HP SiteScope

For the Windows, Solaris, and Linux operating systems

Software Version: 11.20

Configuring the Integration with HP Diagnostics



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Contents

Configuring the Integration with HP Diagnostics	1
Contents	5
SiteScope Integration with Diagnostics Overview	6
How to Configure SiteScope to Report Data to HP Diagnostics	8
Troubleshooting the Integration.	13
XML Tag Reference for Generic Data and Diagnostics Integrations	14
Viewing SiteScope Data in Diagnostics	17
How to Display a Graph and See Status in the Monitors View.	19
Monitors View Description	19

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 is displayed in the Diagnostics External Monitors view group. See "Viewing SiteScope Data in Diagnostics" on page 17 for information on this view and on configuration.

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

Page 6 of 21 HP SiteScope (11.20)

Configuring the Integration with HP Diagnostics

Chapter 1: SiteScope Integration with Diagnostics Overview

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 14.

Page 7 of 21 HP SiteScope (11.20)

Chapter 2

How to Configure SiteScope to Report Data to HP Diagnostics

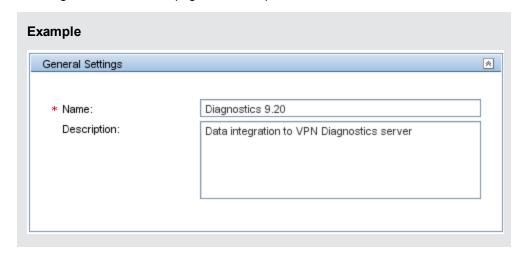
The following steps describe how to configure SiteScope to report metrics data to HP Diagnostics.

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 Diagnostic 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 on the Diagnostics server receiving the data from SiteScope. This description appears only in the Integration Preferences page in SiteScope.



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

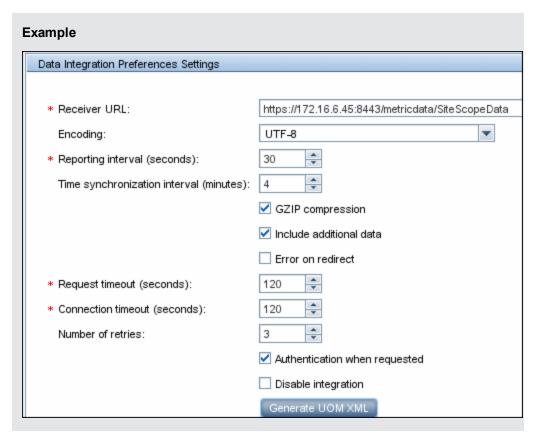
Page 8 of 21 HP SiteScope (11.20)

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
which 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.

Page 9 of 21 HP SiteScope (11.20)



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, whilst for more complex monitors the counters with "unknown" units must be updated accordingly 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 6.

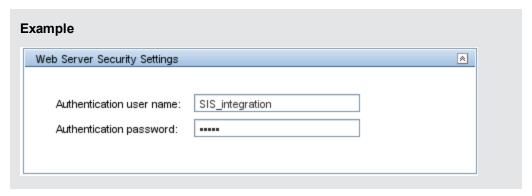
```
Example
sis.unit.map.% = percent
sis.unit.map.KB = kilobytes
sis.unit.map.MB = megabytes
sis.unit.map.GB = gigabytes
```

Page 10 of 21 HP SiteScope (11.20)

```
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.



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

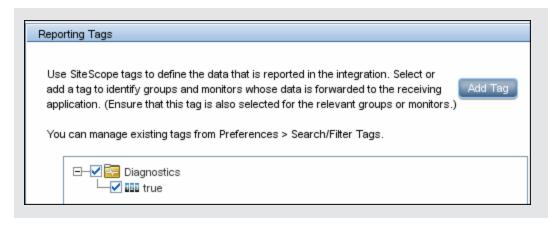
3. Select reporting tags to indicate which monitors/groups to report

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. The tag must be selected for the groups, subgroups, and monitors whose data you want forwarded 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 <code>Diagnostics</code> and select it here. For each group, monitor, or both, whose status you want to report to Diagnostics, select this tag under the <code>Search/Filter Tags</code> setting.

Page 11 of 21 HP SiteScope (11.20)



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 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 can be viewed in the Diagnostics External view group.

Page 12 of 21 HP SiteScope (11.20)

For details on viewing data in Diagnostics, see "Viewing SiteScope Data in Diagnostics" on page 17.

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 forwarded to Diagnostics.
- Activate DEBUG in <SiteScope root directory>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

Page 13 of 21 HP SiteScope (11.20)

XML Tag Reference for Generic Data and Diagnostics Integrations

When SiteScope forwards data for generic data or diagnostics integrations, it does so 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 8.

This section also includes:

- "Data XML Elements and Attributes Table" below
- "Time Synchronization XML" on page 16

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.	collector collector	SiteScope Host Application collecting the data, which is always SiteScope
group	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

Page 14 of 21 HP SiteScope (11.20)

monitor Represents the SiteScope monitor	type	Monitor type (as displayed in New Monitor dialog box)	
	and parent element to the counter element	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.	

Page 15 of 21 HP SiteScope (11.20)

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	collectorHost	SiteScope host
the XML	tne XML	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

Page 16 of 21 HP SiteScope (11.20)

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 (see the "Integration Preferences" section of the SiteScope documentation for details).

When configuring SiteScope for integration with Diagnostics it will be important to ensure 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
milliseconds seconds	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 will be defaulted to the count unit.

After configuring the SiteScope integration with Diagnostics (see the SiteScope documentation), and as monitors are associated with the integration, SiteScope generates a file /SiteScope/conf/integration/data integration uom.xml that controls the mappings of

Page 17 of 21 HP SiteScope (11.20)

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 is unable to 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 of 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 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.

Page 18 of 21 HP SiteScope (11.20)

Note: You may see some of the same metrics in both the Monitors view and others 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. You'll note when setting a threshold in this view that there aren't any 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. Select the Monitors view from the External Monitors view group.
	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 the metrics sent to Diagnostics conform to the allowable units in Diagnostics (see"Viewing SiteScope Data in Diagnostics" on page 17).
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 19 of 21 HP SiteScope (11.20)

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 are displayed, 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.
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 displayed 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.
	By default the following columns are displayed:
	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>.</sitescope_server_name>
	Info. This column indicates if the entity has an alert rule or comment defined.

Page 20 of 21 HP SiteScope (11.20)

UI Element	Description
Common	Common actions relevant to the monitor.
Tasks and Navigations	You can select Add to Snapshot, which 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 it is important to ensure the metrics sent to Diagnostics conform to the allowable units in Diagnostics (see "Viewing SiteScope Data in Diagnostics" on page 17).

Page 21 of 21 HP SiteScope (11.20)