

HP SiteScope

For the Windows, Solaris and Linux operating systems

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Integration with HP Operations Manager Products

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Chapter 1

Configuring SiteScope to Communicate with HPOM and OMi Overview

SiteScope, which is an agentless solution for IT infrastructure performance and availability monitoring, can work together with Operations Manager (HPOM) and Operations Management (OMi) in BSM, to provide a powerful combination of agentless and agent-based infrastructure management.

SiteScope communicates with these applications using the HP Operations agent, which is installed on the SiteScope server. The HP Operations agent enables SiteScope to integrate both event and metrics data:

- **Events.** Events in SiteScope are based on SiteScope monitor metric status changes and alerts being triggered. SiteScope sends events by writing them to a log file which is monitored by the HP Operations agent. The agent reads the data and converts it to events, which it forwards to the HPOM management server, or to BSM for use in Operations Management, Service Health, and Service Level Management. For details on sending events, see "[Configuring SiteScope to Send Events to HPOM or OMi](#)" on page 11.
- **Metrics Integration.** The HP Operations agent acts as a data storage for metrics data collected by SiteScope. SiteScope metrics are collected from the HP Operations agent data storage by HPOM for use in Performance Manager graphs, and by Performance Graphing in BSM's Operations Management. For details on reporting metrics, see "[Configuring SiteScope to Report Metrics to HPOM and OMi](#)" on page 51.

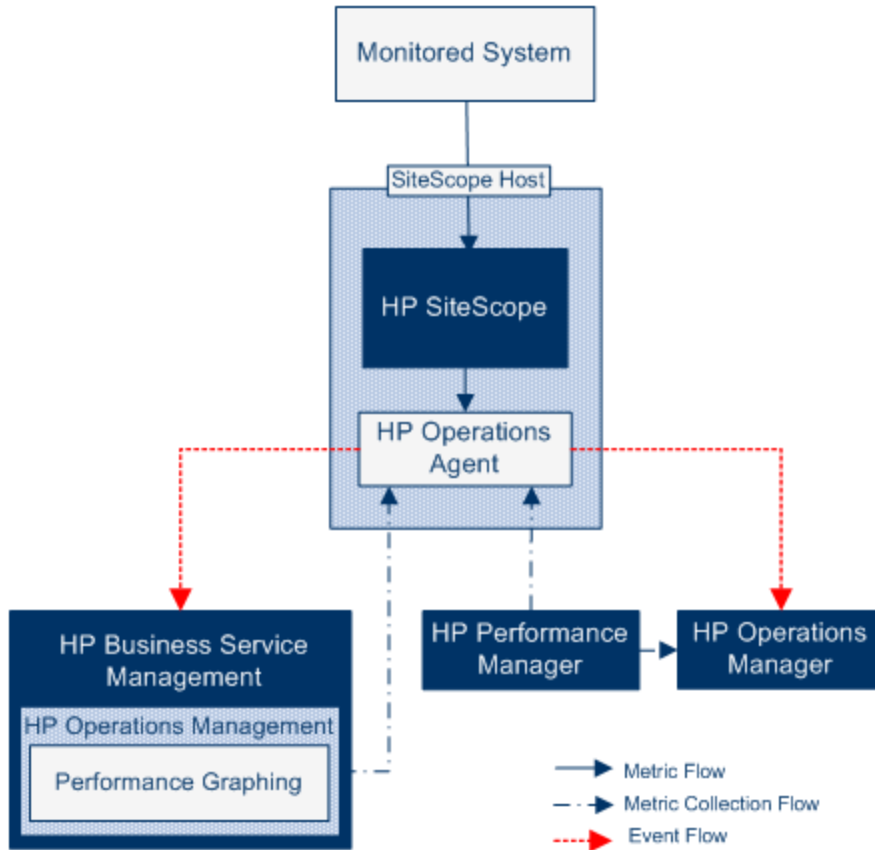
Note:

- This integration replaces the need to install the HP SiteScope Adaptor on the HPOM server that was required for the earlier integration solution when using the basic alert script mechanism.
- Metrics integration using the HP Operations agent (where metrics data is used in Performance Graphing in BSM's Operations Management) should not be confused with the BSM integration where SiteScope monitor metrics are used by the various BSM applications to calculate CI status (for example, in Service Health, Service Level Management, and System Availability Management). For details on BSM metrics integration, see the Working with BSM section of the Using SiteScope Guide in the SiteScope Help.

Tip: For best practices and troubleshooting for reporting data to BSM and HPOM products, see the *Integration with BSM and HPOM Best Practices* guide in the SiteScope Help.

Event and Metrics Flow Diagram

The following diagram illustrates the metrics data and event flow between SiteScope and the HPOM and BSM applications.



HP Operations Agent Topology

HP Operations agent CIs are created when SiteScope is connected to HPOM, and HPOM is connected to BSM.

When SiteScope is connected directly to BSM, SiteScope creates the agent CI through its usual topology flow. When SiteScope sends its main topology (profile CI) and there is either an event or metrics integration with Operations Manager active, it also sends the agent topology.

Note:

- The agent CI is deleted only when both event and metrics integrations are removed.
- The agent CI is not deleted when SiteScope is disconnected from BSM, because SiteScope does not know if the connection is through HPOM or BSM (the agent CI eventually disappears due to the aging process).

Centralized Template Management from HPOM

This integration enables you to centrally manage and deploy templates from multiple SiteScope instances from within HPOM (this is not relevant when SiteScope is integrated with Operations Management).

Benefits

This integration provides the following benefits:

- Centralized management of templates across multiple SiteScope instances—you no longer have to worry about templates getting out of sync or to manually sync templates.
- Version control for templates (including roll-back functionality).
- Automatic and robust deployment of templates based on group policy assignment (desired state handling).
- Scheduled roll out of template deployment.
- Reduced firewall configuration, leveraging existing HP Operations agent-HPOM management server connectivity.
- Unified management of SiteScope and the HP Operations agent through a single administrative console.

Note: This integration is currently not supported for HPOM for Windows.

Available Actions

When managing SiteScope templates with HPOM, you can perform the following actions:

- Export all templates from SiteScope and import them to HPOM as policies, which you can later on assign and deploy. Use the **Export to OM** option in the Template shortcut menu in SiteScope to export SiteScope templates to HPOM when SiteScope and HPOM are installed on the same machine.
- Create or modify a template on SiteScope and then move this template to HPOM (only when SiteScope and HPOM are installed on the same system). This means that you can either create a new template or modify an existing template to contain the text or the variables that you choose.
- Deploy a SiteScope template or import template container from HPOM.
- Delete SiteScope templates.

Note: When deploying a template to SiteScope from HPOM, all mandatory SiteScope variables must have a value set in the OM Policy. If not, the deployment fails.

For details on managing SiteScope templates with HPOM, see *Deploying SiteScope Configuration with HPOM*, available from the Home page of the SiteScope Help, or from the [HP Software Support Product Manuals site](#) (under **Operations Manager for UNIX**).

System Requirements

Template integration with HPOM is available provided your system conforms to the following requirements:

- SiteScope is installed and connected to a supported version of HPOM. For the HPOM versions supported in this release, see the HP Operations Manager (HPOM) Integration Support Matrix in the SiteScope release notes (in SiteScope, select **Help > What's New?**).
- Before installing SiteScope, you should create a predefined SiteScope configuration with a defined username and password for the SiteScope Administrator. For details, see *Deploying SiteScope Configuration with HPOM*, available from the Home page of the SiteScope Help or from the [HP Software Support Product Manuals site](#) (under **Operations Manager for UNIX**).
- The HP Operations agent is installed on the SiteScope server using the SiteScope Configuration Tool (even if the agent was previously installed during SiteScope installation). For details on installing the agent using the Configuration Tool, see "Using the SiteScope Configuration Tool" in the SiteScope Deployment Guide.
- Operations Manager integration is configured in SiteScope and the **Enable exporting templates to HP Operations Manager** check box is selected in HP Operations Manager Integration Main Settings. For details, see "[How to Enable SiteScope to Send Events to HPOM or OMi](#)" on page 15.

SiteScope Failover and Operations Manager Integration

The SiteScope Failover (automated mirroring) solution was reinstated in SiteScope as a replacement for the SiteScope Failover Manager (shared drive architecture) solution for providing automated failover functionality. SiteScope Failover provides support for Operations Manager event and metrics integration. If you want to configure HP Operations Manager Integration for SiteScope with High Availability option, the SiteScope Failover solution is recommended, since HP might stop supporting the Failover Manager solution in the future.

Event Integration

To enable SiteScope Failover support for OM event integration, perform the steps in "[How to Enable SiteScope to Send Events to HPOM or OMi](#)" on page 15, both for the primary SiteScope and for the SiteScope Failover.

Event flow and host discovery flow work without any additional steps. For the Monitor Discovery integration, follow the steps in "[How to Enable the SiteScope Monitor Discovery Policy](#)" on page 27 for the primary SiteScope only.

Notes and Limitations

- Since there will be only one SiteScope service tree (and it is affected by events), it is not possible to know if it is affected by what was reported from the primary or failover SiteScope.
- When the primary is down, events triggered from monitors that are monitoring the SiteScope server (in this case, the SiteScope server is the failover) do not affect the service tree.
- Groups and monitors added when the primary is down are not displayed in the service tree.
- The Drill Down to SiteScope tool works only when the primary SiteScope is running.
- If there are different agent configurations on the primary and SiteScope Failover (for example, an agent is installed on a different path), the agent command on the failover server will not run from the Event Integration preferences user interface and you need to enter the agent path manually beforehand.

Metrics Integration

SiteScope Failover provides support for OM metrics integration. Note that SiteScope Failover reports metrics to its HP Operations agent (not to the primary's agent).

Chapter 2

Configuring SiteScope to Send Events to HPOM or OMi

You can enable SiteScope to send events directly to the HPOM management server and to BSM (for use in Operations Management, Service Health, and Service Level Management). Events in SiteScope are based on SiteScope monitor metric status changes and alerts being triggered.

To enable SiteScope to send events, the HP Operations agent must be installed on the SiteScope server. The agent can be installed from the SiteScope installation media during SiteScope installation, or after SiteScope is installed using the Configuration Tool. It can also be installed manually from the HPOM management server, although this is not recommended unless it is the same or a later version than the one packaged with SiteScope.

After the agent is installed, it must be configured in SiteScope Integration Preferences. This involves entering the installation path of the agent and the host name or IP address of the HPOM management or BSM Gateway Server, and connecting the agent to HPOM or BSM. The agent then sends a connection request to HPOM or BSM which must grant the certificate request (the HPOM management server can be configured to accept this client automatically).

After the certificate request has been granted on the HPOM or BSM server, a preconfigured log file policy should be installed and signed on the agent installation on the SiteScope server. This enables SiteScope to sign the preconfigured Operations Manager policies locally and automatically. This policy comes with SiteScope, and is deployed from the Operations Manager Integration dialog box in SiteScope's Integration Preferences.

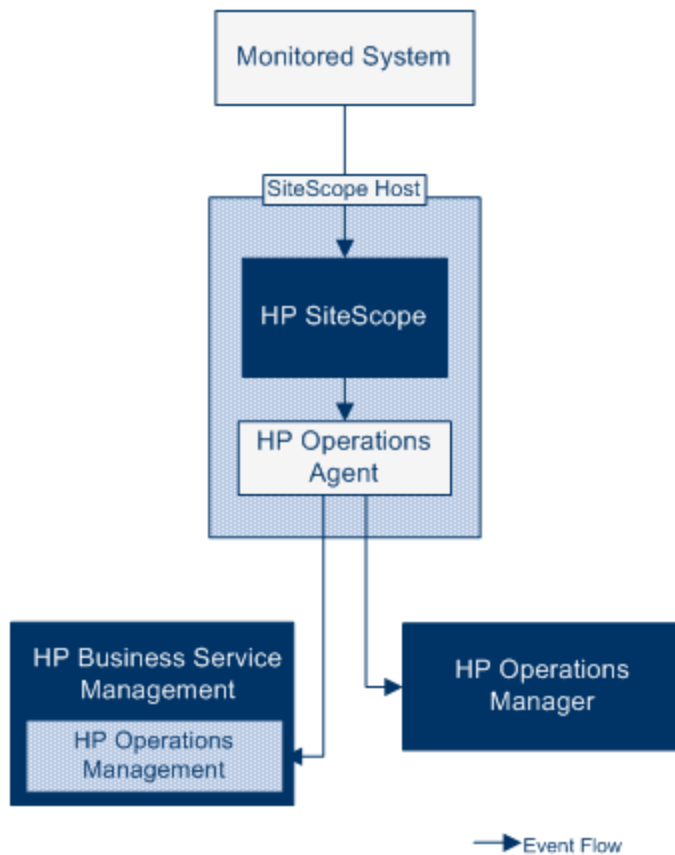
When an event is triggered, SiteScope writes the event data to the **HPSiteScopeOperationsManagerIntegration.log** file which is located in the **<SiteScope root directory>\logs** directory. Each event is written as a separate line in the log. The log file policy instructs the agent to read this file and create event messages that are sent to HPOM or BSM.

The format of the event attributes is determined using the event mapping template. The template maps SiteScope runtime data to the event attribute values that are sent to the HPOM management or BSM Gateway Server when an event is triggered. For details on event mappings, see the section on Common Event Mappings in the Using SiteScope Guide in the SiteScope Help.

After the data is converted to an event, the agent sends the event to the HPOM management/BSM Gateway Server. Events appear in:

- HPOM's Event Console.
- BSM's Operations Management Event Browser if you have an Event Management Foundation license, and in Service Health for events that affect CIs. If Operations Management is not part of your BSM installation, you can still view events that affect CI status using a health indicator in Service Health.

The following diagram illustrates event data flow:



Note: The HP Operations agent can be configured either to report events to an HPOM management or a BSM Gateway Server—not to both.

For details on configuring SiteScope to send events, see "How to Enable SiteScope to Send Events to HPOM or OMi" on page 15.

Event Generation

You can configure events to be generated and sent to the HPOM management server or to Operations Management in BSM following a change in a monitor's metric status or when a SiteScope alert is triggered.

- **Status Change.** Every metric or counter status change is an event (for example, if the CPU utilization counter status changes from `Good` to `Error`). You can choose whether events are triggered for metrics status changes in the monitor's properties. By default, SiteScope sends an event for each metric status change for the monitor instance.

You can change the default settings for sending events and the event attribute values used when an event is triggered. The event attribute values are filled according to the event configuration mappings using the monitor's properties. For details on event mappings, see the event mapping section in the Using SiteScope Guide in the SiteScope Help.

In addition to sending the monitor properties, SiteScope also sends health indicators or event type indicators (indicators) for the monitor instance. Events are categorized according to indicators. The BSM event manager uses indicators to categorize events according to the type of occurrence in the managed IT environment (for example, CPU Load). Indicators that provide CI state information are then used to calculate the CI.

Note: Status change is applicable only to metrics that are configured in the monitor's Thresholds Settings.

- **Alert.** Every alert is an event. Since alerts are triggered per monitor, an event triggered by an alert can use the monitor's properties, but not the indicators associated with a specific metric. Therefore, when configuring an event alert, you can manually select the indicator that is reported when an event is triggered by an alert. As a result, the indicator is more generic, and you should select indicators that do not affect health indicators in BSM.

You can choose whether an alert sends events to HPOM or BSM in the alert definition in the Operations Manager Integration Settings panel.

Note:

- When a SiteScope alert is triggered, it is possible that two events are generated if both the alert and monitor are configured to send events. When configuring alerts to send events, you should not also enable the monitors to send events. Conversely, if you want an alert for each metric status change (together with health or event type indicators for the monitor instance), we do not recommend also using alert events.
- SiteScope also includes threshold information in alerts that are sent to HPOM. In earlier versions of SiteScope and BSM, it was not possible to include the thresholds created for monitors in alerts.
- In Operations Management, it is recommended to use alert events for notification purposes only.

Discovery Scripts and Drilling Down User to View HPOM Events

When SiteScope is integrated with HPOM, the **Node discovery** and **Monitor discovery** policies are activated for nodes and monitors on the HPOM management server.

Both discovery policies rely on the **Integration Viewer** user in SiteScope. This is the user provided by SiteScope for drilling down from HPOM events. This user has been granted view permissions, and permissions to refresh groups and monitors. For details on users and user permissions, see section on user management preferences in the Using SiteScope Guide in the SiteScope Help.

Note:

- If the Integration Viewer user is deleted from User Management Preferences, this user type is automatically created when SiteScope is restarted.

- If the Integration Viewer user properties are changed, you must restart SiteScope to update the user properties file, or you can manually update the user properties in the **<SiteScope root directory>\conf\sitescope_connection.properties** file.

When changing Integration Viewer user properties manually, the user login name and password should be encrypted using the SiteScope Encryption Tool as follow:

- Run the following batch file:
 - **For Windows:** `<SiteScope root directory>/tools/AutoDeployment/encrypt_password.bat`
 - **For UNIX:** `<SiteScope root directory>/tools/AutoDeployment/encrypt_password.sh<SiteScope`
- Open a command prompt window.
 - In Windows, drag and drop the file into your command prompt window.
 - In UNIX, you must run the .sh file from its directory.
- Enter space and the password value (for example `Mypassword`). Click `Enter`.
- Use the returned string as a value for the encrypted variable in the XML file. You must change the value of the attribute **encrypted** to **yes** and the **value** of the variable attribute to the returned string.

For example, the following value was generated by the encryption tool:

```
<deploy:variables encrypted="yes" name="password" value="(sisp)d5JLOSwaVfE="/>
```

For details on deploying the discovery policies on the HPOM management server, refer to the HPOM documentation.

Node Discovery Policy

When SiteScope is connected with HPOM, a node is automatically created and registered in HPOM for each node monitored by SiteScope. This enables SiteScope to report all the nodes that it monitors to HPOM. Only hosts for monitors which report events are sent to HPOM through the discovery policy.

Tip: When you are not connected to HPOM (if connected to Operations Management), it is recommended to disable the node discovery by running the command: `ovpolicy -disable -polname SiteScope_Hosts_Discovery`

Note: SiteScope does not report nodes or services to HPOM for monitors that are disabled, or are not configured to send events.

Monitor Discovery Policy

This is an optional policy that must be activated manually on HPOM using the files in the `<SiteScope root directory>\tools\OMIntegration\SiteScopeMonitorDiscoveryPolicy` directory. After the policy has been activated, SiteScope runs the SiteScope-OM monitor discovery script when it is connected with HPOM.

This policy enables the HPOM Service Navigator to view the SiteScope monitor tree in the HPOM service maps. When new monitors, groups, or both, are added or changes are made in the SiteScope monitor tree, the services tree is updated in HPOM to reflect these changes. In addition, when events arrive to HPOM, they affect the SiteScope services tree and color all related nodes affected by them.

For details on how to enable the monitor discovery policy, see ["How to Enable the SiteScope Monitor Discovery Policy"](#) on page 27.

For details on enabling the tool to drill down to SiteScope from HPOM, see ["How to Enable the Drill Down to SiteScope Tool on HPOM for Windows"](#) on page 24 and ["How to Enable the Drill Down to SiteScope Tool on HPOM for UNIX/Linux/Solaris"](#) on page 25.

How to Enable SiteScope to Send Events to HPOM or OMi

This task describes how to enable SiteScope to be used to send events to the HPOM management server or BSM Gateway Server.

1. Prerequisites

- Your system must conform to the following requirements:
 - SiteScope version 11.00 or later is installed.
 - For OMi, BSM 9.00 or later is installed.
 - For HPOM, HP Operations Manager for UNIX 9.0x, or HP Operations Manager for Windows 8.1x is installed.

Note: The node discovery, monitor discovery, and template integration are not supported for all versions of HPOM. For details of the integrations that are supported and of any patch requirements, refer to the HP Operations Manager (HPOM) Integration Support Matrix in the SiteScope release notes. (Available from the HP Product Manuals site (<http://support.openview.hp.com/selfsolve/manuals>)).

- Only a SiteScope administrator user, or a user granted **Edit integration preferences** and **Add, edit or delete common event mappings** permissions can configure the integration and event mappings. For details on user permissions, see the section on user management preferences in the Using SiteScope Guide in the SiteScope Help.

2. Install the HP Operations agent on the SiteScope server

You can install the HP Operations agent during SiteScope installation from the SiteScope

installation media, or after SiteScope is installed using the Configuration Tool. The agent enables SiteScope to send event data to the HPOM management server or BSM Gateway Server.

For the supported HPOM environments and HP Operations agent versions, refer to the HP SiteScope Support Matrices section in the SiteScope release notes.

For details on installing the agent during SiteScope installation or using the SiteScope Configuration Tool, see the HP SiteScope Deployment Guide.

3. (For OMi only) Configure the connection request to be passed to the Data Processing Server if BSM is installed on a distributed environment, or if BSM Gateway Servers are behind a load balancer

If BSM uses a separate Gateway and Data Processing Server, perform the following to enable the request received on the Gateway Server to be passed to the Data Processing Server:

- a. In BSM, select **Admin > Platform > Infrastructure Settings**:
 - o Select **Applications**.
 - o Select **Operations Management**.
 - o In the **Certificate Server Settings**, locate the **Certificate Server Host**. Make sure that the value matches the host name or IP address of the active BSM Data Processing Server that acts as the certificate server host. If it does not match, change it accordingly.

Note: If the BSM Data Processing Server fails and automatic failover has been configured, you must change the **Certificate Server Host** setting to the name of the backup Data Processing Server to handle new certificate requests. However, if you do not expect any new certificate requests during the Data Processing Server failover timeframe, you can keep the setting unchanged as it does not affect any event integrations configured previously.

- b. Configure the Gateway Server:
 - o Change the active directory to the `\bin` directory by typing `cd <HPBSM root directory>\bin`.
 - o Run **setup-secure-communication.bat** and enter the DNS name of the Data Processing Server.
- c. Configure the Data Processing Server:
 - o Change the active directory to the `\bin` directory by typing `cd <HPBSM root directory>\bin`.
 - o Run **setup-secure-communication.bat** and type `g` to grant the request (make sure that you grant this request and not some other request).
- d. If you are using a BSM failover environment with load balancer, make sure to keep the certificate server of each Data Processing Server synchronized.
 - o Repeat steps b and c for every Gateway Server. It does not matter to which Data Processing Server you send the certificate request because the Data Processing

Servers already trust each other. As a result, all Gateway Servers trust both Data Processing Servers and can communicate with them regardless of which one is active at any given moment.

- If you install a new certificate on the running Data Processing Server, you also have to install the certificate on the secondary Data Processing Server which is used as failover. To install the new certificate, run the following commands:



```
ovcert -importtrusted -file <newCertificateFilePath>
ovcert -importtrusted -file <newCertificateFilePath> -ovrg
server
```

- Configure the load balancer to forward all HTTPS traffic that arrives on port 383 to the Gateway Servers. This enables the certificate requests and event forwarding to work.

4. Configure the agent connection settings on the SiteScope server

In SiteScope Integration Preferences, configure the HP Operations agent connection settings to the HPOM management server or BSM server.

- a. Select **Preferences > Integration Preferences**. In the Integration Preferences page:

- Click the **New Integration**  button and select **HP Operations Manager Integration**, or
- Select an existing integration and click the **Edit Integration**  button.

- b. In the HP Operations Manager Integration dialog box, expand the **HP Operations Manager Integration Main Settings** panel, and enter the following in the **Connection Settings** area:

- **HP Operations Agent installation path**. Path to the HP Operations agent installation on the SiteScope machine.
 - On Windows platforms, the installation path is automatically resolved from the HP Operations agent **InstallDir** key in the registry, and appears in this field. The default path is **C:\Program Files\HP\HP BTO Software**. If the key is not found, the field is left empty, and you must manually enter the agent installation path.
 - On UNIX platforms: SiteScope checks to see if the HP Operations agent is installed in the default **/opt/OV** path. If it is not there, the field is left empty, and you must manually enter the agent installation path.

Click the **Resolve Path** button to restore the default installation path found by SiteScope if you manually entered a different path.

- **HP Operations Manager/BSM server**. Enter the name or IP address of the HPOM/BSM server to which you want to connect. If you are connecting to a BSM-distributed environment, enter the BSM Gateway Server name or IP address. If your BSM Gateway Servers are behind a load balancer, enter the name or IP address of the load balancer that is configured for data collectors.
- c. Click **Connect** to connect the agent to the HPOM management or BSM server. This sends a connection request from the agent to the specified server.

5. Accept the agent connection request on the HPOM management server or BSM Gateway/Web Processing server

■ For HPOM:

In HPOM, you need to configure the SiteScope node, map the certificate request to this node, and accept the certificate request.

- i. In HPOM, add SiteScope as a managed node.
 - For HPOM for Windows, you can use the **ovownodeutil** command-line tool to add a node, or you can use the user interface. For details, see the "Configure nodes" section in the HPOM for Windows documentation.
 - For HPOM for UNIX/Linux, you can use the **opcnode** command-line tool to add a node.

Example - Using the opcnode command line tool:

```
# opcnode -add_node node_name=<SiteScope_node_name>
\net_type=<network_type> mach_type=<machine_type>
\group_name=<group_name> node_type=<node_type>
```

For detailed information, see the HPOM for UNIX and Linux documentation:

- "Adding a Managed Node to the HPOM Database" in the Administrator's Reference Guide.
 - "Install HPOM Software on HTTPS Nodes" and "Working with Certificates" in the HTTPS Agent Concepts and Configuration Guide.
- ii. List the pending certificate request IDs with the following command. If you want that detailed information on every pending request is listed, use the **-l** option:

```
ovcm -listpending [-l]
```

Note the request ID for the SiteScope node.

For more information, see the ovcm manual page.

- iii. Grant the certificate request from the to the SiteScope node, with the following command:

```
ovcm -grant <SiteScope_node_request_id>
```

■ For BSM:

For BSM running on a Gateway Server only, perform the following on the BSM Gateway Server. If BSM runs on a distributed environment, perform the following on the Data Processing Server.

- i. (Optional) To make sure that the OV Certificate Server process is running, run the command line `run ovc -status`. If it is not running, run the command `ovc -start` or contact your BSM administrator.
- ii. Change the active directory to the **\bin** directory by typing `cd <HPBSM root directory>\bin`.

- iii. Run **setup-secure-communication.bat** and type `g` to grant the request (make sure that you grant this request and not some other request).
- iv. Make sure that the request ID you are going to accept is associated with the agent's core ID. To retrieve the agent's core ID, in SiteScope, click the **Analyze** button in HP Operations Manager Integration, or run the agent's `ovcoreid` command on the SiteScope server.

6. Install the log policies on the SiteScope server

After the certificate request has been granted on the HPOM/BSM server, click **Install Policies** in the **HP Operations Manager Integrations Main Settings** panel of the HP Operations Manager Integration dialog box. This installs and signs the preconfigured log file policy file on the HP Operations agent.

Note: If an agent is connected to an HPOM or BSM server and you want to connect it to a different server, you must uninstall and reinstall the agent or redirect the agent to another server. For task details, see ["How to Reconnect the HP Operations Agent to a Different HPOM or BSM Server"](#) on page 22.

7. Check connection status and send test message from the SiteScope server - optional

If there are connectivity problems, you can perform problem analysis and check the status of the agent and the certificate request.

- a. In the HP Operations Manager Integration dialog box, expand the **HP Operations Manager Integrations Main Settings** panel, and click **Analyze**.

Use the information supplied in the analysis results to perform problem analysis and for troubleshooting. For example, you can verify connectivity between the agent and server by checking the `bbcutil` connection protocol.

- b. To check that the agent is connected to the HPOM management or BSM server, expand the **HP Operations Manager Integrations Advanced Settings** panel, type a message in the **Test message** text box, and click **Send Test Message**.
- c. If the test is successful, the text message is displayed in the HPOM console or in the Operations Management Event Browser in BSM. This message is generated by a basic `opcmsg` policy command.

8. (For HPOM only) Extend the integration with HPOM using monitor discovery - optional

To enable the HPOM Service Navigator to view SiteScope groups and monitors in the HPOM service maps, you must manually enable the Monitor discovery policy on HPOM using the files in the **<SiteScope root directory>\tools\OMIntegration\SiteScopeMonitorDiscoveryPolicy** directory.

For details on how to enable the policy, see ["How to Enable the SiteScope Monitor Discovery Policy"](#) on page 27.

Note: To enable SiteScope Failover support for the Operations Manager event integration,

follow the steps for configuring the monitor discovery policy in "[SiteScope Failover and Operations Manager Integration](#)" on page 9.

Tip: You can also use the Drill Down to SiteScope tool to enable opening the SiteScope user interface from the monitor or group service that was discovered by the monitor discovery policy and added to the HPOM Service Navigator.

- For details on enabling the tool on HPOM for Windows, see "[How to Enable the Drill Down to SiteScope Tool on HPOM for Windows](#)" on page 24.
- For details on enabling the tool on HPOM for UNIX/Linux/Solaris, see "[How to Enable the Drill Down to SiteScope Tool on HPOM for UNIX/Linux/Solaris](#)" on page 25.

9. Enable SiteScope to send events to HPOM or OMi

- a. In the HP Operations Manager Integration dialog box, expand the **HP Operations Manager Integrations Main Settings** panel, and in the **Configuration Settings** area select **Enable sending events**.
- b. Configure the following settings as required:
 - **Connect directly to BSM.** When the agent is connected to OMi, select to automatically deactivate the node discovery policy if it was installed and enabled on the SiteScope server. When this option is selected:
 - The **Enable node discovery policy** option is not available, and the node discovery policy is disabled if it was installed and enabled on the SiteScope server.
 - The **Prefer events over metrics in BSM Service Health (global preference)** option is automatically selected.
 - **Prefer events over metrics in BSM Service Health (global preference).** Determines the global default preference for influencing BSM's Service Health when both SiteScope events and metrics are reported to Service Health (since indicators for SiteScope events and metrics both affect CIs). This is relevant only when both BSM and Operations Manager integrations are active, and are connected to the same BSM server (the BSM server is used instead of the HPOM server).

If selected, the **Events** option is set as the default preference for every new monitor created in **HP Integration Settings > BSM Service Health Preferences > BSM Service Health affected by**. If not selected, **Metrics** is the default preference for reporting data to BSM. By default, this is not selected, which means metrics data influences Service Health.

Note: This setting does not override the preference already set for individual monitor instances in the monitor **Properties** tab > **HP Integration Settings > BSM Service Health Preferences > BSM Service Health affected by** box.

For more information on choosing the preference to use, see the section on integrating SiteScope with BSM in *Integration with BSM and HPOM Best Practices* in the SiteScope Help.

- **Enable node discovery policy.** SiteScope enables the node discovery policy (if installed) on the SiteScope server. This option is automatically selected when the **Connect directly to BSM** option is cleared. For details on Node discovery, see ["Discovery Scripts and Drilling Down User to View HPOM Events"](#) on page 13.
- **Enable exporting templates to HP Operations Manager.** Enables exporting all templates from SiteScope and importing them to HPOM as policies (only when SiteScope and HPOM are installed on the same system), which you can later on assign and deploy from HPOM. For details on the template integration with HPOM, see ["Centralized Template Management from HPOM"](#) on page 8.

10. **Enable default event severity mappings to be used - optional**

Severity mappings correlate the severity level in HPOM or BSM to the monitor threshold status in SiteScope. You can use the default severity mappings or customize the mapping between the Error, Warning, Good, and Unavailable status threshold for each monitor instance in SiteScope and the HPOM/BSM server in the **HP Operations Manager Integrations Advanced Settings** panel.

If **Use default severity** is selected, the default mappings are sent when:

- Events are created by a triggered alert.
- SiteScope is not connected to BSM.
- The indicator state and severity value is missing. For example, when using monitors that do not have a defined topology.

Note:

- This option is not available when SiteScope is connected to BSM (and the default global severity mappings cannot be sent).
- By default, the `Warning` state is mapped to `Minor` (not `Warning`).

Note: You can override the severity mapping at the monitor level by modifying the **Severity** attribute in Common Event Mappings. For details, see ["Configure event mappings for monitors and alerts - optional"](#) on next page.

11. **Enable/Disable sending events for monitor instances and alerts**

By default, each newly-created monitor instance is configured to send an event for each metric status change, and each new alert is configured to send an event when triggered. Monitors and alerts that are upgraded from earlier versions of SiteScope are not configured to send events.

- To disable sending events when there is a change of a metric status (Good/Warning/Error/Unavailable) for a monitor instance, in the monitor properties for the selected monitor instance, expand **HP Integration Settings > HP Operations Manager Integration Settings**, and clear the **Send events** check box. Status change is only applicable on metrics that are configured in the monitor's Threshold Setting.
- To disable sending events for an alert, in the New/Edit Alert dialog box, expand the **HP Operations Manager Integration Settings** panel, and clear the **Send events** check box.

Note: The **Send events** option is selected by default when event integration is enabled in the HP Operations Manager Integration Main Settings panel (otherwise this option is not available).

12. **Configure event mappings for monitors and alerts - optional**

Monitor instances and alerts are assigned a common event mapping that is used when an event is triggered. This is the mapping between SiteScope runtime data and the values of the attributes of the event that will be sent.

You can use the default event mapping associated with the monitor or alert, select a different event mapping (if any exist), or create a new event mapping in **Preferences > Common Event Mappings**. Alternatively, for alerts, you can use the event mapping template associated with the monitor that triggered the alert.

You can select the event mapping template:

- When configuring a monitor instance from the monitor **Properties** tab > **Event Mapping Settings**.
- When configuring alerts from the **Alerts** tab > **New/Edit Alert** > **HP Operations Manager Integration Settings** > **Event mapping**.

For details on configuring Common Event Mappings, see ["How to Configure Common Event Mappings for HPOM or BSM"](#) on page 30.

13. **Results**

After a monitor metric status change or an alert is triggered in SiteScope, the event is written to the integration log file in the format selected for the monitor instance or alert in Common Event Mappings.

The agent monitors the log file and creates an event, which it sends to HPOM or BSM. Events are displayed in the Event Console in HPOM, or in BSM in the Operations Management Event Browser (if you have an Event Management Foundation license). If Operations Management is not part of your BSM installation, you can view events that affect CI status using a health indicator in Service Health.

For notes and limitations on event integrations, see ["Notes and Limitations"](#) on page 39.

For troubleshooting event integration issues, see ["Troubleshooting Event Integration Issues"](#) on page 40.

How to Reconnect the HP Operations Agent to a Different HPOM or BSM Server

You can reconnect the HP Operations agent to a different HPOM management or BSM server by either:

- Uninstalling and reinstalling the HP Operations agent.
- Redirecting the HP Operations agent to a different server.

Note: This task is part of a higher-level task. For details, see ["How to Enable SiteScope to Send Events to HPOM or OMi" on page 15.](#)

To uninstall and reinstall the HP Operations agent:

1. In SiteScope, select **Preferences > Integration Preferences**, and delete the Operations Manager integration.
2. Open the SiteScope Configuration Tool (**Start > Programs > HP SiteScope > Configuration Tool**), select the **HP Operations Agent** option, and uninstall the HP Operations agent.
3. Open the SiteScope Configuration Tool, select the **HP Operations Agent** option, and install the HP Operations agent.
4. In SiteScope, configure the HP Operations Manager integration with the new HPOM/BSM server to which you want to connect. For details, see ["Configure the agent connection settings on the SiteScope server" on page 17.](#)

Note: After reconnecting to the HPOM server, it can take some time until events are sent to HPOM. Restarting the HPOM server, the HP Operations agent, or both, might fix it.

To redirect the HP Operations agent to a different server:

Note: If you are cloning a machine with an HP Operations agent which usually includes a host name and IP address change, start from step 1 below; otherwise start from step 4.

1. On the SiteScope server where the HP Operations agent is installed, run the following command to create a new core ID:

```
ovcoreid -create -force
```

2. To remove the certificates, run:

```
ovcert -list
```

For all IDs in the output, run the command:

```
ovcert -remove 'id'
```

3. Adapt the xpl configuration variable OPC_NODENAME by running the command:

```
ovconfchg -ns eaagt -set OPC_NODENAME 'hostname'
```

4. Set the new server host name and core ID by running the commands:

```
ovconfchg -ns sec.cm.client -set CERTIFICATE_SERVER <new OM server>
```

```
ovconfchg -ns sec.core.auth -set MANAGER <new OM server>
```

```
ovconfchg -ns sec.core.auth -set MANAGER_ID <new OM server  
ovcoreid>
```

```
ovconfchg -ns eaagt.lic.mgrs -set general_licmgr <new OM server>
```

```
ovconfchg -ns sec.cm.certificates -set CERT_INSTALLED FALSE
```

- Restart the HP Operations agent by running the commands:

```
ovc -kill  
ovc -start
```

- Create a new certificate request by running the command:

```
ovcert -certreq
```

- Grant a certificate request on the HPOM or BSM Gateway Server (in case of distributed BSM, grant certificate request on the Data Processing Server).

- In SiteScope, open the Operations Manager Integration dialog box and perform the following in the **HP Operations Manager Integration Main Settings** panel:

- Change the name or IP address of the HPOM/BSM server in the **HP Operations Manager / BSM server** box. For details, see ["Configure the agent connection settings on the SiteScope server"](#) on page 17.
- Install the log policies by clicking the **Install Policies** button.

Note: After reconnecting to the HPOM server, it can take some time until events are sent to HPOM. Restarting the HPOM server, the HP Operations agent, or both, might fix it.

How to Enable the Drill Down to SiteScope Tool on HPOM for Windows

This task describes how to enable the Drill Down to SiteScope tool on the HPOM for Windows management server. This tool enables you to open the SiteScope user interface from the monitor or group service that was discovered by the monitor discovery policy and added to the HPOM Service Navigator.

Note: This task is part of a higher-level task. For details, see ["How to Enable SiteScope to Send Events to HPOM or OMI"](#) on page 15.

1. Prerequisites

The Monitor Discovery policy must be enabled and deployed on the SiteScope Server node on HPOM.

For task details, see ["How to Enable the SiteScope Monitor Discovery Policy"](#) on page 27.

2. Install the Drill Down to SiteScope tool on the HPOM for Windows server

- Log on to the HPOM for Windows server machine as an Administrator.
- Copy the **drillDownToSiteScope.vbs** file from the **<SiteScope root>\tools\OMIntegration\DrillDownTool\ForOMW** folder to **\\<HPOM server>\SPI-Share\SiteScope**.
- Upload the Drill Down to SiteScope tool to the HPOM server:

- Copy the `tls_drillDownToSIS.mof` file from the `<SiteScope root>\tools\OMIntegration\DrillDownTool\ForOMW` folder to any folder on the HPOM server machine (`<tls path>`).
 - Open a command line and run the command:

```
>> ovpmutil cfg tls upl <tls path>\tls_drillDownToSIS.mof
```
 - d. The Drill Down to SiteScope tool is available on the HPOM server under **Tools > SiteScope Tools**.
3. **Associate the tool with the SiteScope Service**
 - a. In the HPOM for Windows console, open the Service Type Configuration Editor, select **Application Services > SiteScope**, and click **Properties**.
 - b. In the SiteScope Properties dialog box, click the **Tools** tab, select **SiteScope Tools**, and then click **OK**.
 4. **Launch the tool (from the SiteScope service)**
 - a. In the HPOM for Windows console, right-click the SiteScope service that you want to view (SiteScope monitor, group, or server service), and select **All Tasks > Launch Tool**.
 - b. Select the **Drill Down to SiteScope** tool, and click **Launch**.
 - c. The SiteScope user interface opens displaying the selected monitor, group, or the default Dashboard view (if SiteScope Server service was selected).
 5. **Launch the tool (from the Tools repository)**
 - a. In the HPOM for Windows console, expand **Tools > SiteScope Tools**. In the right pane, right-click the **Drill Down to SiteScope** tool and select **All Tasks > Launch Tool**.
 - b. In the Edit Parameters dialog box, select the monitor, group, or SiteScope Server service that you want to view, and click **Launch**.
 - c. The SiteScope user interface opens displaying the selected monitor, group, or default Dashboard view (if SiteScope Server service was selected).

How to Enable the Drill Down to SiteScope Tool on HPOM for UNIX/Linux/Solaris

This task describes how to enable the Drill Down to SiteScope tools on the HPOM for UNIX/Linux/Solaris management server. This tool enables you to open the SiteScope user interface from events or from the monitor or group service that was discovered by the monitor discovery policy and added to the HPOM Service Navigator.

Note: This task is part of a higher-level task. For details, see ["How to Enable SiteScope to Send Events to HPOM or OMi" on page 15](#).

1. Prerequisites

The Monitor Discovery policy must be enabled and deployed on the SiteScope Server node on HPOM.

For task details, see "How to Enable the SiteScope Monitor Discovery Policy" on next page.

2. Install the Drill Down to SiteScope tools on the HPOM for UNIX/Linux/Solaris server

a. Log on to the HPOM for UNIX/Linux/Solaris server machine as an Administrator.

b. Open a command shell and create a new directory by typing:

```
# mkdir -p /opt/OV/newconfig/SiteScope
```

c. Change to the SiteScope directory by typing:

```
cd /opt/OV/newconfig/SiteScope
```

d. Copy the **DrillDownToSIS.tar** file from the **<SiteScope root>\tools\OMIntegration\DrillDownTool\ForOMX** folder to **/opt/OV/newconfig/SiteScope** on the HPOM server machine.

e. Extract the .tar file to the current directory by typing:

```
# cd /opt/OV/newconfig/SiteScope
```

```
# tar -xvf DrillDownToSIS.tar
```

f. Upload the Drill Down to SiteScope tools to the HPOM server by typing:

```
# cd /opt/OV/bin/OpC/
```

```
# opccfgupld -replace -subentity /opt/OV/newconfig/SiteScope/  
DrillDownToSIS
```

g. The Drill Down to SiteScope tools are available on the HPOM Administrator user interface under **Browse > All Tool Groups**.

h. Assign **Drill Down to SiteScope tools** to the **opc_adm** user.

- o Click **Action > Assign to User/Profile...**

- o Select **All Users > opc_adm** and click **OK**.

i. Update the HPOM user interface by selecting **File > Reload Configuration**.

j. The Drill Down to SiteScope tools are available on the HPOM server under **Tools > Drill Down to SiteScope tools**.

3. Launch the tool (from the SiteScope service)

a. In the HPOM Administrator user interface, right-click the SiteScope service (server, group, or monitor), select **Start > Tools > Drill Down to SiteScope tools > Drill Down to SiteScope service**, and select the tool according to the service type selected.

b. The SiteScope user interface opens displaying the selected monitor, group, or default SiteScope Dashboard view.

4. Launch the tool (from an event)

a. In the HPOM Administrator user interface, right-click an event and select **Start > Drill Down to SiteScope tools > Drill Down to SiteScope event**.

b. The SiteScope user interface opens displaying the selected monitor that send the event.

How to Enable the SiteScope Monitor Discovery Policy

This task describes how to enhance the SiteScope integration with HPOM by enabling HPOM Service Navigator to view SiteScope groups and monitors in HPOM service maps.

Note:

- This task is part of a higher-level task. For details, see "How to Enable SiteScope to Send Events to HPOM or OMi" on page 15.
- HPOM 9.0 for Windows 64-bit consoles support the services tree view with patch OMW_00132 or later.

1. Copy policy files to the instrumentation folder

On the SiteScope server:

- For Windows: Copy the **discoverSiteScope.bat** file from the **<SiteScope root directory>\integrations\om\bin** folder to the **%OvDataDir%\bin\instrumentation** folder.
- For Linux, UNIX, Solaris: Copy all files from **/opt/HP/SiteScope/integrations/om/bin/*** to the **/var/opt/OV/bin/instrumentation** folder.

Note: All relevant policy files can be found in the **<SiteScope root directory>\tools\OMIntegration\SiteScopeMonitorDiscoveryPolicy\SiS_Discovery_policy_3.0** folder.

2. Upload the policy to the HPOM server (for HPOM for Windows servers)

Prerequisites:

- HPOM for Windows 8.16 (or an equivalent patched 8.10 server) or 9.10, and sufficient user rights (typically, Administrator).
- All uploads are performed using the HPOM for Windows command line tool **ovpmutil** which is normally in the environment path.

To upload the policy to the HPOM server:

- a. Open a command prompt, and navigate to the folder where the SiteScope Discovery 3.0 server components are located. For example, **C:\temp\SiS_Discovery_3.0**:

```
cd C:\temp\SiS_Discovery_3.0\ForServer
```

- b. Upload the Service Model using **ovpmutil**:

```
ovpmutil cfg svt upl .\DiscoverSiteScope.mof
```

The Service Model is displayed in the HPOM Service Type Configuration Editor (under **Application Services > SiteScope**).

- c. Upload the SiteScope monitor discovery policy using **ovpmutil** and the provided index file:

```
ovpoutil cfg pol upl .\PolicyConfig_77BFF2F6-38BD-45B3-BEA9-  
E237C55F7877.xml
```

The policy is now available in the HPOM server policy repository under **Policy management > Policy groups**.

3. Upload the policy to the HPOM server (for HPOM for Linux, UNIX, Solaris 9.x servers)

- a. Upload the HPOM Service Model to the HPOM management server. Open a command shell and type:

```
/opt/OV/bin/OpC/Utils/mof_cfgupld.sh /opt/HP/SiteScope/tools/  
SiS_Discovery_policy_3.0/ForServer/DiscoverSiteScope.mof  
OMIntegration/SiteScopeMonitorDiscoveryPolicy/\
```

(The .mof file is located in the **<SiteScope>/tools/OMIntegration/SiteScopeMonitorDiscoveryPolicy/SiS_Discovery_policy_3.0/ForServer** folder.)

- b. Upload the policies by typing in a command shell:

```
/opt/OV/bin/OpC/Utils/opcpolicy -upload dir=/opt/HP/SiteScope/  
tools/OMIntegration/SiteScopeMonitorDiscoveryPolicy/  
SiS_Discovery_policy_3.0/ForServer
```

- c. Assign the policies to the node, and deploy to the SiteScope node by typing in a command shell:

```
# /opt/OV/bin/OpC/Utils/opcnode -assign_pol node_name=<NODENAME>  
net_type=NETWORK_IP pol_name= "SiteScope Discovery" pol_  
type=svcdisc
```

4. Set the Schedule Interval

You can set the schedule interval for running the SiteScope monitor discovery policy on the HPOM agent in the HPOM for Windows console.

- a. Select **Policy management > Policy groups > SiteScope Discovery**. In the right pane, right-click **SiteScope Discovery** and select **All Tasks > Edit**.
- b. In the Service Auto-Discovery policy editor, select the **Schedule** tab and specify an interval for running the SiteScope monitor discovery policy on the HPOM agent in the HPOM for Windows console.

5. Deploy the policy

Prerequisites:

- The HP Operations agent is running and connected (for details, see ["How to Enable SiteScope to Send Events to HPOM or OMi" on page 15](#)).
- The SiteScope server to be integrated is set up as an HPOM managed node, and a certificate has been granted. For details, see ["Accept the agent connection request on the HPOM management server or BSM Gateway/Web Processing server" on page 18](#).
- The SiteScope monitor discovery policy has been uploaded to the **SiteScope Discovery**

policy group (for details, see ["Upload the policy to the HPOM server \(for HPOM for Windows servers\)"](#) on page 27 or ["Upload the policy to the HPOM server \(for HPOM for Linux, UNIX, Solaris 9.x servers\)"](#) on previous page).

To deploy the policy for HPOM for Linux, UNIX, Solaris 9.x servers:

Open a command shell and type: `# opcragt -dist <NODENAME>`

To deploy the policy for HPOM for Windows servers:

- a. Right-click the **SiteScope Discovery** policy and select **All Tasks > Deploy on**.
- b. In the Deploy Policies on dialog box, select the SiteScope Server OM node from the available managed nodes, and click **OK**. The deployment status is displayed in **Deployment jobs** in the OM Console.
- c. To view the policy inventory of the node, right-click the SiteScope Server OM node under **Nodes**, and select **View > Policy Inventory**.
- d. The policy inventory is displayed in the right pane, showing all policies deployed to the node.

6. Manually run the Monitor Discovery policy - optional

For testing or debugging purposes, it is useful to run the discovery manually. This can be done using the **ovagtrep** command line tool on the SiteScope server HPOM agent node where the policy is running.

To do so, run the following commands:

- a. To force execution of the policy, run the command:

```
ovagtrep -run "SiteScope Discovery"
```

- b. To force submittal to server, run the command:

```
ovagtrep -publish
```

- c. For troubleshooting, use the **System.txt** file in the **%OvDataDir%\log** folder.

7. Drill down to the SiteScope user interface from HPOM - optional

You can also use the Drill Down to SiteScope tool to enable opening the SiteScope user interface from the monitor or group service that was discovered by the monitor discovery policy and added to the HPOM Service Navigator.

For details on enabling the tool for HPOM for Windows, see ["How to Enable the Drill Down to SiteScope Tool on HPOM for Windows"](#) on page 24.

For details on enabling the tool for HPOM for UNIX/Linux/Solaris, see ["How to Enable the Drill Down to SiteScope Tool on HPOM for UNIX/Linux/Solaris"](#) on page 25.

8. Troubleshooting

For troubleshooting, you can check the following files:

- **System.txt** file in the **<SiteScope Server>%OvDataDir%\log** folder (for Linux: **<SiteScope Server>/var/opt/OV/log**).
- **agtrep.xml** file in **<SiteScope Server>%OvDataDir%\datafiles** folder (for Linux: **<SiteScope Server>/var/opt/OV/datafile**) to see the discovered instances the agent

knows about.

- **<HPOM Server>\%OvShareDir%\server\log\OvSvcDiscServer.log** to see what the HPOM server receives.

How to Configure Common Event Mappings for HPOM or BSM

This task describes how to use Common Event Mappings to configure event mappings for monitors and alerts. This is the mapping between SiteScope runtime data and the values of event attributes that will be sent.

1. Prerequisites

- To create or make changes to event mappings, you must be a SiteScope administrator user, or a user granted **Add, edit or delete common event mappings** permissions. For details on user permissions, see the section on user management preferences in the Using SiteScope Guide in the SiteScope Help.
- To select an event mapping when configuring an alert or a monitor instance:
 - The HP Operations agent must be installed and connected to an HPOM or BSM server. For details, see "[Install the HP Operations agent on the SiteScope server](#)" on page 15.
 - Event integration must be enabled in the HP Operations Manager Integration dialog box (In **Preferences > Integration Preferences > HP Operations Manager Integration**. For details, see "[Enable SiteScope to send events to HPOM or OMi](#)" on page 20.

2. Configure the alerts or monitor instances

You configure the alerts or monitor instances that, where triggered, create the relevant events in the event system.

For task details, see the alerts or monitors section in the Using SiteScope Guide in the SiteScope Help.



3. Configure the event mappings for an alert or monitor instance

You configure an event mapping to map an alert or monitor instance to the corresponding event attributes. You can create several mappings for each type of alert or monitor.

- You configure alerts from the **Alerts** tab > **New/Edit Alert > HP Operations Manager Integration Settings > Event mapping**.
- You configure a monitor instance from monitor **Properties** tab > **Event Mapping Settings**.

For each alert or monitor instance, you can use the default event mapping associated with the monitor or alert, select a different event mapping (if any exist), or create a new event mapping in Common Event Mappings. Alternatively, for alerts, you can use the event mapping template associated with the monitor that triggered the alert.

To create or edit a mapping:

- a. In the New/Edit Event Mappings dialog box, click the **New Event Mapping**  button, or select an existing event and click the **Edit Event Mapping**  button.

- b. In the Main Settings panel, enter a name to identify the common event and a description.
- c. In the **Common Event Model Settings - General** tab, you can use the default settings, or edit them as necessary. For details, see ["Common Event Model Settings - General Tab" on page 46](#).
- d. Use the **Common Event Model Settings - Custom Attributes** tab to add attributes which provide additional information about the event that is not provided in any of the other common event attributes. A custom attribute consists of a key and a value (both are strings). The value can be any string and is used by the common event mapping as any other value. For details, see ["Common Event Model Settings - Custom Attributes Tab" on page 49](#).

4. Results

You can view the events corresponding to the triggered alerts or changes in a monitor's metric status in the Event Console in HPOM, or in Operations Management in BSM (if you have an Event Management Foundation license).

If Operations Management is not part of your BSM installation, you can view events that affect CI status using a health indicator in Service Health.

For troubleshooting relating to the HP Operations agent installation, event integration setup, sending events, and with node and monitor discovery, see ["Troubleshooting Event Integration Issues" on page 40](#).

SiteScope Alert Template and Event Properties Directory

The following common properties can be found or used in SiteScope alert templates, common event mapping attributes, and in email reports.

This section includes:

- ["Alert Template and Event Properties" below](#)
- ["Email Report Properties" on page 38](#)

Alert Template and Event Properties

The following is a list of the common properties found in SiteScope alert templates and attributes used in common event mappings.

Available Properties	Description / Example	Included in Templates
<_customPropertiesValues>		
<_eventCategory>		NTEventlog
<_httpPort>		NTEventlog

Available Properties	Description / Example	Included in Templates
<_webserverAddress>		NTEventlog
<alert>		XMLMail
<alertHelpURL>	URL of the SiteScope help including the alert topic	NoDetails Traceroute WithDiagnostic
<alert::name>	The name of the alert	
<alert::id>	The alert ID	
<alert::description>	Text description for the alert definition	
<alert::disableDescription>	Description of the purpose of the disable operation	
<alert::actionID>	The ID for the alert action	
<alert::actionName>	The name of the alert action	
<all>	All of the properties of the monitor	
<allThresholds>	Returns all the thresholds in the monitor in the email alert	
<automaticSeverityMapping>		
<bacMonitorID>	The monitor's BSM ID	
<bacSessionID>	The BSM profileID	
<category>	The monitor category	Typical
<_classifier>	Returns the first threshold in the monitor in the email alert	
<currentTime>	The time that the alert is run	
<diagnostic>		XMLMail
<diagnosticText>		Default User NoDetails WithDiagnostic
<diagnosticTraceRoute>		Traceroute WithDiagnostic
<errorCounterOnly>	List of the monitor counters in error status (returns counter name only)	

Available Properties	Description / Example	Included in Templates
<errorOnly>	List of the monitor counters in error status (returns counter name and counter value)	Typical
<etiType>		
<etiValue>		
<eventID>		NTEventlog
<eventMachine>		NTEventlog
<eventSource>		NTEventlog
<eventType>		NTEventlog
<firstgroupdescription>		
<fullMonitorName>		
<FullGroupId>	Full path from the SiteScope root directory to the group, exclude\SiteScope	
<goodCounterOnly>	List of the monitor counters in good status (returns counter name only)	Typical
<goodOnly>	List of the monitor counters in good status	Typical
<group>	Name of the group that the monitor is in	AllErrors Default Default User Ir-Default_mail_template NoDetails NTEventlogt PagerMail ShortMail Traceroute Typical WithDiagnostic XMLMail
<group>.propertyname	Property of the group that the monitor is in	
<group>.<parent>.	Property of the parent group of the group that	

Available Properties	Description / Example	Included in Templates
propertyname	the monitor is in	
<groupdescription>	Group description	
<groupID>	ID of the group	Default Typical WithDiagnostic XMLMail
<id>		XMLMail
<mainParameters>	List of the main monitor properties that are set as parameter	Default Default User NTEventlog WithDiagnostic
<mainStateProperties>	List of main monitor properties that are set as state properties. These are the result statistics that are shown on the Reports.	Default Default User NTEventlog WithDiagnostic
<metric>		
<metricValue>		
<monitorDrilldownURL>	Creates a hyperlink in the event to the monitor URL.	
<monitor>		XMLMail
<monitorName>		
<monitorServiceId>	Enables customizing the service name that is sent from SiteScope events to HPOM by entering the value of the monitor service ID. This is useful for relating the SiteScope monitor with the HPOM Service Name.	
<monitorType>		
<name>	Name of the monitor (same as <code>_name</code>)	Default Default User Ir-Default_ mail_

Available Properties	Description / Example	Included in Templates
		template NoDetails NTEventlog PagerMail ShortestMail ShortMail ShortSubject Traceroute Typical WithDiagnostic XMLMail
<newSiteScopeURL>	URL of the SiteScope server	Default Typical
<newStatus>	Current status of the metric	
<oldStatus>	Previous status of the metric	
<processtext>		
<remoteMachineName>	Name of the remote server machine	
<sample>	Sample #	AllErrors Default Default User NoDetails NTEventlog PagerMail ShortMail Traceroute Typical Typical.mail WithDiagnostic XMLMail

Available Properties	Description / Example	Included in Templates
<secondaryParameters>	Lists the main state properties and other internal properties	
<secondaryStateProperties>	Lists the main state properties and other internal properties	
<server>		XMLMail
<sitescope>		XMLMail
<sitescopeURL>	The URL to the main page of SiteScope for admin access	AllErrors Default User NoDetails Traceroute WithDiagnostic
<sitescopeuserurl>	The URL to the main page of SiteScope for user access	
<state>	Status string reported by the monitor (same as stateString)	AllErrors Default Default User Ir-Default_mail_template NoDetails PagerMail ShortestMail ShortMail ShortSubject Traceroute Typical WithDiagnostic XMLMail
<tag>	Tags of the monitor (if exists)	Default Default User Ir-Default_

Available Properties	Description / Example	Included in Templates
		mail_ template NoDetails NTEventlog PagerMail ShortestMail ShortMail ShortSubject Traceroute Typical WithDiagnostic XMLMail
<tag:[tagName]>	Displays the value or values of the Search/Filter tag with the [tagName] assigned to the monitor that triggered the alert. Example: You have a tag named <code>AppServer</code> with value <code>Apache</code> assigned to a monitor, and you include <tag:AppServer> in the alert template configured for that monitor. If an alert is triggered, the new property is replaced with <code>Apache</code> in the alert text.	
<targetHost>	Name of the target host	
<templateDeployPath>	Displays the path of the template group from which the monitor was deployed.	
<thresholdCrossed>		
<time>	Time that the monitor completed the last run	AllErrors Default Default User Ir-Default_ mail_ template NoDetails NTEventlog Traceroute

Available Properties	Description / Example	Included in Templates
		Typical WithDiagnostic XMLMail
<time-date>	The date portion of the time that the monitor completed	
<time-time>	The time portion of the time that the monitor completed	
<warningCounterOnly>	List of the monitor counters in warning status (returns counter name only)	
<warningOnly>	List of the monitor counters in warning status (returns counter name and counter value)	Typical

Email Report Properties

The following properties are applicable to the email templates stored in the <SiteScope>\templates.history directory:

Available Properties	Description
_httpPort	Port number used to access SiteScope
_webserverAddress	IP address for the SiteScope Server
basicAlertSummary	Basic information on what alerts have been triggered
detailAlert Summary	More detailed information on alerts
reportIndexURL	URL to the index page for the management report
reportPeriod	Time period for this report
reportURL	URL to the HTML version of the management report
summary	Summary and measurement information
textReportURL	URL to the comma-delimited file generated by SiteScope
userReportIndexURL	URL to the index page for a user-accessible report
userTextReportURL	URL to the comma-delimited file generated by a user-accessible report
userXMLReportURL	URL to the XML file generated by a user-accessible report
xmlReportURL	URL to the XML file generated by the management report

Troubleshooting and Limitations

This section contains notes and limitations, and provides troubleshooting when using the Operations Manager integration to send events directly to the HPOM management server or to Operations Management in BSM.

Notes and Limitations

- Upgrades for earlier SiteScope-HPOM event integration (pre-SiteScope 11.00) are not supported.
- While SiteScope 10.x versions support HPOM event integration, events generated in SiteScope versions earlier than 11.00 do not affect Service Health and Service Level Management in BSM 9.0x.
- If SiteScope is installed on the same machine as HPOM, when uninstalling SiteScope you should clear the option to uninstall the HP Operations agent.
- Sending events to HPOM using the HP Operations agent is available only when connected to BSM 9.00 or later. Although the earlier HPOM integration solution of installing the HP SiteScope Adaptor on the HPOM management server is supported in earlier versions of SiteScope, it is not supported with SiteScope 11.00 or later and should be uninstalled. You should therefore upgrade to the implementation using the HP Operations agent.
- If you are having problems activating node discovery or deploying the monitor discovery policy, verify that the SiteScope node system properties are discovered correctly, and fix them if necessary. In the Node Properties dialog box, select the **System** tab and make sure the settings matches you SiteScope node system settings.
- If you are using HP Operations Manager for Windows 9, patch OMW_00097/98 or later (32-bit/64-bit) is required to support the Node discovery feature without overriding SiteScope node properties.
- If you currently use HPOM with SiteScope and you plan to upgrade HPOM to BSM, you must connect SiteScope directly to BSM to perform the upgrade. This also enables SiteScope to report the topology to BSM. For details on connecting SiteScope to BSM, see section on working with BSM in the Using SiteScope Guide in the SiteScope Help..
- When SiteScope sends an event in which a monitor metric value does not match any of the thresholds, the indicator severity **Normal** is sent to the HPOM management/BSM Gateway Server.
- When SiteScope is connected to BSM, after a monitor is created on a new host, the event is sent to Operations Management without the value of the related CI (the event is triggered before topology is reported to BSM). To avoid waiting for the next event to be sent, select the **Manually send first event** check box in the monitor's **HP Integration Settings > HP Operations Manager Integration Settings**. This action can be performed globally using Global Search and Replace.
- If there are no ETIs from SiteScope in the Operations Management Event Browser, make sure when configuring event integration that the **BSM Service Health affected by** setting in **HP Integration Settings > BSM Service Health Preferences** is set to **Events**. If **Metrics** is

selected, status change events reported by SiteScope do not have any influence on CIs in Service Health or Operations Management.

- Events are not closed (relevant to HPOM and BSM) and the indicator status is not cleared (relevant to BSM) if SiteScope stops monitoring in the following instances:
 - The related SiteScope monitor skipped or was disabled/suspended (permanently or by the scheduler)
 - The related SiteScope monitor was deleted
 - SiteScope stops reporting to BSM (for example, if it is disconnected)
- To exclude indicators of disabled monitors from Service Health, Service Level Management, or both, it is recommended to use Downtime Management in BSM 9.0x or later. For details, see the section on downtime management in the BSM Platform Administration Guide in the BSM Help.
- For additional troubleshooting relating to the HP Operations agent installation, event integration setup, sending events, and with node and monitor discovery, see "[Troubleshooting Event Integration Issues](#)" below.

Troubleshooting Event Integration Issues

This section includes:

- "[Installation Problems](#)" below
- "[Integration Setup Problems](#)" on next page
- "[Problems Sending Events](#)" on page 43
- "[Node Discovery and Monitor Discovery Troubleshooting](#)" on page 45

Tip: When referring to the integration log file, you can open it from the SiteScope user interface (**Server Statistics > Log files > HPSSiteScopeOperationsManagerIntegration.log**).

Installation Problems

Symptom:

An error occurred while running the HP Operations agent installation in the SiteScope Configuration Wizard during SiteScope installation.

Troubleshooting:

1. Open the agent installation log, **opc_inst.log**, in the **c:\Windows\Temp**, **/var/tmp** (Solaris) or **/tmp** (Linux) folder, and delete **opc_inst.lock**.
2. Refer to the SiteScope documentation to make sure your operating system is supported for HP Operations agent installation.
3. Run the SiteScope Configuration Tool, and install the HP Operations agent again (it is also recommended to restart the server).
4. Run the SiteScope Configuration Tool, and uninstall the HP Operations agent and then install it

again (it is also recommended to restart the server).

5. Manually reinstall the HP Operations agent (it is also recommended to restart the server).

On Windows:

- a. Uninstall the agent from **C:\Program Files\HP\HP BTO Software\bin\OpC\install**.
- b. Run the command: `cscript opc_inst.vbs -remove -force`
- c. From the Control Panel, uninstall the HP Operations Integration Adapter Policy Activation package.
- d. Reinstall the agent from: **<SiteScope root directory>\install\components\oa\<Operating System>**
- e. Run the command: `cscript opc_inst.vbs`
- f. Install **<SiteScope root directory>\install\components\oa_policy_signing_tool**

On UNIX:

- a. Run the command:
`/opt/HP/SiteScope/install/components/oa/<operating_system>/opc_inst -remove`

where `<operating_system>` is either `solaris`, `linux`, or `linux64`.

- b. Run the command:
`/opt/HP/SiteScope/install/components/oa/<operating_system>/opc_inst`

- c. For Solaris:

Run the command: `/opt/HP/SiteScope/install/components/oa_policy_signing_tool/
solaris pkgadd -a HPOprIAPA.admin -d HPOprIAPA-09.00.<version>-
SunOS5.10-release.sparc`

For Linux:

Run the command: `/opt/HP/SiteScope/install/components/oa_policy_signing_tool/
rpm -i HPOprIAPA-09.00.<version>-Linux2.6-release.rpm`

6. Put a new clean image on the system and install SiteScope and the HP Operations agent again.
7. Contact your HPOM administrator for assistance.

Integration Setup Problems

Symptom:

Any problem that occurs while trying to configure the HP Operations Manager Integration (between connecting the agent to the HPOM/BSM server and sending a test message).

Troubleshooting:

1. In SiteScope, open the HP Operations Manager Integration dialog box panel (**Preferences > Integration Preferences > HP Operations Manager Integration**).
2. In the HP Operations Manager Integration Main Settings pane, check the **HP Operations agent installation path**.
 - a. Click the **Resolve Path** button.
 - b. Make sure the agent is installed on the path you see in this field.
 - If the agent is installed on a different path, update the path accordingly.
 - If you do not see the path is resolved (probably the agent is not installed properly), try restarting the server machine. If it does not help, follow the troubleshooting in "[Installation Problems](#)" on page 40.
 - c. Make sure your HPOM management server or BSM Gateway host name is typed correctly in the host field.
3. Click the **Analyze** button.
 - a. If the command outputs are empty, there is a problem with the agent installation. Follow the troubleshooting in "[Installation Problems](#)" on page 40.
 - b. Check that the `bbcutil` command output returns **status=eServiceOK**. If it does not, there is a connectivity problem to your HPOM management server and you should contact your HPOM administrator for assistance.
 - c. Check the `opcagt -status` command output. You should see a few processes running (some can be in Aborted state—this is fine at this stage). If they are not running, manually start the agent by running command line: `opcagt -start`, or restart your server machine.
4. Make sure your HPOM management server is up and running.
5. If you are working with BSM, check your Gateway and Data Processing Server. Run command line `ovc -status`. Make sure all processes are running (in particular, the "Certificate Broker") if they do not start with `ovc -start`.
6. If you are working with a distributed BSM environment (in BSM 9.00 or later), follow the procedures for initiating trust between your Gateway and Data Processing Server, and forwarding the certificate request from the Gateway to the Data Processing Server. For details, see "[How to Enable SiteScope to Send Events to HPOM or OMi](#)" on page 15.
7. Click the **Connect** button, and make sure the command output returns: `opcactivate Info: Successfully activated OVO agent`.

If it does not, contact your HPOM administrator for assistance.
8. Accept the certificate request.
 - When connecting to a BSM server, follow the step for accepting the agent connection request in "[How to Enable SiteScope to Send Events to HPOM or OMi](#)" on page 15.
 - When connecting to an HPOM management server, consult your HPOM administrator. If you do not see the certificate request, contact your HPOM administrator.
9. Click the **Analyze** button.

- a. Make sure the `ovcert -check` is ok, and it ends with "Check Succeeded".
 - b. Make sure `ovcert -list` lists some certificates.
 - c. If there are problems with the command outputs:
 - o Contact your HPOM administrator, or
 - o Start the integration process troubleshooting from the connect phase, or even reinstall the agent.
10. Click the **Install Policies** button.
- a. If you get an error here or this process is stuck with "please wait" and:
 - o You recently reinstalled the agent and did not restart yet, restart your server.
 - o Otherwise, there is a problem with the agent (and the additional policy activation tool package) installation. Reinstall on a clean image.
 - b. Click the **Analyze** button, or check the output of the Install Policies for the list of policies. Make sure you see the following list with all enabled:
 - o HP_SiteScope_to_Operations_Manager_Integration_by_Log_File
 - o HP_SiteScope_to_Operations_Manager_Integration
 - o SiteScope_Hosts_Discovery
11. In the **Test Message** box, type a message and click **Send test message**.
- a. Check your HPOM Event Console or Operations Management Event Browser.
 - b. If you do not see the message in the Event Console/Browser:
 - o Run command line: `opcmsg a=a o=o msg_t=xxx`
 - o If the command is not available, something went wrong with the process so far (either the certificate or the policies does not work). Try to install the policies again, and if the same problem occurs contact HP Software Support.
 - o If the command is executed but you still do not see the message in the Event Console, contact your HPOM administrator for support.

Problems Sending Events

Symptom 1:

Sending a test event from the HP Operations Manager Integration dialog box does not reach the HPOM Event Console/Operations Management Event Browser.

Troubleshooting:

1. In the HP Operations Manager Integration dialog box, enter a test message in the **Test message** box, and click **Send test message**. If the test message is not displayed in the Event Console, follow all the steps in "[Integration Setup Problems](#)" on page 41, and then try again.
2. Click the **Analyze** button, and make sure all commands are successful (in particular, see the list of policies installed). For details, see "[Integration Setup Problems](#)" on page 41.

3. Click the **Send Test Event** button.
4. In the **<SiteScope root directory>\logs** directory, check the events log file, **HPSiteScopeOperationsManagerIntegration.log**. Verify the event entry in the log file. If you do not see it, contact HP Software Support.
5. If you still do not see the event in the HPOM Event Console/Operations Management Event Browser, check you are viewing the correct node in HPOM, or are not filtering out anything in the Operations Management Event Browser. If you still do not see the event, contact HP Software Support.
6. Open the **<SiteScope root directory>\tools\OMIntegration\Policies\F516CEC3-3AD4-4627-9CFD-BB155B894349_data** file, and check that the path specified for **HPSiteScopeOperationsManagerIntegration.log** is correct (it might use an environment variable). If you make any changes here, you must install the policies again.

Symptom 2:

The metric status change or alert event is not displayed in the HPOM Event Console/Operations Management Event Browser.

Troubleshooting:

1. Check if the test event is displayed in the Event Console/Browser. If it is not displayed, follow the guidelines for Symptom 1 in "[Problems Sending Events](#)" on previous page above.
2. Check that event integration is enabled in the monitor or alert configuration settings. Change the monitor metric status, or trigger an alert. In the **<SiteScope root directory>\logs** directory, check the events log file, **HPSiteScopeOperationsManagerIntegration.log**.
3. If you do not see the event entry in the log file, check you enabled event integration correctly in the monitor or alert you are running (for details, see "[How to Enable SiteScope to Send Events to HPOM or OMi](#)" on page 15). If it is still not in the log file, contact HP Software Support.
4. If you see the event entry in the log file, but not in the Event Console/Browser:
 - a. Check that no filter is set in the Event Browser.
 - b. If it is a newly-created monitor, and you are filtering the related CI in Operations Management, it is possible that the CI topology is not reported yet. Try again in a few minutes.
 - c. In HPOM legacy, make sure the event target node exists on your console.
 - d. Contact HP Software Support.

Symptom 3:

You see the metric or alert event in the Operations Management Event Browser, but it has no related CI or HI, or Indicator state or severity.

Troubleshooting:

1. Check the event attribute values in the **HPSiteScopeOperationsManagerIntegration.log** file located in the **<SiteScope root directory>\logs** directory. Look for the HI (ETI) and CI hint. They should look like this: **CPUload:High:80** and **SiteScope:3:123456** respectively.

- a. To know the attribute order in this tab separated values line, you can send a test event before this event and compare the lines. The test event writes the name of each attribute in its order.
 - b. If the CI Hint or HI hint are unknown, empty, or look different than the example, there is a problem with the SiteScope configuration.
 - Check that the SiteScope is registered to BSM.
 - Check that the monitor thresholds have indicator states assigned to them, or that your alert has some ETI and ETI state set.
 - Check the preference setting for reporting SiteScope data in the monitor configuration is set to **Events** (in **HP Integration Settings > BSM Service Health Preferences**).
2. If everything looks fine in the log file in SiteScope, open the event in the Operations Management Event Browser.
- a. In the **General** tab, check the **related CI** attribute. If you do not see the related CI, select the **Resolver** tab and check the **Status** field.
 - Check if there is information about the CI resolution failure.
 - Check that the monitor topology is available in the BSM (you can check this in the System Hardware or System Monitors views).

Note: If this is a newly-created monitor, it will take few minutes for the topology to arrive and the event to be assigned with a related CI.

- b. In the **General** tab, if you see the **related CI** but **Event Type Indicator** is empty:
 - Select the **Resolver** tab and check the ETI Hint attribute value sent by SiteScope. If it is empty or unknown, check your SiteScope configuration.
 - If the value exists but does not show up in **Event Type Indicator** in the General tab, there was a problem when applying the indicator to the CI. Check Service Health or Operations Management for support.

Node Discovery and Monitor Discovery Troubleshooting

Node Discovery:

- If you are using HP Operations Manager for Windows 8.1x, patch OMW_00071 is required to support the Node discovery feature in SiteScope-HPOM event integration.
- If you are using HP Operations Manager for Windows 9, patch OMW_00097/98 or later (32-bit/64-bit) is required to support the Node discovery feature without overriding SiteScope node properties.
- If you are using HP Operations Manager for Solaris/HP-UX/Linux 9.10, patch 9.10.200 is required to support the Node discovery feature in SiteScope-HPOM event integration.

Problems with Node discovery:

1. Click the **Analyze** button in the HP Operations Manager Integration dialog box. Make sure you see the **SiteScope_Hosts_Discovery policy** installed and enabled.

2. Check that your event configuration is set. Send a test event and make sure you see it in the HPOM Event Console on the SiteScope node.

New nodes are reported within 5 minutes from the time they started to being monitored by SiteScope monitors.

The discovery policy runs SiteScope scripts that generate XML consumed by the policy. Each run is logged in the following log: `%OvDataDir%\log\System.txt` (for Linux `<SiteScope Server>/var/opt/OV/log`).

3. You can invoke the process manually, by running the following commands:

```
ovagtrep -run "SiteScope_Hosts_Discovery"ovagtrep -publish
```

Monitor Discovery:

To enable HPOM Service Navigator to view SiteScope groups and monitors in HPOM service maps, follow the configuration instructions in "How to Enable the SiteScope Monitor Discovery Policy" on page 27.

Common Event Mappings User interface

The New/Edit Event Mappings dialog box enables you to create new common event mappings or edit existing mappings. These are mappings between SiteScope runtime data and the attribute values that are used for sending events. Common event mappings are used when configuring the Operations Manager event integration and the Generic Event integration.

Common Event Model Settings - General Tab

User interface elements are described below

UI Element	Description
General	
Title	<p>Descriptive text describing the occurrence represented by the event. This should include information about what threshold has been crossed (or other trigger conditions), and the current values.</p> <p>Default value:</p> <ul style="list-style-type: none"> • For status change metrics: Metric '<<metric>>' changed status from '<<oldStatus>>' to '<<newStatus>>' • For alerts: Alert '<<alertName>>' was fired on monitor '<<fullMonitorName>>' status change <p>Tip: Since the text is typically shown within a single line in the event browser, it is recommended to put the most relevant information at the beginning.</p>
Description	<p>Additional information describing the event.</p> <p>Default value:</p>



UI Element	Description
	<ul style="list-style-type: none"> For status change metrics: Metric '<<metric>>' crossed '<<thresholdCrossed>>' with value '<<metricValue>>' For alerts: Monitor '<<fullMonitorName>>' changed status from '<<oldStatus>>' to '<<newStatus>>'
Severity	<p>Severity of the occurrence related to the event. The severity level can be Unknown, Normal, Warning, Minor, Major, or Critical.</p> <p>Default value: <<severity>>. The <<severity>> attribute is replaced by the severity in the Indicator State and Severity field in the Threshold Settings for the selected monitor metric.</p>
Category	<p>Value used for organizing or grouping events by monitor type.</p> <p>Default value: <<monitorType>></p> <p>Examples: Database, Application, J2EE</p>
Subcategory	<p>Value used for organizing or grouping events that have the same category.</p> <p>Default value:</p> <ul style="list-style-type: none"> For status change metrics: <<metric>> For alerts: <<fullMonitorName>> <p>Example: Oracle</p>
Log only	<p>If True is selected, enables submitting an event that goes directly into the history event browser as a closed event. Such an event goes through the complete event processing, but has its Life Cycle State set to close from the beginning.</p> <p>Typical examples are events that result in resetting an indicator to a normal or good state, or an event signaling that a previous problem no longer exists (where the problem was reported in another event).</p> <p>If True for normal severity is selected, all messages forwarded from SiteScope to HPOM are sent to the Acknowledged message browser (instead of the Active message browser) if their severity is normal. This prevents the Active message browser becoming unnecessarily cluttered with normal severity messages.</p> <p>Default value: False</p>
Event Type Indicator	<p>Link between the event and the indicator so that information about the indicator can be updated as a result of submitting the event.</p> <p>Default value:</p> <ul style="list-style-type: none"> For status change metrics: <<etiType>>:<<etiValue>>:<<metricValue>> For alerts: <<etiType>>:<<etiValue>>

UI Element	Description
	<p>Example of metric status change: CPU Load:High:90</p> <p>Note: This field is mandatory for updating the indicator. It is not recommended to change the template value of this attribute.</p>
Correlation	
Key	<p>A unique string representing the type of event that occurred. Two events can have the same key if both events represent the same situation in the managed environment. Duplicate events are discarded after the number of duplicate events is increased in the "Number of Duplicates" count.</p> <p>Default value:</p> <ul style="list-style-type: none"> • For status change metrics: <<siteScopeHost>>:<<monitorUUID>>:<<metric>>:<<etiValue>>:<<severity>> • For alerts: <<siteScopeHost>>:<<fullgroupid>>:<<monitorName>>:<<alertName>>:<<etiValue>> <p>Example of metric status change:</p> <p>labmachine1:OMEventIntegration:CPU Utilization on SiteScope Server:utilization:Good</p>
Submit close key condition	<p>Enables the close key pattern to be evaluated by the event subsystem. If selected, enter the pattern in the Close key pattern box below.</p> <p>Default value: Selected</p>
Close key pattern	<p>(This box is available only if Submit close key condition is selected.) Enables the event that is sent to automatically close all the events whose key attribute matches this expression. It is recommended that this field contain the same value as in the Key field.</p> <p>Note: SiteScope event integration policy always adds "<*>" to the end of your close key pattern. The "<" and ">" signs cannot be used here since that they cannot be interpreted by the log file policy.</p> <p>Default value: <<siteScopeHost>>:<<fullgroupid>>:<<monitorName>>:<<metric>></p> <p>Example: labmachine1:OMEventIntegration:CPU Utilization on SiteScope Server:utilization<*></p>
Advanced Parameters	
CI hint	<p>Information about the CI that is related to the event. This attribute is used for providing hints to enable the event processing to find the correct related CI (RTSM ID of the related CI).</p> <p>Default value: <<ciHint>>. The value in this field varies, depending on whether</p>

UI Element	Description
	SiteScope is connected to BSM or HPOM. This field is not editable.
Host hint	<p>The target host being monitored by the monitor that triggered the event. The value is translated to the legacy node attribute in HPOM. If the node does not exist in HPOM, the event will be lost.</p> <p>Default value: <<targetHost>></p> <p>Examples:</p> <ul style="list-style-type: none"> • IPv4: 15.15.12.13, • DNS: host1.hp.com
Generating source hint	<p>Information about the monitoring application and the corresponding probe/agent that is responsible for creating the event.</p> <p>Default value: SiteScope@@<<siteScopeHost>></p> <p>Example: SiteScope@@host1.hp.com</p>
Attributes	
<Attributes list>	<p>Displays the list of available attribute variables. You can add an attribute by dragging it from the Attributes list to the selected text box, or select the cell in which to copy the selected attribute, and click Ctrl+I.</p> <p>For a description of the available attribute variables, see "SiteScope Alert Template and Event Properties Directory" on page 31.</p>

Common Event Model Settings - Custom Attributes Tab

User interface elements are described below

UI Element	Description
	<p>Enables creating a new custom attribute for the event. Each event can have any number of custom attributes.</p> <ul style="list-style-type: none"> • New Key. Adds a new line to the table, enabling you to add a name and value for the attribute. • Known Key. Opens a submenu with the known keys as options. You can select the relevant key. A new row opens in the Name/Value table, with the name of the selected key in the Name column. You can then enter the value of the key in the corresponding Value column.
	Delete Custom Attribute. Deletes the selected custom attribute from the table.
Name and Value	Each event can have any number of custom attributes. Custom attributes can be used to provide additional information with the event that is not provided in any of the other common event attributes or that is contained in any of the other attributes. Each custom attribute is a Name-Value pair, where you enter the name

UI Element	Description
	<p>of the attribute in the Name field and the value of the attribute in the Value field.</p> <p>This feature may be used when you manage the environment of multiple customers using one instance of the product. The multiple customers might be handled by a custom attribute object.</p> <p>Example: Name = "cma1" ; Value = "XYZ Company"</p> <p>Note: Make sure that the name of the attribute you are defining is unique and does not already exist in the attributes list.</p>
Attributes	
<Attributes list>	<p>Displays the list of available attribute variables. You can add an attribute by dragging it from the Attributes list to the selected box, or select the cell in which to copy the selected attribute, and click Ctrl+I.</p> <p>For a description of the available attribute variables, see "SiteScope Alert Template and Event Properties Directory" on page 31.</p> <p>HP CDA Event Mapping template</p> <p>This is an out-of-the-box template that is specially configured for CDA (Continuous Delivery Automation). CDA is a policy-based platform that provides infrastructure provisioning in hybrid cloud environments. CDA integrates with SiteScope to deploy SiteScope monitors and receive events from them. Monitoring status based on the events received is available in the CDA user interface. For more details on CDA, refer to the CDA documentation.</p> <p>The following attributes are included in the Custom Attributes tab for the HP CDA Event Mapping template which is included by default in Common Event Mappings:</p> <ul style="list-style-type: none"> • <<TemplateDeployPath>>. Displays the full path to the template group from which the monitor was deployed. • <<monitorServiceId>>. (see below) • <<monitorDrilldownURL>>. Creates a hyperlink in the event to the monitor URL. • <<newStatus>>. Current status of the metric.
Service ID	<p>Enables customizing the service name that is sent from SiteScope events to HPOM by entering the value of the monitor service ID. This is useful for relating the SiteScope monitor with the HPOM Service Name.</p> <p>Default value: <<monitorServiceId>></p>

Chapter 3

Configuring SiteScope to Report Metrics to HPOM and OMi

SiteScope uses the HP Operations agent to make its metrics data available to HP Performance Manager (the reporting component of HPOM) and to Performance Graphing in BSM's Operations Management. To enable SiteScope metrics to be collected by these reporting products, the HP Operations agent must be installed on the SiteScope server. SiteScope collects metrics data, and logs it to the agent data store on the SiteScope host.

When a user in Performance Manager draws or designs a graph, Performance Manager collects metrics data from the agent data store for the selected node in Performance Manager that is monitored by SiteScope, and draws the graph. Agentless graphing is supported in Performance Manager 9.0 or later. For details on Performance Manager, refer to the Performance Manager documentation. Metrics data collected from SiteScope can also be used in Performance Graphing.

Sizing is important for planning the maximum number of monitors, metrics, and monitors types that can be stored within the SiteScope-HPOM metrics integration. For sizing recommendations, see ["Sizing Recommendations for SiteScope-Operations Manager Metrics Integration" on page 57](#).

Metrics name alignment, the process of aligning metrics names in SiteScope with those used in HPOM or BSM, has been performed for some of the most commonly used monitors. For details, see ["SiteScope-Operations Agent Metrics Alignment" on page 54](#). Performance Manager can graph any metrics (whether aligned or not), and metrics alignment for all possible metrics is not required for viewing the data in Performance Manager.

For details on configuring metrics integration, see ["How to Enable SiteScope to Report Metrics to the HP Operations Agent" on next page](#).

Note:

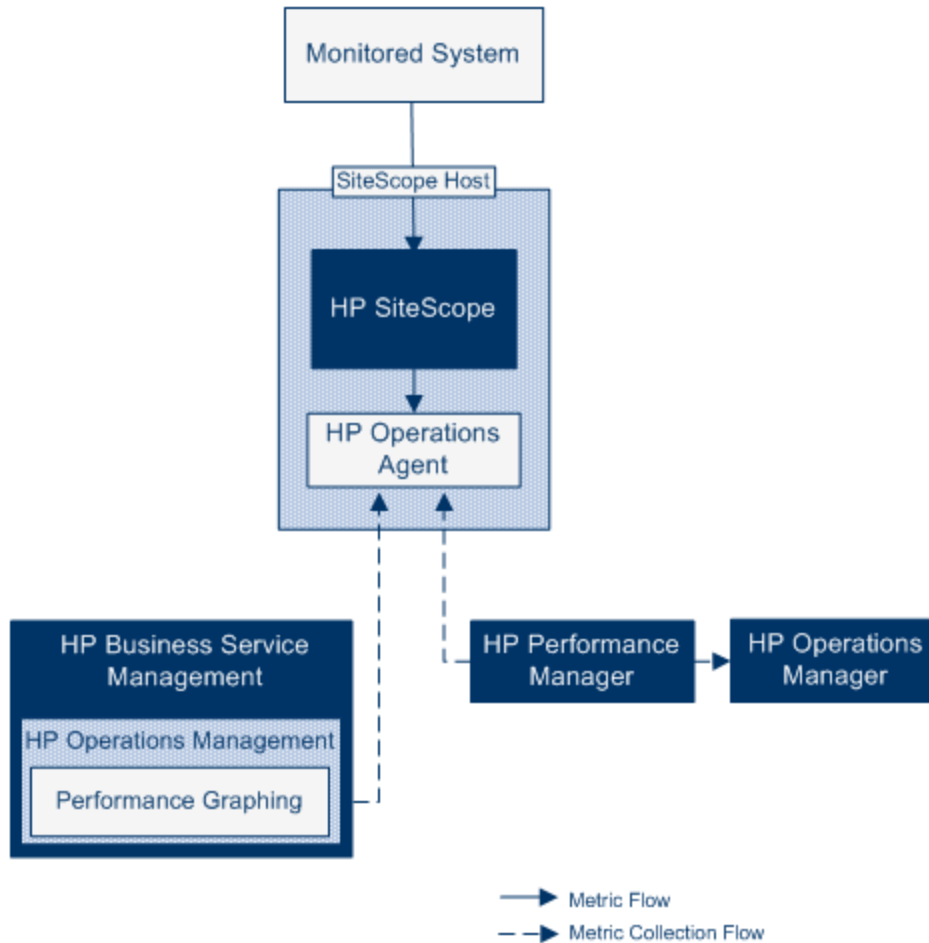
- Metrics integration using the HP Operations agent should not be confused with the integration of SiteScope monitor metrics used by the various BSM applications when calculating status for CIs (for example, in Service Health, Service Level Management, and System Availability Management). For details on BSM metrics integration, see the Working with BSM section of the Using SiteScope Guide in the SiteScope Help.
- Metrics integration with Performance Manager can be activated regardless of the connection status between the HP Operations agent and the HPOM or BSM server, since metrics are collected by the agent.
- The Operations Manager metrics integration is supported by SiteScopes running on Windows and UNIX platforms for HPOM and Operations Management.

Tip: For best practices and troubleshooting for reporting metrics data to BSM and HPOM products using the HP Operations agent, see the *Integration with BSM and HPOM Best*

Practices guide in the SiteScope Help.

Metrics Data Flow Diagram

The following diagram illustrates the metrics data flow:



How to Enable SiteScope to Report Metrics to the HP Operations Agent

This task describes how to enable SiteScope to report metrics data to HPOM and BSM reporting products.

1. Prerequisites

- Your system must conform to the following requirements:
 - SiteScope version 11.00 or later is installed.
 - For OMi, BSM 9.00 or later is installed.

- For HPOM, HP Performance Manager 9.0 or later is installed.

Note: The node discovery, monitor discovery, and template integration are not supported for all versions of HPOM. For details of the integrations that are supported and of any patch requirements, refer to the HP Operations Manager (HPOM) Integration Support Matrix in the SiteScope release notes. (Available from the HP Product Manuals site (<http://support.openview.hp.com/selfsolve/manuals>)).

- Only a SiteScope administrator user, or a user granted **Edit integration preferences** permissions, can configure the integration. For details on user permissions, see the section on user management preferences in the Using SiteScope Guide in the SiteScope Help.
- The Performance Manager administrator must configure Performance Manager to connect to the SiteScope node where the SiteScope instance is logging data. For details, refer to the Performance Manager documentation.

2. Install the HP Operations agent on the SiteScope server

You can install the HP Operations agent during or after a SiteScope installation from the SiteScope installation media. The agent enables SiteScope to act as data storage for metrics data collected by SiteScope.

For the supported HP Operations agent versions (and prerequisites), refer to the HP SiteScope Support Matrices section in the SiteScope release notes.

For details on installing the HP Operations agent, see the section on installing SiteScope in the HP SiteScope Deployment Guide.

3. Enable SiteScope to send metrics

In **Preferences > Integration Preferences**, select an existing Operations Manager integration or click **HP Operations Manager Integration** to create a new integration. In the HP Operations Manager Integration dialog box, expand the **HP Operations Manager Metrics Integration** panel and select **Enable HP Operations Manager metrics integration**.

Note: Metrics integration with HP Operations Manager can be activated regardless of the connection status between the HP Operations agent and the HPOM/BSM server, since metrics are collected by the agent.

4. Enable monitor instances to send metrics

For each monitor instance that you want to report metrics data to the agent data storage, expand **HP Integration Settings** in the monitor properties, and select **Report metrics to HP Operations agent** in the **HP Operations Manager Integration Settings** section.

Tip: You can automatically enable metrics reporting for particular monitor types without having to select **Report metrics to HP Operations agent** for each monitor instance. To do so, select **Integration Preferences > HP Operations Manager Integration**, expand the **HP Operations Manager Metrics Integration** panel, and:

- Select **Enable metrics reporting for new monitors** to enable SiteScope to report metrics to the HP Operations agent for all newly-created monitors.

- Click the **Enable metrics reporting for specific monitors** button to enable reporting metrics for Memory, CPU, Disk Space, and Windows Resources monitors only.

5. Results

Each monitor metric is logged as an instance by the agent on the SiteScope host node, with the time and host as the instance identifier. The metrics data is collected from the agent data storage by HPOM and BSM for use in the reporting products.

Metrics error data is written to the **oa_metric_integration.log** file which is found in the **<SiteScope root directory>\logs** directory.

For notes and limitations on metrics integrations, see "[Notes and Limitations](#)" on page 59.

For troubleshooting metrics integration issues, see "[Troubleshooting Metrics Integration Issues](#)" on page 59.

SiteScope-Operations Agent Metrics Alignment

Metrics name alignment is the process of aligning metrics names in SiteScope with those used by Operations Manager Performance Agent (PA). Performance Manager can graph any metrics (whether aligned or not), and metrics alignment for all possible metrics is not required for viewing the data in Performance Manager.

Metrics name alignment has been performed for the commonly used metrics listed below.

Note: For more information on metrics provided by Performance Agent, refer to the HP Performance Agent Metric Help Viewer in the Performance Agent 5.0 documentation (http://support.openview.hp.com/selfsolve/document/KM864772/binary/PA5_MetricHelpView.html?searchIdentifier=-65c7a852:127e60d1b54:6921&resultType=document). To enter the HP Software Self-solve Knowledge Base, you must log on with your HP Passport ID.

PA Metrics Name (Display Name)	SiteScope Metrics Name
BYCPU_CPU_TOTAL_UTIL (Total CPU%)	<p>Windows:</p> <ul style="list-style-type: none"> CPU Monitor \utilization (cpu #1, cpu #2, etc) Microsoft Windows Resources Monitor \Processor\{instance}%\ Processor Time <p>Linux: UNIX Resources Monitor \Processor\{instance}\System</p> <p>HP-UX: N/A</p> <p>Solaris: N/A</p> <p>AIX: UNIX Resources Monitor \Processor\{instance}%sys</p>
BYNETIF_IN_BYTE_RATE (In KB Rate)	<p>Windows: Microsoft Windows Resources Monitor \Network Interface\{instance}\Bytes Received\sec</p> <p>Linux: N/A</p> <p>HP-UX: N/A</p> <p>Solaris: N/A</p> <p>AIX: N/A</p>
BYNETIF_OUT_BYTE_RATE (Out KB Rate)	<p>Windows: Microsoft Windows Resources Monitor \Network Interface\{instance}\Bytes Sent\sec</p> <p>Linux: N/A</p> <p>HP-UX: N/A</p> <p>Solaris: N/A</p> <p>AIX: N/A</p>
BYDSK_PHYS_READ_BYTE_RATE (Phys Read KB Rate)	<p>Windows: Microsoft Windows Resources Monitor \Physical Disk\{instance}% Disk Read Bytes\sec</p> <p>Linux: N/A</p> <p>HP-UX: N/A</p> <p>Solaris: N/A</p>

PA Metrics Name (Display Name)	SiteScope Metrics Name
	AIX: N/A
BYDSK_PHYS_WRITE_BYTE_RATE (Phys Write KB Rate)	<p>Windows: Microsoft Windows Resources Monitor \Physical Disk\{instance}\% Disk Write Bytes\sec</p> <p>Linux: N/A</p> <p>HP-UX: N/A</p> <p>Solaris: N/A</p> <p>AIX: N/A</p>
BYDSK_REQUEST_QUEUE (Req Queue)	<p>Windows: Microsoft Windows Resources Monitor \Physical Disk\{instance}\Avg. Disk Queue Length</p> <p>Linux: N/A</p> <p>HP-UX: N/A</p> <p>Solaris: N/A</p> <p>AIX: N/A</p>
BYDSK_UTIL (Disk %)	<p>Windows: Microsoft Windows Resources Monitor \Physical Disk\{instance}\% Disk Time</p> <p>Linux: N/A</p> <p>HP-UX: UNIX Resources Monitor \Block device activity\<device>\%busy</p> <p>Solaris: UNIX Resources Monitor \Block device activity\<device>\%busy</p> <p>AIX: UNIX Resources Monitor \Block device activity\<device>\%busy</p>
FS_SPACE_UTIL (Space%)	<p>Windows: Disk Space Monitor \percent full</p> <p>Linux: Disk Space Monitor \percent full</p> <p>HP-UX: Disk Space Monitor \percent full</p> <p>Solaris: Disk Space Monitor \percent full</p> <p>AIX: Disk Space Monitor \percent full</p>
GBL_CPU_TOTAL_UTIL (CPU %)	<p>Windows:</p> <ul style="list-style-type: none"> • CPU Monitor \utilization (avgas) • Microsoft Windows Resources Monitor \Processor_Total\% Processor Time <p>Linux: UNIX Resources Monitor \Processor\Total\System</p>

PA Metrics Name (Display Name)	SiteScope Metrics Name
	HP-UX: N/A Solaris: N/A AIX: UNIX Resources Monitor\Processor\Total\%sys
GBL_MEM_PAGEOUT_RATE (Pg Out Rate)	Windows: Microsoft Windows Resources Monitor \Memory\Pages Output/sec Linux: N/A HP-UX: N/A Solaris: UNIX Resources Monitor \Page-out memory and memory freeing activities\ppgout/s AIX: N/A
GBL_MEM_UTIL (Memory %)	Windows: Memory Monitor \percent used Linux: N/A HP-UX: N/A Solaris: N/A AIX: N/A
GBL_SWAP_SPACE_UTIL (Swap %)	Windows: Microsoft Windows Resources Monitor \Memory\% Committed Bytes In Use Linux: N/A HP-UX: N/A Solaris: N/A AIX: N/A

Sizing Recommendations for SiteScope-Operations Manager Metrics Integration

While the default SiteScope configuration enables running thousands of monitors, sizing is important for planning the maximum number of monitors, metrics, and monitors types that can be stored within the SiteScope-HPOM metrics integration.

The sizing should not exceed:

- Maximum insertion rate of 1000 metrics per minute.
- Total retention storage of 1 GB.
- Total retention period of 5 weeks.

Definitions

The following are definitions of the terms used in the validation calculations below:

- **Monitors.** The number of monitors that report metrics to HPOM Performance Manager.
- **Metrics.** The average number of metrics of the above mentioned monitors that report to HPOM Performance Manager.
- **Frequency.** The average frequency at which the above mentioned monitors feed data into the integration.

Validation

When choosing the specific SiteScope monitors and metrics to store within the SiteScope-HPOM metrics integration, you should validate that the insertion and retention rates do not exceed the recommendations. You can do that using the formulae below:

- **Supported Insertion Rate Validation:**

$$(\text{Monitors} * \text{Metrics}) / \text{Frequency} \leq 1000 \text{ metrics/minute}$$

- **Supported Retention Period Validation:**

$$(1000 \text{ MB}) / ((\text{Monitors} * \text{Metrics} / \text{Frequency}) * 0.07 \text{ MB}) =$$

configured retention period in days
(which should be less than the maximum retention period of 5 weeks)

where 0.07 MB is the storage size for each metric/minute per day.

Example

If you have 2500 monitors that report data using the HPOM metrics integration, and every monitor has 4 metrics, the frequency of these monitors is every 10 minutes, and the average metric storage size per day is 0.07 MB, you will be able to store your historical data for 14 days.

Validation calculations:

- **Insertion Rate Validation:**

$$(2500 \text{ monitors} * 4 \text{ metrics}) / 10 \text{ minutes} = 1000 \leq 1000 \text{ metrics/minute}$$

- **Retention Period Validation:**

$$1000 \text{ MB} / (((2500 * 4 \text{ Metrics}) / 10 \text{ minutes}) * 0.07 \text{ MB}) = 14.28 \text{ days} (\leq 5 \text{ weeks})$$

Troubleshooting and Limitations

This section contains notes and limitations, and provides troubleshooting when using the HP Operations Manager integration to make SiteScope metrics data available to Performance Manager or to Performance Graphing in Operations Management.

Notes and Limitations

- The agent data store supports only alphanumeric and the underscore (_) character in SiteScope metric names. All other characters are converted to supported characters (the metric display name (heading) remains in the SiteScope style).
- Web Script monitor data cannot be reported to Operations Management or HPOM.
- After upgrading from Performance Manager to Performance Graphing and connecting SiteScope to BSM, historical report data cannot be upgraded since it does not have CI-based reporting capability (it can still be viewed in the old Performance Manager way).
- To enable reporting numerical values with postfixes (such as 25% or 400MB) to the agent data store, add the list of postfixes, separated by commas, to the `_omMetricIntergationAllowedNumberPostfixs` property in the **<SiteScope root directory>\groups\master.config** file. For example, to include %, MB, KB, and GB, add `=%,mb,kb,gb`. Note that all postfixes should be in lower case.
- In an Operations Management Manager of Managers configuration (where multiple HPOM servers are connected to Operations Management, and multiple SiteScopes are connected to the HPOM servers, and indirectly to Operations Management), data sent from SiteScope is not supported by Performance Graphing, since SiteScope does not send topology to Operations Management. For details on Operations Management deployment configurations, see the section on Connected Servers in the BSM Application Administration Guide.
- To prevent overloading the agent data store, follow the sizing recommendations as described in "Sizing Recommendations for SiteScope-Operations Manager Metrics Integration" on page 57.

Troubleshooting Metrics Integration Issues

This section includes:

- "SiteScope and HP Operations Agent Configuration" below
- "Health Monitors Errors" on page 61
- "HP Performance Manager Configuration" on page 61
- "CI Resolution does not work ("BadHint error" in the cir_enrichment.log)" on page 61
- "System runs out of ports when reporting data to the HP Operations agent" on page 61

SiteScope and HP Operations Agent Configuration

Check the HP Operations Agent Configuration

1. Check the status of the HP Operations agent installed on the SiteScope server status by running the following command: `opcagt -status`

The expected output is:

```
C:\Documents and Settings\...>opcagt -status
opcnsqa      OVO Message Agent      AGENT,EA      <2476>      Aborted
opcacta      OVO Action Agent       AGENT,EA      <376>      Running
opcnsqi      OVO Message Interceptor AGENT,EA      <376>      Running
```

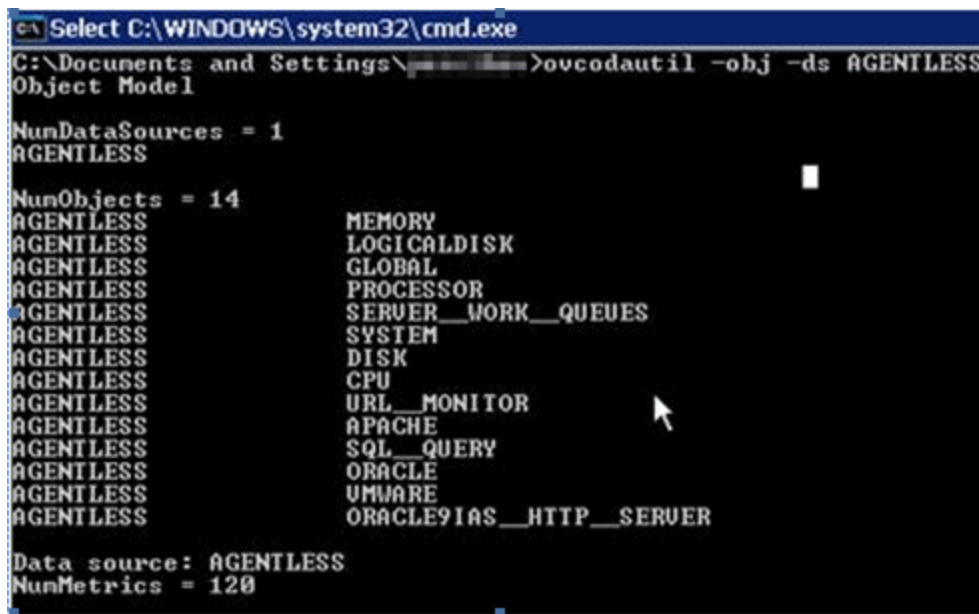
If `opcacta` or `opcmsgi` are not running, try to restart the agent by running:

```
opcagt -stop  
opcagt -start
```

2. Select **Preferences > Integration Preferences**, and select an existing or create a new **HP Operations Manager Integration**. Verify that the **Enable sending events** check box is selected.
3. In the HP Integration Settings for the monitor, Verify that the **Report metrics to HP Operations agent** check box is selected.
4. Run the monitor, and wait for about a minute.
5. Run the following command to check if the agent data store contains the data:

```
set CODAMAGIC=0X05201993  
ovcodautl -obj -ds AGENTLESS
```

You should receive object names from AGENTLESS data source (similar to the following):



```
 Select C:\WINDOWS\system32\cmd.exe  
C:\Documents and Settings\...>ovcodautl -obj -ds AGENTLESS  
Object Model  
  
NumDataSources = 1  
AGENTLESS  
  
NumObjects = 14  
AGENTLESS MEMORY  
AGENTLESS LOGICALDISK  
AGENTLESS GLOBAL  
AGENTLESS PROCESSOR  
AGENTLESS SERVER__WORK__QUEUES  
AGENTLESS SYSTEM  
AGENTLESS DISK  
AGENTLESS CPU  
AGENTLESS URL__MONITOR  
AGENTLESS APACHE  
AGENTLESS SQL__QUERY  
AGENTLESS ORACLE  
AGENTLESS UMWARE  
AGENTLESS ORACLE9IAS__HTTP__SERVER  
  
Data source: AGENTLESS  
NumMetrics = 120
```

6. To dump the summarized last record for AGENTLESS data source, run the following command:

```
ovcodautl -dumpds AGENTLESS
```

Check the Relevant SiteScope Logs

Check the following logs that are available from the `<SiteScope root directory>\logs` directory:

- **error.log**
- **RunMonitor.log**
- **om_metric_integration.log**
- **data_integration.log**

Health Monitors Errors

In the SiteScope monitor tree, expand **Health** and click **Log Event Checker**.

- If the **Failed to report data to HP OM Agent** counter is in error, SiteScope failed to connect or report data to the HP Operations agent using Java API. For more information, see the **oa_metric_integration.log** file in the **<SiteScope root directory>\logs** directory.
- If the **Generic Data Integration queue exceeded allowed size** counter is in error, the queue of metrics waiting to be sent is oversized and some metrics were dropped to maintain SiteScope stability. For more information, **data_integration.log** file in the **<SiteScope root directory>\logs** directory.

HP Performance Manager Configuration

1. On the Performance Manager server, open the **OVPMconfig.ini** file in the **%ovdatadir%\shared\server\conf\perf** directory.
2. Update the SiteScope server details as follows:
 - [SITESCOPE]
 - SERVER = servename
 - NODEGROUP = Agentless
3. Restart the HP Openview Tomcat(B) service.

CI Resolution does not work ("BadHint error" in the cir_enrichment.log)

1. Go to **Admin > Platform > Infrastructure Setting**.
2. In the **Application** dropdown, select **End User/System Availability Management**.
3. In the **SiteScope CI Resolver Settings**, check for **TQL Queries** value.
The default value is `CIs Monitored by SiteScope`.
4. Go to **Admin > RTSM Administration** and check for **CIs Monitored by SiteScope** query results. If you do not get the requested CI in the query results, CI resolution will not find it as well.

Possible problem: CI has missing attributes or the SiteScope monitor CI is not connected to any monitored CI.

System runs out of ports when reporting data to the HP Operations agent

Problem: The system runs out of ports when reporting metrics data to the HP Operations Agent in a loaded environment.

- In SiteScope Health, an error is displayed in the Log Event Checker monitor for the **.*Failed to report data to HP OM Agent.*** counter.
- In the **oa_metric_integration.log**, the following error is displayed: "ERROR - Failed to report

data to /Hewlett-Packard/OpenView/Coda/ IO error while gettingSingle Object;Address already in use: connect".

Possible solution: Increase the upper range of ephemeral ports and reduce the client TCP/IP socket connection timeout value in Windows. For details, see <http://msdn.microsoft.com/en-us/library/aa560610%28v=bts.20%29.aspx>.