



One Identity Safeguard for Privileged  
Sessions 6.9.5

RADIUS Multi-Factor Authentication -  
Overview

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One Identity LLC.  
Attn: LEGAL Dept  
4 Polaris Way  
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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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For the most recent documents and product information, see [Online product documentation](#).

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# Introduction

This document describes how you can use the services of RADIUS server (for example, [RSA SecurID Access](#) and [FreeRADIUS](#)) 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 RADIUS server (or another Multi-Factor Authentication (MFA) provider), SPS directs all connections to the authentication tool, and upon successful authentication, it permits the user to access the information system.

## Integrating RSA with SPS:

SPS can interact with your RSA Authentication Manager and can automatically request strong Multi-Factor Authentication for your privileged users who are accessing the servers and services protected by SPS. When used together with RSA SecurID Access, SPS prompts the user for a second factor authentication, 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 user has an RSA SecurID Hardware Token, the user can generate a One-Time Password (OTP) using the device. This will be used for the authentication to the One Identity platform. The one-time password is changed after 60 seconds.

## Integrating a generic RADIUS server with SPS:

SPS can interact with your RADIUS server and can automatically request strong multi-factor authentication for your privileged users who are accessing the servers and services protected by SPS.

The integration adds an additional security layer to the gateway authentication performed on SPS. Your RADIUS server can use any hardware or software token as long as it provides standard RADIUS interface.

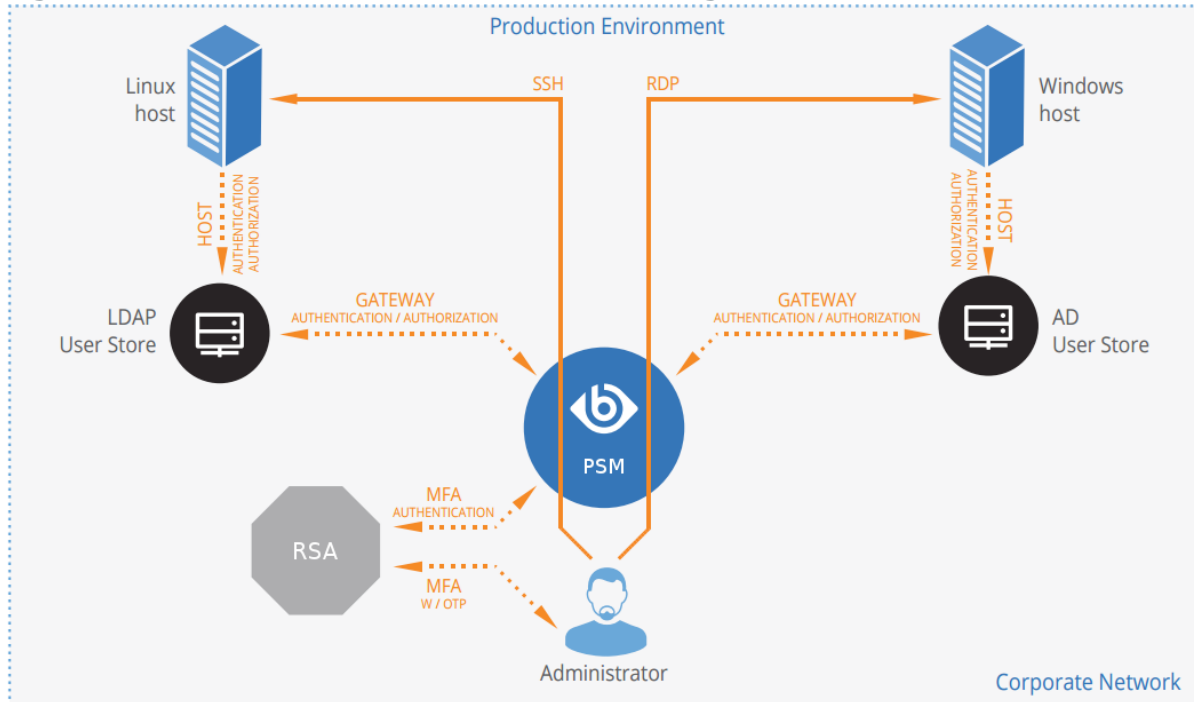
## Meet compliance requirements

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 RADIUS server 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 MFA.
- PART 500.12 Multi-Factor Authentication: Covered entities are required to apply MFA 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 MFA for network access to privileged accounts.

# How SPS and RADIUS server work together in detail

Figure 1: How SPS and RADIUS server 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](#)]" in the [RADIUS Multi-Factor Authentication - Tutorial](#).

#### 4. **Determining the external RADIUS server identity**

If the gateway usernames are different from the external RADIUS server identities, you must configure the SPS RADIUS plugin to map the gateway usernames to the external RADIUS server identities.

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 "[[USERMAPPING](#)]" in the [RADIUS Multi-Factor Authentication - Tutorial](#).

#### 5. **Authentication using a RADIUS server**

If gateway authentication is successful, SPS connects to the RADIUS server. Then SPS requests the second authentication factor from the user and sends it to the RADIUS server for verification.

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.)

Alternatively, the RADIUS server can request Access-Challenge response. The challenge is displayed to the user and they have to respond to the challenge. After a successful response, the user can start working. In RSA SecurID, this process is used for next token mode. This means that if the password is entered incorrectly several times, two subsequent RSA SecurID tokens have to be entered for a successful authentication.

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 "[[authentication\\_cache](#)]" in the [RADIUS Multi-Factor Authentication - Tutorial](#).

# Technical requirements

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

## In RSA:

- An RSA Authentication Manager deployed.
- RADIUS access parameters, (for example, host, port, and an RSA shared secret). You will need it to configure the SPS plugin.
- Your users must be enrolled in RSA Authentication Manager.
- The users must be able to perform the authentication required for the factor (for example, possess the required RSA SecurID Hardware Token).
- Only CHAP and PAP authentication methods are supported.

## In a generic RADIUS server:

- RADIUS access parameters, (for example, host, port, and a shared secret). You will need it to configure the SPS plugin.
- Your users must be enrolled in the RADIUS server or its backend.
- Only CHAP and PAP authentication methods are supported.

## In SPS:

- A One Identity Safeguard for Privileged Sessions appliance (virtual or physical), at least version SPS 5.11.05.11.0.
- A copy of the SPS RADIUS (RSA) Multi-Factor Authentication plugin. This plugin is an Authentication and Authorization (AA) plugin customized to work with the RADIUS (RSA) multi-factor authentication service.
- SPS supports AA plugins in the MSSQL, 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.
- 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 RADIUS (RSA) Multi-Factor Authentication plugin is available for download as-is, free of charge to every SPS customer from the [RADIUS Multi-Factor Authentication plugin for Safeguard for Privileged Sessions](#) page. In case you need any customizations or additional features, [contact our Support Team](#).



**CAUTION:**

Using custom plugins in SPS is recommended only if you are familiar with both Python and SPS. Product support applies only to SPS: that is, until the entry point of the Python code and passing the specified arguments to the Python code. One Identity is not responsible for the quality, resource requirements, or any bugs in the Python code, nor any crashes, service outages, or any other damage caused by the improper use of this feature, unless explicitly stated in a contract with One Identity. If you want to create a custom plugin, [contact our Support Team](#) for details and instructions.

# About us

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One Identity solutions eliminate the complexities and time-consuming processes often required to govern identities, manage privileged accounts and control access. Our solutions enhance business agility while addressing your IAM challenges with on-premises, cloud and hybrid environments.

# Contacting us

For sales and other inquiries, such as licensing, support, and renewals, visit <https://www.oneidentity.com/company/contact-us.aspx>.

# Technical support resources

Technical support is available to One Identity customers with a valid maintenance contract and customers who have trial versions. You can access the Support Portal at <https://support.oneidentity.com/>.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. The Support Portal enables you to:

- Submit and manage a Service Request
- View Knowledge Base articles
- Sign up for product notifications
- Download software and technical documentation
- View how-to videos at [www.YouTube.com/OneIdentity](http://www.YouTube.com/OneIdentity)
- Engage in community discussions
- Chat with support engineers online
- View services to assist you with your product