debug", "All", or "Off" are considered inappropriate for production environments and therefore will report error. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Debug log level affects the amount of output in the log which consumes more disk space and slows down the application. **Troubleshooting:** Change the configuration back to **loglevel=ERROR**.
OPR Scripting Host	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\opr-scripting-host\opr-scripting-host.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Execution of customized scripts using the event processing interface. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.
OPR Scripting Host.properties	Scans the **\opr-scripting-host\opr-scripting-host.properties** file. Log level with values of "Debug", "All", or "Off" are considered inappropriate for production environments and therefore will report error. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Debug log level affects the amount of output in the log which consumes more disk space and slows down the application. **Troubleshooting:** Change the configuration back to **loglevel=ERROR**.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
OPR Gateway Flowtrace	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\wde\opr-gateway-flowtrace.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Flow of Operations Management events through the gateway adapter might not function correctly. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.
OPR Gateway.properties	Scans the **\wde\opr-gateway.properties** file. Log level with values of "Debug", "All", or "Off" are considered inappropriate for production environments and therefore will report error. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Debug log level affects the amount of output in the log which consumes more disk space and slows down the application. **Troubleshooting:** Change the configuration back to **loglevel=ERROR**.
OPR Svcdiscserver Flowtrace	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\wde\opr-svcdiscserver-flowtrace.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Communication of topology information from connected OM servers. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.
OPR SVCDiscServer.properties	Scans the **\wde\opr-svcdiscserver.properties** file. Log level with values of "Debug", "All", or "Off" are considered inappropriate for production environments and therefore will report error. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Debug log level affects the amount of output in the log which consumes more disk space and slows down the application. **Troubleshooting:** Change the configuration back to **loglevel=ERROR**.

Portal Application

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
MyBSM	Searches for unexpected behavior, displayed as instances of `ERROR`, in **portal.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** This may impact on MyBSM, and indicates problems in configuration or failed administration operations. **Troubleshooting:** • Check for any error messages in MyBSM, or for any missing portlets • Check if the errors in the log reappear, or if this was a one time occurrence • If you do not notice an impact, take no further action

Verticals Application

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Verticals Core	Searches for unexpected behavior, displayed as instances of `ERROR`, in **vertical.ejb.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Troubleshooting:** Verify that Verticals is working correctly. Check the log file, and try to resolve the problem from the error messages provided.
BSM for Siebel	Searches for unexpected behavior, displayed as instances of `ERROR`, in **siebel.ejb.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Troubleshooting:** Verify that the Siebel solution is working correctly. Check the log file, and try to resolve the problem from the error messages provided.
BSM for SAP	Searches for unexpected behavior, displayed as instances of `ERROR`, in **sap.ejb.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Troubleshooting:** Verify that the SAP solution is working correctly. Check the log file, and try to resolve the problem from the error messages provided.

System Availability Management Application

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
SAM Admin Fatal	Searches for unexpected behavior, displayed as instances of `FATAL`, in **sam-admin.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Troubleshooting:** Contact HP Software Support.
SAM Admin SiteScope Profiles on DB	Searches for unexpected behavior, displayed as instances of `ERROR-Unable to get SiteScope profiles from DB`, in **sam-admin.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Unable to see the SiteScope profile in SAM Admin. This is probably a problem with the database or the profile ID. **Troubleshooting:** Check database connectivity.
SAM Admin SiteScope Profiles List	Searches for unexpected behavior, displayed as instances of `Failed to retrieve SiteScope profiles list`, in **sam-admin.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Unable to see the SiteScope profile in SAM Admin. This is probably a problem with the database or the profile ID. **Troubleshooting:** Check database connectivity.

Data Processing Server Monitors

The following component monitors run on the Data Processing Server:

Alerts Engine

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
BLE-BUS Connection Monitor	Monitors connection between the Business Logic Engine offline engine and the bus. This monitor is displayed as red if alerts are not sent.	**Troubleshooting**: Check for problems in other bus monitors and bus logs, and try to resolve the problem from the information provided.
queue/alert_engine_alert	Measures the size of the queue between the Business Logic Engine and the Alerts Listener. This indicates the extent to which alert delivery is being delayed. **Threshold Configured In:** Infrastructure Settings (context alerts). To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Troubleshooting**: Check the **log\alerts\alerts.ejb.log** and the bus logs, and try to resolve the problem from the information provided.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
queue/alert_ engine_ notification	Measures the size of the queue between the Alerts Listener and the Notification Listener. This indicates the extent to which alert delivery is being delayed. **Threshold Configured In:** Infrastructure Settings (context alerts). To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Troubleshooting**: • Check the SMTP/SNMP configuration in the Infrastructure Settings • Check the **log\alerts\alerts.ejb.log** file and the bus logs, and try to resolve the problem from the information provided

Bus

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Subscriber Group	Monitors subscriber related measurements. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** If the number or size of messages waiting for processing is high, the bus may suffer from low performance. This may also cause out of memory exceptions. **Troubleshooting:** Contact your system administrator if the message threshold is met.
Broker Group	Monitors the overall measurements of the broker (bytes and number of messages). **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** If the number or size of messages waiting for processing is high, the bus may suffer from low performance. This may also cause out of memory exceptions. **Troubleshooting:** Contact your system administrator if the message threshold is met.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Durable Subscriber Group	Monitors the number and size of messages waiting for durable subscribers in the broker. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** If the number of messages waiting for durable subscribers is high, this affects the size and performance of the local database. The bus may suffer from low performance and may be stuck when the database files grow by more than a few gigabytes. **Troubleshooting:** Contact your system administrator if the message threshold is met.

Database Services/Partition Manager

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Partition Timely Creation	Verifies that partitions are created according to partitioning policy. **Note:** This monitor is displayed as red for two hours after being connected.	**Effect on BSM:** Missing partition means that there is no persistency data in the system and the reports will be empty. **Troubleshooting:** Check the following log files on the BSM Data Processing Server machine for the cause of the problem: • **pmanager.log** • **pm_statistics.log**

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Oversized Partitions	Finds partitions with more than the allotted number of rows specified in threshold settings. **Threshold Configured In:** **<HPBSM root directory>\conf\pmanager.properties**, located on the Gateway Server. You can edit these settings in the properties file: • **MAX_ROWS_PER_PARTITION.** The optimal number of rows per partition that Partition Manager strives to create. • **WARN_ROWS_PER_PARTITION.** The number of rows in the partition that generates a warning. • **ERROR_ROWS_PER_PARTITION.** The number of rows in the partition that generates an error.	**Effect on BSM:** Low performance in the reports caused by too many rows in data tables. **Troubleshooting:** 1. Change or tune the Partition Manager policy according to the EPS default values in **<HPBSM root directory>\conf\pmanager.properties** file. 2. Restart the Partition Manager.

Application Engines/Service Health Engine

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
BLE Online Monitor	Monitors Business Logic Engine online calculations. **Included Measurements:** • **Size of Model.** Percentage of model size relative to the maximum capacity. • **DB Availability.** Verifies connection to the database. • **Bus Connectivity.** Verifies connection to the bus. • **Calculation Duration.** Average calculation time. **Threshold Configured In:** Infrastructure Settings. To configure threshold: a. Navigate to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**. b. Choose **Foundations**. c. Select **Distributed Online Business Logic Engine - Supervisor**. d. Modify **Maximum interval between two consecutive model calculations.**	• **Size of Model.** If the model is too large, it causes performance problems, out of memory exceptions, and Service Health might not be available. Decrease the model to a supported size. You can also switch to a larger deployment (in case you are not using it already). • **DB Availability.** If there is no connection to the database, persistency, repositories, and settings are affected. Ask your database/network administrator to check the database connection and/or any network issues. • **Bus Connectivity.** If there is no connection to the bus, Business Logic Engine does not receive samples and is unable to send samples to the bus. Check the bus log file for the cause of the problem. • **Calculation Duration.** Service Health responsiveness is affected if the calculation takes too long, since no requests from Service Health are processed during the calculation. Slow calculation might be caused by a large model, very high EPS, or if the log level is set to DEBUG.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Service Health BLE Plug-in	Searches for unexpected behavior, displayed as instances of `ERROR`, in **bam.ble.plugin.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Service Health cannot get status information from the online engine.
Service Health Rules	Searches for unexpected behavior during execution of Service Health rules, displayed as instances of `ERROR`, in **bam.app.rules.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Indicator statuses might not be calculated, or might be calculated incorrectly. This is visible in the System Health application. **Troubleshooting:** Check for the root cause of the problem in the log file.
Groovy Rules timeOut worker_1	Notify if a groovy rule is taking too long to calculate.	**Effect on BSM:** Groovy rules are calculated periodically. Sometimes, the calculation period of a rule is greater than the time between calculation periods. This can cause BSM to lose calculation data and not to show the current status of CIs. **Troubleshooting:** You should find and modify the problematic rule. Otherwise, you must delete it.
Groovy Rules timeOut worker_2		
Groovy Rules timeOut worker_3		

Application Engines/Service Level Management (SLM) Engine

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
BLE Offline Tasks	Indicates whether the time taken to perform the SLM tasks took longer than the time allotted in Infrastructure Settings. **Included Measurements:** • **Delayed Tasks.** Shows whether there are delayed or failed SLM calculation tasks. • **Cycle Time.** Shows the percentage of the overall measurement period used to complete calculation of ongoing SLM tasks. **Threshold Configured In:** Infrastructure Settings. To configure threshold, navigate to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**. Choose **Foundations**, select **Offline Aggregator** and modify **Monitor Threshold for SLM Aggregator.**	**Effect on BSM:** No data in the database for reports for the latest SLM calculation. This can result in slow database performance, task failure, invalid SLM configuration, database access problems, and RTSM access problems. **Troubleshooting:** Check the following log files for the cause of the problem: • **NOAScheduler.log** • **bambino.log** • **BambinoStatistics.log** • **offline.engine.all.log**

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
BLE Offline Monitor	Monitors Business Logic Engine offline calculations. **Included Measurements:** • **DB Availability.** Verifies connection to the database. • **Bus Connectivity.** Verifies connection to the bus. • **Persistency.** Indicates the number of failures in saving persistency data. • **Max Task Duration.** Displays the duration of the longest task over the time configured in Infrastructure Settings, indicating whether or not the SLM calculation is too slow. • **Data Stream Fuse Violations.** Indicates performance problems due to the amount of data queried for SLM calculations. **Threshold Configured In:** Infrastructure Settings. To configure threshold, navigate to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings**. Choose **Foundations**, select **Offline Business Logic Engine** and modify **Maximum number of rows that the Data Streamer can count.**	**Effect on BSM:** No data in the database for reports for the latest SLM calculation. This can result in no connection to the database, failure to connect to the bus, low calculations performance, and no memory space to calculate the SLA. **Troubleshooting:** For low calculations performance, check the **BambinoStatistics.log** for bottlenecks. For no memory space to calculate the SLA: • Check **bambino.log** and **BambinoStatistics.log**. • Increase memory for processes in the **mercury_offline_engine_vm_params.ini** file and the fuse setting (BSM Admin Infrastructure settings UI). • Limit the number of SLAs that are calculated simultaneously in **Admin > Platform > Setup and Maintenance > Infrastructure Settings**.

Application Engines/Reports DB Aggregator

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
DB Aggregator	Indicates whether the time to perform the DB Aggregation task took longer than the time configured in Infrastructure Settings. **Included Measurements:** • **Delayed Tasks.** Displays whether delayed or failed tasks are found. • **Cycle Time.** Shows the percentage of the overall measurement period used to complete aggregation calculations. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** No data in the database for reports using aggregation data. This can result in slow database performance, task failure, invalid SLM configuration, database access problems, and RTSM access problems. **Troubleshooting:** Check the following log files for the cause of the problem: • **NOAScheduler.log** • **bambino.log** • **NOAStatistics.log** • **offline.engine.all.log**
Validator	Responsible for the creation of DB Aggregation and SLM tasks. **Included Measurements:** • **Validation Time.** Checks whether validation ran within the time frame defined in the Offline Aggregation settings. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** No data in the database for reports using aggregation data. **Troubleshooting:** Check the following log files for the cause of the problem: • **NOAValidator.log** • **offline.engine.all.log**

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Scheduler	Schedules when the DB Aggregator and SLM tasks are performed. **Included Measurements:** • **Threads Alive.** Checks for active threads in the offline aggregation scheduler.	**Effect on BSM:** No data in the database for reports using aggregation data. This can result in database and RTSM access problems. **Troubleshooting:** Check the following log files for the cause of the problem: • **NOAScheduler.log** • **bambino.log** • **NOAStatistics.log** • **offline.engine.all.log**

Application Engines/CDM

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Adapters Framework	Searches for unexpected behavior, displayed as instances of `ERROR`, in **bam.shared.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Not relevant for BSM 9.22, since all data collectors send their topology directly to RTSM (which previously was done by adapters).

Modeling/RTSM

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Model Objects Quota and Count	Compares current CI count with the CI quota. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** If the quota is exceeded, no more CIs and links can be added. **Troubleshooting:** Increase the quota, delete unnecessary CIs, or refine the discovery process so it discovers less data.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
TQL Quota and Count	Compares current TQL count with the TQL quota. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** If the quota is exceeded, no new active TQLs can be added. **Troubleshooting:** Increase the quota or delete unnecessary TQLs.
Oversized TQLs	Displays TQLs that are larger than the size permitted by the configured threshold. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** If the TQL result is larger than the threshold, the TQL is deactivated. **Troubleshooting:** Change the TQL definition.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Availability and Performance	Checks system availability and response time. If response time exceeds 2 seconds, monitor status changes to Warning. If response time exceeds 15 seconds, monitor status changes to Error. **Included Measurements:** • **Run AdHoc TQL.** Checks how long the Run AdHoc TQL operation takes. • **Load ClassModel.** Checks how long the Load ClassModel operation takes. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** System availability issues and slow response time affect BSM performance. **Troubleshooting:** Check the log files for the cause of the problem.
DB - Could not reset timeout because the object is not monitored	Searches for `Couldn't reset timeout because the object isn't monitored` in **cmdb.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Troubleshooting:** If this error is registered in the log file, it means there are problems in the database. Contact your database administrator for assistance.
DB - Failed to borrow object from pool	Searches for `Failed to borrow object from pool` in **cmdb.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Troubleshooting:** If this error is registered in the log file, it means there are problems in the database. Contact your database administrator for assistance.
DB - Failed to create a connection	Searches for `Failed to create a connection for` in **cmdb.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Troubleshooting:** If this error is registered in the log file, it means there are problems in the database. Contact your database administrator for assistance.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Notification - Cannot Publish	Searches for `cannot publish` in **cmdb.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM if this error is registered in the log file:** There are no notifications about active TQLs or model updates, and BSM applications and Service Health are not notified about changes in topology (such as added hosts or business transactions). **Troubleshooting:** Check the bus log for problems.
Notification - Cannot get notifications from the BUS	Searches for `error occurred during receive of JMS message` in **cmdb.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM if this error is registered in the log file:** There are no notifications about active TQLs or model updates, and BSM applications and Service Health are not notified about changes in topology (such as added hosts or business transactions). **Troubleshooting:** Check the bus log for the cause of the problem.
Performance - Request Timeout	Searches for `Request Timeout` in **cmdb.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM if this error is registered in the log file:** This error may indicate a general problem, or it may have been caused by a temporary issue such as running a large number of TQLs. **Troubleshooting:** Check the log file for the cause of the problem.

Modeling/Viewing System

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
All Symbols Quota and Count	Compares current symbols count with symbols quota. You can create a view on top of a TQL. Each element in the view tree is called a symbol. The quota is determined in the settings. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** If the quota is exceeded, no new active views can be created. **Troubleshooting:** Deactivate views or increase the quota.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Views Quota and Count	Compares current views count with views quota. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** If the quota is exceeded, no new views can be created. **Troubleshooting:** Deactivate views or increase the quota.
Oversized Views	Checks for views that are larger than the threshold configured in Infrastructure Settings. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** Oversized views are deactivated. **Troubleshooting:** Change the view definition.

KPI Enrichment Service Monitors

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
KES Availability	Monitors that Assignment Mechanism is up and running for each customer. For details, see the section on Assignments in the BSM Application Administration Guide. **Included Measurements**: • **KES Availability per customer** The monitor measurements list is dynamic and determined according to the number of customers running Assignment Mechanism service on this Data Processing Server. **Troubleshooting:** If a Data Processing Server is running KES service for customers 1-3, the monitor will be deployed with three measurements: • KES Availability for customer 1 • KES Availability for customer 2 • KES Availability for customer 3	**Troubleshooting:** Verify that KES service is running. Check the following log files in **<HPBSM root directory>\log\EJBContainer** for the cause of the problem: • **kes.server.log** • **kes.manager.log**

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
KES Content	Monitors that Assignment Mechanism content is valid: checks that there are no invalid SLM/Service Health KPI/HI assignments for each customer running Assignment Mechanism. **Included Measurements** • SLM KES content per customer • DASHBOARD KES content per customer The monitor measurements list is dynamic and determined according to the number of customers running KES service on this data processing server. For example: In a data processing server running KES service for customers 1-2, the monitor will be deployed with four measurements: • SLM KES content for customer 1 • DASHBOARD KES content for customer 1 • SLM KES content for customer 2 • DASHBOARD KES content for customer 2	If there is an invalid assignment in the SLM or Service Health application for a customer, the KPI/HI assignment will be ignored by the assignment mechanism and KPIs/HIs may not be assigned for CIs. (In case of overriding invalid assignment, the overridden assignment HIs/KPIs will be assigned to CIs instead.) Locate the assignment and fix it according to validation error in the UI.

Operations Management Monitors

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
OPR Webapp	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\EJBContainer\opr-webapp.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Operations Management Application UI might not function correctly. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.
OPR Webapp.properties	Scans the **\EJB\opr-webapp.properties** file. Log level with values of "Debug", "All", or "Off" are considered inappropriate for production environments and therefore will report error. Threshold Configured In: SiteScope (Log File monitor)	**Effect on BSM:** Debug log level affects the amount of output in the log which consumes more disk space and slows down the application. **Troubleshooting:** Change the configuration back to **loglevel=ERROR**.
OPR Backend	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\opr-backend\opr-backend.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Operations Management event processing (such as Topology-base event correlation, ETI resolution, CI resolution) might not function correctly. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.
OPR Flowtrace Backend	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\opr-backend\opr-flowtrace-backend.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Flow of Operations Management events through the gateway adapter might not function correctly. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
OPR CiResolver	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\opr-backend\opr-ciresolver.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Operations Management CI Resolver might not function correctly. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.
OPR Backend.properties	Scans the **\opr-backend\opr-backend.properties** file. Loglevel with values of "Debug", "All", or "Off" are considered inappropriate for production environments and therefore will report error. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Debug log level affects the amount of output in the log which consumes more disk space and slows down the application. **Troubleshooting:** Change the configuration back to **loglevel=ERROR**.
OPR Scripting Host	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\opr-scripting-host\opr-scripting-host.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Execution of customized scripts using the event processing interface. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.
OPR Scripting Host.properties	Scans the **\opr-scripting-host\opr-scripting-host.properties** file. Log level with values of "Debug", "All", or "Off" are considered inappropriate for production environments and therefore will report error. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Debug log level affects the amount of output in the log which consumes more disk space and slows down the application. **Troubleshooting:** Change the configuration back to **loglevel=ERROR**.
OPR Event Sync Adapter EJB	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\EJBContainer\opr-event-sync-adapter.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Event flow to connected servers. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
OPR Event Sync Adapter EJB.properties	Scans the **\EJB\opr-event-sync-adapter.properties** file. Loglevel with values of "Debug", "All", or "Off" are considered inappropriate for production environments and therefore will report error. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Debug log level affects the amount of output in the log which consumes more disk space and slows down the application. **Troubleshooting:** Change the configuration back to **loglevel=ERROR**.
OPR Event Sync Adapter ScrHost	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\opr-scripting-host\opr-event-sync-adapter.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Event flow to connected servers - if triggered by customized scripts. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.
OPR Event Sync Adapter ScrHost.properties	Scans the **\opr-scripting-host\opr-event-sync-adapter.properties** file. Loglevel with values of "Debug", "All", or "Off" are considered inappropriate for production environments and therefore will report error. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Debug log level affects the amount of output in the log which consumes more disk space and slows down the application. **Troubleshooting:** Change the configuration back to **loglevel=ERROR**.
OPR Topologysync properties	Searches for unexpected behavior, displayed as instances of `ERROR`, in **\opr-topologysync\opr-topologysync.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Topology synchronization might not function correctly. **Troubleshooting:** Change the configuration back to **loglevel=ERROR**.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
OPR Topologysync.properties	Scans the **\opr-topologysync\opr-topologysync.properties** file. Loglevel with values of "Debug", "All", or "Off" are considered inappropriate for production environments and therefore will report error. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Debug log level affects the amount of output in the log which consumes more disk space and slows down the application. **Troubleshooting:** Change the configuration back to **loglevel=ERROR**.
OPR Backend Boot	Searches for unexpected behavior, displayed as instances of `ERROR`, in **opr-backend-boot.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Startup of the Operations Management OPR-Backend process might not function correctly. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.
OPR Backend Shutdown	Searches for unexpected behavior, displayed as instances of `ERROR`, in **opr-backend_shutdown.log**. **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Shutdown of the Operations Management OPR-Backend process might not function correctly. **Troubleshooting:** Check the log file, and try to resolve the problem from the error messages provided.

Rapid Anomaly Detection Engine Monitors

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Service Health Analyzer Engine	Monitors SHA Engine. **Included Measurements:** • **Cycle Time.** Shows the percentage of the overall measurement period used to complete calculation. The default threshold is 66.7%. • **Delayed Tasks.** Shows if there are delayed tasks. • **Worst Task Performance** • **Worst Method Performance** • **Open Anomalies** (for information only) • **Traced Metrics.** Shows amount of traced metrics (for information only)	**Effect on BSM:** Stronger server is needed.
SHA Engine log monitor	Searches for unexpected behavior, displayed as instances of error.	**Effect on BSM**: Process may not function correctly. **Troubleshooting:** Check the log file and try to resolve the problem from the error message provided.
SHA Engine General log monitor	Searches for unexpected behavior, displayed as instances of error.	**Effect on BSM:** Process may not function correctly. **Troubleshooting:** Check the log file and try to resolve the problem from the error message provided.

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
SHA Engine Statistics log monitor	Monitors the statistics for the pi_engine process.	**Effect on BSM:** Some data might not be available in SHA. **Troubleshooting:** Verify the BSM deployment type, memory (RAM), and expected load (reported samples per second) using the BSM capacity calculator. This type of exception usually occurs if BSM is installed on hardware that has insufficient resources for the current load.
SHA Application General log monitor	Searches for unexpected behavior, displayed as instances of error.	**Effect on BSM:** Process may not function correctly. **Troubleshooting:** Check the log file and try to resolve the problem from the error message provided.

BPI Server Monitors

The following component monitors run on the BPI Server:

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Data Samples Provider	Searches for `[SEVERE|ERROR]` in **bia_bacdatasamples0_0.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** BPI data samples might not be sent to BSM. Information in the BPI health page and Service Health is not updated, and the current status of Health Indicators and KPIs might be incorrect. **Troubleshooting:** • Check the error message, and try to resolve the problem from the information provided • Check that the Web data entry component of BSM is working correctly • Restart the BPI Server • If the problem persists, check with BSM Administrator
Notification Server	Searches for `[SEVERE|ERROR]` in **bia_notify0_0.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** BPI business process threshold violation notifications might not be sent to the users specified using BPI notification administration in BSM. **Troubleshooting:** • Check the error message, and try to resolve the problem from the information provided • Check that the BPI notification mail server is configured correctly • Restart the BPI Server • If the problem persists, check with BSM Administrator

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Servlet Engine	Searches for `[SEVERE|ERROR]` in **bia_tomcat0_0.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** The BPI landing pages, monitor definer, process repository explorer, and BPI notification might not function properly in BSM. **Troubleshooting:** • Check the error message, and try to resolve the problem from the information provided • Restart the BPI Server • If the problem persists, check with BSM Administrator
CI Status Poller	Searches for `[SEVERE|ERROR]` in **bia_adaptor_framework0_0.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** The CI status poller component in BPI might not be able to obtain the current status of business activities, resulting in the current status not being visible in the BPI health page. The blocked and impeded process instances count might also be incorrect. **Troubleshooting:** • Check the error message, and try to resolve the problem from the information provided • Restart the BPI Server • If the problem persists, check with BSM Administrator
JMS Business Event Handler	Searches for `ERROR` in **Rolling_Adaptor_BIAJMSEngineAdaptor.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** BPI events that are being delivered using a JMS queue are not being processed. The data shown in the BPI application and the statuses of BPI KPIs and Health Indicators might be incorrect. **Troubleshooting:** • Check the error message, and try to resolve the problem from the information provided • Check the configuration properties of the JMS Business Event Handler and that the BPI Impact Engine is started • Restart the BPI Server • If the problem persists, check with BSM Administrator

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Process Repository	Searches for `[SEVERE|ERROR]` in **bia_model_repository0_0.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** The BPI Modeler might fail to load or is unable to correctly modify BPI definitions. The BPI health pages might also fail to display process maps. **Troubleshooting:** • Check the error message, and try to resolve the problem from the information provided • Check that the BPI database configured for BSM is running correctly • Restart the BPI Server • If the problem persists, check with BSM Administrator
Monitor Engine	Searches for `[SEVERE|ERROR]` in **bia_metric_engine0_0.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** BPI Monitor statistics and the current status KPIs might be incorrect. **Troubleshooting:** • Check the error message, and try to resolve the problem from the information provided • Check that the BPI instance database is running correctly • Restart the BPI Server • If the problem persists, check with BSM Administrator
Business Event Handler	Searches for `ERROR` in **Rolling_Adaptor_BIAEngine Adaptor.log.** **Effect on BSM:** BPI events might not be processed, and the data displayed in the BPI application and the statuses of BPI KPIs might be incorrect. **Threshold Configured In:** SiteScope (Log File monitor)	**Troubleshooting:** • Check the error message, and try to resolve the problem from the information provided • Check the configuration properties of the Business Event Handler and that the BPI Impact Engine is started • Restart the BPI Server • If the problem persists, check with BSM Administrator

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Web Services Provider	Searches for `[SEVERE|ERROR]` in **bia_webservices0_0.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** None
Business Impact Engine	Searches for `[SEVERE|ERROR]` in **bia_bce0_0.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Statistics for BPI processes and activities, and data shown in the BPI application and the statuses of BPI KPIs and health indicators might be incorrect. **Troubleshooting:** • Check the error message, and try to resolve the problem from the information provided • Check that the BPI instance database is running correctly • Restart the BPI Server • If the problem persists, check with BSM Administrator
Admin Server	Searches for `[SEVERE|ERROR]` in **bia_adminserver0_0.log.** **Threshold Configured In:** SiteScope (Log File monitor)	**Effect on BSM:** Possibly unable to start or stop BPI components on the BPI server. **Troubleshooting:** • Check the error message, and try to resolve the problem from the information provided • Restart the BPI Server • If the problem persists, check with BSM Administrator

Data Collectors

Following are the data collectors that run as part of BSM:

BPM Data Collector

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
BPM Last Ping Time	Reports how much time has passed since the last time BPM data collectors requested job updates from BSM. If BPM last ping time exceeds 5 minutes, monitor status changes to Warning. If BPM last ping time exceeds 20 minutes, monitor status changes to Error. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** BPM does not get configuration updates. • If the other BPM monitor is also red, this indicates that BPM is unable to connect to or send a request to BSM, or that BPM is down. • If this monitor is constantly red, the BPM is unable to retrieve configuration updates. • If this monitor is sometimes green and sometimes red, the job poll interval configuration (BPM configuration) may be higher than 5 minutes. **Troubleshooting:** • If this monitor is not constantly red: ▪ Check the job poll interval in BPM, and reduce it if necessary. ▪ Increase the Error and Warning thresholds for BPM Last Ping Time in Infrastructure Settings. • If this monitor is constantly red, check for connection errors in the BPM logs (**..\workspace\commcenter\commcenter.txt**).

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
BPM Last Reported Data Time	Measures how much time has passed since the last time BPM data collectors sent samples to BSM. If this time exceeds 80 minutes, monitor status changes to Warning. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Effect on BSM:** BPM samples are not entered into BSM. • If the other BPM monitor is also red, this indicates that BPM is unable to connect to or send a request to BSM, or that BPM is down. • If this monitor is constantly red, the BPM is unable to send samples to BSM. **Troubleshooting:** • Check for connection errors in the BPM logs (**..\workspace\agent1\data\data_depot.txt**) • Increase the Warning threshold for BPM Last Reported Data Time in Infrastructure Settings.

SiteScope Data Collector

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
SiteScope status on <SiteScope instance>	Measures the overall status of the SiteScope data collector. **Included Measurements:** • **Last Heartbeat.** Indicates the time of the most recent sample received from SiteScope that indicates the basic availability (i.e., heartbeat) of the system. • **Health Status.** Indicates the status of the SiteScope Health group, and number of monitors in the group with **error** status. **Note:** Both measurements are monitored only if using SiteScope version 9.0 or later. If a previous version is installed, only the **Last Heartbeat** measurement is monitored. **Threshold Configured In:** Infrastructure Settings. To access, go to **Admin** > **Platform** > **Setup and Maintenance** > **Infrastructure Settings** and search under **System Health** or the applicable component application.	**Troubleshooting:** • **Last Heartbeat.** Check that SiteScope is up and running. In SAM Admin, check the connection between BSM and SIteScope. Check the BSM status and that BSM components are running. • **Health Status.** In SiteScope, check the SiteScope Health group, and check the SiteScope Progress Report (in SiteScope versions 10.00 or earlier) or the SiteScope progress pages (in **Server Statistics** > **General/Running Monitors** tabs in SiteScope 10.10 or later). Check the troubleshooting for SiteScope Health monitors in the Using SiteScope Guide in the SiteScope Help.

Discovery Probe Data Collector

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
Discovery Probe status on <Discovery Probe instance>	Receives discovery tasks from the server, dispatches them, and sends the results back to the CMDB through the server. **Included Measurements:** • **Last Report Time.** The most recent report time. • **Amount of Reported CIs.** The number of CIs reported by the probe. • **Last Access Time.** The most recent time the probe was accessed.	**Effect on BSM:** No new discovery data is entered into BSM. There is an indication of a problem is if the last report time is earlier than the scheduled discovery time. **Troubleshooting:** Check that the discovery probe is running and connected to BSM.

RUM Data Collector

Monitor Name	Description	Effect on BSM if there is a problem/Troubleshooting
RUM Status on <RUM Engine Instance Name>	Displays the aggregated status of the Real User Monitor data collector. **Included Measurements:** • **RUM Engine.** Aggregated status of the Real User Monitor engine monitors. • **RUM Probe IP.** Aggregated status of the Real User Monitor probe with the specified IP address. Each probe has its own entry. • **Database.** Aggregated status of Real User Monitor internal DB monitors. • **Samples to Business Service Management server.** Aggregated status of the Real User Monitor samples sent to BSM. **Threshold Configured In:** Real User Monitor internal configuration.	**Troubleshooting:** If the Real User Monitor data collector's status is problematic, refer to the Real User Monitor web console for troubleshooting. For details, see Monitoring the Health of HP Real User Monitor Components in the Real User Monitor Administration Guide.

Chapter 5

Adding Monitors to System Health

You can add monitors to System Health and view the overall health of the BSM system in one place. You can do this by creating a new template, and adding monitors and alerts to the template. You also need to add the template to the **<SiteScope root directory>/conf/sh/templates.xml** file to avoid the newly-created monitors being deleted after a Full Model Synchronization.

Note:

- It is not recommended to modify the original System Health templates, because this may lead to issues if you need to upgrade System Health.
- It is recommended to create templates outside of the System Health template container to avoid losing these changes should you need to redeploy the template.

How to Add Additional Monitors to System Health Using a Template

This task describes how to add to System Health monitors that are not deleted after a full synchronization.

1. **Prerequisites**

   For template monitors to appear correctly in System Health, they must be created directly under a template entity, instead of in a template group (the default setting). In SiteScope, click **Preferences > Infrastructure Preferences > Template Settings**, select the **Allow creation of template monitors directly under template entity** check box, and then click **Restart SiteScope**.

2. **Create a monitoring template**

   a. In SiteScope, open the **Templates** context, and create a template container and a template in the template tree.

   Note: It is not recommended to create the template in the System Health template container, since any template changes are lost if the System Health template needs to be redeployed.

   b. Select the monitor instances you want to add to the template, and enter values for the monitor properties. If you are using template variables, use the same System Health parameters that are supplied to the template deployment on runtime. For example, if the monitor requires a host name, you can enter `%%SH_MACHINE_NAME%%` in the **Server** box.

   c. Create monitor alerts if required.

3. **Add the template to the templates.xml file**

To prevent monitors and alerts being deleted from System Health after a Full Model Synchronization, perform the following:

a. Open the **<SiteScope root directory>\conf\sh\templates.xml** file.

b. Find the node and component type under which you want to deploy the template, and enter the template name. You can check in the SiteScope monitor tree for the group name mapped to the component type.

Example:

To deploy a template named `MyCPUTemplate` containing a CPU monitor to the Server monitors group, add the template name under the `SERVERS` node and component type name (`Physical` is the name of the group mapping in SiteScope).

```
<!--  SERVERS NODES  -->
- <type name="physical">
    <template name="MyCPUTemplate" />
    <template name="PingMon" />
    <template name="NTBasicMachineRemoteMon" os_type="WINDOWS" />
    <template name="NTExtraMachineRemoteMon" os_type="WINDOWS" />
    <template name="UNIXBasicMachineRemoteMon" os_type="SOLARIS" />
    <template name="UNIXExtraMachineRemoteMon" os_type="SOLARIS" />
  </type>
```

c. Save the changes you make to the **templates.xml** file.

4. **Perform a Full Model Synchronization in System Health**

In System Health, click the **Full Model Synchronization**  button to synchronize the status and model of the components. In the left pane, select the component to which the template was added. The template monitors and alerts appear in the Monitors table in the right pane. For more details about synchronization, see Synchronizing System Health.

Chapter 6

Managing BSM Processes

You can stop or start processes on specific servers in case these processes display a problematic status on the System Health Dashboard or Inventory tab, or the processes require maintenance. You stop or start processes using the Process Manager dialog box.

Note: You can select multiple processes to start or stop in the Process Manager dialog box.

To access

Click the **Process Manager** button  on the Toolbar.

Learn More

BSM Processes

The following table displays the processes that run on the BSM servers:

UI Element (A-Z)	Description
bpi_ process_ repository	Manages process definitions, which you create using the BPI Modeler, to monitor IT operational resources defined within the RTSM. **Process name:** BPI Process Repository
data_ upgrade	Enables transferring of data from a previous version of BSM to a newer version. **Process name:** DataUpgrade
dbloader	Runs the component on the server which loads the data into the database. **Process name:** mercury_db_loader
domain_ manager	Configures and monitors the bus process cluster in BSM machines. **Process name:** DomainManager
ldap	Runs queries and modifications for directory services. **Process name:** slapd
mercuryAS	Runs the JBoss application server, which provides access to all BSM applications. **Process name:** MercuryAS

UI Element (A-Z)	Description
message_ broker	Enables the transference of a message from the formal messaging protocol of the sending machine to the formal messaging protocol of the receiving machine. **Process name:** MessageBroker
offline_ engine	Runs the engine which controls the offline components of the BSM system. **Process name:** mercury_offline_engine
online_ engine	Runs the engine which controls the online components of the BSM system. **Process name:** mercury_online_engine
pmanager	Runs the Partition Manager to create new or purge old partitions in the profile database, as necessary. **Process name:** mercury_pm
RTSM Process	Runs on the RTSM database that stores all the configuration item data. It does not always run, depending on your BSM deployment. **Process name:** RTSM
schedulergw	Enables scheduling tasks to be continually run on the Gateway Server. **Process name:** schedulergw
schedulerpr	Enables scheduling tasks to be continually run on the Data Processing. **Process name:** schedulerpr
WDE	Runs the Web Data Entry component of the Gateway Server, which receives data from all registered data collectors and publishes the data to all BSM engines. **Process name:** mercury_wde

UI Description

Process Manager Dialog Box

User interface elements are described below:

UI Element (A-Z)	Description
	Indicates the selected process is running.
	Indicates the selected process was started and is not yet running.
	Indicates the selected process was stopped.

UI Element (A-Z)	Description
	Indicates the selected process is currently being stopped.
	Indicates the selected process was launched.
	Indicates the selected process' status is unknown.
Operation Status	Displays the status of the performed operation.
Refresh	Refreshes process statuses. **Note:** A stopped process appears in red.
Select Process(es)	Select the process you want to stop or start.
Select Server	Select the server on which you want to start or stop processes.
Start	Starts the selected processes.
Start All	Starts all of the processes in the **Select Process(es)** window.
Stop	Stops the selected processes.
Stop All	Stops all of the processes in the **Select Process(es)** window.

Chapter 7

Reassigning Services

If a certain machine is not functioning properly, requires downtime for servicing, or is overloaded, you can reassign services running on BSM Data Processing servers using the Backup Server Setup Window. You can also preconfigure a specific Data Processing server to automatically fail over to a specific backup machine, to ensure that your data is not lost in the event of system downtime.

You can move services from a server only to another server of the same BSM type. The secondary machine must also be a Data Processing server. You cannot move services (such as RTSM) from or to an external machine.

Note: Service Reassignment can be performed only by an administrator.

When automatic failover moves processes to the backup machine, it may move only part of a service group, causing System Health to display the same service group on two different servers.

To access

Click the **Service Manager** button  on the Toolbar on either the System Health Dashboard or the Inventory tab.

Learn More

Downtime during reassignment

The reassignment process can take up to 25 minutes, at which point the system is in downtime.

Service reassignment flow table

There are several theoretical scenarios for reassigning services among machines, depending on the type of deployment with which BSM servers are configured.

The table below illustrates these scenarios by indicating the paths along which services can be reassigned.

	To Full Data Processing Server (Backup server in recommended deployment)	To Modeling Data Processing Server	To Online Data Processing Server	To Offline Data Processing Server
From Full Data Processing Server	Yes **Note:** This is the recommended server deployment	Yes - for modeling services	Yes - for online services	Yes - for offline services

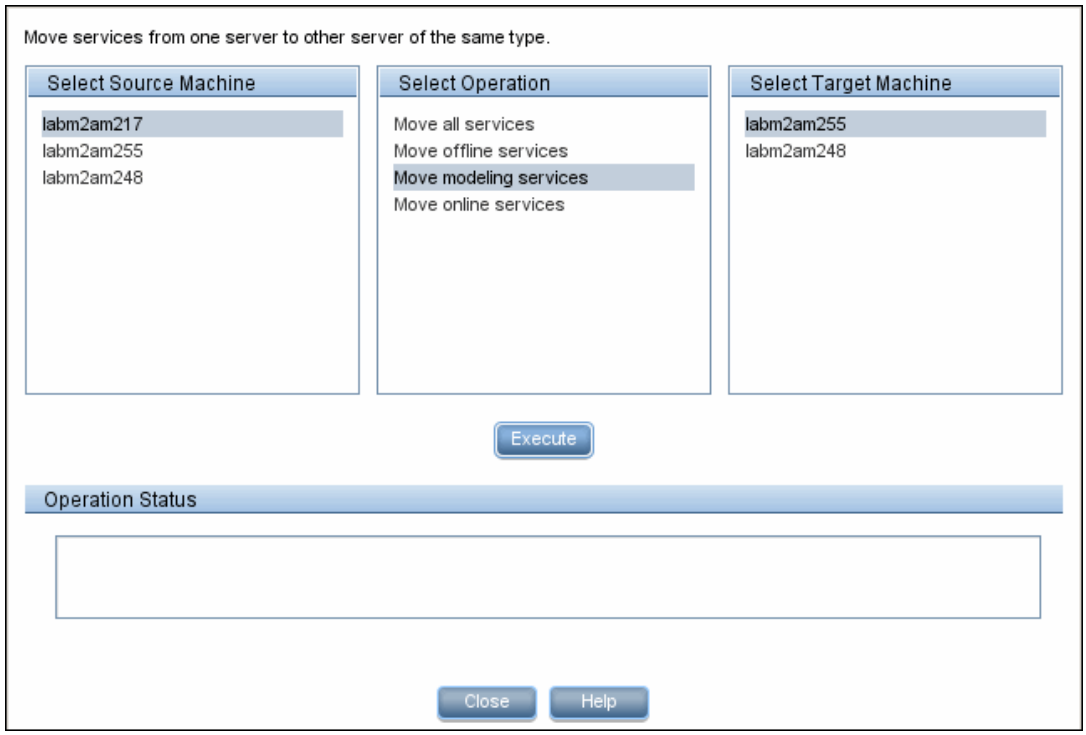
	To Full Data Processing Server (Backup server in recommended deployment)	To Modeling Data Processing Server	To Online Data Processing Server	To Offline Data Processing Server
From Modeling Data Processing Server	Yes	Yes	No	No
From Online Data Processing Server	Yes	No	Yes	No
From Offline Data Processing Server	Yes	No	No	Yes

Task

How to reassign services

This task describes how to reassign services to another Data Processing server:

1. On the Toolbar on either the System Health Dashboard or the Inventory tab, click the **Service Manager** button.



2. In the **Select Source Machine** window, select the machine that you want to move services from.
3. In the **Select Operation** window, select the operation you want to perform.
4. In the **Select Target Machine** window, select the machine you want to move services to.
5. Click the **Execute** button. The **Operation Status** window indicates whether or not the operation request was sent successfully.

UI Description

Service Manager Dialog Box

User interface elements are described below:

UI Element (A-Z)	Description
Execute	Moves the indicated customer services from one server to another.
Operation Status	Displays the status of the performed operation.
Select Operation	Select the type of service you want to move.
Select Source Machine	Select the machine from which you want to move the services.
Select Target Machine	Select the machine to which you want to move the services.

Chapter 8

System Health Reports

System Health enables you to view and export reports information on BSM components and monitors in the following formats:

- **Quick Reports.** Receives a Quick Report on data collected over the past 24 hours for the selected component. For more details about the Quick Report format, see "Quick Reports" below.
- **CSV format.** Exports a report containing the current status of the System Health monitors and BSM components to a .csv file. To export a report to a .csv file, in the Toolbar, click the **CSV format**  button.
- **Log files**. Log files containing information on specific components in a variety of formats. For more details about log files, see "Log Files" on next page.

Quick Reports

Quick Reports display information gathered over the past 24 hours on the monitors deployed on the selected components.

Table Format
Error List
Warning List
Good List

Close Window

Summary for Multiple Monitors

(information from 8:58 AM 7/9/07 to 12:18 PM 7/9/07)

Uptime Summary

Name	Uptime %	Error %	Warning %	Last
Durable Subscriber Group	94.73	0	5.27	good
Monitor Broker Group	94.73	0	5.27	good
Monitor Subscriber Group	94.73	0	5.27	good
Monitor Container Group	94.73	0	5.27	good
Log Level for D$\HPBAC\conf\core\Tools\log4j\mercury_online_engine	100	0	0	good
Log Level for D$\HPBAC\conf\core\Tools\log4j\mercury_offline_engine	100	0	0	good
Log Level for D$\HPBAC\conf\core\Tools\log4j\mercury_data_upgrade	100	0	0	good
Log Level for D$\HPBAC\conf\core\Tools\log4j\mam	100	0	0	good
Log Level for D$\HPBAC\conf\core\Tools\log4j\mercury_upgrade_wizard	100	0	0	good
Log Level for D$\HPBAC\conf\core\Tools\log4j\cmdb	100	0	0	good
Log Level for D$\HPBAC\conf\core\Tools\log4j\common	100	0	0	good
Log Level for D$\HPBAC\conf\core\Tools\log4j\mercury_wde	100	0	0	good
Log Level for D$\HPBAC\conf\core\Tools\log4j\data_marking	100	0	0	good
Log Level for D$\HPBAC\conf\core\Tools\log4j\PlainJava	100	0	0	good
Log Level for D$\HPBAC\conf\core\Tools\log4j\EJB	100	0	0	good
Log Level for D$\HPBAC\conf\core\Tools\log4j\mercury_pm	100	0	0	good
Log Level for D$\HPBAC\conf\core\Tools\log4j\Servlets	100	0	0	good
Log Level for D$\HPBAC\conf\core\Tools\log4j\bus	100	0	0	good
Log Level for D$\HPBAC\conf\core\Tools\log4j\mercury_db_loader	100	0	0	good
Out of Memory in log	100	0	0	good
Logged in Users	94.73	0	5.27	good

To access	Click the **Quick Report** button  on the Toolbar.
Important information	The following links appear on the Quick Report screen, which enable you to view specific information on the monitors: • **Table Format:** • **Error List:** • **Warning List:** • **Good List:** For details on the information each of these links displays, see Quick Report Screen below.
See also	The section on Reports in Using SiteScope in the SiteScope Help.

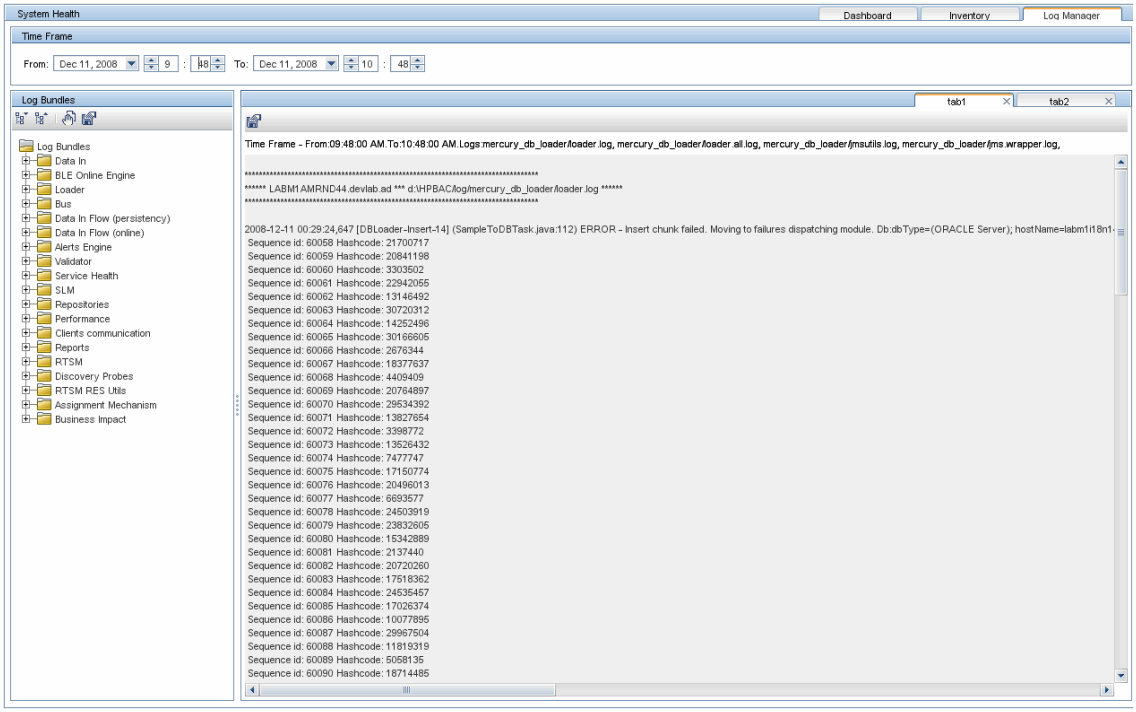
Quick Report Screen

User interface elements are described below:

UI Element (A-Z)	Description
<Graphs>	Displays the monitor groups' output in graph format.
Error List	Displays the monitor runs that retrieved an **error** status, based on the thresholds configured for the monitor.
Good List	Displays the monitor runs that retrieved a **good** status, based on the thresholds configured for the monitor.
Measurement Summary Table	Displays measurement data for each of the BSM monitors.
Table Format	Displays the monitor groups' output in table format.
Uptime Summary Table	Displays the percentage of uptime each BSM monitor experienced over the indicated time period.
Warning List	Displays the monitor runs that retrieved a **warning** status, based on the thresholds configured for the monitor.

Log Files

System Health enables you to view various log files associated with the components that System Health monitors in a variety of formats. You view these log files in the Log Manager tab.



To access	Click the **Log Manager** tab on the System Health interface.
Important information	• You can view a log file by selecting a component in the **Log Bundles** pane and performing one of the following actions: ▪ Double-click. ▪ Drag and drop it into the **Main** pane. ▪ Click the **Grab Log Files**  button. • You can search for a string in the **Main** pane by selecting any point in the pane and typing the string you want to find. You can also search the content of a set of logs by saving the output to a .txt file and performing a search.

Logs are arranged hierarchically in **log bundles**. Nested under the log bundles are the machines in the BSM deployment that contain the individual log files.

The entities that can be seen in the **Log Bundle** pane tree are:

- **Log Bundles.** Can contain any or all of the following:
  - Other log bundles
  - Machines
  - Logs (if there is no model configured on the System Health Dashboard), arranged by category.
- **Machines.** Contains a group of logs arranged by the machine they are located on. Machines are nested under the log bundles in the hierarchical tree.
- **Individual Logs.** The individual log files monitoring the behavior of the monitored components.

Logs are nested either under the log bundles, or the specific machines on which they are running.

You configure a time frame for which you want data to be retrieved in the **Time Frame** pane, and then select one or more of the components in the **Log Bundles** pane. You can then perform one of the following actions:

- Download and save the selected logs by clicking the **Save Output**  button in the **Log Bundles** pane.
- Retrieve and view the selected logs by clicking the **Grab Log Files**  button. The logs are displayed in the **Main** pane, where you can also save the displayed output by clicking the **Save Output**  button.

You can select any combination of log bundles, machines, and log files.

For each log retrieval action that is performed, a separate tab opens in the **Main** pane displaying the logs contained in your selection. Tabs are numbered chronologically, according to the retrieval actions you perform. For details on the available functions in the Log Manager, see Log Manager Tab below.

Log Manager Tab

User interface elements are described below:

UI Element (A-Z)	Description
	Retrieves logs for the specified entities. You can retrieve log files by selecting a specific file, a bundle, or a machine. **Note:** • You can also view log files by dragging the selected entity to the main frame. • The Log Manager cannot display a log file larger than 1 MB. If you try to retrieve a log file larger than this, a message is displayed prompting you to download the file to your local machine.
	Saves the selected log files. • When selecting this button in the main frame, the currently displayed logs are saved. • When selecting this button on the **Log Bundles** pane, the selected entities are saved, without being displayed in the main frame. This option is useful if you are saving a large output of data, or if you want to perform a complex search on the data output.
	Indicates a log bundle or machine whose content has been collapsed or not expanded in the Log Bundles hierarchical tree. **Note:** This is the default view in the **Log Bundles** pane.
	Indicates a log bundle or machine whose content has been expanded in the Log Bundles hierarchical tree.
	Indicates a log file. You can view a log file in one of the following ways: • Double-click the log file • Drag and drop the log file into the main pane • Select the log file and click the **Grab Log Files**  button.
<tab #>	Indicates a selection of any combination of bundles, machines, or log files. The tabs are numbered chronologically, according to the number of retrieval actions you have performed. **Note:** The specific logs displayed in the tab are listed at the top of the pane. If more than 5 logs have been retrieved, the message, **Assorted logs (more than 5)** is displayed in place of the log list.
From	Select a date and time from which the log data is to begin being displayed.
To	Select a date and time until which the log data is to be displayed.

Chapter 9

HP CLIP Integration

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. CLIP helps IT organizations achieve their goals of IT efficiency, increased automation levels, and focus on the business.

To integrate System Health with CLIP:

1. ## In BSM, configure the System Health CLIP integration.

   Select **Admin > Platform > Setup and Maintenance > Infrastructure Settings**, choose **Foundations**, select **System Health**, and locate the **System Health - CLIP Integration** entry in the System Health table.

   Add the URL required to access the following (in the format `http://<fully qualified host name>:<port>`):

   - **UCMDB Server login URL** (default port is `http://<ucmdb server>:8080`)
   - **OO Server WSDL URL** (default port is `http://<oo server>:8443`)
   - **Service Manager Server WSDL URL** (default port is `http://<sm web tier server>:13080`)

2. ## Configure the following System Health monitors for the CLIP integration.

   The CMS WSDL Monitor, OO WSDL Monitor, and OPR event REST API URL Monitor appear in red until you enter the monitor's user name and password in SiteScope.

   a. Log in to your System Health machine. For details, see "Installing System Health" on page 8.

   b. In System Health, click the **SiteScope** button in the System Health Dashboard toolbar to open the SiteScope application.

   c. In SiteScope, select **Templates** context > **SystemHealth > CLIP > CMSMonitors > CMS WSDL Monitor**. In the right pane, expand **URL Monitor Settings**.

   d. In the **Authentication Settings** area, select **User user name and password**, and enter a user name and password for the monitor. Click **Save**.

   e. Repeat steps 3c and 3d for the following CLIP monitors:

      - **OOMonitors > OO WSDL Monitor**
      - **OPRMonitors > OPR event REST API URL Monitor**

3. ## Perform a Synchronization in System Health.

   a. In System Health, click the **Full Model Synchronization**  button to synchronize the

status and model of the components. For details about synchronization, see "Synchronizing System Health" on page 21.

b. The Remote Servers Setup Wizard opens. For each server in the left pane, enter the remote connection information in order for System Health to run all of the server's available monitors. For details, see "System Health Setup Wizard" on page 14.

Chapter 10

Troubleshooting and Limitations

The following table illustrates potential problems that can occur on the System Health interface, and suggested solutions:

Problem	Solution
Interface does not display any BSM components	Click the **Refresh** button on your browser. **Note:** This problem is most common when first logging into System Health on Microsoft Internet Explorer 7.0.
All components and monitors are displayed in gray	Click the **Full Model Synchronization**  button in the Toolbar on either the **System Health Dashboard** or the **Inventory** tab. The **Full Model Synchronization** button resets the System Health configuration and erases all of the monitors' history in BSM. You then reconfigure System Health to create remote connections to the servers which System Health monitors, using the System Health Setup Wizard. For details, see "System Health Setup Wizard" on page 14.
Monitors are not displayed on a component	