END USER LICENSE AGREEMENT

The Pulse Secure product that is the subject of this technical documentation consists of (or is intended for use with) Pulse Secure software. Use of such software is subject to the terms and conditions of the End User License Agreement (“EULA”) posted at http://www.pulsesecure.net/support/eula/. By downloading, installing or using such software, you agree to the terms and conditions of that EULA.
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Preface

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Document Conventions
The document conventions describe text formatting conventions, command syntax conventions, and important notice formats used in Pulse Secure technical documentation.

Text Formatting Conventions
Text formatting conventions such as boldface, italic, or Courier font may be used in the flow of the text to highlight specific words or phrases.

<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>bold text</strong></td>
<td>Identifies command names</td>
</tr>
<tr>
<td></td>
<td>Identifies keywords and operands</td>
</tr>
<tr>
<td></td>
<td>Identifies the names of user-manipulated GUI elements</td>
</tr>
<tr>
<td></td>
<td>Identifies text to enter at the GUI</td>
</tr>
<tr>
<td><em>italic text</em></td>
<td>Identifies emphasis</td>
</tr>
<tr>
<td></td>
<td>Identifies variables</td>
</tr>
<tr>
<td></td>
<td>Identifies document titles</td>
</tr>
<tr>
<td><strong>Courier Font</strong></td>
<td>Identifies command output</td>
</tr>
<tr>
<td></td>
<td>Identifies command syntax examples</td>
</tr>
</tbody>
</table>

Command Syntax Conventions
Bold and italic text identify command syntax components. Delimiters and operators define groupings of parameters and their logical relationships.

<table>
<thead>
<tr>
<th>Convention</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>bold text</strong></td>
<td>Identifies command names, keywords, and command options.</td>
</tr>
<tr>
<td><em>italic text</em></td>
<td>Identifies a variable.</td>
</tr>
<tr>
<td>[ ]</td>
<td>Syntax components displayed within square brackets are optional.</td>
</tr>
<tr>
<td></td>
<td>Default responses to system prompts are enclosed in square brackets.</td>
</tr>
</tbody>
</table>
## Notes and Warnings

Note, Attention, and Caution statements might be used in this document.

**Note:** A Note provides a tip, guidance, or advice, emphasizes important information, or provides a reference to related information.

**ATTENTION**

An Attention statement indicates a stronger note, for example, to alert you when traffic might be interrupted or the device might reboot.

**CAUTION**

A Caution statement alerts you to situations that can be potentially hazardous to you or cause damage to hardware, firmware, software, or data.

### Requesting Technical Support

Technical product support is available through the Pulse Secure Global Support Center (PSGSC). If you have a support contract, file a ticket with PSGSC.

- Product warranties—For product warranty information, visit [https://support.pulsesecure.net/product-service-policies/](https://support.pulsesecure.net/product-service-policies/)

### Self-Help Online Tools and Resources

For quick and easy problem resolution, Pulse Secure provides an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: [https://support.pulsesecure.net](https://support.pulsesecure.net)
- Search for known bugs: [https://support.pulsesecure.net](https://support.pulsesecure.net)
- Find product documentation: [https://www.pulsesecure.net/techpubs](https://www.pulsesecure.net/techpubs)
- Download the latest versions of software and review release notes: [https://support.pulsesecure.net](https://support.pulsesecure.net)
• Open a case online in the CSC Case Management tool: https://support.pulsesecure.net
• To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: https://support.pulsesecure.net

For important product notices, technical articles, and to ask advice:
• Search the Pulse Secure Knowledge Center for technical bulletins and security advisories: https://kb.pulsesecure.net
• Ask questions and find solutions at the Pulse Community online forum: https://community.pulsesecure.net

Opening a Case with PSGSC
You can open a case with PSGSC on the Web or by telephone.

• Use the Case Management tool in the PSGSC at https://support.pulsesecure.net.
• Call 1-844 751 7629 (Toll Free, US).

For international or direct-dial options in countries without toll-free numbers, see https://support.pulsesecure.net/support/support-contacts/

Reporting Documentation Issues
To report any errors or inaccuracies in Pulse Secure technical documentation, or to make suggestions for future improvement, please send your comments to: techpubs-comments@pulsesecure.net. Include a full description of your issue or suggestion and the document(s) to which it relates.
Overview of Pulse One

Pulse One provides unified management of Pulse Connect Secure and Pulse Policy Secure in a single easy-to-use console.

Pulse One, a single, comprehensive management console, offers the superior administrative end-to-end control and visibility needed to manage remote, local and mobile access to any corporate applications. Administrators use its intuitive, role-based console to monitor system health, manage security policies, troubleshoot issues, report on the appliance and device health, and publish appliance and mobile device configuration.

It controls enterprise access to data center and cloud from a single console.

- **Role-based access** - Grants console access and privileges based on IT role and credentials.
- **Group-based management** - Publish software updates, policy changes and configuration provisioning by custom-defined groups. ESAP updates to appliances are also supported.
- **Centralized administration** - Collectively administers multiple appliances without logging into them on a box-by-box basis.
- **Built-in Mobility Management** - Provides basic EMM functionality for iOS and Android devices and management of BYOD and corporate-owned workspaces.
• **System Dashboard** - Assesses the collective health of all appliances and provides security alerts and appliance alarms.

• **Appliance Dashboard** - Provides appliance status with analytics for connectivity, capacity, utilization, and uptime.

• **Administrator Audit Logging** - Tracks administrator changes to appliance configuration.

• **Monitor and Reporting** - Monitors system activity and provides historical reporting.

• **Deployment** - Introduces new features and scales without data center logistics and planning.

**Logging Into Pulse One**

This section details the steps to log in to Pulse One as an administrator.

Use the Pulse One admin URL to launch the Pulse One Admin Console.

• If you are an existing user, enter the user name and password. Click **Sign In** to log in to Pulse One.

• If Enterprise SSO is configured for your user ID, then click **Sign In with Enterprise SSO**. For details about the Enterprise SSO configuration, see “Enterprise Connection Properties” on page 62.

![Pulse One Login Page](image)

If you are a new user, you will have received a welcome mail from Pulse One to your registered mail ID. Click the **Set your password** link in the welcome mail. In the Pulse One login page that appears, provide a strong password and confirm the password. On successful login, the **End User License Agreement (EULA)** page appears.
If you have forgotten your Pulse One password, click the **Forgot password?** link. In the page that appears, enter your user id and click **Request reset**.

An email that contains a **Reset your password** link will be sent to your registered mail id. Use this link to launch Pulse One and provide your new password and confirm the new password.

**Note:** The **Reset your password** link has an expiration time of 1 hour. Beyond this time, you should make a new request for reset.

If you are a new user logging into Pulse One for the first time, then in the EULA page use the scroll bar to read through the terms of the agreement and then click **Agree**.

The Welcome wizard appears. This provides you a brief overview of Pulse One, appliance management and Bring Your Own Devices (BYODs).

**FIGURE 3** Pulse One Welcome Wizard

In the Welcome wizard, click the right-arrow button until the **Get Started** option appears. If required, select the **Don’t show this to me again** check box and then click **Start Now**.

**Note:** You can view the Welcome wizard any time by clicking the **Settings** icon on the top right corner of the page and selecting **Show Welcome Wizard**.
The Pulse One Home page appears:

**FIGURE 4** Pulse One Home Page

Select the appropriate tab, settings icon or user icon, and get started with the administration.

**Changing the User Password**

To change the user password:

1. Click the User icon on the top-right corner of the page.
2. From the menu, click Change Password to change your login password.

**FIGURE 5** Change Password
An email that contains Set new password link will be sent to your registered mail id. Use this link to launch Pulse One and provide your new password.

**Note:** The Set new password link that you received in the email has an expiration time of 1 hour.

3. To log out of the admin console, click **Logout**.

### Adding Pulse One Licenses

To view and install licenses on Pulse One Cloud:

1. Login into Pulse One as an administrator.
2. Click the **Settings** icon on top-right-corner of the page.
3. Select **Licenses**. The **Licenses** page appears.

![Installed Licenses](image)

**Note:** Any expired licenses (none shown in this example) are displayed in red.

4. Click **Add New License**.

The **Activate License** dialog appears.

![Add New License](image)

5. Enter the license key.
6. Click **Activate**.

The new license is confirmed.

The new license appears in the list of licenses. For example:

**FIGURE 8** New Pulse Workspace License

![New Pulse Workspace License](image)

**Setting a Session Timeout Threshold**

You can set a session timeout threshold. After a period of activity reaches this threshold, the user is logged out, and must log in again to continue.

To set a session timeout threshold:

1. Log into Pulse One as an administrator.
2. Click the **Settings** icon on top-right-corner of the page.
3. Select **Pulse One Properties**.
   
   The **Pulse One Properties** page appears.

**FIGURE 9** Pulse One Properties

![Pulse One Properties](image)

4. Expand the **Session** category.
5. Edit the Session idle timeout (minutes) property and specify a new setting.

   **Note:** The default setting is 20.

6. Save the new setting.

The new session timeout threshold is applied to your current session and all subsequent sessions.
Working with the Pulse One Dashboard

- Viewing Overall System Health ....................................................... 13
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Viewing Overall System Health
To view metrics for system health, select the Dashboard tab, and then select the Overall tab. For example:

FIGURE 10  Overall System Health Dashboard

This dashboard includes the following widgets by default:

- Overall appliance statistics.
- Appliance health for individual appliances.
- VPN realm usage.
- Role usage.
- Frequent user logins.
- Logins in the past 24 hours.
- Critical appliance events with timestamps.
- Resource dial.
- Pulse Connect Secure versions.
- Pulse Policy Secure versions.
Each widget that can be refreshed by clicking Reload Widget Content (✓) and collapsed by clicking Collapse/Expand Widget (🗑).

Customizing Dashboards and Widgets

The dashboard views are customizable. You can change the dashboard layout, add/remove widgets, and rearrange the widgets.

To customize the widgets on a Dashboard tab:

1. Display the required dashboard tab. For example, the Overall tab.

   ![Customizing the Dashboard](image)

   **FIGURE 11** Customizing the Dashboard

   **Note**: The inclusion of individual menus and tabs will reflect all loaded licenses. Your view may differ from that shown above.

2. Click the Enable Edit mode icon (✍️) on the top-right of the tab.
A widget layout summary for the dashboard appears. For example, for the **Overall** tab:

**FIGURE 12** Dashboard Widget Layout

3. (Optional) Click **Add New Widget** (⛵️) to add a widget to the current layout, see “Adding a New Widget” on page 16.

4. (Optional) Click **Edit Dashboard** ( 굉장히) to select a new layout, see “Editing the Dashboard Layout” on page 17.

5. (Optional) Rearrange the current widgets by dragging a widget using its **Change Widget Location** (🐟) handle.

6. (Optional) Change the settings for a widget by clicking its **Edit Widget Configuration** (⚙️), see “Editing Widget Configuration” on page 19.

7. (Optional) Remove a widget by clicking its **Remove Widget** control.

8. (Optional) Click **Undo Changes** (_undo) to reset all unsaved changes and close the layout summary.

9. Click **Save Changes** (✓) to save all changes and close the layout summary.
Adding a New Widget

To add a new widget to a dashboard tab:

1. Display the required dashboard tab. For example, the **Overall** tab.

2. Click the **Enable Edit mode** icon (🔧) on the top-right of the tab.
   A widget layout summary for the dashboard appears.

3. Click the **Add New Widget** (.addButton) control.
   A list of widgets appears.

4. Select the required widget.
   The selected new widget is added to the top of the layout summary.

5. (Optional) On the widget layout, change the settings for the widget by clicking its **Edit Widget Configuration** (겠습니다) control, see “Editing Widget Configuration” on page 19.

6. (Optional) Click **Undo Changes** (.undo) to reset all unsaved changes and close the layout summary.

7. Click **Save Changes** (✓) to save all changes and close the layout summary.
Editing the Dashboard Layout

To change the layout of a dashboard tab:

1. Display the required dashboard tab. For example, the Overall tab.

2. Click the Enable Edit mode icon (편집모드) on the top-right of the tab.

A widget layout summary for the dashboard appears. For example, for the Overall tab:

**FIGURE 14** Dashboard Widget Layout

![Dashboard Widget Layout](image)

**Note:** The inclusion of individual menus and tabs will reflect all loaded licenses. Your view may differ from that shown above.
3. Click the **Edit Dashboard** ( ) icon. A display of available layouts appears.

![Edit Dashboard Layout](image)

**FIGURE 15** Edit Dashboard Layout

4. Select the required layout from the displayed list and click **Close**.

The widget layout is rearranged to reflect the new layout. For example, to a two-column layout.

![Updated Dashboard Widget Layout](image)

**FIGURE 16** Updated Dashboard Widget Layout

5. (Optional) Click **Undo Changes** ( ) to reset all unsaved changes and close the layout summary.

6. Click **Save Changes** ( ) to save all changes and close the layout summary.

The dashboard layout updates to reflect the selected layout.
Editing Widget Configuration

To change the configuration of a widget:

1. Display the required dashboard tab. For example, the **Overall** tab.

2. Click the **Enable Edit mode** icon (✓) on the top-right of the tab.
   
   A widget layout summary for the dashboard appears.

3. Locate the widget you want to configure.

4. Click the **Configure Widget** (Override) control for the widget. For example:

   ![Appliance Health Widget](image)

   A dialog appears which displays all configurable options for the widget.

5. Make the required changes and click **Apply**.

6. (Optional) Click **Undo Changes** (Override) to reset all unsaved changes and close the layout summary.

7. Click **Save Changes** (Override) to save all changes and close the layout summary.
Registering an Existing PCS/PPS Appliance

After Pulse One is installed and configured, the next step is to register one or more PCS/PPS appliances.

**Note:** This process requires sufficient appliance licensing capacity.

To register an existing appliance:

1. Log into Pulse One as an administrator.
2. Click the **Appliances** menu and then the **Appliances** tab.
   
   The **Appliances** tab displays all current appliances.
3. Click **Add Appliance**.

   The **Add Appliance** dialog box appears.

   ![Add Appliance](image)

4. Select **Register existing appliance** and click **Next**.

   The **Register Appliance** dialog appears.

   ![Register New Appliance](image)

5. Enter the required **Name** for the appliance. For example: `appliance.pcs`. 
6. Enter the management interface address of the appliance as the **Appliance URL**. Typically, this URL will end with “/admin”.

7. (Optional) If you want the appliance to support Device Management Interface (DMI) software upgrades directly from Pulse One:
   - For **IP Address**, specify the IP Address on which the appliance is configured to receive DMI requests. This is either the internal interface or the management interface.
   - For **Port**, specify the port on which the appliance is configured to receive DMI requests. Typically, this is 830.
   - Specify the required admin **Username** and **Password** for the appliance. This will be used to receive DMI requests.

   **Note:**
   **Note:** DMI does not need to be configured for ESAP package uploads to appliances.

8. Click **Save**.

A dialog displays the required **Registration Host** and a **Registration Code**. For example:

![Registration Required](Registration Required)

9. Record the **Registration Host** and **Registration Code** and close the dialog.

10. Switch to the appliance application (for example, PCS) and enter the **Registration Host** and a **Registration Code** in the appliance's panel, see “Configuring an Appliance to Connect to Pulse One” on page 26.

When the auto-registration process is complete, the appliance is added to Pulse One. The Pulse One console displays the appliance status as **Connected** in the **Appliances** list.
Editing Appliance Information
To edit appliance information:

1. Log into Pulse One as an administrator.
2. Click the **Appliances** menu and then the **Appliances** tab.
   
   The **Appliances** tab displays all current appliances.
3. Select the required appliance from the list and click its **Actions** icon (§).
4. From the menu options, select **Edit Appliance Info**.
5. In the **Edit Appliance Info** dialog, make the required changes.

   **FIGURE 21**  Edit Appliance Information

   ![Edit Appliance Info](image)

   **Note:** If you want the Launch Appliance UI option to be available on the **Actions** menu for the appliance, specify the **Appliance URL**. This URL typically ends with “/admin”.

6. Click **Save** to update the appliance.

Launching the User Interface for an Appliance
You can launch the administration user interface for a registered appliance directly from the **Appliances** tab.

To support this, ensure that you have specified an **Appliance URL** property for the appliance. Where no **Appliance URL** is specified for an appliance, you can manually edit the appliance properties to specify one, see “**Editing Appliance Information**” on page 24.

To launch the admin UI for an appliance.

1. Log into Pulse One as an administrator.
2. Click the **Appliances** menu and then the **Appliances** tab.

   The **Appliances** tab displays all current appliances.
3. Select the required appliance from the list and click its **Actions** icon ( ).

4. From the menu options, select **Launch Appliance UI**.

   The graphical user interface for the appliance starts in a new tab of your browser.

### Recognizing Critical Vulnerabilities

On Pulse One, the Appliances list displays all registered appliances. Summary information for each appliance includes a **Version** number for the appliance. A warning flag appears beside the version number if the version has known critical vulnerabilities. For example:

**FIGURE 22**  Critical Vulnerability

![Critical Vulnerability](image)

Hover over the **Version** number to see additional information.

**FIGURE 23**  Details of a Critical Vulnerability

![Details of a Critical Vulnerability](image)
Configuring an Appliance to Connect to Pulse One

After you have added an appliance record into Pulse One:

- Complete the Pulse One registration from the appliance, see “Completing Registration of an Appliance” on page 26.
- Configure the ActiveSync handler on the appliance as required, see “Configuring ActiveSync Handler” on page 27.

Completing Registration of an Appliance

To complete registration of an appliance in Pulse Connect Secure:

1. Log into the PCS/PPS appliance.
2. Select the System > Configuration > Pulse One > Settings tab.
3. Enter the Registration Host and Registration Code.
   
   **Note**: These were displayed during “Registering an Existing PCS/PPS Appliance” on page 21.
4. Click Save Changes.

   The Status Information displays the Registration Status in green.

   ![Status Information]

   Registration Status: 
   Notification Channel Status:
Configuring ActiveSync Handler

The Pulse Connect Secure gateway can act as an ActiveSync proxy for Mobile devices that are onboarded through Pulse Workspace Server. Pulse Connect Secure gateway will:

- Filter out and reject ActiveSync connection requests coming from unauthorized Mobile devices.
- Allow only those devices that have been successfully provisioned on Pulse Workspace Server.

To configure ActiveSync handler, in the Connect Secure Device screen:

1. Start the appliance user interface.
2. Select the **System > Configuration > Pulse One > Command Handlers** tab.
   
The **Pulse Workspace Handler** screen appears.

3. Select a role where secure email is enabled.
4. Select authentication servers to use for group look up and click **Add**.
5. (Optional) To delete the device records set by the Pulse Workspace Console Server, click **Clear Active Sync Device Records**.
6. Click **Save Changes**.
Note: To create a user rule, refer to the Pulse Connect Secure Administration Guide available at: https://www.pulsesecure.net/techpubs.

After you register a PCS appliance, it regularly sends the following information to Pulse One:

- Non-Hardware-specific PCS XML configuration. (Sent to On-Prem/Appliance and SaaS/Cloud)
- Hardware-specific PCS XML configuration. (Sent to On-Prem/Appliance and SaaS/Cloud)
  
  Note: Hardware-specific PCS XML configuration is not shared during configuration distribution.
- General information. That is, PCS health, statistics (such as CPU, network throughput), licensing details, cluster information and so on. (Sent to On-Prem/Appliance and SaaS/Cloud)
- User sign-in history. That is, logins from both web and the Pulse client. (Sent to On-Prem/Appliance only)
- User and System binary configuration. (Sent to On-Prem/Appliance only)

Configuring CPU, Memory and Disk Utilization

The Appliances tab displays all the added appliances. When you select an online appliance, a detailed panel shows the health of the appliance.

The panel shows the following status:

- CPU, memory and disk utilization.
- The number of concurrent users connected.
- The throughput of the appliance.
- The number of authentication failures.

To view the health of an appliance:

1. Log into Pulse One as an administrator.
2. Click the Appliances menu and then the Appliances tab.
   
   The Appliances tab displays all current appliances.
3. Select an appliance whose Pulse One Status is Connected.
The panel on the right gives a pictorial representation of the CPU, memory, and disk usage information. For example:

**FIGURE 26  Appliance Health**

![Appliance Health Panel]

---

### Working with Appliance Groups

Two or more appliances can be collected into an appliance group to enable group operations:

- “Creating an Appliance Group” on page 29.
- “Adding Appliances to an Appliance Group” on page 34.
- “Distributing a Master Configuration” on page 35.

### Creating an Appliance Group

An Appliance Group uses a single base configuration from a master appliance in Pulse One and applies that configuration to all the other target appliances in the group. This master appliance is always used to change the configuration settings for the group. You can add appliances to the group or remove appliances from the group at any time.

All appliances in a group must run the same firmware version and must be the same appliance type as the master. However, the appliance group may contain member appliances using any form factor.

Examples:

- If the master is a Pulse Connect Secure appliance running firmware version 8.2R5, all other appliances in the group must also be Pulse Connect Secure – either virtual appliances or hardware appliances (PSAs, MAGs, and SAs) - that also run firmware version 8.2R5.
- If the master is Pulse Policy Secure, all other appliances in the group must also be Pulse Policy Secure.
To create an appliance group:

1. Select the **Appliances** menu.
2. Select the **Config Groups** tab.
3. Click **Create Appliance Group**.

   ![Create Appliance Group](image)

   **FIGURE 27** Create Appliance Group

   The **Create Appliance Group Wizard** appears.

   ![Create Appliance Group Wizard](image)

   **FIGURE 28** Create Appliance Group Wizard

4. Click **Next**.
The **Group name and description** panel of the wizard appears.

**FIGURE 29** Group Name and Description Wizard Panel

5. In this wizard panel:
   - Enter the **Group name** and a **Description**.
     
     **Note:** The **Group name** should be at least 3 characters and not more than 50 characters.
   - Enter a common admin **Username** and **Password** for all the appliances under this group, with which all appliances can receive DMI requests from Pulse One.
     
     **Note:** These credentials must be valid for all group members.
   - Specify a common **Port** number on which all appliances under this group will receive DMI requests. The default value is 830.

6. Click **Next**.
The **Group configuration settings** panel of the wizard appears.

**FIGURE 30** Group Configuration Settings Wizard Panel

7. In this panel:

- For **Select master appliance**, select an appliance to be the master appliance.  
  **Note:** An appliance can be configured as master appliance in one or more groups.

- Enter the **Master appliance URL**. This is the Internet-facing admin login URL. For example:
  https://<ip_address>/admin

- Select the configuration settings that must be shared between all group members.
8. Click **Next**.

The **Summary** panel of the wizard appears. For example:

**FIGURE 31** Summary Wizard Panel

9. (Optional) If you want to make any changes, click on the corresponding **Edit** link and make the changes.

10. Click **Finish**.

The new appliance group is listed in the **Appliances** page. For example:

**FIGURE 32** New Appliance Group

You can now add appliances to the group as target appliances, see “Adding Appliances to an Appliance Group” on page 34.
Adding Appliances to an Appliance Group
To add an appliance into an appliance group as a target appliance:

1. Select the Appliances menu.
2. Select the Config Groups tab.
3. Select the appliances group to which you want to add the appliance. The right-hand panel updates to show group details.
4. Select the Target Appliances tab. For example:

   [FIGURE 33 Target Appliances Empty]

5. Click Add Appliance. A dialog appears.

   [FIGURE 34 Select Target Appliance]

6. In this dialog, select an appliance to be added as a target appliance to the selected group.

   Note: Group configuration is only supported for appliances that are of same security appliance type and running the same software version.

7. Click Save to add the appliance to the group.
8. Repeat steps 5, 6 and 7 until the group contains all required target appliances. For example:

**FIGURE 35  Target Appliances Added**

![Target Appliances Added](image)

**Distributing a Master Configuration**

This section details the steps to distribute the configuration of the master appliance to all target appliances.

- “Viewing Configuration Changes” on page 35.
- “Publishing Configuration Changes Manually to Group Members” on page 36.
- “Publishing Configuration Changes to Group Members as a Scheduled Task” on page 38.

**Viewing Configuration Changes**

To view configuration changes between the master appliance and target appliances, click the View Changes button. The button changes to Close Changes. The configuration changes will be displayed on the same page.
To close the configuration changes view, click **Close Changes**.

**Publishing Configuration Changes Manually to Group Members**

If the configuration of the master appliance differs from the configuration of the target appliances in its group, a *Publish Required* notification is displayed, and the **Publish All** button is enabled.

**Note:** Publishing to a group can also be performed as a scheduled task for groups. See “**Publishing Configuration Changes to Group Members as a Scheduled Task**” on page 38.
To manually publish a configuration to all appliances in a group:

1. Select the **Appliances** menu and then the **Config Groups** tab.
2. In the Appliance Group panel, click **Publish All**.

   ![Figure 37: Publish All](image)

   - The **Configuration Changes** view closes if it is open.
   - A confirmation dialog appears.

3. In the confirmation dialog, click **Yes** to confirm the publication.

   Pulse One then publishes the master appliance configuration to the target appliances within the group.

4. To view configuration mismatch scenarios, click the **View Changes** button and then click the **Apply Group Config** button. The **Publish All** button will be disabled.

   ![Figure 38: Configuration Change in Member Appliance](image)

   The **Configuration Changes** panel shows the changes in the member appliance configuration compared to the master configuration.
5. You can either:
   - Retain the changes by clicking **Keep Non-compliant**, OR
   - Apply the group configuration by clicking **Apply Group Config**.

In either case, the compliance conflict is ignored, and the configuration will be published.

6. If you choose to remain non-compliant, then the **Configuration Mismatch** notification changes to a **Mismatch Ignored** notification, indicating that it is intentionally being kept out of compliance.

**FIGURE 39** Configuration Mismatch

Publishing Configuration Changes to Group Members as a Scheduled Task

If the configuration of the master appliance differs from the configuration of the target appliances in its group, a **Publish Required** notification is displayed.

To publish configuration changes at a specific time, you can create a scheduled task to perform this action.

**Note:** Publishing configuration changes to an appliance group can also be performed manually, see “Publishing Configuration Changes Manually to Group Members” on page 36.

To publish configuration changes from a master appliance to all target appliances as a scheduled task:

1. Select the **Appliances** menu and then the **Config Groups** tab.
2. Click the **Actions** icon ( ) for the appliance group you want to upgrade, and then click **Schedule Task**.
The **Create Task** dialog appears.

**FIGURE 40** Create Publish Configuration Task

![Create Task dialog](image)

3. In the **Create Task** dialog, for **Task Type**, select *Publish configuration*.

4. For **Scheduled Time**, select the required start time for the task.

5. (Optional) Add **Comments** as required. These appear on the **Scheduled Tasks** list.

6. Click **Save**.

The new task is added to the list of scheduled tasks in the **Scheduled Tasks** tab.

**FIGURE 41** Scheduled Publish Configuration Task

![Scheduled Task list](image)

7. (Optional) You can edit the details for a scheduled task by clicking the **Edit** icon for the task.

8. (Optional) You can cancel a scheduled task by clicking the **Delete** icon for the task.

9. (Optional) You can monitor the progress of scheduled tasks using one of the following methods:
   - On the **Scheduled Tasks** tab. Here, the **Task Status** updates as a task starts and proceeds through to completion.
   - From the **Appliance Activities** panel. To access this, click the **Administration** tab, and then the **Appliance Activities** option.
   - From the **Config Group** tab, you can see status updates for the group as a whole.
   - From the **Appliances** tab, you can see status updates for each appliance group member.
   - From the **Activities** panel for an individual appliance on the right side of the **Appliances** tab.
Viewing the Activities Log for an Appliance

Viewing the log details of the activities between the Pulse One console and various appliances will help the Administrator to troubleshoot and resolve any issues. The Appliances > Activities panel in Pulse One provides details of appliance reboots, configuration uploads, and so on.

To view the activities log for an appliance:

1. Log into Pulse One as an administrator.
2. Click the Appliances menu and then the Appliances tab.
   
The Appliances tab displays all current appliances.
3. Select an appliance whose Pulse One Status is status Connected.
4. In the panel on the right, expand Activities to display details of all activities.

For example:

FIGURE 42 Activities Details
Viewing the Configuration Change History for an Appliance

The Configuration Changes panel in the Appliances tab provides the configuration change history for each appliance.

To view the configuration changes history:

1. Log into Pulse One as an administrator.
2. Click the Appliances menu and then the Appliances tab.
   The Appliances tab displays all current appliances.
3. Select an appliance whose Pulse One Status is status Connected.
4. In the panel on the right, select Configuration History. This displays the configuration changes history for the appliance, including timestamps for each change.
5. Expand the required timestamp to view the changes made at that time. For example:

   ![View Configuration Changes](image-url)
Comparing Appliances
The Compare Appliances feature allows you to compare two appliances based on their settings.

To compare two appliances:

1. Log into Pulse One as an administrator.
2. Click the Appliances menu and then the Appliances tab.
   The Appliances tab displays all current appliances.
3. Select the source appliance that you want to compare and click its Actions icon ().
4. On the drop-down menu, click Compare Appliances.

![FIGURE 44 Compare Appliances]

5. In the Appliance Configuration Comparison window, select the source appliance and the target appliance to compare.
   The Differences panel shows a list of settings that the two selected appliances have differences.
6. Select a setting. For example, Pulse One (Modified).
   In the Results pane, the Base text and New text highlight the differences in the two appliances for that setting. For example:
Rebooting an Appliance

Rebooting an appliance is necessary when the services on the appliance must be restarted, or when there are other issues with an appliance that must be resolved.

After the reboot, the appliance will connect back to the network and Pulse One will indicate the status of the appliance in the dashboard.

To reboot an appliance:

1. Log into Pulse One as an administrator.
2. Click the Appliances menu and then the Appliances tab.
   
   The Appliances tab displays all current appliances.
3. Select the appliance that you want to reboot and click the Actions icon ( ).
4. On the drop-down menu, click **Reboot Appliance**.

   ![Reboot Appliance](image)

   **FIGURE 46** Reboot Appliance

   The **Reboot Appliance** confirmation dialog appears.

5. Ensure that you have selected the correct appliance and click **Yes**.

   The selected appliance reboots.
Removing an Appliance from Pulse One

If you no longer want to use an appliance with Pulse One, or want to re-provision it, you can remove the appliance.

To remove an appliance:

1. Log into Pulse One as an administrator.
2. Click the **Appliances** menu and then the **Appliances** tab.
   
   The **Appliances** tab displays all current appliances.
3. Select the appliance that you want to remove and click its **Actions** icon ( ).
4. Click **Remove Appliance** to remove the appliance from Pulse One.

   ![Remove Appliance](image)

   **FIGURE 47**  Remove Appliance

   **Note:** For PCS appliance virtual machines on either vSphere or AWS, an additional command is available. Click **Destroy Appliance** to remove the appliance from Pulse One, and to also destroy the appliance on the vSphere/AWS platform.

   The **Remove Appliance From Pulse One** confirmation dialog appears.

5. Click **Yes** to remove the selected appliance.
Preparing a Target Appliance
This section details the steps to add an agent instance for the target appliance, and a checklist for preparing the target appliance for configuration distribution.

Preparing an RSA Agent Instance for the Target Appliance
The Pulse One administrator must ensure that the sdconf.rec file is uploaded to the master appliance that contains the agent instance for the target appliance.

To add a new target appliance:

1. In RSA Authentication Manager, add the agent instance for the target appliance.
2. Download the sdconf.rec file.
3. Upload the sdconf.rec file to the master appliance.

**Note:** Some configuration blocks that are distributed by Pulse One may refer to other blocks that are not distributed. In such cases, the configuration distribution fails at the target appliance while importing the configuration. The administrator must manually configure the target appliance before distributing the configuration through Pulse One.

A checklist for preparing the target appliance for configuration distribution is provided in “Appendix: Checklist for Preparing a Target Appliance” on page 81.

Removing an Appliance from an Appliance Group
You can remove any appliance other than the master appliance from the appliance group.

This section details the steps to remove an appliance from the group.

To remove an appliance from the group:

1. Select the Appliances menu.
2. Select the Config Groups tab.
   
   A list of configuration groups is displayed.
3. Select the group from which the appliance needs to be removed.
4. Select the Target Appliances tab.
5. Click the Actions icon ( ) for the appliance you want to remove.
6. From the menu options, select **Remove from Group.** For example:

![FIGURE 48 Remove from Group](image)

An alert message confirms the removal of the appliance from the group.

**Editing an Appliance Group**

This section details the steps to modify an appliance group.

To edit an appliance group:

1. Select the **Appliances** menu.
2. Select the **Config Groups** tab.
   - A list of configuration groups is displayed.
3. Select the group that you want to modify and click its **Actions** (✓) icon.
4. From the menu options, select **Edit Group Configuration**.

**FIGURE 49** Edit Group Configuration

The **Edit Appliance Group** wizard appears. For example:

**FIGURE 50** Edit Appliance Group Wizard

5. Work through the wizard, making the required changes to the group name, master appliance, and configuration settings.

6. Click **Finish**.
Deleting an Appliance Group

This section details the steps to delete an appliance group.

**Note:** The appliances within the appliance group are not deleted when you delete the group, and can be viewed as normal in the **Appliances** tab.

1. Select the **Appliances** menu.
2. Select the **Config Groups** tab.
3. A list of all configuration groups is displayed.
4. Click the group that you want to delete and click its **Actions** icon (ख). 

![Delete Group](image)

4. From the menu options, select **Delete Group**.
5. In the **Delete Group** confirmation window, click **Yes** to delete the group.
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Viewing the Login Attempts Report

To view the Login Attempts report:

1. Select the Analytics menu.
2. Select Login Attempts.
3. From the Login Attempts drop-down, select one or more appliances for the report.
4. Select the graph type.

The report shows the login attempts, authentication mechanism and result, and device OS in the last 24 hours.

FIGURE 52 Login Attempts Report
5. (Optional) Choose bar chart, line graph, pie chart or table data for each graph.
6. (Optional) Click **Export** to download displayed information as a .csv format file.

**Viewing the Appliance Health Report**

To view the **Appliance Health** report:

1. Select the **Analytics** menu.
2. Select **Appliance Health**.
3. From the **Appliance Health** drop-down, select one or more appliances for the report.

   The following reports for the selected appliance over the last 24 hours are displayed:
   - CPU Utilization
   - Memory Utilization
   - Disk Utilization
   - Network Throughput (kb/s)

   For example:

   ![Appliance Health Report](image)

   **FIGURE 53** Appliance Health Report
Viewing the Appliance Activities Report

To view the Appliance Activities report:

1. Select the Analytics menu.
2. Select Appliance Activities.
3. From the Appliance Activities drop-down, select the required filter (Critical, Alert, Notice, and so on) for the report.

4. (Optional) Click Export to download displayed information as a .csv format file.
Viewing Appliance Activities

The **Appliance Activities** page displays information about the events registered in the Management Server. You can view filtered activities for appliances.

To view appliance activities:

1. Select the **Administration** tab
2. Click **Appliance Activities**.
3. Click an **Event Type** button to filter for a specific event type.

   ![Filter Activities](image)

4. Click the **Details** button associated with the activity you want to view the details.

   The **Activity Details** dialog displays the additional details.

   ![Activity Details](image)
User Management

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Adding an Admin User
To add an admin user:

1. Select the **Administration** tab.
2. Select **User Management**.
   A list of existing admin users is displayed.
3. Click **Add User** to add an admin user.
   The **Add Admin User** window appears.

   ![Add Admin User](image)

   **FIGURE 57** Add Admin User

   **Note**: If Role is set to **Read Only Admin**, then the user will not be given the permissions to create/ update/ delete functions.

4. In the Add Admin User window, enter the **Username**, **Full Name** and **Email** for the user.
5. Select a **Role** from the drop-down list:
   - **Super Admin** - This role has full access to the admin console. Super admin can create other admins.
   - **Read Only Admin** - This role has read-only access to the entire system. Read-only admin can view dashboard and report, perform search function, and run pre-defined queries.
6. Select a Sign in Method. Either:
   - Select **Enterprise SSO** if the same user ID exists on both Pulse One (Service Provider) and the Pulse Connect Secure (Identity Provider), OR
   - Select **Local Authentication**.

7. Click **Create**. The new user is displayed in the list of users.

**Editing User Details**

To modify a user’s details:

1. Select the **Administration** tab.

2. Select **User Management**.

   A list of existing admin users is displayed.

3. Select the user from the list.

4. In the user details panel click the **Edit** icon and make the required changes.

5. Click **Update**.

**FIGURE 58  Edit User Details**
Removing an Admin User
To remove an admin user:

1. Select the Administration tab.
2. Select User Management.
   A list of existing admin users is displayed.
3. Select the user from the list.
4. Click Delete User.
5. In the Remove Admin User confirmation message box, click OK.
   The user is removed as an administrator.

Resetting a User Password
To reset a user’s password:

1. Select the user from the list.
2. Click the Reset login link in the user details pane.
   An email that contains the Set new password link will be sent to the registered email address.
3. Click the Set new password link in the email.
4. In the Pulse One page that appears, provide the new password and confirm the new password. The new password will be saved in the database.
5. Then log in to Pulse One with the new password.

   Note: The Set new password link that you received in the email has an expiration time of 1 hour. Beyond this time, you should make a new request for setting the new password.

   FIGURE 59 Reset Login
Suspending a User

To suspend an admin user:

1. Select the user from the list.

2. Click **Suspend User**.

   The user will be locked and will not be able to log in.

   The **Forgot Password** option in the **Login** page will not send email to reset the password.

3. (Optional) To unlock the suspended user, select the user and click **Reset Login**. This will send a mail to the user with a set new password link.

![Suspend User](image_url)
Adding an Admin Defined Role

To add a new admin-defined role:

1. Select the **Administration** tab.
2. Select **Role Management**.
3. Click **Add Role** to add a new admin-defined role.
   
   **Note:** To create a role from an existing role, click **Duplicate** corresponding to the existing role.
4. In the **Create New Role** window, enter the role name.
5. In the **Role Assignment** section, select the permissions for **Dashboard**, **Appliances**, **Settings**, **Users**, and **Roles** from the drop-down list.
   
   - **None** - This permission disables the assigned feature. For example, if the **Appliances** permission is set to **None**, then **Appliances** page will not be visible in Pulse One console for this role.
   - **Read Only** - This permission will disable create/edit/delete options for the assigned feature.
   - **Edit** - This permission allows create/view/edit operations.
   - **Delete** - This permission allows all operations.

   ![Create New Role](image)

6. Click **Create**.
Editing an Admin Role
You can modify only the admin defined roles.

To modify a role's permissions:

1. Select the Administration tab.
2. Select Role Management.
   A list of system defined roles is displayed.
3. Select the role from the list.
4. In the role details pane, click Edit.
5. Make the required changes and click Save.

Removing an Admin Role
You can remove only the admin defined roles.

To remove an admin defined role:

1. Select the Administration tab.
2. Select Role Management.
   A list of system defined roles is displayed.
3. Select the role from the list and click Delete Role.
   In the Confirmation message box, click Yes to remove the selected role.
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Viewing Pulse One Properties

To open the Pulse One Properties page:

1. Click the Settings icon on top-right-corner of the page.
2. Select Pulse One Properties.

The Pulse One Properties page appears.

![Pulse One Properties](image)

FIGURE 63 Pulse One Properties

Editing Pulse One Properties

To edit a Pulse One property:

1. View Pulse One properties, see Viewing Pulse One Properties.<XREF>.
2. Click the Edit (✔️) button corresponding to the field you want to edit.
3. Change the value and then click Save. For example:

![Edit Properties](image)

FIGURE 64 Edit Properties
Understanding Pulse One Properties

All Pulse One properties are described in the following sections:

- “Enterprise Connection Properties” on page 62
- “Password Properties” on page 62
- “Miscellaneous Properties” on page 63
- “Session Properties” on page 63

Enterprise Connection Properties

The Enterprise Connections settings are described below:

- **Auto Configure SAML Settings** – Boolean. If True, Pulse One automates the SAML Metadata configuration flow for both Appliance and Pulse One SAML settings.

- **Create Users and Roles from SAML** – Boolean. If True, a Pulse One user is created automatically whenever a user from a linked SAML idP (PCS) authentication server logs into Pulse One for the first time using Enterprise SSO.

  **Note:** Further configuration is required to use this feature, see “Automatically Creating Pulse One Users for SAML SSO Logins” on page 78.

- **SAML Identity Provider** – The Pulse Connect Secure appliance that is configured for Pulse One server SAML auto-provisioning.

- **SAML Identity Provider Metadata** – Required metadata for the SAML identity provider.

- **SAML Service Provider Metadata** – Required metadata for the SAML service provider.

Password Properties

The Password settings are described below:

- **Console Minimum Password Length** – The minimum length of a console password.

- **Console Password Expiration Days** – The number of days after which an Administrator must change their console password.

- **Console Password Require Lowercase** – Boolean. If True, the console password must contain at least one lowercase letter.

- **Console Password Require Number** – Boolean. If True, the console password must contain at least one number.

- **Console Password Require Special** – Boolean. If True, the console password must contain at least one special character.
• **Console Password Require Uppercase** – Boolean. If True, the console password must contain at least one uppercase letter.

• **Console Password Reset Timeout Hours** – The number of hours a console password reset email link is valid.

• **Domain Allowed Password Attempts** – The number of login attempts until a console account is locked.

• **Welcome Timeout Hours** – The number of hours a registration token in a welcome email is valid.

### Miscellaneous Properties

The miscellaneous (Misc) settings are described below:

• **Created On** – The date on which the management console was created.

• **Locale** – The console language code.

• **Page Footer** – The footer information that will be displayed at the bottom of the admin console.

• **Server Version** – The current Management Server version that will be displayed at the bottom of the admin console.

**Note:** You cannot edit the **Created On** and **Server Version** properties.

### Session Properties

The Session properties are described below:

• **Session idle timeout (minutes)** – The timeout for an idle session. After this timeout is reached, the user is logged out automatically. The default is 20.
Configuring Enterprise SSO Using SAML

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Overview

By setting up Enterprise Single Sign On (SSO) with SAML, Enterprise users can sign into Pulse One by delegating authentication to their Pulse Connect Secure appliance.

FIGURE 65  Sign In with Enterprise SSO
If your authentication is performed by a PCS appliance at v8.3r1 or later, many of the configuration steps are automated. You must perform the following processes:

- “Configuring SAML idP in Pulse Connect Secure Server” on page 66.
- “Automatically Configuring a SAML idP on Pulse One” on page 70.
- (Optional) “Automatically Creating Pulse One Users for SAML SSO Logins” on page 78.
- “Testing Sign In with Enterprise SSO” on page 80.

If your authentication is performed by a PCS appliance that is earlier than v8.3r1, you must perform all stages of the following manual processes:

- “Configuring SAML idP in Pulse Connect Secure Server” on page 66.
- “Configuring a Metadata Provider in Pulse Connect Secure” on page 72.
- “Enabling Enterprise SSO in Pulse One Appliance” on page 73.
- “Configuring SAML Metadata in Pulse One” on page 73.
- “Adding SAML SP Metadata in Pulse Connect Secure Server” on page 74.
- (Optional) “Automatically Creating Pulse One Users for SAML SSO Logins” on page 78.
- “Testing Sign In with Enterprise SSO” on page 80.

### Configuring SAML idP in Pulse Connect Secure Server

**Note:** This section is required for all PCS appliance versions.

This section provides the steps to configure a SAML Identity Provider on Pulse Connect Secure server.

Before proceeding with the configuration, ensure that the Pulse Connect Secure appliance that you intend to use as the Identity Provider is registered with Pulse One, see “Registering an Existing PCS/PPS Appliance” on page 21.

**Note:** If the PCS server is already configured as a SAML identity provider, make sure that POST binding is enabled and the **Accept Unsigned AuthnRequest** option is selected.

To configure SAML IdP on the Pulse Connect Secure server:

1. Log in to the Pulse Connect Secure server that is identified as an Identity Provider.
2. Navigate to **System > Configuration > SAML > Settings**.
3. Configure the following Metadata Server Configuration:

- **Timeout value for metadata fetch request** to 300.
- **Host FQDN for SAML** to the Fully Qualified Domain Name, noting the host FQDN guidance below.

![SAML Settings](image)

The host FQDN specified here is used in the SAML entity ID, used by browsers to connect to PCS, and used in the URLs for SAML services. Typically:

- If the PCS is standalone, the FQDN should resolve to the IP address of the external interface / internal interface, whichever is chosen.
- If the PCS is an Active-Passive cluster, the FQDN should resolve to the external VIP / Internal VIP, whichever is chosen.
- If the PCS is an Active-Active cluster behind an in-line load balancer, the FQDN should resolve to the load balancer’s external VIP / Internal VIP, whichever is chosen.

4. Click **Save Changes**.
5. Navigate to **System > Configuration > Certificates > Device Certificate**, create a new CSR, and import certificate and keys. Skip this step if the PCS external interface / internal interface (whichever is chosen) already provides a certificate that matches the host's Fully Qualified Domain Name.

**FIGURE 67** Import Certificate and Keys

6. Navigate to **Authentication > Signing In > Sign In SAML > Identity Provider**.
7. Locate the Basic Identity Provider (idP) Configuration section. For example:

![Basic Identity Provider Configuration](image)

8. In the Basic Identity Provider (idP) Configuration section, do the following:

   - Select the **Post** check box for protocol binding to use for SAML response.
     
     **Note:** If the PCS server is already configured as a SAML identity provider, make sure that POST binding is enabled and the **Accept Unsigned AuthnRequest** option is selected.

   - Select a **Signing Certificate** from the list.

   - For **Decryption Certificate**, select **No Encryption**.

   - Clear the **Reuse Existing NC (Pulse) Session** check box.

   - Select the **Accept Unsigned AuthnRequest** check box.

   For more details, refer to the "Configuring Sign-in SAML Identity Provider Settings" section in the Pulse Connect Secure Administration Guide.

9. Click **Save Changes** to save the Identity Provider configuration.
Automatically Configuring a SAML idP on Pulse One

**Note:** This section is only applicable if your PCS appliance is at v8.3r1 or later. If your PCS is at an earlier release, you must perform a number of manual processes, see “Overview” on page 65.

To automatically configure a SAML idP, you must have already completed the following tasks:

- Registered the Pulse Connect Secure appliance that you intend to use as the SAML idP with Pulse One, see “Registering an Existing PCS/PPS Appliance” on page 21.
- Configured the SAML idP on Pulse Connect Secure, see “Configuring SAML idP in Pulse Connect Secure Server” on page 66.

To auto-configure the SAML idP:

1. Log into Pulse One as an administrator.
2. Click the **Settings** icon on top-right-corner of the page.
3. Select **Pulse One Properties**.
   
   The **Pulse One Properties** page appears.
4. Expand the **Enterprise Connections** group to view its properties. For example:

   ![Pulse One Properties Enterprise Connections](image)

5. Set the **Auto Configure SAML Properties** property to **Yes**.

   **Note:** When you set **Auto Configure SAML Properties** to **Yes**, the **SAML Identity Provider Metadata** and the **SAML Service Provider Metadata** properties are removed. These are not required when auto-configuration is enabled.
6. Set the **SAML Identity Provider** property to match the appliance name, as registered on Pulse One. For example:

![Pulse One Properties Configure Auto SAML](image1)

After this process is complete, auto-configuration of the SAML idP will be performed.

7. (Optional) To confirm the auto-configuration of the SAML idP, log into Pulse Connect Secure and access the **System > Configuration > SAML** settings page. There will now be a **Metadata Name** called **AutoConfigured**. For example:

![Pulse Connect Secure SAML Auto-configuration](image2)

The auto-configuration of the SAML idP is complete.

You can then either:

- Continue with an optional activity **“Automatically Creating Pulse One Users for SAML SSO Logins” on page 78.**

- Move directly to testing the SSO login, see **“Testing Sign In with Enterprise SSO” on page 80.**
Configuring a Metadata Provider in Pulse Connect Secure

Note: You do not have to perform the process in the section if your appliance is at v8.3r1 or later, and you have already performed auto-configuration of SAML, see “Automatically Configuring a SAML IdP on Pulse One” on page 70.

This section provides the steps to configure Metadata Provider on Pulse Connect Secure.

Note: If the PCS server is already configured to operate as a SAML IdP, skip the steps 2 to 6.

To configure a Metadata Provider in the PCS server:

1. Log in to Pulse Connect Secure server.
2. Navigate to Authentication > Signing-In > Sign In SAML > Metadata Provider.
3. The SAML Metadata Provider Entity Id property is pre-populated. It is generated by the system, based on the value for the Host FQDN for SAML setting on the System > Configuration > SAML > Settings page.
4. Set Metadata Validity to 365 days.
5. Clear the Do Not Publish IdP in Metadata check box.
6. Click Save Metadata Provider.
7. Click Download Metadata and save the file to your computer.

FIGURE 72 Metadata Provider
Enabling Enterprise SSO in Pulse One Appliance

Note: You do not have to perform the process in the section if your appliance is at v8.3r1 or later, and you have already performed auto-configuration of SAML, see “Automatically Configuring a SAML idP on Pulse One” on page 70.

To enable Enterprise SSO:

1. Log into Pulse One as an administrator.
2. Select the Administration tab.
4. In the User Management page, add (or edit) all the admin users who need to use Enterprise SSO by setting their corresponding Sign In Method to Enterprise SSO. For example:

   ![Figure 73 - Sign In Method](image)

   Note: To use Enterprise SSO login, the same user identity (username) must exist on both Pulse One (Service Provider) and the Identity Provider (Pulse Connect Secure).

Configuring SAML Metadata in Pulse One

Note: You do not have to perform the process in the section if your appliance is at v8.3r1 or later, and you have already performed auto-configuration of SAML, see “Automatically Configuring a SAML idP on Pulse One” on page 70.

To configure metadata in Pulse One:

1. In the Pulse One admin console, click the settings icon on top-right-corner of the page and select Pulse One Properties.
2. Click the Edit icon corresponding to SAML Identity Provider and select the Pulse Connect Secure appliance that you are setting up as the Identity Provider.
3. Click the Edit icon corresponding to SAML Identity Provider Metadata.
4. Copy the contents of the metadata file that you downloaded from Pulse Connect Secure, paste it into the Edit Property window, and click Save. The SAML Service Provider Metadata will automatically be populated.

5. Click SAML Service Provider Metadata, copy the metadata content, paste it into a file such as saml-metadata-pws.xml and save the file to your computer. This file will be used when configuring Pulse Connect Secure later.

![Pulse One Properties](image)

**FIGURE 74** Pulse One Properties

Adding SAML SP Metadata in Pulse Connect Secure Server

**Note:** You do not have to perform the process in the section if your appliance is at v8.3r1 or later, and you have already performed auto-configuration of SAML, see “Automatically Configuring a SAML idP on Pulse One” on page 70.

This section provides the steps to add SAML Service Provider metadata in PCS server.

1. Navigate to System > Configuration > SAML.
2. Click New Metadata Provider.
3. Enter a Name for the metadata provider.
4. Under **Metadata Provider Location Configuration**:
   - For **Location**, select *Local*.
   - For **Upload Metadata File**, click **Browse** and select the SP metadata file `saml-metadata-pws.xml` that you saved on your computer in the previous process.

**FIGURE 75**  Metadata Provider Location Configuration

5. Under **Metadata Provider Verification Configuration**:
   - Select the **Accept Unsigned Metadata** check box.

6. Under **Metadata Provider Filter Configuration**:
   - For **Roles**, select the **Service Provider** check box.

**FIGURE 76**  Service Provider

7. Click **Save Changes**.

8. Navigate to **Authentication > Signing In > Sign-In SAML > Identity Provider**.
9. In the **Configuration** section, click **Add SP**.

**FIGURE 77** SAML Identity Provider

The **New Peer Service Provider** page appears.

10. In the **Service Provider Configuration** and **Certificate Status Checking Configuration** sections, make the necessary service provider specific settings. For more details, refer to the "Configuring Sign-in SAML Identity Provider Settings" section in the **Pulse Connect Secure Administration Guide**.

**FIGURE 78** New Peer Service Provider

11. In the **Customize IdP Behavior** section, select the **Override Default Configuration** check box.

12. Clear the **Reuse Existing NC (Pulse) Session** check box.
13. Select the **Accept unsigned AuthnRequest** check box.

**FIGURE 79** Customize IdP Behavior

14. At the bottom of the page, click **Save Changes**.

SAML configuration is complete.

You can then either:

- Continue with an optional activity “**Automatically Creating Pulse One Users for SAML SSO Logins**” on page 78.
- Move directly to testing the SSO login, see “**Testing Sign In with Enterprise SSO**” on page 80.
Automatically Creating Pulse One Users for SAML SSO Logins

**Note:** This section is optional for all PCS appliance versions.

After you have a linked a SAML idP (PCS) server to Pulse One, users can log into Pulse One using their Enterprise SSO. However, by default there is no Pulse One user created for these Enterprise SSO users. A Pulse One user is required for features such as appliance configuration management, and the addition of workspaces and devices.

You can configure roles on PCS and Pulse One so that a Pulse One user will be created automatically whenever an Enterprise SSO user logs into Pulse One for the first time.

1. Log into the PCS appliance.
2. Access user roles.
3. Create a user role with a name that starts with “Pulse One: “, followed by a defined Pulse One admin-defined role. For example:

   ![PCS User Roles](image)

   In this example, there must be a role called **SAML Role1** on Pulse One.
4. Access the SAML idP configuration, see Configuring SAML idP in Pulse Connect Secure Server
5. In the **Services-Provider-related idP Configuration** section, ensure that there is an **Attribute Statement Configuration** entry that matches the following entry:

   ![Attribute Statement Configuration](image)

6. Log into Pulse One.
7. Click the **Settings** icon on top-right-corner of the page.

8. Select **Pulse One Properties**.

9. Under **Enterprise Connections**, ensure that the **Create users and roles from SAML** property is set to **Yes**.

   ![Pulse One Properties Enterprise Connections](image1)

10. Select the **Administration** menu, and then click **Role Management**.

11. Ensure that there is an admin-defined role whose name was referenced in step 3. For example:

   ![Pulse One Admin Defined Roles](image2)

The configuration is now complete.

Whenever a SAML user logs into Pulse One using their Enterprise SSO, an equivalent Pulse One user is created for them automatically.

**Note:** The user will continue to log in with their Enterprise SSO. However, their Pulse One user will enable them to use features such as appliance configuration management, and the addition of workspaces and devices.
Testing Sign In with Enterprise SSO

To test signing in using Enterprise SSO:

1. Navigate to the Pulse One admin login page and click **Sign In with Enterprise SSO**.

   ![Pulse One Properties](image1)

   You are navigated to the Pulse Connect Secure login page.

2. Enter your Username and Password, and click **Sign In**.

   ![Pulse Connect Secure Login Page](image2)

3. If this is the first time you’re logging in to Pulse One, you are prompted to access the **End User License Agreement (EULA)**. Read and scroll to the bottom of the EULA. Click **Agree** and you will be signed in to Pulse One using your SAML SSO credentials.

   **Note:** If you have configured the automatic creation of Pulse One users from SAML Enterprise SSO users, an equivalent Pulse One user is created for the SAML Enterprise SSO user. See [Automatically Creating Pulse One Users for SAML SSO Logins](#).

   **Note:** The user will continue to log in with their Enterprise SSO. However, their Pulse One user will enable them to use features such as appliance configuration management, and the addition of workspaces and devices.
## Appendix: Checklist for Preparing a Target Appliance

<table>
<thead>
<tr>
<th>Block Type (which is distributed) (Names as in Pulse One Console)</th>
<th>Requires Preparation of (which is not distributed) (Names as in Appliances Menu)</th>
<th>Sample Log Messages</th>
<th>How to Prepare the Target Appliance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Endpoint Security &gt; Host Checker &gt; ESAP Versions</strong></td>
<td></td>
<td></td>
<td>Navigate to Authentication &gt; Endpoint Security &gt; Host Checker. Upload the required ESAP package.</td>
</tr>
<tr>
<td><strong>Auth &gt; Realms &gt; Admin, Auth &gt; Realms &gt; User</strong></td>
<td>Auth. Servers (Local Auth Servers are not distributed)</td>
<td></td>
<td>Configure the Local Auth Server</td>
</tr>
<tr>
<td><strong>Policies &gt; Web &gt; Client Auth</strong></td>
<td>Configuration &gt; Certificates</td>
<td>Import of configuration from Pulse One returned an Error: [/users/resource-policies/web-policies/client-authentications/client-authentication[name=client-auth-policy,parent-type=none]/certificate] Invalid reference: no 'Client Auth Certificate' object found with identifier 'qa.pulsesecure.net'.</td>
<td>Configure the appropriate CA certificate under System &gt; Configuration &gt; Certificates</td>
</tr>
<tr>
<td><strong>Policies &gt; Web &gt; Client Auth</strong></td>
<td>Resource Policies &gt; Email Client</td>
<td>AnSANnnn (for example, SA6500), if it has been configured with Resource Policies &gt; Email Client, should not be a master appliance.</td>
<td></td>
</tr>
<tr>
<td><strong>Policies &gt; Web &gt; Compression</strong></td>
<td>Options</td>
<td></td>
<td>Select &quot;Enable gzip compression&quot; on the Options page.</td>
</tr>
<tr>
<td><strong>Policies &gt; Web &gt; Java Code Signing</strong></td>
<td>Configuration &gt; Certificates &gt; Code-signing Certificates</td>
<td></td>
<td>Save the policy with the default code-signing certificates.</td>
</tr>
<tr>
<td><strong>Policies &gt; Web &gt; PTP</strong></td>
<td>Network &gt; Overview</td>
<td>Import of configuration from Pulse One returned an Error: [/users/resource-policies/web-policies/ptp[application=ptp_policy_2,parent-type=none]] Please specify the IVE hostname on the Network Settings page under Network Identify.</td>
<td>Configure a valid hostname under System &gt; Network &gt; Overview.</td>
</tr>
<tr>
<td><strong>Policies &gt; Secure Email</strong></td>
<td>Network &gt; Overview</td>
<td>Import of configuration from Pulse One returned an Error: [/users/resource-profiles/mobile/secure-mail-profiles/secure-mail-profile[virtual-hostname=myhost.myco.com]] Please specify the IVE hostname on the Network Settings page under Network Identify.</td>
<td>Configure a valid hostname under System &gt; Network &gt; Overview.</td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td>Network Settings &gt; Internal Port &gt; Virtual Port</td>
<td>Import of configuration from Pulse One returned an Error: [/system/configuration/security/ssl-options] Virtual port number virtual_internal is not a valid Virtual Port</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Network Settings &gt; External Port &gt; Virtual Port</td>
<td>Import of configuration from Pulse One returned an Error: [/system/configuration/security/ssl-options] Virtual port number virtual_external is not a valid Virtual Port</td>
<td></td>
</tr>
<tr>
<td><strong>SAML Auth-Server</strong></td>
<td>System &gt; Configuration &gt; SAML &gt; Settings</td>
<td></td>
<td>Configure a valid Host FQDN for SAML* on the System &gt; Configuration &gt; SAML &gt; Settings page.</td>
</tr>
<tr>
<td>Block Type (which is distributed) (Names as in Pulse One Console)</td>
<td>Requires Preparation of (which is not distributed) (Names as in Appliances Menu)</td>
<td>Sample Log Messages</td>
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</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Signing in &gt; Sign-in SAML</td>
<td>System &gt; Configuration &gt; SAML &gt; Settings</td>
<td>Import of configuration from Pulse One returned an Error: [authentication/signin/saml/identity-provider/sp-default-configuration/source-id] Modification of this attribute is not allowed.</td>
<td>Configure a valid “Host FQDN for SAML” on the System &gt; Configuration &gt; SAML &gt; Settings page.</td>
</tr>
<tr>
<td>(PPS) Policies &gt; Enforcer &gt; Access</td>
<td>Policies &gt; Enforcer &gt; Connection</td>
<td>Import of configuration from Pulse One returned an Error: Failed to resolve path references. Import of configuration from Pulse One returned an Error: [/uac/infranet-enforcer/resource-access-policies/resource-access-policy[name=enforcer_access_policy]/infranet-enforcer] Invalid reference: no ‘Infranet Enforcer’ object found with identifier ‘screenOS1’.</td>
<td></td>
</tr>
<tr>
<td>(PPS) Policies &gt; Enforcer &gt; Source Interface</td>
<td>Policies &gt; Enforcer &gt; Connection</td>
<td>No error message. Enforcer is a required field for Source Interface Policy.</td>
<td>Configure the appropriate ‘Trusted Server CA’ under System &gt; Configuration &gt; Certificates &gt; ‘Trusted Server CAs’, by importing the ‘Trusted Server CA’.</td>
</tr>
<tr>
<td>Pulse Secure Client &gt; Connections</td>
<td>System &gt; Configuration &gt; Certificates &gt; Trusted Server CAs</td>
<td>Import of configuration from Pulse One returned an Error: [/users/junos-pulse/connection-sets/connection-set[name=PPS_PCS_Combo]/connections/connection [name=L2_Connection_WIRED]/trusted-servers/trusted-server[dn=ANY,ca=PMDRootCA]/ca] Invalid reference: no ‘Trusted Server CA’ object found with identifier ‘PMDRootCA’.</td>
<td></td>
</tr>
</tbody>
</table>