HP SiteScope

For the Windows, Solaris, and Linux operating systems

Software Version: 11.23

Configuring the Integration with HP Diagnostics

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Contents

Chapter 1: SiteScope Integration with Diagnostics Overview

SiteScope can forward metrics data to Diagnostics that enables you to see a more complete view of the application servers that are monitored by Diagnostics. The data can provide insight into the infrastructure components onto which the application servers are deployed.

For example, integrating data from the SNMP by MIB monitor can help determine problems with the infrastructure on which the application server runs.SiteScope forwards data on groups, monitors, and measurements. Diagnostics can read the data sent from SiteScope and present the data in its reports and graphs.

The data that SiteScope sends to Diagnostics appears in the Diagnostics External Monitors view group. See "Viewing SiteScope Data in Diagnostics" on page 15 for information on this view and on configuration. SiteScope data can also appear in Diagnostics custom views. For details, see "Working with Custom Views (Dashboard and Detail)" in the HP Diagnostics User's Guide.

System Requirements

- SiteScope 10.00 and later

- Diagnostics 8.x, 9.x and later

This integration is metric-based, sampled in XML, and transmitted via HTTP as BAC/BSM integration.

Units of Measurements in Diagnostics

SiteScope generates a file **<SiteScope root directory>/conf/ integration/data_integration_ uom.xml** that controls the mappings of SiteScope monitors to Diagnostics metrics and the units of measurement used for the metrics. Diagnostics accepts data from SiteScope only if the data is associated with a unit of measurement that Diagnostics can recognize. SiteScope units are captured from the monitored source and may need to be mapped to the appropriate Diagnostics unit of measurement.

The units of measurements used by SiteScope monitors vary, depending on the type of data being monitored. For example, the unit of measurement used for the CPU monitor is a percentage and the unit of measurement used for the Disk Space monitor is number of bytes. It is therefore recommended that you modify the xml file as needed so that Diagnostics recognizes the unit of measurement to use for the monitor data coming from SiteScope.

When new monitors are added to the SiteScope that report data to Diagnostics, it is recommended that you edit the Diagnostics Integration Preference and click the **Generate UOM XML** button. SiteScope generates a list of currently deployed monitors and their corresponding metrics. This list merges with the **<SiteScope root directory>/conf/ integration/data_integration_uom.xml** file and updates only those values in the xml file that were not manually changed. If any values were manually changed in the xml file, those values are not updated and are preserved. This merge of information on units of measurements occurs when you click this button and on each SiteScope restart.

For a reference detailing the XML tags, elements, and attributes included in the integration file that SiteScope forwards to Diagnostics, see XML Tag Reference for Generic Data and Diagnostics Integrations.

To understand the XML generated and sent by SiteScope, see "XML Tag Reference for Generic Data and Diagnostics Integrations" on page 12.

Chapter 2: How to Configure SiteScope to Report Data to HP Diagnostics

The following steps describe how to configure SiteScope to report metrics data to HP Diagnostics:
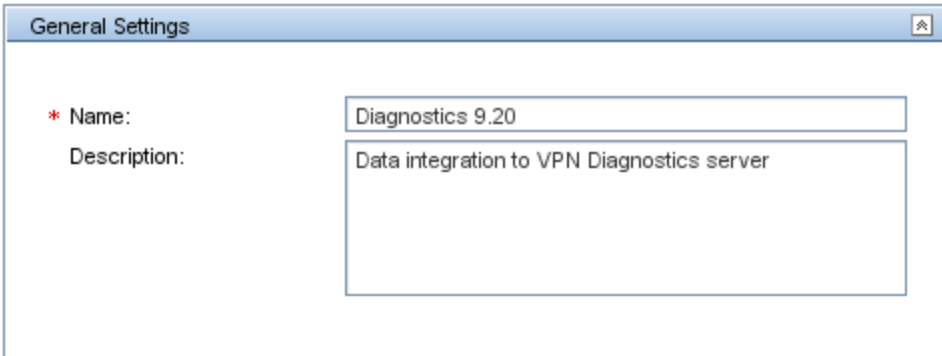
1. **Prerequisites**

   You must be an Administrator user in SiteScope or have **Edit integration preferences** permissions to be able to create or make changes to Integration Preferences. For details on user permissions, see the User Management Preferences section in the Using SiteScope Guide in the SiteScope Help.

2. **Configure Diagnostics preferences**

   a. Select **Preferences > Integration Preferences**.

   b. In the Integration Preferences page, click the **New Integration** button and select **Diagnostics Integration**.

   c. In the Diagnostics Integration Preferences dialog box, expand the **General Settings** panel and enter the following:

      ○ **Name.** Name by which to identify this integration in the SiteScope interface. (This is a required field.)

      ○ **Description.** Description of the integration. This could include information about the Diagnostics server receiving the data from SiteScope. This description appears only in the Integration Preferences page in SiteScope.

   Example

General Settings	
* Name:	Diagnostics 9.20
Description:	Data integration to VPN Diagnostics server

   d. Expand the **Diagnostics Integration Preferences Settings** panel and configure the following settings as required:

○ **Receiver URL.** URL of the Diagnostics server to receive the SiteScope data. This must be a full URL, including server, port where Diagnostics receives data, and path. The path must always include **/metricdata/siteScopeData**. The URL should be in the format (for example):

http://DiagnosticsServer1.hp.net:2006/metricdata/siteScopeData

○ **Encoding.** Encoding used by the Diagnostics application.

○ **Reporting interval (seconds).** Time in seconds between when SiteScope finishes sending data to the Diagnostics server to the next period SiteScope sends data. This time interval can prevent communication delays between the servers, as it is an interval of time when no data is sent.

○ **Time synchronization interval (minutes).** Select how often you want SiteScope to report to Diagnostics the time of the SiteScope server. Diagnostics then synchronizes the time of the data samples coming from SiteScope with the time on its own server so that there is no discrepancy between the time of the SiteScope data and the Diagnostics data.

○ **GZIP compression.** For performance improvements, select to compress the sample data sent to the Diagnostics server.

○ **Include additional data.** Select this option to report the status string, which includes the description of each SiteScope object (groups, monitors, and counters), along with the object status. If this option is cleared, only the object status is reported.

○ **Error on redirect.** SiteScope returns an error status if the target URL is redirected.

○ **Request timeout (seconds).** Socket timeout, which is the timeout for waiting for data. A timeout value of zero is interpreted as an infinite timeout.

○ **Connection timeout (seconds).** Timeout until a connection is established. A value of zero means the timeout is not used.

○ **Number of retries.** Number of times SiteScope attempts to establish a connection.

○ **Authentication when requested.** SiteScope sends user name and password credentials, if requested. If cleared, SiteScope does not forward credentials.

○ **Disable integration.** SiteScope does not forward data to the Diagnostics server. The integration preference settings remain. Use when temporarily disabling the integration.

Example

Data Integration Preferences Settings

* Receiver URL:	https://172.16.6.45:8443/metricdata/SiteScopeData
Encoding:	UTF-8
* Reporting interval (seconds):	30
Time synchronization interval (minutes):	4
	☑ GZIP compression
	☑ Include additional data
	☐ Error on redirect
* Request timeout (seconds):	120
* Connection timeout (seconds):	120
Number of retries:	3
	☑ Authentication when requested
	☐ Disable integration
	Generate UOM XML

e. Click the **Generate UOM XML** button to generate a unit of measurement xml file to merge with the **<SiteScope root directory>/conf/ integration/data_integration_uom.xml** file. This file enables Diagnostics to read the SiteScope data and apply the appropriate unit of measurement to the data.

For simple monitors, the default mapping should work. For more complex monitors, the counters with "unknown" units must be updated according to the unit of measurement displayed in the SiteScope Dashboard and according to the mapping settings in Diagnostics' **etc/server.properties** file.

It is recommended that you click this button when a monitor instance is added that reports data to Diagnostics. If any values were manually changed in the **data_integration_ uom.xml** file, those values remain and are not updated by this merge file. This merge file is also generated and updates the xml file on every SiteScope restart. For details, see "Units of Measurements in Diagnostics" on page 4.

Example

```
sis.unit.map.% = percent
sis.unit.map.KB = kilobytes
sis.unit.map.MB = megabytes
sis.unit.map.GB = gigabytes
sis.unit.map.PAGES/SEC = load
sis.unit.map.PROCESSES = count
```

f. If the server is configured to use basic authentication, expand the **Web Server Security Settings** panel and enter the username and password to access the Diagnostics server. The minimum role privilege required is [system].

For example, if username SIS_integration and password SIS_pw are entered here, the same credentials must be used in Diagnostics User Administration when configuring Diagnostics security.

Example

g. If a proxy server is used, enter the Proxy server address, username, and password in the **Proxy Server Settings** panel.

3. **Select reporting tags to indicate which monitors/groups to report**

In the **Reporting Tags** panel, select one or more tags for each integration. SiteScope uses the tags selected here to determine what data is forwarded to Diagnostics. You must select the tag for the groups, subgroups, and monitors whose data you want to forward to Diagnostics.

When selecting an integration tag for an object, the tag propagates to that object's children. If you tag a group with this integration tag, all its subgroups and monitors report their status to Diagnostics.

For example, create a tag called Diagnostics and select it here. For each group, monitor, or both, whose status you want to report to Diagnostics, select this tag under the **Search/Filter Tags** setting.
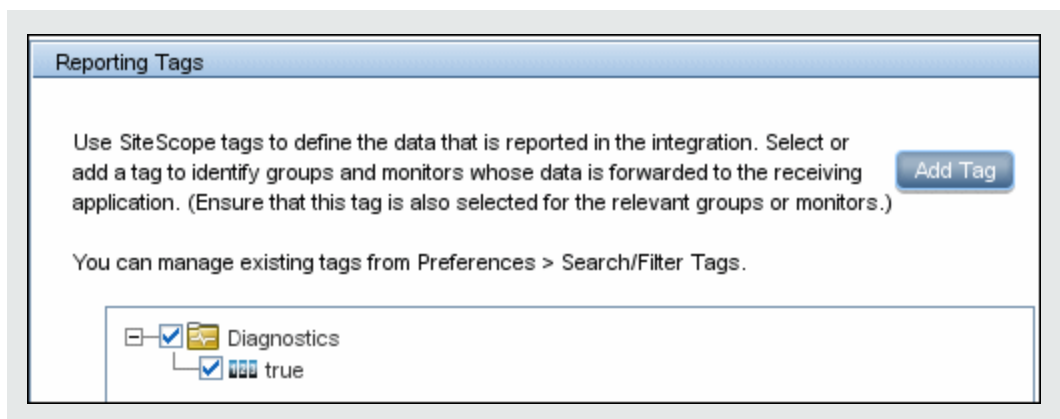
4. **Configure the integration to use SSL communications - Optional**

   After setting the Diagnostics server to use secure connections, you need to access the interface using port 8443.

   a. Import the Diagnostic server's certificate into SiteScope. In SiteScope, select

      Preferences > Certificate Management and click the **Import Certificates** button.
      Select **Host**, and enter the real IP address or host name of the Diagnostics server.

      Click **Import**. The imported certificate is listed on the Certificate Management page.

      Note: Only a SiteScope administrator user, or a user with View/Edit certificates list permissions, can view, add, or make changes to the certificates keystore on the Certificate Management page.

   b. Update the receiver URL, if already configured in SiteScope. In SiteScope, select
      Preferences > Integration Preferences > Diagnostics Integration, expand the
      Diagnostics Integration Preferences Settings panel, and change the **Receiver URL**
      accordingly.

5. **Configure the Diagnostics Server - Optional**

   On the Diagnostics server, check the values in the following configuration files (in most cases, there is no need to modify the default values):

   - **etc/server.properties**: SiteScope Unit Mappings, SiteScope Group to Probe group mapping

   - **etc/metrics.config**: XML Input Data

   SiteScope monitors should be visible from the Diagnostics External Monitors view group.

   Note: SiteScope monitors disappear from the view if the information is not refreshed every 5 minutes.

6. **Results**

SiteScope forwards data to Diagnostics, which you can view in the Diagnostics External Monitors view group.

For details on viewing data in Diagnostics, see "Viewing SiteScope Data in Diagnostics" on page 15.

For troubleshooting, see "Troubleshooting the Integration" below.

Troubleshooting the Integration

A few basic troubleshooting steps:

- Test the connection to the Diagnostics receiver. Enter the Diagnostics server URL in a Web browser, in the format:

  http://<server>:2006/metricdata/siteScopeData

  > **Note:** There can only be one SiteScope per Diagnostics COMMANDER server.

- Check UOM file mappings. Counters with "unknown" metrics unit do not appear in Diagnostics views.

- Check that you selected a reporting tag for the groups, subgroups, and monitors whose data you want to forward to Diagnostics.

- Activate DEBUG in **<SiteScope root directory>\conf\core\Tools\log4j\PlainJava\log4j.properties** file:

  log4j.category.dataIntegration=${loglevel}, data.integration.appender

  log4j.additivity.dataIntegration=false

- Enable Diagnostics Sample dump:

  etc/logging.properties file >> **xml_data_parsing** and **xml_data**

XML Tag Reference for Generic Data and Diagnostics Integrations

SiteScope forwards data for generic data or Diagnostics integrations using the XML files whose elements and attributes are described below. For details on creating the integration, see "How to Configure SiteScope to Report Data to HP Diagnostics" on page 6.

This section also includes:

- "Data XML Elements and Attributes Table" below

- "Time Synchronization XML" on page 14

Data XML Elements and Attributes Table

Parent Element	Description of Element	Attribute	Description
performance Monitors	The parent element of the XML. Includes all group elements within it.	collectorHost collector	SiteScope Host Application collecting the data, which is always SiteScope
group	Represents the SiteScope group and is parent element to group and monitor element	name	Group name as defined by the user
		desc (optional)	Group description if entered for the group
		previousName (optional)	Previous name of the group if existed

monitor	Represents the SiteScope monitor and parent element to the counter element	type	Monitor type (as displayed in New Monitor dialog box)
		name	Monitor name as defined by the user
		target	Remote server being monitored
		targetIP	IP address of the remote server being monitored
		time	Time of the measurement
		quality	Status as determined by the monitor's thresholds **Possible values**: • 0 - no data (no thresholds defined) • 1 - informational (good) • 2 - warning • 3 - critical
		previousName (optional)	Previous name of the monitor if existed
		desc (optional)	Monitor description if entered for the monitor
		sourceTemplateName	Name of the source template if the monitor was created from a template or solution template.
		statusDesc (optional)	Represents monitor's status string that is included only if the **Include additional data** is selected when creating the integration.

counter	Represents the measurements gathered by the monitor	name	Counter name
		value	Counter value
		quality	Status of the counter as determined by the counter's threshold **Possible values**: 0 - no data (no thresholds defined) 1 - informational (good) 2 - warning 3 - critical
		desc (optional)	Monitor description if entered for the monitor
		status (optional)	If this attribute appears with a value of 0, the counter is not available. This attribute is not sent by SiteScope and not included in the XML if the counter is available. **Possible value**: 0 - counter not available
		units (optional)	Units of measurements for the counter if relevant

Time Synchronization XML

If you enter a value in the **Time synchronization interval** field when creating the data integration, SiteScope sends this XML to synchronize the time of the SiteScope server with that of the receiving application.

Parent Element	Description of Element	Attribute	Attribute Description
performanceMonitors	The parent element of the XML	collectorHost	SiteScope host
		collector	Application collecting the data, which is always SiteScope
timeStamp	Provides the time of the SiteScope server	timestamp	Time stamp, calculated as the seconds since January 1st 1970

Chapter 3: Viewing SiteScope Data in Diagnostics

The External Monitors view group contains a single view labeled **Monitors**. The Monitors view currently presents data gathered by SiteScope monitors.

HP SiteScope is an agentless monitoring solution designed to ensure the availability and performance of distributed IT infrastructures—for example, servers, operating systems, network devices, network services, applications, and application components. SiteScope can monitor utilization, response time, usage, and resource availability of a variety of host types and application platforms.

Within SiteScope, you create your monitoring structure, configure the Diagnostics integration, and select objects for the integration. SiteScope then forwards data to HP Diagnostics for display in the Diagnostics UI.

SiteScope can forward data to HP Diagnostics that allows the user to see a more complete view of the application servers that are monitored by Diagnostics and/or provide insight into the infrastructure components that these application servers are deployed into. For example, integrating data from the SNMP monitor can help determine problems with the infrastructure that the application server runs on.

SiteScope sends data to Diagnostics from the monitor's counters, along with the name of the monitor, the name of the system that the monitor is targeting, the name of the SiteScope server, and the hierarchy of groups that the monitor is defined in.

The Diagnostics integration with SiteScope is configured in SiteScope (for details, see "Configure Diagnostics preferences" on page 6).

When configuring SiteScope for integration with Diagnostics, you should ensure that the metrics sent to Diagnostics conform to the allowable units in Diagnostics. The allowable units within Diagnostics are as follows:

Time Units	Size Units	Numerical Counter	Contribution	Load
microseconds milliseconds seconds minutes hours days	bytes kilobytes megabytes gigabytes	count	percent fraction_percent - A value in the range 0.0-1.0 which is multiplied by 100 by the UI	load

If an invalid unit is sent to Diagnostics from SiteScope, it is defaulted to the count unit.

After configuring the SiteScope integration with Diagnostics (see "Configure Diagnostics preferences" on page 6), and as monitors are associated with the integration, SiteScope generates a file **/SiteScope/conf/integration/data_integration_uom.xml** that controls the mappings of SiteScope monitors to Diagnostics metrics. SiteScope units are captured from the monitored

source and will sometimes need to be mapped to the appropriate Diagnostics metric unit. Modify the xml file as needed.

For example:

```
<monitor type="CPU">
<counter units="%" name="utilization"/>
<counter units="%" name="utilization cpu # 1"/>
<counter units="%" name="utilization cpu # 2"/>
<counter units="%" name="utilization cpu # 3"/>
<counter units="%" name="utilization cpu # 4"/>
</monitor>
```

Should be modified as follows:

```
<monitor type="CPU">
<counter units="percent " name="utilization"/>
<counter units="percent " name="utilization cpu # 1"/>
<counter units="percent " name="utilization cpu # 2"/>
<counter units="percent " name="utilization cpu # 3"/>
<counter units="percent " name="utilization cpu # 4"/>
</monitor>
```

Sometimes, SiteScope cannot determine an appropriate unit of measure, and sets the units to "unknown". For any counters with a unit of "unknown", SiteScope will not forward the data to Diagnostics. You must modify the **data_integration_uom.xml** file and assign an appropriate unit to the counter before data will flow to Diagnostics for that counter.

Once configured, SiteScope data flows to the Diagnostics servers configured to receive the data after the monitors finish running.

In the Monitors view, the SiteScope data is presented in the form of graphs. This SiteScope data can help in understanding the root cause of the problems identified by the probes (for example, slow method execution) by correlating between slow performance of the application (based on data from the probes) and various metrics provided by SiteScope monitors.

Important: When you first view SiteScope data in the Monitors view, by default the monitor's status is gray and no data is graphed. To see a status (red, yellow, green), you must first set a threshold on a metric (in the details pane). To see data in the graph, you must first select a metric to be charted (in the details pane). See "How to Display a Graph and See Status in the Monitors View" on the next page.

You can set thresholds, define metric alert rules for the SiteScope metrics, and add SiteScope metrics to snapshots as you would other Diagnostics metrics.

You can see monitors listed under probe groups in views such as the Server Summary view. Monitors are associated with Diagnostics probe groups whose names are derived from the names of the groups and sub-groups in which the monitor is defined in SiteScope. The group hierarchy is represented as a path. For example, a monitor in the "Windows" sub-group of the "Servers" group will be in the "Servers/Windows" probe group in Diagnostics.

Note: You may see some of the same metrics in both the Monitors view and other Diagnostics views. The difference between the SiteScope and Diagnostics view of the same metrics has to do with the frequency of the measurements and aggregation.

For details on the user interface, see "Monitors View Description" below.

How to Display a Graph and See Status in the Monitors View

This task describes how to display a graph in the Monitors view and see the status of a monitor.

To display graph data and see monitor status in this view:

1. Check the Chart column for a monitor in the graph entity table.

2. Select a metric in the details pane and check the icon to **Start Charting this Metric**.

3. To see monitor status, select a metric in the details pane and set a threshold. Note that, when setting a threshold in this view, there are no default threshold values for the SiteScope metrics. To set a threshold, use the Set Threshold dialog box, select **Use custom threshold**, and define the threshold you want set for the SiteScope metric.

Monitors View Description

The Monitors view currently presents data gathered by SiteScope monitors.

To access	In the navigation pane of the Diagnostics Applications window, double-click an application name (for example, Entire Enterprise).
	In the Views pane, click External Monitors to open the External Monitors view group. From the External Monitors view group, select the Monitors view.
	You can also access this view directly from the Applications window by selecting the link to Monitors under Monitors in the Application Contents pane.
Important information	The Diagnostics integration with SiteScope is configured in SiteScope. When configuring SiteScope for integration with Diagnostics, it is important to ensure that the metrics sent to Diagnostics conform to the allowable units in Diagnostics (see"Viewing SiteScope Data in Diagnostics" on page 15).
Relevant tasks	"How to Display a Graph and See Status in the Monitors View" above
	When you first view SiteScope data in the Monitors view, by default the monitor's status is gray and no data is graphed. To see a status (red, yellow, green), you must first set a threshold on a metric (in the details pane). To see data in the graph, you must first select a metric to be charted (in the details pane).

Page Content

The following user interface elements are included:

UI Element	Description
Chart	When you first view SiteScope data in the Monitors view, by default the monitor's status is gray and no data is graphed. To see a status (red, yellow, green), you must first set a threshold on a metric (in the details pane). To see data in the graph, you must first select a metric to be charted (in the details pane). The metrics you select to be charted appear as a trend line. You can use the view filters in the Title bar to filter the data for a particular probe group. The x-axis of the graph shows chronological time. The y-axis of the graph shows the scale for the metric selected to be charted. Thresholds are displayed as horizontal lines, with the threshold value shown to the left (and warning value shown to the right) in the chart. Monitor Details tooltip for the trend line on the graph displays the average metric value.

UI Element	Description
Table	Lists the SiteScope monitors that pertain to the context selected. The metrics reported in the table are aggregated based on the time period selected in the view filters in the Title bar.
	The table is highly customizable. Right-click any column to select Customize Columns and specify which metrics you want to appear in the columns in the table and the order in which they should appear. You can also specify which columns to use to sort the rows in the table.
	The following columns appear by default:
	Status. By default, the first column shows the status for the monitor. When you first view SiteScope data in the Monitors view, by default the monitor's status is gray and no data is graphed. To see a status (red, yellow, green), you must first set a threshold on a metric (in the details pane). To see data in the graph, you must first select a metric to be charted (in the details pane).
	The status reflects how the performance of the item compares with the threshold setting.
	Chart. From the table, you can select the entities that are to be charted on the graph. The color of the block is the color that Diagnostics uses to chart the metrics for the entity.
	Type. The type of SiteScope monitor (for example, Disk Space, CPU, Memory, SNMP, Windows Services, UNIX Resources).
	Collector. The SiteScope server displayed as SiteScope-<SiteScope_server_name>.
	Info. This column indicates if the entity has an alert rule or comment defined.
Common Tasks and Navigations	Common actions relevant to the monitor.
	You can select Add to Snapshot. This is useful if you want to view SiteScope data combined with probe data.
Details Pane	Shows metrics collected on external monitors. The Diagnostics integration with SiteScope is configured in SiteScope. When configuring SiteScope for integration with Diagnostics, you should ensure that the metrics sent to Diagnostics conform to the allowable units in Diagnostics (see "Viewing SiteScope Data in Diagnostics" on page 15).

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