CA SiteMinder® Web Services Security

Upgrade Guide

12.52

CA Technologies Product References

This document references the following CA Technologies products:

- CA SiteMinder®
- CA SiteMinder® Web Services Security (formerly CA SOA Security Manager)

Contact CA Technologies

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
- CA Support policies and guidelines
- Other helpful resources appropriate for your product

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Documentation Changes

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

- How to Configure a Parallel Environment (see page 47)—Revised steps and XPSImport command switches.
- Korn Shell (ksh) Package Required on Linux (see page 32)—Added to describe the libraries required for upgrading the Policy Server.

Contents

Chapter 1: Planning Migration and Upgrades

SiteMinder Documentation

CA SiteMinder® documentation is available through a bookshelf. The CA SiteMinder® bookshelf lets you:

- Use a single console to view all documents that are published for CA SiteMinder®.
- Use a single alphabetical index to find a topic in any document.
- Search all documents for one or more words.

CA SiteMinder® product documentation continues to be available separately. This guide references other CA SiteMinder® guides. We recommend that you locate the documentation before beginning an upgrade.

More information:

Locate the Bookshelf (see page 103)

Component Versions in this Guide

This guide details the paths for upgrading a SOA Security Manager r12.1 SP3 environment to CA SiteMinder® Web Services Security 12.52.

The component versions in this guide include:

- CA SOA Security Manager Administrative UI upgrades from r12.1 SP3 to CA SiteMinder® Administrative UI 12.52.
- CA SOA Manager Security Policy Server and policy store upgrades from r12.1 SP3 to CA SiteMinder® Policy Server and policy store 12.52.
- SOA Agent upgrades from r12.1 SP3 to SiteMinder WSS Agents 12.52.

Policy Server and Policy Store Versions in this Guide

This guide details the considerations and migration paths for upgrading your CA SOA Security Manager Policy Server and policy store from CA SOA Security Manager r12.1 SP3 to CA SiteMinder® 12.52.

Note: The CA SiteMinder® Web Services Security r12.1 SP3 Policy Server is an extended version of the SiteMinder r12 SP3 Policy Server. The [assign the value for rn in your book] CA SiteMinder® Policy Server includes the CA SiteMinder® Web Services Security extensions. Therefore, there is no *CA SiteMinder® Web Services Security* Policy Server in a CA SiteMinder® Web Services Security 12.52 environment — the CA SiteMinder® 12.52 Policy Server supports web service access control requests from SiteMinder WSS Agents (formerly SOA Agents).

Upgrade Paths

An upgrade consists of deploying 12.52 components to an existing CA SiteMinder® environment. Upgrading to 12.52 can be accomplished in two ways:

- Completing a migration.
- Configuring a parallel 12.52 environment next to an existing environment. Both environments use one or more key stores to maintain single sign–on.

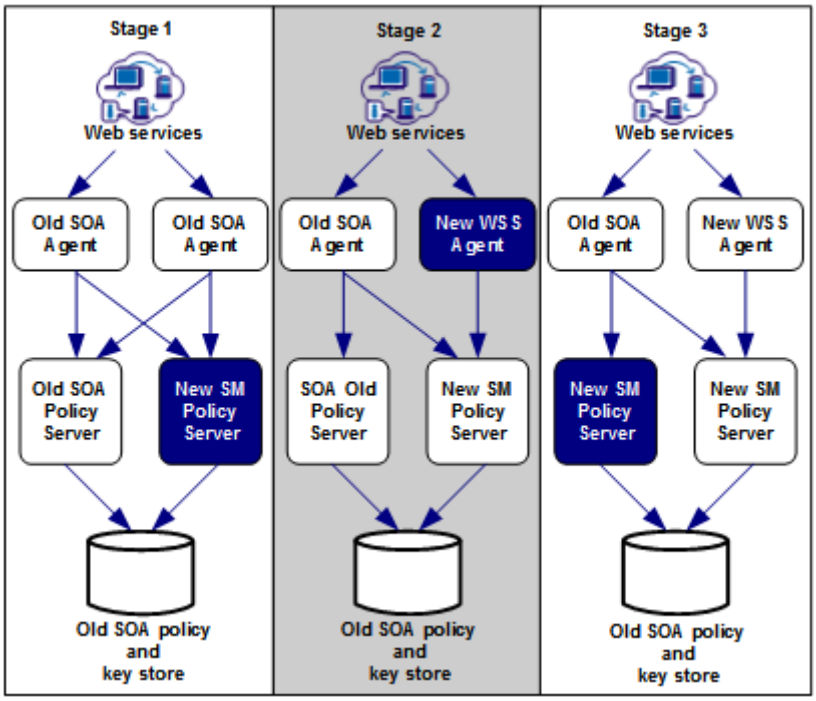
Migration

A migration is the process of upgrading individual CA SOA Security Manager components until your environment is operating at CA SiteMinder® Web Services Security 12.52. Upgrading individual components consists of one or more steps during which you:

- Take a component offline.
- Upgrade the component.
- Bring the component online.

You upgrade individual components over an extended period to maintain system availability. A key to maintaining system availability is the order in which you upgrade components. During a migration, specific components that have been upgraded can continue to communicate with prior versions. This type of communication is known as mixed-mode support.

The following illustrates the concept of a migration:

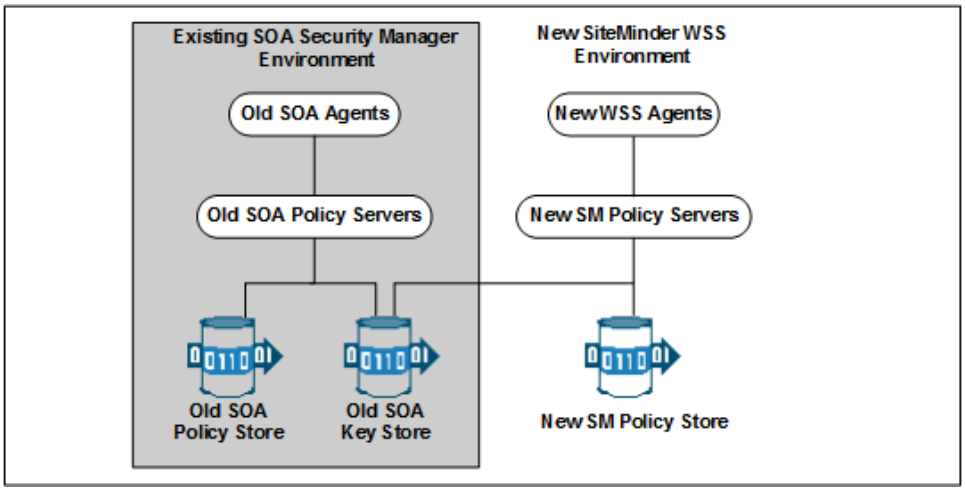


Parallel Upgrade

A parallel upgrade is the process of configuring a CA SiteMinder® Web Services Security 12.52 environment beside an existing r12.1 SP3 environment. Configuring a parallel upgrade consists of multiple steps during which you:

- Leave the existing environment unchanged
- Configure a 12.52 environment
- Use a common key store or multiple key stores to enable single sign–on between both environments

The following illustrates the concept of a parallel upgrade.



How to Plan a Migration

Migrating a complex CA SiteMinder® environment involves many component upgrades before the environment is upgraded. A migration strategy is critical so that the migration is completed efficiently and without exposing sensitive resources to security risks or downtime.

A migration strategy can consist of the following:

- A test environment

  Perform a test migration to become familiar with the process. A test migration can help you identify, troubleshoot, and avoid issues that can bring down mission-critical resources when you migrate a production environment.

- Current third-party products and hardware

  Determine if 12.52 supports your current third-party products and hardware.

  Note: For a list of supported CA and third-party components, refer to the CA SiteMinder® 12.52 Platform Support Matrix on the Technical Support site.

- A site analysis

  Determine the current state of your CA SiteMinder® environment and when it is the best time to update each component.

- CA SiteMinder® Components

  List the individual CA SiteMinder® components that you plan on upgrading and identify where each component is being hosted.

- A recovery plan

  Back up your existing components in the case you experience problems during the migration.

- Upgrade paths

  Determine the individual component upgrade paths supported by a migration.

- Mixed–mode support

  Develop an understanding of mixed mode support.

- Performance testing

  Develop a strategy to performance test the environment when the migration is complete.

Review the Policy Server Release Notes

The Policy Server Release Notes includes installation and upgrade considerations. We recommend that you review this material before beginning a migration.

Analyze Your CA SiteMinder® Web Services Security Environment

Analyze your CA SiteMinder® Web Services Security environment to determine the complexity of your upgrade. Do this by answering the following questions:

Question	Recommendation
How many Policy Servers and SOA Agents are in your environment?	Use the Policy Server audit logs to determine the number.
What are the versions of the Policy Server and SOA Agents?	Use the Policy Server audit logs to determine the versions.
Which Policy Servers are communicating with which SOA Agents?	Use the Policy Server audit logs to determine this information.
What time of day do you encounter the least traffic at each site?	Review your web and application server logs and the Policy Server audit logs.
Are your SOA Agents working in failover or round robin mode?	To maintain failover and round robin, refer to Mixed CA SiteMinder® Environments.
Does CA SiteMinder® Web Services Security12.52 support your third–party hardware and software?	Go to the Technical Support site and search for the CA SiteMinder® Platform Matrix for 12.52.

Question	Recommendation
Do you have CA SiteMinder® software customized by Professional Services?	Contact Customer Support for instructions.
Do you have access to previous versions of the CA SiteMinder® Web Services Security user documentation? This guide refers to the previous CA SiteMinder® documentation.	Locate the CA SiteMinder® documentation on the Technical Support Site.
Do you have any customized files that may be overwritten by the upgrade?	Back up customized files, such as Host configuration files before upgrading.

More information:

Locate the Platform Support Matrix (see page 103)
Locate the Bookshelf (see page 103)

Plan a Recovery Strategy

Implement a recovery plan that lets you return to your original configuration. You cannot revert from a component upgrade or migration.

Important! The most complete recovery plan is to back up the entire image of each Policy Server and SOA Agent host. We recommend this method.

If you do not want to back up the entire image of each system, do the following:

- Back up all SOA Agent and Policy Server binaries. Most of these files are in the bin subdirectory where you installed the Policy Server and SOA Agent.
- Back up the SOA Agent configuration file

  If you intend to manage Agents centrally from a 12.52 Policy Server, you need to supply the Agent configuration file to the Policy Server administrator. The Administrator will need this file to create an Agent Configuration Object, which defines the Agent's configuration at the Policy Server.

  Note: More information about centrally managing SOA Agents exists in the CA SiteMinder® Web Services Security *Policy Configuration Guide*.

- Export the policy store to a file using the XPSExport utility.
- Copy the r12.1 SP3 installation scripts and hot fixes so that you can re-install if necessary. You can download copies from the Technical Support site.

Determine the Upgrade Path

The following table lists the supported upgrade paths for a migration to 12.52:

- CA SOA Security Manager Policy Server r12.1 SP3 to CA SiteMinder® 12.52 Policy Server

  Note: The CA SOA Security Manager r12.1.SP3 Policy Server is an extended version of the SiteMinder r12.0 SP3 Policy Server. The CA SiteMinder® 12.52 Policy Server includes all the SOA Security Manager extensions.
- CA SOA Security Manager r12.1 SP3 SOA Agents to SiteMinder WSS Agents 12.52
- CA SOA Security Manager r12.1 SP3 Administrative UI to CA SiteMinder® 12.52 Administrative UI

  Note: The CA SOA Security Manager r12.1.SP3 Administrative UI is an extended version of the SiteMinder r12.0 SP3 Policy Server. The CA SiteMinder® 12.52 Administrative UI includes all the SOA Security Manager extensions.

Mixed Environments

As you migrate to CA SiteMinder® Web Services Security 12.52, your environment can contain a combination of components at different versions. In addition, you do not have to upgrade all of your components to 12.52. You can leave some components at the current version. Consider the following:

- If your environment contains CA SOA Security Manager r12.1 SP3 components, CA SiteMinder® 12.52 Policy Servers can continue to communicate with r12.1 SP3 policy stores.
- If you have a mix of Policy Server versions, users can continue to access resources and have the same experience using SOA Agents r12.1 SP3 or SiteMinder WSS Agents 12.52
- A mixed environment can support single sign-on.

Use Mixed-Mode Support

Mixed-mode support lets a CA SiteMinder® 12.52 Policy Server communicate with a CA SOA Security Manager r12.1 SP3 policy store during a migration. When you upgrade a Policy Server, the Policy Server installer detects that policy store version. If the policy store is operating at a previous version, the installer upgrades the Policy Server and enables mixed (compatibility) mode.

Note: You cannot turn mixed-mode off.

The Policy Server Management Console lets you see what policy store version the 12.52 Policy Server is using.

Note: The CA SOA Security Manager r12.1.SP3 Policy Server is an extended version of the SiteMinder r12.0 SP3 Policy Server. The CA SiteMinder® 12.52 Policy Server includes all the SOA Security Manager extensions. The Management Console identifies SiteMinder rather than CA SiteMinder® Web Services Security Policy Server and Policy Store version numbers.

To identify the policy store version

1. Start the Policy Server Management Console.
2. Click the Data tab.
3. Select Help, About.

   The About the Policy Server Management Console screen appears. The Policy Server version is listed.

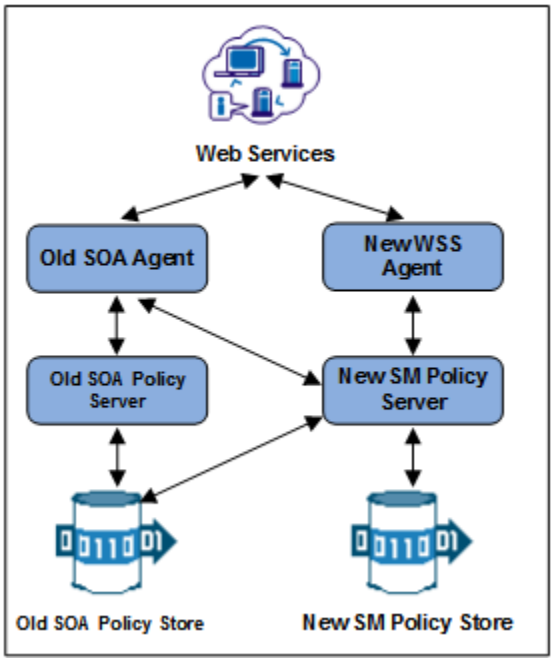
Note: The policy store version is also listed. The policy store version does not match the Policy Server version.

SOA Security Manager r12.1 SP3 Mixed Mode Support

Consider the following when migrating from r12.1to 12.52:

- A SOA Security Manager r12.1 SP3 Policy Server cannot communicate with a CA SiteMinder® 12.52 policy store.
- A CA SiteMinder® 12.52 Policy Server can communicate with a SOA Security Manager r12.1 SP3 policy store.
- A SOA Security Manager r12.1 SP3 Policy Server can share the same key store with an CA SiteMinder® 12.52 Policy Server.
- A SOA Security Manager r12.1 SP3 Policy Server can share the same session store with a CA SiteMinder® 12.52 Policy Server.
- A SOA Security Manager r12.1 SP3 SOA Agent can communicate with a CA SiteMinder® 12.52 Policy Server.

The following illustration details mixed mode support:



Limitations of an r12.1 SP3 Mixed Environment

A CA SiteMinder® 12.52 Policy Server can communicate with a CA SOA Security Manager r12.1 SP3 policy store, but a CA SOA Security Manager r12.1 SP3 Policy Server cannot connect to a CA SiteMinder® 12.52 policy store. As a result, all existing SOA Security Manager r12.1 SP3 features are available in a mixed environment, but the features specific to 12.52 are not available.

Note: For more information about features in 12.52, see the release notes.

How to Plan a Parallel Upgrade

Configuring a parallel CA SiteMinder® environment beside an existing CA SOA Security Manager environment involves installing the following:

- One or more Policy Servers
- A policy store
- An Administrative UI

- One or more WSS Agents
- [assign the value for cabi in your book] (Report Server)

Note: This guide lists the requirements for establishing single sign-on between both environments. For more information about installing a Policy Server, a policy store, an Administrative UI, and the Report Server, see the *Policy Server Installation Guide*. For more information about installing a WSS Agent, see the corresponding *Agent Guide*.

How to Upgrade Simple Test Environments

You follow the upgrade paths detailed in this guide only if you must maintain single-sign on or failover.

If your test environment does not require these, the most efficient way to upgrade is to:

1. Install a CA SiteMinder® 12.52 Policy Server.

   Note: Ensure that you install a new Policy Server and do not upgrade the existing Policy Server. More information on installing a Policy Server exists in the *Policy Server Installation Guide*.

2. Use XPSExport to export data from the CA SOA Security Manager r12.1 SP3 policy store.

   Note: For more information about the XPSExport utility, see the *Policy Server Administration Guide*.

3. Use XPSImport to import the CA SOA Security Manager r12.1 SP3 policy store data into the CA SiteMinder® 12.52 policy store.

   Note: For more information about the XPSExport utility, see the *Policy Server Administration Guide*.

4. Uninstall CA SOA Security Manager r12.1 SP3.

When moving policy data from one environment to another, either as part of an upgrade or a policy migration, some objects that are environment–specific are included in the export file. Examples of these objects include:

- Trusted hosts
- HCO Policy Server settings
- Authentication scheme URLs

Depending on the mode you select when using XPSExport, these objects may be added to the new environment or can overwrite existing settings. Be sure that you do not adversely affect environment settings when importing the objects.

Common CA SOA Security Manager Environments

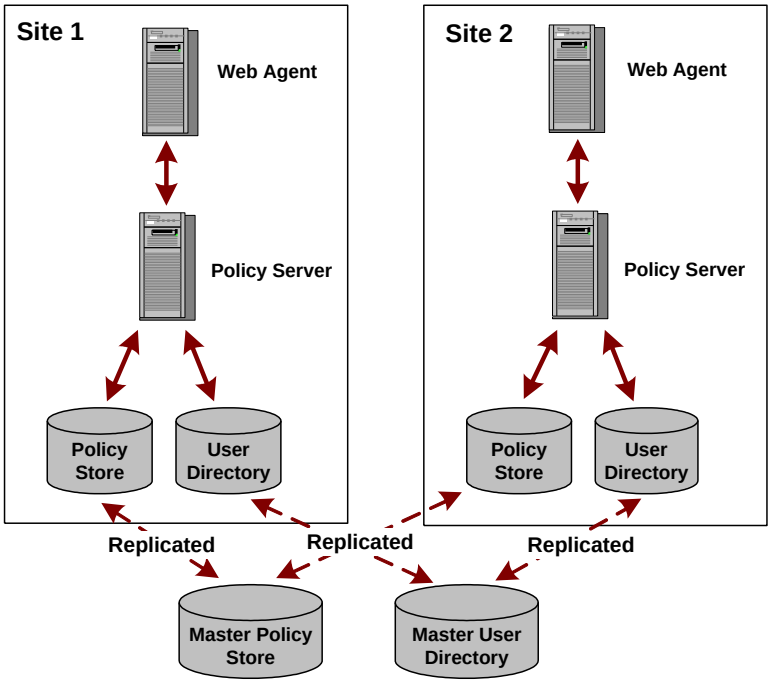
There are several common CA SOA Security Manager environments to consider before upgrading to CA SiteMinder® 12.52. See if your site matches one of the following:

- Single Policy Store, Multiple Policy Servers and SOA Agents
- Clustered Environment (see page 20)
- Shared User Directory Environment (see page 20)

Single Policy Store, Multiple Policy Servers and SOA Agents

This CA SOA Security Manager environment contains a single policy store used by 20 to 100 Policy Servers located across the world. For performance reasons, the policy store and user directories are automatically replicated so that each Policy Server communicates with the closest replicated version. Each Policy Server communicates with 50 to 300 SOA Agents.

The following figure illustrates this environment on a smaller scale:



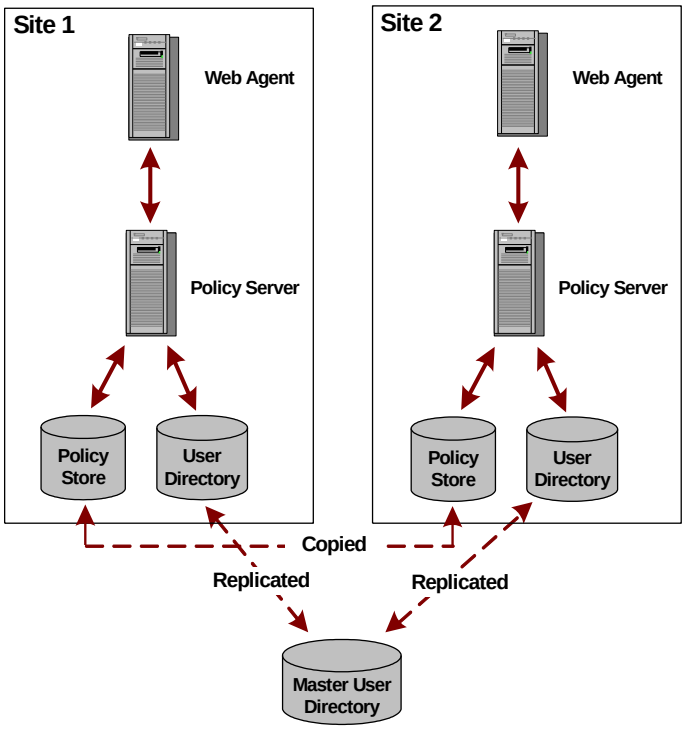
Use the procedures outlined in this guide to upgrade this environment.

Clustered Environment

A clustered environment is similar to the CA SOA Security Manager environment with a single policy store and multiple SOA Agents and Policy Servers. However, in a cluster, the policy stores are copied, not replicated, the difference being that a copied store is a snapshot of the policy store at a specific point in time; it is not dynamically updated. A replicated store is updated automatically. Typically a change is made to a primary database and then the changes are propagated to secondary databases.

In addition, you can upgrade one cluster site independently from another and still maintain single sign-on between them.

The following figure illustrates the clustered environment on a smaller scale:

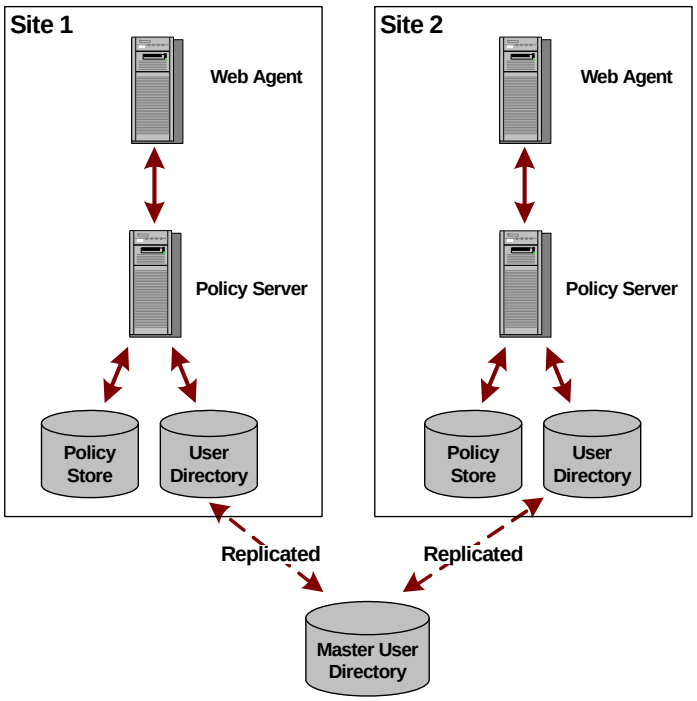


Use the procedures outlined in this guide to upgrade this environment.

Shared User Directory Environment

In this environment, two sites have multiple SOA Agents and multiple Policy Servers, but they maintain their own set of policies stored in two separate policy stores. These sites maintain single sign-on by replicating the same master user directory.

The following figure illustrates the shared user directory environment on a smaller scale:



Use the procedures outlined in this guide to upgrade this environment.

Chapter 2: Upgrading from CA SOA Security Manager r12.1 SP3

This section contains the following topics:

Supported Upgrade Paths

An upgrade consists of deploying CA SiteMinder® Web Services Security 12.52 components to an existing CA SOA Security Manager environment. Upgrading to 12.52 can be accomplished in two ways:

- Completing a migration.
- Configuring a parallel CA SiteMinder® Web Services Security 12.52 environment next to an existing CA SOA Security Manager environment. Both environments use one or more key stores to maintain single sign–on.

Migration Considerations

Consider the following before beginning the migration.

Administrative UI Upgrade Options

Consider the following items:

- If you deployed the r12.1 SP3 Administrative UI to an existing application server infrastructure, you cannot upgrade the Administrative UI to 12.52.

  a. Uninstall the r12.1 SP3 version of the Administrative UI.

  b. Install an application server that CA SiteMinder® supports.

  c. Install a new 12.52 Administrative UI.

  Note: For more information about installing the Administrative UI, see the *Policy Server Installation Guide*.

- If you deployed the r12.1 SP3 Administrative UI using the embedded version of JBoss, run the 12.52 Administrative UI prerequisite installer and the Administrative UI installer to upgrade the Administrative UI.

  Note: For more information about upgrading an Administrative UI, see How to Migrate from r12.1 SP3.

Administrative UI Protection with SiteMinder

You can protect a 12.52 Administrative UI with CA SiteMinder®. Protecting the Administrative UI requires that you complete the following steps:

1. Configure an agent to work with a reverse proxy server.

   Note: For more information about configuring a reverse proxy server, see the *Web Agent Configuration Guide*.

2. Configure an external administrator store. You enable CA SiteMinder® authentication when you configure the store.

   Note: For more information about configuring an external administrator store, see the *Policy Server Configuration Guide*.

If you have configured an r12.1 SP3 Administrative UI with an external administrator store and you want to enable CA SiteMinder® authentication, complete the following steps:

1. Configure an agent to work with a reverse proxy server.
2. Reconfigure the external administrator store with the required agent settings.

Important! The Administrative UI does not retain the settings when you reconfigure the store. Before you reconfigure the connection, we recommend that you view the connection and record the settings.

Certificate Data Management

The certificate data store is replacing the CA SiteMinder® key database (smkeydatabase). If you have one or more smkeydatabases deployed in your environment, consider the following items:

- The certificate data store is collocated with the 12.52 policy store. A single certificate data store replaces the need for an individual smkeydatabase instance on each Policy Server host system.
- As part of a Policy Server upgrade, all smkeydatabase content is automatically backed up and migrated to the certificate data store.

- A 12.52 Policy Server can only communicate with a certificate data store. A 12.52 Policy Server and the respective local smkeydatabase do not operate in compatibility mode. However, all Policy Servers that have not been upgraded continue to communicate with their local version of the smkeydatabase.

  Important! If the migration of the smkeydatabase fails, do not return the Policy Server to the environment. Returning the Policy Server after a failed migration causes all transactions that require the certificate data to fail.

- Synchronize all smkeydatabase instances before beginning the migration. Synchronizing all instances helps avoid data collisions. Data collisions prevent a successful migration.
- All Policy Servers that share a common view into the same policy store have access to the same keys, certificates, and certificate revocation lists (CRL).
- The purpose of the certificate data store remains unchanged from the purpose of the smkeydatabase. This store makes the following available to the CA SiteMinder® environment:
  - Certificate authority (CA) certificates
  - Public and private keys
  - Certificate revocation lists
- You can continue to use the CA SiteMinder® key tool to manage the certificate data store. However, several options are deprecated.

  Note: For more information, see the *Policy Server Release Notes*.
- If a CRL is stored in an LDAP directory service, consider the following items:
  - CA SiteMinder® no longer requires that the issuer of the CRL is the same CA that issued the corresponding root certificate.
  - CA SiteMinder® no longer performs this check. This behavior is consistent with the requirements for a text–based CRL.

More information:

Synchronize Key Database Instances (see page 28)

Avoid Policy Store Corruption

To avoid possible policy store corruption, be sure that the server that is hosting policy store is configured to store objects in UTF-8 form.

Note: For more information about configuring your server to store objects in UTF-8 form, see your vendor–specific documentation.

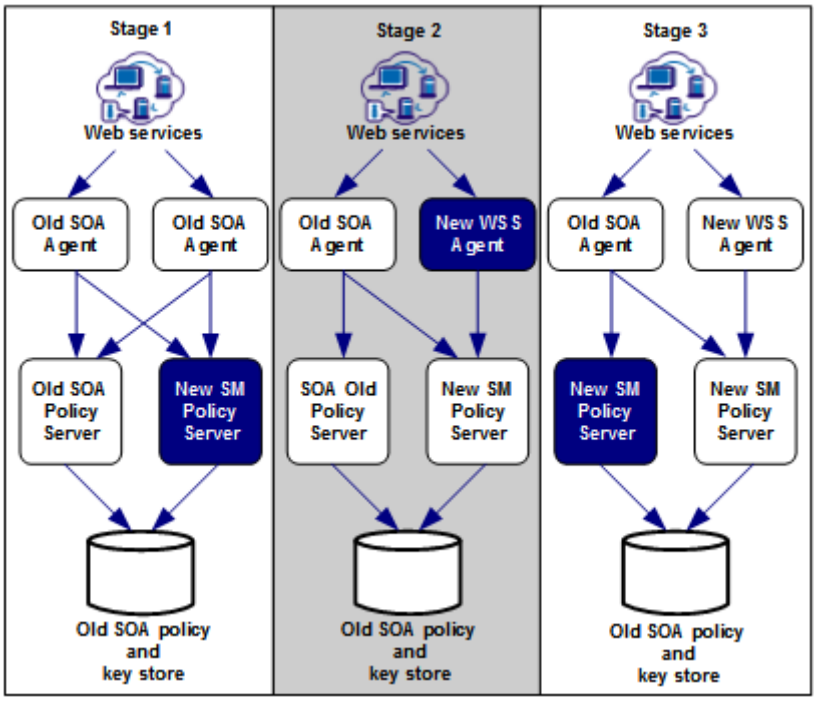
How the r12.1 SP3 Migration Works

To migrate a CA SOA Security Manager deployment with multiple Policy Servers and SOA Agents, remove one of the Policy Servers and SOA Agents from the CA SOA Security Manager environment. While these components are being upgraded, the remaining Policy Servers and SOA Agents continue to protect your resources.

Continue removing and upgrading CA SiteMinder® components until all components are upgraded or operating in mixed–mode compatibility.

The following figures illustrate a simple r12.1 SP3 environment and detail the order in which existing components are upgraded.

Note: Each figure depicts a single policy/key store. Your environment can use separate policy and key stores.

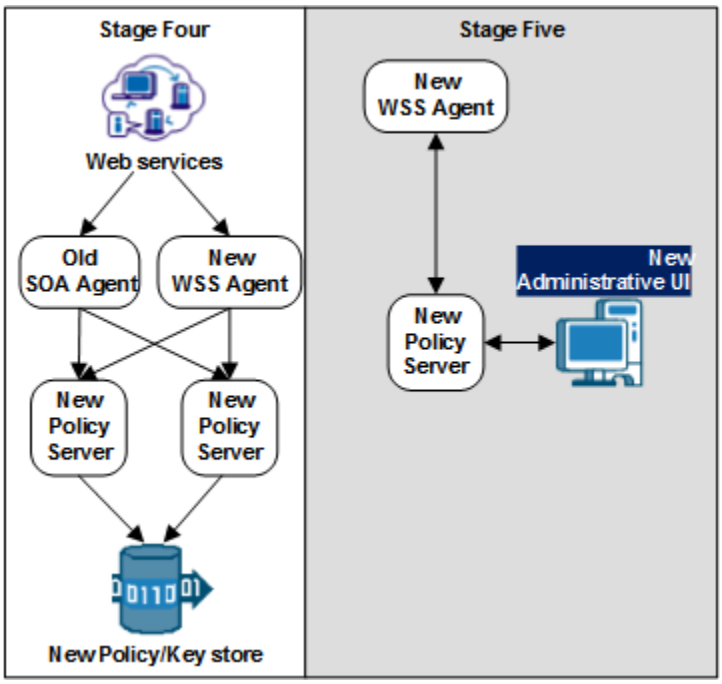


1. In stage one, an r12.1 SP3 Policy Server is upgraded. The 12.52 Policy Server operates in compatibility mode. Consider the following items:
   - The r12.1 SP3 SOA Agents continue to communicate with the 12.52 Policy Server.
   - The 12.52 Policy Server continues to communicate with the r12.1 SP3 policy and key store.
   - The r12.1 SP3 Policy Server continues to communicate with the r12.1 SP3 policy and key store.

- If an r12.1 SP3 Administrative UI is configured with the 12.52 Policy Server, the Administrative UI continues to communicate with the Policy Server to manage objects in the r12.1 SP3 policy store.

2. In stage two, an r12.1 SP3 SOA Agent is upgraded to 12.52.
   - The r12.1 SP3 SOA Agent continues to communicate with the r12.1 SP3 and the 12.52 Policy Server.
   - The 12.52 Web Agent only communicates with the 12.52 Policy Server.

     Note: You cannot configure a new 12.52 agent with a 12.52 Policy Server until the policy store is upgraded to 12.52.
3. In stage three, the remaining Policy Server is upgraded to 12.52. The 12.52 Policy Servers operate in compatibility mode with the r12.1 SP3 policy and key store.



4. In stage four, the r12.1 SP3 policy and key store is upgraded to 12.52.
5. In stage five, the Administrative UI is upgraded.

How to Migrate from r12.1 SP3

Complete the following procedures to migrate from r12.x to 12.52:

1. Review the installation and upgrade considerations in the *Policy Server Release Notes*.
2. (Optional) If your environment includes multiple instances of smkeydatabase, synchronize all instances. Part of the Policy Server upgrade includes migrating all content in the smkeydatabase to the certificate data store.
3. Review the sections in Before You Upgrade the Policy Server.
4. Upgrade an r12.1 SP3 Policy Server to 12.52.
5. Upgrade an r12.1 SP3 SOA Agent to 12.52.
6. Upgrade the remaining r12.1 SP3 Policy Servers and SOA Agents to 12.52, respectively.
7. Upgrade the r12.1 SP3 policy and key stores to 12.52.
8. Upgrade the r12.1 SP3 Administrative UI.

Synchronize Key Database Instances

Synchronize all smkeydatabase instances before beginning the migration to a new version.

Note: Use the smkeytool utility to synchronize the smkeydatabases and resolve all data inconsistencies between smkeydatabase instances. For more information about the smkeytool utility, see the *Policy Server Administration Guide*.

Previous versions of CA SiteMinder® used a local smkeydatabase to store certificate data. Each Policy Server required its own smkeydatabase. For version 12.52, a centralized certificate data store replaces the local smkeydatabases.

As part of a Policy Server upgrade, the installer automatically backs up the local smkeydatabase and tries to migrate all content to the certificate data store. This process includes a comparison of both stores before starting the migration.

Important! If the migration of the smkeydatabase fails, do not return the Policy Server to the environment. Returning the Policy Server after a failed migration causes all transactions that require the certificate data to fail.

Use the following guidelines to identify and resolve data consistencies among your smkeydatabases:

- Verify that each certificate-authority certificate references certificate revocation lists consistently across instances.

  Example: A certificate-authority certificate consistently references certificate revocation lists in an LDAP directory service.

- Verify that the defaultentpriseprivatekey alias represents the same private key/certificate pair in all instances.
- Verify that the same alias maps to the same certificate or key/certificate pair.
- Verify that the same certificate-authority certificates map to the same certificate revocation lists.
- Verify that a revoked or expired certificate is not present.
- Verify that all CRL information is valid.

Important! After you resolve all data inconsistencies, we recommended that you do not modify a smkeydatabase until all migrations are complete.

Upgrade an r12.1 SP3 Policy Server

The following sections detail how to upgrade an r12.1 SP3 Policy Server on Windows and UNIX.

Before You Upgrade

Before you upgrade a Policy Server, consider the following items:

- (Optional) If the environment contains multiple smkeydatabase instances, be sure to synchronize all content. Synchronizing resolves data inconsistencies that can prevent the Policy Server installer from automatically migrating content to the certificate data store.
- You upgrade the Policy Server using the installation media on the Technical Support site.

  Note: For a list of installation media names, see the *Policy Server Release Notes*.

- (Linux) Be sure that the required Linux libraries are installed to the Policy Server host system. For more information, see Required Linux Libraries.
- Remove the Policy Server from the environment. Removing the Policy Server prevents CA SiteMinder® Agents from contacting the Policy Server during the upgrade.

- Shut down all instances of the Policy Server Management Console.
- (UNIX) The user account upgrading the Policy Server must have executable permissions on the directory that contains the installation media. If the user account does not have these permissions, run the following command:

  `chmod +x installation_media`

  installation_media

  Specifies the Policy Server installation executable.
- (UNIX) If you execute the Policy Server across different subnets, it can crash. Run the Policy Server installer directly on the host system.
- (UNIX) Upgrade the Policy Server using an account with at least the same permissions as the user who installed the Policy Server. For example, if a root user installed the Policy Server, upgrade the Policy Sever using a root user.
- The CA SiteMinder® documentation is not installed with the Policy Server. We recommend that you locate the documentation before you upgrade.

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*.l386

libstdc++-4.x.x-x.el5.i686.rpm

Red Hat 6.x:

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

Additionally, for Red Hat 6.x (64-bit):

Note: All the RPM packages that are required for 64-bit Red Hat 6.x are *32-bit* packages.

libXau-1.0.5-1.el6.i686.rpm

libxcb-1.5-1.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

Korn Shell (ksh) Package Required on Linux

The ksh Korn shell is required during Policy Server installation and upgrade on Linux platforms. Verify that the appropriate version for your Linux environment is installed.

Red Hat 5.x 32-bit

ksh-20100621-12.el5.i386.rpm

Red Hat 5.x 64-bit

ksh-20100621-12.el5.x86_64.rpm

Red Hat 6.x 32-bit

ksh-20100621-16.el6.i686.rpm

Red Hat 6.x 64-bit

ksh-20100621-16.el6.x86_64.rpm

Upgrade a Policy Server on Windows

Follow these steps:

1. Review Before You Upgrade (see page 29).
2. Exit all applications that are running.
3. Navigate to the installation media.
4. Double–click *installation_media*.

   installation_media

   Specifies the name of the Policy Server installation executable.

   The Policy Server installer starts.

   Note: For a list of installation media names, see the *Policy Server Release Notes*.
5. Considering the following items when running the installer:
   - The installer prompts you to select the components. When selecting components:
     - Reconfigure components that had been previously configured for the environment. Be sure to select the respective components.

- If you do not intend on configuring a new policy store, clear the Policy Store check box. You do not have to reconfigure existing policy store settings. The Policy Server retains the policy store settings after the upgrade. You manually upgrade an existing policy store.

- If the installer detects a smkeydatabase, it:
  - Backs up the smkeydatabase.
  - Attempts to migrate the content to the certificate data store.

  Important! If the migration of the smkeydatabase fails, do not return the Policy Server to the environment. Returning the Policy Server after a failed migration causes all transactions that require the certificate data to fail.

6. Review the installation settings and click Install.

   The Policy Server is upgraded. The selected components are configured for use with the Policy Server.

More information:

Troubleshoot a Policy Server Upgrade (see page 36)

Upgrade a Policy Server Using a GUI on UNIX

Follow these steps:

1. Review Before You Upgrade (see page 29).
2. Exit all applications that are running.
3. Execute the following script in a ksh shell from the CA SiteMinder® installation directory:

   ```
   ../ca_ps_env.ksh
   ```

   Note: Be sure that there is a space between the periods.
4. Open a shell and navigate to the installation executable.
5. Enter the following command:

   ```
   ./installation_media
   ```

   installation_media

   Specifies the name of the Policy Server installer executable.

   The Policy Server installer starts.

   Note: For a list of installation media names, see the *Policy Server Release Notes*.

6. Considering the following items when running the installer:
   - The installer prompts you to select the components. When selecting components:
     - Reconfigure components that had been previously configured for the environment. Be sure to select the respective components.
     - If you are not configuring a new policy store, clear the Policy Store check box. You do not have to reconfigure existing policy store settings. The upgraded Policy Server retains the policy store settings. You manually upgrade an existing policy store.
   - If the installer detects a smkeydatabase, it:
     - Backs up the smkeydatabase.
     - Attempts to migrate the content to the certificate data store.

     Important! If the migration of the smkeydatabase fails, do not return the Policy Server to the environment. Returning the Policy Server after a failed migration causes all transactions that require the certificate data to fail.
7. Review the installation settings and click Install.

   The Policy Server is upgraded. The selected components are configured for use with the Policy Server.
8. Click Done.
9. Execute the following script in a ksh shell from the CA SiteMinder® installation directory:

   ```
   ../ca_ps_env.ksh
   ```

   Note: Be sure that there is a space between the periods.

More information:

Troubleshoot a Policy Server Upgrade (see page 36)

Upgrade a Policy Server on UNIX Using a Console

Follow these steps:

1. Review Before You Upgrade (see page 29).
2. Exit all applications that are running.
3. Execute the following script in a ksh shell from the CA SiteMinder® installation directory:

   ```
   ../ca_ps_env.ksh
   ```

   Note: Be sure that there is a space between the periods.

4. Open a shell and navigate to the installation executable.
5. Enter the following command:

   ```
   ./installation_media -i console
   ```

   installation_media

   Specifies the name of the Policy Server installer executable.

   The Policy Server installer starts.

   Note: For a list of installation media names, see the *Policy Server Release Notes*.
6. Considering the following items when running the installer:

   The installer prompts you to select CA SiteMinder® components. Each component is prefixed with a number. Type numbers separated with a comma (,) to select one or more components. Enter only a comma to select none of the features.

   - Consider the following items when selecting components:
     - Reconfigure components that had been previously configured for the environment. Be sure to select the respective components.
     - Only select Policy Store if you are configuring a new policy store. You do not have to reconfigure existing policy store settings. The upgraded Policy Server retains the policy store settings. You manually upgrade an existing policy store.
   - If the installer detects a smkeydatabase, it:
     - Backs up the smkeydatabase.
     - Attempts to migrate the content to the certificate data store.

     Important! If the migration of the smkeydatabase fails, do not return the Policy Server to the environment. Returning the Policy Server after a failed migration causes all transactions that require the certificate data to fail.
7. Review the installation settings and press Enter.

   The Policy Server is upgraded. The selected components are configured for use with the Policy Server.
8. Click Done.
9. Execute the following script in a ksh shell from the CA SiteMinder® installation directory:

   ```
   ../ca_ps_env.ksh
   ```

   Note: Be sure that there is a space between the periods.

More information:

Troubleshoot a Policy Server Upgrade (see page 36)

Custom Server–Side Code Requirements

Your Policy Server operating system determines whether recompiling custom server–side code is required. Use the following table to identify the requirement:

Operating System	Required?
Microsoft Windows and UNIX	No. Recompiling the custom code is optional.
Red Hat Linux	Yes. Upgrade the SDK and recompile the custom code using GCC 3.4.

Troubleshoot a Policy Server Upgrade

If you experience problems during the upgrade:

- You can locate the Policy Server installation log file in *siteminder_home*\siteminder\install_config_info.

  siteminder_home

  Specifies the Policy Server installation path.

- You can locate the smkeydatabase migration log (smkeydatabaseMigration.log) in *siteminder_home*\log.

  Note: A Policy Server upgrade and a smkeydatabase migration are separate processes. If the smkeydatabase migration fails, the Policy Server upgrade does not fail.

Upgrade an r12.1 SP3 SOA Agent

Upgrading the r12.1 SP3 SOA Agents in the environment to 12.52 WSS Agents is the second step in the migration process. You can upgrade the SOA Agents in your environment in any order.

Note: CA SiteMinder® Web Services Security r12.1 SP3 SOA Agents can communicate with a 12.52 Policy Server. Therefore, you can upgrade your Policy Server to 12.52 before upgrading SOA agents while continuing to protect resources.

How to Prepare for a SOA Agent Upgrade

Prepare for upgrading a SOA Agent using the following process:

- (UNIX) Be sure that you upgrade the SOA Agent with the same account that was used to install it. If you use a different account, the upgrade can fail.
- Verify that the Policy Server is configured
- Identify the required administrator and Policy Server object names
- Identify SOA Agent requirements
- Back up customized files
- Replace existing read-only files during the upgrade (if prompted).

Verify the Policy Server is Configured

Before you upgrade the SOA Agent:

- Be sure that the Policy Server can connect to the SOA Agent host system.
- Be sure that the Policy Server is running before registering trusted hosts. You start the Policy Server on the Status tab of the Policy Server Management Console.

Identify the Required Administrator and Policy Server Object Names

Before upgrading the SOA Agent, you need the following information from the Policy Server administrator.

- Name of the CA SiteMinder® Administrator allowed to register hosts.
- Name of the Host Configuration Object.
- Name of the Agent Configuration Object.

Identify WSS Agent Requirements

For more information about patches and other WSS Agent requirements, see the respective *WSS Agent Guide*.

Replace Existing Read-only Files

When you upgrade a SOA Agent, you may see messages asking whether you want to replace read-only files. Select Yes to all.

Upgrade an r12.1 SP3 SOA Agent

Use the 12.52 WSS Agent installer to upgrade a web agent.

Note: For more information about upgrading a SOA agent, see the respective WSS *Agent Guide*.

How to Upgrade an r12.1 SP3 Policy Store

Complete the following procedures to upgrade an r12.1 SP3 policy store to 12.52:

1. Stop all Policy Servers that are communicating with the policy store (see page 38).
2. Import the policy store data definitions (see page 38).
3. Import the default policy store objects (see page 39).
4. If you configured policy objects related to generating SAML assertions using the FSS Administrative UI, run the XPS sweeper utility to complete the migration of your legacy federation objects (see page 40).
5. Start all Policy Servers that are communicating with the policy store (see page 40).

Stop all Policy Severs

Stopping all of the Policy Servers that are communicating with the policy store helps to prevent policy store corruption during the upgrade.

Follow these steps:

1. Log in to the Policy Server host system.
2. Complete one of the following steps:
   - (Windows)
     a. Open the Policy Server Management Console and click Stop.
     b. Click OK to close the console.
   - (UNIX) Use the following supplied script:
     `install_path/siteminder/stop-all`

     install_path

     Specifies the Policy Server installation path.
3. Repeat this procedure for each Policy Server that is communicating with the policy store.

Import the Policy Store Data Definitions

Importing the policy store data definitions defines the types of objects that can be created and stored in the policy store.

Follow these steps:

1. Open a command window and navigate to *siteminder_home*\xps\dd.

   siteminder_home

   Specifies the Policy Server installation path.

2. Run the following command:

   ```
   XPSDDInstall SmMaster.xdd
   ```

   XPSDDInstall

   Imports the required data definitions.

Import the Default Policy Store Objects

Importing the default policy store objects configures the policy store for use with the Administrative UI and the Policy Server.

Consider the following items:

- Be sure that you have write access to *siteminer_home*\bin. The import utility requires this permission to import the policy store objects.

  siteminder_home

  Specifies the Policy Server installation path.

- Before running a CA SiteMinder® utility or executable on Windows Server 2008, open the command line window with administrator permissions. Open the command line window this way, even if your account has administrator privileges. For more information, see the release notes for your CA SiteMinder® component.

Follow these steps:

1. Open a command window and navigate to *siteminder_home*\db.
2. Import one of the following files:
   - To import smpolicy.xml, run the following command:

     ```
     XPSImport smpolicy.xml -npass
     ```

   - To import smpolicy–secure.xml, run the following command:

     ```
     XPSImport smpolicy-secure.xml -npass
     ```

   Note: You use either file to configure a new policy store and upgrade an existing store. When imported as part of an upgrade, the file does not overwrite existing default objects that were modified. Both files include the default policy store objects. These objects include the default security settings in the default Agent Configuration Object (ACO) templates. The secure file provides more restrictive security settings.

   –npass

   Specifies that no passphrase is required. The default policy store objects do not contain encrypted data.

   The default policy store objects are imported.

Run the XPS Sweeper Utility

If you configured policy objects related to generating SAML assertions using the FSS Administrative UI, run the XPS sweeper utility (XPSSweeper) to complete the migration of these objects.

Follow these steps:

1. Log in to the Policy Server host system.
2. Run the following command to make available your legacy federation objects to the Administrative UI:

   `XPSSweeper`

   All legacy federation created using the FSS Administrative UI are available in the Administrative UI.

Start all Policy Servers

Starting all Policy Servers resumes communication between all of the Policy Servers and the upgraded policy store.

Follow these steps:

1. Log in to the Policy Server host system.
2. Complete one of the following steps:
   - (Windows)
     a. Open the Policy Server Management Console and click Start.
     b. Click OK to close the console.
   - (UNIX) Use the following supplied script:
     `install_path``/siteminder/start-all`

     install_path

     Specifies the Policy Server installation path.
3. Repeat this procedure for each Policy Server that is communicating with the policy store.

The policy store is upgraded.

How to Upgrade an r12.1 SP3 Administrative UI

Complete the following procedures to upgrade an r12.1 SP3 Administrative UI to 12.52 on Windows and UNIX.

1. Verify that you are prepared for the upgrade (see page 41)
2. Verify that required libraries are present on Linux systems
3. Upgrade the Administrative UI on Windows (see page 44)
4. Upgrade the Administrative UI on UNIX using a GUI (see page 44)
5. Upgrade the Administrative UI on UNIX using a console (see page 46)

Before You Upgrade

Consider the following items before you upgrade the Administrative UI:

- **Important!** Review the Administrative UI upgrade options.
- Upgrade the Administrative UI using the installation media on the Technical Support site.

  Note: For a list of installation media names, see the *Policy Server Release Notes*.
- Extract the executable for the prerequisite installer into the same directory that you extracted the Administrative UI installer. The installers must be in the same location so that the layout.properties file, included with the installation zip, is co-located with both executables.

  The installation zip contains a layout.properties file at the same level as the installation media. If you moved the installation media after extracting the installation zip, move the properties file to the same location or the installation fails.
- (Windows) Run the installer from the Administrative UI host system. Do not run the installer from a mapped network share or UNC path.
- (Linux) Be sure that the required Linux libraries are installed to the Administrative UI host system. For more information, see Required Linux Libraries.
- **Important!** (UNIX) Depending on your permissions, run the following command to add executable permissions to the directory that contains the installation media:

  `chmod -R+x` *`directory`*

  directory

  Specifies the directory that contains the installation media.
- (UNIX) If you execute the Administrative UI installer across different subnets, it can crash. Run the Administrative UI installer directly on the host system.

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

libstdc++-4.x.x-x.el5.i686.rpm

Red Hat 6.x:

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

Additionally, for Red Hat 6.x (64-bit):

Note: All the RPM packages that are required for 64-bit Red Hat 6.x are *32-bit* packages.

libXau-1.0.5-1.el6.i686.rpm

libxcb-1.5-1.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

Upgrade the Administrative UI on Windows

Be sure that you extracted the prerequisite installer executable into the same directory that you extracted the Administrative UI installer. The installers must be in the same location so that the layout.properties file, included with the Administrative UI installation zip, is co-located with both executables.

If you move the prerequisite or Administrative UI installation media after extracting the zips, move the executables and the layout.properties file to the same location. Both executables and the layout.properties file must be co-located or the stand-alone installation fails.

Upgrading the Administrative UI requires that you run a prerequisite installer and the Administrative UI installer.

Follow these steps:

1. Exit all applications that are running.
2. Stop the application server that is hosting the Administrative UI.

   Note: For more information about stopping the application server, see the r12.x *Policy Server Installation Guide*.
3. Run the following executable:

   `adminui-pre-req-`*`version-cr`*`-win32.exe`
4. Follow the prerequisite installer prompts.
5. Run the following executable:

   `ca-adminui-`*`version-cr`*`-win32.exe`
6. Follow the installer prompts and confirm the upgrade of the Administrative UI.
7. Review the installation settings and click Install.

   The Administrative UI is upgraded.

Upgrade the Administrative UI on UNIX

Be sure that you extracted the prerequisite installer executable into the same directory that you extracted the Administrative UI installer. The installers must be in the same location so that the layout.properties file, included with the Administrative UI installation zip, is co-located with both executables.

If you move the prerequisite or Administrative UI installation media after extracting the zips, move the executables and the layout.properties file to the same location. Both executables and the layout.properties file must be co-located or the stand-alone installation fails.

You can upgrade the Administrative UI in GUI or console mode.

Follow these steps:

1. Exit all applications that are running.
2. Stop the application server that is hosting the Administrative UI.

   Note: For more information about stopping the application server, see the r12.x *Policy Server Installation Guide*.
3. Open a shell and navigate to one of the following prerequisite installation executables:

   `adminui-pre-req-`*`version-cr`*`-linux.bin`
   `adminui-pre-req-`*`version-cr`*`-sol.bin`
4. Enter the command for the appropriate mode:

   GUI Mode

   `./prerequisite_installation_media`

   Console Mode

   `./prerequisite_installation_media –i console`
5. Follow the prerequisite installer prompts.
6. Open a shell and navigate to one of the following installation executables:

   `ca-adminui-`*`version-cr`*`-linux.bin`

   `ca-adminui-`*`version-cr`*`-sol.bin`
7. Enter the command for the appropriate mode:

   GUI Mode

   `./installation_media`

   Console Mode

   `./installation_media -i console`
8. Follow the prompts and confirm the upgrade of the Administrative UI.
9. Review the installation settings and click Install.
10. Start the application server that is hosting the Administrative UI.

    Note: For more information about starting the application server, see the 12.52 *Policy Server Installation Guide*.

    The Administrative UI is upgraded.

Upgrade the Administrative UI on UNIX Using a Console

Be sure that you extracted the prerequisite installer executable into the same directory that you extracted the Administrative UI installer. The installers must be in the same location so that the layout.properties file, included with the Administrative UI installation zip, is co-located with both executables.

If you move the prerequisite or Administrative UI installation media after extracting the zips, move the executables and the layout.properties file to the same location. Both executables and the layout.properties file must be co-located or the stand-alone installation fails.

Upgrading the Administrative UI requires that you run a prerequisite installer and the Administrative UI installer.

Follow these steps:

1. Exit all applications that are running.
2. Stop the application server that is hosting the Administrative UI.

   Note: For more information about stopping the application server, see the r12.x *Policy Server Installation Guide*.
3. Open a shell and navigate to one of the following prerequisite installation executables:

   `adminui-pre-req-`*`version-cr`*`-linux.bin`
   `adminui-pre-req-`*`version-cr`*`-sol.bin`
4. Enter the following command:

   `./`*`prerequisite_installation_media`* `–i console`
5. Follow the prerequisite installer prompts.
6. Open a shell and navigate to one of the following installation executables:

   `ca-adminui-`*`version-cr`*`-linux.bin`
   `ca-adminui-`*`version-cr`*`-sol.bin`
7. Enter the following command:
   `./`*`installation_media`* `-i console`
8. Follow the prompts and confirm that the installer can upgrade the Administrative UI.
9. Review the installation settings and press Enter.
10. Start the application server that is hosting the Administrative UI.

    Note: For more information about starting the application server, see the 12.52 *Policy Server Installation Guide*.

    The Administrative UI is upgraded.

How a Parallel Upgrade Works

You do not have to migrate an existing r12.1 SP3 environment to 12.52. Rather, you can configure a parallel 12.52 environment beside an existing deployment.

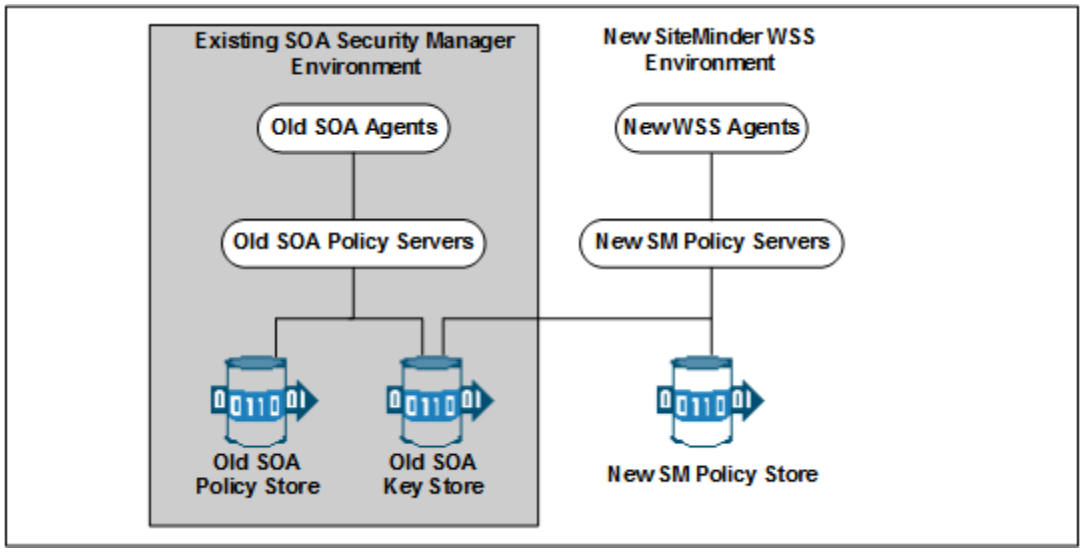
The following figure illustrates a simple parallel upgrade and details:

- An r12.1 SP3 environment that continues to protect existing resources.
- An r12.1 SP3 Administrative UI that is used to manage CA SiteMinder® objects in the r12.1 SP3 policy store.

A 12.52 environment that protects new resources.

- A 12.52 Administrative UI that is used to manage CA SiteMinder® objects in the 12.52 policy store.
- A common r12.1 SP3 key store. The common key store enables single sign-on between both environments.

  Note: Although not illustrated, you can enable single sign–on between both environments using multiple key stores.



How to Configure a Parallel Environment

Complete the follow procedures to configure a parallel environment:

1. Review the parallel environment key management options to determine how to implement single sign–on.
2. Create the 12.52 environment.

3. Do one of the following:
   - Be sure that both environments meet the common key store single sign–on requirements.
   - Be sure that both environments meet the multiple key store single sign–on requirements.
4. Migrate the r12.1 SP3 policy store data. Use the 12.52 version of the XPSImport utility to import 12.52 default policy objects to the 12.1 SP3 policy store using the following command

   ```
   XPSImport smpolicy.xml –npass
   ```
5. If your r12.1 SP3 environment contains smkeydatabases:
   a. Synchronize all instances.
   b. Migrate the content of a smkeydatabase to the 12.52 certificate data store.
6. If you are managing legacy federation (Federation Security Services) objects in your r12.x environment, migrate the assertion issuer ID.
7. Review the user directory single sign–on requirements.

More information:

Certificate Data Management (see page 24)
Synchronize Key Database Instances (see page 28)

Parallel Environment Key Management Options

Managing CA SiteMinder® keys to maintain single sign–on between the existing environment and 12.52 environment is critical to a successful parallel upgrade. Two CA SiteMinder® key management options are available. The option you deploy depends on how you implement one or more key stores across both environments. The options include:

- Multiple policy stores with a common key store
- Multiple policy stores with separate key stores

Common Key Store Deployment

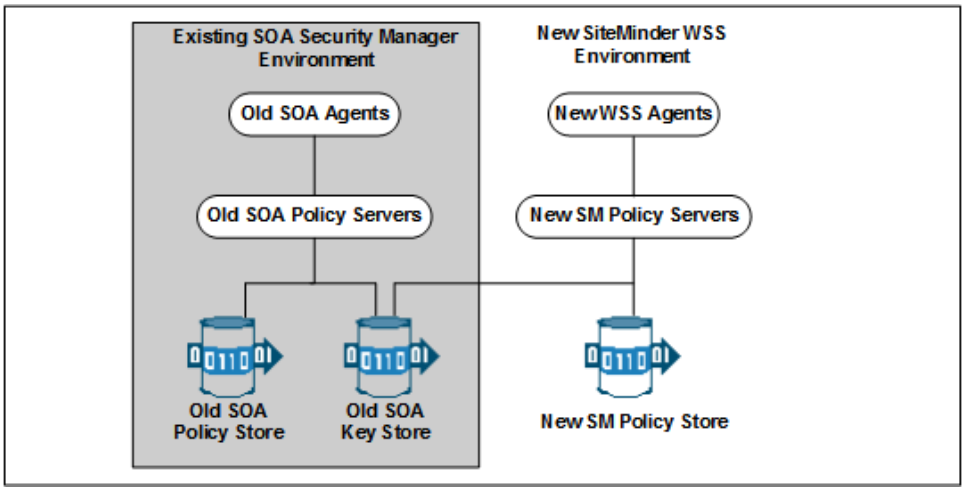
All Policy Servers can use a single key store for key rollover. The following figure illustrates:

- r12.1 SP3 Policy Servers connecting to an r12.1 SP3 policy store.
- 12.52 Policy Servers connecting to a 12.52 policy store.
- A common r12.1 SP3 key store maintaining key data for all Policy Servers. The common key store lets Agents associated with all Policy Server share keys. Sharing the keys enables single sign–on between both environments.

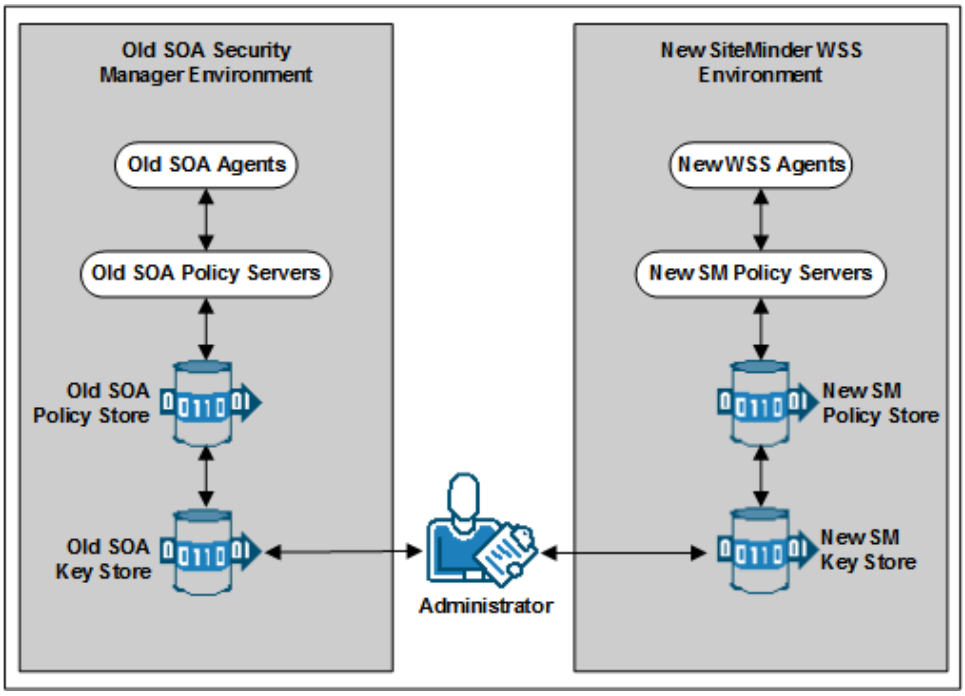
  Important! The r12.1 SP3 key store must be configured separately from the r12.1 SP3 policy store.
- All Policy Servers connecting to a common key store to retrieve new keys.

  Important! The 12.52 Policy Servers must be configured with the r12.1 SP3 key store. r12.1 SP3 Policy Servers cannot communicate with a 12.52 key store.
- All SOA Agents and WSS Agents polling their respective Policy Server to retrieve new keys.

Note: Although not illustrated, policy store and key store data can be replicated for failover. The database or directory server type determines how you replicate data. For more information about key management in a master/slave environment, see the *Policy Server Administration Guide*. For more information about replicating data, see your vendor–specific documentation.



Multiple Key Store Deployment



Existing r12.1 SP3 Policy Servers can use an r12.1 SP3 key store for key rollover, while 12.52 Policy Servers can use a 12.52 key store for key rollover. The following figure illustrates:

- r12.1 SP3 Policy Servers connecting to an r12.1 SP3 policy store.
- 12.52 Policy Servers connecting to a 12.52 policy store.
- r12.1 SP3 Policy Servers connecting to an r12.1 SP3 key store to retrieve new keys.
- 12.52 Policy Servers connecting to a 12.52 key store to retrieve new keys.
- A CA SiteMinder® administrator using the Administrative UI to configure static Agent and Session keys for each key store.

  Important! If all key stores do not use the same Agent and Session keys, single sign–on fails.
- r12.1 SP3 SOA Agents polling their respective r12.1 SP3 Policy Servers to retrieve new keys.

- 12.52 WSS Agents polling their respective 12.52 Policy Servers to retrieve new keys.

Note: Although not illustrated, policy store and key store data can be replicated for failover. The database or directory server type determines how you replicate data. For more information about key management in a master/slave environment, see the *Policy Server Administration Guide*. For more information about replicating data, see your vendor–specific documentation.

Create the 12.52 Environment

You can configure a 12.52 environment independently of the existing environment. Install and configure the 12.52 components in the following order:

1. One or more Policy Servers.

   Important! If you are maintaining single sign–on with a common key store, all Policy Servers must use the same encryption key. If you do not know the value of the encryption key, you can reset the r12.1 SP3 value in the policy store. Use the new value when installing 12.52 Policy Servers.

   Note: For more information about resetting the policy store encryption key, see the *Policy Server Administration Guide*.

2. A policy store.
3. An Administrative UI.
4. One or more WSS Agents.

Note: For more information about installing a Policy Server, a policy store, and an Administrative UI, see the *Policy Server Installation Guide*. For more information about installing WSS Agents, see the corresponding *WSS Agent Guides*.

Common Key Store Single Sign–on Requirements

If you are deploying a common key store, do the following or single sign–on fails:

- Be sure that the r12.1 SP3 policy and key store are configured separately.

  Note: For more information about configuring a key store, see the *Policy Server Administration Guide*.

- Leave the key store version at r12.1 SP3. 12.52 Policy Servers can communicate with an r12.1 SP3 key store, but r12.1 SP3 Policy Servers cannot communicate with a 12.52 key store.
- Configure all Policy Servers to use the common r12.1 SP3 key store.

- Verify that all Policy Servers use the same encryption key. If you do not know the value of the encryption key, you can reset the r12.1 SP3 value in the policy store. Use the new value when installing a 12.52 Policy Server.

  Note: For more information about resetting the policy store encryption key, see the *Policy Server Administration Guide*.

- Nominate a single Policy Server to generate dynamic Agent keys. Disable Agent key generation for the remaining Policy Servers.

  Note: For more information about dynamically generating Agent keys, see the *Policy Server Administration Guide*.

How to Separate a Key Store from a Policy Store

Complete the following procedures to separate the key store from the policy store:

1. Install or locate a set–up Policy Server. A set–up Policy Server is a Policy Server that is not configured with the collocated policy/key store.
   - If a Policy Server is configured with the collocated store, you cannot use it to configure the new key store instance. The required CA SiteMinder® utilities available on the Policy Server host system are configured to manage the collocated store.
   - The set–up Policy Server makes available a separate set of the required utilities. The separate set lets you configure the key store without interfering with the collocated store.
2. Use the set–up Policy Server host system to create a separate r12.1 SP3 key store instance. Consider the following items:
   - The key store only requires the default policy store schema. For more information about configuring a separate key store, see the r12.1 SP3 *Policy Server Installation Guide*.
   - The key store does not require that you:
     - Set the CA SiteMinder® superuser password.
     - Import the default policy store objects.
3. Disable dynamic agent key generation in the r12.1 SP3 environment.

   Note: If your environment uses static keys, this step is not required. However, be sure that a CA SiteMinder® administrator does not generate a random agent key after you export the keys from the policy store.
4. Export the agent keys from the r12.1 SP3 policy/key store.
5. Import the agent keys in to the r12.1 SP3 key store.
6. Configure all Policy Servers to use the separate key store.
7. If you disabled dynamic agent key generation, re–enable it.

Disable Dynamic Agent Key Generation

Before the key store separation is complete, the r12.1 SP3 environment is operating with two key stores:

- Some Policy Servers use the agents keys in the collocated policy/key store.
- Some Policy Servers use the agent keys in the separate key store.

Disabling dynamic agent key generation prevents a Policy Server from generating keys after you export them for the separate store. Stopping the Policy Server from generating keys prevents single sign–on issues that can occur when the keys are not synchronized in all stores.

Follow these steps:

1. Log in to the r12.1 SP3 Administrative UI.
2. Click Administration, Policy Server.
3. Click Key Management, Agent Key Management.
4. Select the Use Static Agent Key option.
5. Click Submit.

   The Policy Server is configured to use a static key. The Policy Server does not generate keys automatically.

Export the Agent Keys

You export the keys from the collocated policy/key store to make them available to the separate key store.

Follow these steps:

1. Log in to a r12.1 SP3 Policy Server host system. Be sure that this Policy Server is configured with the collocated policy/key store.
2. Run the following command to export only the keys from the policy store:

   ```
   smkeyexport -dadministrator -wpassword -ofile_name
   ```

   Important! Before running a CA SiteMinder® utility or executable on Windows Server 2008, open the command line window with administrator permissions. Open the command line window this way, even if your account has administrator privileges.

   Note: For more information about the utility, see the r12.1 SP3 *Policy Server Administration Guide*.

   Example:

   ```
   smkeyexport -dsuperuser -wpassword -oagentkeys
   ```

The agent keys are exported from the collocated policy/key store.

3. Copy the file that contains the agent keys to the set–up Policy Server host system.

Import the Agent Keys

You import the keys from the collocated policy/key store to make them available to the separate key store.

Follow these steps:

1. Log in to the r12.1 SP3 set–up Policy Server host system.
2. Run the following command to import the agent keys in to the separate key store:

   `smobjimport -f`*`file_name`* `-k`

   Important! Before running a CA SiteMinder® utility or executable on Windows Server 2008, open the command line window with administrator permissions. Open the command line window this way, even if your account has administrator privileges.

   Note: For more information about these modes and arguments, see the r12.1 SP3 *Policy Server Administration Guide*.

   Example:

   ```
   smobjimport -fagentkeys -k
   ```

   The agent keys are imported in to the separate key store.

Configure all Policy Servers to use the Key Store

Configuring all Policy Servers in the parallel environment to use a common r12.1 SP3 key store maintains single sign–on across both environments.

Follow these steps:

1. Identify the Policy Server that is nominated to generate agent keys dynamically. Configure this Policy Server with the key store last.
2. Complete the following steps for all other Policy Servers in the environment:
   a. Log in to the Policy Server host system.
   b. Open the Policy Server Management Console.
   c. Click the Data tab.
   d. Select Key Store from the Database list and clear the Use Policy Store database option.
   e. Select the key store type from the Storage list.

f. Complete one of the following steps:

- (LDAP) Enter the required connection information in the LDAP Key Store section.
- (ODBC) Enter the data source information in the Data Source Information section.

g. Test the Connection.

h. Click OK.

i. Restart the Policy Server to configure the Policy Server to use the key store.

3. Configure the Policy Server that is nominated to generate agent keys to use the key store.

Re-enable Dynamic Agent Key Generation

If you disabled dynamic agent key generation, re–enable the functionality for the Policy Server that is nominated to generate agent keys. Complete this procedure only after all Policy Servers in the environment are configured to use the new key store.

Follow these steps:

1. Log in to the r12.1 SP3 Administrative UI.
2. Click Administration, Policy Server.
3. Click Key Management, Agent Key Management.
4. Select the Use Dynamic Agent Key option.
5. Click Submit.

   The nominated Policy Server is enabled to generate keys dynamically.

You have completed the required tasks to separate the key store from the policy store.

Multiple Key Store Single Sign–on Requirements

If you are deploying multiple key stores, do the following or single sign–on fails:

- Disable dynamic Agent key generation for all Policy Servers.
- Be sure that a CA SiteMinder® administrator has the necessary Administrative UI permissions to specify the same static Agent key and the same session ticket in the r12.1 SP3 and 12.52 key stores.

  Note: For more information about delegating administrator permissions, see the *Policy Server Configuration Guide*.
- Be sure that the same static Agent key and the same session ticket are configured in the r12.1 SP3 and 12.52 key stores.

  Note: For more information about configuring a static Agent key and session ticket, see the *Policy Server Administration Guide*.

Migrate Keys and Certificates

If your environment contains one or more smkeydatabases, migrate their contents to the 12.52 certificate data store.

Follow these steps:

1. Be sure that all r12.1 SP3 smkeydatabases are synchronized (see page 28).
2. Log in to an r12.1 SP3 Policy Server host system and go to the following location:

   PS_home\config\properties

   PS_home

   Specifies the Policy Server installation path.
3. Copy the following file

   smkeydatabase.properties
4. Log in to a 12.52 Policy Server host system and complete the following steps:
   a. Go to the following location:

      siteminder_home\config\properties
   b. Rename the 12.52 version of the smkeydatabase properties file to the following value:

      newsmkeydatabase.properties
   c. Add the r12.1 SP3 version of the properties file to the directory.
   d. Open the 12.52 and r12.1 SP3 properties file in a text editor.

e. Edit the database location path in the r12.1 SP3 version to match the path in the 12.52 version.

Example:

The r12.1 SP3 file references the following path:

```
DBLocation=C\:/Program
Files/netegrity/siteminder/smkeydatabase
```

The 12.52 file references the following path:

```
DBLocation=C:/Program Files/CA/siteminder/smkeydatabase
```

Update the r12.x file to reference the following path:

```
DBLocation=C\:/Program Files/CA/siteminder/smkeydatabase
```

f. Save the r12.1 SP3 properties file and close the 12.52 properties file.

g. Create the following directory at the root of the Policy Server installation:

```
smkeydatabase
```

Example:

```
C:\Program Files\CA\SiteMinder\smkeydatabase
```

5. Return to the r12.1 SP3 Policy Server host system and copy the contents of the smkeydatabase directory.

Note: The default location of this directory is *siteminder_home*.

6. Return to the 12.52 Policy Server host system and complete the following steps:

a. Add the contents of the r12.1 SP3 smkeydatabase directory to the 12.52 smkeydatabase directory you created.

b. Use the following migration utility to migrate the smkeydatabase to the certificate data store:

```
smmigratecds
```

c. After a successful migration, remove the smkeydatabase properties file and the smkeydatabase directory.

The migration is complete.

More information:

Migrate a CA SiteMinder® Key Database Manually (see page 101)

Migrate the Assertion Issuer ID

If you have configured policy objects related to generating SAML assertions in your r12.1 SP3 environment, migrate the assertion issuer ID from r12.1 SP3 to 12.52.

Follow these steps:

1. Log in to an r12.1 SP3 Policy Server host system and go to the following location:

   ps_home\config\properties

   ps_home

   Specifies the Policy Server installation path.

2. Copy the following file:

   AMAssertionGenerator.properties

3. Log in to a 12.52 Policy Server host system and go to the following location:

   ps_home\config\properties

4. Rename the 12.52 version of the assertion generator properties file to the following value:

   newAMAssertionGenerator.properties

5. Add the r12.1 SP3 version of the properties file to the directory.

   The migration is complete.

Migrate the r12.1 SP3 Policies

If you plan on using the 12.52 deployment to protect r12.1 SP3 resources, we recommend migrating your policy store data to the 12.52 policy store.

Although not required, if you migrate the policy store data before you begin managing the 12.52 policy store, you can avoid the possibility of conflicts associated with duplicate objects.

To migrate policies

1. Use the r12.1 SP3 version of the XPSExport utility to export the r12.1 SP3 policy store data. For more information about the r12.1 SP3 version of XPSExport, see the r12.1 SP3 *Policy Server Administration Guide*.
2. Use the 12.52 version of the XPSImport utility to import the policy data into the 12.52 policy store. For more information about the 12.52 version of XPSImport, see the *Policy Server Administration Guide*.

When moving CA SiteMinder® policies from one environment to another, either as part of an upgrade or a policy migration, some objects that are environment–specific are included in the export file. Examples of these objects include:

- Trusted hosts
- HCO Policy Server settings
- Authentication scheme URLs

Depending on the mode you select when using XPSExport, these objects may be added to the new environment or can overwrite existing settings. Be sure that you do not adversely affect environment settings when importing the objects.

Note: For more information about the XPSExport modes of export, see the *Policy Server Administration Guide*.

User Directory Single Sign on Requirements

Be sure that the CA SiteMinder® user directory objects you create in both environments have the same names. If you use different names to point r12.1 SP3 and 12.52 Policy Servers to the same user stores, single sign–on fails.

Chapter 3: Using FIPS-Compliant Algorithms

This section contains the following topics:

FIPS 140-2 Migration Overview

The Policy Server uses certified Federal Information Processing Standard (FIPS) 140–2 compliant cryptographic libraries. FIPS is a US government computer security standard that is used to accredit cryptographic modules that meet the Advanced Encryption Standard (AES). These libraries provide a FIPS mode of operation when a CA SiteMinder® environment only uses FIPS–compliant algorithms to encrypt sensitive data. A CA SiteMinder® environment can operate in one of the following FIPS modes of operation:

- FIPS–compatibility
- FIPS–migration
- FIPS–only

By default, an environment that is upgraded to 12.52 is operating in FIPS–compatibility mode. In FIPS–compatibility mode, the environment uses algorithms existing in previous versions of CA SiteMinder® to encrypt sensitive data and is compatible with previous versions CA SiteMinder®. If your organization does not require the use of FIPS–compliant algorithms, the environment can operate in FIPS–compatibility mode without further configuration.

Migrating your environment to use only FIPS–compliant algorithms is comprised of two stages.

1. **Re–encrypt existing sensitive data**—In stage one, you configure the environment to operate in FIPS–migration mode. FIPS–migration mode lets you transition a 12.52 environment running in FIPS–compatibility mode to FIPS–only mode. In FIPS–migration mode, the 12.52 environment continues to use existing CA SiteMinder® encryption algorithms as you re–encrypt existing sensitive data using FIPS-compliant algorithms.

2. **Configure FIPS–only mode**—In stage two you configure your environment to operate in FIPS–only mode. In FIPS–only mode, the environment only uses FIPS–compliant algorithms to encrypt sensitive data.

   Important! An environment that is running in FIPS–only mode cannot interoperate with and is not backward compatible to versions of CA SiteMinder® before 12.x, including:

   - All agents
   - Custom software using older versions of the Agent API
   - Custom software using PM APIs or any other API that the Policy Server exposes

   Re–link all such software with the 12.52 versions of the respective SDKs to achieve the required support for FIPS–only mode.

FIPS 140-2 Migration Requirements

Ensure that your environment meets the minimum requirements before migrating the environment to only use FIPS-compliant algorithms. You may want to print the following to use as a checklist:

- ☐ Ensure that your entire CA SiteMinder® environment, including the SDK, is upgraded to 12.52.
- ☐ If the environment contains custom agents, ensure that they are re-linked to the respective SDK.

  Note: More information on re-linking custom agents exists in the *API Reference Guide for C* and the *API Reference Guide for Java*.
- ☐ Ensure that at least one Policy Server in the environment is configured to enable Agent key generation.

  Note: More information on enabling agent key generation exists in the *Policy Server Administration Guide*.
- ☐ If the environment uses X.509 Client Certificate authentication schemes, ensure that the user certificates are generated using only FIPS-compliant algorithms.
- ☐ If the Policy Servers are to connect to policy stores and/or user stores via SSL, ensure that the certificates used by the Policy Servers and the directory stores for the connection are FIPS-compliant.

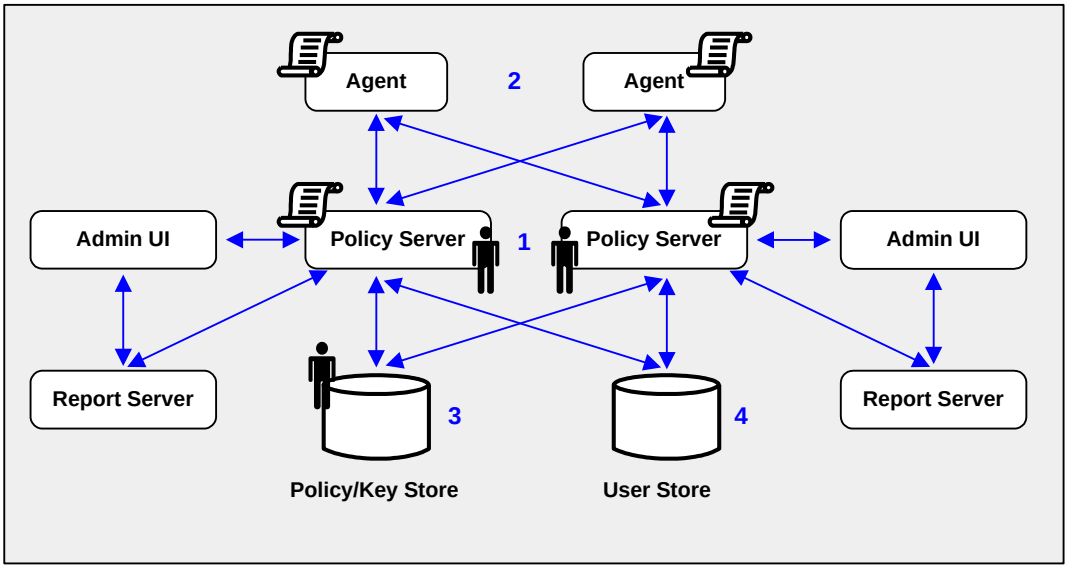
Migration Roadmap—Re-Encrypt Sensitive Data

Before your environment can operate in FIPS-only mode, you must:

- Set specific components to operate in FIPS-migration mode.
- Re-encrypt existing sensitive data using FIPS-compliant algorithms.

The following figure illustrates a sample 12.52 environment and details:

- The order in which you configure components to operate in FIPS-migration mode.
- The existing sensitive data that you must re-encrypt.



1. Each Policy Server in the environment is set to operate in FIPS-migration mode.
   - The policy store key is encrypted using algorithms that are not FIPS–compliant. Re-encrypt this key for each Policy Server in the environment before configuring the environment for FIPS-only mode. The policy store key is located in the EncryptionKey.txt file.
   - The policy store administrator password is encrypted using algorithms that are not FIPS–compliant. Re-encrypt this password before configuring the environment for FIPS-only mode.

     Important! If you have configured a separate database for a key store, audit logs, token data, or a session store, these passwords are encrypted using algorithms that are not FIPS–compliant. Re-encrypt these passwords before configuring the environment for FIPS-only mode.
   - The CA SiteMinder® superuser password is encrypted using algorithms that are not FIPS–compliant. Re-encrypt the password before configuring the environment for FIPS-only mode.

     Note: The password is for the default CA SiteMinder® administrator account. The account is used for all administrative tasks that do not require direct access to the Administrative UI. The password is not the password for the Administrative UI administrator account with superuser privileges.

2. Each CA SiteMinder® Agent, including custom Agents, in the environment is set to operate in FIPS-migration mode.

   The shared secrets that the Policy Servers and Agents use to establish encrypted communication channels are encrypted using algorithms that are not FIPS–compliant. Re-encrypt the shared secrets before configuring the environment for FIPS-only mode.

3. Keys and sensitive policy store data is re-encrypted.

   Note: The previous figure depicts a single database instance as a policy/key store. Your environment can use separate database instances for individual policy and key stores.

   Sensitive data stored in a policy store or policy and key stores is encrypted using algorithms that are not FIPS–compliant. Re-encrypt the keys and sensitive policy store data before configuring the environment for FIPS-only mode.

4. (Optional) If your environment uses basic password services, a Policy Server operating in FIPS-migration mode re-encrypts each Password Blob with FIPS–compliant algorithms when the respective user is challenged for authentication. To prevent users from losing their password history and being locked out, identify the Password Blobs that the Policy Server did not re-encrypt and notify users to log in or to change their password.

   Note: How the password policy is configured determines when the Policy Server re-encrypts the Password Blob:

   - If the password policy is configured to track successful or failed logins, the Policy Server re-encrypts the Password Blob when the user logs in.
   - If the password policy is not configured to track logins, the Policy Server re-encrypts the Password Blob when the user changes the password.

How to Re-Encrypt Existing Sensitive Data

Complete the following procedures to re-encrypt existing sensitive data using FIPS-compliant algorithms:

1. Gather environment information.
2. Set FIPS-migration mode for all Policy Servers.
3. Re-encrypt the policy store key.
4. Re-encrypt the policy store administrator password.
5. Re-encrypt the CA SiteMinder® Super User password.
6. Set FIPS-migration mode for all Agents.

7. Re-encrypt policy and key store data.
8. (Optional) If your environment uses Basic Password Services, verify that Password Blobs are re-encrypted.

Gather Environment Information

Re-encrypting existing sensitive data while the Policy Server operates in FIPS-migration mode requires specific environment information.

Note: A FIPS information worksheet is provided to help you gather and record information prior to re-encrypting sensitive data. You may want to print this worksheet and use it to record required information.

- **Policy store key**—For each Policy Server in the environment, copy the policy store encryption key from the EncryptionKey.txt file and save them to a single location from which you can copy them. The EncryptionKey.txt file is located in *policy_server_home*\bin.

  policy server home

  Specifies the Policy Server installation path.

- **CA SiteMinder® Super User account name and password**— Identify the CA SiteMinder® Super User account name and password. CA SiteMinder® tools you use to re-encrypt data require this information.

  Note: This is the account that is used for all administrative tasks that do not require direct access to the Administrative UI. These are not the credentials for the Administrative UI administrator account with Super User privileges.

- **Policy store administrator password**—Identify the policy store administrator password. This is the password that was supplied when the connection between the policy store and the Policy Server was configured.

More information:

FIPS Information Worksheet (see page 97)

Set a Policy Server to FIPS-Migration Mode

You set the Policy Servers to FIPS-migration mode so the environment can continue to use the existing CA SiteMinder® encryption algorithms as you re-encrypt existing sensitive data using FIPS-compliant algorithms.

Follow these steps:

1. Open a command prompt on the computer hosting the Policy Server and run the following command:

   ```
   setFIPSmigration
   ```

   MIGRATION appears in the command window.

2. Stop the Policy Server.

   Note: For more information about stopping and starting the Policy Server, see the *Policy Server Administration Guide*.

3. Complete one of the following steps:

   - If the Policy Server is installed on a Windows system, reboot the system.
   - If the Policy Server is installed on a UNIX system, complete the following steps:

     a. Log in as the user that is used to start the Policy Server.

     b. Open a command prompt.

     c. Navigate to *policy_server_home.*

     d. Run the following command:

     ```
     . ./ca_ps_env.ksh
     ```

4. Start the Policy Server.

5. Open the smps.log file and verify that the following line appears:

   ```
   Policy Server migrating from classic SiteMinder to FIPS-140 cryptographic
   algorithms.
   ```

6. Close the log file.

   The Policy Server is set to operate in FIPS-migration mode.

7. Repeat the previous steps for each Policy Server in the environment.

You can now re-encrypt the policy store key for each Policy Server in the environment.

Re-encrypt a Policy Store Key

You re-encrypt the policy store key to replace the existing key with a version that is encrypted using FIPS-compliant algorithms.

To re-encrypt the policy store key

1. Open a command prompt from the computer hosting the Policy server and run the following command:

   `smreg -cf MIGRATE -key key_value`

   -cf MIGRATE

   Specifies that smreg run in FIPS-migration mode.

   Note: When smreg runs in FIPS-migration mode, the policy store key is re-generated using FIPS-compliant algorithms.

   -key *key value*

   Specifies the current policy store key.

   smreg generates a new policy store key and encrypts it using FIPS-compliant algorithms.

2. Open the EncryptionKey.txt file, and verify that a new encryption key is present and prefixed with a FIPS-compliant algorithm.

   Prefix example: {AES}

   The policy store key is re-encrypted.

3. Repeat the latter steps for each Policy Server in the environment.

You may now re-encrypt the policy store administrator password.

Re-Encrypt the Policy Store Administrator Password

You re-encrypt the policy store administrator password to be sure that the data is encrypted using FIPS-compliant algorithms.

Follow these steps:

1. Start the Policy Server Management Console, and click the Data tab.

   Note: For more information about starting the Policy Server Management Console, see the *Policy Server Administration Guide*.

2. Re–enter the administrator password in the Password field, and click Apply.

   The administrator password is encrypted using FIPS-compliant algorithms.

3. (Optional) If you have configured a separate database for one or more of the following stores, re-encrypt the administrator password for each:

   - key store
   - audit logs
   - token data
   - session store

   Important! A Policy Server operating in FIPS-only mode cannot decrypt a database password that remains encrypted with algorithms that are not FIPS–compliant.

You can now re-encrypt the CA SiteMinder® superuser password.

Re-encrypt the CA SiteMinder® Super User Password

You re-encrypt the CA SiteMinder® Super User password to ensure that the data is encrypted using FIPS-compliant algorithms.

Note: This is the password for the default administrator account. This account is used for all administrative tasks that do not require direct access to the Administrative UI. This is not the password for the Administrative UI administrator account with Super User privileges.

To reset the CA SiteMinder® Super User password, open a command prompt and run the following command:

```
smreg -cf MIGRATE -su password
```

-cf MIGRATE

Specifies that smreg run in FIPS-migration mode.

Note: When smreg runs in FIPS-migration mode, the existing Super User password is saved using FIPS-compliant algorithms.

password

Specifies the existing Super User password.

Note: You do not have to supply a new password. You are entering the same password to ensure that the data is encrypted using FIPS-compliant algorithms.

The CA SiteMinder® Super User password is encrypted using FIPS-compliant algorithms.

You may now set each of the Agents in the environment to FIPS-migration mode.

Set an Agent to FIPS-Migration Mode

You set the Agents to FIPS-migration mode so the environment can continue to use existing CA SiteMinder® encryption algorithms as you re-encrypt sensitive data using FIPS-compliant algorithms.

To change the FIPS mode of an agent

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

   The following line appears in the file:

   ```
   fipsmode="COMPAT"
   ```

2. Edit the line to read:

   ```
   fipsmode="MIGRATE"
   ```

3. Save and close the file.
4. Restart the machine that is hosting the Agent.

   The agent is operating in FIPS-migration mode.

5. Repeat the previous steps for each machine in the environment on which a trusted hosted is registered.

You may now encrypt agent shared secrets.

Re-encrypt Client Shared Secrets

You re-encrypt the agent shared secrets to replace the existing secrets with secrets that are encrypted using FIPS-compliant algorithms. You re-encrypt shared secrets either:

- Manually rolling over the shared secret from the Administrative UI.
- Using smreghost in FIPS-migration mode

  Note: You only have to use smreghost if the agent was not configured for shared secret rollover when you registered the trusted host.

Use the Administrative UI to Re-encrypt a Shared Secret

To rollover the shared secret from the Administrative UI

1. Log into the Administrative UI and click Administration, Policy Server, Shared Secret Rollover.

   The Shared Secret Rollover pane appears.

2. Select the Rollover Shared Secret every radio button.

   Rollover Now becomes active.

3. Click Rollover Now.

   The Policy Server rolls over the shared secrets for all trusted hosts configured to allow shared secret rollover.

You may now re-encrypt sensitive policy and key data in the policy store.

Use smreghost to Re-encrypt a Shared Secret

To use smreghost to re-encrypt a shared secret

1. Open a command prompt and run the following command:

   ```
   smreghost -i policy_server_ip_address -u administrator_user_name
   -p administrator_password -hn hostname_for_registration -hc host_config_object
   -f path_to_host_config_file -o -cf MIGRATE
   ```

   -i *policy server ip address*

   Specifies the IP address of the Policy Server to which the trusted host is registered.

   -u *administrator user name*

   Specifies the name of the CA SiteMinder® administrator with the rights to register a trusted host.

   - p *administrator password*

   Specifies the password of the administrator who is allowed to register a trusted host.

   -hn *hostname for registration*

   Specifies the current name of the host that is registered.

   -hc *host configuration object*

   Specifies the Host Configuration Object configured at the Policy Server.

-f path to host config file

Specifies the full path to the file that contains the registration data. The default file name is SmHost.conf.

Note: If you do not specify a file path, the updated file is saved in the location where you are running smreghost.

-o

Overwrites an existing trusted host. If you do not use this argument, you will have to delete the existing trusted host using the Administrative UI. We recommend using smreghost with this argument.

-cf MIGRATE

Specifies that smreghost run in FIPS-migration mode.

Note: When smreghost runs in FIPS-migration mode, the shared secret created and encrypted using FIPS-compliant algorithms.

smreghost re-registers the trusted host and creates a new shared secret that is encrypted using FIPS-approved algorithms.

2. Open the file that contains the trusted host registration data and verify that a new shared secret is present and prefixed with a FIPS-approved algorithm.

   The shared secret is encrypted using FIPS-compliant algorithms.

   Prefix example: {AES}

You may now re-encrypt sensitive policy and key data in the policy store.

Re-encrypt Policy and Key Store Data

You re-encrypt policy and key store data to ensure that sensitive data that is encrypted using existing CA SiteMinder® algorithms is encrypted using FIPS-compliant algorithms.

Options for Re-encrypting Policy and Key Store Data

There are three ways to re-encrypt policy and key store data. You can:

- Re-encrypt the policy and key store data in an existing policy store.
- Re-encrypt policy data in an existing policy store and key data in an existing key store.
- Re-encrypt the policy and key store data, and migrate the data into a new 12.52 policy store or policy and key store, respectively.

This guide details the steps for re-encrypting the policy and key store data for existing stores.

If you want to create a new 12.52 policy store or policy and key store:

1. Export the key data using smkeyexport.

   Note: XPSExport does not export keys that are stored in a policy or key store. More information on using smkeyexport exists in the *Policy Server Administration Guide*.

2. Export the policy store data using XPSExport.

   Note: More information on using XPSExport exists in the *Policy Server Administration Guide*.

3. Create a 12.52 policy store or policy and key store.

   Note: More information on creating a policy and key stores exists in the *Policy Server Installation Guide*.

4. Import the key data into the new policy store, or if created, the new key store using smkeyimport.

   Note: More information on using smkeyimport exists in the *Policy Server Administration Guide*.

5. Import the policy store data into the new policy store using XPSImport.

   Note: More information on using XPSImport exists in the *Policy Server Administration Guide*.

Re-encrypt Keys Stored in the Policy or Key Store

You re-encrypt the keys stored in the policy or key store to replace the existing keys with versions that are encrypted using FIPS-compliant algorithms.

To re-encrypt the keys stored in the policy or key store

1. Open a command prompt from the computer hosting the Policy server and run the following command:

   `smkeyexport -d`*`admin_name`* `-w`*`admin_password`* `-o`*`output_file_name`* `-l -v -t -cf`

   -d*admin_name*

   Specifies the name of the CA SiteMinder® administrator account.

   -w*admin_password*

   Specifies the password for the CA SiteMinder® administrator account.

   -o*output_file_name*

   (Optional) Specifies the name of the exported file. If you do not specify a file name, the default file name is stdout.smdif.

   Note: Ensure that the file name contains the .smdif extension.

   Example: pskeys.smdif

-l

Specifies that a log file be created.

-v

(Optional) Enables verbose mode for troubleshooting.

-t

(Optional) Enables tracing for troubleshooting.

-cf

Specifies that smkeyexport run in FIPS-migration mode.

Note: When smkeyexport runs in FIPS-migration mode, the keys stored in the policy store are exported and re-encrypted using FIPS-compliant algorithms.

smkeyexport exports an smdif file that contains the re-encrypted keys.

2. Run the following command:

```
smkeyimport -iinput_file_name -dadmin_name -wadmin_password -l -v -t -cf
```

-i*input_file_name*

Specifies the name of the file output file you created.

Note: Ensure that the file name you specify includes the .smdif extension.

-d*admin_name*

Specifies the name of the CA SiteMinder® administrator account.

-w*admin_password*

Specifies the password for the CA SiteMinder® administrator account.

-l

Specifies that a log file be created.

-v

(Optional) Enables verbose mode for troubleshooting.

-t

(Optional) Enables tracing for troubleshooting.

-cf

Specifies that smkeyimport run in FIPS-migration mode.

smkeyimport imports the re-encrypted keys into the respective store.

You may now re-encrypt policy store data.

Re-encrypt the Policy Store Data

To re-encrypt the policy store data

1. Open a command prompt from the machine hosting the Policy Server and navigate to the location to which you want to export the policy store data file.
2. Run the following command:

   ```
   XPSExport outputfile -xe -xp -pass <passphrase> -vT -vI -vW -vE -vF -e file_name
   -l log_file
   ```

   Note: Although you can use XPSExport to export one or more granular objects, this procedure provides the arguments for exporting all of the policy store data. This ensures that the export includes all of the sensitive data. More information on exporting one or more granular objects exists in the *Policy Server Administration Guide*.

   outputfile

   Specifies the name of the XML output file.

   Note: The file name must be unique. The export fails if a file with the same name exists.

   Example: psdata

   -xe

   Exports the object types that are related to the execution environment.

   -xp

   Exports the object types that are related to the policies.

   -pass <passphrase>

   Specifies a passphrase required for encryption of sensitive data. Record this value as it is required to import the sensitive data back into the policy store.

   Limit: The passphrase must be contain at least:

   - Eight (8) characters
   - One (1) digit
   - One (1) upper-case character
   - One (1) lower-case character

   Note: If the passphrase contains spaces, enclose it in quotes (").

   -vT

   (Optional) Sets verbosity level to TRACE.

   -vI

   (Optional) Sets verbosity level to INFO.

-vW

(Optional) Sets verbosity level to WARNING (default).

-vE

(Optional) Sets verbosity level to ERROR.

-vF

(Optional) Sets verbosity level to FATAL.

-l *log_path*

(Optional) Outputs log to the specified path.

-e *file_name*

(Optional) Specifies the file to which errors and exceptions are logged. If omitted, stderr is used.

XPSExport exports the policy store data and places the data file in the directory from which you ran the tool.

3. Run the following command:

`XPSImport` *`input_file -pass <passphrase>`* `-vT -vI -vW -vE -vF -l` *`log_path`*

input_file

Specifies the input XML file.

-pass <passphrase>

Specifies the passphrase required for the decryption of sensitive data.

Limit: The phrase must match the phrase you specified during export or the decryption fails.

-vT

(Optional) Sets verbosity level to TRACE.

-vI

(Optional) Sets verbosity level to INFO.

-vW

(Optional) Sets verbosity level to WARNING (default).

-vE

(Optional) Sets verbosity level to ERROR.

-vF

(Optional) Sets verbosity level to FATAL.

-l *log_path*

(Optional) Outputs log to the specified path.

-e *file_name*

(Optional) Specifies the file to which errors and exceptions are logged. If omitted, stderr is used.

XPSImport imports the data into the policy store. Sensitive data is encrypted using FIPS-compliant algorithms.

If your environment users Basic Password Services, you may now verify that the Password Blobs are re-encrypted using FIPS-approved algorithms.

Verify that Password Blobs are Re-encrypted

You verify that the Policy Server has re-encrypted every Password Blob in the user store to prevent users from losing their password history and being locked out by Password Services.

When you configured the user store connection for password policies, you specified the Password Data user profile attribute. This value represents where Password Blobs are stored in the user store and is the value you use to identify Password Blobs that are not re-encrypted.

To verify that Password Blobs are re-encrypted

1. Using the directory server or database-specific tool, search for Password Data entries that are not prefixed with:

   `{AES}`

   Example: If "audio" is the value you specified in the Password Data field when configuring the user store connection, search for all entries stored in "audio" that are not prefixed with {AES}.

2. Identify the users whose Password Blobs are not prefixed with {AES}. The Policy Server has not re-encrypted these Password Blobs.

3. Notify these users that they must either log in or change their password.

   Note: How the password policy is configured determines when the Policy Server re-encrypts the Password Blob:

   - If the password policy is configured to track successful and/or failed logins, the Policy Server re-encrypts the Password Blob when the user logs in.
   - If the password policy is not configured to track logins, the Policy Server re-encrypts the Password Blob when the user changes the password.

Important! Password Services locks out users whose Password Blobs are not re-encrypted when the Policy Server is operating in FIPS-only mode. A user cannot regain access until you have deleted the Password Blob and cleared any disabled flags. Deleting the Password Blob results in the loss of the user's password history.

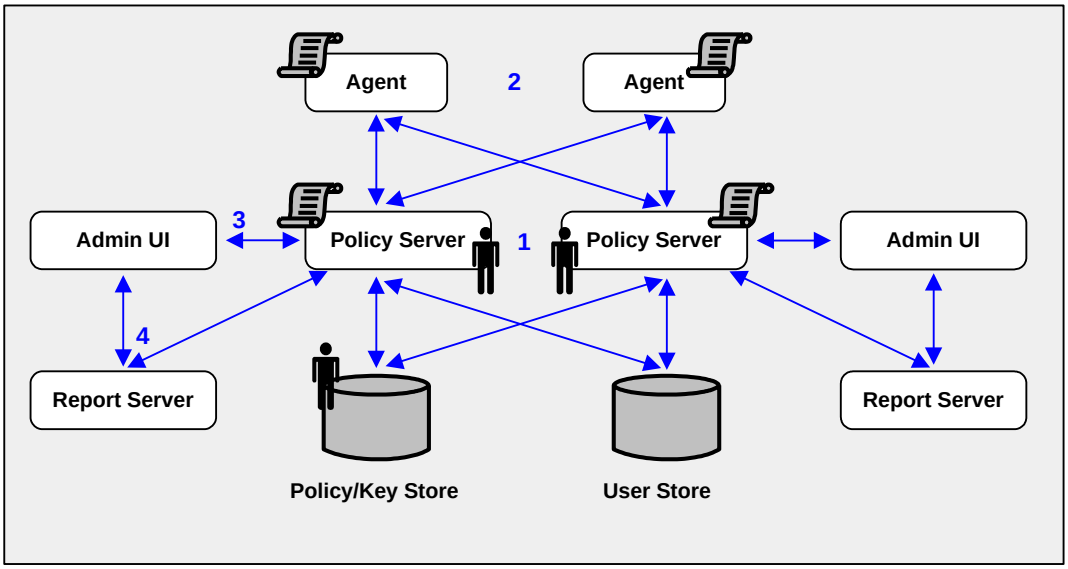
Migration Roadmap—Configure FIPS-Only Mode

The following diagram illustrates a sample 12.52 environment operating in FIPS-migration mode and lists the order in which you configure each component and connection to operate in FIPS-only mode.

The shaded components represent sensitive data that must be re-encrypted using FIPS-approved algorithms. Do not continue with the migration process until you have:

- Re-encrypted the policy store key for each Policy Server in the environment
- Re-encrypted the policy store administrator password
- Re-encrypted the CA SiteMinder® Super User password
- Re-encrypted the shared secret for each Agent in the environment
- Re-encrypted the policy store data
- Verified that the Policy Server has re-encrypted every user Password Blob in the user store, if the environment is using Basic Password Services.

  Important! Password Services locks out users whose Password Blobs are not re-encrypted when the Policy Server is operating in FIPS-only mode. A user cannot regain access until you have deleted the Password Blob and cleared any disabled flags. Deleting the Password Blob results in the loss of the user's password history.



1. Each Policy Server in the environment is set to operate in FIPS-only mode.
2. Each CA SiteMinder® Web Agent, including custom Agents, is set to operate in FIPS-only mode.

3. The existing connection between each Administrative UI and its respective Policy Server is encrypted using algorithms that are not FIPS compliant. Re-register each Administrative UI with its respective Policy Server to encrypt the connection using FIPS-compliant algorithms.
4. The existing connection between a Report Server and a Policy Server is encrypted using algorithms that are not FIPS compliant. Re-register each Report Server with its respective Policy Server to encrypt the connection using FIPS-compliant algorithms.

How to Configure FIPS-only Mode

Complete the following procedures to be sure that your environment only encrypts sensitive data using FIPs–compliant algorithms:

1. Set each Agent in the environment to FIPS–only mode.
2. Set each Policy Server in the environment to FIPS–only mode.
3. Re–register an Administrative UI with its respective Policy Server. Consider the following:

   - The Administrative UI is unavailable during registration process. However, the Policy Server continues to provide access control and generate log files that contain auditing information during this time.
   - The Administrative UI can be configured for internal or external administrator authentication.
     - An Administrative UI configured for internal authentication is one that is using the policy store as it source for administrator credentials.
     - An Administrative UI configured for external authentication is one that is using an external user store as its source for administrator credentials.

     The process you follow to re–register an Administrative UI depends on how it is authenticating CA SiteMinder® administrators.

   Note: Repeat this step until all Administrative UI connections are re–registered.
4. Re–register a Report Server with its respective Policy Server.

   Note: Repeat this step until all Report Server connections are re–registered.

Set an Agent to FIPS-only Mode

You set an Agent to FIPS-only mode to ensure that the Agent only accepts session keys, Agent Keys, and shared secrets that are encrypted using FIPS-compliant algorithms.

To set an Agent to FIPS-only mode

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

   The following line appears in the file:

   ```
   fipsmode="MIGRATE"
   ```

2. Edit the line to read:

   ```
   fipsmode="ONLY"
   ```

3. Save and close the file.

4. Restart the machine that is hosting the Agent.

   The agent is operating in FIPS-migration mode.

5. Repeat the previous steps for each machine in the environment that is registered as a trusted hosted.

You may now set Policy Servers to operate in FIPS-only mode.

Set the Policy Server to FIPS-only Mode

Setting the Policy Server to FIPS–only mode configures the Policy Server to read and write encrypted information using FIPS–compliant algorithms only.

Important! Password Services locks out users whose Password Blobs are not re-encrypted when the Policy Server is operating in FIPS-only mode. A user cannot regain access until you have deleted the Password Blob and cleared any disabled flags. Deleting the Password Blob results in the loss of the user's password history.

Note: For more information about identifying Password Blobs that are not re–encrypted, see Verify that Password Blobs are Re-encrypted (see page 76).

Follow these steps:

1. Open a command prompt from the Policy Server host system and run the following command:

   ```
   setFIPSonly
   ```

   ONLY appears in the command window.

2. Stop the Policy Server.

   Note: For more information about stopping and starting the Policy Server, see the *Policy Server Administration Guide*.

3. Do one of the following steps:
   - If the Policy Server is installed on a Windows system, reboot the system.
   - If the Policy Server is installed on a UNIX system, do the following steps:
     a. Log in as the user that is used to start the Policy Server.
     b. Open a command prompt.
     c. Navigate to *policy_server_home.*
     d. Run the following command:

     ```
     ./ca_ps_env.ksh
     ```
4. Start the Policy Server.
5. Open the smps.log file and verify that the following line appears:

   ```
   Policy Server employing only FIPS-140 cryptographic algorithms.
   ```
6. Close the log file.

   The Policy Server is set to operate in FIPS-only mode.
7. Repeat the latter steps for each Policy Server in the environment.

You can now re–register each Administrative UI with its respective Policy Server.

How to Re–Register an Administrative UI Configured for Internal Authentication

Existing CA SiteMinder® algorithms continue to encrypt the shared secret that the Administrative UI and the Policy Server use to establish an encrypted connection. Re–registering the Administrative UI creates a new shared secret that is encrypted using FIPS–compliant algorithms.

Complete the following procedures to re–register an Administrative UI configured for internal authentication:

1. Stop the application server.
2. Delete the Administrative UI data directory.
3. Reset the Administrative UI registration window.
4. Start the application server.
5. Register the Administrative UI.

Stop the Application Server

To stop the application server

1. Log into the Administrative UI host system.
2. Do one of the following:
   - If you installed the Administrative UI using the stand–alone installation option, stop the CA SiteMinder® Administrative UI service.
   - If you installed the Administrative UI to an existing application server infrastructure, stop the application server.

   Note: For more information about stopping the application server, see the *Policy Server Installation Guide*.

Delete the Administrative UI Data Directory

Delete the Administrative UI data directory to remove the existing trusted connection between the Administrative UI and the Policy Server.

To delete the Administrative UI data directory

1. Log into the Administrative UI host system.
2. Do one of the following:
   - (Stand–alone) If you installed the Administrative UI using the stand–alone installation option, navigate to *administrative_ui_home*/CA/SiteMinder/adminui/server/default and delete the following folder:

     data

     administrative_ui_home

     Specifies the Administrative UI installation path.
   - (JBoss) If you installed the Administrative UI to an existing JBoss infrastructure, navigate to *JBoss_home*/server/default/data.

     JBoss_home

     Specifies the JBoss installation path.

     The data folder contains the apacheds, derby, and siteminder folders.

     a. Delete the siteminder folder.

     b. Open the apacheds folder and delete the siteminder folder.

     c. Open the derby folder and delete the siteminder folder.

- (WebLogic) If you installed the Administrative UI to an existing WebLogic infrastructure, navigate to *WebLogic_domain_folder,* and delete the following folder:

  data

  WebLogic_domain_folder

  Specifies the path to the WebLogic domain created for the Administrative UI.

- (WebSphere) If you installed the Administrative UI to an existing WebSphere infrastructure, navigate to *WebSphere_home*/profiles/*profile,* and delete the following folder:

  data

  WebSphere_home

  Specifies the full path of the WebSphere installation.

  profile

  Specifies the name of the profile used for the Administrative UI.

The Administrative UI data dictionary is deleted.

Reset the Administrative UI Registration Window

Reset the registration window to submit the credentials of any super user in the policy store. The Policy Server uses these credentials to verify that the registration request is valid and that the relationship between the Administrative UI and the Policy Server can be trusted.

To reset the Administrative UI registration window

1. Log into the Policy Server host system.
2. Run the following command:

   ```
   XPSRegClient siteminder_administrator[:passphrase] -adminui-setup -t timeout -r
   retries -c comment -cp -l
   log_path -e error_path -vT -vI -vW -vE -vF
   ```

   siteminder_administrator

   Specifies a CA SiteMinder® administrator with super user permissions.

   Note: If a super user account is not available, use the smreg utility to create the default CA SiteMinder® account.

   passphrase

   Specifies the password for the CA SiteMinder® administrator account.

   Note: If you do not specify the passphrase, XPSRegClient prompts you to enter and confirm it.

-adminui-setup

Specifies that the Administrative UI is being re–registered with a Policy Server.

-t *timeout*

(Optional) Specifies the allotted time from when you to install the Administrative UI to the time you log in and create a trusted relationship with a Policy Server. The Policy Server denies the registration request when the timeout value is exceeded.

Unit of measurement: minutes

Default: 240 (4 hours)

Minimum limit: 1

Maximum limit: 1440 (24 hours)

-r *retries*

(Optional) Specifies how many failed attempts are allowed when you are registering the Administrative UI. A failed attempt can result from submitting incorrect CA SiteMinder® administrator credentials when logging into the Administrative UI to complete the registration process.

Default: 1

Maximum limit: 5

-c *comment*

(Optional) Inserts the specified comments into the registration log file for informational purposes.

Note: Surround comments with quotes.

-cp

(Optional) Specifies that registration log file can contain multiple lines of comments. The utility prompts for multiple lines of comments and inserts the specified comments into the registration log file for informational purposes.

Note: Surround comments with quotes.

-l *log path*

(Optional) Specifies where the registration log file must be exported.

Default: *siteminder_home*\log

siteminder_home

Specifies the Policy Server installation path.

-e *error path*

(Optional) Sends exceptions to the specified path.

Default: stderr

-vT

(Optional) Sets the verbosity level to TRACE.

-vI

(Optional) Sets the verbosity level to INFO.

-vW

(Optional) Sets the verbosity level to WARNING.

-vE

(Optional) Sets the verbosity level to ERROR.

-vF

(Optional) Sets the verbosity level to FATAL.

3. Press Enter.

   XPSRegClient supplies the Policy Server with the administrator credentials. The Policy Server uses these credentials to verify the registration request when you log into the Administrative UI.

Start the Application Server

To start the application server

1. Log into the Administrative UI host system.
2. Do one of the following:
   - If you installed the Administrative UI using the stand–alone installation option, start the CA SiteMinder® Administrative UI service.
   - If you installed the Administrative UI to an existing application server infrastructure, start the application server.

   Note: For more information about starting the application server, see the *Policy Server Installation Guide*.

Register the Administrative UI

Register the Administrative UI to create a new shared secret that is encrypted using FIPS–compliant algorithms.

Note: For more information about registering the Administrative UI, see the *Policy Server Installation Guide*.

How to Re–Register an Administrative UI Configured for External Authentication

Existing CA SiteMinder® algorithms continue to encrypt the shared secret that the Administrative UI and the Policy Server use to establish an encrypted connection. Re–registering the Administrative UI creates a new shared secret that is encrypted using FIPS–compliant algorithms.

Complete the following procedures to re–register an Administrative UI configured for external authentication:

1. Delete the existing connection between the Administrative UI and the Policy Server.
2. Run the Administrative UI registration tool.
3. Gather registration information.
4. Configure the Administrative UI and Policy Server connection.
5. Delete the previous trusted host.

Delete an Administrative UI Connection to the Policy Server

You delete the Administrative UI connection to the Policy Server so that you can re–register the connection.

To delete the Administrative UI connection to the Policy Server

1. Log into the Administrative UI and click Administration, Admin UI.

   A list of connection types appears.
2. Click Policy Server Connections, Delete Policy Server Connection.

   The Delete Policy Server Connection pane appears.
3. Enter search criteria, and click Search.

   Connections matching your criteria appear.
4. Select the connection you want to delete, and click Select.

   You are prompted to confirm the request.
5. Click Yes.

   The connection between the Administrative UI and the Policy Server is deleted.

Run the Registration Tool

You run the Administrative UI registration tool to create a client name and passphrase. A client name and passphrase pairing are values that the Policy Server uses to identify the Administrative UI you are registering. You submit the client and passphrase values from the Administrative UI to complete the registration process.

To run the registration tool

1. Open a command prompt from the Policy Server host system.
2. Run the following command:

```
XPSRegClient client_name[:passphrase] -adminui -t timeout -r retries -c comment
-cp -l log_path -e error_path
-vT -vI -vW -vE -vF
```

Note: Inserting a space between *client_name* and [:*passphrase*] results in an error.

client_name

Identifies the Administrative UI being registered.

Limit: This value must be unique. For example, if you have previously used smui1 to register an Administrative UI, enter smui2.

Note: Record this value. This value is to complete the registration process from the Administrative UI.

passphrase

Specifies the password required to complete the registration of the Administrative UI.

Limits:

- The passphrase must contain at least six (6) characters.
- The passphrase cannot include an ampersand (&) or an asterisk (*).
- If the passphrase contains a space, it must be enclosed in quotation marks.
- If you are registering the Administrative UI as part of an upgrade, you can reuse a previous passphrase.

Note: If you do not specify the passphrase in this step, XPSRegClient prompts you to enter and confirm one.

Important! Record the passphrase, so that you can refer to it later.

-adminui

Specifies that an Administrative UI is being registered.

-t *timeout*

(Optional) Specifies how long you have to complete the registration process from the Administrative UI. The Policy Server denies the registration request when the timeout value is reached.

Unit of measurement: minutes

Default: 240 (four hours)

Minimum Limit: 1

Maximum Limit: 1440 (one day)

-r *retries*

(Optional) Specifies how many failed attempts are allowed when you complete the registration process from the Administrative UI. A failed attempt can result from an incorrect client name or passphrase submitted to the Policy Server during the registration process.

Default: 1

Maximum Limit: 5

-c *comment*

(Optional) Inserts the specified comments into the registration log file for informational purposes.

Note: Surround comments with quotes.

-cp

(Optional) Specifies that registration log file can contain multiple lines of comments. The registration tool prompts for multiple lines of comments and inserts the specified comments into the registration log file for informational purposes.

Note: Surround comments with quotes.

-l *log_path*

(Optional) Specifies where to export the registration log file.

Default: *siteminder_home*\log

siteminder_home

Specifies the Policy Server installation path.

-e *error_path*

(Optional) Sends exceptions to the specified path.

Default: stderr

-vT

(Optional) Sets the verbosity level to TRACE.

-vI

(Optional) Sets the verbosity level to INFO.

-vW

(Optional) Sets the verbosity level to WARNING.

-vE

(Optional) Sets the verbosity level to ERROR.

-vF

(Optional) Sets the verbosity level to FATAL.

The registration tool lists the name of the registration log file and prompts for a passphrase.

3. Press Enter.

   The registration tool creates the client name and passphrase pairing.

You can now register the Administrative UI with a Policy Server. You complete the registration process from the Administrative UI.

Gather Registration Information

The Administrative UI requires specific information about the Policy Server and the client name and passphrase you created to complete the registration process. Gather the following information before logging into the Administrative UI:

- **Client name**—The client name you specified using the XPSRegClient tool.
- **Passphrase**—The passphrase you specified using the XPSRegClient tool.
- **Policy Server host**—The IP address or name of the Policy Server host system.
- **Policy Server authentication port**—The port on which the Policy Server is listening for authentication requests.

  Default: 44442

Note: A worksheet is provided to help you gather and record information before registering the Administrative UI.

Configure the Connection to the Policy Server

You configure the Administrative UI and Policy Server connection so CA SiteMinder® administrators can use the Administrative UI to manage policy information through the Policy Server. You configure the connection from the Administrative UI.

To configure the Administrative UI and Policy Server connection

1. Open a supported web browser and enter the following:

   http://*host.domain*/iam/siteminder/adminui

   The Administrative UI login screen appears.

2. Log in as a super user.
3. Click Administration, Admin UI.

4. Click Policy Server Connections, Register Policy Server Connection.

   The Register Policy Server Connection pane opens.

   Note: Click Help for descriptions of settings and controls, including their respective requirements and limits.

5. Type a connection name in the Name field on the General group box.
6. Type the name or IP address of the Policy Server host system in the Policy Server Host field.
7. Type the Policy Server authentication port in the Policy Server Port field.

   Note: This value must match the value in the Authentication port (TCP) field on the Settings tab in the Policy Server Management Console. The default authentication port is 44442.

8. Type the client name and passphrase you created using the registration tool in the fields on the General group box.
9. Select the FIPS only mode radio button.
10. Click Submit.

    The connection between the Administrative UI and Policy Server is configured. The shared secret the Administrative UI and Policy Server use to establish an encrypted connection is encrypted using FIPS-approved algorithms.

You have completed the process for re–registering the Administrative UI.

Delete the Previous Trusted Host

Re–registering the Administrative UI with a Policy Server creates a new trusted host. You delete the previous trusted host as it is no longer needed.

To delete the trusted host connection

1. Log into the Administrative UI and click Infrastructure, Hosts.
2. Click Trusted Hosts, Delete Trusted Host.

   The Delete Trusted Host pane appears.

3. Search for and select the previous trusted host connection.

   Note: A trusted host that is created as a result of the Administrative UI registration process has the following description: Generated by XPSRegClient.

4. Click Select.

   The Administrative UI prompts you to verify the selection.

   Important! Be sure that you delete the trusted host that was created the last time you registered the Administrative UI and not the new trusted host.

5. Click Yes.

   The trusted host connection is deleted.

How to Re-Register the Report Server Connection

Re-registering the Report Server ensures that the connection between the Report Server and the Policy server is encrypted using FIPS-approved algorithms.

Complete the following steps to re-register a report server:

1. Create the Report Server client name and passphrase.
2. Gather registration information.
3. Register the Report Server with the policy server.

Create a Client Name and Passphrase

You run the XPSRegClient utility to create a client name and passphrase. A client name and passphrase are:

- Values that the Policy Server uses to identify the Report Server you are registering
- Values that you use with the XPSRegClient tool to register the Report Server with the Policy Server

To run the registration tool

1. Open a command–line window from the Policy Server host system.
2. Navigate to *siteminder_home*/bin.

   siteminder_home

   Specifies the Policy Server installation path.

3. Run the following command:

   ```
   XPSRegClient client_name[:passphrase] -report -t timeout -r retries
   -c comment -cp -l log_path -e error_path -vT -vI -vW -vE -vF
   ```

client_name

Identifies the name of Report Server you are registering.

Limit: The value must be unique. For example, if you have previously used reportserver1, enter reportserver2.

Note: Record this value. This value is required to complete registration process from the Report Server host system.

passphrase

Specifies the password required to complete the Report Server registration.

Limits: The passphrase

- Must contain at least six (6) characters.
- The passphrase cannot include an ampersand (&) or an asterisk (*).
- If the passphrase contains a space, it must be enclosed in quotation marks.

If you do not specify the passphrase in this step, XPSRegClient prompts you to enter and confirm it.

Note: Record this value. This value is required to complete registration process from the Report Server host system.

-report

Specifies that a Report Server is being registered.

-t *timeout*

(Optional) Specifies how long you have to complete the registration process from the Report Server host system. The Policy Server denies the registration request when the timeout value is reached.

Unit of measurement: minutes

Default: 240 (4 hours)

Minimum Limit: 1

Maximum Limit: 1440 (one day)

-r *retries*

(Optional) Specifies how many failed attempts are allowed when you complete the registration process from the Report Server host system. A failed attempt can result from submitting an incorrect passphrase to the Policy Server during the registration.

Default: 1

Maximum Limit: 5

-c *comment*

(Optional) Inserts the specified comments into the registration log file for informational purposes.

Note: Surround comments with quotes.

-cp

(Optional) Specifies that registration log file can contain multiple lines of comments. The registration tool prompts for multiple lines of comments and inserts the specified comments into the registration log file for informational purposes.

Note: Surround comment with quotes.

-l *log path*

(Optional) Specifies where the registration log file must be exported.

Default: siteminder_home\log, where siteminder_home is where the Policy Server is installed.

-e *error path*

(Optional) Sends exceptions to the specified path.

Default: stderr

-vT

(Optional) Sets the verbosity level to TRACE.

-vI

(Optional) Sets the verbosity level to INFO.

-vW

(Optional) Sets the verbosity level to WARNING.

-vE

(Optional) Sets the verbosity level to ERROR.

-vF

(Optional) Sets the verbosity level to FATAL.

The utility lists the name of the registration log file. If you did not provide a passphrase, the utility prompts for one.

4. Press Enter.

   The registration tool creates the client name and passphrase.

You can now register the Report Server with the Policy Server. You complete the registration process from the Report Server host system.

Gather Registration Information

Completing the registration process between the Report Server and the Policy Server requires specific information. Gather the following information before running the XPSRegClient utility from the Report Server host system.

- **Client name**—The client name you specified using the XPSRegClient tool.
- **Passphrase**—The passphrase you specified using the XPSRegClient tool.
- **Policy Server host**—The IP address or name of the Policy Server host system.

Register the Report Server with the Policy Server

You register the Report Server with the Policy Server to create a trusted relationship between both components. You configure the connection from the Report Server host system using the Report Server registration tool.

To configure the connection to the Policy Server

1. From the Report Server host system, open a command–line window and navigate to *report_server_home/external/scripts.*

   report_server_home

   Specifies the Report Server installation location.

   Default: (Windows) C:\Program Files\CA\SC\CommonReporting3

   Default: (UNIX) /opt/CA/SharedComponents/CommonReporting3

2. Run one of the following commands:

   - (Windows)

     ```
     regreportserver.bat -pshost host_name -client client_name -passphrase passphrase
     -psport portnum -fipsmode 0|1
     ```

     Important! Before running a CA SiteMinder® utility or executable on Windows Server 2008, open the command line window with administrator permissions. Open the command line window this way, even if your account has administrator privileges.

   - (UNIX)

     ```
     regreportserver.sh -pshost host_name -client client_name -passphrase passphrase
     -psport portnum -fipsmode 0|1
     ```

   -pshost *host_name*

   Specifies the IP address or name of the Policy Server host system to which you are registering the Report Server.

-client *client_name*

Specifies the client name. The client name identifies the Report Server that you are registering.

Note: This value must match the client name that you specified using the XPSRegClient utility when you registered the Report Server on the Policy Server host system.

Example: If you specified "reportserver1" when using the XPSRegClient utility, enter "reportserver1".

-passphrase *passphrase*

Specifies the passphrase that is paired with the client name. The client name identifies the Report Server that you are registering.

Note: This value must match the passphrase that you specified using the XPSRegClient utility when you registered the Report Server on the Policy Server host system.

Example: If you specified CA SiteMinder® when using the XPSRegClient utility, enter CA SiteMinder®.

-psport *portnum*

(optional) Specifies the port on which the Policy Server is listening for the registration request.

fipsmode

Specifies how the communication between the Report Server and the Policy Server is encrypted.

- Zero (0) specifies FIPS–compatibility mode
- One (1) specifies FIPS–only mode.

Default: 0

3. Press Enter.

You receive a message stating that the registration is successful. You have completed re–registering the Report Server with the Policy Server. The connection between the Report Server and the Policy Server is encrypted using FIPS-compliant algorithms.

Appendix A: Upgrade and FIPS Worksheets

You can use the following worksheets to record the necessary information to upgrade:

- A supported LDAP database as a policy store
- A supported relational database as a policy store
- An individual relational database as an audit logging database, key store, token store or session store

Active Directory Information Worksheet

You can use this worksheet to gather the required information for configuring an Active Directory directory server as a policy store or upgrading an existing policy store.

Information Needed	Your Value
Host information	
Directory server port information	
Administrative DN	
Administrative password	
Policy store root DN	
(Optional) SSL client certificate	

CA Directory Information Worksheet

You can use this worksheet to gather the required information for configuring a CA Directory database as a policy store.

Information Needed	Your Value
Host information	
CADSA port number	
Base DN	
Administrative DN	
Administrative password	

Oracle Directory Server Information Worksheet

You can use this worksheet to gather the required information for configuring Oracle Directory Server Enterprise Edition (formerly Sun Directory Server Enterprise Edition) as a policy store or upgrading an existing policy store.

Information Needed	Your Value
Host information	
Directory server port information	
Administrative DN	
Administrative password	
Policy store root DN	
(Optional) SSL client certificate	

Microsoft ADAM Information Worksheet

You can use this worksheet to gather the required information for configuring a Microsoft ADAM directory server as a policy store or upgrading an existing policy store.

Information Needed	Your Value
Host information	
Directory server port information	
Administrative DN	
Administrative password	
Policy store root DN	
(Optional) SSL client certificate	

Administrative UI Registration Worksheet

You can use this worksheet to gather the required registration information for the Administrative UI installation:

Required Information	Your Value
Client name	

Required Information	Your Value
Passphrase	
Policy Server host name	
Policy Server port number	

FIPS Information Worksheet

You can use this worksheet to gather the required information for re-encrypting existing sensitive data while Policy Servers are operating in FIPS-migration mode.

Information Needed	Your Value
CA SiteMinder® Super User account name and password	
Policy store administrator password	

More information:

Gather Environment Information (see page 65)

Chapter 4: Troubleshoot a SiteMinder Key Database Migration

Status of CA SiteMinder® Key Database Migration Unknown

Symptom:

I know that a Policy Server was upgraded. However, I am not sure that the smkeydatabase migration to the certificate data store was successful.

Solution:

Use the smkeydatabase migration utility (smmigratecds) to verify that the migration was successful.

Note: The default location of this utility is *siteminder_home*\bin.

siteminder_home

Specifies the Policy Server installation path.

Follow these steps:

1. Log in to the Policy Server host system on which the smkeydatabase is collocated.
2. Do one of the following steps:
   - (Windows) Open a command prompt and run the following command:

     ```
     smmigratecds.bat –isComplete
     ```

     -isComplete

     Verifies that a previous migration succeeded.
   - (UNIX) Open a shell and run the following command:

     ```
     smmigratecds.sh –isComplete
     ```

   If the migration was successful, a message states that the system has already been migrated. If the migration failed, a message states that the system must be migrated.

Certificate Data Store Error Appears

Symptom:

I received a message stating that the certificate data store is not configured.

Solution:

Follow these steps:

1. If you are upgrading from r6.x, extend the policy store schema.
2. Log in to the Policy Server host system.
3. Run the following command:

   ```
   XPSDDInstall CDSObjects.xdd
   ```

   The policy store schema is extended to support the certificate data store.
4. Do one of the following steps:
   - (Windows) Open a command prompt and run the following command:

     ```
     smmigratecds.bat –validateInstall
     ```

     validateInstall

     Verifies if the certificate data store is installed correctly.
   - (UNIX) Open a shell and run the following command:

     ```
     smmigratecds.sh -validateInstall
     ```

     If the certificate data store is configured correctly, a message states that the installation is valid. If the certificate data store installation failed, a message states that the installation is not valid.
5. Migrate the CA SiteMinder® key database manually.

More information:

Migrate a CA SiteMinder® Key Database Manually (see page 101)

Migration Failed Error Appears

Symptom:

I received a message stating that the smkeydatabase migration failed.

Solution:

The migration utility (smmigratecds) compared the contents of the smkeydatabase to the certificate data store and identified one or more data inconsistencies. An example of a data inconsistency is the same alias mapping to different certificates.

These inconsistencies prevented a successful migration.

Follow these steps:

1. Use the smkeydatabase migration log (smkeydatabaseMigration.log) to identify the problem.

   The log is located in *siteminder_home*\log.

   siteminder_home

   Specifies the Policy Server installation path.

2. Access the smkeydatabase using the smkeytool utility with the access legacy key store flag (–accessLegacyKS).

3. Resolve the data inconsistencies that resulted in the failure.

   Note: For more information about using smkeytool, see the *Policy Server Administration Guide*.

4. Migrate the smkeydatabase manually.

Migrate a CA SiteMinder® Key Database Manually

Symptom:

I want to migrate smkeydatabase certificate data to the certificate data store manually.

Solution:

Use the smkeydatabase migration utility (smmigratecds).

Follow these steps:

1. Be sure that all smkeydatabase instances are synchronized (see page 28).
2. Log in to the Policy Server host system on which the smkeydatabase is collocated.

3. Do one of the following steps to verify that the certificate data store is configured correctly:
   - (Windows) Open a command prompt and run the following command:

     `smmigratecds.bat –validateInstall`

     -validateInstall

     Verifies that the certificate data store is installed correctly.
   - (UNIX) Open a shell and run the following command:

     `smmigratecds.sh -validateInstall`
4. Do one of the following steps to compare the contents of the smkeydatabase to the certificate data store. Comparing the contents identifies data inconsistencies that can prevent a successful migration:
   - (Windows) Run the following command:

     `smmigratecds.bat –validate -log log_file`

     -validate

     Compares the contents of the smkeydatabase to the certificate data store.

     -log

     Sends the validation results to a log.

     log_file

     Specifies the name of the log file and the location to which the utility sends it.

     Example: -log "C:\Progam Files\Sample\Logs"
   - (UNIX) Run the following command:

     `smmigratecds.sh -validate -log log_file`
5. (Optional) If data inconsistencies exist, use the log file to identify the problem.
6. Do one of the following steps to begin the migration:
   - (Windows) Run the following command:

     `smmigratecds.bat -migrate -log log_file`

     -migrate

     Migrates the smkeydatabase to the certificate data store.

     -log

     Sends the migration results to a log.

log_file

Specifies the name of the log file and the location to which the utility sends it.

Example: -log "C:\Progam Files\Sample\Logs"

- (UNIX) Run the following command:

  `smmigratecds.sh -migrate -log log_file`

7. (Optional) If the migration fails, use the log file to identify the cause.

Chapter 5: Platform Support and Installation Media

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 CA SiteMinder® in the Product Finder field.

   The CA SiteMinder® product page appears.
4. Click Product Status, CA SiteMinder® Family of Products Platform Support Matrices.

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

Locate the Bookshelf

The CA SiteMinder® bookshelf is available on the Technical Support site.

Follow these steps:

1. Go to the Technical Support site.

   Note: You do not have to log in.
2. (Optional) If the Get Support tab is not pulled to the front, click Get Support.

3. Under Find Product News and Support, click Product Pages.

   The Support by Product page appears.

4. Enter CA SiteMinder® in the Select a Product Page field and press Enter.

   The CA SiteMinder® product page appears.

5. Click Bookshelves.

6. Click the link for the release that you require.

   The CA SiteMinder® bookshelf main page appears.

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 **CA SiteMinder® Web Services Security** in the Select a Product Page field, and then press Enter.
6. Click Downloads.

   The Download Center screen appears.

7. Enter **CA SiteMinder® Web Services Security** 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 CA SiteMinder® installation executables are listed.