CA SiteMinder®

Web Agent Installation Guide for Apache-based Servers
r12.5

technologies

2nd Edition

CA Technologies Product References

This document references the following CA Technologies products:

- CA SiteMinder®
- CA CA Identity Manager
- CA SOA Security Manager

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Contact CA Support

For your convenience, CA Technologies provides one site where you can access the information that you need for your Home Office, Small Business, and Enterprise CA Technologies products. At http://ca.com/support, you can access the following resources:

- Online and telephone contact information for technical assistance and customer services
- Information about user communities and forums
- Product and documentation downloads
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Documentation Changes

The following documentation updates have been made since the last release of this documentation:

- Source the Agent Environment Script on UNIX or Linux Operating Environments (see page 39)—Changed sequence of sourcing ca_wa_env script (169369).

- Required Linux Libraries (see page 15)—Updated list of required libraries (169484, 169447).

- Apache-based server Preparations for Windows operating environments (see page 13)—Removed reference to Visual C++ library prerequisite. Installation program now checks for and installs this library if needed. Resolves CQ171379.

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Chapter 1: Preparation

This section contains the following topics:

Only Apache-based Web Server Procedures in this Guide

This guide only contains procedures for installing or configuring SiteMinder agents on Apache-based web servers.

To install or configure a SiteMinder agent on any other type of web server or operating environment, see one of the following guides:

■ *Web Agent Installation Guide for Domino*.

■ *Web Agent Installation Guide for IIS*.

■ *Web Agent Installation Guide for Oracle iPlanet*.

Hardware Requirements for SiteMinder Agents

Computers hosting SiteMinder agents require the following hardware:

Windows operating environment requirements

SiteMinder agents operating on Windows operating environments require the following hardware:

- CPU: x86 or x64

- Memory: 2-GB system RAM.

- Available disk space:

    - 2-GB free disk space in the installation location.

    - .5-GB free disk space in the temporary location.

UNIX operating environment requirements

SiteMinder agents operating on UNIX operating environments require the following hardware:

- CPU:

    - Solaris operating environment: SPARC

    - Red Hat operating environment: x86 or x64

- Memory: 2-GB system RAM.

- Available disk space:

    - 2-GB free disk space in the installation location.

    - .5-GB free disk space in /temp.

Note: Daily operation of the agent requires 10 MB of free disk space in /tmp. The agent creates files and named pipes under /tmp. The path to which these files and pipes are created cannot be changed.

Preparation Roadmap for Apache-based web servers

The following illustration describes how to prepare your web server before you install a SiteMinder agent:
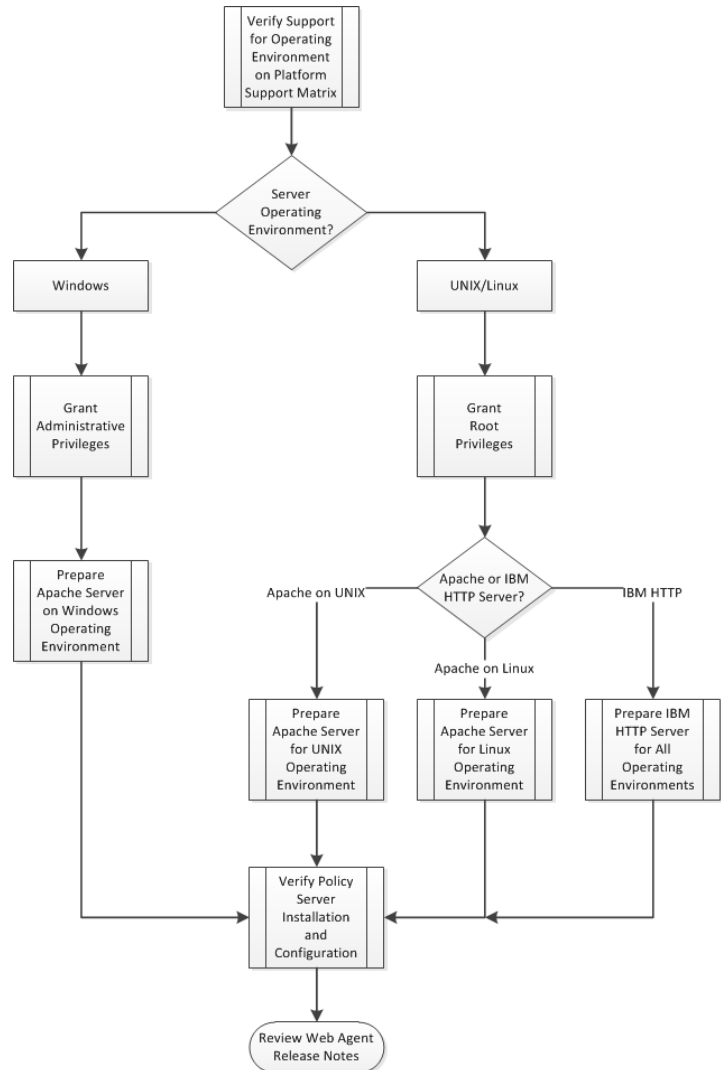
How to Prepare for a Web Agent Installation on Apache-based Servers

To prepare for a SiteMinder agent installation on an Apache-based server, use the following process:

1. Locate the Platform Support Matrix (see page 12). Verify that your web server supports the version of the SiteMinder agent that you want to install.

2. Verify that you have an account with one of the following types of privileges for your web server:

   ■ Administrative privileges (for the Windows operating environment)

   ■ Root privileges (for the UNIX or Linux operating environments)

3. Configure the appropriate additional SiteMinder agents require using *one* of the following lists:

   ■ Apache-based server preparations for Windows operating environments (see page 13).

   ■ Apache-based server preparations for UNIX operating environments (see page 13).

   ■ Apache-based server preparations for Linux operating environments (see page 15).

   ■ IBM HTTP server preparations for all operating environments (see page 20).

4. Verify that the Policy Server is installed and configured.

5. Review the known issues section of the *Web Agent Release Notes.*

Locate the Platform Support Matrix

Use the Platform Support Matrix to verify that the operating environment and other required third-party components are supported.

Follow these steps:

1. Log in to the CA Support site.

2. Locate the Technical Support section.

3. Enter SiteMinder in the Product Finder field.

   The SiteMinder product page appears.

4. Click Product Status, SiteMinder Family of Products Platform Support Matrices.

Note: You can download the latest JDK and JRE versions at the Oracle Developer Network.

Apache-based server Preparations for Windows operating environments

Apache-based web servers running on Windows operating environments require the following preparations *before* installing a SiteMinder agent:

1. Install the Apache-based web server as a service for all users (see page 13).
2. Verify the presence of a logs subdirectory with the proper permissions (see page 13).

Install an Apache Web Server on Windows as a Service for All Users

When an Apache-based web server is installed using a single user account, the Agent configuration cannot detect the Apache-based web server installation.

To correct this problem, select the following option when you install an Apache-based web server on a Windows operating environment:

```
"install as a service, available for all users".
```

Verify Presence of a Logs Subdirectory with Permissions for Apache-based Web Agents

For SiteMinder Agents for Apache-based web servers (including IBM HTTP Server), a logs subdirectory must exist under the root directory of the Apache-based web server. This subdirectory needs Read and Write permissions for the user identity under which the Apache child process runs.

If the logs subdirectory does not exist, create it with the required permissions.

Note: This configuration requirement applies to any Apache-based web server that writes log files outside the Apache root directory.

Apache-based server Preparations on UNIX operating environments

Apache-based servers running on UNIX operating environments require the following preparations before installing a SiteMinder agent:

1. Set the display variable (see page 14).
2. Verify the presence of a logs subdirectory (see page 14).
3. Verify that the appropriate patches have been installed for your operating environment:

   ■ Solaris patches (see page 14).
   ■ AIX requirements (see page 14).

Set the DISPLAY For SiteMinder Agent Installations on UNIX

If you are installing the SiteMinder Agent on a UNIX system from a remote terminal, such as a Telnet or Exceed terminal, be sure the DISPLAY variable is set for the local system. For example, if your machine is 111.11.1.12, set the variable as follows:

DISPLAY=111.11.1.12:0.0

export DISPLAY

Note: You can also install the agent using the console mode installation, which does not require the X window display mode.

Verify Presence of a Logs Subdirectory with Permissions for Apache-based SiteMinder Agents

For SiteMinder Agents for Apache-based web servers (including IBM HTTP Server), a logs subdirectory must exist under the root directory of the Apache-based web server. This subdirectory needs Read and Write permissions for the user identity under which the Apache child process runs.

If the logs subdirectory does not exist, create it with the required permissions.

Note: This configuration requirement applies to any Apache-based web server that writes log files outside the Apache root directory.

Required Solaris Patches

Before installing a SiteMinder Agent on a Solaris computer, install the following patches:

Solaris 9

Requires patch 111711-16.

Solaris 10

Requires patch 119963-08.

You can verify installed patch versions by logging in as the root user and executing the following command:

```
showrev -p | grep patch_id
```

To locate Solaris patches, go to the Oracle Solution Center.

AIX Requirements

SiteMinder agents running on AIX systems require the following components:

- To run a rearchitected (framework) SiteMinder Apache-based agent on an AIX system, your C/C++ runtime environment must be version 8.0.0.0.

Apache-based server Preparations for Linux operating environments

Apache-based servers running on Linux operating environments require the following preparations before installing a SiteMinder agent:

1. Verify that the required patches are installed (see page 15).

2. Verify that the required libraries are installed (see page 15).

3. Verify that the required tools are installed (see page 16).

4. Compile the Apache-based web server (see page 16).

5. Verify the presence of a logs subdirectory (see page 17).

Required Linux Patches

The following Linux patches are required:

For Web Agents running on 64-bit Linux systems

- Binutils 2.17

- GCC 4.1.0

Required Linux Libraries

Certain library files are required for components operating on Linux operating environments. Failure to install the correct libraries can cause the following error:

`java.lang.UnsatisfiedLinkError`

If you are installing, configuring, or upgrading a Linux version of this component, the following libraries are required on the host system:

Red Hat 5.x

compat–gcc-34-c++-3.4.6-*patch_version*.I386

Red Hat 6.x (32-bit)

libstdc++-4.4.6-3.el6.i686.rpm

To have the appropriate 32-bit C run–time library for your operating environment, install the previous rpm.

Red Hat 6.x (64-bit)

libXau-1.0.5-1.el6.i686.rpm

libxcb-1.5-1.el6.i686.rpm

libstdc++-4.4.6-4.el6.i686.rpm

compat-db42-4.2.52-15.el6.i686.rpm

compat-db43-4.3.29-15.el6.i686.rpm

libX11-1.3-2.el6.i686.rpm

libXrender-0.9.5-1.el6.i686.rpm

libexpat.so.1 (provided by expat-2.0.1-11.el6_2.i686.rpm)

libfreetype.so.6 (provided by freetype-2.3.11-6.el6_2.9.i686.rpm)

libfontconfig.so.1 (provided by fontconfig-2.8.0-3.el6.i686.rpm)

libICE-1.0.6-1.el6.i686.rpm

libuuid-2.17.2-12.7.el6.i686.rpm

libSM-1.1.0-7.1.el6.i686.rpm

libXext-1.1-3.el6.i686.rpm

compat-libstdc++-33-3.2.3-69.el6.i686.rpm

compat-db-4.6.21-15.el6.i686.rpm

libXi-1.3-3.el6.i686.rpm

libXtst-1.0.99.2-3.el6.i686.rpm

libXft-2.1.13-4.1.el6.i686.rpm

libXt-1.0.7-1.el6.i686.rpm

libXp-1.0.0-15.1.el6.i686.rpm

Linux Tools Required

Before installing a SiteMinder Agent on a Red Hat Apache 2.2 web server running on the Red Hat Enterprise Linux operating environment, install all the items included in the Red Hat Legacy Software Development tools package.

Compile an Apache Web Server on a Linux System

For the SiteMinder Agent to operate with an Apache web server running Linux, you have to compile the server. Compiling is required because the Agent code uses pthreads (a library of POSIX-compliant thread routines), but the Apache server on the Linux platform does not, by default.

If you do not compile with the lpthread option, the Apache server starts up, but then hangs and does not handle any requests. The Apache server on Linux cannot initialize a module which uses pthreads due to issues with Linux's dynamic loader.

Follow these steps:

1. Enter the following:

```
LIBS=-lpthread
export LIBS
```

2. Configure Apache as usual by entering the following:

```
configure --enable-module=so --prefix=your_install_target_directory
make
make install
```

Verify Presence of a Logs Subdirectory with Permissions for Apache-based SiteMinder Agents

For SiteMinder Agents for Apache-based web servers (including IBM HTTP Server), a logs subdirectory must exist under the root directory of the Apache-based web server. This subdirectory needs Read and Write permissions for the user identity under which the Apache child process runs.

If the logs subdirectory does not exist, create it with the required permissions.

Note: This configuration requirement applies to any Apache-based web server that writes log files outside the Apache root directory.

How to Prepare for Agent Installation and Configuration on z/OS Systems

Before you install and configure a SiteMinder agent on the z/OS operating environment, perform the preparation steps described in this process.
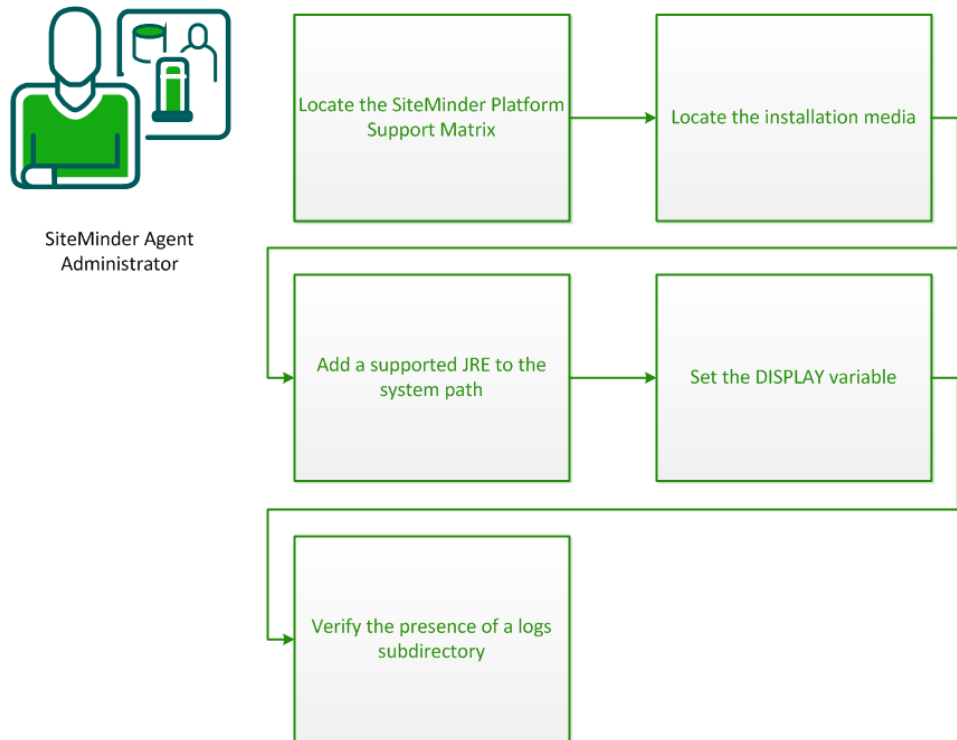
1. Locate the SiteMinder Platform Support Matrix (see page 12).

2. Locate the installation media (see page 19).

3. Add a supported JRE to the system path (see page 20).

4. Set the DISPLAY variable (see page 19).

5. Verify the presence of a logs subdirectory (see page 14).

Locate the Platform Support Matrix

Use the Platform Support Matrix to verify that the operating environment and other required third-party components are supported.

Follow these steps:

1. Log in to the CA Support site.

2. Locate the Technical Support section.

3. Enter SiteMinder in the Product Finder field.

The SiteMinder product page appears.

4. Click Product Status, SiteMinder Family of Products Platform Support Matrices.

Note: You can download the latest JDK and JRE versions at the Oracle Developer Network.

Locate the Installation Media

You can find the installation media on the Technical Support site.

Follow these steps:

1. Log in to the CA Support site.

2. Locate the Technical Support section.

3. Click Download Center.

4. Locate the Support by Product section.

5. Type **SiteMinder** in the Select a Product Page field, and then press Enter.

6. Click Downloads.

   The Download Center screen appears.

7. Enter **SiteMinder** in the Select a Product field.

8. Select a release from the Select a Release drop-down list.

9. Select a Service Pack from the Select a Gen Level drop-down list.

10. Click Go.

    The Product Downloads screen appears. All SiteMinder installation executables are listed.

Set the DISPLAY Variable for SiteMinder Agent Installations on z/OS

If you are installing the SiteMinder agent on a z/OS system from a remote terminal, verify that the DISPLAY variable is set for the local system. For example, if your server IP address is 111.11.1.12, set the variable as follows:

```
export DISPLAY=111.11.1.12:0.0
```

Note: You can also install the SiteMinder agent using the console mode installation, which does not require the X window display mode.

Verify Presence of a Logs Subdirectory with Permissions for Apache-based SiteMinder Agents

For SiteMinder Agents for Apache-based web servers (including IBM HTTP Server), a logs subdirectory must exist under the root directory of the Apache-based web server. This subdirectory needs Read and Write permissions for the user identity under which the Apache child process runs.

If the logs subdirectory does not exist, create it with the required permissions.

Note: This configuration requirement applies to any Apache-based web server that writes log files outside the Apache root directory.

Add a Supported JRE to the System Path

On z/OS systems, before installing the SiteMinder agent, verify that a supported JRE is present on the system and defined in the PATH and JAVA_HOME system variables.

Follow these steps:

Enter the following commands at a command prompt:

```
export PATH=JRE/bin:$PATH
export JAVA_HOME=JRE
```

JRE

Specifies the location of the JRE.

For example, /sys/java64bt/v6r0m1/usr/lpp/java/J*version_number*

IBM HTTP server Preparations for all Supported Operating Environments

Apache-based IBM HTTP servers require the following preparations before installing a SiteMinder agent:

-

Enable Write Permissions for IBM HTTP Server Logs

If you install the SiteMinder Agent on an IBM HTTP Server, this web server gets installed as root and its subdirectories do not give all users in all groups Write permissions.

For the Low Level Agent Worker Process (LLAWP) to write agent initialization messages to the web server logs, the user running the web server needs permission to write to the web server's log directory. Ensure that you allow write permissions for this user.

Policy Server Requirements

Verify the following criteria:

- Your Policy Server is installed and configured.

- Your Policy server can communicate with the computer where you plan to install the agent.

Note: For more information, see the Policy Server documentation.

To install and configure a SiteMinder agent, a Policy Server requires at least the following items:

- A SiteMinder administrator that has the right to register trusted hosts.

  A trusted host is a client computer where one or more SiteMinder Agents are installed and registered with the Policy Server. The SiteMinder administrator must have permissions to register trusted hosts with the Policy Server. Registering a trusted host creates a unique trusted host name object on the Policy Server.

- An Agent identity

  An Agent identity establishes a mapping between the Policy Server and the name or IP address of the web server instance hosting an Agent. You define an Agent identity from the Agents object in the Administrative UI. You assign it a name and specify the Agent type as a Web Agent.

- A Host Configuration Object (HCO)

  The host configuration object on the Policy Server defines the communication between the agent and the Policy Server that occurs after an initial connection. The Initial connections use the parameters in the SmHost.conf file.

■ Agent Configuration Object (ACO)

This object includes the parameters that define the agent configuration. All SiteMinder agents require at least one of the following configuration parameters that are defined in the ACO:

AgentName

Defines the identity of the web agent. This identity links the name and the IP address or FQDN of each web server instance hosting an Agent.

The value of the DefaultAgentName is used instead of the AgentName parameter if any of the following events occur:

■ The AgentName parameter is disabled.

■ The value of AgentName parameter is empty.

■ The values of the AgentName parameter do *not* match any existing agent object.

Note: This parameter can have more than one value. Use the multivalue option when setting this parameter in an Agent Configuration Object. For local configuration files, add each value to a separate line in the file.

Default: No default

Limit: Multiple values are allowed, but each AgentName parameter has a 4,000 character limit. Create additional AgentName parameters as needed by adding a character to the parameter name. For example, AgentName, AgentName1, AgentName2.

Limits: Must contain 7-bit ASCII characters in the range of 32-127, and include one or more printable characters. Cannot contain the ampersand (&) and asterisk (*) characters. The value is not case-sensitive. For example, the names MyAgent and myagent are treated the same.

Example: myagent1,192.168.0.0 (IPV4)

Example: myagent2, 2001:DB8::/32 (IPV6)

Example: myagent,www.example.com

Example (multiple AgentName parameters): AgentName1, AgentName2, AgentName3. The value of each AgentName*number* parameter is limited to 4,000 characters.

DefaultAgentName

Defines a name that the agent uses to process requests. The value for DefaultAgentName is used for requests on an IP address or interface when no agent name value exists in the AgentName parameter.

If you are using virtual servers, you can set up your SiteMinder environment quickly by using a DefaultAgentName. Using DefaultAgentName means that you do not need to define a separate agent for each virtual server.

Important! If you do not specify a value for the DefaultAgentName parameter, then the value of the AgentName parameter requires every agent identity in its list. Otherwise, the Policy Server cannot tie policies to the agent.

Default: No default.

Limit: Multiple values are allowed.

Limits: Must contain 7-bit ASCII characters in the range of 32-127, and include one or more printable characters. Cannot contain the ampersand (&) and asterisk (*) characters. The value is not case-sensitive. For example, the names MyAgent and myagent are treated the same.

Chapter 2: Install and Configure Apache-based Agents on Windows

This section contains the following topics:

Agent Installation Compared to Agent Configuration

The concepts of installation and configuration have specific meanings when used to describe SiteMinder agents.

Installation means installing the SiteMinder agent software on a computer system. For example, installing an agent creates directories and copies the SiteMinder agent software and other settings to the computer.

Configuration occurs after installation and means the act of preparing the SiteMinder agent software for a specific web server on a computer. This preparation includes registering the agent with SiteMinder Policy Servers, and creating a runtime server instance for the web server that is installed on the computer.

Use the wizard-based installation and configuration programs to install and configure your agent on your first web server. The wizard-based programs create a .properties file.

Use the .properties file and the respective executable file to install or configure the agent silently on additional web servers.

How to Install Agents on Windows Systems

Installing SiteMinder agents on the Windows operating environment requires several separate procedures. These procedures are described using the following process:

1. Gather the required information for the installation program (see page 26).

2. Run the wizard based installation program (see page 26).

Gather the Information for the Installation Program

Gather the following information about your web server before running the installation program for the SiteMinder agent:

Installation Directory

Specifies the location of the SiteMinder agent binary files on your web server. The *web_agent_home* variable is set to this location.

Limit: SiteMinder requires the name "webagent" for the bottom directory in the path.

Run the Installation Program on Windows

The installation program for the SiteMinder agent installs the agent on one computer at a time using the Windows operating environment. This installation program can be run in wizard or console modes. The wizard and console-based installation programs also create a .properties file for subsequent installations and configurations using the unattended or silent method with the same settings.

For example, suppose the Agents in your environment use the same web server version, installation directory, Agent Configuration Object and Policy Servers. Use the installation wizard or console-based installation program for your first installation. Afterwards, you could create your own script to run the installation program with the .properties file the wizard or console-based installation program created.

Follow these steps:

1. Copy the SiteMinder Web Agent installation executable file to a temporary directory on your web server.

2. Do *one* of the following steps:

   ■ For wizard-based installations, right-click the installation executable file, and then select Run as Administrator.

   ■ For console-based installations, open a command line window and run the executable as shown in the following example:

   executable_file_name.exe -i console

3. Use the information that you gathered previously to complete the installation.

How to Configure Agents on Windows Systems

Configuring the agent occurs after the installation. Configuration requires several separate procedures which are described using the following process:

1.

2.

3.

Gather the Information Required by the Configuration Program on Windows

Gather the following information about your SiteMinder environment before running the configuration program for the SiteMinder agent:

Register Host

Indicates whether you want to register a trusted host. This registration creates a trusted host object in the SiteMinder Policy Server and an SmHost.conf file on the web server. The agent uses this information to make an initial connection to SiteMinder Policy Servers when it starts. Register each agent instance as a trusted host only once.

Default:Yes

Limits: Yes, No

Admin User Name

Specifies the name of a SiteMinder user with Administrative privileges that is already defined in the SiteMinder Policy Server. This SiteMinder user account requires privileges to register trusted hosts.

Admin Password

Specifies a password for the Admin User Name that is already defined in the SiteMinder Policy Server.

Confirm Admin Password

Repeats the password entered in the Admin Password field. This value verifies the password for the Admin User Name already defined in the SiteMinder Policy Server.

Trusted Host Object Name

Specifies a unique name for the trusted host you are registering. This trusted host object is stored on the SiteMinder Policy Server.

Host Configuration Object

Specifies the name of a Host Configuration Object that is already defined in the SiteMinder Policy Server. After the agent initially connects to a Policy Server (using the SmHost.conf file settings), subsequent connections use the settings from the Host Configuration Object.

Policy Server IP Address

Specifies the Internet Protocol address of the Policy Servers to which the agent attempts to connect upon startup. If your Policy Server is behind a firewall, specify a port number also.

If a hardware load balancer is configured to expose Policy Servers in your environment through a single Virtual IP Address (VIP), enter the VIP. For more information, see the *Policy Server Administration Guide*.

Example: (IPV4) 192.168.1.105

Example: (IPV4 with the port number) 192.168.1.105:44443

Example: (IPV6) 2001:DB8::/32

Example: (IPV6) [2001:DB8::/32]:44443

FIPS Mode Setting

Specifies *one* of the following algorithms:

FIPS Compatibility/AES Compatibility

Uses algorithms existing in previous versions of SiteMinder to encrypt sensitive data and is compatible with previous versions of SiteMinder. If your organization does *not* require the use of FIPS-compliant algorithms, use this option.

FIPS Migration/AES Migration

Allows a transition from FIPS-compatibility mode to FIPS-only mode. In FIPS-migration mode, SiteMinder environment continues to use existing SiteMinder encryption algorithms as you reencrypt existing sensitive data using FIPS-compliant algorithms.

FIPS Only/AES Only

Uses *only* FIPS-compliant algorithms to encrypt sensitive data in the SiteMinder environment. This setting does *not* interoperate with, *nor* is backwards-compatible with, previous versions of SiteMinder.

Default: FIPS Compatibility/AES Compatibility

Note: FIPS is a US government computer security standard that accredits cryptographic modules which meet the Advanced Encryption Standard (AES).

Important! Use a compatible FIPS/AES mode (or a combination of compatible modes) for both the SiteMinder agent and the SiteMinder Policy Server.

Name

Specifies the name of the SmHost.conf file which contains the settings the Web Agent uses to make initial connections to a SiteMinder Policy Server.

Default: SmHost.conf

Location

Specifies the directory where the SmHost.conf file is stored.

Default: *web_agent_home*\config

Enable Shared Secret Rollover

Select this check box to change the shared secret that the SiteMinder Policy Server uses to encrypt communications to the Web Agents.

Select Servers

Indicates the web server instances that the configuration program finds on the computer. Select the check boxes of the instances you want to configure. Clear the check boxes of those instances from which you want to remove SiteMinder protection.

Agent Configuration Object Name

Specifies the name of an agent configuration object (ACO) already defined on the Policy Server.

Default: AgentObj

Advanced Authentication Scheme Dialog

Specifies the advanced authentication scheme for the web server instances you selected previously.

Run the Web Agent Configuration Program on Windows

After gathering the information for your agent configuration, run the agent configuration program. This program creates an agent runtime instance for the web servers running on your computer.

This configuration program is wizard or console based, depending on the option you select. Running the configuration program in the wizard or console mode once creates a properties file. Use the properties file to run unattended configurations on other computers with same operating environment in the future.

Follow these steps:

1. Open the following directory on your web server:

   web_agent_home\install_config_info

   web_agent_home

   > Indicates the directory where the SiteMinder agent is installed on your web server.
   >
   > **Default** (Windows 32-bit installations only): C:\Program Files\CA\webagent
   >
   > **Default** (Windows 64-bit installations only): C:\Program Files\CA\webagent\win64
   >
   > **Default** (Windows 32-bit applications operating on 64-bit systems [Wow64]): C:\Program Files (x86)\webagent\win32

2. Use *one* of the following configuration methods:

   - For a GUI-based configuration, go to Step 3.
   - For a console-based configuration, go to Step 5.

3. Right-click the following executable, and then select Run as Administrator:

   ca-wa-config.exe

4. Go to Step 8.

5. Open a Command Prompt window with Administrator privileges.

6. Navigate to the executable file listed previously, and then run it with the following switch:

   -i console

7. Go to Step 8.

8. Follow the prompts shown in the configuration program. Provide the requested values from your agent configuration worksheet.

   The agent runtime instance is created for your web servers.

Run the Unattended or Silent Installation and Configuration Programs for Subsequent Agents on Windows

The unattended or silent installation option can help you automate the installation and configuration process. This method saves time if you have a large SiteMinder environment that uses many agents with identical settings.

For example, suppose the Agents in your environment use the same web server version, installation directory, Agent Configuration Object and Policy Servers. Use the installation wizard or console-based installation program for your first installation. Afterwards, you could create your own script to run the installation program with the .properties file the wizard or console-based installation program created.

Follow these steps:

1. Run the following wizards on your first web server (in the order shown):

    a. The SiteMinder Web Agent Installation wizard.

    b. The SiteMinder Web Agent Configuration wizard.

2. Locate the following file on your first web server:

    web_agent_home\install_config_info\ca-wa-installer.properties

    Note: If the path contains spaces, surround it with quotes.

    ### *web_agent_home*

    Indicates the directory where the SiteMinder agent is installed on your web server.

    Default (Windows 32-bit installations only): C:\Program Files\CA\webagent

    Default (Windows 64-bit installations only): C:\Program Files\CA\webagent\win64

    Default (Windows 32-bit applications operating on 64-bit systems [Wow64]): C:\Program Files (x86)\webagent\win32

3. Perform each of the following steps on the other web servers in your environment:

    Note: To automate this process, create your own customized script to execute these files on your systems. Use any scripting language that you want.

    a. Create a temporary directory on the subsequent web server.

    b. Copy the following files from the first web server (Steps 1 and 2) to the temporary directory on your subsequent web server:

        ■ The SiteMinder Web Agent Installation executable file.

        ■ SiteMinder ca-wa-installer properties file.

    c. Open a Command Prompt window with Administrative privileges in the temporary directory.

    d. Run the following command:

```
agent_executable -f properties_file -i silent
```

The SiteMinder agent is installed and configured on the subsequent server silently.

    e.   (Optional) Delete the temporary directory from your subsequent web server.

4. Repeat Step 3 for each additional web server in your SiteMinder environment that uses the configuration that the settings in your ca-wa-installer.properties file specify.

Chapter 3: Install and Configure Apache-based Agents on UNIX/Linux

This section contains the following topics:

Agent Installation Compared to Agent Configuration

The concepts of installation and configuration have specific meanings when used to describe SiteMinder agents.

Installation means installing the SiteMinder agent software on a computer system. For example, installing an agent creates directories and copies the SiteMinder agent software and other settings to the computer.

Configuration occurs after installation and means the act of preparing the SiteMinder agent software for a specific web server on a computer. This preparation includes registering the agent with SiteMinder Policy Servers, and creating a runtime server instance for the web server that is installed on the computer.

Use the wizard-based installation and configuration programs to install and configure your agent on your first web server. The wizard-based programs create a .properties file.

Use the .properties file and the respective executable file to install or configure the agent silently on additional web servers.

How to Install Agents on UNIX or Linux Systems

Installing SiteMinder agents on the UNIX or Linux operating environments requires several separate procedures. These procedures are described using the following process:

1. Gather the information that the installation program requires (see page 34).

2. Run the wizard based installation program (see page 34).

Gather the Information for the Installation

Gather the following information about your web server before running the installation program for the SiteMinder agent:

Installation Directory

Specifies the location of the SiteMinder agent binary files on your web server. The *web_agent_home* variable is set to this location.

Limit: SiteMinder requires the name "webagent" for the bottom directory in the path.

Run the Installation Program on UNIX/Linux

The installation program for the SiteMinder agent installs the agent on one computer at a time using the UNIX or Linux operating environments. This installation program can be run in wizard or console modes. The wizard and console-based installation program also creates a .properties file for subsequent installations and configurations using the unattended or silent method with the same settings.

For example, suppose the Agents in your environment use the same web server version, installation directory, Agent Configuration Object and Policy Servers. Use the installation wizard or console-based installation program for your first installation. Afterwards, you could create your own script to run the installation program with the .properties file the wizard or console-based installation program created.

Follow these steps:

1. Copy SiteMinder agent installation executable file to a temporary directory on your web server.

2. Log in as a root user.

3. Do *one* of the following steps:

    ■ For wizard-based installations, run the installation executable file.

    ■ For console-based installations, open a command-line window and run the executable as shown in the following example:

    executable_file_name.exe -i console

4. Use the information from your agent Installation worksheet to complete the installation program.

How to Install Agents on z/OS Systems

To Install SiteMinder agents on the z/OS operating environments, perform the following process.

SiteMinder Agent
Administrator
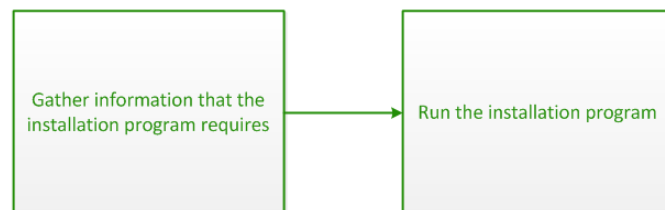
1.

2.

Gather the Information for the Installation

Gather the following information about your web server before running the installation program for the SiteMinder agent:

Installation Directory

Specifies the location of the SiteMinder agent binary files on your web server. The *web_agent_home* variable is set to this location.

Limit: SiteMinder requires the name "webagent" for the bottom directory in the path.

Run the SiteMinder Agent Installation Program on z/OS

The installation program for the SiteMinder agent installs the agent on a single computer running the z/OS operating environment. This installation program can be run in wizard or console modes. The wizard and console-based installation program also creates a .properties file for subsequent installations and configurations using the unattended or silent method with the same settings.

For example, suppose the Agents in your environment use the same web server version, installation directory, Agent Configuration Object and Policy Servers. Use the installation wizard or console-based installation program for your first installation. Afterwards, you could create your own script to run the installation program with the .properties file the wizard or console-based installation program created.

You install the SiteMinder agent using the installation media on the Technical Support site.

Note: Verify that you have executable permissions. To add executable permissions to the installation media, run the following command:

```
chmod +x installation_media
```

installation_media

Specifies the SiteMinder agent installer executable.

Follow these steps:

1. Log in as a root user.

2. Exit all applications that are running.

3. Open a shell and navigate to the installation media.

4. Run the installation program in GUI or console mode by entering one of the following commands:

   GUI Mode:

   ```
   java -jar  installation_media
   ```

   Console Mode:

   ```
   java -jar installation_media -i console
   ```

5. Use the information from that you gathered earlier to complete the installation program.

How to Configure Agents on UNIX/Linux

Configuring the agent occurs after the installation. Configuration requires several separate procedures which are described using the following process:

1. Gather the information that the configuration program requires (see page 37).

2. Source the Agent environment script (see page 39).

3. Set the library path variable on UNIX or Linux systems (see page 40).

4. Run the agent configuration program (see page 41).

5. (Optional) Run the unattended or silent installation and configuration program for other agents (see page 42).

6. Set the LD_PRELOAD variable (see page 43).

7. (SuSE 9 zSeries only) Set the LD_ASSUME_KERNEL variable (see page 43).

8. (Red Hat Linux only) Set the CAPKIHOME variable (see page 43).

Gather the Information that the Configuration Program Requires on UNIX/Linux

Gather the following information about your SiteMinder environment before running the configuration program for the SiteMinder agent:

Register Host

Indicates whether you want to register a trusted host. This registration creates a trusted host object in the SiteMinder Policy Server and an SmHost.conf file on the web server. The agent uses this information to make an initial connection to SiteMinder Policy Servers when it starts. Register each agent instance as a trusted host only once.

Default:Yes

Limits: Yes, No

Admin User Name

Specifies the name of a SiteMinder user with Administrative privileges that is already defined in the SiteMinder Policy Server. This SiteMinder user account requires privileges to register trusted hosts.

Admin Password

Specifies a password for the Admin User Name that is already defined in the SiteMinder Policy Server.

Confirm Admin Password

Repeats the password entered in the Admin Password field. This value verifies the password for the Admin User Name already defined in the SiteMinder Policy Server.

Trusted Host Object Name

Specifies a unique name for the trusted host you are registering. This trusted host object is stored on the SiteMinder Policy Server.

Host Configuration Object

Specifies the name of a Host Configuration Object that is already defined in the SiteMinder Policy Server. After the agent initially connects to a Policy Server (using the SmHost.conf file settings), subsequent connections use the settings from the Host Configuration Object.

Policy Server IP Address

Specifies the Internet Protocol address of the Policy Servers to which the agent attempts to connect upon startup. If your Policy Server is behind a firewall, specify a port number also.

If a hardware load balancer is configured to expose Policy Servers in your environment through a single Virtual IP Address (VIP), enter the VIP. For more information, see the *Policy Server Administration Guide*.

Example: (IPV4) 192.168.1.105

Example: (IPV4 with the port number) 192.168.1.105:44443

Example: (IPV6) 2001:DB8::/32

Example: (IPV6) [2001:DB8::/32]:44443

FIPS Mode Setting

Specifies *one* of the following algorithms:

FIPS Compatibility/AES Compatibility

Uses algorithms existing in previous versions of SiteMinder to encrypt sensitive data and is compatible with previous versions of SiteMinder. If your organization does *not* require the use of FIPS-compliant algorithms, use this option.

FIPS Migration/AES Migration

Allows a transition from FIPS-compatibility mode to FIPS-only mode. In FIPS-migration mode, SiteMinder environment continues to use existing SiteMinder encryption algorithms as you reencrypt existing sensitive data using FIPS-compliant algorithms.

FIPS Only/AES Only

Uses *only* FIPS-compliant algorithms to encrypt sensitive data in the SiteMinder environment. This setting does *not* interoperate with, *nor* is backwards-compatible with, previous versions of SiteMinder.

Default: FIPS Compatibility/AES Compatibility

Note: FIPS is a US government computer security standard that accredits cryptographic modules which meet the Advanced Encryption Standard (AES).

Important! Use a compatible FIPS/AES mode (or a combination of compatible modes) for both the SiteMinder agent and the SiteMinder Policy Server.

Name

Specifies the name of the SmHost.conf file which contains the settings the Web Agent uses to make initial connections to a SiteMinder Policy Server.

Default: SmHost.conf

Location

Specifies the directory where the SmHost.conf file is stored.

Default: *web_agent_home*\config

Enable Shared Secret Rollover

Select this check box to change the shared secret that the SiteMinder Policy Server uses to encrypt communications to the Web Agents.

Select Servers

Indicates the web server instances that the configuration program finds on the computer. Select the check boxes of the instances you want to configure. Clear the check boxes of those instances from which you want to remove SiteMinder protection.

Agent Configuration Object Name

Specifies the name of an agent configuration object (ACO) already defined on the Policy Server.

Default: AgentObj

Advanced Authentication Scheme Dialog

Specifies the advanced authentication scheme for the web server instances you selected previously.

Source the Agent Environment Script on UNIX or Linux Operating Environments

The agent installation program creates an environment script in the following directory:

web_agent_home/ca_wa_env.sh

> **web_agent_home**
>
> > Indicates the directory where the SiteMinder Agent is installed.
> >
> > **Default** (UNIX/Linux installations): /opt/ca/webagent

Source this script *after* doing any of the following tasks:

- Running the agent configuration program.
- Starting the web server.

    Note: If you perform *all* the previous tasks in the *same* shell, only source the script *once*.

Set the Library Path Variable on UNIX or Linux Systems

Set the library path variable on UNIX or Linux systems before running the agent configuration program.

The following table lists the library path variables for the various UNIX and Linux operating environments:

Operating System	Name of Library Path Variable
AIX	LIBPATH
Linux	LD_LIBRARY_PATH
Solaris	LD_LIBRARY_PATH

Set the value of the library path variable to the *web_agent_home*/bin directory.

web_agent_home

Indicates the directory where the SiteMinder Agent is installed.

Default (UNIX/Linux installations): /opt/ca/webagent

Run the Web Agent Configuration Program on UNIX/Linux

After gathering the information for your agent configuration, run the agent configuration program. This program creates an agent runtime instance for the web servers running on your computer.

This configuration program is wizard or console based, depending on the option you select. Running the configuration program in the wizard or console mode once creates a properties file. Use the properties file to run unattended configurations on other computers with same operating environment in the future.

Follow these steps:

1. Open the following directory on your web server:

   web_agent_home/install_config_info

   > **web_agent_home**
   >
   > Indicates the directory where the SiteMinder Agent is installed.
   >
   > **Default** (UNIX/Linux installations): /opt/ca/webagent

2. Use *one* of the following configuration methods:

   - For a GUI-based configuration, go to Step 3.

   - For a console-based configuration, go to Step 5.

3. Run the following executable file:

   ca-wa-config.bin

4. Go to Step 8.

5. Open a Command Prompt window with root privileges.

6. Navigate to the executable file listed previously, and then run it with the following switch:

   -i console

7. Go to Step 8.

8. Follow the prompts shown in the configuration program. Provide the requested values from your agent configuration worksheet.

   The agent runtime instance is created for your web servers.

Run the Unattended or Silent Installation and Configuration Programs for Agents on UNIX/Linux

The unattended or silent installation option can help you automate the installation and configuration process. This method saves time if you have a large SiteMinder environment that uses many agents with identical settings.

For example, suppose the Agents in your environment use the same web server version, installation directory, Agent Configuration Object and Policy Servers. Use the installation wizard or console-based installation program for your first installation. Afterwards, you could create your own script to run the installation program with the .properties file the wizard or console-based installation program created.

Follow these steps:

1. Run the following wizards on your first web server (in the order shown):

   a. The SiteMinder Web Agent Installation wizard.

   b. The SiteMinder Web Agent Configuration wizard.

2. Locate the following file on your first web server:

   web_agent_home/install_config_info/ca-wa-installer.properties

   Note: If the path contains spaces, surround it with quotes.

   > ***web_agent_home***
   >
   > > Indicates the directory where the SiteMinder Agent is installed.
   > >
   > > **Default** (UNIX/Linux installations): /opt/ca/webagent

3. Perform each of the following steps on the subsequent web server:

   Note: To automate this process, create your own customized script to execute these files on your systems. Use any scripting language that you want.

   a. Create a temporary directory on the subsequent web server.

   b. Copy the following files from the web server where you ran the wizards (from Steps 1 and 2) to the temporary directory on your subsequent web server:

      - The SiteMinder Web Agent Installation executable file.

      - SiteMinder ca-wa-installer properties file.

   c. Open a Command Prompt window with root privileges in the temporary directory.

   d. Run the following command:

      agent_executable.bin -f *properties_file* -i silent

      The SiteMinder agent is installed and configured on the web server silently.

   e. (Optional) Delete the temporary directory from your web server.

4. Repeat Step 3 for each additional web server in your SiteMinder environment that uses the configuration that the settings in your ca-wa-installer.properties file specify.

Set the LD_PRELOAD Variable

Apache-based SiteMinder agents require that the LD_PRELOAD variable is set to the following value:

```
LD_PRELOAD=web_agent_home/bin/libbtunicode.so
```

Set the LD_ASSUME_KERNEL for Apache Agent on SuSE Linux 9 for zSeries

After you install the Web Agent on an Apache web server running on SuSE Linux 9 for zSeries, set the LD_ASSUME_KERNEL environment variable as follows:

LD_ASSUME_KERNEL=2.4.21

export LD_ASSUME_KERNEL

Important! You must set this variable to 2.4.21 because it represents the kernel release upon which the Web Agent libraries are built.

Without this setting, the following problems occur:

- The Apache web server will not start properly.
- Host registration dumps core.

Set the CAPKIHOME Variable for Red Hat Linux Systems

If you want to run an Apache-based Web Agent on a Red Hat Linux system, set the CAPKIHOME environment variable by entering the following commands:

```
CAPKIHOME="/usr/local/CA/webagent/CAPKI"
export CAPKIHOME
```

How to Configure Agents on z/OS Systems

Configure the SiteMinder agent after installation by performing the procedures described in the following process.
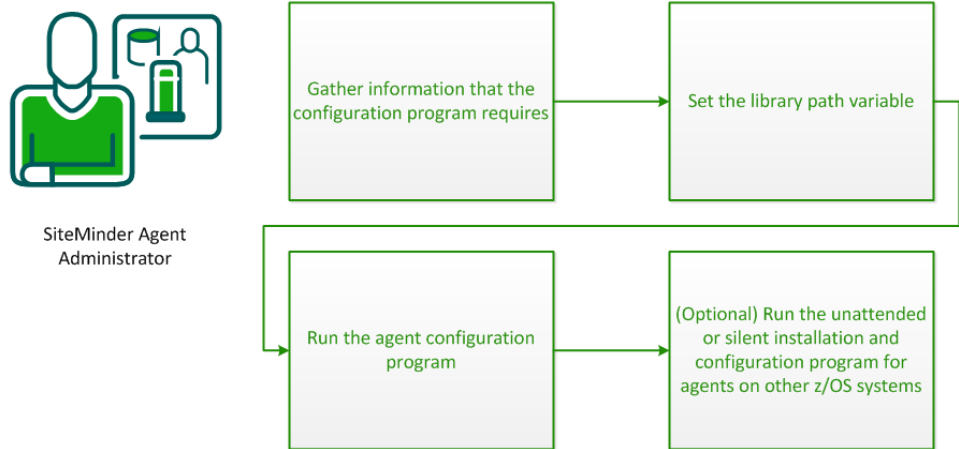
1. Gather the information that the configuration program requires (see page 44).

2. Set the Library Path variable (see page 46).

3. Run the agent configuration program (see page 46).

4. (Optional) Run the unattended or silent installation and configuration program for agents on other z/OS systems (see page 47).

Gather the Information that the Configuration Program Requires on z/OS

Gather the following information about your SiteMinder environment before running the configuration program for the SiteMinder agent:

Register Host

Indicates whether you want to register a trusted host. This registration creates a trusted host object in the SiteMinder Policy Server and an SmHost.conf file on the web server. The agent uses this information to make an initial connection to SiteMinder Policy Servers when it starts. Register each agent instance as a trusted host only once.

Default:Yes

Limits: Yes, No

Admin User Name

Specifies the name of a SiteMinder user with Administrative privileges that is already defined in the SiteMinder Policy Server. This SiteMinder user account requires privileges to register trusted hosts.

Admin Password

Specifies a password for the Admin User Name that is already defined in the SiteMinder Policy Server.

Confirm Admin Password

Repeats the password entered in the Admin Password field. This value verifies the password for the Admin User Name already defined in the SiteMinder Policy Server.

Enable Shared Secret Rollover

Select this check box to change the shared secret that the SiteMinder Policy Server uses to encrypt communications to the Web Agents.

Trusted Host Object Name

Specifies a unique name for the trusted host you are registering. This trusted host object is stored on the SiteMinder Policy Server.

Host Configuration Object

Specifies the name of a Host Configuration Object that is already defined in the SiteMinder Policy Server. After the agent initially connects to a Policy Server (using the SmHost.conf file settings), subsequent connections use the settings from the Host Configuration Object.

Policy Server IP Address

Specifies the Internet Protocol address of the Policy Servers to which the agent attempts to connect upon startup. If your Policy Server is behind a firewall, specify a port number also.

If a hardware load balancer is configured to expose Policy Servers in your environment through a single Virtual IP Address (VIP), enter the VIP. For more information, see the *Policy Server Administration Guide*.

Example: (IPV4) 192.168.1.105

Example: (IPV4 with the port number) 192.168.1.105:44443

Example: (IPV6) 2001:DB8::/32

Example: (IPV6) [2001:DB8::/32]:44443

Name

Specifies the name of the SmHost.conf file which contains the settings the Web Agent uses to make initial connections to a SiteMinder Policy Server.

Default: SmHost.conf

Location

Specifies the directory where the SmHost.conf file is stored.

Default: *web_agent_home/*config

Select Servers

Indicates the web server instances that the configuration program finds on the computer. Select the check boxes of the instances you want to configure. Clear the check boxes of those instances from which you want to remove SiteMinder protection.

IBM HTTP Server for z/OS Path

Specifies the path of the IBM HTTP Server httpd.conf configuration file.

Default: The home directory of the account that is used to run the configuration wizard.

Agent Configuration Object Name

Specifies the name of an agent configuration object (ACO) already defined on the Policy Server.

Default: AgentObj

Advanced Authentication Scheme Dialog

Specifies the advanced authentication scheme for the web server instances you selected previously.

Set the Library Path Variable on z/OS

Set the library path variable on z/OS systems before running the agent configuration program.

export LIBPATH=*web_agent_home*/bin

web_agent_home

Indicates the directory where the SiteMinder Agent is installed.

Default: /opt/ca/webagent

Run the SiteMinder Agent Configuration Program on z/OS

After gathering the information for your agent configuration, run the agent configuration program. This program creates an agent runtime instance for the web servers running on your computer.

This configuration program is wizard or console based, depending on the option you select. Running the configuration program in the wizard or console mode once creates a properties file. Use the properties file to run unattended configurations on other z/OS systems in the future.

Note: Verify that you have executable permissions. To add executable permissions to the installation media, run the following command:

`chmod +x` *`installation_media`*

installation_media

> Specifies the SiteMinder agent installer executable.

Follow these steps:

1. Log in as a root user.

2. Exit all applications that are running.

3. Open a shell and navigate to the following directory:

   `web_agent_home``/install_config_info`

   > ***web_agent_home***
   >
   > > Indicates the directory where the SiteMinder Agent is installed.
   > >
   > > **Default** (UNIX/Linux installations): /opt/ca/webagent

4. Run the configuration program in GUI or console mode by entering one of the following commands:

   GUI Mode:

   `ca-wa-config.sh`

   Console Mode:

   `ca-wa-config.sh -i console`

5. Follow the prompts shown in the configuration program. Provide the requested values from your agent configuration worksheet.

   The agent runtime instance is created for your web servers.

(Optional) Run the Unattended or Silent Installation and Configuration Programs for SiteMinder Agents on z/OS

The unattended or silent installation option can help you automate the installation and configuration process. This method saves time if you have a large SiteMinder environment that uses many agents with identical settings.

For example, suppose the Agents in your environment use the same web server version, installation directory, Agent Configuration Object and Policy Servers. Use the installation wizard or console-based installation program for your first installation. Afterwards, you could create your own script to run the installation program with the .properties file the wizard or console-based installation program created.

Follow these steps:

1. Run the following wizards on your first web server (in the order shown):

   a. The SiteMinder agent Installation wizard.

   b. The SiteMinder agent configuration wizard.

2. Locate the following file on your first web server:

   web_agent_home/install_config_info/ca-wa-installer.properties

   Note: If the path contains spaces, surround it with quotes.

   web_agent_home

   > Indicates the directory where the SiteMinder Agent is installed.

   > **Default** (UNIX/Linux installations): /opt/ca/webagent

3. Perform each of the following steps on the subsequent web server:

   Note: To automate this process, create your own customized script to execute these files on your systems. Use any scripting language that you want.

   a. Create a temporary directory on the subsequent web server.

   b. Copy the following files from the web server where you ran the wizards (from Steps 1 and 2) to the temporary directory on your subsequent web server:

   - The SiteMinder Agent Installation executable file.

   - The ca-wa-installer properties file.

   c. Open a Command Prompt window with root privileges in the temporary directory.

   d. Run the following command:

   java -jar *installation_media* -f ca-installer.properties -i silent

   installation_media

   > Specifies the SiteMinder Agent installer executable.

   The SiteMinder agent is installed and configured on the web server silently.

   e. (Optional) Delete the temporary directory from your web server.

4. Repeat Step 3 for each additional web server in your SiteMinder environment that uses the configuration that the settings in your ca-wa-installer.properties file specify.

Optional Agent Settings for UNIX/Linux

SiteMinder agents for apache-based servers offer the following optional settings:

- If you are using the apachectl script, set the agent variables in the script (see page 49).

- Improve server performance with optional httpd.conf file changes (see page 49).

Set Web Agent Variables when using apachectl Script

You run your Apache server using the apachectl script (such as when running an Apache web server on POSIX). Adding a line to the apachectl script sets the environment variables for the agent.

Follow these steps:

1. Locate a line resembling the following example:

   # Source /etc/sysconfig/httpd for $HTTPD setting, etc

2. Add the following line *after* the line in the previous example:

   sh */web_agent_home*/ca_wa_env.sh

   > **web_agent_home**
   >
   > Indicates the directory where the SiteMinder Agent is installed.
   >
   > **Default** (UNIX/Linux installations): /opt/ca/webagent

Improve Server Performance with Optional httpd.conf File Changes

You can improve server performance by modifying the default configuration settings in the httpd.conf file; however, these changes are *not* required:

Follow these steps:

1. For Apache- based servers, assign a higher priority level to your Apache20WebAgent.dll file than any other auth or access modules on your web server.

2. For low-traffic websites, define the following directives:

   - Set MaxRequestsPerChild>1000 *or* Set MaxRequestsPerChild=0

   - MinSpareServers >5

   - MaxSpareServers>10

   - StartServers=MinSpareServers>5

3. For high-traffic websites, define the following directives:

- Set MaxRequestsPerChild>3000 *or* Set MaxRequestsPerChild=0

- MinSpareServers >10

- MaxSpareServers>15

- StartServers=MinSpareServers>10

Note: CA Services can provide assistance with performance-tuning for your particular environment.

Chapter 4: Dynamic Policy Server Clusters

Earlier versions of SiteMinder agents did *not* automatically discover when Policy Servers were added or removed from a cluster. The agents recognized the changes only after their respective web servers were restarted.

SiteMinder r12.5 supports dynamic Policy Server clusters. Agents automatically discover Policy Servers that are added or removed from an existing cluster when dynamic Policy Server Clusters are enabled.

For example, suppose that your agent connects to a cluster of the following Policy Servers:

- 192.168.2.100
- 192.168.2.101
- 192.168.2.103
- 192.168.2.104

Suppose that you later decide to remove the server 192.168.2.103 to upgrade its operating system. In this situation, enabling dynamic Policy Server clusters lets your agents recognize the change in the membership of the cluster without restarting.

Restart your web server if you do any of the following tasks:

- Change the configuration of an existing Policy Server (using the configuration wizard).
- Create a Policy Server cluster.
- Delete a Policy Server cluster.
- Change the values for any of the following Policy Server settings:
  - EnableFailOver
  - MaxSocketsPerPort
  - MinSocketsPerPort
  - NewSocketStep
  - RequestTimeout

Connect a Web Agent to a Dynamic Policy Server Cluster

You can connect a Web Agent to one or more dynamic Policy Server clusters by modifying the SmHost.conf file on your web server.

Follow these steps:

1. Open the following file with a text editor:

    web_agent_home\config\SmHost.conf

    > ### *web_agent_home*
    >
    > Indicates the directory where the SiteMinder agent is installed on your web server.
    >
    > **Default** (Windows 32-bit installations only): C:\Program Files\CA\webagent
    >
    > **Default** (Windows 64-bit installations only): C:\Program Files\CA\webagent\win64
    >
    > **Default** (Windows 32-bit applications operating on 64-bit systems [Wow64]): C:\Program Files (x86)\webagent\win32

2. Do *one* of the following tasks:

    If this Web Agent has *never* been connected to dynamic cluster of Policy Servers before, create a line (anywhere in the file) with the following text:

    enableDynamicHCO="YES"

    ■   If this Web Agent has previously been connected to a dynamic cluster of Policy Servers, change the value of the existing enableDynamicHCO parameter from "NO" to "YES".

1. Save the SmHost.conf file, and then close the text editor.

2. Restart your web server.

    The Web Agent is connected to dynamic Policy Server clusters.

Chapter 5: Starting and Stopping Web Agents

This section contains the following topics:

Enable a Web Agent

Configure your agent parameters and then enable the agent to protect the resources on the web server.

Note: *No* resources are protected until you also define policies in the SiteMinder Policy Server.

Follow these steps:

1. Open the WebAgent.conf file with a text editor.

2. Change the value of the EnableWebAgent parameter to yes.

3. Save and close the WebAgent.conf file.

4. Restart the web server (the web server itself, not the computer on which it runs).

    The Web Agent is enabled.

Disable a Web Agent

If you want to stop the Web Agent from protecting the resources on your web server, disable the Web Agent.

Follow these steps:

1. Open the WebAgent.conf file with a text editor.

2. Change the value of the EnableWebAgent parameter to no.

3. Save and close the WebAgent.conf file.

4. Restart the web server (the web server itself, not the computer on which it runs).

    The Web Agent is disabled.

Starting or Stopping Most Apache-based Agents with the apachectl Command

Starting or stopping most Apache-based agents with the apachectl command on UNIX or Linux operating environments requires setting the environment variables for the product first.

Note: The Apache-based agents do *not* support the apachectl -restart option. This procedure does *not* apply to Apche-based IBM HTTP servers. Use this procedure instead.

Follow these steps:

1. For UNIX/Linux operating environments, set the environment variables by running the following script:

   ```
   ./ca_wa_env.sh
   ```

2. Use *one* of the following commands:

   ```
   apachectl -stop
   ```

   ```
   apachectl -start
   ```

Chapter 6: Upgrade a Web Agent to r12.5

This section contains the following topics:

Agent Upgrade Roadmap

The following illustration describes how to upgrade a SiteMinder Agent to r12.5:
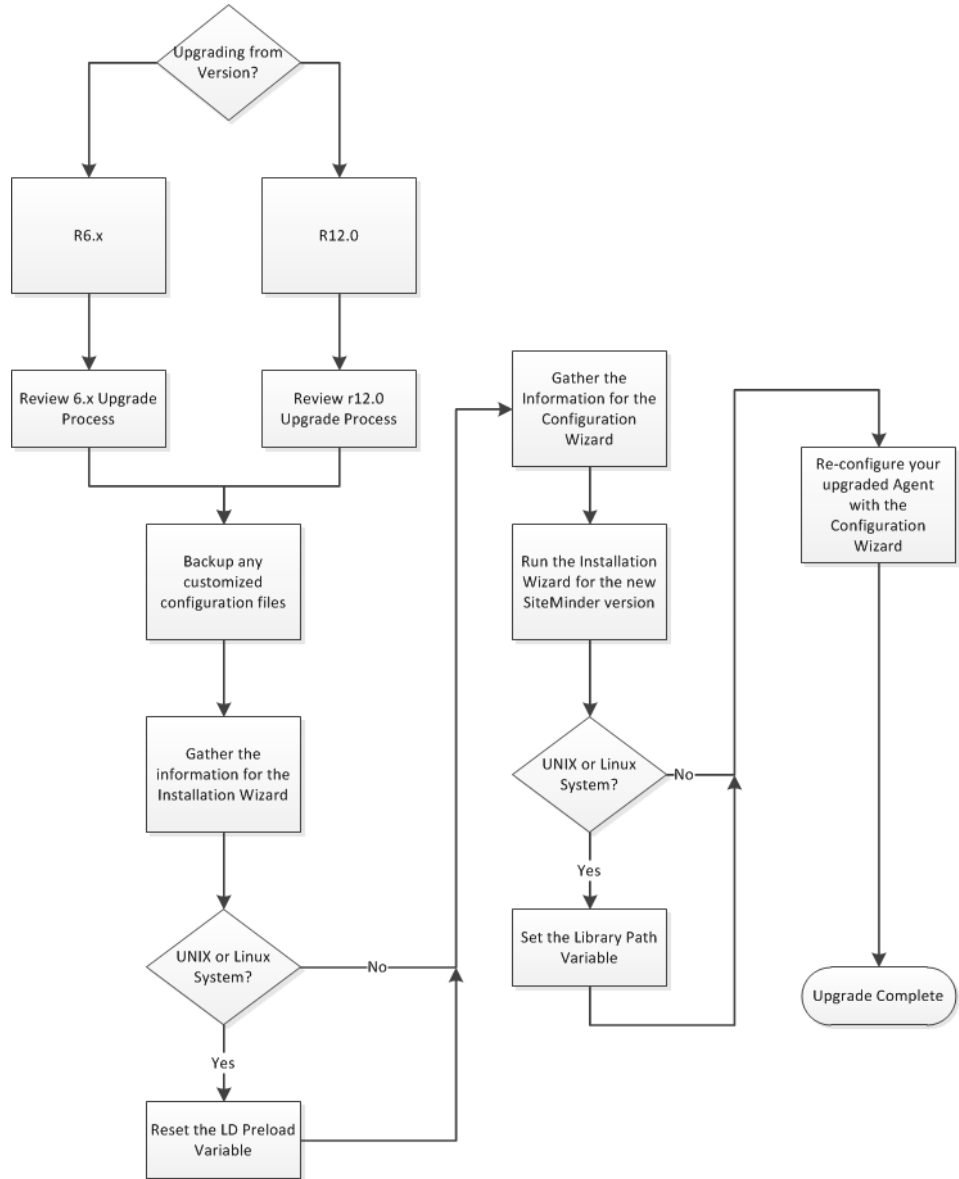
How to Prepare for a SiteMinder Agent Upgrade

Upgrading a SiteMinder agent involves several separate procedures. To prepare for an upgrade of your agent, follow these steps:

1. Use one of the following diagrams to verify that you are in the proper step of the SiteMinder upgrade process for an agent upgrade:

   ■ Upgrade process from r6.x (see page 59)

   ■ Upgrade process from r12.0 (see page 58)

2. Create backup copies of any customized SiteMinder files on your web server. Examples of files you could have customized after installing or configuring your agent include the following examples:

   ■ LocalConfig.conf

   ■ WebAgent.conf

3. Gather information for the following SiteMinder programs.

   ■ Agent installation wizard.

   ■ Agent configuration wizard.

4. If you are upgrading an agent on a UNIX/Linux operating environment, clear the LD_PRELOAD variable (see page 59). Otherwise, continue with the next step.

5. Use *one* of the following procedures to upgrade your agent:

   ■ Run the installation wizard for Windows operating environments (see page 60).

   ■ Run the installation wizard for UNIX/Linux operating environments (see page 61).

6. If you are upgrading an agent on a UNIX/Linux operating environment, set the LD_LIBRARYPATH variable (see page 61). Otherwise, continue with the next step.

7. Use *one* of the following procedures to configure the upgraded agent:

   ■ Configure your upgraded agent on Windows operating environments (see page 63).

   ■ Configure your upgraded agent on UNIX/Linux operating environments (see page 64).

Upgrade Process from SiteMinder r12.0

An agent upgrade to r12.5 from r12.0 occurs at stage two of the SiteMinder upgrade process, as shown in the following illustration:

Figure 1: r12.x migration overview.
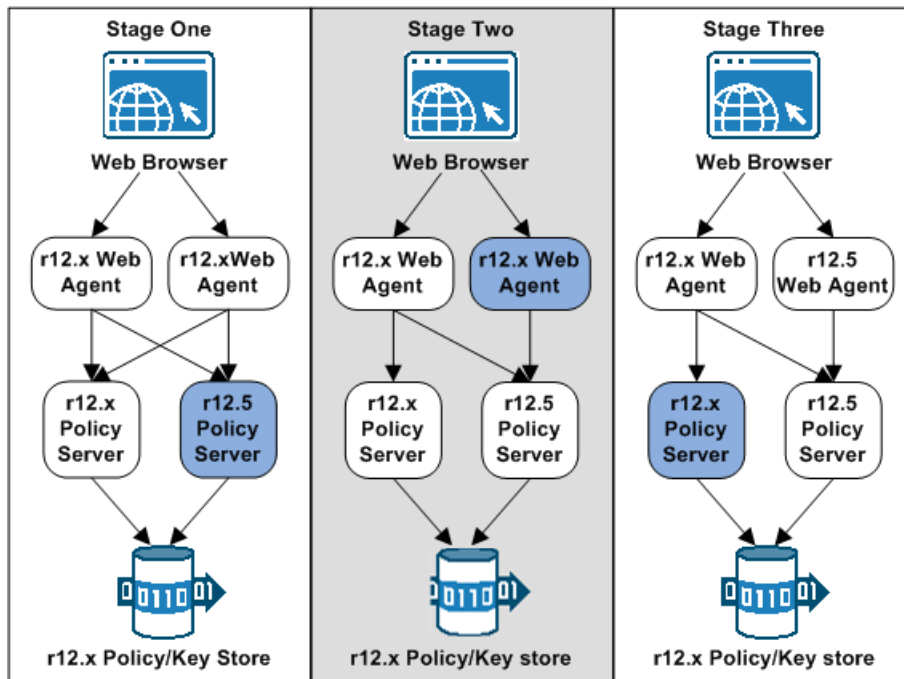
Note: For more information about the SiteMinder upgrade process, see the *Upgrade Guide*.

Upgrade Process from SiteMinder r6.x

An agent upgrade to r12.5 from r6.x occurs at stage three of the SiteMinder upgrade process, as shown in the following illustration:

Figure 2: r6 SP5 migration. Stages 1 through 3
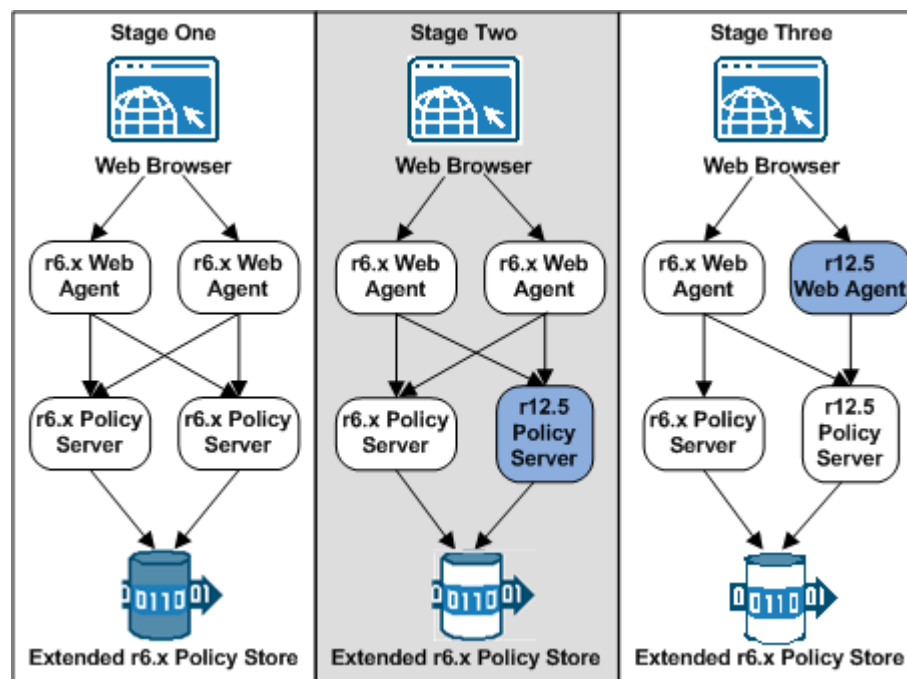
Note: For more information about the SiteMinder upgrade process, see the *Upgrade Guide*.

Ensure LD_PRELOAD Variable Does Not Conflict with Existing Agent

If you are upgrading or reinstalling a Web Agent on a Linux system, from the shell, set the LD_PRELOAD variable so that it points to a different location from any existing Web Agent installation directory. For example, if an existing LD_PRELOAD entry is set to:

LD_PRELOAD=*web_agent_home*/bin/libbtunicode.so

Before you reinstall or upgrade, set the variable to:

export LD_PRELOAD=

This entry sets the variable to a blank value.

Run the Installation Wizard to Upgrade your Agent on Windows

The installation program for the SiteMinder agent installs the agent on one computer at a time using the Windows operating environment. This installation program can be run in wizard or console modes. The wizard and console-based installation programs also create a .properties file for subsequent installations and configurations using the unattended or silent method with the same settings.

For example, suppose the Agents in your environment use the same web server version, installation directory, Agent Configuration Object and Policy Servers. Use the installation wizard or console-based installation program for your first installation. Afterwards, you could create your own script to run the installation program with the .properties file the wizard or console-based installation program created.

Follow these steps:

1. Copy the SiteMinder Web Agent installation executable file to a temporary directory on your web server.

2. Do *one* of the following steps:

   ■ For wizard-based installations, right-click the installation executable file, and then select Run as Administrator.

   ■ For console-based installations, open a command line window and run the executable as shown in the following example:

   executable_file_name.exe -i console

3. Use the information that you gathered previously to complete the installation.

Run the Installation Wizard to Upgrade your Agent on UNIX/Linux

The installation program for the SiteMinder agent installs the agent on one computer at a time using the UNIX or Linux operating environments. This installation program can be run in wizard or console modes. The wizard and console-based installation program also creates a .properties file for subsequent installations and configurations using the unattended or silent method with the same settings.

For example, suppose the Agents in your environment use the same web server version, installation directory, Agent Configuration Object and Policy Servers. Use the installation wizard or console-based installation program for your first installation. Afterwards, you could create your own script to run the installation program with the .properties file the wizard or console-based installation program created.

Follow these steps:

1. Copy SiteMinder agent installation executable file to a temporary directory on your web server.

2. Log in as a root user.

3. Do *one* of the following steps:

   ■ For wizard-based installations, run the installation executable file.

   ■ For console-based installations, open a command-line window and run the executable as shown in the following example:

   executable_file_name.exe -i console

4. Use the information from your agent Installation worksheet to complete the installation program.

Set the Library Path Variable Before Configuring your Upgraded Agent on UNIX/Linux

Set the library path variable on UNIX or Linux systems before running the agent configuration program.

The following table lists the library path variables for the various UNIX and Linux operating environments:

Operating System	Name of Library Path Variable
AIX	LIBPATH
Linux	LD_LIBRARY_PATH
Solaris	LD_LIBRARY_PATH

Set the value of the library path variable to the *web_agent_home*/bin directory.

web_agent_home

Indicates the directory where the SiteMinder Agent is installed.

Default (UNIX/Linux installations): /opt/ca/webagent

Configure your Upgraded Agent on Windows

After gathering the information for your agent configuration, run the agent configuration program. This program creates an agent runtime instance for the web servers running on your computer.

This configuration program is wizard or console based, depending on the option you select. Running the configuration program in the wizard or console mode once creates a properties file. Use the properties file to run unattended configurations on other computers with same operating environment in the future.

Follow these steps:

1. Open the following directory on your web server:

   web_agent_home\install_config_info

   web_agent_home

   Indicates the directory where the SiteMinder agent is installed on your web server.

   Default (Windows 32-bit installations only): C:\Program Files\CA\webagent

   Default (Windows 64-bit installations only): C:\Program Files\CA\webagent\win64

   Default (Windows 32-bit applications operating on 64-bit systems [Wow64]): C:\Program Files (x86)\webagent\win32

2. Use *one* of the following configuration methods:

   ■ For a GUI-based configuration, go to Step 3.

   ■ For a console-based configuration, go to Step 5.

3. Right-click the following executable, and then select Run as Administrator:

   ca-wa-config.exe

4. Go to Step 8.

5. Open a Command Prompt window with Administrator privileges.

6. Navigate to the executable file listed previously, and then run it with the following switch:

   -i console

7. Go to Step 8.

8. Follow the prompts shown in the configuration program. Provide the requested values from your agent configuration worksheet.

   The agent runtime instance is created for your web servers.

Configure your Upgraded Agent on UNIX/Linux

After gathering the information for your agent configuration, run the agent configuration program. This program creates an agent runtime instance for the web servers running on your computer.

This configuration program is wizard or console based, depending on the option you select. Running the configuration program in the wizard or console mode once creates a properties file. Use the properties file to run unattended configurations on other computers with same operating environment in the future.

Follow these steps:

1. Open the following directory on your web server:

   web_agent_home/install_config_info

   web_agent_home

   Indicates the directory where the SiteMinder Agent is installed.

   Default (UNIX/Linux installations): /opt/ca/webagent

2. Use *one* of the following configuration methods:

   ■ For a GUI-based configuration, go to Step 3.

   ■ For a console-based configuration, go to Step 5.

3. Run the following executable file:

   ca-wa-config.bin

4. Go to Step 8.

5. Open a Command Prompt window with root privileges.

6. Navigate to the executable file listed previously, and then run it with the following switch:

   -i console

7. Go to Step 8.

8. Follow the prompts shown in the configuration program. Provide the requested values from your agent configuration worksheet.

   The agent runtime instance is created for your web servers.

Chapter 7: Operating System Tuning

This section contains the following topics:

Tune the Shared Memory Segments

If you install an Apache-based agent on Solaris systems, tune the shared memory settings of the operating environment for the Agent to function correctly. By increasing the shared memory segments or your operating environment, you improve the performance of the Agent. The variables that control shared memory segments are defined in the specification file of your operating environment.

For AIX operating environments, run the following command before starting an Apache-based server:

```
export EXTSHM=ON
```

Note: Sometimes Linux operating environments require tuning the shared memory segments. For more information about the shared memory segments and how to tune them, see the documentation for your particular operating environment.

Follow these steps:

1. Follow the appropriate procedure for your operating environment:

   - Solaris**:** Open the /etc/system file, using the editor of your choice.

2. Modify the shared memory variables using *one* of the following methods:

   - Solaris: Add the variables shown in the following list and configure them using the recommended settings shown in the examples. Use the following syntax:

     ```
     set shmsys:shminfo_shmmax=33554432
     ```

   shmsys:shminfo_shmmax

   Specifies the maximum shared memory segment size. Controls the maximum size of the Agent resource and session cache.

   Note: To estimate the amount of memory segments that are required, allocate 4 KBs per entry in each cache, or view cache usage statistics in the OneView Monitor. See the *Web Agent Configuration* Guide for more information about using the OneView Monitor.

   Example: 33554432 (32 MB) for busy sites that require large caches.

   shmsys:shminfo_shmmin

   (Not required for Solaris) Minimum shared memory segment size. Controls the minimum size of the Agent resource and session cache.

shmsys:shminfo_shmmni

Specifies the maximum number of shared memory segments that can exist simultaneously, systemwide.

Example: (except Solaris 9) N/A

Example: (Solaris 9) 200

shmsys:shminfo_shmseg

(Not required for Solaris 9) Specifies the maximum number of shared memory segments per process.

Example: 24

semsys:seminfo_semmni

Specifies the number of semaphore identifiers. Use 11 for every instance of the Agent that you run on the system.

Example: (except Solaris 9) 100

Example: (Solaris 9) 200

semsys:seminfo_semmns

Specifies the number of semaphores in the system. Use 10 for every instance of the Agent that you run on the system.

Example: (Solaris 9) 100

Example: (Solaris 9) 400

semsys:seminfo_semmnu

Specifies the number of processes using the undo facility. For optimal performance, set the semmnu value so it exceeds the number of Apache child processes running on the system at any one time. For Apache–based servers, use a value exceeding the maxclients setting by 200 or more.

Example: (Solaris 9) 200

3. Save your changes then exit the file or the utility.

4. Reboot the system.

5. Verify your changes by entering the command:

    ```
    $ sysdef -i
    ```

How to Tune the Solaris 10 Resource Controls

Tune the resource controls at the project level to improve the performance of the agent.

Note: See your Solaris documentation for more information.

Tuning the resource controls on Solaris 10 uses the following process:

1. Determine the project that is associated with the user account under which the Web Agent runs.

2. Increase the settings for any of the following resource controls of that project:

   project.max-shm-ids

   Specifies the maximum shared memory IDs for a project.

   project.max-sem-ids

   Specifies the maximum number of semaphore IDs for a project.

   project.max-msg-ids

   Specifies the maximum number of message queue IDs for a project.

   project.max-shm-memory

   Specifies the total amount of shared memory allowed for a project.

   process.max-sem-nsems

   Specifies the maximum number of semaphores allowed per semaphore set.

   process.max-sem-ops

   Specifies the maximum number of semaphore operations allowed per semop.

   process.max-msg-messages

   Specifies the maximum number of messages on a message queue.

   process.max-msg-qbytes

   Specifies the maximum number of bytes of messages on a message queue.

Chapter 8: Uninstall a Web Agent

This section contains the following topics:

Notes About Uninstalling Web Agents

Be aware of the following:

- All Web Agents for all installed web servers will be uninstalled.

- The Password Services and Forms directories, (pw_default, jpw_default, samples_default) will be removed. However, the non-default copies of these directories (pw, jpw, samples) are not removed because these directories may contain customized files.

- Make sure that the JRE is installed on the Web Agent system, as it is needed for uninstallation. For a supported version, see the SiteMinder r12.5 Platform Matrix at Technical Support.

Set JRE in PATH Variable Before Uninstalling the SiteMinder Agent

On Windows and UNIX systems, when you are uninstalling a SiteMinder Agent, make sure the JRE is in the PATH variable or the uninstallation program stops and issues one of the following error messages:

- "Could not find a valid Java virtual machine to load. You need to reinstall a supported Java virtual machine."

- "No Java virtual machine could be found from your PATH environment variable. You must install a VM prior to running this program."

Follow these steps:

On Windows

1. Go to the Control Panel.

2. Double-click System.

3. In the Environment Variables dialog, add the location of the JRE to the PATH system variable.

   For example, C:\j2sdk*version_number*\jre\bin

On UNIX

Run the following commands:

1. PATH=$PATH:*JRE*/bin

   JRE

   Specifies the location of your JRE.

   For example, /usr/bin/j2sdk*version_number*/jre

2. export PATH

Uninstall a Web Agent from a Windows Operating Environment

Before you un–install the SiteMinder Web Agent from a Windows operating environment, consider making backup copies of your registry settings and Web Agent configuration settings.

Follow these steps:

1. Stop the web server.

2. Choose *one* of the following procedures:

    ■   To remove the Web Agent using the wizard, go to Step 3.

    ■   To remove the Web Agent using the console-based program, go to Step 8.

3. Click Start, Control Panel, Programs and Features.

    A list of installed programs appears.

4. Click CA SiteMinder Web Agent *version_number*.

5. Click Uninstall/Change.

    The uninstallation wizard appears.

6. Review the information in the Uninstall SiteMinder Web Agent dialog, then click Uninstall.

    The wizard removes the web agent.

7. Wait for the wizard to finish, then go to Step 12.

8. Open a command-line window.

9. Navigate to the following directory.

    web_agent_home

    web_agent_home

    Indicates the directory where the SiteMinder Agent is installed on your web server.

    Default (Windows 32-bit installations of SiteMinder IIS Web Agents only): C:\Program Files\CA\webagent

    Default (Windows 64-bit installations [SiteMinder Web Agents for IIS only]): C:\Program Files\CA\webagent\win64

    Default (Windows 32-bit applications operating on 64-bit systems [Wow64 with SiteMinder Web Agents for IIS only]): C:\Program Files (x86)\webagent\win32

10. Run the following command:

    ```
    ca-wa-uninstall.cmd -i console
    ```

11. Wait for the un–installation program to finish, then go to Step 12.

12. Start the web server.

Important! Delete the ZeroG registry file from the following location after uninstalling the Web Agent: C:\Program Files\ZeroG Registry\com.zerog.registry.xml

Uninstall a Web Agent from a UNIX System

These instructions are for GUI and Console Mode removal.

Note: Removing a Web Agent from a 64-bit SuSE Linux 10 system requires additional preparations.

The steps for the two modes are the same, with these exceptions for Console Mode:

■ Select the option that you want by entering a corresponding number.

Press Enter after each step to proceed through the process instead of "clicking Next," as stated in the following procedure.

Note: Before you uninstall, we recommend copying your agent configuration settings to have as a backup.

1. Stop the web server.

2. Log in to the UNIX system.

3. Specify the JRE in the PATH environment variable to uninstall the Web Agent. If you receive an error message that the Java virtual machine could not be found, add the JRE to the PATH variable as follows:

   PATH=/*jre_home*/bin:${PATH}

   export PATH

   jre_home is the location of the JRE.

4. Navigate to the directory where the Web Agent is installed:

   web_agent_home/install_config_info/ca-wa-uninstall

5. If necessary, verify that you have execute permissions on the uninstallation program by entering chmod +x uninstall.

6. From a console window, enter one of the following commands:

   ■ GUI mode: ./uninstall

   ■ Console mode: ./uninstall -i console

   The uninstallation program starts.

7. Read the information in the dialog to confirm the removal of the Web Agent, then click Uninstall. The Web Agent is removed from the system.

8. Click Done to exit the uninstallation program.

9. (Optional) For Apache-based agents, remove the lines from the httpd.conf file that the Configuration Wizard added.

10. Change to your home directory (the current directory has been deleted).

11. Restart the web servers.

Uninstall a SiteMinder Agent from a z/OS System

These instructions are for GUI and Console Mode removal. The steps for the two modes are the same, with these exceptions for Console Mode:

■ Select the option that you want by entering a corresponding number.

■ Press Enter after each step to proceed through the process instead of "clicking Next," as stated in the following procedure.

Note: Before you uninstall, we recommend copying your agent configuration settings to have as a backup.

Follow these steps:

1. Log in as a root user.

2. Stop the web server.

3. Open a shell and navigate to the directory where the SiteMinder agent is installed:

   web_agent_home/install_config_info/ca-wa-uninstall

4. If necessary, verify that you have execute permissions on the uninstallation program by entering the following command:

   chmod +x *installation_media*

   installation_media

   Specifies the Policy Server installer executable.

5. Perform one of the following procedures:

   ■ If you installed the agent using GUI mode, enter the following command from a console window:

   ./ca-wa-uninstall.sh

   The uninstallation program starts.

   ■ If you installed the agent using console mode, use the Configuration Wizard to unconfigure the agent and then delete the *web_agent_home* directory manually.

6. Read the information in the dialog to confirm the removal of the SiteMinder agent, then click Uninstall. The SiteMinder agent is removed from the system.

7. Click Done to exit the uninstallation program.

8. (Optional) Remove the lines from the httpd.conf file that the Configuration Wizard added.

9. Change to your home directory (the current directory has been deleted).

10. Restart the web servers.

Chapter 9: Troubleshooting

This section contains the following topics:

Apache Server Shows shmget Failure On Startup

Symptom:

When starting the web server, you see: shmget failed.

You may be trying to make a cache that is too large or be doing apachectl restart.

Solution:

Make the recommended adjustments to the shared memory segments.

Apache Agent is Enabled but Default Server Page or Protected Resource Not Accessible

Symptom:

The default web server page or the protected resource is not accessible after enabling
Web Agent.

Solution:

Make the recommended adjustments to the shared memory segments.

Apache Web Agent Not Operating

Symptom:

The Apache Web Agent is not operating.

Solution:

Tune the Apache operating system shared memory.

Appendix A: Worksheets

This section contains the following topics:

Agent Installation Worksheet

Use the following table to record the information that the agent installation program requires:

Information Needed	Your Value
Installation Directory	

Agent Configuration Worksheet

Use the following table to record the information that the agent configuration program requires:

Information Needed	Your Value
Host Registration (Yes/No)	
Admin User Name	
Admin Password	
Enable Shared Secret Rollover	
Trusted Host Name	
Host Configuration Object	
IP Address	
FIPS Mode Setting	
SmHost.conf file Name	
SmHost.conf file Location	
Select Server	
Agent Configuration Object Name	

Information Needed	Your Value
Advanced Authentication Scheme Dialog	

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