

# HP Select Federation

For the HP-UX, Linux, Solaris and Windows® operating systems

Software Version: 7.00

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## Certificate Management User's Guide

Document Release Date: August 2007  
Software Release Date: September 2007



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# Contents

<b>1</b>	<b>Introduction</b> .....	<b>7</b>
	Running the CMT .....	7
	Configuring the CMT .....	8
	Logging-Related Properties .....	8
	handler .....	8
	java.util.logging.ConsoleHandler.level .....	8
	java.util.logging.FileHandler.level: .....	8
	java.util.logging.FileHandler.pattern .....	8
	java.util.logging.FileHandler.formatter .....	8
	Sample Logging Configuration .....	9
	Tool-Related Properties .....	9
	JCEProvider .....	9
	historyfile .....	9
<b>2</b>	<b>Supported Features</b> .....	<b>11</b>
	File Menu .....	11
	Create New Keystore .....	11
	Open Keystore .....	11
	Load Recent Keystore .....	11
	Save Keystore .....	12
	Close Keystore .....	12
	Edit Menu .....	12
	Create New Entry .....	12
	CSR (Certificate Signing Request) .....	12
	SSC (Self Signed Certificate) .....	13
	Delete Entry .....	13
	View Menu .....	13
	Show Details in Table Format .....	13
	Show Details in PEM Format .....	13
	Import Menu .....	14
	Import Certificate .....	14
	Import a Certificate Reply .....	14
	Import Key and Certificate .....	14
	Import PKCS#12 Certificate .....	15
	Export Menu .....	15
	Export Key .....	15
	Export Certificate .....	15
	Export to PKCS#12 File .....	15
	Export Certificate Request .....	16

Glossary..... 17

# 1 Introduction

Certificate Management Tool (CMT) is a platform independent software tool implemented in Java which can be used to manage keystores and its individual key and certificate entries. This tool exclusively uses Java Cryptography Architecture and supports the JKS file format. This tool does not require any console-based operation.

CMT supports the following operations:

- Create new keystores
- Modify current keystores
  - Creating self-signed certificates in X.509 format
  - Creating PKCS#10 certificate signing request (CSR)
  - Deleting existing entries
- Import to current keystore
  - Existing third-party signed certificates
  - Self-signed certificates
  - PKCS#12 file containing key and certificate
- Export from current keystore
  - Key in X.509 format
  - Certificate in X.509 format
  - Key and certificate to PKCS#12 file
  - CSR request to PKCS#10 file
- Display current keystore entry details
  - **List view**: all entries are displayed in a tree structure
  - **Detailed view**: entry details are displayed in tabular format
  - **PEM view**: PEM-encoded display of the selected entry

The Certificate Management Tool (CMT) is a standalone 100% Pure Java application. When you run the Select Federation Installer, the CMT is installed in the `tools/cmt` directory.

## Running the CMT

To launch the CMT, execute the following command appropriate for your operating system:

- On Linux:
  - `./cmt.sh`
- On Windows:

```
<SF_Install_Dir>\tools\cmt> cmt.bat
```



Before running the tool, be sure that all the configuration parameters are set according to the requirements. See all the configuration parameters in the next section [Configuring the CMT](#).

## Configuring the CMT

CMT can be configured by modifying the configuration properties in the `config.properties` file. Details of the configuration properties are in the following sections:

- [Logging-Related Properties](#)
- [Tool-Related Properties](#)

### Logging-Related Properties

#### handler

This property is a logging handler, which logs logging messages. There are two types of logging handlers:

- `java.util.logging.FileHandler` – This handler is the default, which logs messages to a specified file on the disk.
- `java.util.logging.ConsoleHandler` – This handler prints messages directly on the console.

#### `java.util.logging.ConsoleHandler.level`

This property specifies the logging level for the console handler. The default is set to OFF so that no logging messages are displayed on the console.

#### `java.util.logging.FileHandler.level:`

This property specifies the logging level for the file log handler. The default is set to SEVERE. Other possible values are WARNING, INFO, ALL, FINE, FINER, FINEST (in descending order of debug information). The value should be kept low if you need the debug messages. Otherwise, keep the values high (SEVERE).

#### `java.util.logging.FileHandler.pattern`

This property specifies the file in which log messages are to be stored. The default file name is `cmt.log`.

#### `java.util.logging.FileHandler.formatter`

This property specifies the format in which logging messages are to be printed in the file. There are two types of logging formatters:

- `java.util.logging.SimpleFormatter` — This logging format is the default, which formats the logs in plain text readable format.



- `java.util.logging.XMLFormatter` — This logging format formats the logs in xml format. Each message is entered as a new element and each informational unit is entered as a separate node in that element.

## Sample Logging Configuration

As an example, if you want to enable detailed logging to a file as well the console, you would set logging properties as follows:

```
# Log to file on disk, and to console.
handlers=java.util.logging.FileHandler java.util.logging.ConsoleHandler

# Logging level for console log output.
java.util.logging.ConsoleHandler.level=ALL

# Specify one of these levels (SEVERE, WARNING, INFO, ALL, FINE)
java.util.logging.FileHandler.level=ALL

# logging messages will be logged to this file.
java.util.logging.FileHandler.pattern =cmt.log

# logging formatter. Other available formatter is XMLFormatter
java.util.logging.FileHandler.formatter =java.util.logging.SimpleFormatter
```

## Tool-Related Properties

### JCEProvider

This property specifies which JCE provider to use. There are two types of JCE providers supported by this tool.

- BC (Bouncy Castle) — BC is the default value for the JCE provider. The BC provider is widely used and supports a large number of encryption algorithms and a wide range of key sizes. See <http://www.bouncycastle.org> for more information. This provider is bundled with the CMT.
- SUN (Sun JCE provider) – The SUN JCE provider is used by default with Java JDK or JRE.

### historyfile

This property provides a keystore history in a flat file called `history.properties` in the `install` directory. This file maintains the history of the last five keystores that were used.



## 2 Supported Features

The Certificate Management Tool (CMT) supports various keystore management operations. The CMT manages one keystore at a time. A keystore is a single file in JKS format, which can contain keys, certificate signing requests (CSRs) and certificates. Using the CMT, you can generate new keypairs, import or export certificates or generate CSRs.

You can invoke these operations through selecting the menus or clicking on the tools on the toolbar. This chapter describes the following menus and the menu options.

- [File Menu](#)
- [Edit Menu](#)
- [View Menu](#)
- [Import Menu](#)
- [Export Menu](#)

### File Menu

#### Create New Keystore

You can create a new keystore using CMT. CMT asks the user to enter the location and password for the keystore file. On submitting this information, an empty keystore is created at the given location and is protected by the given key-password. You need to save the newly created keystore to use it afterwards.

#### Open Keystore

Opening the keystore makes it available for other operations. Once opened, all the contents of the keystore are visible in the tree structure under **List View**. If an individual entry in the **List View** is selected, the detailed view of the selected entry displays in the right pane. The detailed view can be shown in PEM or tabular format. Select the format you want in the **View** menu.

#### Load Recent Keystore

CMT stores the history of five recently opened keystores. You can select one of them by using this feature. In this case, the key-password of the selected keystore is required to open the keystore. You do not need to browse for the file in the file system.

## Save Keystore

Any modifications done in the keystore are written to the current keystore using the **Save Keystore** sub-menu.

## Close Keystore

To operate another keystore without restarting the CMT, close the current keystore and open another one. If any unsaved modifications have been done in the current keystore, the CMT prompts you to save the keystore.

## Edit Menu

### Create New Entry



- You must use ASCII characters in an email address.
- You must use the English alphabet for the Country Code. For example, US.

To create a new entry, enter the following information:

- **Alias for this entry\*** (name of the entry in the keystore)
- **Password for this entry\*** (password for the key/certificate entry)
- **Common Name\* (CN)**
- **Name of Organization (O)**
- **Email ID**
- **Organizational Unit (OU)**
- **Location / Town (L)**
- **State / Province (ST)**
- **Country Code (e.g. US)**
- **Key Size** (512,1024,2048) in Bits
- **Validity Period** (Days)

The fields identified with an asterisk (\*) are required. These field values are included in the CSR or certificate that is generated along with the key pair.

You can create two types of new entries in the keystore: CSR (Certificate Signing Request) or SSC (Self Signed Certificate) as described in the following sections:

### CSR (Certificate Signing Request)

When you create an entry, all information entered is used in the Certificate Signing Request (CSR). The CSR is created in PKCS#10 format. This operation creates a CSR entry in the keystore. It also allows you to save the CSR into a file. Since keystores cannot have entries without certificates, the CMT generates a dummy certificate with serial number 1. This way, the CSR can be sent to the CA for certificate signing and the signed certificate could be imported

To submit this CSR to a Certificate Authority do the following:

- 1 Select the **View** → **Show details in PEM format** menu options to switch to PEM format.
- 2 Copy (**Ctrl+C**) the entire request and submit it to the Certificate Authority.

## SSC (Self Signed Certificate)

Self-signed certificates may be used where a third-party trust is not required by the application. Users can generate self-signed certificates using this feature. For a self-signed certificate, the key pair and self signed certificate in X.509 format is created from the user entered information. A new entry is added to the keystore.

## Delete Entry

Any available entry (key, certificate, CSR) in the keystore can be deleted. Only one entry can be deleted at a time. Before any delete, the CMT asks for user confirmation of the particular delete operation.

## View Menu

### Show Details in Table Format

Contents of the selected entry are shown in tabular format as Attribute and Value. Following are the contents of the table format:

- Serial Number
- Version
- Issuer DN
- Subject DN
- Valid (If certificate is not valid, this field will show “NO” in red color.)
- Valid From
- Valid Till
- Signature Algorithm
- Public Keysize
- MD5 Fingerprint
- SHA-1 Fingerprint

### Show Details in PEM Format

Contents of the selected entry are shown in PEM encoded format. You can select the required part and copy and paste it to wherever you wish.

# Import Menu

## Import Certificate

Import an existing third-party or self-signed certificate in the keystore.

If the private-key corresponding to the certificate being imported already exists, the certificate is added to the alias corresponding to that key. Otherwise, a new certificate entry is created in the keystore.

A third-party certificate is one in which the corresponding private-key is not in the keystore. If the certificate being imported is a third-party certificate, the tool asks whether to add the certificate as a “Trusted Certificate.”

To import a third-party or self-signed certificate, you need to specify the following:

- **Alias** to which the certificate will be imported.
- **Key password** for the alias.
- **File** containing the certificate to be imported.

## Import a Certificate Reply

The CMT allows you to import a CSR reply from a Certificate Authority.

To create a CSR, see [Create New Entry](#) on page 12. When a CSR is created, it appears under the Certificate Request category in the left panel.

To import a CSR reply, perform the following steps:

- 1 Select the CSR entry for which you would like to import a reply.
- 2 Select the **Import** → **Import Certificate** menu options.  
A dialog box opens where the alias field is pre-populated with the CSR alias.
- 3 Enter the key password (this is the one you would have specified while creating the CSR).
- 4 Browse to the location of the certificate reply file.
- 5 Click the **Import** button.

The imported certificate appears under the Keys and Certificates panel.

- ▶ Before you import the CSR reply, make sure to import the root and any other intermediary CA certificates as “Trusted Certificates” into your keystore. Failing to do so will result in an “Incomplete Certificate Chain” error.

## Import Key and Certificate

The CMT has two options for importing keys and certificates. The key and the certificate may be in separate files, or they may be in a single PKCS#12 format file. To import an existing key and certificate from separate files in the keystore, click **Import** → **Import Key and Certificate**.

If the key and certificate already exists with the same alias name, then the tool asks whether to overwrite the entry. Also, if the key already exists with a different alias name, then the tool asks whether to create a new entry with a new alias name. For that user, you need to specify the following:

- **Alias** to which the certificate will be imported.
- **Key password** for the alias.
- **File** containing the certificate to be imported.
- **File** containing the key to be imported.

## Import PKCS#12 Certificate

If the keys and certificates to be imported are in a single PKCS#12 file, click **Import** → **Import PKCS#12 File**. You need to specify the following:

- **Alias** to which the certificate will be imported.
- **Key password** for the alias.
- **Password** for the PKCS#12 certificate file.
- PKCS#12 **file path**.

## Export Menu

### Export Key

Exports the key with the specified alias to a file. The key corresponding to the selected alias is exported to a specified file on disk in X.509 encoded format. You need to specify the following:

- **Alias** for the key entry in the keystore.
- **Password** for the key entry in the keystore.
- **File** on the disk in which the key will be stored.

### Export Certificate

Exports the certificate corresponding to the alias to a file. The certificate corresponding to the selected alias is exported to a specified file on disk in X.509 format. You need to specify the following:

- **Alias** for the certificate entry in the keystore.
- **Password** for the certificate entry in the keystore.
- **File** on the disk in which certificate will be stored.

### Export to PKCS#12 File

Exports either a key and certificate or a third-party certificate to a PKCS#12 file. A new PKCS#12 file is created which is protected by the given password. You need to specify the following:

- **Alias** for the entity.
- **Password** for the selected entry.

- **File** on the disk in which key will be stored.
- **Password** for the PKCS#12 file

## Export Certificate Request

Exports a certificate request generated by CMT, which already exists in the keystore. This CSR is exported as a PKCS10 file and is stored on the disk at a given location. For that user, you need to specify the following:

- **Alias** for the CSR entry.
- **Password** for the specified alias.
- **File** on the disk in which CSR will be stored on export.



For a password (key or cert store) length greater than or equal to 8 characters, you need to download and install “Unlimited Strength” Jurisdiction Policy Files. See <http://java.sun.com/products/jce/index-14.html>.



# Glossary

## **Access Control**

The authorization policies and conditions that regulate identity access to resources with a goal towards preventing unauthorized use or use in an unauthorized manner.

## **Access Management**

The process of authentication and authorization.

## **Activation**

Process of setting up mapping from a federated name identifier to a local user ID.

## **Active Directory Federation Services (ADFS) (WS-Federation 1.0)**

A feature of Microsoft Windows 2003 Server R2, which allows a federation with Active Directory-based users, by using the WS-Federation 1.0 protocol.

## **Active Server Pages (ASP)**

Microsoft pages, which log users in by invoking the IDP-FSS over a secure channel. See also [Identity Provider Filter-Support Service \(IDP-FSS\)](#).

## **ADFS**

See [Active Directory Federation Services \(ADFS\) \(WS-Federation 1.0\)](#).

## **Administrator**

An identity with full permission to manage Select Federation.

## **API**

See [Application Program Interface \(API\)](#).

## **Application Helper**

Select Federation component that helps you configure URLs in your application for seamless navigation to the Service Provider (SAML Consumer) sites or for authentication through the Identity Provider (SAML Producer) sites.

## **Application Program Interface (API)**

An interface that enables programmatic access to an application.

## **Application Site Role**

An Application Site (also called a Service Provider (SP) Site), which is a Trusted Partner site that participates in a federation to provide a service or application to common users and relies on an authority site to provide authoritative user authentication and other information. For example, in a federation of an extranet with partners' corporate portals, the site hosting the extranet is the Application Site.

## **Artifact Binding**

Specifies that the browser should be redirected from the Authority Site (IDP) to the Application Site (SP) using a random string known as the "artifact" and that string should then be used by the SP over a SOAP call to retrieve the actual protocol message.

## **ASP**

See [Active Server Pages \(ASP\)](#).

## **Attribute**

One or more characteristics that are part of an identity profile. For each identity, an attribute has a corresponding value. For example, an attribute called "Department" may be assigned the values of, "IT", "Sales", or "Support". These attributes are interpreted and assigned appropriately to profiles in different applications (LDAP-compliant directories, databases, SAPs, and so on) based on the mapping rules defined for that application.

## **Authentication**

The act of verifying the credentials of an identity and matching them with an identity profile. The evaluation of credentials ensures that the identity is truly who or what they claim to be.

## **Authority Site Role**

An Authority Site (also called an Identity Provider (IDP) Site), which is a Trusted Partner site that participates in a federation to authenticate users and provide other authoritative user information to other sites. For example, in a federation of an extranet with partners' corporate portals, the portals act as the Authority Site.

## **Authorization**

The process of defining and enforcing the entitlements of an identity. Checking whether the entitlements of an authenticated principal permit the principal to perform the requested operation. Authentication is a prerequisite for authorization. See [Access Control](#) and [Authentication](#).

## **Bindings**

Possible ways in which messages can be conveyed in the context of a browser-based user transaction between an Authority Site (IDP) and an Application Site (SP).

## **CA**

Certificate Authority

## **CardSpace**

An active client software protocol that manages the release of identity information to Service Providers (SP). Identity information is organized into "cards" on the end user's computer. Each computer contains a set of "claims" or identity attributes, such as name or email

address. Each time the user is required to authenticate to an SP, the user selects one of these cards, which determines the set of claims that will be sent.

### **Certificate Revocation Checking**

Verifies the validity of certificates against a certification authority's published list of revoked certificates. Select Federation provides a simple means of enabling certificate revocation checking via Certificate Revocation Lists or CRLs.

### **Context**

A Select Identity concept that defines a logical grouping of users that can access a Service.

### **CSR**

Certificate Service Request

### **Delegated Administrator**

An identity that has been added by the root administrator. The delegated administrator can perform all functions that the root administrator performs except admin-related functions such as add and remove admins and change admin passwords. When Select Federation is running in Standalone mode, the delegated administrator also cannot view the Admin Audit log. But when Select Federation is integrated with Select Access, then the delegated administrator can view the Admin Audit log. See [Root Administrator](#).

### **DS**

Discover Service

### **DST**

(Data Services Template) DST-based services such as the Personal Profile service (ID-PP) and the Employee Profile service (ID-EP).

### **Edge Router**

A Federation Router that is located at the edge of an enterprise where employees of that enterprise use applications offered by partners of the enterprise. Those applications request authentication of users (employees) of the Federation Router, and the Federation Router “routes” that authentication request to the appropriate departmental authority. See [Federation Router](#).

### **Event**

Federation activity such as **Logged In**, **Received Logout Request**, **Logged Out**, and so on. Select Federation logs server events (operational activities of enabled users) and administrator events (all the federated identity activities of each administrator).

### **Event Plugin Chain**

A set of plugins that are called in order whenever an event occurs. A chain may contain one or more Event Plugins. See [Event](#).

### **Federation**

The combination of business and technology practices to enable identities to span systems, networks and domains in a secure and trustworthy fashion. This is analogous to how passports are used to assert our identity as we travel between countries.

## **Federation Router**

A Select Federation installation that simplifies trust relationships between Authority Sites (IDPs) and Application Sites (SPs). The Federation Router acts as an intermediary for multiple organizational entities.

## **Filter-Support**

A dedicated Java web application, which integrates Select Federation with the filters provided for the corresponding web servers: IIS, Apache 2.0 and Java Servlet Containers. Filter-Support also integrates Select Federation with web servers that cannot access the Select Federation databases, which are normally kept behind a firewall.

## **Filter-Support Service (FSS)**

A servlet component that exposes Select Federation functionality to non-java applications, which can make web requests through xml messages. FSS exposes two main pieces of functionality: a) allowing trusted programs to inject a Windows-authenticated `user-id` into an IDP session, and b) allowing trusted programs to query for user attributes.

## **FSS**

See [Filter-Support Service \(FSS\)](#).

## **GMT**

See [Greenwich Mean Time \(GMT\)](#).

## **Greenwich Mean Time (GMT)**

Standard time used throughout the world based on the mean solar time of the meridian of Greenwich. See [Universal Coordinated Time \(UTC\)](#).

## **Group**

For Select Federation, a Group shares a common set of policies. All groups and partners within that Group inherit those policies. An administrator may override the Group setting for a particular partner within that Group.

## **Identity Mapping**

The process of determining a local user ID against which to map an incoming federated name identifier. Two common techniques for identity mapping are either generating a random local user ID based on the federated name identifier or using any attributes available to determine a local user ID.

## **Identity Provider Filter-Support Service (IDP-FSS)**

A servlet component of the Integrated Windows Authentication (IWA). The IDP-FSS enables a trusted program to add a Windows-authenticated user ID into an IDP session.

## **Identity Provider (IDP)**

An Authority organization or web site that asserts the identity of users to the Service Providers or SPs in a federated network. The assertion of the user identity is done using standard protocols such as SAML and Liberty.

## **Identity Web Services Framework (ID-WSF)**

Liberty Identity Web Services Framework security mechanism, which is a federated web service protocol. ID-WSF is used to build federated (identity-based) web services.

## **IDP**

See [Identity Provider \(IDP\)](#).

## **IDP-FSS**

See [Identity Provider Filter-Support Service \(IDP-FSS\)](#).

## **ID-WSF**

See [Identity Web Services Framework \(ID-WSF\)](#).

## **IE**

Internet Explorer

## **IIS**

See [Internet Information Server \(IIS\)](#).

## **Impersonation Token**

Any token that allows actions to be carried out on the user's behalf. For example, in Windows, tokens issued through Kerberos are often used for impersonating users. Various technologies running on Windows have APIs defined that take an impersonation token and apply them to threads and/or processes that can then leverage them for whatever actions they need to perform on behalf of the users.

## **Inbound Windows Integration (IWI)**

Inbound-integration that seamlessly integrates federated users at a Select Federation Application (SP) site to applications hosted on the Windows environment.

## **Integrated Windows Authentication (IWA)**

Outbound integration that allows Select Federation to leverage a user's Windows logon credentials to seamlessly authenticate the user and transfer the user to a Trusted Federation Partner site.

## **Internet Information Server (IIS)**

The web server that is bundled with the Windows 2003 Server.

## **IWA**

See [Integrated Windows Authentication \(IWA\)](#).

## **IWI**

See [Inbound Windows Integration \(IWI\)](#).

## **JAVA**

Object-oriented programming language.

**JVM**

Java Virtual Machine. A platform independent execution environment that converts Java bytecode into machine language then executes it.

**Keystore**

A database of keys. The private keys are associated with a certificate chain, which authenticates the corresponding public key. The keystore also contains certificates from trusted entities. By generating the keystore, you add another layer of security to the data that is exchanged in the Select Federation system.

**LDAP**

See [Lightweight Directory Access Protocol \(LDAP\)](#).

**LECP**

Liberty Enabled Client/Proxy Service.

**Liberty Identity-based Web Services Framework (ID-WSF)**

A protocol that provides standards for discovering and invoking identity-based web services.

**Liberty Identity Federation Framework (ID-FF)**

An open standard federation standard protocol that provides basic single sign-on capabilities.

**Lightweight Directory Access Protocol (LDAP)**

A set of open protocols for accessing information directories. LDAP can make the physical network topology and protocols transparent so that a network identity can access any resource without knowing where or how it is physically connected.

**Metadata**

Online exact description of a Trusted Partner site in a federation. The metadata describes the various URLs at which its site services (such as Single Sign-On, Single Logout) are available. It also describes the public key certificates so that sites receiving messages from these Trusted Partner sites can confirm that the messages are signed correctly and have not been tampered with. See [Single Sign-On \(SSO\)](#) and [Single Logout \(SLO\)](#).

**Microsoft Management Console (MMC)**

MMC is used to set up server authentication and to import the `pkcs / pfx` format file into your local store on the IIS machine.

**MMC**

See [Microsoft Management Console \(MMC\)](#).

**NTLM (NT LAN Manager)**

Default network authentication protocol for Windows NT 4.0.

**OCSP**

See [Online Certificate Status Protocol \(OCSP\)](#).

## **Online Certificate Status Protocol (OCSP)**

OCSP support exists in JDK 1.5. OCSP support is available for the Built-in application server (Tomcat 5.5.23) and WebLogic 8.1 and 9.1.

## **Partner**

For Select Federation, the main entity in a federation trust relationship. A partner is described in terms of its protocol metadata, various descriptive attributes, and policy information. Select Federation allows partners to be grouped together in “Groups.”

## **Passive URLs**

Passive URLs are for resources where users’ personalized content is not critical for the application. Users are allowed to access these URLs even though they cannot be authenticated without being prompted. However, if the user is already logged in at the IDP, has a federation session with Select Federation, or can be authenticated without being prompted, the user’s identity and attribute information is presented in the federation session to the application.

## **PDC**

Primary Domain Controller

## **Plugin**

Compiled code that can interact with the core product to provide additional functionality, without replacing parts of the core product. In the context of Select Federation, the “compiled code” can be thought of as Java compiled code that is packaged in JARs and the “core product” can be thought of as any Select Federation install.

## **POST Binding**

Specifies that the protocol message is to be delivered to an SP from an IDP through an auto-posted HTML form.

## **Presence Service**

A service that informs the WSC if a user is online, available, and so on. See [Web Service Consumer \(WSC\)](#).

## **Privacy Manager**

End-user visible component of Select Federation. Its visibility allows extensive customizing.

## **Protected URLs**

Protected URLs require users to be authenticated to allow access to these URLs. If a user is not authenticated, the filter redirects the user to Select Federation for authentication. The Select Federation installation may authenticate the user locally or initiate federated login at another Authority (IDP).

## **Protocol**

A set of rules that controls or enables communication between two endpoints. In the context of Select Federation, an endpoint is software that is capable of using any one of the many protocols that Select Federation supports.

**Root Administrator**

The “super user” administrator who has complete entitlement to all functionality in the Select Federation Administration Console. The root administrator’s login is always **admin**. Only the root administrator can add and remove delegated administrators and change administrators’ passwords.

**SAML**

Security Assertion Markup Language open standard federation protocol. Identity federation standard that was created by the OASIS Security Services Technical Committee (SSTC).

**Secure Sockets Layer (SSL)**

A handshake protocol, which supports server and client authentication.

**Service Provider (SP)**

An application that allows authenticated access based on an authentication performed by an IDP using a federated identity protocol such as Liberty or SAML.

**Single Logout (SLO)**

Permits a user to do a global log out from all active sites.

**Single Sign-On (SSO)**

Session/authentication process that permits a user to enter one set of credentials (such as name/password, secureId, fingerprint, and so on) to access multiple applications. A Web SSO is a specialized SSO system for web applications.

**Site Role**

Type of web site in a federation. Typically, you and your Trusted Partner agree in advance on how to set up the federation. Generally, one site hosts the application, while the other provides the authentication for end users to seamlessly access the application. When you deploy Select Federation in your site, you must set the site role as one of the following: (1) an Authority Site, (2) an Application Site, (3) both an Authority and Application Site, or (4) a Federation Router. See also [Service Provider \(SP\)](#), [Identity Provider \(IDP\)](#), and [Federation Router](#).

**SOAP**

Simple Object Access Protocol is a fundamental web services standard for XML-based communication between web service providers and consumers.

**SP**

See [Service Provider \(SP\)](#).

**SSC**

Self Signed Certificate

**SSL**

See [Secure Sockets Layer \(SSL\)](#).



**SSO**

See [Single Sign-On \(SSO\)](#).

**TLS**

Transport Layer Security

**Universal Coordinated Time (UTC)**

Standard time used throughout the world based on the mean solar time of the meridian of Greenwich. Formerly known as Greenwich Mean Time (GMT).

**Unprotected URLs**

Unprotected URLs allow users access to these URLs without being authenticated. Typically, special URLs such as the login URL and logout URL are unprotected URLs.

**UPN**

User Principal Name

**UTC**

See [Universal Coordinated Time \(UTC\)](#).

**Web Service Consumer (WSC)**

An application that uses web services. It may not be a web service in itself, but uses XML and typically SOAP-based communication with a web service to perform some of its functions.

**Web Service Provider (WSP)**

A web service application that services requests it receives based on XML and typically SOAP-based communication.

**WSC**

See [Web Service Consumer \(WSC\)](#).

**WSP**

See [Web Service Provider \(WSP\)](#).

