



One Identity Safeguard for Privileged Sessions 6.0

DEPRECATED inWebb Multi-Factor Authentication - Tutorial

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Legend

 **WARNING:** A WARNING icon highlights a potential risk of bodily injury or property damage, for which industry-standard safety precautions are advised. This icon is often associated with electrical hazards related to hardware.

 **CAUTION:** A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.

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Introduction

i NOTE:

This tutorial describes the deprecated version of the plugin.

To upgrade your deprecated plugin for One Identity Safeguard for Privileged Sessions 6.0, see [Upgrading plugins for One Identity Safeguard for Privileged Sessions version 6.0](#).

This document describes how you can use the services of [inWebo](#) to authenticate the sessions of your privileged users with One Identity Safeguard for Privileged Sessions (SPS).

One Identity Safeguard for Privileged Sessions:

One Identity Safeguard for Privileged Sessions (SPS) controls privileged access to remote IT systems, records activities in searchable, movie-like audit trails, and prevents malicious actions. SPS is a quickly deployable enterprise device, completely independent from clients and servers — integrating seamlessly into existing networks. It captures the activity data necessary for user profiling and enables full user session drill down for forensic investigations.

SPS acts as a central authentication gateway, enforcing strong authentication before users access sensitive IT assets. SPS can integrate with remote user directories to resolve the group memberships of users who access nonpublic information. Credentials for accessing information systems can be retrieved transparently from SPS's local credential store or a third-party password management system. This method protects the confidentiality of passwords as users can never access them. When used together with inWebo (or another multi-factor authentication provider), SPS directs all connections to the authentication tool, and upon successful authentication, it permits the user to access the information system.

Integrating inWebo with SPS:

SPS can interact with your inWebo account and can automatically request strong multi-factor authentication for your privileged users who are accessing the servers and services protected by PSM. When used together with inWebo, SPS directs all connections to the inWebo tool, and upon successful authentication, it permits the user to access the information system.

The integration adds an additional security layer to the gateway authentication performed on SPS. If the inWebo Authenticator App is installed on the user's device (smartphone, notebook, and so on), the user can generate a one-time password on the device. This will be used for authentication to the One Identity platform. This way, the device turns into a two-factor authentication token for the user. The one-time password is changed after every authentication and is generated using dynamic keys.

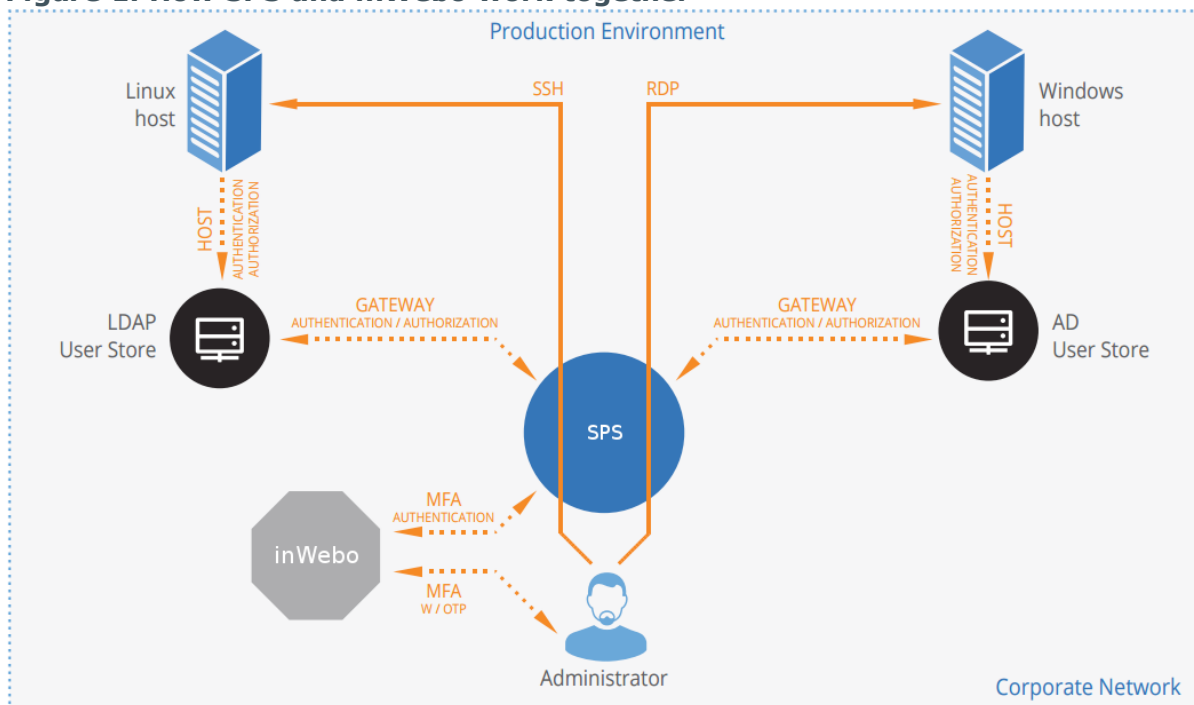
Meet compliance requirements

ISO 27001, ISO 27018, SOC 2, and other regulations and industry standards include authentication-related requirements, for example, multi-factor authentication (MFA) for accessing production systems, and the logging of all administrative sessions. In addition to other requirements, using SPS and inWebo helps you comply with the following requirements:

- PCI DSS 8.3: Secure all individual non-console administrative access and all remote access to the cardholder data environment (CDE) using multi-factor authentication.
- PART 500.12 Multi-Factor Authentication: Covered entities are required to apply multi-factor authentication for:
 - Each individual accessing the covered entity's internal systems.
 - Authorized access to database servers that allow access to nonpublic information.
 - Third parties accessing nonpublic information.
- NIST 800-53 IA-2, Identification and Authentication, network access to privileged accounts: The information system implements multi-factor authentication for network access to privileged accounts.

How SPS and inWebo MFA work together

Figure 1: How SPS and inWebo work together



1. A user attempts to log in to a protected server.
2. **Gateway authentication on SPS**

SPS receives the connection request and authenticates the user. SPS can authenticate the user to a number of external user directories, for example, LDAP, Microsoft Active Directory, or RADIUS. This authentication is the first factor.

3. Outband authentication on inWebo

If gateway authentication is successful, SPS connects the inWebo server to check which authentication factors are available for the user. Then SPS requests the second authentication factor from the user.

- For OTP-like authentication factors, SPS requests the one-time password (OTP) from the user, and sends it to the inWebo server for verification.
 - For the inWebo push notification factor, SPS asks the inWebo server to check if the user successfully authenticated on the inWebo server.
4. If multi-factor authentication is successful, the user can start working, while SPS records the user's activities. (Optionally, SPS can retrieve credentials from a local or external credential store or password vault, and perform authentication on the server with credentials that are not known to the user.)

Technical requirements

In order to successfully connect SPS with inWebo, you need the following components.

In inWebo:

- A valid inWebo subscription that permits multi-factor authentication.
- Your users must be enrolled in inWebo and their access must be activated.
- The users must install the inWebo mobile app.

In SPS:

- A One Identity Safeguard for Privileged Sessions appliance (virtual or physical), at least version 5 F1.
- A copy of the SPS inWebo plugin. This plugin is an Authentication and Authorization (AA) plugin customized to work with the inWebo multi-factor authentication service.
- SPS must be able to access the Internet (at least the services on api.myinwebo.com). Since inWebo is a cloud-based service provider, SPS must be able to access its web services to authorize the user.

The connection also requires the Service ID that is displayed on the inWebo Administration interface under the **Service Users** tab.

Generate and download an X.509 certificate and store it in the credential store:

1. In the inWebo Administration interface, navigate to **Secure Sites** and click **Download a new certificate for the API**. Configure the parameters (**Authentication**: Yes, **Provisioning**: No) and click **Download**.
2. Decrypt the downloaded X.509 certificate with the following command: **openssl rsa -in <certificate-file-name>.cert**. Enter the required passphrase. The decrypted part of the certificate is displayed on the console screen.
3. Copy the decrypted part from **-----BEGIN RSA PRIVATE KEY-----** to **-----END RSA PRIVATE KEY-----**, open the <certificate-file-name>.cert and replace the encrypted part with the copied decrypted part from **-----BEGIN**

ENCRYPTED PRIVATE KEY----- to -----END ENCRYPTED PRIVATE KEY---
--.

- Depending on the factor you use to authenticate your users, your users might need Internet access on their cellphones.
- SPS supports AA plugins in the RDP, SSH, and Telnet protocols.
- In RDP, using an **AA plugin** together with Network Level Authentication in a Connection Policy has the same limitations as using Network Level Authentication without domain membership. For details, see "[Network Level Authentication without domain membership](#)" in the *Administration Guide*.
- In RDP, using an **AA plugin** requires TLS-encrypted RDP connections. For details, see "[Enabling TLS-encryption for RDP connections](#)" in the *Administration Guide*.

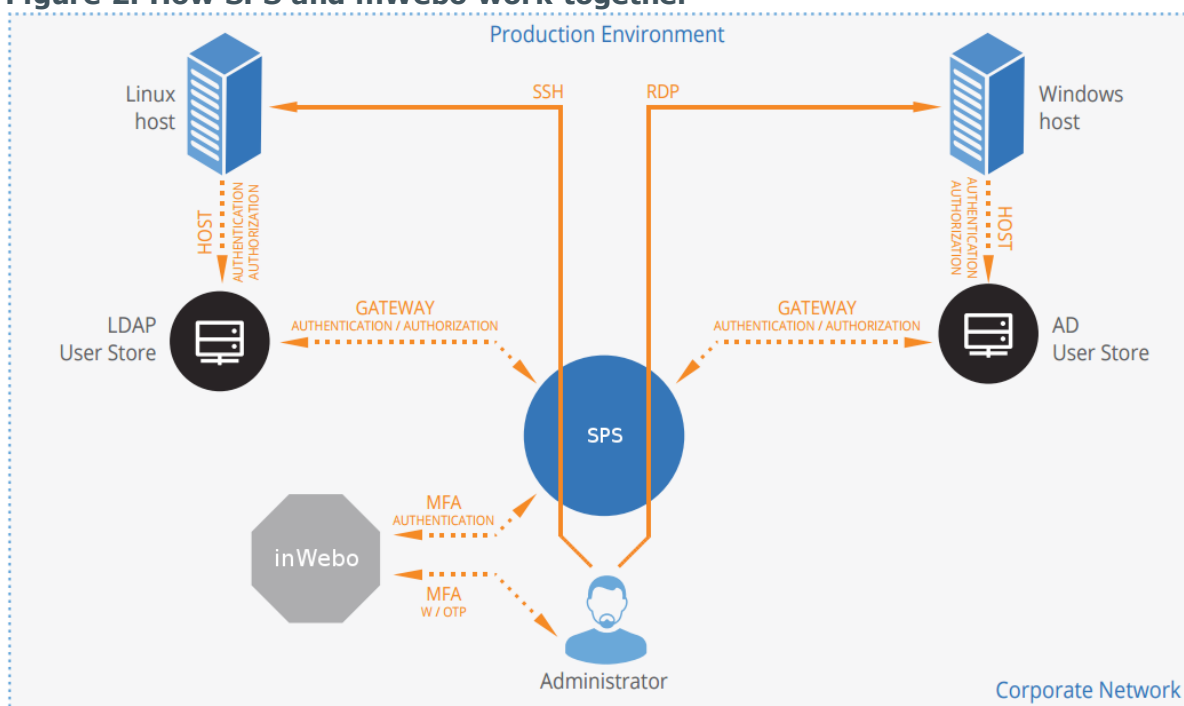
Availability and support of the plugin

The SPS inWebo plugin is available as-is, free of charge to every SPS customer from the [Plugin Page](#). In case you need any customizations or additional features, [contact our Professional Services Team](#).

You can use the plugin on SPS 5 F4 and later. If you need to use the plugin on SPS 5 LTS, [contact our Professional Services Team](#).

How SPS and inWebo work together in detail

Figure 2: How SPS and inWebo work together



1. A user attempts to log in to a protected server.

2. Gateway authentication on SPS

SPS receives the connection request and authenticates the user. SPS can authenticate the user to a number of external user directories, for example, LDAP, Microsoft Active Directory, or RADIUS. This authentication is the first factor.

3. Check if the user is exempt from multi-factor authentication

You can configure SPS using whitelists and blacklists to selectively require multi-factor authentication for your users, for example, to create break-glass access for specific users.

- If multi-factor authentication is not required, the user can start working, while SPS records the user's activities. The procedure ends here.
- If multi-factor authentication is required, SPS continues the procedure with the next step.

For details on creating exemption lists, see [whitelist](#).

4. Determining the inWebo username

If the gateway usernames are different from the inWebo usernames, you must configure the SPS inWebo plugin to map the gateway usernames to the inWebo usernames. The mapping can be as simple as appending a domain name to the gateway username, or you can query an LDAP or Microsoft Active Directory server. For details, see [Mapping SPS usernames to inWebo identities](#).

5. Outband authentication on inWebo

If gateway authentication is successful, SPS connects the inWebo server to check which authentication factors are available for the user. Then SPS requests the second authentication factor from the user.

- For OTP-like authentication factors, SPS requests the OTP from the user, and sends it to the inWebo server for verification.
 - For the inWebo push notification factor, SPS asks the inWebo server to check if the user successfully authenticated on the inWebo server.
6. If multi-factor authentication is successful, the user can start working, while SPS records the user's activities. (Optionally, SPS can retrieve credentials from a local or external credential store or password vault, and perform authentication on the server with credentials that are not known to the user.)
 7. If the user opens a new session within a short period, they can do so without having to perform multi-factor authentication again. After this configurable grace period expires, the user must perform multi-factor authentication to open the next session. For details, see [\[cache\]](#).

Mapping SPS usernames to inWebo identities

By default, SPS assumes that the inWebo username of the user is the same as the gateway username (that is, the username the user used to authenticate on SPS during the gateway authentication). To identify the users, SPS uses the username (login) field in inWebo, which is an email address.

If the gateway usernames are different from the inWebo usernames, you must configure the SPS inWebo plugin to map the gateway usernames to the inWebo usernames. You can use the following methods:

- To simply append a string to the gateway username, configure the [append_domain parameter](#). In this case, SPS automatically appends the @ character and the value of this option to the username from the session, and uses the resulting username on the inWebo server to authenticate the user. For example, if the domain is set as `append_domain: example.com` and the username is `Example.User`, the SPS plugin will look for the user `Example.User@example.com` on the inWebo server.
- To look up the inWebo username of the user from an LDAP/Active Directory database, configure the `[ldap]` section of the SPS inWebo plugin. Typically, the SPS plugin queries the email address corresponding to the username from your LDAP or Active Directory database. For details on LDAP parameters, see [\[ldap\]](#).
- If you configure both the [append_domain parameter](#) and the [\[ldap\] section](#) of the SPS inWebo plugin, SPS appends the @ character and the value of the `append_domain` parameter to the value retrieved from the LDAP database.
- If you have configured neither the `Domain` parameter nor the `[ldap]` section, SPS assumes that the inWebo username of the user is the same as the gateway username.

Bypassing inWebo authentication

Having to perform multi-factor authentication to a remote server every time the user opens a session can be tedious and inconvenient for the users, and can impact their productivity. SPS offers the following methods to solve this problem:

- In SPS, the Connection policy determines the type of authentication required to access a server. If you do not need multi-factor authentication for accessing specific servers, configure your Connection policies accordingly.
- If the user opens a new session within a short period, they can do so without having to perform multi-factor authentication. After this configurable grace period expires, the user must perform multi-factor authentication to open the next session. For details, see [\[cache\]](#).
- You can configure SPS using whitelists and blacklists to selectively require multi-factor authentication for your users, for example, to create break-glass access for specific users. For details on creating exemption lists, see [whitelist](#).

Configure your inWebo account for SPS

Prerequisites:

- Administrator access to your inWebo account.
- Make sure that you have all the required components listed in [Technical requirements](#).

1. Add users to your inWebo account.

The users you want to authenticate with SPS must have an activated account in inWebo. For details on adding or importing your users, see [Start provisioning your users on our platform](#) in the inWebo documentation.

2. Enable Multi-factor Authentication (MFA) for your organization.

Optionally, you can create a Multi-factor Policy in inWebo to enable MFA only for the group of users who you want to authenticate with SPS.

For details, see [2-Step Multi-Factor Authentication using a Push request to a Smartphone](#) in the inWebo documentation.

3. Create an API token.

Navigate to *Admin > API > Tokens*, click *Create Token*, and save it.

Configure SPS to use inWebo multi-factor authentication

Prerequisites:

- Your inWebo API token.

CAUTION:

According to the current inWebo policies, your API token expires if it is not used for 30 days. Make sure that you use it regularly, because SPS will reject your sessions if the API token is expired.

- Administrator access to SPS.
- Make sure that you have all the required components listed in [Technical requirements](#).

To configure SPS to use inWebo multi-factor authentication

1. Download the SPS inWebo plugin

SPS customers can [download the official plugin from GitHub](#).

2. Upload the plugin to SPS

Upload the plugin to SPS. For details, see "[Using a custom Authentication and Authorization plugin to authenticate on the target hosts](#)" in the Administration Guide.

3. Configure the plugin on SPS

The plugin includes a default configuration file, which is an ini-style configuration file with sections and name=value pairs. You can edit it on the **Policies > AA Plugin Configurations** page of the SPS web interface.

- a. Configure the usermapping settings if needed. SPS must find out which inWebo user belongs to the username of the authenticated connection. For that, it can query your LDAP/Microsoft Active Directory server. For details, see [Mapping SPS usernames to inWebo identities](#).
- b. Configure other parameters of your plugin as needed for your environment. For details, see [SPS inWebo plugin parameter reference](#).

4. Configure a Connection policy and test it

Configure a Connection policy on SPS. In the **AA plugin** field of the Connection policy, select the SPS inWebo plugin you configured in the previous step, then start a session to test it. For details on how a user can perform multi-factor authentication,

see [Perform multi-factor authentication with the SPS inWebo plugin in terminal connections](#) and [Perform multi-factor authentication with the SPS inWebo plugin in Remote Desktop connections](#).

 **CAUTION:**

According to the current inWebo policies, your API token expires if it is not used for 30 days. Make sure that you use it regularly, because SPS will reject your sessions if the API token is expired.

SPS inWebo plugin parameter reference

This section describes the available options of the SPS inWebo plugin.

The plugin uses an ini-style configuration file with sections and name=value pairs. This format consists of sections, led by a [section] header and followed by name=value entries. Note that the leading whitespace is removed from values. The values can contain format strings, which refer to other values in the same section. For example, the following section would resolve the %(dir)s value to the value of the dir entry (/var in this case).

```
[section name]
dirname=%(dir)s/mydirectory
dir=/var
```

All reference expansions are done on demand. Lines beginning with # or ; are ignored and may be used to provide comments.

You can edit the configuration file from the SPS web interface. The following code snippet is a sample configuration file.

```
[inwebo]
service_id=<your-inWebo-service-ID>
api_url=https://api.myinwebo.com/FS/
# Do NOT use client_cert in production
; client_cert=
timeout=60
http_socket_timeout=10
rest_poll_interval=1
ignore_conn_err=no

[plugin]
config_version=1
log_level=info
cred_store=<name-of-credstore-storing-sensitive-data>

[auth]
prompt=Hit Enter to send inWebo push notification or provide the OTP:
```

```

whitelist=name-of-a-userlist

[username_transform]
append_domain=""

[ldap]
ldap_server_config=<SPS-LDAP-server-policy-name>
filter=(&(samAccountName={})(objectClass=user))
user_attribute=mail

[cache]
soft_timeout=15
hard_timeout=90
conn_limit=5

[question_1]
key=<name-of-name-value-pair>
prompt=<the-question-itself-in-text>
disable_echo=No

[question_2]...

```

[inwebo]

This section contains the options related to your inWebo account.

```

[inwebo]
service_id=<your-inWebo-service-ID>
api_url=https://api.myinwebo.com/FS/
# Do NOT use client_cert in production
; client_cert:
http_socket_timeout=5
ignore_conn_err=Yes
rest_poll_interval=1
timeout=25

```

service_id

Type:	string
Required:	yes
Default:	N/A

Description: For SPS to be able to communicate with the inWebo server, a service ID is required. It is displayed on the inWebo Administration interface under the **Service Users** tab.

api_url

Type:	string
Required:	yes
Default:	N/A

Description: The URL where the inWebo server can be accessed. Usually you can use the default value:

```
api_url=https://api.myinwebo.com/FS/
```

To override the access URL for the inWebo API, change the value.

client_cert

Type:	string
Required:	yes
Default:	N/A

CAUTION:

This parameter contains sensitive data. Make sure to store this data in your local Credential Store. Type the \$ value for this parameter in production.

For details, see "Store sensitive plugin data securely".

Only enter a value different than \$ for this parameter in the configuration for testing purposes in a secure, non-production environment.

Description: For SPS to be able to communicate with the inWebo server, an unencrypted key is required. A certificate is generated by inWebo, which you have to store in the credential store of SPS. The X.509 certificate and the private key either has to be uploaded to SPS or copied into the configuration file. If you want to copy the X.509 certificate and the private key in PEM format inline, insert a whitespace before every line for both the certificate and the private key so that the configuration parser considers it a single value.

For details on using a local Credential Store to host this data, read [Store sensitive plugin data securely](#).

1. In the inWebo Administration interface, navigate to **Secure Sites** and click **Download a new certificate for the API**. Configure the parameters

(**Authentication:** Yes, **Provisioning:** No) and click **Download**.

Decrypt the downloaded X.509 certificate with the following command: **openssl rsa -in <certificate-file-name>.crt**. Enter the required passphrase. The decrypted part of the certificate is displayed on the console screen.

Copy the decrypted part from **-----BEGIN RSA PRIVATE KEY-----** to **-----END RSA PRIVATE KEY-----**, open the <certificate-file-name>.crt and replace the encrypted part with the copied decrypted part from **-----BEGIN ENCRYPTED PRIVATE KEY-----** to **-----END ENCRYPTED PRIVATE KEY-----**.

timeout

Type:	integer [seconds]
Required:	no
Default:	60

Description: How long an HTTP request can take during the communication with the inWebo server.

http_socket_timeout

Type:	integer [seconds]
Required:	no
Default:	10

Description: How long the plugin waits for an approval when using the inWebo push notification factor. This option sets the timeframe (measured from the user initiating the connection to SPS) within which SPS must receive the approval from the inWebo server. SPS [periodically asks the inWebo server](#) to check if the user successfully authenticated on the inWebo server.

rest_poll_interval

Type:	integer [seconds]
Required:	no
Default:	1

Description: How often the plugin checks the inWebo server to see if the push notification was successful. Note that SPS rejects the connection of the user if it does not receive an approval for the push notification within the period set in [http_socket_timeout](#).

ignore_conn_err

Type:	yes no
Required:	no
Default:	no

Description: Determines how to handle the sessions if the inWebo service is not available. If set to yes, the plugin assumes that the user successfully authenticated even if the plugin cannot access inWebo to verify this.

⚠ CAUTION:

Enabling this option allows the users to bypass multi-factor authentication if SPS cannot access the inWebo service for any reason, for example, a network configuration error in your environment.

[plugin]

This section contains general plugin-related settings.

```
[plugin]
config_version=1
log_level=20
cred_store=<name-of-credstore-hosting-sensitive-data>
```

config_version

Type:	integer
Required:	yes
Default:	1

Description: The version number of the configuration format. This is used to enable potentially incompatible changes in the future. If provided, the configuration will not be upgraded automatically. If not provided, the configuration will be upgraded automatically.

cred_store

Type:	string
Required:	no
Default:	N/A

Description: The name of a local credential store policy configured on SPS. You can use this credential store to store sensitive information of the plugin in a secure way, for example, the inWebo client certificate. For details, see [Store sensitive plugin data securely](#).

log_level

Type:	integer or string
Required:	no
Default:	info

Description: The logging verbosity of the plugin. The plugin sends the generated log messages to the SPS syslog system. You can check the log messages in the **Basic settings > Troubleshooting > View log files** section of the SPS web interface. Filter on the plugin: string to show only the messages generated by the plugins.

The possible values are:

- debug or 10
- info or 20
- warning or 30
- error or 40
- critical or 50

For details, see Python logging API's log levels: [Logging Levels](#).

[auth]

This section contains the options related to authentication.

```
[auth]
prompt=Hit Enter to send inWebo push notification or provide the OTP:
whitelist=name-of-a-userlist
```

prompt

Type:	string
Required:	no
Default:	Hit Enter to send push notification or provide the OTP:

Description: SPS displays this text to the user in a terminal connection to request an OTP interactively. The text is displayed only if the user uses an OTP-like factor, and does not send the OTP in the connection request.

```
prompt="Hit Enter to send inWebo push notification or provide the OTP:"
```

whitelist

Type:	string
Required:	no
Default:	N/A

Description: The name of a user list containing gateway users configured on SPS (**Policies > User Lists**). You can use this option to selectively require multi-factor authentication for your users, for example, to create break-glass access for specific users.

- If you set the **Default Policy** of the user list to **Reject**, then the list is a whitelist, so the plugin will not request inWebo authentication from the users on the list.
- If you set the **Default Policy** of the user list to **Accept**, then the list is a blacklist, so the plugin will request inWebo authentication only from the users on the list.

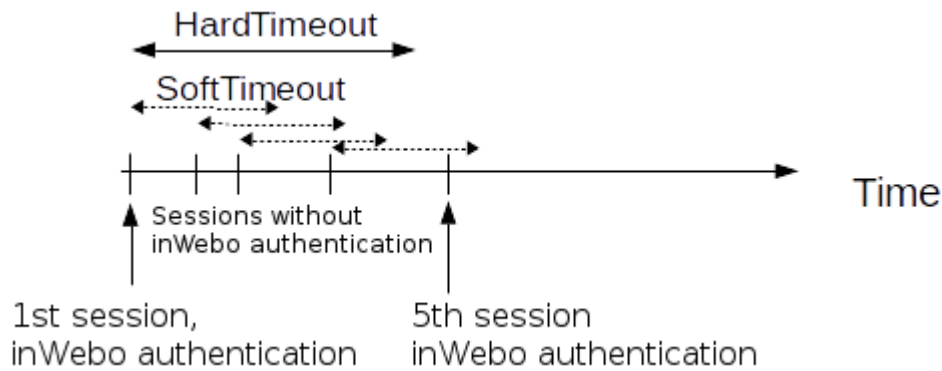
For details on creating user lists, see ["Creating and editing user lists" in the Administration Guide](#).

[cache]

This section contains the settings that determine how soon after performing an inWebo authentication must the user repeat the authentication when opening a new session.

After the first inWebo authentication of the user, SPS will not request a new inWebo authentication from the user as long as the new authentications would happen within `soft_timeout` seconds from each other. After the `hard_timeout` expires (measured from the first inWebo login of the user), SPS will request a new inWebo authentication.

In other words, after opening the first session and authenticating on inWebo, the user can keep opening other sessions without having to authenticate again on inWebo as long as the time between opening any two sessions is less than `soft_timeout`, but must authenticate on inWebo if `hard_timeout` expires.



```
[cache]
soft_timeout=15
hard_timeout=90
conn_limit=5
```

soft_timeout

Type:	integer [seconds]
Required:	yes, if you want caching
Default:	N/A

Description: The time in seconds after which the SPS plugin requires a new inWebo authentication for the next new session of the user, unless the user successfully authenticates another session within this period.

hard_timeout

Type:	integer [seconds]
Required:	yes, if you want caching
Default:	N/A

Description: The time in seconds after which the SPS plugin requires a new inWebo authentication for the next new session of the user. The time is measured from the last inWebo authentication of the user.

conn_limit

Type:	integer [number of]
-------	---------------------

Description: The cache can be used `conn_limit` times without multi-factor authentication. If the number of logins exceeds this number, the plugin will request multi-factor authentication again. If this parameter is not set, the number of logins from cache are unlimited.

[ldap]

This section contains the settings you configure when you need to use an LDAP query to map the usernames from your audited sessions to the usernames in inWebo.

To look up the inWebo username of the user from an LDAP/Active Directory database, configure the [ldap] section of the SPS inWebo plugin. Typically, the SPS plugin queries the email address corresponding to the username from your LDAP or Active Directory database. For details on LDAP parameters, see [ldap].

If you configure both the [append_domain parameter](#) and the [ldap] section of the SPS inWebo plugin, SPS appends the @ character and the value of the append_domain parameter to the value retrieved from the LDAP database.

For other methods of mapping gateway usernames to inWebo usernames, see [Mapping SPS usernames to inWebo identities](#).

```
[ldap]
ldap_server_config=<SPS-LDAP-server-policy-name>
filter=(&(cn={})(objectClass=inetOrgPerson))
user_attribute=CN
```

ldap_server_config

Type:	string
Required:	no
Default:	N/A

Description: The name of a configured LDAP server policy in SPS. For details on configuring LDAP policies, see "[Authenticating users to an LDAP server](#)" in the *Administration Guide*.

filter

Type:	string
Required:	no
Default:	(&(cn={})(objectClass=inetOrgPerson))

Description: The LDAP filter query that locates the user based on the gateway username. The plugin automatically replaces the {} characters with the gateway username from the session.

```
filter=(&(cn={})(objectClass=inetOrgPerson))
```

user_attribute

Type:	string
Required:	no
Default:	cn

Description: The name of the LDAP attribute that contains the inWebo username.

[username_transform]

This section contains username transformation-related settings.

```
[username_transform]  
append_domain=""
```

append_domain

Type:	string (nonrequired, no default)
Required:	no
Default:	N/A

Description: If the gateway usernames are different from the inWebo usernames, you must configure the SPS inWebo plugin to map the gateway usernames to the inWebo usernames.

To simply append a string to the gateway username, configure the [append_domain parameter](#). In this case, SPS automatically appends the @ character and the value of this option to the username from the session, and uses the resulting username on the inWebo server to authenticate the user. For example, if the domain is set as `append_domain: example.com` and the username is `Example.User`, the SPS plugin will look for the user `Example.User@example.com` on the inWebo server.

If you configure both the [append_domain parameter](#) and the [\[ldap\] section](#) of the SPS inWebo plugin, SPS appends the @ character and the value of the `append_domain` parameter to the value retrieved from the LDAP database.

For other methods of mapping gateway usernames to inWebo usernames, see [Mapping SPS usernames to inWebo identities](#).

[question_1]

Type: integer [seconds]

Description: Used for communication between plugins. This is an interactive request/response right after authentication in order to supply data to credential store plugins. The question is transferred to the session cookie and all hooks of all plugins receive it.

For example, if you have an external authenticator app, you do not have to wait for the question to be prompted but can authenticate with a one-time password:

```
ssh otp=123456@root@scb
```

Name subsequent questions with the appropriate number, for example, [question_1], [question_2], and so on.

For details, see ["Performing authentication with AA plugin in terminal connections" in the Administration Guide](#) and ["Performing authentication with AA plugin in Remote Desktop connections" in the Administration Guide](#).

key

Type:	string
Required:	yes
Default:	N/A

Description: The name of the name-value pair.

prompt

Type:	string
Required:	yes
Default:	N/A

Description: The question itself in text format.

disable_echo

Type:	boolean yes no
Required:	no
Default:	no

Description: Whether the answer to the question is visible (yes), or replaced with asterisks (no).

Store sensitive plugin data securely

By default, the configuration of the plugin is stored on SPS in the configuration of SPS. Make sure that you store the sensitive parameters (for example, `client_cert`) of the plugin in an encrypted way.

To store sensitive plugin data securely

1. Log in to SPS and create a local Credential Store. For details, see "[Configuring local Credential Stores](#)" in the [Administration Guide](#).
Instead of usernames and passwords, you will store the configuration parameters of the plugin in this Credential Store.
2. Add the plugin parameters you want to store in an encrypted way to the Credential Store. You can store any configuration parameter of the plugin in the Credential Store, but note that if an option appears in the Credential Store, the plugin will use it. If the same parameter appears in the configuration of the plugin, it will be ignored.
 - Enter the name of the configuration section without the brackets in the **HOST** field (for example, `inwebo`).
 - Enter the name of the plugin parameter in the **USERNAME** field (for example, `client_cert`).
 - Enter the value of the plugin parameter in the **PASSWORD** field.
3. Commit your changes, and navigate to the configuration of the plugin on the **Policies > AA Plugin Configurations** page.
4. In the plugin configuration file, enter the name of the local Credential Store under the `[plugin]` section, in the `cred_store` parameter.

Perform multi-factor authentication with the SPS inWebo plugin in terminal connections

The following describes how to establish a terminal connection (SSH, TELNET, or TN3270) to a server.

To establish a terminal connection (SSH, TELNET, or TN3270) to a server

1. Connect to the server.
 - If you can authenticate using an OTP or token, encode the OTP as part of the username. You can use the @ as a field separator. For example:

```
ssh otp=YOUR-ONE-TIME-PASSWORD@user@server
```

Replace YOUR-ONE-TIME-PASSWORD with your actual OTP. If needed, you can specify the type of OTP as a prefix to the OTP. For example, to specify the OTP of a YubiKey token:

```
ssh otp=y_ YOUR-ONE-TIME-PASSWORD@user@server
```

- Google Authenticator: g
 - inWebo Authenticator: o
 - Symantec token: s
 - YubiKey: y
 - RSA token: r
- If you need to authenticate using the inWebo Verify push notification, approve the connection in your mobile app.
2. If SPS prompts you for further information, enter the requested information. If you need to authenticate with an OTP, but you have not supplied the OTP in your username, you will be prompted to enter the OTP.
 3. Authenticate on the server.
 4. If authentication is successful, you can access the server.

Perform multi-factor authentication with the SPS inWebo plugin in Remote Desktop connections

The following describes how to establish a Remote Desktop (RDP) connection to a server when the **AA plugin** is configured

To establish an RDP connection to a server when the AA plugin is configured

1. Open your Remote Desktop client application.
2. If you have to provide additional information to authenticate on the server, you must enter this information in your Remote Desktop client application in the *User name* field, before the regular content (for example, your username) of the field.

If you can authenticate using an OTP or token, encode the OTP as part of the username. To encode additional data, you can use the following special characters:

- % as a field separator
- ~ as the equal sign
- ^ as a colon (for example, to specify the port number or an IPv6 IP address)

For example, use the following format:

```
domain\otp~YOUR-ONE-TIME-PASSWORD%Administrator
```

Replace YOUR-ONE-TIME-PASSWORD with your actual OTP. If needed, you can specify the type of OTP as a prefix to the OTP. For example, to specify the OTP of a YubiKey token: domain\otp~y_YOUR-ONE-TIME-PASSWORD%Administrator

- Google Authenticator: g
- inWebo Authenticator: o
- Symantec token: s
- YubiKey: y
- RSA token: r

3. Connect to the server.

If you need to authenticate using the inWebo Authenticator push notification, approve the connection in your mobile app.

4. Authenticate on the server.
5. If authentication is successful, you can access the server.

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