

CA Wily Introscope®

Manager for CA SiteMinder

User Guide

Version 12.0.1.2

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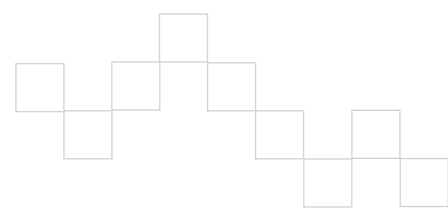
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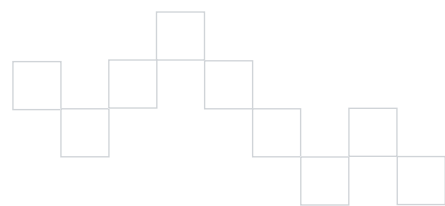
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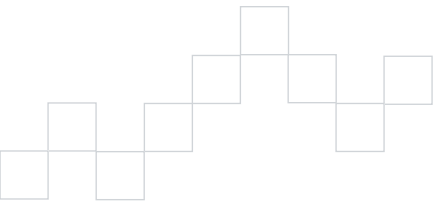




Introduction to CA Wily Introscope Manager for CA SiteMinder

This chapter provides an overview of CA Wily Introscope Manager for CA SiteMinder.

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Introduction

CA Wily Manager for CA SiteMinder (henceforth referred to as Manager for SiteMinder) enables you to monitor the CA SiteMinder and view the associated metrics in Introscope. This user guide discusses how you can use Manager for SiteMinder-specific metrics, typeviews, dashboards, and metrics to monitor CA SiteMinder. It also lists the procedures for installation and configuration of Manager for SiteMinder.

CA SiteMinder is built on a three tier architecture:

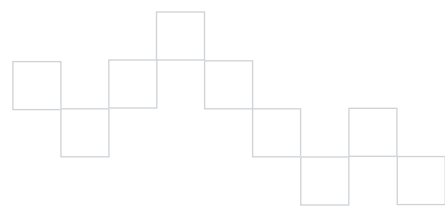
- The Web Agent tier where gatekeeper agents block unauthorized access to Web applications and enterprise resources.
- The Policy Server tier where requests from agents are validated against policies and user stores to determine what is protected, to validate user identities, and to authorize user access to a given resource.
- The Data Store tier where User Stores, Policy Stores, and Key Stores are queried by the Policy Server during operation.

Manager for SiteMinder provides visibility into all tiers of the CA SiteMinder infrastructure.

- On the Web Agent tier Manager for SiteMinder determines whether a web agent is available and measures its performance, load, and platform health.
- On the Policy Server tier Manager for SiteMinder monitors the Policy Server process for availability and measures the performance, load, and internal health of the Policy Server process as well as platform health.
- On the Data Store tier Manager for SiteMinder exposes data store load, performance, and availability, along with any errors generated by each data store in operation.

Manager for SiteMinder collects and analyzes metrics from the CA SiteMinder infrastructure in real time. If metrics show availability, performance, or health problem, administrators can customize Manager for SiteMinder to alert an administrator or system user based on the problem that has occurred. Alerts can be configured to meet the needs of an individual CA SiteMinder deployment.

Manager for SiteMinder is built on the CA Wily Introscope and shares all the key benefits of Introscope as an enterprise monitoring platform. Administrators can set alerts and create custom dashboards to visualize the performance of CA SiteMinder in real time. Through Introscope, administrators can create standard and custom reports to show the current and historic status of CA SiteMinder.

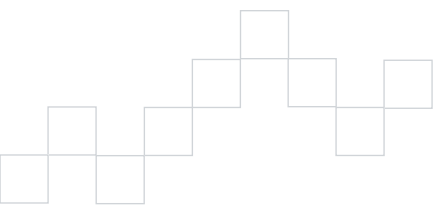


Key Features of Manager for SiteMinder

Manager for SiteMinder provides CA Wily Introscope with CA SiteMinder metric data. It enables the use of Introscope to monitor the performance impact of CA SiteMinder on your application infrastructure.

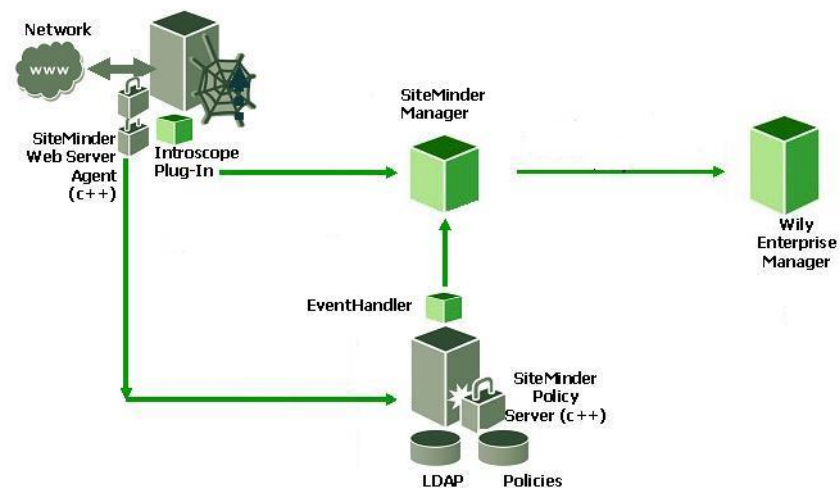
Key features include:

- A real-time monitor of availability, health, and operational performance for each CA SiteMinder Web Agent and CA SiteMinder Policy Server.
- An operating system monitor to measure the status of each web server hosting a CA SiteMinder Web Agent and CA SiteMinder Policy Server.
- A real-time monitor of availability, load, and performance for each CA SiteMinder data store.
- Programmable alerts.
- Customizable dashboards for visualizing CA SiteMinder availability, health, and performance.
- Alerts through console, email, or other means when CA SiteMinder metrics violate programmable alerting levels.
- Customized reports on CA SiteMinder availability, health, and performance over a specific time frame.
- Integration with commonly-used enterprise monitoring systems.

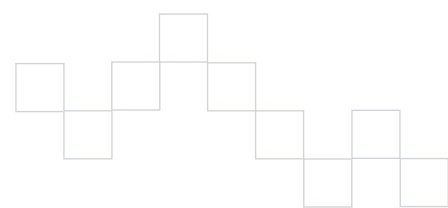


Overview of Architecture and Design of Manager for SiteMinder

The illustration shows a high-level architecture of Manager for SiteMinder in one of its operating environments. Manager for SiteMinder collects metrics from two plug-ins, namely, the Introscope plug-in in Web Agent and the Event Handler in Policy Server. Both plug-ins come along with CA SiteMinder product. The plug-ins must be configured to send metrics to Manager for SiteMinder. The loaded plug-ins in Web Agent and Policy Server write their metrics into a shared memory segment created by Manager for SiteMinder. Manager for SiteMinder then reads data from this segment in fifteen-second intervals and reports them to Introscope.



If Web Agent and Policy Server are installed on the same machine as shown in the illustration, then you need only one Manager for SiteMinder for that machine. In this case, Manager for SiteMinder can monitor and report metrics for both, Web Agent and Policy Server. If Web Agent and Policy Server are on different machines, then Manager for SiteMinder needs to be installed on each of those machines.



Manager for SiteMinder Components

Manager for SiteMinder version 12.0 contains the following features.

Installer

The installer is used for ease of installation of Manager for SiteMinder components.

Web Agent Monitor

The Web Agent Monitor determines the availability, health, and performance of each CA SiteMinder Web Agent installed on a web server. The OS Monitor is optional. The SiteMinder Web Agent Monitor collects for each Web agent, the average, and peak operation time for:

- Resource protection checks
- Logins
- Authorizations
- Session validations

In addition, metrics on cache status, CPU, disk, memory, and network statistics are collected for the web server and passed to the Introscope Enterprise Manager to be analyzed and stored.

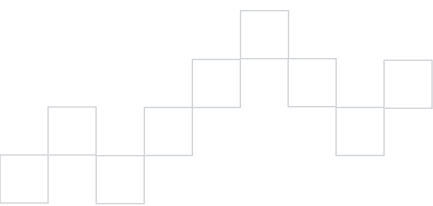
Policy Server Monitor

The Policy Server Monitor, installed on a CA SiteMinder Policy Server, determines the availability, health, and performance of the CA SiteMinder Policy Server. The OS Monitor provides information on the Policy Server process, along with CPU, disk, memory and network statistics for the Policy Server.

The Policy Server Monitor collects average and peak operation time for each operation, average and peak access time for each data store access, data store cache status, and internal Policy Server queue, thread, and socket metrics. The Policy Server Monitor passes this information to the Introscope Enterprise Manager.

OS Monitor

OS Monitor allows users to monitor the platform hosting CA SiteMinder components. It allows for the monitoring of CPU and memory usage, disk activity, and network performance. OS Monitor can be installed on any machine.



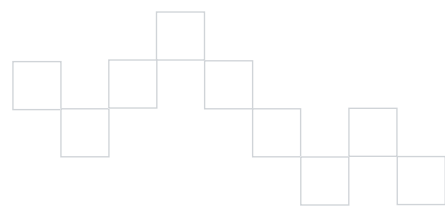
The CA SiteMinder Web Agent Monitor, the Policy Server Monitor, the SiteMinder Management Module, and the OS Monitor are installed from the same installer executable.

The SiteMinder Management Module installs pre-configured dashboards and alerts for default operation of the Manager for SiteMinder.

The OS Monitor is a standalone application that monitors key system resources such as disk space and memory usage. OS monitor does not require a Policy Server or web server to run. The metrics it reports are viewed through the Enterprise Manager.

Manager for SiteMinder Dashboards and Typeviews

The Introscope Enterprise Manager and Workstation are used to store and view data, respectively, generated by the Manager for SiteMinder. Installing the SiteMinder Management Module adds new dashboard views to the Introscope Console of the Introscope Workstation, providing users with a default set of views into CA SiteMinder performance. These dashboards can be customized to meet the unique monitoring needs of each CA SiteMinder implementation.



Installing and Configuring Manager for SiteMinder

This chapter contains instructions for installing, configuring, and uninstalling Manager for SiteMinder in Graphical User Interface (GUI) and silent installation modes. The chapter topics include:

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Installation requirements

This section lists the types of installation, the privileges required by users for Windows and UNIX platforms, system and version requirements of CA SiteMinder and Manager for SiteMinder, and considerations for web servers that are outside the firewall.

Types of installation and user privileges

Windows installation

If you are using Windows, you must have administrative privileges, or be part of the Administrators group to install Manager for SiteMinder.

UNIX installation

If you are using UNIX, you can install Manager for SiteMinder using root or non-root account.

Root installation

If you have root permissions, use the root installation to install Manager for SiteMinder.

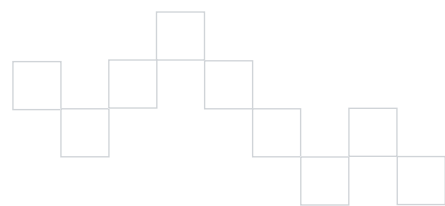
Non-root installation

If you do not have root permissions, use non-root installation to install Manager for SiteMinder.

When performing a GUI or silent mode installation using a non-root account, ensure that the non-root account has the privileges to:

- Create the Manager for SiteMinder installation directory.
- Copy files to the Manager for SiteMinder installation directory.
- Copy files to the following subdirectories within the Introscope EM install location (only required when installing Manager for SiteMinder Management Module)

- <EM installPath>/config/modules
- <EM installPath>/ext
- <EM installPath>/ext/ddtv
- <EM installPath>/scripts



Also, you must ensure that the user account with which Introscope EM is running has read and write permissions for the Manager for SiteMinder Management Module. The Management Module is available in the `<EM installPath>/config/modules` directory with the name `SiteMinderManager_ManagementModule.jar`.

Root versus non-root installation

When the installer is run with a root account, the installer executes all the steps and exits successfully. A log file is created in the Manager for SiteMinder's installation directory. After successful installation, you must manually configure the Web Agent and the Policy Server.

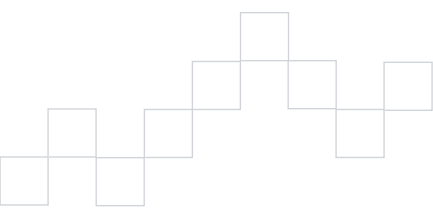
When the installer is run with a non-root account with required privileges, it would only execute the steps that do not require root privileges. You must manually complete the rest of the configuration. If the non-root account does not have the required privileges, the GUI installation displays a warning and you cannot proceed further without assigning the required permissions. For silent mode installation, if the installation folder does not have write permissions for the non-root user, the installation fails without creating a log file.

» **Important** If the user ID of the logged-in user includes special characters, such as \$, the installation does not proceed. Log in with a user ID that does not include special characters and run the installer again.

System and version requirements

The system and versions of CA SiteMinder components and Introscope components supported by Manager for SiteMinder are as follows:

- Introscope Enterprise Manager, version 7.2.2.0 or higher and version 8.0.2
- Introscope Workstation or Web View, version 7.2.2.0 or higher and version 8.0.2
- CA SiteMinder Web Agent v6.0 SP5 CR12 or higher and r12 SP1 CR2 or higher
- Apache 2.0, 2.2, and derivatives, such as IBM HTTP Server 2.0. Refer the CA SiteMinder Platform Support matrix for the complete list of Apache 2.0 and 2.2 derivative web servers.
- IIS 6.0
- Sun ONE 6.x and 7.0
- CA SiteMinder Policy Server, v6.0 SP5 CR12 or higher and r12 SP1 CR2 or higher.
- Perl is required for UNIX/Linux installations for OS monitoring.
- For HP-UX, ensure that the patch PHCO_34236 is applied on the machine.



Considerations for Web Servers outside your firewall to connect to EM

The Introscope Enterprise Manager is configured to communicate by default on port 5001. This can be configured during or after the Enterprise Manager installation, by setting the value of the `introscope.enterprisemanager.port.channel1` variable in the `IntroscopeEnterpriseManager.properties` configuration file of the Introscope Enterprise Manager to the required port. The installer prompts for the Enterprise Manager hostname and port to which the monitors send the metric data. This configured port must be opened in your firewall for the communication.

Before you begin

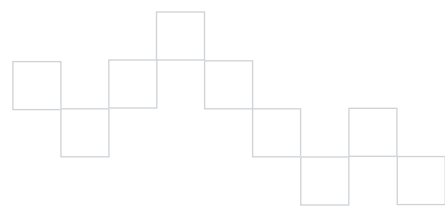
Before you begin installing Manager for SiteMinder, you must enable CA SiteMinder Web Agent for monitoring, select the components of Manager for SiteMinder to install and complete the installation worksheet.

Enable CA SiteMinder Web Agent

For Manager for SiteMinder to collect Web Agent metric data, the CA SiteMinder Web Agent must be enabled.

To enable the CA SiteMinder Web Agent:

- ◆ Set `EnableWebAgent` to `yes` in the `WebAgent.conf` file located in the web server's `<WebServerHome>\config` directory.



Complete the installation checklist

You may need to decide which components of Manager for SiteMinder to install, the directories where the components need to be installed, or information regarding the web servers where you need to install Manager for SiteMinder.

To identify the directory locations and the components to install:

- ◆ Complete the following installation checklist.

» **Note** If you need to perform an unattended or silent install of Manager for SiteMinder, see [Performing a silent install](#) on page 28

| Setting | Required for... |
|--|--|
| Select a directory for the installation | <p>The default directory is <code><C>:\CAWily\</code> on Windows and <code>/opt/CAWily/</code> on UNIX or Linux systems. You may choose to install Manager for SiteMinder in a directory other than the default.</p> <p>Note: If you are installing an additional component or components, they must be installed in the same directory where the other components have been installed.</p> |
| Decide if you want to install the entire product or a subset of its components | <ul style="list-style-type: none"> ■ SiteMinder Web Agent Monitor ■ Policy Server Monitor ■ SiteMinder Management Module ■ OS Monitor ■ Complete Product |
| Identify the location and port number of your Enterprise Manager | <ul style="list-style-type: none"> ■ Name of your Introscope Enterprise Manager ■ Port number (default: 5001) |
| Identify the location for the Management Modules | Directory where Enterprise Manager resides |

Setting**Required for...**

Identify your web servers

The installer allows you to automatically discover the web servers on the machine where CA SiteMinder Web agents have been configured. You can override the automatic discovery feature and locate the web servers manually. If you choose to locate the web servers manually, you need the following information for each web server:

- Type of server
- Directory where server is located (Server Root)

Note: For Apache servers, this is the home path of the Apache server (for example, `C:\apache`). For Sun ONE servers, this is the home path of the Sun ONE server (for example, `C:\iPlanet\Servers` for Windows and `/opt/SUNWbsvr` for UNIX).

- Directory of server configuration file (Configuration Path)

Note: For Apache servers, this is the `conf` file of the Apache instance running (for example, if the Apache server is installed at `C:\apache` and the default `conf` file `httpd.conf` is used, the path needs to be specified as `C:\apache\conf\httpd.conf`

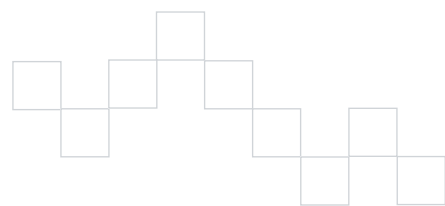
For Sun One servers, this field should be the full instance name (for example, `https-sunoneinstancename`).

Back up files from previous installation

Before proceeding with the new installation, back up any files from a previous installation that you might want to save. Installing Manager for SiteMinder may erase files created for a previous version of the application.

To back up files from a previous installation:

- ◆ Create a copy of all the directories and data related to Manager for SiteMinder on your hard disk and archive it on another storage device, such as a hard disk or a tape.



Installing Manager for SiteMinder in the GUI mode

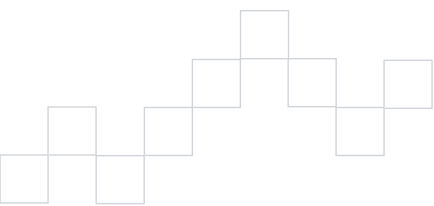
You can install Manager for SiteMinder on Windows and UNIX in the GUI mode.

To install Manager for SiteMinder in the GUI mode, perform the following steps:

- 1 Obtain and extract the following archive from the URL for the CA Wily Software Download Site that is provided in a software delivery e-mail.

| Platform | Archive |
|-------------------|---|
| UNIX 32-bit | CAWilySiteMinderManager_12.0.1.2<UNIXOSName>32Installer.tar |
| Windows 32-bit | CAWilySiteMinderManager_12.0.1.2Windows32Installer.zip |
| UNIX 64-bit | CAWilySiteMinderManager_12.0.1.2<UNIXOSName>64Installer.tar |
| Windows 64-bit | CAWilySiteMinderManager_12.0.1.2Windows64Installer.zip |

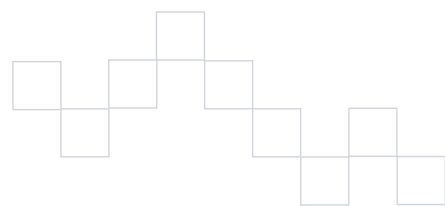
- 2 Move the archive to a drive on your network that is accessible to the machines where you plan to install Manager for SiteMinder components.
- 3 Extract the files from the archive.
Each component is installed from the same installer executable.
- 4 Launch the installer executable.
 - **For Windows:** Execute `install.exe`
 - **For UNIX:** Run `./install.bin` from the directory where the archive was extracted
 The **Introduction** screen appears.
- 5 Click **Next**.
The **Important Information** screen appears with a message asking you to back up files from previous installation.
- 6 Click **Next**.
The **Choose Install Folder** screen appears.
- 7 Click the **Choose** button to select an installation directory or type the path to the installation directory in the text box.
- 8 Click **Next**.
The **Product Explorer** screen appears.



- 9 Perform one of the following steps:
 - Select one of the following installation options from the **Install Set** menu.
 - **All**—selects all components for installation.
 - **Web Agent**—selects both the CA SiteMinder Web Agent Monitor and the OS Monitor for installation.
 - **Policy Server**—selects both the Policy Server Monitor and OS Monitor for installation.
 - **Introscope Enterprise Manager**—selects both the SiteMinder Management Module and the OS Monitor for installation.
 - **OS Monitor**—selects the OS Monitor for installation.
 - **Custom**—selects all components for installation. Clear the check boxes beside the components you do not want to install.
If you need to install more than one Install Set option on a particular machine, choose **Custom** and clear the checkboxes for the items you do not want to install.
 - Clear the check boxes beside the names of components you don't want to install
- 10 Continue with the installation, following the onscreen prompts and referring to your Installation Worksheet when necessary to provide the required information.
 - » **Note** When installing in a UNIX environment, use of a terminal emulator may cause display issues. Apply the current UNIX patch bundle to correct the problem.

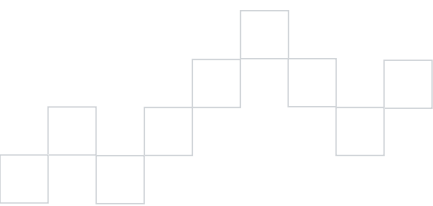
Installation Log files

On successful installation, the `CAWilySiteMinderManager_InstallLog.Log` log file gets created in the Manager for SiteMinder install directory. If you cancel the installation in progress, the `CAWilySiteMinderManager_InstallLog.Log` log file gets created on the desktop for Windows or in the home directory of the user account for UNIX.



Auto-created response file

During the installation process, Manager for SiteMinder creates a response file, `Silentinstaller.properties`, in the `<installPath>/CAWilySiteMinderManager/` directory. The response file saves your configuration options and allows you to duplicate them on other machines without having to launch the GUI-based installer and run through the steps again. By using the `Silentinstaller.properties` file, you can recreate the installation on another machine unattended. See [Performing a silent install](#) on page 28 for information on using the auto-created response file to simplify the installation process.



Post-installation steps for GUI installation

If you have installed the Manager for SiteMinder using root or administrator privileges, see [Post installation steps for installation with root or administrative privileges](#) on page 22.

If you have installed the Manager for SiteMinder using non-root account, see [Post installation steps for installation with non-root account](#) on page 24

Post installation steps for installation with root or administrative privileges

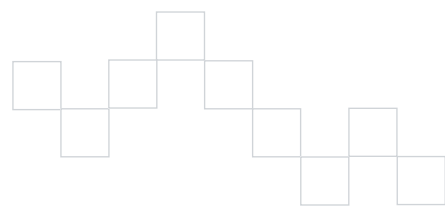
If the installer was run with administrator privileges on Windows or root privileges on UNIX, after completing the installation, you need to perform the following steps:

- Step 1** Update WebAgent Config object.
- Step 2** Update the Policy Server configuration.
- Step 3** Restart the affected servers.
- Step 4** Start Manager for SiteMinder.

Update WebAgent Config object

To update WebAgent Config object:

- ◆ Set the `EnableIntroscopeAgentSupport` and `EnableMonitoring` parameters in the WebAgent Config object as follows:
 - `EnableIntroscopeAgentSupport=YES`
 - » **Note** If you are using both Manager for SiteMinder and Introscope PowerPack for SiteMinder to monitor the WebAgent, then set the `EnableIntroscopeAgentSupport` parameter to BOTH.
 - `EnableMonitoring=YES`



Update the Policy Server configuration

You must configure the event handlers in policy Server in order to enable the Server to send metrics to Manager for SiteMinder.

If you are using Policy Server v6.0 SP5 CR12 or higher

To update Policy Server configuration, perform the following steps:

- 1 Launch the SiteMinder Policy Server Management Console for CA SiteMinder.

For Windows: From the start menu on windows, select **SiteMinder Policy Server Management Console**.

For UNIX/Linux: From the `<policy server path>/bin` directory, run the `smconsole` command.

- 2 Select the **Advanced** tab.
- 3 Add one of the following to the Event Handlers list:

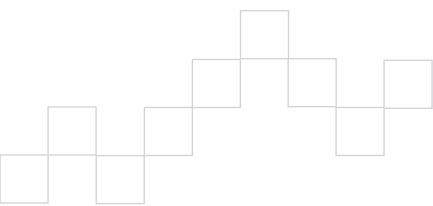
For Windows: `<policy server path>\bin\EventIntroscopeprovider.dll`

For UNIX/Linux: `<policy server path>/lib/libEventIntroscopeprovider.so`

If you are using Policy Server r12 SP1 or higher

To update Policy Server configuration, perform the following steps:

- ◆ Launch the `XPSCfg` to add one of the following to the Event Handlers list:
 - a **For Windows:** Navigate to the `<policy server path>\bin\` directory and double-click the `XPSCfg.exe` file to execute it.
For UNIX/Linux: Navigate to the `<policy server path>/bin` directory and type `./XPSCfg` and press ENTER.
 System prompts for "Enter Option (id, L or Q):".
 - b Type XPS and press ENTER.
 System prompts for "Enter Option (D, V, F, # or Q):".
 - c Type 5 and press ENTER.
 System prompts for "Enter Option (CQ):".
 - d Type C.
 You are asked to enter a new value.
 - e **For Windows:** Enter the complete path for `EventIntroscopeprovider.dll`.
For UNIX/Linux: Enter the complete path for `libEventIntroscopeprovider.so`.
 System prompts for "Enter Option (D, V, F, # or Q):".



f Type Q.

System prompts for "Enter Option (id, L or Q):".

g Type Q.

Restart the affected servers

To enable the configurations to take effect:

- ◆ Restart the Introscope Enterprise Manager, Policy Server, and the web server, after completing the installation, if you added components or changed their configurations.

Start Manager for SiteMinder

Manager for SiteMinder gets registered as a Windows service and starts automatically. You do not perform any explicit procedure to start the Manager for SiteMinder on Windows.

To start Manager for SiteMinder on UNIX and Linux installations:

- ◆ Enter the following command to execute the script from the `<installPath>/CAWilySiteMinderManager/SiteMinderManagerAgent` directory:

```
./StartAgent.sh start
```

The script must be executed each time the system is rebooted.

Post installation steps for installation with non-root account

If the installer was run with non-root privileges on UNIX/Linux, after completing the installation, you need to perform the following steps:

Step 1 Update Web Agent configuration.

Step 2 Update Policy Server configuration.

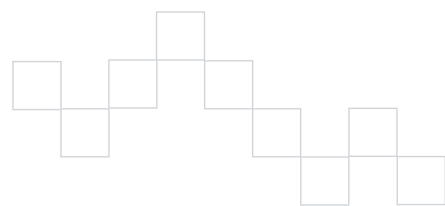
Step 3 Restart the affected servers.

Step 4 Start Manager for SiteMinder.

Update Web Agent configuration

To update WebAgent config object:

- 1 In the `WebAgent.conf` file, uncomment the load module directive for plug-in `libIntroscopePlugin`.



2 Set the following parameters in the WebAgent Config object as follows:

- `EnableIntroscopeAgentSupport=YES`

» **Note** If you are using both Manager for SiteMinder and Introscope PowerPack for SiteMinder to monitor the WebAgent, then set the `EnableIntroscopeAgentSupport` parameter to BOTH.

- `EnableMonitoring=YES`

3 From the `<installPath>/CAWilySiteMinderManager/ SiteMinderManagerAgent` directory, copy the `libIntroscopeNativeDataAPI.so` file to the `bin` directory of SiteMinder Web Agent.

4 From the `<installPath>/CAWilySiteMinderManager/ SiteMinderManagerAgent` directory, copy the `smm_env.sh` file to the Web Agent root directory. Thereafter, source it in the Web Agent profile file `ca_wa_env.sh` (if CA SiteMinder r12 SP1 is installed) or `nete_wa_env.sh` (if SiteMinder 6.x is installed) using the complete path.

For example, if SiteMinder Web Agent is installed in the `/opt/netegrity/webagent` directory, add the following line to the SiteMinder Web Agent profile file

```
. /opt/netegrity/webagent/smm_env.sh
```

5 For Apache web server, edit the `envvars` file present in the web server's `bin` directory by adding the line

```
<installPath>/CAWilySiteMinderManager/SiteMinderManagerAgent/IntroscopeNativeDataReporter.sh init
```

Update Policy Server configuration

If you are using Policy Server v6.0 SP5 CR12 or higher

You must configure the event handlers in policy Server in order to enable the Server to send metrics to Manager for SiteMinder.

To update Policy Server configuration, perform the following steps:

1 Launch the SiteMinder Policy Server Management Console for CA SiteMinder. From the `<policy server path>/bin` directory, run the `smconsole` command.

2 Select the **Advanced** tab.

3 Add the following to the Event Handlers list:

```
<policy server path>/lib/libEventIntroscopeprovider.so
```

- 4 From the `<installPath>/CAWilySiteMinderManager/`
`SiteMinderManagerAgent` directory, copy the
`libIntroscopeNativeDataAPI.so` to the policy server's `lib` directory.
- 5 From the `<installPath>/CAWilySiteMinderManager/`
`SiteMinderManagerAgent` directory, copy the `smm_env.sh` file to the policy
server root directory. Thereafter, source it in the Policy Server profile file
`nete_ps_env.ksh` using the complete path.

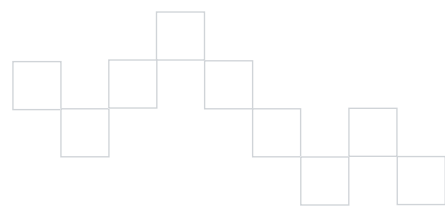
For example, if SiteMinder Policy Server is installed in the `/opt/netegrity/`
`siteminder` directory, add the following line to the SiteMinder Policy Server
profile file

```
. /opt/netegrity/siteminder/nete_ps_env.ksh
```

If you are using Policy Server r12 SP1 or higher

To update Policy Server configuration, perform the following steps:

- 1 Launch the `XPSSConfig` to add one of the following files to the Event Handlers list:
 - a Navigate to the `<policy server path>/bin` directory and type `./XPSSConfig`
and press ENTER.
System prompts for "Enter Option (id, L or Q):".
 - b Type XPS and press ENTER.
System prompts for "Enter Option (D, V, F, # or Q):".
 - c Type 5 and press ENTER.
System prompts for "Enter Option (CQ):".
 - d Type C.
You are asked to enter a new value.
 - e Enter the complete path for `libEventIntroscopeprovider.so`.
System prompts for "Enter Option (D, V, F, # or Q):".
 - f Type Q.
System prompts for "Enter Option (id, L or Q):".
 - g Type Q.
- 2 From the `<installPath>/CAWilySiteMinderManager/`
`SiteMinderManagerAgent` directory, copy the
`libIntroscopeNativeDataAPI.so` to the policy server's `lib` directory.



- 3** From the `<installPath>/CAWilySiteMinderManager/`
`SiteMinderManagerAgent` directory, copy the `smm_env.sh` file to the policy
 server root directory. Thereafter, source it in the Policy Server profile file
`ca_ps_env.ksh` using the complete path.

For example, if SiteMinder Policy Server is installed in the `/opt/netegrity/`
`siteminder` directory, add the following line to the SiteMinder Policy Server
 profile file

```
. /opt/netegrity/siteminder/smm_env.sh
```

Restart the affected servers

To enable the configurations to take effect:

- ◆ Restart the Introscope Enterprise Manager, Policy Server, and the web server, after completing the installation, if you added components or changed their configurations.

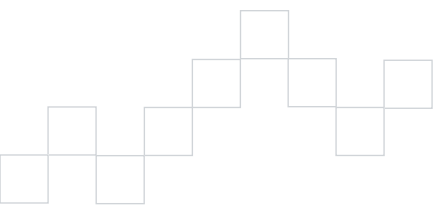
Start Manager for SiteMinder

To start Manager for SiteMinder on UNIX and Linux installations:

- ◆ Enter the following command to execute the script from the `<installPath>/`
`CAWilySiteMinderManager/SiteMinderManagerAgent` directory:

```
./StartAgent.sh start
```

The script must be executed each time the system is rebooted.



Performing a silent install

Manager for SiteMinder allows you to install its components without requiring access to a GUI or console. The installation occurs silently, without disrupting current processes or requiring user input.

User configuration values are stored as a set of variables in the response file. You set these variables by editing the sample response file

`silentInstallerSampleManager.properties` provided by Manager for SiteMinder. See [Use sample response file provided by Manager for SiteMinder](#) on page 28 for details. You can use the `Silentinstaller.properties` file generated from a previous install using the GUI-based installation process. See [Use auto-generated response file from previous GUI installation](#) on page 32 for details. During a silent install, configuration values are read from the response file so no user interaction is required and installation proceeds unattended.

An unattended install can be conducted on either a local or remote machine.

» **Note** After performing a silent install, you need to restart the Introscope Enterprise Manager, Policy Server, and the web server if changes were made to their configurations.

Use sample response file provided by Manager for SiteMinder

The first step in the process is to configure the response file manually. For successful installation of Manager for SiteMinder, this file must be configured correctly.

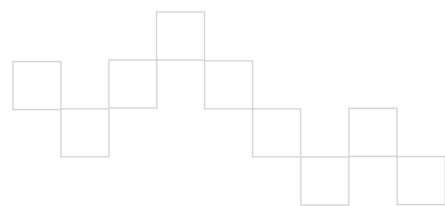
» **Note** If any variable value is not set correctly, installation may fail or provide unintended results.

The sample response file, `silentInstallerSampleManager.properties`, is located in the directory where you extracted the archive for Manager for SiteMinder.

To use the sample response file provided by Manager for SiteMinder, perform the following steps:

Step 1 Edit the response file manually.

Step 2 Install the components using the manually edited response file



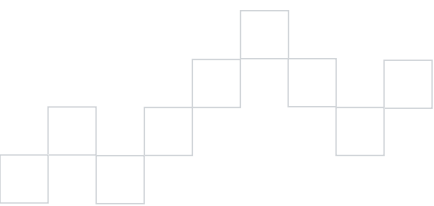
Edit the response file manually

The response file contains a number of categories. Within each category, one or more variables need to be set.

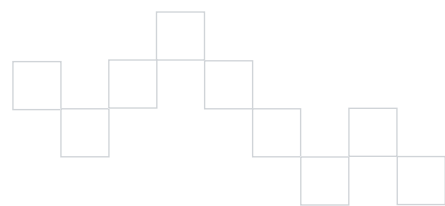
To edit the response file manually:

- ◆ Set the variables as listed in the following table. If a variable doesn't apply to your installation, leave it blank.
- » **Note** On Windows systems, when setting paths, the backslash character must be escaped (using a double slash). For example, `C:\\CAWily` is correct where `C:\CAWily` will fail.

| (Category) Variable(s) | Value |
|---|---|
| (General Settings) USER_INSTALL_DIR= | <p>Directory where you intend to install Manager for SiteMinder.</p> <p>Note: On Windows systems, the backslashes must be escaped.</p> <p>Windows Example: <code>C:\\CAWily</code></p> <p>UNIX Example: <code>/opt/CAWily</code></p> |
| (Features List) CHOSEN_INSTALL_FEATURE_LIST | <p>Specify the features to be installed.</p> <p>To install more than one feature, separate features with a comma.</p> <p>Features</p> <p>WSAgent for SiteMinder Web Agent Monitor</p> <p>PolMon for Policy Server Monitor</p> <p>ManMod for Management Modules for Introscope EM</p> <p>OS Mon for OS Monitor</p> <p>Example: <code>CHOSEN_INSTALL_FEATURE_LIST=WSAgent,OSMon</code></p> |



| (Category) Variable(s) | Value |
|---|---|
| (List of web servers) | <p>In this section you list the web servers where you intend to install Manager for SiteMinder Web Agents. The first group of parameter, the counters, require a numerical value to represent how many of each type of web server you want to install, as in the following example:</p> |
| <p>counterApacheWebServer= counterSunOneWebServer= counterIISWebServer=</p> <p>apacheWSCBox1= apacheInstallPath1= apacheConfPath1=</p> <p>sunOneWSCBox1= sunOneInstallPath1= sunOneInstanceName1=</p> <p>sunOneWSCBox2= sunOneInstallPath2= sunOneInstanceName2=</p> <p>sunOneWSCBox3= sunOneInstallPath3= sunOneInstanceName3=</p> <p>iisWSCBox1= iisInstallPath1=</p> | <p>counterApacheWebServer=1 counterSunOneWebServer=3 counterIISWebServer=1</p> <p>For each Apache web server, set the following three variables.</p> <ul style="list-style-type: none"> ■ apacheWSCBox<N>= Set the apacheWSCBox<N> value to Selected to select the web server. Leave it blank if this web server is not to be included in the silent install. ■ apacheInstallPath<N>= Sets the path where the Apache web server is located. ■ apacheConfPath<N>= Sets the path where the Apache web server configuration file is located. <p><N> represents which server you are referring to. If you set the Apache counter variable to 3, you will need to create three line entries for each parameter where <N> is replace with 1 in the first instance, 2 in the second, and 3 in the third.</p> |
| <p>Note: The example illustrated here is for one Apache Server, three Sun ONE servers, and 1 IIS server. The number of instances in the list of web server must correspond to the actual number of web servers that you use.</p> | <p>Windows Examples</p> <p>apacheWSCBox1=Selected apacheInstallPath1=C:\\Program Files\\Apache2 apacheConfPath1=C:\\Program Files\\Apache2\\conf\\httpd.conf</p> <p>UNIX Examples</p> <p>apacheWSCBox1=Selected apacheInstallPath1=/usr/local/apache2 apacheConfPath1=/usr/local/apache2/conf/httpd.conf</p> |
| <p>(Management Module feature)</p> <p>EM_INSTALL_DIR=</p> | <p>Introscope Enterprise Manager folder where Management Module files should be copied.</p> <p>On Windows, backslashes must be escaped.</p> <p>Windows Example</p> <p>EM_INSTALL_DIR=C:\\Introscope7.2</p> <p>UNIX Example</p> <p>EM_INSTALL_DIR=/opt/Introscope7.2</p> |



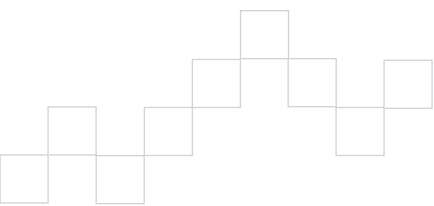
| (Category) Variable(s) | Value |
|--|--|
| (Policy Server feature) SMM_NETE_PS_ROOT= | The SiteMinder Policy Server root folder. On Windows, backslashes must be escaped. Windows Example SMM_NETE_PS_ROOT=C:\\netegrity\\siteminder UNIX Example SMM_NETE_PS_ROOT=/opt/netegrity/siteminder |
| (OS Monitor Feature - Introscope Enterprise Manager Info) emName=localhost emPort=5001 | Use the default settings here, unless you have changed the port number on your Enterprise Manager server. |
| (SiteMinder Policy Server Info) POLICY_SERVER_EXISTS=0 | Specifies whether Policy Server is installed or not. OS Monitor will monitor the SiteMinder Policy Server process if it is installed. A value of 0 means NO, 1 means YES. Default value is 0. |
| EM_VERSION_8=1 EM_VERSION_7.2.2=0 | Specify the Introscope Enterprise Manager version. For example, if you want to connect to 8.0 EM set EM_VERSION_8=1 and EM_VERSION_7.2.2=0 . If you want to connect to 7.2.2.0 EM onwards set EM_VERSION_8=0 and EM_VERSION_7.2.2=1 . 0 means NO, 1 means YES. Default is 8.0 EM. |

Install the components using the manually edited response file

Use the manually edited response file to install components for Manager for SiteMinder.

To install the components using the manually edited the sample response file:

- 1 Edit the sample response file (`silentInstallerSampleManger.properties`). See [Edit the response file manually](#) on page 29 for instructions on editing the response file or follow the comments in the `silentInstallerSampleManager.properties` file.
- 2 Rename the response file by changing the name of the edited response file from `silentInstallerSampleManager.properties` to `installer.properties`.
- 3 Copy the `installer.properties` file to the directory with the installer executable.



- 4 Run the installer from the desktop by double clicking it, or from a command prompt by typing the appropriate command:

For Windows:

- If the `installer.properties` file is located in the current folder
`install.exe -i silent`
- If the `installer.properties` file is not in the current folder
`install.exe -f <path>\installer.properties -i silent`
- If the `installer.properties` file has a different name:
`install.exe -f [<path>]<filename> -i silent`

For UNIX:

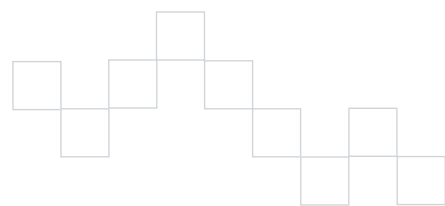
- If the `installer.properties` file is located in the current folder
`./install.bin -i silent`
- If the `installer.properties` file is not in the current folder
`./install.bin -f <path>/installer.properties -i silent`
- If the `installer.properties` file has a different name:
`./install.bin -f [<path>]/<filename> -i silent`

Use auto-generated response file from previous GUI installation

When you install Manager for SiteMinder using GUI, a response file, `Silentinstaller.properties`, is created in the `<installpath>CAWily\CAWilySiteMinderManager` directory. See [Auto-created response file](#) on page 21 for details. You may use this response file as the basis for the response file required for the silent install instead of the provided `silentInstallerSample.properties` file.

To use auto-generated response file from previous GUI installation:

- 1 Edit the `Silentinstaller.properties` file if necessary.
 - » **Note** The `Silentinstaller.properties` file may need little or no change if you are using it to install Manager for SiteMinder on multiple machines using the same set of parameters.
- 2 Rename the response file by changing the name of the edited response file from `Silentinstaller.properties` to `installer.properties`.
 - » **Note** If you have multiple `installer.properties` files, you may want to name them differently to make it easy to keep track of them.
- 3 Copy the `installer.properties` file to the directory with the installer executable.



- 4 Run the installer from the desktop by double clicking it, or from a command prompt by typing the appropriate command:

For Windows:

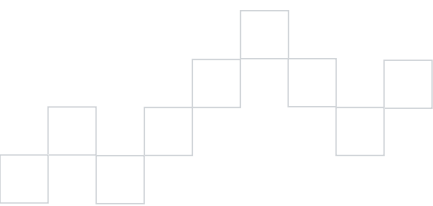
- If the `installer.properties` file is located in the current folder
`install.exe -i silent`
- If the `installer.properties` file is not in the current folder
`install.exe -f <path>\installer.properties -i silent`
- If the `installer.properties` file has a different name:
`install.exe -f [<path>]<filename> -i silent`

For UNIX:

- If the `installer.properties` file is located in the current folder
`./install.bin -i silent`
- If the `installer.properties` file is not in the current folder
`./install.bin -f <path>/installer.properties -i silent`
- If the `installer.properties` file has a different name:
`./install.bin -f [<path>]/<filename> -i silent`

Post-installation steps for silent installation

The post-installation steps for silent installation are same as the post-installation steps for GUI installation. See [Post-installation steps for GUI installation](#) on page 22.



Uninstalling Manager for SiteMinder

The uninstall procedure is common for both GUI installation and silent installation. It consists of three steps.

Step 1 Uninstall Manager for SiteMinder Components.

Step 2 Stop the Manager for SiteMinder.

Step 3 Launch and complete the uninstall.

Uninstall Manager for SiteMinder Components

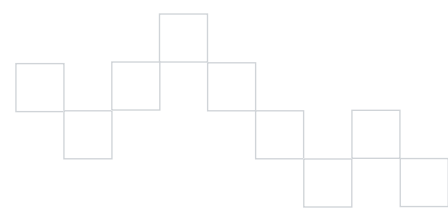
If the Manager for SiteMinder components were installed with a non-root account on UNIX, uninstall SiteMinder Web Agent Monitor or Policy Server Monitor, depending on the feature that needs to be uninstalled.

Optional: To uninstall SiteMinder Web Agent Monitor:

- 1** Stop the SiteMinder Web Agents that were configured to be monitored by Manager for SiteMinder.
- 2** Set `EnableIntroscopeAgentSupport=NONE` in the Web Agent configuration object.
Perform this step for all the web servers or their instances, which were configured with Manager for SiteMinder.
- 3** Comment the load module directive for plug-in `libIntroscopePlugin` in the `WebAgent.conf` file.
Perform this step for all the web servers or their instances, which were configured with Manager for SiteMinder.
- 4** Remove the call to the `smm_env.sh` file from the Web Agent profile file `nete_wa_env.sh` if using CA SiteMinder Web Agent v6.0 SP5 CR12 or a higher CR or `ca_wa_env.sh` if using CA SiteMinder Web Agent r12 SP2 or higher.
- 5** Delete the `smm_env.sh` file from the SiteMinder Web Agent root directory

Optional: To uninstall SiteMinder Policy Server Monitor:

- 1** Stop the SiteMinder Policy Server that was configured to be monitored by Manager for SiteMinder.
- 2** Remove the Event Handler that was configured to be loaded using `XPSSconfig` if using CA SiteMinder Policy Server r12 SP2 or higher or the SiteMinder Management console if using CA SiteMinder Policy Server v6.0 SP5 CR12 or a higher CR. To remove Event Handler using `XPSSconfig`:
 - a For Windows:** Navigate to the `<policy_server_path>\bin\` directory and double-click the `XPSSconfig.exe` file to execute it.



For UNIX/Linux: Navigate to the `<policy server path>/bin` directory and type `./XPSConfig` and press ENTER.

System prompts for "Enter Option (id, L or Q):".

- b** Type XPS and press ENTER.

System prompts for "Enter Option (D, V, F, # or Q):".

- c** Type 5 and press ENTER.

System prompts for "Enter Option (CQ):".

- d** Type C.

You are asked to enter a new value.

- e** Type `<space>`.

System prompts for "Enter Option (D, V, F, # or Q):".

- f** Type Q.

System prompts for "Enter Option (id, L or Q):".

- g** Type Q.

- 3** Remove the call to the `smm_env.sh` file from the Policy Server profile file `nete_ps_env.ksh` if using SiteMinder Policy Server v6.0 SP5 CR12 or a higher CR or `ca_ps_env.ksh` if using SiteMinder Policy Server r12 SP1 or higher.

- 4** Delete the `smm_env.sh` file from the SiteMinder Policy Server root directory

Stop the Manager for SiteMinder

You must stop Manager for SiteMinder before launching the uninstaller.

For Windows

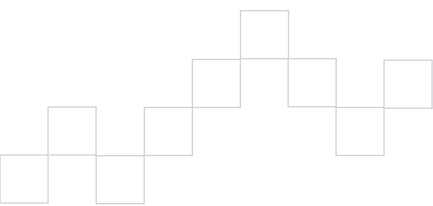
To stop Manager for SiteMinder:

- ◆ Stop the Windows service **Wily SiteMinderManager Agent**.
Manager for SiteMinder stops running.

For UNIX

To stop Manager for SiteMinder:

- ◆ Stop Manager for SiteMinder by executing the `./StartAgent.sh stop` command from `<installpath>/CAWilySiteMinderManager/SiteMinderManagerAgent` directory.



Launch and complete the uninstall

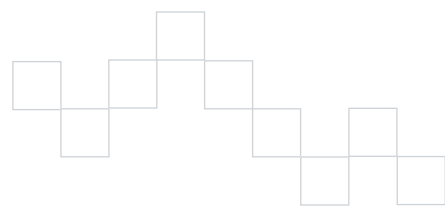
- 1 Launch the Uninstaller:

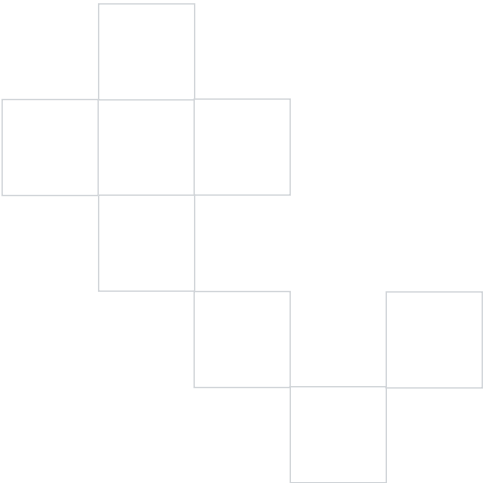
On Windows: From the *<Install Folder>\CAWilySiteMinderManager\Uninstall_* directory, double click *Uninstall_CAWilySiteMinderManager.exe*.

On UNIX: From the *<Install Folder>/* *Uninstall_CAWilySiteMinderManager* directory, execute *Uninstall_CAWilySiteMinderManager.sh*.

A dialog box appears with the message: **About to uninstall...**

- 2 Click **Next**.
- 3 Select either **Complete Uninstall** or **Uninstall Specific Features** and click **Next**.
- 4 If you selected **Uninstall Specific Features** in the next dialog, you need to select the items you want to uninstall. Only checked items are uninstalled.
The uninstall proceeds, ending in the message **All items were successfully uninstalled**.
- 5 Click **Finish** and restart the web servers and the Policy Server.

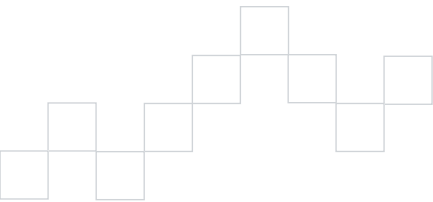




Using Manager for SiteMinder

This chapter describes how you can use Manager for SiteMinder to view metrics and overall health of the application using tabs and dashboards.

| | |
|--|----|
| Viewing Manager for SiteMinder metrics in the Investigator | 38 |
| Using Manager for SiteMinder dashboards | 52 |
| Viewing and creating Manager for SiteMinder metric groupings | 72 |
| Viewing and creating Manager for SiteMinder alerts | 73 |
| Viewing Transaction Tracing | 75 |



Viewing Manager for SiteMinder metrics in the Investigator

This section describes where Manager for SiteMinder metrics are found in the Introscope Investigator.

For a detailed list of metrics, see [Metrics](#) on page 89.

SiteMinder Web Agent metrics

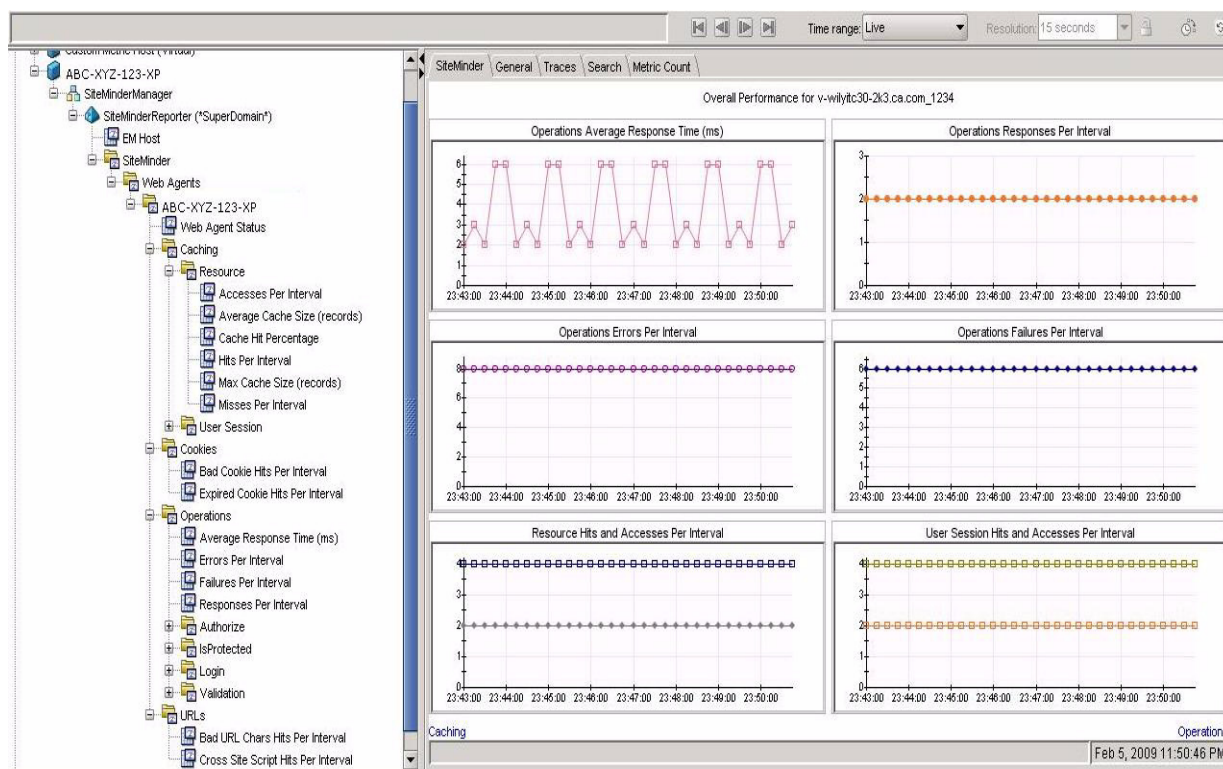
To view Web Agent metrics:

- 1 Click the **SiteMinderManager > SiteMinderReporter(*SuperDomain*) > SiteMinder > Web Agents > <WebagentName_Port>** node.

In the Viewer pane, the **SiteMinder** tab is active by default and you can see metrics associated with the web agent to assess its overall performance.

Under the **Web Agents** node are sub-nodes for **Caching**, **Cookies**, **Operations**, and **URLs**.

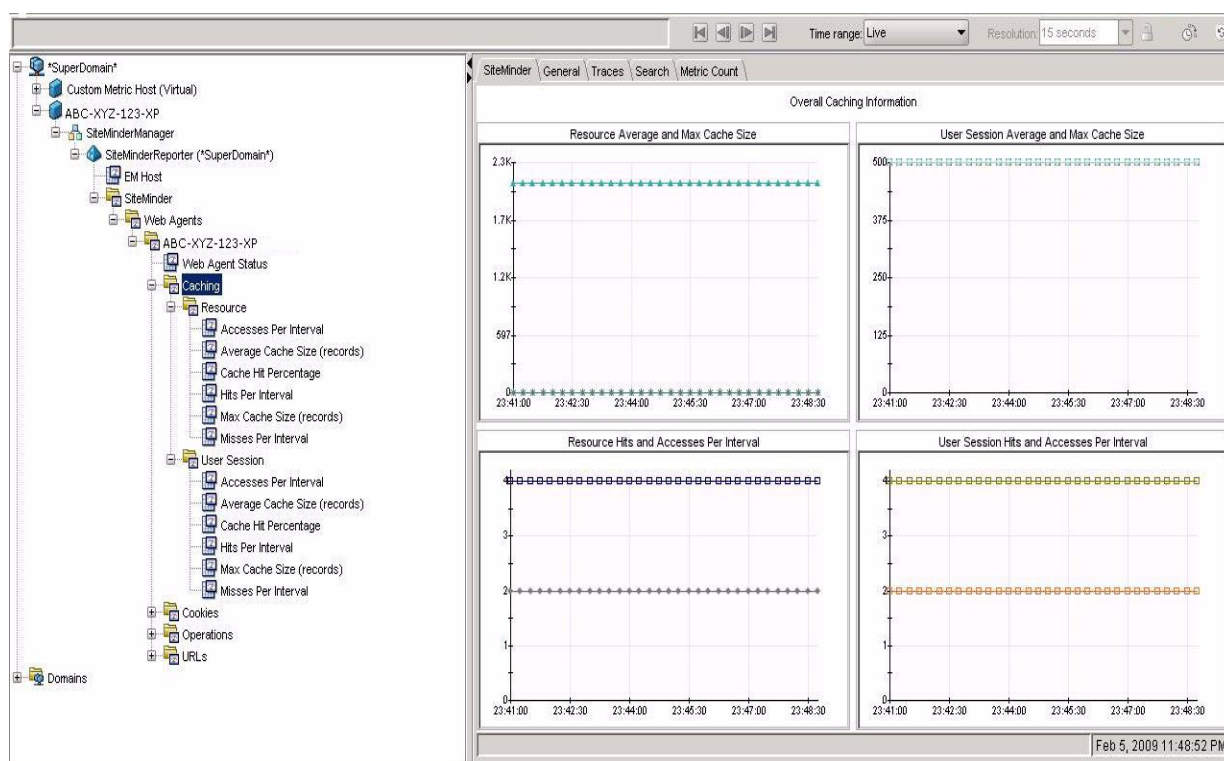
- 2 Expand the sub-nodes to see the metrics listed under each.



Caching metrics

To view Caching metrics:

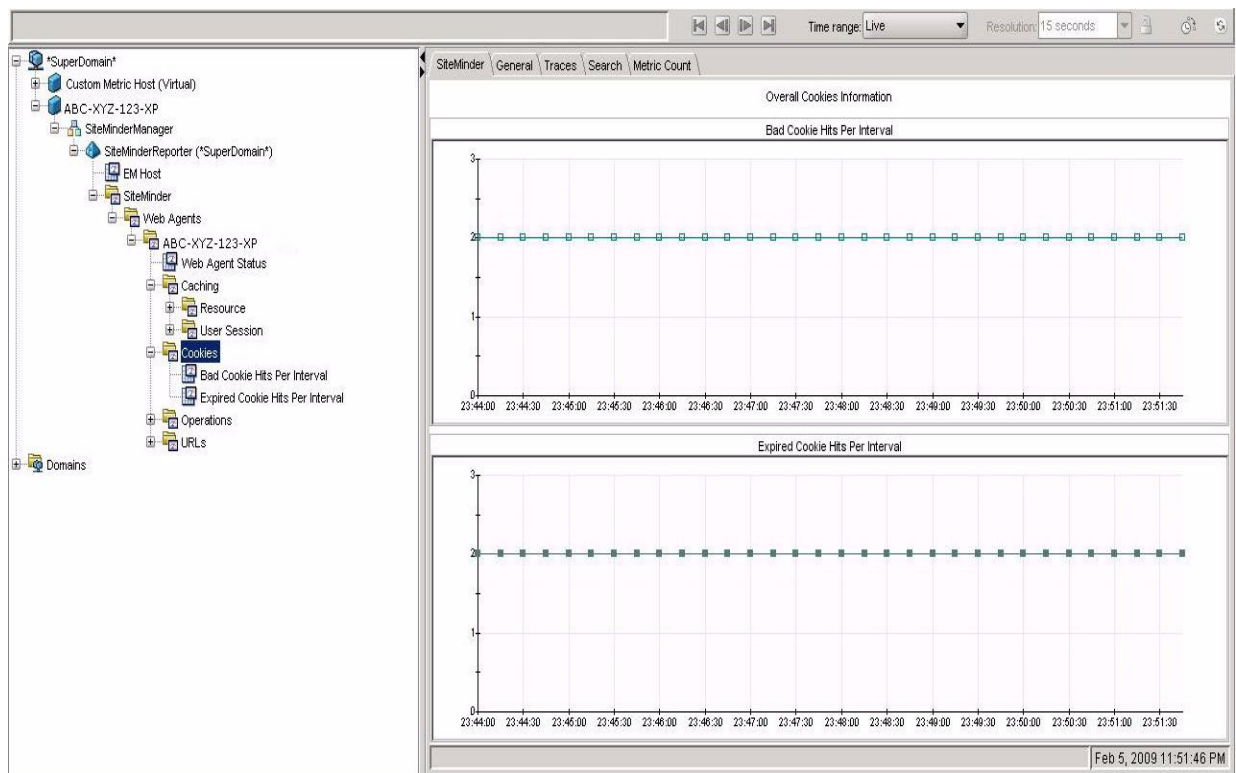
- Click **SiteMinderManager > SiteMinderReporter(*SuperDomain*) > SiteMinder > Web Agents > <WebagentName_Port> > Caching** node to view all the associated metrics in a graphical format.



Cookies metrics

To view Cookies metrics:

- Click **SiteMinderManager > SiteMinderReporter(*SuperDomain*) > SiteMinder > Web Agents > <WebagentName_Port> > Cookies** node to view all the associated metrics in a graphical format.



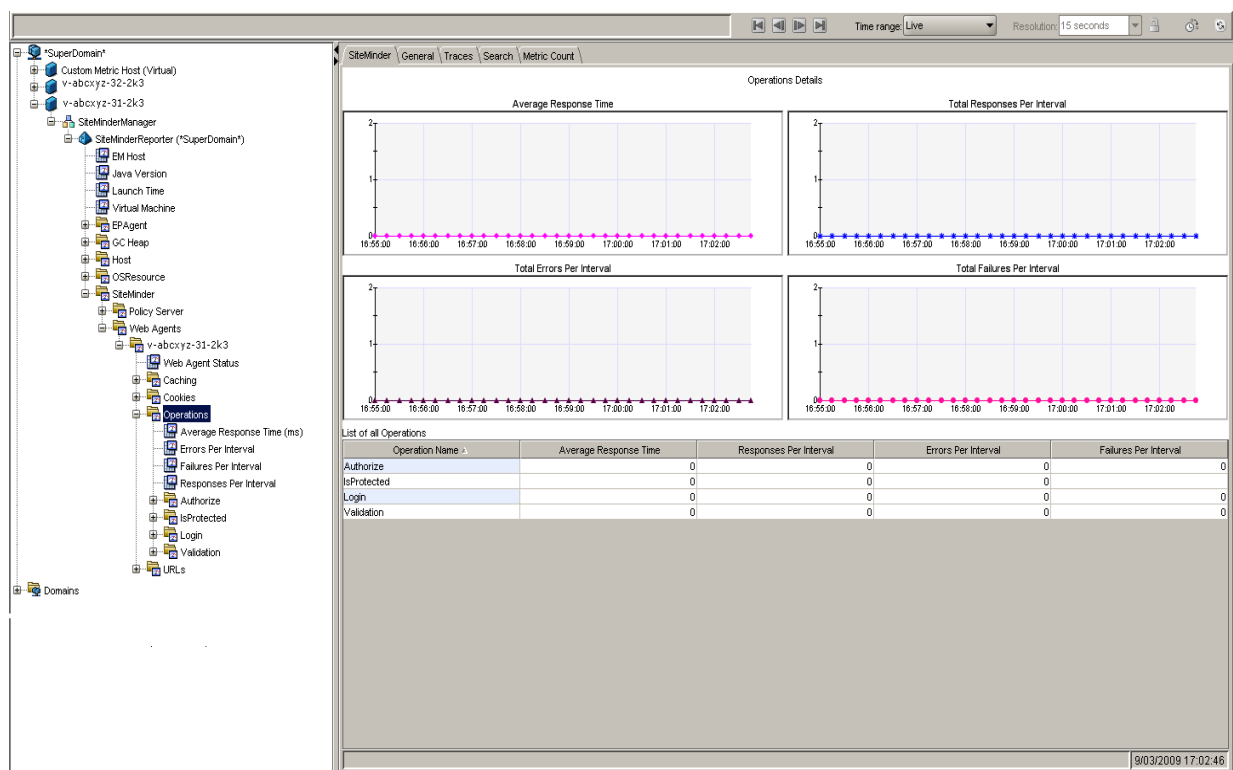
Operations metrics

To view Operations metrics:

- 1 Click the **SiteMinderManager > SiteMinderReporter(*SuperDomain*) > SiteMinder > Web Agents > <WebagentName_Port> > Operations** node.

In the Viewer pane, the **SiteMinder** tab is active by default, and you can view all the associated metrics in a graphical format. Also, metrics for the **Authorize**, **IsProtected**, **Login**, and **Validation** operations are listed in a table.

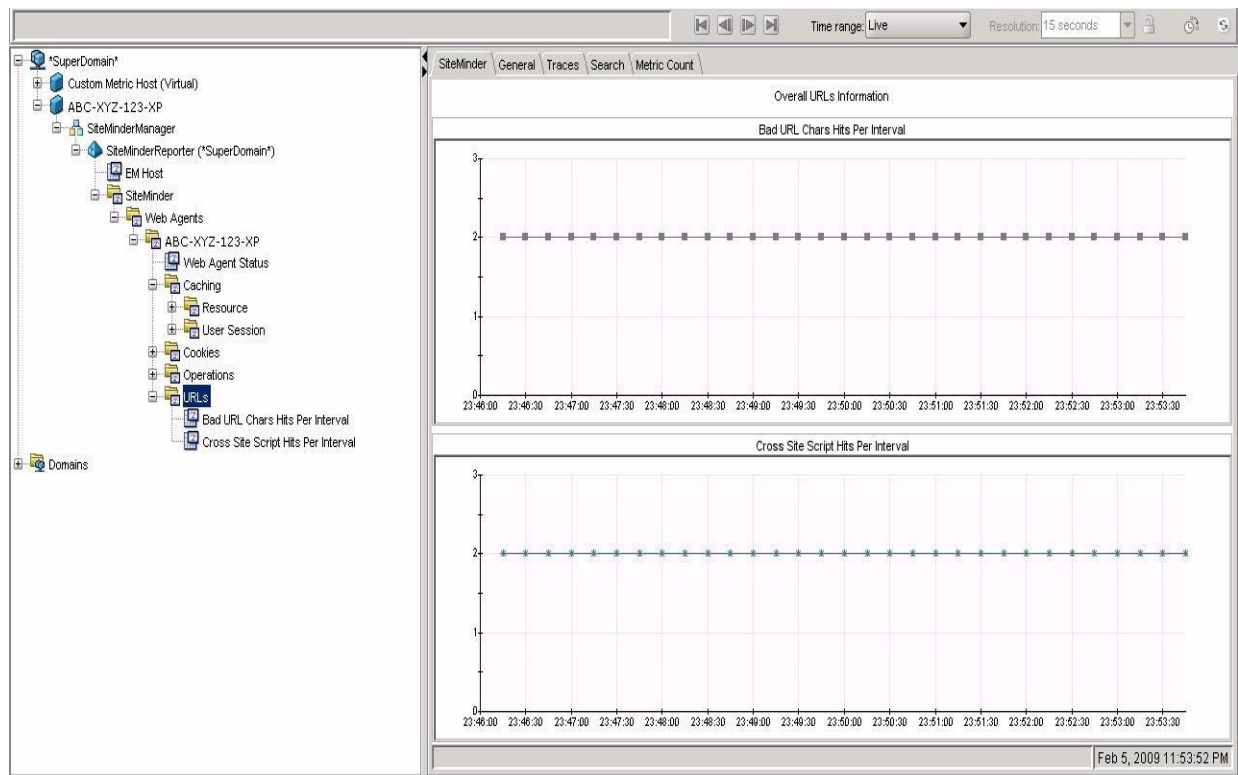
- 2 Double-click an operation to view all the associated metrics in a graphical format.



URLs metrics

To view URLs metrics:

- Click **SiteMinderManager > SiteMinderReporter(*SuperDomain*) > SiteMinder > Web Agents > <WebagentName_Port> > URLs** node to view all the associated metrics in a graphical format.



Policy Server metrics

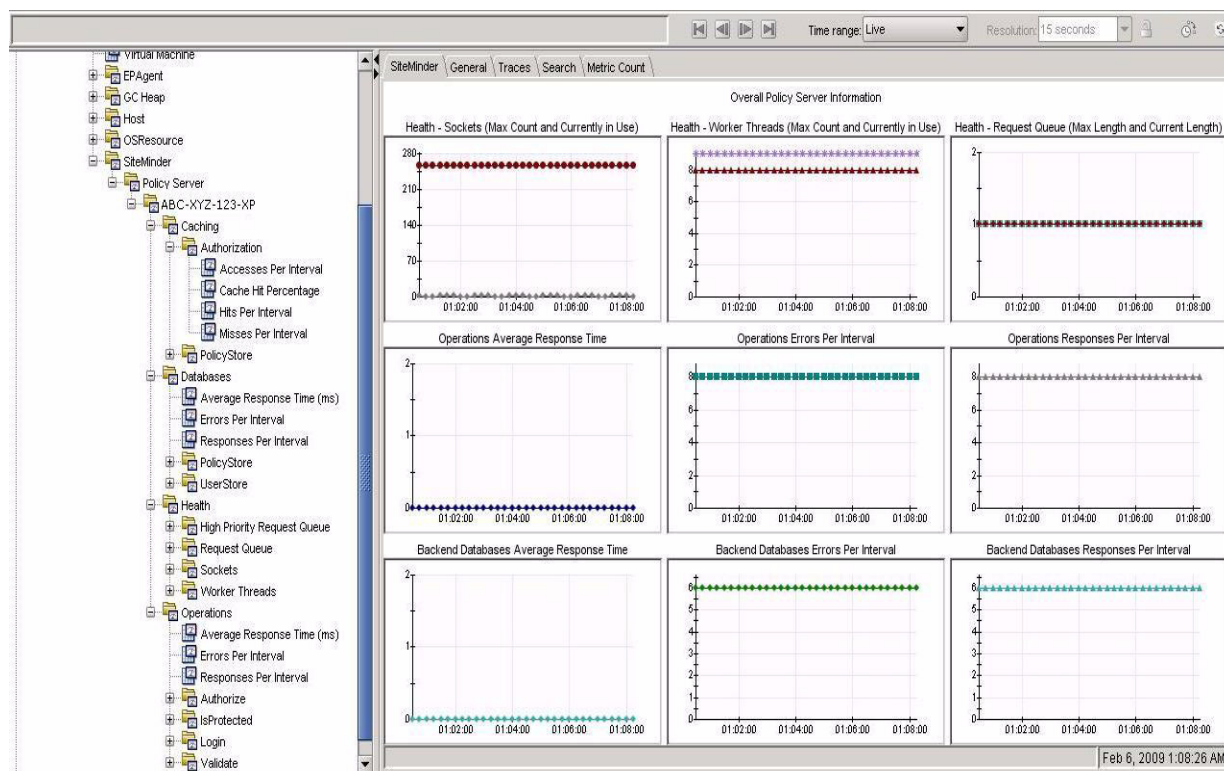
To view Policy Server metrics:

- 1 Click the **SiteMinderManager > SiteMinderReporter(*SuperDomain*) > SiteMinder > Policy Server > <PSName>** node.

In the Viewer pane, the **SiteMinder** tab is active by default and you can see metrics associated with the policy server to assess its overall performance.

Under the **Policy Server** node are sub-nodes for **Caching**, **Databases**, **Health**, and **Operations**.

- 2 Expand the sub-nodes to see the metrics listed under each.



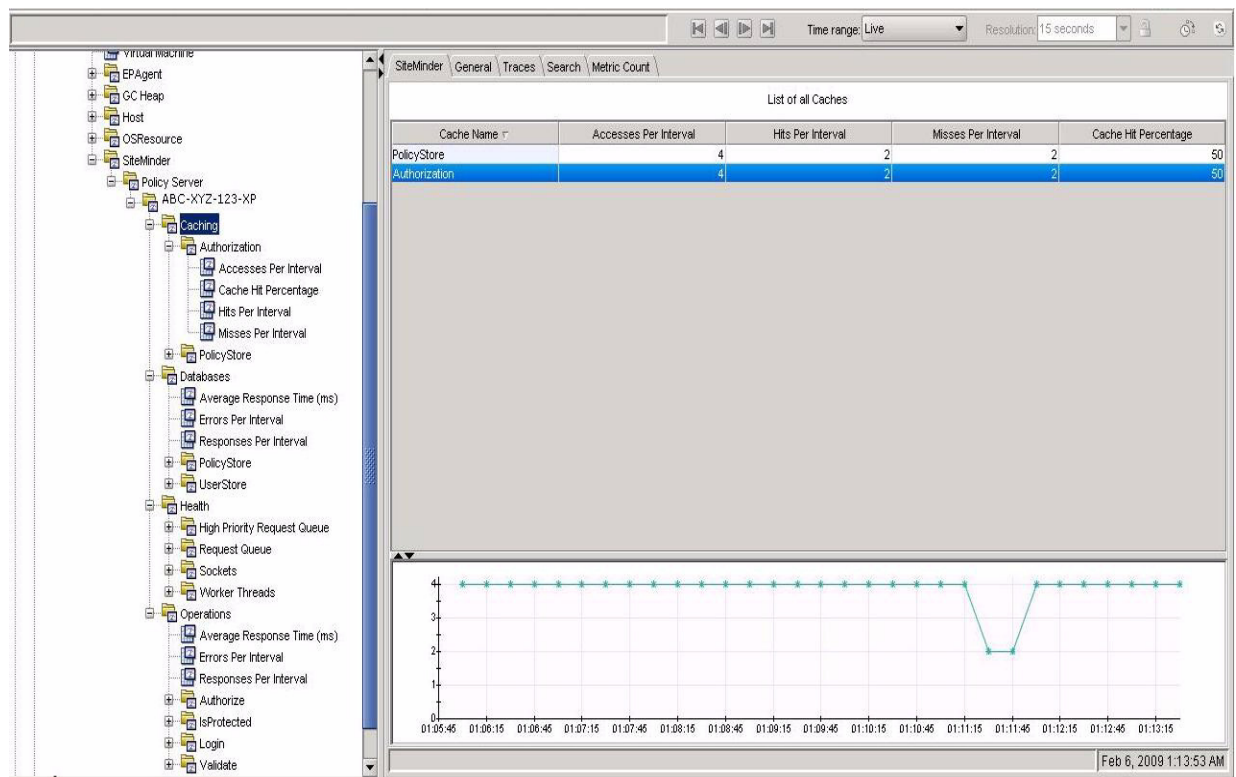
Caching metrics

To view Caching metrics:

- 1 Click the **SiteMinderManager > SiteMinderReporter(*SuperDomain*) > SiteMinder > Policy Server > <PSName> > Caching** node.

In the Viewer pane, the **SiteMinder** tab is active by default, and all the PolicyStore Cache and Authorization Cache metrics are listed in their respective tables.

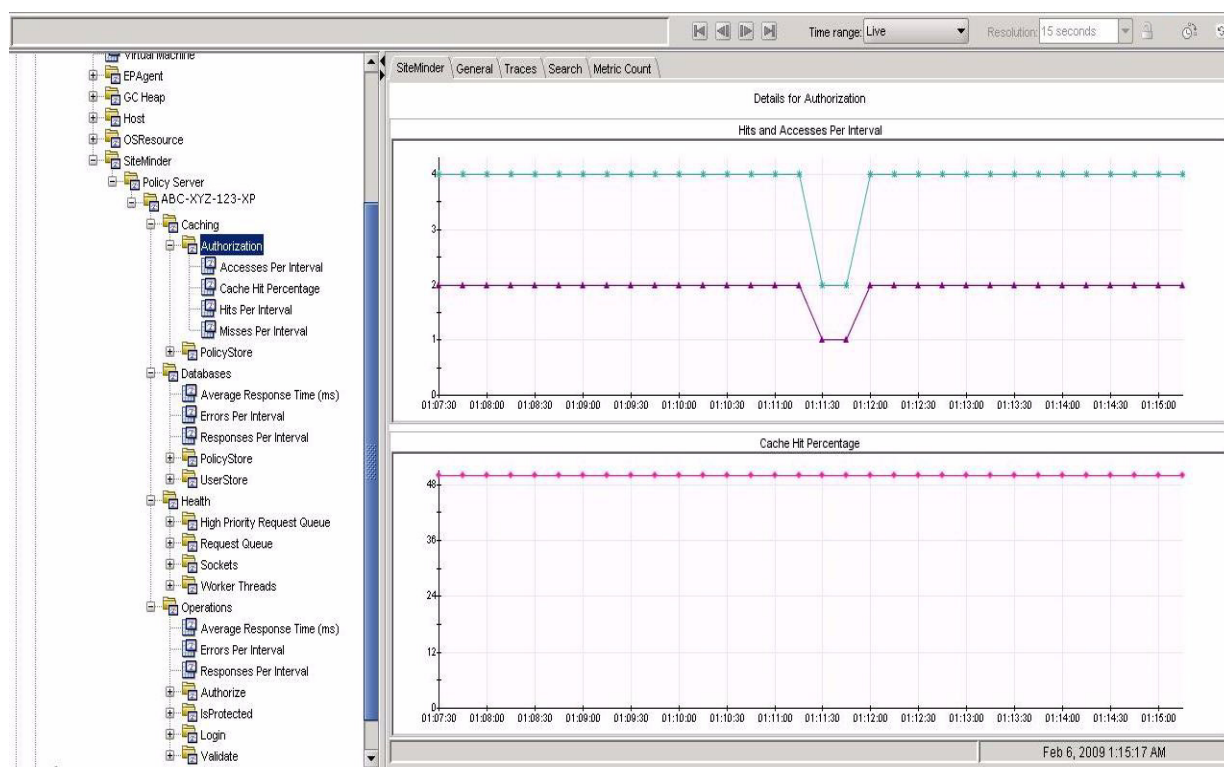
- 2 Click a PolicyStore cache or an Authorization cache and a corresponding metric to view the data for that metric in a graphical format.
- 3 Double-click a PolicyStore cache or an Authorization cache to view all the associated metrics in a graphical format.



Authorization Cache metrics

To view Authorization Cache metrics:

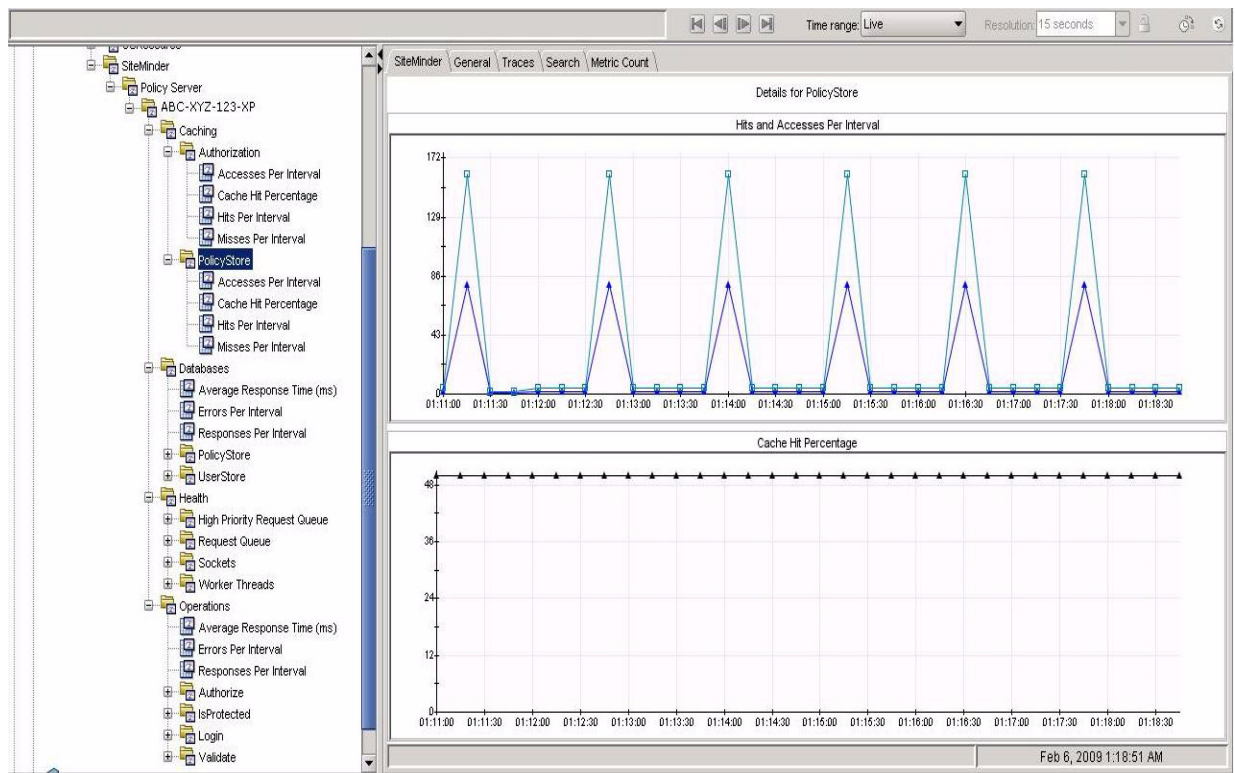
- Click the **SiteMinderManager > SiteMinderReporter(*SuperDomain*) > SiteMinder > Policy Server > <PSName> > Caching > Authorization** node to view all the associated metrics in a graphical format.



PolicyStore Cache metrics

To view PolicyStore Cache metrics:

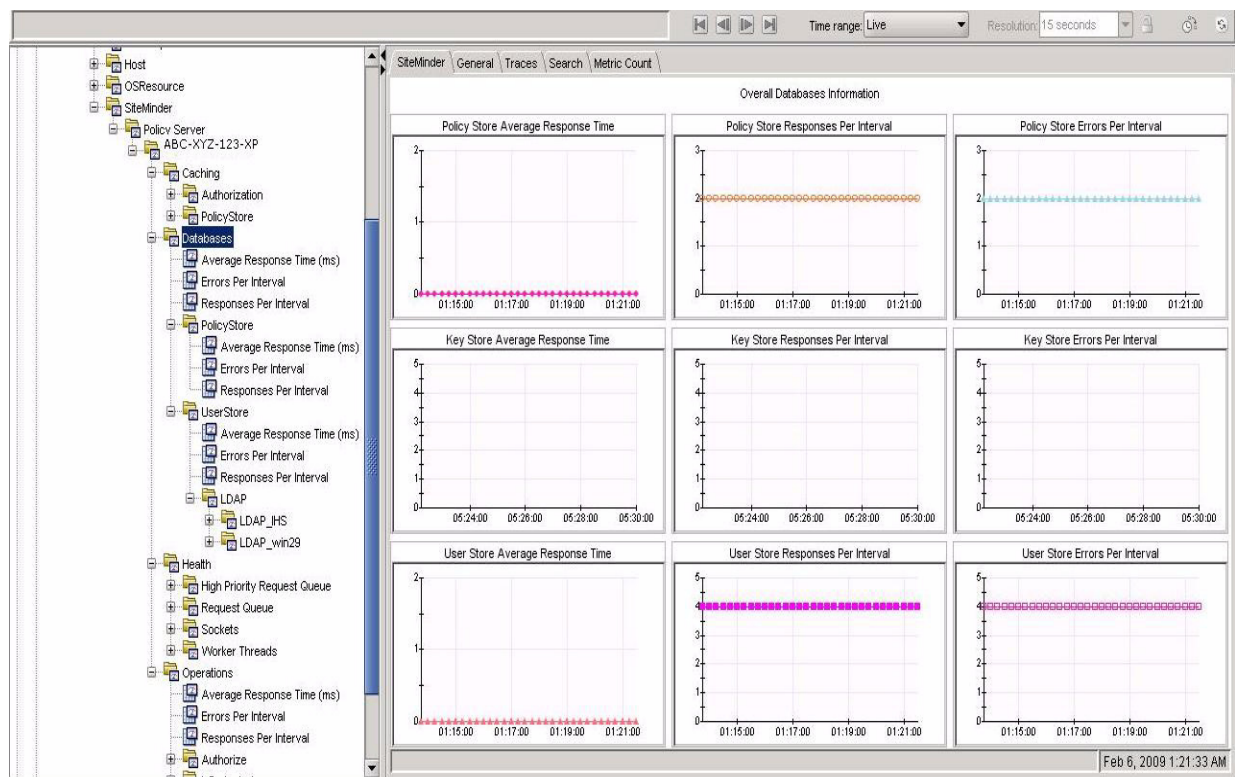
- ◆ Click the **SiteMinderManager > SiteMinderReporter(*SuperDomain*) > SiteMinder > Policy Server > <PSName> > Caching > PolicyStore** node to view all the associated metrics in a graphical format.



Databases metrics

To view Databases metrics:

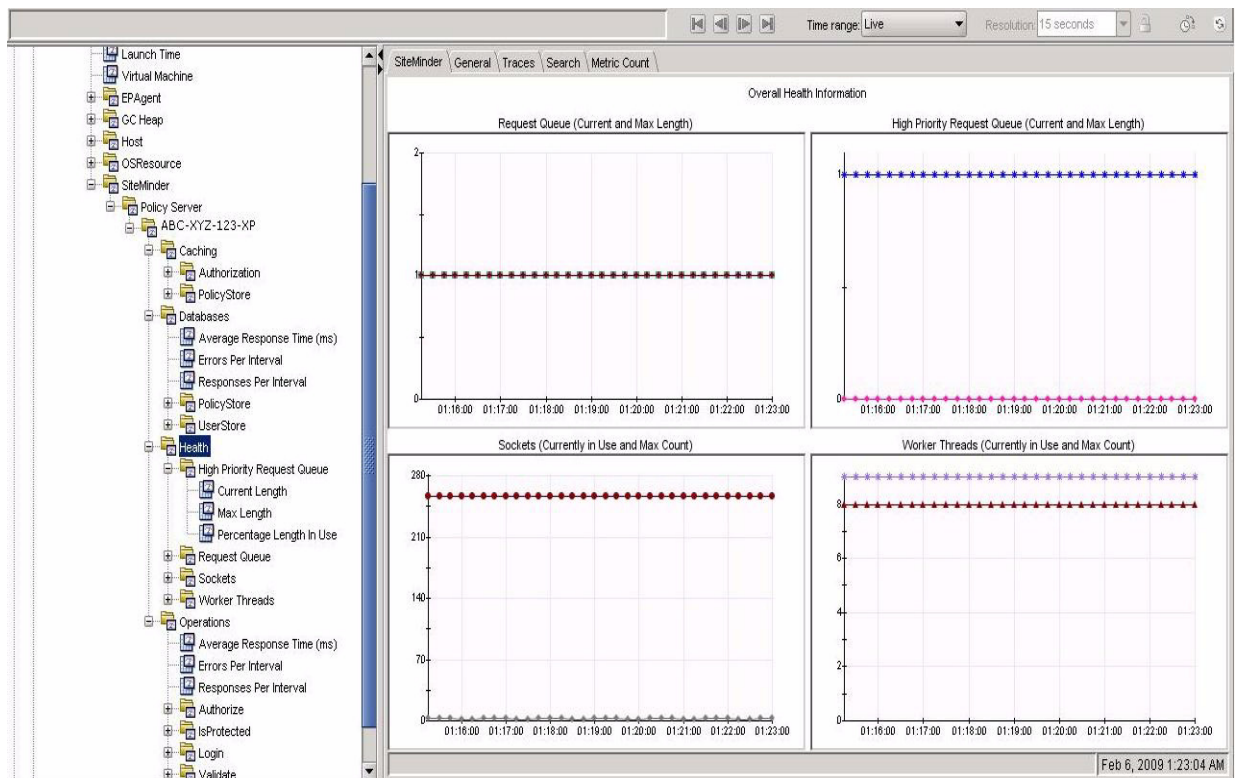
- Click the **SiteMinderManager > SiteMinderReporter(*SuperDomain*) > SiteMinder > Policy Server > <PSName> > Databases** node to view all the associated metrics in a graphical format.



Health metrics

To view Health metrics:

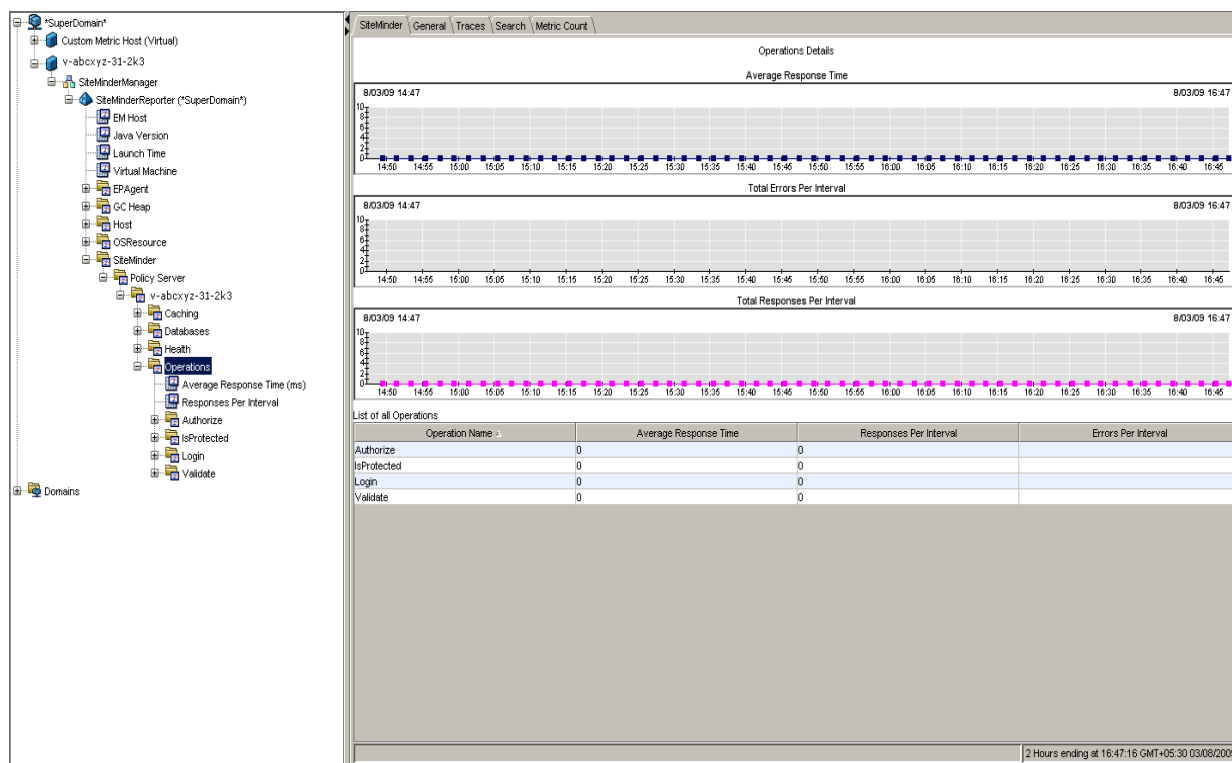
- Click the **SiteMinderManager > SiteMinderReporter(*SuperDomain*) > SiteMinder > Policy Server > <PSName> > Health** node to view all the associated metrics in a graphical format.



Operations metrics

To view Operations metrics:

- Click the **SiteMinderManager > SiteMinderReporter(*SuperDomain*) > SiteMinder > Policy Server > <PSName> > Operations** node to view all the associated metrics in a graphical format.



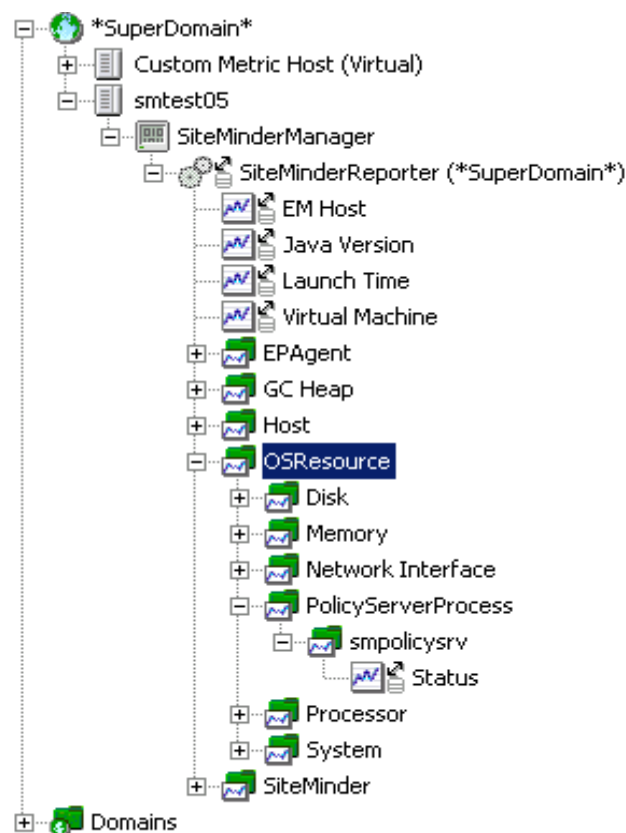
OS Monitor metrics

To view OS monitor metrics on Windows:

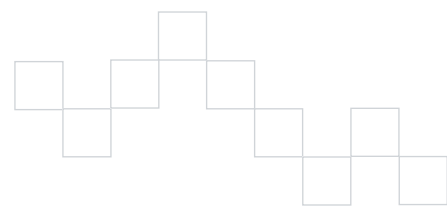
- 1 Click the **SiteMinderManager > SiteMinderReporter(*SuperDomain*) > OS Resource** node.

Under the OS Resource node, you can see nodes for **Disk**, **Memory**, **Network Interface**, **PolicyServerProcess**, **Processor**, and **System**.

- 2 Expand the sub-nodes to see the metrics listed under each.



» **Note** **PolicyServerProcess** metrics are available only if you selected it during the installation of OS Monitor and the SiteMinder Policy Server is installed on the machine where you have installed the OS Monitor.

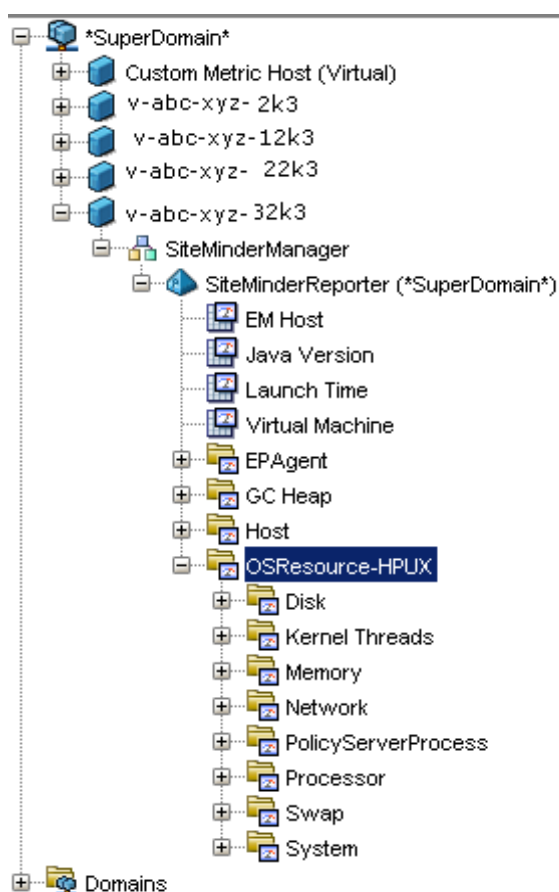


To view OS monitor metrics on UNIX, Solaris, AIX, HP-UX, or Linux:

- 1 Click the **SiteMinderManager > SiteMinderReporter(*SuperDomain*) > <OSResource-OSName>** node.

Under the OS Resource node, you can see nodes for **Disk**, **Kernel Threads**, **Memory**, **Network**, **PolicyServerProcess**, **Processor**, **Swap**, and **System**.

- 2 Expand the sub-nodes to see the metrics listed under each.



- » **Note** **PolicyServerProcess** metrics are available only if you selected it during the installation of OS Monitor and the SiteMinder Policy Server is installed on the machine where you have installed the OS Monitor.

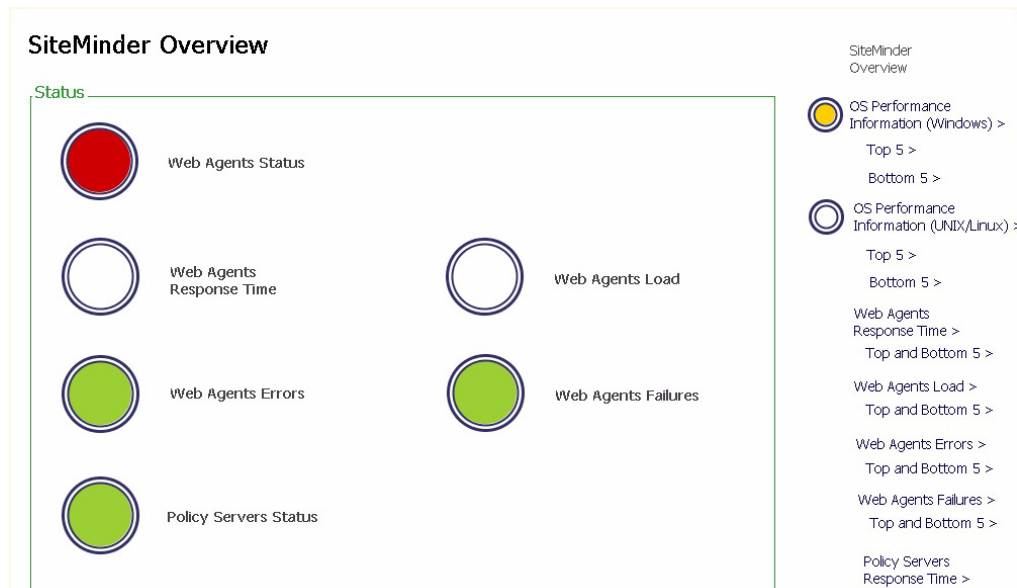
Using Manager for SiteMinder dashboards

Manager for SiteMinder provides pre-configured dashboards for monitoring CA SiteMinder components.

To view dashboards, launch the Workstation, and open an Introscope Console window. All SiteMinder dashboards begin with "SiteMinder" or "OS" to distinguish them from dashboards already installed in Introscope.

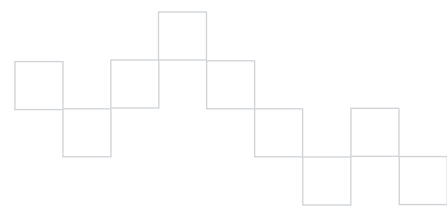
Default caution and danger alert thresholds are configured for many of the performance metrics displayed in the dashboards. Refer to the *Introscope Workstation User Guide* for information on customizing these alerts and thresholds to your environment.

Overview dashboard



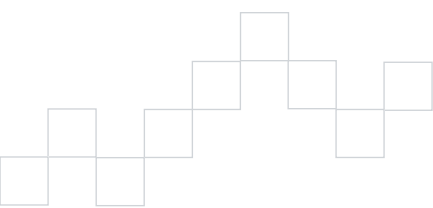
The Overview dashboard summarizes the status of the CA SiteMinder components that Manager for SiteMinder monitors.

- Web Agents Status -- The alert indicates the lowest connection status of the monitored Web Agents.
- Web Agents Response Time—The alert indicates the total average response time for authentication and authorization for the applications on monitored web agents. The default caution threshold is 3 seconds; the default danger threshold is 5 seconds.



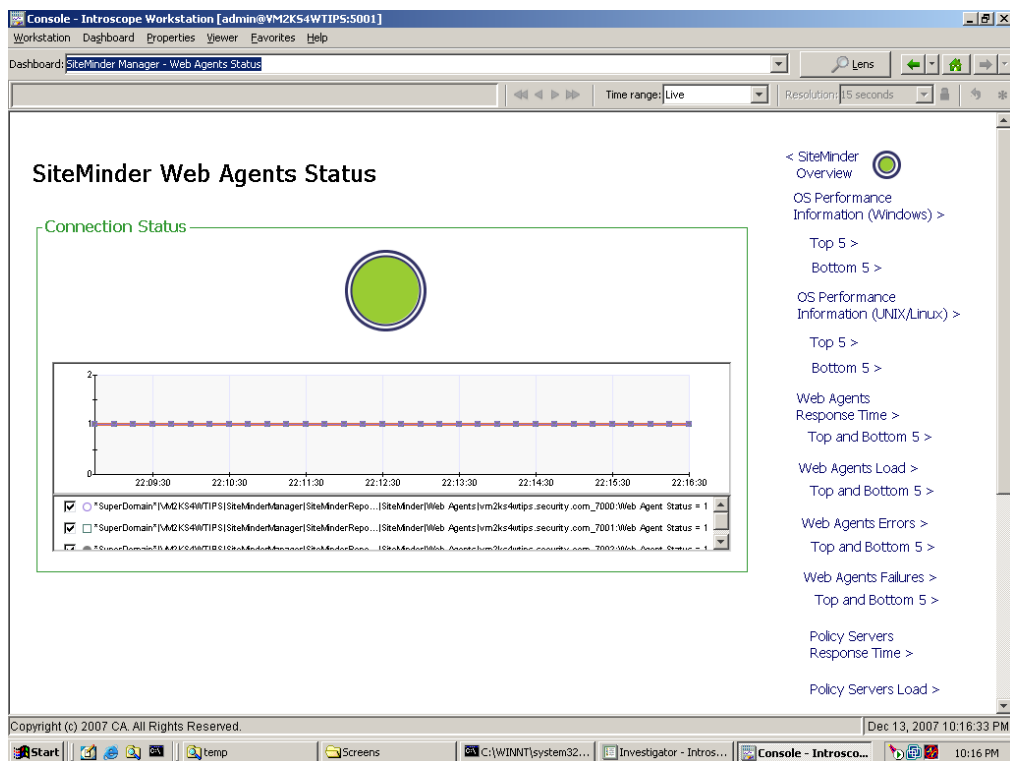
- **Web Agents Load**—The alert indicates the total number of responses per interval for authentication and authorization for the applications on monitored Web agents. The default caution threshold is 500; the default danger threshold is 800.
- **Web Agents Error**—The alert indicates the total errors per interval for Login, Authorization, Validation and IsProtected operations for all the Web agents. The default caution threshold is 0; the default danger threshold is 0.
- **Web Agents Failures**—The alert indicates the total number of login, authorization, and validation failures per interval of all Web Agents. The default caution threshold is 5; the default danger threshold is 10.
- **Policy Servers Status**—The alert indicates the lowest connection status of the monitored Policy Servers.
- **Policy Servers Response Time**—The alert indicates the total average response time for Login, Authorization, Validation, IsProtected and Logout operations for the monitored Policy Servers. The default caution threshold is 3; the default danger threshold is 5.
- **Policy Servers Backend Database Response Time**—The alert indicates the total average response time for the policy store, key store, and user store for the monitored backend databases. The default caution threshold is 3; the default danger threshold is 5.
- **Policy Servers Load**—The alert indicates the total number of responses per interval for login, authorization, and validation on the monitored Policy Servers. The default caution threshold is 500; the default danger threshold is 800.
- **Policy Servers Backend Database Load**—The alert indicates the total number of responses per interval for policy store, key store, and user store on the monitored backend databases. The default caution threshold is 500; the default danger threshold is 800.
- **Policy Servers Errors**—The alert indicates the total number of errors per interval for login, authorization, and validation on the monitored Policy Servers. The default caution threshold is 0; the default danger threshold is 0.
- **Policy Servers Backend Database Errors**—The alert indicates the total number of backend database errors per interval for policy store, key store, and user store on the monitored backend databases. The default caution threshold is 0; the default danger threshold is 0.

Double-click an alert associated with a component to open the component's dashboard. For example, click the Policy Servers Load alert to go view the Policy Servers Load dashboard.



SiteMinder Web Agents Status dashboard

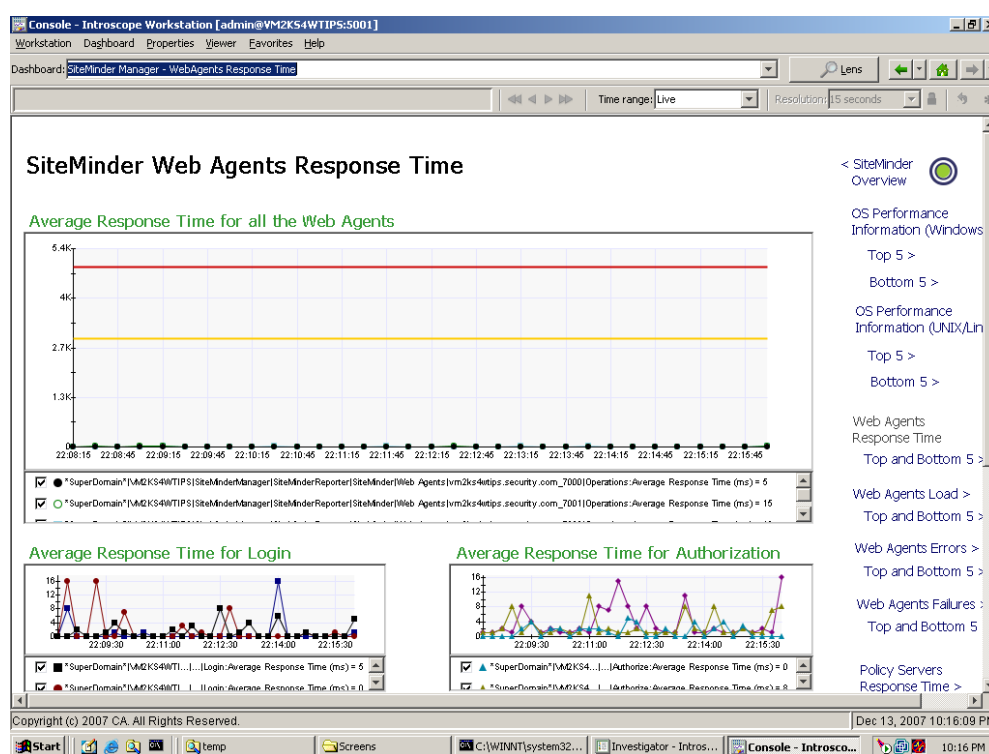
On the Web Agents Status dashboard, the upper graph indicates the connection status of all connected Web agents.



SiteMinder Web Agents Response Time dashboard

On the Web Agents Response Time dashboard, the upper graph indicates the total Average Response Time for the authentication and authorization of applications on monitored web server agents. The graphs in the bottom indicate the Average Response Time for individual Web agent operations. If there are multiple agents for each of these, they will appear in the graph. The Web agent metrics displayed are:

- Average Response Time for all Web Agents
- Average Response Time for Login
- Average Response Time for Authorize
- Average Response Time for Validation
- Average Response Time for IsProtected
- Average Response Time for Validation



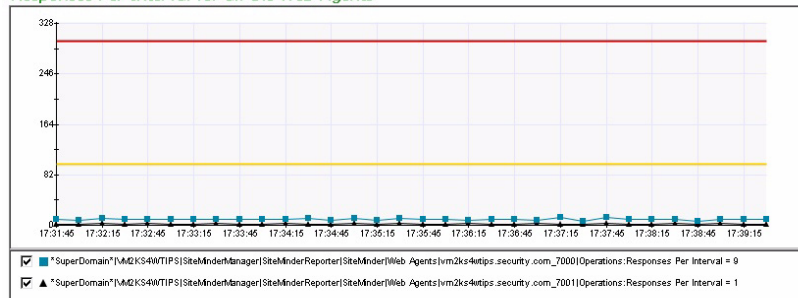
SiteMinder Web Agents Load dashboard

On the Web Agents Load dashboard, the upper graph indicates the total responses per interval for the authentication and authorization of applications on monitored web server agents. The graphs in the bottom indicate the responses per interval for each individual Web agent operation. If there are multiple agents for each of these, they will appear in the graph. The web agent metrics displayed are:

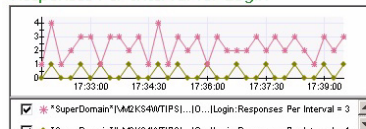
- Responses Per Interval for all the Web Agents
- Responses Per Interval for Login
- Responses Per Interval for Authorization
- Responses Per Interval for Validation
- Responses Per Interval for IsProtected

SiteMinder Web Agents Load

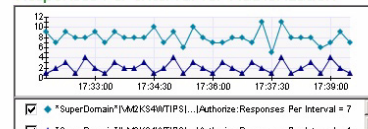
Responses Per Interval for all the Web Agents



Responses Per Interval for Login



Responses Per Interval for Authorization



< SiteMinder Overview

OS Performance Information (Windows)

Top 5 >

Bottom 5 >

OS Performance Information (UNIX/Linux)

Top 5 >

Bottom 5 >

Web Agents Response Time >

Top and Bottom 5 :

Web Agents Load

Top and Bottom 5 :

Web Agents Errors >

Top and Bottom 5 :

Web Agents Failures

Top and Bottom 5

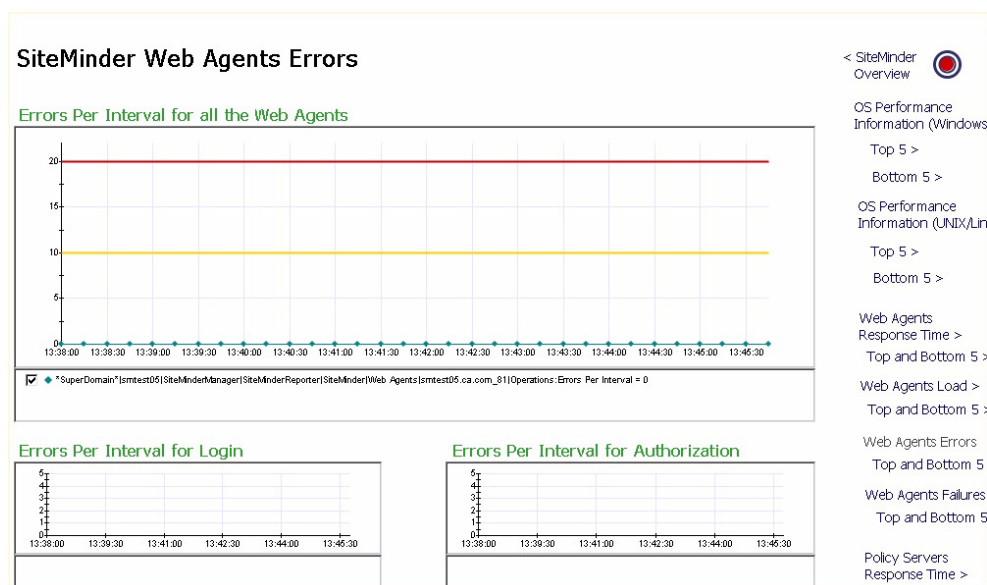
Policy Servers

Response Time >

SiteMinder Web Agents Errors dashboard

On the Web Agents Errors dashboard, the upper graph indicates the total number of errors per interval for the Login, Authorization, Validation, and IsProtected operations for monitored web server agents. The graphs in the bottom indicate the errors per interval for each type of monitored error. The Web agent metrics displayed are:

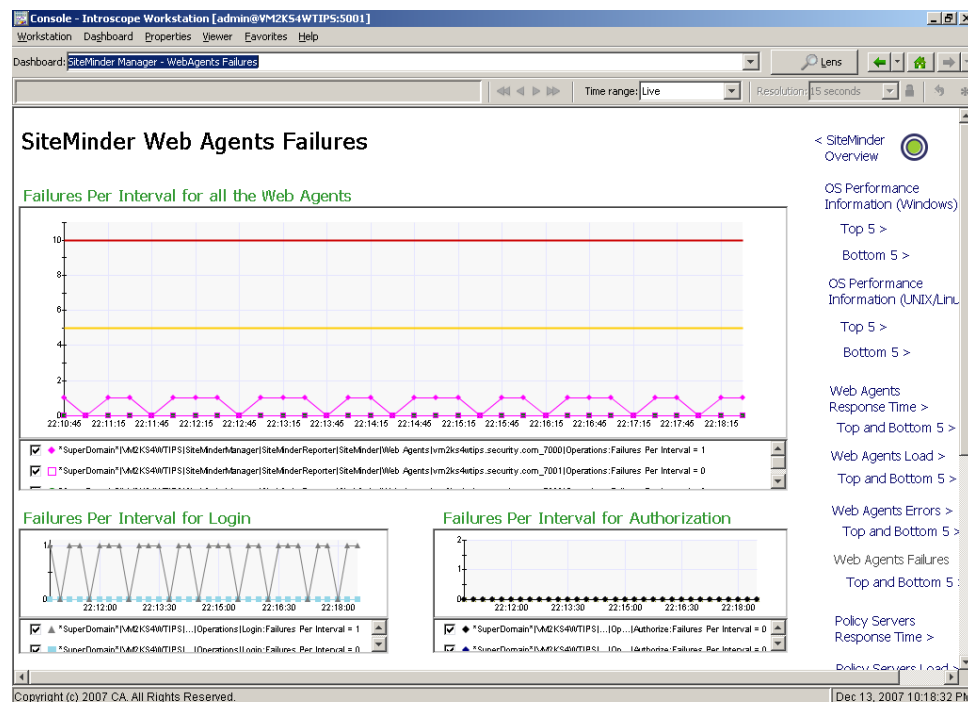
- Errors Per Interval for all the Web Agents
- Errors Per Interval for Login
- Errors Per Interval for Authorization
- Errors Per Interval for Validation
- Errors Per Interval for IsProtected



SiteMinder Web Agents Failures dashboard

On the Web Agents Failures dashboard, the upper graph indicates the total number of failures per interval for the login, authorization, and validation of monitored web server agents. The graphs in the bottom indicate the failures per interval for each type of monitored error. The Web agent metrics displayed are:

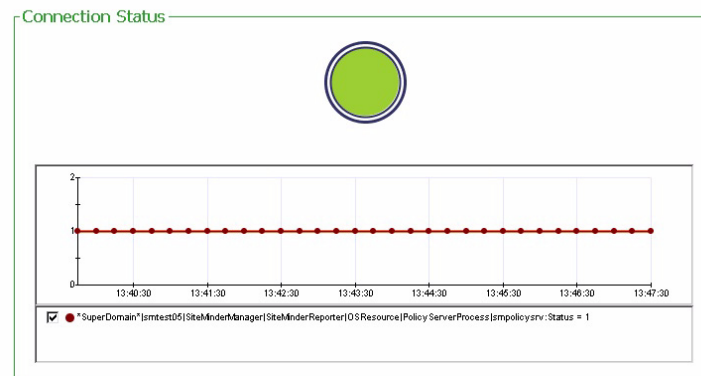
- Failures Per Interval for all the Web Agents
- Failures Per Interval for Login
- Failures Per Interval for Authorization
- Failures Per Interval for Validation




SiteMinder Policy Servers Status dashboard

On the Policy Servers Status dashboard, the graph indicates the connection status of all monitored Policy Servers.

SiteMinder Policy Servers Status

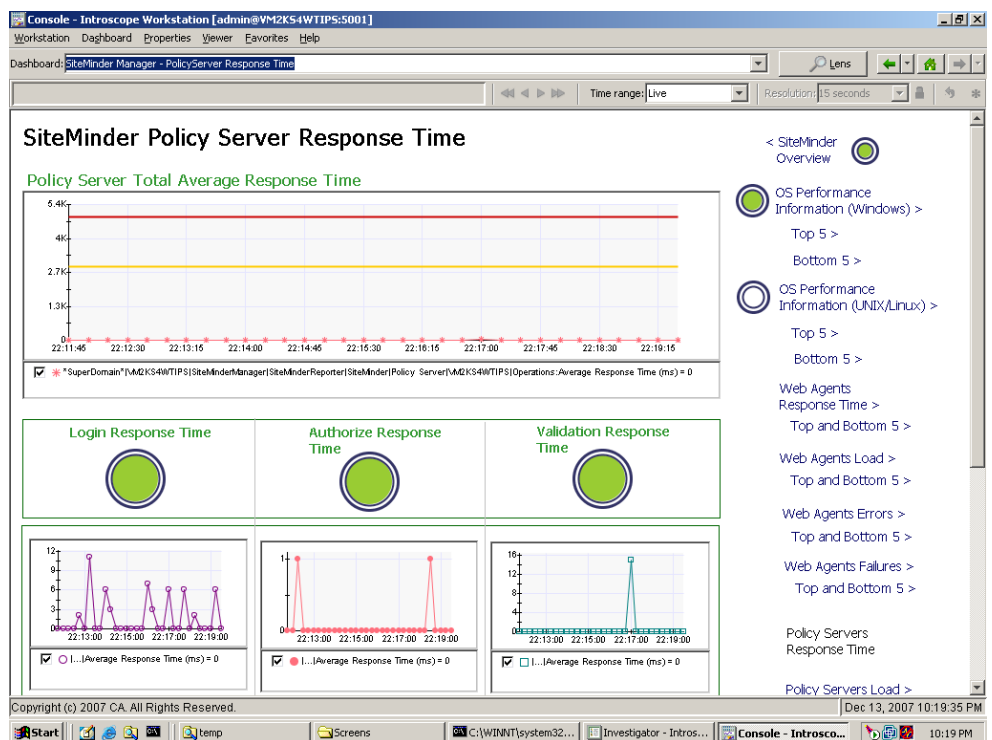


- < SiteMinder Overview 
- OS Performance Information (Windows) >
- Top 5 >
- Bottom 5 >
- OS Performance Information (UNIX/Linux) >
- Top 5 >
- Bottom 5 >
- Web Agents Response Time >
- Top and Bottom 5 >
- Web Agents Load >
- Top and Bottom 5 >
- Web Agents Errors >
- Top and Bottom 5 >
- Web Agents Failures >
- Top and Bottom 5 >
- Policy Servers Response Time >
- Policy Servers Load >

SiteMinder Policy Servers Response Time dashboard

On the Policy Servers Response Time dashboard, the upper graph indicates the total average response time for authentication and authorization of requests made to the Policy Servers. The graphs in the bottom indicate the Average Response Time for individual Policy Server operations. The Policy Server metrics displayed are:

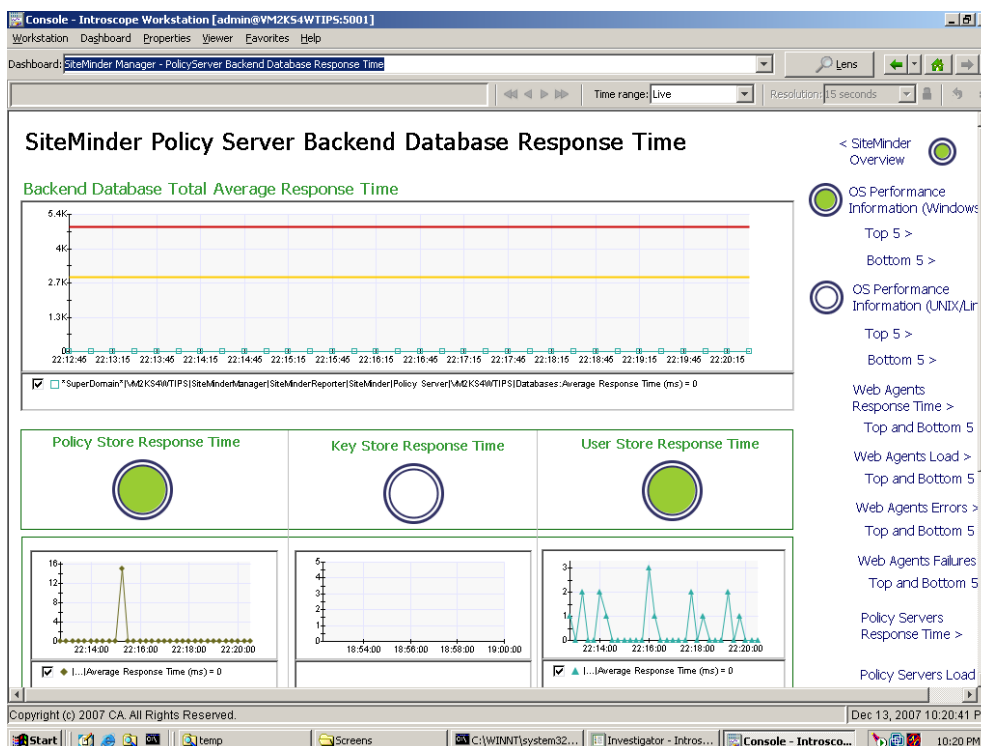
- Policy Server Total Average Response Time
- Login Response Time
- Authorize Response Time
- Validation Response Time
- IsProtected Response Time
- Logout Response Time



SiteMinder Policy Servers Backend Database Response Time

On the Policy Servers Backend Database Response Time dashboard, the upper graph indicates the total average response time for requests made to the backend databases. The graphs in the bottom indicate the Average Response Time for individual Policy Server backend database operations. The Policy Server backend database metrics displayed are:

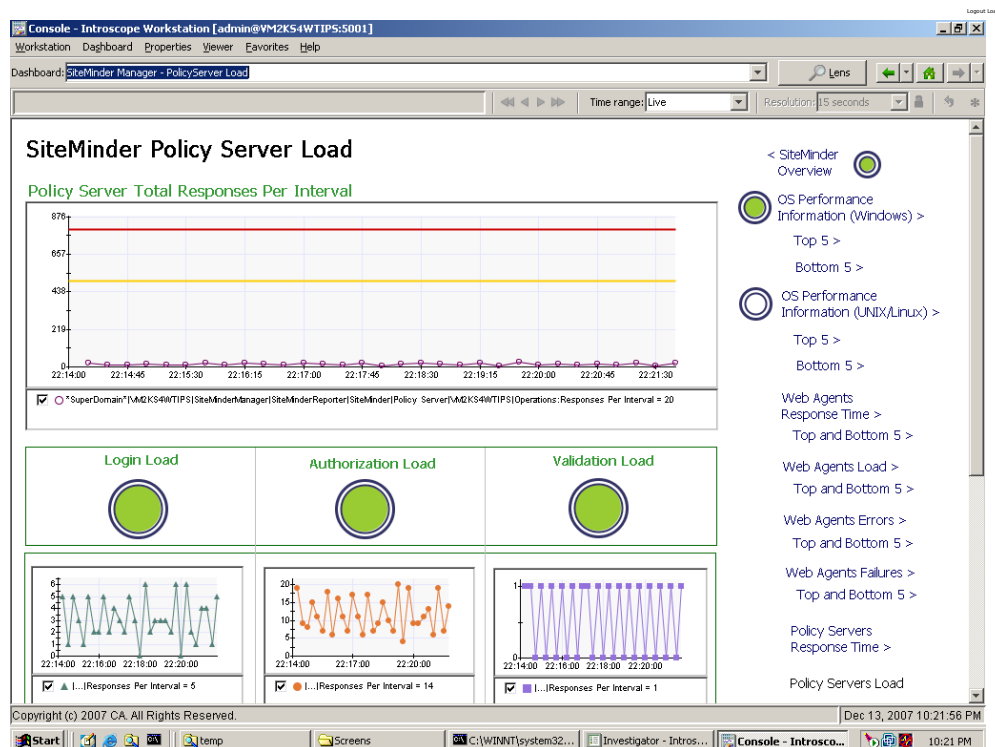
- Backend Database Total Average Response Time
- Policy Store Response Time
- Key Store Response Time
- User Store Response Time



SiteMinder Policy Servers Load dashboard

On the Policy Servers Load dashboard, the upper graph indicates the total responses per interval for the authentication and authorization of requests made to the Policy Server. The graphs in the bottom indicate the responses per interval for each individual Policy Server operation. The Policy Server metrics displayed are:

- Policy Server Total Responses Per Interval
- Login Load
- Authorization Load
- Validation Load
- IsProtected Load



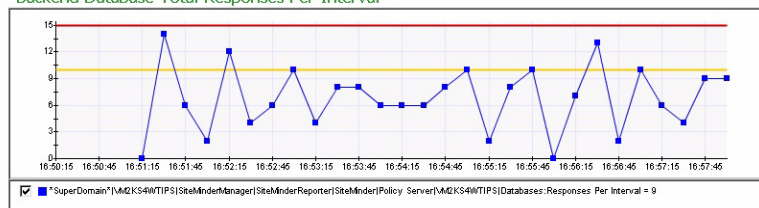
SiteMinder Policy Servers Backend Database Load dashboard

On the Policy Servers Backend Database Load dashboard, the upper graph indicates the total responses per interval for the authentication and authorization of requests made to the Policy Server. The graphs in the bottom indicate the responses per interval for each individual Policy Server backend database operation. The Policy Server backend database metrics displayed are:

- Backend Database Total Responses Per Interval
- Policy Store Load
- Key Store Load
- User Store Load

SiteMinder Policy Server Backend Database Load

Backend Database Total Responses Per Interval



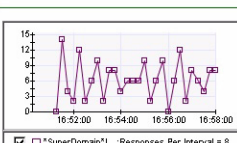
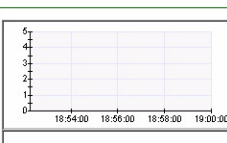
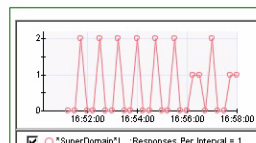
Policy Store Load



Key Store Load



User Store Load



< SiteMinder Overview

OS Performance Information (Window):
Top 5 >
Bottom 5 >

OS Performance Information (UNIX/Linux):
Top 5 >
Bottom 5 >

Web Agents Response Time >
Top and Bottom 5

Web Agents Load >
Top and Bottom 5

Web Agents Errors >
Top and Bottom 5

Web Agents Failures
Top and Bottom 5

Policy Servers Response Time >

Policy Servers Load

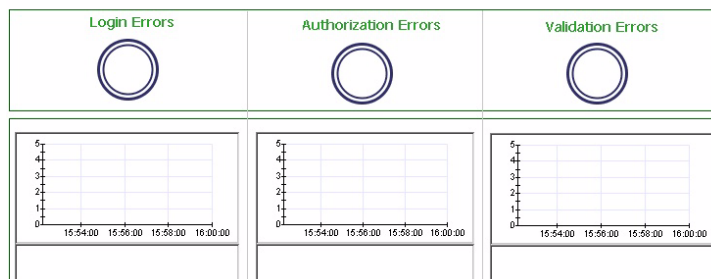
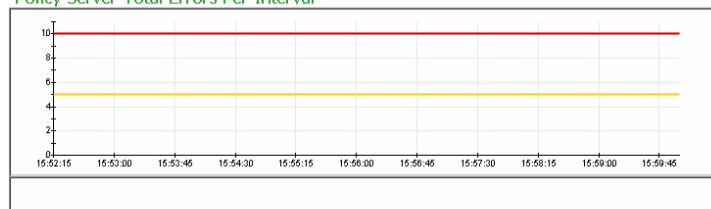
SiteMinder Policy Servers Errors dashboard

On the Policy Servers Errors dashboard, the upper graph indicates the total errors per interval for the authentication and authorization of requests made to the Policy Servers. The graphs in the bottom indicate the errors per interval for each individual Policy Server operation. The Policy Server metrics displayed are:

- Policy Server Total Errors Per Interval
- Login Errors
- Authorization Errors
- Validation Errors
- IsProtectedErrors
- LogoutErrors

SiteMinder Policy Server Errors

Policy Server Total Errors Per Interval



- < SiteMinder Overview
- OS Performance Information (Windows) >
 - Top 5 >
 - Bottom 5 >
- OS Performance Information (UNIX/Linux) >
 - Top 5 >
 - Bottom 5 >
- Web Agents Response Time >
 - Top and Bottom 5 >
- Web Agents Load >
 - Top and Bottom 5 >
- Web Agents Errors >
 - Top and Bottom 5 >
- Web Agents Failures >
 - Top and Bottom 5 >
- Policy Servers Response Time >

SiteMinder Policy Servers Backend Database Errors dashboard

On the Policy Servers Backend Database Errors dashboard, the upper graph indicates the total errors per interval for the authentication and authorization of requests made to the backend databases. The graphs in the bottom indicate the errors per interval for each individual Policy Server backend database operation. The Policy Server backend database metrics displayed are:

- Backend Database Total Errors Per Interval
- Policy Store Errors
- Key Store Errors
- User Store Errors

SiteMinder Policy Server Backend Database Errors



Operating System Performance Information (UNIX/Linux) dashboard

The Operating System Performance Information (UNIX/Linux) dashboard displays:

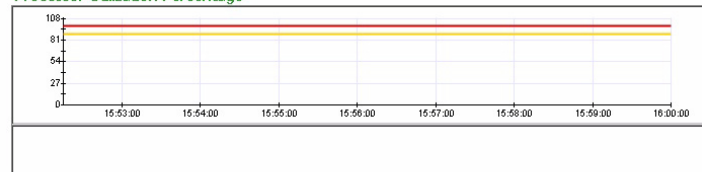
- Total Free Disk Space in Percentage
- Processor Utilization Percentage
- Network Interface - Total Packet Errors Per Interval

Operating System Performance Information (UNIX/Linux)

Total Free disk space in percentage



Processor Utilization Percentage



Network Interface - Total Packets Errors Per Interval

< SiteMinder
Overview

OS Performance
Information (Windows) >

Top 5 >

Bottom 5 >

OS Performance
Information (UNIX/Linux)

Top 5 >

Bottom 5 >

Web Agents
Response Time >

Top and Bottom 5 >

Web Agents Load >

Top and Bottom 5 >

Web Agents Errors >

Top and Bottom 5 >

Web Agents Failures >

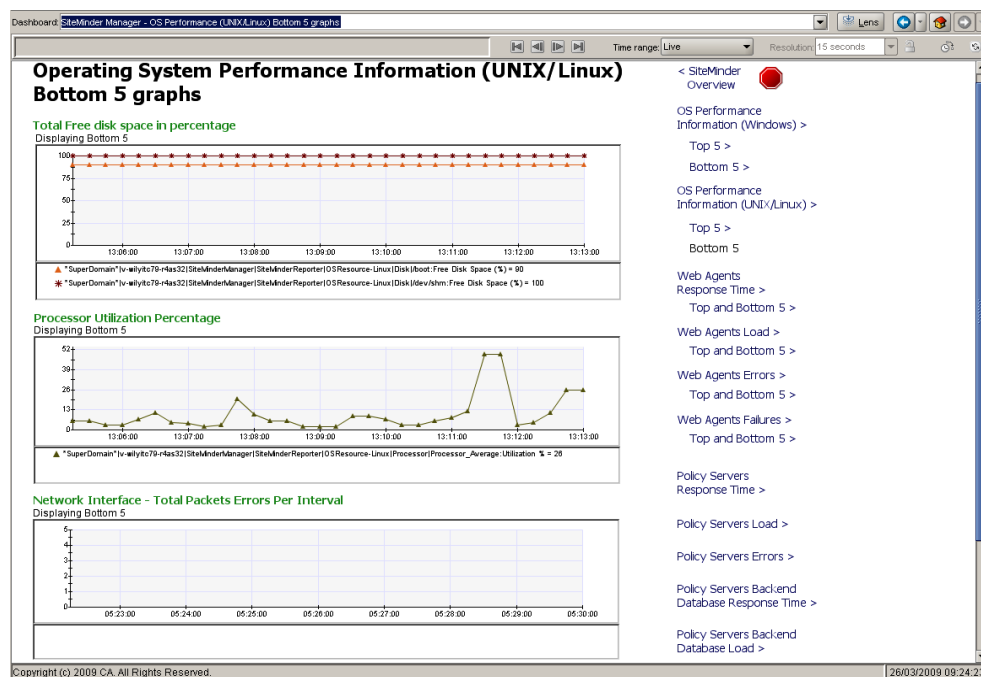
Top and Bottom 5 >

Policy Servers
Response Time >

Operating System Performance Information (UNIX/Linux) Bottom 5 graphs dashboard

The Operating System Performance Information (UNIX/Linux) Bottom 5 graphs displays metric data on the 5 lowest occurrences of the following metrics:

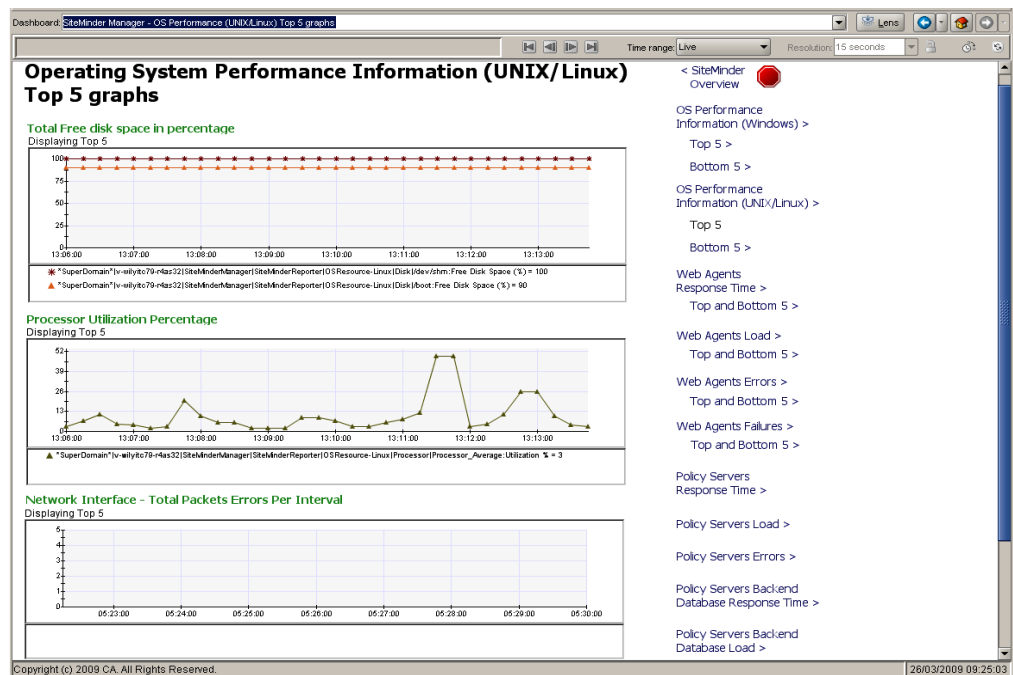
- Total Free Disk Space in Percentage
- Processor Utilization Percentage
- Network Interface -- Total Packets Errors Per Interval



Operating System Performance Information (UNIX/Linux) Top 5 graphs dashboard

The Operating System Performance Information (UNIX/Linux) Top 5 graphs displays metric data on the top 5 occurrences of the following metrics:

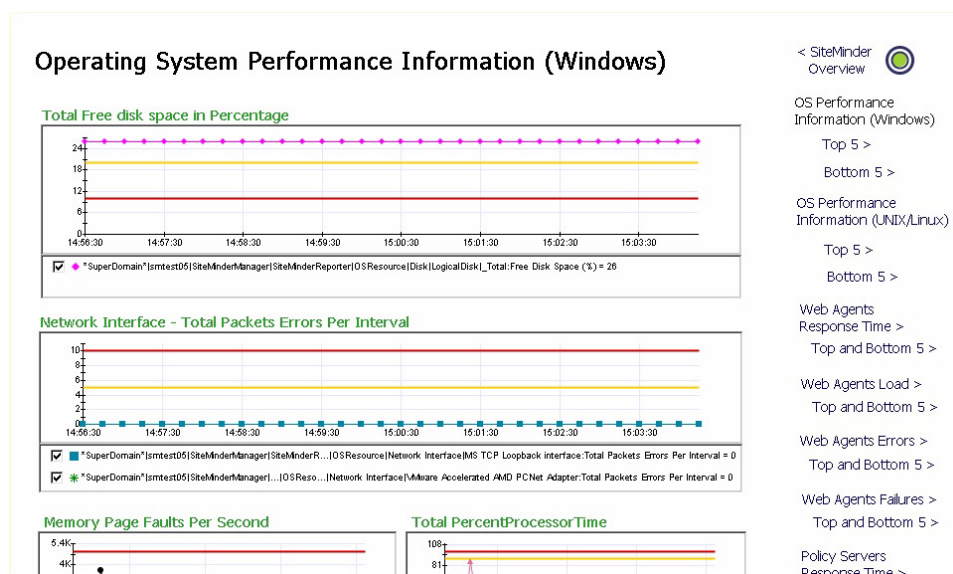
- Total Free Disk Space in Percentage
- Processor Utilization Percentage
- Network Interface - Total Packets Errors Per Interval



Operating System Performance Information (Windows) dashboard

The Operating System Performance Information (Windows) dashboard displays:

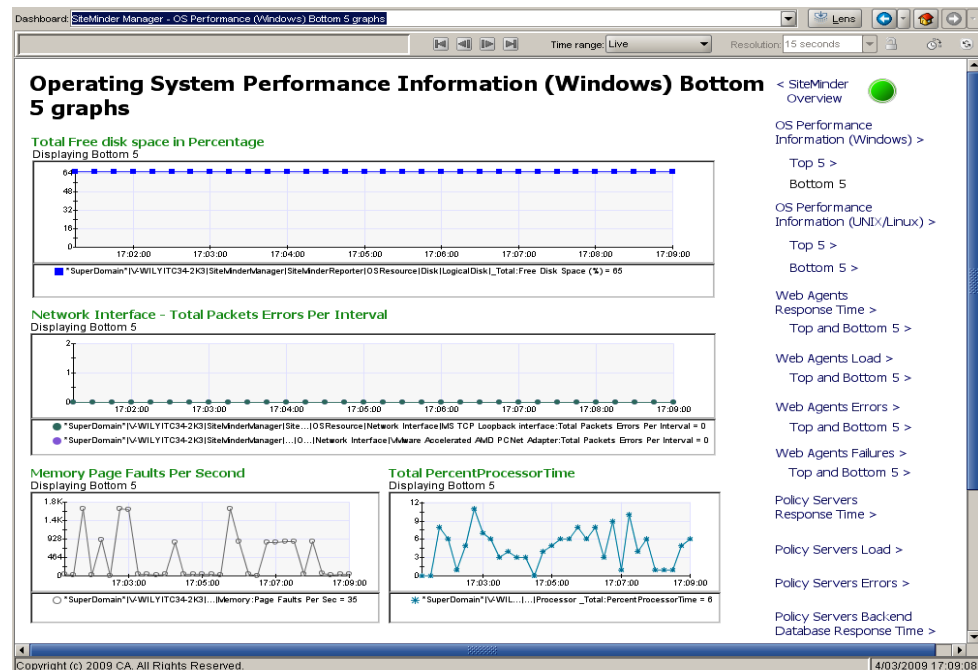
- Total Free Disk Space in Percentage
- Network Interface - Total Packets Errors Per Interval
- Memory Page Faults Per Second
- Total Percent Processor Time



Operating System Performance Information (Windows) Bottom 5 graphs dashboard

The Operating System Performance Information (Windows) Bottom 5 graphs dashboard displays metric data on the 5 lowest occurrences of the following metrics:

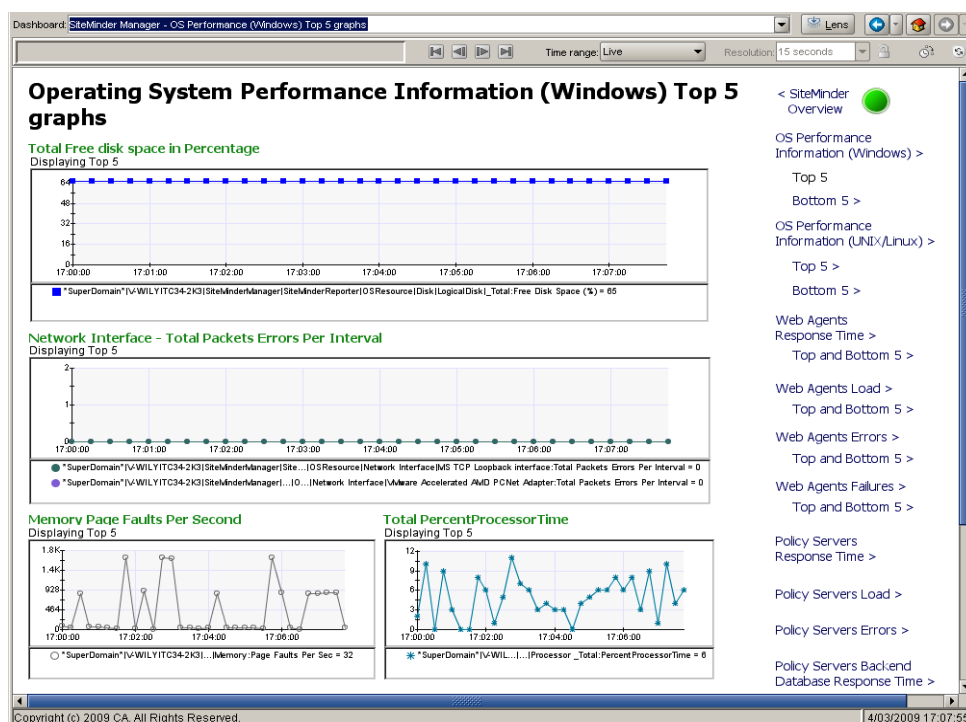
- Total Free Disk Space in Percentage
- Network Interface - Total Packets Errors Per Interval
- Memory Page Faults Per Second
- Total Percent Processor Time



Operating System Performance Information (Windows) Top 5 graphs dashboard

The Operating System Performance Information (Windows) Top 5 graphs dashboard displays metric data on the 5 highest occurrences of the following metrics:

- Total Free Disk Space in Percentage
- Network Interface - Total Packets Errors Per Interval
- Memory Page Faults Per Second
- Total Percent Processor Time



Viewing and creating Manager for SiteMinder metric groupings

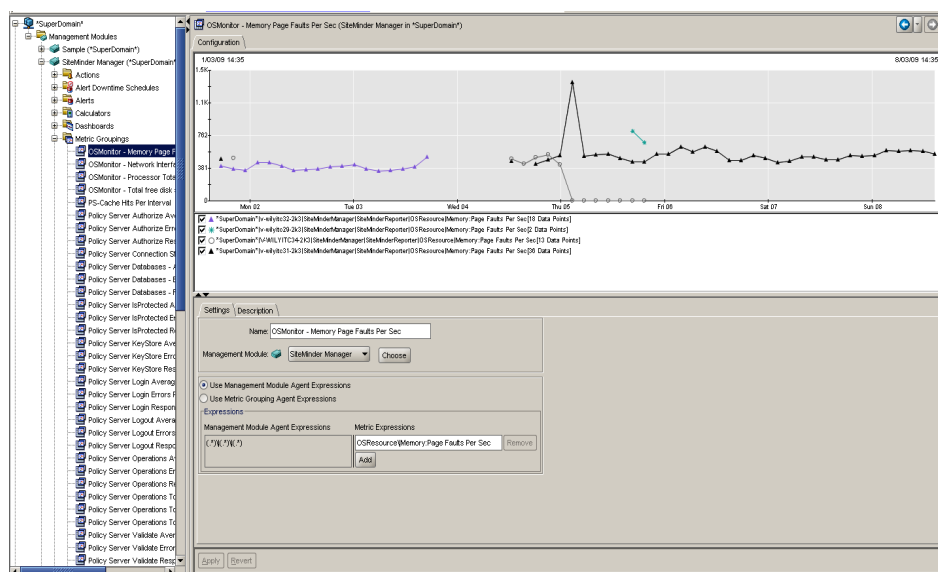
You can view and create the metric groupings for Manager for SiteMinder using the Management Module Editor.

To view Manager for SiteMinder metrics groupings across all agents:

- 1 In the Investigator, click **Workstation > New Management Module Editor**.
The Management Module Editor opens.
- 2 Expand the following nodes:
 - a **Super Domain**.
 - b **Management Modules**.
 - c **SiteMinder Manager (*Super Domain*)**.
- 3 Expand the **Metric Groupings** node to view all metric groupings for Manager for SiteMinder.
- 4 Click a metric grouping to view it in the Viewer pane.
- 5 Click **Elements > New Metric Grouping** to create a new metric grouping based on the Manager for SiteMinder management module.

For information about creating and defining metric groupings, see the *Introscope Configuration and Administration Guide*.

This figure shows Manager for SiteMinder metric groupings in the Management Module Editor.



Viewing and creating Manager for SiteMinder alerts

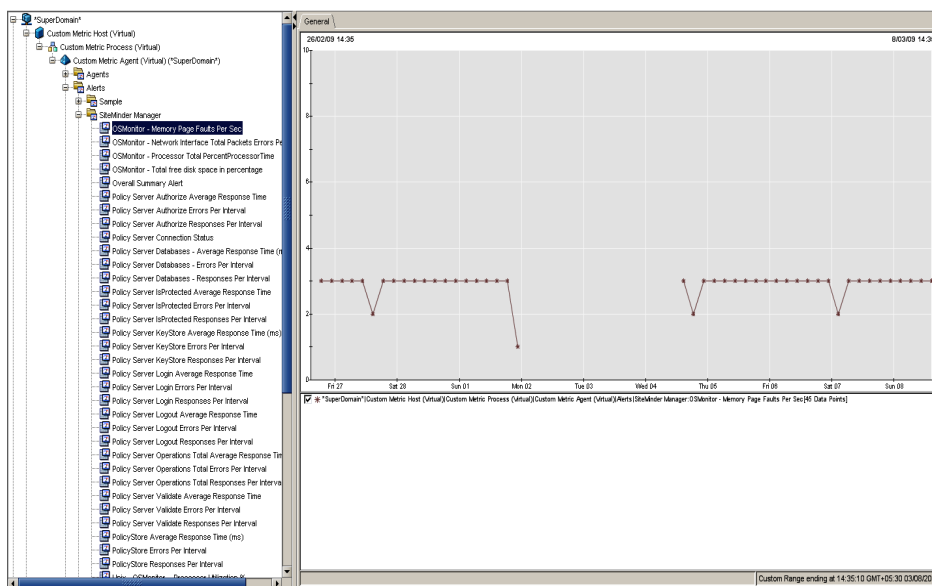
You can view and create the alerts for Manager for SiteMinder using the Management Module Editor and the Investigator.

To view Manager for SiteMinder alerts using Management Module Editor:

- 1 In the Investigator, click **Workstation > New Management Module Editor**.
The Management Module Editor opens.
- 2 Expand the following nodes:
 - a **Super Domain**.
 - b **Management Modules**.
 - c **SiteMinder Manager (*Super Domain*)**.
- 3 Expand the **Alerts** node to view all alerts for Manager for SiteMinder.
- 4 Click an alert to view it in the Viewer pane.
- 5 Click **Elements > New Alert** to create a new alert.

For information about creating and defining alerts, see the *Introscope Configuration and Administration Guide*.

This figure shows Manager for SiteMinder alerts in the Management Module Editor.



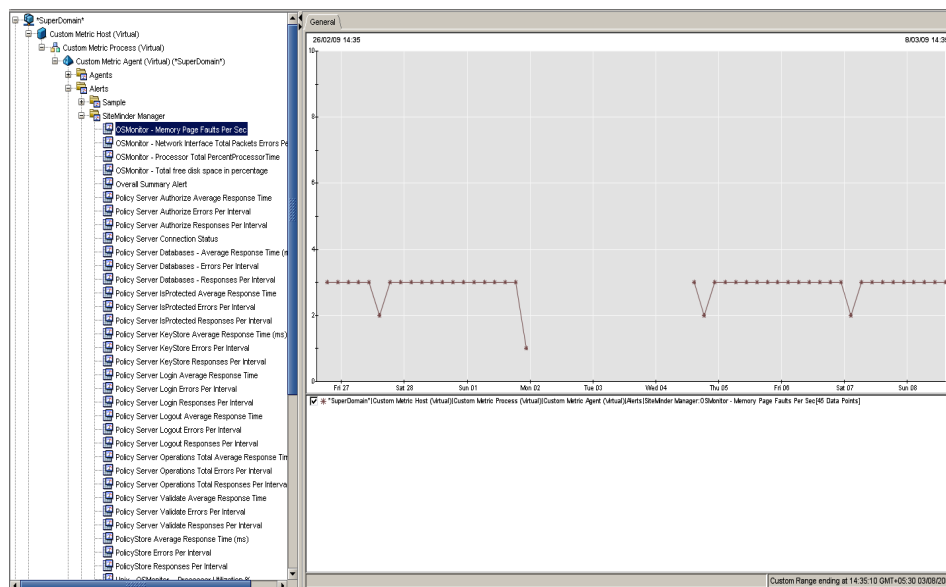
To view Manager for SiteMinder alerts using Investigator:

- 1 In the Investigator, expand the following nodes:
 - a **Super Domain.**
 - b **Custom Metric Host.**
 - c **Custom Metric Process.**
 - d **Custom Metric Agent.**
 - e **Alerts.**
- 2 Expand the **SiteMinder Manager** node to view all alerts for Manager for SiteMinder.
- 3 Click an alert to view its current status in the Viewer pane.

Each alert color has a metric value:

- 0 indicates No Data
- 1 indicates Normal
- 2 indicates Caution
- 3 indicates Danger

This figure shows Manager for SiteMinder alerts in the Investigator.



Viewing Transaction Tracing

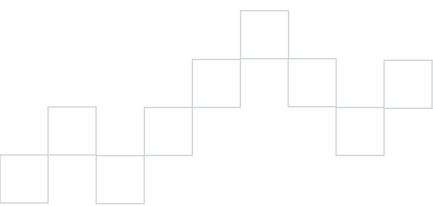
You can use Introscope's Transaction Tracing feature to view all transactions exceeding the specified threshold limit on the web server on which Manager for SiteMinder is installed. When you set a threshold limit in Transaction Trace window, it is propagated to the web server machine. The Introscope plug-in in SiteMinder checks this threshold for each transaction. If any of the transaction exceed this value, the plug-in prepares a Transaction Trace message and sends it all the way back to the Investigator. Along with the time duration for this transaction, each message has the following metric data.

- IsProtected Operation Time (ms)
 - Login Operation Time (ms)
 - Validation Operation Time (ms)
 - Authorize Operation Time (ms)
 - Resource Cache Hit (1|0)
 - UserSession Cache Hit (1|0)
- » **Note** Manager for SiteMinder has a restriction of reporting only 50 transaction traces at any point in time. If this limit is exceeded, no traces will be reported and an error message will be logged.

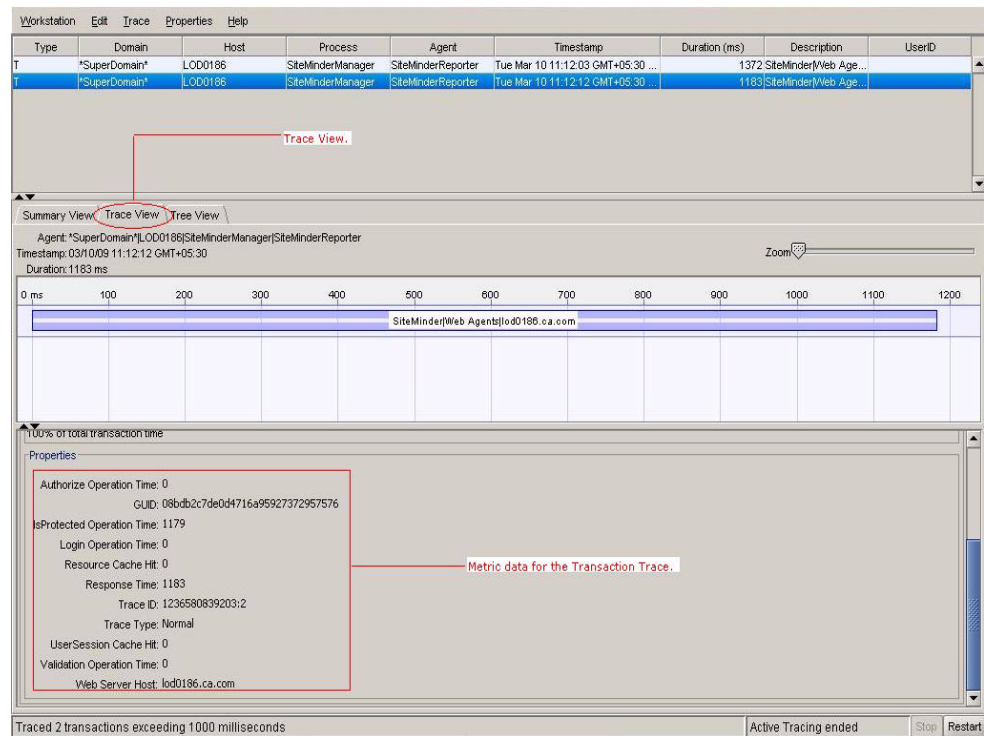
Manager for SiteMinder supports viewing Transaction Trace information through Investigator for transactions in web server that exceeds the specified time limit.

To view Transaction Traces from the Investigator:

- 1 Click **Workstation >New Transaction Trace Session** to open the **New Transaction Trace Session** dialog box.
- 2 Set the threshold value by selecting the **Lasting longer than...** checkbox and specifying a value in seconds or milliseconds.
- 3 Under **Trace Agents**, select **Trace selected Agent(s)**, the agent to trace, and click **OK** to start tracing.



This screenshot provides a sample transaction trace session from Investigator.



By clicking the transactions, you can see the calls executed by that particular transaction in the **Summary View** and the time taken by it in the **Trace View**.

The screenshot shows the Workstation application window with the following components:

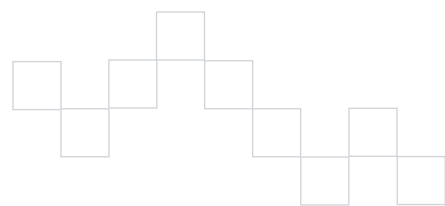
- Menu Bar:** Workstation, Edit, Trace, Properties, Help.
- Transaction List Table:**

| Type | Domain | Host | Process | Agent | Timestamp | Duration (ms) | Description | UserID |
|------|---------------|---------|-------------------|--------------------|-----------------------------------|---------------|-----------------------|--------|
| T | *SuperDomain* | LOD0186 | SiteMinderManager | SiteMinderReporter | Tue Mar 10 11:12:03 GMT+05:30 ... | 1372 | SiteMinder/Web Age... | |
| T | *SuperDomain* | LOD0186 | SiteMinderManager | SiteMinderReporter | Tue Mar 10 11:12:12 GMT+05:30 | 1183 | SiteMinder/Web Age... | |
- Summary View Tab:** Selected and circled in red. It displays:
 - Agent: *SuperDomain*[LOD0186]SiteMinderManager[SiteMinderReporter]
 - Timestamp: 03/10/09 11:12:12 GMT+05:30
 - Duration: 1183 ms
 - Call Details Table:**

| Path | Calls | Call time (ms) | Min | Avg | Max |
|-------------------------------------|-------|----------------|------|------|------|
| SiteMinder/Web_Agents/od0186.ca.com | 1 | 1183 | 1183 | 1183 | 1183 |
- Status Bar:** Traced 2 transactions exceeding 1000 milliseconds. Active Tracing ended. [Stop] [Restart]

By using Manager for SiteMinder and Introscope, the application support specialist can easily find the time spent on various transactions for a particular request.

By clicking on the **Duration** column heading, Workstation sorts the transactions by time length. Now you can find out which transaction took the maximum time to execute.



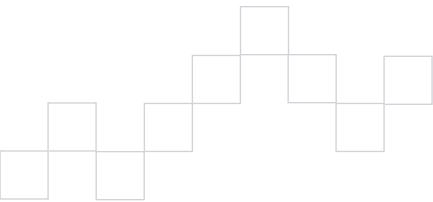


Support for Configurable Log Path, Log Size, and Logging

If you want the `IntroscopeAPI.log` log file to be available at a particular path other than the default path, you can configure the new path for the log file by using the `INTROSCOPE_NATIVEATAPI_LOGPATH` environment variable. You can also customize the name and the size of the log file.

You can also enable global or selective debug logging to track the data that is being written to the shared memory segment.

| | |
|---|----|
| Support for configurable log path | 80 |
| Support for configurable log size | 83 |
| Support for configurable logging | 84 |



Support for configurable log path

The custom name and the location of the `IntroscopeAPI.log` file can be configured with the `INTROSCOPE_NATIVEATAAPI_LOGPATH` environment variable. The following sections describe how this variable can be set for Windows and UNIX platforms.

On Windows

You can set the `INTROSCOPE_NATIVEATAAPI_LOGPATH` environment variable as a system variable or a user variable. If you want all the components to log data to `IntroscopeAPI.log` file in a custom location, set this as a system variable.

To configure the log file path:

- ◆ Set the environment variable as follows:

```
INTROSCOPE_NATIVEATAAPI_LOGPATH=C:\Program
Files\netegrity\webagent\logs
```

The `IntroscopeAPI.log` file is now created in the `C:\Program Files\netegrity\webagent\logs` directory.

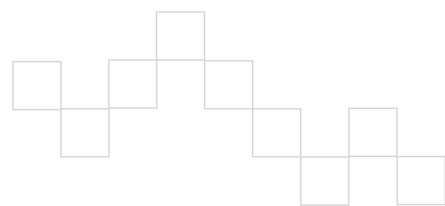
To customize the log file name:

- ◆ Set the environment variable to include the customized name along with the path.

```
INTROSCOPE_NATIVEATAAPI_LOGPATH=C:\Program
Files\netegrity\webagent\logs\Introscope-WA.log
```

If the user account with which the Web Agent is running does not have write permissions to the custom file name or the custom directory location does not exist, the Web Agent data would go to the `IntroscopeAPI.log` file in the `<installPath>\CAWilySiteMinderManager\SiteMinderManagerAgent\data` directory by default.

- » **Note** To get the log files in the customized location for Policy Server, Web Agent, or Manager for SiteMinder, service must be run with the same user account as Policy Server, Web Agent, or Manager for SiteMinder. By default service is run with LocalSystem Account.



If different components like SiteMinder Web Agents, Policy Server, and Manager for SiteMinder Agent have been configured to run under different accounts, this variable can be set as a user variable, uniquely for each of the components. This implies that you get three different log files.

» **Important** If both, system and user variable, are set, user variable takes precedence over system variable.

» **Note** The `INTROSCOPE_NATIVEATAPI_LOGPATH` environment variable is read at the server startup. If the variable is set after starting the web server, Policy Server, or Manager for SiteMinder Agent, you must restart the corresponding component for the changes to take effect.

On UNIX:

To customize the name and the location of the `IntroscopeAPI.log` file, the `INTROSCOPE_NATIVEATAPI_LOGPATH` environment variable can be set in the Manager for SiteMinder profile file, that is, `smm_env.sh` file. As you have separate `smm_env.sh` files for each of the components like Web Agent, Policy Server and Manager for SiteMinder Agent, you can configure unique names and locations of the log file for each of the components. This implies that you get three different log files.

To configure the log file path for Web Agent component:

- ◆ Set the following variables in the `smm_env.sh` file present in the Web Agent root directory.

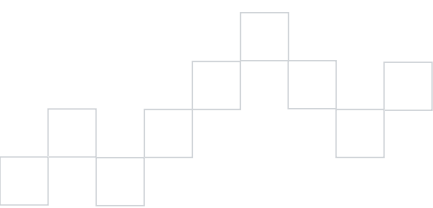
```
INTROSCOPE_NATIVEATAPI_LOGPATH=/opt/netegrity/webagent/logs
export INTROSCOPE_NATIVEATAPI_LOGPATH
```

Now the `IntroscopeAPI.log` file gets created in the Web Agent logs directory rather than the data directory of Manager for SiteMinder.

To customize the log file name for Web Agent component:

- ◆ Set the following variables in the `smm_env.sh` file present in the Web Agent root directory.

```
INTROSCOPE_NATIVEATAPI_LOGPATH=/opt/netegrity/webagent/logs/
Introscope-WA.log
export INTROSCOPE_NATIVEATAPI_LOGPATH
```



If the user account with which the Web Agent is running does not have write permissions to the custom file name or the custom directory location does not exist, the Web Agent data would go to the `IntroscopeAPI.log` file in the `<installPath>/CAWilySiteMinderManager/SiteMinderManagerAgent/data` directory by default.

Similarly, you can configure a custom location and name for the log file for the Policy Server component.

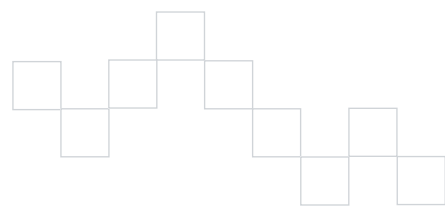
To configure the log file path and log file name for Policy Server component:

- ◆ Set the following variables in the `smm_env.sh` file present in the Policy Server root directory.

```
INTROSCOPE_NATIVEATAAPI_LOGPATH=/opt/netegrity/siteminder/logs/  
Introscope-PS.log
```

```
export INTROSCOPE_NATIVEATAAPI_LOGPATH
```

- » **Note** The `INTROSCOPE_NATIVEATAAPI_LOGPATH` environment variable is read at the server startup. If the variable is set after starting the web server, Policy Server, or Manager for SiteMinder Agent, you must restart the corresponding component for the changes to take effect.



Support for configurable log size

The default size of the `IntroscopeAPI.log` file is 10MB. You can configure the log file size of the `IntroscopeAPI.log` file by setting the `INTROSCOPE_NATIVEATAAPI_LOGSIZE` environment variable to the required size. You can configure the log file size between 10 and 100 MB. If you specify any other size, the nearest valid size limit, either 10 or 100 MB, is configured for the variable automatically. Once the file reaches the specified log size, it is overwritten.

» **Important** You must specify the log file size for the `INTROSCOPE_NATIVEATAAPI_LOGSIZE` environment variable in bytes.

For example, if you want the log file to reach 20MB in size before it is overwritten, set the variable as follows:

On Windows:

To configure the log file size:

- ◆ Set the environment variable as follows:

```
INTROSCOPE_NATIVEATAAPI_LOGSIZE=20971520
```

On UNIX:

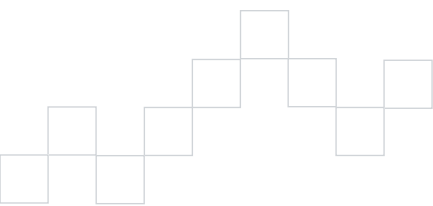
To configure the log file size for Web Agent component:

- ◆ Set the following variables in the `smm_env.sh` file present in the Web Agent root directory.

```
INTROSCOPE_NATIVEATAAPI_LOGSIZE=20971520
```

```
export INTROSCOPE_NATIVEATAAPI_LOGSIZE
```

» **Note** In the example, 20 MB has been converted to 20971520 bytes using this formula - $20 \times 1024 \times 1024$.



Support for configurable logging

The Manager for SiteMinder makes use of a shared memory segment for inter-process communication. The SiteMinder Web Agents, SiteMinder Policy Server, and Manager for SiteMinder Agent communicate with each other using a shared memory.

The shared memory is created in the `<installPath>/CAWilySiteMinderManager/SiteMinderManagerAgent/data` directory with the name `IntroscopeAPI.shm`. This file has 777 permissions by default so that all the processes like SiteMinder Web Agents, SiteMinder Policy Server, and Manager for SiteMinder Agent can write to it irrespective of the user account with which they are running.

You can track the data which is being written by the SiteMinder Web Agents and SiteMinder Policy Server in this shared segment. This can be done by enabling debug logging.

» **Note** The debug log must be enabled only for trouble shooting purposes as by enabling this you incur overhead on the SiteMinder Web Agent and Policy Server. As enabling the debug logging results in performance overhead, it is disabled by default.

There are two modes of debug logging that are supported.

- Global Debug
- Selective Debug

Global Debug

Select this option when you want to turn debugging on for all the components communicating through the shared segment, that is, SiteMinder Web Agents, Policy Server and Manager for SiteMinder Agent.

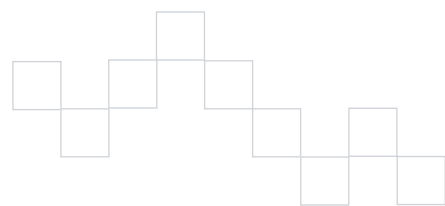
For Windows:

To set the global debug on:

- ◆ From the `<installPath>\CAWilySiteMinderManager\SiteMinderManagerAgent` directory, execute the following command:
`IntroscopeNativeDataReporter.exe -debug`

To turn the global debug off:

- ◆ Execute the following command:
`IntroscopeNativeDataReporter.exe -debugOFF.`



For UNIX:**To set the global debug on:**

- ◆ From the `<installPath>/CAWilySiteMinderManager/SiteMinderManagerAgent` directory, execute the following command:
`./IntroscopeNativeDataReporter.sh -debug`

To turn the global debug off execute:

- ◆ Execute the following command:
`./IntroscopeNativeDataReporter.sh -debugOFF`

When the global debug is turned on, all the components start logging into the `IntroscopeAPI.log` file. This file is present in the `<installPath>/CAWilySiteMinderManager/SiteMinderManagerAgent/data` directory by default.

Selective Debug

Selective debug provides an additional level of flexibility over the component for which the debug needs to be turned on. For example, you may want to turn the debug on for the Web Agent component and not the Policy Server. This is when selective logging must to be used.

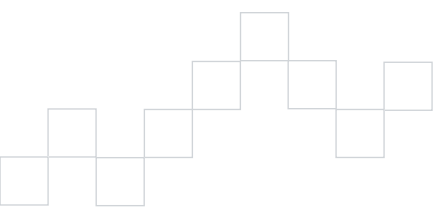
Perform the following steps for configuring selective logging.

On Windows:**To set the selective debug on:**

- ◆ In order to turn the selective debug on for a particular component like SiteMinder Web Agent, set `INTROSCOPE_NATIVEATAAPI_LOGGING=1` as a user variable for the user account with which the SiteMinder Web Agent is running.

For example, an Apache web server is configured with SiteMinder Web Agent and is running with administrator account. If you want to turn the selective debug on only for this component, set `INTROSCOPE_NATIVEATAAPI_LOGGING=1` as a user variable for administrator. This would ensure that the debug is turned on only for the Web Agent and not for Policy Server and Manager for SiteMinder Agent.

- » **Note** The `INTROSCOPE_NATIVEATAAPI_LOGGING` environment variable is read at the server startup. If the variable is set after starting the web server, Policy Server, or Manager for SiteMinder Agent, you must restart the corresponding component for the changes to take effect.
 To get the debug logs in the customized location for Policy Server, Web Agent, or Manager for SiteMinder, service must be run with the same user account as Policy Server, Web Agent, or Manager for SiteMinder. By default service is run with LocalSystem Account.



To set the selective debug off:

- ◆ Remove the `INTROSCOPE_NATIVEATAPI_LOGGING` variable for disabling the selective debug.
 - » **Note** The `INTROSCOPE_NATIVEATAPI_LOGGING` environment variable is read at the server startup. If the variable is set after starting the web server, Policy Server, or Manager for SiteMinder Agent, you must restart the server for the changes to take effect.

On UNIX:**To set the selective debug on:**

- Uncomment the `INTROSCOPE_NATIVEATAPI_LOGGING` variable definition in the `smm_env.sh` file for the component for which you want to turn the selective debug on.

For example, if you want to turn the selective debug on for the Web Agent component, uncomment the following lines in the `smm_env.sh` file present in the Web Agent's root directory.

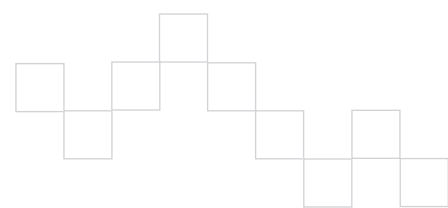
```
INTROSCOPE_NATIVEATAPI_LOGGING=1
export INTROSCOPE_NATIVEATAPI_LOGGING
```

- » **Note** The `INTROSCOPE_NATIVEATAPI_LOGGING` environment variable is read at the server startup. If the variable is set after starting the web server, Policy Server, or Manager for SiteMinder Agent, you must restart the corresponding component for the changes to take effect.

The `INTROSCOPE_NATIVEATAPI_LOGPATH` environment variable can be used for selective logging also.

- If you want to enable selective debug for the Web Agent component and want the log file to be created in a custom directory with a custom name, add the following lines in the `smm_env.sh` file present in the Web Agent root directory:

```
INTROSCOPE_NATIVEATAPI_LOGPATH=/opt/netegrity/webagent/logs/
Introscope-WA.log
export INTROSCOPE_NATIVEATAPI_LOGPATH
INTROSCOPE_NATIVEATAPI_LOGGING=1
export INTROSCOPE_NATIVEATAPI_LOGGING
```

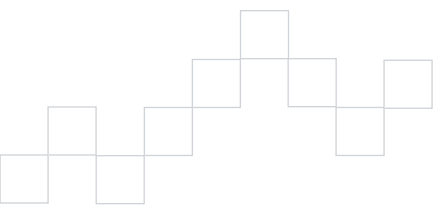


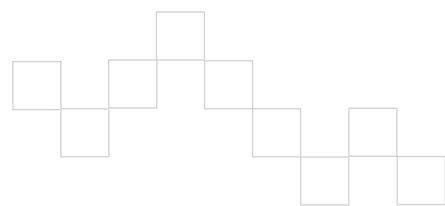
To set the selective debug off:

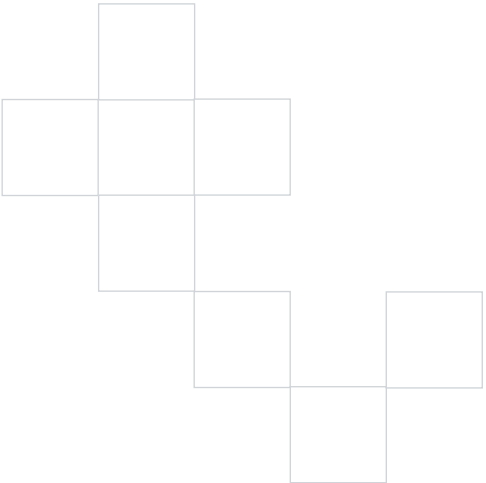
- ◆ Comment out the following lines in the `smm_env.sh` file for the component for which you want to turn the selective debug off.

```
INTROSCOPE_NATIVEATAAPI_LOGGING=1  
  
export INTROSCOPE_NATIVEATAAPI_LOGGING
```

- » **Note** The `INTROSCOPE_NATIVEATAAPI_LOGGING` environment variable is read at the server startup. If the variable is set after starting the web server, Policy Server, or Manager for SiteMinder Agent, you must restart the corresponding component for the changes to take effect.



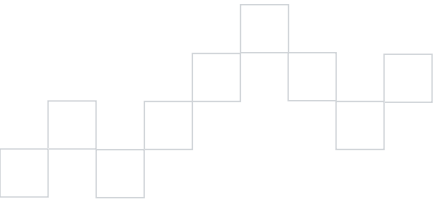




Metrics

This appendix explains the metrics provided by Manager for SiteMinder.

| | |
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| Metrics for SiteMinder Web Agent. | 90 |
| Aggregated Metrics for SiteMinder Web Agent. | 92 |
| Metrics for SiteMinder Policy Servers | 94 |
| Aggregated Metrics for SiteMinder Policy Servers | 97 |
| Metrics for OS Monitor | 99 |
| Aggregated Metrics for OS Monitor | 119 |



Metrics for SiteMinder Web Agent

The following metrics appear in the Introscope Investigator under the **SiteMinderManager | SiteMinderReporter | SiteMinder | Web Agents | <WebagentName_Port>** node

Caching

These metrics are provided for each cache listed in the table in this section:

- Average Cache Size—Average size of cache required by the web agent to store details related to policy server IsProtected or Login responses.
- Hits Per Interval—Number of hits per interval for Resource or User Session cache in web agent.
- Max Cache Size—Maximum size of cache that can store details related to IsProtected or Login responses from a policy server in the web agent.
- Misses Per Interval—Number of misses per interval for Resource or User Session cache in web agent. This is the result of an unsuccessful cache lookup.

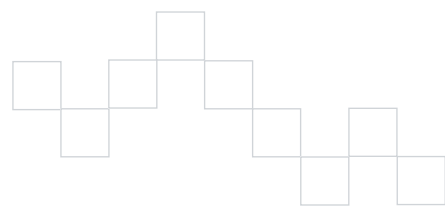
| Metric | Notes |
|--|---|
| SiteMinder Manager Web Agents <WebAgent Name> Caching Resource | Counters relating to the cache that stores IsProtected responses from a SiteMinder Policy Server. |
| SiteMinder Manager Web Agents <WebAgent Name> Caching User Session | Counters relating to the cache that stores Login responses from a SiteMinder Policy Server. |

Cookies

The following cookie metrics are provided:

- Bad Cookie Hits Per Interval—Number of hits per interval for bad cookies.
- Expired Cookie Hits Per Interval—Number of hits per interval for an expired cookie.

| Metric | Notes |
|---|---|
| SiteMinder Manager Web Agents <WebAgent Name> Cookies | Reports on the number of bad cookie hits and expired hits per interval. |



Operations

These metrics are provided for each resource listed in the table in this section:

- Average Response Time (ms)—Average time in milliseconds spent on a particular operation by the web agent.
- Errors Per Interval—Number of errors per interval for a particular operation in a web agent.
- Failures Per Interval—Number of failures per interval for a particular operation in a web agent.
- Responses Per Interval—Number of responses per interval by a web agent for a particular operation.

| Metric | Notes |
|--|---|
| SiteMinder Manager Web Agents <WebAgent Name> Operations Authorize | Authorize describes counters relating to user authorization. |
| SiteMinder Manager Web Agents <WebAgent Name> Operations IsProtected | IsProtected describes counters relating to an agent calling on the policy server to determine if a resource is protected or not. Failures Per Interval metric is not available for IsProtected. |
| SiteMinder Manager Web Agents <WebAgent Name> Operations Login | Login describes counters relating to user authentication. |
| SiteMinder Manager Web Agents <WebAgent Name> Operations Validation | Validation describes counters relating to user session validation (single sign-on). |

URLs

The following URL metrics are collected:

- Bad URL Chars Hits Per Interval—Number of URL bad character hits received per interval by the web agent.
- Cross Site Script Hits Per Interval—Number of Cross Site Script file hits per interval recorded in a web agent.

| Metric | Notes |
|--|--|
| SiteMinder Manager Web Agents <WebAgent Name> URLs | URLS describes metrics for URL processing. Agents filter URLS for potential forms of attack. |

Aggregated Metrics for SiteMinder Web Agent

The following aggregated metrics appear in the Introscope Investigator under the **SiteMinderManager | SiteMinderReporter | SiteMinder | Web Agents | <WebagentName_Port>** node

Status

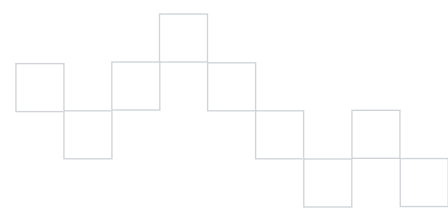
| Metric | Notes |
|--|--|
| SiteMinder Manager Web Agents <WebAgent Name>:Web Agent Status | Status of the Web Agent. 1 = normal, 0 = down or not responding. Its calculation is based on whether a data is present for a reporting cycle or not. |

Caching

These metrics are provided for each cache listed in the table in this section:

- **Accesses Per Interval**—This aggregated metric is calculated by adding up number of hits and misses per interval.
- **Cache Hit Percentage**—This aggregated metric is calculated by dividing hits per interval by accesses per interval.

| Metric | Notes |
|--|---|
| SiteMinder Manager Web Agents <WebAgent Name> Caching Resource | Counters relating to the cache that stores IsProtected responses from a SiteMinder Policy Server. |
| SiteMinder Manager Web Agents <WebAgent Name> Caching User Session | Counters relating to the cache that stores Login responses from a SiteMinder Policy Server |



Operations

| Metric | Notes |
|---|--|
| SiteMinder Manager Web Agents <WebAgent Name> Operations:Errors Per Interval | Total errors per interval for all operations. It is calculated by adding the data for Errors Per Interval of all individual operations from web agent. |
| SiteMinder Manager Web Agents <WebAgent Name> Operations:Failures Per Interval | Total failures per interval for all operations. It is calculated by adding Failures Per Interval of all individual operations from web agent. |

Metrics for SiteMinder Policy Servers

Metrics for SiteMinder Policy Servers appear in the Introscope Investigator under the **SiteMinderManager | SiteMinderReporter | SiteMinder | Policy Server | <PSHost>** node.

Caching

These metrics are provided for each resource listed in the table in this section:

- Hits Per Interval—Number of hits per interval for a particular resource in Policy Server.
 - Misses Per Interval—Number of misses per interval for a particular resource in Policy Server. This is a result of unsuccessful cache lookups.
- » **Note** Misses Per Interval does not show up until a miss is registered.

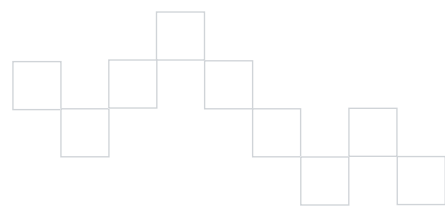
| Metric | Notes |
|---|---|
| SiteMinder Policy Server <PSHost> Caching Authorization | Displays authorization cache metrics for the named policy server. |
| SiteMinder Policy Server <PSHost> Caching PolicyStore | Displays Policy Store cache metrics for the named Policy Server. |

Databases

These metrics are provided for each resource listed in the table in this section:

- Average Response Time (ms)—Average response time in milliseconds for accessing policy, key, or user stores.
- Errors Per Interval—Errors occurred per interval when accessing policy, key, or user stores.
- Responses Per Interval—Responses sent per interval for accessing policy, key, or user stores. This indicates the number of successful accesses per interval to these stores.

| Metric | Notes |
|--|--|
| SiteMinder Policy Server <PSHost> Databases KeyStore | Displays database metrics for the Policy Server Key Store. |



| Metric | Notes |
|---|---|
| SiteMinder Policy Server <PSHost> Databases PolicyStore | Displays database metrics for the Policy Server Policy Store. |
| SiteMinder Policy Server <PSHost> Databases UserStore <store-type> <userstore-name> | Displays database metrics for the User Store, which may be LDAP, ODBC, or Active Directory. |

Health

These metrics are provided for each resource listed in the table in this section:

- Current Length/Currently In Use—The current length or count of either queues, sockets, or worker threads.
- Max Length/Max Count—The maximum length or count of either queues, sockets, or worker threads.

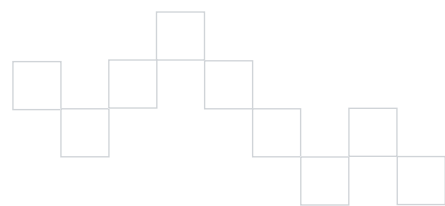
| Metric | Notes |
|--|---|
| SiteMinder Policy Server <PSHost> Health High Priority Request Queue | Current length, maximum length, and percentage length of requests in the high priority request queue. |
| SiteMinder Policy Server <PSHost> Health Request Queue | Current length, maximum length, and percentage length of requests in the request queue. |
| SiteMinder Policy Server <PSHost> Health Sockets | Currently in use, percentage in use, and max count of sockets. |
| SiteMinder Policy Server <PSHost> Health Worker Threads | Currently in use, percentage in use, and maximum length of worker threads. |

Operations

These metrics are provided for each resource listed in the table in this section:

- Average Response Time (ms)—Average time in milliseconds taken by Policy Server to process a single operation call. The operation may be related to Login, Logout, Validate, IsProtected, or Authorize.
- Errors Per Interval—Number of failures occurred per interval when Policy Server is processing an operation call.
- Responses Per Interval—Number of successes occurred per interval when Policy Server is processing an operation call.

| Metric | Notes |
|---|---|
| SiteMinder Policy Server <PSHost> Operations Authorize | Metrics regarding the response time and errors related to authorize operations. |
| SiteMinder Policy Server <PSHost> Operations IsProtected | Metrics regarding the response time and errors encountered when checking to see if a resource is protected. |
| SiteMinder Policy Server <PSHost> Operations Login | Metrics regarding the response time and errors encountered when users attempt to log in to the system. |
| SiteMinder Policy Server <PSHost> Operations Logout | Metrics regarding the response time and errors encountered when users attempt to log out of the system. |
| SiteMinder Policy Server <PSHost> Operations Validate | Metrics regarding the response time and errors encountered when users are validated on the system. |



Aggregated Metrics for SiteMinder Policy Servers

Aggregated metrics for SiteMinder Policy Servers appear in the Introscope Investigator under the **SiteMinderManager | SiteMinderReporter | SiteMinder | Policy Server | <PSHost>** node.

Caching

These metrics are provided for each resource listed in the table in this section:

- **Accesses Per Interval**—This aggregate metric is calculated by adding hits and misses per interval received for a particular resource in Policy Server.
- **Cache Hit Percentage**—This aggregate metric is calculated by dividing hits per interval by accesses per interval.

| Metric | Notes |
|---|---|
| SiteMinder Policy Server <PSHost> Caching Authorization | Displays authorization cache metrics for the named policy server. |
| SiteMinder Policy Server <PSHost> Caching PolicyStore | Displays Policy Store cache metrics for the named Policy Server. |

Databases

These metrics are provided for each resource listed in the table in this section:

- **Average Response Time (ms)**—Total average response time for all the Databases or UserStores. It is calculated by taking an average of all average response time of Databases or UserStores, respectively.
- **Errors Per Interval**—Total errors per interval for all the Databases or UserStores. It is calculated by adding all errors per interval of Databases or UserStores, respectively.
- **Responses Per Interval**—Total responses per interval for all the Databases or UserStores. This metric is calculated by adding all responses per interval of Databases or UserStores, respectively.

| Metric | Notes |
|---|---|
| SiteMinder Policy Server <PSHost> Databases | Displays all aggregated metrics for KeyStore, UserStore, and PolicyStore. |
| SiteMinder Policy Server <PSHost> Databases UserStore | Displays all aggregated metrics for all UserStores. |

Health

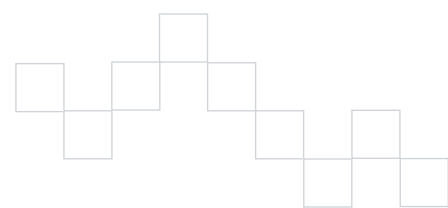
These metrics are provided for each resource listed in the table in this section:

- **Percentage Length in Use / Percentage in Use**—This metric is calculated by dividing current length (or count) by max length (or count) and multiplying the result with 100.

| Metric | Notes |
|--|---|
| SiteMinder Policy Server <PSHost> Health High Priority Request Queue | Current length, maximum length, and percentage length of requests in the high priority request queue. |
| SiteMinder Policy Server <PSHost> Health Request Queue | Current length, maximum length, and percentage length of requests in the request queue. |
| SiteMinder Policy Server <PSHost> Health Sockets | Currently in use, percentage in use, and max count of sockets. |
| SiteMinder Policy Server <PSHost> Health Worker Threads | Currently in use, percentage in use, and maximum length of worker threads. |

Operations

| Metric | Notes |
|---|--|
| SiteMinder Policy Server <PSHost> Operations:Errors Per Interval | This metric is calculated by adding all Errors Per Interval for individual operations performed by Policy Server. |
| SiteMinder Policy Server <PSHost> Operations:Average Response Time (ms) | This metric is calculated by taking an average of all Average Response Time of individual operations performed by Policy Server. |
| SiteMinder Policy Server <PSHost> Operations:Responses Per Interval | This aggregated metric is calculated by adding all Responses Per Interval of individual operations performed by Policy Server. |



Metrics for OS Monitor

OS Monitor provides metrics on operating system resources for Policy Servers. The metrics are available for the following operating systems:

- Windows
- Solaris
- AIX
- HP
- Linux

Due to differences among operating systems, the metrics shown for the supported platforms vary somewhat.

Windows

Metrics Path

All Metrics appear in the Introscope Investigator under the **SiteMinderManager|SiteMinderReporter (*SuperDomain*)** node in the format:

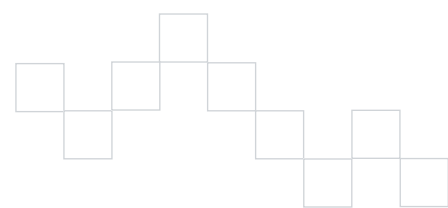
```
OSResource|<instrumentedelementname>|<modulename>|<sub-  
modulename>|<metricname>.
```

Memory

| Metric | Notes |
|----------------------------|--|
| Memory:Committed Bytes | Committed Bytes displays the amount of committed virtual memory in bytes. Committed memory is the physical memory which has space reserved on the disk paging file(s). There can be one or more paging files on each physical drive. This counter displays the last observed value only; it is not an average. |
| Memory:Page Faults Per Sec | The average number of pages faulted per second. Only one page is faulted in each fault operation, so this is also equal to the number of page fault operations. This counter includes both hard faults (those that require disk access) and soft faults (where the faulted page is found). |
| Memory:Pages Per Sec | The rate at which pages are read from or written to disk to resolve hard page faults. This counter is a primary indicator of the kinds of faults that cause system-wide delays. It is the sum of Memory\\Pages Input/sec and Memory\\Pages Output/sec. It is counted in numbers of pages so it can be compared to other counts of pages, such as Memory\\Page Faults/sec, without conversion. It includes pages retrieved to satisfy faults in the file system cache (usually requested by applications) non-cached mapped memory files. |

Logical Disk

| Metric | Notes |
|--|---|
| Disk LogicalDisk <Instance>:DiskName | Name of Logical Disk |
| Disk LogicalDisk <Instance>:Free Disk Space (%) | The percentage of total usable space on the selected logical disk drive that was free. |
| Disk LogicalDisk <Instance>:Free Disk Space (MB) | The unallocated space, in megabytes, on the disk drive. One megabyte is equal to 1,048,576 bytes. |

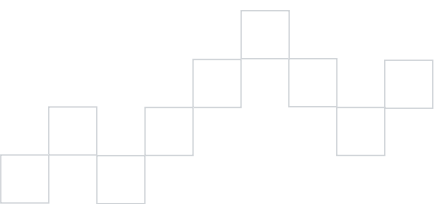


Physical Disk

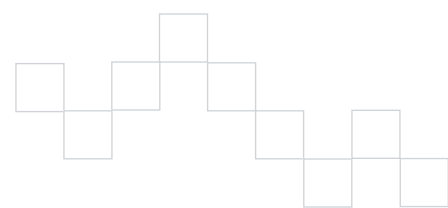
| Metric | Notes |
|--|--|
| Disk PhysicalDisk <Instance>:Avg Disk Milliseconds Per Write | The average time, in milliseconds, of a write of data to the disk. |
| Disk PhysicalDisk <Instance>:Avg Disk Milliseconds Per Read | The average time, in seconds, of a read of data from the disk. |
| Disk PhysicalDisk <Instance>:Avg Disk Queue Length | The average number of read and write requests that were queued for the selected disk during the sample interval. |
| Disk PhysicalDisk <Instance>:Disk Name | Name of Physical Disk Instance |
| PhysicalDisk <Instance>:Disk Read Bytes Per Sec | The rate at which bytes are transferred from the disk during read operations. |
| Disk PhysicalDisk <Instance>:Disk Reads Per Sec Avg | The rate of read operations on the disk. |
| Disk PhysicalDisk <Instance>:Disk Write Bytes Per Sec | The rate at which bytes are transferred to the disk during write operations. |
| Disk PhysicalDisk <Instance>:Disk Writes Per Sec Avg | The rate of write operations on the disk. |
| Disk PhysicalDisk <Instance>:Percent Disk Time | The percentage of elapsed time that the selected disk drive was busy servicing read or write requests. |

Network Interface

| Metric | Notes |
|--|--|
| Network Interface <Instance>:Bytes Received Per Sec | The rate at which bytes are received over each network adapter, including framing characters. Network Interface\\Bytes Received/sec is a subset of Network Interface\\Bytes Total/sec. |
| Network Interface <Instance>:Bytes Sent Per Sec | The rate at which bytes are sent over each network adapter, including framing characters. Network Interface\\Bytes Sent/sec is a subset of Network Interface\\Bytes Total/sec. |
| Network Interface <Instance>:Interface Name | Name of Network Interface Instance |
| Network Interface <Instance>:Packets Outbound Errors | The number of outbound packets that could not be transmitted because of errors. |



| Metric | Notes |
|---|---|
| Network Interface <Instance>:Packets Outbound Discarded | The number of outbound packets that were chosen to be discarded even though no errors were detected to prevent transmission. One possible reason for discarding packets could be to free up buffer space. |
| Network Interface <Instance>:Packets Received Discarded | The number of inbound packets that were chosen to be discarded even though no errors were detected to prevent their delivery to a higher-layer protocol. One possible reason for discarding packets could be to free up buffer space. |
| Network Interface <Instance>:Packets Received Errors | The number of inbound packets that contained errors preventing them from being deliverable to a higher-layer protocol. |
| Network Interface <Instance>:Total Packets Errors | The sum of Packets Outbound Errors and Packets Received Errors. |
| Network Interface <Instance>:Total Packets Discarded | The sum of Packets Outbound Discarded and Packets Received Discarded. |
| Network Interface <Instance>:Total Bytes Per Sec | The rate at which bytes are sent and received over each network adapter, including framing characters. It is sum of Bytes Received Per Sec and Bytes Sent Per Sec. |
| Network Interface <Instance>:Packets Sent Per Sec | The rate at which packets are sent on the network interface. |
| Network Interface <Instance>:Packets Received Per Sec | The rate at which packets are received on the network interface. |
| Network Interface <Instance>:Total Packets Per Sec | The rate at which packets are sent and received on the network interface. |



Processor

| Metric | Notes |
|--|---|
| Processor <Instance>: PercentProcessor Time | The percentage of elapsed time that the processor spends to execute a non-idle thread. It is calculated by measuring how long the idle thread is active in the sample interval and subtracting that time from interval duration. (Each processor has an idle thread that consumes cycles when no other threads are ready to run). This counter is the primary indicator of processor activity, and displays the average percentage of busy time observed during the sample interval. It is calculated by monitoring the time that the service is inactive and subtracting that value from 100%. |

System

| Metric | Notes |
|---------------------------------|---|
| System: ProcessorQueueLength | The number of threads in the processor queue. Unlike disk counters, this counter represents ready threads only, not threads that are running. There is a single queue for processor time even on computers with multiple processors. Therefore, if a computer has multiple processors, you need to divide this value by the number of processors servicing the workload. A sustained processor queue of less than 10 threads per processor is normally acceptable, independent of the workload. |

Process

| Metric | Notes |
|--|---|
| PolicyServerProcess smpolicysrv:Status | Indicates status of policy server process. Display 0 for down and 1 for up. |

Solaris

Metrics Path

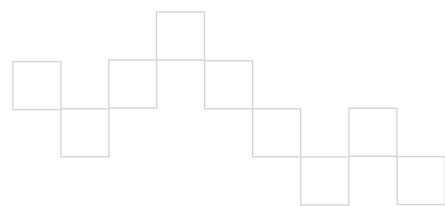
All Metrics appear in the Introscope Investigator under the **SiteMinderManager|SiteMinderReporter (*SuperDomain*)** node in the format:

```
OSResource-Solaris|<instrumentedelementname>|<modulename>|<sub-modulename>|<metricname>.
```

Disk

This table shows the metrics generated by the `<product install path>/SiteMinderManagerAgent/epaplugins/solaris/diskStats.pl` plugin.

| Metric | Notes |
|--|--|
| Disk <Disk>:Reads/sec | The number of reads per second. |
| Disk <Disk>:Writes/sec | The number of writes per second. |
| Disk <Disk>:KB Read/sec | The number of kilobytes read per second. |
| Disk <Disk>:KB Written/sec | The number of kilobytes written per second. |
| Disk <Disk>:Avg. Transactions Waiting | The average number of transactions waiting for service (queue length). |
| Disk <Disk>:Avg. Transactions Active | The average number of transactions actively being serviced (removed from the queue but not yet completed). |
| Disk <Disk>:Avg. Service Time in Wait Queue (Milliseconds) | The average time spend waiting on queue. |
| Disk <Disk>:Avg. Service Time Active Transactions (Milliseconds) | The average time spent performing I/O functions. |
| Disk <Disk>:% Time Transactions Waiting | The percentage of time there are transactions waiting for service (queue non-empty). |
| Disk <Disk>:% Time Disk Is Busy | The percentage of time the disk is busy (transactions in progress). |
| Disk <Disk>:Free Disk Space (%) | The percentage of free disk space. |
| Disk <Disk>:Free Disk Space (MB) | The amount of free disk space in megabytes. |



Network

This table shows the metrics generated by the `<product install path>/SiteMinderManagerAgent/epapugins/solaris/network.pl` plugin. It shows network states returned by network command.

| Metric | Notes |
|--|--|
| Network TCP Connection States:Total CLOSED | Closed. The socket is not being used. |
| Network TCP Connection States:Total CLOSE_WAIT | Waiting for the socket to close after a remote shutdown. |
| Network TCP Connection States:Total CLOSING | Waiting for an acknowledgement after a close and a remote shutdown. |
| Network TCP Connection States:Total ESTABLISHED | A connection has been established. |
| Network TCP Connection States:Total FIN_WAIT1 | Shutting down the connection after the socket closed. |
| Network TCP Connection States:Total FIN_WAIT2 | Waiting for shutdown after the socket closed. |
| Network TCP Connection States:Total TIME_WAIT | The wait or the remote shutdown retransmission after a close has occurred. |
| Network TCP Connection States:Total SYN_RECEIVED | The initial synchronization of the connection is under way. |
| Network TCP Connection States:Total SYN_SENT | Actively trying to establish a connection. |
| Network TCP Connection States:Total LAST_ACK | Awaiting acknowledgment after a remote shutdown and a close. |
| Network TCP Connection States:Total BOUND | Awaiting acknowledgment after a remote shutdown and a close. |
| Network TCP Connection States:Total IDLE | Number of TCP Connections currently idle. |
| Network:Total number of TCP connections | The total number of TCP connections. |
| Network Network Interface <Interface>:Input Packets | The number of packets received with no errors. |
| Network Network Interface <Interface>:Input Errors | The number of packets received with errors. |
| Network Network Interface <Interface>:Output Packets | The number of packets transmitted with no errors. |
| Network Network Interface <Interface>:Total Packets | The total number of packets. |

| Metric | Notes |
|--|--|
| Network Network Interface <Interface>:Output Errors | The number of packets transmitted with errors. |
| Network Network Interface <Interface>:Total Packets Errors | The total number of packets with errors. |

VM statistics

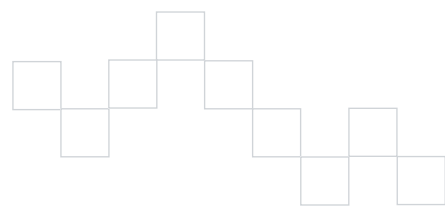
The following tables show the metrics generated by the <product install path>/SiteMinderManagerAgent/epapugins/solaris/vmstat.pl plugin.

Processor

| Metric | Notes |
|---|--|
| Processor Processor_Average:Idle % | The percentage of time the processor was idle. |
| Processor Processor_Average:System % | The percentage of system time. |
| Processor Processor_Average:User % | The percentage of user time. |
| Processor Processor_Average:Utilization % | The percentage of utilization time. |

Kernel threads

| Metric | Notes |
|------------------------------|---|
| Kernel Threads:In Wait Queue | The number of kernel threads placed in wait queue (awaiting resource, awaiting input/output). |
| Kernel Threads:Runnable | The number of kernel threads placed in the run queue. |
| Kernel Threads:Swapped | The number of threads swapped. |



Memory

| Metric | Notes |
|---|--|
| Memory:Free List (% of physical memory) | The free list percentage of physical memory. |
| Memory:Free List (Bytes) | The size of the free list. |
| Memory:Physical (Bytes) | The physical memory size. |
| Memory:Scan Rate | The pages scanned by the clock algorithm. |

Swap

| Metric | Notes |
|---|---|
| Swap:Free(Bytes) | The amount of swap space currently available. |
| Swap:Pages paged in from paging space (Bytes/s) | The pages paged in from the paging space (Bytes/s). |
| Swap:Pages paged out to paging space (Bytes/s) | The pages paged out to the paging space (Bytes/s). |

System

| Metric | Notes |
|--------------------------|------------------------------|
| System:Device Interrupts | Non-clock device interrupts. |
| System:System Calls | The number of system calls. |
| System:Context Switches | The CPU context switches. |

Process

The following table shows the metrics generated by the `<product install path>/SiteMinderManagerAgent/epaplugins/solaris/process.pl` plugin

| Metric | Notes |
|--|--|
| PolicyServerProcess smpolicysrv:Status | Indicates the status of policy server process. Displays 0 for down and 1 for up. |

AIX

Metrics path

All Metrics appear in the Introscope Investigator under the **SiteMinderManager|SiteMinderReporter (*SuperDomain*)** node in the format:

```
OSResource-Aix|<instrumentedelementname>|<modulename>|<sub-  
modulename>|<metricname>.
```

Disk

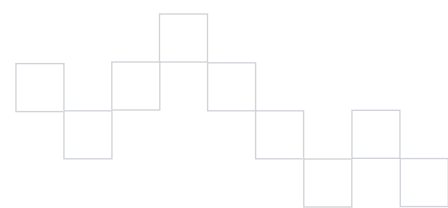
This table shows the metrics generated by the `<product install path>/SiteMinderManagerAgent/epaplugins/aix/diskStats.pl` plugin.

| Metric | Notes |
|----------------------------------|------------------------------------|
| Disk <Disk>:Free Disk Space (%) | The percentage of free disk space. |
| Disk <Disk>:Free Disk Space (MB) | The free disk space in megabytes. |

Network

These metrics are generated by the `<product install path>/SiteMinderManagerAgent/epaplugins/aix/network.pl` plugin and show network states returned by the `network` command.

| Metric | Notes |
|---|--|
| Network TCP Connection States:Total CLOSED | Closed. The socket is not being used. |
| Network TCP Connection States:Total CLOSE_WAIT | Remote shut down; waiting for the socket to close. |
| Network TCP Connection States:Total CLOSING | Waiting for acknowledgement after a close and a remote shutdown. |
| Network TCP Connection States:Total ESTABLISHED | The connection has been established. |
| Network TCP Connection States:Total FIN_WAIT1 | Shutting down the connection after the socket has closed. |
| Network TCP Connection States:Total FIN_WAIT2 | Waiting for shutdown after the socket has closed. |
| Network TCP Connection States:Total TIME_WAIT | Wait for remote shutdown retransmission after a close. |
| Network TCP Connection States:Total SYN_RCVD | The initial synchronization of the connection is under way. |



| Metric | Notes |
|--|--|
| Network TCP Connection States:Total SYN_SENT | Actively trying to establish a connection. |
| Network TCP Connection States:Total LAST_ACK | Waiting for acknowledgement after a remote shutdown and a close. |
| Network:Total number of TCP Connections | The total number of TCP connections. |
| Network Network Interface <Interface>:Input Packets | The number of packets received with no errors. |
| Network Network Interface <Interface>:Input Errors | The number of packets received with errors. |
| Network Network Interface <Interface>:Output Packets | The number of packets transmitted with no errors. |
| Network Network Interface <Interface>:Output Errors | The number of packets transmitted with errors. |
| Network Network Interface <Interface>:Total Packets | The total number of packets. |
| Network Network Interface <Interface>:Total Packets Errors | The total number of packets with errors. |

VM statistics

The following tables show the metrics generated by the `<product install path>/SiteMinderManagerAgent/epaplugins/aix/vmstat.pl` plugin.

Processor

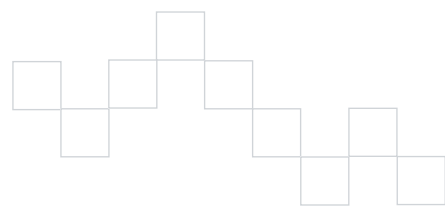
| Metric | Notes |
|---|--|
| Processor Processor_Average:Idle % | Processor Processor_Average Idle time. |
| Processor Processor_Average:System % | The system time. |
| Processor Processor_Average:User % | The user time. |
| Processor Processor_Average:Utilization % | The utilization time. |
| Processor Processor_Average:IOWait % | The CPU idle time during which the system had outstanding disk/NFS I/O request(s). |

Kernel Threads

| Metric | Notes |
|------------------------------|---|
| Kernel Threads:Runnable | The number of kernel threads placed in the run queue. |
| Kernel Threads:In Wait Queue | The number of kernel threads placed in the wait queue (awaiting resource, awaiting input/output). |

Memory

| Metric | Notes |
|--|---|
| Memory:Free List (% of physical memory) | The free list percentage of physical memory. |
| Memory:Free List (Bytes) | The size of the free list. |
| Memory:Physical (Bytes) | The physical memory size. |
| Memory:Scan Rate | The pages scanned by the clock algorithm. |
| Memory:Active Virtual Pages (Bytes) | The size of the active virtual pages in bytes. |
| Memory:Active Virtual Pages (% of physical memory) | The percentage of active virtual pages using physical memory. |



Swap

| Metric | Notes |
|---|---|
| Swap:Pages paged in from paging space (Bytes/s) | The pages paged in from paging space (bytes/s). |
| Swap:Pages paged out to paging space (Bytes/s) | The pages paged out to paging space (bytes/s). |

System

| Metric | Notes |
|--------------------------|----------------------------------|
| System:Device Interrupts | The non-clock device interrupts. |
| System:System Calls | The system calls. |
| System:Context Switches | The CPU context switches. |

HP

Metrics Path

All Metrics appear in the Introscope Investigator under the **SiteMinderManager|SiteMinderReporter (*SuperDomain*)** node in the format:

```
OSResource-HPUX|<instrumentedelementname>|<modulename>|<sub-modulename>|<metricname>.
```

Disk

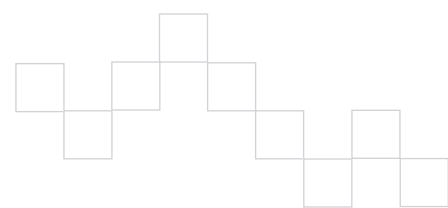
This table shows the metrics generated by the `<product install path>/SiteMinderManagerAgent/epaplugins/hp/diskStats.pl` plugin.

| Metric | Notes |
|----------------------------------|---|
| Disk <Disk>:Free Disk Space (%) | The percentage of free disk space. |
| Disk <Disk>:Free Disk Space (MB) | The amount of free disk space in megabytes. |

Network

These metrics generated by the `<product install path>/SiteMinderManagerAgent/epaplugins/hp/network.pl` plugin show network states returned by the `network` command.

| Metric | Notes |
|--|--|
| Network TCP Connection States:Total CLOSED | The socket is closed and not being used. |
| Network TCP Connection States:Total CLOSE_WAIT | Remote shut down; waiting for the socket to close. |
| Network TCP Connection States:Total CLOSING | Awaiting acknowledgement after close and remote shutdown. |
| Network TCP Connection States:Total ESTABLISHED | The connection has been established. |
| Network TCP Connection States:Total FIN_WAIT1 | The socket is closed and the connection is being shut down. |
| Network TCP Connection States:Total FIN_WAIT2 | The socket has been closed. Waiting for shutdown. |
| Network TCP Connection States:Total TIME_WAIT | Wait for remote shutdown retransmission after close. |
| Network TCP Connection States:Total SYN_RCVD | The initial synchronization of the connection is under way. |
| Network TCP Connection States:Total SYN_SENT | Trying to establish a connection. |
| Network TCP Connection States:Total LAST_ACK | Waiting for acknowledgement after remote shutdown and close. |
| Network TCP Connection States:Total BOUND | Bound |
| Network TCP Connection States:Total INVALID | Invalid |
| Network:Total number of TCP Connections | The total number of TCP connections. |
| Network Network Interface <Interface>:Input Packets | The number of packets received with no errors. |
| Network Network Interface <Interface>:Input Errors | The number of packets received with errors. |
| Network Network Interface <Interface>:Output Packets | The number of packets transmitted with no errors. |
| Network Network Interface <Interface>:Total Packets | The total number of packets. |



| Metric | Notes |
|--|--|
| Network Network Interface <Interface>:Output Errors | The number of packets transmitted with errors. |
| Network Network Interface <Interface>:Total Packets Errors | The total number of packets with errors. |

VM statistics

The following tables show the metrics generated by the <product install path>/SiteMinderManagerAgent/epaplugins/hp/vmstat.pl plugin.

Processor

| Metric | Notes |
|---|--------------------------------|
| Processor Processor_Average:Idle % | The processor's CPU Idle time. |
| Processor Processor_Average:System % | The system time. |
| Processor Processor_Average:User % | The user time. |
| Processor Processor_Average:Utilization % | The utilization time. |

Kernel Threads

| Metric | Notes |
|------------------------------|---|
| Kernel Threads:Runnable | The number of kernel threads placed in run queue. |
| Kernel Threads:In Wait Queue | The number of kernel threads placed in wait queue (awaiting resource, awaiting input/output). |
| Kernel Threads:Swapped | Runnable or short sleeper (< 20 secs) but swapped. |

Memory

| Metric | Notes |
|-------------------------------------|---|
| Memory:Free List (Bytes) | The size of the free list. |
| Memory:Scan Rate | The pages scanned by the clock algorithm. |
| Memory:Active Virtual Pages (Bytes) | The active virtual pages. |

Swap

| Metric | Notes |
|---|---|
| Swap:Pages paged in from paging space (Bytes/s) | The pages paged in from the paging space (Bytes/s). |
| Swap:Pages paged out to paging space (Bytes/s) | The pages paged out to paging space (Bytes/s), |

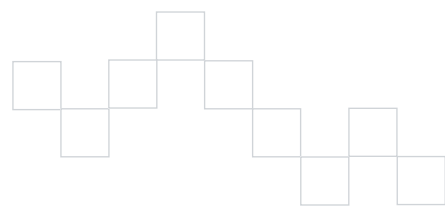
System

| Metric | Notes |
|--------------------------|----------------------------------|
| System:Device Interrupts | The non-clock device interrupts. |
| System:System Calls | The system calls. |
| System:Context Switches | The CPU context switches. |

Process

The following table shows the metrics generated by the `<product install path>/SiteMinderManagerAgent/epaplugins/hp/process.pl` plugin

| Metric | Notes |
|--|--|
| PolicyServerProcess smpolicysrv:Status | Indicates status of policy server process. Displays 0 for down and 1 for up. |



Linux

Metrics Path

All Metrics appear in the Introscope Investigator under the **SiteMinderManager|SiteMinderReporter (*SuperDomain*)** node in the format:

```
OSResource-Linux|<instrumentedelementname>|<modulename>|<sub-modulename>|<metricname>.
```

Disk

This table shows the metrics generated by the `<product install path>/SiteMinderManagerAgent/epaplugins/linux/diskStats.pl` plugin.

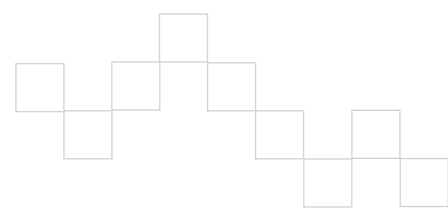
| Metric | Notes |
|----------------------------------|---|
| Disk <Disk>:Free Disk Space (%) | The percentage of free disk space. |
| Disk <Disk>:Free Disk Space (MB) | The amount of free disk space in megabytes. |

Network

These metrics generated by the `<product install path>/SiteMinderManagerAgent/epaplugins/linux/network.pl` plugin show network states returned by the `network` command.

| Metric | Notes |
|---|---|
| Network TCP Connection States:Total CLOSED | Closed. The socket is not being used. |
| Network TCP Connection States:Total CLOSE_WAIT | Remote shut down; waiting for the socket to close. |
| Network TCP Connection States:Total CLOSING | Waiting for acknowledgement after close and remote shutdown. |
| Network TCP Connection States:Total ESTABLISHED | A connection has been established. |
| Network TCP Connection States:Total FIN_WAIT1 | The socket has been closed and the connection is being shut down. |
| Network TCP Connection States:Total FIN_WAIT2 | Waiting for shutdown after the socket has been closed. |
| Network TCP Connection States:Total TIME_WAIT | The wait after a close for remote shutdown retransmission. |

| Metric | Notes |
|--|--|
| Network TCP Connection States:Total SYN_RECV | Initial synchronization of the connection under way. |
| Network TCP Connection States:Total SYN_SENT | Attempting to establish a connection. |
| Network TCP Connection States:Total LAST_ACK | Waiting acknowledgement after a remote shutdown and close. |
| Network TCP Connection States:Total UNKNOWN | An unknown TCP connection state. |
| Network:Total number of TCP Connections | The total number of TCP connections. |
| Network Network Interface <Interface>:Input Packets | The number of packets received with no errors. |
| Network Network Interface <Interface>:Input Errors | The number of packets received with errors. |
| Network Network Interface <Interface>:Input Dropped | The number of packets dropped. |
| Network Network Interface <Interface>:Input Lost | The number of packet overruns. |
| Network Network Interface <Interface>:Output Packets | The number of packets transmitted with no errors. |
| Network Network Interface <Interface>:Output Errors | The number of packets transmitted with errors. |
| Network Network Interface <Interface>:Output Dropped | The number of packets dropped during transmission. |
| Network Network Interface <Interface>:Output Lost | The number of packets dropped due to overrun errors |
| Network Network Interface <Interface>:Total Packets | The total number of packets. |
| Network Network Interface <Interface>:Total Packets Errors | The total number of packets with errors. |
| Network Network Interface <Interface>:Total Dropped | The total number of dropped packets. |
| Network Network Interface <Interface>:Total Lost | The total number of lost packets. |



VM statistics

The following tables show the metrics generated by the `<product install path>/SiteMinderManagerAgent/epaplugins/linux/vmstat.pl` plugin.

Processor

| Metric | Notes |
|---|---|
| Processor Processor_Average:Idle % | Processor time spent idle. |
| Processor Processor_Average:System % | The time spent running kernel code. |
| Processor Processor_Average:User % | The time spent running non-kernel code. |
| Processor Processor_Average:Utilization % | The utilization time. |
| Processor Processor_Average:IOWait % | The time spent waiting for IO operations. |

Kernel Threads

| Metric | Notes |
|------------------------------|---|
| Kernel Threads:Runnable | The number of kernel threads placed in run queue. |
| Kernel Threads:In Wait Queue | The number of kernel threads placed in wait queue (awaiting resource, awaiting input/output). |

Memory

| Metric | Notes |
|--|--|
| Memory:Free Physical Memory (% of physical memory) | The percentage of Free Physical Memory. |
| Memory:Free Physical Memory (Bytes) | The amount of idle memory. |
| Memory:Physical (Bytes) | The physical memory size. |
| Memory:Buffers (Bytes) | The amount of memory used as buffers. |
| Memory:Buffers (% of physical memory) | The percentage of physical memory used as buffers. |
| Memory:Cache (Bytes) | The amount of memory used as cache. |
| Memory:Cache (% of physical memory) | Percentage of physical memory used as cache. |

Swap

| Metric | Notes |
|---|---|
| Swap:Active (Bytes) | The amount of virtual memory used. |
| Swap:Pages paged in from paging space (Bytes/s) | The amount of memory swapped in from disk (/s). |
| Swap:Pages paged out to paging space (Bytes/s) | The amount of memory swapped to disk (/s). |

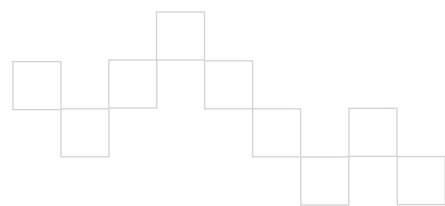
System

| Metric | Notes |
|--------------------------|---|
| System:Device Interrupts | The number of interrupts per second, including the clock. |
| System:Context Switches | The number of context switches per second. |

Process

The following tables show the metrics generated by the `<product install path>/SiteMinderManagerAgent/epaplugins/linux/process.pl` plugin

| Metric | Notes |
|--|---|
| PolicyServerProcess smpolicysrv:Status | Indicates status of policy server process. Display 0 for down and 1 for up. |



Aggregated Metrics for OS Monitor

OS Monitor provides aggregated metrics on operating system resources for Policy Servers. The aggregated metrics are available for the following operating systems:

- Windows
- Solaris
- AIX
- HP
- Linux

Due to differences among operating systems, the metrics shown for the supported platforms may vary.

Windows

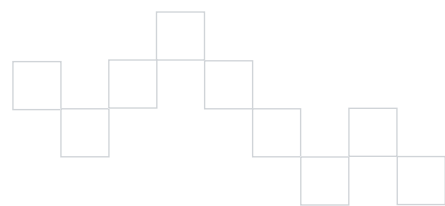
Metrics Path

All aggregated metrics appear in the Introscope Investigator under the **SiteMinderManager|SiteMinderReporter (*SuperDomain*) > OSResource > Network Interface** node.

Network Interface

| Metric | Notes |
|--|---|
| Network Interface <Instance>:Packets Outbound Discarded Per Interval | The number of outbound packets that were chosen to be discarded per interval, even though no errors were detected to prevent transmission. One possible reason for discarding packets could be to free up buffer space. This metric is calculated by subtracting previous Packets Outbound Discarded from current Packets Outbound Discarded. The time difference between these two values is our reporting interval. |
| Network Interface <Instance>:Packets Outbound Errors Per Interval | The number of outbound packets per interval that could not be transmitted because of errors. This metric is calculated by subtracting previous Packets Outbound Errors from current Packets Outbound Errors. The time difference between these two values is our reporting interval. |

| Metric | Notes |
|--|---|
| Network Interface <Instance>:Packets Received Discarded Per Interval | The number of inbound packets that were chosen to be discarded per interval, even though no errors were detected to prevent their delivery to a higher-layer protocol. One possible reason for discarding packets could be to free up buffer space. This metric is calculated by subtracting previous Packets Received Discarded from current Packets Received Discarded. The time difference between these two values is our reporting interval. |
| Network Interface <Instance>:Packets Received Errors Per Interval | The number of inbound packets received per interval that contained errors preventing them from being deliverable to a higher-layer protocol. This metric is calculated by subtracting previous Total Packets Errors from current Total Packets Errors. The time difference between these two values is our reporting interval. |
| Network Interface <Instance>:Total Packets Errors Per Interval | The sum of Packets Outbound Errors and Packets Received Errors per interval. This metric is calculated by subtracting previous Total Packets Errors from current Total Packets Errors. The time difference between these two values is our reporting interval. |
| Network Interface <Instance>:Total Packets Discarded Per Interval | The sum of Packets Outbound Discarded and Packets Received Discarded per interval. This metric is calculated by subtracting previous Total Packets Discarded from current Total Packets Discarded. The time difference between these two values is our reporting interval. |



Solaris

Metrics Path

All aggregated metrics appear in the Introscope Investigator under the **SiteMinderManager|SiteMinderReporter (*SuperDomain*) > <OSResource-Name> > Network** node.

Network

This table shows the metrics generated by the `<product install path>/SiteMinderManagerAgent/epaplugins/solaris/network.pl` plugin. It shows network states returned by `network` command.

| Metric | Notes |
|---|--|
| Network Network Interface <Interface>:Input Errors Per Interval | The number of packets received with errors per interval. This metric is calculated by subtracting previous Input Errors from current Input Errors. The time difference between these two values is our reporting interval. |
| Network Network Interface <Interface>:Output Errors Per Interval | The number of packets transmitted with errors per interval. This metric is calculated by subtracting previous Output Errors from current Output Errors. The time difference between these two values is our reporting interval. |
| Network Network Interface <Interface>:Total Packets Errors Per Interval | Packet errors measured since last sampling period. This metric is calculated by subtracting previous Total Packets Errors from current Total Packets Errors. The time difference between these two values is our reporting interval. |

AIX

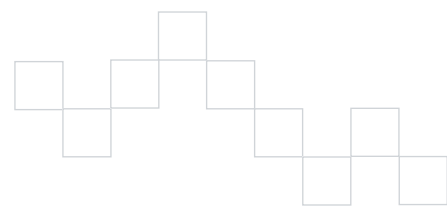
Metrics path

All aggregated metrics appear in the Introscope Investigator under the **SiteMinderManager|SiteMinderReporter (*SuperDomain*) > <OSResource-Name> > Network** node.

Network

These metrics are generated by the `<product install path>/SiteMinderManagerAgent/epaplugins/aix/network.pl` plugin and show network states returned by the `network` command.

| Metric | Notes |
|---|--|
| Network Network Interface <Interface>:Input Errors Per Interval | The number of packets received with errors per interval. This metric is calculated by subtracting previous Input Errors from current Input Errors. The time difference between these two values is our reporting interval. |
| Network Network Interface <Interface>:Output Errors Per Interval | The number of packets transmitted with errors per interval. This metric is calculated by subtracting previous Output Errors from current Output Errors. The time difference between these two values is our reporting interval. |
| Network Network Interface <Interface>:Total Packets Errors Per Interval | Packet errors measured since last sampling period. This metric is calculated by subtracting previous Total Packets Errors from current Total Packets Errors. The time difference between these two values is our reporting interval. |



HP

Metrics Path

All aggregated metrics appear in the Introscope Investigator under the **SiteMinderManager|SiteMinderReporter (*SuperDomain*) > <OSResource-Name> > Network** node.

Network

These metrics generated by the `<product install path>/SiteMinderManagerAgent/epaplugins/hp/network.pl` plugin show network states returned by the `network` command.

| Metric | Notes |
|---|--|
| Network Network Interface <Interface>:Input Errors Per Interval | The number of packets received with errors per interval. This metric is calculated by subtracting previous Input Errors from current Input Errors. The time difference between these two values is our reporting interval. |
| Network Network Interface <Interface>:Output Errors Per Interval | The number of packets transmitted with errors per interval. This metric is calculated by subtracting previous Output Errors from current Output Errors. The time difference between these two values is our reporting interval. |
| Network Network Interface <Interface>:Total Packets Errors Per Interval | Packet errors measured since last sampling period. This metric is calculated by subtracting previous Total Packets Errors from current Total Packets Errors. The time difference between these two values is our reporting interval. |

Linux

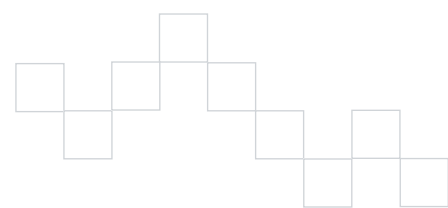
Metrics Path

All aggregated metrics appear in the Introscope Investigator under the **SiteMinderManager|SiteMinderReporter (*SuperDomain*) > <OSResource-Name> > Network** node.

Network

These metrics generated by the `<product install path>/SiteMinderManagerAgent/epaplugins/linux/network.pl` plugin show network states returned by the `network` command.

| Metric | Notes |
|---|--|
| Network Network Interface <Interface>:Input Errors Per Interval | The number of packets received with errors per interval. This metric is calculated by subtracting previous Input Errors from current Input Errors. The time difference between these two values is our reporting interval. |
| Network Network Interface <Interface>:Output Errors Per Interval | The number of packets transmitted with errors per interval. This metric is calculated by subtracting previous Output Errors from current Output Errors. The time difference between these two values is our reporting interval. |
| Network Network Interface <Interface>:Total Packets Errors Per Interval | Packet errors measured since last sampling period. This metric is calculated by subtracting previous Total Packets Errors from current Total Packets Errors. The time difference between these two values is our reporting interval. |



Integrating with Introscope PowerPack for SiteMinder

This appendix provides instructions for users of the SiteMinder Application Server Agent who want to monitor its activity using CA Wily Introscope for J2EE, with the optional CA Wily Introscope PowerPack for CA SiteMinder (Introscope PowerPack for SiteMinder).

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Configuring for use with Introscope PowerPack for SiteMinder. 127

Typical SiteMinder Architecture

Most SiteMinder installations fall into one of three categories:

- Web server-based security
Security features are enforced using a SiteMinder Web Agent on the web server.
- Application server-based security
Security features are enforced using a SiteMinder Application Server Agent (ASA) on the application server.
- Web server and application server-based security
Security features are enforced using a SiteMinder Web Agent on the web server and a SiteMinder ASA on the application server.

The following three sections describe the way Manager for SiteMinder integrates with SiteMinder based on the security method implemented.

Web server-based security

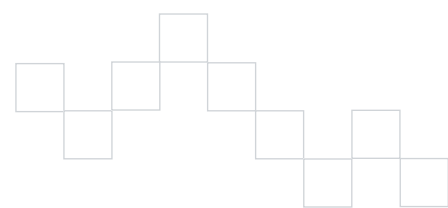
When SiteMinder security is enforced using the web server, the Manager for SiteMinder is installed on the web server. The Manager for SiteMinder talks directly with the SiteMinder Web Agent and transmits the collected metric data to the Enterprise Manager. It is possible that the SiteMinder Web Agents may also be monitored by the CA Wily Introscope PowerPack for CA SiteMinder (Introscope PowerPack for SiteMinder). The PowerPack metrics can show transaction-by-transaction views of SiteMinder performance, while Manager for SiteMinder metrics show average and max times only.

Application server-based security

When SiteMinder security is enforced using the SiteMinder ASA, the ASA can be monitored by the Introscope PowerPack for SiteMinder. This PowerPack monitors the performance of a SiteMinder ASA as part of an Introscope installation monitoring applications on a J2EE application server. The data is collected by the Enterprise Manager connected to the application server monitoring.

Web server and application server-based security

When SiteMinder security is enforced using both the SiteMinder Web Agent and SiteMinder ASA, it is possible to have three sets of data: SiteMinder Web Agent metrics from both Manager for SiteMinder and Introscope PowerPack for SiteMinder, and ASA metrics from Introscope PowerPack for SiteMinder.



Configuring for use with Introscope PowerPack for SiteMinder

If you intend to process management data using both Manager for SiteMinder and Introscope PowerPack for SiteMinder, you can set up an Enterprise Manager, or a cluster of Enterprise Managers, to relay data from Introscope PowerPack for SiteMinder installation to a Manager for SiteMinder installation.

This process provides a single view of all of your SiteMinder agents provided by both the direct monitoring from Manager for SiteMinder and Introscope PowerPack for SiteMinder.

To configure your Manager for SiteMinder Enterprise Manager to collect SiteMinder metrics from your source Introscope PowerPack for SiteMinder Enterprise Manager:

- 1 Copy the `DataTransferExt.jar` to the EXT directory of your source Enterprise Manager and your destination Enterprise Manager.

The `DataTransferExt.jar` is located in the following zip or tar file:

On UNIX:

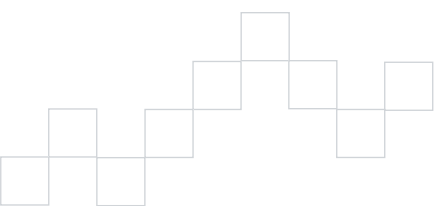
CAWilySiteMinderManager_12.0Unix_DataTransferExt.tar

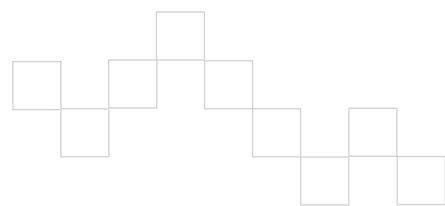
On Windows:

CAWilySiteMinderManager_12.0Windows_DataTransferExt.zip

- 2 Edit the `IntroscopeEnterpriseManager.properties` file on the source Enterprise Manager machine so that:

```
introscope.enterprisemanager.ext.datatransfer.agentregex=.*
introscope.enterprisemanager.ext.datatransfer.metricregex=Site
  Minder.*
introscope.enterprisemanager.ext.datatransfer.remoteHost=<DEST
  INATION-EM-HOST>
introscope.enterprisemanager.ext.datatransfer.remotePort=<DEST
  INATION-EM-PORT>
```





IPv6 Support

Manager for SiteMinder 12.0 is IPv6 certified.

Connecting to Introscope EM on IPv6

If you want the Manager for SiteMinder Agent to connect to Introscope EM on IPv6, perform the following step:

- ◆ Specify the EM host as an IPv6 address in the `IntroscopeEPAgent.properties` file in the `<installPath>/CAWilySiteMinderManager/SiteMinderManager/config` directory.

To enable display of the IPv6 IP address in the Investigator

In a pure IPv6 java environment, you can configure the agent `java.net.preferIPv6Addresses` property to enable display of the IPv6 IP address in the Investigator. Set this property in the start script of the Manager for SiteMinder Agent as follows:

On Windows:

- 1 Open the `StartAgent.bat` file present in the `<installPath>\CAWilySiteMinderManager\SiteMinderManager` directory.
- 2 If only OS Monitor is installed, add the `-Djava.net.preferIPv6Addresses=true` property to the `StartAgent.bat` file as follows.

```
%INTROSCOPE_JRE_PATH%\java -cp
%INTROSCOPE_NATIVE DATA API_PATH%\lib\EPAgent.jar;%INTROSCOPE_NATIVE DATA API_PATH%\lib\SNMP4J.jar;%INTROSCOPE_NATIVE DATA API_PATH%\lib\SNMPCollector.jar;%INTROSCOPE_NATIVE DATA API_PATH%\lib\castor-1.0.4.jar;%INTROSCOPE_NATIVE DATA API_PATH%\lib\commons-logging-1.1.jar -Djava.net.preferIPv6Addresses=true
com.wily.introscope.api.IntroscopeEPAgent
```

- 3** If SiteMinder Web Agent Monitor or Policy Server Monitor or a combination of both is installed, add the

`-Djava.net.preferIPv6Addresses=true` property to the `StartAgent.bat` file as follows.

```
%INTROSCOPE_NATIVEATAAPI_PATH%\IntroscopeNativeDataReporter.exe
-Djava.net.preferIPv6Addresses=true
```

On UNIX:

- 1** Open the `StartAgent.sh` file present in the `<installPath>/CAWilySiteMinderManager/SiteMinderManager` directory
- 2** If only OS Monitor is installed, add the
`-Djava.net.preferIPv6Addresses=true` property to the `StartAgent.sh` file as follows:

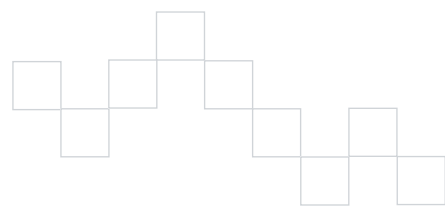
» **Note** For HP-UX, an additional property
`-Djava.net.preferIPv4Stack=false` needs to be added.

On HP-UX:

```
nohup "$JAVA" -Dhostname=$HOSTNAME -classpath
$INTROSCOPE_NATIVEATAAPI_PATH/lib/
EPAgent.jar:$INTROSCOPE_NATIVEATAAPI_PATH/lib/
Agent.jar:$INTROSCOPE_NATIVEATAAPI_PATH/lib/
SNMP4J.jar:$INTROSCOPE_NATIVEATAAPI_PATH/lib/
SNMPCollector.jar:$INTROSCOPE_NATIVEATAAPI_PATH/lib/castor-
1.0.4.jar:$INTROSCOPE_NATIVEATAAPI_PATH/lib/commons-logging-
1.1.jar -Djava.net.preferIPv6Addresses=true
-Djava.net.preferIPv4Stack=false
com.wily.introscope.api.IntroscopeEPAgent > /dev/null 2>&1 &
```

On Linux/Solaris/AIX:

```
nohup "$JAVA" -Dhostname=$HOSTNAME -classpath
$INTROSCOPE_NATIVEATAAPI_PATH/lib/
EPAgent.jar:$INTROSCOPE_NATIVEATAAPI_PATH/lib/
Agent.jar:$INTROSCOPE_NATIVEATAAPI_PATH/lib/
SNMP4J.jar:$INTROSCOPE_NATIVEATAAPI_PATH/lib/
SNMPCollector.jar:$INTROSCOPE_NATIVEATAAPI_PATH/lib/castor-
1.0.4.jar:$INTROSCOPE_NATIVEATAAPI_PATH/lib/commons-logging-
1.1.jar -Djava.net.preferIPv6Addresses=true
com.wily.introscope.api.IntroscopeEPAgent > /dev/null 2>&1 &
```



- 3** If SiteMinder Web Agent Monitor or Policy Server Monitor or a combination of both is installed, add the `-Djava.net.preferIPv6Addresses=true` property to the `StartAgent.sh` file as follows.

» **Note** For HP-UX, an additional property

`-Djava.net.preferIPv4Stack=false` needs to be added.

On HP-UX:

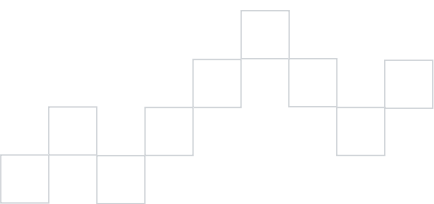
```
LD_PRELOAD_ONCE=$SMM_LD_PRELOAD_ONCE
$INTROSCOPE_NATIVE_DATA_API_PATH/IntroscopeNativeDataReporter.exe
-Djava.net.preferIPv6Addresses=true
-Djava.net.preferIPv4Stack=false > /dev/null 2>&1 &
```

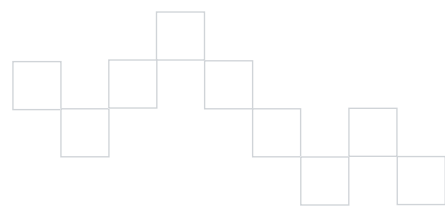
On Linux/Solaris/AIX:

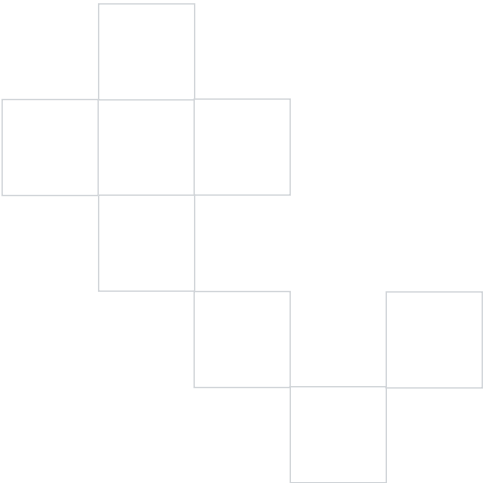
```
$INTROSCOPE_NATIVE_DATA_API_PATH/IntroscopeNativeDataReporter.exe
-Djava.net.preferIPv6Addresses=true > /dev/null 2>&1 &
```

» **Note** Note the following points:

- When `-Djava.net.preferIPv6Addresses=true` is used, the Investigator displays the full IPv6 IP address under `*SuperDomain* |<agentname> | <hostname> | IPaddress`. But if the IPv6 address is not mentioned in the hosts file of the machine on which the agent is running, it displays `0:0:0:0:0:0:1`.
- The Workstation Investigator tree does not display IPv6 IP addresses; elsewhere in the Investigator, `127.0.0.1` is displayed instead of the correct IPv6 address.
- For HP-UX: When configuring the agent and/or Enterprise Manager on a host running HP-UX using IPv6, you must manually disable IPv4 support.



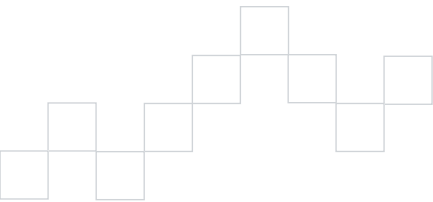




Frequently Asked Questions

This appendix contains frequently asked questions regarding the Manager for SiteMinder 12.0. The FAQs are covered in the following sections:

| | |
|---|-----|
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| Manager for SiteMinder Shared Memory Segment. | 137 |
| Web Server Agent configuration | 139 |
| Policy Server | 141 |
| Manager for SiteMinder Agent and Metrics | 142 |
| Miscellaneous | 145 |



Installation and Configuration

Q. Why is it recommended to install Manager for SiteMinder with root account on UNIX/Linux platforms?

A. There are three reasons for Manager for SiteMinder to be installed with root account:

- The installer copies the Manager for SiteMinder libraries to the SiteMinder web agent or policy server bin directories. The web agent and policy server might have been installed using an account which we are not aware of. So, to copy the libraries without any access problem the installer should be run using root account.
- The installer also copies `smm_env.sh` file to the SiteMinder web agent or policy server root directories. After copying, it automatically adds calls to source this file from the SiteMinder Web Agent and Policy Server profile files.
- `WebAgent.conf` file is updated during the installation of Web Agent Monitor for Manager for SiteMinder. This file resides in the web server's conf directory and thus has two directory owners, that is, SiteMinder and web server. Thus the installer has to be executed as root so as to ascertain that this file gets edited correctly. Make sure that the installation has been successful.

» **Note** The installer can also be run with a non-root account. However, in this case, the above steps need to be manually done.

Q. Is there any constraint on the user privileges while installing Manager for SiteMinder on Windows?

A. Yes. Windows users must have administrative privileges or be part of the Administrator's group.

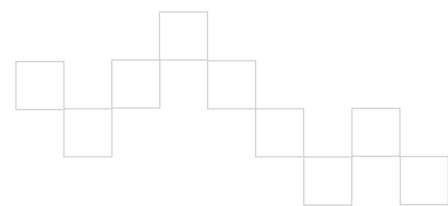
Q. How can I make sure that the installation is successful?

A. Check the Manager for SiteMinder installation log for any errors. If there are no fatal errors then the installation has been successful. This log file is available in the `<installPath>/CAWilySiteMinderManager` directory and named as `CAWilySiteMinderManager_InstallLog.log`.

Q. What is the significance of the various variables in the `smm_env.sh` file?

A. `smm_env.sh` file defines the Manager for SiteMinder environment. The various variables in this file are:

- `INTROSCOPE_NATIVEATAPI_PATH` – Variable that points to the `<installPath>/CAWilySiteMinderManager/SiteMinderManagerAgent` directory.



- `LD_LIBRARY_PATH` - This variable might already have a previous setting. So, for this variable, the JRE path is added as a suffix to the already existing value. This variable is set for Solaris and Linux platforms.

This variable is `SHLIB_PATH` for HP-UX and `LIBPATH` for AIX platforms.

- `INTROSCOPE_NATIVEATAPI_LOGPATH` - This variable can be used to define the location and the name of the log file that should be created for each of the components using the Manager for SiteMinder shared memory segment. The default file is created in the `<installPath>/CAWilySiteMinderManager/SiteMinderManagerAgent/data` directory with the name `IntroscopeAPI.log`.
- `INTROSCOPE_NATIVEATAPI_LOGGING` - This variable can be used for turning selective debug on. For example, if this variable is defined in the `smm_env.sh` file present in the Web Agent's root directory, the selective debug would be turned on for the Web Agent.
- `INTROSCOPE_NATIVEATAPI_LOGSIZE` - This variable is used for configure the log file size between 10 and 100 MB. You must specify the log file size in bytes.

Q. Does `StartAgent.sh` use `smm_env.sh`? Can `smm_env.sh` be moved while the Manager for SiteMinder Agent is running?

A. Yes, `StartAgent.sh` file uses `smm_env.sh` file at the time of startup, stopping, restarting, or querying the status of the Manager for SiteMinder Agent.

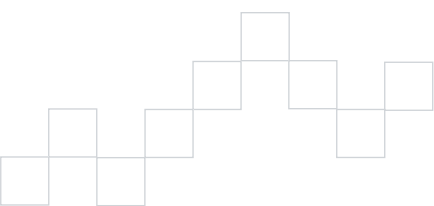
The `smm_env.sh` file should not be moved or deleted while the agent is running. If this is done, `StartAgent.sh` would fail to function correctly. For example, you will not be able to use the `StartAgent.sh` file for stopping the Manager for SiteMinder Agent.

Q. Do I need to start Manager for SiteMinder agent after installation?

A. Yes. For UNIX platforms, execute the following from the `<installPath>/CAWilySiteMinderManager/SiteMinderManagerAgent` directory after installation is complete.

```
[./StartAgent.sh start]
```

For windows, a service `Wily SiteMinderManager Agent` is created and started automatically after the installation is complete. This is a service with startup type as `Automatic`. So it will be started automatically each time the machine restarts.



Q. Should I restart the SiteMinder web server agent after Manager for SiteMinder installation?

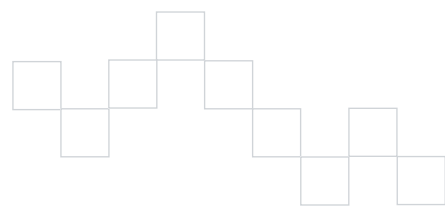
A. Yes, because installation updates the SiteMinder web agent configurations file `WebAgent.conf` and needs a restart of the web server agent for the changes to take effect. Note that the web agent configuration file is only updated if the installer was run with a root account. If not, the file needs a manual update.

Q. Should the Policy Server be stopped before installing Manager for SiteMinder? If yes, why?

A. Yes, because the Manager for SiteMinder installer copies a library file to the SiteMinder policy server bin directory. The library is also shipped by the SiteMinder Policy Server installer version 6.0 SP5 CR12 or higher. But Manager for SiteMinder installer copies the latest library to the PS bin directory while installing. If the Policy Server is running while installation is in process, the library file might not get overwritten. Note that this step is manual in case the installer is being run with a non-root account.

Q. Can I install all the components of Manager for SiteMinder at a time on different machines?

A. No, you have to run the Manager for SiteMinder installer for each component on its respective machine. For example, Install policy server component through Manager for SiteMinder installer on policy server machine, web server agent component on web agent machine, Management module component on the machine where Introscope EM is installed



Manager for SiteMinder Shared Memory Segment

Q. What is the shared memory segment used for in Manager for SiteMinder?

A. Producer-consumer architecture is used in Manager for SiteMinder and the shared memory segment is used to facilitate inter-process communication. The Introscope plug-in, that is part of SiteMinder web agent, and Event handler plug-in, that is part of Policy Server, make use of `IntroscopeNativeDataAPI` library and write the performance/health counters to the shared segment. The Manager for SiteMinder agent, `IntroscopeNativeDataReporter` process, reads from there and reports them to Introscope.

Q. Where is the shared memory segment or `IntroscopeAPI.shm` file created?

A. The file is created in the `<installPath>/CAWilySiteMinderManager/SiteMinderManagerAgent/data` directory. The installer assigns 777 permissions to the data directory so that the `IntroscopeAPI.shm` file can be accessed by all the processes irrespective of the user accounts with which they are running.

Q. What are the precautions to be taken to avoid corrupting the shared memory segment?

A. Do not delete the shared memory segment file, that is, `IntroscopeAPI.shm` while any of the dependant processes are running like Manager for SiteMinder agent `IntroscopeNativeDataReporter` process, web server agent, and Policy Server.

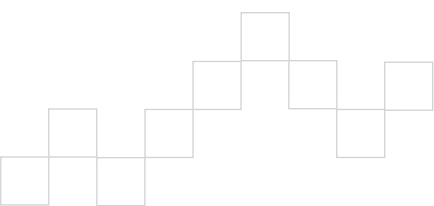
If the `IntroscopeAPI.shm` file gets deleted for some reason while any of the processes is running or one of the processes crashes, you would have to

- Delete the `IntroscopeAPI.shm` file and
- Explicitly delete the shared memory segment identifier associated with the `.shm` file from the system using the following `ipcrm` command.

```
ipcrm -m <shared memory segment id>
```

The shared memory segment identifier can be obtained from the `IntroscopeAPI.log` file present in the `<installPath>/CAWilySiteMinderManager/SiteMinderManagerAgent/data` directory.

Note that this is the default path and can be customized using the `INTROSCOPE_NATIVEDATAAPI_LOGPATH` variable.



Q. How can we check if the metrics are being written to the shared memory segment from the web server agent or policy server?

A. From `<installPath>/CAWilySiteMinderManager/SiteMinderManagerAgent` directory, execute the following commands:

For UNIX:

Execute `./IntroscopeNativeDataReporter.sh -list`. This provides detailed list of metric data, traces, connections, and trace threshold in the shared segment.

For Windows:

Execute `./IntroscopeNativeDataReporter.exe -list`.

For example, if the SiteMinder web server agent is connected to the segment, then the output shows a non-zero connection and shows metrics that it has written. If no connection has been made, then the problem is on the SiteMinder web agent side and you would see some data as follows:

Metric Counters:

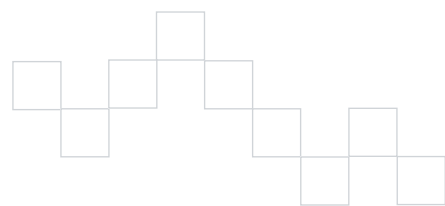
Traces:

Trace Threshold: -1

Connections: 0

Q. Where and how can I get the detailed log about the shared segment data?

A. `IntroscopeAPI.log` is created in the `<installPath>/CAWilySiteMinderManager/SiteMinderManagerAgent/data` directory. It has detailed logging of how and what metric data is been written to the shared segment. This log is created when you set the global debug on or when the selective debug is turned on.



Web Server Agent configuration

Q. What are the values that the web agent configuration property `EnableIntroscopeAgentSupport` can accept and their significances?

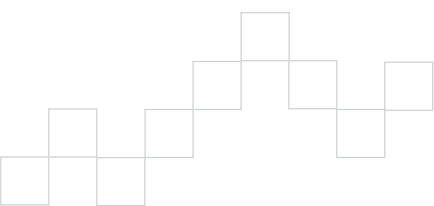
A. `EnableIntroscopeAgentSupport` accepts any one of the values `YES`/`NO`/`NONE`/`BOTH`.

- To see the metrics from Introscope PowerPack for SiteMinder only, its value should be set to `NO`.
- To see the metrics from Manager for SiteMinder only, its value should be set to `YES`.
- To see the metrics from both the Manager for SiteMinder and Introscope PowerPack for SiteMinder, its value should be set to `BOTH`.
- If you don't want either of the above two products to report data, its value should be set to `NONE`.

Q. What are the changes done to `WebAgent.conf` file as part of Manager for SiteMinder installation assuming installation was done with a root account?

A. Following changes are done to the `WebAgent.conf` file as part of installation:

- It uncomments the `LoadPlugin` directive for `IntroscopePlugin.dll` (Windows) or `libIntroscopePlugin.so` (UNIX).
- It changes the value for `EnableIntroscopeAgentSupport` property to either `YES` or `NONE` or `BOTH` depending on the products Manager for SiteMinder and Introscope PowerPack for SiteMinder installed on the machine. This change is only done if this property has been manually added to the conf file before installation.

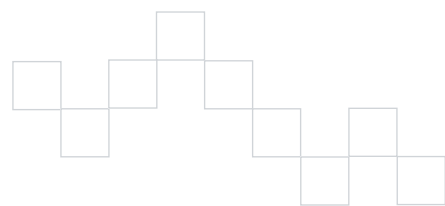


Q. The `EnableIntroscopeAgentSupport` and `EnableMonitoring` parameters must be set to “YES” in the `WebAgent` config object to turn on the monitoring of the SiteMinder web agent. Why do we have two different settings and not one?

A. As of now, apart from setting the `EnableIntroscopeAgentSupport` property, you also need to set the `EnableMonitoring` property to `YES` so as to get the web server agent statistics. Setting the latter property to `YES` leads to data flowing to the policy server even if it is not being used. It would be useful to be able to collect web server agent statistics and pass them to Introscope on the agent side with none of that data flowing down to the Policy Server if it is not being used. The agent is coded to only collect data when `EnableMonitoring` is set to `YES` and it is an intrinsic part of its design. That is the reason you have two properties and not one.

There has been an enhancement request filed with SiteMinder team to change this behavior. In the new model, `EnableMonitoring` would start the collection and transfer of data to the Policy Server as it does today.

`EnableIntroscopeAgentSupport` would start the collection of data, but would NOT start the transfer of data to the Policy Server.



Policy Server

Q. Do we monitor any RSA calls from the Policy server in our out of the box instrumentation?

A. Currently, the RSA (or ACE) calls are not monitored. They are independent of the policy, directory, and key store calls and are currently not measured by the SiteMinder side.

Q. Is there any manual configuration needed for the Policy Server component after installation?

A. Yes, an event handler, `EventIntroscopeprovider.dll` in the `<policy server home dir>\bin`, has to be configured through the Policy Server management console under **advanced** tab if SiteMinder Policy Server 6.0 SP5 CR12 or higher is used. Else, `XPSConfig` utility needs to be used for configuring this in SiteMinder Policy Server R12 SP1.

This event handler is responsible for sending the policy server metrics to Manager for SiteMinder.

Manager for SiteMinder Agent and Metrics

Q. How many SiteMinder web agents can be monitored using a single instance of the Manager for SiteMinder agent?

A. The Manager for SiteMinder agent can handle up to 4096 unique metrics. Each web agent generates 36 metrics. You can thus handle about 100+ agents with one instance of Manager for SiteMinder agent.

Q. Give an example of a login error and a login failure.

A. A login error is an internal SiteMinder error, like the agent can not connect to the policy server and can not fail over – might be the most common.

A login failure is a failed validation check, that is, bad userid/password or not permitted to access the resource. If one started seeing a lot of these errors, it could be a policy was updated wrongly and users lost access.

Q. Do we have any metrics that convey the status of policy server and web server agent?

A. Yes. The following metrics can be used.

`"OSResource|PolicyServerProcess|smpolicysrv|Status"` -- Policy server status and `"SiteMinder|Web Agents|<web server host_port>|Web Agent Status"` -- Web agent status.

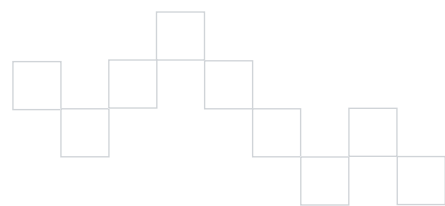
Q. Can we see the nature of the errors reported by Wily Manager for SiteMinder v12.0? That is the complete stack trace and not just the number of errors per operation.

A. SiteMinder error causes are not reported from SiteMinder and being that it is a C++ application, you cannot obtain information with Probe Directives (PBD's). Manager for SiteMinder alerts that there are errors, so the next step is to follow SiteMinder debugging procedures; which is usually to check log files for errors, or to turn on more detailed logging options.

Q. How many metrics would be generated when using Manager for SiteMinder?

A. The policy server metric count is variable depending on the backend configuration (number of user stores configured), but will be at least 39 per server.

The web agent metric count is 36 per agent.



Q. Why does the web agent status metric remain at zero even after the web agent is started/restarted (when there is no activity on the web agent)?

A. Web Agent status is a calculated metric which shows the status (value) as 1 only when there are any metrics reported by the web agent (that is there should be some activity on the web agent or at least one protected page needs to be accessed).

Unlike policy server status metric (reported based on the PS process), there is no other way of showing the web agent status. So this is a kind of known issue/limitation regarding this metric.

If you see the web agent status alert repeatedly fired as the agent goes up/down and you do not want this to happen, you can change the "Trigger Alert Notification" to "Whenever Severity Increases" instead of "Whenever Severity changes" for the web Agent Status alert through the Management Module editor. By this change it will alert only when the agent severity increases (that is normal to critical when it is down).

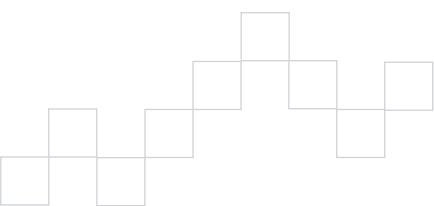
Q. Do we have any specific metric to detect/provide the status of connection between web agent and the policy server?

A. There is no specific metric for the connection status between web agent and the policy server, as the SiteMinder agent does not provide it, but if the connection breaks, then login errors will start occurring and this will trigger an alert. The agent log would have to be examined to find the reason for the errors.

Q. Why do we need to add a call to the `IntroscopeNativeDataReporter.sh` script in the Apache `envvars` file with `init` argument?

A. This call ensures that the shared segment gets created with appropriate permissions (666) when the Apache web server starts. This takes care of the case where the Apache web server could be configured to run with user account nobody. This user account does not have the privileges of creating a shared segment. You need to create the segment even before the first request hits the web server.

Note that this call gets executed even at the time of stopping the server. However if the segment is already created, this call simply returns.



Q. Our current production setup consists of around 50 web server instances on the same server. Can we use the silent installer response file to have 50 different configuration file names and paths?

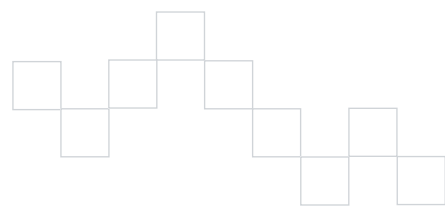
A. Yes. You can modify the silent installer response file and set the install and configuration file path of the 50 web server instances there. Note that this is possible in silent mode only. GUI installer discovers a max of 10 instances due to a limit on the Install Anywhere panel.

Q. Can SiteMinder Web Agent report the collected metrics to Manager for SiteMinder located on a different UNIX server?

A. No. Manager for SiteMinder has to be on the same box as the Web Agent. Remote monitoring of SiteMinder Web Agent and Policy Server is not supported.

Q. Can multiple Web Agents instances report the collected metrics to the same Manager for SiteMinder?

A. Yes, all the Web Agent instances would report the metrics to the same shared segment present under the Manager for SiteMinder data directory.



Miscellaneous

Q. I see the following errors while starting Introscope EM. I have deployed SiteMinder Management Module feature in this EM. What could be wrong?

A. 1/16/09 04:08:59 PM IST [ERROR] [Manager.Bootstrap] Cannot write to Management Module file: /export/home/psuser/sw/Introscope8.0.2.0/config/modules/SiteMinderManager_ManagementModule.jar

1/16/09 04:08:59 PM IST [ERROR] [Manager.Bootstrap] Could not read Management Module file /export/home/psuser/sw/Introscope8.0.2.0/config/modules/SiteMinderManager_ManagementModule.jar

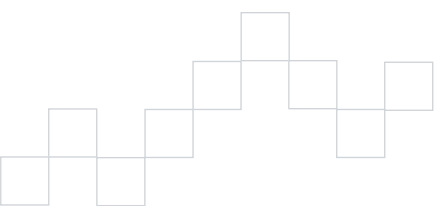
This error would be reported when the EM user does not have read and write permissions on the Manager for SiteMinder Management module. You need to ensure that the user account with which Introscope EM is running has read and write permissions on the Manager for SiteMinder Management Module, available in the <EM installPath>/config/modules directory with the name SiteMinderManager_ManagementModule.jar.

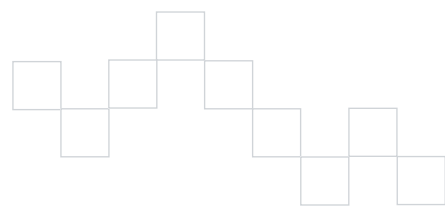
Q. What's the difference between the Manager for SiteMinder v12.0 and the Introscope PowerPack for SiteMinder v2.0 products?

A. Manager for SiteMinder v12.0 monitors SiteMinder web server agent and Policy Server (and the LDAP servers with which the policy server obtains the user and policy information). It does not require an application server in the backend. On the other hand, Introscope PowerPack for SiteMinder v2.0 monitors SiteMinder Application Servers Agents (ASA) for WebLogic and WebSphere application servers. It also monitors the SiteMinder TransactionMinder Agent.

Q. How can I find out the version of Manager for SiteMinder installed on my machine?

A. Please refer to the `smm_version.info` file present in the <installPath>/CAWilySiteMinderManager directory. This file provides information about the Manager for SiteMinder version.





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