Self Service Password Reset 4.1

Installation Guide

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NetIQ

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Contents

About this Book

The *NetIQ Self Service Password Reset Installation Guide* provides conceptual information and step-by-step guidance for installation tasks.

Intended Audience

This book provides information for individuals responsible for understanding administration concepts and implementing a secure, distributed administration model.

Systems Administrator

Deploy Self Service Password Reset across a distributed network. Configure language, connectivity, and authentication settings to ensure that users can access and reset passwords without generating a help desk call. Correlate business administrator and data administrator needs. Plus, integrate Advanced Authentication, Identity Manager, and Access Manager.

Other Information in the Library

The library provides the following information resources in addition to this guide:

Release Notes

Provides information specific to this release of the Self Service Password Reset product, such as known issues.

Administration Guide

Provides details configuration tasks specific to this release of Self Service Password Reset.

Videos

Provide supplemental information about using Self Service Password Reset. For more information, see the NetIQ Youtube site (https://www.youtube.com/user/netiqTV).

1 Self Service Password Reset Overview

Self Service Password Reset is a web-based password management solution. You can deploy Self Service Password Reset to any web server or application server that supports a web archive. It eliminates users' dependency on administrators' assistance for changing passwords. It brings higher returns by reducing the cost and workload of the help desk. It allows you to ensure that all passwords in the organization comply with established best practice policies.

Self Service Password Reset also provides enhanced security. The user gets authenticated through a series of questions and answers known only to the user. During password reset, Self Service Password Reset uses a challenge-response authentication method to authenticate the user. You can store the challenge-response information in the back-end directory, external database, or local database. Users can change or reset their password and reset any forgotten password by using the configured challenge-response information.

Self Service Password Reset increases a user's productivity by synchronizing changed passwords, eliminating the need for users to wait for password resets and account unlocks. At the same time, the help desk can perform tasks more critical than password resets.

To learn more about Self Service Password Reset, see the following:

- "Self Service Password Reset Key Features" on page 7
- "Self Service Password Reset Architecture" on page 8
- "Understanding Challenge-Response Storage Methods" on page 9

Self Service Password Reset Key Features

Self Service Password Reset provides the following key features and benefits:

- **Easily Change Passwords:** Users can change their password without the help of an administrator.
- **Reset Forgotten Passwords:** Users can reset their passwords by answering challenge questions configured by an administrator. Self Service Password Reset stores the challenge questions and the users' responses for when they forget their password.
- **Recover Forgotten User Name:** Users can easily search for forgotten user names by using the search filter that is configurable by administrators.
- **Configure Challenge-Response Authentication:** Administrators can configure a set of challenge questions for the users. The questions can include random and required questions. The first time users log into Self Service Password Reset, it prompts users to provide answers to these questions. Users can reset their password by answering the same questions they saved earlier.
- **Self-Registration for New Users:** New users can self-register, saving time and money.
- **Activate User Accounts:** Users can reactivate a deactivated on their own account and set a password for it.
- **Edit Profile:** Users can view and update their profiles.
- **Search for People:** Users can search for their information as well as search for information about colleagues. Users can perform an interactive wildcard searches.

- **Simplify Help Desk Support:** The Help Desk Module simplifies administrative tasks, such as resetting passwords, clearing intruder lockout, unlocking user accounts, and debugging user information.
- **Create Password Policies:** Administrators can use password policies to enforce restrictions on the types of passwords that users can create.
- **Generate Usage and Lockout Reports:** Administrators can generate reports for intruder lockout, daily usage statistics, and online log information for debugging purposes.
- **Supports Localization:** Self Service Password Reset provides an easy way to add new languages. Self Service Password Reset provides default localization support for English, Catalan, Chinese Simplified, Chinese Traditional, Danish, Dutch, French, German, Italian, Japanese, Polish, Portuguese (Brazilian), Russian, Spanish, and Swedish.
- **Easily Customized:** Administrators can easily customize Self Service Password Reset to integrate with external web authentication methods as well as integrate with NetIQ Identity Manager to add automated workflows and account claiming support.

Self Service Password Reset Architecture

Self Service Password Reset is a web-based application that can be deployed to any web server or application server that supports a web archive. The Figure 1-1 depicts the architecture for Self Service Password Reset.

Self Service Password Reset consists of the following components:

- **User Accounts (LDAP):** The LDAP directories contain the user accounts Self Service Password Reset manages. The types of LDAP directories that Self Service Password Reset supports are Active Directory, eDirectory, and Oracle Directory Server.
- **Tomcat Server:** As you can see in Figure 1-1 on page 9, the Self Service Password Reset application must run on a web server, such as a Tomcat server.
- **Self Service Password Reset:** Self Service Password Reset is a Java-based web application that contains the following items:
  - **Administration Console:** Self Service Password Reset contains a web-based administration console. Administrators use the administration console to configure Self Service Password Reset, to view recent log events, download the current XML configuration file, manage certificates, and export or import the contents of the local database.

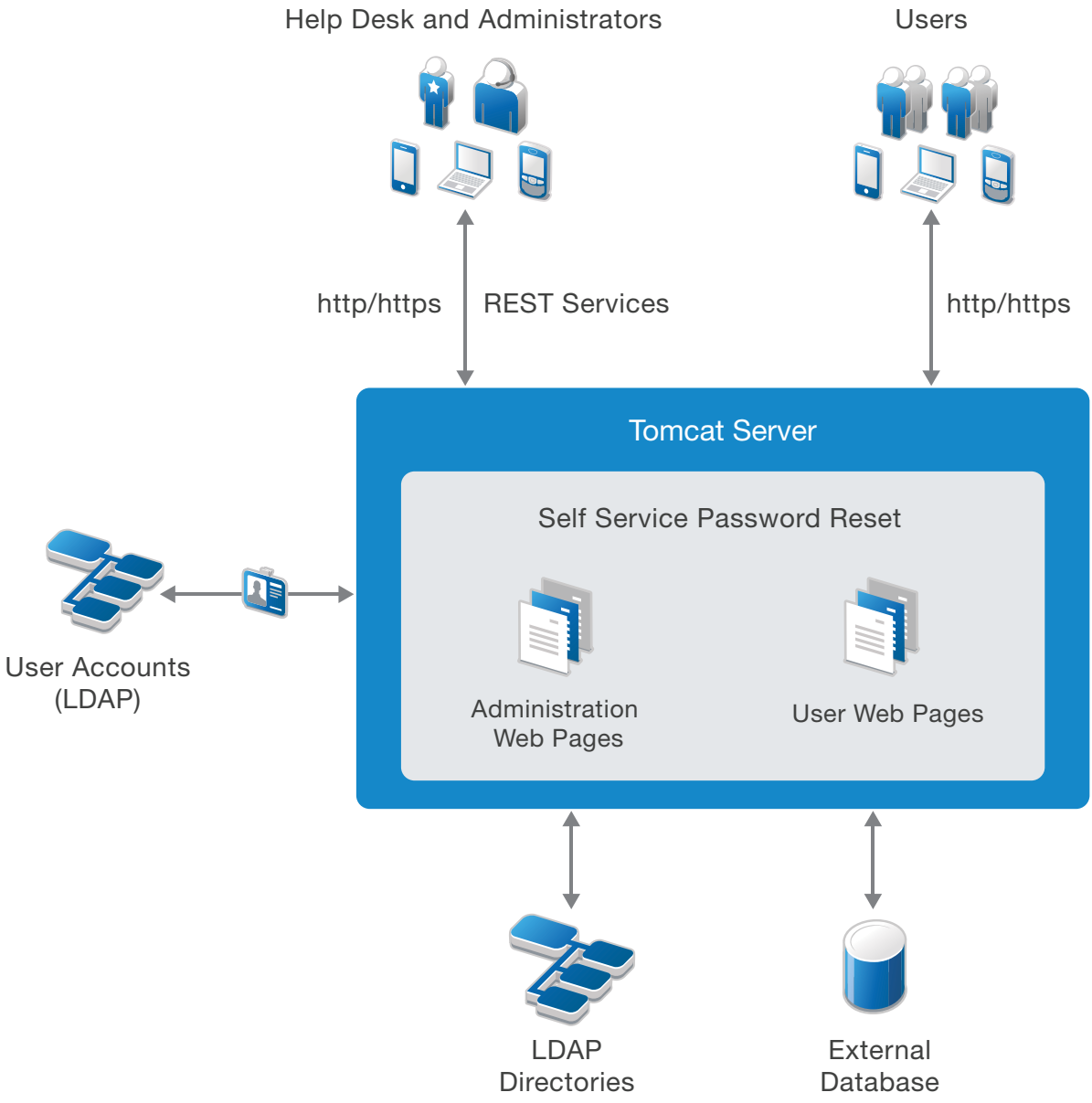
    If you are a help desk administrator, it allows you to manage user accounts, passwords, and reset intruder lockouts.

    You can also programmatically connect to Self Service Password Reset through REST Services. For more information, see the *Self Service Password Reset REST Services Reference*.
  - **Users Web Pages:** Self Service Password Reset provides a web interface for users to manage their passwords. The users access the interface through a browser that is supported on a desktop or a mobile device.
- **LDAP Directories and External Database:** Self Service Password Reset stores the user challenge-responses in LDAP directories or external databases. Self Service Password Reset provides the local database for testing purposes only. Use an external database or an LDAP directory in production environments to store the users' challenge-responses.

  Self Service Password Reset supports Microsoft SQL Server, PostgreSQL, and Oracle.

- **Secure Communication:** By default, the appliance and Windows deployments communicate over HTTPS. The communications for the WAR file deployment depends on how you have your Tomcat web server configured.

Figure 1-1 *Architecture of Self Service Password Reset*



Understanding Challenge-Response Storage Methods

Self Service Password Reset supports the following locations to store users' challenge-responses:

- LDAP directory
- External database
- Local database (test only)

WARNING: Do not use the local database in a production environment as there are no methods to make the local database storage redundant, nor are there optimal backup methods available for the local database.

You can configure Self Service Password Reset to use any of the locations mentioned earlier to save users' challenge-responses. When a user attempts to recover a forgotten password, Self Service Password Reset reads the location that you have configured. Self Service Password Reset reads each configured location until it finds the relevant policy in the order that you specify during configuration.

A valid policy must meet the requirements of the user's current challenge-response policy.

Challenge-responses are stored in the locale that the user's browser selects during configuring responses. During the forgotten password recovery process, Self Service Password Reset uses answers in the same locale regardless of browser locale settings. Self Service Password Reset uses a standardized XML format to store answers. Depending on the configuration that you set for the **Responses Storage Hashing Method** setting, Self Service Password Reset stores answers as plain text or one-way hashed (encrypted) by using PBKDF2WithHmacSHA1 by default and the following as configurable options:

- None (Plain text)
- MD5
- SHA1
- SHA-1 with Salt
- SHA-256 with Salt
- SHA-512 with Salt
- PBKDF2WithHmacSHA1
- PBKDF2WithHmacSHA256
- PBKDF2WithHmacSHA512
- BCrypt
- SCrypt

Self Service Password Reset can read password and challenge policies from eDirectory. After saving a user's challenge-response answers, Self Service Password Reset can optionally write the challenge-response answers to the NMAS challenge-response format in addition to the configured methods. This enables interoperability of Self Service Password Reset with other products such as Novell Client for Windows.

NOTE: Self Service Password Reset does not save help desk challenge-response answers to the NMAS. Self Service Password Reset always considers the NMAS-stored responses as additional responses. Self Service Password Reset prefers to read and is required to store the responses in one of the non-NMAS formats to utilize the additional features of Self Service Password Reset responses.

2 Planning to Install Self Service Password Reset

Self Service Password Reset helps simplify the management of users' credentials. You must plan how best to secure the users' credentials and how to create the correct configuration for your environment and your users' needs.

Security Considerations

You can deploy Self Service Password Reset along with applications that are available on the internet in the public domain. As an administrator, you must protect Self Service Password Reset so that unauthorized users cannot gain access to it and access users' credentials or make any configuration changes. You must check and control the installation, maintenance, and monitoring processes of Self Service Password Reset to ensure that you are following security best practices. This section includes the following information:

Over-the-Wire Data Encryption

Self Service Password Reset is an endpoint for several communication traffic channels that send users' credentials. Self Service Password Reset does not control the communication traffic channels.

Each channel requires its own security configuration settings. For example, ensure that all browser communication is HTTPS. However, you should encrypt all channels by using an end-to-end encryption protocol. Do not rely on private, secure networks. We recommend you use the encryption protocols listed below:

HTTPS Browser to Self Service Password Reset

Secure this channel by using SSL/TLS for HTTPS communication. For more information, see "Importing Certificates to Create an HTTPS Connection to Browsers" in the *Self Service Password Reset 4.1 Administration Guide*.

Self Service Password Reset to the User Store (LDAP)

Secure this channel by using SSL/TLS to LDAP by using LDAPS. For more information, see "Exporting LDAP Certificates" on page 29.

Self Service Password Reset to the Database

Secure this channel by using database-specific security measures. For more information, see the database-specific documentation.

At-Rest Data

It is important to secure the data used in Self Service Password. You must secure the operating system where you have hosted Self Service Password Reset, the local database, and the LDAP directory by using the respective vendor's best practices.

The Self Service Password Reset stores sensitive security data in several locations.

Configuration Files

Stored in Self Service Password Reset here: *`SSPR-installation-directory`*`/config/SSPRConfiguration.xml`.

User Responses (Hashed)

Stored in configurable locations of the local database, an external database, LDAP, or in NMAS. Self Service Password Reset stores the users answers as a one-way cryptographically hash using the configured hash algorithm. For more information, see "Understanding Challenge-Response Storage Methods" on page 9.

Help Desk Response

Stored in configuration locations of the local database, an external database, or LDAP.

Shared Password History

Stored in the local database.

Best Practices for Self Service Password Reset Security

To enhance the security of Self Service Password Reset, Micro Focus recommends that you do the following:

- Enable the CAPTCHA support.
- Configure HTTPS for end-to-end security.
- Configure LDAPS for end-to-end security.
- Use a strong encryption protocol for formatted hashed stored responses.
- Configure Self Service Password Reset to see source network addresses for complete audit records to be maintained.

For more information, see "Configuring Security Settings" in the *Self Service Password Reset 4.1 Administration Guide*.

Best Practices for Password Policy

To enhance security of password policies:

- Use a word list to prevent easily guessable passwords
- Use a shared word list to prevent organizational password value use from becoming common among many users
- Do not allow users to configure challenge questions

- Do not impose complex syntax rules on users; instead use a specific overall complexity level
- Use a long list of potential random question challenges that are unlikely to have similar answers among different users

For more information, see “Configuring a Profile for a Password Policy” in the *Self Service Password Reset 4.1 Administration Guide*.

High Availability and Load Balancing

Self Service Password Reset supports high availability and load balancing for user authentications through an L4 switch. You must install and deploy the L4 switch in your environment ensuring that you use session persistence. Self Service Password Reset uses your browser's session storage to facilitate seamless high availability and load balancing. As users are working and their existing sessions change, Self Service Password Reset requires the users to reauthenticate before they can continue their work.

To enable the load balancing and high availability for users authentications:

1. Install an L4 switch and ensure you use session persistence.
2. Deploy two or more separate, yet identical, instances of Self Service Password Reset.
   a. Install and configure a Self Service Password Reset system.
   b. Back up the configuration information. For more information, see “Backing Up Configuration Information” in the *Self Service Password Reset 4.1 Administration Guide*.
   c. Install the second Self Service Password Reset system, then import the configuration information from the first system to the second system. For more information, see “Importing Configuration Information” in the *Self Service Password Reset 4.1 Administration Guide*.
   d. Repeat these steps for each additional system you want to add.
3. Ensure that the Self Service Password Reset computers and the L4 switch are in the same subnet.
4. Follow the L4 switch documentation to configure the L4 switch to provide load balancing for the Self Service Password Reset computers.

There are no additional configuration steps in Self Service Password Reset to make the load balancing and high availability work.

Selecting an Appropriate Configuration

Self Service Password Reset has a flexible configuration. You must choose what works best for you in your environment to properly configure it. Self Service Password Reset requires a location to install the application, a back-end user store, and a location to store the users’ information such as the challenge-response information. Self Service Password Reset provides many different options for these main components. You must decide which components you want to use before installing Self Service Password Reset.

Answer the following questions to select the appropriate configuration for your environment.

What version of Self Service Password Reset are you installing? (Version)

There are two different versions of Self Service Password Reset: a full version and a trial version. For more information, see “Obtaining Self Service Password Reset” on page 15.

Where do you want to install Self Service Password Reset? (Platform)

Select the platform where you want to install Self Service Password Reset. The supported platforms are:

- An appliance of Self Service Password Reset for Hyper-V or VMware
- SUSE Linux Enterprise Server or Red Hat Enterprise Linux
- Microsoft Windows Server
- Oracle Directory Server with an attached Oracle database

For more information, see "Installing Self Service Password Reset" on page 17.

Where are your users? (User Store)

Self Service Password Reset can manage users' credentials as long the information is in an LDAP directory. Select the LDAP directory that contains the users account that Self Service Password Reset will manage. The supported LDAP directories are:

- Active Directory
- eDirectory
- Oracle Directory Server

For more information, see "Installing Self Service Password Reset" on page 17.

Where do you want to store the users' information? (Databases or LDAP Directories)

Self Service Password Reset must have access to either a database or an LDAP directory to stores the user's information such as the challenge-response information. Select the location where you want to save the users' information:

- **Local Database:** Self Service Password Reset contains a local database you can use to store the users challenge-responses information.

  WARNING: Do not use the local database in a production environment as there are no methods to make the local database storage redundant, nor are there optimal backup methods available for the local database.

- **External Database:** Best practice is to use an external database to store the users challenge-response information. The external database provides the ability to cluster to the database and easily backup the database. The supported databases are Microsoft SQL Server and the Oracle database. For more information, see "Installing Self Service Password Reset" on page 17.

  IMPORTANT: You must have an empty database created to install Self Service Password Reset with the external database. The installers create the appropriate tables and schema for the database that you choose to use.

- **LDAP:** You can securely store the users challenge-responses in any of the supported LDAP directories. For more information, see "Installing Self Service Password Reset" on page 17.
- **eDirectory with NMAS** You can securely store the users challenge-responses in eDirectory using NMAS. Self Service Password Reset can read password and challenge policies from eDirectory. After saving a user's challenge-response answers, Self Service Password Reset can optionally write the challenge-response answers to the NMAS challenge-response format in addition to the configured methods. This enables interoperability of Self Service Password Reset with other products.

3 Installing Self Service Password Reset

This chapter guides you through the process of installing the components and framework required for Self Service Password Reset.

Obtaining Self Service Password Reset

Self Service Password Reset is available in two types: a trial version and a full version. You access the different version in different locations.

Downloading the Full Version

You must have purchased Self Service Password Reset to access the full version of the product. To buy a full version of Self Service Password Reset, see How to Buy. The activation code is in the Customer Center where you download the software. For more information, see Customer Center Frequently Asked Questions.

To access a full version of Self Service Password Reset:

1. Log in to the Customer Center.
2. Click **Software**.
3. In the **Entitled Software** tab, click the appropriate version of Self Service Password Reset for your environment to download.

The Self Service Password Reset files are compressed packages of files that must be decompressed before you can use them. To decompress the Self Service Password Reset distribution packages:

Linux: Use `tar`. For example:

```
tar -zxvf ssprappliance.xxx.x86-x.x.xxx-ovf.tar.gz
```

Windows: Unzip the `.zip` files.

Downloading the Trial Version

We provide a trial version of Self Service Password Reset to allow you to see how the product works. The trial version does have the following limitations:

- After 100 authentications, the system requires a restart to continue functioning.
- After 10,000 authentications, you must reinstall the system.

NOTE: It is possible to upgrade from the trial version to the full version of Self Service Password by exporting the configuration from the trial version and importing the configuration to an installed full version.

To download the trial version:

1. Access the Download page at https://dl.netiq.com.
2. Click the **Find Trial Download** link.
3. Scroll down to find Self Service Password Reset, then click **Download**.
4. Enter your information to receive an email with the download link.

   IMPORTANT: You must enter a valid email address or you do not receive the email that contains the link to download the trial version.

5. After you receive the email, click the link then download the appropriate version for your environment.
6. (Conditional) Extract the compressed file for the appliance.

   NOTE: The OVF file includes a pointer to the `.vmdk` files; extract and store the contents of the `.tar.gz` file within the same folder. Do not rename the files.

   6a (Conditional) If you are using Windows, unzip the file to extract the appliance so that you can access the OVF file or the Hyper-V file.

   6b (Conditional) If you are using Linux, use the following command to extract the image:

The Self Service Password Reset files are compressed packages of files that must be decompressed before you can use them. To decompress the Self Service Password Reset distribution packages:

Linux: Use `tar`. For example:

```
tar -zxvf ssprappliance.xxx.x86-x.x.xxx-ovf.tar.gz
```

Windows: Unzip the `.zip` files.

Default Ports for Self Service Password Reset

Self Service Password Reset uses various ports to communicate with the LDAP directories, the databases, and the browsers. The following table lists the default ports Self Service Password Reset uses to help you plan your installation. You must open these ports in your firewall for Self Service Password Reset to work.

Table 3-1 *Self Service Password Reset Appliance Default Ports*

Component	Port	Protocol	Description
Inbound Traffic			
Appliance Management	9443	HTTPS	Appliance management for Self Service Password Reset. For more information, see "Managing the Appliance" in the *Self Service Password Reset 4.1 Administration Guide*.
Apache Tomcat	8080	HTTP	
Apache Tomcat	8443	HTTPS	
Outbound Traffic			
SMTP	25	SMTP	SMTP messages to an email server.

Component	Port	Protocol	Description
Audit	514	UDP/IP	For more information, see the documentation for the Syslog server that you are using.
SMS		HTTP or HTTPS	For more information, see the documentation for the SMS gateway that you are using.
CAPTCHA			For more information, see http://www.captcha.net/.
Remote Database	Configurable		For more information, see the: ◆ Oracle documentation ◆ PostgreSQL documentation ◆ SQL Server documentation
LDAP	Configurable default 389		For more information, see the LDAP directory documentation that you are using.
LDAPS	Configurable default 636		For more information, see the LDAP directory documentation that you are using.

Installing Self Service Password Reset

Before you install Self Service Password Reset, you must decide where you want to install it. You must select a platform specific installer to install the product. Use the following information to install the platform specific version that is appropriate for your environment.

- “Deploying the Self Service Password Reset Appliance” on page 17
- “Deploying Self Service Password Reset on Windows” on page 19
- “Deploying the WAR File on Linux” on page 21

Deploying the Self Service Password Reset Appliance

You can deploy a virtual appliance that contains Self Service Password Reset as one of the installation options. The currently supported platforms for the appliance are VMware and Hyper-V. We recommend that you have a good understanding of the virtual platform before deploying the appliance.

- “Deployment Requirements for the Appliance” on page 17
- “Deploying the Appliance” on page 18

Deployment Requirements for the Appliance

The following is the minimum requirements required to deploy the Self Service Password Reset appliance. Ensure that you meet these minimum requirements before deploying the appliance.

Table 3-2 Self Service Password Reset Appliance Requirements

Component	Requirements
Virtual Systems	◆ Hyper-V versions 4.0 and 3.0 **NOTE:** When you are using Hyper-V, you must select Generation 1. Generation 2 is currently not available. For more information, see Hyper-V documentation (https://technet.microsoft.com/en-us/library/mt169373(v=ws.11).aspx). ◆ VMware ESX 5.5 or later **NOTE:** Your VMware license must be Enterprise or Enterprise Plus if you want to use remote serial connections. For more information, please refer to VMware support. For more information, see the VMware documentation (https://www.vmware.com/support/pubs/).
Memory	2 GB of RAM
Hard disk space	40 GB
Browsers	◆ Mozilla Firefox 45.0.0 or later ◆ Google Chrome 49.0.2623.110 m or later ◆ Microsoft Internet Explorer 11 or later ◆ Edge 38 or later
IP Ports	Ensure that the default ports for the Self Service Password Reset appliance are open in your firewall. For more information, see “Default Ports for Self Service Password Reset” on page 16.

LDAP Directories	◆ NetIQ eDirectory
	  ◆ 9.0 SP2
	  ◆ 8.8 SP8
	◆ Microsoft Active Directory 2012
	◆ Oracle Directory Server 11g
	
	IMPORTANT: Self Service Password Reset does not support the Active Directory Global catalog services. Instead, you can configure multiple profiles for different domains to represent the data repository for each domain. For more information about creating multiple profiles, see “Configuring Policies” in the *Self Service Password Reset 4.1 Administration Guide*.

Remote Databases	◆ Microsoft SQL Server 2012 ◆ Oracle Database 12c ◆ Postgres 9.6.1

Deploying the Appliance

Before you deploy the appliance, ensure that you meet all of the appliance requirements and that you have downloaded and extracted the appropriate version of the appliance.

To deploy the Self Service Password Reset appliance:

1. Deploy the appliance to your virtual environment. For more information, see:

   Hyper-V: Importing a Virtual Machine.

   VMware: Deploy an OVF Template.
2. Power on the appliance.
3. Select the appropriate language, then read the license and click **Accept**.
4. Use the following information to configure the appliance:

   root Password

   Specify a password for the `root` user on the appliance.

   NTP Server

   Specify a primary and secondary NTP server used to keep time on the appliance.

   Region and Time Zone

   Select your region and time zone.

   Hostname and Networking options

   Specify a hostname for the appliance, then select whether to use a static IP address or DHCP. If you use a static IP address, you must specify the IP address, subnet mask, the gateway, and the DNS servers.
5. Click **Finish** and wait for the appliance initialization to complete.

After you complete the deployment of the appliance, you must configure your environment to work with Self Service Password Reset. For more information, see Chapter 4, “Configuring Your Environment for Self Service Password Reset,” on page 25.

Deploying Self Service Password Reset on Windows

Installing Self Service Password Reset on Windows server is another configuration option. There is a `.msi` executable file that installs Self Service Password Reset on a Windows server. Use the following information to install Self Service Password Reset on Windows.

Deployment Requirements for Self Service Password Reset on Windows

The following is the minimum requirements required to deploy the Self Service Password Reset on a Windows server. Ensure that you meet these minimum requirements before starting the installation.

Table 3-3 *Self Service Password Reset on Windows Requirements*

Component	Requirements
Windows Platforms	Microsoft Windows Server 2012 R2 (64-bit)
Memory	1 GB of RAM
Hard disk space	5 GB

Component	Requirements
Browsers	◆ Mozilla Firefox 45.0.0 or later ◆ Google Chrome 49.0.2623.110 m or later ◆ Microsoft Internet Explorer 11 or later ◆ Edge 38 or later
IP Ports	Ensure that the default ports for the Self Service Password Reset appliance are open in your firewall. For more information, see "Default Ports for Self Service Password Reset" on page 16.

LDAP Directories	◆ NetIQ eDirectory
	  ◆ 9.0 SP2
	  ◆ 8.8 SP8
	◆ Microsoft Active Directory 2012
	◆ Oracle Directory Server 11g
	IMPORTANT: Self Service Password Reset does not support the Active Directory Global catalog services. Instead, you can configure multiple profiles for different domains to represent the data repository for each domain. For more information about creating multiple profiles, see "Configuring Policies" in the *Self Service Password Reset 4.1 Administration Guide*.

Remote Databases	◆ Microsoft SQL Server 2012 ◆ Oracle Database 12c ◆ Postgres 9.6.1
Java	**NOTE:** The `.msi` file supplies Java and installs it for you. Any other version of Java is not supported. The patches contain updates for Java. It is important to install patches to have the latest security updates.
Apache Tomcat	**NOTE:** The `.msi` file supplies Apache Tomcat and installs it for you. Any other version of Apache Tomcat is not supported. The patches contain updates for Apache Tomcat. It is important to install patches to have the latest security updates.

Installing Self Service Password Reset with the .msi File on Windows

Ensure that you have met all of the installation requirements for installing Self Service Password Reset on Windows and that you have downloaded an extracted the `.msi` file before beginning the installation.

To install Self Service Password Reset on Windows:

1. Launch the `sspr.x.x.msi` file.
2. Read the notice for Self Service Password Reset, then click **Next**.
3. Read and accept the end user license, then click **Next**.
4. Specify the path for the installation of Self Service Password Reset, then click **Next**.
5. In **Configure SSPR-Service URLs**, specify the following:

Shutdown Port

Specify the port number for Apache Tomcat shutdown port.

HTTPS Secure Port

Specify the secure port for Self Service Password Reset service.

Open Secure HTTPS Port

Select the firewall setting for Self Service Password to use on the Windows server. The installer selects the open HTTPS Windows firewall port by default. The options for the firewall are:

All

This enables users to use Self Service Password Reset on a domain, private or public networks.

Domain

This enables users to use Self Service Password Reset on a domain network only.

Private

This enables users to use Self Service Password Reset on a private network.

Public

This enables users to use Self Service Password Reset on a public network.

6 Click **Next**, then click **Install**.

7 Click **Install**.

8 Record the **HTTPS Secure URL**, then click **Finish**.

After completing the installation, you must configure your environment to work with Self Service Password Reset. For more information, see Chapter 4, “Configuring Your Environment for Self Service Password Reset,” on page 25.

Deploying the WAR File on Linux

Self Service Password Reset is a web application. When you install Self Service Password Reset, you are deploying a WAR (Web application ARchive) file as Java servlet application running on the Apache Tomcat web server. The WAR file contains an Apache Tomcat implementation of the Self Service Password Reset application. The following procedures work for the supported distributions of Linux.

Deployment Requirements for Self Service Password Reset WAR File on Linux

The following is the minimum requirements required to deploy the Self Service Password Reset on a Linux server. Ensure that you meet these minimum requirements before starting the installation.

Table 3-4 *Self Service Password Reset WAR File Requirements on Linux*

Component	Requirements
Linux Platforms	◆ SUSE Linux Enterprise Server 12 SP2 or later (64-bit) ◆ SUSE Linux Enterprise Server 11 SP4 (64-bit) ◆ Red Hat Enterprise Linux 7.3 or later (64-bit)
Memory	1 GB of RAM
Hard disk space	5 GB
Browsers	◆ Mozilla Firefox 45.0.0 or later ◆ Google Chrome 49.0.2623.110 m or later ◆ Microsoft Internet Explorer 11 or later ◆ Edge 38 or later
IP Ports	Ensure that the default ports for the Self Service Password Reset appliance are open in your firewall. For more information, see “Default Ports for Self Service Password Reset” on page 16.

LDAP Directories	◆ NetIQ eDirectory
	  ◆ 9.0 SP2
	  ◆ 8.8 SP8
	◆ Microsoft Active Directory 2012
	◆ Oracle Directory Server 11g
	IMPORTANT: Self Service Password Reset does not support the Active Directory Global catalog services. Instead, you can configure multiple profiles for different domains to represent the data repository for each domain. For more information about creating multiple profiles, see “Configuring Policies” in the *Self Service Password Reset 4.1 Administration Guide*.

Remote Databases	◆ Microsoft SQL Server 2012 ◆ Oracle Database 12c ◆ Postgres 9.6.1
Java	Java JDK 1.8.0_112 (Java 8u112) or later of the 1.8.0_*xxx* branch **IMPORTANT:** You must install this version of Java on the Linux server prior to deploying the WAR file. You must be familiar with the installation, configuration, and maintenance of this component.
Apache Tomcat	◆ Apache Tomcat 8.5.*x* in this branch ◆ Apache Tomcat 8.0.*x* in this branch **IMPORTANT:** You must install this version of Apache Tomcat on the Linux server prior to deploying the WAR file. You must be familiar with the installation, configuration, and maintenance of this component.

Prerequisites for Deploying the WAR File

You must have Java and Apache Tomcat installed and running on Linux before you deploy the WAR file. If you already have Java and Tomcat installed, proceed to “Setting Operating System Environment Variables” on page 23. Follow these steps to install and validate the installation of Java and Tomcat.

To install Java and Tomcat:

1. Install Java 8. For more information, see “JDK 8 and JRE 8 Installation”.

   Verify `JAVA_HOME` (or `JRE_HOME`) path is set appropriately by entering:

   ```
   echo $JAVA_HOME
   ```

   or

   ```
   echo $JRE_HOME
   ```

2. Install Tomcat 8. For more information, see “Tomcat Setup”.
3. Start Tomcat by executing the `catalina.sh` script in the *`Tomcat_Home`*`/bin` directory.

   ```
   ./catalina.sh start
   ```

4. Validate you can access `http://localhost:`*`port`*. The default port is 8080.

   Check the `Tomcat_Home/logs/catalina.out` file for any errors if you are unable to access the default Tomcat page.

Setting Operating System Environment Variables

Self Service Password Reset, as a Java servlet application running on Apache Tomcat, requires several operating system environmental variables to be set. There are various methods for setting environmental variables depending on the operating system. The recommended place to specify these variables is a `setenv` script. For more information, see Section 3.4 in the Apache Tomcat documentation.

The following are the Self Service Password Reset specific environment variables:

- `SSPR_APPLICATIONPATH` (Required): Specifies where Self Service Password Reset stores its configuration data file (`SSPRConfiguration.xml`). This file contains all of the Self Service Password Reset configuration data. The specified path must exist prior to starting Self Services Password Reset.

  For example: `export SSPR_APPLICATIONPATH="/etc/opt/microfocus/sspr"`

- `CATALINA_OPTS`: Allows specification of additional options for the Java command that starts Apache Tomcat. The recommended Java options for the Self Service Password Reset Java servlet application running on Apache Tomcat include:
  - `-Xms`

    Specifies the initial heap memory allocation pool.
  - `-Xmx`

    Specifies the maximum heap memory allocation pool for a Java Virtual Machine (JVM).

Setting the initial and maximum heap memory size to the same size is a best practice because the JVM does not increase heap memory size at runtime. The recommended SSPR heap memory size is 1 GB (1024 MB). For more information about how to set Java heap size, see the Apache Tomcat documentation.

For example: `export CATALINA_OPTS="-Xms1024M -Xmx1024M"`

The following is an example of a `setenv` script located here `Tomcat_Home/bin/setenv.sh`:

```
export SSPR_APPLICATIONPATH="/etc/opt/microfocus/sspr"
export CATALINA_OPTS="-Xms1024M -Xmx1024M"
```

Deploying the Self Service Password Reset WAR File

After you have installed Java and Apache Tomcat and they are running with the appropriate OS environmental variables set, you must deploy the Self Service Password Reset WAR file. Ensure that you have downloaded and extracted the file. For more information, see “Obtaining Self Service Password Reset” on page 15.

To deploy the WAR file on Linux:

1. Copy the sspr.war file to the *`Tomcat_Home`*`/webapps/` directory.

   When Apache Tomcat discovers the `sspr.war` file in the `Tomcat_Home/webapps/` directory, Apache Tomcat auto-deploys Self Service Password Reset in an automatically created directory; *`Tomcat_Home`*`/webapps/sspr/`.

2. Stop Apache Tomcat by running the `catalina.sh` script in the *`Tomcat_Home`*`/bin` directory.

   ```
   ./catalina.sh stop
   ```

3. Start Apache Tomcat by running the `catalina.sh` script in the *`Tomcat_Home`*`/bin` directory.

   ```
   ./catalina.sh start
   ```

After deploying the WAR file, you must configure your environment to work with Self Service Password Reset. For more information, see Chapter 4, “Configuring Your Environment for Self Service Password Reset,” on page 25.

4 Configuring Your Environment for Self Service Password Reset

After you have installed Self Service Password Reset, you must configure your environment to allow Self Service Password Reset to work. You can manually configure your environment, or you can use the Configuration Guide that comes with Self Service Password Reset.

The Self Service Password Reset Configuration Guide walks you through configuring your environment. It creates certificates for you, it provides LDIF files to extend the schema for the LDAP directories, and it shows you what rights you must have in the LDAP directories for Self Service Password Reset to work. It also helps you configure a secure connection to an external database if that is your configuration choice.

If you manually configure your environment, you must create and manage certificates, configure the LDAP directories by extending schema and assigning rights, and you must configure the external databases to communicate with Self Service Password Reset.

You must complete these configuration tasks before you can use Self Service Password Reset.

Self Service Password Reset Configuration Worksheet

Use the following worksheet to gather the required information to use the Configuration Guide or to manually configure your environment.

Table 4-1 *Self Service Password Reset Configuration Worksheet*

Component	❑	Gather the following information:
LDAP Directory Information		
	❑	Full DNS name or IP address and the port of the LDAP server **NOTE:** Do not use a virtual address or a proxy server address.
	❑	LDAP server certificates Allow Self Service Password Reset to manage the certificates, or you must generate new certificates and import them into the Java keystore. For more information, see "Exporting LDAP Certificates" on page 29.

Component	❑	Gather the following information:
	❑	Fully qualified LDAP distinguished name (DN) of the proxy administrator credentials For security reasons, create a proxy LDAP administrator that has sufficient rights to administer the users that log in to this system.
	❑	Fully qualified DN of the root container of your LDAP users You can add additional containers after the Configuration Guide completes.
	❑	Fully qualified DN of an LDAP administrators group A group in your LDAP directory to use to control administrative access to Self Service Password Reset.
	❑	Fully qualified DN of an LDAP test user Self Service Password Reset uses this test user to periodically test the connection between the LDAP server and the system.
	❑	LDAP attribute permissions You must change the LDAP attribute permissions to allow Self Service Password Reset to manage your users' credentials. The Configuration Guide displays the specific permissions you must change for your environment. If you perform a manual install, you must change these same attribute permissions for your environment. For more information, see "Configuring the LDAP Directories" on page 30.
Self Service Password Reset URL		
	❑	URL to this deployment of Self Service Password Reset that the users access The fully qualified hostname of the server running Self Service Password Reset.
Challenge-Response Storage Local Database		**NOTE:** Select one of the locations to store the challenge-response information: local database, LDAP, or remote database.
	❑	Local database - Testing Only Use for testing only and nothing else must be done to your environment.
Challenge-Response Storage LDAP		

Component	❑	Gather the following information:
	❑	LDAP You must extend the schema in your LDAP directory and assign rights to allow Self Service Password Reset to manage the users. If you are using eDirectory, you can allow the Configuration Guide to extend the schema for you or you can manually extend the schema with the provided files. For Active Directory and the Oracle Directory Server, you must manually extend the schema using the provided files. For more information, see “Configuring the LDAP Directories” on page 30.
Challenge-Response Storage Remote Database		
	❑	Empty database You must install an empty database that Self Service Password Reset supports. The configuration process adds the appropriate tables and schema to the database.
	❑	Database driver You must download the JDBC driver from the website of the database you are using. You upload the JAR or ZIP file during the configuration of Self Service Password Reset.

	❑	Database class
		
		You must specify the Java class name of the JDBC driver. For example:
		
		◆ **Microsoft SQL:**
		
		`com.microsoft.sqlserver.jdbc.SQLServerDriver`
		
		◆ **Microsoft SQL using jTDS:**
		
		`net.sourceforge.jtds.jdbc.Driver`
		
		◆ **Oracle:** `oracle.jdbc.OracleDriver`
		
		◆ **Postgres:** `org.postgresql.Driver`

	❑	Database connection string This setting configures the Java JDBC database driver with the information required to reach your database server such as IP address, port number, and database name. For example: ◆ **Microsoft SQL:** `jdbc:sqlserver://`*`host.example.net`*`:`*`port`*`;`*`databaseName`*`=SSPR` ◆ **Microsoft SQL using jTDS:** `jdbc:jtds:sqlserver://host.example.net:`*`port`*`/SSPR` ◆ **Oracle:** `jdbc:oracle:thin:@//`*`host.example.net`*`:1521/SSPR` ◆ **Postgres:** `jdbc:postgresql://`*`host:port/database/`*`SSPR`

Component	❑	Gather the following information:
	❑	Library Path - Microsoft SQL only Set the appropriate values for JAVA_OPTS in catalina.bat in the *tomcat*/bin folder. For more information, see the Tomcat documentation.
	❑	Database user name A user name that Self Service Password Reset uses to authenticate to the database.
	❑	Database password The password of the database user Self Service Password Reset uses to authenticate to the database.

Using the Configuration Guide

After you have completed the Self Service Password Reset installation, you must configure your environment to use Self Service Password Reset. Self Service Password Reset contains a Configuration Guide that walks you through configuring your environment. The Configuration Guide simplifies the configuration process for you.

To use the Configuration Guide:

1. Ensure that you have gathered all of the information in the worksheet before proceeding. For more information, see “Self Service Password Reset Configuration Worksheet” on page 25.
2. Access the appropriate URL for your deployment.

   Appliance

   `https://dns-name/sspr`

   Windows

   `https://localhost:8443/sspr`

   WAR File

   `https://localhost:port/sspr`
3. Click **Start Configuration Guide**.
4. Follow the instructions for your environment.

   NOTE: The Configuration Guide displays information unique to your environment and your configuration choices.
5. (Conditional) If you are using Active Directory or the Oracle Directory Server, you must manually extend the schema in the LDAP directories to work with Self Service Password Reset. For more information, see “Configuring the LDAP Directories” on page 30.

After you completed the Configuration Guide, you can now configure Self Service Password Reset for you environment. Proceed to “Getting Started” in the *Self Service Password Reset 4.1 Administration Guide*.

If you are using eDirectory to store the challenge-response information, there is one post-configuration step you must perform. You must install the iManager Password Management plugin and enable the Universal Password policy. For more information, see "Managing Password" in the *eDirectory Administration Guide*.

Manually Configuring Self Service Password Reset

If you choose to manually configure Self Service Password Reset, there are a number of different tasks you must perform. Complete the following tasks in the order listed, to manually configure Self Service Password Reset and your environment.

1. Gather the information listed in the worksheet.

   For more information, see "Self Service Password Reset Configuration Worksheet" on page 25.
2. Manually configure your LDAP directory by extending the schema and assigning permissions.

   For more information, see "Configuring the LDAP Directories" on page 30.
3. Manually create an LDAP profile in the Self Service Password Reset Configuration Editor.

   For more information, see "Creating an LDAP Profile for Your Environment" on page 35.
4. Manually configure your external database to store the challenge-response information.

   For more information, see "Configuring Databases" on page 35.
5. Manually define the database settings in the Self Service Password Reset Configuration Editor.

   For more information, see "Configuring Self Service Password Reset to Work with the External Database" on page 36.

After you have completed the manual configuration of your environment, you can now configure Self Service Password Reset. Proceed to "Getting Started" in the *Self Service Password Reset 4.1 Administration Guide*.

Exporting LDAP Certificates

To create a secure channel of communication between LDAP and Self Service Password Reset, Self Service Password Reset must trust the LDAP server's certificates to create a secure channel. You must export the LDAP server certificates to use during the manual configuration of Self Service Password Reset.

To export the LDAP server certificates:

1 Identify the certificates you want to use. You can use one of the following certificates:

A certificate issued by a recognized commercial certificate authority (CA):

The certificate of this type of CA must be present in the certificate database. If the server name in the LDAP URL is identical to the common name (CN) of the certificate, the certification process is complete.

A certificate issued by a private certificate authority such as Microsoft Active Directory:

In this case, the certificates of this CA must be imported into the Java certificate database.

A self-signed certificate:

In this case, import the self-signed certificate into the Java certificate database.

2 Export the certificates from the LDAP server.

eDirectory

To export certificates from eDirectory, see Exporting the SSL Certificate Using iManager.

Microsoft Active Directory

To export certificates from Microsoft Active Directory, see Exporting the LDAPS Certificates and Importing for Use with AD DS

Oracle Directory Server

To export certificate from Oracle Directory Server, see Managing Certificates.

3 Ensure that the exported certificate is accessible from a computer that you will use to configure Self Service Password Reset.

After you have your LDAP certificate, you must manually configure the LDAP directories to work with Self Service Password Reset. Proceed to "Configuring the LDAP Directories" on page 30.

Configuring the LDAP Directories

To allow Self Service Password Reset to store the challenge-response information in an LDAP directory, you must extend the LDAP directory schema and assign specific permissions to attributes in the LDAP directory. This allows Self Service Password Reset to manage the passwords for your users.

Self Service Password Reset provide `.ldif` files that manually extend the schema for the LDAP directories and change the permissions that allow Self Service Password Reset to work. You can access the `.ldif` files here: `https://sspr.server.com/sspr/public/reference/` on your Self Service Password Reset application.

IMPORTANT: You must be running Self Service Password Reset 4.1 Patch Update 1 or later to access the `.ldif` files on the reference page here: `https://sspr.server.com/sspr/public/reference/ldap-schema.jsp`

The `.ldif` files are also included in the Configuration Guide for the appliance and for the Windows installer.

WARNING: Extending the schema and changing rights in your LDAP directory permanently changes the LDAP directory. Ensure that your LDAP directory administrator performs these steps. If the directory is not healthy or there are communication problems in your network, changing the schema can cause problems.

Self Service Password Reset contains an LDAP Permissions tool that reads your Self Service Password Reset configuration file. The LDAP Permissions tool lists all of the required rights for your environment depending on the components of Self Service Password Reset you have enabled. The rights listed in the tool change depending on the Self Service Password Reset modules you enable. The following steps are guidelines for what rights you need in your environment for Self Service Password Reset to work. It is best to use the LDAP Permissions tool to see all of the rights specific to your deployment of Self Service Password Reset. For more information, see "Viewing LDAP Permissions Recommendations" in the *Self Service Password Reset 4.1 Administration Guide*.

Use the following information to extend the LDAP directory schema and assign rights:

- "Configuring eDirectory" on page 31
- "Configuring Active Directory" on page 32
- "Configuring the Oracle Directory" on page 34

Configuring eDirectory

Before you extend the schema or change any rights to make Self Service Password Reset work with eDirectory, you must install the iManager Password Management plugin and enable the Universal Password policy. For more information, see "Managing Password" in the *eDirectory Administration Guide*.

Self Service Password Reset uses eDirectory attributes to store the following user data:

- The last time a user changed the password
- The last time Self Service Password Reset sent an email notification to the user about password expiry
- Secret questions and answers

Use the following information to modify eDirectory:

- "Extending the eDirectory Schema" on page 31
- "Modifying eDirectory Rights to Grant Permissions" on page 31

Extending the eDirectory Schema

You must use eDirectory tools to extend the eDirectory schema with the `edirectory-schema.lidf` file. You can access this file here: `https://sspr.server.com/sspr/public/reference/ldap-schema.jsp`.

IMPORTANT: You must be running Self Service Password Reset 4.1 Patch Update 1 or later to access the `.ldif` files on the reference page here: `https://sspr.server.com/sspr/public/reference/ldap-schema.jsp`

Depending on your platform, you must use a different eDirectory tool to extend the schema. The steps for extending the schema are in the eDirectory documentation. For more information, see "Manually Extending the Schema" in the *NetIQ eDirectory Administration Guide.*

The `edirectory-schema.ldif` file adds the following Self Service Password Reset attributes to the eDirectory schema:

- `pwmEventLog`
- `pwmResponseSet`
- `pwmLastPwdUpdate`
- `pwmGUID`
- `pwmOTPsecret`

Modifying eDirectory Rights to Grant Permissions

Self Service Password Reset requires permission to perform all operations in eDirectory. For instructions on how to change eDirectory rights, see "eDirectory Rights" in the *eDirectory Administration Guide*.

Use the LDAP Permissions tool to determine the proper rights for your environment and your configuration of Self Service Password Reset. For more information about the LDAP Permissions tool, see "Viewing LDAP Permissions Recommendations" in the *Self Service Password Reset 4.1 Administration Guide*.

Set up the following user rights:

- Proxy User Rights
- Authenticated User Rights
- Other Rights

Proxy User Rights

Users with generic proxy user rights perform operations such as pre-authentication. Proxy users need the following rights to user containers:

- Browse rights to `[Entry Rights]`
- Read and Compare rights to the `pwmResponseSet` and `Configured Naming (CN)` attribute
- Read, Compare, and Write rights to `objectClass`, `passwordManagement`, `pwmEventLog`, and `pwmLastPwdUpdate`

IMPORTANT: If you enable the New User Registration module for Self Service Password Reset, you must enable the Create right to the `[Entry Rights]`. The `edirectory-rights.ldif` file does not add this right. To add the Create right to the `[Entry Rights]`, use the **Modify Trustees** task of the `Rights` role in iManager.

Authenticated User Rights

Users with authenticated user rights perform operations based on the permissions associated with the user's connection. Authenticated users need the following rights for their own user entries:

- Browse rights to `[Entry Rights]`
- Read, Compare, and Write rights, Inherited to [This] for `pwmResponseSet`
- Write rights, Inherited rights to `[This]` for `pwmLastPwdUpdate`

Other Rights

Depending on the Self Service Password Reset configuration, users might need other rights assigned as well. In most cases, Self Service Password Reset interacts with the directory by using the user's LDAP connection. The user must have LDAP rights to execute operations. For example:

- **Update Profile Module:** Users must have all rights to read attributes that are part of the Update Profile module and Write rights to any attributes they must write to.
- **Help Desk Module:** Users must have Read rights to search and display attributes of users whom they administer. Users must also have Write rights to any attributes modified by the Help Desk module through configured actions or password setting and unlocking accounts.

Configuring Active Directory

If you intend to install Self Service Password Reset with Active Directory and you want the challenge-response information to be stored in Active Directory, you must extend the schema and assign user rights to store data in Active Directory.

Self Service Password Reset provides `.ldif` files that extend the schema and assign the correct rights to your Active Directory. You can access these files here: `https://sspr.server.com/sspr/public/reference/ldap-schema.jsp`.

IMPORTANT: You must be running Self Service Password Reset 4.1 Patch Update 1 or later to access the `.ldif` files on the reference page here: `https://sspr.server.com/sspr/public/reference/ldap-schema.jsp`

After you extend the directory schema, you must give permissions to access objects, including the group policy, organizational units, and containers. Assigning users' rights include authorizing read or write rights to Self Service Password Reset directory schema attributes.

The `AD-schema.ldif` file extends the schema on the server and enables you to assign user rights. You must determine containers and organizational units that need Self Service Password Reset access. You must know their distinguished names (DN) so that you can assign rights to each container and organizational unit separately.

You can use the LDAP Permissions tool to determine what rights you must change in Active Directory for each Self Service Password Reset module you enable. For more information, see "Viewing LDAP Permissions Recommendations" in the *Self Service Password Reset 4.1 Administration Guide*.

You can also extend the Active Directory schema to the root of the domain and assign rights to each container and the organizational unit below the root.

- "Extending the Active Directory Schema" on page 33
- "Assigning User Rights" on page 34

Extending the Active Directory Schema

You must use Active Directory tools to extend the schema. You use the `AD-schema.ldif` file provided here `https://sspr.server.com/sspr/public/reference/ldap-schema.jsp` to extend the schema.

IMPORTANT: You must be running Self Service Password Reset 4.1 Patch Update 1 or later to access the `.ldif` files on the reference page here: `https://sspr.server.com/sspr/public/reference/ldap-schema.jsp`

Log in as the domain administrator and run the schema extension file on an Active Directory domain controller or computer that is connected to the Active Directory domain. Following the instructions provided in the Microsoft documentation. For more information, see Methods for Extending Schema.

The `.ldif` file adds the following Self Service Password Reset attributes to the directory schema:

- `pwmEventLog`
- `pwmResponseSet`
- `pwmLastPwdUpdate`
- `pwmToken`
- `pwmOTPSecret`

In a multi-server environment, schema updates occur after server replication. To ensure that the schema synchronized through your environment you can perform a schema cache update. For more information, see Schema Cache.

Assigning User Rights

To store the data against the new Self Service Password Reset schema attributes, assign user permissions to objects in the directory. Assign rights to the attributes added through the schema extension to all of the objects that access the Self Service Password Reset data, including the following:

- User objects
- User containers
- Group policies
- Organizational units

If you assign rights to containers and organizational users, the rights filter down to the associated user objects.

IMPORTANT: Do not assign rights at the user level or object level.

To assign rights, use the Microsoft documentation. For more information, see Configuring User Rights.

You can also assign rights to a Password Settings object (PSO) to add a fine-grained password and account lockout policy for Active Directory. For more information, see Create a PSO.

Configuring the Oracle Directory

You must extend the schema and assign permissions for the Oracle Directory Server to store the challenge-response information. This allows Self Service Password Reset to manage the passwords for the users.

- "Extending the Schema for the Oracle Directory Server" on page 34
- "Assigning Rights for the Oracle Directory Server" on page 35

Extending the Schema for the Oracle Directory Server

You must use Oracle tools to extend the schema. You use the `OracleDS-schma.ldif` file to extend the schema. The file is available here: `https://sspr.server.com/sspr/public/reference/`.

IMPORTANT: You must be running Self Service Password Reset 4.1 Patch Update 1 or later to access the `.ldif` files on the reference page here: `https://sspr.server.com/sspr/public/reference/ldap-schema.jsp`

To extend the Oracle schema for Self Service Password Reset, use the Oracle documentation. For more information, see "Extending Directory Server Schema".

The `OracleDS.ldif` file adds the following Self Service Password Reset attributes to the Oracle Directory Server schema:

- `pwmEventLog`
- `pwmResponseSet`
- `pwmLastPwdUpdate`
- `pwmGUID`
- `pwmOTPsecret`

Assigning Rights for the Oracle Directory Server

You must change the permission for the Oracle Directory attributes to store the following users' data:

- The last time when a user changed the password
- The last time when Self Service Password Reset sent an email notification to the user about password expiry
- Secret questions and answers

The permission between the Oracle Directory Server and eDirectory are similar. The information for permission provided for eDirectory is the same as for the Oracle Directory Server.

Self Service Password Reset requires permission to perform operations in Oracle Directory. The following rights are required:

- Proxy User Rights
- Authenticated User Rights

Use the `OracleDS-right.ldif` file to make the permissions changes for your environment. You must modify this file for your environment for the file to work.

Creating an LDAP Profile for Your Environment

After you have manually configured your LDAP directory, you must now create an LDAP profile for your environment in the Self Service Password Reset Configuration Editor. You will use the information from the worksheet to configure the LDAP Profile.

However, you must know the additional information to manually create an LDAP profile. You must know:

- A user name attribute you want to use when viewing users in Self Service Password Reset
- A GUID attribute that is unique to all users that are managed by Self Service Password Reset
- Attributes to use for logging into Self Service Password Reset
- Attribute used for user groups

For instructions and more information, see "Configuring Policies" in the *Self Service Password Reset 4.1 Administration Guide*.

Configuring Databases

Self Service Password Reset uses two types of databases:

- **Local Database:** Self Service Password Reset uses a local database for storing local data. The local database requires no administration or maintenance and the default values are sufficient.
- **External Database:** Self Service Password Reset uses an external database to store data for certain functions. Any standard JDBC database that supports a standard Java JDBC driver works. Self Service Password Reset connects to the database and creates the necessary tables. You can configure multiple Self Service Password Reset instances to the same database instance. Self Service Password Reset officially supports MS SQL database and Oracle database.

You must manually configure the database to save the challenge-response information from Self Service Password Reset. You must work with a database administrator to completed the tasks.

To configure the database:

1. Create a database.

   For more information about how to create a database, see the related product documentation.
2. Create a database administrator for that database. You must specify this administrator during Self Service Password Reset configuration.
3. Create a user and associate it with the database you created in Step 1.
4. (Conditional) If you are using the Microsoft SQL database, ensure that the user has enabled the SQL server authentication mode and has suitable rights to open the database, which is the SQL Server Authentication mode. For more information, see "Choosing an Authentication Mode."

Configuring Self Service Password Reset to Work with the External Database

After you have created the external database, you must configure Self Service Password Reset to communicate with the database. Self Service Password Reset uses the JDBC driver for the specific database. Download the JDBC driver from the vendor's website to connect to the JDBC database.

To configure an external database to store the challenge-response information:

1. Ensure that you have downloaded the JDBC driver from the vendor's website.
2. Log in to Self Service Password Reset at `https://dns-name/sspr` as an administrator.
3. In the toolbar, click your name.
4. Click **Configuration Editor**.
5. Click **Default Settings**.
   - **5a** Select the LDAP directory type you are using.
   - **5b** Select where to store information as **Remote Database**
   - **5c** In the toolbar, click **Save changes**.
6. (Conditional) If you are using anything other than Active Directory to store challenge-response information in an external database, click **Modules > Authenticated > Forgotten Password > Settings**.
   - **6a** Set **Response Read Location** to **Database**.
   - **6b** Set **Response Write Location** to **Database**.
   - **6c** Click **Save**.
7. Click **Settings** > **Database (Remote)** > **Connection**.
8. Use the following information to configure the database connection:

   Database Driver

   Upload the JDBC database driver you downloaded from the vendor's website.

   Database Class

   Specify the Java class name of the JDBC driver. For example:

   - **Microsoft SQL:** `com.microsoft.sqlserver.jdbc.SQLServerDriver`
   - **Microsoft SQL using jTDS:** `net.sourceforge.jtds.jdbc.Driver`
   - **Oracle:** `oracle.jdbc.OracleDriver`

Database Connection String

Specify the database connections string that configures the Java JDBC database driver with the information required to reach your database server such as IP address, port number, and database name. For example:

- **Microsoft SQL:** `jdbc:sqlserver://host.example.net:port;databaseName=SSPR`
- **Microsoft SQL using jTDS:** `jdbc:jtds:sqlserver://host.example.net:port/SSPR`
- **Oracle:** `jdbc:oracle:thin:@//host.example.net:1521/SSPR`

Database User Name

Specify the name of the user who can connect to the database.

Database Password

Specify a password for the database user.

Database Vendor

Select the vendor for your database. The options are **Other** or **Oracle**.

9 Click **Test Database Connection** to validate in the information you entered.

10 In the toolbar, click **Save changes**.

Integrating with Other NetIQ Products

Self Service Password Reset integrates with other NetIQ products to simplify password management for your environment. Integrating the different products enhances the users' experience of managing their own passwords and helps reduce costs for your company. Self Service Password Reset integrates with the following products:

- **NetIQ Access Manager:** For more information, see "Integrating Self Service Password Reset with NetIQ Access Manager" in the *Self Service Password Reset 4.1 Administration Guide*.
- **NetIQ Advanced Authentication:** For more information, see "Integrating Self Service Password Reset with Advanced Authentication" in the *Self Service Password Reset 4.1 Administration Guide*.
- **NetIQ Identity Manager:** For more information, see "Integrating Self Service Password Reset with NetIQ Identity Manager" in the *Self Service Password Reset 4.1 Administration Guide*.

5 Upgrading Self Service Password Reset

If you have Self Service Password Reset installed and configured, you can upgrade Self Service Password Reset to the latest version. The upgrade steps are different for each platform. Follow the instructions that are specific to your platform: the appliance, Linux, or Windows.

Since Self Service Password Reset is a web application, the steps to add a patch update are the same as when you upgrade Self Service Password Reset. For more information, see "Adding a Patch Update" in the *Self Service Password Reset 4.1 Administration Guide*.

Upgrading the Self Service Password Reset Appliance

Upgrading the Self Service Password Reset appliance is a manual process and it is different that updating the appliance. Upgrading the appliance is when you move to another release rather than applying a update. For more information about updates, see "Performing an Online Update" in the *Self Service Password Reset 4.1 Administration Guide*.

IMPORTANT: The **Upgrade Product** option in the appliance administration console does not work in the Self Service Password Reset 4.1 release. If you use this option to try and upgrade from Self Service Password Reset 4.0 to 4.1, it will break the appliance. Use the following procedure to correctly upgrade the Self Service Password Reset appliance.

To upgrade Self Service Password Reset from 4.0 to 4.1 is a manual process. Ensure that you follow all of the steps to complete the upgrade process.

To upgrade the appliance:

1. Create a backup of your current configuration information.
   - **1a** Log in to Self Service Password Reset at `https://dns-name/sspr` as an administrator.
   - **1b** In the toolbar, click your name.
   - **1c** Click **Configuration Manager**.
   - **1d** Back up the configuration XML file.
     - **1d1** Under **Configuration Activities**, click **Download Configuration**.
     - **1d2** Save the `SSPRConfiguration.xml` file to a safe location.
2. Back up the data stored in the local database:
   - **2a** In the Configuration Manager, click **LocalDB**.
   - **2b** Click **Download LocalDB**, then save the local database to a safe location.
3. Download the new version of the Self Service Password Reset appliance.

4 Deploy the new version of the Self Service Password Reset appliance. For more information, see “Deploying the Self Service Password Reset Appliance” on page 17.

5 Restore the Self Service Password Reset configuration file. For more information, see “Importing Configuration Information” in the *Self Service Password Reset 4.1 Administration Guide*.

6 Restore the local database information.

   6a Log in to the Configuration Manager as an administrator.

   6b Click **LocalDB**.

   6c Click **Import (Upload) LocalDB Archive File**, then browse to and select the file you saved before installing the new appliance.

7 Log in to Self Service Password Reset at `https://dns-name/sspr` as an administrator and verify that all of the configuration information is correct.

Upgrading Self Service Password Reset on Linux

If you installed Self Service Password Reset by deploying the WAR file on a Linux server, you must use the following steps to upgrade your deployment.

Since Self Service Password Reset is a Java servlet application running Apache Tomcat, the steps to add a patch update are the same as upgrading Self Service Password Reset. For more information, see “Adding a Patch Update” in the *Self Service Password Reset 4.1 Administration Guide*.

To upgrade Self Service Password Reset on Linux:

1 Download the most recent version of Self Service Password Reset WAR file from the NetIQ Patch Finder download website.

2 Create a backup of your current configuration information.

   2a Log in to Self Service Password Reset at `https://dns-name/sspr` as an administrator.

   2b In the toolbar, click your name.

   2c Click **Configuration Manager**.

   2d Back up the configuration XML file:

      2d1 Under **Configuration Activities**, click **Download Configuration**.

      2d2 Save the `SSPRConfiguration.xml` file to a safe location.

3 Back up the data stored in the local database:

   3a In the Configuration Manager, click **LocalDB**.

   3b Click **Download LocalDB**, then save the local database to a safe location.

4 (Optional) If you have made any customization in Self Service Password Reset such as changes in the user interface copy these for later reference.

   For more information, see “Customizing the Branding of Self Service Password Reset” in the *Self Service Password Reset 4.1 Administration Guide*.

5 Stop Apache Tomcat by running the `catalina.sh` script in the *`Tomcat_Home`*`/bin` directory.

```
./catalina.sh stop
```

6 Copy the updated `sspr.war` to the *`Tomcat_Home`*`/webapps` directory.

NOTE: Ensure that you have set the `SSPR_APPLICATION` operating system environment variable in the `setenv` file. For more information, see “‘Setting Operating System Environment Variables” on page 23”.

---

7 Restart the Apache Tomcat service by running the `catalina.sh` script in the *`Tomcat_Home`*`/bin` directory.

```
./catalina.sh start
```

8 Import the configuration information you backed up prior to the upgrade.

8a Log in to Self Service Password Reset at `https://`*`dns-name`*`/sspr` as an administrator.

8b In the toolbar, click your name.

8c Click **Configuration Manager**.

8d Click **Import Configuration**, then browse to and select the `SSPRConfiguration.xml` file you created earlier.

9 Restore the local database information.

9a Log in to the Configuration Manager as an administrator.

9b Click **LocalDB**.

9c Click **Import (Upload) LocalDB Archive File**, then browse to and select the file you saved before installing the new appliance.

10 (Optional) Copy any customization as required.

NOTE: If you uploaded a ZIP file to the configuration editor in you previous Self Service Password Reset version, the file is embedded in the `SSPRConfiguration.xml` file you imported previously so you do not need to complete the following steps.

10a Log in to Self Service Password Reset at `https://`*`dns-name`*`/sspr` as an administrator.

10b In the toolbar, click your name.

10c Select **Configuration Editor**.

10d Click **Settings > User Interface > Look & Feel > Custom Resource Bundle**.

10e Browse to and select the Custom Resource Bundle file, then click **Upload File**.

11 Log in to Self Service Password Reset at `https://`*`dns-name`*`/sspr` as an administrator and verify that all of the configuration information is correct.

Upgrading Self Service Password Reset on Windows

If you deployed Self Service Password Reset using the `.msi` file, you must use the following procedure to upgrade your deployment.

1 Download the most recent version of Self Service Password Reset `.msi` file from the NetIQ Patch Finder download website.

2 Create a backup of the current configuration information.

2a Log in to Self Service Password Reset at `https://`*`dns-name`*`/sspr` as an administrator.

2b In the toolbar, click your name.

2c Click **Configuration Manager**.

2d Back up the configuration XML file.

2d1 Under **Configuration Activities**, click **Download Configuration**.

2d2 Save the `SSPRConfiguration.xml` file to a safe location.

NOTE: This is for backup purposes only.

---

3 Back up the data stored in the local database:

   3a In the Configuration Manager, click **LocalDB**.

   3b Click **Download LocalDB**, then save the local database to a safe location.

   NOTE: This is for backup purposes only.

4 (Optional) If you have made any customization in Self Service Password Reset such as changes in the user interface copy these for later reference.

   For more information, see "Customizing the Branding of Self Service Password Reset" in the *Self Service Password Reset 4.1 Administration Guide*.

5 Run the `.msi` file.

6 Follow the prompts to install the new version.

7 (Optional) Restore any customization.

8 Log in to Self Service Password Reset at `https://dns-name/sspr` as an administrator and verify that all of the configuration information is correct.

Upgrading the Identity Manager Deployment of Self Service Password Reset

If you deployed Self Service Password Reset from the Identity Manager installation, there are separate steps you must perform to upgrade Self Service Password Reset.

To upgrade Self Service Password Reset from an Identity Manager deployment:

1 Download the most recent version of Self Service Password Reset WAR file from the NetIQ Patch Finder download website.

2 Ensure that you have configured an administrator user for Self Service Password Reset.

   2a Log in to Self Service Password Reset at `https://dns-name/sspr` as an administrator.

   2b In the toolbar, click your name.

   2c Click **Configuration Editor > Setting > Modules > Admin > Administrator Permission**.

   2d Ensure that the LDAP filter you defined includes an administrator user.

3 Create a backup of your current configuration information.

   3a Log in to Self Service Password Reset at `https://dns-name/sspr` as an administrator.

   3b In the toolbar, click your name.

   3c Click **Configuration Manager**.

   3d Back up the configuration XML file:

      3d1 Under **Configuration Activities**, click **Download Configuration**.

      3d2 Save the `SSPRConfiguration.xml` file to a safe location.

4 Back up the data stored in the local database:

   4a In the Configuration Manager, click **LocalDB**.

   4b Click **Download LocalDB**, then save the local database to a safe location.

5 (Optional) If you have made any customization in Self Service Password Reset such as changes in the user interface copy these for later reference.

   For more information, see "Customizing the Branding of Self Service Password Reset" in the *Self Service Password Reset 4.1 Administration Guide*.

6 Lock the Self Service Password Reset configuration file by accessing the Configuration Manager, then clicking **Lock Configuration**.

7 Stop Apache Tomcat by running the `catalina.sh` script in the *`Tomcat_Home`*`/bin` directory.

```
./catalina.sh stop
```

8 Delete the following directories:

- `Tomcat_home/webapps/sspr`
- `Tomcat_home/work/Catalina/localhost`

9 Copy the updated `sspr.war` to the *`Tomcat_Home/`*`webapps` directory.

NOTE: Ensure that you have set the `SSPR_APPLICATION` operating system environment variable in the `setenv` file. For more information, see "“Setting Operating System Environment Variables” on page 23".

---

10 Restart the Apache Tomcat service by running the `catalina.sh` script in the *`Tomcat_Home`*`/bin` directory.

```
./catalina.sh start
```

11 Import the configuration information you backed up prior to the upgrade.

11a Log in to Self Service Password Reset at `https://`*`dns-name`*`/sspr` as an administrator.

11b In the toolbar, click your name.

11c Click **Configuration Manager**.

11d Click **Import Configuration**, then browse to and select the `SSPRConfiguration.xml` file you created earlier.

12 Restore the local database information.

12a Log in to the Configuration Manager as an administrator.

12b Click **LocalDB**.

12c Click **Import (Upload) LocalDB Archive File**, then browse to and select the file you saved before installing the new appliance.

13 (Optional) Copy any customization as required.

NOTE: If you uploaded a ZIP file to the configuration editor in you previous Self Service Password Reset version, the file is embedded in the `SSPRConfiguration.xml` file you imported previously so you do not need to complete the following steps.

13a Log in to Self Service Password Reset at `https://`*`dns-name`*`/sspr` as an administrator.

13b In the toolbar, click your name.

13c Select **Configuration Editor**.

13d Click **Settings > User Interface > Look & Feel > Custom Resource Bundle**.

13e Browse to and select the Custom Resource Bundle file, then click **Upload File**.

14 Configure the setting that integrates Self Service Password Reset with Identity Manager.

14a Log in to Self Service Password Reset at `https://`*`dns-name`*`/sspr` as an administrator.

14b In the toolbar, click your name.

14c Click **Configuration Editor > Settings > Default Settings > LDAP Vendor Default Settings**.

14d Select **NetIQ IDM / OAuth Integration**.

14e Select **Save changes**.

15 Verify that all of the configuration information is correct and if you imported the customization, that Self Service Password Reset restored all of the customizations.

6 Uninstalling Self Service Password Reset

Self Service Password Reset provides a way for you to uninstall it. Select the appropriate information for your deployment of Self Service Password Reset.

Removing the Self Service Password Reset Appliance

To uninstall the appliance, power off the appliance and then delete the image from your virtual environment. If you are using an L4 switch, ensure to remove the IP address of this appliance from the L4 switch.

Uninstalling on Linux

1. Stop Apache Tomcat by running the `catalina.sh` script in the *`Tomcat_Home`*`/bin` directory.

   ```
   ./catalina.sh stop
   ```

2. (Optional) Save the XML Configuration file to another location for future use.
3. (Optional) Back up the local database if you stored the challenge-response information in it.
   - **3a** In the Configuration Manager, click **LocalDB**.
   - **3b** Click **Download LocalDB**, then save the local database to a safe location.
4. Delete both the *`Tomcat_Home`*`/webaps/sspr` directory and the *`Tomcat_Home`*`/webaps/sspr.war` file.
5. Reboot the Linux server to complete the uninstall process.

Uninstalling on Windows

1. Stop Apache Tomcat by one of the following methods:
   - Right-click the Tomcat icon in the System tray, then select **Stop**.
   - Run the **catalina.bat** script in the *`Tomcat_Home`*`\bin` directory.

     ```
     catalina stop
     ```

2. (Optional) Save the XML Configuration file to another location for future use.

   For more information, see "Backing Up Configuration Information" in the *Self Service Password Reset 4.1 Administration Guide*.

3 (Optional) Back up the local database if you stored the challenge-response information in it.

3a In the Configuration Manager, click **LocalDB**.

3b Click **Download LocalDB**, then save the local database to a safe location.

4 From the Windows Control Panel, uninstall Self Service Password Reset.

5 Reboot the Windows Server to complete the uninstall process.

A Documentation Updates

These sections contains a list of the changes made to the documentation.

May 17, 2017

Location	Change
“Modifying eDirectory Rights to Grant Permissions” on page 31	Remove a reference to an old LDIF file and added links to the LDAP Permissions tool information.

March 15, 2017

Locations	Change
Table 3-3, “Self Service Password Reset on Windows Requirements,” on page 19	Changed the text for the supported versions of Java and Apache Tomcat.
Table 3-4, “Self Service Password Reset WAR File Requirements on Linux,” on page 22	Updated the supported versions for Apache Tomcat.

March 2017

Location	Change
“Self Service Password Reset Configuration Worksheet” on page 25	Added additional information to the worksheet for LDAP directories.
“Using the Configuration Guide” on page 28	Added additional steps to Using the Configuration Guide.
“Configuring the LDAP Directories” on page 30	Added the information about Patch Update 1 and the LDIF schema files for the LDAP directories.
“Authenticated User Rights” on page 32	Added Inherited to [This] for `pwmResponseSet`.