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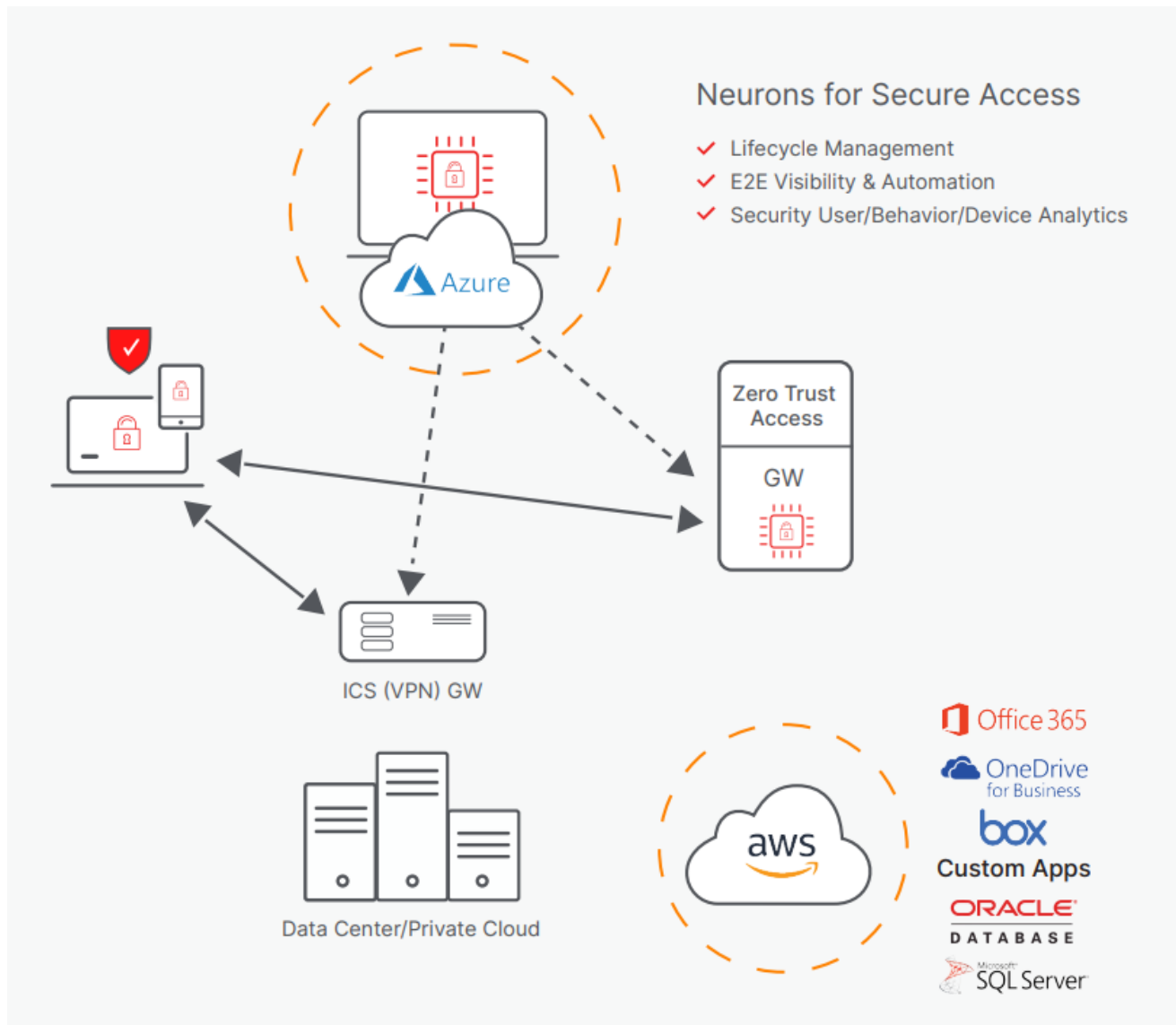
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# Ivanti Neurons for Secure Access Overview

Neurons for Secure Access (nSA) is a SaaS-delivered, centralized management and reporting platform designed to work with both Ivanti Connect Secure (ICS) and Neurons for Zero Trust Access (nZTA).

- nSA provides a unified interface allowing security admins to manage multiple gateways and/or locations quickly and efficiently.
- nSA simplifies workflows by consolidating all logging, reporting and activity data to a single pane of glass.
- Administrators gain powerful analytics tools to review the health status of their deployments as part of their daily routine.
- Proprietary risk scores identify non-compliant or anomalous user activity, enabling admins to identify risky user activity and react accordingly.
- Scheduled reports let admins design, customize and schedule reports to arrive in their inbox with the exact data they want to see.



nSA works with existing ICS deployments and does not require additional hardware to be implemented, nor must any network or connectivity changes be made in order to integrate nSA into an ICS deployment. Registering an ICS Gateway with nSA will initiate secure WebSocket communications between the ICS Gateway and nSA. Once connected, the ICS Gateway logs and analytics are uploaded to nSA and can be viewed and reported on from the nSA portal. Gateway-management duties allowing for the ability to upgrade, roll back and restart — as well as provide troubleshooting tools — are all enabled once ICS is connected to nSA.

The following list shows the supported features and benefits.

- **Secure Access Foundation:**
  - Manages Connect Secure Gateways and/or Zero Trust.
  - Access Gateways in all aspects.
  - Supports both existing and next-gen VPN gateways.
- **Gateway Lifecycle Management:** Enables centralized upgrades, downgrades and restarts.
- **Configuration Management:**
  - Supports gateway configurations.
  - Configuration groups for multi-node configuration management.
- **Single-Pane-of-Glass Visibility:** Holistic visibility and compliance reporting of users, devices, applications and infrastructure across the enterprise.
- **User Entity Behavior Analytics (UEBA):** Leverages analytical data to reduce security risks, detect anomalies, optimize user experience and adapt to a mobile workforce.
- **Local (Gateway) and Central Debugging:** Enables getting back to business faster.
- **Hybrid Configuration Support:** Gateways can be deployed in a variety of configurations including the cloud.

# What's New

## Version 22.7R1

### Admin Management user experience enhancement

User experience for Administration > Admin Management is enhanced in this release. For details, see ["nSA Administration" on page 478](#).

### Password Strengthening for Local Authentication Server

The local authentication server has stronger password restrictions. For details, see ["Workflow: Creating a Local Authentication Policy" on page 498](#).

## Version 22.6R1

### IPv6 L3 VPN Application Visibility (Supported only for 22.x ICS Gateway)

Support for IPV6 L3 VPN visibility in nSA. You can view both IPv4 and IPv6 applications for L3 user sessions from the Applications overview page. For details, see ["Using the Applications Filter Bar" on page 79](#).

### nSA Named User License Normalization (Supported only for ICS 22.6R2 Gateway with ISAC 22.6R1 Client and later versions):

Normalization of license seat reservation across devices and users. Single license is consumed instead of two through associating devices with users for Machine Cert Authentication and subsequent User Authentication. For details, see ["nSA Licensing/Subscription" on page 539](#).

### nSA Feature parity with 22.6R2 ICS gateway

- Resource policies > VPN Tunneling > Connection Profile > DHCP Subnet - 22.x
- HTML5 Bookmark - Enable Auto Resolution Option - 22.x and 9.x
- User Roles Options - Enable Auto Resolution Option - 22.x and 9.x
- System > Configuration > SAML > New SAML > Hide PDP Option - 22.x

- Hide Authentication > Auth Servers > LDAP server > Health check - Test username, Test Password and Validate User Credential fields - 9.x
- Authentication > Auth Servers > LDAP server > Health check - Test username, Test Password and Validate User Credential fields - 22.x
- System > Configuration > Security > Miscellaneous > Relay state option - 22.x

### **Support SAML Authentication server as a secondary authentication server when configuring Certificate Authentication server (Supported only for 22.x ICS Gateway)**

nSA now supports configuration of Certification Authentication server with SAML Authentication server as a secondary authentication server. For details, see "[Configuring Certificate Authentication Server](#)" on [page 285](#).

### **Admin experience enhancements to L4, Gateway Logs, and Logs Tables in terms of selection and resizing, pagination, and text copy/paste**

The following list shows the enhancements to L4, Gateway Logs, and Logs Tables.

- Column resizing across ICS pages
- Cell content copy text from Table
- Pagination across ICS pages
- Minimum number of columns in all the tables in L4 dashboards
- Enhancement to Advanced Filter

For details, see "[Using the Top Active Breakdown Charts](#)" on [page 64](#) and "[Filtering the Logs](#)" on [page 108](#).

## **Version 22.5R1**

### **Admin Access Control Based on Location, Host Checker, and Network**

Checks the Admin's device geographic location/network/host checker compliance for admin sign-in policy before providing access to admin login. For details, see "[Creating Admin Policies](#)" on [page 482](#).

## Auto Selecting Dependent Configurations as part of Config Sync

While creating config sync rule, if there is any dependency mismatch, admin can review dependent configurations and select them before creating/editing rule.

For example, If realm configuration is mapped to Authentication server and if config sync rule is created with only realm. The dependent configuration is highlighted (Auth server). Realm configuration is highlighted with i icon and when dependencies are reviewed, Authentication server is mentioned in the dependency tree.

Preview of changes done in source gateway before config sync. This feature is available only with Manual sync.



Preview before sync works only when one manual config sync rule is triggered.

---

For details, see "[Config Synchronization](#)" on page 152.

## Version 22.4R3

### Role Based Access Control for Admin Users

With Role-based access control (RBAC), organizations can easily add admins and assign them specific roles, with differing levels of access to the nSA Admin Portal. In addition to an existing set of default roles, Administrators can now create custom granular roles for specific functions within the nSA admin portal.

For details, see "[Role-based Access Control for Admin Users](#)" on page 494.

## Version 22.4R1

### Analytics: Historical View

Analytics supports data visualization in Active View. Admin can see the historic data on different time windows. Admin's can find all connections details for different time frames past 30 days. For details, see "[Using the Filter Bar](#)" on page 41.

### Config Sync Rule Status

This feature allows a user to view the config sync rule status of all target gateways. For details, see "[Config Synchronization](#)" on page 152.

### **nSA named user licensing normalization**

This feature allows a user to use different login formats - Domain\username, Common Name (CN), and User Principal Name (UPN) - from different devices, but consumes only one seat for the user. For details, see ["nSA Licensing/Subscription" on page 539](#).

# Logging in to Ivanti Neurons for Secure Access

- ["Preparing to Log in" below](#)
- ["Logging in to the Ivanti Neurons for Secure Access as a Tenant Admin" below](#)
- ["Logging out of the Ivanti Neurons for Secure Access" on page 18](#)

## Preparing to Log in

To log in to Ivanti Neurons for Secure Access (nSA), you require a Tenant Admin login.

All Tenant Admin accounts are set up by the Ivanti DevOps team. Once your Tenant Admin account has been created, you will receive an email which describes how to log in to the nSA as a Tenant Admin.

You can then proceed to log in to nSA. See ["Logging in to the Ivanti Neurons for Secure Access as a Tenant Admin" below](#).

## Logging in to the Ivanti Neurons for Secure Access as a Tenant Admin

Before you can log in as a Tenant Admin, you will receive an email from the Ivanti DevOps team. This email contains:

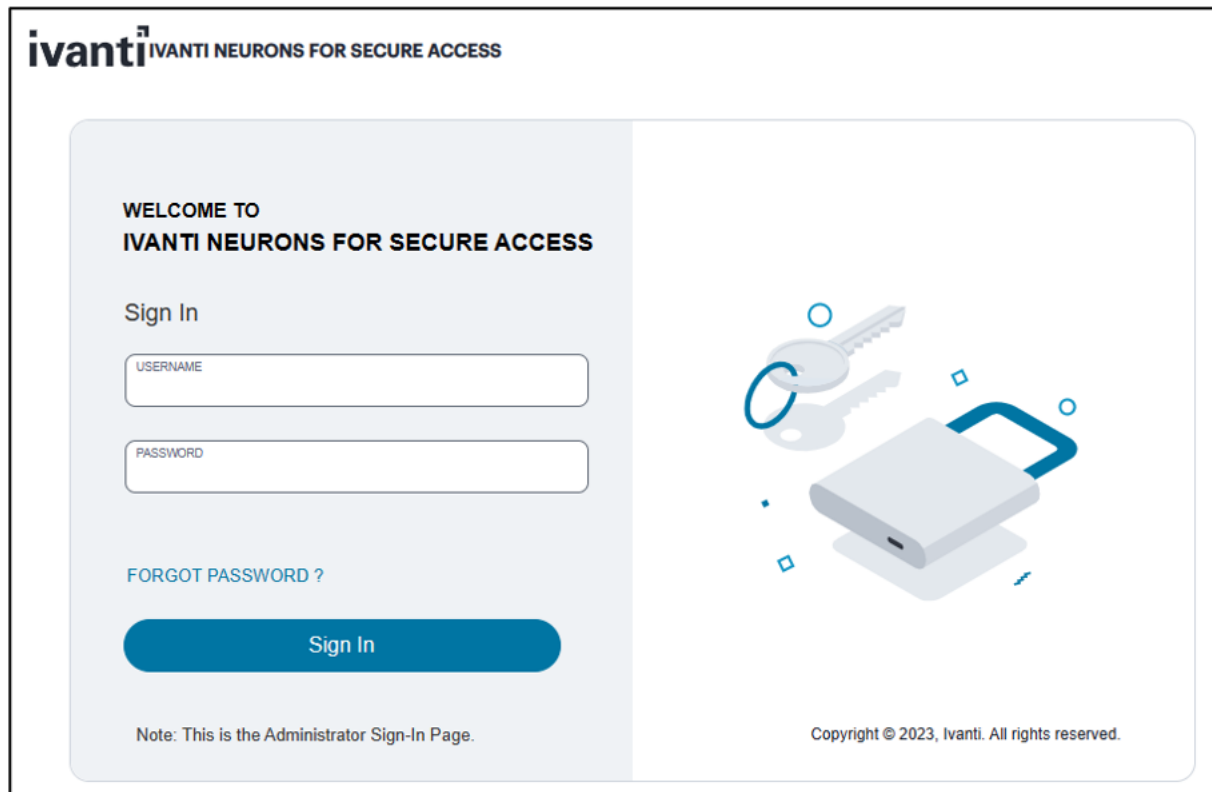
- Your Tenant Admin user name.
- Your password.
- The nSA domain. That is, the FQDN of Ivanti Neurons for Secure Access.
- An Admin hyperlink to start the login process. Example: <https://<tenant FQDN>/login/admin>

To log in to your Tenant Admin account:



1. Click the hyperlink in your email.

The administrator login page appears.



2. Log in using your supplied Tenant Admin credentials. If you are logging in for the first time, system prompts for a password reset.

The following timeouts are used for all Admin sessions:

- The idle timeout is 10 minutes.
- The session timeout is 60 minutes.

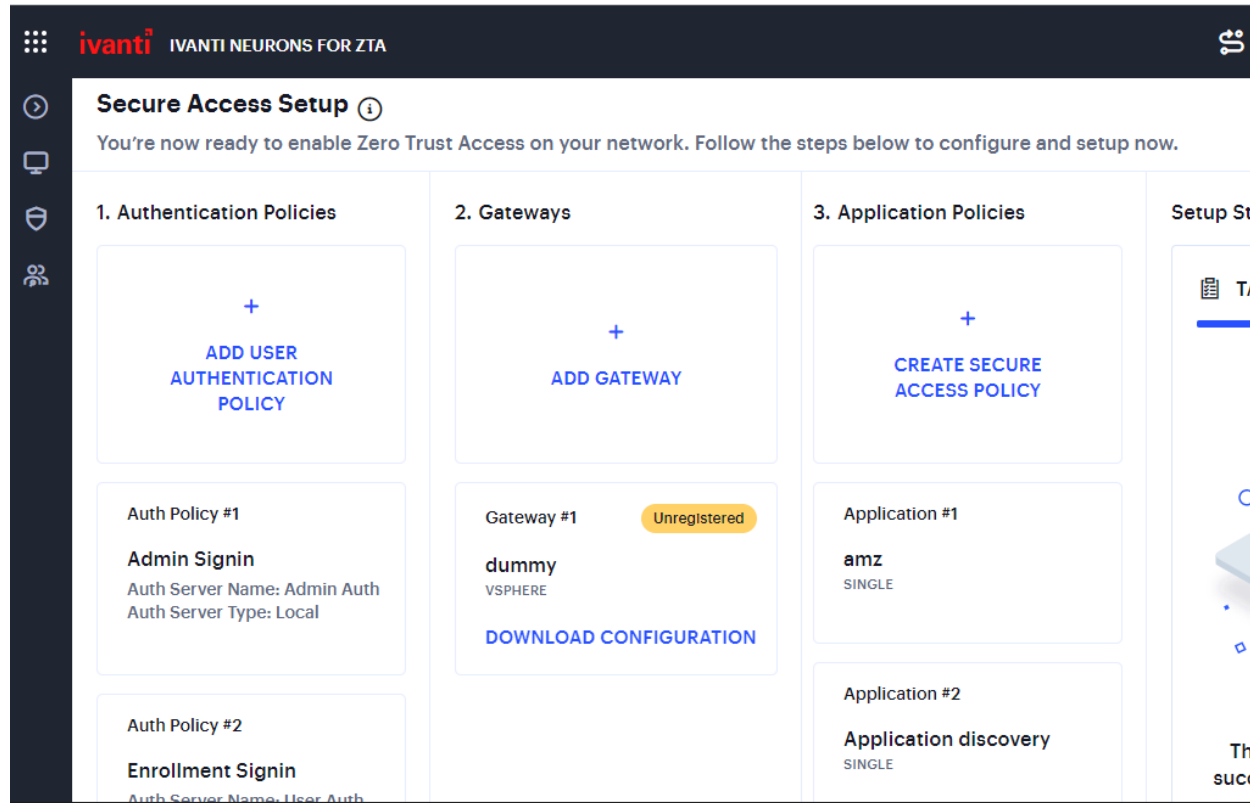


To reset a forgotten password, click **FORGOT PASSWORD**. This link presents a credentials form through which you enter a Username and Email address. If the entered credentials match a registered administrator account, ICS emails a password reset link to the entered address allowing the recipient to create a new password.

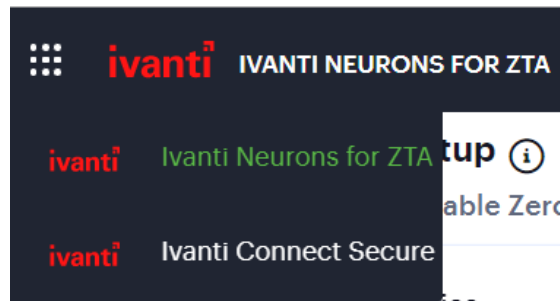
3. If nSA requests it, specify a new password for your account.

Once this procedure is complete, you can access the nSA graphical interface as an admin user.

The **Secure Access Setup** page appears.



4. Click '9 dots' on extreme left corner. Choose **Ivanti Connect Secure**. These two steps are required for every login.



From this page, you can view and configure all functions and capabilities allowed through your subscription and role. Using the Ivanti Connect Secure menu at the left-hand side, choose from:

- The **Show/Hide** menu icon, providing the ability to show or collapse the Ivanti Connect Secure menu tree:



- The **Insights** menu icon, providing access to the analytics and monitoring components of the nSA portal:



To learn more about the functionality offered by this menu, see "[Ivanti Connect Secure Gateway Analytics](#)" on page 38.

- The **Gateways** menu icon, providing access to register and manage the Gateways:



- The **Administration** menu icon, providing access to administrative functions related to your ICS subscription:

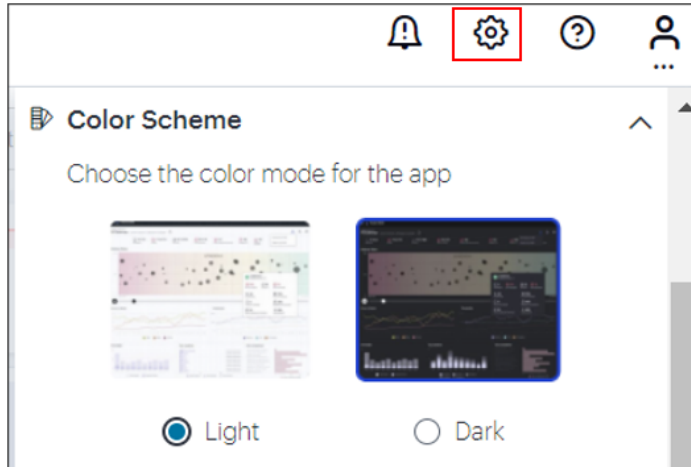


The chapters in this guide cover each of these functions in detail.

## Changing the UI Theme

nSA offers two themes for your UI display:

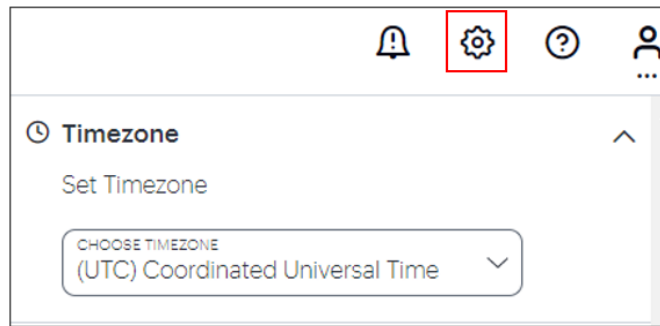
To change the current theme, which remains in place through subsequent logins, use the **Settings** menu located on the top-right-corner of the page:



Through the **Color Scheme** panel (indicated), click **Light** or **Dark** to switch between themes.

## Setting the Timezone

To configure the default timezone for this admin login account, use the **Settings** menu located on the top-right-corner of the page:



Choose a timezone in the provided drop-down selector, then click **Apply**.

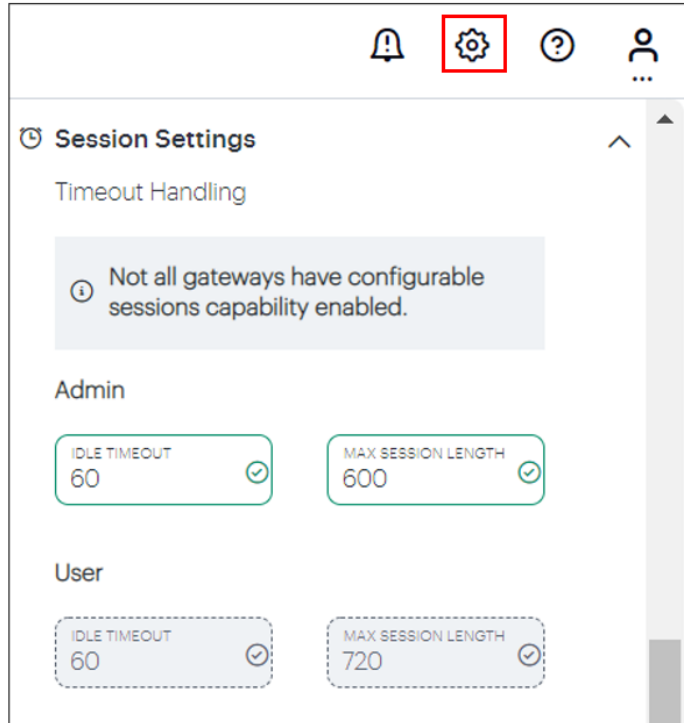
The configured timezone affects the display of data on all **Insights** pages, and each admin login account within a tenant deployment has their own specific timezone configuration. Changes to the timezone persist across login sessions, and the default setting is *UTC (Coordinated Universal Time)*.



Changing the timezone can affect the data displayed in each chart or graph. For example, a recently-observed non-compliance event involving a client device in the GMT timezone that appears in the *Last Hour* view (when using GMT (UTC + 00:00) as your configured timezone) might then only appear in the *Last X Hours* view when you switch your timezone to IST (UTC+05:30).

## Configuring Session Timeouts

To configure timeout values for admin and user sessions, use the **Settings** menu located on the top-right-corner of the page:



Through the **Session Settings** panel (indicated), you can set the following timeout values:

- **Admin Idle Timeout:** the time, in minutes, after which the admin login session to the Tenant Admin Portal times out due to inactivity. (default: 10)
- **Admin Max Session Length:** the time, in minutes, after which the admin login session to the Tenant Admin Portal ends and must be re-authenticated. (default: 60)
- **User Idle Timeout:** the time, in minutes, after which the user login session to nSA times out due to inactivity. (default: 60)
- **User Max Session Length:** the time, in minutes, after which the login session to nSA ends and must be re-authenticated. (default: 720)

To apply your changes, click **APPLY**.

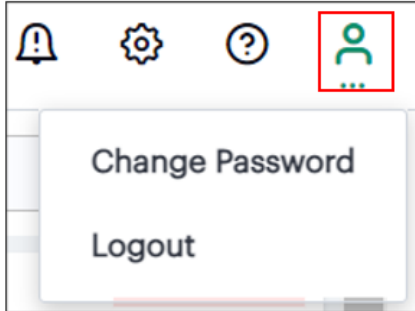


To use these settings, your configured Gateways must all meet minimum version requirements for session control. nSA disables the panel and displays a warning message if this is not the case.

---

## Logging out of the Ivanti Neurons for Secure Access

To log out of the nSA and end the current session, click the *Profile* icon and select **Logout**.



# Managing Existing Ivanti Connect Secure 9.x Appliance

The existing Ivanti Connect Secure 9.x appliance can be managed by Ivanti Neurons for Secure Access (nSA), by upgrading the appliance to the nSA managed 9.1R11.5 version. Note that the fresh installation is not available for this release.

The screenshot shows the 'Platform' page in the 'System Maintenance > Platform' section. The page has a navigation bar with 'Platform', 'Upgrade/Downgrade', 'Options', and 'Installers'. The main content area displays system information for a cluster:

- Cluster: PSA-IQ-5K
- Hostname: N-186
- Model: PSA-5000
- Machine ID: 0320M52NS0DYM0HOS
- Serial Number: 0320062017100026
- Uptime: 1 day, 21 hours, 36 minutes, 36 seconds
- Current version: 9.1R11.5 (build 14110)
- Rollback version: 9.1R11 (build 11160)

A red box highlights the 'Current version' field. Below the system information, a note states: 'Note: This PCS can be managed by Ivanti Neurons for Secure Access.' This note is also highlighted with a red box. Underneath, there are sections for 'Node operations' (with a 'Reboot this node...' button), 'Cluster operations' (with buttons for 'Restart Services', 'Reboot...', 'Shut Down...', and 'Rollback...'), and 'Connectivity' (with a 'Test Connectivity' button).

The note "This Ivanti Connect Secure can be managed by Ivanti Neurons for Secure Access" confirms that the appliance is upgraded to the correct version.

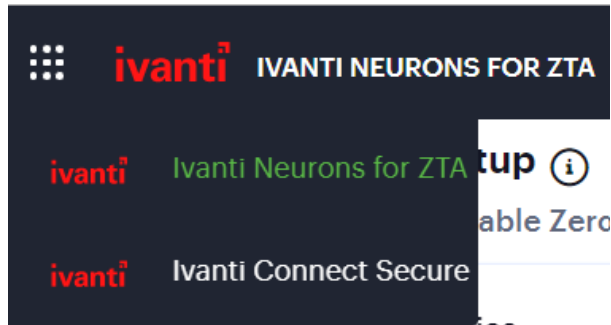
# Registering Ivanti Connect Secure Gateway

- ["Completing Registration of an ICS Appliance" on page 22](#)

Once you have logged into the Ivanti Neurons for Secure Access, the next step is to launch Ivanti Connect Secure Gateway UI, then register one or more ICS.

To launch ICS Gateway UI

1. In the Ivanti Neurons for Secure Access UI, select the Gateway Switcher icon located on the top left corner.



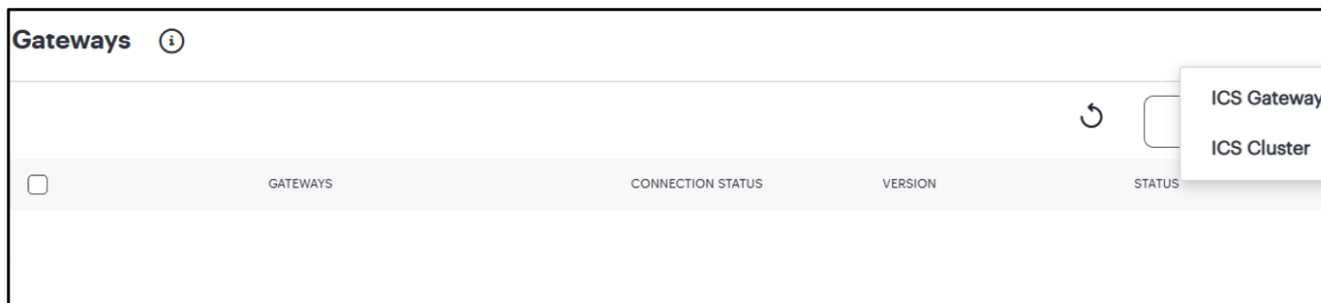
2. From the list, select **Ivanti Connect Secure**.

The Ivanti Connect Secure UI page is displayed.

To register ICS Gateway:

1. From the Ivanti Connect Secure menu, click the **Gateways** icon, then select **Gateways > Gateways List**.

The Gateways List page is displayed.





- In the Gateways List page, click the **Create** drop-down list.
- From the Gateway types list, select **ICS Gateway**.

The Register ICS Gateway page is displayed.

**Register ICS Gateway**

**Gateway Details**

To register a new gateway, enter the gateway name and location

NAME  
ics-gw

**Location**

COUNTRY  
United States

STATE/REGION  
California

CITY  
Atlanta

**Register**

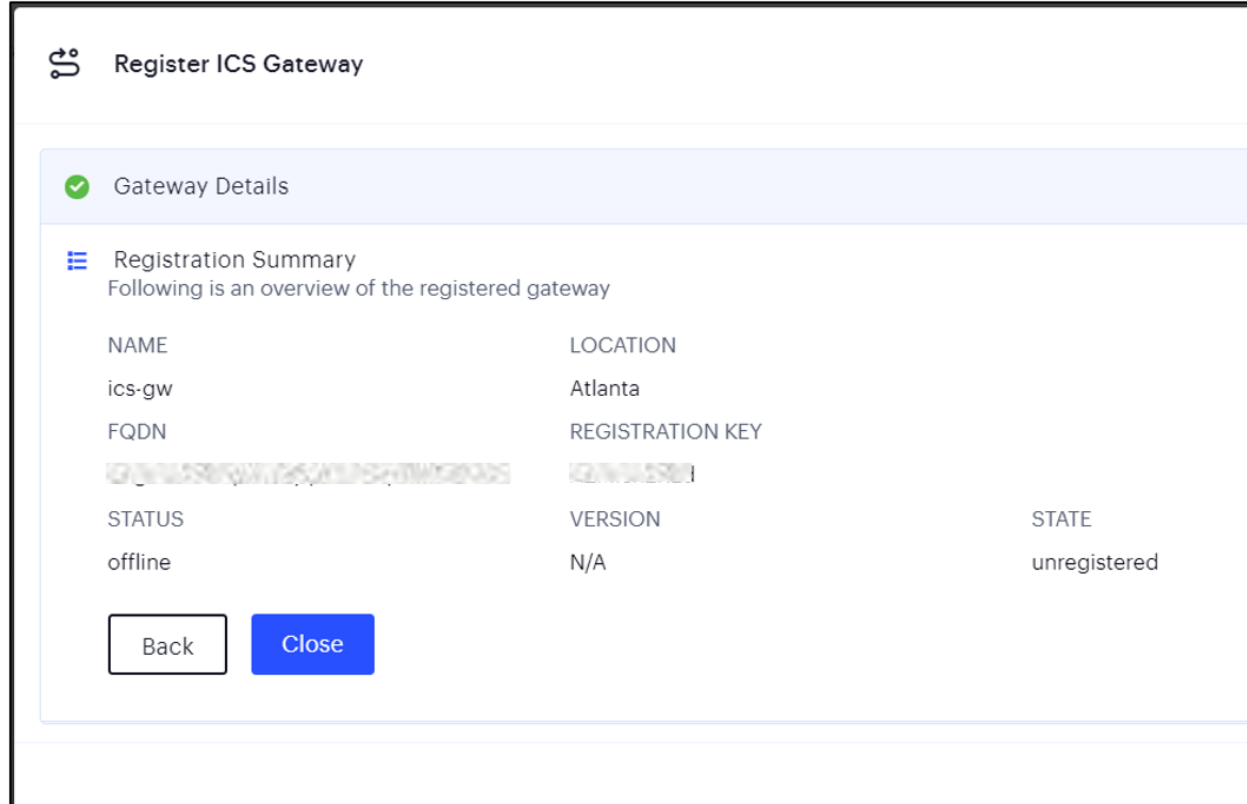
**Registration Summary**

- Enter a unique name for ICS gateway.



The name should be maximum 15 characters, only alphanumeric, underscores, and hyphens are allowed between characters, and **must start with a letter**.

5. Enter your Location details such as Country, State/Region, City, and then click **Register**.



The Registration Summary page contains the FQDN URL and Registration Key, which you need to enter in the ICS Gateway to complete the registration. See "[Completing Registration of an ICS Appliance](#)" below.

6. Click **Close**.

The newly added ICS Gateway gets listed as "Unregistered" under ICS Gateways list.

## Completing Registration of an ICS Appliance

For all platforms, make sure the firewall rules for the Public Subnet in which your ICS Gateway External Interface resides is configured to accept inbound client connections on TCP port 443.

Furthermore, make sure you configure the Network Gateway serving your Private Subnet to allow outbound traffic to the nSA Controller in the following ways:

- Allow outbound TCP traffic on port 443 to the Controller service
- Allow outbound UDP traffic to the following Network Time Protocol (NTP) services:
  - time.windows.com (port 123)
  - time.nist.gov (port 123)



We recommend you use NTP server to ensure the clocks are synchronized and features on Ivanti Neurons for Secure Access work properly.

---

To complete registration of a ICS appliance:

1. Log in to the ICS appliance as an Admin.
2. Select the **System > Configuration > Ivanti Neurons for Secure Access > Settings** tab.
3. Enter the Registration FQDN and Registration Code.



The Registration FQDN and Registration Code were displayed during ICS Registration with nSA” .

---

Ivanti Neurons for Secure Access > Settings

## Settings

**Settings**

\*Registration FQDN:  The Ivanti Neurons for Secure Access FQDN to which the gateway connects to for st

\*Registration Code:  The registration code provided by Ivanti Neurons for Secure Access

\*Credential Renegotiation Interval:  days 1 - 7 days. The time after which credentials are renegotiated

Preferred network interface:  If the selected network interface is disabled, defaults to 'Internal Port'

Credentials Exchange time: Mon 2023-06-19 20:36:29 IST The last successful credential exchange time.

Use Proxy Server for communication with Ivanti Neurons for Secure Access

Select if proxy server configuration is needed to communicate with Ivanti Neurons for Secure Access

▼ **Application Visibility for Vpn Tunnels**

Enable Application Visibility for VPN tunnels  
 Note: Enabling this might cause performance degradation.

▼ **Registration Result Details**

On successful registration the following information is received from Ivanti Neurons for Secure Access

Gateway Id: dddaec9afbe24c6b85fc609adec23333 Unique id of the gateway on Ivanti Neurons for Secure Access

Notification URL: wss://nsaqa.e.cedar.pzt.dev.perfsec.com/api/v1/notifications The URL for establishing notification channel

▼ **Status Information**

Registration Status: ●

Notification Channel Status: ●

▼ **Actions**

4. Select **Use Proxy Server for communication with Ivanti Neurons for Secure Access** to enable ICS to nSA communication via HTTP proxy server.

5. Click **Save Changes**.

The Status Information displays the Registration Status in green.

# Ivanti Connect Secure Gateway Deployment

The following sections describe the new parameters that are added for the deployment of Ivanti Connect Secure VA on VMware, Amazon Web Services cloud and Microsoft Azure cloud.

- ["Deploying on VMware" below](#)
- ["Deploying on Hyper-V" on the next page](#)
- ["Deploying on KVM" on the next page](#)
- ["Deploying on AWS Cloud" on the next page](#)
- ["Deploying on Azure Cloud" on page 34](#)
- ["Deploying on Google Cloud Platform" on page 37](#)

## Deploying on VMware

For a detailed ICS VA deployment procedure, refer to *Virtual Appliance Deployment Guide* at <https://www.ivanti.com/support/product-documentation>.

This below table describes the new parameters that are added in the script file **create-va.pl**, which is included in your ISA-V package.

Sample Script Parameters - New Parameters

Parameter	Description
<b>New Parameters</b>	
registrationCode	The registration code, which is generated during the ICS gateway registration on nSA. Example, KyZR6YDL8
registrationFQDN	The registration FQDN name, which is generated during the ICS gateway registration on nSA. Example, auto.lark.pzt.dev.perfsec.com
enableproxy	Default is set to n.

Parameter	Description
proxyHost	The proxy server name.
proxyPort	The port number of the proxy server. Example, 8080
proxyUsername	The username of the proxy server. Example, usr
proxyPassword	The password of the proxy server. Example, pxx124
registerNetworkInterface	The interface through which the gateway registers with nSA. Example, external

## Deploying on Hyper-V

For a detailed ICS on Hyper-V deployment procedure, refer to *ICS Gateway Deployment on Hyper-V Platform* at <https://www.ivanti.com/support/product-documentation>.

## Deploying on KVM

For a detailed ICS on KVM deployment procedure, refer to *ICS Gateway Deployment on KVM Platform* at <https://www.ivanti.com/support/product-documentation>.

## Deploying on AWS Cloud

For a detailed ICS VA on AWS Cloud deployment procedure, refer to *Virtual Appliance on Amazon Web Services Deployment Guide* at <https://www.ivanti.com/support/product-documentation>.

Ivanti Connect Secure accepts the following parameters as provisioning parameters in the XML format.

```
<pulse-config>
```

```
    <primary-dns><value></primary-dns>
```

```
    <secondary-dns><value></secondary-dns>
```

```
    <wins-server><value></wins-server>
```

```
    <dns-domain><value></dns-domain>
```

```
    <admin-username><value></admin-username>
```

```

<admin-password><value></admin-password>

<cert-common-name><value></cert-common-name>

<cert-random-text><value></cert-random-text>

<cert-organisation><value></cert-organisation>

<config-download-url><value></config-download-url>

<config-data><value></config-data>

<auth-code-license><value></auth-code-license>

<enable-license-server><value></enable-license-server>

<accept-license-agreement><value></accept-license-agreement>
>

<enable-rest><value></enable-rest>

<registration-code> 1grkL2Xbr </registration-code>

<registration-
fqdn>auto.toad.pzt.dev.perfsec.com</registration-fqdn>

<enable-proxy>n</enable-proxy>

<proxy-host></proxy-host>

<proxy-port></proxy-port>

<proxy-username></proxy-username>

<proxy-password></proxy-password>

<register-network-interface>external</register-network-
interface>

</pulse-config>

```

The below table describes the new parameters that are added in the XML file.



## XML File Details - New Parameters

Parameter	Type	Description
<b>New Parameters</b>		
registrationCode	string	The registration code, which is generated during the ICS gateway registration on nSA. Example, KyZR6YDL8
registrationFQDN	string	The registration FQDN name, which is generated during the ICS gateway registration on nSA. Example, sample.domain.com
enableproxy	string	Default is set to n.
proxyHost	string	The proxy server name.
proxyPort	integer	The port number of the proxy server. Example, 8080
proxyUsername	string	The username of the proxy server. Example, usr
proxyPassword	string	The password of the proxy server. Example, pxx124
registerNetworkInterface	string	The interface through which the gateway registers with nSA. Example, external

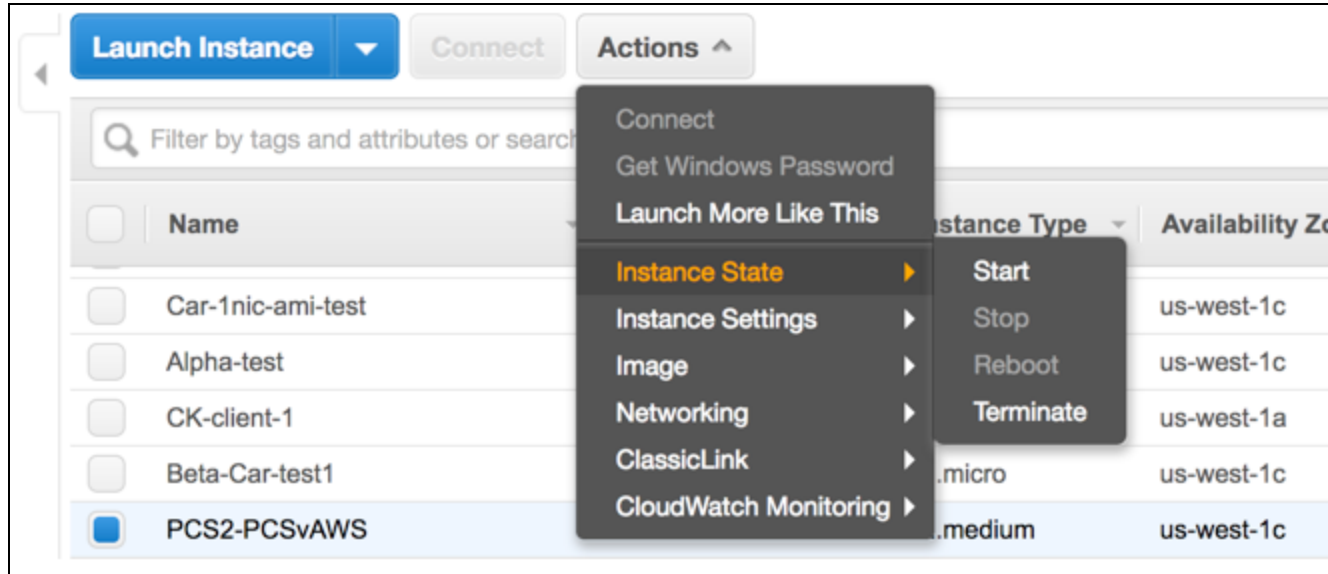
The XML parsing fails if the following characters are used in the strings:

- ""
- '''
- "<"
- ">"
- "&"



## System Operations

The AWS portal provides Start, Restart Stop and Terminate operations to control the Virtual Appliance connection.



On the AWS portal, select **AWS Services > Launch Instance**. From the Actions menu, select **Instance State**.

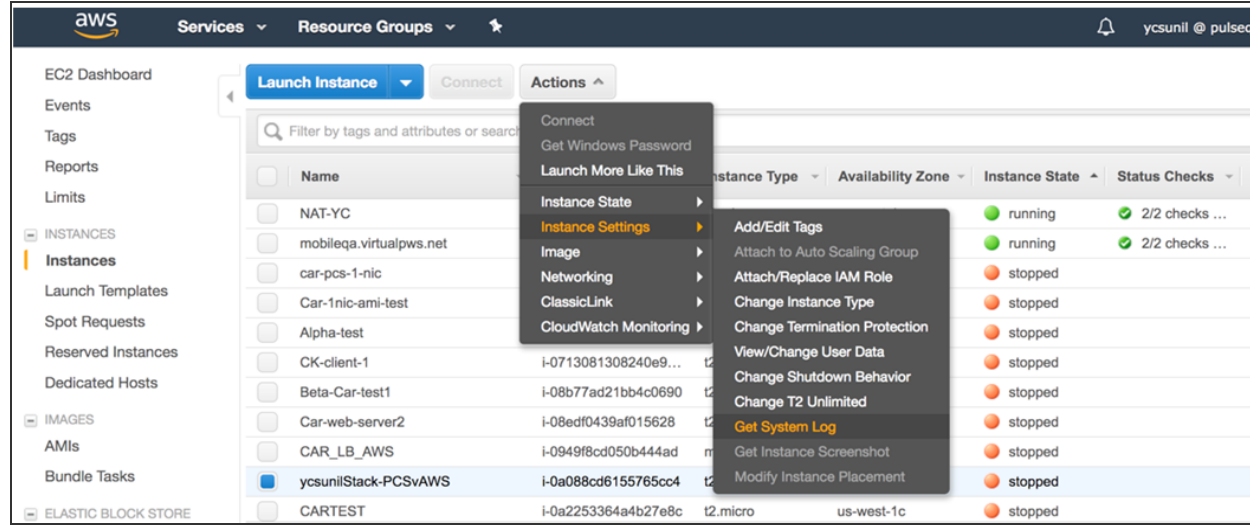
- Click **Start** to start a VM
- Click **Stop** to stop the VM
- Click **Restart** to restart the VM
- Click **Terminate** to terminate the VM

## Troubleshooting

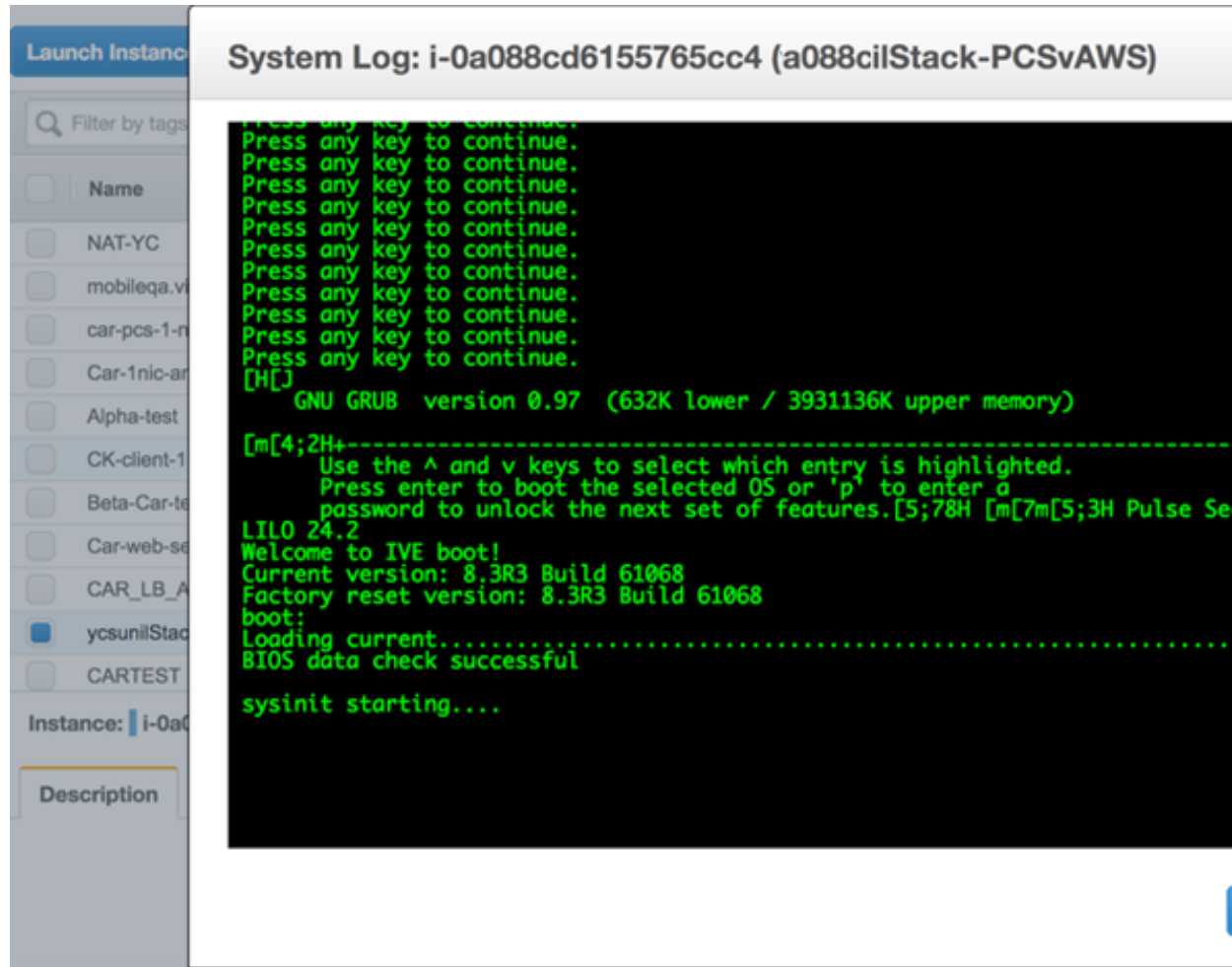
Ivanti Connect Secure emits booting logs at a specified storage. You can check the storage details of the boot diagnostic logs as shown below:

1. Select **AWS Services > Instances > Launch Instance**.

- From the list displayed, select **Instance Settings > Get System Log**.



The system logs window is displayed.



## Frequently Asked Questions

### FAQ1: Packets transmitted from ICS Internal Interface are getting dropped by AWS Virtual Gateway in L3 traffic.

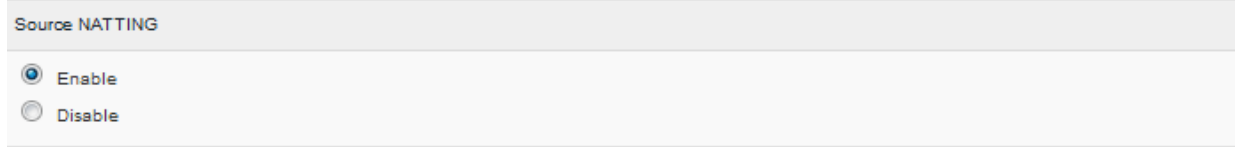
**Cause:** The packets are dropped because the source IP and MAC address are not matching and the transit routing is not supported.

**Solution:** Ivanti Connect Secure must be able to SNAT these packets to the Internal interface IP which belongs to a subnet within the VPC.

To NAT endpoint tunnel IP to Internal interface IP, do the following:

1. Log in to Ivanti Connect Secure admin console.
2. Navigate to **System > Network > VPN Tunneling**.

3. Enable **Source NATTING**. By default, Source NATTING is disabled.



Source NATTING

Enable

Disable

## Deploying on Azure Cloud

For a detailed deployment procedure, refer to *Virtual Appliance on Microsoft Azure Deployment Guide* at <https://www.ivanti.com/support/product-documentation>.

Ivanti Connect Secure accepts the following parameters as provisioning parameters in the XML format.

```
"<pulse-config>

    <primary-dns>8.8.8.8</primary-dns>

    <secondary-dns>8.8.8.9</secondary-dns>

    <wins-server>1.1.1.1</wins-server>

    <dns-domain>psecure.net</dns-domain>

    <admin-username>admin</admin-username>

    <admin-password>password</admin-password>

    <cert-common-name>val.psecure.net</cert-common-name>

    <cert-random-text>fdsfpisonvsfnms</cert-random-text>

    <cert-organisation>Psecure Org</cert-organisation>

    <config-download-url><value></config-download-url>

    <config-data><value></config-data>

    <auth-code-license><value></auth-code-license>

    <enable-license-server>n</enable-license-server>
```

```

    <accept-license-agreement>n</accept-license-
    agreement>

    <enable-rest>n</enable-rest>

    <registration-code> 1grkL2Xbr </registration-code>

    <registration-
    fqdn>auto.toad.pzt.dev.perfsec.com</registration-fqdn>

    <enable-proxy>n</enable-proxy>

    <proxy-host></proxy-host>

    <proxy-port></proxy-port>

    <proxy-username></proxy-username>

    <proxy-password></proxy-password>

    <register-network-interface>external</register-
    network-interface>

</pulse-config>"

```

The below table describes the new parameters that are added in the XML file.

XML File Details

Parameter	Type	Description
<b>New Parameters</b>		
registrationCode	string	The registration code, which is generated during the ICS gateway registration on nSA. Example, KyZR6YDL8
registrationFQDN	string	The registration FQDN name, which is generated during the ICS gateway registration on nSA.

Parameter	Type	Description
		Example, sample.domain.com
enableproxy	string	Default is set to n.
proxyHost	string	The proxy server name.
proxyPort	integer	The port number of the proxy server. Example, 8080
proxyUsername	string	The username of the proxy server. Example, usr
proxyPassword	string	The password of the proxy server. Example, pxx124
registerNetworkInterface	string	The interface through which the gateway registers with nSA. Example, external

The XML parsing fails if the following characters are used in the strings:

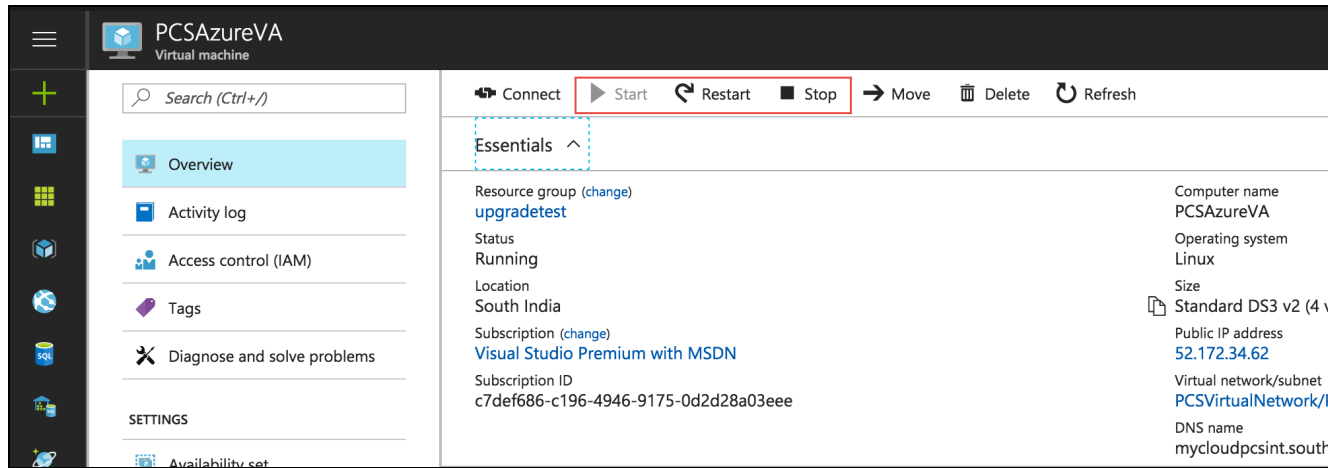


- """"
- ""''
- "<"
- ">"
- "&"

## System Operations

The Azure VA portal provides Start, Restart and Stop operations to control the Virtual Appliance connection.





On the Azure portal top menu bar:

- Click **Start** to start a VM
- Click **Stop** to stop the VM
- Click **Restart** to restart the VM

The corresponding CLI commands are:

- Start a VM

```
az vm start --resource-group myResourceGroup --name myVM
```

- Stop a VM

```
az vm stop --resource-group myResourceGroup --name myVM
```

- Restart a VM

```
az vm restart --resource-group myResourceGroup --name myVM
```

## Deploying on Google Cloud Platform

For a detailed ICS on GCP deployment procedure, refer to *ICS Gateway Deployment on Google Cloud Platform* at <https://www.ivanti.com/support/product-documentation>.

# Ivanti Connect Secure Gateway Analytics

- ["Introduction" below](#)
- ["Reviewing Your Network Activity" on the next page](#)
- ["Reviewing Users Activity" on page 66](#)
- ["Reviewing Application Usage" on page 77](#)
- ["Reviewing Individual User Activity" on page 89](#)
- ["Reviewing Gateways Status and Versions" on page 95](#)
- ["Checking the Logs" on page 102](#)
- ["Configuring Actionable Insights" on page 116](#)
- ["Generating Reports" on page 119](#)
- ["Managing the Sessions" on page 126](#)
- ["Viewing Alerts and Notifications" on page 131](#)

## Introduction

Ivanti Neurons for Secure Access Admin portal provides visibility of user activity and service usage across your Ivanti Connect Secure Gateways in your enterprise through network activity analytics, gateway performance graphs, application usage metrics, and stored activity logs.

After you log in to the Ivanti Neurons for Secure Access Admin portal and select Ivanti Connect Secure from the Gateway Switcher (Ivanti Connect Secure, Ivanti Neurons for Secure Access), Ivanti Connect Secure displays the **Network Overview** page. This page presents a top-down overview of your application infrastructure, providing an opportunity to monitor user and Gateway activity, and to identify problems and compliance issues as they occur. For more information, see ["Reviewing Your Network Activity" on the next page](#)

Through the Ivanti Connect Secure menu, use the **Insights** menu icon to:

- View graphs, metrics, and logs concerning all users activities, see ["Reviewing Users Activity" on page 66](#).

- View graphs, metrics, and logs concerning to individual user activities, see "[Reviewing Individual User Activity](#)" on page 89.
- See details and usage of applications configured in your Ivanti Connect Secure service, see "[Reviewing Application Usage](#)" on page 77
- View graphs, metrics, and logs concerning to all gateways status and versions, see "[Reviewing Gateways Status and Versions](#)" on page 95.
- Configure certain actions based on different types of Insights, see "[Configuring Actionable Insights](#)" on page 116



Ivanti Connect Secure provides both a light theme and a dark theme for the UI display.

---

## Reviewing Your Network Activity

The *Network Overview* page shows real-time analytics data for your application infrastructure, providing a one-page dashboard of activity across your organization.

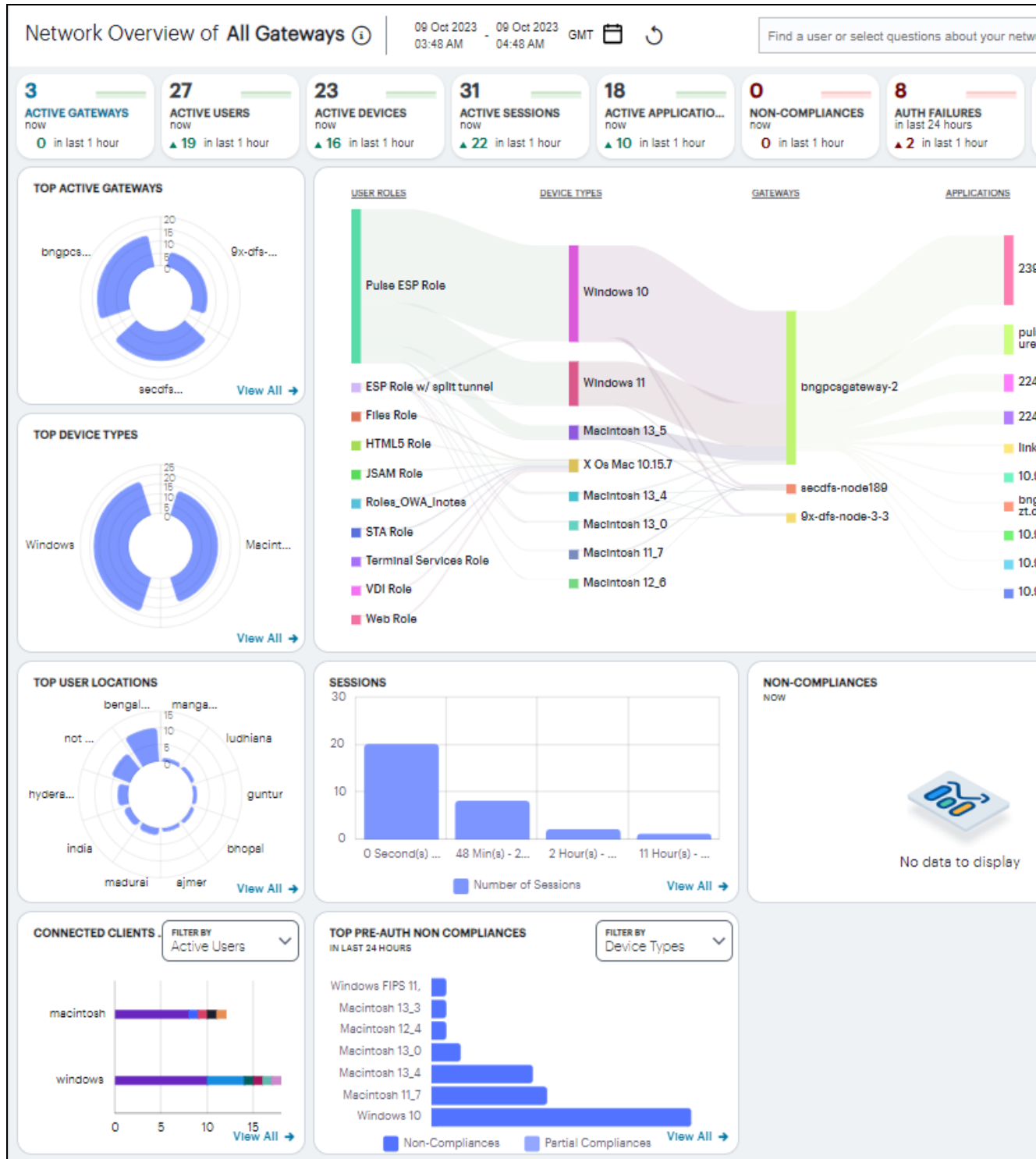
To access the **Network Overview** page:

1. Log in to the Ivanti Neurons for Secure Access Admin portal as a Tenant Admin, and select Ivanti Connect Secure from the Gateway Switcher. See "[Logging in to Ivanti Neurons for Secure Access](#)" on page 12.

The *Network Overview* page appears by default.

2. To return to the *Network Overview* page at any time, click the **Insights** menu icon and then click **Overview**. Alternatively, click the "Ivanti Neurons for Secure Access" banner at the top.

Ivanti Connect Secure provides bread-crumbs navigation for all *Insights* pages at the top.



## Understanding the Display

The primary components of the **Network Overview** page are the following:

- **Filter bar**, allowing the selection of active or historic data, and filtering by Gateway. For details, see ["Using the Filter Bar" below](#).
- **Summary ribbon**, showing totals for active **Gateways, Users, Devices, Sessions, Applications, Non-Compliances, Auth Failures**, and **Anomalies**. For more details, see ["Viewing the Network Summary Ribbon" on page 43](#).
- **Switchable World Map and Sankey chart**, showing active Gateways locations and Users locations:
  - In the world map view, each Gateway location and User location provides a summary of the activity observed there. For more details, see ["Using the World Map" on page 50](#).
  - In the Sankey chart view, you can view the relationships between user groups, device types, and Gateways. For more details, see ["Using the Sankey Chart View" on page 58](#).
- **Radar charts**, providing top usage data for **Gateways, Device Types**, and **User Locations**. For more details, see ["Using the Top Active Breakdown Charts" on page 64](#)
- **Bar chart** breakdowns showing **Sessions, Non-compliances, Connected Clients Version** and **Pre-auth Non-Compliances** activity. For more details, see ["Using the Sessions, Non-Compliances, Connected Clients Version and Pre-Auth Non-Compliances Charts" on page 59](#).



The data in this page refreshes automatically every 5 minutes.

---

With each chart, click the **View all** link to view detailed log records for that category.

The following principles apply to all elements of the page:

- A user can have one or more devices.
- Each device can have one or more active secure access sessions on multiple gateways.
- One session can connect to multiple applications.
- One session can be associated with multiple Gateways.
- One Gateway can have multiple applications registered with it.

## Using the Filter Bar

Ivanti Connect Secure uses the top part of the display on all **Insights** data analysis pages to show the current page title, the default time period, and options to:

- Manually refresh the data
- Filter analytics data for a specific Ivanti Connect Secure gateway
- Select the date and time period for which data is displayed.

By default, analytics data on all pages is shown for the last hour. To select a previous or specified time period, select the date-time display (indicated):

The screenshot shows a date-time selection dialog. At the top right, it displays the current date and time: 09 Oct 2023 03:48 AM to 09 Oct 2023 04:48 AM GMT. Below this, there are two main sections: 'From' and 'To'. On the left, there are radio button options: 'Active', 'Last 4 hours', 'Previous day', 'Previous week', and 'Custom' (which is selected). Under 'From', there are dropdowns for 'MONTH' (October) and 'YEAR' (2023), followed by a calendar grid for October 2023 with the 9th selected. Below the calendar are dropdowns for 'HR' (3) and 'MIN' (52). The 'To' section has identical dropdowns for 'MONTH' (October) and 'YEAR' (2023), a calendar grid with the 9th selected, and 'HR' (4) and 'MIN' (52) dropdowns. At the bottom of the dialog are three buttons: 'RESET', 'CANCEL', and 'APPLY'.

Selecting a date and time range

In the date-time selection dialog, choose from the following predefined time period options:

- **Last hour:** Data observed for the previous 60 minutes.
- **Last <X> hours:** Data observed so far in the current day, up to the last hour (in GMT).
- **Previous day:** Data observed for the previous full day.
- **Previous Week:** Data observed for the previous calendar week (for the previous full Sunday-to-Saturday week).
- **Custom:** Data observed for a chosen time period. If you select this option, *nZTA* enables you to select a custom time period using the **From** and **To** date/time calendar controls.



The date/time calendar controls are enabled for only the **Custom** option. However, the calendar continues to identify the applicable start and end date-time for all predefined time periods.

To reset the selected time period back to the default (*Last Hour*) view, select **Reset**. To return to the current page without making any changes, select **Cancel**.

To apply your changes, select **Apply**. The selected time period is displayed in the filter bar and data across all **Insights** pages is updated accordingly.

The data in the display refreshes automatically at 5 minute intervals. To manually refresh the data, click the circular arrow:



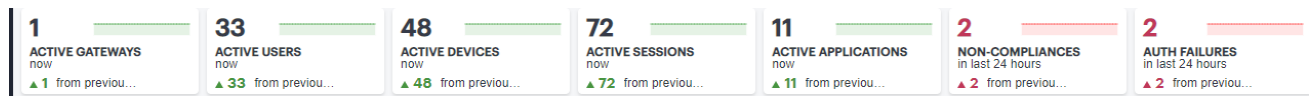
Ivanti Connect Secure provides the ability to show focused metrics for a specific Ivanti Connect Secure Gateway. To select a specific gateway, use the filter icon:



In the Filter panel, from the drop-down list select the required gateway and click **Apply**. To clear the selection, click **Clear All**.

## Viewing the Network Summary Ribbon

The Summary ribbon at the top of the page shows data totals for the selected time filter:



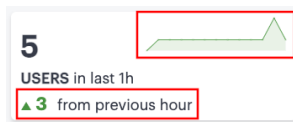
The ribbon indicates the totals accrued for each category during the displayed time period, as indicated adjacent to the category name.

The following categories are provided in the ribbon:

- The number of **Active Gateways**.
- The number of **Active Users**.
- The number of **Active Devices**.
- The number of **Active Sessions**.

- The number of **Active Applications**.
- The number of **Non-compliances**. In other words, non-compliant attempts to access your applications. For the default time period filter, non-compliance totals shown here are for 24 hours. For other selected time periods, the number reflect the total for that period.
- For the default time period filter, **Auth Failures** totals shown here are for 24 hours. For other selected time periods, the number reflect the total for that period.
- The number of **Anomalies** detected by Ivanti Connect Secure. That is, the total number of geographic anomalies. For the default time period filter, anomaly totals shown here are for the previous 30 days, and include only unacknowledged anomalies. For other selected time periods, this total includes both acknowledged and unacknowledged anomalies.

If you are currently viewing data for the *last hour*, each category in the ribbon includes a trend graph (highlighted, top) showing the changes in data during the hour. Also included is a change value (highlighted, bottom) based on the previous hour:



In the default *last hour* view, while data for Active Gateways, Users, Devices, Sessions and Applications is shown as such, Non-Compliances and Auth Failures are shown for the previous 24 hours, and anomalies are shown for the previous 30 days. This is as indicated against the Category name.

Additional trend indicators are present for the *last hour* time period only. Trends are not applicable when any filter is applied (intent or gateway).

If you click on any of the categories in the ribbon, Ivanti Connect Secure displays a sliding info-panel dialog showing more details for that category. For example, if you click on the **Active Gateways** category, a panel appears showing the list of active Gateways. In this case, a summary box is displayed for each Gateway showing statistics relevant to that instance, such as the number of active users, active sessions, active devices, non-compliance events, system status such as the system uptime, last config update, session counts such as current SSL sessions count, auth-only sessions, ActiveSync device count.



**All Gateways 3**

VIEW GATEWAY BY STATUS  
Active Gateways (3)

SEARCH  
Type your search query...

**9X-DFS-NODE-3-3**

**Health**

DISK UTILIZATION CPU UTILIZATION SWAP MEMORY UTILIZATION

**Activity**

ACTIVE USERS: 7  
ACTIVE SESSIONS: 7  
ACTIVE DEVICES: 1  
ACTIVE NON COMPLIANCE: 0

**SYSTEM STATUS**

System Uptime: 3d 18h 46m  
Last Config Update: 45m ago

**SESSION COUNTS**

Current SSL Sessions Count: 7  
Auth Only Sessions: 0  
ActiveSync Device Count: 0

**SECDFS-NODE189 BENGALURU**

**Health**

DISK UTILIZATION CPU UTILIZATION SWAP MEMORY UTILIZATION

**Activity**

ACTIVE USERS: 12  
ACTIVE SESSIONS: 12  
ACTIVE DEVICES: 11  
ACTIVE NON COMPLIANCE: 0

**SYSTEM STATUS**

System Uptime: 10d 21h 48m  
Last Config Update: 36m ago

**SESSION COUNTS**



This version of the info-panel shows details for *all Gateway locations*. To view an info-panel for a single Gateway location, click the Gateway location bubble in the world map. For more details, see ["Using the World Map" on page 50](#).

For the *Active Gateways* info-panel, use the **View Gateway by Status** drop-down list to change the type of Gateways displayed in the panel. Choose from:

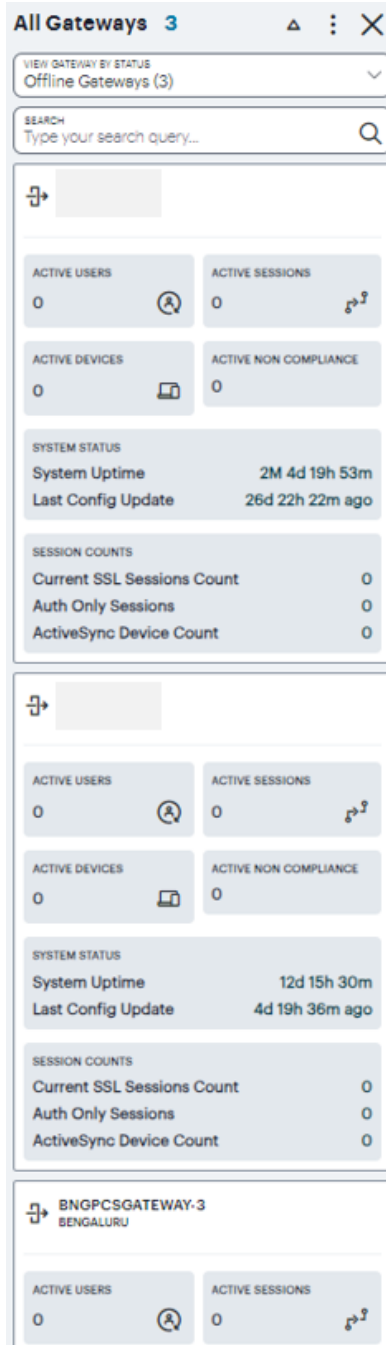
- **All Gateways:** All Gateways regardless of status.
- **Active Gateways:** All active Gateways. That is, only Gateways that have active sessions. This is the default view.
- **Offline Gateways:** All offline or unregistered Gateways. That is, only Gateways that are unresponsive or not yet registered with the Ivanti Neurons for Secure Access.
- **Online Gateways:** All online Gateways. That is, all Gateways that are registered with the Ivanti Neurons for Secure Access.



The number of instances of each type is given in brackets.

---

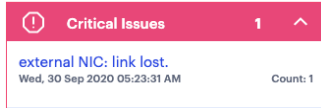
For example, by selecting *Offline Gateways*, the panel updates as follows:



Use the **Search** bar at the top to filter the results list. For example, to show only those Gateways that match a search string. To clear your search, click **CLEAR SEARCH RESULTS**.

To learn more about the meaning of the different indicator colors used in the info-panel, see ["Understanding Gateway Status Indicator Colors"](#) on page 54. Hover your pointer over the instance health indicators to display a tooltip showing more specific details and values.

Click on any Critical or Warning notification banner to display a drop-down summary of the issues:



You can click on each entry to obtain more details and logs concerning the issue.



For the Active Users info-panel, Ivanti Connect Secure displays an *average UEBA threat score*. To learn more about UEBA threat scores, see "[Viewing a Summary of UEBA Threat Scores for your Users](#)" on page 72



For Non-Compliance and Anomalies info-panels, summaries are displayed on a per-user basis, with the reason for the event shown.

To change the sort order of the items displayed in the info-panel, use the *Sorting* controls at the top:

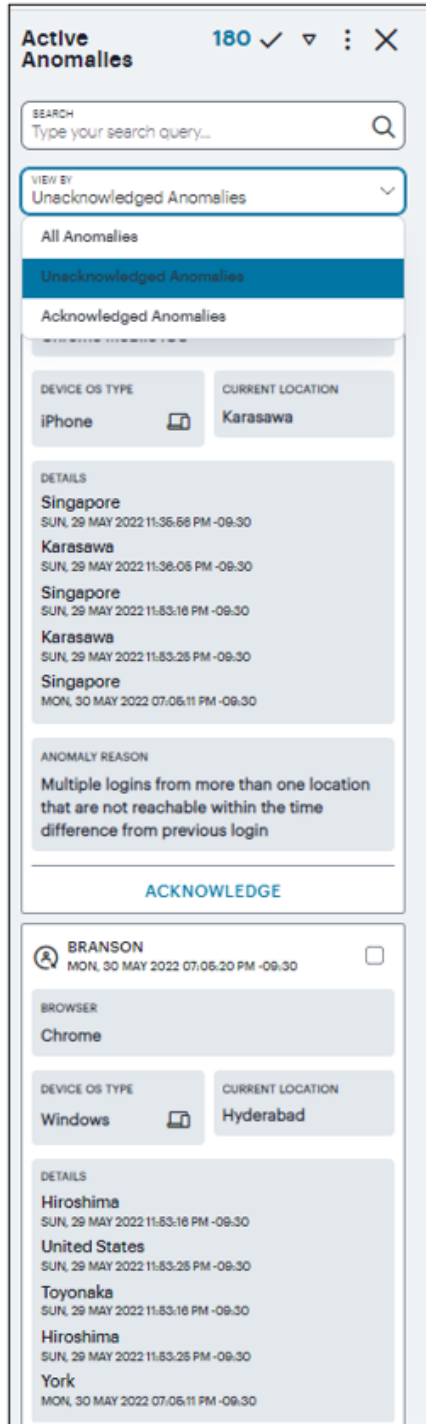


Use the *dots* icon to select the sort criteria, then use the *arrow* icon to toggle between ascending and descending order. The sort criteria varies depending on the category chosen, and is based on the statistics shown for each item. For example, by selecting the **Gateways** info-panel, you can choose the display order for your Gateways based on the following statistics:

- Active Users
- Non-Compliances
- Active Devices
- Number of Issues
- Gateway Name
- City Name

A tick identifies the currently chosen criteria.

For **Anomalies**, the info-panel lists Unacknowledged and Acknowledged anomalies, and provides additional functionality to enable you to *Acknowledge* individual Unacknowledged anomalies.



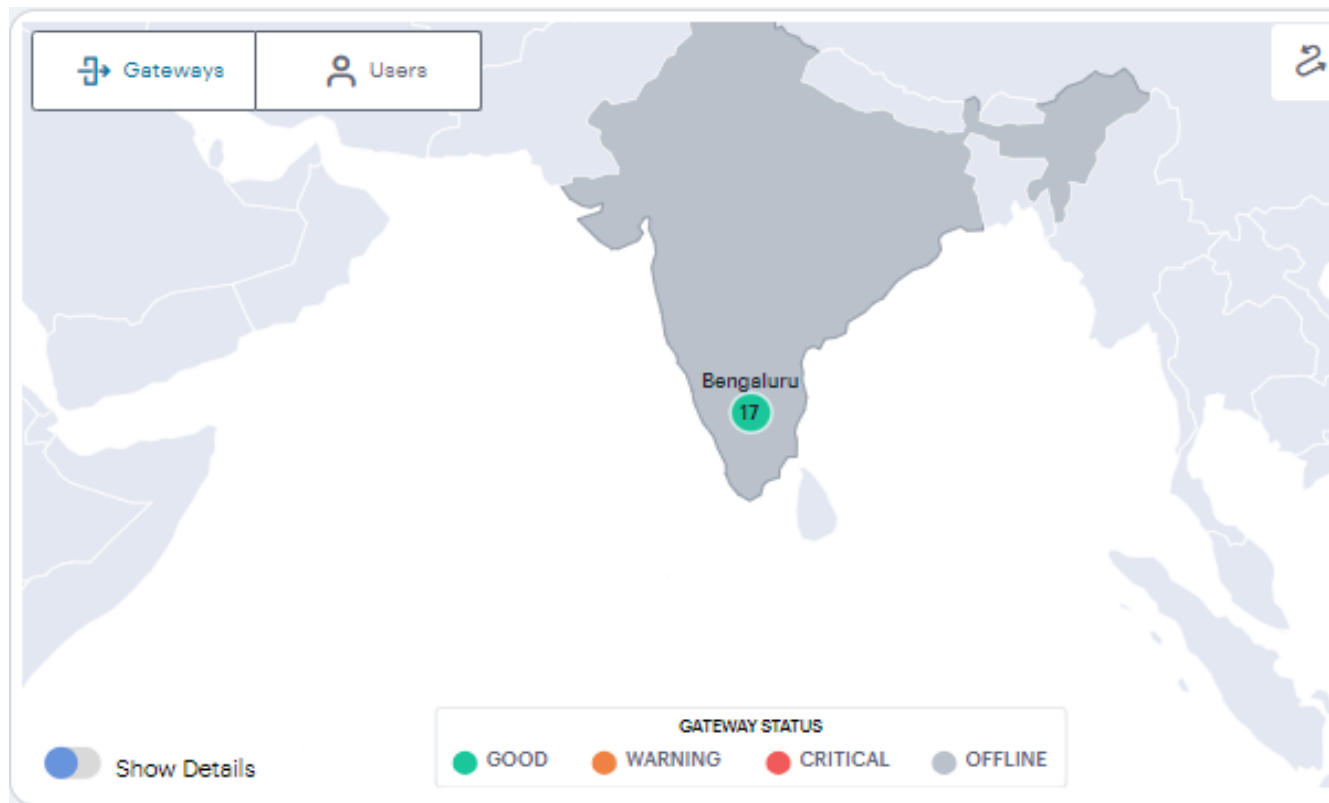
Each box in the info-panel lists a user and the active anomalies connected to them. For each user, from the Unacknowledged anomalies list, click **ACKNOWLEDGE** to remove this anomaly from the list.

Alternatively, use the *tick* icon and check boxes adjacent to each user name to acknowledge multiple, or all, anomalies in a single action. Note that when the default "active" time period filter is selected, the anomalies count in the Summary ribbon decreases by 1 for each acknowledgment.

For the **Gateways** info-panel, click a Gateway name to access the corresponding *Gateways Overview* page that provide usage metrics or configuration details for that item.

## Using the World Map

The Map view contains Gateways and Users tabs. Your Gateways locations are presented on the map as a series of geographically-placed counters, with each counter depicting a location, the status of the services held there, and the number of Gateways. To learn more about the colors used to indicate service status, see "[Understanding Gateway Status Indicator Colors](#)" on page 54



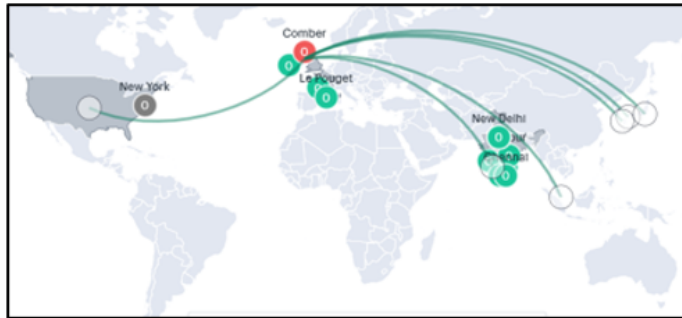
Use the Plus (+) and Minus (-) controls to zoom in and out of the world map, allowing you to select the desired level of detail. Alternatively, use your pointer to manipulate the map display. Double-click/tap an open area of the map to zoom in, or reposition the map display through drag and drop.

To toggle between the Map view and Sankey chart view, use the icons at the top-right:




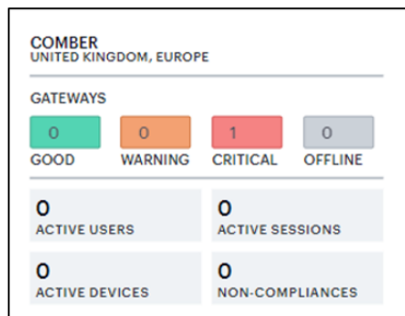
The data shown is representative of the currently-selected time period, and by default shows *active* data (for the previous 1 hour). To learn more about setting time periods for the displayed data, see ["Using the Filter Bar" on page 41](#).

To learn more about network usage or alerts at a particular location, hover your pointer over the location identifier. It shows the active user sessions established from that Gateway location to other Gateway locations.



By turning on the **Show Details** switch located at the bottom-left of the map, and by hovering on a Gateway location, the current Gateway status is indicated by the color scheme shown in the legend.

 To learn more about the meaning of the different indicator colors used in the map and panels, see ["Understanding Gateway Status Indicator Colors" on page 54](#)



To expand the current view, click the Full Screen icon:



In the expanded view, the Gateway Status pop-up summary panel is expanded to include more details concerning usage at that location:

In addition to the status indicator, this version of the summary panel shows the following statistics:

- **Active Users:** The number of unique users that have sessions through Gateways at the location (as also indicated in the location bubble)
- **Active Sessions:** The number of sessions accessed through Gateways at the location
- **Active Devices:** The number of unique devices that have sessions through Gateways at the location
- **Non-Compliances:** The number of active non-compliant sessions (full/partial non-compliant) in this location



Click the Full Screen icon again to return to the standard view.

---

In both views, click a location bubble to display a sliding info-panel dialog for the Gateways at that location.



**Bengaluru 11** ▾ ⋮ ✕

SEARCH  
Type your search query... 🔍

SECDFS-NODE189  
BENGALURU

### Health

DISK UTILIZATION CPU UTILIZATION SWAP MEMORY UTILIZATION

### Activity

ACTIVE USERS: 17 🔍

ACTIVE SESSIONS: 18 🔄

ACTIVE DEVICES: 17 📱

ACTIVE NON COMPLIANCE: 0

### SYSTEM STATUS

System Uptime: 10d 23h 43m

Last Config Update: 30m ago

### SESSION COUNTS

Current SSL Sessions Count: 15

Auth Only Sessions: 0

ActiveSync Device Count: 0

### CLUSTER DETAILS

Cluster Name: dfs-security

Cluster Type: Active/Passive

🔍 [Redacted]

### Health

DISK UTILIZATION CPU UTILIZATION SWAP MEMORY UTILIZATION

### Activity

ACTIVE USERS: 0 🔍

ACTIVE SESSIONS: 0 🔄

ACTIVE DEVICES: 0 📱

ACTIVE NON COMPLIANCE: 0

### SYSTEM STATUS

System Uptime: 2M 4d 8h 25m

Last Config Update: [Redacted]

Use this info-panel to view health and usage statistics for the location, with further details concerning any reported problems with the deployed Gateways. The panel displays the following details:

- **Location name and number of Gateways:** The descriptor for this location and the number of Gateway instances deployed there.
- **Active Users:** The number of unique users that have sessions through Gateways at the location (as also indicated in the location bubble).
- **Active Sessions:** The number of sessions accessed through Gateways at the location.
- **Active Devices:** The number of unique that have sessions through Gateways at the location.
- **Non-Compliance:** The number of active non-compliant sessions (full/partial non-compliant) in this location.
- **System Status:** The system uptime and the time since the last config update.
- **Session Counts:** The number of current SSL sessions, number of auth only sessions, and the number of ActiveSync devices.
- **Cluster Details:** The cluster name, type, and node details.

This view of the info-panel displays data for a *single* Gateway location. To view an info-panel showing data for *all* Gateway locations, click the Gateways category in the Summary ribbon. To learn more, see "[Viewing the Network Summary Ribbon](#)" on page 43.

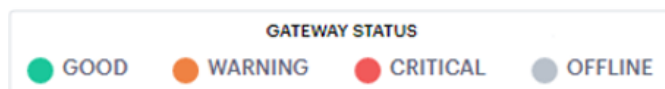


When displaying active data, all non-compliance and unacknowledged anomaly totals are displayed for the previous 24 hours.

To learn more about the information and controls contained in the info-panel, see "[Viewing the Network Summary Ribbon](#)" on page 43.

## Understanding Gateway Status Indicator Colors

In the world map view, your current Gateway status is indicated by the color scheme shown in the legend:



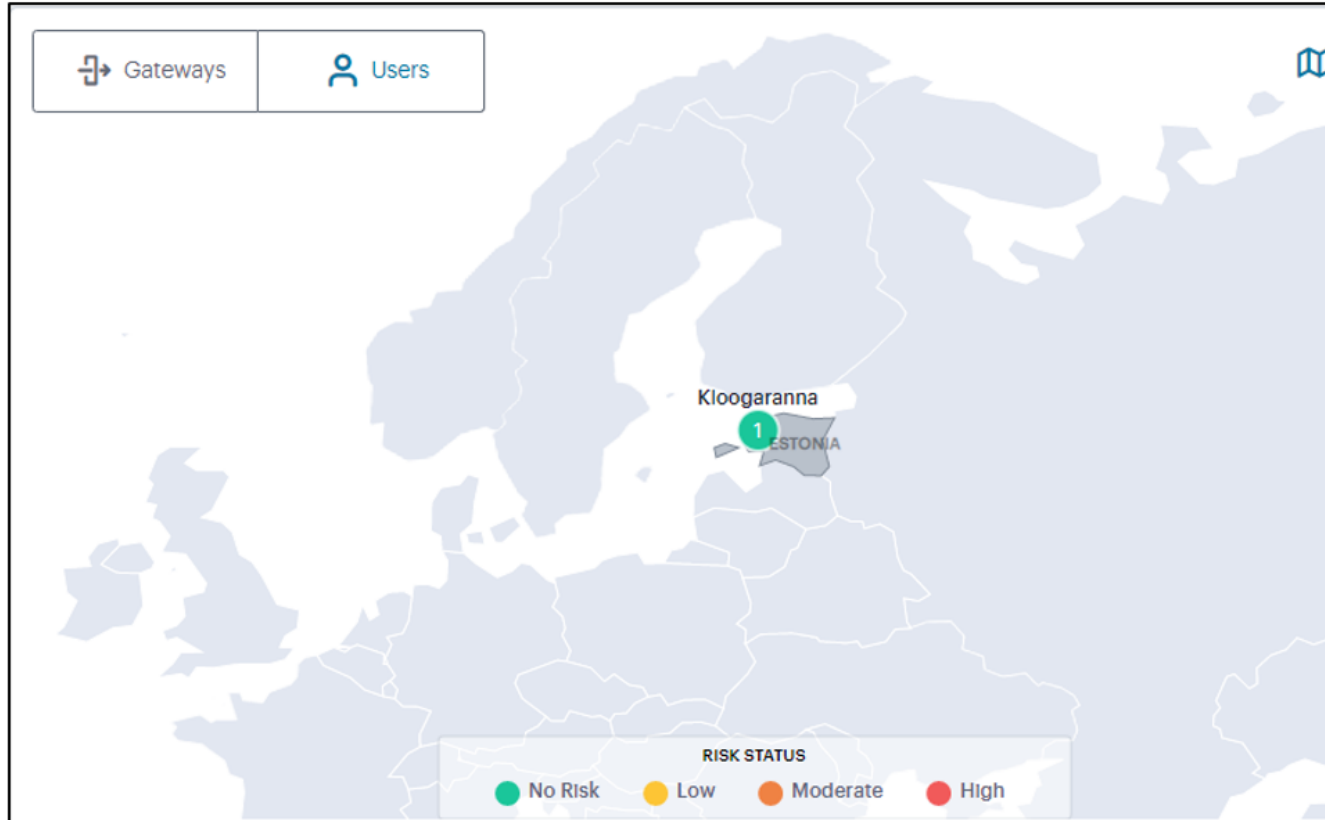
- **Good (Green):** All Gateways are functioning normally.
- **Warning (Amber):** One or more of the Gateways at that location is experiencing a *warning* scenario. This status is triggered by the occurrence of any one of the following conditions:
  - Gateway device CPU usage is within the range 80% - 90%
  - Gateway device swap memory usage is within 10% - 50%
  - Gateway device disk usage is within the range 80% - 90%
- **Critical (Red):** One or more of the Gateways at that location is experiencing an *critical* alert scenario. This status is triggered by the occurrence of any one of the following conditions:
  - Gateway device swap memory usage is greater than 50%
  - Gateway device disk usage is greater than 90%
  - At least 1 critical error has been reported
- **Offline (Grey):** All offline or unregistered Gateways. That is, only Gateways that are unresponsive or not yet registered with the Ivanti Neurons for Secure Access.

Furthermore, counters in the *Summary ribbon* use the following color scheme to reflect status:

- **Red:**
  - **Users:** at least one user has anomalies in the selected duration
  - **Devices:** at least one active device is non-compliant in the selected duration
  - **Gateways:** as described above
  - **Non-compliance:** if the count is non-zero
  - **Anomalies:** if the count is non-zero

## Users Map View

In the world map **Users** tab, each location shows the number of active users in that location.



Use the Plus (+) and Minus (-) controls to zoom in and out of the world map, allowing you to select the desired level of detail. Alternatively, use your pointer to manipulate the map display. Double-click/tap an open area of the map to zoom in, or reposition the map display through drag and drop.

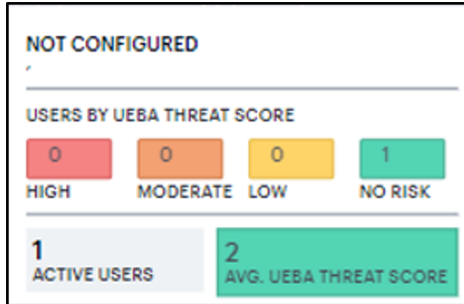
To toggle between the Map view and Sankey chart view, use the icons at the top-right:



The color of the location shows the average UEBA Threat scores of the active users in that location:

- **Green (No Risk)** - UEBA Threat score < 10
- **Yellow (Low)** - UEBA Threat score > 10 < 20
- **Orange (Medium)** - UEBA Threat score > 20 < 30
- **Red (High)** - UEBA Threat score > 30
- Hover on a user location to view detailed UEBA Threat scores of the users in that users location.

By hovering on a User location, the current Users' status is indicated by the color scheme shown in the legend.



Click a location bubble to display a sliding info-panel dialog for the Users at that location.

**United Arab Emirates 3** ▾ ⋮ ✕

SEARCH  
Type your search query... 🔍

---

**JACOB**  
THU, 01 SEP 2022 12:21:17 AM UNITED ARAB EMIRATES  
HDT

SESSION TYPES L3	DEVICE OS TYPES Windows 7
LAST CONNECTED GATEWAY pcs-coa	UEBA THREAT SCORE 0
ANOMALIES 0	ALERTS COUNT 0

CONNECTION\_TYPES

**GRAYSEN**  
THU, 01 SEP 2022 12:21:16 AM UNITED ARAB EMIRATES  
HDT

SESSION TYPES L3	DEVICE OS TYPES Windows 7
LAST CONNECTED GATEWAY pcs-coa	UEBA THREAT SCORE 18
ANOMALIES 21	ALERTS COUNT 0

CONNECTION\_TYPES

**LUKE**  
THU, 01 SEP 2022 12:21:07 AM UNITED ARAB EMIRATES  
HDT

SESSION TYPES	DEVICE OS TYPES
---------------	-----------------

The panel displays the following details:

- Session type
- Device OS type
- Last connected gateway
- Average UEBA Threat score
- Anomalies
- Alerts count

## Using the Sankey Chart View

The Network Sankey chart provides an alternate visualization of your services, showing directed flow between related objects. The width of each stream in the flow is proportional to the utilization of the object the flow passes through, allowing an administrator to view significant usage and relationships across your user base and application infrastructure.

To activate the Sankey chart view, use the toggle icons at the top-right:



By clicking the toggle display icon, the Sankey chart replaces the world map in the display. All other components remain unchanged.

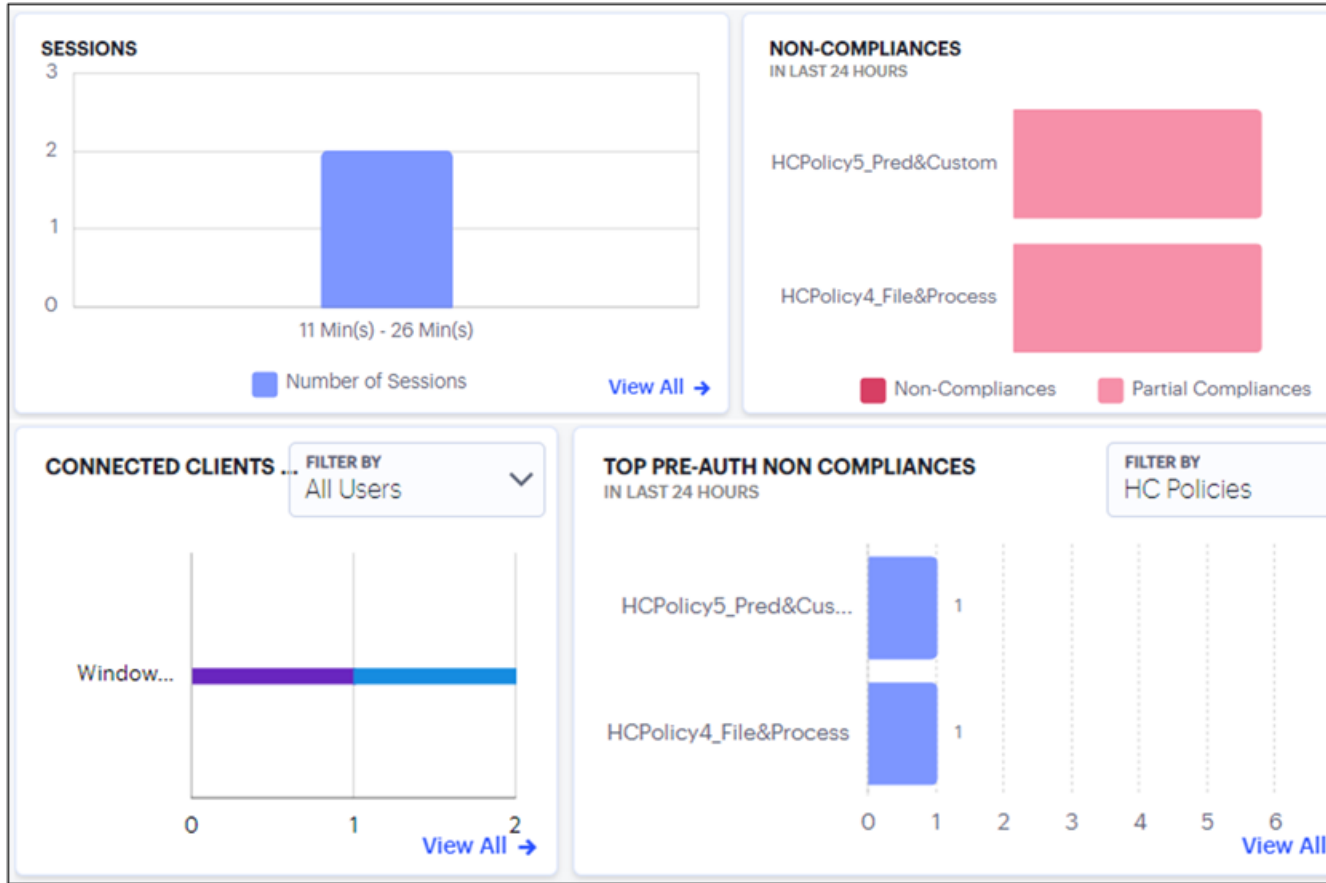


The Ivanti Connect Secure Sankey chart maps **User Roles > Device Types > Gateways > Applications**. By hovering your pointer over a flow of interest, Ivanti Connect Secure displays a tooltip confirming the scale of the activity between the two objects connected by the flow.

To focus the display on a specific flow, or to identify related objects that interact with this flow, click the chart at a point of interest. Ivanti Connect Secure provides highlighting to all flows that pass through the point selected.

## Using the Sessions, Non-Compliances, Connected Clients Version and Pre-Auth Non-Compliances Charts

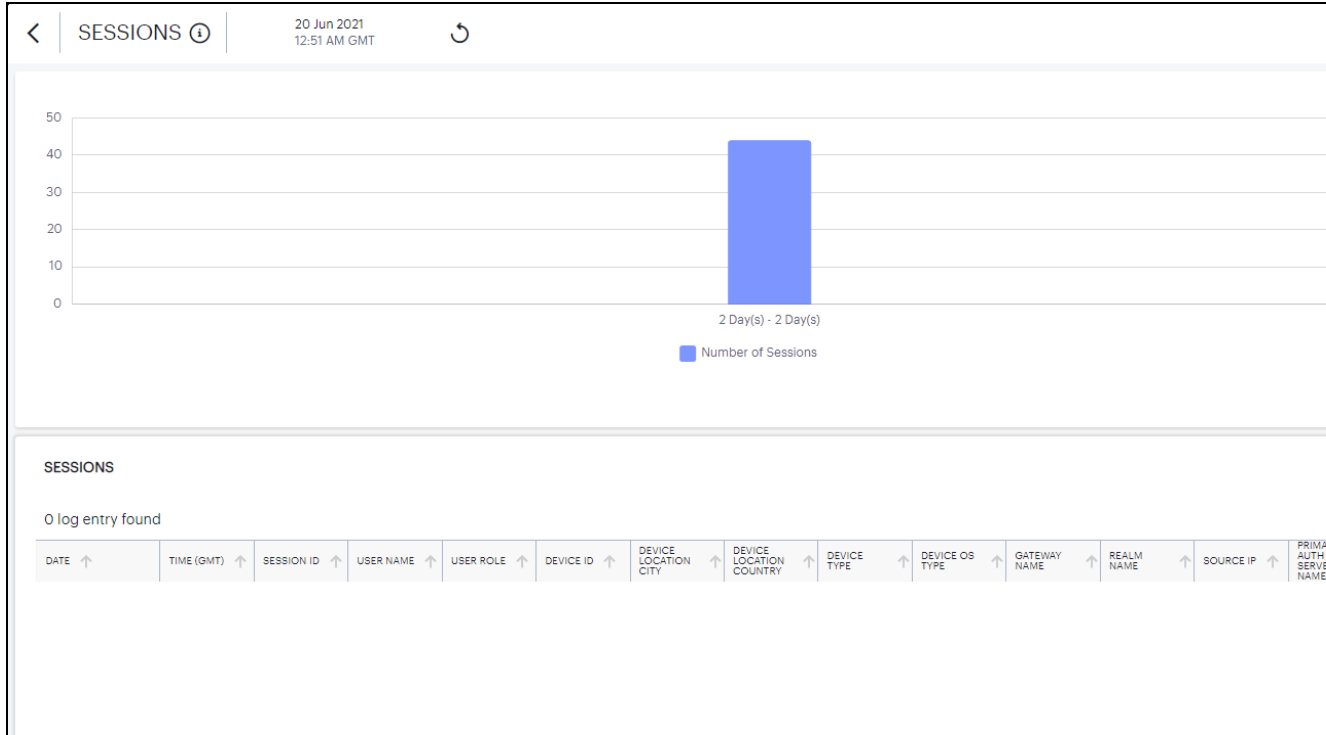
The **Network Overview** page includes bar charts to provide a breakdown of **Sessions**, **Non-Compliances**, **Connected Clients Version** and **Pre-Auth Non-Compliances** events.



The **Sessions** chart provides the total number of sessions over a period. That is, user sessions that took place during the period.

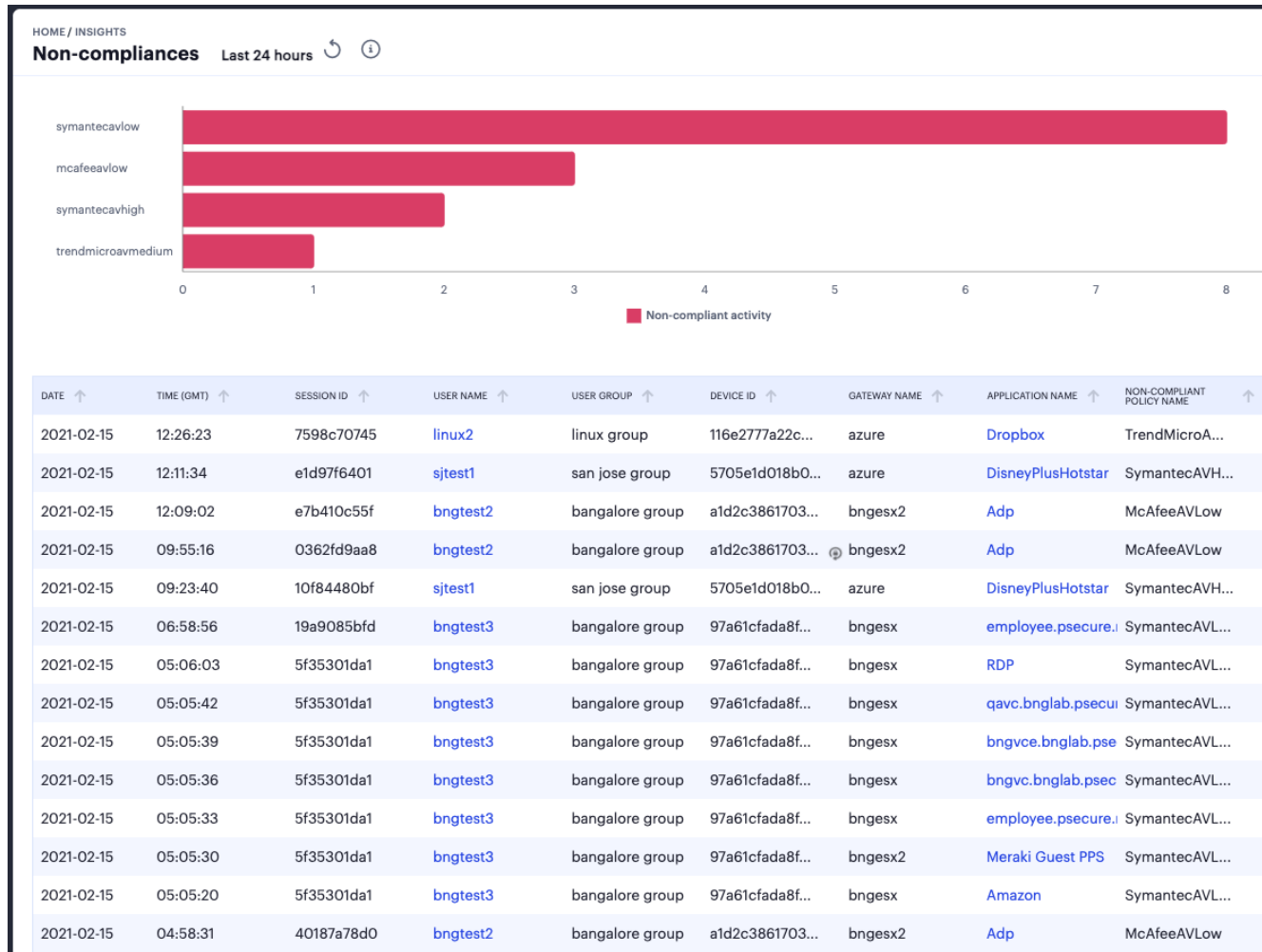
To view a detailed list of events that contributed to the totals, click **View all**:





The **Non-compliances** chart provides a breakdown of non-compliant device activity that contravened a configured device policy. Totals are given for the highest policy contraventions recorded during the period.

To view a detailed list of events that contributed to the totals, click **View all**:

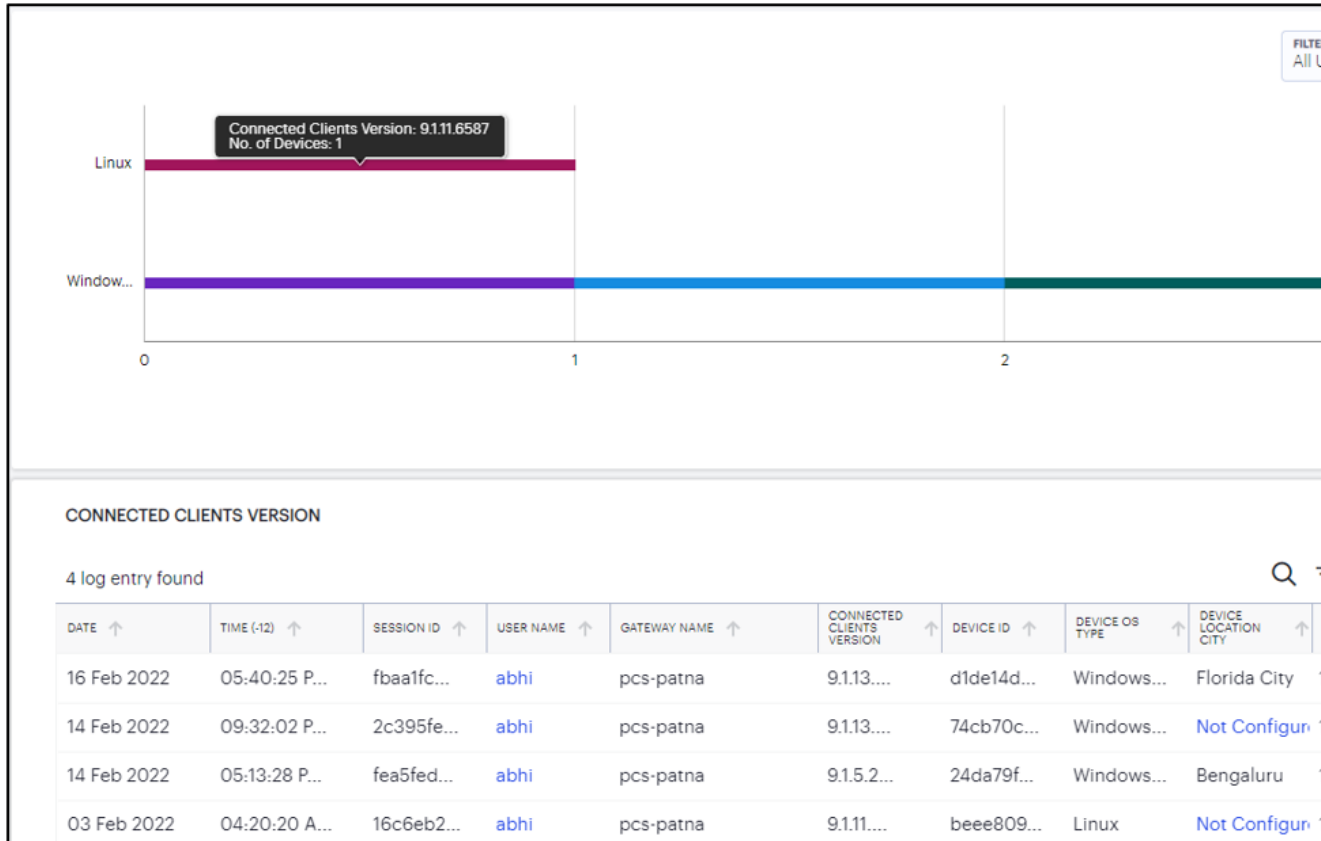


Click on the legend labels to toggle that element on or off in the chart. Use your pointer to scroll the event messages pane to view more details in the columns to the right.

The **Connected Clients Version** chart provides the distribution of various versions of Ivanti Secure Access client across different device OS in the tenant.

You can view the chart based on *Active Users* for Ivanti Secure Access client versions distribution from the currently active sessions or *All Users* for Ivanti Secure Access client versions distribution from the sessions in the last 30 days.

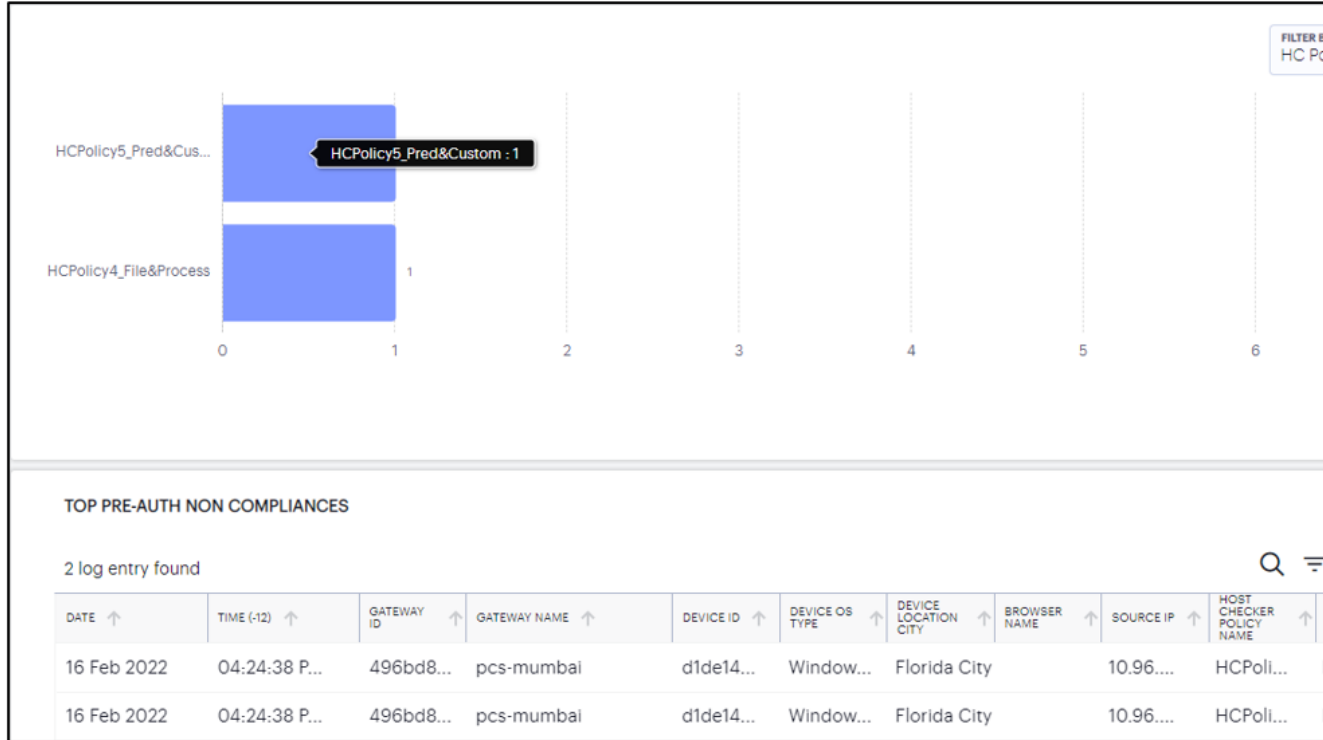
To view a detailed list of events that contributed to the totals, click **View all**:



The **Pre-Auth Non-Compliances** provides the occurrences of non-compliance in the last 24 hours, in the tenant even before the authentication.

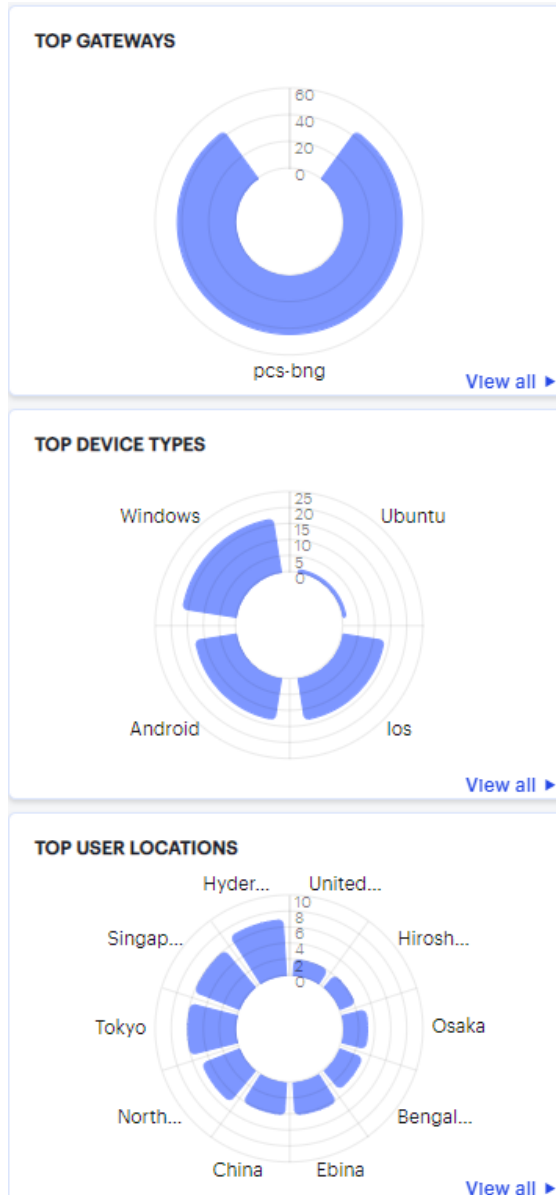
You can view the chart based on *Device Types*, *User Locations*, *Gateways* and *HC Policies*.

To view a detailed list of events that contributed to the totals, click **View all**:

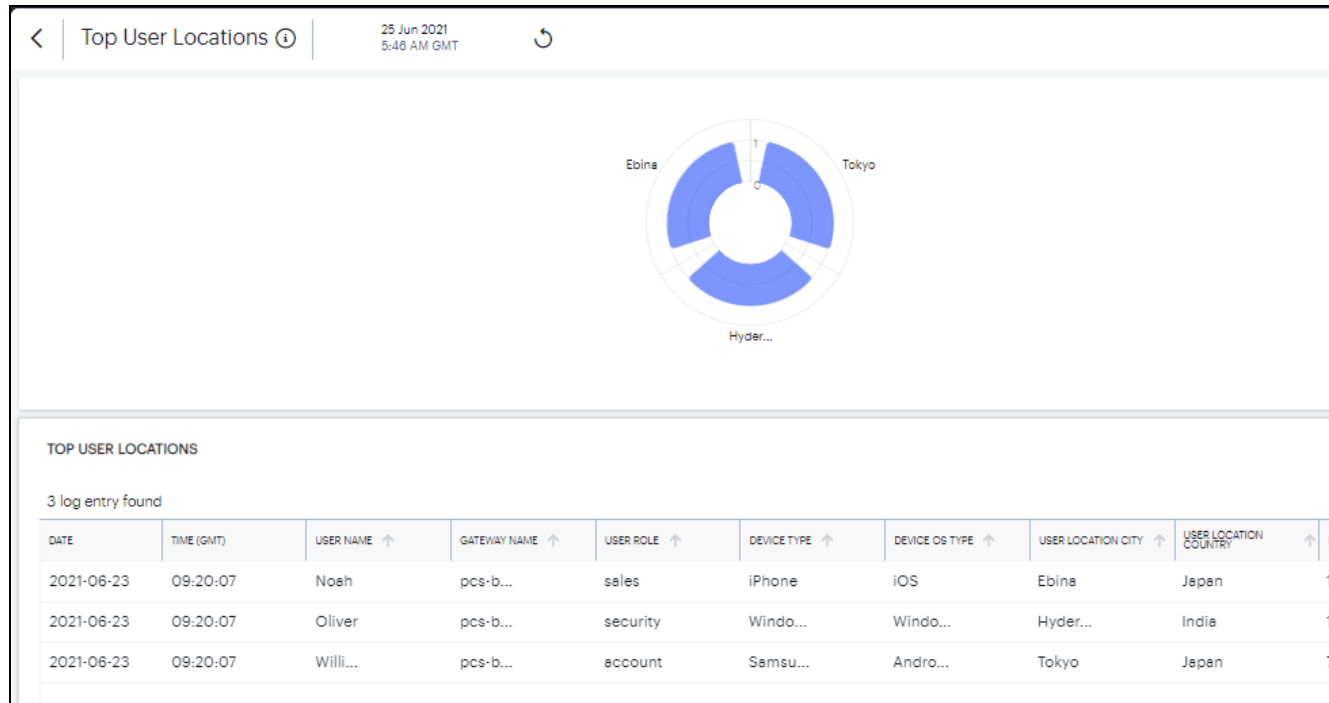


## Using the Top Active Breakdown Charts

The *radar* charts at the bottom of the page show a breakdown of **Gateways**, **Device Types**, and **User Locations** across your organization. Each chart shows the *top active items* in each category.



Hover your pointer over a particular element to view a tooltip showing the label and total. To view more details for a chart, click the corresponding **View all** link. For example:



Click the **View All** link that provides access to a detailed view showing logs for the corresponding chart.

In the detailed log page:

- Double-click on any log to view additional details of that log in the Info Panel to the right.
- Use the Group by option and select the field type to view the table information in groups. Then click > to view the logs in that group.



- Where a specific data item in the event table is truncated due to the column width, hover your pointer over the item to view a tooltip containing a full-length description. You can also re-size the width of any column by dragging the column.
- To copy a log's column content, double click on the column content and press **ctrl-c**. If the content has multiple words, for example log message column, then triple click and press **ctrl-c**. To paste the content elsewhere, press **ctrl-v**.
- Use the Advanced Filter icon to view logs based on the pre-defined filter, operator and value. To learn more, see "[Filtering the Logs](#)" on page 108.

## Reviewing Users Activity

The *Users Overview* page shows activity relating to users in your Ivanti Connect Secure deployment.

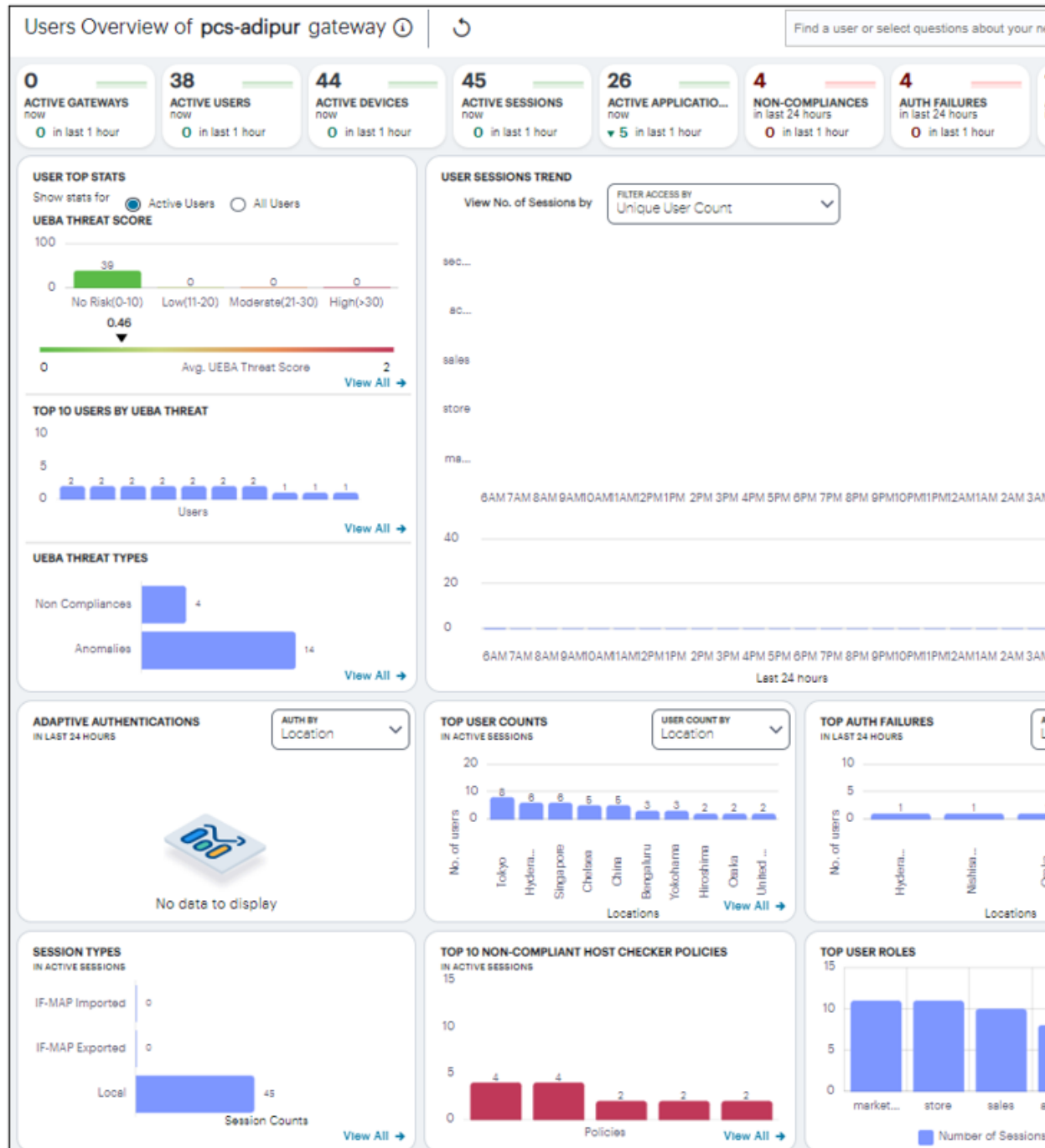
To access the *Users Overview* page:

1. Log in to the Ivanti Neurons for Secure Access Admin portal as a Tenant Admin, and select Ivanti Connect Secure from the Gateway Switcher. See "[Logging in to Ivanti Neurons for Secure Access](#)" on page 12,.

The *Network Overview* page appears by default.

- From the Ivanti Connect Secure menu, click the **Insights** icon, then select **Users**.

The *Users Overview* page appears.



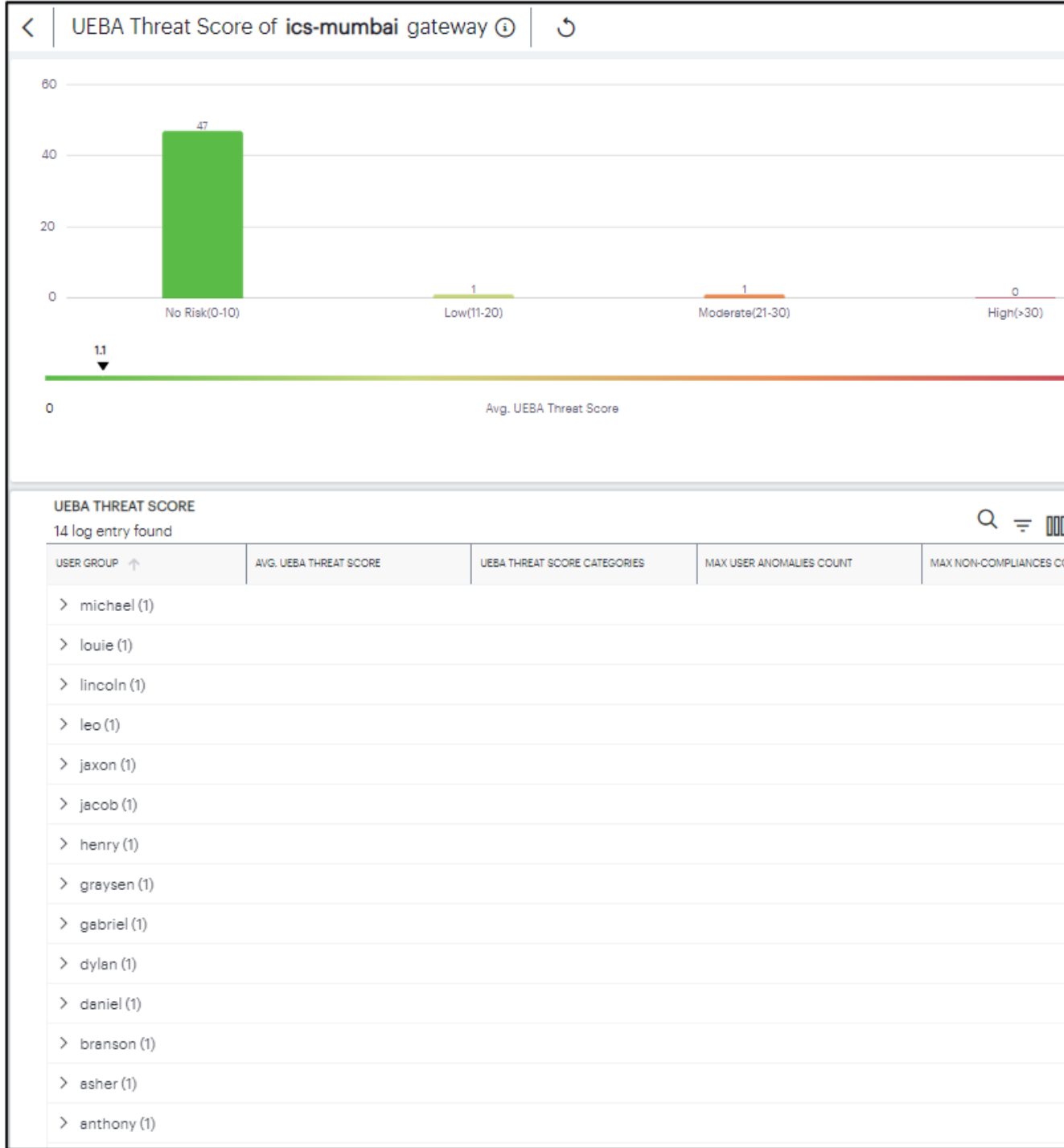
## Understanding the Display

The *Users Overview* page contains the following components:



- **Filter bar**, allowing the selection of active or historic data, and filtering by Gateway. For details, see ["Using the Filter Bar" on page 41](#).
- **Summary ribbon**, showing metrics for user activity. For more details, see ["Viewing the Users Summary Ribbon" on page 71](#).
- **User Top Stats, Top 10 Users By UEBA Threat, UEBA Threat Types**, showing graphs and metrics for UEBA Threat scores across your user groups. For more details, see ["Viewing a Summary of UEBA Threat Scores for your Users" on page 72](#)
- **User Session Trends**, showing a timeline chart of user sessions. For more details, see ["Viewing the Users Session Trend" on page 73](#)
- **Activity charts**, showing charts for *Adaptive authentication*, *Top user count*, *Top auth failures*, and *Session types*.

Each chart on this page includes a **View All** link. This link provides access to a detail view showing logs for the corresponding chart. For example:

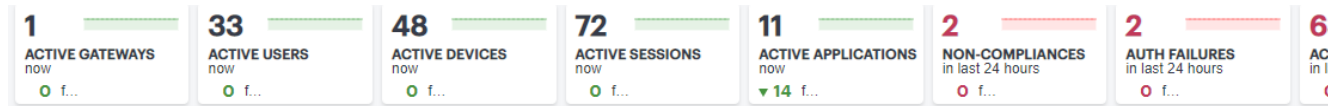


Each detail view shows logs for the corresponding chart or category. For each column, click the *arrow* icon adjacent to the column name to sort in ascending or descending order. Use your pointer to scroll the log messages pane to view more details in the columns to the right.

Where a log message is too long for the display, hover your pointer over the message to view a tooltip containing the full text. Furthermore, to view a single log entry in a dedicated panel, click the log message text to activate the info-panel view.

## Viewing the Users Summary Ribbon

The Summary ribbon at the top of the *Users Overview* page shows activity totals for the selected time filter:



The ribbon indicates the totals accrued for each category during the displayed time period, as indicated adjacent to the category name. Hover your pointer over the category elements to show a descriptive tooltip.

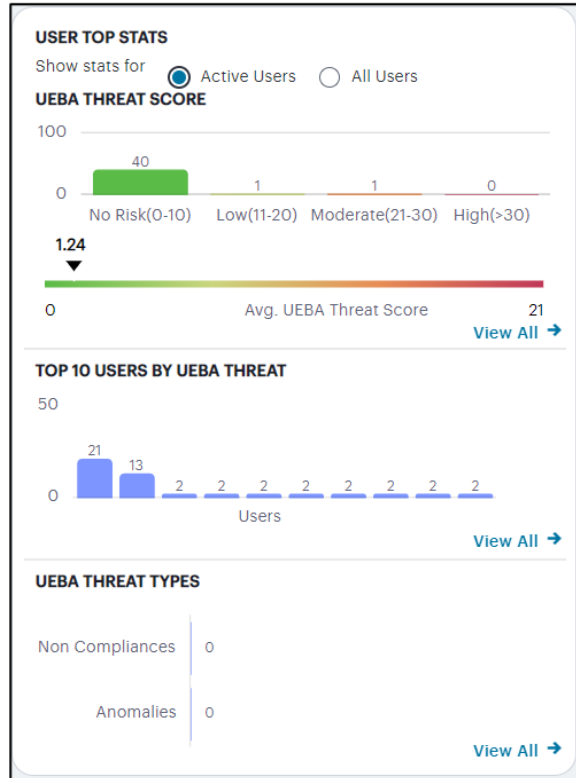
- **Active Gateways:** The total number of active Ivanti Connect Secure Gateways.
- **Active Users:** The number of active users during the selected time period.
- **Active Devices:** The number of active devices.
- **Active Sessions:** The number of active sessions.
- **Active Applications:** The number of in-use applications.
- **Non-Compliances:** The number of non-compliant sessions (full/partial non-compliant) across all gateways in the last 24 hours.
- **Auth failures:** The number of authentication failures in the last 24 hours.
- **Active Anomalies:** The number of anomalies detected by Ivanti Connect Secure in the last 30 days.

By default, the data presented in the ribbon corresponds to the current day, since midnight GMT. The number of hours over which the data applies is displayed in each category. To change the time period, use the filter bar (see "[Ivanti Connect Secure Gateway Analytics](#)" on page 38.)



## Viewing a Summary of UEBA Threat Scores for your Users

On the **Insights > Users** page, the *User Top Stats* panel displays information concerning UEBA threat across your user base:



The User Top Stats contains:

- **Active Users** tab to view user stats of the active users.
- **All Users** tab to view user stats that include users logged in for the last 30 days.

The panel provides:

- A breakdown of UEBA threat by user.
- The average UEBA threat score across all users.
- The top-10 users scoring highest for UEBA threat. It also shows the UEBA threat score threshold set, to terminate the user sessions with applicable rule on reaching the permissible limit.
- A break-down of UEBA threat types.
- The policies with highest non-compliance.

A user's UEBA Threat score is calculated from a combination of:

- Application access attempts originating from anomalous geographic locations.
- Non-compliant user devices that attempted to access your applications.

Each additional incident increments a user's overall UEBA Threat score.

The *No. of users* chart provides a visual indication of the number of users that fall into each of the UEBA Threat categories. These categories are shown as a range of UEBA Threat scores and number of users. The upper and lower bands for each category are shown in brackets. The categories are:

- No risk (0-10)
- Low (11-20)
- Moderate (21-30)
- High (>31)



Where a particular threat category matches no users for the selected time period, that category label is not shown.

---

Below this chart, Ivanti Connect Secure displays the **Average UEBA Threat Score** for all users on a scale between zero UEBA Threat and the highest UEBA Threat score measured at the end of the current time period.



The maximum value shown in the chart corresponds to the highest UEBA Threat score for all users as they stand at the end of the time period, not the highest they have been within that period.

---

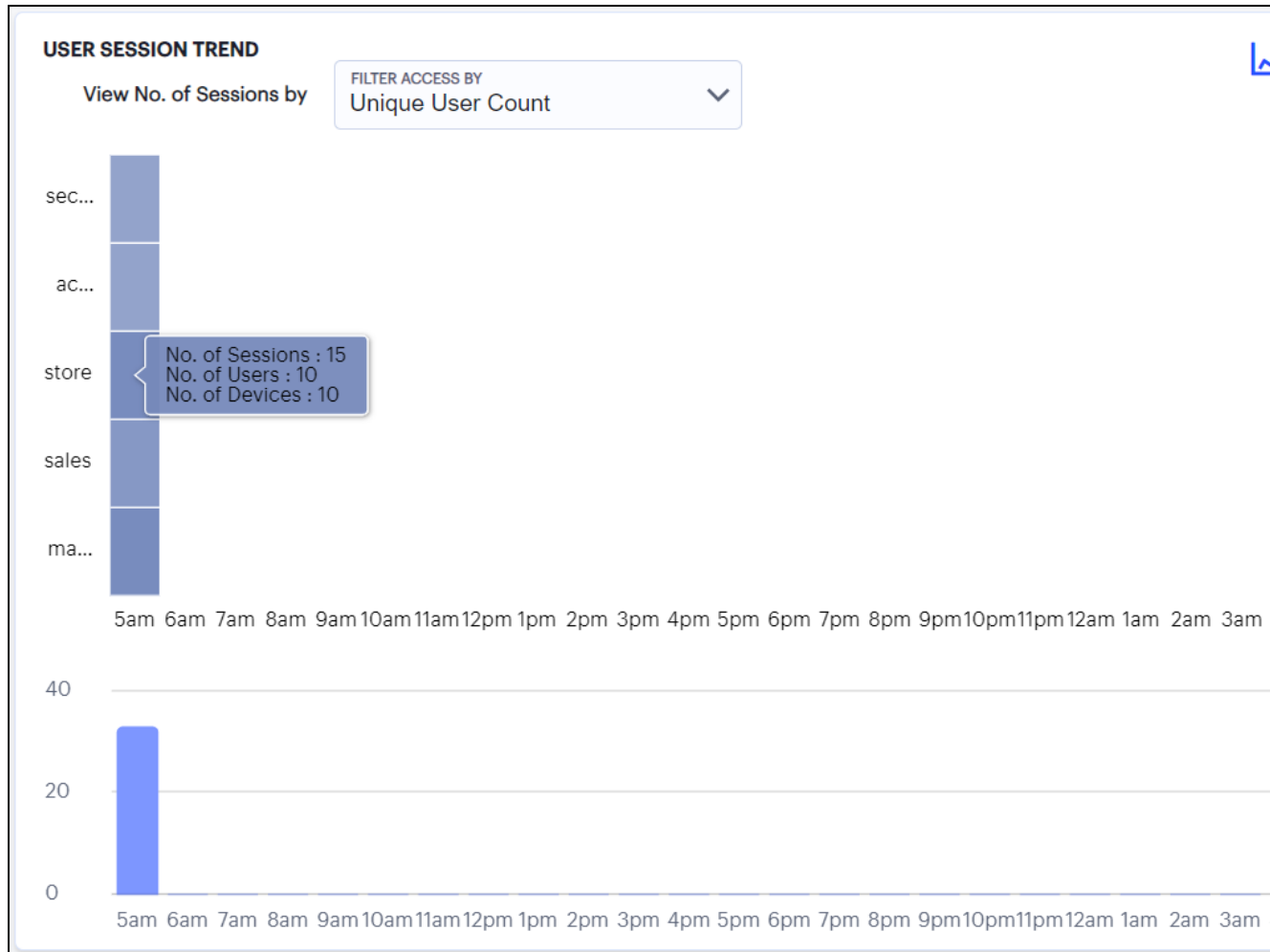
The *Top 10 Users by UEBA Threat Score* chart shows the top-10 users with the highest cumulative UEBA Threat score across the selected time period. Hover your pointer over each bar in the chart to see the name of the corresponding user.

The *UEBA Threat Type* chart provides a breakdown of all geolocation anomalies and non-compliances that occurred during the selected time period.

The *Top Policies with Non-compliances* chart shows the device policies that recorded the highest number of non-compliances for the active users. Hover your pointer over each bar in the chart to see the name of the corresponding policy.

## Viewing the Users Session Trend

Ivanti Connect Secure uses this section to show user sessions trends that occurred during the period:



You can choose to display this information through bar charts (as shown), or in a Sankey chart. Use the toggle icon at the top-right to select the required view:



To expand the current view, click the Full Screen icon:

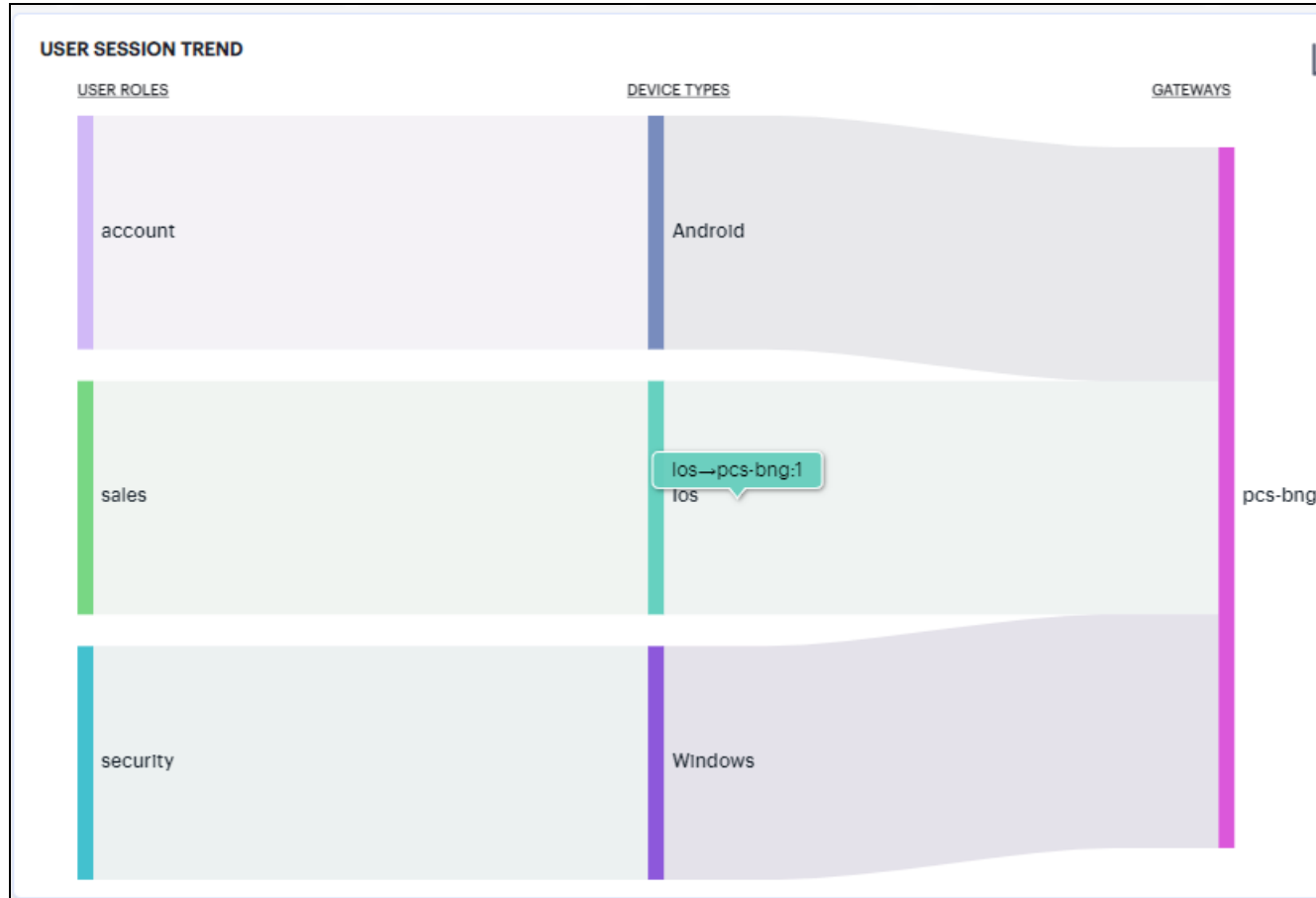


In bar chart view, the bar chart shows one of following data types, selected using the drop-down control:

- Unique User Count
- Unique Session Count

- Unique Device Count

In the Sankey chart view, Ivanti Connect Secure provides an alternate visualization of user sessions, showing directed flow between related objects.

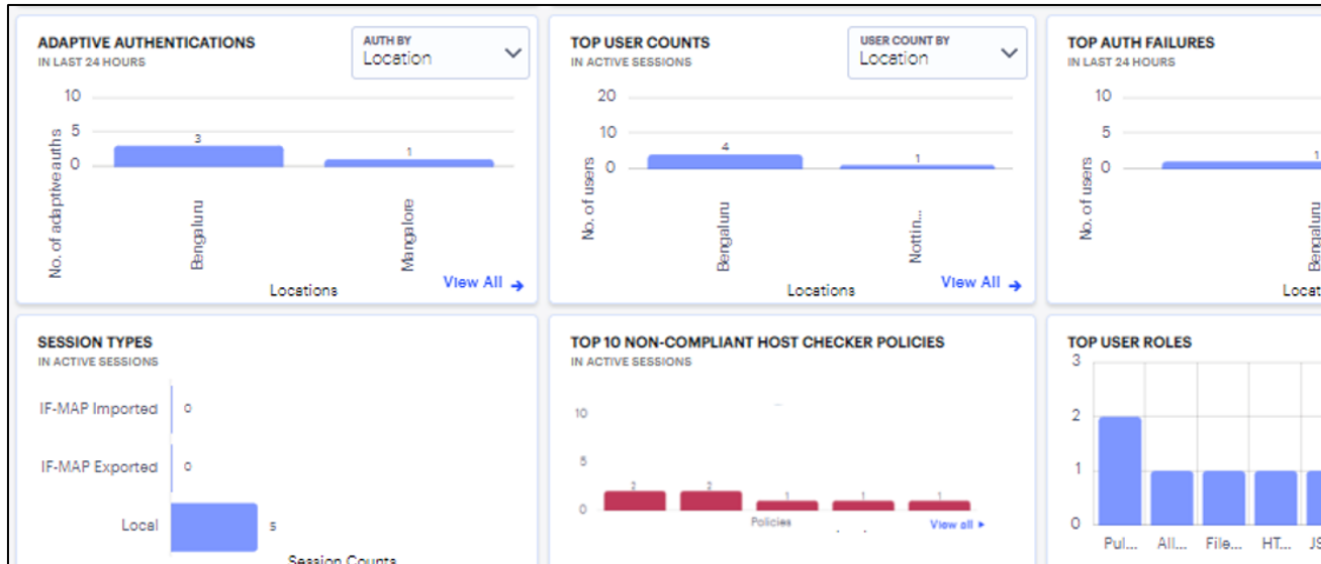


The chart maps **User Roles** > **Device Types** > **Gateways**. By hovering your pointer over a flow of interest, Ivanti Connect Secure displays a tooltip confirming the scale of the activity between the two objects connected by the flow.

To focus the display on a specific flow, or to identify related objects that interact with this flow, click the chart at a point of interest. Ivanti Connect Secure provides highlighting to all flows that pass through the point selected.

## Viewing the Users Activity Charts

Ivanti Connect Secure provides charts to represent user activity:



- **Adaptive Authentications:** a chart of adaptive authentication in the last 24 hours based on Location, Realm, or Reason.
- **Top User Counts:** a chart showing users that accrued the highest number of successful accesses based on Location, Auth Server, Gateway, Device Type or Session.
- **Top Auth Failures:** a chart of authentication failures observed based on the Location, Auth Server, or Gateway.
- **Session Types:** a chart showing number of Imported IF-MAP sessions, Exported IF-MAP sessions and Local sessions.
- **Top 10 Non-Compliant Host Checker Policies:** a chart showing the top 10 host checker policies that recorded the highest number of non-compliances.
- **Top User Roles:** a chart showing the totals for the number of user roles such as marketing, sales, account, security, store.

Click the **View All** link that provides access to a detailed view showing logs for the corresponding chart.

In the detailed log page:

- Double-click on any log to view additional details of that log in the Info Panel to the right.
- Use the Group by option and select the field type to view the table information in groups. Then click > to view the logs in that group.





- Use the Advanced Filter icon to view logs based on the pre-defined filter, operator and value. To learn more, see "[Filtering the Logs](#)" on page 108.

## Reviewing Application Usage

Applications are defined primarily by the URI you use to access them, and can be fully *defined* (for example, a complete URI denoting a specific application at a location).

Ivanti Connect Secure provides views for your application usage metrics for all defined applications in your Ivanti Connect Secure deployment..

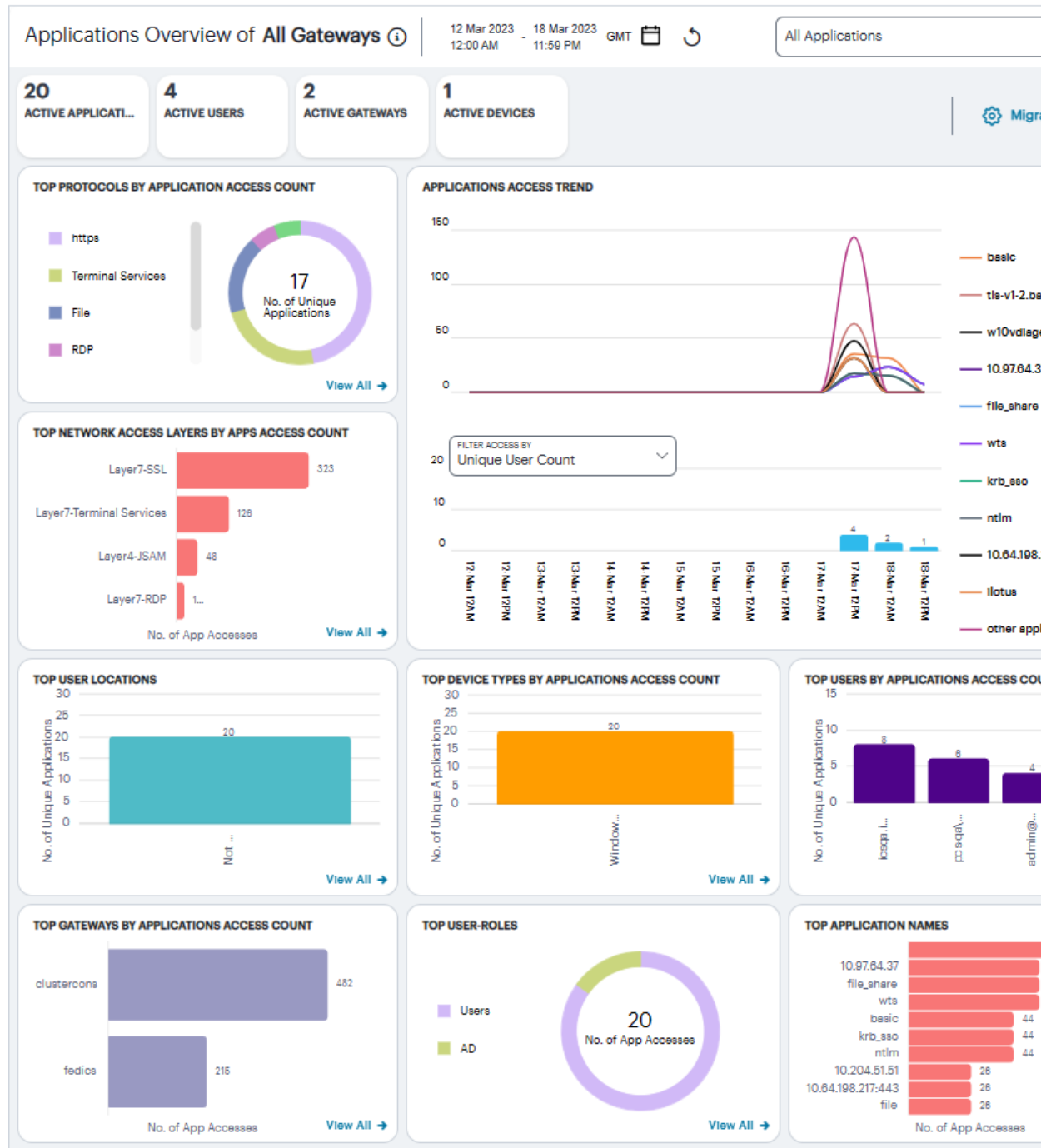
To view application usage:

1. Log in to the Ivanti Neurons for Secure Access Admin portal as a Tenant Admin, and select Ivanti Connect Secure from the Gateway Switcher. See "[Logging in to Ivanti Neurons for Secure Access](#)" on page 12.

The *Network Overview* page appears.

- From the Ivanti Connect Secure menu, click the **Insights** icon, then select **Applications**.

The *Applications Overview* page appears, showing the selected metrics.



## Understanding the Display

The Applications page contains the following components:

- **Filter bar**, allowing the selection of active or historic data, and filtering by Gateway. For details, see ["Using the Applications Filter Bar" below](#).
- **Summary ribbon**, showing details of the selected gateway. For more details, see ["Using the Applications Summary Ribbon" on the next page](#)
- **Top Protocols by Application Access Count**, showing number of top protocols that attracted the greatest number of application accesses. For more details, see ["Viewing Top Protocols by Application Access" on the next page](#).
- **Applications Access Trend**, showing applications accesses trends that occurred over a period. For more details, see ["Viewing Applications Access Trend" on page 81](#).
- **Activity charts**, showing application access details of *Top Network Access Layers, Top User Locations, Top Device Types, Top Users, Top Gateways, Top User Roles, and Top Application Names*. For more details, see ["Viewing the Activity Charts" on page 84](#)

Each chart on this page includes a **View All** link. This link provides access to a detail view showing logs for the corresponding chart. For example:

## Using the Applications Filter Bar

Ivanti Connect Secure uses the top part of the display on all **Insights** data analysis pages to show the current page title, the default time period, and options to:

- Manually refresh the data
- Select the date and time period for which data is displayed.
- Set a filter for a specific Ivanti Connect Secure Gateway
- Select Layer 3 and Layer 7 Applications



L3 user sessions support viewing both IPv4 and IPv6 applications.

---

By default, analytics data on this page and others is shown for the last hour or current day. To manually refresh the data, click the circular arrow:



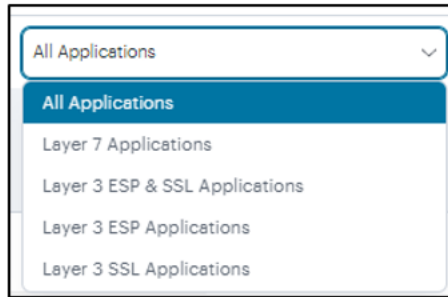
Ivanti Connect Secure provides the ability to show focused metrics for a specific Ivanti Connect Secure Gateway. To select a specific gateway, use the filter icon:



In the Filter panel, from the drop-down list select the required gateway and click **Apply**.

To clear the selection, click **Clear All**.

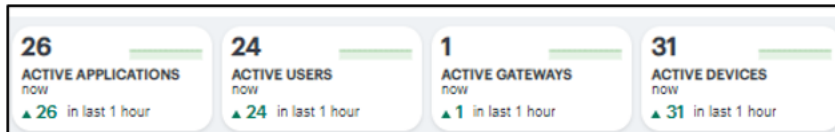
Ivanti Connect Secure provides the ability to show focused metrics for Layer 3 and Layer 7 applications. By default, data on this page shows for **All Applications**. Select the required application access from the list to view the corresponding charts and trends in the Applications page. Within Layer 3 Applications, you can choose ESP or SSL applications.



## Using the Applications Summary Ribbon

The Summary ribbon provides the following metrics:

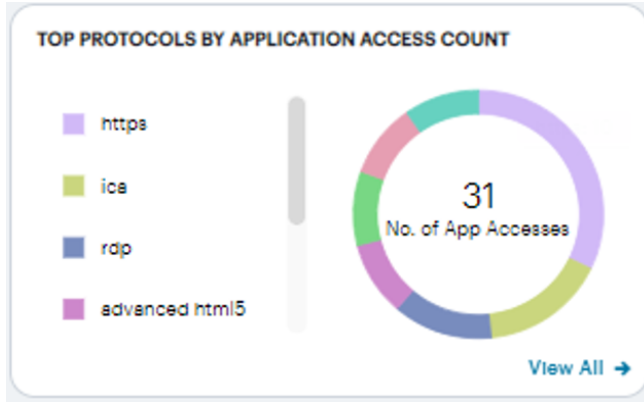
- **Active Applications:** The total number of active applications defined on the Ivanti Connect Secure.
- **Active Users:** The number of active users.
- **Active Gateways:** The number of active Gateways.
- **Active Devices:** The number of active devices.



## Viewing Top Protocols by Application Access

The **Top Protocols by Application Access Count** radar chart shows the top protocols that attracted the greatest number of application accesses during the period (for example, Web, RDP, SSH or Bookmark).

Hover your pointer over each bar to display a tooltip of the protocol type and number of accesses recorded.



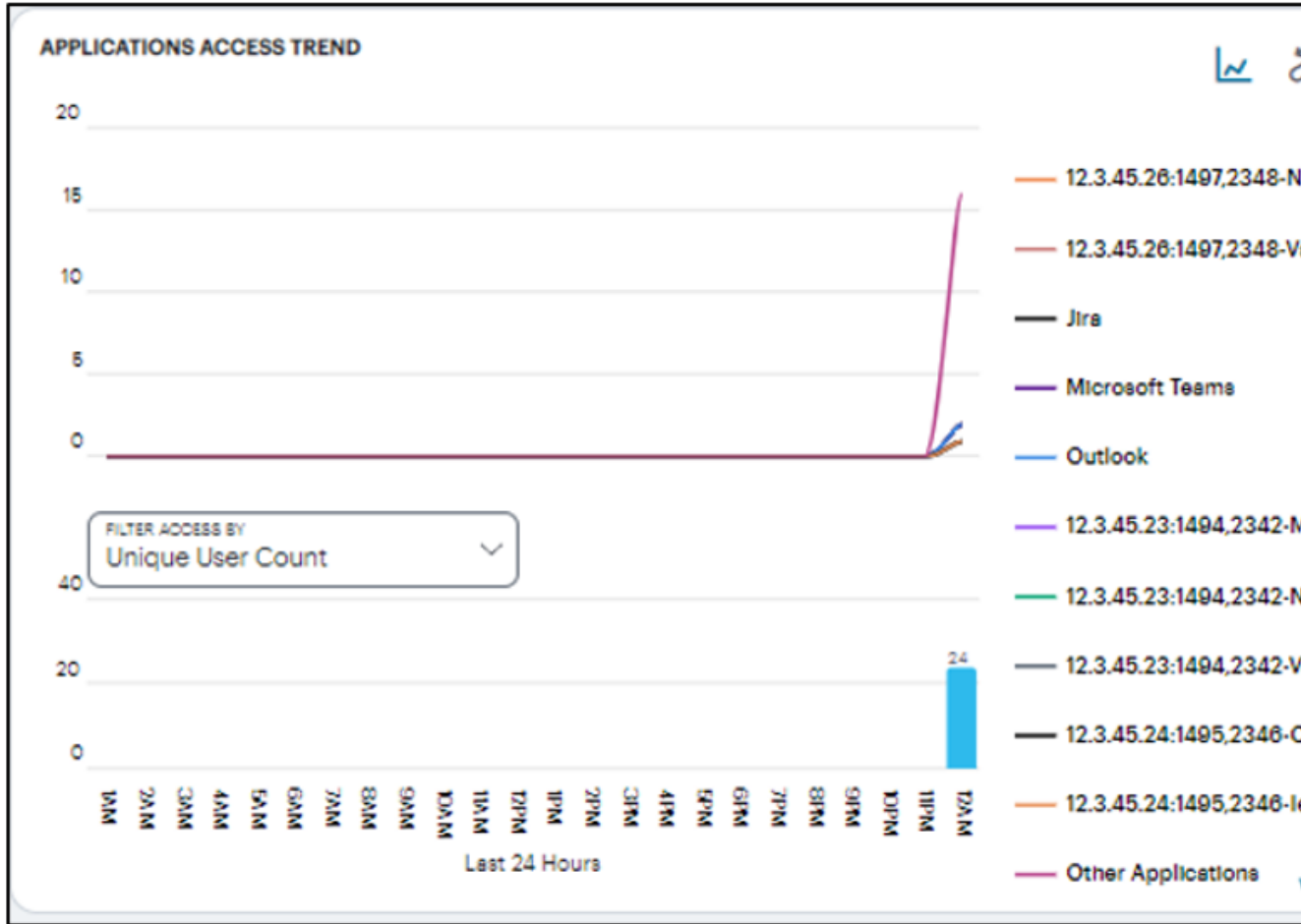
To view a detailed list of events that contributed to the totals, click **View all**.

Top Protocols by Application Access Count of All Gateways

APPLICATION PROTOCOL GROUP	NO. OF USERS	NO. OF SESSION IDS	NO. OF SOURCE IPS	DEVICE OS TYPES	NO. OF DEVICE LOCATION CITIES	NO. OF ROLE NAMES	NO. OF APPLICATIONS	APP ACCESS MODE	NO. OF APP HOSTS	NO. OF APP IPS	NO. OF APP LOCATION CITIES	NO. OF GATEWAYS	DEVICE TYPES	APPLICATION TYPES		
https (2)	2	2	2	Andro..	2	2	2	Layer...	2	0	1	1	samsu..	web		
DATE	TIME (HDT)	USER NAME	SESSIO ID	SOURC IP	DEVIC OS TYPE	DEVIC LOCATI CITY	USER ROLE	APPLIC NAME	APPLIC PROTO	APP ACCESS MODE	APP HOST	APP IP	APP LOCATI CITY	GATEWAY NAME	DEVICE TYPE	APPLICATION TYPE
02 Sep 2022	12:09:04 A...	alexa	68bc	65.16	Andr	Unite	mark	Micrk	https	Layer	acco	Not C	pcs-coa		Sams	W
02 Sep 2022	12:09:04 A...	ethar	e497	92.27	Wind	Chel	acco	Offic	https	Layer	acco	Not C	pcs-coa		Wind	W

## Viewing Applications Access Trend

The **Applications Access Trend** panel shows application access trends that occurred during the period. Choose to display this information through line and bar charts, or in a Sankey chart.



Use the toggle icon at the top-right to select the required view. Also at the top-right, use the full-screen icon to toggle the current view between normal and full screen.

- In line/bar chart view:

The display is split into two charts:

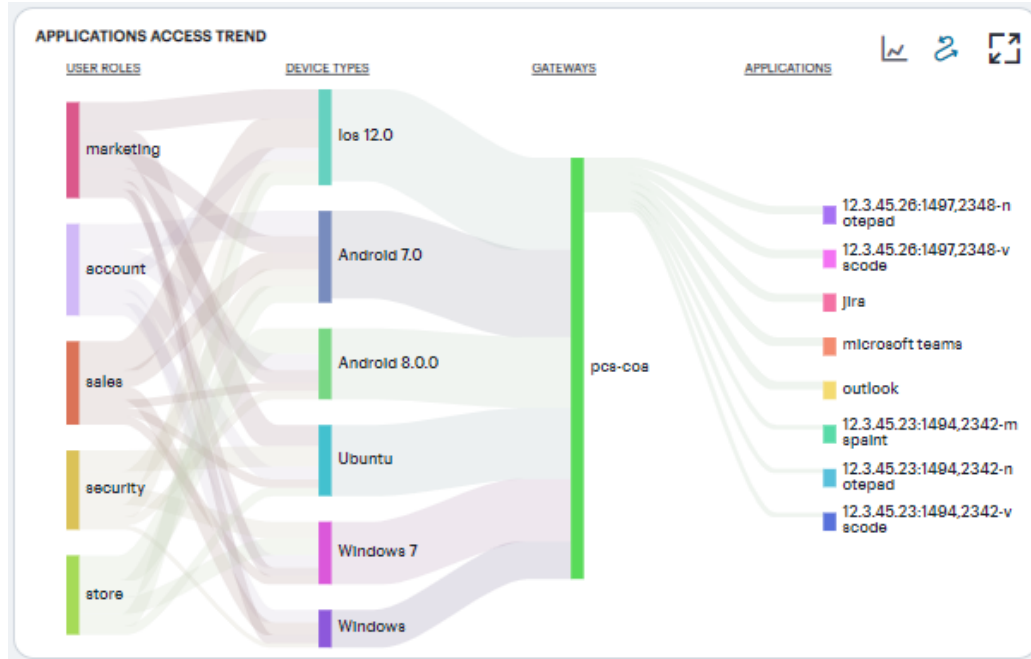
- A line chart showing the number of accesses for the top-10 applications during each hourly period of the day
- A bar chart showing one of four data types, selected using the **Filter Access By** drop-down control:
  - **Unique User Count:** Shows a count of unique user activity identified during each hourly period.
  - **Unique Device Type Count:** Shows a count of unique device types identified during each hourly period.
  - **Unique Location Count:** Shows a count of activity from unique user locations identified during each hourly period.
  - **Unique User Group Count:** Shows a count of activity from unique user groups identified during each hourly period.

In this chart, you can:

- Hover your pointer over each hourly interval to view a tooltip showing the corresponding data totals.
- Click and drag a select box across a shorter time period to zoom in on a narrower time window. To return to the full 24 hour period, click the *zoom out* icon.
- Click the corresponding line in the graph to view only the data for that specific user group.

## Using the Sankey Chart View

The Sankey chart provides an alternate visualization of application access activity, showing directed flow between related objects. The width of each stream in the flow is proportional to the utilization of the object the flow passes through, allowing an administrator to view significant usage and relationships across your user groups and application infrastructure.



Hover your pointer over a flow of interest to display a tooltip confirming the scale of the activity between the two objects connected by the flow.

To focus the display on a specific flow, or to identify related objects that interact with this flow, click the chart at a point of interest. Ivanti Connect Secure provides highlighting to all flows that pass through the point selected.

## Viewing the Activity Charts

The **Activity Charts** on this page represent top application access totals in the following categories:

- **Top Network Access Layers by Apps Access Count:** a bar chart showing the count of Layer 3 and Layer 7 applications accesses.
- **Top User Locations:** a bar chart showing the count of application accesses made from various user locations.
- **Top Device Types by Applications Access Count:** a bar chart showing a count of number of applications accesses made from various devices.
- **Top Users by Applications Access Count:** a bar chart showing a count of number of applications accesses made by the users.



- **Top Gateways by Applications Access Count:** a bar chart showing a count of number of applications accesses made from Gateways.
- **Top User Roles:** a bar chart showing the count of application accesses made by various user roles (example: Marketing, Sales, Accounts, Security).
- **Top Application Names:** a bar chart showing the count of application accesses made to various applications (example: Microsoft Teams, Outlook).

Hover your pointer over a particular element to view a tooltip showing the label and total.

Use the Filter to view active access count by Gateway, Device Type, User Name, User Role, or User Location City.

Click the **View All** link that provides access to a detailed view showing logs for the corresponding chart.

In the detailed log page:

- Double-click on any log to view additional details of that log in the Info Panel to the right.

**TOP USER-ROLES**  
5 log entry found

ROLE NAMES GROUP ↑	NO. OF USERS ↑	NO. OF SESSION IDS ↑	NO. OF SOURCE IPS ↑	DEVICE OS TYPES	NO. OF DEVICE LOCATION CITIES	NO. OF APPLICATI...	NO. OF APPLICATIO...	APP ACCESS MODE	NO. OF APP HOSTS ↑	NO. OF APP IPS ↑
> store (6)	6	6	6	Andro...	6	5	5	Layer...	5	4
> security (6)	6	6	6	Ubunt..	6	5	4	Layer...	5	4
> sales (5)	5	5	5	iOS 1...	4	5	4	Layer...	5	4
∨ marketing (7)	7	7	7	Ubunt..	6	6	4	Layer...	5	3

DATE ↑	TIME (HDT) ↑	USER NAME	SESSIO ID	SOURC IP	DEVICE OS TYPE	DEVICE LOCATI CITY	USER ROLE	APPLIC NAME	APPLIC PROTO	APP ACCESS MODE	APP HOST	APP IP	APP LOC CIT
04 Sep 2022	08:29:54 P...	josial	3ee2	65.16	Ubur	Unite	mark	www	ESP	Layer	www	65.16	Un
04 Sep 2022	08:29:44 P...	grays	a42a	113.1	iOS 1	Hiros	mark	12.3.	ICA	Layer	12.3.	12.3.	Un
04 Sep 2022	08:29:44 P...	julian	5e8d	113.1	Ubur	Hyde	mark	12.3.	Adva	Layer	12.3.	12.3.	Un

**TOP USER-ROLES**  
JOSIAH  
SUN, 04 SEP 2022 08:29:54 PM HD

APPLICATION ACCESS MODE  
**Layer3-ESP**

APPLICATION HOST  
**www.facebook.com**

APPLICATION IP  
**65.162.195.163**

APPLICATION LOCATION CITY  
**United States**

APPLICATION NAME  
**www.facebook.com**

APPLICATION PROTOCOL  
**ESP**

APPLICATION TYPE  
**Layer3-ESP**

APPLICATION URL  
**https://www.facebook.com**

DEVICE LOCATION CITY  
**United States**

DEVICE OS TYPE  
**Ubuntu**

DEVICE TYPE  
**Linux**

GATEWAY NAME

- Double-click on any log to view additional details of that log in the Info Panel to the right.
- Use the Group by option and select the field type to view the table information in groups. Then click > to view the logs in that group.

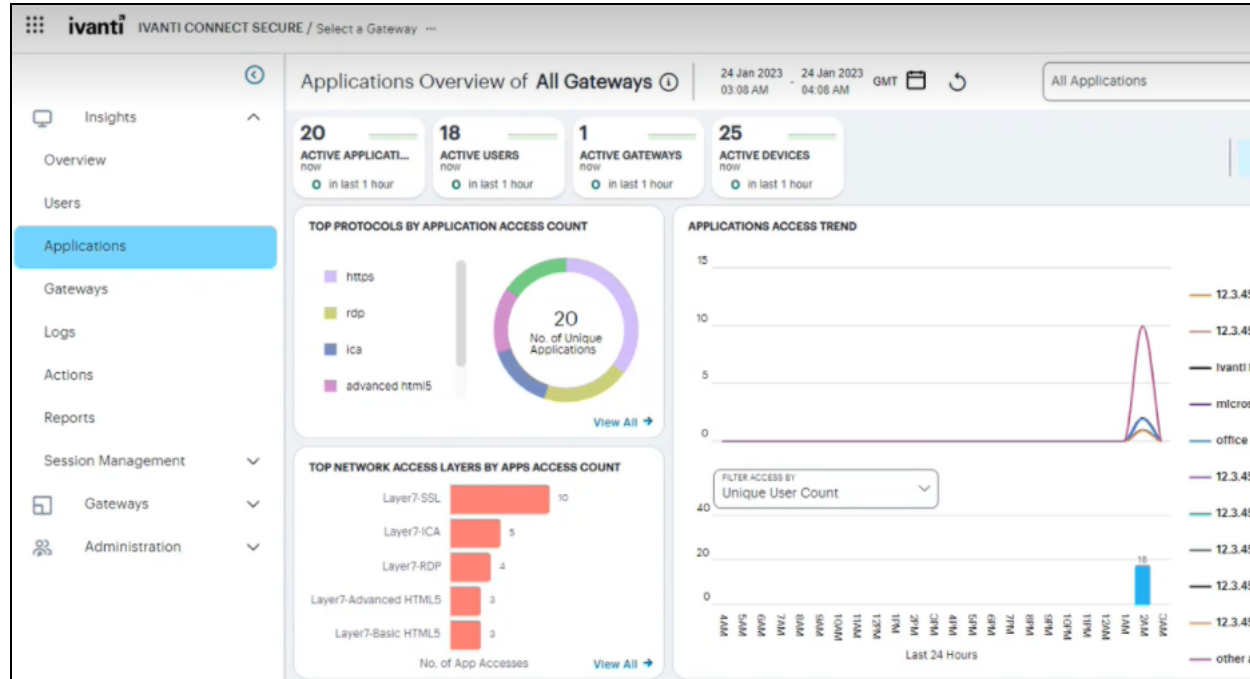


- Use the Advanced Filter icon to view logs based on the pre-defined filter, operator and value. To learn more, see ["Filtering the Logs" on page 108.](#)

## Configuring nZTA Policy to an ICS Application

Administrators can now configure ICS application with nZTA Secure Access Policy from the nSA-ICS Applications page. This feature requires nZTA license. The Secure Access Policy defines how end users can connect to nSA to access applications.

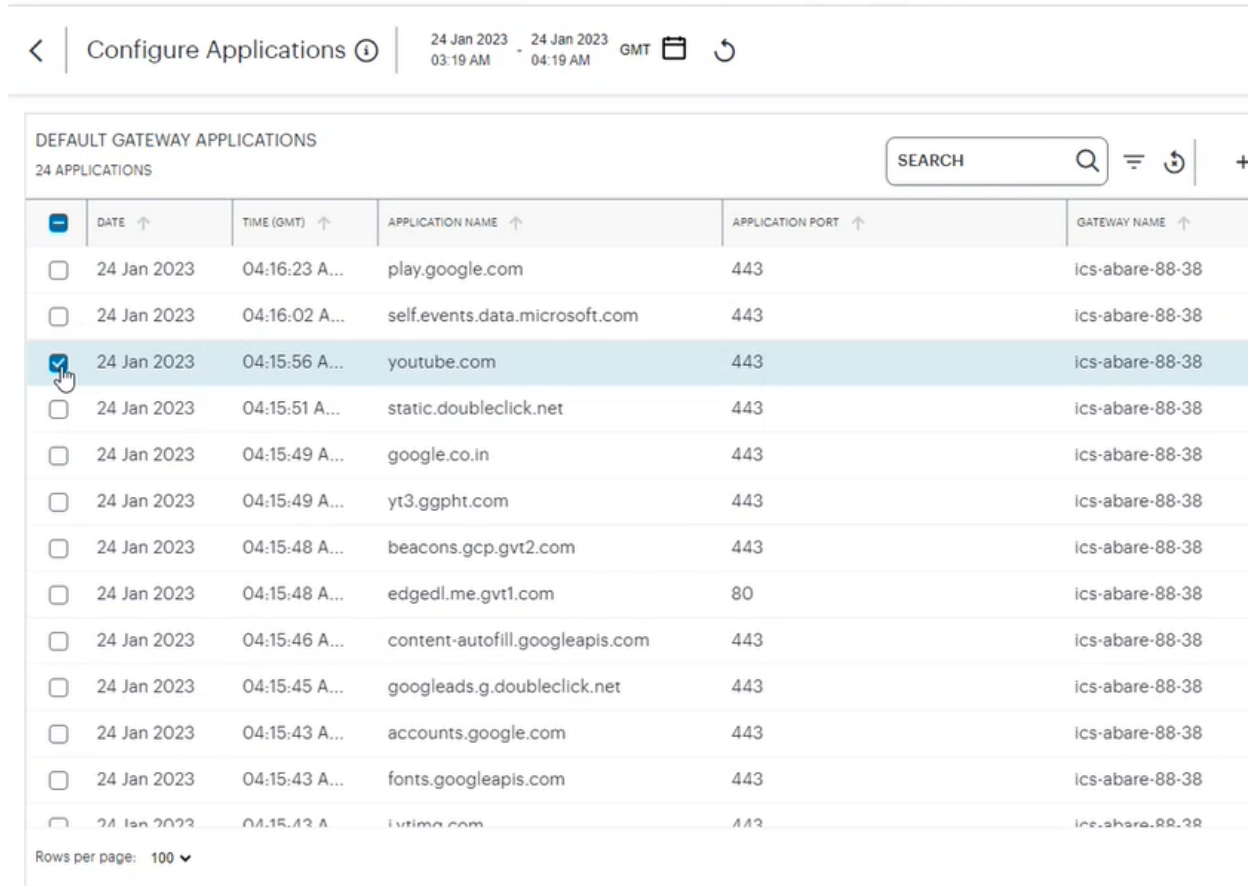
A Configure button is provided in the ICS Applications page to configure nZTA Secure Access Policy to an ICS application.



To configure nZTA policy to the ICS application:

1. In the ICS applications page, click **Configure**.

The *Configure Applications* page is displayed showing a list of accessed applications behind the ICS gateway.



Configure Applications ⓘ 24 Jan 2023 03:19 AM - 24 Jan 2023 04:19 AM GMT 📅 ↻

DEFAULT GATEWAY APPLICATIONS  
24 APPLICATIONS

SEARCH 🔍 ⌵ ⌲ +

<input type="checkbox"/>	DATE ↑	TIME (GMT) ↑	APPLICATION NAME ↑	APPLICATION PORT ↑	GATEWAY NAME ↑
<input type="checkbox"/>	24 Jan 2023	04:16:23 A...	play.google.com	443	ics-abare-88-38
<input type="checkbox"/>	24 Jan 2023	04:16:02 A...	self.events.data.microsoft.com	443	ics-abare-88-38
<input checked="" type="checkbox"/>	24 Jan 2023	04:15:56 A...	youtube.com	443	ics-abare-88-38
<input type="checkbox"/>	24 Jan 2023	04:15:51 A...	static.doubleclick.net	443	ics-abare-88-38
<input type="checkbox"/>	24 Jan 2023	04:15:49 A...	google.co.in	443	ics-abare-88-38
<input type="checkbox"/>	24 Jan 2023	04:15:49 A...	yt3.ggpht.com	443	ics-abare-88-38
<input type="checkbox"/>	24 Jan 2023	04:15:48 A...	beacons.gcp.gvt2.com	443	ics-abare-88-38
<input type="checkbox"/>	24 Jan 2023	04:15:48 A...	edgedl.me.gvt1.com	80	ics-abare-88-38
<input type="checkbox"/>	24 Jan 2023	04:15:46 A...	content-autofill.googleapis.com	443	ics-abare-88-38
<input type="checkbox"/>	24 Jan 2023	04:15:45 A...	googleads.g.doubleclick.net	443	ics-abare-88-38
<input type="checkbox"/>	24 Jan 2023	04:15:43 A...	accounts.google.com	443	ics-abare-88-38
<input type="checkbox"/>	24 Jan 2023	04:15:43 A...	fonts.googleapis.com	443	ics-abare-88-38
<input type="checkbox"/>	24 Jan 2023	04:15:43 A...	ytimg.com	443	ics-abare-88-38

Rows per page: 100 ▼

2. In the search box provided, start typing the application name. ICS auto-completes any matching application name.

3. Select an application from the list and click **Create Policy** to create a nZTA Policy.

The nZTA Create Secure Access Policy page is displayed. The Application Name, Application Detail and Description fields are pre-filled in the page.

**Create Secure Access Policy**

Create Secure Access Policy  
A Secure Access Policy defines how end users can connect to nSA to access applications.  
To create a Secure Access Policy, user has to define Application/Application Group, Device Policy, User Group and Gateway/Gateway Group/Gateway Selector  
Optional Selection: Device Policy

1 Applications/Application Groups 2 Device Policies 3 User Groups 4 Gateways/Gateway Groups/Gateway Selectors 5 Summary

APPLICATION NAME: youtube.com

APPLICATION DETAILS: youtube.com:443

DESCRIPTION: This application resource has been discovered by ICS and migrated to ZTA

Add Allowed Domains

Choose or Upload an Application icon

APPLICATION ICON: [Dropdown]

UPLOAD ICON: Max file size 1MB

Add Ons

Create bookmark for application  Enable Application Discovery

Add to Application Group

Save Application

4. Click **Save Application** and then click **Next**.
5. Define Device Policy, User Group and Gateway/Gateway Group/Gateway Selector. For details, see the section [Creating a Secure Access Policy](#).

## Reviewing Individual User Activity

This page shows activity relating to a specific user in your Ivanti Connect Secure deployment.

To access the User Overview page:

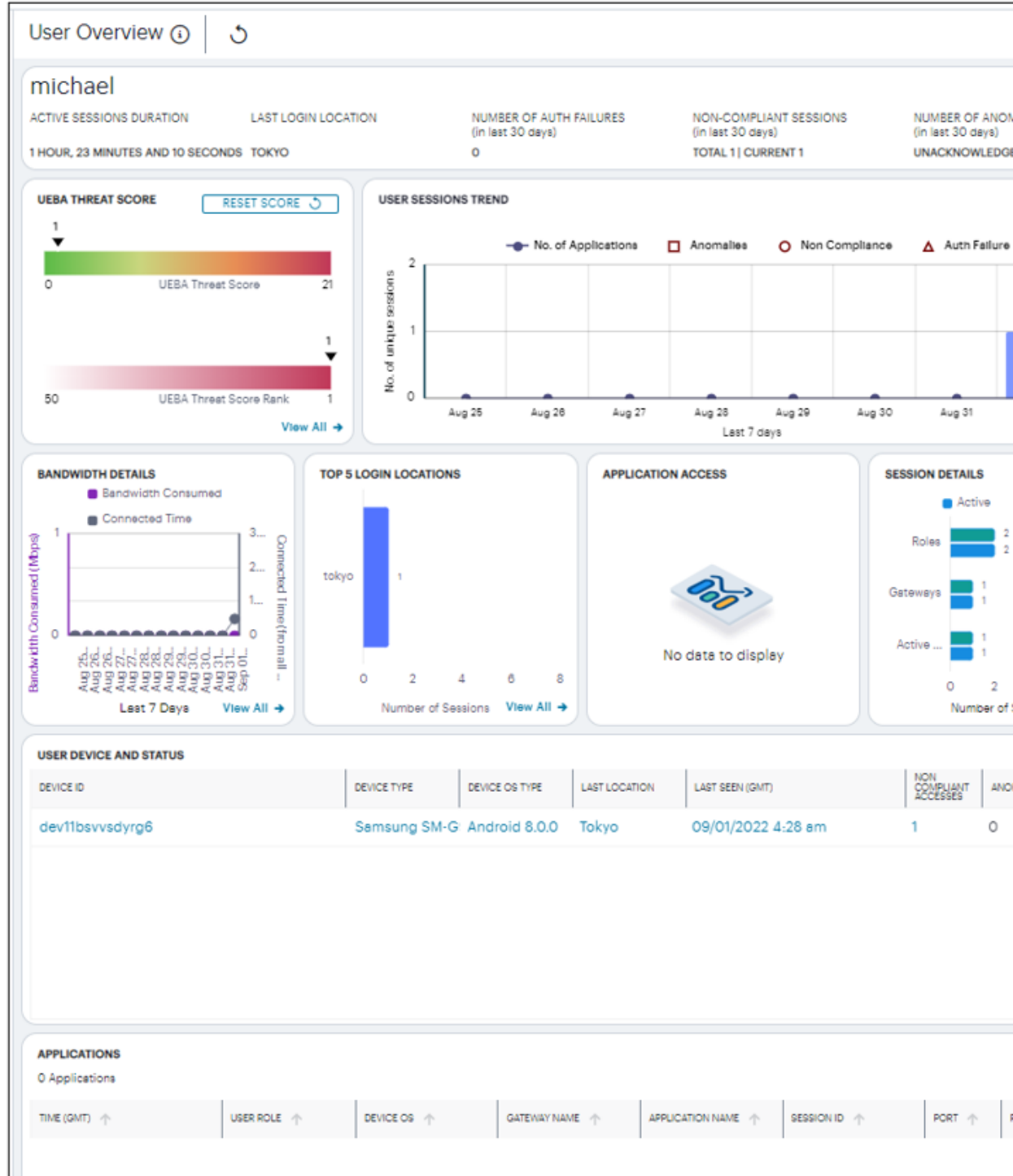
1. Log in to the Ivanti Neurons for Secure Access Admin portal as a Tenant Admin, and select **Ivanti Connect Secure** from the Gateway Switcher. See "[Logging in to Ivanti Neurons for Secure Access](#)" on page 12.

The Network Overview page appears by default.

2. Launch the User Overview page by doing one of the following:

- In the **Search** field on Filter bar, type the username for which you want to see the activities.
- In the Summary ribbon, click **Active Users**. In the Active Users panel displayed, click the username link for which you want to see the activities.
- Click the **View All** link in any of the charts. In the logs table displayed, click the username link for which you want to see the activities.

The User Overview page is displayed.



The page has the following areas:

- The Filter bar
- The Summary ribbon



- UEBA Threat Score and UEBA Threat Score Rank
- User Sessions trend
- Activity charts, showing charts for Bandwidth details, Last 5 Login Locations, Application Access and Session Details
- Table showing User Device and Status

Each chart on this page includes a View All link. This link provides access to a detail view showing logs for the corresponding chart.

## Using the Filter Bar

The top part of the page has the option to manually refresh the data.

## Viewing the User Summary Ribbon

The Summary ribbon provides the following metrics:

- **Active Sessions Duration** – All active sessions duration combined of the user, displayed in hours, minutes, and seconds.
- **Last Login Location** – The location from where the user has last logged in.
- **Number of Auth Failures** – The number of authentication failures for this user in the last 30 days.
- **Number of Non-Compliant Sessions** – The number of Non-compliant sessions (full/partial non-compliant) for this user across all gateways in the last 30 days.
- **Number of Anomalies** – The number of anomalies (acknowledged and unacknowledged) detected by Ivanti Connect Secure in the last 30 days.

ACTIVE SESSIONS DURATION	LAST LOGIN LOCATION	NUMBER OF AUTH FAILURES (in last 30 days)
22 MINUTES AND 49 SECONDS	UNITED STATES	0

## Viewing the UEBA Threat Score

The UEBA Threat Score panel contains:

- **UEBA Threat Score** – It is the cumulative value of number of anomalies and number of non-compliant sessions of this user. Click the **View All** link to see the log details in a table.
- **UEBA Threat Score Rank** – It is the UEBA Threat score position of this user based on the UEBA Threat scores of all the users in the tenant.
- **Reset Score** – As an administrator, you can reset the UEBA Threat score of this user.



A user's UEBA Threat score is calculated from a combination of geographic anomalies, non-compliance with device policies, and activity deviations.

---

## Viewing the User Session Trend

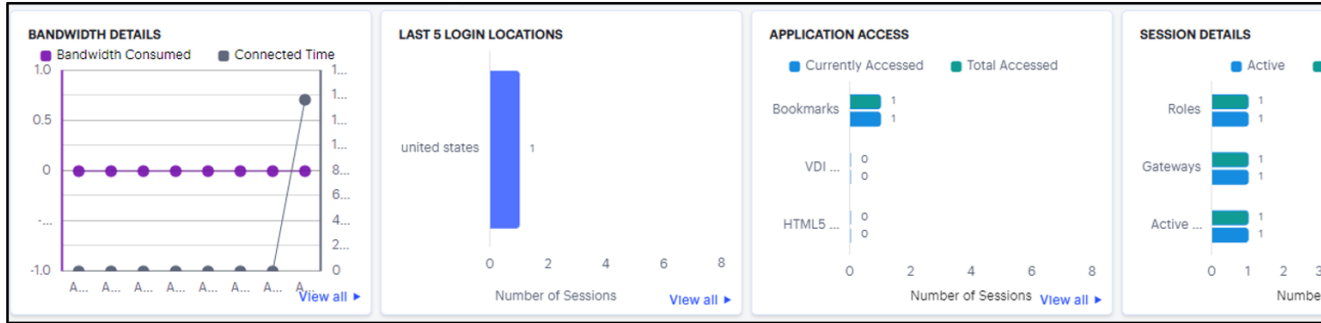
This section shows the following user activities per day that occurred during the last seven days. You can hover over the trend to view details.

- Number of unique Active Sessions
- Number of Applications accessed
- Number of Anomalies
- Number of Non-Compliance sessions
- Number of Auth Failures

## Viewing the User Activity Charts

This Ivanti Connect Secure provides charts to represent user activity:

- **Bandwidth Details** – shows the Bandwidth Consumed per day and Total Time connected per day by the user for the last seven days.
- **Last 5 Login Locations** – shows the last top five Login Locations accessed by the user in the last 30 days.
- **Application Access** – shows the number of Applications accessed by the user in the active sessions and in the last 30 days based on Bookmark, VDI and HTML5 access.
- **Session Details** – shows the number of Active Sessions and Total number of sessions in the last 30 days based on Role, Gateways and Active sessions



Click the **View All** link that provides access to a detailed view showing logs for the corresponding chart.

## Viewing the User Device and Status

This table provides the status of the devices used by the user for connecting to VPN in the last 30 days. Each row in the table includes Device ID and Device Type of a device among other user session details.

Click the link in each column to drill-down for additional details.

USER DEVICE AND STATUS					
DEVICE ID	DEVICE TYPE	LAST LOCATION	LAST SEEN	COMPLIANT ACCESSES	ANOMALIES
<a href="#">dev10vs4P6oBSIh</a>	<a href="#">Windows 7</a>	<a href="#">Hyderabad</a>	<a href="#">August 25, 2021 7:05 PM</a>	0	<a href="#">2</a>
<a href="#">dev9QxuDmgSTf8</a>	<a href="#">Ubuntu</a>	<a href="#">Fleet</a>	<a href="#">August 25, 2021 7:05 PM</a>	0	0

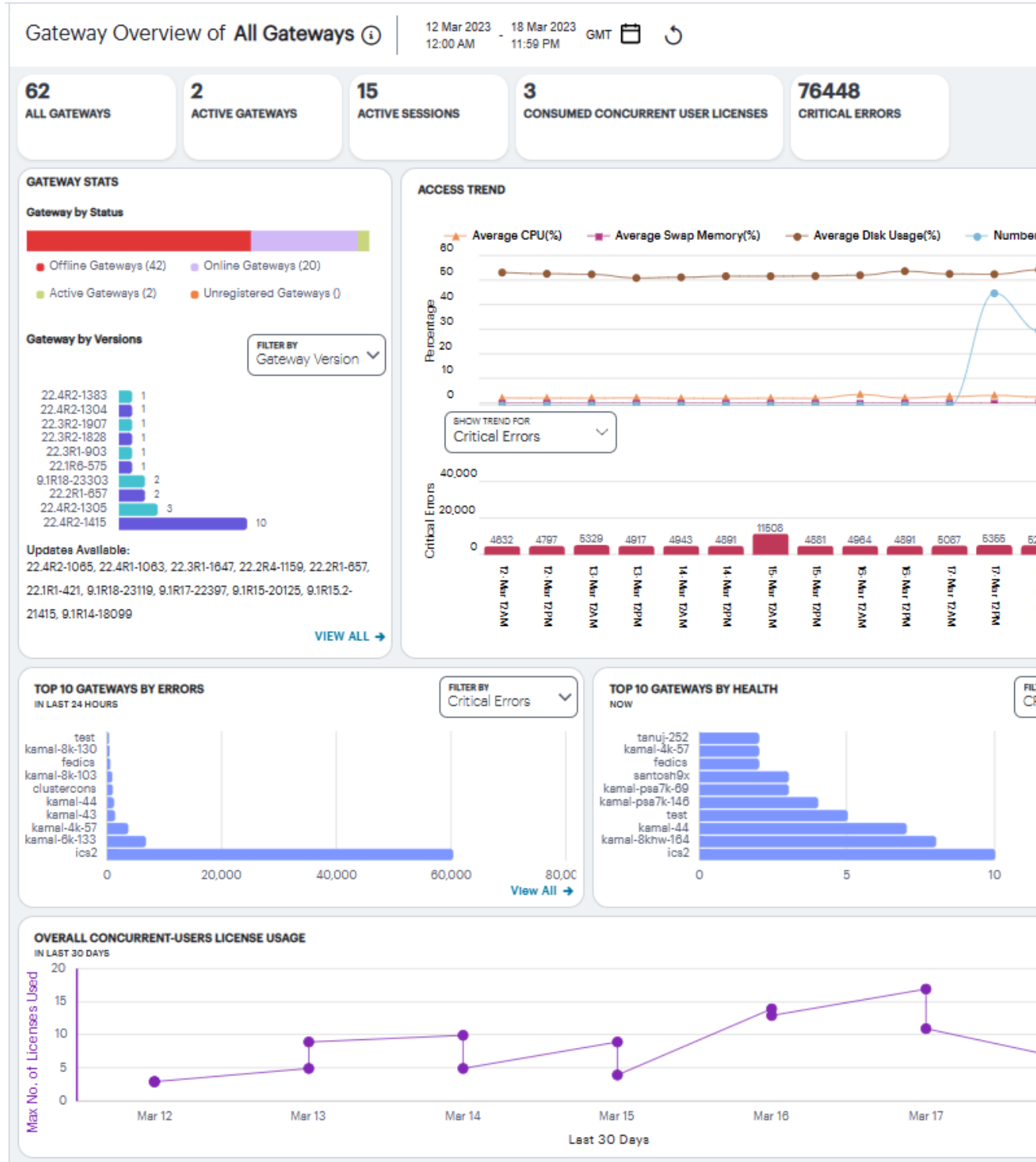
## Reviewing Gateways Status and Versions

The Gateway Overview page gives an overall detail of all the gateways that are registered in the tenant.

To access the Gateway Overview page:

1. Log in to the Ivanti Neurons for Secure Access Admin portal as a Tenant Admin, and select Ivanti Connect Secure from the Gateway Switcher. See "[Logging in to Ivanti Neurons for Secure Access on page 12.](#)"
2. From the Ivanti Connect Secure menu, click the **Insights** icon, then select **Gateways**.

The *Gateway Overview* page appears.



## Understanding the Display

The Gateway Overview page contains the following components:

- Summary ribbon
- Gateway Status and Versions
- Access Trend View
- Top 10 Gateways by Errors
- Top 10 Gateways by Health
- Overall Concurrent Users License Usage

Use the Filter bar, located on the top-right-corner of the page, that allows the selection of active or historic data, and filter by Gateway. For details, see ["Using the Filter Bar" on page 41](#).

Each chart on this page includes a **View All** link. This link provides access to a detail view showing logs for the corresponding chart.

## Viewing the Gateways Summary Ribbon

The Gateway Overview Summary panel gives the following details:

- **All Gateways:** Shows the total number of Ivanti Connect Secure Gateways that are registered with the tenant.
- **Active Gateways:** The total number of active gateways within the tenant.
- **Active Sessions:** The total number of active sessions across all the connected gateways within the tenant.
- **Consumed Concurrent User Licenses:** The total number of concurrent user licenses consumed across all the gateways.
- **Critical Errors:** The total number of critical errors in the last 24 hours across all the gateways. The trend shows the critical error occurrence in the last 24 hours. It also shows the number of errors increased or decreased in the last 24 hours.

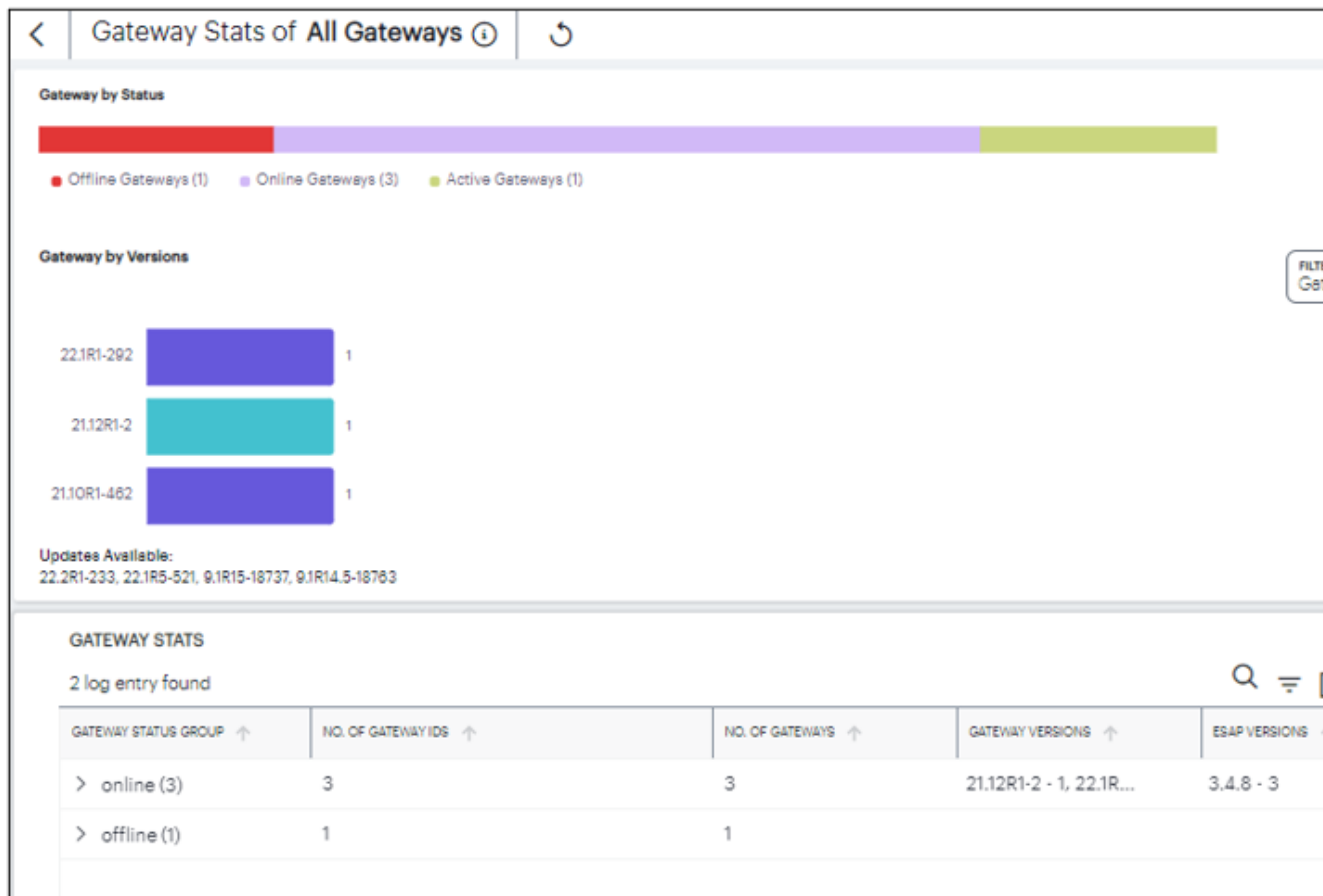
## Viewing the Gateways Status and Versions

The Gateways by status chart shows the distribution of gateways by their status:

- **Offline Gateways:** All gateways that are registered with the tenant, but not connected.
- **Online Gateways:** All gateways that are registered with the tenant and connected but are not running any sessions.
- **Active Gateways:** All gateways that have at least one active session.

The Gateway by versions chart shows the distribution of latest 10 gateway versions across all the gateways within the tenant. The Gateways by ESAP version chart shows the distribution of latest 10 ESAP versions across all the gateways within the tenant.

To view a detailed list of events that contributed to the totals, click **View All**.



## Viewing the Gateways Access Trend

Ivanti Connect Secure uses the Gateways Access Trend section to show:

- the hourly distribution of the number of logins, average CPU usage, average memory usage, average disk usage, average network throughput across all the gateways during the last 24 hours.
- the hourly distribution of critical errors across all the gateways during the last 24 hours.

You can check the trend for **Critical Errors** and **Throughput (MB)**.

To view a detailed list of events that contributed to the totals, click **View All**.

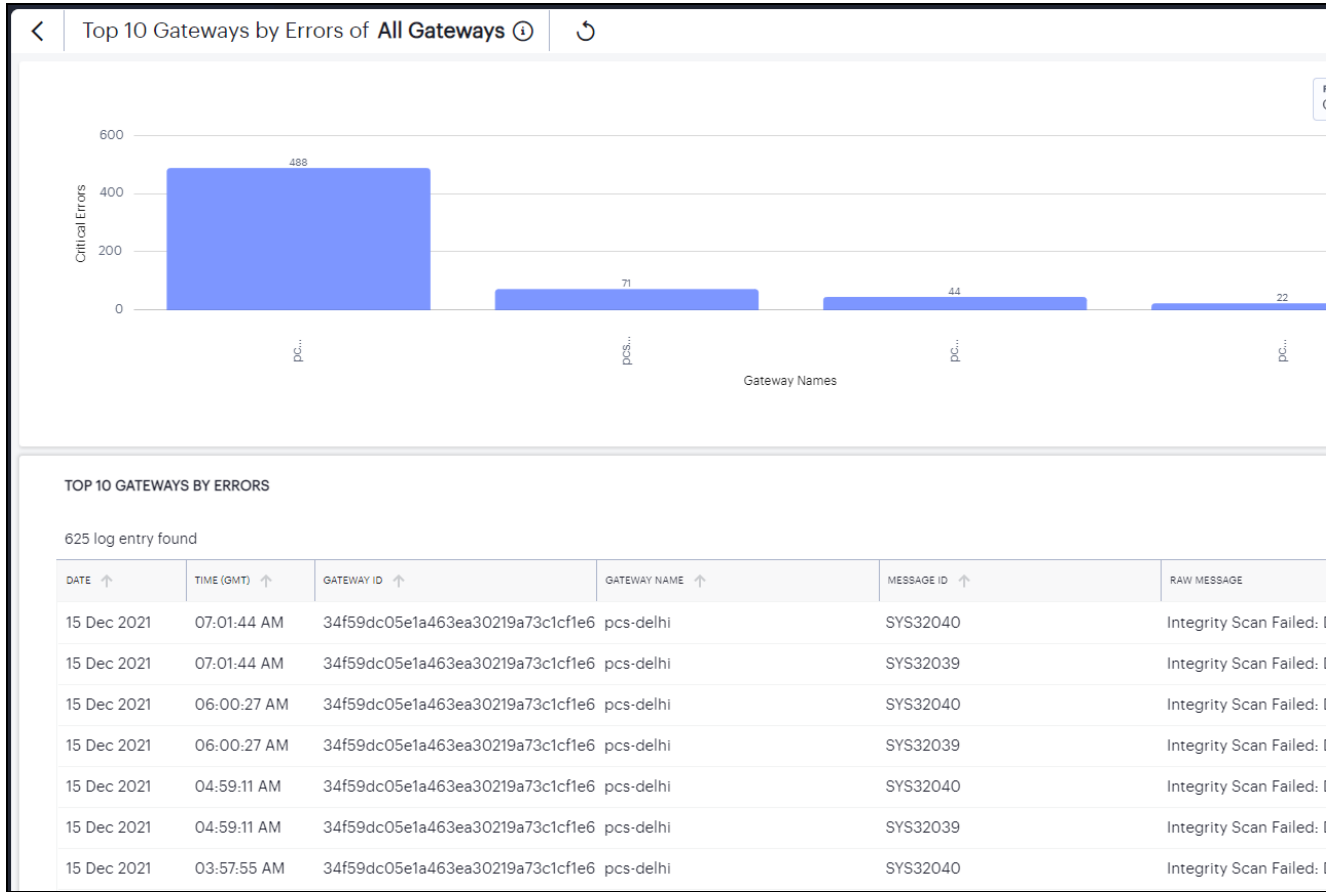


## Viewing the Top Gateway Activity Charts

Ivanti Connect Secure provides charts to show breakdown of Top 10 Gateways by Errors and Top 10 Gateways by Health.

The Gateways by Errors chart provides the total number of Critical Errors or Integrity Check Violations across top 10 gateways over the last 24 hours. Use the Filter drop-down to select the option from the list.

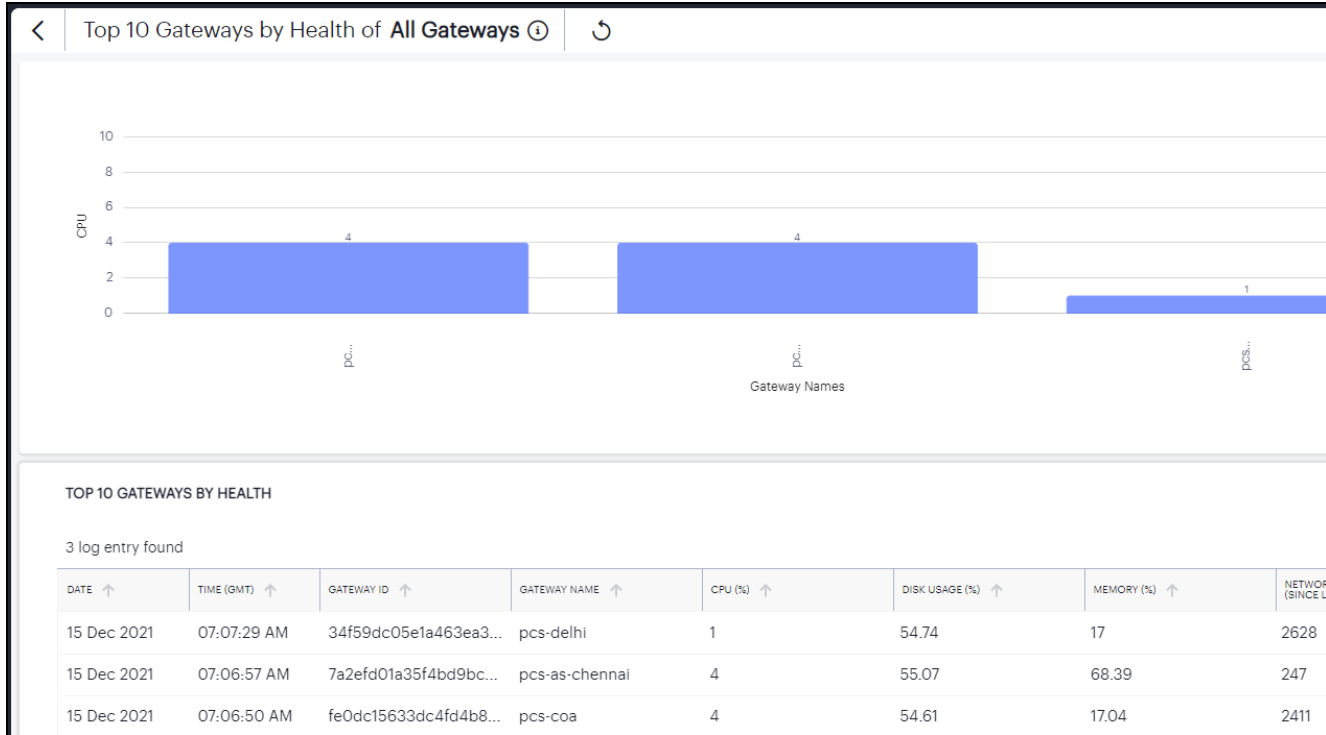
To view a detailed list of events that contributed to the totals, click **View All**.



The Gateways by Health chart shows the top 10 gateways that have high CPU usage, Memory usage, Disk usage, or Network throughput. Use the Filter drop-down to select the option from the list.

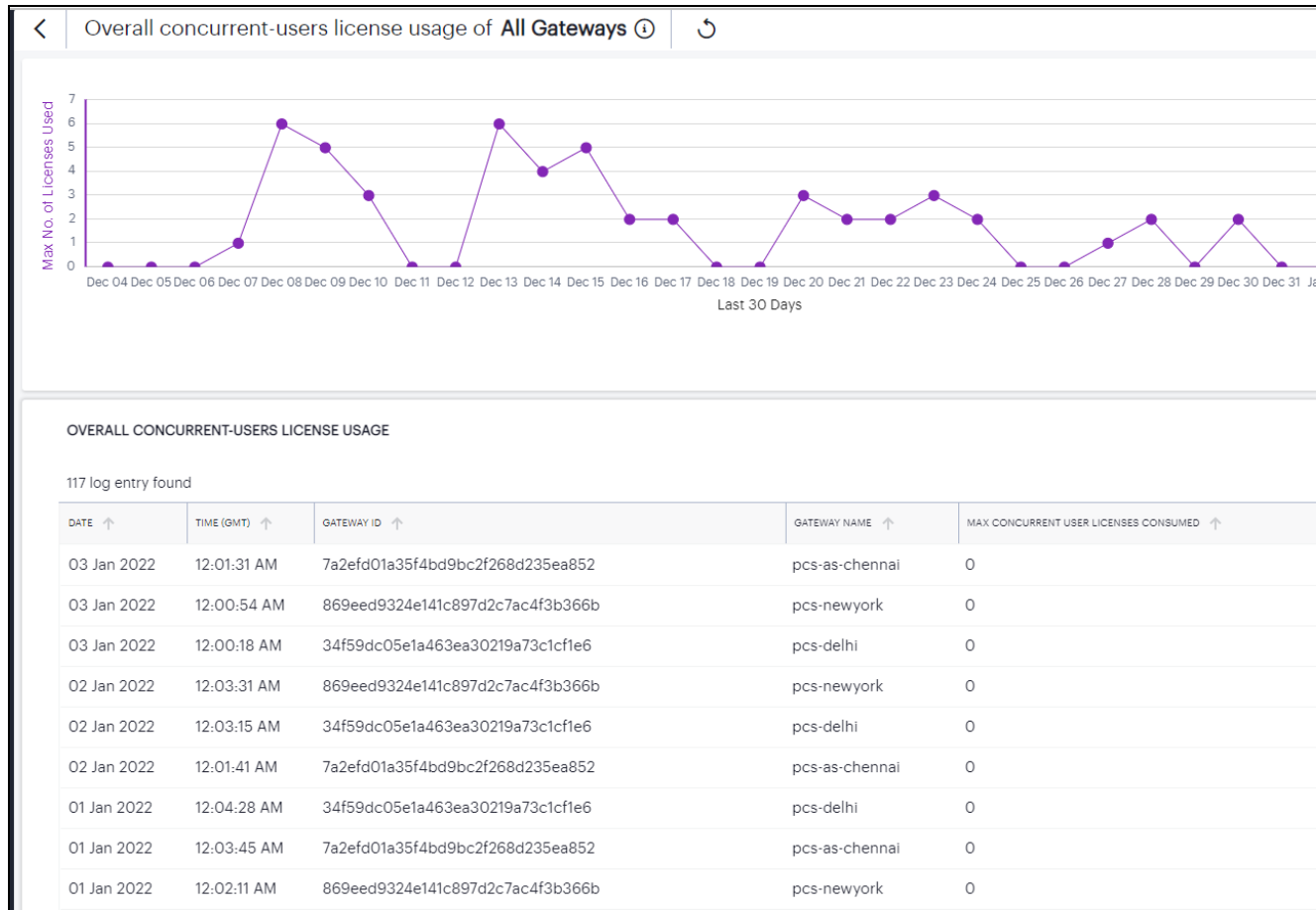
To view a detailed list of events that contributed to the totals, click **View All**.





The Overall Concurrent Users License Usage chart provides the maximum licenses used on a daily basis across all the gateways over the last 30 days.

To view a detailed list of events that contributed to the totals, click **View All**.



Use the Advanced Filter icon to view logs based on the pre-defined filter, operator and value. To learn more, see ["Filtering the Logs" on page 108](#).

## Checking the Logs

The Ivanti Connect Secure Logs page displays audit and activity events observed by your Ivanti Connect Secure access infrastructure. These events are reported to the Ivanti Neurons for Secure Access by your Gateways and Authentication, Authorization and Accounting (AAA) service.

To view the Logs page:

1. Log in to the Ivanti Neurons for Secure Access Admin portal as a Tenant Admin, and select Ivanti Connect Secure from the Gateway Switcher. See ["Logging in to Ivanti Neurons for Secure Access" on page 12](#).
2. From the Ivanti Connect Secure menu, click the **Insights** icon, then select **Logs**.

The *Logs* page appears.

**Logs** ⓘ

**EVENT LOGS**

3922 log entry found

LOG TYPE: Event Logs

21 Feb 2022 06:04 PM - 22 Feb 2022 06:04 PM -12:00

STATUS	DATE ↑	TIME (-12:00) ↑	SEVERITY ↑	SESSION ID ↑	GATEWAY NAME ↑	USER NAME ↑	MESSAGE
●	22 Feb 2022	06:03:37 PM	INFO		pcs-patna	System	Integrity Checker Tool: Integrity Scan Finished!
●	22 Feb 2022	06:03:37 PM	CRITICAL		pcs-patna	System	Integrity Scan Failed: Detected 1 mismatched file
●	22 Feb 2022	06:03:37 PM	CRITICAL		pcs-patna	System	Integrity Scan Failed: Detected 1 new files
●	22 Feb 2022	06:03:19 PM	INFO		pcs-patna	System	Integrity Checker Tool: Integrity Scan Started!
●	22 Feb 2022	06:01:02 PM	INFO		pcs-mumbai	System	LMDB shards usage stats shard: 0:1% 1:1% 2:1% 3:
●	22 Feb 2022	05:53:00 PM	INFO		pcs-patna	System	LMDB shards usage stats shard: 0:1% 1:1% 2:1% 3:
●	22 Feb 2022	05:50:55 PM	INFO		pcs	System	Active sessions sync with nSA completed and 0
●	22 Feb 2022	05:50:53 PM	INFO		pcs	System	Starting hourly nSA sessions sync with 0 session
●	22 Feb 2022	05:50:53 PM	INFO		pcs	System	Received Netconf RPC request: <rpc id="123"><g
●	22 Feb 2022	05:49:29 PM	INFO		pcs-patna	System	Received Netconf RPC request: <rpc id="123"><g
●	22 Feb 2022	05:39:23 PM	MAJOR		pcs-patna	System	Certificate 'Cybertrust Global Root' is expired

Rows per page: 100

This page comprises the following sections:

- Log selection and filtering controls, see ["Setting Log Criteria and Filtering the Output" on the next page.](#)
- The log record display, see ["Viewing Log Records" on page 107.](#)



Ivanti Connect Secure additionally provides a separate log records page pertaining to activity for specific Gateways.

## Setting a Log Time Period

Use the time period selectors at the top of the page to set a time period or time range for your log results.

To switch between **Time Period** and **Time Range**, use the following icon:



The adjacent time selection boxes update according to your choice. For **Time Period**, set the time period you want to view. Choose from:

- Last 60 minutes
- Last 24 hours (default)
- Last 7 days
- Last 1 month

For **Time Range**, set a specific *Date* and *Time* for both the start and end of your time range.

## Setting Log Criteria and Filtering the Output

To set the criteria you want to use for viewing log data, use the controls above the main log display. This section also contains functions to highlight search terms, apply filters, and schedule log export jobs.

Select the primary log type you want to display by using the **Log Type** drop-down list:



Choose from:

- Access Logs
- Admin Logs
- Event Logs

Then, use the icons adjacent to the log selector to further control your log selection. Choose from the following:

- To search for a term in the displayed logs, click the following icon:



Ivanti Connect Secure highlights all matches in the log display.

- Logs are refreshed automatically by changing the criteria. To manually refresh the log display, click the following icon:



- To change the fields displayed for each log line, click the following icon:



In the field selector, click a field name to toggle between show or hide. A *tick* icon indicates a displayed field. After you are finished, click the context menu icon to close the selector. See ["Viewing Log Records" on page 107](#).

- To trigger the advanced filter selection, use the following icon:



To learn more, see ["Filtering the Logs" on page 108](#).

- To group the logs based on the fields, use the Group by option and select the field type to view the table information in groups.



Click > to view the logs in that group.

**Logs** ⓘ

ADMIN LOGS  
4 log entry found

LOG TYPE: Admin Logs

30 May 2022 08:44 PM - 31 May 2022 08:44 PM -09:30

GATEWAY GROUP ↑	SEVERITIES	NO. OF USER ↑	NO. OF GATEWAY IDS ↑	NO. OF SOURCE IPS ↑	NO. OF DEVS ↑
> pcs-mumbai (277)	info - 277	1	1	1	1
▼ pcs-delhi (12)	info - 12	2	1	2	1
> pcs-coa (1)	info - 1	1	1	1	1

STATUS	DATE ↑	TIME ↑	MESSAGE ID ↑	SEVERITY ↑	SESSION ID ↑	GATEWAY ID ↑	GATEWAY NAME
●	31 May 2022	05:15:01 AM	ADM31931	INFO	be18a04be3	ea8a4de381354...	pcs-delhi
●	31 May 2022	05:15:01 AM	ADM31931	INFO	be18a04be3	ea8a4de381354...	pcs-delhi
●	31 May 2022	05:15:01 AM	ADM20664	INFO	be18a04be3	ea8a4de381354...	pcs-delhi
●	31 May 2022	05:15:01 AM	ADM20664	INFO	be18a04be3	ea8a4de381354...	pcs-delhi

- To export the displayed log as a CSV or JSON text file, or to set up a new scheduled log export job, click the following icon:



To learn more about log export jobs, see ["Exporting Logs" on page 110](#).

- To view the status of currently-scheduled log export jobs, click the following icon:



To learn more about log export jobs, see ["Exporting Logs" on page 110](#).

- To change the view density, click the following icon:



## Viewing Log Records

The main part of the page shows the log records that match your selected criteria. The number of matching log records is displayed at the top-left.

Each log line includes the following fields:

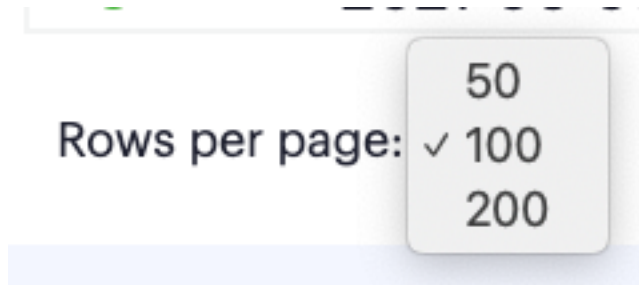
- A status indicator showing the level of severity associated with each log event. Use the following table for a guide to the meaning of each indicator color:

### Severity Status Color

INFO	Green
MINOR	Amber
MAJOR	Amber
CRITICAL	Red

- The date and time of the event.
- The message ID that identifies this type of event.
- The severity of the event in words.
- The session ID that was the source of the event, where applicable.
- The ID of the Ivanti Connect Secure Gateway that reported the event, where applicable.
- The name of the Ivanti Connect Secure Gateway that reported the event, where applicable.
- The IP address identified as the source of the event.
- The user name associated with the event, where applicable.
- The ID of the device associated with the event, where applicable.
- The message (description) of the event.

Use the page controls at the bottom to select the number of log records/rows per page:



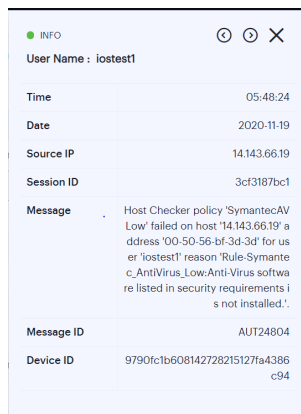
Choose from:

- 50
- 100 (default)
- 200

To cycle through the log pages, use the page controls at the bottom-right.

Where a single log message is too long for the display, use your pointing device to scroll the optional fields display to the left or right.

Furthermore, to view a single log entry in a dedicated panel, click the log message text to activate the info-panel view:



In the info-panel, use the **Previous** and **Next** icons to cycle through each log entry in turn.

## Filtering the Logs

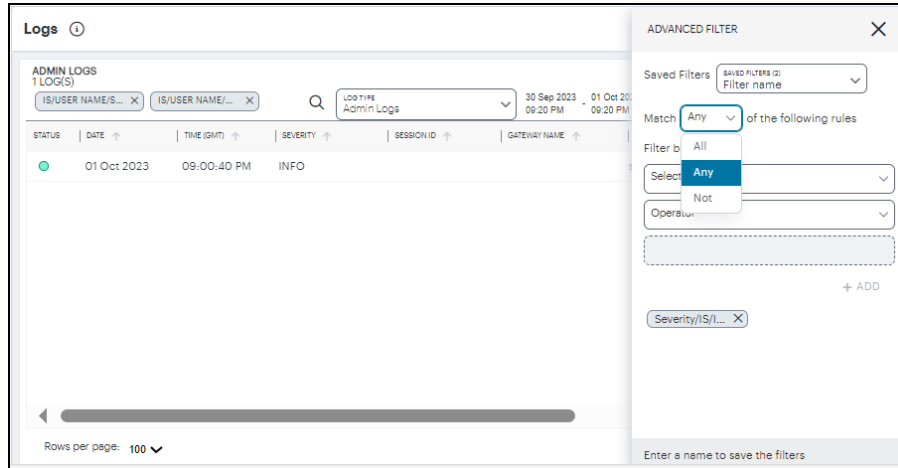
The **Logs** page provides an advanced field filter through which you can narrow down the displayed log entries to a sub-set that matches the filters you apply.

To add a filter, click the following icon:





Next, use the pop-up dialog to add one or more new field filters.



In this dialog, select a matching criteria for the filters.

- **All:** performs AND operation on the filters
- **Any:** performs OR operation on the filters
- **Not:** Negates the list of filters

Use the **Selector** drop-down list to choose the field you want to filter on, add an **Operator** type, and then enter the **Value** you want to apply.

For the operator, choose from:

- **IS:** The selected field matches exactly the value you specify.
- **CONTAINS:** The selected field contains as a sub-string the value you specify.

Click the *plus* symbol to add your filter, then repeat the process to add any further filters you want to apply.

To apply your filters to the log data, click **APPLY**.

Your filters remain in place through data refreshes and are displayed at the bottom of the screen. To remove a filter, click the corresponding *X* icon.

In addition, Ivanti Connect Secure enables you to store advanced filters for future use. After you have applied filter criteria, enter a filter name into the box provided and click **Save**.

To load a previously-saved filter, select your filter from the **Saved Filters** drop-down list and click **Apply**.

To delete one or more previously-saved filters, select the filters from the **Saved Filters** drop-down list and click **Delete**.

## Exporting Logs

Ivanti Connect Secure provides the ability to export the currently-displayed log as a Comma-Separated Value (CSV) or JavaScript Object Notation (JSON) text file. You can download the log immediately or set up a scheduled job to activate or repeat the export action at a defined time and interval of your choosing.

To access the Export Logs page:

1. Log in to the Ivanti Neurons for Secure Access Admin portal as a Tenant Admin, and select Ivanti Connect Secure from the Gateway Switcher. See "[Logging in to Ivanti Neurons for Secure Access](#)" on page 12.
2. From the Ivanti Connect Secure menu, click the **Insights** icon, then select **Logs**.

The *Logs* page appears.

3. Select the log type you want to display in the **Log Type** drop-down list. Choose from:
  - Access Logs
  - Admin Logs
  - Event Logs

4. Click the *cloud* icon at the top of the page:



The Export Logs page appears:

The screenshot shows the 'Export Logs' page in a web application. At the top, the breadcrumb 'HOME / LOGS / EXPORT LOGS' is visible. The page title is 'Export Logs'. Below the title, a message states 'You have selected Logs of Type : Access logs'. Underneath, there is a section 'Select an export format' with two radio buttons: 'CSV' (selected) and 'JSON'. The next section is 'Export once OR set a schedule' with a dropdown menu set to 'Export one time'. To the right, 'Set an export time frame' has a dropdown menu set to 'Last 24 HOURS'. Below this, the 'Job name' field is populated with 'Export once/access logs-5xAr8P'. At the bottom, a note reads 'Please note: You've reached 3 out of your 5 limit for exports.' and there are 'Cancel' and 'Export' buttons.

Use the Export Logs settings page to configure an export operation, either to execute immediately as a one-off job, or as a scheduled job.

Configure the following settings:

- Select either **CSV** or **JSON** as the output format.
- Select the frequency of the export operation. Choose from:
  - **Export one time**: Perform the log export now as a single job.
  - **Daily data export**: Create a daily export job executed once per day from the selected start date, up to and including the stop date (if defined).
  - **Weekly data export**: Create a weekly export job executed once per week on the selected start day, up to and including the stop date (if defined).
  - **Monthly data export**: Create a monthly export job executed once per month on the selected start day, up to and including the stop date (if defined).

If a stop date is specified, this is the date the schedule ceases. In the case of weekly or monthly jobs, if this date falls before the expected run date for that period, the job is terminated without running. For example, in a weekly run scheduled to execute every Thursday, if the stop date is set as a Tuesday, the final run of the job would be the previous Thursday.

A daily data export job continues to run for one extra day beyond the selected end date in order to process the logs for the final scheduled day.

For daily/weekly/monthly frequency export jobs, Ivanti Connect Secure allows for a maximum of 5 runs per scheduled export job. That is, each schedule runs a maximum of 5 times. On the sixth run, the first run is deleted (together with the log file), and so on.

- Set an export time frame. For one-time exports, choose from:
  - **Last 60 minutes**
  - **Last 24 hours**
  - **Last 7 days**
  - **Last 1 month**
  - **Set a date range (30d max)**: This option presents a configurable start and end date.

For daily, weekly, and monthly exports, this option switches to show start and end date parameters. You do not need to specify an end date; in this case, the job remains active until deleted.

- Enter a **Job name** for the export operation. Ivanti Connect Secure suggests an appropriate name; use this, or type your own.
- To execute the defined job, click **Export**.

To view all scheduled export logs jobs, and to download the log files created by each job, see "[Viewing Scheduled Log Export Jobs and Downloading Log Files](#)" below

Ivanti Connect Secure allows for a maximum of 5 defined export jobs. Each job that you add reduces the total, as displayed at the bottom of the page. This is a separate limit to the maximum number of job runs described earlier.

## Viewing Scheduled Log Export Jobs and Downloading Log Files

To view the status of your current log export jobs:

1. Log in to the Ivanti Neurons for Secure Access Admin portal as a Tenant Admin, and select Ivanti Connect Secure from the Gateway Switcher. See "[Logging in to Ivanti Neurons for Secure Access](#)" on page 12.
2. From the Ivanti Connect Secure menu, click the **Insights** icon, then select **Logs**.

The *Logs* page appears.

3. Click the *list* icon at the top of the page:



The Job Status page appears:

HOME / LOGS / JOB STATUS							
Job Status ↻							
<input type="checkbox"/>	Job ↑	Schedule ↑	Job Type ↑	Previous Run	Current Run ↑	Run Timestamp	Expiration ↑
<input type="checkbox"/>	> Export Once/Access Logs-8LcB3R	Onetime	Log Export		In Progress	Nov 18, 2020 14:11 PM GMT	
<input type="checkbox"/>	> Export Daily/Access Logs	Daily	Log Export	Completed	Completed	Nov 18, 2020 00:11 AM GMT	Nov 18 2020
<input type="checkbox"/>	> Export Once/Access Logs	Onetime	Log Export		Completed	Nov 16, 2020 06:11 AM GMT	

Use the Job Status page to:

- View the status and progress of currently scheduled log export jobs.
- Download log files for completed job runs.

For each job on the Job Status page, you can view the configured details of the export operation along with status indicators for progress of the previous and outstanding job runs.

A job run refers to a single run of a scheduled job. For example, in a weekly data export job, a job run refers to the export operation scheduled or completed for one specific week within the start and end dates. Thus, a scheduled log export job is comprised of one or more job runs.

The **Summary** column provides totals of successful job runs, unsuccessful/failed job runs, and inactive job runs.

Click any of the fields in a single job row to display an info-panel at the side showing more details about the scheduled job:

**Job Details** ⋮ ✕

**Job Name**  
Event daily st1311 end 1411 filter json

**Log Export Details**  
Columns : ALL  
Log Type : event  
Severity : CRITICAL

**Job Start Date**  
Nov 13, 2020 00:11 AM GMT

**Job Expiration Date**  
Nov 14, 2020 23:11 PM GMT

**Job Run Details**

**Next Scheduled Run**  
Nov 17, 2020 23:11 PM GMT

**Runs So Far**  
6 runs Completed

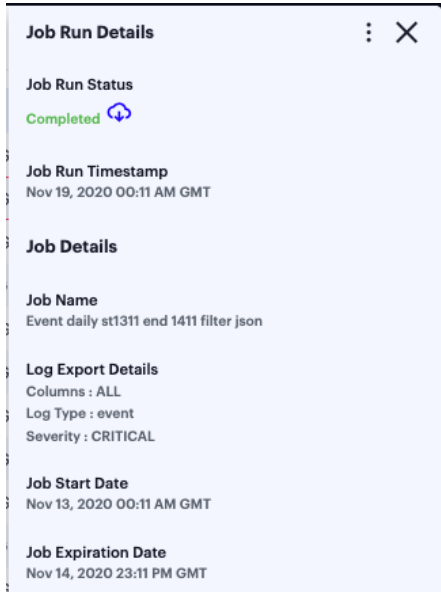
**Previous 2 Runs**  
Nov 16, 2020 00:11 AM GMT Completed  
Nov 14, 2020 00:11 AM GMT Completed

To access the log files and view more information about each individual job run, click the down-arrow adjacent to the *Job* name:

Job ↑	Schedule ↑	Job Type ↑	Previous Run	Current Run ↑	Run Timestamp	Expiration ↑
☐ > Export Once/Access Logs-8LcB3R	Onetime	Log Export		In Progress	Nov 18, 2020 14:11 PM GMT	
☐ ▾ Export Daily/Access Logs	Daily	Log Export	Completed	Completed	Nov 18, 2020 00:11 AM GMT	Nov 18 2020
☐				Completed ↻	Nov 18, 2020 00:11 AM GMT	
☐				Completed ↻	Nov 17, 2020 00:11 AM GMT	
☐ > Export Once/Access Logs	Onetime	Log Export		Completed	Nov 16, 2020 06:11 AM GMT	

For daily/weekly/monthly frequency export jobs, Ivanti Connect Secure allows for a maximum of 5 runs per scheduled export job. That is, each schedule runs a maximum of 5 times. On the sixth run, the first run is deleted (together with the log file), and so on.

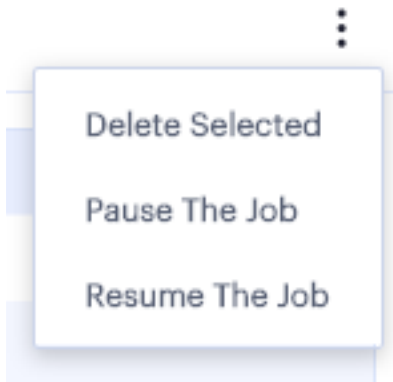
As with a scheduled job, click on any of the fields in the job run row to display an info-panel at the side showing more details about the job run:



To download the log file generated by the job run, click the *cloud* icon for a completed job run:



To remove a scheduled log export job, or any of the completed job runs within the job, tick the checkbox adjacent to the job/job run and then access the context menu at the top of the page:



Select from the following options:

- **Delete Selected:** Remove all jobs or job runs that have been selected.
- **Pause the Job:** Instruct the outstanding job runs in the schedule to become inactive. The schedule continues chronologically, but no further log export operations are completed while in this state.
- **Resume the Job:** Resume the schedule starting at the next scheduled job run.

If you choose to delete a complete job, all job runs and log download files are removed permanently.

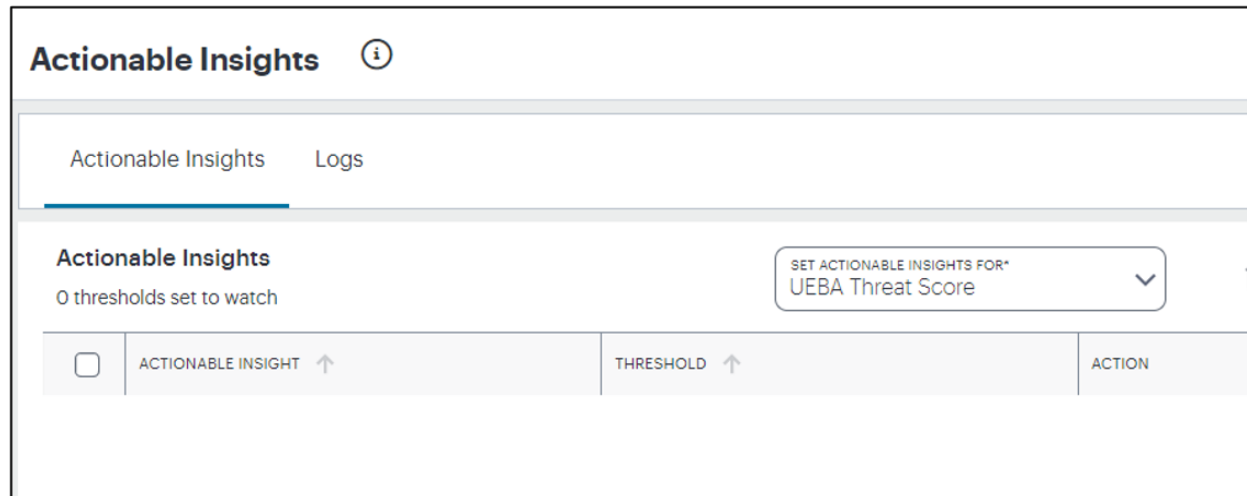
## Configuring Actionable Insights

The Actionable Insights function enables the tenant admin to create a policy/action to terminate all the existing sessions, with applicable rule, of a user when the UEBA threat score goes beyond the permissible limit.

To configure actionable insights:

1. Log in to the Ivanti Neurons for Secure Access Admin portal as a Tenant Admin, and select Ivanti Connect Secure from the Gateway Switcher. See "[Logging in to Ivanti Neurons for Secure Access](#)" on page 12.
2. From the Ivanti Connect Secure menu, click the **Insights** icon, then select **Actions**.

The Actionable Insights page is displayed.



3. From the **Set Actionable Insights for** drop-down list, select **UEBA Threat Score**.



- Click **Add Actionable Insights**.

The screenshot shows a configuration window titled "Actionable Insights" with an information icon. The window is divided into several sections:

- UEBA Threat Score**: A section header.
- Set Threshold value**: A label followed by a text input field containing "THRESHOLD VALUE" and "Enter Value", and an information icon.
- Current Session**: A section header with a horizontal line below it.
- Current Session options**: A checked checkbox labeled "Terminate all the existing sessions of this user when the UEBA threat score reaches to above threshold".
- Subsequent Login**: A section header with a horizontal line below it.
- Trigger Action**: A section header with the instruction "Select action to trigger when conditions are met". Below this are three radio button options:
  - Allow subsequent logins with a warning message that UEBA threat score is beyond permissible threshold
  - Multi-Factor authentication, Offer additional authentication during subsequent logins
  - Deny the subsequent logins with a warning message that UEBA threat score is beyond permissible threshold

At the bottom right of the window are two buttons: "Cancel" and "Create".

- Enter a **Threshold Value**.
- In the Current Session section, select the **Terminate all the existing sessions of this user when the UEBA threat score reaches the threshold value** option. This is selected by default.

7. From the Subsequent Login section, select one of the following actions to trigger when conditions are met:

The newly added trigger actions will be supported with the ISAC Client version 22.3R1. For more details, refer KB: [https://kb.pulsesecure.net/articles/Pulse\\_Secure\\_Article/KB45603](https://kb.pulsesecure.net/articles/Pulse_Secure_Article/KB45603).

- Allow subsequent logins with a warning message
- Offer Multi-factor Authentication during the subsequent logins
- Deny subsequent logins with a warning message

A maximum of three thresholds can be created using the subsequent login conditions.

8. Click **Create**. A table showing the metric name, threshold value that is set, and the action to trigger when the condition is met, is shown in the Actionable Insights page.

A confirmation message for the successful creation of the action is displayed. Click **Close** to close the message box.

<input type="checkbox"/>	ACTIONABLE INSIGHT	THRESHOLD ↑	ACTION
<input type="checkbox"/>	UEBA Threat Score	>=15	Allow subsequent logins
<input type="checkbox"/>	UEBA Threat Score	>=25	Multi-Factor Authentication
<input type="checkbox"/>	UEBA Threat Score	>=30	Deny the subsequent logins

9. To modify an action, select the check box corresponding to the action from the list, click the Edit icon, make the changes and then click **Update**.
10. To change the sequence of the rule, drag up or down the rule.
11. To remove one or more actions, select the check box(es) corresponding to the action from the list, and click **Delete**. Click **Yes, Delete** to confirm.

When a user session is terminated due to reaching the threshold UEBA Threat score, the following admin log message is generated in nSA: "User <username> session <session id> has been terminated due to UEBA Threat score based Actionable Insights configuration". Select the **Logs** tab to view the list of log messages.

## Generating Reports

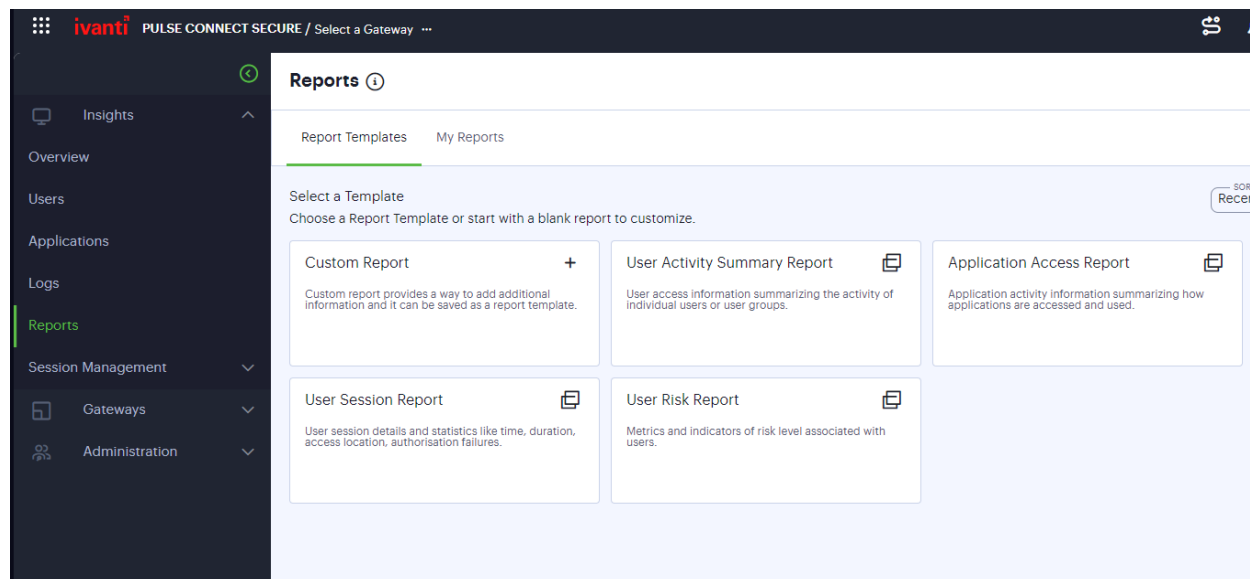
The Reports function provides the ability to generate reports from the pre-defined templates or from the custom report. You may choose any of the pre-defined templates from User Activity Summary report, Application Access report, User Risk report or User Session Report. It also provides options to generate reports in PDF, JSON or CSV formats.

## Accessing the Reports Page

To access the Reports page:

1. Log in to the Ivanti Neurons for Secure Access Admin portal as a Tenant Admin, and select Ivanti Connect Secure from the Gateway Switcher. See "[Logging in to Ivanti Neurons for Secure Access on page 12.](#)"
2. From the Ivanti Connect Secure menu, click the **Insights** icon, then select **Reports**.

The Reports page is displayed.



The Reports page provides the following tabs:

- **Report Templates** – You can use the Custom Report option or the pre-defined report templates, and go through the wizard to configure and schedule the required report.

- **My Reports** – You can view a list of generated reports for all users of this tenant.
  - Click the report name link to view the summary of the configured details.
  - Click the download icon located next to the report to view report in the specified format (PDF, JSON, or CSV)

## Configuring a Report

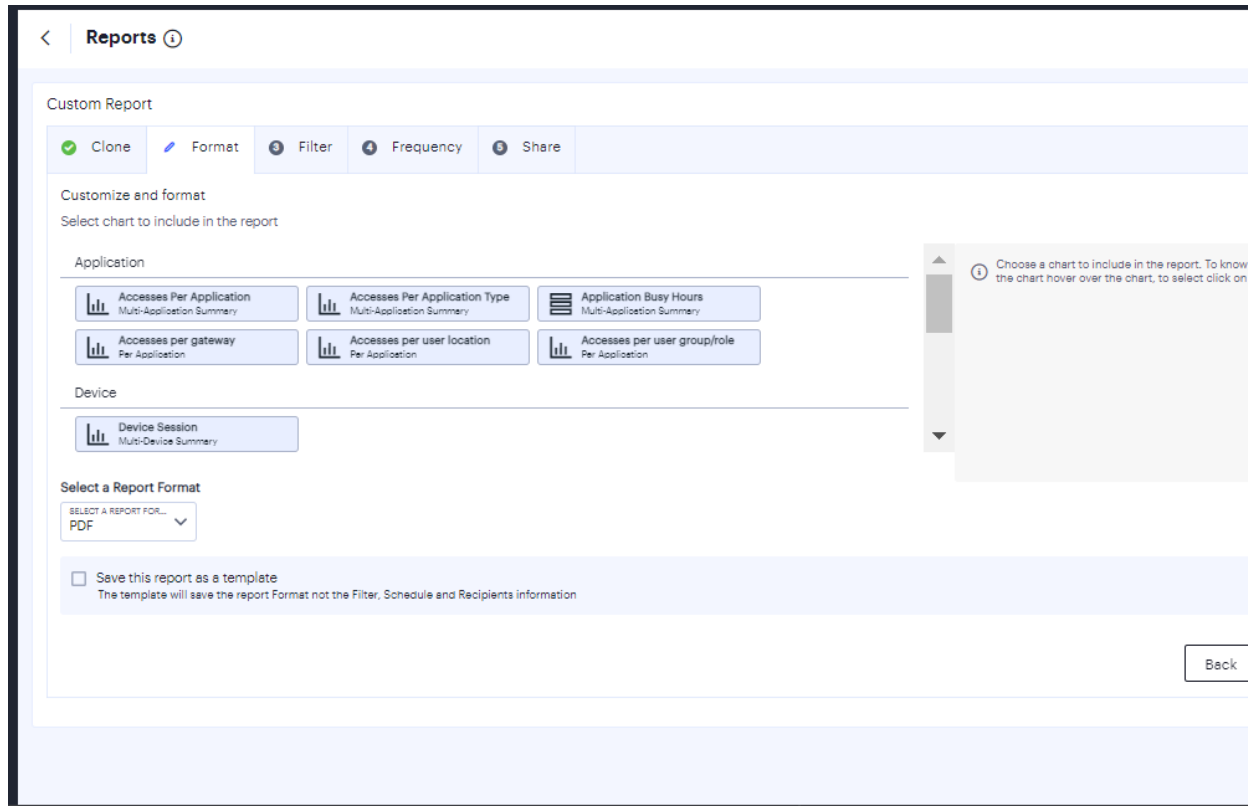
For scheduling a report, you can select one of the pre-defined report templates if that meets your requirement. Otherwise, select the Custom Report option.

## Configuring Custom Report

To configure Custom report:

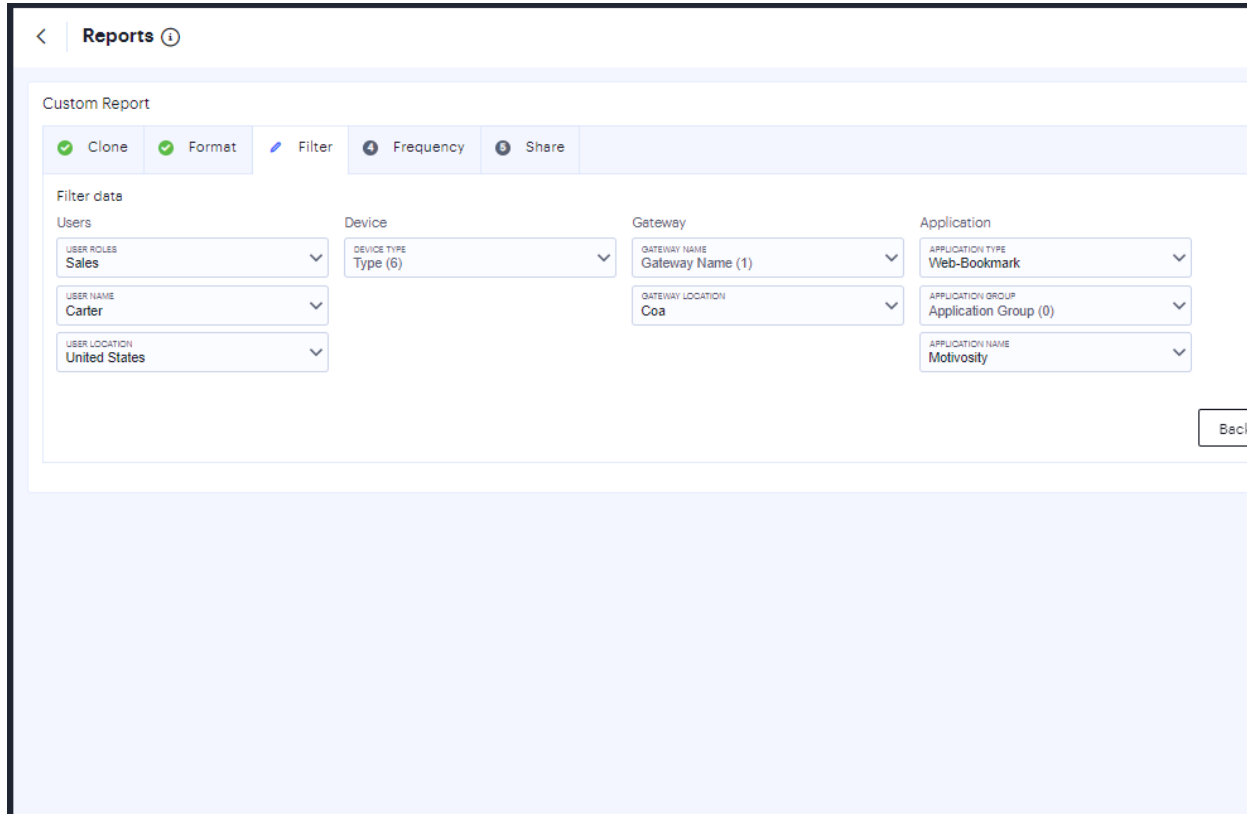
1. In the Reports page, select **Report Templates > Custom Report**.
2. In the Clone page, enter unique name for the report and click **Next**.

3. In the Format page:
  1. Select the required charts from User, Device and Application sections.
  2. Select the report format (PDF, JSON, or CSV).
  3. Select the check box if you want to save the report as a template.



4. Click **Next**.

5. In the Filter page, select the data filter from User, Device, Gateway and Application attributes. Then click **Next**.



6. In the Frequency page:

- **Set recurring date range** - Click the calendar icon, specify the start date and the end date, and then click **Apply**.
- **Frequency** - Select one of the options:
  - **On Demand:** Click the calendar icon, select the start date and the end date of the report, and then click **Apply**.

Frequency

On-Demand

**Report range**

27 Jun 2021 02:38 PM - 27 Jul 2021 02:38 PM

- **Daily:** Click the time icon and select the start time. Then select the time zone from the drop-down list.

On-Demand

**Preferred start time**

15:02

TIME ZONE (GMT) Local Time

Daily

Exact start time will depend on job queue activity

- **Weekly:** Select the days of the week. Click the time icon and select the start time. Then select the time zone from the drop-down list.

On-Demand

**On day/s**

Mon Tue Wed Thu Fri Sat Sun

Daily

**Preferred start time**

15:02

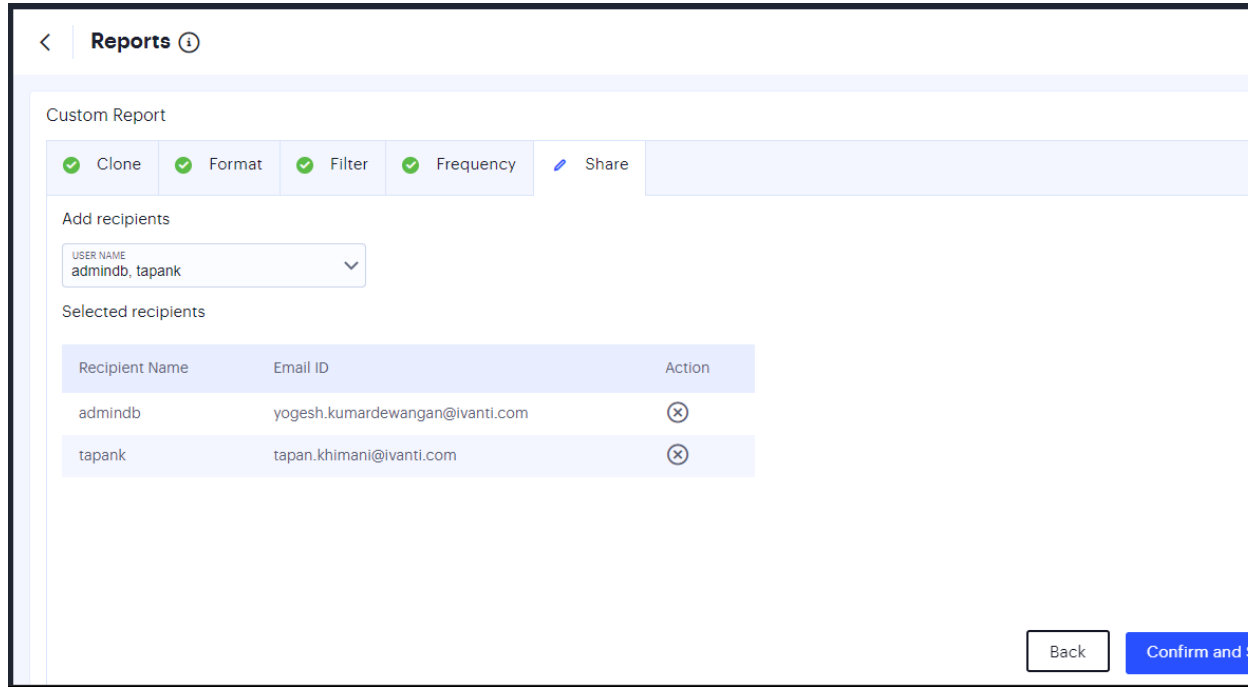
TIME ZONE (GMT) Local Time

Weekly

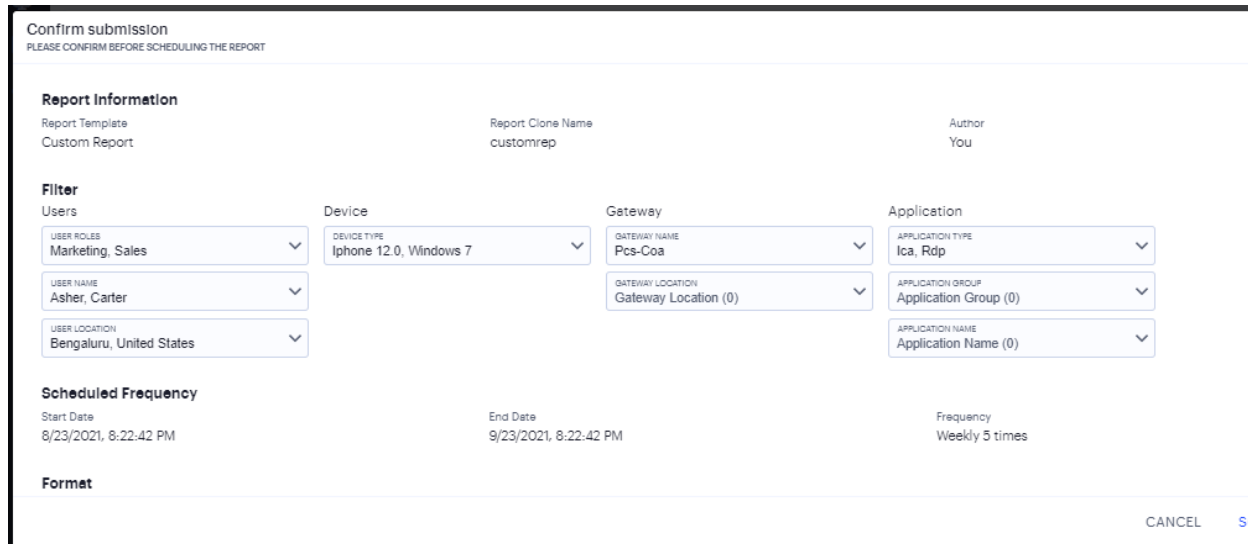
Exact start time will depend on job queue activity

7. Click **Next**.

- In the Share page, select the admin users from the list to whom the notifications need to be sent, and click **Confirm and Schedule**.

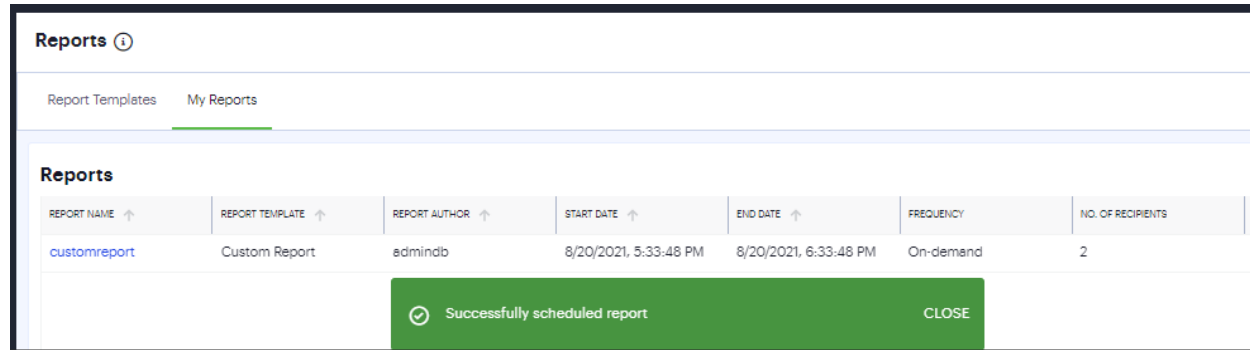


- In the Confirm Submission page, verify the details and then click **Schedule Report**.





10. The report will be generated per schedule and listed in the My Reports page.
  - Click the report name link to view the summary of the configured details.
  - Click the download icon located next to the report to view report in the specified format (PDF, JSON, or CSV)



## Configuring Pre-defined Report

To configure pre-defined report:

1. In the Reports page, select **Report Templates > <pre-defined report>**.
2. In the Clone page, enter unique name for the report and click **Next**.
3. In the Format page:
  1. Select the required charts from User, Device and Application sections, as applicable. By default, all the pre-defined template charts are selected.
  2. Select the report format (PDF, JSON, or CSV).
4. Click **Next**.
5. Configure the Filter, Frequency and Share pages as described in "[Configuring Custom Report](#)" on [page 120](#).
6. In the Confirm Submission page, verify the details and click **Schedule Report**.
7. The report will be generated per schedule and listed in the My Reports page.
  - Click the report name link to view the summary of the configured details.
  - Click the download icon located next to the report to view report in the specified format (PDF, JSON, or CSV)

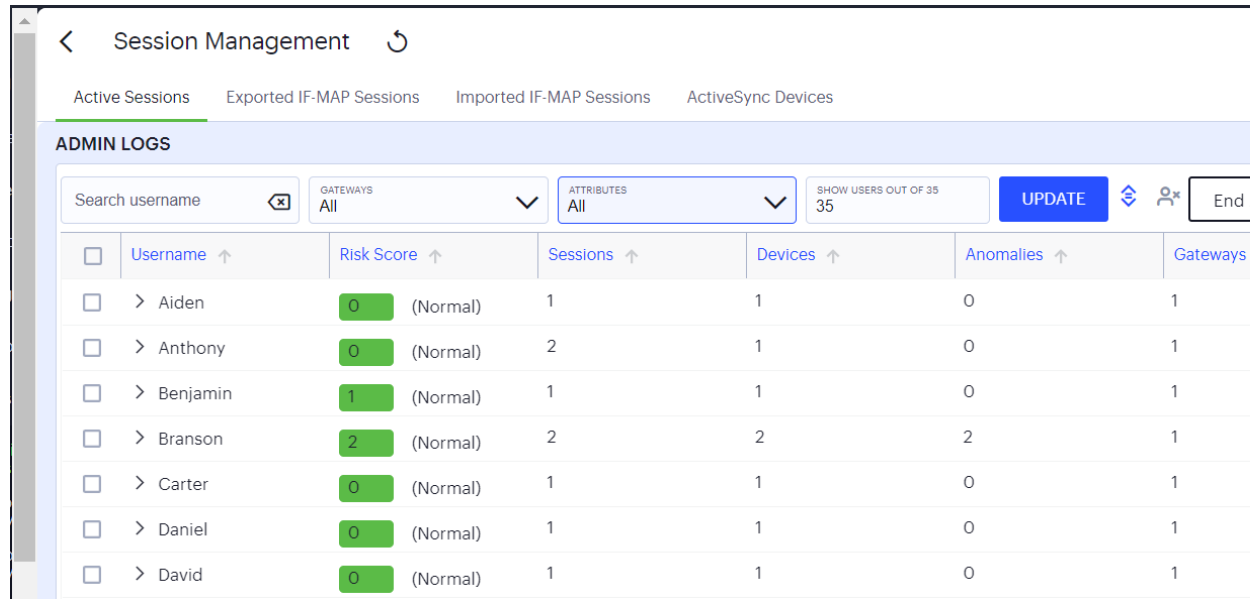
## Managing the Sessions

Ivanti Connect Secure Sessions Management page allows you to manage the Active Sessions, Exported IF-MAP Sessions, Imported IF-MAP Sessions and ActiveSync Devices.

To navigate to Session Management page:

1. Log in to the Ivanti Neurons for Secure Access Admin portal as a Tenant Admin, and select Ivanti Connect Secure from the Gateway Switcher (9 dots). See "[Logging in to Ivanti Neurons for Secure Access](#)" on page 12.
2. From the Ivanti Connect Secure menu, click the **Insights** icon, then select **Session Management > Active Sessions**.

The Session Management page is displayed. It presents the various sessions tabs to manage the sessions.



The screenshot shows the 'Session Management' page with the 'Active Sessions' tab selected. Below the tabs is an 'ADMIN LOGS' section with a search bar and filters for 'GATEWAYS' (All) and 'ATTRIBUTES' (All). A table lists users with their session details:

<input type="checkbox"/>	Username ↑	Risk Score ↑	Sessions ↑	Devices ↑	Anomalies ↑	Gateways
<input type="checkbox"/>	> Aiden	0 (Normal)	1	1	0	1
<input type="checkbox"/>	> Anthony	0 (Normal)	2	1	0	1
<input type="checkbox"/>	> Benjamin	1 (Normal)	1	1	0	1
<input type="checkbox"/>	> Branson	2 (Normal)	2	2	2	1
<input type="checkbox"/>	> Carter	0 (Normal)	1	1	0	1
<input type="checkbox"/>	> Daniel	0 (Normal)	1	1	0	1
<input type="checkbox"/>	> David	0 (Normal)	1	1	0	1

3. The logs data presented can be sorted based on the column.
4. To manually refresh the data, click the circular arrow:



## Managing Active Sessions

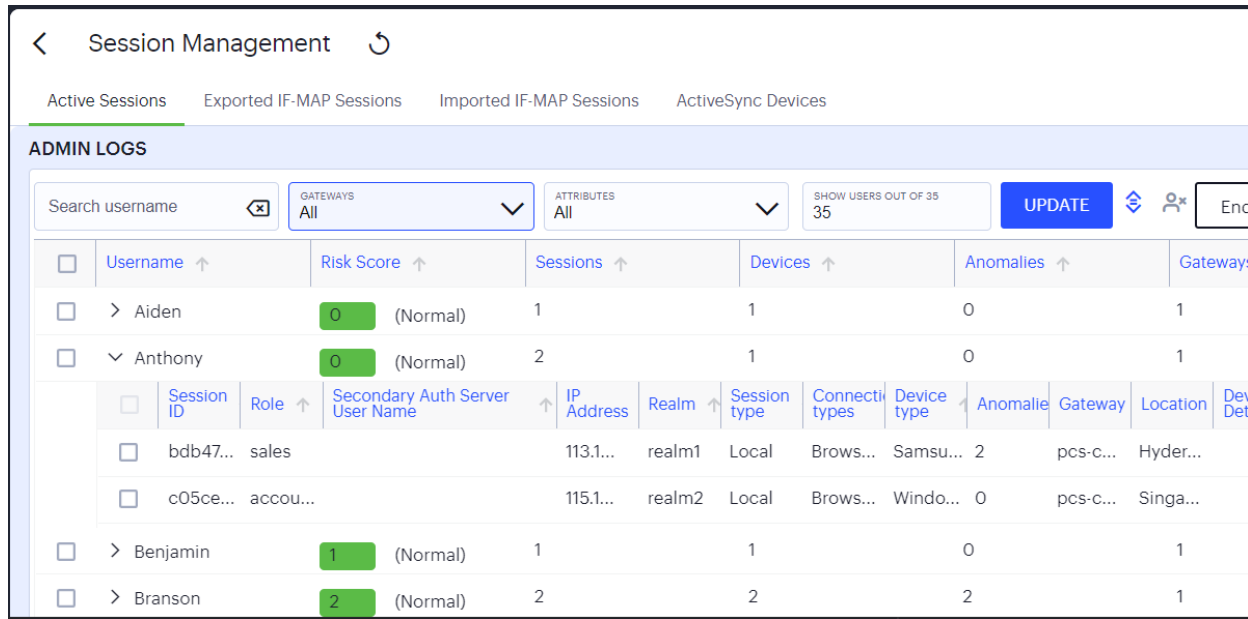
To view Active Sessions:

1. In the Session Management page, select the **Active Sessions** tab.

The Users list is displayed.

2. Click the > icon that is present next to a user name.

An expanded list shows all the active sessions of that user.

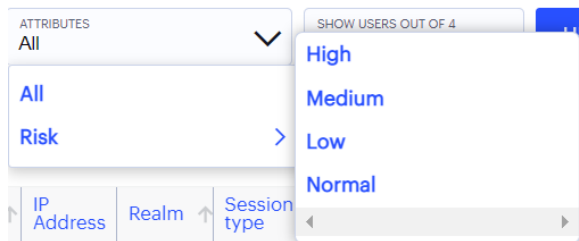


3. To view active sessions of all the users, click the **Expand/Collapse** icon.



4. To view the active sessions in a specific Gateway, select the Gateway from the Gateways list and click **Update**.

5. To view sessions based on the risk, select the appropriate option from the **Attributes** list.



To terminate user session:

1. In the Users list, click the > icon that is present next to the user name.

An expanded list shows all the active sessions of that user. .

2. Click the **Terminate User Session** icon available in the **Action** column corresponding to the session you want to delete.



3. To terminate all the sessions, click the **End All Sessions** button provided at the top-right corner of the page.

## Viewing Exported IF-MAP Sessions

To view Exported IF-MAP Sessions:

1. In the Session Management page, select the **Exported IF-MAP Sessions** tab.

The Exported IF-MAP Sessions page is displayed. The page shows a list of Exported IF-MAP Sessions.

The screenshot shows the 'Session Management' interface with the 'Exported IF-MAP Sessions' tab selected. At the top, there are navigation tabs: 'Active Sessions', 'Exported IF-MAP Sessions', 'Imported IF-MAP Sessions', and 'ActiveSync Devices'. Below the tabs, there are search and filter options: 'SHOW USERS NAMED' (with a text input 'Type Username here...'), 'SHOW USERS OUT OF 4' (with the number '4'), and 'GATEWAYS LIST' (with a dropdown menu 'Select a Gateway' and an 'UPDATE' button). Below these options, it states 'Total number of exported sessions: 4'. The main content is a table with the following data:

USERNAME ↑	GATEWAY ↑	IP ADDRESS ↑	REALM	IDENTITY ↑	IDENTITY TYPE ↑	IDENTITY OTHER ↑	ROLES	CAPABILITIES	DEVICE ATTRIBUTES
Lucas	pcs-coa	175.111.15...	realm1	Lucas	username	N/A	sales	Users, Cap2	dev_attr1, dev...
Mason	pcs-coa	113.193.17...	realm1	Mason	username	N/A	security	Users, Cap2	dev_attr1, dev...
Alexander	pcs-coa	126.116.16...	realm1	Alexander	username	N/A	marketing	Users, Cap2	dev_attr1, dev...
Ethan	pcs-coa	117.192.39...	realm1	Ethan	username	N/A	account	Users, Cap2	dev_attr1, dev...

2. You can sort the list based on the column.
3. To view the sessions by a specific user, enter the username in the Username field and click **Update**.
4. To view all the sessions associated to a specific Gateway, select the Gateway from the drop-down list and click **Update**.

## Managing Imported IF-MAP Sessions

To manage Imported IF-MAP Sessions:

1. In the Session Management page, select the **Imported IF-MAP Sessions** tab.

The Imported IF-MAP Sessions page is displayed. The page shows a list of Imported IF-MAP Sessions.

The screenshot shows the 'Session Management' interface with the 'Imported IF-MAP Sessions' tab selected. At the top, there are navigation tabs: 'Active Sessions', 'Exported IF-MAP Sessions', 'Imported IF-MAP Sessions' (highlighted), and 'ActiveSync Devices'. Below the tabs, there's a search section with a text input 'SHOW USERS NAMED Type Username here...', a dropdown 'SHOW USERS OUT OF 4 4', and an 'UPDATE' button. A summary line states 'Total number of imported sessions: 4'. A 'Remove Selected' button is visible on the right. The main table has columns: 'TIMESTAMP (GMT)', 'SESSION ID', 'ENDPOINT', 'GATEWAY NAME', 'USERNAME', 'PUBLISHER ID', and 'ASSIGNED ROLES'. The table contains four rows of session data.

<input type="checkbox"/>	TIMESTAMP (GMT) ↑	SESSION ID ↑	ENDPOINT ↑	GATEWAY NAME ↑	USERNAME ↑	PUBLISHER ID ↑	ASSIGNED ROLES
<input type="checkbox"/>	08/19/2021 7...	1acb148f54d5...	113.193.178....	pcs-coa	Henry	1CmBBSw/-	store
<input type="checkbox"/>	08/19/2021 7...	dbc2016e2d61...	113.193.178....	pcs-coa	Jacob	1CmBBSw/-	sales
<input type="checkbox"/>	08/19/2021 7...	2320cf4c0f27...	126.116.160....	pcs-coa	Michael	1CmBBSw/-	security
<input type="checkbox"/>	08/19/2021 7...	f510f9ca1a18...	76.223.164.1...	pcs-coa	Daniel	1CmBBSw/-	account

2. You can sort the list based on the column.
3. To view the sessions by a specific user, enter the username in the Username field and click **Update**.

To remove session:

1. In the IF-MAP Imported Sessions page, select the check box(es) present next to the sessions that you want to remove and click the **Remove Selected** button.
2. To remove all the sessions, click the **Remove All** button.

## Managing ActiveSync Devices

The ActiveSync Devices page shows all ActiveSync Device sessions that are currently active across all Gateways that are registered with nSA.

To view ActiveSync Devices:

1. In the Session Management page, select the **ActiveSync Devices** tab.

The ActiveSync Devices page is displayed. The page shows a list of devices.

The screenshot shows the 'ActiveSync Devices' page. At the top, there are tabs for 'Active Sessions', 'Exported IF-MAP Sessions', 'Imported IF-MAP Sessions', and 'ActiveSync Devices'. Below the tabs, there is a search bar for 'SHOW USERS NAMED' and a dropdown for 'GATEWAYS LIST'. A table lists three devices with columns for User ID, Device ID, Gateway Name, Source IP, Access Allowed, Device Reg. Date, Device Type, Location, Operating System, Roles, and Session Duration. Buttons for 'Delete', 'Delete All', and 'Block Access' are visible on the right side of the table.

	USER ID ↑	DEVICE ID ↑	GATEWAY NAME ↑	SOURCE IP	ACCESS ALLOWED ↑	DEVICE REG. DATE	DEVICE TYPE ↑	LOCATION ↑	OPERATING SYSTEM ↑	ROLES	SESSION DURATION
<input type="checkbox"/>	Logan	dev7106r...	pcs-coa	175.111....	✓	08/11/2021 12:22 PM	Samsung ...	China	Android ...	marketing	0:49:53
<input type="checkbox"/>	Jackson	dev72181...	pcs-coa	114.18.1...	✓	08/11/2021 12:22 PM	Windows	Sasebo	Windows	store	0:49:53
<input type="checkbox"/>	Sebastian	dev73wRf...	pcs-coa	157.119....	✓	08/11/2021 12:22 PM	Ubuntu-L...	China	Ubuntu	sales	0:49:53

2. You can sort the devices list based on the column.
3. To view the devices accessed by a specific user, enter the username in the Username field and click **Update**.
4. To view all the devices associated to a specific Gateway, select the Gateway from the drop-down list and click **Update**.

To block/unblock one or more devices:

1. In the Session Management page, select the **ActiveSync Devices** tab.

The ActiveSync Devices page is displayed that shows a list of devices.

The Access Allowed column shows if the device is blocked/allowed for use. The tick mark means the access is allowed for that device.

2. To block a device, select the check box(es) next to the device that you want to block and click **Block Access**.

The device is blocked, and a confirmation message is displayed.

3. To unblock a device, select the check box(es) next to the blocked device that you want to unblock and click **Allow Access**.

The devices is unblocked, and a confirmation message is displayed.

To remove one or more devices:

1. In the Session Management page, select the **ActiveSync Devices** tab.

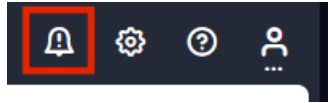
The ActiveSync Devices page is displayed. The page shows a list of devices.

2. To remove one or more devices, select the check box(es) next to the device that you want to remove and click **Delete**.
3. To remove all the devices, click **Delete All**.

## Viewing Alerts and Notifications

The **Alerts** page lists all alerts and notifications that have been raised by nZTA.

To view the **Alerts** page, click the **Alerts** icon and then click **See all Alerts**:



The **Alerts** page appears. For example:

**Alerts** ⓘ

37 ALERTS

SEVERITY ↑	DATE ↑	TIME ↑	TYPE ↑	GATEWAY NAME ↑	MESSAGE ↑
● Error	Nov 17, 2022	16:38	Gateway Disconnected	sulthan-158-1	gateway sulthan-158-1 disconn
● Error	Nov 17, 2022	16:37	Gateway Disconnected	sulthan-158-1	gateway sulthan-158-1 disconn
● Error	Nov 17, 2022	15:35	Gateway Disconnected	sulthan-158-1	gateway sulthan-158-1 disconn
● Error	Nov 17, 2022	15:04	Gateway Disconnected	sulthan-158-1	gateway sulthan-158-1 disconn
● Error	Nov 17, 2022	14:26	Gateway Disconnected	sulthan-158-1	gateway sulthan-158-1 disconn
● Error	Nov 17, 2022	04:47	Gateway Disconnected	node-6210	gateway node-6210 disconn
● Error	Nov 14, 2022	17:45	Gateway Disconnected	node-1461	gateway node-1461 disconn
● Error	Nov 14, 2022	15:58	Gateway Disconnected	sulthan-158-1	gateway sulthan-158-1 disconn
● Error	Nov 14, 2022	13:15	Gateway Disconnected	node-1461	gateway node-1461 disconn
● Error	Nov 14, 2022	12:38	Gateway Disconnected	sulthan-158-1	gateway sulthan-158-1 disconn
● Error	Nov 14, 2022	12:11	Gateway Disconnected	node-6210	gateway node-6210 disconn
● Error	Nov 14, 2022	12:09	Gateway Disconnected	node-1461	gateway node-1461 disconn
● Error	Nov 11, 2022	22:38	Gateway Disconnected	sulthan-158-1	gateway sulthan-158-1 disconn

Rows per page: 100 ▾

The alerts table supports the following alert types:

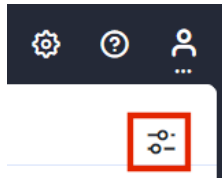
- AAA Config Pull Failure
- AAA Config Pull Success
- AAA Config Pull Success - Failure Resolved
- AAA Journal Update Failed
- AAA Journal Update Success
- Config Sync Rule Deleted
- Config Sync Rule Updated
- Config Sync Target Cluster Deleted
- Custom Domain Certificate for mTLS Domain Due for Renewal
- Custom Domain Certificate for mTLS Domain Expired



- Custom Domain Certificate for TLS Domain Due for Renewal
- Custom Domain Certificate for TLS Domain Expired
- Device Vulnerability Risk Rating (VRR) Critical
- Device Vulnerability Risk Rating (VRR) High
- Device Vulnerability Risk Rating (VRR) Medium
- Device Vulnerability Risk Rating (VRR) Low
- Gateway Config Apply Failed
- Gateway Config Import Failed
- Gateway Disconnected
- Gateway Invalid Configurations Cleared
- Gateway Upgrade Failed

To filter the alerts table by type:

1. Click **Configure Alert Rules** icon.



The **Configure Alerts & Notifications** page appears.

2. Click **Alert Types** and select the required type.
3. Click **Close**.

To filter the alerts table by time period, click **Time Period** and select the required time period.

To sort the alerts table into ascending or descending order of a specific property, click on one of the following column headings in the alerts table:

- **Severity**
- **Type**
- **Message Type**

# Ivanti Connect Secure Gateway Management

- ["Introduction" below](#)
- ["Viewing ICS Gateway/Cluster Details" on the next page](#)
- ["Creating an ICS Cluster" on page 139](#)
- ["Restarting Services" on page 140](#)
- ["Rebooting ICS Gateway/Cluster" on page 141](#)
- ["Rolling Back a Gateway/Cluster" on page 141](#)
- ["Upgrading a Gateway and Cluster" on page 142](#)
- ["Upgrading Multiple Gateways and Clusters" on page 143](#)
- ["Removing Ivanti Connect Secure Gateway" on page 149](#)
- ["Configuring Integrity Scanner" on page 149](#)

## Introduction

An admin can manage the ICS Gateway/Cluster with the following operations:

- **Restart Services:** Kills all processes and restarts the Gateway/Cluster. The Gateway/Cluster is available again after a few minutes. See ["Restarting Services" on page 140](#).
- **Reboot Gateway:** Reboots the Gateway. The Gateway is available again after a few minutes. See ["Rebooting ICS Gateway/Cluster" on page 141](#).
- **Reboot Cluster:** Reboots all nodes in the Cluster. See ["Rebooting ICS Gateway/Cluster" on page 141](#).
- **Rollback to <version>:** Reverts the registered Gateway virtual machine instance to the specified version. See ["Rolling Back a Gateway/Cluster" on page 141](#).
- **Rollback Cluster:** Reverts the cluster instance to the previous version. See ["Rolling Back a Gateway/Cluster" on page 141](#).

- **Upgrade to <version>**: Upgrades the registered Gateway virtual machine instance to the specified version. See ["Upgrading a Gateway and Cluster" on page 142](#)
- **Upgrade to <version> Cluster**: Upgrades all the nodes in the Cluster to the specified version. See ["Upgrading a Gateway and Cluster" on page 142](#).
- **Delete Gateway**: Removes the Gateway record. See ["Removing Ivanti Connect Secure Gateway" on page 149](#).
- **Configure Integrity Scanner**: Scans the system periodically to check for any integrity anomalies.
- **Upgrade multiple Gateways/Clusters to new version**: Upgrades multiple Gateways/Clusters to the specified version. See ["Upgrading Multiple Gateways and Clusters" on page 143](#).

The available menu options vary depending on whether the selected Gateway is registered and connected to the nSA.

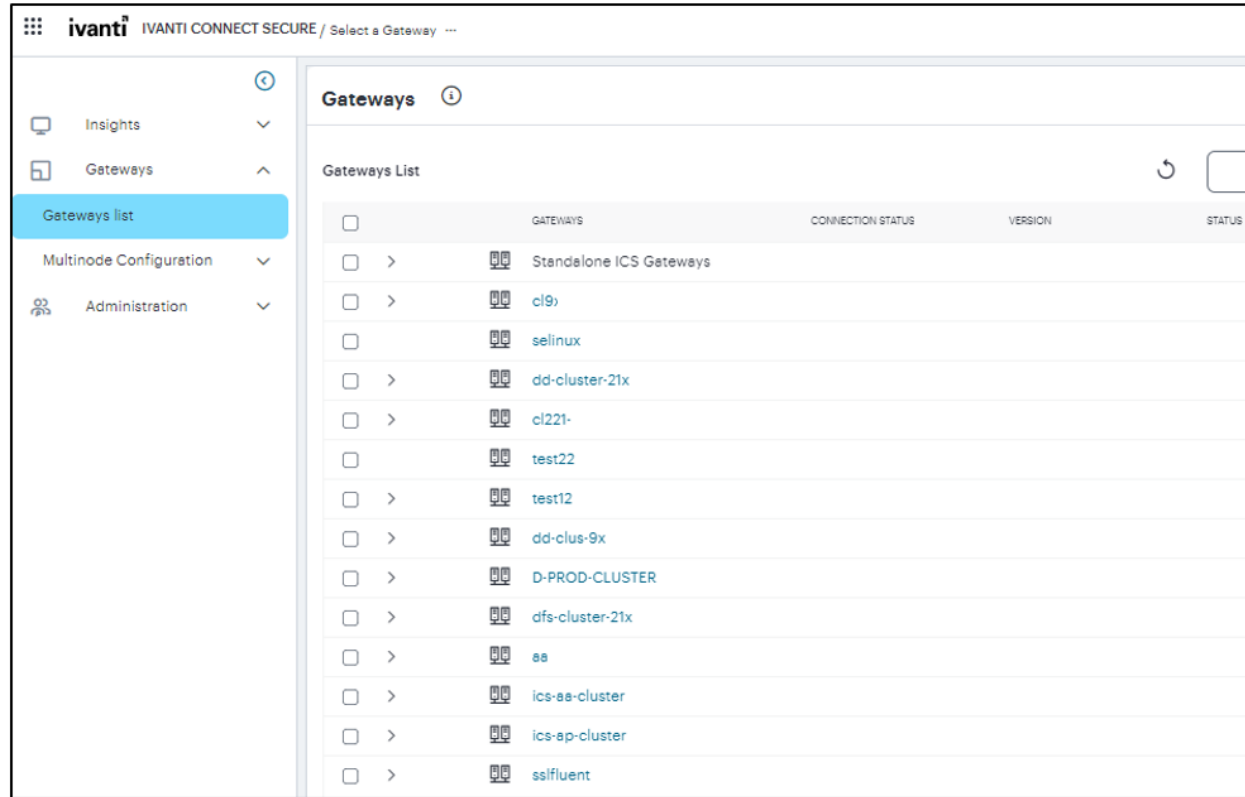
## Viewing ICS Gateway/Cluster Details

To view the list of ICS Gateways and Clusters:

1. Log in to the Ivanti Neurons for Secure Access portal as a Tenant Admin. See ["Logging in to Ivanti Neurons for Secure Access" on page 12](#).
2. Use the Gateway Switcher and select **Ivanti Connect Secure**.

- From the Ivanti Connect Secure menu, click the **Gateways** icon, then select **Gateways > Gateways List**.

The Gateways List page is displayed showing a list of standalone ICS Gateways and Cluster nodes.



The Gateway management functions can be performed only if the status of the Gateway is green.

To view the details of a specific Gateway:

1. In the All Gateways page, double-click the required Gateway from the Standalone Gateways list.

The Gateway Overview page is displayed showing the Gateway Status, Version, Registration State, and last Updated time.

The screenshot displays the 'GATEWAYS' section for a specific gateway named 'gwpcsn121'. It indicates the gateway is 'Ready' with a green dot. Below this, a table provides key details:

gwpcsn121	
STATUS	Online
VERSION	21.6R2-272
STATE	Registered
UPDATED	0d21h 43m ago

To the right of the table, a context menu is open, showing options: Reboot, Restart, Rollback, Upgrade, and Delete.

2. Click the context menu icon present at the top-right of the page to access the options applicable to the selected Gateway.

To view the details of an Active-Active Cluster:

1. In the Gateways List page, double-click the Active-Active Cluster from the list.

The Gateway Overview page is displayed showing the Model, Cluster Name and Configuration of the Cluster.

GATEWAYS			
<b>Test-9x</b>			
MODEL		VA-SPE	
CLUSTER NAME		Test-9x	
CONFIGURATION		Active/Active	
STATUS	MEMBER NAME	INTERNAL ADDRESS	EXTERNAL ADDRESS
●	Node-1	10.204.56.153	10.204.48.250
●	Node-2	10.204.51.250	10.204.48.231

2. Click the context menu icon present at the top-right of the page to access the options applicable to the selected Cluster.

To view the details of an Active-Passive Cluster:

1. In the Gateways List page, double-click **Active-Passive Cluster** from the list.

The Gateway Overview page is displayed showing the Model, Cluster Name, Configuration, External and Internal VIP Owner, External and Internal VIP IPV4/IPV6 of the Cluster.

GATEWAYS				
<b>IQ-VMW-3K</b>				
MODEL	VA-SPE			
CLUSTER NAME	IQ-VMW-3K			
CONFIGURATION	Active/Passive			
EXTERNAL VIP OWNER	NODE-91			
EXTERNAL VIP IPV4	10.96.64.93			
EXTERNAL VIP IPV6				
INTERNAL VIP OWNER	NODE-91			
INTERNAL VIP IPV4	10.204.91.93			
INTERNAL VIP IPV6	fd6:3001:8e20:9ce9::93			
STATUS	MEMBER NAME	INTERNAL ADDRESS	EXTERNAL ADDRESS	NOTES
●	NODE-91	10.204.91.91	10.96.64.91	Enabled
●	NODE-92	10.204.91.92	10.96.64.92	Leader

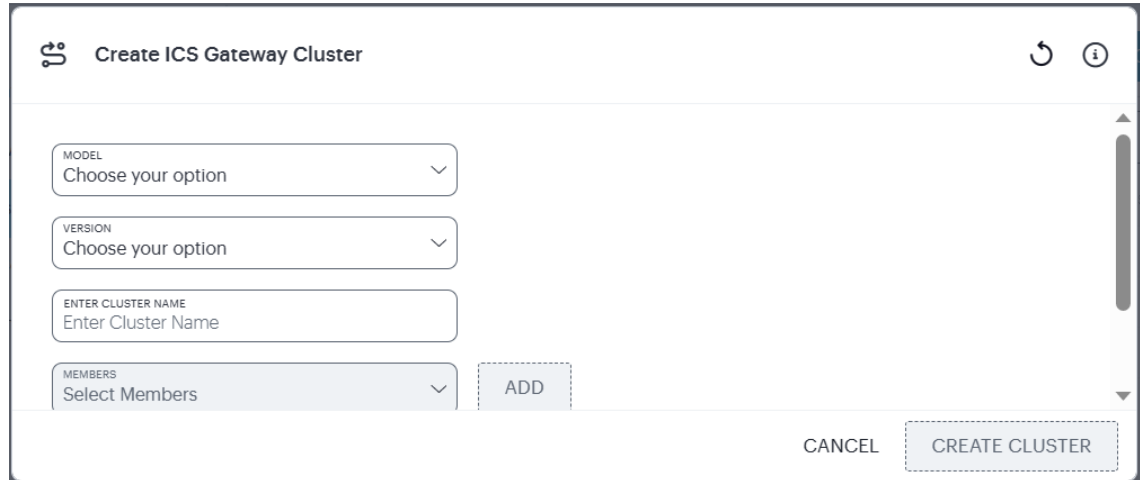
2. Click the context menu icon present at the top-right of the page to access the options applicable to the selected Cluster.

## Creating an ICS Cluster

Clusters define a collection of Gateways that operate as if they were a single machine. A cluster pair is used to refer to a cluster of two units and a multiunit cluster refers to a cluster of more than two units. Once two or more units are joined in a cluster, they act as one unit.

To create an ICS Cluster:

1. In the Gateways List page, click the **Create** drop-down list.
2. From the Gateway types list, select **ICS Cluster**.



3. Select the ISA **Model**.
4. Select the Gateway **Version**.
5. Enter a unique **Cluster Name**. Maximum 15 characters, only alphanumeric and hyphens are allowed between characters.
6. Select a member node and click **Add** to add the nodes.
7. Enable **Configuration Only Cluster** to limit data transfer between cluster nodes. User and session specific limits are only enforced on the node and not across the cluster.
8. Click **Create Cluster**.

## Restarting Services

To restart services:

1. In the Gateway Overview page, click the context menu icon at the top-right to access the options applicable to the selected Gateway or Cluster.
2. Select the **Restart Services** option.

The Gateway/Cluster is available again after a few minutes.



## Rebooting ICS Gateway/Cluster

To reboot ICS Gateway:

1. In the Gateway Overview page, click the context menu icon present at the top-right of the page to access the options applicable to the selected Gateway.
2. Select the **Reboot Gateway** option.

The Gateway is available again after a few minutes.

To reboot ICS Cluster:

1. In the Gateway Overview page, click the context menu icon present at the top-right of the page to access the options applicable to the selected A/A or A/P Cluster.
2. Select the **Reboot Cluster** option.

The Cluster is available again after a few minutes.

## Rolling Back a Gateway/Cluster

Your ICS Gateway/Cluster can be rolled back to a previously-installed version through the Tenant Admin Portal. You might want to return to an earlier version if, for example, you encounter an unforeseen issue with a newly-upgrading Gateway instance, or for testing purposes.

You can roll back to a version only where that Gateway instance has been previously upgraded through the Tenant Admin Portal, and only to the previously-installed version.

To roll back a Gateway to an earlier version:

1. In the Gateway Overview page, click the context menu icon present at the top-right of the page to access the options applicable for the selected Gateway.

If a rollback function is available for this Gateway, a corresponding link is displayed in the drop-down menu:

2. Select the **Rollback to <version>** link.

As the rollback process starts, your Gateway remains operating on the current version and continues to serve traffic. After the earlier version is reinstated, the Gateway reboots and becomes unavailable for a short time.

If the procedure is successful, the new software version is displayed in the Gateway Overview page.

To roll back a Cluster to the previous version:

1. In the Gateway Overview page, click the context menu icon present at the top-right of the page to access the options applicable for the selected Cluster.

If a rollback function is available for this Cluster, a corresponding link is displayed in the drop-down menu:

2. Select the **Rollback Cluster** link.

As the rollback process starts, your Cluster remains operating on the current version and continues to serve traffic. After the earlier version is reinstated, the Cluster reboots and becomes unavailable for a short time.

If the procedure is successful, the new software version is displayed in the Gateway Overview page.

## Upgrading a Gateway and Cluster

Ivanti periodically creates and releases new software versions to address updates and issues, and to improve performance. As new version packages become available, you can trigger an upgrade for your Gateway/Cluster through the nSA to take advantage of the updates available in the new version.

To upgrade a Gateway to a higher version:

1. In the Gateway Overview page, click the context menu icon present at the top-right of the page to access the options applicable for the selected Gateway.

If the upgrade function is available for this Gateway, a corresponding link is displayed in the drop-down menu:

2. Select the **Upgrade to <version>** link.

In some cases, there might be more than one version available. Select the version you want, or contact your support representative for details.

As the upgrade process starts, your Gateway remains operating on the current version and continues to serve traffic. After the upgrade to new version, the Gateway reboots and becomes unavailable for a short time.

If the procedure is successful, the upgrade task is marked with a status of "Success" and the new software version is displayed in the Gateway Overview page.

To upgrade a Cluster to a higher version:

1. In the Gateway Overview page, click the context menu icon present at the top-right of the page to access the options applicable for the selected Cluster.

If the upgrade function is available for this Cluster, a corresponding link is displayed in the drop-down menu:

2. Select the **Upgrade to <version> Cluster** link.

In some cases, there might be more than one version available. Select the version you want, or contact your support representative for details.

As the upgrade process starts, your Cluster remains operating on the current version and continues to serve traffic. After the upgrade to new version, the Cluster reboots and becomes unavailable for a short time.

If the procedure is successful, the upgrade task is marked with a status of "Success" and the new software version is displayed in the Gateway Overview page.

## Upgrading Multiple Gateways and Clusters

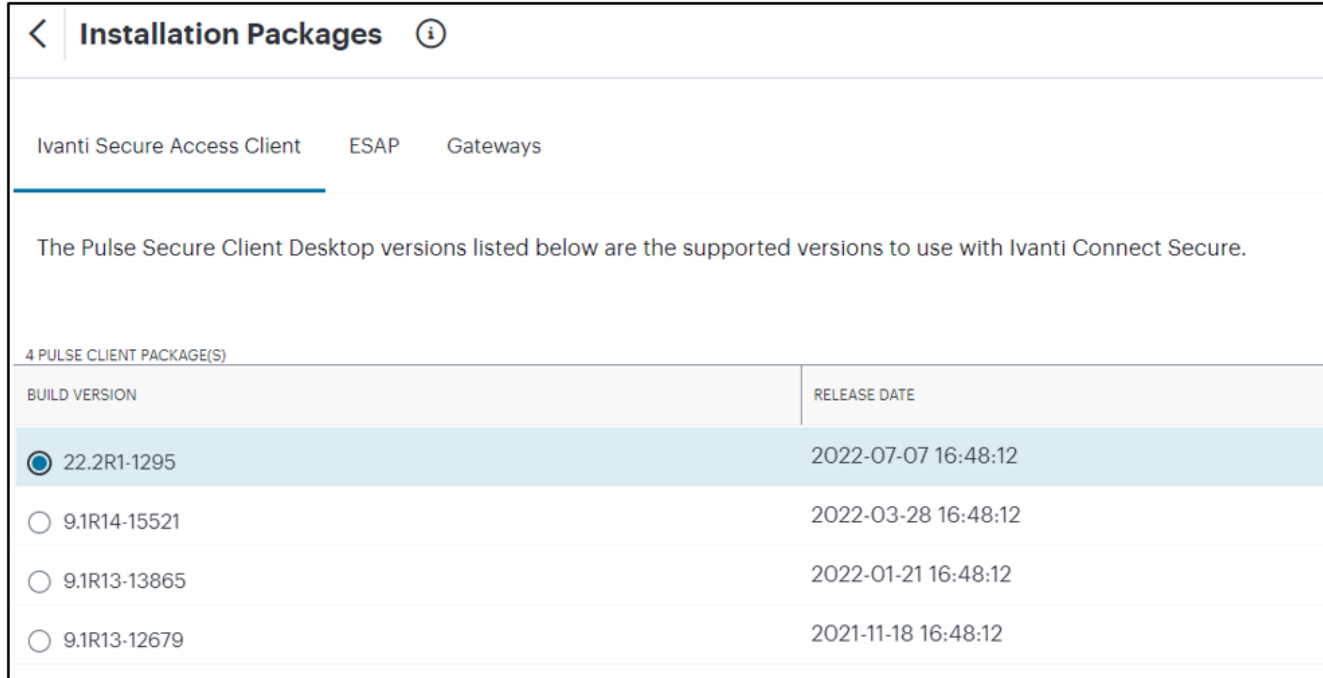
This feature allows you to upgrade one or more gateways and clusters in a tenant with a selected version.

## Viewing the Installed Packages

To view the installed packages:

1. Log in to the Ivanti Neurons for Secure Access portal as a Tenant Admin. See "[Logging in to Ivanti Neurons for Secure Access](#)" on page 12.
2. Use the Gateway Switcher and select **Ivanti Connect Secure**.
3. Select **Administration > Upgrade > Installation Packages**.

The Installation Packages page shows the list of installed packages of Secure Access client, ESAP, and Connect Secure Gateways.



**Installation Packages** ⓘ

Ivanti Secure Access Client    ESAP    Gateways

The Pulse Secure Client Desktop versions listed below are the supported versions to use with Ivanti Connect Secure.

4 PULSE CLIENT PACKAGE(S)

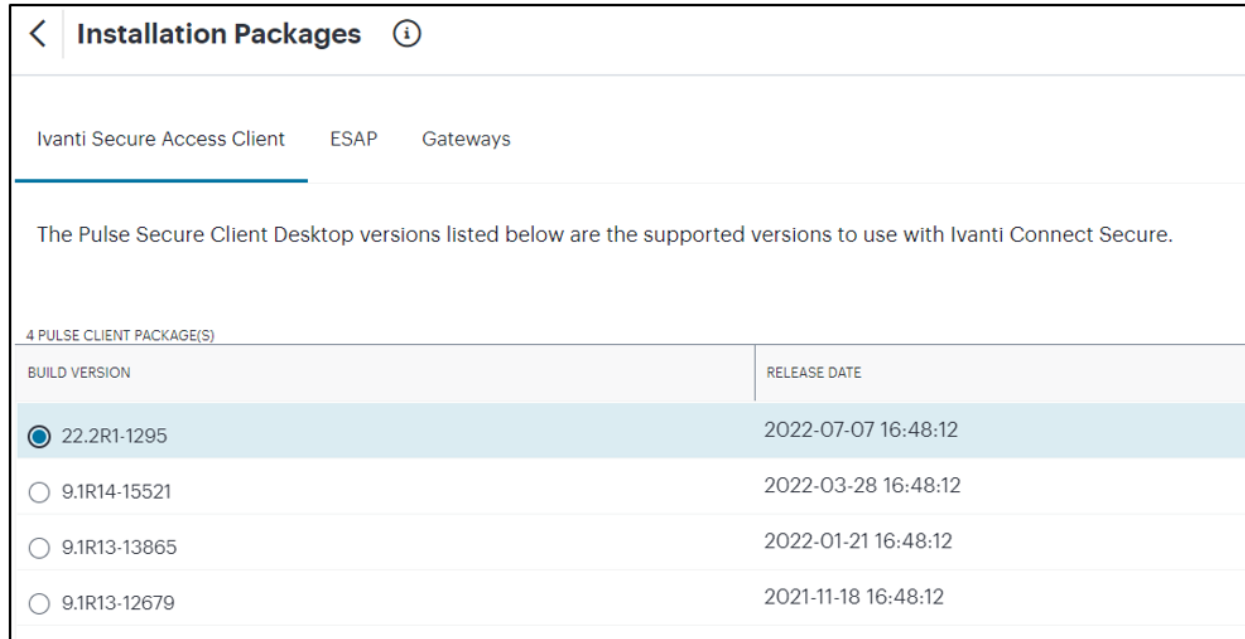
BUILD VERSION	RELEASE DATE
<input checked="" type="radio"/> 22.2R1-1295	2022-07-07 16:48:12
<input type="radio"/> 9.1R14-15521	2022-03-28 16:48:12
<input type="radio"/> 9.1R13-13865	2022-01-21 16:48:12
<input type="radio"/> 9.1R13-12679	2021-11-18 16:48:12

## Upgrading Gateways and Clusters with Ivanti Secure Access Client

To upgrade one or more Gateways and Clusters with an Ivanti Secure Access Client package newer version:

1. Select **Administration > Upgrade > Installation Packages**.
2. In the Installation Packages page, select the **Ivanti Secure Access Client** tab.

A list of available Ivanti Secure Access Client packages appears.



4 PULSE CLIENT PACKAGE(S)	
BUILD VERSION	RELEASE DATE
<input checked="" type="radio"/> 22.2R1-1295	2022-07-07 16:48:12
<input type="radio"/> 9.1R14-15521	2022-03-28 16:48:12
<input type="radio"/> 9.1R13-13865	2022-01-21 16:48:12
<input type="radio"/> 9.1R13-12679	2021-11-18 16:48:12

3. Select any of the listed Ivanti Secure Access Client packages. This is the version of the Ivanti Secure Access Client software that you want users to have on their device.

As each user next logs into Ivanti Secure Access Client on their device, if their software is at a different version, Ivanti Secure Access Client provides a prompt to the user to change to the version you selected in nSA.

After the Client package download starts from nSA to ICS Gateway, any other operations in nSA, for example a Role or Realm creation and any configuration change, do not work unless the download is complete. After the successful download, config creations or modifications appear.

## Upgrading Gateways and Clusters with a New Gateway Version

To upgrade one or more Gateways and Clusters:

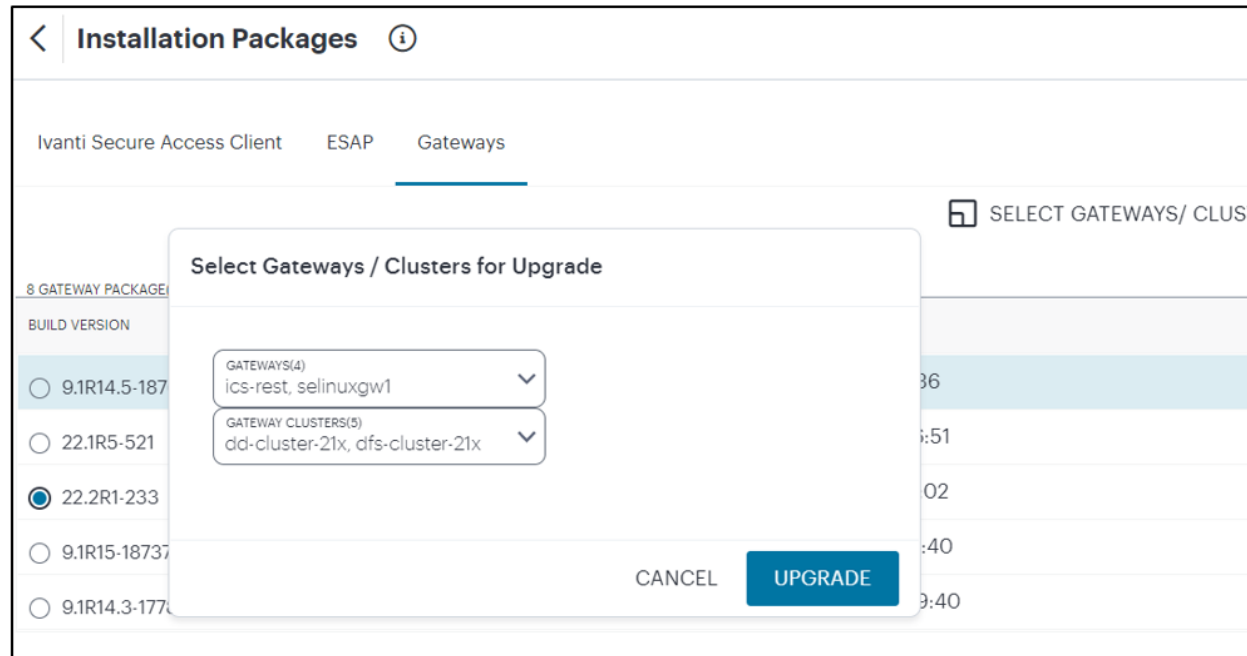
1. Select **Administration > Upgrade > Installation Packages**.
2. In the Installation Packages page, select the **Gateways** tab.

The Gateways page shows the list of installed packages of Connect Secure Gateway.

3. Select the required build version from the list and click **Select Gateways/Clusters to Upgrade**.
4. In the Select Gateways / Clusters for Upgrade dialog, from the **Select Gateways** drop-down list, select one or more Gateways.

The UI shows the applicable Gateways and Clusters running on version 21.12 and above.

5. From the **Select Clusters** drop-down list, select one or more Clusters.





























The Select Gateways and Select Clusters list shows only those Gateways and Clusters that have lower versions than the selected version.

6. Click **Upgrade**. The upgrade task is scheduled, and a notification is displayed.

- On the Ivanti Connect Secure menu, select Gateways > Gateways List to see the progress of the Upgrade process.

**ALL GATEWAYS**

Gateways List ↻

<input type="checkbox"/>	GATEWAYS	CONNECTION STATUS	VERSION	STATUS
<input type="checkbox"/>	Standalone ICS Gateways			
<input type="checkbox"/>	 d-vmw21xics-166	 Connected	22.1R1-334	 Gateway c
<input type="checkbox"/>	 sulthan-aws-2	 Disconnected	22.1R1-223	 N/A
<input type="checkbox"/>	 milan22r1gw1-210	 Connected	22.1R1-285	 N/A
<input type="checkbox"/>	 milan22r1gw1-211	 Connected	22.1R1-285	 N/A
<input type="checkbox"/>	 milan9x22r1gw199	 Connected	9.1R14-17679	 N/A
<input type="checkbox"/>	 milan9x22r1gw289	 Connected	9.1R14-17679	 N/A
<input type="checkbox"/>	 d-vmw21xics-161	 Connected	22.1R1-304	 N/A
<input type="checkbox"/>	 d-vmw21xics-162	 Connected	22.1R1-334	 Gateway c
<input type="checkbox"/>	 fzgwrcl	 Connected	22.1R1-285	Downloading
<input type="checkbox"/>	APcluster			

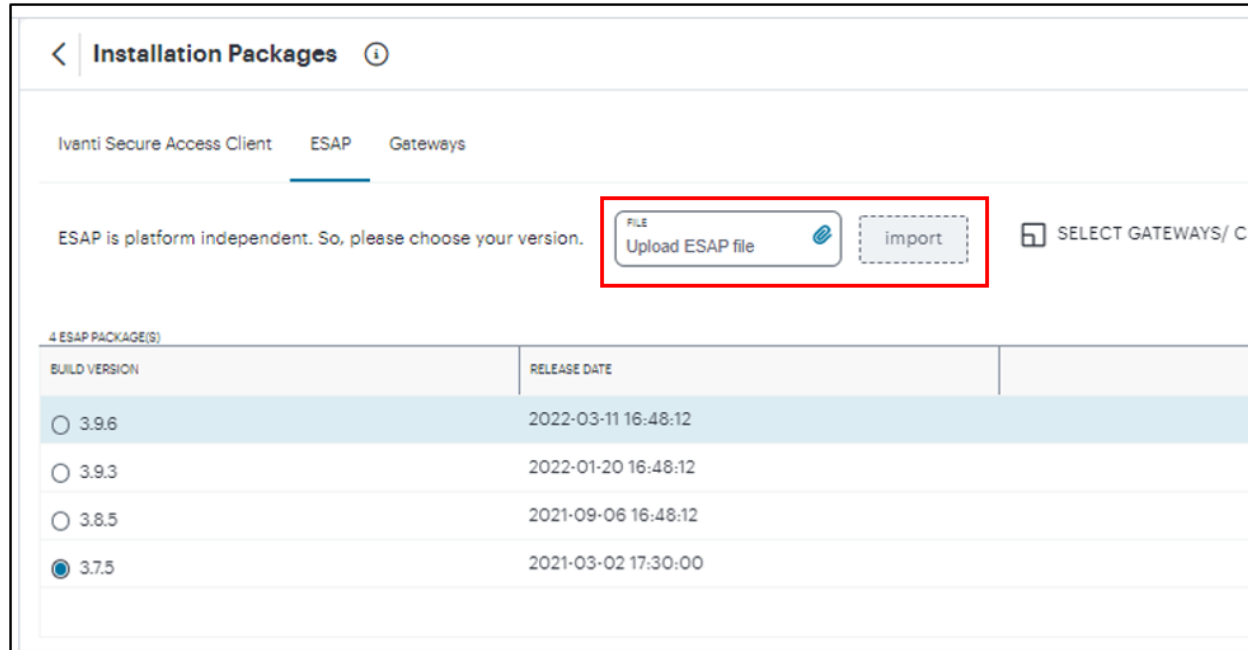
## Upgrading Gateways and Clusters with ESAP

### Uploading an ESAP Package

To upload an ESAP package version:

- Select **Administration > Upgrade > Installation Packages**.
- In the Installation Packages page, select the **ESAP** tab.

3. Click the **Upload ESAP file** box.



4. Browse and select the latest ESAP package that you want to upload and then click **Import**.

After successful upload to nSA, the ESAP package gets listed in the ESAP packages page.

You can upload only one ESAP package.

## Upgrading with ESAP

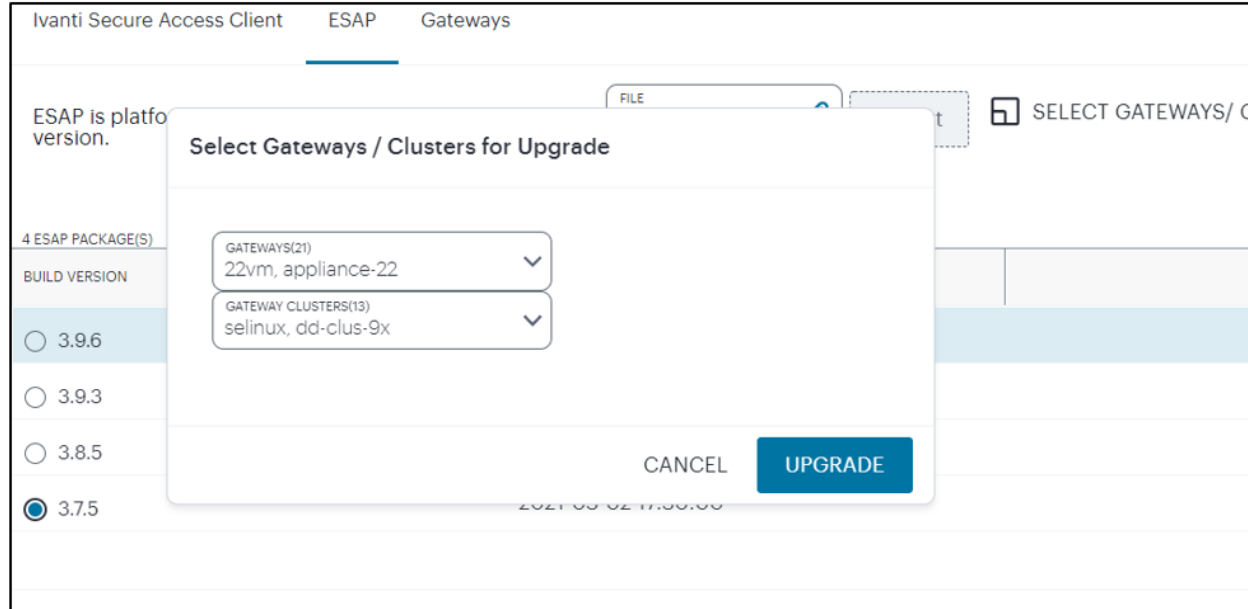
To upgrade one or more Gateways and Clusters to a newer ESAP package version:

1. Select **Administration > Upgrade > Installation Packages**.
2. In the Installation Packages page, select the **ESAP** tab.
3. Select the required build version from the list and click **Select Gateways/Clusters to Upgrade**.
4. In the Select Gateways / Clusters for Upgrade dialog, from the **Select Gateways** drop-down list, select one or more Gateways.

The UI shows the applicable Gateways/Clusters running on version 21.12 and above.



- From the **Select Clusters** drop-down list, select one or more Clusters.



The Select Gateways and Select Clusters list shows only those Gateways and Clusters that have lower versions than the selected version.

- Click **Upgrade**. The upgrade task is scheduled, and a notification is displayed in the logs.

nSA deletes all the existing ESAP packages from the ICS Gateway after the upgrade and retains only the upgraded ESAP version.

## Removing Ivanti Connect Secure Gateway

To remove Ivanti Connect Secure Gateway:

- In the Gateway Overview page, click the context menu icon present at the top-right of the page to access the options applicable to the selected Gateway.
- Select **Delete Gateway**.

The selected Gateway is removed from the list of Gateways.

## Configuring Integrity Scanner

You can configure scan the system to periodically check for any integrity anomalies. If any anomaly found, information is displayed in the dashboard.

To configure Integrity Scanner Interval:

1. Log in to the Ivanti Neurons for Secure Access portal as a Tenant Admin. See "[Logging in to Ivanti Neurons for Secure Access](#)" on page 12.
2. Use the Gateway Switcher and select **Ivanti Connect Secure**.
3. From the Ivanti Connect Secure menu, click the **Gateways** icon, then select **Gateways > Gateways List**.

The All Gateways page is displayed showing a list of standalone ICS Gateways and Cluster nodes.

4. Select one or more gateways, click **Select Configuration**, and select **ICT**.

ALL GATEWAYS					
				Search	⌵
Gateways List					
	GATEWAYS	CONNECTION STATUS	VERSION	STATUS	
<input type="checkbox"/>	>	Standalone ICS Gateways			
<input checked="" type="checkbox"/>		fznewgw			
<input checked="" type="checkbox"/>	>	dfs-cluster-21x			


5. Select the scanner interval.

- **Periodic Scan:** Select the time interval to run the integrity scanner during run time.

For example: Select 2 hrs to run the integrity scanner every 2 hrs.

- **Scheduled Scan:** Select to run integrity scanner at a specified time every day.

For example: When 13 hr 25 min is specified, the scanner runs at the same time every day.

 **Runtime Integrity Scanner Interval**

---

**You have selected 2 Gateway**

Run the ICT Periodic Scan     Run the ICT Scheduled Scan

# Multinode Configuration Management

## Config Synchronization

The config synchronization feature supports simple configuration management across an enterprise without requiring you to deploy the systems as a cluster. You synchronize a partial configuration from the running configuration on the source system to the running configuration on one or more target systems.

To configure config synchronization rule:

1. Log into the nSA as a Tenant Admin.
2. From the ICS menu, click **Gateways**, then click **Multinode Configuration** and then select **Config Synchronization**.

- In the Config Synchronization page, click **Create Config Sync Rule**.

←
**CREATE CONFIG SYNC RULE** ⓘ

CONFIG SYNC RULE NAME  
 CNFG-Rule-1

SELECT SOURCE GATEWAY OR CLUSTER NODE NAME  
 bingw

Version 22.3R2-916

DESCRIPTION  
 Type your message here...

---

**Target Gateways**

Select gateways and clusters to push the configuration

GATEWAYS(S)  
 lcsd58base, kan-782

CLUSTER(S)  
 peri-1009

---

**Select Configuration**

Select a configuration to push to the selected gateways and cluster

Expand All
Select All

- System Settings
- Cloud Secure
- Sign-in Settings
- Endpoint Security
- Behavioral Analytics
- Authentication Realms
- Roles
- Resource Profiles
- Resource Policies
- Ivanti Secure Access Client
- Enterprise Onboarding
- Maintenance Settings

Mode	Action
<input checked="" type="radio"/> Manual	<input checked="" type="radio"/> Merge
<input type="radio"/> Automatic	<input type="radio"/> Replace

Cancel
Create C

4. Enter **Config Sync Rule Name**, select a Gateway or Cluster, and enter **Description**.
5. Under Target Gateways, select Gateways and Clusters to synchronize.
6. Under Select Configuration, select a configuration to synchronize to the target Gateways and Clusters.
7. You can expand all the configurations using **Expand All** and select all the configurations using **Select All**. You can expand each group and select the required settings.


CREATE CONFIG SYNC RULE ⓘ

System Settings

Cloud Secure

Sign-in Settings

**Select ALL Sign-in Settings**

Sign-in URLs  This configuration has dependent configuration.

None

ALL Sign-in URLs

SELECTED Sign-in URLs

Sign-in Pages

None

ALL Pages

Only Pages used by selected URL(s) and Role(s)

SELECTED Pages

Sign-in Notifications

None

ALL Notifications

Only Notifications used by selected URL(s) and Role(s)

SELECTED Notifications

Sign-in SAML

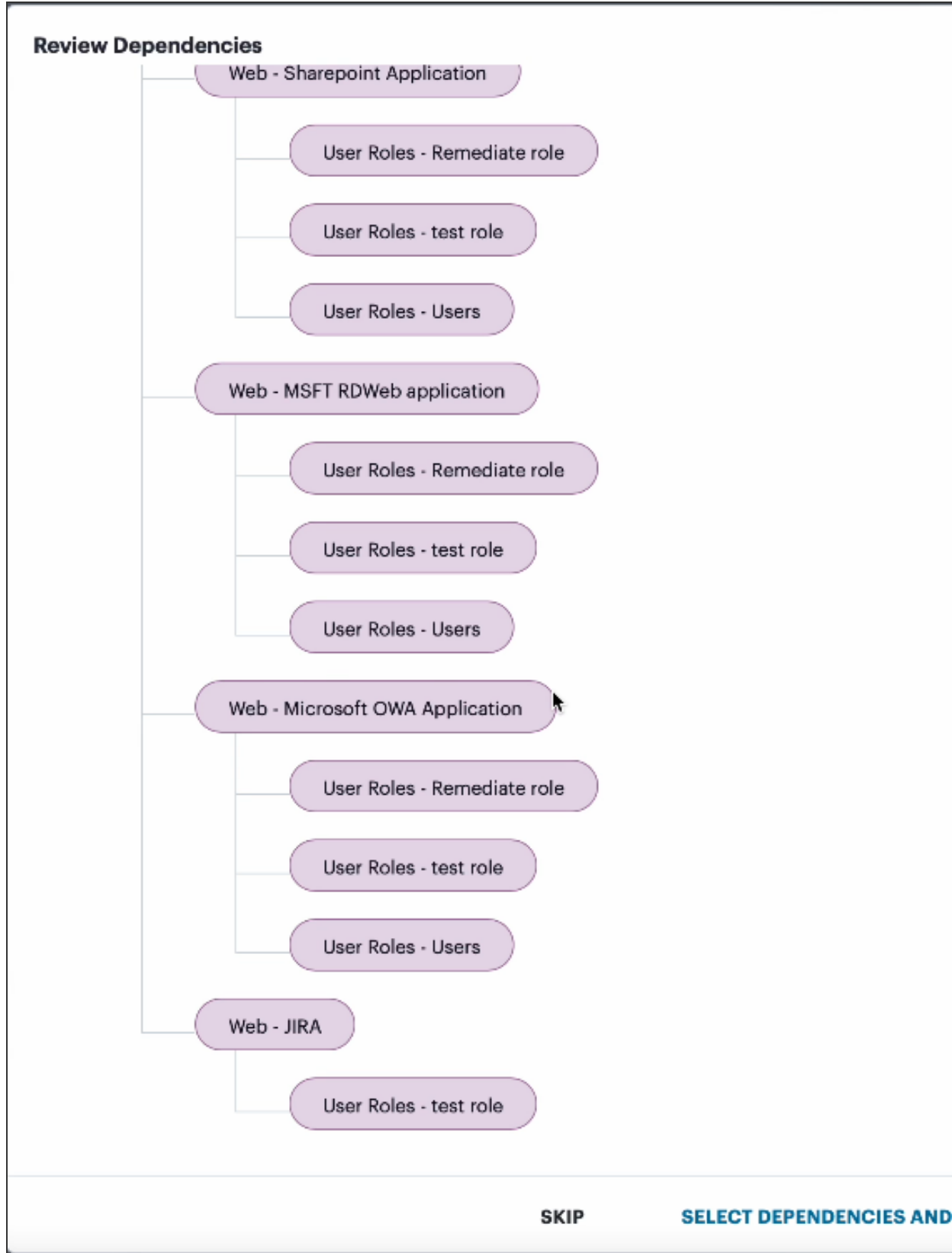
Cancel Review Dependencies Create

8. Look for any dependent configuration and select the required settings. The **Review Dependencies** button will appear at the bottom of the page.
9. Select the Mode: **Manual** or **Automatic**. Automatic option will sync the targets whenever there is change in source configuration.

10. Select the Action: **Merge** or **Replace**. The Merge option applies only changes in source to the targets, whereas the Replace option replaces the targets configuration with the source configuration.

11. To review the dependencies, click **Review Dependencies**.
  - To make any changes, click **Skip** and select the required dependencies.
  - To proceed with the changes, click **Select Dependencies and Proceed**.





12. Click **Create Config Sync Rule**.

The config sync rule gets listed in the Config Synchronization page.

To edit an existing config sync rule:

1. In the Config Synchronization page, click on the config sync rule name that you want to edit.
2. In the Edit Rule page, make the necessary changes. You cannot modify the rule name and source Gateway or Cluster.
3. Click **Update Config Sync Rule**.

- If Manual Mode is selected, then in the Config Synchronization page, select the check box corresponding to the config sync rule that you modified. Then click **Trigger Config Sync Rule** icon.

The Preview Config Sync Rule page appears.

**CONFIG SYNCHRONIZATION** ⓘ

---

**Preview Config Sync Rule of preview-before-sync-desjardins**  
 After previewing the configuration changes in the source gateway, trigger the selected rule.

Summary	Details
Created: Authentication > Auth Servers > new-auth-server	Created: Authentication -> Auth Servers -> new-auth-server
Modified: Authentication > Auth Servers > System Local	Modified: local -> settings -> password maximum length Modified: local -> settings -> password minimum length Modified: local -> settings -> password require alphabets Modified: local -> settings -> password require integer
Deleted: Authentication > Auth Servers > demo	Deleted: Authentication -> Auth Servers -> demo

Cancel

- Preview the config sync rule details, and click **Trigger Rule**.

**i** Preview before sync works only when one manual config sync rule is triggered.

To delete one or more config sync rule(s):

- In the Config Synchronization page, select the check boxes next to the config sync rule names that you want to delete.

2. Click the Delete icon.
3. Click **OK** to confirm the deletion.

To view the config sync rule status on the target gateways:

1. Click on the config sync rule name that you want to view the status.
2. Click the **Status** tab.

A list of target gateways, their config sync rule status and brief description is displayed.

The screenshot shows a web interface for 'CONFIG SYNCHRONIZATION'. It has a header with a back arrow and a title 'CONFIG SYNCHRONIZATION' with an information icon. Below the header are two tabs: 'Edit Rule' and 'Status', with 'Status' being the active tab. The main content area displays 'CONFIG SYNC RULE STATUS' with a green 'Completed' badge. Below this, it shows 'Last Trigger Time: 10-04-2023 03:39:58 PM GMT' and '7 Gateways'. A table follows with three columns: 'TARGET GATEWAYS', 'CONFIG SYNC STATUS', and 'DESCRIPTION'. The table lists seven gateways: 'kamal-8k-103' (Pending), 'kamal-VA-4k' (Successful), 'kamal-6k-61' (Successful), 'kamal-8k-49' (Successful), 'kamal8khw' (Successful), 'kamal6khw' (Successful), and 'kamal-8k-129' (Successful). The descriptions for the successful entries are 'Operation succeeded without warning or error!' and 'The configuration has been implicitly changed'.

TARGET GATEWAYS	CONFIG SYNC STATUS	DESCRIPTION
kamal-8k-103	Pending	Waiting on Gateway Status
kamal-VA-4k	Successful	Operation succeeded without warning or error!
kamal-6k-61	Successful	The configuration has been implicitly changed
kamal-8k-49	Successful	The configuration has been implicitly changed
kamal8khw	Successful	The configuration has been implicitly changed
kamal6khw	Successful	The configuration has been implicitly changed
kamal-8k-129	Successful	The configuration has been implicitly changed

The following alerts are generated:

- Config Sync Rule Deleted - This alert is generated when the Config Sync rule is deleted.
- Config Sync Rule Updated - This alert is generated when the Config Sync rule is updated.
- Config Sync Target Cluster Deleted - This alert is generated when the Target Cluster, which is in the Config Sync rule, gets deleted.

# System Configuration

- ["Introduction" on the next page](#)
- ["NTP Configuration" on the next page](#)
- ["Licensing Mode" on page 163](#)
- ["Security Configuration" on page 165](#)
- ["Certificates Configuration" on page 178](#)
- ["NCP Configuration" on page 193](#)
- ["Client Types Configuration" on page 196](#)
- ["Virtual Desktops Configuration" on page 199](#)
- ["User Record Synchronization" on page 200](#)
- ["IKEv2 Configuration" on page 205](#)
- ["SAML Configuration" on page 208](#)
- ["Mobile Configuration" on page 211](#)
- ["VPN Tunneling Configuration" on page 213](#)
- ["PSAM Configuration" on page 214](#)
- ["Telemetry Settings" on page 215](#)
- ["Advanced Client Configuration" on page 216](#)
- ["Advanced Networking Configuration" on page 219](#)
- ["IF-MAP Federation" on page 220](#)
- ["Log/Monitoring" on page 233](#)
- ["Behavioral Analytics" on page 251](#)

## Introduction

When you install and initially set up the device, you use the serial port console to set basic network and host settings. To get started, you must use the serial console to configure these settings for the internal interface. You have the option to use the serial console to configure network and host settings for the external interface and the management interface.

Once the internal interface has been configured, you can use the admin console Network Settings pages to modify settings for the internal interface, to enable and configure the external interface and the management interface, and to configure or manage advanced networking features, including:

- Hostname
- IPv6 addresses
- VLAN ports
- Virtual ports
- Route table entries
- Host mapping table entries
- ARP cache entries
- Neighbor discovery cache entries
- System date and time (manual configuration) or NTP

## NTP Configuration

You can use the admin console to set the system date and time manually or by configuring a network time protocol (NTP) server. The system supports NTPv4, which is backwards compatible with NTPv3 and NTPv2.



We recommend you use NTP to synchronize the date and time clocks on all network systems. Using NTP obviates issues that might occur with cluster synchronization, network communication that uses time-sensitive protocols, such as SAML, and implementation of time-based policies, such as local authentication server account expiration. In addition, using NTP as a standard in your network rationalizes timestamps in logs, which facilitates reporting and troubleshooting.

---

To configure NTP:

1. Log into the nSA as a Tenant Admin.
2. From the ICS menu, click the **Gateways > Gateways List** and then select any standalone ICS Gateway or Cluster node.
3. Navigate to **System > NTP** that displays the System Status page with *System Date and Time*.
4. Select your **Time Zone**. Selecting the appropriate time zone enables the system to automatically adjust the time for Daylight Saving Time changes
5. Select **Time Source**.
  - If **Use Pool of NTP Servers** is selected, configuring one NTP server is mandatory, but keys are optional. Click **Save Changes**.



It is not recommended to use only two NTP servers. If more than one NTP server is required, four NTP servers is recommended minimum. Four servers protect against one incorrect time-source.

---



If you are using NTPv4, specify the symmetric key. The key must be pre-synchronized with the NTP server. For example, if you want to configure NIST's clock as the NTP server, you must request a key beforehand and have NIST send that key to you.

---

- If **Set Time Manually** is selected, specify the **Date** and **Time** with **Time Slot**.
- Click **Get from Browser** to automatically populate the *Date* and *Time* fields. Click **Save Changes**.

## Licensing Mode

You can use either Gateway licenses or nSA Named User licenses. You can switch between these two licensing modes any time. Gateway Licensing mode is same as the existing 9.x Gateway licensing.

To choose the licensing mode:

1. Log into the nSA as a Tenant Admin.
2. From the ICS menu, click the *Gateways > Gateways List* and then select any standalone ICS Gateway and Cluster node.

3. Navigate to **System > Configuration > Licensing > Licensing Summary**. The License Summary page shows the two options, **Gateway Licensing Mode** and **nSA Named User Licensing Mode**. By default, *Gateway Licensing Mode* is selected.
4. Choose the required mode and click **Switch**. You can view the **Licensed capacity**.
5. Under **Installed license details** enter **License key(s)** in the field and click **Add**. You can view the nodes and corresponding license.

**Licensing Summary**

Configuration

Licensing >

Security

Certificates

NCP

Client Types

Virtual Desktops

User Record Synchronization

IKEv2

SAML

Mobile

VPN Tunneling

PSAM

Telemetry

Advanced Client Config

Advanced Networking

Gateway Licensing mode  
 nSA Named User Licensing mode  
 Switch

**Licensed capacity**

Note that entering your license key signifies that you have read and agree to the terms described in the [license agreement](#).

Feature	Effective	Leased	Installed	Auto-leasing
No Data Available				

**Installed license details**

Note that entering your license key signifies that you have read and agree to the terms described in the [license agreement](#).

LICENSE KEY(S):

Add

#	Nodes	Licenses
---	-------	----------



## Security Configuration

Granular cipher selection provides an administrator the ability to select specific ciphers and the preferred ordering of the selected ciphers. This feature also provides presets like Suite and PFS. There are two tabs, Inbound OpenSSL options and Outbound OpenSSL options. With this feature admins can select the ciphers that TLS/SSL connections will use. The Inbound OpenSSL options apply to all incoming connections. Outbound OpenSSL options apply to the following services:

- Rewriter
- ActiveSync
- SCEP
- Syslog
- LDAPS

## Inbound SSL Options

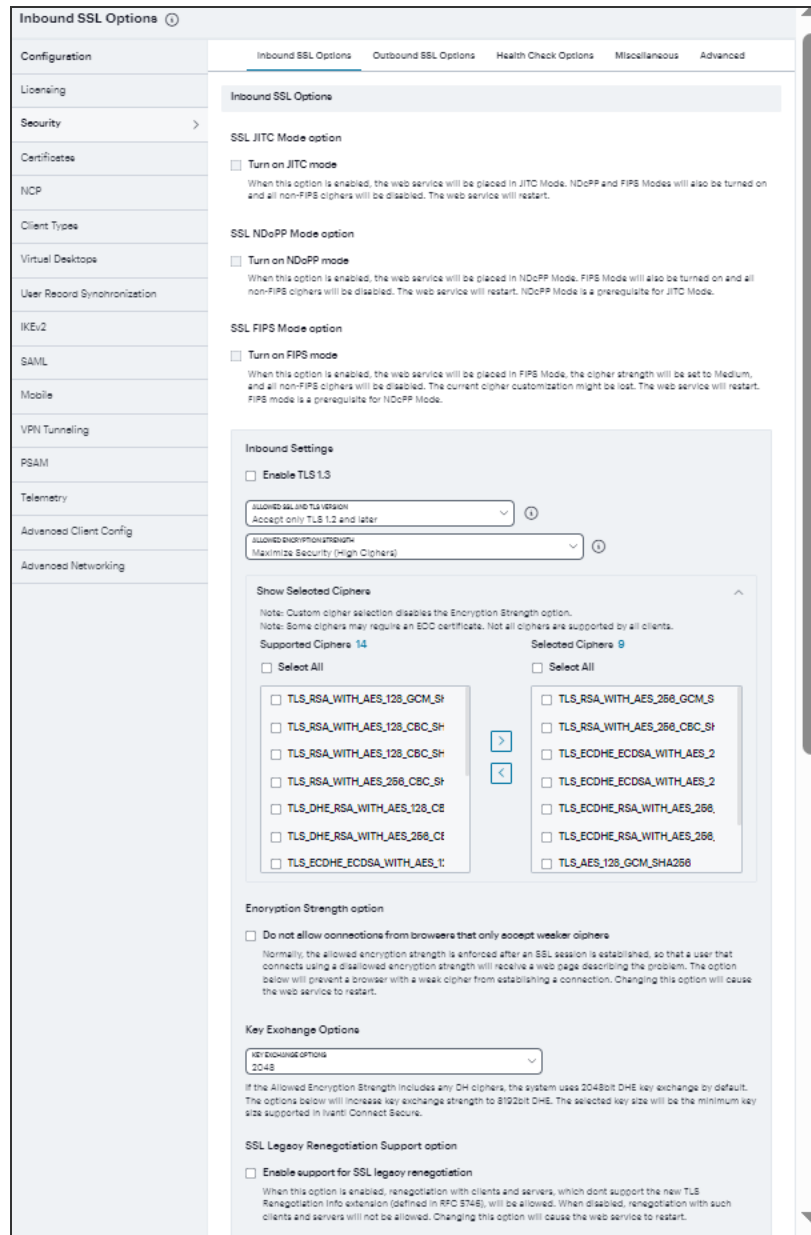
To enable the Inbound SSL options Mode:

1. Navigate to **System > Configuration > Security > Inbound SSL Options**.
2. Click on **Turn on JITC mode** check box.
3. Once Turn on JITC mode is enabled, Turn on NDcPP mode and Turn on FIPS mode are also automatically enabled.

4. In **Inbound settings**, select **Allowed SSL and TLS Version** and **Allowed Encryption Strength**.



NDcPP mode can be enabled in the Inbound tab with a check box. This status is also applied over to the Outbound tab. Turning on NDcPP automatically turns on FIPS mode and disables SSL/TLS Version TLS1.0 and below. Also, NDcPP Mode allows to choose only 16 Ciphers under Custom Encryption Strength.



5. The two panels of **Supported Ciphers** and **Selected Ciphers** are displayed. Supported ciphers has the entire list of ciphers supported for the selected SSL or TLS version. Selected ciphers list the currently selected ciphers list.
6. Select **Encryption Strength option** to strengthen the SSL session that is established.
7. Select **Key Exchange Options** to increase the key exchange strength to 2048bit DHE.
8. Select **Enable support for SSL legacy renegotiation** to allow new TLS Renegotiation Info extension.
9. Select **Enable port redirection for TLSv1.3 certificate authentication** to change the client-certificate authentication over TLSv1.3 connections with Port: 8443.
10. Set **SSL Handshake Timeout option**
11. Select **Enable client certificate** to enable Client certificate on the external port and/or the virtual ports.
12. The two panels of **External Virtual Ports** and **Selected Virtual Ports** are displayed. External Virtual Ports has the entire list of ports available for the selected certificate. Selected Virtual Ports list the currently selected ports list.
13. The two panels of Internal Virtual Ports and Selected Virtual Ports are displayed. Internal Virtual Ports has the entire list of ports available for the selected certificate. Selected Virtual Ports list the currently selected ports list. You can move the virtual ports from the external/internal to selected list and vice versa.

14. Click **Save Changes**.

The screenshot displays the configuration page for SSL options. On the left is a navigation sidebar with categories like Insights, Gateways, System, and Configuration. The 'Configuration' section is expanded, showing sub-items like Network, IF-MAP Federation, and Authentication. The main content area is titled 'Encryption Strength option' and includes several sections:

- Encryption Strength option:** A checked checkbox labeled 'Do not allow connections from browsers that only accept weaker ciphers'. Below it is explanatory text.
- Key Exchange Options:** A checked checkbox labeled 'Use 2048bit Diffie-Hellman key exchange' with explanatory text.
- SSL Legacy Renegotiation Support option:** An unchecked checkbox labeled 'Enable support for SSL legacy renegotiation' with explanatory text.
- Common options:**
  - SSL Handshake Timeout option:** A text input field labeled 'TIMEOUT (SECONDS)' with the value '60' and a help icon.
  - ActiveSync Client Certificate Configuration:** An unchecked checkbox labeled 'Enable client certificate on the external port'. Below it are two lists of virtual ports: 'External Virtual Ports' and 'Selected Virtual Ports', both currently showing '0' and 'No Items'.
  - Internal Virtual Ports:** Similar to the external ports, showing '0' and 'No Items'.

At the bottom of the configuration area, there is a note: 'Note that changing any of the above settings might restart some services in the Pulse Connect Secure.' Below this note is a blue button labeled 'Save Changes'.

## Outbound SSL Options

To enable the Outbound SSL options Mode:

1. Navigate to **System > Configuration > Security > Outbound SSL Options**.



Only for Outbound SSL Settings, we can configure Non FIPS Ciphers when FIPS is Enabled using Custom Cipher Selection Option. Now, there are options to change different SSL/TLS versions and different encryptions in the Outbound SSL Settings.

---

2. **DoD Certification Mode**, **SSL NDcPP Mode**, and **SSL FIPS Mode** are OFF all these can be enabled from **Inbound SSL options** tab.
3. In **Outbound settings**, select **Allowed SSL and TLS Version** and **Allowed Encryption Strength**
4. The two panels of **Supported Ciphers** and **Selected Ciphers** are displayed. Supported ciphers has the entire list of ciphers supported for the selected SSL or TLS version. Selected ciphers list the currently selected ciphers list. The following figure shows the two panels (Supported Ciphers and Selected Ciphers). Note that the Selected Ciphers and Supported Ciphers List will also be displayed for all Preset like PFS or Suite B or Medium or High.

5. Click **Save Changes**.

## Health Check Options

To configure health check options:

1. Navigate to **System > Configuration > Security > Health Check Options** to display the configuration page.



Enable additional information via healthcheck.cgi-This option is used by entities like load balancers to monitor the health status of the node.

2. Select the **Enable additional information via healthcheck.cgi** check box.

- Click '+' to add the relevant IPv4/v6 addresses for which additional information is required to be made available.
- Click **Save Changes**.

## Miscellaneous Setup

You can use the **System > Configuration > Security > Miscellaneous** page to configure the following security options:

- **Persistent cookie options** - You can choose whether to preserve or delete persistent cookies when a session is terminated.
- **Lockout options** - You can configure lockout options to protect the system from denial of service (DoS), distributed denial of service (DDoS), and password-guessing attacks.
- **Last login** - You can choose whether to show users the time and IP address their user ID was used to sign in.
- **X-Frame-Options protection** - You can choose to defend against click-jacking attacks by adding X-Frame-Option header to all the IVE generated pages. If this is not enabled, then only welcome.cgi will have this header.

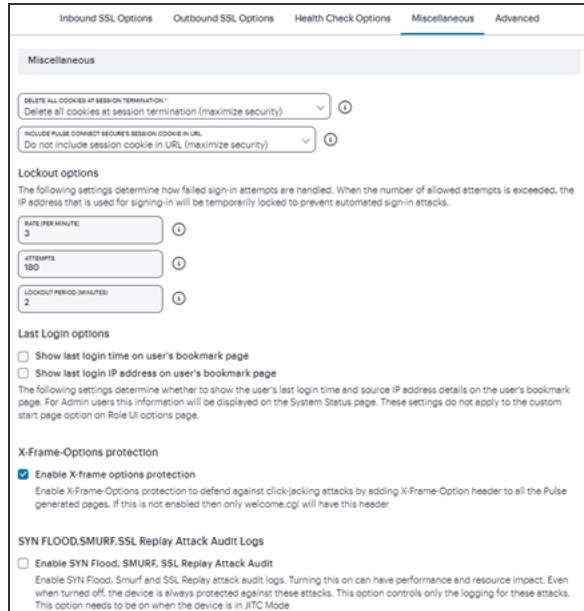
- **Slow Post Attack Defense** - You can configure to protect against slow-post DOS attacks from non-authenticated users.
- **HSTS** - HTTP Strict Transport Security (HSTS) is a HTTP special response header which will prevent any communications over HTTP
- **Booting Options on Integrity Check Failure** - You can configure to protect against integrity attacks.
- **Host Header Validation** – You can block open redirect attacks
- **Username Validation** – You can block unauthorized access
- **Integrity checking options** - You can configure scan the system to periodically check for any integrity anomalies. If any anomaly found, information is displayed in the dashboard.

To configure cookie and lockout options:

1. Select **System > Configuration > Security > Miscellaneous** to display the configuration page.
2. Complete the configuration as described in the following table.



3. Click **Save Changes**.



Settings	Guidelines
<b>Delete all cookies at session termination</b>	
Delete / Preserve	For convenience, the system sets persistent cookies on the user's machine to support functions such as multiple sign-in, last associated realm, and the last sign-in URL. For additional security or privacy, you can choose not to set them.
<b>Include Ivanti Connect Secure's session cookie in URL</b>	
Include / Not Include	Mozilla 1.6 and Safari may not pass cookies to the Java Virtual Machine, preventing users from running JSAM and Java applets. To support these browsers, the system can include the user session cookie in the URL that launches JSAM or a Java applet. By default, this option is enabled, but if you have concerns about exposing the cookie in the URL, you can disable this feature.
<b>Lockout options</b>	
Rate	Specify the number of failed sign-in attempts to allow per minute.

Settings	Guidelines
Attempts	Specify the maximum number of failed sign-in attempts to allow before triggering the initial lockout. The system determines the maximum initial period of time (in minutes) to allow the failed sign-in attempts to occur by dividing the specified number of attempts by the rate. For example, 180 attempts divided by a rate of 3 results in an initial period of 60 minutes. If 180 or more failed sign-in attempts occur within 60 minutes or less, the system locks out the IP address being used for the failed sign-in attempt.
Lockout period	Specify the length of time (in minutes) the system must lock out the IP address.
<b>Last Login options</b>	
Time / IP Address	Display the day and time and IP address the user last logged in to the system. For users, this information appears on their bookmark page. For administrators, this information appears on the System Status Overview page. These settings do not apply to the custom start page option on Role UI Options page.
<b>X-Frame-Options protection</b>	
Enable X-Frame-Options protection	By default, the Enable X-Frame-Options is checked. If the admin does not want to have this protection, they can uncheck this option. The X-Frame-Options HTTP response header can be used to indicate whether or not a browser should be allowed to render a page in a <frame>, <iframe> or <object>.
SYN FLOOD,SMURF,SSL Replay Attack Audit Logs	Turning this on can have performance and resource impact. Even when turned off, the device is always protected against these attacks. This option controls only the logging for these attacks. This option needs to be on when the device is in JITC Mode
Limit SYN requests per source IP	To limit the number of SYN requests per source IP to prevent DOS attacks.

Settings	Guidelines
Limit SYN requests per system	To limit the number of SYN requests per system to prevent DDOS attacks.
<b>Slow Post Attack Defence</b>	
Timeout	By default, the POST body is received within 10 seconds. If the browser is unable to send the POST body within 10 seconds the connection is eventually dropped. (Configurable from 3 - 60Sec)
Maximum Request Size	By default, now a connection is directly rejected if it tries to POST more than 4KB in POST body (Configurable from 256 Bytes to 24 KB)
<b>HSTS</b>	
Max Age	Specify the maximum age for HSTS. It can be disabled by configuring max age as 0.
Enable includeSub-domain directive	Select the check box to enable/disable the includeSubdomain directive. By default, it is turned off.
Enable preload directive	Select the check box to enable/disable the preload directive. By default, it is turned off.
<b>Bootimg Options on Integrity Check Failure</b>	
Bootimg Options on Integrity Check Failure to stop booting if manifest integrity validation fails	Select the check box to enforce bootimg options on integrity validation. By default, it is turned off. The following integrity checks are performed: Checks the SHA512 digital signature of the manifest file. Checks the SHA256 digest of each individual file entries in the manifest. If enabled and integrity check fails, admin needs to roll back to previous working package or perform factory reset.
<b>Host Header Validation</b>	
Enable Host header validation to block open redirect attacks	Select the check box to enforce host header validation. By default, it is turned off.

Settings	Guidelines
	When Host header validation is enabled, every http request will be validated against hostnames and IP v4/v6 addresses known to the ICS server. If match is not found, the request will be dropped and logs are recorded in admin access logs and user access logs, and a response will be sent back to client.
<b>Username Validation</b>	
Enable Username validation to block unauthorised access	Select the check box to enforce username validation for usage of unsupported characters. Max allowed length for username is 128 characters.
<b>Runtime Integrity Scanner Interval</b>	
Periodic Scan	Select the time interval to run the integrity scanner during run time. For example: Select 2 hrs to run the integrity scanner every 2 hrs.
Scheduled Scan	Select to run integrity scanner at a specified time everyday. For example: When 13 hr 25 min is specified, the scanner runs at the same time everyday.
<b>Referer Header Validation</b>	
Enable Referer Header validation to block CSRF attacks	Select the check box to enable referer header validation.
<b>Active Directory Encryption type</b>	
Enable AES 256 type encryption for Active Directory Authentication Server	Select the check box to enable AES256 encryption type. If enabled, this option changes the encryption type to AES256 for all Active Directory Authentication Server using Kerberos Authentication Protocol. This Feature is applicable only for Active Directory Authentication Server using Kerberos Authentication protocol.
<b>Relay State Validation</b>	

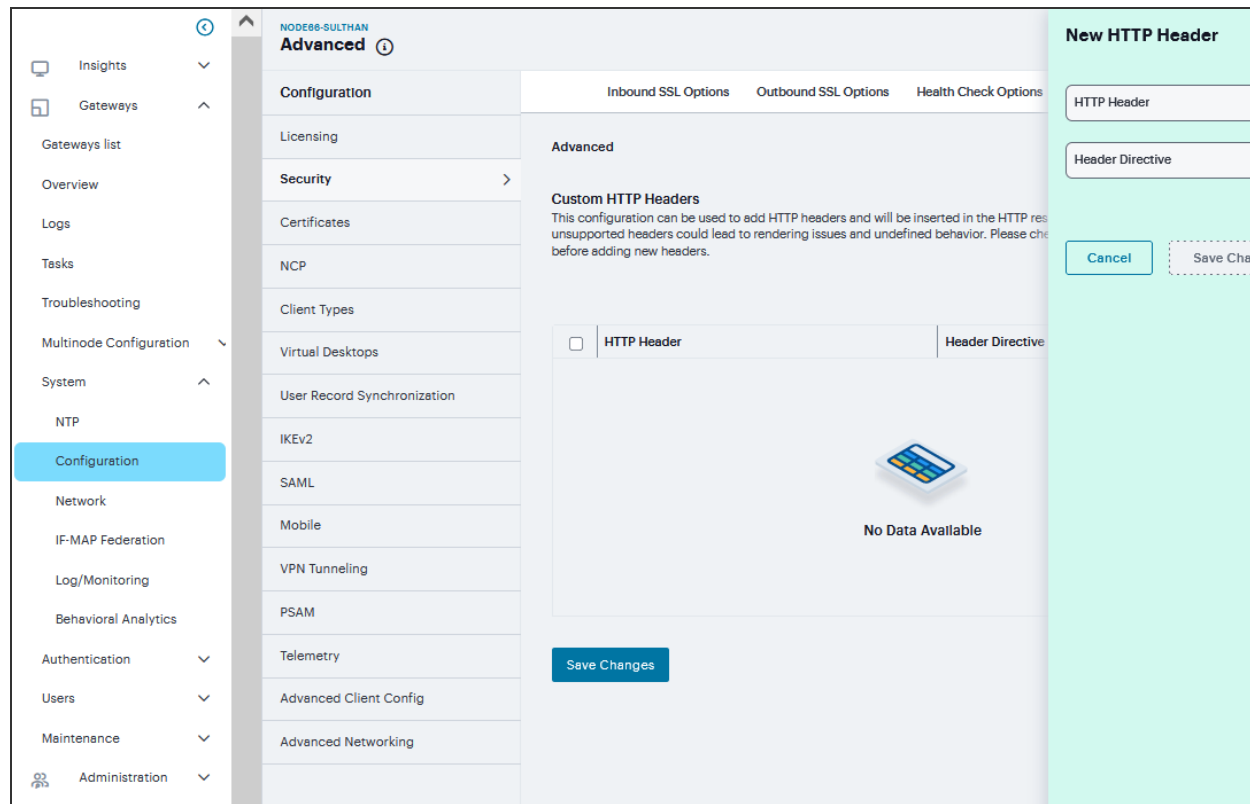
Settings	Guidelines
Enable Relay State Validation for SAML Authentication Server	Relay State validation can be configured under <b>System &gt; Configuration &gt; Miscellaneous</b> . It is enabled by default in 22.5R2.1.

## Advanced Configuration

Connect Secure supports several HTTP headers, which are sent in response to the client request. There are several more headers built to improve security and prevent attacks like XSS. The Custom HTTP Headers configuration enables the administrator to add new headers that they want to enforce.

To configure custom HTTP header:

1. Navigate to **System > Configuration > Security > Advanced**
2. Click '+' to Add the relevant **HTTP Header** and **Header Directive**.
3. Click **Save Changes**



## Certificates Configuration

Connect Secure uses Public Key Infrastructure (PKI) to secure the data sent to clients over the Internet. PKI is a security method that uses public and private keys to encrypt and decrypt information. These keys are enabled and stored through digital certificates. A digital certificate is an encrypted electronic file issued by a certificate authority (CA) that establishes credentials for client/server transactions.

### Device Certificates

A device certificate helps to secure network traffic to and from the Ivanti Secure Access client service using elements such as your company name, a copy of your company's public key, the digital signature of the Certificate Authority (CA) that issued the certificate, a serial number, and an expiration date. When receiving the device certificate from the system, the client's browser first verifies whether the device certificate is valid and whether the user trusts the CA that issued the certificate. If the user has not already indicated that they trust the certificate issuer, the Web browser prompts the user with a warning saying connection is untrusted or there is a problem with the websites security certificate.

To import an enterprise root server certificate and private key:

1. Select **System > Configuration > Certificates > Device Certificates**.
2. Click **Import Certificate** to display the configuration page.

The screenshot shows the 'Certificates' configuration page in the Neurons Secure Access Tenant Administration interface. The left sidebar contains a navigation menu with 'Configuration' selected. The main content area displays the 'Device Certificates' configuration page, which includes a table of certificates and an 'Import Certificate' button.

Certificate Issued To	Issued By	Valid Dates	Used By
<input type="checkbox"/> qs1.gateway1.com	Intermediate	Feb 9 23:36:24 2019...	<Internal Port>
<input type="checkbox"/> psecure.net	psecure.net	May 8 09:45:22 2019...	

3. Complete the configuration described in table.
4. Click **Import**.

To create Certificate Signing Request (CSR) for RSA and ECC Keys:

1. Navigate to **System > Configuration > Certificates > Client Auth Certificates**.
2. Click '+' on the **Certificate Signing Requests** pane.

- Enter the required requestor information. In this example, the common name is `ecc-p256.<orgname>.net` or `ics.<orgname>.net`.
  - If **RSA** is selected, then select **Key Length** and enter **Random characters**.
  - If **ECC** is selected, then select **ECC Curve** drop-down.
- Click **Save Changes**.
- The CSR is encoded and can be copied or saved to a file. The ECC certificate should be signed by an RSA/ECC CA for Suite B compliance. Follow your CA's process for sending a CSR.
- Click the **Back to Device Certificates** link. Until you import the signed certificate from your CA, your CSR is listed as Pending.

### New Certificate Signing Request ⓘ

Use this page to create a new Certificate Signing Request (CSR) to send to your Certificate Authority of choice.

**KEY TYPE**  
RSA

**COMMON NAME**  
pcs.psecure.net  
(e.g., secure.company.com)

**ORGANIZATION NAME**  
PulseSecure  
(e.g., Company Inc.)

**ORG. UNIT NAME**  
??  
(e.g., IT Group)

**LOCALITY**  
??  
(e.g., SomeCity)

**STATE (FULLY SPELLED OUT)**  
??  
(e.g., California)

**COUNTRY (2 LETTER CODE)**  
??  
(i.e., US)

**EMAIL ADDRESS**  
??

**KEY LENGTH (BITS)**  
1024

Please enter some random characters to augment the system's random key generator. We recommend that you enter approximately twenty characters.

**Random Data**  
(Used for key generation)



## Trusted Client CAs

A trusted client CA is a CA that you deem trusted by adding it to the trusted client CA store. The system trusts any certificate issued by that CA. To use client CA certificates, you must install and enable the proper certificates. Additionally, you must install the corresponding client-side certificates in your users' Web browsers, or you must use the MMC snap-in in your users' computer accounts (machine certificate). When validating a client-side CA certificate, the system verifies that the certificate is not expired or corrupt and that the certificate is signed by a CA that the system has been configured to recognize. If the CA certificate is chained, the system also follows the chain of issuers until it reaches the root CA, validating each issuer in turn. The system supports X.509 CA certificates in DER and PEM encode formats.

To import a trusted client CA certificate:

1. Navigate to **System > Configuration > Certificates > Trusted Client CAs** to display the configuration page.

The screenshot shows the 'Trusted Client CAs' configuration page. The left sidebar contains navigation options: Insights, Gateways, Gateways list, Overview, Logs, Tasks, Troubleshooting, Multinode Configuration, System, NTP, Configuration (highlighted), Network, IF-MAP Federation, Log/Monitoring, Behavioral Analytics, Authentication, Users, and Maintenance. The main menu for 'Certificates' includes Configuration, Licensing, Security, Certificates (selected), NCP, Client Types, Virtual Desktops, User Record Synchronization, IKEv2, SAML, Mobile, VPN Tunneling, PSAM, Telemetry, Advanced Client Config, and Advanced Networking. The 'Trusted Client CAs' section has a 'PORT SELECTION FOR OCSP AND CRL TRAFFIC' dropdown set to 'Internal Port' and a 'Save Changes' button. Below this, there are buttons for 'Auto Import Options', 'Proxy Settings', and 'Import CA Certificate'. A search bar and a 'RECORDS PER PAGE' dropdown (set to 10) are also present. The table below lists the trusted client CAs:

<input type="checkbox"/>	Trusted Client CA	Trusted For Client Authentication?	Valid Dates	Status Checking
<input type="checkbox"/>	msrootca	Yes	2008/07/15 - 2028/07/15	None
<input type="checkbox"/>	AutoEnterprise-CA	Yes	2016/05/21 - 2026/05/21	None
<input type="checkbox"/>	Zero	Yes	2019/08/20 - 2039/08/15	None
<input type="checkbox"/>	fruit-ORANGE-CA	Yes	2013/12/13 - 2038/12/13	None
<input checked="" type="checkbox"/>	Root	Yes	2018/03/14 - 2038/03/09	None
<input type="checkbox"/>	Intermediate	Yes	2018/03/15 - 2028/03/12	None
<input type="checkbox"/>	*client,CA,pcs-qa.e.ash.pz	Yes	2022/05/08 - 2024/05/08	None

2. Click **Import CA Certificate** to display the configuration page.

3. Browse to the *Certificate File*, select it, and click **Import** to complete the import operation.

To enable auto-importing:

1. Navigate to **System > Configuration > Certificates > Trusted Client CAs**.
2. Click the **Auto-Import Options** button to display the options.
3. Complete the configuration described in the following table.
4. Click **Save Changes**.

Auto-Import Options Settings

Setting	Guidelines
Auto-import trusted	Select this option to enable auto-import and display its

Setting	Guidelines
CAs	configuration settings.
Client Certificate Status Checking	<p>Select a method to validate the trusted client certificate:</p> <ul style="list-style-type: none"> <li>• None-Do not validate.</li> <li>• Use OCSP-Use the OCSP method, validating the client certificate in real-time, as needed. After you select this option, you can specify options for OCSP.</li> <li>• Use CRLs-Use CRLs to validate the client certificate. After you select this option, you can specify options for CRL.</li> <li>• Use OCSP with CRL fallback-Use the OCSP validation method when possible, but attempt to validate client certificates using CRLs if the OCSP method fails (for example, if the link to the OCSP responder fails). After you select this option, you can specify options for OCSP and CRL. Inherit from root CA-Use the method configured for the device certificate.</li> </ul>
CDP(s)/OCSP responder	<p>Select the location of the responder value:</p> <ul style="list-style-type: none"> <li>• None-Do not use the responder.</li> <li>• From client certificate-Use the responder value configured in the client certificate.</li> <li>• From trusted CA certificate-Use the responder value configured in the trusted CA certificate that has been uploaded to the system.</li> </ul>
Verify imported CA certificates	<p>Select this option to verify that this trusted client CA is valid. Enabling this will check the CRL of this certificate's issuer, and repeat up the chain until reaching the root trusted client CA.</p>
Skip Revocation check when OCSP/CDP server is not available	<p>Select this option to instruct ICS to skip revocation check and accept end user certificates when either OCSP server or CDP server is not accessible over the network. This</p>

Setting	Guidelines
	<p>option is applicable to digital certificates used for end user authentication.</p> <p>The OCSP Timeout, applicable only for OCSP, is used as the maximum timeout for a network connection or data transfer operation while connecting to an OCSP Responder. An internal timeout will be used for CDP.</p> <p>ICS skips the revocation check in the following conditions:</p> <ul style="list-style-type: none"> <li>• Server IP is not reachable</li> <li>• Server Hostname is either not resolvable or resolving to non OCSP/CRL</li> <li>• Server IP</li> <li>• Proxy IP is either not reachable or not resolving</li> <li>• Downloaded CRL has expired</li> <li>• OCSP/CRL service in Server is not responding.</li> </ul>

To configure a proxy server:

1. Select **System > Configuration > Certificates > Trusted Client CAs**.
2. Click **Proxy Settings** to display the page.
3. Complete the configuration described in Proxy Settings table.
4. Click **Save Changes**.

**Proxy Settings** ⓘ

Use Proxy Server for HTTP-based CRL download

Use Proxy Server for HTTP-based OCSP status checking

[Save Changes](#)

## Proxy Settings

Setting	Guidelines
Use Proxy Server for HTTP-based CRL download	Select to enable the CRL operations to use a proxy server. You can configure a proxy server for web-based URLs, not LDAP URLs.
Use Proxy Server for HTTP-based OCSP status checking	Select to enable the OCSP operations to use a proxy server.
Host Address	Specify either an IP address or a fully qualified domain name.
Port	Enter the proxy server port number if it is different from the default value of 80.
Username/password	If your proxy server required authentication, enter a username and password to log in to the proxy server.

## Trusted Server CAs

All of the trusted root CAs for the Web certificates installed in Internet Explorer are preinstalled. You might need to install a trusted server CA for additional Web servers in the following situations:

- If you are using third-party integrity measurement verifiers (IMVs) that are installed on a remote server, you must upload the trusted root certificate of the CA that signed the remote server's server certificate.
- If you are using virus signature version monitoring with your own staging site for storing the current virus signatures list, you must upload the trusted root certificate of the CA that signed the staging server certificate.

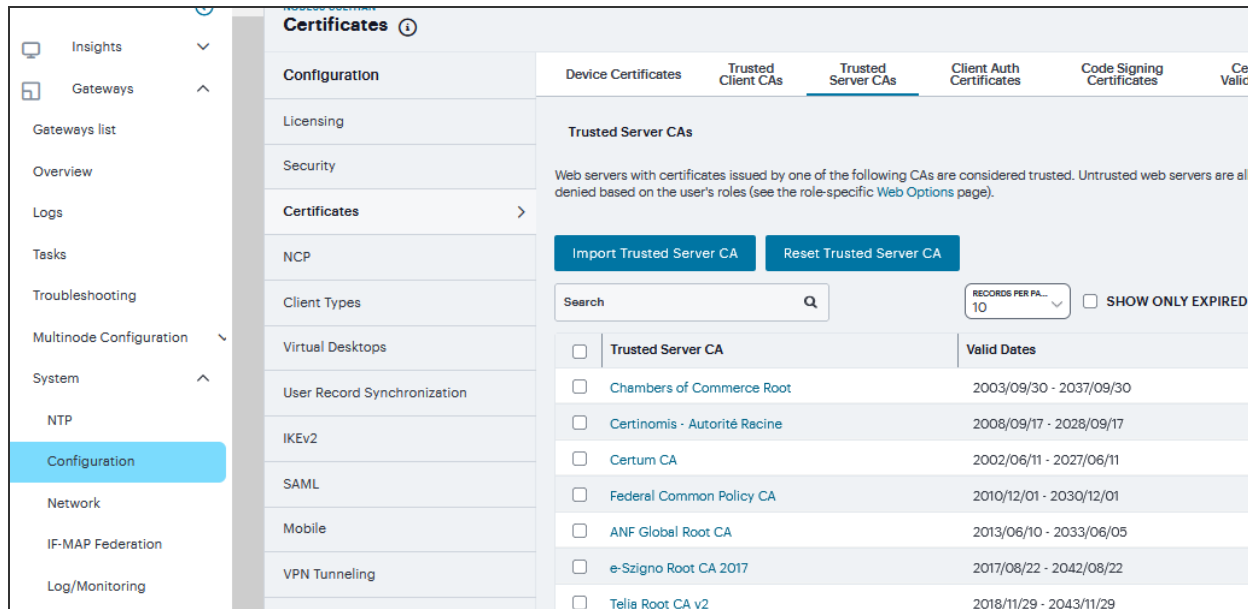
You can install the trusted root CA certificate on the endpoint in any of the following ways:

- Use a CA certificate that is chained to a root certificate that is already installed on the endpoint, such as VeriSign.

- Upload the CA certificate and any intermediate CA certificates to the Ivanti Secure Access client system. During client installation, the system automatically installs the trusted root device CA certificates on the endpoint. When prompted during installation, the user must allow the installation of the CA certificate(s).
- Prompt users to import the CA certificates on the endpoint using Internet Explorer or other Microsoft Windows tools. In other words, you can use common methods organizations use to distribute root certificates.

To upload CA certificates:

1. Select **System > Configuration > Certificates > Trusted Server CAs** to display the page.
2. Click **Import Trusted Server CA** to display the page.



- Browse to the **Certificate File**, select it, and click **Import** to complete the import operation.

The screenshot shows the 'Certificates' configuration page in the Ivanti Connect Secure administration console. The left sidebar is expanded to 'Configuration' > 'Certificates'. The main content area shows the 'Trusted Server CAs' tab selected. Below the tab, there are buttons for 'Import Trusted Server CA' and 'Reset Trusted Server CA'. A search bar and a 'SHOW ONLY EXPIRED' checkbox are also present. A table lists several trusted server CAs with their valid dates.

Trusted Server CA	Valid Dates
<input type="checkbox"/> Chambers of Commerce Root	2003/09/30 - 2037/09/30
<input type="checkbox"/> Certnomis - Autorité Racine	2008/09/17 - 2028/09/17
<input type="checkbox"/> Certum CA	2002/06/11 - 2027/06/11
<input type="checkbox"/> Federal Common Policy CA	2010/12/01 - 2030/12/01
<input type="checkbox"/> ANF Global Root CA	2013/06/10 - 2033/06/05
<input type="checkbox"/> e-Szigno Root CA 2017	2017/08/22 - 2042/08/22
<input type="checkbox"/> Telia Root CA v2	2018/11/29 - 2043/11/29

To restore the prepopulated group of trusted CA certificates:

- Select **System > Configuration > Certificates > Trusted Server CAs**.
- Click **Reset Trusted Server CAs**.
- Confirm that you want to restore the set of trusted server CAs that was installed when you upgraded.



Connect Secure restores the group of pre-populated trusted server CAs that were installed upon upgrade. This operation clears all manually imported certificates.

## Client Auth Certificates

In certain corporate environments, servers on the LAN are protected with two-way SSL authentication. These servers require the client to authenticate by presenting a valid certificate. In the remote access scenario, Ivanti Connect Secure is a client of these servers. You can configure Ivanti Connect Secure to present client authentication certificates to servers whenever it communicates over SSL. Note that Ivanti Connect Secure will present client certificates only when the SSL handshake requires it.

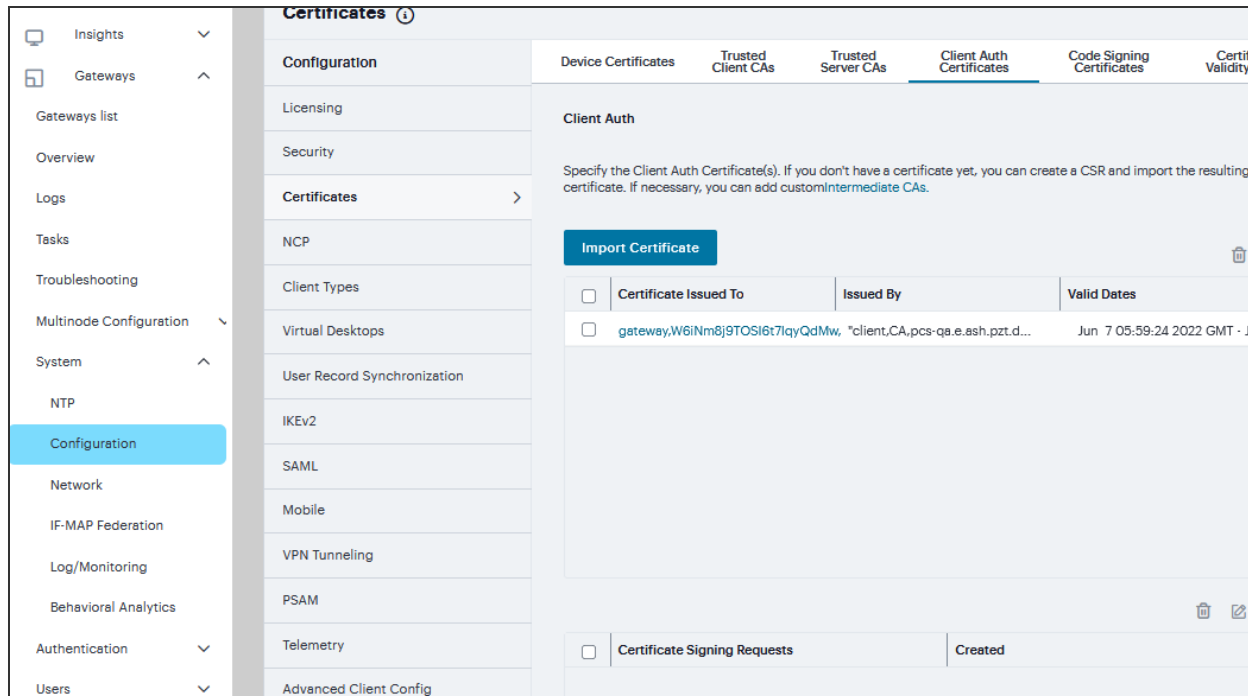


This feature authenticates Ivanti Connect Secure (as a client) to back-end servers. It also authenticates end users or end-user machines to servers on the corporate LAN.

The access management framework allows certificates that include the private key and for instances where the private key is in a separate file from the certificate. In addition, if your certificates have been exported into a system configuration file, you can import the system configuration file to upload the certificates.

To import the client auth certificates files:

1. Select **System > Configuration > Certificates > Client Auth Certificates**.
2. Click **Import Certificate** to display the configuration page.



3. Complete the configuration described in table.
4. Click **Import**.

### Import Certificate and Key Settings

Setting	Guidelines
<b>If certificate and private file are separate keys</b>	Browse to the network path or local directory location of your certificate key file.
Certificate File	



Setting	Guidelines
Private Key File	Browse to the network path or local directory location of your private key file.
Password Key	Enter the password key.
<b>Import via System Configuration file</b>	
System Configuration File	Browse to the network path or local directory location of the system configuration file.

To create Certificate Signing Request (CSR) for RSA and ECC Keys:

1. Navigate to **System > Configuration > Certificates > Client Auth Certificates**.
2. Click '+' on the **Certificate Signing Requests** pane.
3. Enter the required requestor information. In this example, the common name is *ecc-p256.<orgname>.net* or *ics.<orgname>.net*.
  - If **RSA** is selected then, select **Key Length** and enter **Random characters**.
  - If **ECC** is selected then, select **ECC Curve** drop down. Click **Save Changes**.
4. The CSR is encoded and can be copied or saved to a file. The ECC certificate should be signed by an RSA/ECC CA for Suite B compliance. Follow your CA's process for sending a CSR.
5. Click the **Back to Device Certificates** link. Until you import the signed certificate from your CA, your CSR is listed as Pending.

**New Certificate Signing Request** ⓘ

Use this page to create a new Certificate Signing Request (CSR) to send to your Certificate Authority of choice.

KEY TYPE	▼
ECC	
COMMON NAME	
pca.psecure.net	
<small>(e.g., secure.company.com)</small>	
ORGANIZATION NAME	
PulseSecure	
<small>(e.g., Company Inc.)</small>	
ORG. UNIT NAME	
??	
<small>(e.g., IT Group)</small>	
LOCALITY	
??	
<small>(e.g., SomeCity)</small>	
STATE (FULLY SPELLED OUT)	
??	
<small>(e.g., California)</small>	
COUNTRY (2 LETTER CODE)	
??	
<small>(i.e., US)</small>	
EMAIL ADDRESS	
??	
ECC CURVE	▼
P-256	

## Code-Signing Certificates

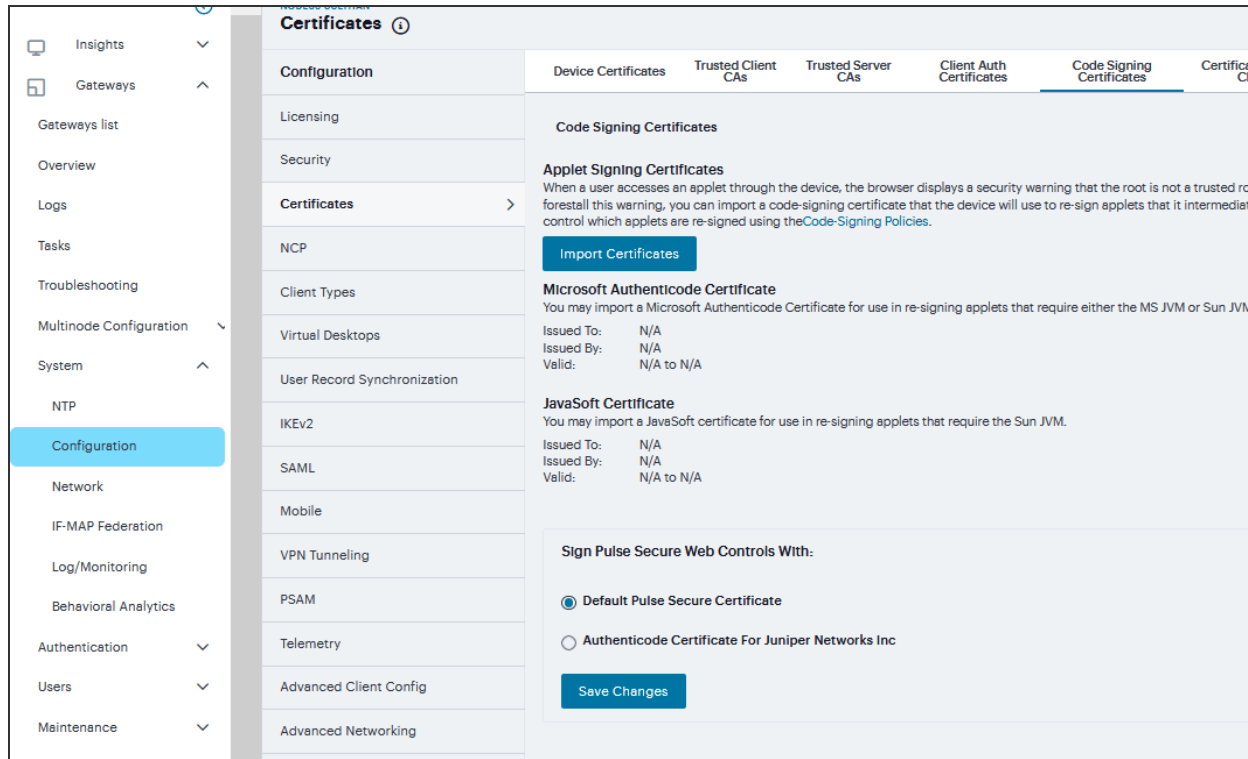
In a basic setup, the only required certificates are a device certificate and a code-signing certificate. Ivanti Connect Secure can use a single code-signing certificate to resign all Java applets and a single device certificate to intermediate all other PKI-based interactions. If the basic certificates do not meet your needs, however, you may install multiple device and applet certificates on Ivanti Connect Secure or use trusted CA certificates to validate users.

When Ivanti Connect Secure intermediates a signed Java applet, it re-signs the applet with a self-signed certificate by default. This certificate is issued by a nonstandard trusted root CA. As a result, if a user requests a potentially high-risk applet (such as an applet that accesses network servers), the user's Web browser alerts him that the root is untrusted.

To import a code-signing certificate:

1. Select **System > Configuration > Certificates > Code-Signing Certificates** to display the configuration page.
2. Click **Import Certificates** to display the configuration page.

3. Complete the configuration described in the following table.



The following table lists the Import Certificates Configuration Guidelines:

Import Certificates Configuration Guidelines

Setting	Guidelines
<b>Microsoft Authenticode or Multipurpose Certificate for Internet Explorer (Microsoft JVM)</b>	
Certificate File	Browse to the network path or local directory location of your certificate key file.
Private Key File	Browse to the network path or local directory location of your private key file.
Password Key	Enter the password key.

Setting	Guidelines
<b>Javasoftware Certificate for Internet Explorer &amp; Netscape (Sun JVM)</b>	Browse to the network path or local directory location of the keystore file.
Keystore File	

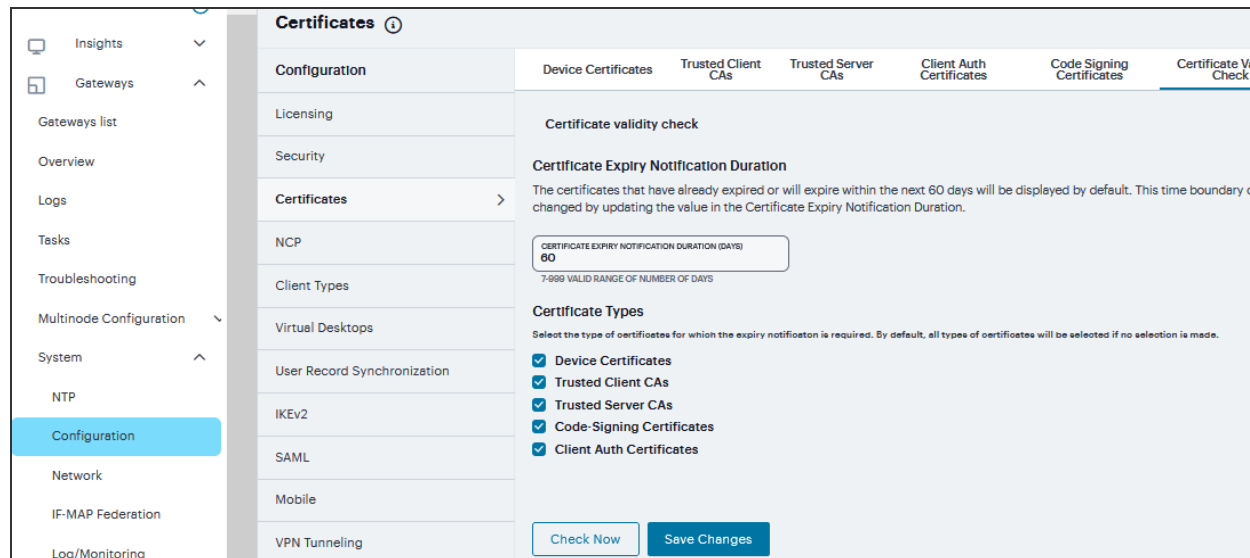
1. Click *Import* to complete the import operation.
2. When you have successfully imported a certificate, the system displays the Sign Ivanti Web Controls With dialog box. Specify the signing option:
  - *Default Ivanti Certificate* - Select this option to sign all ActiveX and Java applets originating from Ivanti Connect Secure using the default Ivanti certificate. If you have previously selected an imported code-signing certificate and are reverting back to this option, after you click Save, a process icon appears indicating that the system is processing the request and re-signing all of the relevant code. This process can take several minutes to complete.
  - *Authenticode Certificate* - For <Imported Certificate Name>-Select this option to sign all ActiveX and Java applets using the certificate or certificates imported in the previous step. When you click Save, a process icon appears indicating that the system is processing the request and signing all of the relevant code. This process can take several minutes to complete.
3. Click **Save Changes**.

## Certificate Validity Check

Every time a certificate is added to ICS (through manual import, XML import, or upgrade), its expiration date is stored in the cache. A background process checks all certification expiration dates once in every 7 days. If any certificate is about to expire soon, the administrator is notified. Notifications to administrators include a banner message in the adminUI upon login, SNMP trap, and log messages in the event log. The administrator can configure how soon he or she wishes to be notified of the expiration. The default is 60 days in advance. It can be configured to a value starting from 7 days in advance to 999 days in advance of the expiration of the certificate. The expiration warning window is common to all types of certificates. However, the administrator can choose to enable or disable this feature for each certificate category in the user interface.

To check validity of certificates:

1. Click on **Configuration > Certificates > Certificates Validity Check**.
2. The page displays the **Certificate Expiry Notification Duration** and the **Certificate Types**.
3. Enter the number of days before which the warning must be displayed.
4. Select the type of certificate for which the expiry notification is required. By default, all types of certificates will be selected if no selection is made.
5. Click on Check Now. The Certificate Category, DN name and date of expiry are displayed.
6. When an administrator logs in, a warning sign is displayed, if there are any certificates that expire within the configured number of days.



## NCP Configuration

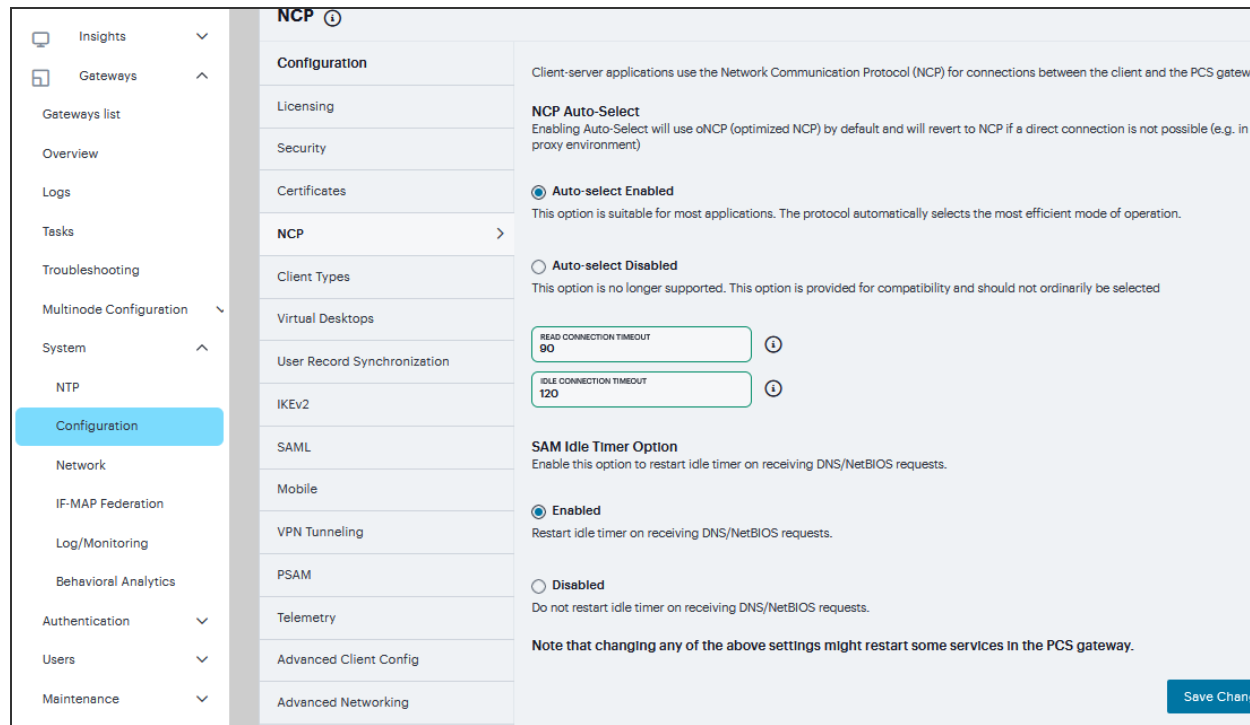
The following types of internal protocols are used to communicate between Ivanti Connect Secure and client applications:

- *Network Communications Protocol (NCP)* - Standard NCP has been replaced with oNCP. Windows client applications, PSAM, and Terminal Services fallback to NCP if oNCP fails.
- *Optimized NCP (oNCP)* - oNCP significantly improves the throughput performance of the client applications over NCP because it contains improvements to protocol efficiency, connection handling, and data compression. Windows client applications, PSAM, and Terminal Services use oNCP by default.

- *Java Communications Protocol (JCP)* -JCP is the Java implementation of standard NCP. The system uses JCP to communicate with Java client applications, JSAM, and the Java Content Intermediation Engine.

To set NCP options:

1. Navigate to **System > Configuration > NCP**.
2. (Windows clients) Under NCP Auto-Select, select:
  - **Auto-select Enabled** (recommended) - Use the oNCP by default. If you select this option, the system uses oNCP for most client/server communications and then switches to standard NCP when necessary. The system reverts to NCP if the user is running an unsupported operating system, browser type, or combination thereof, or if the client application fails to open a direct TCP connection to the device for any reason (for instance, the presence of a proxy, timeout, disconnect).
  - **Auto-select Disabled** - Always use standard NCP. This option is primarily provided for backwards compatibility.



If you are using Network Connect to provide client access, we recommend that you exercise caution when employing the Auto-select Disabled option, as Mac and Linux clients cannot connect using the traditional NCP protocol. If you disable the oNCP/NCP auto-selection feature and a UDP-to oNCP/NCP fail-over occurs, the system disconnects Macintosh and Linux clients because it fails over from UDP to NCP (instead of oNCP), which does not support these users.

3. (Java clients) Under **Read Connection Timeout**, set the timeout interval for Java clients (15-120 seconds). If client-side secure access methods do not receive data from the system for the specified interval, they try to reestablish a connection. Note that this value does not apply to user inactivity in client applications.
4. (Windows clients) Under Idle Connection Timeout, set the idle connection interval. This timeout interval determines how long the system maintains idle connections for client-side Windows secure access methods.
5. Under **SAM Idle Timer** enable/disable idle timer to receive DNS/NetBIOS requests
6. Click **Save Changes**.

## Client Types Configuration

The Client Types tab allows you to specify the types of systems your users may sign in from and the type of HTML pages to display when they do. In addition, client types are used to identify the operating system shown on the Device Management page for devices that use ActiveSync to synchronize e-mail with a Microsoft Exchange server. The user agent string used to identify a device during login may be different from the one in the ActiveSync message. For example, in the list of default user agent strings, *Apple-iPhone* and *Apple-iPad* are used only in ActiveSync messages.

To manage the client types:

1. Navigate to **System > Configuration > Client Types**.
2. In the User-agent string pattern text box, enter the user agent string for the operating system (s) that you want to support. You can specify all or part of the string. For example, you can use the default *DoCoMo* string to apply to all DoCoMo operating systems, or you can create a string such as *DoCoMo/1.0/P502i/c10* to apply to a single type of DoCoMo operating system. You can use the \* and ? wildcard characters in the string. Note that user agent strings on the system are case-insensitive.



3. Select the type of HTML to display to users who sign in from the operating system specified in the previous step. Options include:

- *Standard HTML* - The system displays all standard HTML functions, including tables, full-size graphics, ActiveX components, JavaScript, Java, frames, and cookies. Ideal for standard browsers, such as Firefox, Mozilla, and Internet Explorer.
- *Compact HTML (iMode)* - The system displays small-screen HTML-compatible pages. This mode does not support cookies or the rendering of tables, graphics, ActiveX components, JavaScript, Java, VB script, or frames. (The only difference between this option and the Smart Phone HTML Basic option is the user interface.) Ideal for iMode browsers.

The screenshot shows the 'Client Types' configuration page. The left sidebar includes options like Insights, Gateways, Overview, Logs, Tasks, Troubleshooting, Multinode Configuration, System, NTP, Configuration (highlighted), Network, IF-MAP Federation, and Log/Monitoring. The central configuration area has tabs for Configuration, Licensing, Security, Certificates, NCP, Client Types (selected), Virtual Desktops, User Record Synchronization, IKEv2, SAML, Mobile, and VPN Tunneling. The 'Client Types' tab displays a table with columns for checkboxes, an ID number, and the User-agent String Pattern. The table lists patterns such as \*Blazer\*, \*DoCoMo\*, \*Windows CE\*, \*Windows Phone\*, \*SonyEricsson\*, \*Vodafone\*, and \*KDDI\*. Below the table, there is a checkbox for 'Enable password masking for Compact HTML' which is checked. A note explains that this option only affects iMode or Compact HTML. The right-hand 'New Client Type' modal form has a text input for 'User-agent string pattern', a 'CLIENT TYPE' dropdown, and 'Cancel' and 'Save' buttons.



Form Post SSO is not supported on iMode appliances.

- *Mobile HTML (Pocket PC)* - The system displays small-screen HTML-compatible pages that may contain tables, small graphics, JavaScript, frames, and cookies, but this mode does not facilitate the rendering of java applets or ActiveX components. Ideal for Pocket PC browsers.
- *Smart Phone HTML Advanced* - The system displays small-screen HTML-compatible pages that may contain tables, small graphics, frames, cookies, and some JavaScript, but this mode does not facilitate the rendering of java applets, ActiveX components, or VB scripts. Ideal for Treo and Blazer browsers.

- *Smart Phone HTML Basic* - The system displays small-screen HTML-compatible pages. This mode does not support cookies or the rendering of tables, graphics, ActiveX components, JavaScript, Java, VB script, or frames. (The only difference between this option and the Compact HTML option is the user interface.) Ideal for Opera browsers on Symbian.



The system rewrites hyperlinks to include the session ID in the URL instead of using cookies.

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- *Mobile Safari, Android, Symbian, iPad* - The Mobile Safari (iPhone/iPod Touch), Android, and Symbian selections have Basic, Advanced, and Full HTML options.
4. Specify the order that you want to evaluate the user agents. The system applies the first rule in the list that matches the user's system. For example, you may create the following user agent string/HTML type mappings in the following order
    - User Agent String: *DoCoMo* Maps to: Compact HTML
    - User Agent String: *DoCoMo/1.0/P502i/c10* Maps to: Mobile HTML

If a user signs in from the operating system specified in the second line, the system will display compact HTML pages to him, not the more robust mobile HTML, since his user agent string matches the first item in the list. To order mappings in the list, select the check box next to an item and then use the up and down arrows to move it to the correct place in the list.

5. Select the **Enable password masking for Compact HTML** check box if you want to mask passwords entered in iMode and other devices that use compact HTML. (Devices that do not use compact HTML mask passwords regardless of whether or not you select this check box.) Note that if your iMode users' passwords contain non-numeric characters, you must disable password masking because iMode devices only allow numeric data in standard password fields. If you disable masking, passwords are still transmitted securely, but are not concealed on the user's display.
6. Click **Save Changes**.

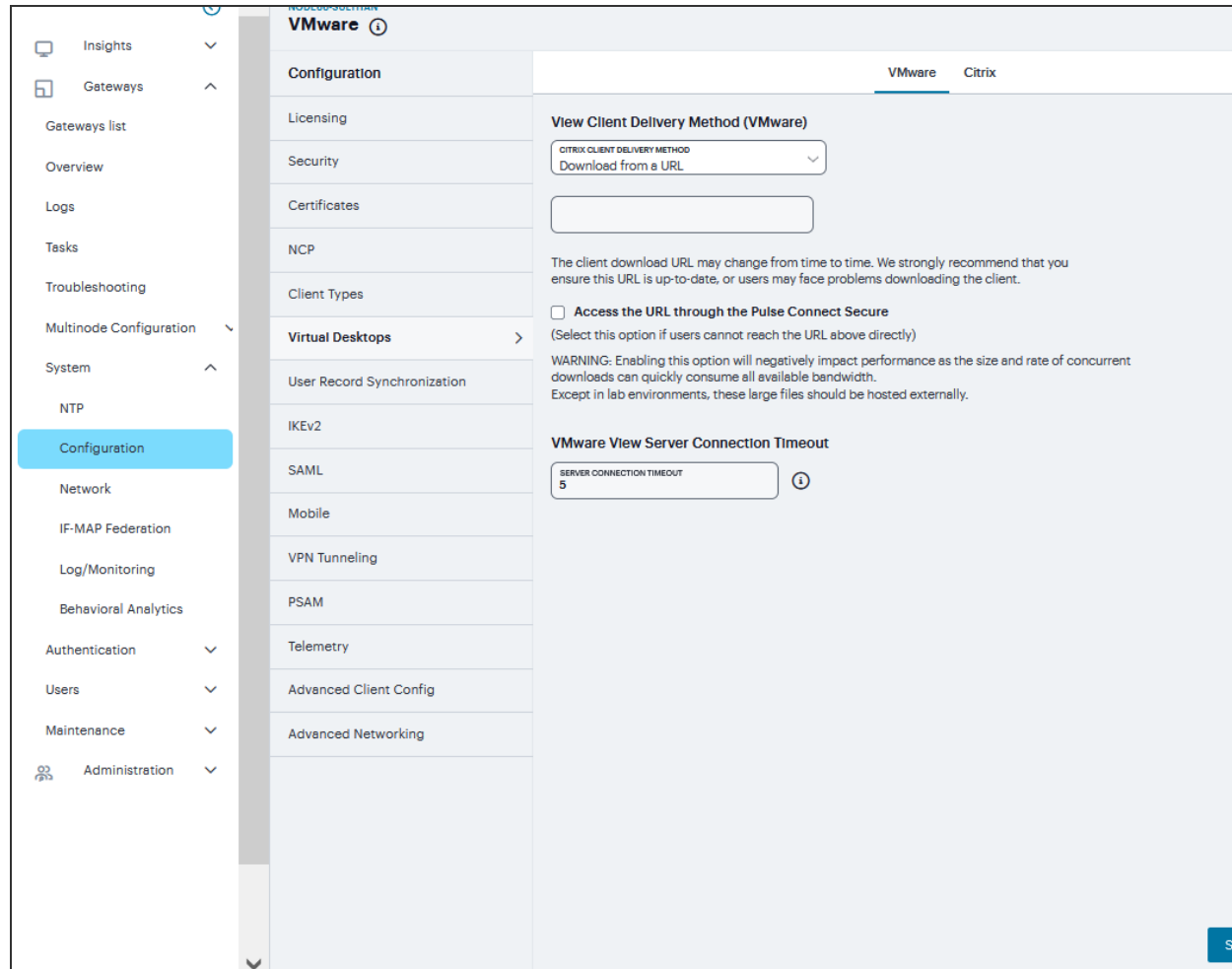
## Virtual Desktops Configuration

In addition to standard resource profiles and resource profile templates, you can configure virtual desktops as resource profiles. As with the other resource profiles, a virtual desktop profile contains all of the role assignments and end-user bookmarks required to provide access to an individual resource. Unlike other resource profile types, there is no resource policy to configure for virtual desktops due to the dynamic nature of virtual desktops. The IP address and port of the system is not known until the end user launches a session so dynamic ACLs are used.

You can use the Virtual Desktop Configuration page to define the client delivery mechanism for end-users who do not have the client. The process is similar for both Citrix XenDesktop and VMware View Manager.

1. Navigate to **System > Configuration > Virtual Desktops**.
  - For **View Client Delivery Method** Select **VMware**.
  - For **Citrix XenDesktop**, select **Citrix**.
2. Select **Download from Ivanti Connect Secure** to download the client file from the system. Click **File** to locate the client file (*.msi, .exe or .cab*) and enter the **version number**.

3. Select **Download from a URL** to download the client file from the Internet. If desired, enter a new URL to override the default.



4. Check the **Access the URL through the Ivanti Connect Secure** check box if end users cannot directly access the specified Web page. Selecting this option allows users to use the secure gateway to access the URL.
5. Under **Server Connection Timeout**, enter the number of seconds to wait for the server to respond before timing out.

## User Record Synchronization

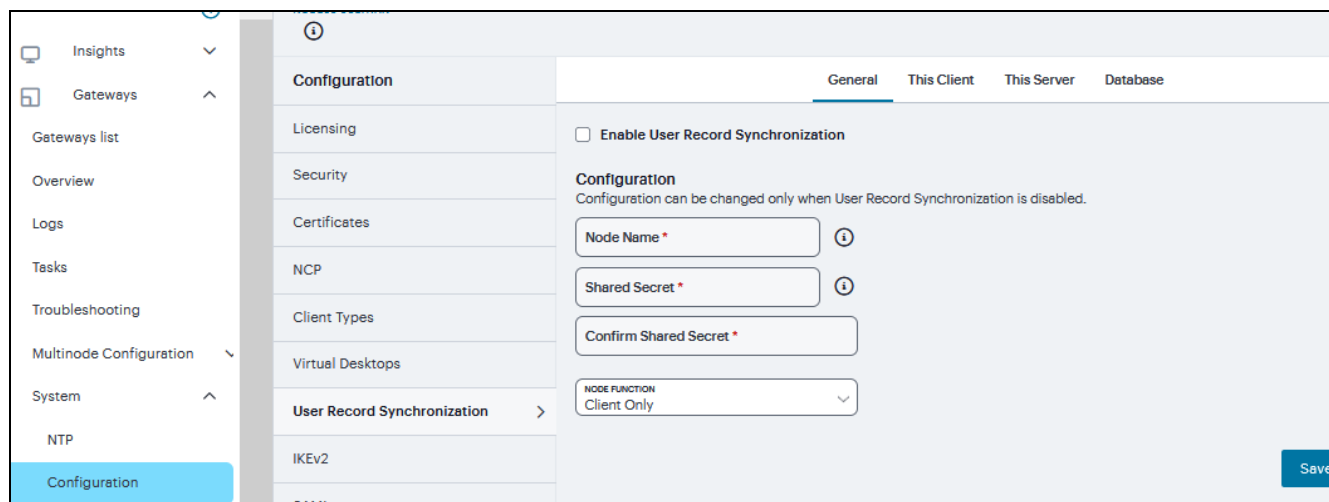
The user record synchronization feature promotes a more consistent user experience by allowing users to retain their bookmarks and individual preferences regardless of which device they log in to.

User record synchronization relies on client-server pairings. The client is the device that users log in to start their remote access. Each client is associated with one primary server and one backup server to store user record data. Clients can be individual appliances or a node within a cluster.

A server in this instance is the device that stores the user data records. Each server can be configured to replicate its user record data to one or more peer servers. Servers are identified by a user-defined logical name. The same logical name can be assigned to more than one authentication server to let you associate authentication servers of different types to the same user. For example, SA1 is an ACE authentication server with user1 who creates a bookmark to www.<orgname>.net. SA2 is an Active Directory authentication server with the same user1. For the www.<orgname>.net bookmark to be transferred from SA1/ACE/user1 to SA2/AD/user1 you would assign the logical name "Logical1" to both the ACE server on SA1 and the Active Directory server on SA2.

## General Setup

1. Navigate to **System > Configuration > User Record Synchronization > General**.
2. Select the **Enable User Record Synchronization** check box.
3. Enter a unique **node name**. This name is used when associating a client with a server and is different from the logical name assigned to a server. This node name is also not the same as the cluster node name.
4. Enter the **shared secret** and **confirm it**. The shared secret is the password used to authenticate the client with its servers and the primary server with its peer servers. Use the same shared secret for all clients and servers participating in user record synchronization.
5. Select whether this node is **client only** or if this node acts as both a **client and server**.
6. Click **Save Changes**.





- If you need to make any changes in this window at a later time, you must deselect the Enable User Record Synchronization check box and click Save Changes. Make your edits, select the Enable User Record Synchronization check box and save your changes.
- Once you enter a name and shared secret, you cannot clear these fields.

## Client Configuration

To set up the client, you select the primary and backup server you want this client to synchronize with:

1. Navigate to **System > Configuration > User Record Synchronization > This Client**.
2. Click '+', Select the LAS name you want to synchronize and enter the primary IP of the user record. If you prefer to synchronize with any available server, select *Any LAS*.
3. Enter the **Primary** and optionally a **Backup server's** IP address and then click **Save Changes**.

Even if you select Any LAS, you must enter a primary server IP address. Once added, the primary and backup servers have a colored icon next to their name indicating their connection status.

#	Logical Authentication Server	Primary Server
1	Any LAS	12.22.33.44

## Server Configuration

To set up the user record synchronization server you must define its peer nodes (optional) and the clients that can access this server.

1. Navigate to **System > Configuration > User Record Synchronization > This Server**.
2. Under **Peer Server**, click '+' and enter the peer server's **Node name** and **IP address**, then click **Save Changes**. To specify more than one peer server, enter each server's node name and IP address individually and click **Save Changes**. There is no limit on the number of peer servers you can add.

Data is replicated from the primary or backup server to its peer servers. If the primary is not available, user data is sent to the backup. User data is then replicated to the peer servers.

3. For each client you want synchronized with this server, Under **Client Nodes**, click '+' enter the **Client's name** and **IP address** and click **Save Changes**.

Once added, peer servers will have a colored icon next to their name indicating their connection status. Node status is provided to client nodes and LAS mapping servers as well.

The screenshot displays the 'This Server' configuration interface. On the left is a navigation sidebar with 'Configuration' highlighted. The main content area is titled 'This Server' and has tabs for 'General', 'This Client', 'This Server', and 'Database'. Under the 'This Server' tab, there are two sections: 'Peer Servers' and 'Client Nodes'. Both sections are currently empty, showing a 'No Data Available' message with a server icon. The 'Peer Servers' section has a table header with columns for '#', 'Server Node Name', and 'Internal Address'. The 'Client Nodes' section has a table header with columns for '#', 'Client Node Name', and 'Internal Address'. The 'User Record Synchronization' section on the left has a right-pointing arrow, indicating further configuration options.

## Database Configuration

With the Database tab, you can delete inactive records from the client cache, retrieve statistics about the database, export and import the data and remove user data from the server's database.

To configure the database:

1. Navigate to **System > Configuration > User Record Synchronization > Database**.
2. Select **Auto-delete inactive synchronized user records from the Cache** to remove inactive user records from the cache and not from the user record database.

When this option is selected, the system performs a check every 15 minutes and deletes user records that meet all of the following criteria:

- There are no active user sessions associated with the user record.
  - The user record does not have any custom settings, or the latest version of the user record has been synchronized with the user record database.
  - The authentication server associated with the user record database does not have type "local". For example, the "System Local" auth server that is part of the default configuration of the system has a "local" type, so any user records associated with that auth server will not be auto-deleted. However, user records associated with external authentication servers like Radius or LDAP may be deleted, depending on the two prior criteria.
3. Click **Save Changes**.
  4. Under **Export**, you export user records to a file. The user records can be exported from the user record database, or from the cache. The exported file can be used to pre-populate the user record database on another node.
  5. To encrypt the exported data, select the **Encrypt the exported data with password** check box and enter the **Password** and **Confirm it**.
  6. Click **Export** to export the user records from the specified source (cache or database). You will be prompted where to save the file.



The screenshot displays the 'Database' configuration page in the Neurons Secure Access Tenant Administration interface. The left sidebar shows the navigation menu with 'Configuration' selected. The main content area is titled 'Database' and has tabs for 'General', 'This Client', 'This Server', and 'Database'. Under the 'Database' tab, there is a 'User Record Synchronization' section with an 'Export' button. The 'Export' section includes a 'Logical Auth Server' dropdown, an 'Encrypt the exported data with password' checkbox, and two password input fields labeled 'Password' and 'Confirm password'.

## IKEv2 Configuration

IKE or IKEv2 (Internet Key Exchange) is the protocol used to set up a security association in the IPsec protocol suite. Microsoft Windows 7 fully supports the IKEv2 standard through Microsoft's Agile VPN functionality and can operate with a VPN gateway using these protocols. Information on IKE and IKEv2 is widely available on the Internet. It is not the intent of this guide to describe details about IKE and IKEv2.

The system supports IKEv2, enabling interoperability with clients or devices, such as smartphones, that have a standards-based IPsec VPN client. IKEv2 clients count toward the total number of sessions. Thus, the total number of sessions = number of IKEv2 sessions + number of NCP sessions. The system supports the following methods for authenticating IKEv2 clients:

- Machine certificate-based authentication
- Authentication using EAP methods

**i** IKEv2 uses port 500 exclusively. Do not configure port 500 in your VPN Tunneling profiles.

To configure the IKEv2 ports and EAP protocol:

1. Navigate to **System > Configuration > IKEv2** to display the configuration page.
2. Enter the **DPD timeout** value in seconds. Valid values are 400-3600.

DPD is a form of keepalive. When a tunnel is established but idle, one or both sides may send a "hello" message and the other replies with an acknowledgement. If no response is received, this continues until the DPD time value has elapsed. If there still is no traffic or acknowledgement, the peer is determined to be dead and the tunnel is closed.

The screenshot displays the configuration page for IKEv2. On the left, a navigation menu includes 'Insights', 'Gateways', 'Logs', 'Tasks', 'Troubleshooting', 'Multinode Configuration', 'System', and 'Configuration'. The main content area shows the 'IKEv2' configuration page with a 'DPD TIMEOUT' field set to '600'. Below this is the 'Port / Realm Mapping' section, which includes a search bar and a table. The table has columns for '#', 'Port', and 'Realm'. One entry is visible: '# 1', 'Port internal (10.96.145.66)', and 'Realm Users'. On the right side, a 'New Port / Realm Mapping' modal is open, showing input fields for 'PORT' and 'REALM', and buttons for 'Cancel' and 'Save Changes'.

3. Under **Port/Realm Mapping**, click '+' select the **Port** and the **Realm** to use that port and click **Save Changes**.

- Under **Realm/Protocol Set Mapping**, click '+' select the **Realm** and the **EAP protocol set** to use for that realm.

The three Protocol Set Options include EAP-MSCHAP-V2, EAP-MD5-Challenge, and EAP-TLS.

The screenshot displays the 'New Realm / Protocol Set Mapping' configuration page. On the left is a navigation sidebar with categories like Insights, Gateways, Logs, Tasks, Troubleshooting, Multinode Configuration, System, and Administration. The 'Configuration' option is highlighted. The main content area is divided into several sections:

- User Record Synchronization:** A list of options including IKEv2, SAML, Mobile, VPN Tunneling, PSAM, Telemetry, Advanced Client Config, and Advanced Networking.
- Realm / Protocol Set Mapping:** A section with a search bar and a table with columns for '#', 'Realm', and 'Protocol Set'. The table currently shows 'No Data Available' with a calculator icon.
- Phase 1 key settings:** A section with the subtext 'IKEv2 Phase 1 key settings below will override current key settings. Changing these settings...' and three checkboxes:
  - Allow only AES256 for Phase 1 key negotiation
  - Allow only SHA2 for Phase 1 key negotiation
  - Allow only DH 2048 bit or DH 3072 bit for Phase 1 key negotiation
- Initial Contact:** A section with the subtext 'Enabling Initial Contact will delete all existing sessions for that user if request contains INITIAL\_CONTACT session is enabled' and one checked checkbox:
  - Enable PCS to process INITIAL\_CONTACT request

On the right side of the page, there is a 'New Realm / Protocol Set Mapping' panel with input fields for 'REALM' and 'PROTOCOL SET', and buttons for 'Cancel' and 'Save Changes'.

5. To Configure Phase-1 Key Settings, select the required Phase 1 Key Settings.

Three new UI options are available to enforce:

- Encryption Algorithm (AES256)
- Integrity Algorithm (SHA256, SHA384 and SHA512)
- Diffie-Hellman Group (DH 2048 and DH3072).

Enabling these options mean more secured Phase 2 negotiations. When AES256 is enabled, AES256 Encryption Algorithm is preferred over AES128 or 3DES. When SHA2 is Enabled, SHA2 Integrity Algorithm is preferred over SHA1 and When DH is Enabled, DH2048 or DH3072 Diffie-Hellman Group is preferred over DH1024.

6. Click **Save Changes**.



Changing IKEv2 configuration (System > Configuration > IKEv2) disconnects connections from IKEv2 clients, VPN Tunneling and Ivanti. VPN Tunneling and Ivanti will reconnect automatically.

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## SAML Configuration

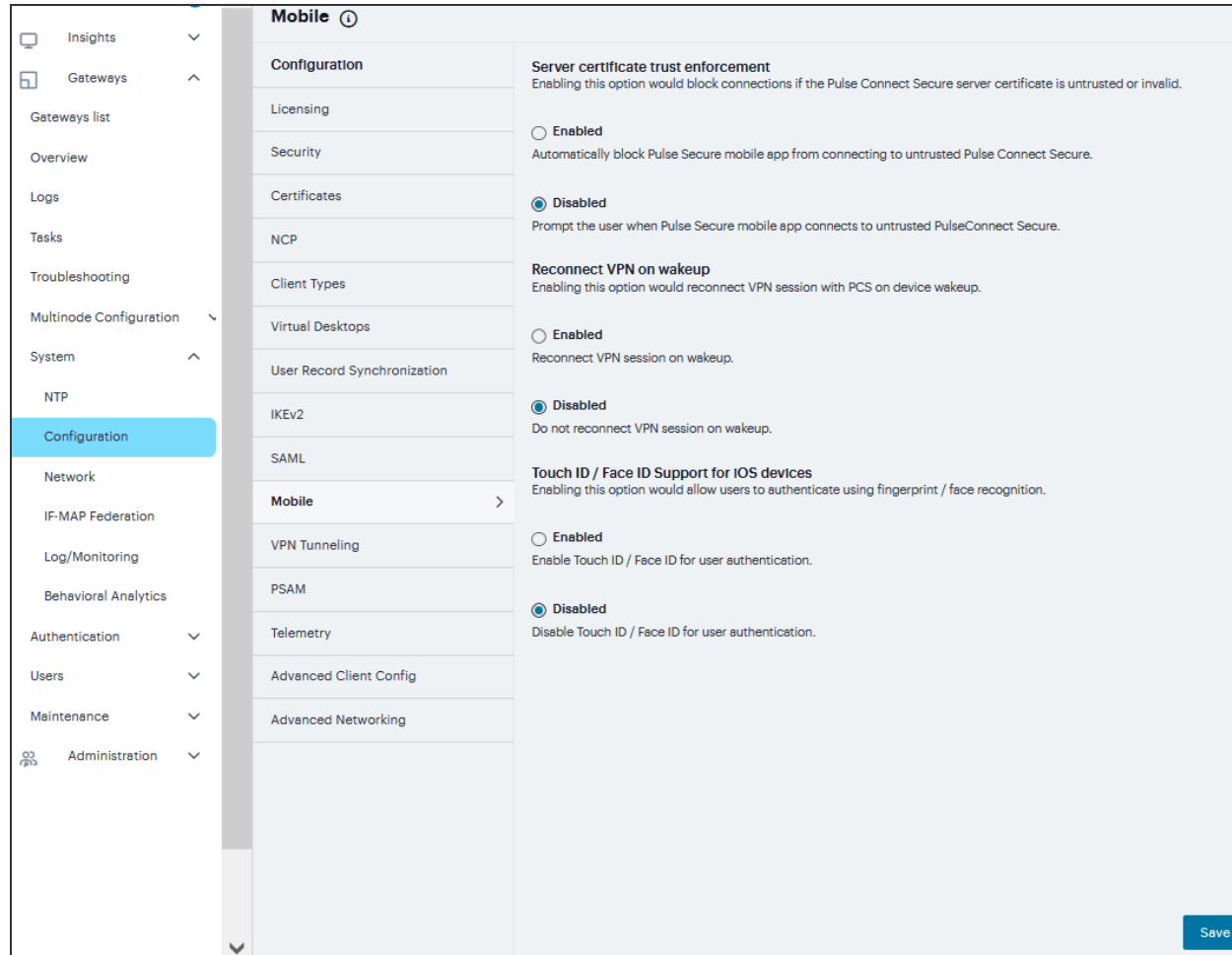
SAML is an XML-based framework for communicating user authentication, entitlement, and attribute information. The standard defines the XML-based assertions, protocols, bindings, and profiles used in communication between SAML entities. SAML is used primarily to implement Web browser single sign-on (SSO). SAML enables businesses to leverage an identity-based security system like Ivanti Connect Secure to enforce secure access to web sites and other resources without prompting the user with more than one authentication challenge.

You use the System > Configuration > SAML pages to maintain a table of SAML metadata files for the SAML service providers and identity providers in your network. Using SAML metadata files makes configuration easier and less prone to error. You can add the metadata files to the system by:

- Uploading a metadata file.
- Retrieving the metadata file from a well-known URL.

To add metadata files:

1. Navigate to **System > Configuration > SAML**.
2. Click '+' to display the configuration page.



3. Enter **New Metadata Provider** name.
4. Complete the settings described in the following table
5. Click **Save Changes**

SAML Metadata Provider Configuration Guidelines

Setting	Guidelines
Metadata Provider Location Configuration	<p>Select one of the following methods:</p> <ul style="list-style-type: none"> <li>• <b>Local</b> Browse and locate the metadata file on your local host or file system.</li> </ul>

Setting	Guidelines
	<ul style="list-style-type: none"> <li>• <b>Remote</b> Enter the URL of the metadata file. Only http and https protocols are supported.</li> </ul>
Upload Metadata File	You can upload the metadata file directly.
<b>Metadata Provider Verification Configuration</b>	
Accept Unsigned Metadata	If this option is not selected, unsigned metadata is not imported. Signed metadata is imported only after signature verification.
Signing Certificate	<p>* Browse and locate the <b>certificate</b> that verifies the signature in the metadata file. This certificate overrides the certificate specified in the signature of the received metadata. If no certificate is uploaded here, then the certificate present in the signature of the received metadata is used. *</p> <p>Select the <b>Enable Certificate Status Checking</b> option to verify the certificate before using it. Certificate verification applies both to the certificate specified here and the certificate specified in the signature in the metadata file.</p>
<b>Metadata Provider Filter Configuration</b>	
Roles	Select whether the metadata file includes configuration details for a SAML service provider, identity provider, or Policy Decision Point. You may select more than one. If you select a role that is not in the metadata file, it is ignored. If none of the selected roles are present in the metadata

Setting	Guidelines
	file, the system returns an error.
Entity IDs To Import	Enter the SAML Entity IDs to import from the metadata files. Enter only one ID per line. Leave this field blank to import all IDs. This option is available only for uploading local metadata files.

**New Metadata Provider**

Metadata Provider Name

Metadata Provider Location Configuration

LOCATION: Local

Upload Metadata File

BROWSE TO SELECT FILE

Metadata Provider Verification Configuration

**Accept Unsigned Metadata**  
If checked Connect Secure accepts unsigned metadata.

Signing Certificate		Other Certificate Details	
ISSUED TO	NA	VERSION	NA
ISSUED BY	NA	SIGNATURE ALGORITHM	NA
VALID	---	THUMBPRINT ALGORITHM	NA
		SERIAL NUMBER	NA
		PUBLIC KEY	NA
		THUMBPRINT	NA

Upload Certificate

BROWSE TO SELECT FILE

**Enable Signing Certificate status checking**  
(Uses configuration in **Trusted Client CAs**. This applies to the certificate configured above as well as the one comes along with the SAML response.)

Metadata Provider Filter Configuration

Roles

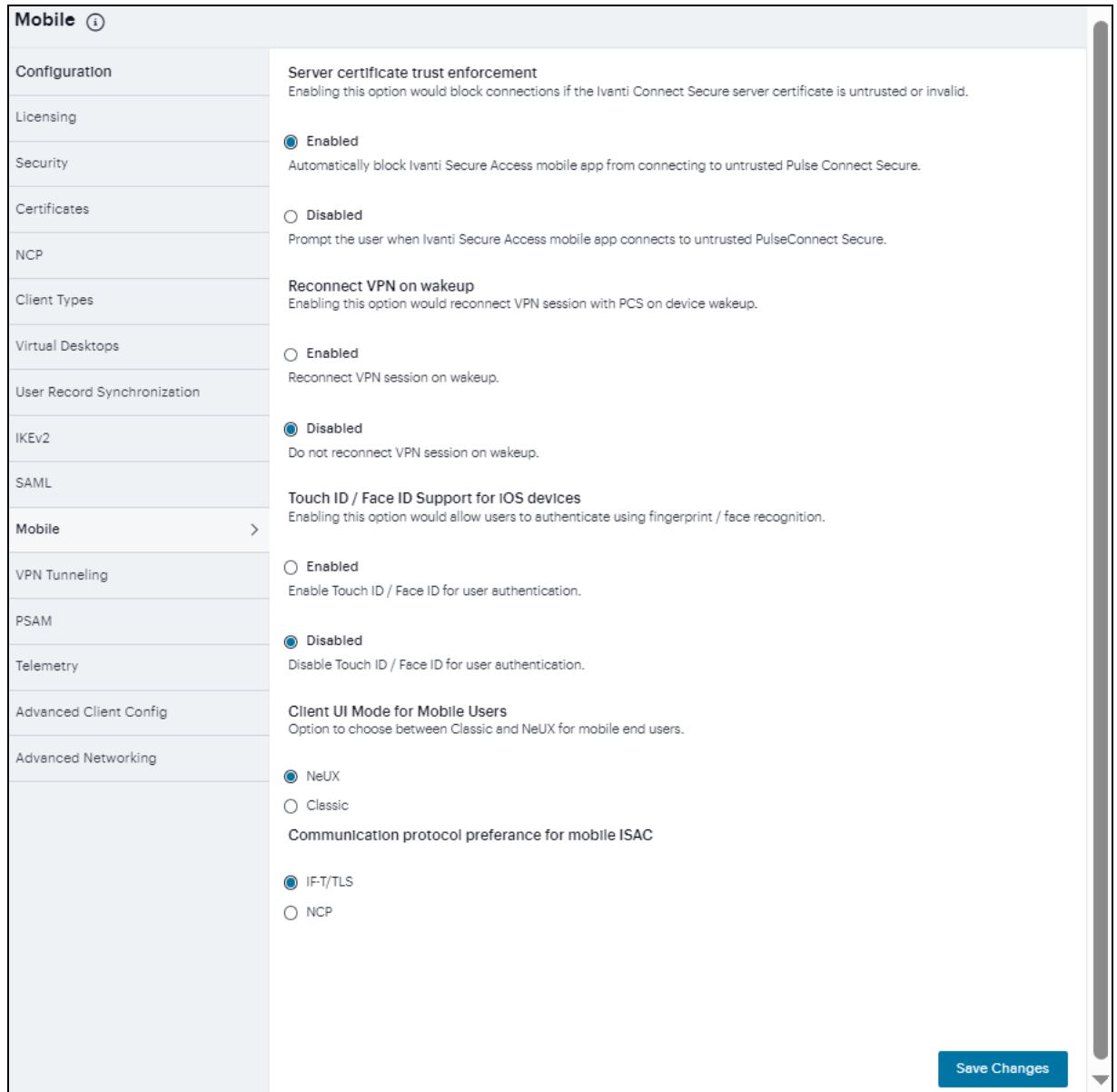
- Identity Provider
- Service Provider
- Policy Decision Point

Roles which Connect Secure looks for in the metadata file.

Entity IDs to import

## Mobile Configuration

This topic describes the mobile options that are available on Ivanti Connect Secure. To configure the mobile option, go to **System > Configuration > Mobile**. It includes the following information:



The following table lists the Configuring the Mobile Options:

Option	Description
Server certificate trust enforcement	Enables you to block connections if the Ivanti Connect Secure server certificate is untrusted or invalid. When enabled, it automatically blocks the Ivanti Secure Access Client app from connecting to untrusted Ivanti Connect Secure. When disabled, it prompts when Ivanti Secure Access Client app connects to untrusted Ivanti Connect Secure.



Option	Description
Reconnect VPN on wakeup	Enables you to reconnect a VPN session with ICS on device wakeup.
Touch ID / Face ID Support for iOS devices	Enables you to authenticate using fingerprint / face recognition.
Client UI Mode for Mobile Users	Enables you to switch between Classic and NeUX
Communication protocol preference for mobile ISAC	Enables you to choose the type of authentication to use either IF-T/TLS or NCP.

## VPN Tunneling Configuration

The VPN tunneling access option (formerly called Network Connect) provides a VPN user experience, serving as an additional remote access mechanism to corporate resources using Connect Secure. This feature supports all Internet-access modes, including dial-up, broadband, and LAN scenarios, from their client machine and works through client-side proxies and firewalls that allow SSL traffic.

When a user launches VPN tunneling, the system transmits all traffic to and from the client over the secure VPN tunnel. The only exception is for traffic initiated by other system-enabled features, such as Web browsing, file browsing. If you do not want to enable other system features for certain users, create a user role for which only the VPN tunneling option is enabled and make sure that users mapped to this role are not also mapped to other roles that enable other system features.

To configure VPN tunneling:

1. Navigate to **System > Configuration > VPN Tunneling**.
2. Under **Access Control List (ACL) Count Enforcement** enable to block VPN tunneling sessions when the total number of ACL rules exceeds 60,000.
3. Under **IPv6 ESP Settings**, enter **UDP Port number** and select the **Use ESP tunnel for 6in4 and 4in6** traffic check box.
4. Under **Precedence of FQDN / IP** section, check **Prefer FQDN resources over IP resources in case of a split tunneling conflict**.

- Under **Enable/Disable FQDN ACL**, check to Enable FQDN ACL
- Click **Save Changes**.

The screenshot displays the 'VPN Tunneling' configuration page. The left sidebar shows the navigation menu with 'Configuration' selected. The main content area is divided into two columns. The left column lists various configuration categories, with 'VPN Tunneling' selected. The right column contains the configuration details for 'VPN Tunneling', including:

- Access Control List (ACL) Count Enforcement:** A section with a warning icon. It states: 'The recommended system limit for VPN ACLs is 60,000. Enable the option below to deny new VPN tunneling sessions when the count reaches the recommended limit. Attention: Allowing more than 60,000 ACLs can create stability issues which may need a system reboot. Hence, disabling recommended limit is not supported.' There are two radio buttons: 'Enabled' (selected) and 'Disabled'. The 'Enabled' option has a sub-note: 'VPN tunneling sessions are blocked when the total number of ACL rules exceeds 60,000.' The 'Disabled' option has a sub-note: 'VPN tunneling sessions are allowed even after the total number of ACL rules exceeds 60,000.'
- IPv6 ESP Settings:** A section with a warning icon. It includes a text input field for 'IPv6 UDP PORT' with the value '4500' and a warning icon. Below it is a checked checkbox for 'Use ESP tunnel for 6in4 and 4in6 traffic' with a warning icon.
- Precedence of FQDN / IP:** A section with a checkbox for 'Prefer FQDN resources over IP resources in case of a split tunneling conflict', which is currently unchecked.
- Enable/Disable FQDN ACL:** A section with a checkbox for 'Check to Enable FQDN ACL', which is checked. Below it is a note: 'Please ensure that there is no DNS latency/delay in your network to avoid performance issues.'

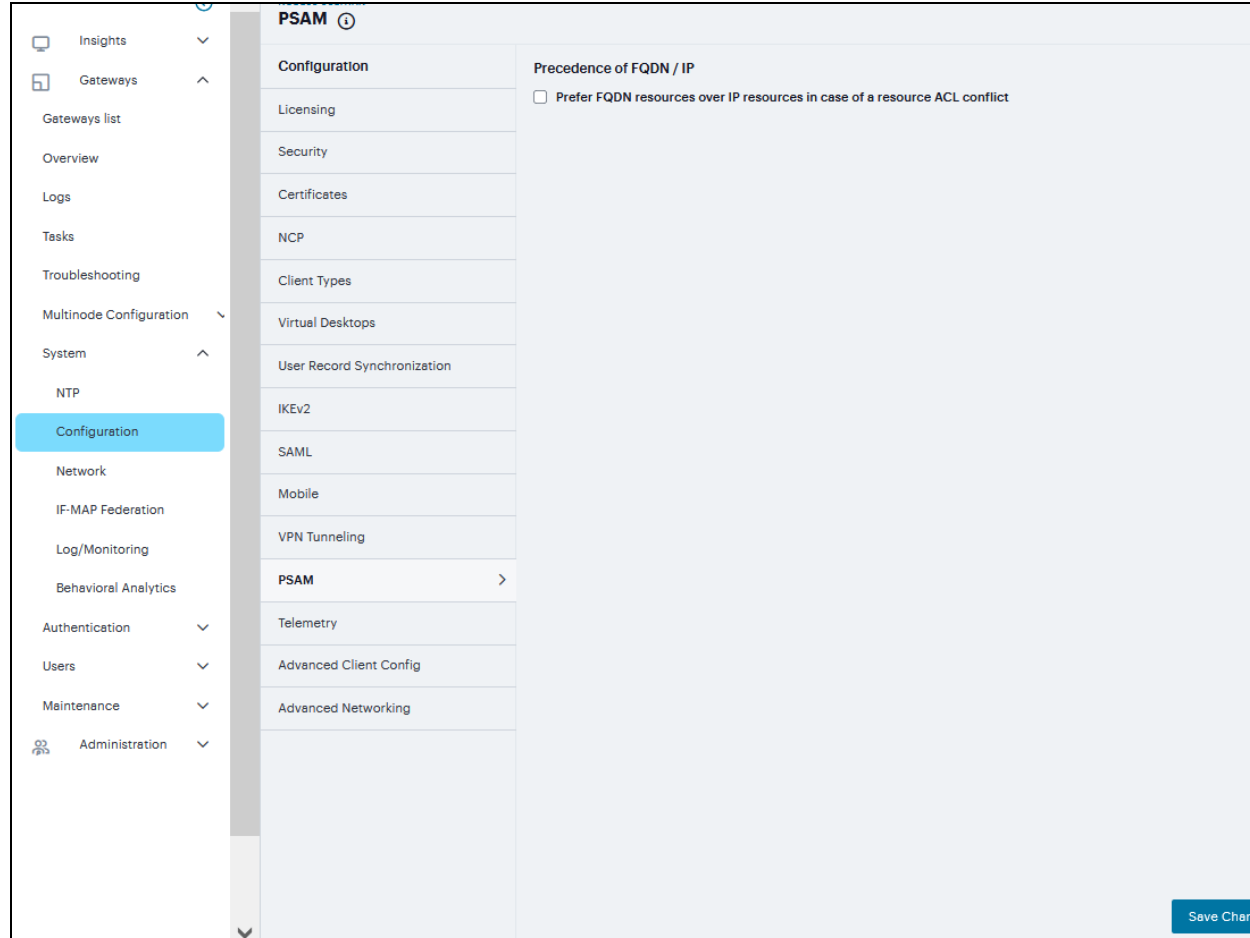
A 'Save' button is visible in the bottom right corner of the configuration area.

## PSAM Configuration

The Secure Application Manager option provides secure, application-level remote access to enterprise servers from client applications. The Windows version of the Secure Application Manager is a Windows-based solution that enables you to secure traffic to individual client/server applications and application servers.

To Configure PSAM:

- Navigate to **System > Configuration > PSAM**
- Under **Precedence of FQDN / IP section**, check Prefer FQDN resources over IP resources in case of a resource ACL conflict.

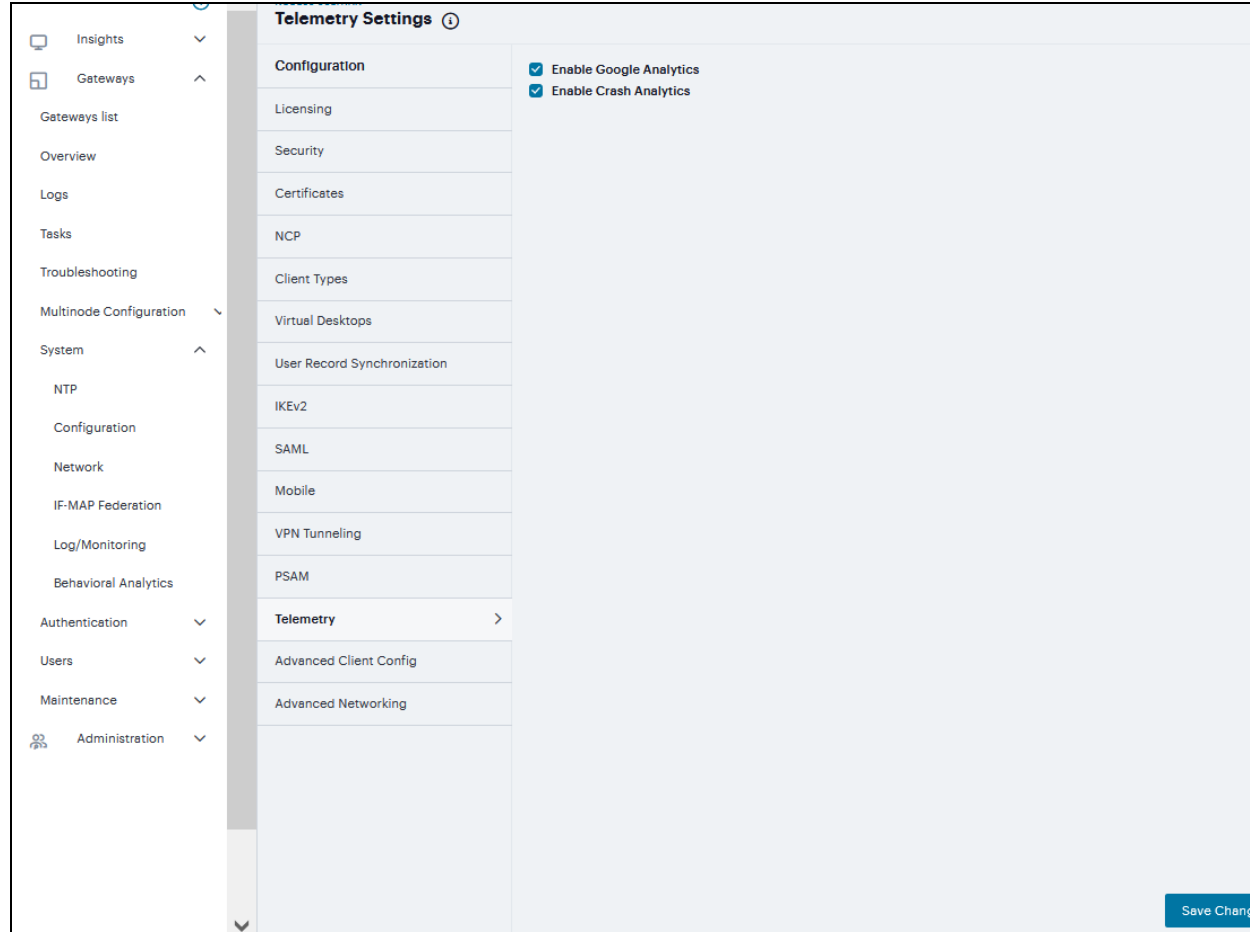


## Telemetry Settings

Telemetry Settings helps you to enable Google Analytics and Crash Analytics.

To monitor the usage of customer and track the crash #. Navigate to **System > Configuration > Telemetry**

- Enable **Google Analytics** to tracking how frequently customer is using a particular feature.
- Enable **Crash Analytics** to collect logs when user faces any crash.



## Advanced Client Configuration

This topic describes the XML advanced client configuration that can be used by the ICS administrator to configure the custom settings, which are meant to solve a specific customer scenario without changing the ICS admin console. Admin can set these custom settings in the form of XML input through the Advanced Client Configuration UI feature. Ivanti Secure Access clients supporting these custom settings will consume them when connecting to this ICS, and the same would be applied on the client machines. This feature will minimize the number of changes going into the ICS admin console, in order to fulfill a custom requirement of a specific customer.

If the administrator configures the Ivanti Connect Secure sever with the following XML input in "Advanced Client Configuration for Ivanti Secure Access Client" option, it will ignore TCP MSS options while calculating the virtual adapter MTU on client side.

To add advance client config:

1. Navigate to **System > Configuration > Advanced Client Configuration** to display the configuration page.
2. Enter the following XML input in **Advanced Configuration for Ivanti Secure Access Clients**.

```
<advanced-config>
  <version> version </version>
  <desktop-client-config>
    <layer3-connection-config>
      <adapter-config>
        <ignore-tcp-mss>TRUE</ignore-tcp-mss>
      </adapter-config>
    </layer3-connection-config>
  </desktop-client-config>
</advanced-config>
```

3. Click **Save Changes**.

The screenshot shows the 'Advanced Client Config' page for tenant 'NODE66-SULTHAN'. The sidebar on the left lists various configuration categories: Configuration, Licensing, Security, Certificates, NCP, Client Types, Virtual Desktops, User Record Synchronization, IKEv2, SAML, Mobile, VPN Tunneling, PSAM, Telemetry, Advanced Client Config (selected), and Advanced Networking. The main content area is titled 'Advanced Configuration for Pulse clients' and contains a text input field with the placeholder text 'Enter advanced configuration in XML'. A 'Save Changes' button is visible in the bottom right corner.

The advanced configuration setting "ignore-tcp-mss" is Layer3 Adapter configuration setting and this will be consumed by the Ivanti Secure Access client as part of the IpsecConfig.



This "ignore-tcp-mss" setting is applicable for the virtual adapter MTU calculation only for IPv4. By default, the setting is always false, and therefore the TCP MSS options are always considered for MTU by default. Admin has to explicitly set the ignore-tcp-mss setting to TRUE (case insensitive), to ignore TCP MSS.

## Advanced Networking Configuration

The NTP, SNMP, Syslog, and Log archiving services are set to send the traffic through Management port by default. In case the Management port is not available, the traffic is routed through Internal port. Now, an administrator can modify the settings of NTP and other services to any physical inter-face.

The following procedure describes the steps to configure the ports for the services. Before you proceed, ensure the External and Management ports are enabled for use in the network settings.

To configure Service Traffic Port Options

1. Navigate to **System > Configuration > Advanced Networking**.
2. For the individual service, select the required port from the drop-down list.
3. Click **Save Changes**.

The screenshot displays the 'Advanced Networking' configuration page. On the left is a sidebar with a navigation menu including: Insights, Gateways, Gateways list, Overview, Logs, Tasks, Troubleshooting, Multinode Configuration, System (expanded), NTP, Configuration, Network, IF-MAP Federation, Log/Monitoring, Behavioral Analytics, Authentication, Users, Maintenance, and Administration. The main content area is titled 'Advanced Networking' and contains a 'Configuration' section with a list of services. To the right of this list is a section titled 'Select the Source Ports to be used for the following features' with four dropdown menus: NTP (Internal), SNMP TRAPS (Internal), SYSLOG (Internal), and LOG ARCHIVING (Internal). A 'Save Changes' button is visible in the bottom right corner.

In a cluster environment, when a node joins the cluster, configuration of the node is replaced with the configuration of other nodes in the cluster.

## IF-MAP Federation

You can configure a Ivanti Policy Secure device to store user session information for other Ivanti Policy Secure and Ivanti Connect Secure devices. Federation allows users to authenticate to a single Ivanti Connect Secure or Ivanti Policy Secure, and then access resources that are protected by any number of Ivanti firewall devices known as Infranet Enforcers that are controlled by different Infranet Controllers. Federation enhances network performance. If a user is required to log in to multiple Ivanti Connect Secure or Ivanti Policy Secure devices during the course of a day to access different resources, each device must perform authentication and Host-Checking, often with periodic Host Checker updates throughout the day. The overhead can lead to decreased performance not only on the devices, but also on the network and the endpoint. Imported IF-MAP sessions eliminate redundant logins and Host Checks.

Federation on the device uses the standard IF-MAP (Interface for Metadata Access Point) protocol to share session information and other data between connected devices over distributed networks. IF-MAP is a protocol defined by the Trusted Network Connect Working Group (TNC-WG) as a standard interface between different network elements and devices. Federation is accomplished using an IF-MAP server and IF-MAP clients.

It is important as an administrator to understand the fundamental underlying communication method for data transmission in a Federation network over IF-MAP. Policies that you configure on the device permit this communication. In a federated network, the IF-MAP server functions as the repository, or data store for IF-MAP clients to use for publishing information regarding activity on the network. For example, IF-MAP clients can publish information about sessions on the network, and Juniper Networks IDP devices can communicate information about potential threats to the IF-MAP client for publishing. IF-MAP clients can search for information about sessions or threats, and an IF-MAP client can establish a subscription so the IF-MAP server notifies the client when other clients publish new or changed information. In addition, IF-MAP clients can purge data that is no longer valid. All transactions are initiated by the IF-MAP client.

## Overview

You can configure the system as an IF-MAP client for an IF-MAP server. You configure an Infranet Controller as an IF-MAP server. Any endpoint sessions with an IP address created on an IF-MAP server are automatically published to that IF-MAP server.



You can create source IP policies for endpoints that authenticate to the device to permit access to resources behind Infranet Enforcers (ScreenOS Enforcers and Ivanti Policy Secure s). Session-Export policies that you configure on the IF-MAP clients allow the clients to publish endpoint user data to the IF-MAP server. Devices that are IF-MAP clients can subscribe to the information on an IF-MAP server. When a user accesses the device that is configured as an IF-MAP client, the client publishes basic session information, including the IP address, username and roles, to the IF-MAP server. The server stores the information as metadata. Other IF-MAP clients in the network can poll the server for metadata when session information is needed as a result of an endpoint attempting to access protected resources behind an Infranet Enforcer.

When an authenticated user from the device that is configured as an IF-MAP client attempts to access resources that are protected by an Infranet Enforcer for an Infranet Controller that is also configured as an IF-MAP client, the Infranet Controller automatically provisions an auth table entry for the user on the Infranet Enforcer to allow access without requiring the user to authenticate to the Infranet Controller.

The Infranet Enforcer as an IF-MAP client subscribes to session information and other data for the endpoint based on the originating IP address. The authenticating device (the original IF-MAP client) publishes any changes in session parameters to the IF-MAP server. Since the Infranet Controller that is protecting the accessed resources subscribes to the metadata on the Federation server, session information is always current.

The Infranet Enforcer allows or denies traffic based on the resource access policies that are configured on the Infranet Controller to which it is connected.

You configure server settings on the Infranet Controller that will be the IF-MAP server. You configure client settings on each of the Ivanti Connect Secure and Infranet Controller devices and that will be connected in the network.

You must identify the IF-MAP server to each IF-MAP client. To add the server, you specify the IF-MAP URL of the server and how to authenticate to the server. Match the URL and security settings to equal those on the IF-MAP server(s) to which the IF-MAP client will connect.

To configure IF-MAP client settings on the devices that will be IF-MAP clients:

1. Log into the nSA as a Tenant Admin.
2. From the ICS menu, click the *Gateway > Gateway List* and then select any standalone ICS Gateway and Cluster node.
3. Navigate to **System > IF-MAP Federation > Overview**.
4. Select the **Enable IF-MAP Client** check box.

5. Type the Server URL for IF-MAP Web service on the IF-MAP server. Append the server URL with */dana-ws/soap/dsifmap* for all Ivanti IF-MAP servers.

6. Select the client Authentication method: **Basic** or **Certificate**.

- If you select **Basic**, enter a **Username** and **Password**. This is the same as the information that was entered on the IF-MAP server.

The screenshot shows the 'Overview' page for 'NODE88-SULTHAN'. The left sidebar contains navigation options: Insights, Gateways, Gateways list, Overview, Logs, Tasks, Troubleshooting, Multinode Configuration, System, NTP, Configuration, Network, and IF-MAP Federation (highlighted). The main content area has a title 'Overview' and a description: 'An IF-MAP federation simplifies the work of end users by letting network devices share information about user sessions. For example, a user connects to the network using Connect Secure, they can automatically gain access (if authorized) to protected resources behind Infranet Enforcer firewalls, without having to log in again.' Below this is a checkbox 'Enable IF-MAP Client' which is checked. Under the heading 'Server URL', there is a text input field for 'Server URL \*', a dropdown menu for 'SELECT CHECK TYPE' with 'Basic' selected, a text input field for 'Username \*', and a password input field for 'PASSWORD \*' with masked characters. A 'Cancel' button is at the bottom left, and a 'Save Changes' button is partially visible on the right.

- If you select **Certificate**, select the **Device Certificate** to use.
- Ensure that the certificate of the CA that signed the IF-MAP server certificate is added from the **System > Configuration > Certificates > Trusted Server CA** page.

This screenshot is a close-up of the 'Server URL' configuration section. It shows the 'Enable IF-MAP Client' checkbox checked. The 'Server URL' section includes a text input field for 'Server URL \*', a dropdown menu for 'SELECT CHECK TYPE' with 'Certificate' selected, and another dropdown menu for 'CERTIFICATE'. A 'Cancel' button is located at the bottom left.

The IF-MAP client validates the IF-MAP server certificate: if validation fails, the connection fails. Ensure that the hostname in the IF-MAP URL on the client machine matches the hostname of the server certificate on the IFMAP server, and that the CA that signed the server certificate is configured as a trusted server CA on the IF-MAP client.

7. Click **Save Changes**.

## This Client

By default, Session-Import and Session-Export IF-MAP policies are configured to allow IF-MAP capabilities (the equivalent of roles) to be published to the IF-MAP server and retrieved from the IF-MAP server, provided there are matching roles on each IF-MAP client. You can open new Session-Import and Session-Export policies on each device, and then name and close the policies. Any matching roles that the IF-MAP clients in the federated network have can be used to access resources.

By default, advanced policy actions are not visible unless you click the advanced options links on the Session-Export and Session-Import policy pages. In default mode, you configure Session-Export and Session-Import policies using IF-MAP capabilities and roles. Device attributes, IF-MAP roles and identities can be accessed through the advanced options links. IF-MAP capabilities and Connect Secure roles should provide the functionality that most IF-MAP Federation requires.

## Session-Export Policies

In a Layer 2 environment, session information on the IF-MAP server includes a MAC address. If an export policy specifies an Administrative Domain, the domain is associated with the MAC address published to the IF-MAP server (the administrative domain is also associated with the identity published to the IF-MAP server).

A DHCP server assigns an IP address to the endpoint after authentication. An IF-MAP enabled DHCP server publishes an ip-mac link to IF-MAP, associating the endpoint's IP address with its IF-MAP session information.

Including administrative domains in MAC addresses allows the ip-mac link to be created based on the administrative domain.

If your IF-MAP Federated network spans different administrative domains, you should configure separate Session-Export policies for each domain to prevent MAC address spoofing. Each administrative domain should have an associated DHCP server and unique Session-Export policies.

Other aspects of the Session-Export policies within the IF-MAP Federated network can overlap.

To configure a Session-Export policy:

1. Log into the nSA as a Tenant Admin.
2. From the ICS menu, click the *Gateway > Gateway List* and then select any standalone ICS Gateway and Cluster node.
3. Navigate to System > IF-MAP > Session-Export Policies.

- Click '+' to create a new policy.

Session-Export Policies		Session-Import Policies		
<p>A session export policy determines data written into IF-MAP when a new user session is created or roles were re-assigned for an existing session. Exported data from all matching policies is combined before being committed into IF-MAP.</p>				
<input type="checkbox"/>	#	Name	Description	Stop
<input type="checkbox"/>	1	Default Export Policy	This policy exports all Pulse and IKEv2 user sessions	

- Type a **Policy Name**, and optionally a **Description**.
- Optionally, add **Available Roles** to the **Selected Roles** column to determine the roles for which this policy should apply. If you do not add any roles, the policy applies to all sessions. However, if you have non-interactive devices such as printers that do not need access, you may want to manually add roles and exclude those roles with non-interactive devices.

**Session-Export Policy** ⓘ

Policy Type: Session Export

Policy Name

Policy Description

Apply policy for these roles

Available Roles 5  Select All

- Outlook Anywhere User Role
- test-role-1
- testrole-2345
- Users

Selected Roles 0  Select All

⚠ No Items

7. Under **Policy Actions**, Select **Set IF-MAP Capabilities** and choose the applicable roles.
  - **Copy matching roles** - Selecting this action copies all of the user roles that match the roles specified in the Roles section of this policy into the IF-MAP capabilities data.
  - **Copy ALL roles** - Selecting this action copies all of the roles from the user session to the IF-MAP capabilities data.
  - **Set capabilities specified below** - Enter capabilities, one per line.

**Policy Actions**

**Set IF-MAP Capabilities**  
IF-MAP capabilities are similar to Pulse Policy Secure and Pulse Connect Secure roles

Copy matching roles

Copy matching roles

Copy ALL roles

Set capabilities specified below

8. Select **Stop processing policies when this policy matches** to specify that when this policy is matched, no more Session-Export policies should be applied.
9. Click **Save Changes**, or continue to configure Advanced Actions.

**Stop processing policies when this policy matches.**

Cancel

Save Changes

10. Click the **View Advanced Actions** link. Additional options appear on the page.
11. **Set IF-MAP Identity** - If this action is chosen, enter the Identity and select an Identity Type from the menu. Identity is normally specified as <NAME>, which assigns the user's login name. Any combination of literal text and context variables may be specified. If you choose other for Identity Type, enter a unique Identity Type in the Other text box.
12. Optionally type the **Administrative Domain** for the Session-Export policy. This optional field is applied to identity and MAC address data. One example for using this field is in a large network environment with several domains in which a username could be duplicated. By entering the domain, you ensure that the correct user is identified.

13. **Set IF-MAP Roles** - If this action is selected, select the applicable roles.
- **Copy matching roles** - Selecting this action copies all of the user roles that match the roles specified in the Roles section of this policy into the IF-MAP capabilities data.
  - **Copy ALL roles** - Selecting this action copies all of the roles from the user session to the IF-MAP capabilities data.
  - **Set roles specified below** - Enter roles, one per line.

14. **Set IF-MAP Device Attributes** - **Device attributes** represent a passed Host Checker policy on the Infranet Controller or Connect Secure.

- **Copy Host Checker policy names** - The name of each Host Checker policy that passed for the session is copied to a device attribute.
- **Set device attributes specified below** - Type device attributes, one per line, into the text box.

**Policy Actions**

**Set IF-MAP Capabilities**  
IF-MAP capabilities are similar to Pulse Policy Secure and Pulse Connect Secure roles

Set capabilities specified below ▼

---

**View Advanced Actions**

**Set IF-MAP Identity**

IDENTITY

IDENTITY TYPE  ▼

Administrative Domain

Other

**Set IF-MAP Roles**

Copy matching roles ▼

**Set IF-MAP Device Attributes**

Copy Host Checker policy names ▼

15. Click **Save Changes** to save this advanced Session-Export policy.

You must create corresponding Session-Import policies that allow IF-MAP client Infranet Controllers that are connected to an Infranet Enforcer in front of protected resources to collect IF-MAP data from the IF-MAP server.

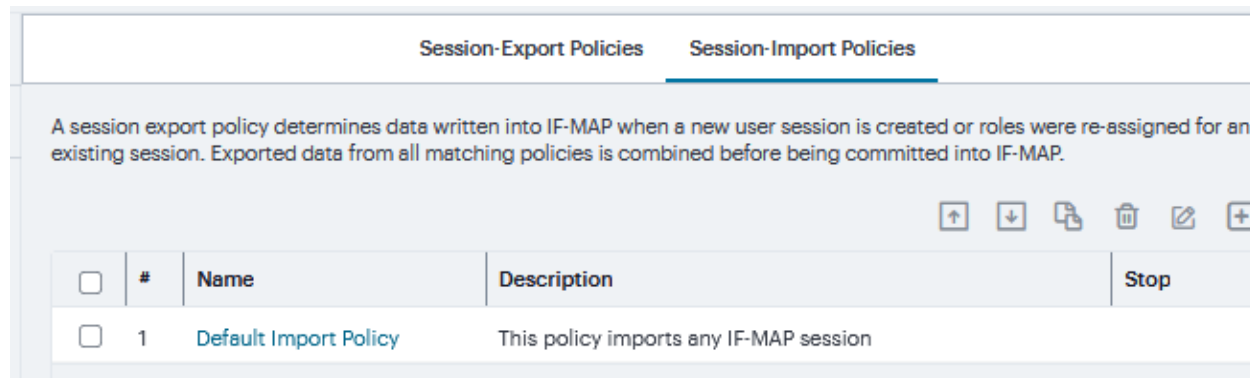


## Session-Export Policies

The Session-Export policies that you create allow IF-MAP data that represents a session to be stored on the IF-MAP server. Session-Import policies specify how the Infranet Controller derives a set of roles and a username from the IF-MAP data in the IF-MAP server. Session-Import policies establish rules for importing user sessions from Connect Secure. Import policies allow you to match authenticated users with corresponding roles on the target device. For example, you might configure an Import policy to specify that when IF-MAP data for a session includes the "Contractor" capability, the imported session should have the "limited" role. Session-Import policies allow the Infranet Controller to properly assign roles based on information that the IF-MAP server provides. You configure Session-Import policies on IF-MAP client IVEs that are connected to an Infranet Enforcer in front of protected resources.

To configure a Session-Import policy:

1. Log into the nSA as a Tenant Admin.
2. From the ICS menu, click the *Gateway > Gateway List* and then select any standalone ICS Gateway and Cluster node.
3. Navigate to **System > IF-MAP > This Client > Session-Import Policies** tab.
4. Click '+' to create a new policy.



5. Type a **Policy Name**, and optionally a **Description**.

- Under **Conditions when Policy Applies**, Select **Match IF-MAP Capabilities**, enter one capability per line.

**Session-Import Policy** ⓘ

Policy Type: Session Import

Policy Name

Policy Description

**Conditions when Policy Applies**

**Match IF-MAP Capabilities**  
Makes this policy apply only when a federation-wide session has particular capabilities. IF-MAP capabilities are similar to Pulse Policy Secure roles.

Capabilities

- Click the **View Advanced Conditions** link. Additional options appear on the page.
- Match IF-MAP Identity** - If this action is chosen, enter the **Identity** and select an **Identity Type** from the menu. Identity is normally specified as <NAME>, which assigns the user's login name. Any combination of literal text and context variables may be specified. If you choose other for Identity Type, enter a unique Identity Type in the **Other** text box.
- Optionally select and type the **Administrative Domain** for the Session-Import policy. This optional field is applied to identity and MAC address data. One example for using this field is in a large network environment with several domains in which a username could be duplicated. By entering the domain, you ensure that the correct user is identified.
- Match IF-MAP Roles - If this action is selected, then match then specified **Roles below** - Enter roles, one per line.

11. Match IF-MAP Device Attributes - Matches **Device attributes** passed Host Checker policy on the Infranet Controller or Connect Secure. Enter one Attribute, one per line.

The screenshot shows a configuration interface titled "View Advanced Conditions". It contains three main sections:

- Match IF-MAP Identity** (checked):
  - A text input field labeled "IDENTITY" with a red asterisk below it.
  - A dropdown menu labeled "IDENTITY TYPE" with "username" selected.
  - A dashed border box labeled "Other".
- Match Administrative Domain** (unchecked):
  - A dashed border box labeled "Administrative Domain".
- Match IF-MAP Roles** (checked):
  - A text input field labeled "ROLES".
- Match IF-MAP Device Attributes** (checked):
  - A text input field labeled "Attributes".

12. Optionally, Under **Assign these roles** and Click **Use these roles** add **Available Roles** to the **Selected Roles** column to determine the roles for which this policy should apply. If you do not add any roles, the policy applies to all sessions.

13. To copy If-Map Capabilities Select Copy IF-MAP Capabilities and select the capabilities. If Specified capabilities or All capabilities other than those specified below is selected, then enter one capability per line in the text box.

**Assign these roles**

Use these roles

Available Roles 5

Select All

Outlook Anywhere User Role

test-role-1

testrole-2345

Users

Selected Roles 0

Select All

**Copy IF-MAP Capabilities**

CAPABILITIES  
All capabilities

Capabilities

14. Select **Stop processing policies when this policy matches** to specify that when this policy is matched, no more Session-Import policies should be applied.
15. Click **Save Changes** or continue to configure Advanced Assignment Option.
16. Click the **View Advanced Assignment Option**. Additional options appear on the page.
17. Click **Copy IF-MAP Roles** - If this action is selected, then select the applicable roles.
18. If **Specified roles** or **All roles other than those specified below** is selected, then enter one role per line in the text box.
19. Click **Save Changes**.

View Advanced Assignment Option

Copy IF-MAP Roles

ROLES  
All roles

Roles

Stop processing policies when this policy matches.

## Log/Monitoring

The system generates event logs related to system performance, administrator actions, network communications, access management framework results, user sessions, and so forth. The system supports the following log collection methods:

- Local log collector and log viewer.
- Reporting to syslog servers.
- Reporting to SNMP servers.

The following table lists the Event Log Severity Levels:

Severity Levels

Severity Level	Description
Critical (level 10)	The system cannot serve user and administrator requests or loses functionality to a majority of subsystems.
Major (levels 8-9)	The system loses functionality in one or more subsystems, but users can still access the system for other access mechanisms.
Minor (levels 5-7)	The system encounters an error that does not correspond to a major failure in a subsystem. Minor events generally correspond to individual request failures.
Info (levels 1-4)	The system writes an informational event to the log when a user makes a request or when an administrator makes a modification.

In addition to managing system logs, you can use the admin console to configure collection of client-side logs, including:

- Host checker
- Windows Secure Application Manager
- Java Secure Application Manager and Applet Rewriting
- VPN Tunneling
- Terminal Services
- Virtual Desktops

## Events to Log

To configure log event categories:

1. Select **System > Log/Monitoring**.
2. Click the **Settings** tab to display the configuration page.
3. Complete the configuration as described in table.
4. Click **Save Changes**.



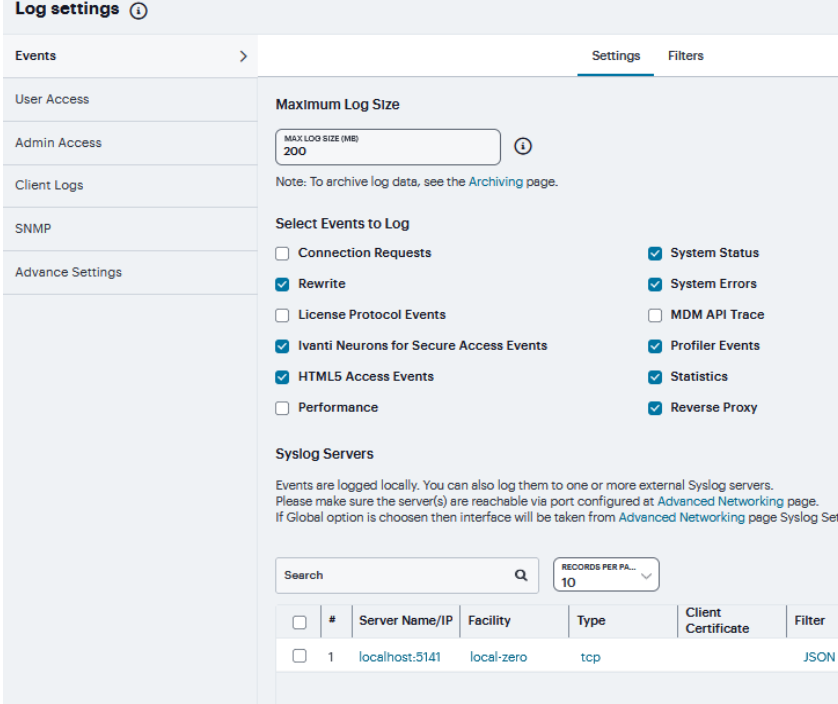
To configure log events for each local log category, you must perform this procedure on each local log tab: Events, User Access, and Admin Access.

The following table lists the Log Events Settings:

Log Events

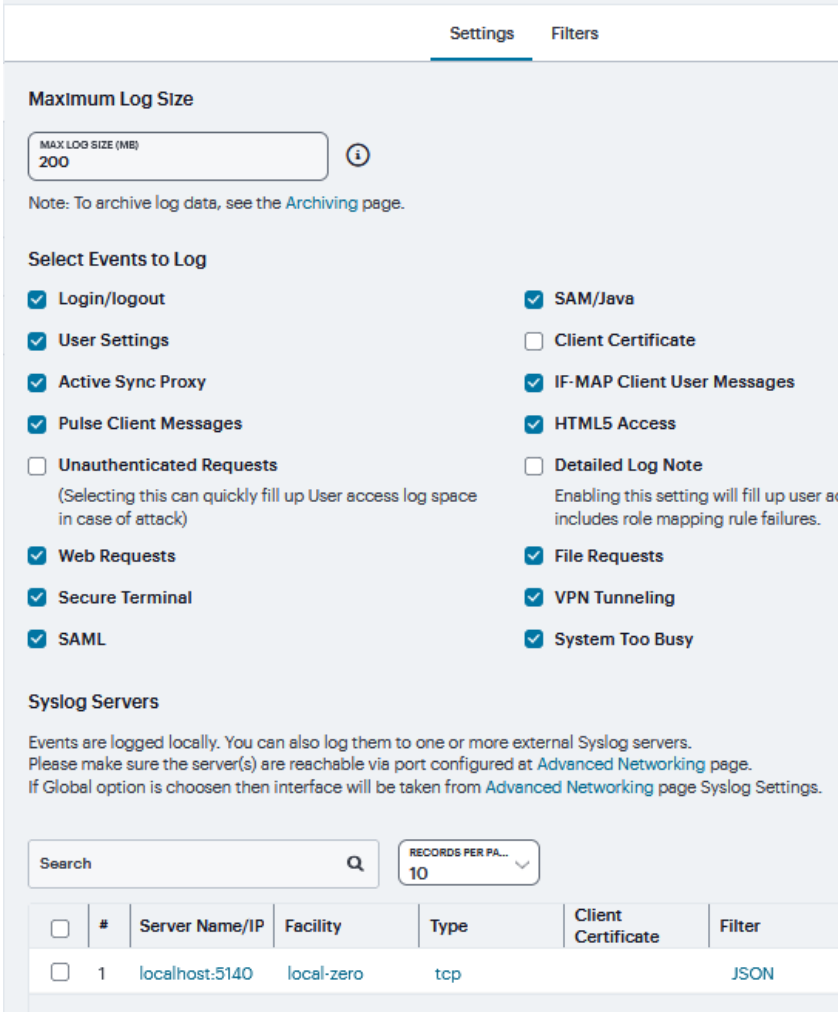
Settings	Guidelines
<b>Maximum Log Size</b>	
Max Log Size	Specify the maximum size of the local log. The default is 200 MB. The maximum is 500 MB. The default is a good choice for logs formatted with the Standard format. If you use a more verbose format, such as WELF, specify a larger value.

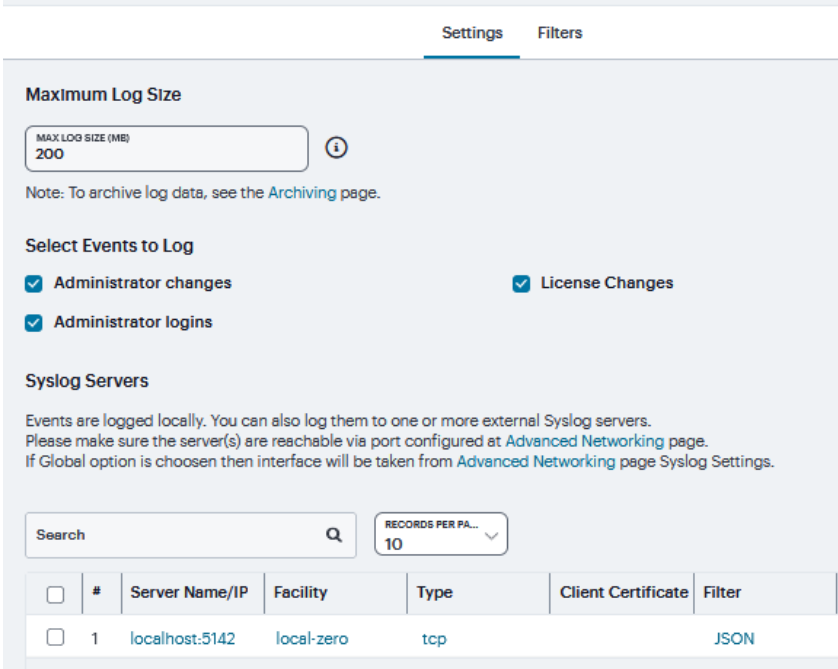
<b>Settings</b>	<b>Guidelines</b>
	<p>When the local log reaches the maximum log size, the current data is rolled over to a backup log file. A new, empty, file is then created for all subsequent (new) log messages. The log viewer displays the most recent 5000 log messages (the display limit). If the current log file contains fewer than 5000 log messages, older log messages from the backup log file can be displayed, up to a total of 5000 log messages. This makes the log files appear as one, even though they are stored separately. When you save the log messages or use the FTP archive function, the backup log file is appended to the current log file and is then downloaded as one log file. If the log files are not archived or saved by the time they are rolled over again, the oldest log messages (saved in the backup log file) are lost.</p>
Archiving	Click the Archiving link to display the configuration page for Archiving jobs, including log archiving.
<b>Select Events to Log - Events Tab</b>	
Connection Requests	Log events related to connection requests.
System Status	Log events related to changes in system status.
Rewrite	Log events related to rewrite policies.
System Errors	Log events related to system errors.
Statistics	Log user access statistics reported on the System > Log/Monitoring > Statistics tab. If you disable the Statistics option, the statistics are not written to the log file, but are still reported on the statistics page.
License Protocol Events	Log events related to licensing.
Reverse Proxy	Logs events related to reverse proxy information.

Settings	Guidelines
	 <p>The screenshot shows the 'Log settings' configuration page. On the left is a sidebar with categories: Events, User Access, Admin Access, Client Logs, SNMP, and Advance Settings. The main area is titled 'Log settings' and includes a 'Maximum Log Size' input field set to 200 MB. Below this is a 'Select Events to Log' section with checkboxes for: Connection Requests, Rewrite (checked), License Protocol Events, Ivanti Neurons for Secure Access Events (checked), HTML5 Access Events (checked), Performance, System Status (checked), System Errors (checked), MDM API Trace, Profiler Events (checked), Statistics (checked), and Reverse Proxy (checked). There is also a 'Syslog Servers' section with a table showing one server configuration: #1, localhost:5141, local-zero, tcp, Client Certificate, Filter, JSON, and Source Interface Global.</p>
<p><b>Select Events to Log - User Access Tab</b></p>	
<p>Login/log out</p>	<p>Log events related to sign in and sign out.</p>
<p>SAM/Java</p>	<p>Log events related to user access to SAM/Java in the local log file.</p>
<p>User Settings</p>	<p>Log events related to changes to user settings in the local log file.</p>
<p>Client Certificate</p>	<p>Log events related to certificate security.</p>
<p>IF-MAP Client User Messages</p>	<p>Log events related to IF-MAP.</p>



<b>Settings</b>	<b>Guidelines</b>
Ivanti Secure Access Client Messages	Log events related to Ivanti Secure Access clients.
HTML5 Access	Log events related to HTML5 access.
Web Requests	Log events related to user access to web.
File Requests	Log events related to user access to files.
Secure Terminal	Log events related to user access to secure terminal.
VPN Tunneling	Log events related to user access to VPN tunneling.
SAML	Log events related to user access to SAML.
System Too Busy	Log events related to ICS overload.
Unauthenticated Web Requests	Log events related to web requests before authentication. By default, this check box is disabled.

Settings	Guidelines																
	 <p>The screenshot shows the 'Settings' tab with the following configuration:</p> <ul style="list-style-type: none"> <li><b>Maximum Log Size:</b> 200 MB</li> <li><b>Select Events to Log:</b> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Login/logout</li> <li><input checked="" type="checkbox"/> User Settings</li> <li><input checked="" type="checkbox"/> Active Sync Proxy</li> <li><input checked="" type="checkbox"/> Pulse Client Messages</li> <li><input type="checkbox"/> Unauthenticated Requests (Note: Selecting this can quickly fill up User access log space in case of attack)</li> <li><input checked="" type="checkbox"/> Web Requests</li> <li><input checked="" type="checkbox"/> Secure Terminal</li> <li><input checked="" type="checkbox"/> SAML</li> <li><input checked="" type="checkbox"/> SAM/Java</li> <li><input type="checkbox"/> Client Certificate</li> <li><input checked="" type="checkbox"/> IF-MAP Client User Messages</li> <li><input checked="" type="checkbox"/> HTML5 Access</li> <li><input type="checkbox"/> Detailed Log Note (Note: Enabling this setting will fill up user access log quickly. It includes role mapping rule failures.)</li> <li><input checked="" type="checkbox"/> File Requests</li> <li><input checked="" type="checkbox"/> VPN Tunneling</li> <li><input checked="" type="checkbox"/> System Too Busy</li> </ul> </li> <li><b>Syslog Servers:</b> Events are logged locally. You can also log them to one or more external Syslog servers. Please make sure the server(s) are reachable via port configured at Advanced Networking page. If Global option is chosen then interface will be taken from Advanced Networking page Syslog Settings.</li> </ul> <p>At the bottom, there is a search bar and a table of Syslog Servers:</p> <table border="1"> <thead> <tr> <th><input type="checkbox"/></th> <th>#</th> <th>Server Name/IP</th> <th>Facility</th> <th>Type</th> <th>Client Certificate</th> <th>Filter</th> <th>Source Interface</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td>1</td> <td>localhost:5140</td> <td>local-zero</td> <td>tcp</td> <td></td> <td>JSON</td> <td>Global</td> </tr> </tbody> </table>	<input type="checkbox"/>	#	Server Name/IP	Facility	Type	Client Certificate	Filter	Source Interface	<input type="checkbox"/>	1	localhost:5140	local-zero	tcp		JSON	Global
<input type="checkbox"/>	#	Server Name/IP	Facility	Type	Client Certificate	Filter	Source Interface										
<input type="checkbox"/>	1	localhost:5140	local-zero	tcp		JSON	Global										
<p><b>Select Events to Log - Admin Access Tab</b></p>																	
<p>Administr ator changes</p>	<p>Log events related to configuration changes.</p>																
<p>Administr ator logins</p>	<p>Log events related to administrator access.</p>																
<p>License changes</p>	<p>Log events related to licensing.</p>																

Settings	Guidelines																
System Errors	<p>Log events related to system errors.</p>  <p>The screenshot shows the 'Settings' tab for Syslog configuration. It includes a 'Maximum Log Size' field set to 200 MB, a note about archiving, and a 'Select Events to Log' section with checkboxes for Administrator changes, Administrator logins, and License Changes. Below is the 'Syslog Servers' section with a search bar, a 'RECORDS PER PAGE' dropdown set to 10, and a table of configured servers.</p> <table border="1"> <thead> <tr> <th><input type="checkbox"/></th> <th>#</th> <th>Server Name/IP</th> <th>Facility</th> <th>Type</th> <th>Client Certificate</th> <th>Filter</th> <th>Source Interface</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td>1</td> <td>localhost:5142</td> <td>local-zero</td> <td>tcp</td> <td></td> <td>JSON</td> <td>Global</td> </tr> </tbody> </table>	<input type="checkbox"/>	#	Server Name/IP	Facility	Type	Client Certificate	Filter	Source Interface	<input type="checkbox"/>	1	localhost:5142	local-zero	tcp		JSON	Global
<input type="checkbox"/>	#	Server Name/IP	Facility	Type	Client Certificate	Filter	Source Interface										
<input type="checkbox"/>	1	localhost:5142	local-zero	tcp		JSON	Global										
<b>Syslog Servers</b>	<p>click '+' to add new logs. Complete the configuration as described in below rows. You can specify multiple syslog servers.</p>																
Server name/IP	<p>Specify the fully qualified domain name or IP address for the syslog server.</p> <p>If you select TLS from the Type list, the server name must match the CN in the subjectDN in the certificate obtained from the server.</p>																
Facility	<p>Select a syslog server facility level (LOCAL0-LOCAL7). Your syslog server must accept messages with the following settings: facility = LOG_USER and level = LOG_INFO.</p>																
Type	<p>Select the connection type to the syslog server. You can select:</p> <ul style="list-style-type: none"> <li>• UDP (User Datagram Protocol) - A simple non-secure transport model.</li> <li>• TCP (Transmission Control Protocol) - A core protocol of the Internet Protocol suite (IP), but lacks strong security.</li> </ul>																

Settings	Guidelines
	<ul style="list-style-type: none"> <li>• TLS (Transport Layer Security) - Uses cryptographic protocols to provide a secure communication.</li> </ul>
Client Certificate	<p>(optional) If you select TLS from the Type menu and your remote syslog server requires client certificates, select the installed client certificate to use to authenticate to the syslog server. Client certificates are defined in the Configuration &gt; Certificates &gt; Client Auth Certificates page. Client certificates must be installed on the device before they can be used. There is no fallback if a connection type fails.</p>
Filter	<p>Select a filter format. Any custom filter format and the following predefined filter formats are available:</p> <ul style="list-style-type: none"> <li>• <b>Standard (default)</b> - This log filter format logs the date, time, node, source IP address, user, realm, event ID, and message.</li> <li>• <b>WELF</b> - This customized Web Trends Enhanced Log Format (WELF) filter combines the standard WELF format with information about the system realms, roles, and messages.</li> <li>• <b>WELF-SRC-2.0-Access Report</b> - This filter adds access queries to the customized WELF filter. You can use this filter with NetIQ's SRC to generate reports on user access methods.</li> </ul>
Source Interface	<p>Select the source port type for the syslog server:</p> <ul style="list-style-type: none"> <li>• Global</li> <li>• External</li> <li>• Internal</li> <li>• Management</li> </ul> <p>Ensure the servers are reachable through port configured in the <b>Advanced Networking</b> page on the Admin UI.</p>

## Log Filters

If desired, you can create custom log collection filters to change the records displayed or exported. For example, it is common to see administrators use a filter for RADIUS accounting logs. This filter allows only the accounting log message, and it puts the entire message in a comma separated list. The order of the filtered message is: Date, Time, User, Realm, "List of Roles", NAS-ID, Acct-Status, Auth-Type, Attr-Value1, Attr-Value2, Attr-Value3.

Accounting attribute messages are different from authentication attribute messages in that the attribute name is not printed in the log message, but a comma is inserted for every attribute to be logged, even if it is not present.

To view the configuration of predefined log format filters:

1. Navigate to System > Log/Monitoring.
2. Click the **Events / User Access / Admin Access** tab.
3. Click the **Filter** tab to display the log filters page.
4. Click the hyperlinked name of the filter to display its configuration page. You cannot edit the predefined filter named Standard, but you may edit the predefined WELF filters and any other custom filters that appear in the list.
5. Click '+' to display the configuration page for creating new filter.
6. Complete the configuration as described in table.
7. Click **Save Changes**.

Settings Filters

**Filter**

Filter Name

Make default for syslog and archiving filter selection

**Query**

START DATE

END DATE

**Variables**

EXPRESSION TYPE

- result ⓘ
- port ⓘ
- method ⓘ
- ⓘ

OPERATOR

Insert Expression →

**Export Format**

FORMAT

DESCRIPTION

%date% %time% - %node% - [%sourceip%] %ivs%:-  
 %user%(%realm%)[%role%]%nonRoot%[%sessionId%]  
 [%tenantid%][%certHash%] - %msg%

### Log Filters

Settings	Guidelines
Filter Name	Specify a name that is helpful to you and other administrators in understanding usage for your custom filter.
Make default	Make the filter the default on syslog and archiving configuration pages.
<b>Query</b>	Enter a start date. Click <b>Earliest Date</b> to write all logs from the first available date stored in the log file.
Start Date	

Settings	Guidelines
End Date	Enter an end date. Click <b>Latest Date</b> to write all logs up to the last available date stored in the log file.
Query	<p>Use the <b>Filter Variables Dictionary</b> to insert query expressions in the Query box. Enclose the query value in single quotes.</p> <p>For example, insert the query expression <code>sourceip=</code>. Then complete the expression by adding the value <code>'192.168.0.1'</code>.</p>
Export Format	<p>Select an export format:</p> <ul style="list-style-type: none"> <li>• <b>Standard (default)</b> - This log filter format logs the date, time, node, source IP address, user, realm, and message.</li> <li>• <b>WELF</b> - This customized WebTrends Enhanced Log Format (WELF) filter combines the standard WELF format with information about the system realms, roles, and messages.</li> <li>• <b>Custom</b> - Use the Standard as a template for your custom selection of columns to be included in exports (when log collections are saved to files).</li> </ul>



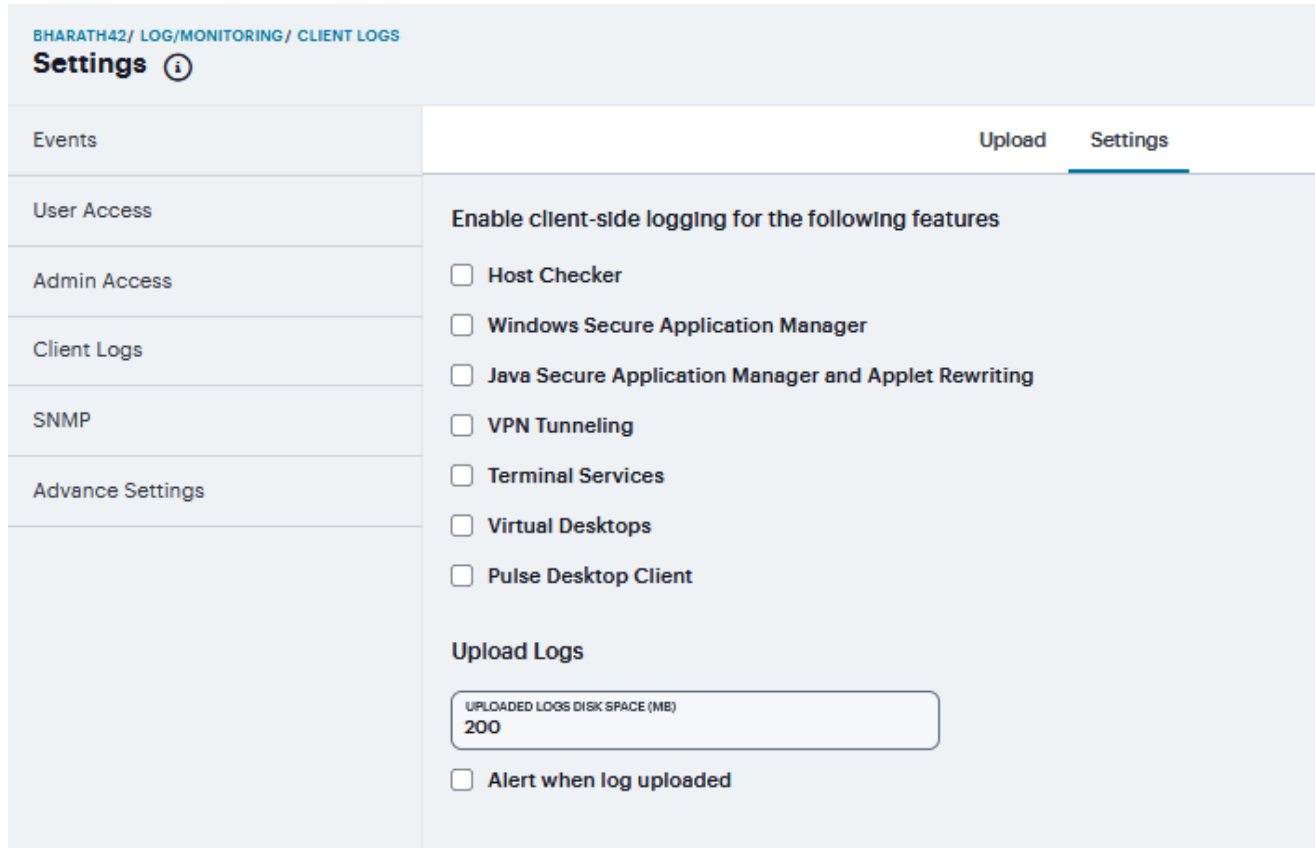
Log query filters change only the data displayed (or rows exported). Log format filters change only the data displayed (or columns exported). Use of filters does not affect the log data that has been collected.

## Client Side Log

Client-side logging is not enabled by default. If necessary, you can enable client-side logging to troubleshoot any client application issues.

To enable client side logging:

1. Select **System > Log/Monitoring**.
2. Click the **Client Logs** tab to display the configuration page. Complete the configuration as described in Table.
3. Click **Save Changes**.



Upload tab displays **Uploaded Logs Details**.

### Client Side Log

Settings	Guidelines
Host Checker	Select this option to enable client-side logging of Host Checker.
Windows Secure Application Manager	Select this option to enable client-side logging of PSAM.
Java Secure Application Manager	Select this option to enable client-side logging of JSAM and applet.



Settings	Guidelines
and Applet Rewriting	
VPN Tunneling	Select this option to enable client-side logging of VPN tunneling.
Terminal Services	Select this option to enable client-side logging of terminal services.
Virtual Desktops	Select this option to enable client-side logging of virtual desktops.
Ivanti Secure Access Desktop Client	Select this option to enable client-side logging of Ivanti Secure Access desktop clients.
<b>Upload logs</b>	
Upload logs disk space (MB)	Specify the amount of disk space (in Megabytes) you want to allocate for uploaded client log files. You can allocate disk space from 0 to 200 MB.
Alert when log uploaded	Select this option to receive an alert message when an end user pushes a log file.

## SNMP

If you prefer, you can use a third-party SNMP manager, such as HP OpenView, to monitor system health. The system supports SNMP v2c and SNMPv3. The system supports two users to be registered with an SNMP engine with different authentication and privilege settings.

To configure the SNMP agent:

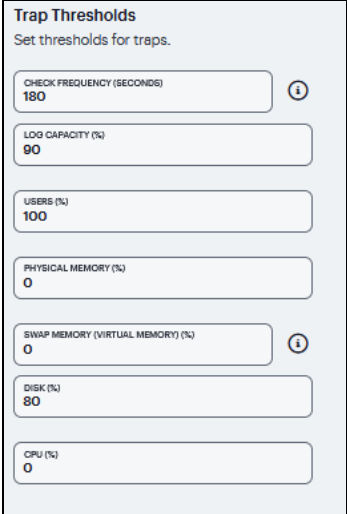
1. Select **System > Log/Monitoring**.
2. Click the **SNMP** tab to display the SNMP configuration page.
3. Complete the configuration as described in Table.
4. Click **Save Changes**.

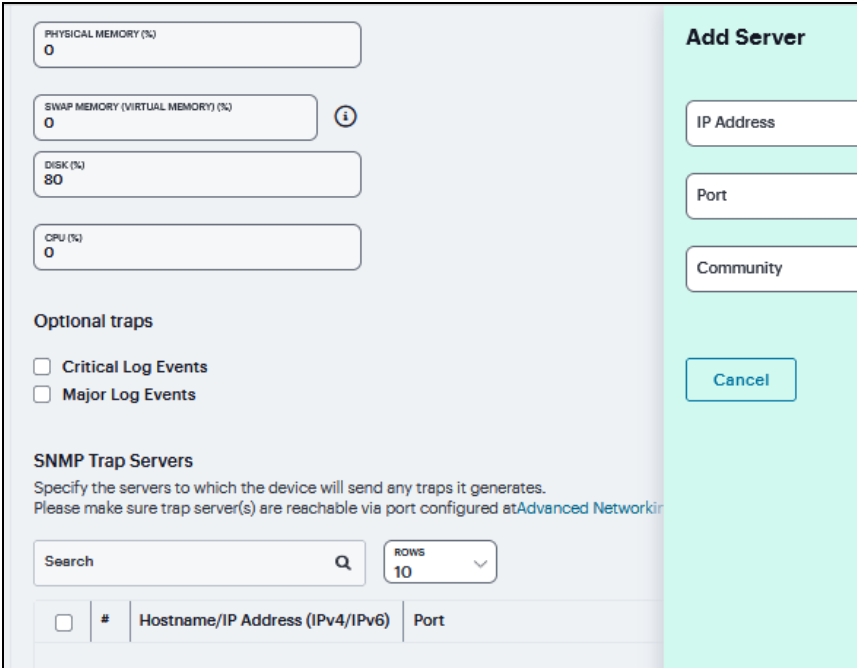
## SNMP agent

Settings	Guidelines
MIB File	Use the Ivanti MIB file link to download the device management information base MIB file. You add this file to your SNMP manager configuration.
SNMP Version	<p>Select your SNMP server version:</p> <ul style="list-style-type: none"> <li>• v2c</li> <li>• v3</li> </ul> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>MIB File</b> You must download the Ivanti Secure MIB file and install it in your SNMP manager application to monitor the device. Please make sure SNMP clients are reachable via the management port or internal port (if management port is disabled).</p> <p><b>SNMP Version data</b></p> <p>SNMP VERSION v2c</p> </div>
<b>Agent Properties</b>	
SNMP Queries	Select to support SNMP queries. Selecting this option enables the SNMP Diagnostic Log utility in the Troubleshooting > Monitoring > Diagnostic Logs page.
SNMP Traps	Select to send SNMP traps. Selecting this option enables the SNMP Diagnostic Log utility in the Troubleshooting > Monitoring > Diagnostic Logs page.
System Name	Specify a system name.
System Location	Specify a location.
System Contact	Specify a system contact
Community String	<p>Required only for SNMPv2c.</p> <p>To query the system, your network management station must send it the community string. To stop the SNMP system, clear the community field.</p>

Settings	Guidelines																				
	<div style="border: 1px solid #ccc; padding: 5px;"> <p><b>Agent Properties</b></p> <p><input type="checkbox"/> SNMP Queries</p> <p><input type="checkbox"/> SNMP Traps</p> <p>System Name <input type="text"/></p> <p>System Location <input type="text"/></p> <p>System Contact <input type="text"/></p> <p>Community <input type="text"/></p> </div>																				
<b>SNMPv3 Configuration</b>																					
Username	<p>Specify the SNMPv3 username. The User-Based Security Model (USM) is the default Security Module for SNMPv3. The system supports two users to be registered with an SNMP engine. Editing the SNMPv3 user attributes overwrite any already registered SNMPv3 user. The SNMPv3 user must have read-only access on all MIBs supported by the system. SNMPv3 user configuration attributes can also be used for SNMP traps.</p> <div style="border: 1px solid #ccc; padding: 5px;"> <p><b>SNMPV3 Configuration</b></p> <p>Username * <input type="text"/></p> <p>SECURITY LEVEL NoAuth, NoPriv <input type="button" value="v"/></p> <p>Username <input type="text"/></p> <p>SECURITY LEVEL NoAuth, NoPriv <input type="button" value="v"/></p> </div>																				
Security Level	<table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 20%;"></th> <th style="text-align: center; width: 15%;"><b>Auth</b></th> <th style="text-align: center; width: 15%;"><b>Auth</b></th> <th style="text-align: center; width: 15%;"><b>Priv</b></th> <th style="text-align: center; width: 15%;"><b>Priv</b></th> </tr> <tr> <th style="text-align: left;"><b>Selection</b></th> <th style="text-align: center;"><b>Protocol</b></th> <th style="text-align: center;"><b>Password</b></th> <th style="text-align: center;"><b>Protocol</b></th> <th style="text-align: center;"><b>Password</b></th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;"><b>No Auth, NoPriv</b></td> <td style="text-align: center;">•</td> <td style="text-align: center;">•</td> <td style="text-align: center;">•</td> <td style="text-align: center;">•</td> </tr> <tr> <td style="vertical-align: top;"><b>Auth, NoPriv</b></td> <td style="vertical-align: top;">Select MD5 (HMAC- MD5-96) or SHA (HMAC-</td> <td style="vertical-align: top;">Enter an authentication password. The password can contain any ASCII</td> <td style="text-align: center;">•</td> <td style="text-align: center;">•</td> </tr> </tbody> </table>		<b>Auth</b>	<b>Auth</b>	<b>Priv</b>	<b>Priv</b>	<b>Selection</b>	<b>Protocol</b>	<b>Password</b>	<b>Protocol</b>	<b>Password</b>	<b>No Auth, NoPriv</b>	•	•	•	•	<b>Auth, NoPriv</b>	Select MD5 (HMAC- MD5-96) or SHA (HMAC-	Enter an authentication password. The password can contain any ASCII	•	•
	<b>Auth</b>	<b>Auth</b>	<b>Priv</b>	<b>Priv</b>																	
<b>Selection</b>	<b>Protocol</b>	<b>Password</b>	<b>Protocol</b>	<b>Password</b>																	
<b>No Auth, NoPriv</b>	•	•	•	•																	
<b>Auth, NoPriv</b>	Select MD5 (HMAC- MD5-96) or SHA (HMAC-	Enter an authentication password. The password can contain any ASCII	•	•																	

Settings	Guidelines
	<p>characters and must be at least 8 characters in length.</p> <p>SHA-96).</p> <p>Auth, Priv</p> <p>Select MD5 (HMAC-MD5-96) or SHA (HMAC-SHA-96).</p> <p>Enter an authentication password. The password can contain any ASCII characters and must be at least 8 characters in length.</p> <p>Select either CBC-DES or CFB-AES-128.</p> <p>-Enter a privacy password. The password can contain any ASCII characters and must be at least 8 characters in length.</p>
Trap Thresholds	Setting a threshold value to 0 disables that respective trap.
Check Frequency	Specify the frequency in seconds for sending traps. The default is 180 seconds.
Log Capacity	Specify the percent of log space used. The default is 90%.
Users	Specify the frequency in seconds for sending traps. The default is 180 seconds.
Physical Memory	Specify the percent of physical memory used. The default is 0 (not reported).

Settings	Guidelines
Swap Memory (Virtual Memory)	Specify the percent of swap memory used. The default is 0 (not reported). We recommend you monitor swap memory to alert you to potential memory issues. The threshold for traps for physical memory usage might be reached even if the system is not experiencing any difficulties.
Disk	Specify the percent of disk utilization. The default is 80%.
CPU	<p>Specify the percent of CPU utilization. The default is 0 (not reported).</p> 
<b>Optional Traps</b>	
Critical Log Events	Send traps when the system logs critical events.
Major Log Events	Send traps when the system logs major events.
Save SNMP Settings	Click Save Changes to update the SNMP agent configuration. The page is refreshed and displays the SNMP engine ID. If the configuration is changed to move from SNMP v2c to SNMP v3, the system generates and displays two engine IDs.

Settings	Guidelines
<b>SNMP Servers</b>	
Hostname / IP address	Specify the hostname or IP address for the SNMP servers to which the system will send any traps it generates.
Port	Specify the port for the SNMP server. Typically, SNMP uses port 162.
Community (v2c) / User (v3)	<p>Specify the community/user string (if necessary).</p>  <p>The screenshot displays a configuration window with several sections:         <ul style="list-style-type: none"> <li><b>System Metrics:</b> Four input fields for Physical Memory (%), Swap Memory (Virtual Memory) (%), Disk (%), and CPU (%), each with a value of 0.</li> <li><b>Optional traps:</b> Two checkboxes for 'Critical Log Events' and 'Major Log Events', both currently unchecked.</li> <li><b>SNMP Trap Servers:</b> A section with a search bar, a 'ROWS' dropdown set to 10, and a table with columns for '#', 'Hostname/IP Address (IPv4/IPv6)', and 'Port'.</li> <li><b>Add Server Panel:</b> A light green sidebar on the right with input fields for 'IP Address', 'Port', and 'Community', and 'Cancel' and 'Save' buttons.</li> </ul> </p>

Keep the following configuration tips in mind when you configure your SNMP manager to listen for this SNMP agent:

- Add the Ivanti MIB file to the SNMP manager configuration.
- If using SNMPv2c, the community string configuration for the SNMP manager and SNMP agent must match.
- If using SNMPv3, the SNMPv3 user configuration for the SNMP manager and the SNMP agent must match.


- If using SNMPv3, you must specify the Authoritative Engine ID for SNMPv3 traps that was generated when you saved the SNMP agent configuration.

## Advanced Settings

This option helps to configure fault tolerance on each configured TCP and TLS syslog server available. Fault tolerance is supported only for TCP and TLS syslog servers. UDP syslog servers cannot be configured for fault-tolerance. This functionality helps the syslog server to recover the logs lost during a disconnect. The administrator can configure fault-tolerance on syslog servers by enabling this option from the admin UI. ICS/IPS reads the lost pending logs during a disconnect from the log disk and transports them to the syslog server on a reconnect. Fault tolerance is supported only for the syslog servers configured under the following log-types:

- Events
- User Access
- Admin Access

---


 Fault tolerance is node-specific. In case of clusters, the setting needs to be enabled/disabled by logging into each of the cluster members. Fault tolerance is supported only for TCP and TLS syslog servers. UDP syslog servers cannot be configured for fault tolerance.

---

To configure advance settings to a TCP and TLS syslog server:

1. Navigate to **System > Log/Monitoring**.
2. Click the **Advance Settings** tab to display the configuration page.
3. Complete the configuration as described in Table.
4. Click **Save changes**.

---

 This feature is limited to configuring fault tolerance settings of an existing syslog server; and cannot be used to create or delete a new syslog server.

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## Behavioral Analytics

Behavioral Analytics feature analyzes user's action along with other context data to derive conclusions about any anomalous activities. It provides information/visibility based on real time user or device context thus helping in advanced attack detection and helps in proactive policy-based enforcement.

The Behavioral Analytics feature addresses the following types of anomaly detection:

- User/device is prompted for second level of authentication based on the threat profile determined for the corresponding user/device.

Below are some scenarios where second level of authentication is required:

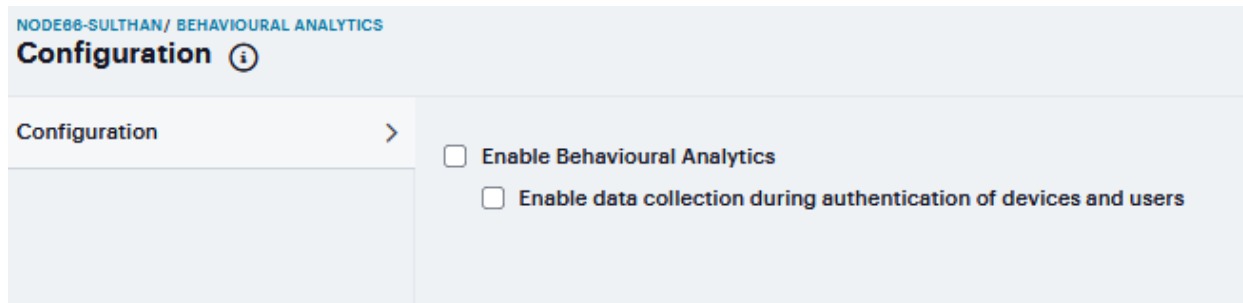
- User authenticating from new device: This is detected by using the device MAC address.
- User authenticating from new location: Location details are obtained by using the location configurations.

### Benefits

- ICS monitors the traffic from users and helps in determining the possible anomalous activities such as:
  - If the user is authenticating from a new device / new location.
  - If the device traffic is different from previous instances.
- Data collected as part of Behavior Analytics is stored so that it can be used later for determining the anomalies.

To enable behavioral analytics:

1. Log into the nSA as a Tenant Admin.
2. From the ICS menu, click the *Gateways > Gateways List* and then select any standalone ICS Gateway or Cluster node.
3. Navigate to **System > Behavioral Analytics > Configuration**.
4. Under Configurations, select **Enable Behavioral Analytics**.
5. For enabling Adaptive Authentication, select **Enable data collection during authentication of devices and users**.
6. Click **Save Changes**.





In case you have a Fresh Installation of ICS, then it will NOT have UEBA package by default with it. Please add the UEBA package before using Adaptive Authentication.

# Network and Host Administration

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- ["Internal Port Configuration" on the next page](#)
- ["External Port Configuration" on page 258](#)
- ["Management Port Configuration" on page 262](#)
- ["VLAN Ports Configuration" on page 265](#)
- ["Routes Configuration" on page 272](#)
- ["Hosts Configuration" on page 273](#)
- ["VPN Tunnel Configuration" on page 273](#)

## Introduction

When you install and initially set up the device, you use the serial port console to set basic network and host settings. To get started, you must use the serial console to configure these settings for the internal interface. You have the option to use the serial console to configure network and host settings for the external interface and the management interface. The network and host settings you configure with the serial port console include:

Once the internal interface has been configured, you can use the admin console Network Settings pages to modify settings for the internal interface, to enable and configure the external interface and the management interface, and to configure or manage advanced networking features, including:

- Hostname
- IPv6 addresses
- VLAN ports
- Virtual ports
- Route table entries
- Host mapping table entries
- ARP cache entries

- Neighbor discovery cache entries
- System date and time (manual configuration) or NTP

## Internal Port Configuration

The internal port, also known as the internal interface, handles all LAN requests to resources, listening for Web browsing, file browsing, authentication, and outbound mail requests.

To configure the internal port configuration:

### Settings

1. Log in to the Ivanti Neurons for Secure Access portal as a Tenant Admin. See "[Logging in to Ivanti Neurons for Secure Access](#)" on page 12.
2. Use the Gateway Switcher and select **Ivanti Connect Secure**.
3. From the Ivanti Connect Secure menu, click the **Gateways** icon, then select **Gateways > Gateways List**.

The All Gateways page is displayed showing a list of standalone ICS Gateways and Cluster nodes.

4. From the **Standalone ICS Gateways** list, click on the gateway link that you want to configure.
5. On the Ivanti Connect Secure menu, select **System > Network > Internal Port > Settings** to display the configuration page.

- Under IPV4 Settings, assign an IP address, assign a Netmask, and specify the IPv4 address for the default Gateway.

The screenshot displays the 'Internal Port - Settings' configuration page. The left sidebar contains a navigation menu with the following items: Network, Overview, Internal Port (selected), External Port, Management Port, VLANs, Routes, Hosts, and VPN Tunneling. The main content area is titled 'Internal Port - Settings' and includes tabs for 'Settings', 'Virtual Ports', 'ARP Cache', and 'ND Cache'. Under the 'Settings' tab, the 'IPV4 Settings' section contains input fields for 'IP ADDRESS\*' (10.96.116.42), 'NETMASK\*' (255.255.240.0), and 'DEFAULT GATEWAY\*' (10.96.112.1). A note below states: 'If you need to specify static routes, you can do so on the [Static Routes](#) page.' The 'IPV6 Settings' section features a dropdown for 'IPV6 STATUS' set to 'Disable', with a warning: 'Changing above setting might restart some services. This restart might drop all the connections to the F...'. The 'Link Local Address' section includes fields for 'LINK LOCAL ADDRESS', 'PREFIX LENGTH\*' (64), and 'IPv6 Address\*'. The 'Advanced Port' section contains fields for 'MAC ADDRESS', 'ARP PING TIMEOUT (SECONDS)\*' (3), 'MTU (BYTES)\*' (1500), and 'Default VLAN ID'. Information icons (i) are present next to several fields.

- Under IPV6 Settings, select IPV6 Status.
- Under Link Local Address, you can see the auto-configured link local address. Specify a routable IPv6 address, Prefix Length, and IPv6 address for the default Gateway.

9. Under Advanced Port, specify the ARP Ping Timeout, maximum transmission unit, and default VLAN ID for the traffic of this port.
10. Click **Save Changes**.

**Virtual port** - You can use virtual ports to provide different groups of users access to the same system using different IP aliases and domains.

To configure a virtual port:

1. Select **Internal Port > Virtual Ports**. Port is Internal Port or External Port.
2. Click '+' to display the configuration page.
3. Enter a name for the virtual port.
4. Enter the IPv4 address and the IPv6 address.
5. Click **Save Changes**.

**ARP Cache** - In IPv4 networking, network nodes use ARP to maintain information about peer network nodes.

To manage the ARP table:

1. Select **Internal Port > ARP Cache**. Port is Internal Port, External Port, or Management Port.
2. Click '+' to display the configuration page.
3. Enter an IP address, and a MAC address.
4. Click **Save Changes** to add an entry.
5. You can delete all dynamically discovered entries.

**ND Cache** - In IPv6 networking, network nodes use the Neighbor Discovery Protocol (NDP) to determine the Layer 2 MAC addresses for neighboring hosts and routers.

To manage the neighbor discovery table:

1. Select **Internal Port > ND Cache**. Port is Internal Port, External Port, or Management Port.
2. The **Flush NDP Entries** deletes all dynamically discovered entries.

## External Port Configuration

The external port, also known as the external interface, handles all requests from users signed into Ivanti Connect Secure from outside the customer LAN, for example, from the Internet. Before sending a packet, Ivanti Connect Secure determines if the packet is associated with a TCP connection that was initiated by a user through the external interface. If that is the case, Ivanti Connect Secure sends the packet to the external interface. All other packets go to the internal interface.

To configure the external port configuration:

### Settings

1. Log in to the Ivanti Neurons for Secure Access portal as a Tenant Admin. See "[Logging in to Ivanti Neurons for Secure Access](#)" on page 12.
2. Use the Gateway Switcher and select **Ivanti Connect Secure**.
3. From the Ivanti Connect Secure menu, click the **Gateways** icon, then select **Gateways > Gateways List**.

The All Gateways page is displayed showing a list of standalone ICS Gateways and Cluster nodes.

4. From the **Standalone ICS Gateways** list, click on the gateway link that you want to configure.

5. On the Ivanti Connect Secure menu, select **System > Network > External Port > Settings** to display the configuration page.

BHARATH42/ NETWORK/ EXTERNAL PORT

## External Port - Settings (i)

Network	Settings	Virtual Ports	ARP Cache	ND Cache
Overview	<p><b>Use Port</b></p> <p>PORT STATUS Disable</p>			
Internal Port				
External Port >	<p><b>IPV4 Settings</b></p> <p>IPV4 STATUS Disable <span style="float: right;">Changing above setting might restart some services and drop all the connections to the Pulse Connect...</span></p> <p>IP Address * <span style="float: right;">Netmask *</span></p> <p>Default Gateway *</p> <p>If you need to specify static routes, you can do so on the <a href="#">Static Routes</a> page.</p>			
Management Port				
VLANs	<p><b>IPV6 Settings</b></p> <p>IPV6 STATUS Disable <span style="float: right;">Changing above setting might restart some services and drop all the connections to the Pulse Connect...</span></p>			
Routes	<p><b>Link Local Address</b></p> <p>LINK LOCAL ADDRESS <span style="float: right;">IPv6 Address *</span></p> <p>PREFIX LENGTH * <span style="float: right;">(i)</span> <span style="float: right;">Default Gateway *</span></p> <p>64</p>			
Hosts	<p><b>Advanced Port</b></p> <p>MAC ADDRESS</p> <p>ARP PING TIMEOUT (SECONDS) * <span style="float: right;">(i)</span> <span style="float: right;">MTU (BYTES) * <span style="float: right;">(i)</span></span></p> <p>3 <span style="float: right;">1500</span></p> <p>Default VLAN ID <span style="float: right;">(i)</span></p>			
VPN Tunneling				



6. Enable the **Port Status**.
7. Under IPV4 Settings, assign an IP address, a Netmask, and the IPv4 address for the default Gateway.
8. Under IPV6 Settings, select **IPV6 Status**.
9. Under Link Local Address, you can see the auto-configured link local address. Specify a routable IPv6 address, Prefix Length, and IPv6 address for the default Gateway.
10. Under Advanced Port, specify the ARP Ping Timeout, maximum transmission unit, and default VLAN ID for the traffic of this port.
11. Click **Save Changes**.

**Virtual Ports** - You can use virtual ports to provide different groups of users access to the same system using different IP aliases and domains.

To configure a virtual port:

1. Select **External Port > Virtual Ports**. Port is Internal Port or External Port.
2. Click '+' to display the configuration page. Specify a name for the virtual port, an IPv4 address, and an IPv6 address.
3. Click **Save Changes**.

**ARP Cache** - In IPv4 networking, network nodes use ARP to maintain information about peer network nodes.

To manage the ARP table:

1. Select **External Port > ARP Cache**. Port is Internal Port, External Port, or Management Port.
2. Click '+' and specify an IP address, a MAC address.
3. Click **Save Changes** to add an entry.
4. You can delete all dynamically discovered entries.

**ND Cache** - In IPv6 networking, network nodes use the Neighbor Discovery Protocol (NDP) to determine the Layer 2 MAC addresses for neighboring hosts and routers.

To manage the neighbor discovery table:

1. Select **External Port > ND Cache**. Port is Internal Port, External Port, or Management Port.
2. The **Flush NDP Entries** deletes all dynamically discovered entries.

## Management Port Configuration

You connect the management port to an Ethernet switch or router that is part of your internal local area network (LAN) and that can connect to your network management infrastructure. When the management port is enabled, the following traffic is directed out the management port: archiving (FTP/SCP), NTP, push config, SNMP, syslog. When the management port is not enabled, that traffic uses the internal port.

To configure the management port:

1. Log in to the Ivanti Neurons for Secure Access portal as a Tenant Admin. See "[Logging in to Ivanti Neurons for Secure Access](#)" on page 12.
2. Use the Gateway Switcher and select **Ivanti Connect Secure**.
3. From the Ivanti Connect Secure menu, click the **Gateways** icon, then select **Gateways > Gateways List**.

The All Gateways page is displayed showing a list of standalone ICS Gateways and Cluster nodes.

4. From the **Standalone ICS Gateways** list, click on the gateway link that you want to configure.

5. On the Ivanti Connect Secure menu, select **System > Network > Management Port > Settings** to display the configuration page.

BHARATH42 / NETWORK / MANAGEMENT PORT

## Management Port - Settings (i)

Network Settings ARP Cache ND Cache

Overview

Internal Port

External Port

Management Port >

VLANs

Routes

Hosts

VPN Tunneling

### Use Port

PORT STATUS  
Disable ▼ When the management port is enabled, the following traffic is directed out the management port. Push Control

### IPV4 Settings

IP Address \*  Netmask \*

Default Gateway \*

If you need to specify static routes, you can do so on the [Static Routes](#) page.

### IPV6 Settings

IPV6 STATUS  
Disable ▼ Changing above setting might restart some services. This restart might drop all the connections to the device.

### Link Local Address

LINK LOCAL ADDRESS

IPv6 Address \*

PREFIX LENGTH \*  (i) Default Gateway \*

### Advanced Port

MAC ADDRESS

ARP PING TIMEOUT (SECONDS) \*  (i) MTU (BYTES) \*  (i)

Default VLAN ID  (i)

6. Enable the **Port Status**.
7. Under IPV4 Settings, Assign an IP address, a Netmask, and specify the IPv4 address for the default Gateway.
8. Under IPV6 Settings, select **IPV6 Status**.
9. Under Link Local Address, you can see the auto-configured link local address. Specify a routable IPv6 address, Prefix Length, and IPv6 address for the default Gateway.
10. Under Advanced Port, specify the ARP Ping Timeout, maximum transmission unit, and default VLAN ID for the traffic of this port.
11. Click **Save Changes**.

**ARP Cache** - In IPv4 networking, network nodes use ARP to maintain information about peer network nodes.

To manage the ARP table:

1. Select **Management Port > ARP Cache**. Port is Internal Port, External Port, or Management Port.
2. Click '+' and specify an IP address and a MAC address.
3. Click **Save Changes** to add an entry.
4. You can delete all dynamically discovered entries.

**ND Cache** - In IPv6 networking, network nodes use the Neighbor Discovery Protocol (NDP) to determine the Layer 2 MAC addresses for neighboring hosts and routers.

To manage the neighbor discovery table:

1. Select **Management Port > ND Cache**. Port is Internal Port, External Port, or Management Port.
2. The **Flush NDP Entries** deletes all dynamically discovered entries.

## VLAN Ports Configuration

Your network design might include VLANs to provide network segmentation. When connected to a trunk port on a VLAN-enabled switch, the system encounters traffic from all VLANs. This is useful for network designs with separate VLANs for separate classes of users or endpoints, and for making the system accessible from all VLANs. You can use RADIUS attributes to place different users in different network segments.

The system supports IEEE 802.1Q VLAN tagging. You must define a VLAN port for each VLAN. The internal port must be assigned to the root system and must be marked as the default VLAN. Routes to servers reachable from the VLAN interfaces must have the next-hop gateway set to the configured gateway for the VLAN interface, and must have the output port defined as the VLAN port.

When you save the configuration for a new VLAN port, the system creates two static routes by default:

- The default route for the VLAN pointing to the default gateway.
- The interface route to the directly connected network.

To configure an internal VLAN port:

1. Log in to the Ivanti Neurons for Secure Access portal as a Tenant Admin. See "[Logging in to Ivanti Neurons for Secure Access](#)" on page 12.
2. Use the Gateway Switcher and select **Ivanti Connect Secure**.
3. From the Ivanti Connect Secure menu, click the **Gateways** icon, then select **Gateways > Gateways List**.

The All Gateways page is displayed showing a list of standalone ICS Gateways and Cluster nodes.

4. From the **Standalone ICS Gateways** list, click on the gateway link that you want to configure.
5. On the Ivanti Connect Secure menu, select **System > Network > VLANs > Internal Port** to display the configuration page.
6. Select **VLANs > Internal Port**.

- Click '+', a New VLAN Port -Settings opens.

BHARATH42/ NETWORK/ VLANS/ INTERNAL PORT

## New VLAN Port - Settings ⓘ

Settings Virtual Ports ARP Cache

Enter the network settings and click the Save Changes button at the bottom of the page.

**Use Port**

USE PORT  
Enabled

**VLAN Settings**

Port Name ⓘ

Vlan Id \*

**IPV4 Settings**

IP Address \*

Netmask \*

Default Gateway \* ⓘ

**IPV6 Settings**

IPV6 SETTINGS  
Disabled

Note: Changing above setting might restart some services. This restart might drop all the connections to the Pulse Connect Secure.

**Link Local Address**

IPv6 Address \* Prefix Length \* ⓘ

Default Gateway \*

Cancel

- Enable the **Use Port**.

9. Under VLAN Settings, specify a Name that is unique across all VLAN ports and specify a VLAN ID between 1 and 4094.
10. Under IPV4 Settings, assign an IP address, a Netmask, and specify the IPv4 address for the default Gateway.
11. Under IPV6 Settings, select the **IPV6 Status**.
12. Under Link Local Address, specify a Routable IPv6 address, Prefix Length, and IPv6 address for the default Gateway.
13. Click **Save Changes**.

To configure an External VLAN port:



1. Select **VLANs > External Port**.
2. Click '+', a New VLAN Port -Settings opens.

BHARATH42/ NETWORK/ VLANS/ EXTERNAL PORT

## New VLAN Port - Settings

Settings Virtual Ports ARP Cache

Enter the network settings and click the Save Changes button at the bottom of the page.

**Use Port**

USE PORT  
Enabled

**VLAN Settings**

Port Name

Vlan Id \*

**IPV4 Settings**

IP Address \*

Netmask \*

Default Gateway \*

**IPV6 Settings**

IPV6 SETTINGS  
Disabled

Note: Changing above setting might restart some services.  
This restart might drop all the connections to the Pulse Connect Secure.

**Link Local Address**

IPv6 Address \* Prefix Length \*

Default Gateway \*

Cancel

3. Enable the **Use Port**.

4. Under VLAN Settings, specify a Name that is unique across all VLAN ports and specify a VLAN ID between 1 and 4094.
5. Under IPV4 Settings, assign an IP address, a Netmask, and specify the IPv4 address for the default Gateway.
6. Under IPV6 Settings, select the **IPV6 Status**.
7. Under Link Local Address, specify a Routable IPv6 address, Prefix Length, and IPv6 address for the default Gateway.
8. Click **Save Changes**.

To configure a Management VLAN port:

1. Select **VLANS > Management Port**.
2. Click '+', a New VLAN Port -Settings opens.

BHARATH42/ NETWORK/ VLANS/ MANAGEMENT PORT

## New VLAN Port - Settings ⓘ

Settings Virtual Ports ARP Cache

Enter the network settings and click the Save Changes button at the bottom of the page.

**Use Port**

USE PORT  
Enabled

**VLAN Settings**

Port Name ⓘ

Vlan Id \* ⓘ

**IPV4 Settings**

IP Address \*

Netmask \*

Default Gateway \* ⓘ

**IPV6 Settings**

IPV6 SETTINGS  
Disabled

Note: Changing above setting might restart some services. This restart might drop all the connections to the Pulse Connect Secure.

**Link Local Address**

IPv6 Address \* Prefix Length \* ⓘ

Default Gateway \*

Cancel

3. Enable the **Use Port**.

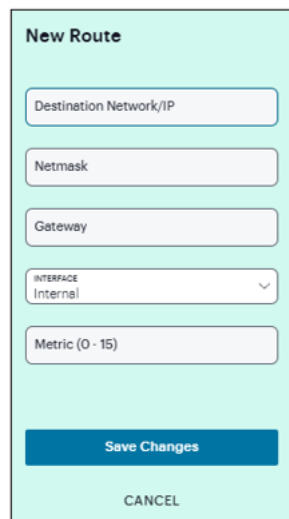
4. Under VLAN Settings, specify a **Name** that is unique across all VLAN ports and specify a **VLAN ID** between 1 and 4094.
5. Under IPV4 Settings, assign an IP address, a Netmask, and specify the IPv4 address for the default Gateway.
6. Under IPV6 Settings, select the **IPV6 Status**.
7. Under Link Local Address, specify a Routable IPv6 address, Prefix Length, and IPv6 address for the default Gateway.
8. Click **Save Changes**.

## Routes Configuration

The system populates the routes table with dynamic, auto-discovered routes. Many networks will not require changes to this routing table. If necessary, you can delete routes or add static routes.

To manage the routes table:

1. In the Routes page, use the controls to change the display to show the route table for internal, external, or management interfaces; and for IPv4 or IPv6 routes.
2. Click '+' and complete the configuration to add a route to the table.



The screenshot shows a 'New Route' configuration form with the following fields and controls:

- Destination Network/IP
- Netmask
- Gateway
- INTERFACE: Internal (dropdown menu)
- Metric (0 - 15)
- Save Changes (button)
- CANCEL (button)

3. Specify a valid IP address, Gateway, DNS address, and select the Interface and metric.
4. Click **Save Changes**.

## Hosts Configuration

In general, the system uses the configured DNS servers to resolve hostnames, but it also maintains a local hosts table that can be used for name resolution. The system populates some entries from host-IP address pair settings in your configuration. You can add host-IP address mappings for other hosts that might not be known to the DNS servers used by the system, or in cases where DNS is not reachable.

To configure hosts table:

1. In the Hosts page, click '+ '.

A screenshot of a web form titled "New Host". The form has a light green header with the title. Below the header are three input fields: "IP Address", "Name(s)", and "Comment". At the bottom of the form are two buttons: "Cancel" and "Save Changes".

2. Specify an IP address, hostname, and comment (a description for the benefit of system administrators).
3. Click **Save Changes**.

## VPN Tunnel Configuration

The VPN tunneling access option (formerly called Network Connect) provides a VPN user experience, serving as an additional remote access mechanism to corporate resources using Connect Secure. The VPN Tunneling Server uses the filter list to assign IP addresses to clients requesting a VPN client session. A filter is an IP address/netmask combination. For example: 10.11.0.0/255.255.0.0 or 10.11.0.0/16.

To add an IP address to the VPN tunneling filter list:

1. In the VPN tunneling page, click +, and enter an IP address/netmask combination.



The image shows a dialog box titled "New IP Address Filter". It has a light green background. At the top, there is a title bar with the text "New IP Address Filter". Below the title bar is a text input field with the placeholder text "IP Address Filter". At the bottom of the dialog, there are two buttons: "Cancel" on the left and "Save Changes" on the right. The "Save Changes" button is highlighted with a dashed border.

2. In the **VPN Tunnel Server IP Address** text box, enter the base IP address used by the VPN tunneling server to assign IP addresses to the tunnel interfaces created for VPN Tunneling sessions.
3. Click **Save Changes**.



Only change the VPN tunneling server base IP address when instructed to do so by the Ivanti Support team.

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# Authentication and Directory Servers

- ["Introduction" below](#)
- ["AAA Traffic Management" below](#)
- ["Configuring Local Authentication Server" on page 277](#)
- ["Configuring ACE Authentication Server" on page 279](#)
- ["Configuring RADIUS Authentication Server" on page 280](#)
- ["Configuring Certificate Authentication Server" on page 285](#)
- ["Configuring LDAP Authentication Server" on page 286](#)
- ["Configuring SAML Authentication Server" on page 291](#)
- ["Configuring TOTP Authentication Server" on page 295](#)
- ["Configuring MDM Authentication Server" on page 298](#)
- ["Configuring Active Directory Authentication Server" on page 301](#)

## Introduction

The access management framework supports the following types of AAA servers: Local, External (standards-based), and External (other).

- Local includes "Local Authentication Server", "Certificate Server".
- External (standards-based) includes "LDAP Server", "RADIUS Server".
- External (other) includes "MDM Server", "RSA ACE Server", "TOTP Server".

## AAA Traffic Management

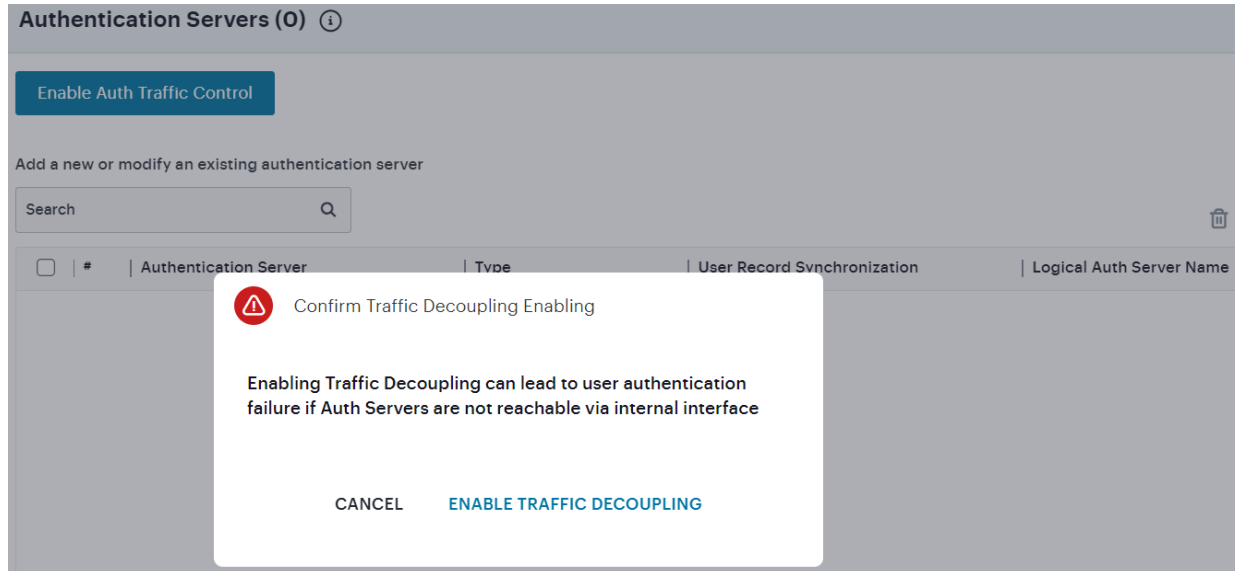
Ivanti Connect Secure Virtual appliances and Appliances allow the administrator to choose the communicating interface or the network for each authentication server.

This feature allows the AAA traffic across physical interfaces, VLAN ports, and virtual ports on physical and VLAN ports.

## Configuring AAA Traffic Management Across Interfaces

To configure AAA traffic management across interfaces:

1. Select the gateway from the Gateways list, and click **Authentication > Authentication Servers**.
2. Click **Enable Auth Traffic Control**.
3. In the Confirm Traffic Decoupling Enabling prompt, click **Enable Traffic Decoupling**.



## Configuring Authentication Servers

To add an authentication server:

1. Log into the nSA as a Tenant Admin.
2. From the ICS menu, click **Gateways > Gateways List**. In the Gateways list page, select the standalone ICS Gateway or Cluster node that you want to configure.
3. From the ICS menu, click **Authentication > Authentication Servers**.
4. Click the Add icon and select the Authentication server type from the list.



	#	Authentication Server	Type
<input type="checkbox"/>	1	local server	Local Authentication

## Configuring Local Authentication Server

You can create multiple local authentication server instances. When you define a new local authentication server, you must give the server a unique name and configure options for passwords.

To create a local authentication server:

1. Select **Authentication > Authentication Servers**.
2. Click the Add icon and select **Local** from the list to display the configuration page.

3. Complete the configuration and save changes.

- Enter a Server Name.
- Select **Password Options**.
- Select the **Allow users to change passwords** option if you want users to be able to change their passwords.
- Select the **Force password change after** option to specify the number of days after which a password expires. The default is 64 days.
- Select the **Prompt users to change password** option to specify when to prompt the user to change passwords.
- Select the **Enable account lockout for users** option to manage user authentication failures for admin users of local authentication server.
- Enter the number of consecutive wrong password attempts after which the admin user account will be locked. The default value is 3 retries.

- Enter the time in minutes for which admin user account will remain locked. The default value is 10 minutes.

**TYPE**  
Local Server

Authentication Server Name

**Password Options**

MINIMUM CHARACTERS: 10      MAXIMUM CHARACTERS: 128

Password must have at least  Password must have at least

Password must have mix of UPPERCASE and lowercase letters

Password must be different from username

New passwords must be different from previous passwords

Password stored as clear text This option can only be set during create. If password stored as clear text, more authentication protocols, i.e. CHAP, EAP-MD5, are supported.

**Password Management**

Allow users to change their passwords

Force password change after  Prompt users to change their password

Use options on the Administrators/Users > Authentication > [Realm] > Authentication Policy > Password page to specify which realms should inherit the server's password management capabilities.

**Account Lockout**

Enable Account lockout for users

    MAXIMUM WRONG PASSWORD ATTEMPTS: 3      ACCOUNT LOCKOUT PERIOD (MINUTES): 10

3 and Above      10 and above

**User Record Synchronization**

Enable User Record Synchronization

## Configuring ACE Authentication Server

RSA Authentication Manager (formerly known as ACE/Server) is an authentication and authorization server that allows user authentication based on credentials from the RSA SecurID® product from RSA Security Inc.

To configure authentication with the ACE server:

1. Select **Authentication > Authentication Servers**.
2. Click the Add icon and select **ACE** from the list to display the configuration page.
3. Complete the configuration and save changes.
  - Enter a Server Name.
  - Enter the default port of the authentication server.
  - Click and browse **Import New Config File** to upload the sdconf.rec configuration file.
  - Select the **Enable User Record Synchronization** option to retain the bookmarks and individual preferences regardless of which system you log in to.
  - Enter a logical authentication server name.

**New ACE Server** ⓘ

Settings

TYPE  
ACE Server

ACE Server Name \*

ACE PORT \*  
5500

Import New Config File

BROWSE TO SELECT FILE ⓘ

User Record Synchronization

Enable User Record Synchronization

Logical Auth Server Name

Cancel

## Configuring RADIUS Authentication Server

To configure authentication with the RADIUS server:

1. Select **Authentication > Authentication Servers**.
2. Click the Add icon and select **RADIUS** from the list to display the configuration page.

3. Complete the configuration and save changes.

**Settings page**

- Enter a Server Name.
- Enter the name that identifies the Network Access Server (NAS) client to the RADIUS server.
- Enter the name or IP address of the RADIUS server.
- Enter the authentication port value for the RADIUS server. Default port number: 1812, 1645 (legacy servers).
- Enter the NAS IP address. If you leave this field empty, the internal IP address is passed to RADIUS requests. You can also fill this field with IPv6 address.
- Enter the interval of time in seconds to wait for a response from the RADIUS server before timing out the connection.
- Enter the number of times to try to make a connection after the first attempt fails.
- Select the **Users authenticate using tokens or one-time passwords** option to prompt the user for a token instead of a password.

- Click **Next**.

**New Radius Server** ⓘ

Settings Backup server & Accounting Rules

Server Name \* ⓘ NAS-Identifier: ⓘ

**Primary Server**

RADIUS Server \* ⓘ AUTHENTICATION PORT 1812

Shared Secret \* ⓘ ACCOUNTING PORT \* 1813 ⓘ

NAS IPv4/IPv6 Address ⓘ TIMEOUT \* 30 ⓘ RETRIES \* 0 ⓘ

**Users authenticate using tokens or one-time passwords**

Note: If you select this, the device will send the user's authentication method as "token" if you use SAML, and this credential will not be used in automatic SSO to backend applications.

Cancel Next

**Backup server & Accounting page** (required only if Backup server exists)

- Enter the secondary RADIUS server.
- Enter the Authentication Port.
- Enter the Shared Secret.
- Enter the Accounting Port.
- Enter the user information to the RADIUS accounting server.
- Enter **Interim Update Interval** in minutes to achieve more precise billing for long-lived session clients and during network failure.

- Select the **Use VPN Tunnel assigned IP Address for FRAMED-IP-ADDRESS/FRAMED-IPV6-ADDRESS attribute value in RADIUS Accounting** option to use the VPN Tunneling IP address for the FRAMED-IP-ADDRESS/FRAMED-IPV6-ADDRESS attribute instead of the pre-authenticated (original) IP address. Framed IPv6 addresses based attribute fetching and parsing:
  - NAS-IPv6-Address
  - Login-IPv6-Host
- Enable the **Send Interim Updates for sub sessions created inside parent sessions** check box to send interim updates for sub sessions (child sessions) created inside parent sessions.
- Click **Next**.

The screenshot shows the 'Backup server & Accounting' configuration page. The page has a navigation bar with 'Settings', 'Backup server & Accounting', and 'Rules'. The main content area is titled 'Backup Server' and includes the following fields and options:

- Backup Server** (required only if Backup server exists)
- RADIUS Server** (text input field)
- Authentication Port** (text input field)
- Shared Secret** (text input field)
- Accounting Port** (text input field)
- Load-Balance Auth Requests between Primary and Backup Servers**  
Accounting requests will not be load-balanced.
- RADIUS accounting**
- USERNAME** (text input field with placeholder: <USER>{<REALM>}[<ROLE SEP=",">])
- Interim Update Interval** (text input field)
- Use VPN Tunnel assigned IP Address for FRAMED-IP-ADDRESS/FRAMED-IPV6-ADDRESS attribute value in RADIUS Accounting**
- Send interim updates for sub sessions created inside parent session**

At the bottom of the page, there are three buttons: 'Cancel', 'Back', and 'Next'.

## Rules page



- Select the **Enable processing of Radius Disconnect Requests** check box. The Radius Disconnect requests received from the backend Radius server will terminate sessions that match the attributes in the request.
- Select the **Enable User Record Synchronization** option to retain the bookmarks and individual preferences regardless of which system you log in to.
- Enter a logical authentication server name.

Settings Backup server & Accounting **Rules**

### Custom RADIUS Rules

<input type="checkbox"/>	#	Name	Response Packet Type	Attribute Criteria	Action
--------------------------	---	------	----------------------	--------------------	--------

#### RADIUS Disconnect

**Enable processing of Radius Disconnect Requests**  
RADIUS Disconnect Requests received from the backend RADIUS server will terminate sessions that match the attributes in the request.  
The RADIUS attributes that are used for session identification are: Framed-IP-Address(for sessions with VPN Tunnel only), Acct-Session-Id, Acct-Multi-Service-Name

#### User Record Synchronization

**Enable User Record Synchronization**

## Configuring Certificate Authentication Server

The certificate server is a local server that allows user authentication based on the digital certificate presented by the user without any other user credentials.

To configure authentication with the Certificate server:

1. Select **Authentication > Authentication Servers**.
2. Click the Add icon and select **Certificate** from the list to display the configuration page.
3. Complete the configuration and save changes.
  - Enter a Server Name.
  - Enter a username template. Specify how the system should construct a username. You may use any combination of certificate variables contained in angle brackets and plain text.
  - Select the **Enable User Record Synchronization** option to retain the bookmarks and individual preferences regardless of which system you log in to.
  - Enter a logical authentication server name.
  - From the drop-down list, select the Secondary Authentication server. From 22.6R1 version, ZTA supports SAML Authentication server as a Secondary Authentication server.

## Configuring LDAP Authentication Server

Lightweight Directory Access Protocol (LDAP) facilitates the access of online directory services. LDAP directory consists of a collection of attributes with a name, known as a distinguished name (DN). Each of the entry's attributes, known as a relative distinguished name (RDN), has a type and one or more values. The types are typically mnemonic strings, such as CN for common name. The valid values for each field depend on the types.

To configure authentication with the LDAP server:

1. Select **Authentication > Authentication Servers**.
2. Click the Add icon and select **LDAP** from the list to display the configuration page.

3. Complete the configuration and save changes.

### Settings page

- Enter a Server Name.
- Select the **Enable Domain Name** option if you want to fetch a list of servers from the DNS server. Clear this option if you want to manually enter all the domain controllers host names.
- Enter the LDAP server name or the IP address.
- (Optional) Enter the parameters for backup LDAP server1. Default port number: 389
- Enter the parameters for backup LDAP port1.
- (Optional) Specify the parameters for backup LDAP server2.
- Enter the parameters for backup LDAP port2.
- Select the backend LDAP server type from the following choices: Generic, Active Directory, iPlanet, Novell eDirectory.
- Select one of the following options for the connection to the LDAP server:
  - Unencrypted - The device sends the username and password to the LDAP Directory Service in cleartext.
  - LDAPS - The device encrypts the data in the LDAP authentication session using the Secure Socket Layer (SSL) protocol before sending it to the LDAP Directory Service.
  - Start TLS - The device allows both secure and plain requests against an LDAP server on a single connection.
- Enter the time (in seconds) to wait for connection to the primary LDAP server, and then to each backup LDAP server. Default: 15 seconds

- Enter the time (in seconds) to wait for search results from a connected LDAP server.

**New LDAP Server** ⓘ

Settings | Authentication & Users | Membership & Sync

Server Name \* ⓘ

**Enable Domain Name**  
If enabled, list of servers will be obtained from Name server through DNS service query

LDAP Server \* ⓘ | LDAP PORT \* 389

Backup LDAP Server1 ⓘ | Backup LDAP Port1

Backup LDAP Server2 ⓘ | Backup LDAP Port2

LDAP SERVER TYPE Generic | CONNECTION Start TLS ⓘ | VALIDATE SERVER CERTIFICATE Disabled

CONNECTION TIMEOUT 15 ⓘ | SEARCH TIMEOUT 60 ⓘ

Cancel

- Click **Next**.

### Authentication & Users page

- Select the **Authentication required to search LDAP** option to require authentication when performing search or password management operations.
- Enter the administrator DN for queries to the LDAP directory.
- Enter the password for the LDAP server.
- Enter the backup administrator DN for queries to the LDAP directory, as a fallback when primary Admin DN fails (due to account expiration).

- Enter the backup administrator password for the LDAP server.

Settings Authentication & Users Membership & Sync

**Authentication required**  
In order to use Password Management, you may need to select the 'Authentication required to search LDAP' checkbox below and enter your LDAP administrator password.

**Authentication required to search LDAP**

Admin DN

Password

Backup Admin DN

Backup Admin Password

**Finding user entries**  
Specify how to find a user entry

Base DN ⓘ

Filter \* ⓘ

**Remove Domain from Windows user names**  
If users authenticate using Windows user names containing domain prefixes (for example: CORP\joe), it may be necessary to remove the domain prefix in order for authentication to succeed. If you choose this option, the <NTDOMAIN> variable is set to the removed from the user name.

**Strip domain from Windows user names**

Cancel Back Next

- Under **Finding user entries**:
  - Enter the base DN under which the users are located. For example, dc=sales,dc=acme, dc=com.
  - Enter a unique variable that can be used to do a fine search in the tree. For example, samAccountname= <username> or cn= <username>.
  - Select the **Strip domain from Windows username** option to pass the username without the domain name to the LDAP server.

- Click **Next**.

### Membership & Sync page

- Enter the base DN to search for user groups.
- Enter a unique variable which can be used to do a fine search in the tree. For example, samAccountname=<username> or cn=<GROUPNAME>.
- Enter all the members of a static group. For example, member or uniquemember (iPlanet specific Deprecated for 21.x).
- Select the **Reverse group search** option to start the search from the member instead of the group. This option is available only for Active Directory server types.
- Enter an LDAP query that returns the members of a dynamic group. For example, memberURL.
- Enter how many levels within a group to search for the user. The higher the number, the longer the query time, so we recommend that you specify to perform the search no more than two levels deep.
- Select one of the following options: Nested groups in Server Catalog, Search all nested groups.

Settings Authentication & Users Membership & Sync

#### Determining group membership

If group membership is NOT reflected as attributes of a user's entry, specify how to find a group's entries. Note that these are default settings that you can override on a group basis in the Server Catalog.

Base DN ⓘ Filter ⓘ

Member Attribute ⓘ

Query Attribute ⓘ NESTED GROUP LEVEL ⓘ  
0

NESTED GROUP SEARCH ⓘ  
Nested groups in Server Catalog

#### User Record Synchronization

Enable User Record Synchronization

Logical Auth Server Name

Cancel Back

## Configuring SAML Authentication Server

SAML is an XML-based framework for communicating user authentication, entitlement, and attribute information. The standard defines the XML-based assertions, protocols, bindings, and profiles used in communication between SAML entities. SAML is used primarily to implement Web browser single sign-on (SSO). SAML enables businesses to leverage an identity-based security system like Ivanti Connect Secure to enforce secure access to web sites and other resources without prompting the user with more than one authentication challenge.

For complete details on the SAML standard, see the OASIS web site:

To configure authentication with the SAML server:

1. Select **Authentication > Authentication Servers**.
2. Click the Add icon and select **SAML** from the list to display the configuration page.
3. Complete the configuration and save changes.

### Settings

- Enter a name to identify the server instance.
- Select SAML version used by the SAML IdP.
- Select to override the Host FQDN for the SAML server. Host FQDN is used to update the Unique SAML Identifier and ACS URL of the SAML Authentication Server.
- Select Manual or Metadata for Configuration Mode. If a metadata file or location is available from the SAML identity provider, use the metadata option to make configuration simpler and less prone to error.
- Enter **Identity Provider Entity ID**. The identity provider entity ID is sent as the Issuer value in the assertion generated by the SAML identity provider.
- Enter **Identity Provider Single Sign On Service URL**. The identity provider SSO service URL is a URL provisioned by the SAML identity provider. The setting is required to support service-provider-initiated SSO.
- Specify **User Name Template** to derive the username from the assertion.

- Specify the maximum allowed difference in time between the system clock and the SAML identity provider server clock.
- Select **Support Single Logout**. Single logout is a mechanism provided by SAML for logging out a particular user from all the sessions created by the identity provider. Select this option if the system must receive and send a single logout request for the peer SAML identity provider.
- Click **Save Changes**. The SAML Authentication Server gets listed in the Authentication Servers page.

### New SAML Server ⓘ

Settings	SSO	Metadata
----------	-----	----------

TYPE  
SAML Server

SAML Server Name\*

Settings

SAML VERSION\*  
2.0

Override Global Host FQDN ⓘ

CONFIGURATION MODE\*  
Manual ⓘ

Identity Provider Entity Id\* ⓘ

Identity Provider Single Sign On Service URL ⓘ

User Name Template ⓘ

ALLOWED CLOCK SKEW (MINUTES)  
5 ⓘ

Support Single Logout

Cancel

## SSO



- Select the **SSO** tab.
- Select **Artifact** to use the Artifact binding. The system then contacts the Artifact Resolution Service (ARS) to fetch the assertion using SOAP protocol. If the ARS is hosted on a HTTPS URL, then the certificate presented by the ARS is verified by the system.
- Select **POST** to use the POST binding, the system uses a response signing certificate to verify the signature in the incoming response or assertion. The certificate file must be in PEM or DER format. The certificate you select should be the same certificate used by the identity provider to sign SAML responses.
- Use the **Add** and **Remove** buttons to select authentication context classes to be sent in the authentication requests to the SAML identity provider. These are included in the RequestedAuthnContext element.

- Click **Save Changes**.

**SSO** ⓘ

Settings
SSO
Metadata

SSO METHOD  
Post

**Upload Certificate**

FILE  
Browse To Select File

**Enable Signing Certificate status checking**  
(Uses configuration in [Trusted Client CAs](#). This applies to the certificate configured above as well as the one comes along with the SAML response.)

SELECT DEVICE CERTIFICATE FOR SIGNING  
Not Applicable ⓘ

SELECT DEVICE CERTIFICATE FOR ENCRYPTION  
Not Applicable ⓘ

Select Requested Authn Context Classes to be sent in the AuthRequest

Available **24**

Select All

InternetProtocolPassword  
 Kerberos  
 MobileOneFactorUnregistered  
 MobileTwoFactorUnregistered  
 MobileOneFactorContract  
 MobileTwoFactorContract  
 Password

>  
  
<

Selected **1**

Select All

InternetProtocol

COMPARISON METHOD FOR AUTHENTICATION CLASSES  
EXACT

Force Authentication

Cancel
Back
Next

## Metadata Settings

- Select the **Metadata** tab.
- Enter the number of days the metadata is valid. Valid values are 0 to 9999. 0 specifies the metadata does not expire.
- Select **Do Not Publish SA Metadata** if you do not want to publish the metadata at the location specified by the **Entity ID** field.
- Select **Download Metadata**. This button appears only after you have saved the authentication server configuration. Use this button to download the metadata of the current SAML service provider.
- Click **Save Changes**.

The screenshot shows a web interface for configuring metadata. At the top, there are three tabs: 'Settings', 'SSO', and 'Metadata' (which is selected). Below the tabs is the 'Service Provider Metadata Settings' section. It contains a 'Metadata Validity' input field with a value of '0' and a help icon. Below that is a checkbox labeled 'Do Not Publish Connect Secure Metadata' which is currently unchecked. A small text note below the checkbox reads: 'Prevents the Metadata for the SAML Auth Server to be published at the location specified by the Connect Secure Entity Id.' At the bottom of the form, there are two buttons: 'Cancel' on the left and 'Back' on the right.

## Configuring TOTP Authentication Server

Time-based One-Time Password (TOTP) algorithm as defined in RFC6238 is an authentication mechanism where a one-time password (a.k.a token) is generated by the authentication server and client from a shared secret key and the current time. ICS can act as TOTP authentication server. Any third-party TOTP applications (for example, Windows Authenticator or Google Authenticator) available on the mobile and desktop client platforms generate TOTP tokens.

To configure the TOTP server as Local:

1. Select **Authentication > Authentication Servers**.
2. Click the Add icon and select **TOTP** from the list to display the configuration page.
3. Complete the configuration and save changes.

### TOTP Auth Server Settings - Local

- Select **Local** as Server Type. TOTP context is created locally and user database is maintained locally on the same device.
- Time Skew - Specify maximum time difference between Ivanti Connect Secure and end user device while authenticating a user's token. (minimum: 1 minute, maximum: 5 minutes).
- Number of attempts allowed - Specify maximum number of consecutive wrong attempts allowed after which account will be locked (minimum: 1 attempt, maximum: 5 attempts).
- Custom message for registration page - Specify a custom message which can be shown on new TOTP user registration web-page.
- Allow Auto Unlock - When checked, locked account will be automatically unlocked after specified period. (minimum: 10 minutes, maximum: 90 days).
- Allow new TOTP user registration to happen via external port - When unchecked (default), new TOTP user registrations will happen only via internal port.
- Accept TOTP authentication from remote ICS devices - When checked, REST access to this TOTP server is allowed from other Ivanti Connect Secure devices.
- Display QR code during user registration - When checked, displays QR code during user registration.

- Disable generation of backup codes - When unchecked, generates backup codes.

**New TOTP Server** ⓘ

Settings

TYPE  
TOTP Server

Server Name \* ⓘ

TOTP SERVER TYPE  
Local ▼

TIME SKEW  
3 ▼ ⓘ

NUMBER OF ATTEMPTS ALLOWED  
3 ▼ ⓘ

CUSTOM MESSAGE FOR REGISTRATION PAGE  
You will need to install a two factor authentication application (Google Authenticator) on your smartphone or tablet.

Allow Auto Unlock

Allow new TOTP user registration to happen via external port  
When unchecked (default), new TOTP user registrations will happen only via company intranet network

Accept TOTP authentication from remote Pulse Secure devices  
When checked, REST access to this TOTP server is allowed from other Pulse Secure devices.

Display QR code during user registration

Disable generation of backup codes

Cancel

### TOTP Auth Server Settings - Remote

- Select **Remote** as Server Type. In this configuration, authentication checks take place on the remote TOTP server.
- If the **Allow new TOTP user registration to happen via external port** option is not selected, new TOTP user registrations happen only via company intranet network.
- Enter remote host name or IP address where the TOTP server is configured. The IP address or host name must match the common name mentioned in the remote TOTP server certificate.
- Enter TOTP Server Name configured on the Remote TOTP server.

- Enter the REST API login name.
- Enter the REST API password.
- Enter the realm name, which refers to the realm that should be used for authenticating the REST user (using the auth. server mapped to the Realm).
- Use the Test Connection button to validate the connection to the remote TOTP server.

## Configuring MDM Authentication Server

The access management framework MDM authentication server configuration includes details on how the system communicates with the MDM Web RESTful API service and how it derives the device identifier from the certificates presented by endpoints.

To configure authentication with the MDM server:

1. Select **Authentication > Authentication Servers**.
2. Click the Add icon and select **MDM** from the list to display the configuration page.
3. Complete the configuration and save changes.
  - Type - Select one of the following options: VMWare Workspace One (formerly AirWatch), Ivanti (formerly MobileIron), Microsoft Intune

### Applicable to VMWare Workspace One and Ivanti

- Enter the URL for the MDM server. This is the URL the MDM has instructed you to use to access its RESTful Web API (also called a RESTful Web service).
- Enter the URL for the MDM report viewer. This URL is used for links from the Active Users page to the MDM report viewer.
- Enter a timeout period (5-60 seconds) for queries to the MDM server. The default is 15 seconds.
- Enter the username and password for an account that has privileges to access the MDM RESTful Web API.
- (AirWatch only) Copy and paste the AirWatch API tenant code.

### Applicable to Microsoft Intune

- Enter Azure AD Tenant ID.
- Enter Web application ID that has been registered in Azure AD.
- Enter Secret key of the web application registered in azure AD.
- Enter a timeout period (5-60 seconds) for queries to the MDM server. The default is 15 seconds.

### **Device Identifier**

- Construct a template to derive the device identifier from the certificate attributes. The template can contain textual characters as well as variables for substitution.

- Select the device identifier type that matches the selection in the MDM SCEP certificate configuration:
  - UUID - The device Universal Unique Identifier. This is the key device identifier supported by MobileIron MDM.
  - Serial Number - The device serial number.
  - UDID - The device Unique Device Identifier. This is the key device identifier supported by AirWatch MDM.
  - Device ID - The device unique identifier.

### New MDM Server ⓘ

Settings

TYPE  
MDM Server

Server Name \* ⓘ

MDM SERVER TYPE  
Mobile Iron ▼

Server

Server Url \* ⓘ

Viewer Url ⓘ For example: <https://m.mobileiron.net/> <Enterprise Name>/admin/admin

Request Timeout \* ⓘ

Administrator

Username \*

Password \*

Device Identifier

Please check the options on the Users > Authentication > [Realm] > Authentication Policy > Certificate page. For example, enable "Allow all users and re information while user is signed in" option in order to request certificate from the client

ID TEMPLATE  
<certDN.CN> ⓘ

ID TYPE \* ▼ ⓘ

Cancel



## Configuring Active Directory Authentication Server

Active Directory is a directory service used in Windows domain networks. It is included in most Windows server operating systems. Enterprise servers that run Active Directory are called domain controllers. An Active Directory domain controller authenticates and authorizes users and computers in a Windows domain network.

When you use Active Directory as the authentication and authorization service for your Ivanti access management framework, users can sign in to Ivanti Connect Secure using the same username and password they use to access their Windows desktops. You can also use Active Directory group information in role mapping rules.

To configure authentication with the MDM server:

1. Select **Authentication > Authentication Servers**.
2. Click the Add icon and select **Active Directory** from the list to display the configuration page.
3. Complete the configuration and save changes.
  - Specify a name to identify the server within the system.
  - Specify the NetBIOS domain name for the Active Directory domain.
  - Specify the FQDN of the Active Directory domain.
  - Specify a username that has permission to join computers to the Active Directory domain.
  - Specify the password for the special user.
  - Select **Save Credentials**. If this setting is not enabled, the credentials entered will be destroyed after successfully joining the domain.
  - Specify the machine account name. The default computer name is derived from the license hardware in the following format: 0161MT2L00K2C0. We recommend the Computer Name string contain no more than 14 characters to avoid potential issues with the AD/NT server. Do not include the '\$' character.

- Specify the protocol to use during authentication. The system attempts authentication using the protocols you have enabled in the order shown on the configuration page. For example, if you have selected the check boxes for Kerberos and NTLMv2, the system sends the credentials to Kerberos. If Kerberos succeeds, the system does not send the credentials to NTLMv2. If Kerberos is not supported or fails, the system uses NTLMv2 as the next protocol in order.
- Contact trusted domains. Select this option to contact domain controllers of trusted domains directly without proxying authentication requests and group membership checks through the domain controller.
- Enter the maximum number of simultaneous domain connections (1 to 10).
- Enable periodic password change of machine account. Select this option to change the domain machine account password for this configuration.

- Click **Save Changes**.

### New Active Directory Server ?

**Settings**

Type  
Active Directory

Authentication Server Name ?

Domain ?

Kerberos Realm ?

**Domain Join Configuration** ^

Username

Active Directory administrator credentials are required in order for the Pulse Connect Secure to join the domain or whenever certain fields of the authentication server are changed.

Password

**Save Credentials** If this setting is not enabled, the credentials entered will be destroyed after successfully joining the domain.

CONTAINER NAME  Container path in Active Directory to create the machine account in. Changing this field will trigger domain rejoin. In the case of nested containers use "/" as the container separator. Ex. "/OU1/OU2"

**Additional Options** ^

Authentication Protocol  
SPECIFY THE PROTOCOL TO USE DURING AUTHENTICATION.

**Kerberos**  
MOST SECURE. REQUIRED FOR KERBEROS SINGLE SIGN-ON (SSO)

**Enable NTLM protocol**  
Required for password management. Authentication attempts Kerberos first, then the following protocol.

NTLM PROTOCOL  
NTLMv2 ?

**Trusted domain lookup**  
Enable this option to fetch user group information from the trusted domains. User login time may increase as the number of trusted domains and network latency to those domain controllers increase. Even if disabled, pass-through authentication via primary domain is still permitted. To restrict login to primary domain only, configure role mapping rules based on domain membership.

**Contact Trusted Domains**

**Domain Connections**  
Specify the maximum number of simultaneous connections that can be opened to the domain controller of the domain. Multiple connections may give better performance and scalability, but higher values could also degrade the performance. Choose the optional value based on the number of trusted domains available. Refer to the Admin Guide for Details.

MAXIMUM SIMULTANEOUS CONNECTIONS PER DOMAIN  ?

**Machine account password change**  
Changes Pulse Connect Secure's domain machine account password.

**Enable periodic password change of machine account**

Cancel
Save Changes

# Sign-in Policies

- ["Introduction" below](#)
- ["Defining Authorization-Only Access Policies" on page 308](#)
- ["Configuring Sign-In Pages" on page 312](#)
- ["Sign-in Notifications" on page 320](#)
- ["Sign-in SAML" on page 324](#)

## Introduction

Sign-in policies define the URLs that users and administrators use to access the device and the sign-in pages that they see. The system has two types of sign-in policies - one for users and one for administrators. When configuring sign-in policies, you associate realms, sign-in pages, and URLs.

For example, in order to allow all users to sign in to the device, you must add all user authentication realms to the user sign-in policy. You may also choose to modify the standard URL that the end-users use to access the system and the sign-in page that they see. Or, if you have the proper license, you can create multiple user sign-in policies, enabling different users to sign into different URLs and pages.

You can create multiple sign-in policies, associating different sign-in pages with different URLs. When configuring a sign-in policy, you must associate it with a realm or realms. Then, only members of the specified authentication realm(s) may sign in using the URL defined in the policy. Within the sign-in policy, you may also define different sign-in pages to associate with different URLs.

For example, you can create sign-in policies that specify:

- Members of the "Partners" realm can sign in to the device using the URLs: partner1.yourcompany.com and partner2.yourcompany.com. Users who sign into the first URL see the "partners1" sign-in page; users who sign into the second URL see the "partners2" sign-in page.
- Members of the "Local" and "Remote" realms can sign into the device using the URL: employees.yourcompany.com. When they do, they see the "Employees" sign-in page.
- Members of the "Admin Users" realm can sign into the device using the URL: access.yourcompany.com/super. When they do, they see the "Administrators" sign-in page.

When defining sign-in policies, you may use different hostnames (such as partners.yourcompany.com and employees.yourcompany.com) or different paths (such as yourcompany.com/partners and yourcompany.com/employees) to differentiate between URLs.

To create or configure user sign-in policies:

1. Navigate to **Authentication > Signing In > Sign-in Policies**.
2. Select the **Enable multiple user sessions** check box to allow users to have multiple concurrent sessions, and specify whether the user can log in when the maximum number of sessions is reached:
  - **Deny any more session from the user** - Displays a message saying the login is denied because it would exceed the maximum number of concurrent sessions.
  - **Allow the user to login** - Allows the user to log in. If the Display open user session[s] warning notification option is enabled, the user can select which session to close; otherwise the session that has been idle the longest is closed automatically.
3. Select the **Display open user session[s] warning notification** check box to allow users who have met the maximum session count to close one of their existing sessions before continuing with the current log in. If this option is disabled, the system terminates the session that has been idle the longest. This option applies only if Enable multiple user sessions is enabled along with Allow the user to log in. Specify when the user is warned about concurrent sessions:
  - Select **Always** to notify users each time they log in when they already have another active session
  - Select **If the maximum session limit per user for the realm has been reached** to display the warning message only when the user's maximum session count has been met.
4. To enable or disable an individual policy, select the check box next to the policy that you want to change, and then click **Enable** or **Disable**.



If you select this option, all user sessions are immediately terminated. If this device is part of a cluster, all user sessions across all nodes in the cluster are immediately terminated.

---

5. To create a new sign-in policy, click '+'. Or, to edit an existing policy, click a URL in the Administrator URLs or User URLs column.
6. Select **Users** to specify which type of user can sign in using the access policy.

7. In the **Sign-in URL** field, enter the URL that you want to associate with the policy. Use the format <host>/<path> where <host> is the hostname of the device, and <path> is any string you want users to enter. For example: partner1.yourcompany.com/outside. To specify multiple hosts, use the \* wildcard character.

To specify that all administrator URLs should use the sign-in page, enter (/admin)\*.

- You may only use wildcard characters (\*) in the beginning of the hostname portion of the URL. The system does not recognize wildcards in the URL path.
  - SAML authentication does not support sign-in URLs that contain multiple realms. Instead, map each sign-in URL to a single realm.
8. (optional) Enter a **Description** for the policy.
9. From the **Sign-in Page** list, select the sign-in page that you want to associate with the policy. You may select the default page that comes with the system, a variation of the standard sign-in page, or a custom page that you create using the customizable UI feature.

10. Under **Authentication realm**, specify which realm(s) map to the policy, and how users and administrators should pick from amongst realms. If you select:
  - **User types the realm name** - The system maps the sign-in policy to all authentication realms, but does not provide a list of realms from which the user or administrator can choose. Instead, the user or administrator must manually enter his realm name into the sign-in page.
  - **User picks from a list of authentication realms** - The system only maps the sign-in policy to the authentication realms that you choose. The system presents this list of realms to the user or administrator when he signs-in to a device and allows him to choose a realm from the list. (Note that the system does not display a drop-down list of authentication realms if the URL is only mapped to one realm. Instead, it automatically uses the realm you specify.)
11. To move **Available realms** to **Selected realms** use the arrows. Similarly use arrows to move vice versa.
12. Under **Configure Sign-in Notifications**, select the check box for **Pre-Auth Sign-in Notification**, **Post-Auth Sign-in Notification**, or both.
  - After Pre-Auth Sign-in Notification, select a previously configured sign-in notification from the drop-down menu.
  - After Post-Auth Sign-in Notification, select the option for Use a common Sign-in Notification for all roles or Use the Sign-in Notification associated to the assigned role.
13. Click **Save Changes**.

### New Sign-In Policy ⓘ

USER TYPE  
 Users

Sign-in URL ⓘ

Description

SIGN-IN PAGE  
 Default Sign-In Page ⓘ

**Authentication realm**  
 Specify how to select an authentication realm when signing in.

AUTHENTICATION REALM ⓘ  
 User types the realm name

**Available realms 1**

Select All

- Users

**Selected realms 0**

Select All

⚠ No Items

**Configure SignIn Notifications**

Pre-Auth Sign-in Notification  
 Post-Auth Sign-in Notification

## Defining Authorization-Only Access Policies

Authorization-only access is similar to a reverse proxy. Typically, a reverse proxy is a proxy server that is installed in front of webservers. All connections coming from the Internet addressed to one of the webservers are routed through the proxy server, which may either deal with the request itself or pass the request wholly or partially to the main webserver.

With an authorization-only access, you select a user role. the system then acts as reverse proxy server and performs authorization against the server for each request.

For example, the authorization-only access feature satisfies the following business needs:



- If you have a third-party AAA policy management server, the system acts as an authorization-only agent.
- If your user sessions are managed by a third-part session management system, there is no need to duplicate the user session management in the system.

With authorization-only access, there is no SSO from the system. SSO is controlled by your third-party AAA infrastructure.

To create or configure authorization-only access policies:

1. In the admin console, choose **Authentication > Signing In > Sign-in Policies**.
2. To create a new authorization only access policy, click '+' and select authorization only access. Or, to edit an existing policy, click a URL in the Virtual Hostname column.
3. In the **Virtual Hostname** field, enter the name that maps to the system's IP address. The name must be unique among all virtual hostnames used in pass-through proxy's hostname mode. The hostname is used to access backend application entered in the Backend URL field. Do not include the protocol (for example, http:) in this field.

For example, if the virtual hostname is myapp.ivehostname.com, and the backend URL is http://www.example.com:8080/, a request to https://myapp.ivehostname.com/test1 via the system is converted to a request to http://www.example.com:8080/test1. The response of the converted request is sent to the original requesting web browser.

- In the **Backend URL** field, enter the URL for the remote server. You must specify the protocol, hostname and port of the server. For example, (*http://www.mydomain.com:8080/*)\*.

When requests match the hostname in the Virtual Hostname field, the request is transformed to the URL specified in the Backend URL field. The client is directed to the backend URL unaware of the redirect.

NODE88-SULTHAN / SIGNING IN / SIGN-IN POLICIES  
**New Sign-In Policy** ⓘ

USER TYPE  
 Authorization Only Access

Virtual Hostname ⓘ

Backend URL ⓘ

Description

ROLE OPTION  
 Outlook Anywhere User Role ⓘ

Protocol Option  
 Allow ActiveSync Traffic Only

KERBEROS CONSTRAINED DELEGATION LABEL  
 None ⓘ

Username Template: ⓘ

Cancel Save Changes

- (optional) Enter a Description for this policy.
- Select a user role from the Role Option drop-down menu. Only the following user role options are applicable for authorization-only access.
  - Allow browsing un-trusted SSL web sites (Users > User Roles > RoleName > Web > Options > View advanced options)
  - HTTP Connection Timeout (Users > User Roles > RoleName > Web > Options > View advanced options)
  - Source IP restrictions (Users > User Roles > RoleName > General > Restrictions)
  - Browser restrictions (Users > User Roles > RoleName > General > Restrictions)

Ensure the user role you select has an associated Web Access policy.

7. Select the **Allow ActiveSync Traffic only** option to perform a basic of validation of the HTTP header to ensure the request is consistent with ActiveSync protocol. If you select this option only ActiveSync protocol requests can be processed. If validation fails, a message is created in the user's event log. If you do not select this option, both ActiveSync and non-ActiveSync requests are processed.
8. Select the **Kerberos Constrained Delegation Label** option to configure a KCD policy for Active Sync. This would list the existing configured Constrained Delegation labels. Selecting any one of the valid Constrained Delegation labels would force to use KCD for the Exchange Active Sync traffic. Also, this option is applicable only for Active Sync traffic.

This option also has the following dependencies:

- Enforce client certificate requirement on virtual ports which are used for Active Sync.
- Appropriate CA certificate should be imported under Trusted Client CAs.
- The role configured to use for Active Sync should be configured to have Certificate Restrictions to Only allow users with a client-side certificate signed by Certification Authority to sign in.
- Appropriate Constrained Delegation policy should be configured. Please refer to the section "Constrained Delegation" under configuring SSO policies



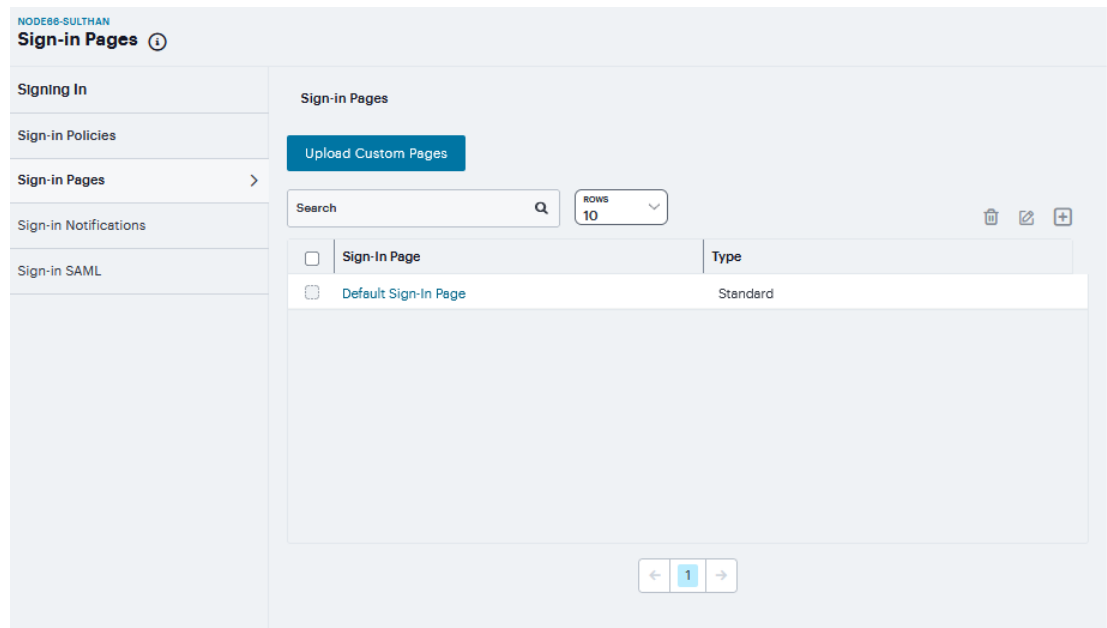
External configurations should be appropriately configured to support Constrained Delegation SSO; Exchange server should be configured to allow Kerberos authentication, i.e., Windows Authentication.

---

9. If Kerberos Constrained Delegation Label policy is chosen, enter the appropriate **Username Template** from certificate attributes.
10. Click **Save Changes**.

## Configuring Sign-In Pages

A sign-in page defines the customized properties in the end-user's welcome page such as the welcome text, help text, logo, header, and footer. The system allows you to create two types of sign-in pages to present to users and administrators: \* **Standard sign-in pages** - Standard sign-in pages are produced by Ivanti and are included with all versions of the Ivanti Connect Secure software. You can modify standard sign-in pages through the Authentication > Signing In > Sign-in Pages tab of the admin console. \* **Customized sign-in pages** - Customized sign-in pages are THTML pages that you produce using the Template Toolkit and upload to the system in the form of an archived ZIP file. The customized sign-in pages feature enables you to use your own pages rather than having to modify the sign-in page included with the system.



### Configuring Standard Sign-In Pages

Standard sign-in pages that come with the system include:

- Default Sign-In Page - the system displays this page to users when they sign into the device.

You can modify the default sign-in page that the system displays to users when they sign into the device. You can also create new standard sign-in pages that contain custom text, logo, colors, and error message text using settings in the Authentication > Signing In > Sign-in Pages tab of the admin console.

To create or modify a standard sign-in page:

1. In the admin console, select **Authentication > Signing In > Sign-in Pages**.
2. If you are:
  - Creating a new page, Click '+'.
  - Modifying an existing page, select the link corresponding to the page you want to modify.
3. Enter a **Name** to identify the page.

4. In the **Custom text** section, revise the default text used for the various screen labels as desired. When adding text to the **Instructions** field, note that you may format text and add links using the following HTML tags: `<i>`, `<b>`, `<br>`, `<font>`, and `<a href>`. However, the system does not rewrite links on the sign-in page (since the user has not yet authenticated), so you should only point to external sites. Links to sites behind a firewall will fail.

If you use unsupported HTML tags in your custom message, the system may display the end user's home page incorrectly.

### Page Customization ?

Page Customization

Header & Error Messages

Notifications & Help

NAME ?

**New Sign-In Page**

Custom Text

WELCOME MESSAGE  
**Welcome to**

PORTAL NAME  
**Ivanti Connect Secure**

SUBMIT BUTTON  
**Sign In**

INSTRUCTIONS ?  
Please sign in to begin your secure session.  
<br><br><noscript>Note: Javascript is disabled on your browser.</noscript>

CLOUD SECURE INSTRUCTIONS ?  
Please sign in to begin your <font class='signin-cloud-secure'>Cloud Secure</font> session.  
<br><br><noscript>Note: Javascript is disabled on your browser.</noscript>

USERNAME  
**Username**

PASSWORD  
**Password**

REALM ?  
**Realm**

SECONDARY USERNAME  
**Secondary username**

SECONDARY PASSWORD  
**Secondary password**

**Prompt the secondary credentials on the second page**  
These labels appear when a realm using this sign-in specifies a secondary authentication server that requires user input. These are only applicable to user sign-in pages. This option is not applicable when TOTP authentication server is selected as secondary auth-server for this realm, in which case token input from user is always taken from the second page. this option is auto-enable for a Sign-in URL if any of the realm configured for that Sign-in URL has Adaptive Authentication enabled in it

**Pulse Client displays customized username and password prompts**  
Supported Pulse Clients will display the username and password prompts defined above instead of the default prompts

SIGN OUT MESSAGE ?  
**Your session has ended. For increased s**

SIGN IN LINK TEXT ?  
**Click here to sign in again**

Cancel

Back

Next





Save Changes

5. In the Header appearance section, specify a **Custom logo** image file for the header, **FAV icon** file for the title bar, and a different **Background color**.

6. In the **Custom error messages** section, revise the default text that is displayed to users if they encounter certificate errors.

You can include <<host>>, <<port>>, <<protocol>>, and <<request>> variables and user attribute variables, such as <<userAttr.cn>> in the custom error messages. Note that these variables must follow the format <variable> to distinguish them from HTML tags which have the format <tag>.

The screenshot shows the 'Header & Error Messages' configuration page. The page is divided into three tabs: 'Page Customization', 'Header & Error Messages' (selected), and 'Notifications & Help'. The 'Header appearance' section includes 'Current appearance' with a preview of the Ivanti logo. Below the preview are three configuration fields: 'LOGO IMAGE' (No file chosen), 'FAV ICON' (No file chosen), and 'BACKGROUND COLOR' (#E3E3E3). The 'Custom error messages' section contains two message boxes: 'MISSING CERTIFICATE' and 'INVALID CERTIFICATE', both with informational icons. At the bottom, there are four buttons: 'Cancel', 'Back', 'Next', and 'Save Changes'.

Page Customization	Header & Error Messages	Notifications & Help
<b>Header appearance</b>		
<b>Current appearance</b>		
		
LOGO IMAGE	No file chosen	
FAV ICON	No file chosen	 
BACKGROUND COLOR	#E3E3E3	 
<b>Custom error messages</b>		
MISSING CERTIFICATE		
Missing certificate. Check that your certificate is valid and up-to-date, and try again.		
INVALID CERTIFICATE		
Invalid or expired certificate. Check that your certificate is valid and up-to-date, and try again.		
<input type="button" value="Cancel"/>	<input type="button" value="Back"/>	<input type="button" value="Next"/>
<input type="button" value="Save Changes"/>		



7. The user is expected to read the content of the sign-in notification message and acknowledge by clicking a Proceed button. The user may indicate disagreement by clicking a Decline button, which ends the login attempt. To configure this provide **Notification title**, **Proceed Button** label, **Decline Button** label and **Message on Decline**. Select **Display 'Decline' button** check box to make the button visible to user. Perform the step for **Pre-Auth Notification** and **Post-Auth Notification**.
8. To provide custom help or additional instructions for your users, select **Show Help button**, enter a label to display on the button, and specify an HTML file to upload to the system. Note that the system does not display images and other content referenced in this HTML page.

- Click **Save Changes**. The changes take effect immediately, but users with active sessions might need to refresh their Web browsers.

**Notifications & Help** ⓘ

Page Customization    Header & Error Messages    **Notifications & Help**

**SignIn Notification appearance**  
 Sign-in Notification will be displayed only if it is configured in the Sign-in Policy.

**Pre-Auth Notification**

NOTIFICATION TITLE  
Pre Sign-In Notification ⓘ

PROCEED BUTTON  
Proceed ⓘ

Display 'Decline' button

DECLINE BUTTON  
Decline ⓘ

MESSAGE ON DECLINE  
You are not allowed to sign in to the system. ⓘ

**Post-Auth Notification**

NOTIFICATION TITLE  
Post Sign-In Notification ⓘ

PROCEED BUTTON  
Proceed ⓘ

Display 'Decline' button

DECLINE BUTTON  
Decline ⓘ

MESSAGE ON DECLINE  
You are not allowed to sign in to the system. Your sign-in has been canceled. ⓘ

**Show Help button**

Show Help button  
 If you want to provide users with more information regarding sign-in requirements, you can display a Help button that links to a custom HTML file.

HELP BUTTON  
Help ⓘ

HTML FILE  
No file chosen  
no file chosen

Note that images and other external content will not be displayed.

Cancel    Back    Next    Save Changes

You can use **Back** and **Next** button to switch between tabs

## Custom Sign-In Pages

### Downloadable Zip Files

Although each zip file contains all the templates, each zip file is for a particular set of features:

- **Sample.zip** — This zip file is for standard IPS/ICS pages, including standard pre- and post-authentication pages, ACE pre-authentication pages, ACE pre-authentication pages for use with eTrust SiteMinder, and password management pages.
- **SoftID.zip** — This zip file is for use with the RSA Soft ID client.
- **Kiosk.zip** — This zip file is for use by kiosk users or for any system in which you want to lock out keyboard-based login.

To upload custom sign-in Pages into ICS:

1. Download new "**Sample Custom Page**" from new Admin UI after login as Admin.  
(**Authentication > Sign-In Pages > Upload Custom Sign-In Pages**. Click on **Sample** It will download the Sample Folder as ZIP & save it on Local disk)
2. Copy the following files after unzip the folder (locally saved in previous step):
  - Logout.shtml
  - PleaseWait.shtml
3. Open pre-downloaded Sample Custom Sign-in folder as unzipped and replace all those files here.
4. Now select all the files and create (.ZIP) file to uploading custom sign-in page on latest build.
5. Log into ICS as admin which is running on latest build and follow the steps to upload new Custom Sign-In Page In new Admin UI Authentication > Sign-In Pages > Upload Custom Pages > Put the **Name** of Custom Sign-In Page > Click **Template file** field and select previously saved (.ZIP) file from local storage in step 4.
6. Select **Use Custom Page for the Ivanti Desktop Client Logon** check box will open a web browser and use custom pages for authentication instead of standard login prompts.
7. Select **Prompt the secondary credentials on the second page** check box to specifies a secondary authentication server that requires user input.
8. Now click on **Upload Custom Pages**. After successful upload, click **Save Changes**.
9. Once all the above steps are successful, we can see the new sign-in page added under Authentication -> Sign-In Pages.

- Old variable names may change and new variables may be added. It is recommended that you convert old variable names to their new counterparts as the default values for the old variables may no longer exist. If you do not want to update your variable names, you can select the **Skip validation checks during upload** option in the Upload Custom Sign-In Pages page. If you select this option, you should review all your custom pages to ensure that they are still functioning correctly.

NODE66-SULTHAN/ SIGNING IN/ SIGN-IN PAGES

### Upload Custom Sign-In Pages

Custom sign-in pages allow you to provide customized templates for various pages that may appear during the sign-in process. Refer to the documentation for information about creating valid templates.

**Sample Templates Files**  
The following sample templates may be useful in producing your own customized sign-in page templates. Click to download the sample files, edit them to fit your needs, and then upload them.

- [SAMPLE](#)  
This is a basic set of templates that works for most cases.
- [SOFTID](#)  
This is a set of templates for ACE Authentication.
- [KIOSK EXAMPLE](#)  
This is an example which demonstrates how to protect against hardware keystroke loggers.

Label to reference the custom sign-in pages.

**Use Custom Page for the Ivanti Desktop Client Logon**  
The Ivanti Desktop Client will open a web browser and use custom pages for authentication instead of standard login prompts.

**Prompt the secondary credentials on the second page**  
These labels appear when a realm using this sign-in page specifies a secondary authentication server that requires user input. These are only applicable to users sign-in pages. This option is not applicable when TOTP authentication server is selected as secondary auth-server for this realm, in which case token input from user is always taken from the second page.

No file chosen  
No file chosen  
Zip file containing the custom templates and assets.

**Skip validation checks during upload**

[Upload Custom Pages](#)

## Sign-in Notifications

With sign-in notifications, you can create and configure detailed notification messages that appear for Ivanti Secure Access clients and for agentless access endpoints when the user attempts to sign in. For example, you could configure a notification message that explains terms of use, company-specific policies, a welcome page, an end user license agreement (EULA), or a message of the day (MOTD).

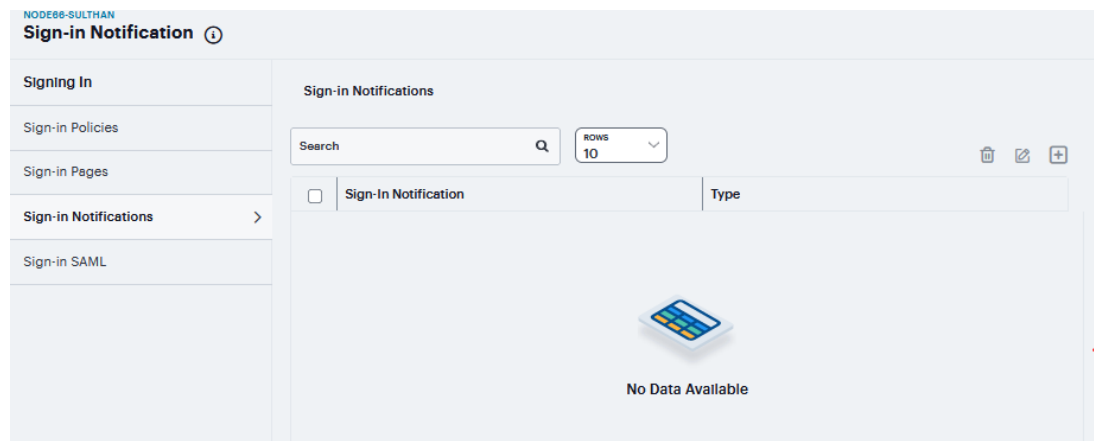
For a browser-based (agentless) login, the notification message appears in a separate page either before (pre-auth) or after (post-auth) user authentication during the sign-in process. For a Ivanti Secure Access client login, the notification messages appear in a Ivanti message box. The user is expected to read the content of the sign-in notification message and acknowledge by clicking a Proceed button. The user may indicate disagreement by clicking a Decline button, which ends the login attempt.

You can configure a sign-in policy to use a sign-in notification either as pre-auth or post-auth (or both). In the case of post-auth configuration, you can either use a common message for all roles or use separate messages for each role.

You can create a multi-language sign-in notification package that relies on the language setting of the endpoint. You can customize the sign-in notification page appearance for browser-based logins by modifying the related fields in a sign-in page in the Admin UI or by using a custom sign-in page.

- Sign-in notifications are supported on Windows, Mac, and for browser-based access on mobile devices. However, sign-in notifications might not work well with all mobile devices due to device limitations.
- Sign-in notifications (including uploaded packages) are included in XML exports.
- If a Ivanti session is resumed or extended, the pre-auth notification message is not shown again. However, if the user switches roles when resuming a session, and that role change results in a new notification, Ivanti displays the message. You can configure the post-auth message to be skipped if it has already been seen. If the post-auth message is not marked to be skipped, then it always appears.

Sign-in notifications appear for Ivanti Secure Access client and for browser-based logins when the user attempts to sign in.



To configure and implement sign-in notifications:

1. In the admin console, select **Authentication > Signing In > Sign-in Notifications**.
2. Click '+'. Specify a **Name** for the notification. This name appears in the sign-in policies page, and in the UI Options page for a selected role.

3. Select **Text** or **Package** in the Type box.

The screenshot shows a form titled "New Sign-In Notification" with an information icon. It contains three main fields: a "NAME" field with the value "New Sign-In Notification", a "TYPE" dropdown menu currently set to "Text", and a "TEXT (64 CHARACTER(S))" field containing the message "You are about to sign in to the system. Do you want to proceed?". Each field has an information icon to its right. Below the form, a note states: "NOTE: For Pulse desktop L3 VPN connection, the combined length of all the sign-in notification messages cannot exceed 3000 characters. If it does then the notifications will be displayed to the user."

- If you select **Text**, type the desired sign-in notification message, or copy and paste the relevant text into the Text field.
- If you select **Package**, click the **Package** field and navigate to a previously prepared .zip file. A package is typically used to provide different language versions of the notification message.
- The zip file should include a default.txt file and one or more <language>.txt files (Example: en.txt).
- Language-abbreviations should be strings that can appear in Accept-Language header of an HTTP request. For example:
  1. Upload a zip file containing files with name format: <language-abbreviation>.txt (Example: en.txt).
  2. Include 'default.txt' and one file for each language you want to support.
  3. Language-abbreviations should be strings that can appear in Accept-Language header of an HTTP request.
- The character encoding supported is UTF-8.



When you create a zip file, do not add the folder containing the files, but add the files directly.

4. Click **Save Changes**.

**New Sign-In Notification** ⓘ

NAME  
New Sign-In Notification ⓘ

TYPE  
Package ▾

PACKAGE  
No file chosen  
no file chosen

**Current Package:** *None*  
Upload a zip file containing files with name format: <language-abbreviation>.txt (Example: en.txt). Include 'default.txt' and one file for each language you want to support. Language abbreviations should be strings that can appear in Accept-Language header of an HTTP request. The character encoding supported is UTF-8.

## Sign-in SAML

SAML is an XML-based framework for communicating user authentication, entitlement, and attribute information. The standard defines the XML-based assertions, protocols, bindings, and profiles used in communication between SAML entities. SAML is used primarily to implement Web browser single sign-on (SSO). SAML enables businesses to leverage an identity-based security system like Ivanti Connect Secure to enforce secure access to web sites and other resources without prompting the user with more than one authentication challenge.

## SAML Metadata Provider

Sign-in SAML metadata provider settings determine how the system identity provider metadata is published. To configure the identity provider metadata publication settings:

1. Select **Authentication > Signing In > Sign-In SAML > Metadata Provider** to display the configuration page.
2. Complete the settings described in the following table.
3. Click **Save Metadata Provider** to save your changes.

The following table lists the Sign-in SAML Metadata Provider Configuration Guidelines:

Sign-in SAML Metadata Provider

Setting	Guidelines
Entity ID	This value is prepopulated. It is generated by the system,



Setting	Guidelines
	based on the value for the Host FQDN for SAML setting on the System > Configuration > SAML > Settings page.
Metadata Validity	Specify the maximum duration for which a peer SAML entity can cache the system SAML metadata file. Valid values are 1 to 9999. The default is 365 days.
Do Not Publish SA Metadata	Select this option if you do not want the system to publish the metadata at the location specified by the system Entity ID field. You can use this option to toggle off publication without deleting your settings.
Download Metadata	Use this button to download the system SAML identity provider metadata.

The screenshot shows the 'Metadata Provider' configuration page. The page title is 'Metadata Provider' with an information icon. On the left, there is a navigation menu with 'Signing In' selected, and sub-items: 'Sign-in Policies', 'Sign-in Pages', 'Sign-in Notifications', and 'Sign-in SAML'. The main content area has two tabs: 'Metadata Provider' (active) and 'Identity Provider'. Below the tabs, there is a heading 'This is configuration of Ivanti Connect Secure (SA) SAML Metadata provider.' followed by three input fields: 'Entity Id \*' (with an information icon), 'METADATA VALIDITY (DAYS)\*' (with an information icon and a value of '365'), and a checkbox labeled 'Do Not Publish IdP in Metadata' with the description 'Prevents the Connect Secure metadata file to be published at the location specified by the Entity Id.' At the bottom, there is a 'Download Metadata' button and a 'Save Changes' button.

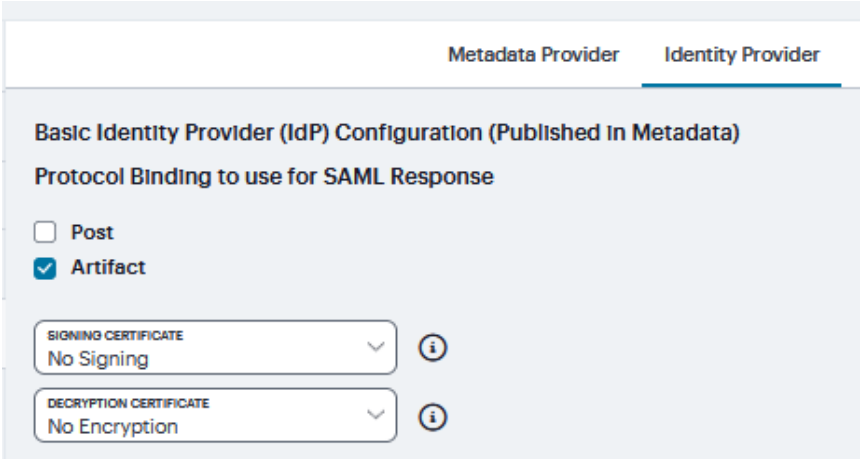
## SAML Identity Provider

The settings defined in this procedure are the default settings for the system SAML identity provider communication with all SAML service providers. If necessary, you can use the peer service provider configuration to override these settings for particular service providers. To configure sign-in SAML identity provider settings:

1. Select **Authentication > Signing In > Sign-In SAML > Identity Provider** to display the configuration page.
2. Complete the settings described in the following table.
3. Save the configuration.

The following table lists the Sign-in SAML Identity Provider Configuration Guidelines:

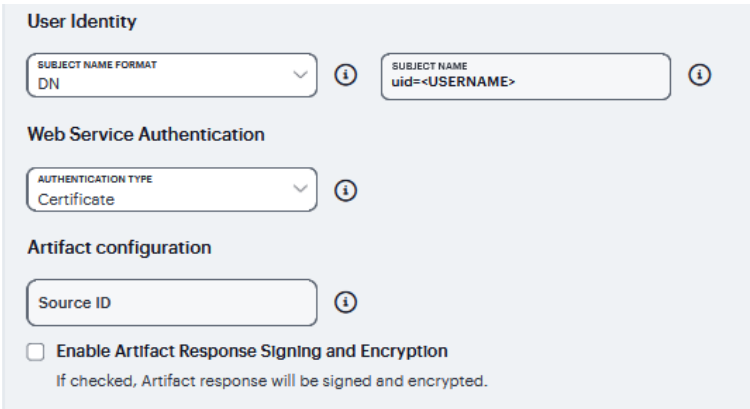
## Sign-in SAML Identity Provider

Setting	Guidelines
<b>Basic Identity Provider (IdP) Configuration (Published in Metadata)</b>	
Protocol Binding to use for SAML Response	Select <b>POST</b> , <b>Artifact</b> , or both, depending on your total requirements.
Signing Certificate	Select the <b>Certificate</b> used to sign the SAML messages sent by the system. The certificates listed here are configured on the <i>System &gt; Configuration &gt; Certificate &gt; Device Certificates</i> page.
Decryption Certificate	<p>Select the <b>Certificate</b> used to decrypt the SAML messages sent by peer service providers. The public key associated with this certificate is used by the peer service provider to encrypt SAML messages exchanged with this identity provider. The decryption certificate must be configured if the peer service provider encrypts the SAML messages sent to the system. The certificates listed here are configured on the <i>System &gt; Configuration &gt; Certificate &gt; Device Certificates</i> page.</p> 
Other Configurations	<b>Reuse Existing NC (Ivanti Secure) Session.</b> This feature applies to a service-provider-initiated SSO scenario - that is, when a user clicks a link to log into the service provider site. The service provider redirects the user to the identity provider SSO Service URL.




Setting	Guidelines
	<p>If this option is selected, a user with an active NC/Ivanti Secure session is not prompted to authenticate. The system uses information from the existing session to form the SAML response.</p> <ul style="list-style-type: none"> <li>• <b>Accept unsigned AuthnRequest.</b> In a service-provider-initiated SSO scenario, the SP sends an AuthnRequest to the identity provider. This AuthnRequest could be either signed or unsigned. If this option is unchecked, the system rejects unsigned AuthnRequests. Note that the system also rejects signed AuthnRequests if signature verification fails.</li> <li>• <b>Sign SAML Assertion.</b> If enabled, SAML assertion will also be signed along with signing the SAML response by default. Individual SPs can choose to accept only signed SAML assertion.</li> <li>• <b>Signature Algorithm,</b> select the algorithm from drop down.</li> </ul> <div style="border: 1px solid #ccc; padding: 10px; background-color: #f9f9f9;"> <p><b>Other Configurations</b></p> <p><input type="checkbox"/> <b>Reuse Existing Pulse Session</b> If enabled, the user's existing Pulse session if any will be used in the SP-initiated SSO scenario, instead of authenticating the user again. Can be disabled in Peer SP configuration.</p> <p><input type="checkbox"/> <b>Reuse Existing IF-MAP Session</b> If enabled, the user's existing IF-MAP session if any will be imported and used in the SP-initiated SSO scenario, instead of authenticating the user again. Can be disabled in Peer SP configuration. If both options are selected, the priority is given to "Reuse Existing Pulse Session".</p> <p><input type="checkbox"/> <b>Accept unsigned AuthnRequest</b> Individual SPs can choose to accept unsigned AuthnRequest.</p> <p><input type="checkbox"/> <b>Sign SAML Assertion</b> If enabled, SAML assertion will also be signed along with signing the SAML response by default. Individual SPs can choose to accept only signed SAML assertion.</p> <p>SIGNATURE ALGORITHM Sha-1 <span style="float: right;">ⓘ</span></p> </div>
<b>Service-Provider-Related IdP Configuration</b>	
Relay State	SAML <b>Relay State</b> attribute sent to the service provider in an identity-provider-initiated SSO scenario. If left blank, the RelayState value is the URL identifier of the resource being accessed.
Session Lifetime	Suggest a maximum duration of the session at the service provider created as a result of the SAML SSO. Select one of the following

Setting	Guidelines								
	<p>options: None. The identity provider does not suggest a session duration. Role Based. Suggest the value of the session lifetime configured for the user role. Customized. If you select this option, the user interface displays a text box in which you specify a maximum in minutes.</p>								
Sign-In Policy	<p>Select the sign-in URL to which the user is redirected in a service-provider - initiated scenario. The list is populated by the sign-in pages configured on the Authentication &gt; Signing In &gt; Sign-in Policies page. The user is not redirected if he or she already has a session with the system and had authenticated through this sign-in policy.</p>								
Force Authentication Behavior	<p>In an service-provider-initiated scenario, the service provider sends an AuthnRequest to the identity provider. If the service provider AuthnRequest includes the ForceAuthn attribute set to true and the user has a valid session, this setting determines how the identity provider responds. Select one of the following options:</p> <ul style="list-style-type: none"> <li>• Reject AuthnRequest. Do not honor the SAML SSO request.</li> <li>• Re-Authenticate User. Invalidate the user session and prompt for reauthentication.</li> </ul> <p>This setting prevails over the Ivanti session reuse setting.</p> <div style="border: 1px solid #ccc; padding: 10px; background-color: #f9f9f9;"> <p><b>Service-Provider-related IdP Configuration</b>                      The following settings apply to all Service Providers by default. Can be overridden in Peer SP configuration</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid #ccc; padding: 5px;">Relay State</td> <td style="text-align: right; padding: 5px;">ⓘ</td> </tr> <tr> <td style="border: 1px solid #ccc; padding: 5px;">SESSION LIFETIME Role based</td> <td style="text-align: right; padding: 5px;">ⓘ</td> </tr> <tr> <td style="border: 1px solid #ccc; padding: 5px;">SIGNIN POLICY No SP-initiated SSO</td> <td style="text-align: right; padding: 5px;">ⓘ</td> </tr> <tr> <td style="border: 1px solid #ccc; padding: 5px;">FORCE AUTHENTICATION BEHAVIOR Reject AuthnRequest</td> <td style="text-align: right; padding: 5px;">ⓘ</td> </tr> </table> </div>	Relay State	ⓘ	SESSION LIFETIME Role based	ⓘ	SIGNIN POLICY No SP-initiated SSO	ⓘ	FORCE AUTHENTICATION BEHAVIOR Reject AuthnRequest	ⓘ
Relay State	ⓘ								
SESSION LIFETIME Role based	ⓘ								
SIGNIN POLICY No SP-initiated SSO	ⓘ								
FORCE AUTHENTICATION BEHAVIOR Reject AuthnRequest	ⓘ								
<b>User Identity</b>									
Subject Name Format	<p>Format of the NameIdentifier field in the generated assertion. Select one of the following options:</p> <ul style="list-style-type: none"> <li>• DN - Username in the format of DN (distinguished name).</li> </ul>								

Setting	Guidelines
	<ul style="list-style-type: none"> <li>• Email address - Username in the format of an e-mail address.</li> <li>• Windows - Username in the format of a Windows domain qualified username.</li> <li>• Other - Username in an unspecified format.</li> </ul>
Subject Name	Template for generating the username that is sent as the value of the NameIdentifier field in the assertion. You may use any combination of available system or custom variables contained in angle brackets and plain text.
Web Service Authentication	These settings apply when the HTTP Artifact binding is used.
Authentication Type	<p>Method used to authenticate the service provider assertion consumer service to the identity provider on the system. Select one of the following options:</p> <ul style="list-style-type: none"> <li>• None - Do not authenticate the assertion consumer service.</li> <li>• Username/Password - If you select this option, use the controls to specify username and password settings.</li> <li>• Certificate - For certificate-based authentication, the Client CA of the service provider should be present in the system Trusted Client CA list (located on the <i>System &gt; Configuration &gt; Certificates &gt; Trusted Client CAs</i> page).</li> </ul>
Artifact Configuration	These settings apply when the HTTP Artifact binding is used.
Source ID	This is the Base64-encoded, 20-byte identifier of the Artifact Resolution Service on the identity provider.
Enable Artifact Response Signing and Encryption	If checked, the identity provider signs and encrypts the artifact response.

Setting	Guidelines
	 <p>The screenshot shows a configuration interface with three sections:         <ul style="list-style-type: none"> <li><b>User Identity:</b> Includes a dropdown for 'SUBJECT NAME FORMAT' (set to 'DN') and a text input for 'SUBJECT NAME' (set to 'uid=&lt;USERNAME&gt;').</li> <li><b>Web Service Authentication:</b> Includes a dropdown for 'AUTHENTICATION TYPE' (set to 'Certificate').</li> <li><b>Artifact configuration:</b> Includes a text input for 'Source ID' and a checkbox for 'Enable Artifact Response Signing and Encryption'. A note below the checkbox states: 'If checked, Artifact response will be signed and encrypted.'</li> </ul> </p>
Attribute Statement Configuration	<p>Attributes to be sent in SAML Attribute statements can be specified manually as name-value pairs, or you can configure an option to fetch name-value pairs from an LDAP server (or you can specify both manual entries and LDAP entries). Click '+' to add the attribute statements.</p>
Attribute Name	<p>An ASCII string.</p>
Friendly Name	<p>A more readable friendly name for the attribute. This is optional (an option included in the SAML standard).</p>
Attribute Value	<p>The attribute value can be specified as a hard-coded string, a custom variable, or a user attribute variable. System conventions for specifying user and custom tokens and variables apply.</p> <ul style="list-style-type: none"> <li>• The value can be a combination of a string and a user or custom variable. For example: (Email::&lt;customVar.email&gt;.)</li> <li>• The value can also be a combination of user and custom variables and hardcoded text. For example: (mydata=&lt;USER&gt; &lt;REALM&gt; &lt;customVar.email&gt;.)</li> </ul>
Value Type	<p>Select Single-Valued or Multivalued.</p> <ul style="list-style-type: none"> <li>• A single-valued attribute can be a combination of a string and a user or custom variable.</li> </ul>

Setting	Guidelines
	<ul style="list-style-type: none"> <li>• If there are multiple single-valued attributes configured with the same attribute names, they are combined and sent as a multivalued attribute. Select Multivalued if you want every individual token defined in the Attribute Value column to be sent as a separate AttributeValue. For example: <code>&lt;element ref="saml:AttributeValue" minOccurs="0" maxOccurs="unbounded"/&gt;</code></li> <li>• If the Attribute value is given as <code>&lt;USER&gt;mars&lt;REALM&gt; &lt;orgname&gt; &lt;ROLE&gt;</code> and the value type is marked as Multivalued, then the values sent as part of attribute statement are sent as follows: <ul style="list-style-type: none"> <li>• Username</li> <li>• Realmname</li> <li>• Role</li> </ul> </li> </ul> <p>Note that only the tokens ['&lt;&gt;'] will be considered when processing a Multivalued attribute marked. The remaining data (for example mars, jupiter) is discarded.</p> <p>Specifying the token <code>&lt;ROLE&gt;</code> will send only one role. To send all roles, specify the Attribute value with the syntax <code>&lt;ROLE SEP=","&gt;</code>. If you specify <code>&lt;ROLE SEP=","&gt;</code> as a single-valued attribute, it is sent as a single string with "," separated roles. If you specify <code>&lt;ROLE SEP=","&gt;</code> as a multi-valued attribute, each role is sent in a separate <code>&lt;AttributeValue&gt;</code> element. Encryption is set at the assertion level. You cannot encrypt individual attributes.</p>
Directory Server	<p>To fetch attribute name-value pairs from an LDAP server, complete the following settings:</p> <ul style="list-style-type: none"> <li>• <b>Directory Server</b> - Select the LDAP server from the list. You must add the LDAP server to the Authentication &gt; Auth. Servers list before it can be selected.</li> </ul>

Setting	Guidelines										
	<div> <p><b>Attribute Statement Configuration</b></p> <p>Attributes to be sent in SAML Attribute Statements can be configured as name-value pairs to the server.</p> <p>Name-Value based configuration, here values can be system variables available in SSO parameters.</p> <table border="1"> <thead> <tr> <th><input type="checkbox"/></th> <th>#</th> <th>Attribute Name</th> <th>Friendly Name</th> <th>Attribute Value</th> </tr> </thead> <tbody> <tr> <td colspan="5" style="text-align: center;">  <p>No Data Available</p> </td> </tr> </tbody> </table> <p>The value can contain textual characters as well as variables for substitution. Variables should be enclosed in brackets like this &lt;variable&gt;.</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>&lt;USER&gt; The user's login name</li> <li>&lt;REALM&gt; The user's sign-in realm</li> <li>&lt;ROLE SEP=","&gt; For a comma separated list of roles.</li> </ul> <p>Mark an element as Multi-valued if it should be sent as a multi valued attribute, in this case the attribute value will be sent as individual values</p> <p><b>Directory server based configuration</b></p> <p>DIRECTORY SERVER <input type="button" value="i"/></p> </div> <div style="background-color: #e0f2f1; padding: 5px;"> <input type="text" value="Attribute Name"/>  <input type="text" value="Friendly Name"/>  <input type="text" value="Attribute Value"/>          VALUE TYPE          Single-Valued <input type="button" value="v"/>  <input type="button" value="Cancel"/> <input type="button" value="Save Changes"/> </div>	<input type="checkbox"/>	#	Attribute Name	Friendly Name	Attribute Value	 <p>No Data Available</p>				
<input type="checkbox"/>	#	Attribute Name	Friendly Name	Attribute Value							
 <p>No Data Available</p>											

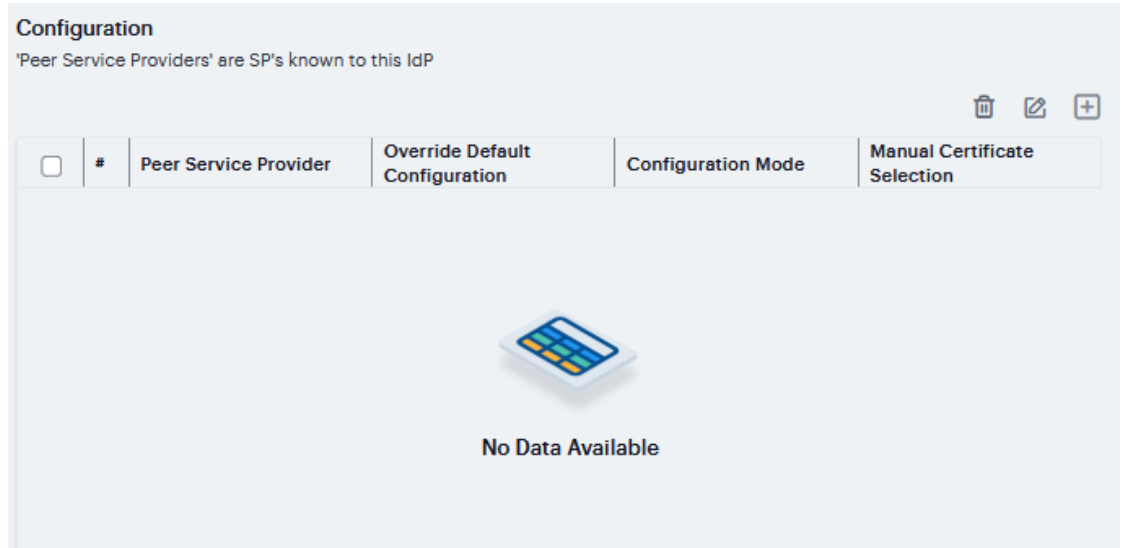
## Configuring Peer SAML Service Provider Settings

The peer service provider list defines the set of service providers configured to communicate with the system SAML identity provider. When you add a peer service provider to the list, you can customize the SAML identity provider settings used to communicate with the individual service provider. If the service provider provides a SAML metadata file, you can use it to simplify configuration, or you can complete more detailed manual steps. If available, we recommend you use metadata so that configuration is simpler and less prone to error.

To configure peer SAML service provider settings:



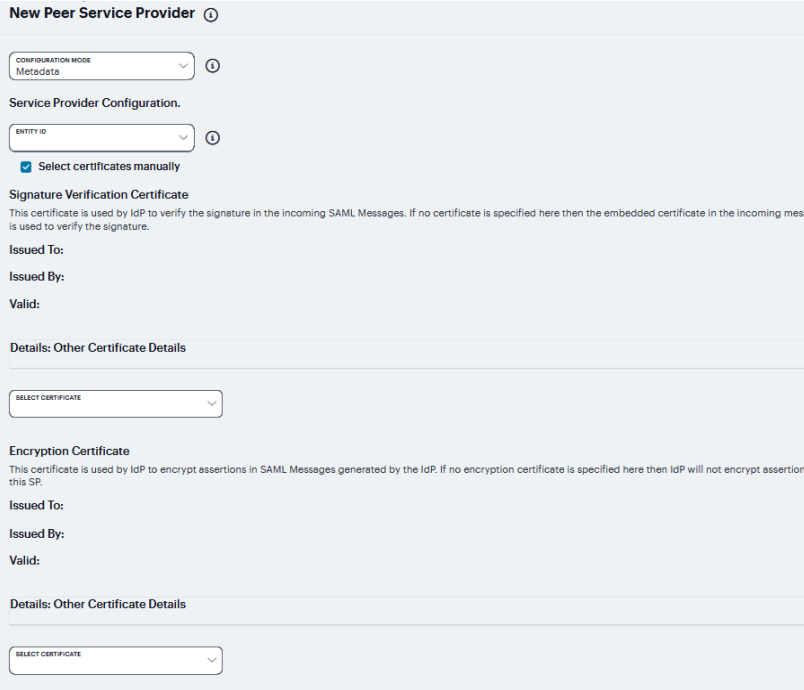
1. Select **Authentication > Signing In > Sign-In SAML > Identity Provider**.
2. Under **Peer Service Provider Configuration**, create a list of service providers that are SAML peers to the system **SAML identity provider**. To add a service provider to the list, click '+' to display the configuration page

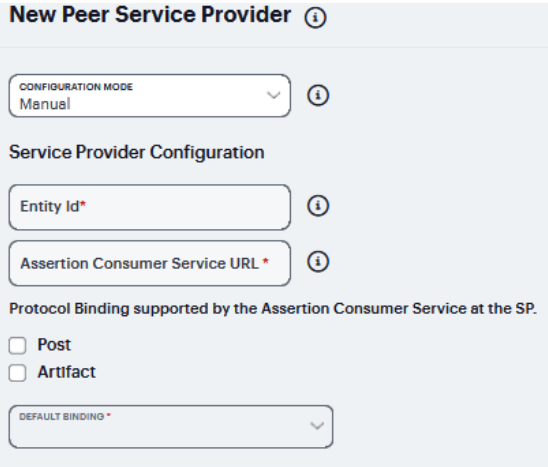


3. Complete the settings described in the following table.
4. Click **Save Changes**.

### Sign-in SAML Identity Provider

Setting	Guidelines
Configuration Mode	Select Manual or Metadata.
<b>Service Provider Configuration - Metadata</b>	
Entity Id	If you use metadata, select the SAML entity ID of the service provider. This list contains all the service providers specified in all the metadata files added to the System > Configuration > SAML page.
Select certificates manually	When you use the metadata configuration, the system SAML identity provider iterates through all the signature verification certificates specified when verifying the incoming SAML messages coming from the service provider. Similarly, when encrypting the

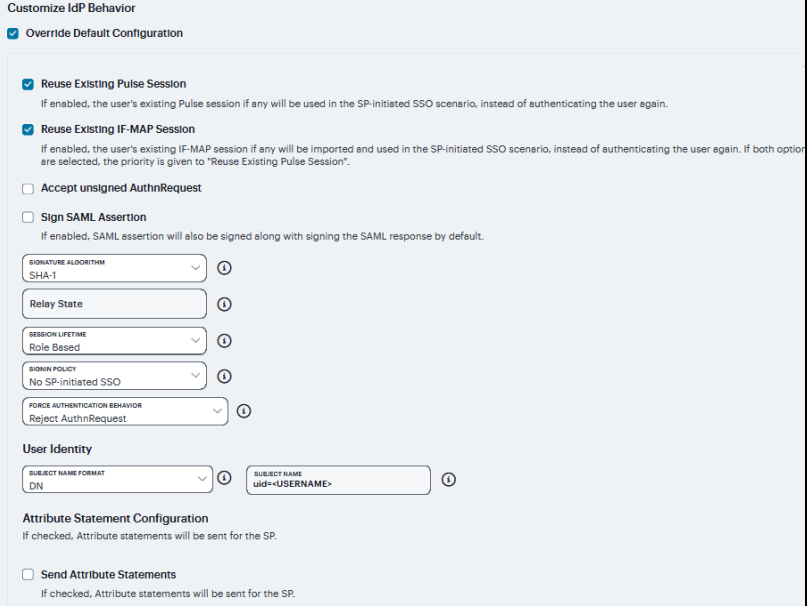
Setting	Guidelines
	<p>SAML messages going out, the system SAML identity provider encrypts the messages with the first valid encryption certificate encountered in the metadata. Select this option to override this default behavior and select certificates manually.</p>
Signature Verification Certificate	<p>If you select the Select certificates manually option, select the certificate to be used by the identity provider to verify the signature of incoming SAML messages..</p>
Encryption Certificate	<p>If you select the Select certificates manually option, select the certificate to be used if the assertions sent by the identity provider must be encrypted.</p>  <p>The screenshot shows the 'New Peer Service Provider' configuration interface. It includes a 'CONFIGURATION MODE' dropdown set to 'Metadata'. Under 'Service Provider Configuration', there is an 'ENTITY ID' dropdown and a checked 'Select certificates manually' checkbox. Below this, there are two sections: 'Signature Verification Certificate' and 'Encryption Certificate'. Each section contains a 'SELECT CERTIFICATE' dropdown menu and fields for 'Issued To:', 'Issued By:', and 'Valid:'. There are also expandable 'Details: Other Certificate Details' sections for both certificate types.</p>
<p><b>Service Provider Configuration - Manual</b></p>	
Entity Id	<p>If you are completing a manual configuration, ask the SAML service provider administrator for this setting.</p>
Assertion Consumer Service URL	<p>SAML service provider URL that receives the assertion or artifact sent by the identity provider.</p>
Protocol	<p>Select POST, Artifact, or both. This setting must be consistent with</p>

Setting	Guidelines
Binding supported by the Assertion Consumer Service at the SP	the SAML identity provider configuration.
Default Binding	<p>If both POST and Artifact bindings are supported, which is the default? Post Artifact This setting must be consistent with the SAML identity provider configuration.</p> 
Signature Verification Certificate	Upload the certificate to be used by the identity provider to verify the signature of incoming SAML messages. If no certificate is specified, the certificate embedded in the incoming SAML message is used for signature verification.
Encryption Certificate	Upload the certificate to be used if the assertions sent by the identity provider must be encrypted. If not certificate is specified, the assertions sent by the identity provider are not encrypted.

Setting	Guidelines
	<div style="background-color: #f0f0f0; padding: 10px;"> <p><b>Signature Verification Certificate</b>                      This certificate is used by IdP to verify the signature in the incoming SAML Messages. If no certificate is specified here then the embedded certificate in the incoming message is used to verify the signature.</p> <p><b>Issued To:</b></p> <p><b>Issued By:</b></p> <p><b>Valid:</b></p> <hr/> <p><b>Details: Other Certificate Details</b></p> <hr/> <div style="border: 1px solid #ccc; border-radius: 5px; padding: 5px; width: fit-content; margin-bottom: 5px;">                         UPLOAD CERTIFICATE                     </div> <p style="font-size: 0.8em; margin: 0;">No File Chooeen</p> <div style="border: 1px dashed #ccc; border-radius: 5px; padding: 5px; width: fit-content; margin: 5px auto;">                         Delete                     </div> <p><b>Encryption Certificate</b>                      The certificate to use if the the assertions from this IdP need to be encrypted.</p> <p><b>Issued To:</b></p> <p><b>Issued By:</b></p> <p><b>Valid:</b></p> <hr/> <p><b>Details: Other Certificate Details</b></p> <hr/> <div style="border: 1px solid #ccc; border-radius: 5px; padding: 5px; width: fit-content; margin-bottom: 5px;">                         UPLOAD CERTIFICATE                     </div> <p style="font-size: 0.8em; margin: 0;">No File Chooeen</p> <div style="border: 1px dashed #ccc; border-radius: 5px; padding: 5px; width: fit-content; margin: 5px auto;">                         Delete                     </div> </div>
<b>Certificate Status Checking Configuration</b>	
<p>Enable signature verification certificate status checking</p>	<p>Select this option to enable revocation checks for the signing certificate. Uses the configuration on the System &gt; Configuration &gt; Certificates &gt; Trusted Client CAs page.</p>
<p>Enable encryption certificate status checking</p>	<p>Select this option to enable revocation checks for the encryption certificate. Uses the configuration on the System &gt; Configuration &gt; Certificates &gt; Trusted Client CAs page.</p>

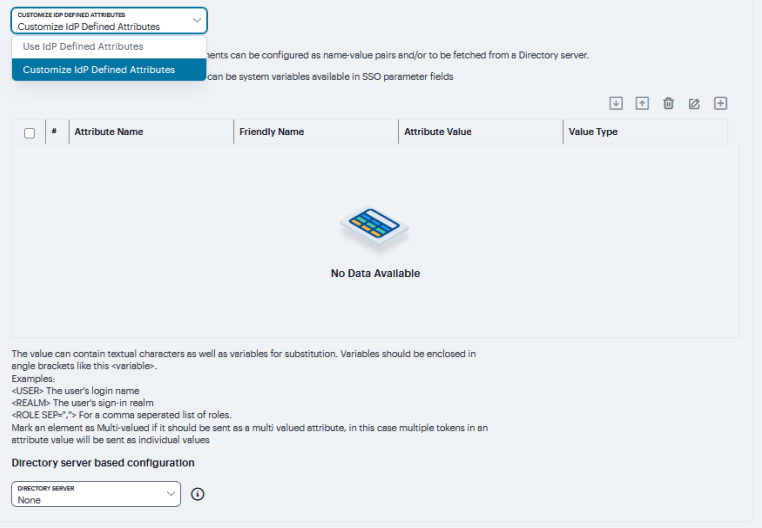
Setting	Guidelines
	<div style="background-color: #e6f2ff; padding: 10px;"> <p><b>Certificate Status Checking Configuration</b></p> <p><input type="checkbox"/> <b>Enable signature verification certificate status checking</b> Check this to enable revocation checks for the signing certificate. (Uses configuration in Trusted Client CAs.)</p> <p><input type="checkbox"/> <b>Enable encryption certificate status checking</b> Check this to enable revocation checks for the Encryption certificate. (Uses configuration in Trusted Client CAs.)</p> </div>
<b>Customize identity provider Behavior</b>	
Override Default Configuration	Select this option to set custom behavior of the system SAML identity provider for this SP instance. If you select this option, the user interface displays the additional options listed next.
Reuse Existing NC (Ivanti Secure) Session	This option cannot be enabled here if it is not selected for the sign-in SAML identity provider default settings.
Reuse Existing IF-MAP Session	If enabled, the user's existing IF-MAP session if any will be imported and used in the SP-initiated SSO scenario, instead of authenticating the user again. If both options are selected, the priority is given to "Reuse Existing Ivanti Secure Session".
Accept unsigned AuthnRequest	<p>Individual service providers can choose to accept unsigned AuthnRequest.</p> <ul style="list-style-type: none"> <li>• <b>Sign SAML Assertion.</b> If enabled, SAML assertion will also be signed along with signing the SAML response by default. Individual SPs can choose to accept only signed SAML assertion.</li> <li>• <b>Signature Algorithm,</b> select the algorithm from drop down.</li> </ul>
Relay State	SAML RelayState attribute sent to the service provider in an identity- provider-initiated SSO scenario. If left blank, the RelayState value is the URL identifier of the resource being accessed.
Session Lifetime	Suggest a maximum duration of the session at the service provider created as a result of the SAML SSO. Select one of the following

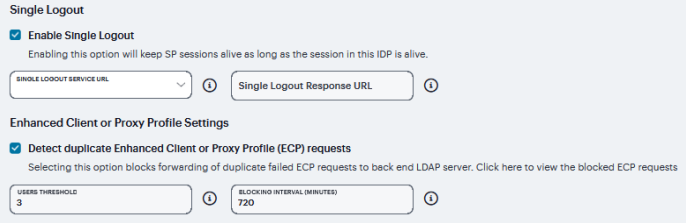
Setting	Guidelines
	<p>options: None. The identity provider does not suggest a session duration. Role Based. Suggest the value of the session lifetime configured for the user role. Customized. If you select this option, the user interface displays a text box in which you specify a maximum in minutes.</p>
Sign-In Policy	<p>Select the sign-in URL to which the user is redirected in a service-provider - initiated scenario. The list is populated by the sign-in pages configured on the Authentication &gt; Signing In &gt; Sign-in Policies page. The user is not redirected if he or she already has a session with the system and had authenticated through this sign-in policy.</p>
Force Authentication Behavior	<p>In an service-provider-initiated scenario, the service provider sends an AuthnRequest to the identity provider. If the service provider AuthnRequest includes the ForceAuthn attribute set to true and the user has a valid session, this setting determines how the identity provider responds. Select one of the following options:</p> <ul style="list-style-type: none"> <li>• Reject AuthnRequest. Do not honor the SAML SSO request.</li> <li>• Re-Authenticate User. Invalidate the user session and prompt for reauthentication.</li> </ul> <p>This setting prevails over the Ivanti session reuse setting.</p>

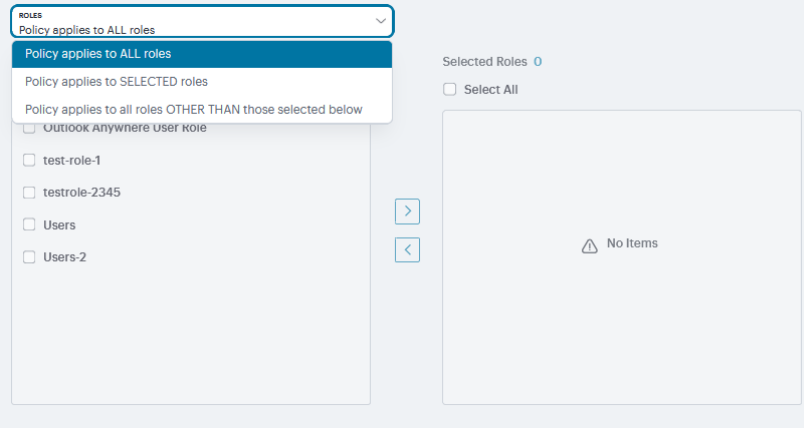
Setting	Guidelines
	
<h3>User Identity</h3>	
<p>Subject Name Format</p>	<p>Format of the NameIdentifier field in the generated assertion. Select one of the following options:</p> <ul style="list-style-type: none"> <li>• DN - Username in the format of DN (distinguished name).</li> <li>• Email address - Username in the format of an e-mail address.</li> <li>• Windows - Username in the format of a Windows domain qualified username.</li> <li>• Other - Username in an unspecified format.</li> </ul>
<p>Subject Name</p>	<p>Template for generating the username that is sent as the value of the NameIdentifier field in the assertion. You may use any combination of available system or custom variables contained in angle brackets and plain text.</p>
<h3>Attribute Statement Configuration</h3>	
<p>Send Attribute</p>	<p>Select this option if the SAML SP requires additional attributes to be sent with SAML assertions. If you enable attribute statements,</p>

<b>Setting</b>	<b>Guidelines</b>
Statements	<p>select one of the following configuration options:</p> <ul style="list-style-type: none"> <li>• Use IdP Defined Attributes-Send attributes based on the default settings for the system SAML identity provider communication with all SAML service providers.</li> <li>• Customize IdP Defined Attributes-Selectively configure the attributes that are sent for this particular peer SAML SP. Attributes to be sent in SAML Attribute statements can be specified manually as name-value pairs, or you can configure an option to fetch name-value pairs from an LDAP server (or you can specify both manual entries and LDAP entries). If you select this option, configure the settings described next.</li> </ul>
Attribute Name	An ASCII string.
Friendly Name	A more readable friendly name for the attribute. This is optional (an option included in the SAML standard).
Attribute Value	<p>The attribute value can be specified as a hard-coded string, a custom variable, or a user attribute variable. System conventions for specifying user and custom tokens and variables apply.</p> <ul style="list-style-type: none"> <li>• The value can be a combination of a string and a user or custom variable. For example: Email:&lt;customVar.email&gt;.</li> <li>• The value can also be a combination of user and custom variables and hardcoded text. For example: mydata=&lt;USER&gt; &lt;REALM&gt; &lt;customVar.email&gt;.</li> </ul>
Value Type	<p>Select Single-Valued or Multivalued.</p> <ul style="list-style-type: none"> <li>• A single-valued attribute can be a combination of a string and a user or custom variable.</li> </ul>



Setting	Guidelines
	<ul style="list-style-type: none"> <li>If there are multiple single-valued attributes configured with the same attribute names, they are combined and sent as a multivalued attribute. Select Multivalued if you want every individual token defined in the Attribute Value column to be sent as a separate AttributeValue. For example: <code>&lt;element ref="saml:AttributeValue" minOccurs="0" maxOccurs="unbounded"/&gt;</code></li> <li>If the Attribute value is given as <code>&lt;USER&gt;mars&lt;REALM&gt; &lt;orgname&gt; &lt;ROLE&gt;</code> and the value type is marked as Multivalued, then the values sent as part of attribute statement are sent as follows: <ul style="list-style-type: none"> <li>Username</li> <li>Realmname</li> <li>Role</li> </ul> </li> </ul> <p>Note that only the tokens ['&lt;&gt;'] will be considered when processing a Multivalued attribute marked. The remaining data (for example mars, jupiter) is discarded.</p> 

Setting	Guidelines
	<p>Specifying the token &lt;ROLE&gt; will send only one role. To send all roles, specify the Attribute value with the syntax &lt;ROLE SEP=","&gt;. If you specify &lt;ROLE SEP=","&gt; as a single-valued attribute, it is sent as a single string with "," separated roles. If you specify &lt;ROLE SEP=","&gt; as a multi-valued attribute, each role is sent in a separate &lt;AttributeValue&gt; element. Encryption is set at the assertion level. You cannot encrypt individual attributes.</p>
<p>Directory Server</p>	<p>To fetch attribute name-value pairs from an LDAP server, complete the following settings:</p> <ul style="list-style-type: none"> <li>• <b>Directory Server</b> - Select the LDAP server from the list. You must add the LDAP server to the Authentication &gt; Auth. Servers list before it can be selected.</li> </ul>
<p><b>Single Logout</b></p>	<p>Single logout is a mechanism provided by SAML for logging out a particular user from all the sessions created by the identity provider. Select this option if the system must receive and send a single logout request for the peer SAML identity provider.</p>
<p>Enable Single Logout</p>	<p>* If you use the metadata option, the Single Logout Service URL setting can be completed by selecting the SLO service URL from the list. The list is populated by the identity provider entities defined in metadata files added to the System &gt; Configuration &gt; SAML page. The system sends Single Logout requests to this URL. * In addition, if you use the metadata option, the Single Logout Response URL setting is completed based on your selection for Single Logout Service URL. If the identity provider has left this setting empty in its metadata file, the system sends the Single Logout response to the SLO service URL. If you complete these settings manually, ask the SAML identity provider administrator for guidance.</p> 
<p>Enhanced Client or Proxy Profile</p>	<p>Select <b>Detect duplicate Enhanced Client or Proxy Profile (ECP) requests</b> option to block forwarding of duplicate failed ECP requests to back end LDAP server.</p>

Setting	Guidelines
Settings	
Users Threshold	Number of duplicate ECP requests that can be detected and blocked per user
Blocking Interval	In Minutes
Roles	<p>Select one of the following options:</p> <ul style="list-style-type: none"> <li>• Policy applies to ALL roles. To apply this policy to all users.</li> <li>• Policy applies to SELECTED roles. To apply this policy only to users who are mapped to roles in the Selected roles list. Make sure to add roles to this list from the Available roles list.</li> <li>• Policy applies to all roles OTHER THAN those selected below. To apply this policy to all users except for those who map to the roles in the Selected roles list. Make sure to add roles to this list from the Available roles list.</li> </ul> 

# Using Endpoint Security

- ["Managing ESAP Versions" below](#)
- ["Configuring Host Checker Policy" on page 346](#)

## Managing ESAP Versions

The Endpoint Security Assessment Plug-in (ESAP) on Ivanti Connect Secure checks third-party applications on endpoints for compliance with the predefined rules you configure in a Host Checker policy. This plug-in is included in the system software package.

Ivanti frequently adds enhancements, bug fixes, and support for new third-party applications to the plug-in. New plug-in releases are available independently and more frequently than new releases of the system software package. If necessary, you can upgrade the plug-in independently of upgrading the system software package.

You can upload up to four versions of the plug-in to your system, but it uses only one version at a time (called the active version). If necessary, you can roll back to a previously active version of the plug-in.

The default SDK version used is v3, but it can be reconfigured based on your requirement. The product/vendor names used by v3 and v4 SDK might differ. Due to the product/vendor names mismatch, there is a possibility that the rules become empty while creating Host Checker rule with v3 SDK activated and upon enabling v4 SDK. To avoid this, a migration page is added to help the administrators in migrating the policies from v3 to v4 SDK.

To migrate from v3 to v4 version:

1. Navigate to **Manage Endpoint Security Assessment PlugIn Versions** section on the **Authentication > Endpoint Security > Host Checker** page.
2. Select the **Enable migration of Opswat SDK from old to new version (V3 to V4)** option.

3. Click **Save Changes**.

On enabling this option, the clients start downloading the V4 SDK and migrate to newer SDK.

**Endpoint Security**

**Host Checker**

**Manage ESAP Versions** | Policies | Options

**Manage Endpoint Security Assessment PlugIn Versions**  
 Currently Active ESAP version: 3.7.5 | Default ESAP version: 3.7.5

Search  RECORDS PER PAGE: 10

#	Version	Released On	Last Activated
<input type="checkbox"/> 1	3.9.6	Fri, Mar 11 2022 16:48:12	N/A
<input type="checkbox"/> 2	3.9.3	Thu, Jan 20 2022 16:48:12	N/A
<input type="checkbox"/> 3	3.8.5	Mon, Sep 6 2021 16:48:12	N/A
<input checked="" type="checkbox"/> 4	3.7.5	Tue, Mar 2 2021 17:30:00	Fri 27 May 2022 16:33:19 IST

← 1 →

**Enable migration of Opswat SDK from old to new version (V3 to V4)**  
 Enabling this option starts Opswat SDK V3 to V4 migration on the client machines. This option enforces V3 Opswat SDK usage in host checker policy definitions by enabling Older SDK usage option below, so that host check happens properly irrespective of whether client machine has Opswat V3 or V4 SDK installed. During the next host check on the client machine, Opswat V4 SDK will be installed. Minimum ESAP version '3.4.2' is needed for supporting this migration.

**Activate Older Opswat SDK in ESAP for Host checker policy evaluation**  
 ESAP contains two versions of Opswat SDKs for supporting policy evaluation. It is recommended to use the newer version of the Opswat SDK. Use the older version if you have Pulse Clients before 5.2R5, Pulse Connect Secure appliances before 8.2R5, or Pulse Policy Secure appliances before C5.3R5.

**Enable Active ESAP package on the client**  
 Enabling this option ensures that the active ESAP package is used on all the client machines. If the client machine contains a newer ESAP package it will be replaced with the active ESAP version.

Cancel Back Next **Save Changes**

4. Clear the Enable migration of Opswat SDK from old to new version (V3 to V4) option once the migration is complete.
5. Verify the migration status. In the confirmation message box, click Confirm.

To roll back to previous version of OPSWAT SDK:

1. Navigate to **Manage Endpoint Security Assessment PlugIn Versions** section on **Authentication > Endpoint Security > Host Checker** page.

2. Clear the **Enable migration of Opswat SDK from old to new version (V3 to V4)** check box.
3. Enable **Activate Older Opswat SDK in ESAP for Host Checker policy evaluation**.
4. Click **Save Changes**.

## Enabling the Active ESAP Package

Administrator can enable "Enable Active ESAP package on the client" check box to ensure that client machine always uses the active ESAP package, even if the active ESAP package is older than the version installed on the client system. In case client machine has newer ESAP package installed, it will be replaced with the older Active ESAP version with this option enabled.

To enable the active ESAP package:

1. Select **Authentication > Endpoint Security > Host Checker**.
2. Under Manage Endpoint Security Assessment Plugin Versions, select the **Enable Active ESAP package on the client** check box.
3. Click **Save Changes**.

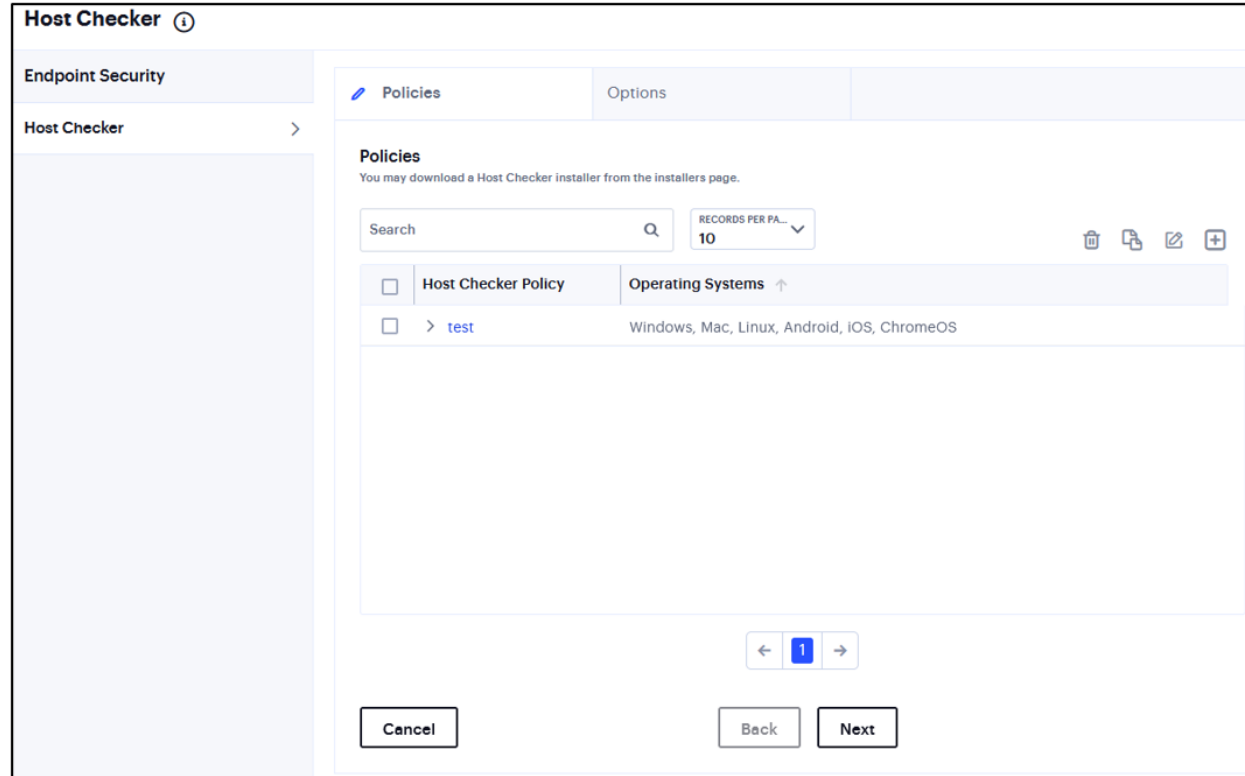
## Configuring Host Checker Policy

Host Checker is a software component that performs endpoint compliance checks on hosts that connect to Ivanti Connect Secure. It supports two types of rules within a policy; predefined and custom. The pre-defined inspection capabilities consist of health and security checks including antivirus versions, antispysware, OS versions, hard disk encryption status and patch checks. The pre-defined rules are provided by OPSWAT and it uses the ESAP plug-in for pre-defined checks.

To configure a Host Checker policy, perform these tasks:

1. Log into the nSA as a Tenant Admin.
2. From the ICS menu, click **Gateways > Gateways List**. In the Gateways list page, select the standalone ICS Gateway or Cluster node that you want to configure.

- From the ICS menu, select **Authentication > Endpoint Security > Host Checker**.



- Under Policies, click the '+' icon.
- Enter a name for the policy and then click **Save Changes**.

A list of all the added policies is displayed.

6. Create one or more rules to associate with the policy.

In the **Options** tab, enter time limit for performance check and logout time if the device is inactive.

The screenshot shows the 'Host Checker' configuration page. The left sidebar has 'Endpoint Security' and 'Host Checker' (with a right arrow). The main content area has two tabs: 'Policies' and 'Options' (selected). Under 'Options', there are two input fields: 'PERFORM CHECK EVERY' with the value '10' and 'CLIENT-SIDE PROCESS, LOGIN INACTIVITY TIMEOUT' with the value '20'. Below these are three checkboxes: 'Auto-upgrade Host Checker' (checked), 'Require enhanced protection for host checker messages received from client' (unchecked), and 'Perform dynamic policy reevaluation' (unchecked). A note explains that the second option is for iOS and can cause failure in Pre 6.0.1 clients. At the bottom are 'Cancel', 'Back', 'Next', and 'Save Changes' buttons.

7. You can select Auto-upgrade Host Checker, Require enhanced protection for host checker messages received from client, and Perform dynamic policy reevaluation.



You need to select this option to enable HMAC validation for Host Checker messages. This is applicable only for iOS platform. Enabling this option results in Host Check failure from Pre 6.0.1 Ivanti Secure Access clients on iOS platform.

8. Select **Store Host Checking evaluation results** to cache the result for the certain number of days.



9. Select **Cache results if any of the roles is assigned** or **Cache results only if any of the selected roles are assigned** and select the roles from **Available Roles**.

**Store host checking evaluation results**

**Store Host Checking evaluation results**

STORE HOST CHECKING EVALUATION RESULTS FOR  
7  
Days

ROLES  
Cache results if any of the roles is assigned

**Available Roles** 0

**Select All**

No Items

**Selected Roles** 0

**Select All**

No Items

10. In Virus signature version monitoring, select **Auto-update virus signatures list**.

- For Download path, leave the existing URL(s) of the staging site(s) where the current list(s) are stored.
- For Download interval, specify how often you want the system to automatically import the current list(s).
- For Username and Password, enter your Connect Secure credentials.
- To use a proxy server as the auto-update server, select **Use Proxy Server** and provide the proxy server details.



You can also import the virus signatures manually by importing signature list.

**Virus signature version monitoring**

**Auto-update virus signatures list**

DOWNLOAD PATH  
https://download.pulsesecure.net/software/av/uac/epupdate\_hist.xml

DOWNLOAD INTERVAL  
30 ⓘ

USERNAME  
doc-team

PASSWORD  
●●●●●●●●

**Use Proxy Server**

Address

PORT  
80

Username

Password

**Manually import virus signatures list**

BROWSE TO SELECT FILE

11. To edit an existing policy, select the corresponding check box and click the Edit icon.

12. To delete one or more policies, select the corresponding check boxes and click the Delete icon.

## Checking for Third-Party Applications Using Predefined Rules

Host Checker comes pre-equipped with a vast array of predefined rules that check for antivirus software, firewalls, malware, spyware, and specific operating systems from a wide variety of industry leaders. You can enable one or more of these rules within a Host Checker client-side policy to ensure that the integrated third-party applications that you specify are running on your users' computers in accordance with your specifications. For firewall and antivirus rules, you can specify remediation actions to automatically bring the endpoint into compliance.

### Add Rule: Antivirus Rule with Remediation Options

To configure a Predefined Antivirus rule:

1. Select one of the following supported platforms:
  - Windows
  - Mac
2. Enter a Rule Name.
3. Under Criteria, click **Require specific products/vendors**. A new window will open with a list of all of the products that support the feature.
4. Select your vendor(s) and product(s) by using either the **Require any supported product from a specific vendor** or **Require specific products** check box.
5. If your product is supported, select the check box for any or all of the remediation actions that you want to apply.
6. (Optional) Select or clear the check box next to **Successful System Scan must have been performed in the last**, and enter the number of days in the field.
  - If you select this check box, a new option appears. If the remediation action to start an antivirus scan has been successfully begun, you can override the previous check.
7. (Optional) Select or clear the check box next to **Check for the Virus Definition files**. Enter a number between 1 and 20. If you enter 1, the client must have the latest update.

- (Optional) Select **Monitor this rule for change in result** to continuously monitor the policy compliance of endpoints.

MILAN9XTEMP1 / HOST CHECKER / POLICIES / HC\_FROM\_NSA\_CONFIGTEMP\_9X1

**Add Predefined Rule : Antivirus** ⓘ

---

**Add Predefined Rule : Antivirus**

RULE TYPE  
Antivirus

Rule Name \*

Criteria

CRITERIA  
Require specific products/vendors

Require any supported product from a specific vendor

Require specific products

Optional

The following check is supported by [these Antivirus products](#). For any other products, this check will be ignored.

Successful System Scan must have been performed in the last

LAST  
5  
Days

The following check is supported by [these Antivirus products](#). For any other products, this check will be ignored. For this check to be effective, enable the 'Auto-update virus signatures list' option or manually import the virus signatures list on Endpoint Security page.

Check for the Virus Definition files

Monitor this rule for change in result

Enabling this option will report change in compliance for this rule to the Pulse Connect Secure immediately. The client component requires additional computing cycles to report change in compliance immediately. We strongly recommend that this option be enabled for rules that are dynamic in nature, for example a rule for RTP check provided by AntiVirus software. For other rules the host checker update frequency should be used to get periodic health checks from endpoints

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Cancel Save Changes

- Use this option only for dynamic rules, such as checking whether Real Time Protection is enabled on the antivirus software.



- Use the Host Checker update frequency to monitor other rules periodically.
- Monitor this rule for change in result for port check is applicable only for Windows and not for Linux or MAC machines.

## Add Rule: Firewall Rule with Remediation Options

When you enforce the Host Checker rule with firewall remediation actions, if an endpoint attempts to log in without the required firewall running, Host Checker can attempt to enable the firewall on the client machine.

1. Select one of the following supported platforms:
  - Windows
  - Mac
2. Enter a Rule Name.
3. Under Criteria, click **Require specific products/vendors**. A new window will open with a list of all of the products that support the feature.
4. Select your vendor(s) and product(s) by using either the **Require any supported product from a specific vendor** or **Require specific products** check box.

5. (Optional) Select **Monitor this rule for change in result** to continuously monitor the policy compliance of endpoints. If this check box is selected, and a change in compliance status on an endpoint that has successfully logged in occurs, the system initiates a new handshake to re-evaluate realm or role assignments.

**Add Predefined Rule : Firewall** ⓘ

Add Predefined Rule : Firewall

RULE TYPE  
Firewall

Rule Name \*

Criteria

CRITERIA  
Require specific products/vendors ▾

Require any supported product from a specific vendor

Require specific products

Optional

**Monitor this rule for change in result**

Enabling this option will report change in compliance for this rule to the Pulse Connect Secure immediately. The client component requires additional computing cycles to report change in compliance immediately. We strongly recommend that this option be enabled for rules that are dynamic in nature , for example a rule for RTP check provided by AntiVirus software. For other rules the host checker update frequency should be used to get periodic health checks from endpoints

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Monitor this rule for change in result for port check is applicable only for Windows and not for Linux or MAC machines.

## Add Rule: AntiSpyware

You can configure Host Checker to check for installed antispyware on endpoints.

To configure a Host Checker Predefined Spyware rule:

1. Select one of the following supported platforms:
  - Windows
  - Mac
2. Enter a Rule Name.

3. Under Criteria, click **Require specific products/vendors**. A new window will open with a list of all of the products that support the feature.
4. Select your vendor(s) and product(s) by using either the **Require any supported product from a specific vendor** or **Require specific products** check box.
5. (Optional) Select **Monitor this rule for change in result** to continuously monitor the policy compliance of endpoints. If this check box is selected, and a change in compliance status on an endpoint that has successfully logged in occurs, the system initiates a new handshake to re-evaluate realm or role assignments.

**Add Predefined Rule : AntiSpyware** ⓘ

---

**Add Predefined Rule : AntiSpyware**

RULE TYPE  
AntiSpyware

Rule Name \*

Criteria ^

CRITERIA  
Require specific products/vendors

Require any supported product from a specific vendor

Require specific products

---

Optional ^

**Monitor this rule for change in result**

Enabling this option will report change in compliance for this rule to the Pulse Connect Secure immediately. The client component requires additional computing cycles to report change in compliance immediately. We strongly recommend that this option be enabled for rules that are dynamic in nature , for example a rule for RTP check provided by AntiVirus software. For other rules the host checker update frequency should be used to get periodic health checks from endpoints

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Monitor this rule for change in result for port check is applicable only for Windows and not for Linux or Mac machines.

## Add Rule: Hard Disk Encryption

You can configure Host Checker to check for installed Hard Disk Encryption on endpoints and specify the drives which needs to be encrypted using these software.

To configure a predefined hard disk encryption rule:

1. Select one of the following supported platforms:
  - Windows
  - Mac
2. Enter a Rule Name.
3. Under Criteria, click **Require specific products/vendors**. A new window will open with a list of all of the products that support the feature.
4. Select your vendor(s) and product(s) by using either the **Require any supported product from a specific vendor** or **Require specific products** check box.

### Add Predefined Rule : HardDisk Encryption ⓘ

Add Predefined Rule : HardDisk Encryption

RULE TYPE  
HardDisk Encryption

Rule Name

Criteria

CRITERIA  
Require specific products/vendors

Require any supported product from a specific vendor

Require specific products

DRIVE CONFIGURATION DETAILS  
All Drives

Consider policy as passed if the drive encryption is in progress  
Enabling this option will result in policy pass if any of the configured drives are not detected on the endpoint machine

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5. Under Drive Configuration Details, select the required option:

- All Drives - (Default) Select this option to check if all the drives on the client machine are encrypted.
- Specific Drives - Select this option to check if only specific drives on the client machine are encrypted.
  - Drive Letters - Enter the drive name. For example, C, D, E.
- Select the **Consider policy as passed if the drive Encryption is in progress** option to allow the Host Checker policy to pass if the encryption process is in progress and the drive is not fully encrypted.



- The drive encryption process takes time to complete depending up on the drive size and contents.

- For multiple drives, the Host Checker policy passes only if the encryption process is in progress in all the drives.

---

## Add Rule: Patch Management

You can configure Host Checker to check for installed Patch management Software on endpoints.

To configure a predefined patch management rule:

1. Select one of the following supported platform options:
  - Windows
  - Mac
2. Enter a Rule Name.
3. Under Criteria, select the product name.
4. Default "Severity" options selected in policy are Critical, Important.
5. Default "Category" options selected in policy are Security Update, Critical Update, Regular Update, Driver Update.

6. To automatically enable patch deployment, select **Enable Automatic Patch Deployment**.

**Add Predefined Rule : Patch Management** ⓘ

---

**Add Predefined Rule : Patch Management**

RULE TYPE  
Patch Management

Rule Name \*

---

**Criteria** ^

SELECT PRODUCT NAME

---

**Severity**  
For some of the patch management software products, severity is not detected. In such cases, enable "Unspecified/Unknown" severity to detect the missing patches

Critical  Important  Moderate  Low  Unspecified/Unknown

---

**Category**  
For some of the patch management software products, category is not detected. In such cases, enable "Unknown" category to detect the missing patches

Security Update  Rollup Update  Critical Update  Regular Update  Driver Update  Service Pack Update  
 Unknown

---

**Remediation** ^

**Enable Automatic Patch Deployment**  
Only SMS/SCCM patch deployment method is used.

---

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## Add Rule: Common Vulnerability and Exposure (CVE)

The CVE check rule helps in identifying the endpoints which are vulnerable using the OPSWAT library.

This rule is applicable only to Windows platform.

To configure a predefined CVE check rule:

1. Enter a Rule Name.
2. From the Criteria, select if you require all the CVE checks from OPSWAT or choose the specific CVE checks from the available CVE checks list.



The screenshot shows a web interface for adding a predefined rule. The title is "Add Predefined Rule : CVE Checks" with an information icon. Below the title, the rule type is set to "CVE Checks". There is a text input field for "Rule Name". Under the "Criteria" section, a dropdown menu is set to "Require all supported CVE checks". At the bottom, it says "Powered by OPSWAT" with the OPSWAT logo.

## Add Rule: OS Checks

You can configure Host Checker to check the version of the windows operating systems and minimum service packs.

This rule is applicable only to Windows platform.

To configure a Host Checker Predefined OS Checks rule:

1. Enter a rule name.
2. Under Criteria, select the service pack/version to ignore.

### Add Predefined Rule : OS Checks ⓘ

Add Predefined Rule : OS Checks

RULE TYPE  
OS Checks

Rule Name

Criteria

- Windows 10  
MINIMUM SERVICE PACK/VERSION  
Ignore
- Windows 10-64-Bit  
MINIMUM SERVICE PACK/VERSION  
Ignore
- Windows 2008  
MINIMUM SERVICE PACK/VERSION  
Ignore
- Windows 2008-R2-64-Bit  
MINIMUM SERVICE PACK/VERSION  
Ignore
- Windows 2012-64-Bit  
MINIMUM SERVICE PACK/VERSION  
Ignore
- Windows 2012-R2-64-Bit  
MINIMUM SERVICE PACK/VERSION  
Ignore
- Windows 2016-64-Bit  
MINIMUM SERVICE PACK/VERSION  
Ignore
- Windows 7  
MINIMUM SERVICE PACK/VERSION  
Ignore

## Specifying Customized Requirements Using Custom Rules

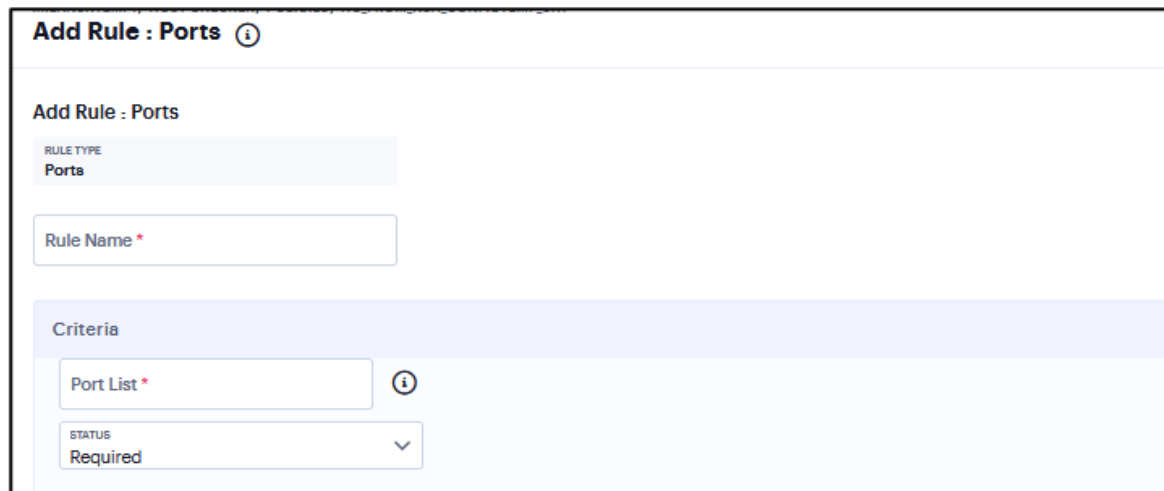
In addition to the predefined policies and rules that come with the system, you can create custom rules within a Host Checker policy to define requirements that your users' computers must meet.

## Add Rule: Ports

Use this rule type to control the network connections that a client can generate during a session. This rule type ensures that certain ports are open or closed on the client machine before the user can access the device.

To configure the Ports rule:

1. Select one of the following supported platform options:
  - Windows
  - Mac
  - Linux
2. Enter the rule name.
3. Under Criteria, enter the Port list.
4. Click Status and select Required/Deny.
  - Required: Select this to enable access from a listed port.
  - Deny: Select this to disallow access from a listed port.



The screenshot shows the 'Add Rule : Ports' configuration form. The form is titled 'Add Rule : Ports' with an information icon. Below the title, the 'RULE TYPE' is set to 'Ports'. There is a text input field for 'Rule Name \*'. The 'Criteria' section contains a 'Port List \*' text input field with an information icon, and a 'STATUS' dropdown menu currently set to 'Required'.

## Add Rule: Process

To configure the Process rule:

1. Select one of the following supported platform options:
  - Windows
  - Mac
  - Linux
2. Enter the rule name.
3. Under Criteria, enter the Process name. For example, explorer.exe.
4. Click **Status** and select **Required/Deny**.
  - Required: Select this to allow access if the process exists.
  - Deny: Select this to deny access if the process does not exist.
5. (Optional) Enter the MD5 Checksums/SHA256 Checksums.

6. Select Monitor this rule for change in result to check if there is any change in compliance result.

The screenshot shows the 'Add Rule : Process' configuration form. It is titled 'Add Rule : Process' with an information icon. The form is divided into several sections:

- Add Rule : Process**: This section contains a 'RULE TYPE' dropdown menu set to 'Process' and a 'Rule Name \*' text input field.
- Criteria**: This section contains a 'Process Name \*' text input field and a 'STATUS' dropdown menu set to 'Deny'.
- Optional**: This section contains two checkboxes for 'MD5 Checksums' and 'SHA256 Checksums', each with an information icon. Below these is a checkbox for 'Monitor this rule for change in result'. A detailed note explains that enabling this option reports compliance changes immediately, which is recommended for dynamic rules like RTP checks, but that it requires additional computing cycles.

## Add Rule: File

To configure the File rule:

1. Select one of the following supported platform options:
  - Windows
  - Mac
  - Linux
2. Enter the rule name.
3. Enter a full file name and path in File Name. For example, "c:test.txt" or "/Users/exampleuser/Downloads/test.txt".

4. Under Criteria, click **Status** and select **Required/Deny**.
  - Required: Select this to allow access where the file exists and is valid.
  - Deny: Select this to deny access if the file does not exist or is invalid.
5. (Optional) Enter the MD5 Checksums/SHA256 Checksums value for the file.
6. Select Monitor this rule for change in result to check if there is any change in compliance result.

**Add Rule : File** ⓘ

---

**Add Rule : File**

RULE TYPE  
**File**

Rule Name \*

Criteria ^

File Name \* ⓘ

STATUS  
Deny ▼

Optional ^

Minimum version

File modified less than ⓘ

MD5 Checksums ⓘ

SHA256 Checksums ⓘ

**Monitor this rule for change in result**

Enabling this option will report change in compliance for this rule to the Pulse Connect Secure immediately. The client component requires additional computing cycles to report change in compliance immediately. We strongly recommend that this option be enabled for rules that are dynamic in nature , for example a rule for RTP check provided by AntiVirus software. For other rules the host checker update frequency should be used to get periodic health checks from endpoints

## Add Rule: NetBIOS

To configure the NetBios rule:



1. Select one of the following supported platform options:
  - Windows
  - Mac
2. Enter the rule name.
3. Enter the Netbios domain Names as a comma-separated list (without spaces) of domain names. Each name can be 15 characters. Duplicate names are not supported. For example, WINDOWS-PC,WIN\*-PC,\*-PC,WINDOWS\*
4. Under Criteria, click **Status** and select **Required/Deny**.
  - Required: Select this to allow access from a listed Netbios domain name.
  - Deny: Select this to deny access from a listed Netbios domain name.

The screenshot shows a web form titled "Add Rule : NetBIOS" with an information icon. The form is divided into sections: "Add Rule - NetBIOS" at the top, followed by a "RULE TYPE" dropdown set to "NetBIOS". Below that is a "Rule Name \*" text input field. The "Criteria" section is highlighted in light blue and contains a "NetBIOS Names \*" text input field with an information icon to its right. At the bottom of the criteria section is a "STATUS" dropdown menu currently set to "Required".

## Add Rule: MAC Address

To configure the MAC Address rule:

1. Select one of the following supported platform options:
  - Windows
  - Mac
2. Enter the rule name.

- Under Criteria, Enter the MAC address as a comma-separated list (without spaces) of MAC addresses in the form HH:HH:HH:HH:HH:HH where the HH is a two-digit hexadecimal number. Duplicate MAC addresses are not supported.
- Click **Status** and select **Required/Deny**.
  - Required: Select this to enable access from a listed MAC address.
  - Deny: Select this to disallow access from a listed MAC address.

The screenshot shows a web form titled "Add Rule : MAC Address" with an information icon. The form is divided into sections: "Add Rule : MAC Address", "RULE TYPE" (set to "MAC Address"), "Rule Name \*" (text input), "Criteria" (header), "MAC Addresses \*" (text input with an information icon), and "STATUS" (dropdown menu set to "Required").

## Add Rule: Machine Certificate

To configure the Machine Certificate rule:

- Select one of the following supported platform options:
  - Windows
  - Mac
- Enter the rule name.
- Under Criteria, select Any certificate to allow access with any certificate.

- (Optional) Enter specific values in the machine certificate.

The screenshot shows the 'Add Rule : Machine Certificate' configuration page. At the top, the title is 'Add Rule : Machine Certificate' with an information icon. Below the title, the 'RULE TYPE' is set to 'Machine Certificate'. There is a text input field for 'Rule Name \*'. Under the 'Criteria' section, there is a dropdown menu currently showing 'STATUS'. Below this, a section titled 'Optional YOU CAN OPTIONALLY REQUIRE SPECIFIC VALUES IN THE MACHINE CERTIFICATE' contains a table with two columns: 'Certificate Field (Example "Cn")' and 'Expected Value'. The table is currently empty, and a 'No Data Available' message with a calculator icon is displayed below it.

## Add Rule: Registry Setting

Note that Registry Setting rule is applicable only to Windows platform.

To configure the Registry Setting rule:

- Enter the rule name.
- Under Criteria, select one of the following options:
  - HKEY\_LOCAL\_MACHINE
  - HKEY\_USERS
  - HKEY\_CURRENT\_USER
  - HKEY\_CURRENT\_CONFIG
  - HKEY\_CLASSES\_ROOT
- Enter a Subkey for the registry path.

4. Under Key Type, select one of the following key types:
  - string
  - dword
  - binary
5. Enter a Key name.
6. Enter a Value for the registry key.
7. Select the 64-bit check box to use the 64-bit registry store. Clear this check box to use the 32-bit registry store.
8. (Optional) Select Monitor this rule for change in result to check if there is any change in compliance result.

- Under Optional, select Monitor this rule for change in result to continuously monitor the policy compliance of endpoints.

### Add Custom Rule : Registry Setting ⓘ

Add Custom Rule : Registry Setting

RULE TYPE  
Registry Setting

Rule Name \*

Criteria ^

REGISTRY ROOT KEY  
HKEY\_LOCAL\_MACHINE ▼

Registry Subkey

Name \*

TYPE  
String ▼

Value ⓘ

**Check for 64-bit registry**  
Check for 64 bit registry. This option is applicable only for 64-bit versions of Windows. By default, Host Checker checks only 32-bit registry

**Minimum version**

Optional ^

**Monitor this rule for change in result**  
Enabling this option will report change in compliance for this rule to the Pulse Connect Secure immediately. The client component requires additional computing cycles to report change in compliance immediately. We strongly recommend that this option be enabled for rules that are dynamic in nature , for example a rule for RTP check provided by AntiVirus software. For other rules the host checker update frequency should be used to get periodic health checks from endpoints

Remediation ^

**Set Registry value specified in criteria**

## Add Rule: Advanced Host Checking

Note that Advanced Host Checking rule is applicable only to Windows platform.

To configure the Advanced Host Checking rule:

1. Enter the rule name.
2. Under Criteria, select one of the following options:
  - ports
  - process
  - File
  - NETBIOS
  - MAC Address
3. Enable Required/Deny.
4. Select the registry root key- HKEY\_LOCAL\_MACHINE, HKEY\_USERS, HKEY\_CURRENT\_USER, HKEY\_CURRENT\_CONFIG, or HKEY\_CLASSES\_ROOT.
5. Enter the registry subkey.
6. Enter the name of the registry.
7. Select the type of the registry- String, Binary, or DWORD.

8. Select "Check for 64-bit registry" to check the 64 bit registry on Windows. The default is 32 bit registry.

### Add Rule : Advanced Host Checking ⓘ

**Add Rule : Advanced Host Checking**

RULE TYPE  
Advanced Host Checking

Rule Name \*

**Criteria**

SELECT CHECK TYPE ⓘ

METHOD TO OBTAIN VALUE\*  
Registry Setting

REGISTRY ROOT KEY  
HKEY\_LOCAL\_MACHINE

Registry Subkey

Name

TYPE  
String

Check for 64-bit registry  
Check for 64 bit registry. This option is applicable only for 64-bit versions of Windows. By default, Host Checker checks only 32-bit registry

## Add Rule: Jail Breaking Detection

Note that Jail Breaking Detection rule is applicable only to iOS platform.

To configure the Jail Breaking Detection rule:

1. Select one of the supported iOS platform options.
2. Enter the rule name.

- Under Criteria, select **Don't allow Jail Broken devices**

### Add Predefined Rule : Jail Breaking Detection ⓘ

Add Predefined Rule : Jail Breaking Detection

RULE TYPE  
**Jail Breaking Detection**

Rule Name

Criteria

✓ **Don't allow Jail Broken devices**

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## Add Rule: Rooting Detection

To configure the Rooting Detection rule:

- Select one of the supported android platform options.
- Enter the rule name.



- Under Criteria, select **Don't allow Rooted devices**.

### Add Predefined Rule : Rooting Detection ⓘ

Add Predefined Rule : Rooting Detection

RULE TYPE  
Rooting Detection

Rule Name

Criteria

- Don't allow Rooted devices

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# Users Configuration

- ["Configuring User Realm" below](#)
- ["Configuring User Role" on page 376](#)
- ["Resource Profiles" on page 378](#)
- ["Resource Policies" on page 458](#)
- ["Ivanti Secure Access Client Connections" on page 460](#)
- ["Enterprise Onboarding" on page 468](#)

## Configuring User Realm

The user realm configuration associates the authentication server data and MDM server data with user roles.

To configure user realm:

1. Log into the nSA as a Tenant Admin.
2. From the ICS menu, click the **Gateway > Gateway List** and then select any standalone ICS Gateway and Cluster node.
3. Navigate to **Users > User Realms**.
4. In the User Realms page, click the Add icon.

**New User Realm** ⓘ

**General**

Name \* ⓘ

Description

When editing, start on the Role Mapping page

**Servers**  
Specify the servers to use for authentication and authorization. To create or manage servers, see the [Servers](#) page

AUTHENTICATION  
System Local ⓘ

USER DIRECTORY/ATTRIBUTE  
None ⓘ

ACCOUNTING  
None ⓘ

DEVICE ATTRIBUTES  
None ⓘ

**Additional Authentication Server** ^

Enable additional authentication server

**Dynamic Policy Evaluation** ^

Enable dynamic policy evaluation

1. Enter a name and description for the realm.
2. Under Servers, select the user authentication server for this realm's users.

3. If you want to use dynamic policy evaluation for this realm, select **Dynamic policy evaluation** to enable an automatic timer for dynamic policy evaluation of this realm's authentication policy, role mapping rules, and role restrictions:
  - Use the **Refresh interval** option to specify how often you want Connect Secure to perform an automatic policy evaluation of all currently signed-in realm users.
  - Select **Refresh roles** to also refresh the roles of all users in this realm.
  - Select **Refresh resource policies** to also refresh the resource policies for all users in this realm.
  - Click **Refresh Now** to manually evaluate the realm's authentication policy, role mapping rules, role restrictions, user roles, and resource policies of all currently signed-in realm users.
4. Click **Save Changes** to create the realm.

## Configuring User Role

A user role is an entity that defines user session parameters, personalization settings, and enabled access features. You can customize a user role by enabling specific access features, defining Web, application, and session bookmarks, and configuring session settings for the enabled access features.

To add a new user role:

1. Log into the nSA as a Tenant Admin.
2. From the ICS menu, click the **Gateway > Gateway List** and then select any standalone ICS Gateway and Cluster node.
3. Navigate to **Users > User Roles**.

- In the User Roles page, click the Add icon.

### New Role ⓘ

Name \*

Description

**Options**  
If these settings are not specified by any roles assigned to the user, the settings specified in Default Options will be used.

VLAN/Source IP

Session Options

UI Options

**Access Features**  
Check the features to enable for this user role, and specify any role-based options. Note that features disabled here may be granted by other roles assigned to the user.

Web

Files, Windows

Secure Application Manager

SECURE APPLICATION MANAGER ⓘ

Terminal Services

Virtual Desktops

HTML5 Access

VPN Tunneling

Secure Mail

Cancel Save Changes

- Enter a name and optionally a description.

6. Under Options:

- Select the **VLAN/Source IP** option to apply the role settings configured on the General > VLAN/Source IP page.
- Select the **Session Options** option to apply the role settings in the General > Session Options page to the role.
- Select the **UI Options** option to apply the role settings in the General > UI Options page to the role.

7. Under Access features, select the features you want to enable for the role. Options include:

- Web - intermediate Web URLs through the Content Intermediation Engine.
- Files, Windows - resource profile that controls access to resources on Windows server shares.
- Secure Application Manager (Windows version or Java version) - provides secure, application-level remote access to enterprise servers from client applications.
- Terminal Services - enable terminal emulation sessions on a Windows terminal server, Citrix NFuse server, or Citrix Metaframe server.
- Virtual Desktops - enable virtual desktop session using the VDI architecture.
- HTML5 Access - enable HTML5 session for RDP connection, telnet connection, SSH session or VNC connection.
- VPN Tunneling - provides secure, SSL-based network-level remote access to all enterprise application resources using the system.
- Secure Mail - enables automatic synchronization with an Exchange server (ActiveSync) and e-mail encryption for iOS devices that have the Ivanti Secure Access Client.

8. Click **Save Changes** to apply the settings to the role.

## Resource Profiles

A resource profile contains all of the resource policies, role assignments, and end-user bookmarks required to provide access to an individual resource. Resource profiles simplify resource configuration by consolidating the relevant settings for an individual resource into a single page within the admin console.

The system comes with two types of resource profiles:

- Standard resource profiles enable you to configure settings for a variety of resource types, such as web sites, client/server applications, directory servers, and terminal servers. When you use this method, you choose a profile type that corresponds to your individual resource and then provide details about the resource.
- Resource profile templates enable you to configure settings for specific applications. When you use this method, you choose a specific application (such as the Citrix NFuse version 4.0). Then, the system pre-populates a variety of values for you based on your chosen application and prompts you to configure additional settings as necessary.

Resource profiles are an integral part of the access management framework, and therefore are available on all Ivanti Connect Secure products. However, you can only access resource profile types that correspond to your licensed features.

### Resource Profiles ⓘ

Resource profiles specify sets of resources, create bookmarks to them, and define which user roles can and cannot access the resources. Resource profiles also include rules that fine-tune who can access the resources and specify additional actions that the IVE must take.

**Web ⓘ**  
Web resource profiles enable/disable access to web resources such as Intranet or Internet pages.

**Files ⓘ**  
File resource profiles enable/disable access to network file systems and directories.

**Terminal Services ⓘ**  
Terminal Services resource profiles enable/disable access to Windows and Citrix terminal servers.

**Virtual Desktops ⓘ**  
Virtual Desktops resource profiles enable/disable access to VMware and Citrix Virtual Environments.

**HTML5 Access ⓘ**  
HTML5 Access profiles enable/disable clientless access to terminal servers using RDP/SSH/Telnet protocols.

**SAM**  
SAM resource profiles enable/disable access to client-server applications.

**Client Applications ⓘ**  
Specify applications to intermediate through P-SAM or J-SAM.

**PSAM Destinations ⓘ**  
Specify destination networks or servers for which you should use PSAM.

**Mobile**  
Configuration of profiles for mobile devices.

**Secure Mail ⓘ**  
Configuration of Secure Mail profile for mobile devices.

**S/MIME Certificate ⓘ**  
Configuration of S/MIME Certificates for mobile devices.

## Web Resource Profile

To Create new Web Application Resource Profiles:

1. Log into the nSA as a Tenant Admin.
2. From the ICS menu, click the **Gateway > Gateway List** and then select any standalone ICS Gateway and Cluster node.
3. Navigate to **Users > Resource Profiles > Web**.
4. Click '+' and select the Profile Template from drop down.

<input type="checkbox"/>	#	Resource Profile	Bookmarks	Roles	Supporting Policies	
<input type="checkbox"/>	1	testweb http://10.96.158.95/test1.txt	testweb	Users, Users-2	Web ACL	...

5. Enter a unique **Name** and optionally a **Description** for the profile.

## Citrix Storefront Server

If you have the Citrix StoreFront 31. and above, you can create a Web template to allow users to access Citrix applications without the need for a Citrix client. Users must have one of the following browser versions (or later) to support HTML5 and Websockets:

- Internet Explorer 10
- Safari 6
- Google Chrome 23
- Mozilla Firefox 17

If **Citrix resource profile** selected as Profile Template, then

1. Enter the URL of the **Citrix StoreFront Web** server in the **Base URL** field. Use the format: [protocol://]host[:port][/path]. The system uses the specified URL to define the default bookmark for the Citrix resource profile.



- Under **Citrix Settings**, select the **ICA Client Access** option. Admin can either choose to go with the HTML5 way of delivery or can choose to deliver ICA over CTS/PSAM/HTML5 Access clients. If admin chooses the ICA over CTS/PSAM/HMTL5 Access, the corresponding ACL should be created and when ICS rewrites ICA content it should launch the appropriate client. Add the Number of servers/applications and Citrix Ports which require ICA client access.

/ RESOURCE PROFILES / WEB APPLICATION RESOURCE PROFILES
**New Web Application Resource Profile** ⓘ

**Configure Profile** >

PROFILE TEMPLATE/TYPE  
Citrix storefront 3.1 and above

Profile Name

Description

Base URL ⓘ

**Citrix settings**

ICA CLIENT ACCESS  
HTML5 Access

Autopolicies are resource policies that correspond to this resource profile. In order for you enter a fully qualified domain name in your base URLs.

**Autopolicies** 1
**Web Access Control**

Use this autopolicy to control access to web servers and URLs.

<input type="checkbox"/>	#	Resource	Action
<p>No Data Available</p>			

Cancel

**Add Web Access Control**

Resource ⓘ

ACTION

Cancel

Save Changes

- Click **Add Autopolicy**, **Web Access Control** or **Single Sign-on** check box to create a policy and click **Add Selected**.

**ADD POLICY**

Select one or more autopolicies to include in this resource profile.

<input checked="" type="checkbox"/>	<b>Web Access Control</b>	Control access to web servers and URLs.
<input type="checkbox"/>	<b>Single Sign-on</b>	Automatically pass user credentials to the Web application.

CLOSE      **ADD SELECTED**

- Under **Web Access Control**, click '+' specific Resource under the Base URL. Enter the full URL of the resource, select **Allow** or **Deny**, and click **Save Changes**. By default, the system automatically creates a policy that enables access to the resource and all of its subdirectories.

Autopolicies 2      Web Access Control      Single Sign-on      ADD AUTOPOLICY

Use this autopolicy to control access to web servers and URLs.

#	Resource	Action
No Data Available		

Cancel      Save Changes

5. Under **Single Sign-on**, select the **POST the following data** check box and specify the application's sign-in page in **Resource** field and In **Post URL** field, specify the absolute URL where the application posts the user's credentials.
  - In the Resource field, specify the application's sign-in page, such as:  
http://my.domain.com/public/login.cgi. Wildcard characters are not supported in this field.
  - In the Post URL field, specify the absolute URL where the application posts the user's credentials, such as: http://yourcompany.com/login.cgi.
6. Select the **Deny direct login for this resource** check box if you do not want to allow users to manually enter their credentials in a sign-in page. Users may see a sign-in page if the form POST fails.
7. Select the **Allow multiple POSTs to this resource** check box if you want to send POST and cookie values to the resource multiple times if required.
8. Optionally, click '+' specify the **Label, Name, Value, and select User modifiable, click Save Changes\*\***.
  - Label - The name used to identify the data.
  - Name - The name used to identify the data in the Value field. The back-end application should expect this name.
  - Value - The value to post to the form for the specified Name. You can enter static data, a system variable, or system session variables containing username and password values.
  - User modifiable? - Select Not modifiable to prevent users from changing the information in the Value field. Select User CAN change value to allow users to specify data for a back-end application. Select User MUST change value if users must enter additional data to access a back-end application.
9. To post header data to the specified URL select the **Send the following data as request headers** check box.
10. Specify the **Resources** to which this policy applies.

11. Optionally, click '+' specify the **Header name** and **Value** and click **Save Changes**.

Autopolicies 2
Web Access Control
Single Sign-on
ADD AUTOPOLICY

Use this autopolicy to automatically pass user credentials to the Web application.

POST the following data

Deny direct login for this resource

Allow multiple POSTs to this resource

↑ ↓ 🗑️ ✎ +

<input type="checkbox"/>	#	Label	Name	Value	User Modifiable
<input type="checkbox"/>	1	Username	username	<USER>	not-modifiable
<input type="checkbox"/>	2	Password	password	<PASSWORD>	not-modifiable
<input type="checkbox"/>	3	loginBtn	loginBtn	Log On	not-modifiable
<input type="checkbox"/>	4	StateContext	StateContext		not-modifiable
<input type="checkbox"/>	5	SaveCredentials	saveCredentials	false	not-modifiable

Send the following data as request headers

↑ ↓ 🗑️ ✎ +

<input type="checkbox"/>	#	Header Name	Value
<input type="checkbox"/>			

### Hosted Java Applet

The Java applet upload feature enables you to store the Java applets of your choice directly on the device without employing a separate Web server to host them. When you use this feature, you simply upload the applets to the device (along with additional files that the applets reference) and create a simple Web page through the system that references the files. Then, the system intermediates the Web page and Java applet content using its Content Intermediation Engine.

For example, you might want to use the system to intermediate traffic between an IBM AS/400 system on your network and individual 5250 terminal emulators on your users' computers. To configure the system to intermediate this traffic, obtain the 5250 terminal emulator's Java applet. Then you can upload this applet to the system and create a simple Web page that references the applet. After you create the Web page through the system, it creates a corresponding bookmark that users can access through their home pages.

If **Hosted Java applet** is selected as Profile Template, then

1. Select the Java applet that you want to associate with the resource profile from the **Applet to use** list. Or, if the applet that you want to use is not currently available in the list, click **Edit list**.

### New Web Application Resource Profile ⓘ

Configure Profile >

PROFILE TEMPLATE/TYPE  
Hosted Java applet

Profile Name

Description

APPLET TO USE\*  
None  
Size: N/A bytes  
Uploaded: N/A

Edit List...

Autopolicies are resource policies that correspond to this resource profile. In order for your autopolicies to work effectively, you must enter a fully qualified domain name in your base URLs.

Autopolicies 1
Java Access Control
ADD AUTOPOLICY

Use this autopolicy to specify the servers and ports to which java applets connect. You may also use this autopolicy to enable re-signing using code-signing certificates.

↑
↓
✎
🗑
+

<input type="checkbox"/>	#	Resource	Action
<p>No Data Available</p>			

Sign applets with uploaded code-signing certificate(s)

Cancel
Save Changes

1. Click '+' to add an applet to this list.



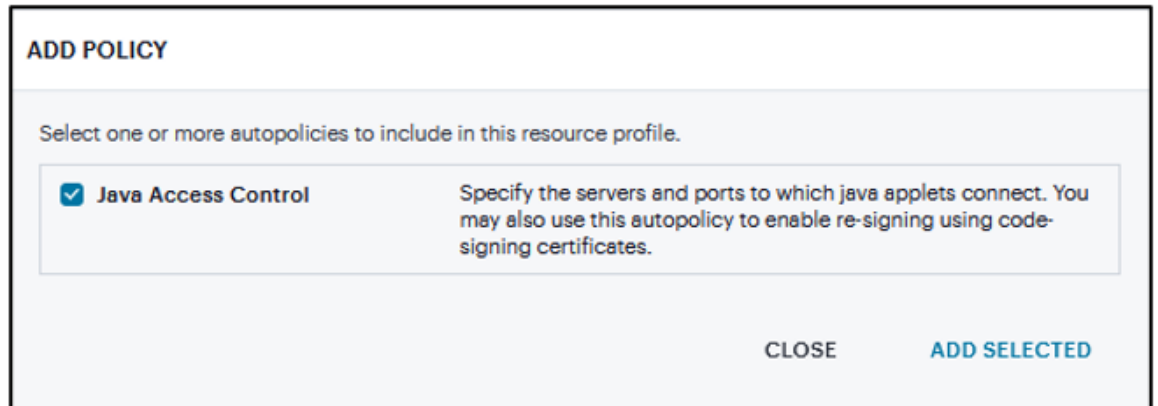
If you replace an existing archive, make sure that the new applet archive contains all of the necessary files for the applet to successfully launch and run. If the associated HTML for the applet refers to files that do not exist in the new archive, then the applet will not function correctly.

2. Enter **Name** to identify the applet.
3. Click the text field to browse to the applet that you want to upload.
4. Select the **Uncompress archive file** check box if the file that you selected is an archive that contains the applet. Click **OK**.



When you select an applet in the Java Applets dialog box, you are loading third-party software onto the Ivanti product. By clicking OK, you are agreeing to the following terms on behalf of yourself (as purchaser of the equipment) or the organization that purchased the Ivanti product, as applicable.

2. Click **Add Autopolicy**, select **Java Access Control to enable access** if your Java applets need to make socket connections.



- Click '+' specific **Resource** under the Base URL. Enter the full URL of the resource, select **Allow** or **Deny**, and click **Save Changes**.



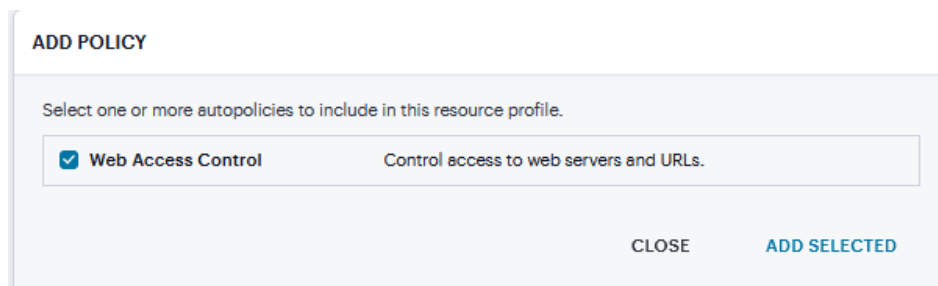
- Select the **Sign applets with uploaded code-signing certificate(s)** to use a single code-signing certificate to resign all Java applets.
- Click **Save Changes**.

## Microsoft RDWeb

A Microsoft RDWeb template is a resource profile that controls access to the published desktops and applications based on HTML5. Microsoft RDWeb templates significantly reduce the configuration time by consolidating configuration settings into one place and by pre-populating a variety of resource policy settings.

If **Microsoft RDWeb** resource profile selected as Profile Template, then

- Enter the URL of the Microsoft RDWeb server in the **Base URL** field.
- Click **Add Autopolicy, Web Access Control** check box to create a policy and click **Add Selected**.



- Under **Web Access Control**, click '+' specific **Resource** under the Base URL. Enter the full URL of the resource, select **Allow** or **Deny**, and click **Save Changes**.



**New Web Application Resource Profile**

Configure Profile >

PROFILE TEMPLATE/TYPE  
Microsoft RDWeb

Profile Name

Description

Base URL

Autopolicies 1

Web Access Control

Use this autopolicy to control access to web servers and URLs.

<input type="checkbox"/>	#	Resource	Action
No Data Available			

Cancel

**Add Web Access Control**

Resource

ACTION

Cancel Save Changes

## Microsoft OWA Versions

A Microsoft Outlook Web Access (OWA) template is a resource profile that controls access to the application and configures OWA settings as necessary. OWA templates significantly reduce your configuration time by consolidating configuration settings into one place and by prepopulating a variety of resource policy settings for you depending on the type of setup you select. The system supports intermediating traffic to Microsoft OWA through a Web rewriting resource profile template, JSAM, PSAM, and VPN Tunneling. This topic describes how to configure access using the Web rewriting template. The prepopulated values vary depending on the version of OWA you select and are based on the most common deployment of the servers.

If any of the **Microsoft OWA** Versions are selected as Profile Template, then

1. Enter the URL of the OWA resource to which you want to control access In the **Base URL** box.
2. Under **OWA settings**, select **Security Settings** and Select **Prevent download of attachments** to prohibit users from downloading attachments to their systems.

3. Select **Prevent upload of attachments** to prevent users from transmitting (uploading) attachments to the system.

### New Web Application Resource Profile ?

Configure Profile >

PROFILE TEMPLATE/TYPE  
Microsoft OWA 2016 and above

Profile Name

Description

Base URL ?

**OWA settings**  
Use these settings to control the security and performance of OWA.

**Security Settings**  
SECURITY SETTINGS  
Private computer

**Attachments**


Prevent download of attachments

**Prevent upload of attachments**

Autopolicies are resource policies that correspond to this resource profile. In order for you must enter a fully qualified domain name in your base URLs.

Autopolicies 3    Web Access Control    Caching    Web Compression

Use this autopolicy to control access to web servers and URLs.

	#	Resource	Action
 <b>No Data Available</b>			

Cancel

### Add Web Access Control

Resource ?

ACTION

Cancel
Save Changes

- Click **Add Autopolicy**, check box to create a policy and click **Add Selected**.

#### ADD POLICY

Select one or more autopolicies to include in this resource profile.

<input checked="" type="checkbox"/>	<b>Web Access Control</b>	Control access to web servers and URLs.
<input checked="" type="checkbox"/>	<b>Single Sign-on</b>	Automatically pass user credentials to the Web application.
<input checked="" type="checkbox"/>	<b>Caching</b>	Control which Web content is cached on a user's machine.
<input checked="" type="checkbox"/>	<b>Web Compression</b>	Bypass compressing Web content.
<input checked="" type="checkbox"/>	<b>Client Authentication</b>	Configure a certificate which should be presented during SSL handshake for a host:port combination, if the backend resource is protected with 2-way SSL authentication.

**CLOSE**      **ADD SELECTED**

- Under **Web Access Control**, click '+' specific **Resource** under the Base URL. Enter the full **URL** of the resource, select **Allow** or **Deny**, and click **Save Changes**.

The screenshot displays the configuration interface for a resource profile. On the left, the 'Microsoft OWA 2010' profile is selected. Fields include 'Profile Name', 'Description', and 'Base URL'. Below these are sections for 'OWA settings', 'Security Settings' (set to 'Private computer'), and 'Attachments' with checkboxes for preventing download and upload. A table at the bottom shows 'Autopolicies' with columns for checkboxes, a '#' symbol, 'Resource', and 'Action'. On the right, a light blue 'Add Web Access Control' panel contains a 'Resource' input field, an 'ACTION' dropdown menu, and 'Cancel' and 'Save Changes' buttons.

- Under **Single Sign-on**, select the **SSO** from drop down and specify the application's sign-in page in **Resource** field and select user's **credentials**.

7. Check **Fallback to NTLM V1** to enable fallback option and click **Save Changes**.

Autopolicies are resource policies that correspond to this resource profile. In order for your autopolicies to work effectively, you must enter a fully qualified domain name in your base URLs.

Autopolicies 5 Web Access Control   Single Sign-on   Caching   Web Compression   ADD AUTOPOLICY

Use this autopolicy to automatically pass user credentials to the Web application.

SELECT SSO  
NTLM

Resource \*

CREDENTIAL  
Default

Fallback to NTLM V1

Cancel Save Changes

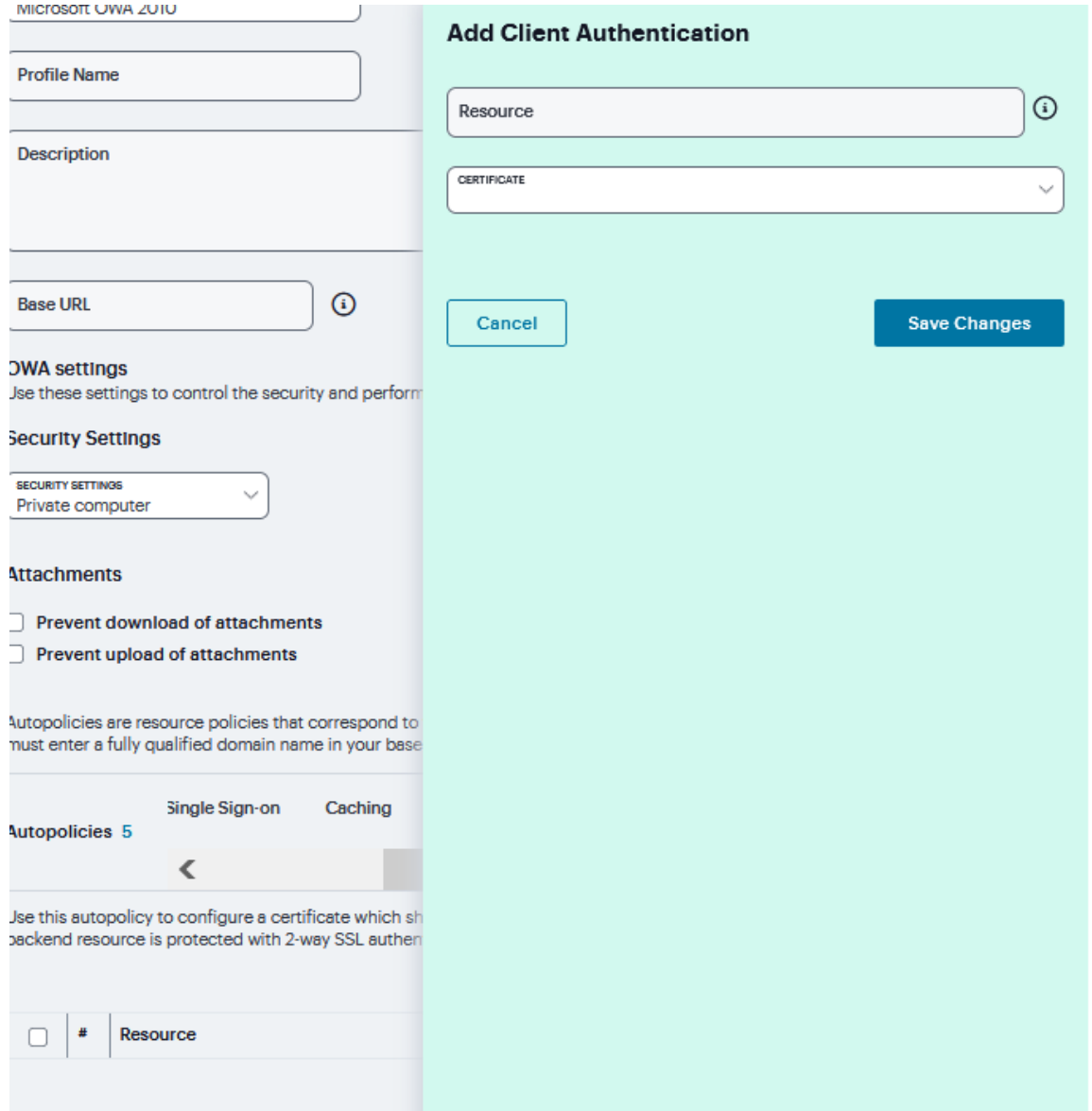
- Under **Caching**, click '+' and specify the resources to which this policy applies in the **Resource** field and select the **Action** from drop down and click **Save Changes**.

The screenshot displays the configuration interface for a resource profile. On the left, there are fields for 'Profile Name', 'Description', and 'Base URL'. Below these are sections for 'OWA settings', 'Security Settings' (with a dropdown menu), and 'Attachments' (with checkboxes for preventing download and upload). At the bottom, there is a table for 'Autopolicies' with columns for checkboxes, an ID column, a 'Resource' column, and an 'Action' column. On the right, a light green 'Caching' panel is overlaid, featuring a 'Resource' text input field, an 'ACTION' dropdown menu with an information icon, and two buttons: 'Cancel' and 'Save Changes'.

- Under **Web Compression**, click '+' and specify the resources to which this policy applies in the **Resource** field and select the **Action** from drop-down and click **Save Changes**.

The screenshot displays the configuration interface for adding web compression. On the left, the 'Microsoft OWA 2010' resource profile is selected. The main configuration area includes fields for 'Profile Name', 'Description', and 'Base URL'. Below these are 'OWA settings' (with a note to control security and performance), 'Security Settings' (set to 'Private computer'), and 'Attachments' (with checkboxes for preventing download and upload). A note at the bottom explains that autopolicies are resource policies that require fully qualified domain names in base URLs. At the bottom of the main area, a navigation bar shows 'Autopolicies 5' and tabs for 'Web Access Control', 'Single Sign-on', 'Caching', and 'Web'. On the right, a light green panel titled 'Add Web Compression' contains a 'Resource' field, an 'ACTION' dropdown menu, and 'Cancel' and 'Save Changes' buttons.

- Under **Client Authentication**, click '+' and specify the resources to which this policy applies in the **Resource** field and select the **Certificate** from drop down and click **Save Changes**.



## Lotus iNotes Versions

A Lotus iNotes template is a resource profile that controls access to the Web application and configures iNotes settings as necessary. Lotus iNotes templates significantly reduce your configuration time by consolidating settings into one place and by prepopulating a variety of resource policy settings for you depending on the type of setup you select.



The system supports intermediating traffic to Lotus iNotes through a Web rewriting resource profile template, JSAM, PSAM, and VPN Tunneling. This topic describes how to configure access using the Web rewriting template. The prepopulated values vary depending on the version of iNotes you select and are based on the most common deployment of the servers.

If any of the **Lotus iNotes** versions resource profile are selected as Profile Template, then

1. Enter the **URL** of the Lotus iNotes resource to which you want to control access In the Base URL box.
2. Under **iNotes settings**, select **Caching Settings**, select **Allow caching on client** to let Web browsers store non-user data, such as Javascript and CSS files, on a user's machine. Select **Minimize caching on client to allow** the system to send a cache-control:no-store header or a cache-control:no-cache header based on the user's Web browser and content type. This is the same as smart caching.

The Allow caching on client option caches content that the backend iNotes server typically caches. This caching option improves performance by using the cached content instead of retrieving the content from the server the next time the page displays. The Minimize caching on client option provides security by sending a cache-control:no-store header or a cache-control:no-cache header to either not store content or to re-validate the cached content each time it is requested. With both caching option, you can choose to either allow or prevent the uploading or downloading of attachments.

3. Select **Prevent download of attachments** to prohibit users from downloading attachments to their systems.

4. Select **Prevent upload of attachments** to prevent users from transmitting (uploading) attachments to the system.

NODE68-SULTHAN / RESOURCE PROFILES / WEB APPLICATION RESOURCE PROFILES

### New Web Application Resource Profile ⓘ

Configure Profile >

PROFILE TEMPLATE/TYPE  
Lotus iNotes 7

Profile Name

Description

Base URL ⓘ

**iNotes settings**  
Use these settings to control the security and performance of iNotes.

**Caching**

CACHING  
Allow caching on client (maximize performan... ⌵

**Attachments**

Prevent download of attachments

**Prevent upload of attachments**

Autopolicies are resource policies that correspond to this resource profile. In order for your autopolicies to work effectively, you must enter a fully qualified domain name in your base URLs.

Autopolicies 5

Web Access Control   Single Sign-on   Caching   Web Compression   **ADD AUTOPOLICY**

Use this autopolicy to configure a certificate which should be presented during SSL handshake for a host:port combination, if the backend resource is protected with 2-way SSL authentication.

<input type="checkbox"/>	#	Resource	Certificate

5. Click **Add Autopolicy**, check box to create a policy and click **Add Selected**.

### ADD POLICY

Select one or more autopolicies to include in this resource profile.

<input checked="" type="checkbox"/> <b>Web Access Control</b>	Control access to web servers and URLs.
<input type="checkbox"/> <b>Single Sign-on</b>	Automatically pass user credentials to the Web application.
<input checked="" type="checkbox"/> <b>Caching</b>	Control which Web content is cached on a user's machine.
<input checked="" type="checkbox"/> <b>Web Compression</b>	Bypass compressing Web content.
<input type="checkbox"/> <b>Client Authentication</b>	Configure a certificate which should be presented during SSL handshake for a host:port combination, if the backend resource is protected with 2-way SSL authentication.

**CLOSE**      **ADD SELECTED**

- Under **Web Access Control**, click '+' specific **Resource** under the Base URL. Enter the full URL of the resource, select **Allow** or **Deny**, and click **Save Changes**.

The screenshot displays the configuration interface for a resource profile. On the left, the 'PROFILE TEMPLATE/TYPE' is set to 'Microsoft OWA 2010'. Below this are input fields for 'Profile Name', 'Description', and 'Base URL'. The 'Base URL' field includes an information icon. Under 'OWA settings', there is a note: 'Use these settings to control the security and performance of OWA.' The 'Security Settings' section has a dropdown menu currently set to 'Private computer'. The 'Attachments' section contains two unchecked checkboxes: 'Prevent download of attachments' and 'Prevent upload of attachments'. A note states: 'Autopolicies are resource policies that correspond to this resource profile. In order for you must enter a fully qualified domain name in your base URLs.' At the bottom, there are tabs for 'Web Access Control', 'Single Sign-on', 'Caching', and 'Web'. The 'Autopolicies 5' section shows a scrollable list with a table header: 

<input type="checkbox"/>	#	Resource	Action
--------------------------	---	----------	--------

. On the right, the 'Add Web Access Control' panel is highlighted in light green. It features a 'Resource' input field with an information icon, an 'ACTION' dropdown menu, and two buttons: 'Cancel' and 'Save Changes'.

- Under **Single Sign-on**, select the **SSO** from drop down and specify the application's sign-in page in **Resource** field and select user's **Credentials** and click **Save Changes**.

The screenshot shows the 'Single Sign-on' configuration page within the 'Autopolicies' section. The page has a navigation bar with tabs for 'Web Access Control', 'Single Sign-on', 'Caching', and 'Web Compression'. The 'Single Sign-on' tab is active. Below the navigation bar, there is a breadcrumb 'Autopolicies 4' and an 'ADD AUTOPOLICY' button. A horizontal scroll bar is visible below the navigation bar. The main content area contains the instruction: 'Use this autopolicy to automatically pass user credentials to the Web application.' Below this instruction are three input fields: a dropdown menu labeled 'SELECT SSO' with 'Basic Auth' selected, a text input field labeled 'Resource \*', and another dropdown menu labeled 'CREDENTIAL' with 'Default' selected. At the bottom of the form are two buttons: 'Cancel' and 'Save Changes'.

- Under **Caching**, click '+' and specify the resources to which this policy applies in the **Resource** field and select the **Action** from drop down and click **Save Changes**.

The screenshot displays the configuration interface for a resource profile. On the left, there are fields for 'Profile Name', 'Description', and 'Base URL'. Below these are sections for 'OWA settings', 'Security Settings' (with a dropdown menu set to 'Private computer'), and 'Attachments' (with checkboxes for 'Prevent download of attachments' and 'Prevent upload of attachments'). At the bottom, there is a section for 'Autopolicies' with a tabbed interface showing 'Web Access Control', 'Single Sign-on', 'Caching', and 'Web'. The 'Caching' tab is active, and a table below it shows one policy with the resource '/\*' and action 'unchanged'. On the right, a light green 'Caching' panel is overlaid, featuring a 'Resource' input field, an 'ACTION' dropdown menu with an information icon, and 'Cancel' and 'Save Changes' buttons.

- Under **Web Compression**, click '+' and specify the resources to which this policy applies in the **Resource** field and select the **Action** from drop down and click **Save Changes**.

The screenshot displays the configuration interface for adding web compression. On the left, the main configuration area includes a dropdown menu for 'Microsoft OWA 2010', a 'Profile Name' text field, a 'Description' text area, a 'Base URL' text field with an information icon, and sections for 'OWA settings', 'Security Settings' (with a dropdown for 'Private computer'), and 'Attachments' (with checkboxes for preventing download and upload of attachments). On the right, a light green 'Add Web Compression' panel contains a 'Resource' text field, an 'ACTION' dropdown menu, and 'Cancel' and 'Save Changes' buttons. At the bottom, a navigation bar shows 'Autopolicies 5' and tabs for 'Web Access Control', 'Single Sign-on', 'Caching', and 'Web'.

10. Under **Client Authentication**, click '+' and specify the resources to which this policy applies in the **Resource** field and select the **Certificate** from drop down and click **Save Changes**.

The screenshot shows the 'Add Client Authentication' dialog box. The dialog is titled 'Add Client Authentication' and is overlaid on a configuration page for 'MICROSOFT OWA 2010'. The dialog contains the following elements:

- A text input field labeled 'Resource' with an information icon (i) to its right.
- A dropdown menu labeled 'CERTIFICATE' with a downward arrow.
- A 'Cancel' button.
- A 'Save Changes' button.

The background configuration page shows fields for 'Profile Name', 'Description', 'Base URL', 'OWA settings', 'Security Settings' (set to 'Private computer'), 'Attachments' (with checkboxes for 'Prevent download of attachments' and 'Prevent upload of attachments'), and 'Autopolicies' (with tabs for 'Single Sign-on' and 'Caching').

## Microsoft Sharepoint

A Microsoft Sharepoint template is a resource profile that controls access to the application and configures Sharepoint settings as necessary. Microsoft Sharepoint templates significantly reduce your configuration time by consolidating configuration settings into one place and by pre-populating a variety of resource policy settings for you depending on the type of setup you select.



The system supports intermediating traffic to Microsoft Sharepoint through a Web rewriting resource profile template, JSAM, PSAM, and VPN Tunneling. This topic describes how to configure access using the Web rewriting template.

If **Microsoft Sharepoint** resource profile selected as Profile Template, then

1. Enter the URL of the Sharepoint resource to which you want to control access In the Base URL box. Use the format: *[protocol://]host[:port][path]*.
2. Under Sharepoint Settings, select **Allow in-line editing of documents within explorer view** to allow users to modify files displayed in the explorer view.
3. Click '+' to add the Resource and click **Save Resource**.
4. Enter the number of minutes a persistent cookie resides on a user's computer before it expires in the **Persistent cookie** timeout box.

NODE66-SULTHAN / RESOURCE PROFILES / WEB APPLICATION RESOURCE PROFILES

### New Web Application Resource Profile ⓘ

Configure Profile >

PROFILE TEMPLATE/TYPE  
Microsoft Sharepoint

Profile Name

Description

Base URL ⓘ

**Sharepoint settings**  
Use these settings to control the security and usability of Sharepoint.

**Allow in-line editing of documents within explorer view** Enabling this option requires setting a time-limited persistent cookie.

Add Web ACL for Office Web Apps server if its different from SharePoint server.  
Autopolicies are resource policies that correspond to this resource profile. In order for your autopolicies to work effectively, you must enter a fully qualified domain name in your base URLs.

Web Access Control | Single Sign-on | Caching | Rewriting Options | ADD AUTOPOLICY

Autopolicies 6 < >

Use this autopolicy to control access to web servers and URLs. + + ✎ 🗑️ +

<input type="checkbox"/>	#	Resource	Action
No Data Available			

Cancel Save Changes

5. Click **Add Autopolicy**, check box to create a policy and click **Add Selected**.

### ADD POLICY

Select one or more autopolicies to include in this resource profile.

<input checked="" type="checkbox"/> <b>Web Access Control</b>	Control access to web servers and URLs.
<input type="checkbox"/> <b>Single Sign-on</b>	Automatically pass user credentials to the Web application.
<input type="checkbox"/> <b>Caching</b>	Control which Web content is cached on a user's machine.
<input type="checkbox"/> <b>Rewriting Options</b>	Bypass rewriting content through the Content Intermediation Engine.
<input type="checkbox"/> <b>Web Compression</b>	Bypass compressing Web content.
<input type="checkbox"/> <b>Client Authentication</b>	Configure a certificate which should be presented during SSL handshake for a host:port combination, if the backend resource is protected with 2-way SSL authentication.

**CLOSE**      **ADD SELECTED**

- Under **Web Access Control**, click '+' specific **Resource** under the Base URL. Enter the full URL of the resource, select **Allow** or **Deny**, and click **Save Changes**.

The screenshot displays the configuration interface for a resource profile. On the left, the 'Microsoft OWA 2010' profile is selected. Fields include 'Profile Name', 'Description', and 'Base URL'. Below these are sections for 'OWA settings', 'Security Settings' (set to 'Private computer'), and 'Attachments' (with checkboxes for preventing download and upload). A 'Web Access Control' tab is active, showing a table of autopolices. On the right, a teal 'Add Web Access Control' panel is overlaid, featuring a 'Resource' input field, an 'ACTION' dropdown menu, and 'Cancel' and 'Save Changes' buttons.

**Profile Template/Type**  
Microsoft OWA 2010

**Profile Name**

**Description**

**Base URL** ⓘ

**OWA settings**  
Use these settings to control the security and performance of OWA.

**Security Settings**  
SECURITY SETTINGS  
Private computer

**Attachments**

- Prevent download of attachments
- Prevent upload of attachments

Autopolicies are resource policies that correspond to this resource profile. In order for you must enter a fully qualified domain name in your base URLs.

**Autopolicies 5**

Web Access Control | Single Sign-on | Caching | Web

<input type="checkbox"/>	#	Resource	Action

Use this autopolicy to control access to web servers and URLs.

**Add Web Access Control**

Resource ⓘ

ACTION

Cancel Save Changes

7. Under **Single Sign-on**, select the **SSO** from drop down and specify the application's sign-in page in **Resource** field and click **Save Changes**.

The screenshot shows a configuration interface for an autopolicy. At the top, there are navigation tabs: "Autopolicies 3", "Web Access Control", "Single Sign-on" (which is the active tab), "Rewriting Options", and "ADD AUTOPOLICY". Below the tabs, there is a descriptive text: "Use this autopolicy to automatically pass user credentials to the Web application." The main configuration area contains a dropdown menu labeled "SELECT SSO" with "Disable SSO" selected. Below this is a text input field labeled "Resource \*". At the bottom left is a "Cancel" button, and at the bottom right is a "Save Changes" button.

- Under **Caching**, click '+' and specify the resources to which this policy applies in the **Resource** field and select the **Action** from drop down and click **Save Changes**.

The screenshot displays the configuration interface for a resource profile. On the left, there are fields for 'Profile Name', 'Description', and 'Base URL'. Below these are sections for 'OWA settings', 'Security Settings' (with a dropdown menu set to 'Private computer'), and 'Attachments' (with checkboxes for 'Prevent download of attachments' and 'Prevent upload of attachments'). At the bottom, there is a section for 'Autopolicies' with a tabbed interface showing 'Web Access Control', 'Single Sign-on', 'Caching', and 'Web'. The 'Caching' tab is active, and a table below it shows one policy with the resource '/\*' and action 'unchanged'. On the right, a light green 'Caching' panel is overlaid, containing a 'Resource' input field, an 'ACTION' dropdown menu, and 'Cancel' and 'Save Changes' buttons.

9. Under Rewriting Options, select the Rewriting Options:

- **Passthrough Proxy** - Select this option to specify Web applications for which the Content Intermediation Engine performs minimal intermediation.
- **No rewriting (use WSAM)** - Select this option to intermediate content using PSAM instead of the Content Intermediation Engine. Then, specify the application server for which you want to intermediate content. (At minimum, you need to click Add in order to intermediate content to and from the server that the system extracts from the Web access control policy).
- **No rewriting (use JSAM)** - Select this option to intermediate content using JSAM instead of the Content Intermediation Engine. Then, specify the application server for which you want to intermediate content. (At minimum, you need to click Add in order to intermediate content to and from the server that the system extracts from the Web access control policy).
- **No rewriting** - Select this option to automatically create a selective rewriting policy for the autopolicy's URL, thereby configuring the system to not intermediate any content to and from the resource. For example, you may choose this option if you do not want the system to intermediate traffic from web sites that reside outside of the corporate network, such as yahoo.com. If you select this option, you do not have to configure any additional rewriting settings.

If **Passthrough Proxy** is selected:

1. Choose the way in which you want to enable the passthrough proxy feature:

- **Use virtual hostname** - If you choose this option, specify a hostname alias for the application server. When the system receives a client request for the application server hostname alias, it forwards the request to the specified application server port in the Base URL field.
- **Use IVE port** - If you choose this option, specify a unique port in the range 11000-11099. The system listens for client requests to the application server on the specified port and forwards any requests to the application server port specified in the Base URL field.

2. Select the **Rewrite XML** check box if you want to rewrite URLs contained within XML content. If this option is disabled, the system passes the XML content "as is" to the server.
3. Select the **Rewrite external links** check box if you want to rewrite all the URLs presented to the proxy. If this option is disabled, the system rewrites only those URLs where the hostname is configured as part of the passthrough proxy policy.
4. Select the **Block cookies from being sent to the browser** check box if you want to block cookies destined for the client's browser. The system stores the cookies locally and sends them to applications whenever they are requested.
5. Select the **Host-Header forwarding** check box if you want to pass the hostname as part of the host header instead of the actual host identifier. click **Save Changes**.

The screenshot shows the 'Rewriting Options' configuration panel for 'Autopolicies 1'. The panel has a title bar with 'Autopolicies 1', 'Rewriting Options', and 'ADD AUTOPOLICY'. Below the title bar, there is a text instruction: 'Use this autopolicy to bypass rewriting content through the Content Intermediation Engine.' A dropdown menu labeled 'REWRITING OPTIONS' is set to 'Passthrough Proxy'. Below this, a text instruction reads: 'A passthrough proxy will be configured based on the following:'. A second dropdown menu labeled 'CONFIGURED' is set to 'Use virtual hostname'. Below that is a text input field for 'Hostname' with an information icon to its right. A section titled 'Select what you want rewritten for this application.' contains four unchecked checkboxes: 'Rewrite XML', 'Rewrite external links', 'Block cookies from being sent to the browser', and 'Host-Header forwarding'. At the bottom left is a 'Cancel' button, and at the bottom right is a 'Save Changes' button.

If **No rewriting (use WSAM)** is selected

1. Create a rewriting autopolicy and select No rewriting (use WSAM).
2. In the **Destination** field, specify resources for which PSAM secures client/server traffic between the client and the system. By default, the system extracts the correct server from the Web access control policy. You may choose to use this server as-is, modify it, and/or add new servers to the list.

When specifying a server, specify the hostname (the wild cards '\*' or '?' are accepted) or an IP/netmask pair. Specify multiple ports for a host as separate entries.

3. Click **Save Changes**.

The screenshot displays the configuration interface for WSAM Destination. The main form on the left includes fields for Profile Name, Description, and Base URL. Below these are Sharepoint settings, including a checkbox for 'Allow in-line editing of documents within explorer view'. At the bottom, there are tabs for 'Autopolicies 1' and 'Rewriting Options', with the latter selected. A dropdown menu under 'REWRITING OPTIONS' is set to 'No rewriting (use WSAM)'. Below this is a table for 'Allowed WSAM servers' with columns for a checkbox, a '#' symbol, and 'Destination'. The right panel, titled 'WSAM Destination', contains a 'Destination' input field with an information icon, and 'Cancel' and 'Save Changes' buttons at the bottom.

If **No rewriting (use JSAM)** options is selected:



1. In the **Server Name** field, enter the DNS name of the application server or the server IP address.
2. In the **Server Port** field, enter the port on which the remote server listens for client connections.
  - For example, to forward Telnet traffic from a remote machine, specify port 23 for both the client port (on which JSAM listens) and the server port (on which the Telnet server listens).
  - To enable drive mapping to this resource, enter 139 as the server port.
3. In the **Client Loopback IP** field, provide a static loopback address. If you do not provide a static IP loopback address, the system assigns an IP loopback address dynamically.

4. In the **Client Port** field, enter the port on which JSAM should listen for client application connections.

Typically, the local port value is the same value as the server port; the local port value usually only differs for Linux or Macintosh users who want to add applications for port forwarding that use ports under 1024.

To enable drive mapping to this resource, enter 139 as the server port.

Base URL ?

**Sharepoint settings**  
Use these settings to control the security and usability of Sharepoint.

**Allow in-line editing of documents within explorer view** Enabling this option requires a persistent cookie.

Add Web ACL for Office Web Apps server if its different from SharePoint server.


Autopolicies are resource policies that correspond to this resource profile. In order for you to use them, you must enter a fully qualified domain name in your base URLs.

**Autopolicies 1** **Rewriting Options**

Use this autopolicy to bypass rewriting content through the Content Intermediation Engine.

REWRITING OPTIONS  
No rewriting (use JSAM) v

JSAM secures traffic destined for the following server(s). It listens for this traffic on a local IP address you specify (valid loopback addresses are 127.0.0.1 or 127.0.10.x and higher). JSAM will automatically use the local loopback addresses if you leave them blank. If you leave the Client Port blank, JSAM will use the default client port.

<input type="checkbox"/>	#	Server Name	Server Port	Client Loopback IP
 <b>No Data Available</b>				

**Launch JSAM**

Cancel

**JSAM Server**

Server Name \*

Server Port \*

Client Loopback IP

Client Port

Cancel
Save Changes

10. Select **Launch JSAM** to automatically start JSAM when the system encounters the Base URL.

11. Click **Save Changes**.

If **No rewriting** options is selected, then only selective rewriting resource policy is created.

The screenshot shows a configuration interface for Autopolicies. At the top, there are three tabs: 'Autopolicies 1', 'Rewriting Options' (which is active and underlined), and 'ADD AUTOPOLICY'. Below the tabs, there is a text instruction: 'Use this autopolicy to bypass rewriting content through the Content Intermediation Engine.' Underneath this instruction is a dropdown menu labeled 'REWRITING OPTIONS' with 'No rewriting' selected. Below the dropdown, a message states: 'A selective rewriting resource policy will be created.' At the bottom of the form, there are two buttons: 'Cancel' on the left and 'Save Changes' on the right.

- Under **Web Compression**, click '+' and specify the resources to which this policy applies in the **Resource** field and select the **Action** from drop down and click **Save Changes**.

The screenshot displays the configuration interface for adding a web compression policy. On the left, the main configuration area includes a dropdown menu for the resource type (currently set to 'Microsoft OWA 2010'), a text input for 'Profile Name', a larger text area for 'Description', a text input for 'Base URL' with an information icon, and a section for 'OWA settings' with a note: 'Use these settings to control the security and performance of OWA.' Below this is a 'Security Settings' section with a dropdown menu (currently 'Private computer') and an 'Attachments' section with two unchecked checkboxes: 'Prevent download of attachments' and 'Prevent upload of attachments'. At the bottom of the main area, there is a breadcrumb trail: 'Autopolicies 5' followed by tabs for 'Web Access Control', 'Single Sign-on', 'Caching', and 'Web'. On the right, a light green panel titled 'Add Web Compression' contains a 'Resource' text input, an 'ACTION' dropdown menu, and two buttons: 'Cancel' and 'Save Changes'.

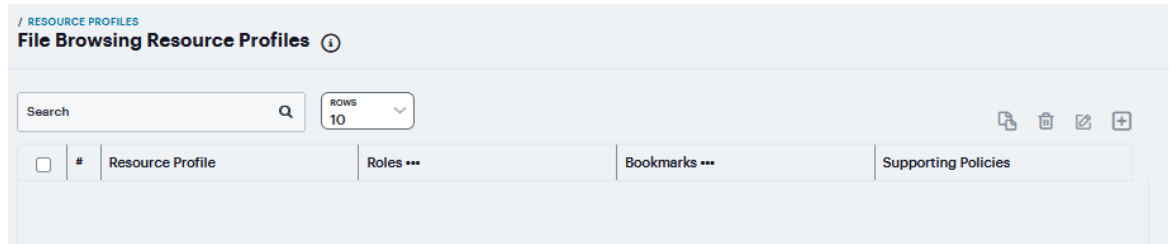
- Under **Client Authentication**, click '+' and specify the resources to which this policy applies in the **Resource** field and select the **Certificate** from drop down and click **Save Changes**.

The screenshot displays the Microsoft OWA 2019 administration interface. On the left, the 'MICROSOFT OWA 2019' settings page is visible, showing fields for Profile Name, Description, Base URL, and Security Settings. The 'Security Settings' dropdown is set to 'Private computer'. Below this, there are sections for Attachments and Autopolicies. On the right, a light green 'Add Client Authentication' dialog box is open. It contains a 'Resource' text input field, a 'CERTIFICATE' dropdown menu, and two buttons: 'Cancel' and 'Save Changes'.

## File Browsing

To create a Windows file browsing resource profile:

1. Navigate to **Users > Resource Profiles > Files**.
2. Click '+'. Or select an existing profile from the list.



3. Select **Windows** from the Type list.
4. Enter a unique **Name** and optionally a **Description** for the resource profile. (This name becomes the default session bookmark's name.)
5. Enter the **Server name** to share.

- If required, select to **show All AutoPolicy** types.

**Resource** ⓘ

Resource >

TYPE\*  
Windows

Name\*


Description

server\share ⓘ

**Autopolicies**  
Autopolicies are resource policies that correspond to this resource profile.

Show All Autopolicy Types >

**Autopolicy: Windows File Access Control**  
Use this autopolicy to control access to file directories and servers.

<input type="checkbox"/>	#	Resource	Action
 No Data Available			

Cancel Save Changes

- Check **Autopolicy Windows File Access Control** to set the file access control.



- Click '+' to add specific **Resource**. Enter the full URL of the resource, select **Allow**, **Deny** or **Read Only**, and click **Save Changes**.

Windows

Name \*

Description

server\share

**Autopolicies**  
Autopolicies are resource policies that correspond to this resource profile.

Hide All Autopolicy Types <

**Autopolicy: Windows File Access Control**  
Use this autopolicy to control access to file directories and servers.

<input type="checkbox"/>	#	Resource	Action
No Data Available			

**Autopolicy: Windows File Compression**  
Use this autopolicy to compress file content.

**Autopolicy: Windows Server Single Sign-On**  
Use this autopolicy to automatically pass user credentials to the Windows server.

Cancel

**File Access Control**

Resource

ACTION  
ALLOW

Cancel Save Changes

- Check **Autopolicy: Windows File Compression** to set the file access control.

- Click '+' to add specific resource. Enter the full URL of the resource, select **Compress** or **Do not Compress**, and click **Save Changes**.

**Autopolicy: Windows File Access Control**  
Use this autopolicy to control access to file directories and servers.

<input type="checkbox"/>	#	Resource	Action
No Data Available			

**Autopolicy: Windows File Compression**  
Use this autopolicy to compress file content.

<input type="checkbox"/>	#	Resource	Action
No Data Available			

**File Compression**

Resource

ACTION

- Under **Autopolicy: Windows Server Single Sign-On**, select the **SSO** from drop down and specify the application's sign-in page in **Resource** field and click **Save Changes**.

**Autopolicy: Windows Server Single Sign-On**  
Use this autopolicy to automatically pass user credentials to the Windows server.

Resource

SINGLE SIGN ON

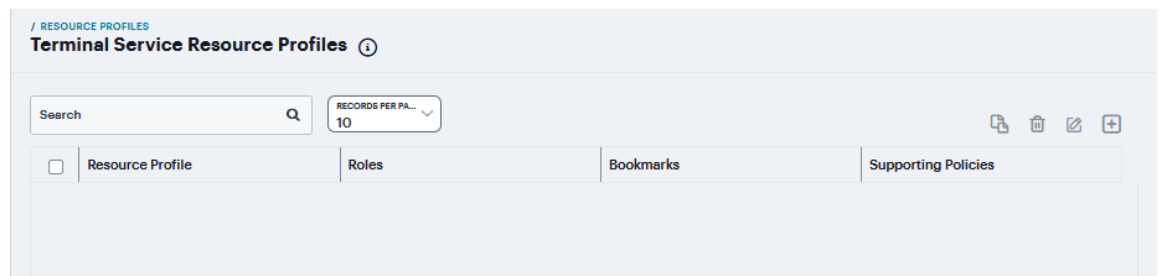
## Terminal Services

Terminal Services resource profile configuration instructions vary depending on whether you want to configure access to a Windows terminal server (which requires an RDP client) or Citrix terminal server (which requires an ICA client). Furthermore, if you choose to configure access to a Citrix server using a custom ICA file, you include many of your configuration settings in the ICA file itself and therefore do not need to configure them through the system.

If you configure access to a Citrix server using the default ICA file on the system, however, you must configure additional settings. You may want to create multiple bookmarks for the same terminal services resource in order to provide easy access to multiple applications. For instance, the server defined in your resource profile may provide access to multiple applications (such as Siebel and Outlook). To easily provide access to each of these applications, you can create resource profile bookmarks to each. Or, you may want to use multiple bookmarks to configure single sign-on to one application, but not another.

To create a terminal services resource profile:

1. Navigate to **Users > Resource Profiles > Terminal Services**.
2. Click '+'. Or select an existing profile from the list.



3. If **Windows Terminal Services** is selected from the Type list.
  1. Enter a unique Name and optionally a description for the resource profile. (This name becomes the default session bookmark's name.)
  2. Specify the server and port to which this resource profile should connect in the Host field. When entering the server, you may enter a hostname or IP address.
  3. Enter the port on which the terminal server listens in the Server port box. (By default, the system populates this box with port number 3389.)
  4. Select the **Create an access control policy allowing Terminal Service access to this server** check box to enable access to the server specified in the Server Port box (enabled by default).

- If you want to enable intermediation using a Java client, select **Enable Java support** and then specify which Java client the system should use.

**New Terminal Service Resource Profile** ⓘ

Resource >

TYPE  
Windows Terminal Services

Name \*

Description

Host \* ⓘ

SERVER PORT \*  
3389

Create an access control policy allowing Terminal Service access to this server.

Enable Java support

APPLET TO USE \*  
Size: N/A bytes  
Uploaded: N/A

Edit List...

CRITERIA ⓘ

- Select the Java applet that you want to associate with the resource profile from the **Applet to use** list. Or, if the applet that you want to use is not currently available in the list, click **Edit list**.
- Click '+' to add an applet to this list.
- Enter **Name** to identify the applet.

**Java Applets**

You are about to load third party software onto the Pulse Secure product. By clicking "OK" you are agreeing to the following terms on behalf of yourself (as purchaser of the equipment) or the organization that purchased the Pulse Secure product, as applicable. By loading third party software onto the Pulse Secure product, you are responsible for obtaining all rights necessary for using, copying, and/or distributing such software in or with the Pulse Secure product. Pulse Secure is not responsible for any liability arising from use of such third party software and will not provide support for interference with the proper operation of the Pulse Secure product and/or Pulse Secure software, and may void any warranty for the Pulse Secure product and/or Pulse Secure software.

	Name	Filename	Details
+	Premier Java RDP Applet	Default RDP Applet Version 4.1	Default RDP Applet Version 4.1

**New Applet**

Name

Filename

Uncompress archive file

Cancel OK

- Click the text field to browse to the applet that you want to upload.

10. Select the **Uncompress archive file** check box if the file that you selected is an archive that contains the applet. Click **OK**.
11. Select the **Criteria** from the drop down. If the Windows client launches, then this Java applet will not be used.
12. Click **Save Changes**.



When you select an applet in the Java Applets dialog box, you are loading third-party software onto the Ivanti product. By clicking OK, you are agreeing to the following terms on behalf of yourself (as purchaser of the equipment) or the organization that purchased the Ivanti product, as applicable.

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4. If **Citrix using default ICA** is selected from the Type list.
  1. Enter a unique Name and optionally a description for the resource profile. (This name becomes the default session bookmark's name).
  2. Specify the server and port to which this resource profile should connect in the Host field. When entering the server, you may enter a hostname or IP address.
  3. Enter the port on which the terminal server listens in the Server port box. (By default, the system populates this box with port number 3389).
  4. Select the **Create an access control policy allowing Terminal Service access to this server** check box to enable access to the server specified in the Server Port box (enabled by default).

- If you want to enable intermediation using a Java client, select **Enable Java support** and then specify which Java client the system should use.

**New Terminal Service Resource Profile**

Resource >

TYPE  
Citrix using default ICA

Name \*

Description

Host \*

SERVER PORT \*  
1494

Create an access control policy allowing Terminal Service access to this server.

Enable Java support

APPLET TO USE \*  
None

Size: N/A bytes  
Uploaded: N/A

Edit List...

HTML \*

FOR PROPER RDP APPLETS, "NET.PROPERO.RDP.RDPAPPLET.CLASS" IS USED AS THE APPLETS CLASS. FOR ICA, "COM.CITRIX.ICA" IS USED AS THE APPLETS CLASS. THE FOLLOWING VARIABLES CAN BE USED IN YOUR HTML. THEY ARE REPLACED BASED ON BOOKMARK VALUES.

<<NODE>>  
<<PORT>>  
<<SERVERPORT>>  
<<CLIENTPORT>>  
<<HEIGHT>>  
<<WIDTH>>

IN ADDITION TO THESE VALUES, SYSTEM VARIABLES CAN BE USED IN THE HTML. FOR EXAMPLE, <<USERATTR.MYSERVER>> CAN BE USED IF YOU HAVE MYSERVER CONFIGURED AS AN AD OR LDAP ATTRIBUTE.

Reset HTML

CRITERIA

Cancel

Save Changes

- Select the Java applet that you want to associate with the resource profile from the **Applet to use** list. Or, if the applet that you want to use is not currently available in the list, click **Edit list**.

Java Applets

You are about to load third party software onto the Pulse Secure product. By clicking "OK", you are agreeing to the following terms on behalf of yourself (as purchaser of the equipment) or the organization that purchased the Pulse Secure product, as applicable. By loading third party software onto the Pulse Secure product, you are responsible for obtaining all rights necessary for using, copying, and/or distributing such software in or with the Pulse Secure product. Pulse Secure is not responsible for any liability arising from use of such third party software and will not provide support for interference with the proper operation of the Pulse Secure product and/or Pulse Secure software, and may void any warranty for the Pulse Secure product and/or Pulse Secure software.

	Name	Filename	Details
+	Premier Java RDP Applet	Default RDP Applet Version 41	Default RDP Applet Version 41

New Applet

Name

Uncompress archive file

Cancel OK

- Click '+' to add an applet to this list.
- Enter **Name** to identify the applet.



9. Click the text field to browse to the applet that you want to upload.
10. Select the **Uncompress archive file** check box if the file that you selected is an archive that contains the applet. Click **OK**.
11. Enter HTML with variables to replace the bookmark.
12. Select the **Criteria** from the drop down. If the Windows client launches, then this Java applet will not be used.
13. Click **Save Changes**.

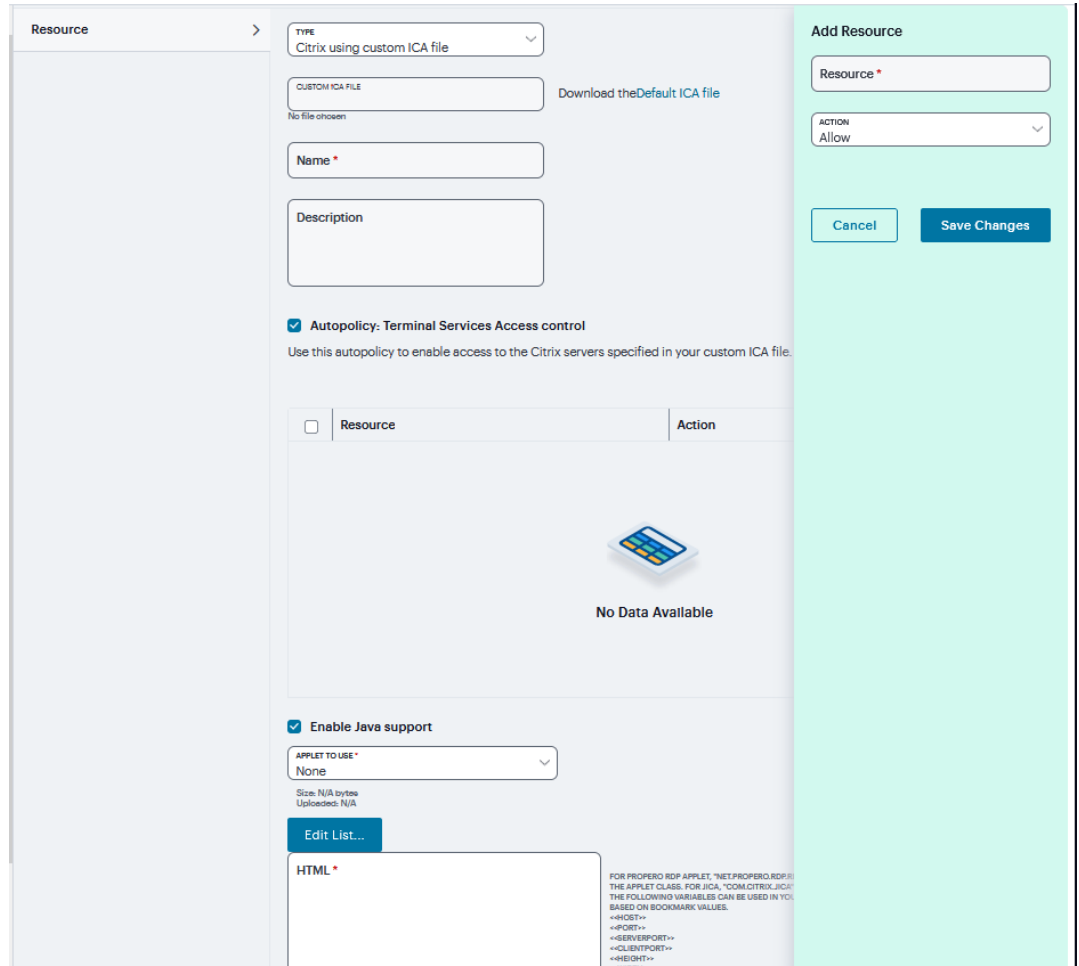


When you select an applet in the Java Applets dialog box, you are loading third-party software onto the Ivanti product. By clicking OK, you are agreeing to the following terms on behalf of yourself (as purchaser of the equipment) or the organization that purchased the Ivanti product, as applicable.

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5. If **Citrix using custom ICA file** is selected from the **Type** list.
  1. Specify the ICA file that contains the session parameters that you want use in the Custom ICA File box. Note that you may download and customize the following ICA files from the system.
    - ICA file that comes with the system-To customize this file, click the Open link, save the file to your local machine, customize the file as required, and upload it back to the system using the Browse option. If you customize this file, you must replace the following parameters in the default.ica file: <CITRIX\_CLIENT\_NAME>, <APPDATA> and <TARGET\_SERVER>.
    - ICA file that you have already associated with the resource profile-To customize this file, click the Current ICA File link, save the file to your local machine, and customize the file as required. Once you make changes, you must upload the revised version using the Browse option.
  2. Enter a unique **Name** and optionally a **Description** for the resource profile. (This name becomes the default session bookmark's name.)
  3. Select the Autopolicy: Terminal Services Access Control check box.
  4. Click '+' and Specify the Metaframe servers to which you want to enable access in the **Resource** field.
  5. Choose **Allow** to enable access to the specified resource or **Deny** to block access to the specified resource from the **Action** list. Click **Save Changes**.

- Specify the server and port to which this resource profile should connect in the Host field. When entering the server, you may enter a hostname or IP address.



- If you want to enable intermediation using a Java client, select **Enable Java support** and then specify which Java client the system should use.
- Select the Java applet that you want to associate with the resource profile from the **Applet to use** list. Or, if the applet that you want to use is not currently available in the list, click **Edit list**.



- Click '+' to add an applet to this list.

10. Enter **Name** to identify the applet.
11. Click the text field to browse to the applet that you want to upload.
12. Select the **Uncompress archive file** check box if the file that you selected is an archive that contains the applet. Click **OK**.
13. Enter **HTML code** with variables to replace the bookmark.
14. Select the **Criteria** from the drop down. If the Windows client launches, then this Java applet will not be used.
15. Click **Save Changes**.

6. If **Citrix Listed Applications** is selected from the Type list:
  1. Enter a unique **Name** and optionally a **Description** for the resource profile. (This name becomes the default session bookmark's name.)
  2. Enter the IP address and port of the Citrix MetaFrame server where the XML service is running.
    - You do not need to enter the port number if you are using the default value. The default port is 80 (if SSL is selected, the default port is 443).
    - You can enter more than one server. If the connection fails on one server, the next server in the list is used.
  3. Click the **Use SSL for connecting to Citrix XML Service** check box to send the password through SSL instead of cleartext.

Although cleartext is supported, we recommend you always use SSL to avoid any security issues.
  4. Enter the **Username**, **Password**, and **Domain** name for connecting to the Citrix Metaframe server where the XML service is running.
    - You can enter variable credentials such as <USERNAME> and <PASSWORD>. If you use variable credentials, the Subset of selected Applications option is disabled in the Bookmarks window.
    - When the user accesses the application list, their credentials are submitted to the Citrix XML service, substituting the session context variables <USERNAME> and <PASSWORD>. Only the user's specific applications (as determined by the Citrix administrator) are returned.
  5. Select the Autopolicy: Terminal Services Access Control check box.
  6. Click '+' and Specify the Metaframe servers to which you want to enable access in the **Resource** field.
  7. Choose **Allow** to enable access to the specified resource or **Deny** to block access to the specified resource from the **Action** list. Click **Save Changes**.

- Specify the server and port to which this resource profile should connect in the Host field. When entering the server, you may enter a hostname or IP address.

- If you want to enable intermediation using a Java client, select **Enable Java support** and then specify which Java client the system should use.
- Select the Java applet that you want to associate with the resource profile from the **Applet to use** list. Or, if the applet that you want to use is not currently available in the list, click **Edit list**.

- Click '+' to add an applet to this list.
- Enter **Name** to identify the applet
- Click the text field to browse to the applet that you want to upload.

14. Select the **Uncompress archive file** check box if the file that you selected is an archive that contains the applet. Click **OK**.
15. Enter **HTML code** with variables to replace the bookmark.
16. Select the **Criteria** from the drop down. If the Windows client launches, then this Java applet will not be used.

Enable Java support

APPLET TO USE \*  
None

Size: N/A bytes  
Uploaded: N/A

Edit List...

HTML \*

FOR PROPERO RDP APPLETS, "NET.PROPERO.RDP.RDPAPPLET.CLASS" IS USED AS THE APPLETS CLASS. FOR JICA, "COM.CITRIX.JICA" IS USED AS THE APPLETS CLASS. THE FOLLOWING VARIABLES CAN BE USED IN YOUR HTML. THEY ARE REPLACED BASED ON BOOKMARK VALUES.

```
<<PORT>>
<<SERVERPORT>>
<<CLIENTPORT>>
<<HEIGHT>>
<<WIDTH>>
```

IN ADDITION TO THESE VALUES, SYSTEM VARIABLES CAN BE USED IN THE HTML. FOR EXAMPLE, <<USERATTR.MYSERVER>> CAN BE USED IF YOU HAVE MYSERVER CONFIGURED AS AN AD OR LDAP ATTRIBUTE.

Reset HTML

CRITERIA

Cancel

Save Changes

17. Click **Save Changes**.

## Virtual Desktop

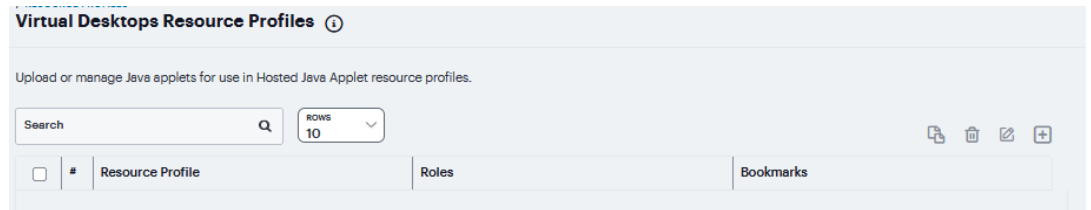
In addition to standard resource profiles and resource profile templates, you can configure virtual desktops as resource profiles. As with the other resource profiles, a virtual desktop profile contains all of the role assignments and end-user bookmarks required to provide access to an individual resource. Unlike other resource profile types, there is no resource policy to configure for virtual desktops due to the dynamic nature of virtual desktops. The IP address and port of the system is not known until the end user launches a session so dynamic ACLs are used. Icons in the Virtual Desktops section on the end user's home page represent desktops defined by the administrator. Clicking the icon launches the session using the Virtual Desktop Infrastructure (VDI) architecture.

The Citrix XenDesktop manages a pool of virtual desktops hosted on virtual machines and provides the connection management to those desktops. A list of XenDesktops is displayed to the end user as bookmarks. When a desktop is selected, the Citrix client is launched and the user can access that desktop.

VMware View Manager, formerly VMware VDI, lets you run virtual desktops in a data center that provide end users a single view of all their applications and data in a personalized environment regardless of the device or location they log in from.

To configure a Citrix XenDesktop or VMware View Manager profile:

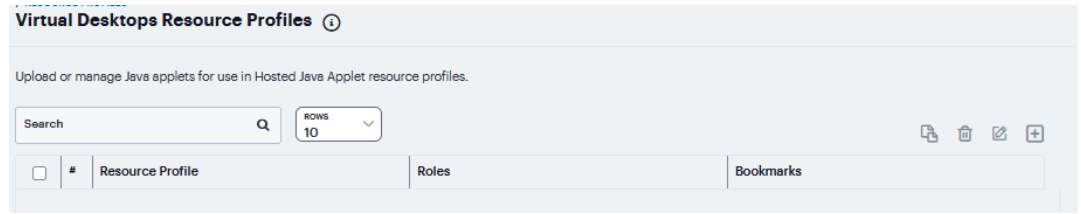
1. Navigate to **Users > Resource Profiles > Virtual Desktops**.
2. Click '+' and Select **VMware View Manager** or **Citrix XenDesktop** from the Type drop-down list



3. Enter a **Name** and **Description** (optional) to identify this profile.
4. Enter the **Name** or **IP address** and port of the connection broker using the format ip:port.  
You can enter more than one IP address. Place each address on a separate line.
5. Select the **Use SSL for connecting to the Server** check box if **SSL** is required to connect to the server.
6. Enter the **Username** to connect to the connection broker or use the **<USERNAME>** session variable.
7. Enter the **Variable Password** or **Password**
  - To use a variable password to connect to the connection broker, select Variable Password and enter the variable in the form of **<PASSWORD>** or **<PASSWORD@SEcAuthServer>**.
  - Select Password to use a static password to connect to the connection broker and enter the user credential's password.
8. Enter the **Domain** where the connection broker is located.



- Click **Save Changes**.



- If you want to enable intermediation using a Java client, select **Enable Java support** and then specify which Java client the system should use (applicable only if Citrix XenDesktop is selected in type).
- Select the Java applet that you want to associate with the resource profile from the **Applet to use** list. Or, if the applet that you want to use is not currently available in the list, click **Edit list**.



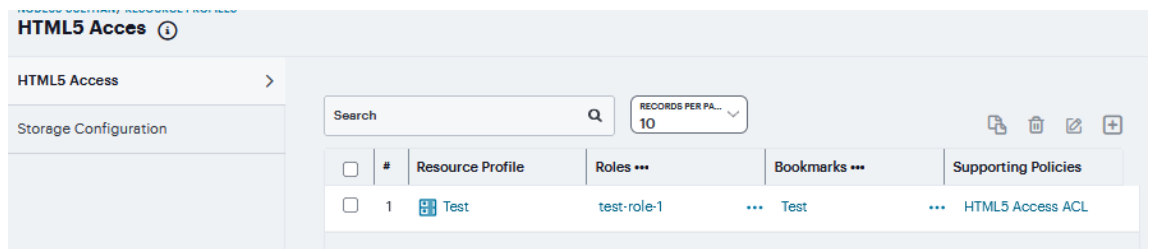
## HTML5 Access

A HTML5 Access resource profile is a profile that enables users to connect to Remote Desktops or to connect to internal server hosts in the clear using Telnet protocols or to communicate over an encrypted Secure Shell (SSH) session through a Web-based terminal session emulation.

The HTML5 license count was based on the number of active HTML5 sessions. The HTML5 licenses will be counted based on the number of active users. Each user will be allowed to access up to five user sessions.

To create a HTML5 Access resource profile:

- Navigate to **Users > Resource Profiles > HTML5 Access**.
- Click '+', Select the **Solution Type** as **Basic HTML5** or **Advanced HTML5**.



3. From the Type list, specify the session type (**Windows RDP** or **SSH** or **Telnet**) for this resource profile. If you have selected Advanced HTML5 solution type, you can also specify **VNC** session type.
4. Enter a unique **Name** and optionally a **Description** for the resource profile.
5. In the **Host** field, enter the Hostname, IP or user attribute of the server to which this resource profile should connect.
6. In the **Server Port** field, enter the port on which the system should connect to the server. (By default, the system populates this field with port number 3389 if you select Windows RDP, port number 23 if you select Telnet, port number 22 if you select SSH and port number 5900 if you select VNC.)
7. Select the **Create an access control policy for HTML5 access** check box to enable access to the server specified in the Server Port box (enabled by default).
8. Click **Save Changes**.

The screenshot shows the 'Resource' configuration page. The 'SOLUTION TYPE' is set to 'Advanced HTML5'. The 'TYPE' dropdown menu is open, showing options: 'Windows RDP', 'VNC', 'SSH', and 'Telnet' (which is selected). The 'Host' field is required and has an information icon. The 'SERVER PORT' is set to '23'. The checkbox 'Create an access control policy for HTML5 access' is checked.

To configure the external storage for session recordings:

1. Navigate to **Users > Resource Profiles > Storage Configuration**.
2. Select *Enable external storage*.
3. Enter the complete storage path to store the session recordings.

4. Enter the **Username** and **Password** required to access the location.
5. Click **Save Changes**.

**Storage Configuration** ⓘ

HTML5 Access

Enable external storage

Storage Configuration >

Storage Path ⓘ

USERNAME  
doc-team ⓘ

PASSWORD  
●●●●●●●●

\*Note: This will disconnect all existing advanced HTML5 connections.

Cancel Save Changes

## SAM Resource Profiles

You can create two types of PSAM resource profiles:

- PSAM application resource profiles-These resource profiles configure PSAM to secure traffic to a client/server application. When you create a PSAM application resource profile, the PSAM client intercepts requests from the specified client applications to servers in your internal network.
- PSAM destination network resource profiles-These resource profiles configure PSAM to secure traffic to a server. When you create a PSAM destination network resource profile, the PSAM client intercepts requests from processes running on the client that are connecting to the specific internal hosts.

When creating PSAM resource profiles, note that the resource profiles do not contain bookmarks. To access the applications and servers that PSAM intermediates, users must first launch PSAM and then launch the specified application or server using standard methods (such as the Windows Start menu or a desktop icon).

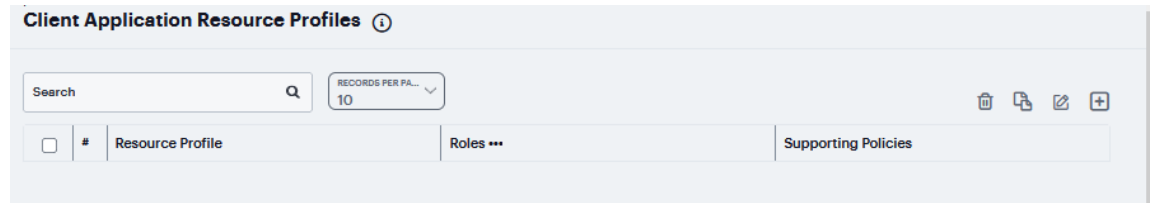
When you enable JSAM or PSAM through Web rewriting autopolicies in the Users > Resource Profiles > Web Applications/Pages page of the admin console, the system automatically creates JSAM or PSAM autopolicies for you. You can only view these SAM policies through the appropriate Web resource profile-not through the SAM resource profile pages of the admin console.

## Client Applications PSAM

To create a PSAM application resource profile:

1. Navigate to **Users > Resource Profiles > SAM > Client Applications**.
2. Click '+'. choose **PSAM** from the Type list

3. From the Application list, select one of the options.



- **Custom** - When you select this option, you must manually enter your custom application's executable file name (such as telnet.exe). Additionally, you may specify this file's path and MD5 hash of the executable file (although it is not required that you specify the exact path to the executable). If you enter an MD5 hash value, PSAM verifies that the checksum value of the executable matches this value. If the values do not match, PSAM notifies the user that the identity of the application could not be verified and does not forward connections from the application to the system.
- **Lotus Notes** - When you select this option, PSAM intermediates traffic from the Lotus Notes fat client application.
- **Microsoft Outlook** - When you select this option, PSAM intermediates traffic from the Microsoft Outlook application.
- **NetBIOS file browsing** - When you select this option, PSAM intercepts NetBIOS name lookups in the TDI drivers on port 137.
- **Citrix** - When you select this option, PSAM intermediates traffic from Citrix applications.

The system supports several mechanisms for intermediating traffic to the Lotus Notes, Microsoft Outlook, and Citrix applications.

- **Domain Authentication** - Select this option to allow integrated Windows applications, such as file sharing, Outlook, and so forth to authenticate to the domain controller when the client machine is part of a domain. Before using this option, you must:
  - Specify domain controllers that are reachable through the system in the PSAM Destination list so that LDAP and Kerberos traffic can be proxied and sent to the system.
  - Configure a PSAM Access Control Policy (ACL) to allow access to all domain controllers.

4. Enter a unique **Name** and optionally a **Description** for the resource profile.

5. Enter the **File Name** and **Path** and in case of **Windows Platform** enter **MD5 Hash**.
6. Under **Autopolicy: SAM Access Control** (this is applicable only for PSAM), click '+' specific **Resource** under the Base URL. Enter the full URL of the resource, select **Allow** or **Deny**, and click **Save Changes**.

**New Client Application Resource Profile**

Resource >

TYPE\*  
PSAM

PLATFORM TYPE\*  
Windows

APPLICATION\*  
Custom

Name \*

Description

Filename \*

Path

MD5 Hash

**Autopolicy: SAM Access Control**  
Use this policy to control access to application servers.

Search

<input type="checkbox"/>	#	Resource	Action
<input type="checkbox"/>			

**SAM Access Control**

Resource

ACTION\*  
Allow

Cancel Save Changes

## Client Applications JSAM

JSAM resource profiles configure JSAM to secure traffic to a client/server application. When you create a JSAM application resource profile, the JSAM client tunnels network traffic generated by the specified client applications to servers in your internal network.

To create a JSAM applied

1. Navigate to **Users > Resource Profiles > SAM > Client Applications**.
2. Click '+'. choose **JSAM** from the Type list.

3. From the Application list, select one of the options.
  - **Custom** - Select this option to intermediate traffic to a custom application. Then:
    1. Under JSAM Port Forwarding click '+'.
    2. In the **Server Name** field, enter the name or IP address of the remote server. If you are using automatic host mapping, enter the server as it is known to the application. If you enter an IP address, note that end users must connect to JSAM using that IP address in order to connect to the specified server.
    3. In the **Server Port** field, enter the port on which the remote server listens for client connections. For example, to forward Telnet traffic from a remote machine, specify port 23 for both the client port (on which JSAM listens) and the server port (on which the Telnet server listens).
      - To disable the registry change made by JSAM and restore the original copy of the etc/hosts file, users must uninstall the JSAM client using settings in the Preferences > Applications page of the end-user console. To re-enable the change, they need to reboot.
      - You can also use the restore system settings script. However, the restore system settings script cannot restore the hosts file successfully if you log in as a different user from the one that originally launched JSAM.
    4. In the **Client Loopback IP field**, provide a static loopback address. If you do not provide a static IP loopback address, the system assigns an IP loopback address dynamically.
    5. In the **Client Port** field, enter the port on which JSAM should listen for client application connections. Typically, the local port value is the same value as the server port; the local port value usually only differs for Linux or Macintosh non-root users who want to add applications for port forwarding that use ports under 1024.
    6. Click **Save Changes**.
4. Select the **Allow JSAM to dynamically select an available port if the specified client port is in use** check box if JSAM is listening for multiple hosts on the same port and you want JSAM to select an available port when the client port you specify is taken. The client application must allow you to specify the port number for the connection in order to use this option.

- Select the **Create an access control policy allowing SAM access to these servers** check box to enable access to the list of servers specified in the Server column (enabled by default).

NODE66-SULTHAN / RESOURCE PROFILES / CLIENT APPLICATIONS

**New Client Application Resource Profile** ⓘ

---

Resource >

TYPE \*  
JSAM

APPLICATION \*  
Custom


Name \*

Description

**JSAM Port Forwarding**

JSAM secures traffic destined for the following server(s). It listens for this traffic on a local (valid loopback addresses are 127.0.0.1 or 127.0.10.x and higher). JSAM will automatically change addresses if you leave them blank. If you leave the Client Port blank, JSAM will use the Server Port.

Search Q

<input type="checkbox"/>	#	Server Name	Server Port	Client Loopback
 <b>No Data Available</b>				

**Create an access control policy allowing SAM access to these servers**

**Allow JSAM to dynamically select an available port if the specified client port is**

Cancel

**JSAM Port Forwarding**

Server Name \*

Server Port \*

Client Loopback IP

Client Port

Cancel

Save Changes



- **Lotus Notes** - Select this option to intermediate traffic from the Lotus Notes fat client application. Then, in the Autopolicy: SAM Access Control section, create a policy that allows or denies users access to the Lotus Notes server:

1. If it is not already enabled, select the **Autopolicy: SAM Access Control** check box.
2. In the **Resource** field, specify the application server to which this policy applies. You can specify the server as a fully-qualified hostname or an IP/netmask pair. For example, if the fully-qualified hostname is notes1.yourcompany.com, add notes1.yourcompany.com and notes1 to the Resource field.
3. From the **Action** list, select **Allow** to enable access to the specified server or **Deny** to block access to the specified server. Click **Save Changes**.

You can only use JSAM to configure access to one Lotus Notes application per user role.

NODE66-SULTHAN / RESOURCE PROFILES / CLIENT APPLICATIONS

### New Client Application Resource Profile ⓘ

Resource >

TYPE\*  
JSAM


APPLICATION\*  
Lotus Notes

Name \*

Description

Autopolicy: SAM Access Control  
Use this policy to control access to application servers.

Search

<input type="checkbox"/>	#	Resource	Action
 No Data Available			

#### SAM Access Control

Resource

ACTION\*  
Allow

- **Microsoft Outlook** - Select this option to intermediate traffic from the Microsoft Outlook application. Then:
  1. Enter a unique **Name** and optionally a **Description** for the resource profile.
  2. Enter the **Hostname** for each MS Exchange server in the Servers field. For example, if the fully-qualified hostname is exchange1.yourcompany.com, add exchange1.yourcompany.com to the Servers field.
    - You must enter the full name of the servers in this field since the system creates direct one-to-one mappings between the servers you enter here and IP addresses in the etc/hosts file. For more information about registry changes made by JSAM, see the Client-side Changes Guide on the Global Support Center.
    - The system does not support Outlook through SVW, since Outlook applications require HKLM registry key changes.
  3. Select the **Create an access control policy allowing SAM access to these server** check box to enable access to the server specified in the previous step (enabled by default).



You can only use JSAM to configure access to one Microsoft Outlook application per user role.

---

NODE88-SULTHAN / RESOURCE PROFILES / CLIENT APPLICATIONS

### New Client Application Resource Profile ⓘ

Resource >

TYPE \*  
JSAM

APPLICATION \*  
Microsoft Outlook

Name \*

Description

Servers \* ⓘ

Create an access control policy allowing SAM access to these servers

- **NetBIOS file browsing** - Select this option to tunnel NetBIOS traffic through JSAM. Then:
  1. Enter a unique **Name** and optionally a **Description** for the resource profile.
  2. Enter the fully-qualified **Hostname** for your application servers in the Servers field.
    - You must enter the full name of the servers in this field since the system creates direct one-to-one mappings between the servers you enter here and IP addresses in the *etc/hosts* file. For more information about registry changes made by JSAM, see the Client-side Changes Guide on the Global Support Center.
    - If you want to enable drive mapping on a Windows client machine, use the standard NetBIOS file browsing option. When you do, JSAM automatically modifies the registry to disable port 445 on Windows machines, which forces Windows to use port 137, 138, or 139 for drive-mapping. Windows users need to reboot one time to enable the registry change to take effect.
  3. Select the **Create an access control policy allowing SAM access to these server** check box to enable access to the server specified in the previous step (enabled by default).



You can only use JSAM to configure NetBIOS file browsing once per user role.

---

NODE86-SULTHAN / RESOURCE PROFILES / CLIENT APPLICATIONS

### New Client Application Resource Profile ⓘ

Resource >

TYPE \*  
JSAM

APPLICATION \*  
NetBIOS File Browsing

Name \*

Description

Servers \* ⓘ

Create an access control policy allowing SAM access to these servers

6. Click **Save Changes**.

## PSAM Destinations

When you create a PSAM destination network resource profile, the PSAM client intercepts requests from processes running on the client to internal hosts. When destinations (using either IP address or hostnames) are configured on the system, all DNS and NetBIOS names are resolved through the system.

To create a PSAM destination network resource profile:

1. Navigate to **Users > Resource Profiles > SAM > PSAM Destinations**.
2. Click '+', enter a unique **Name** and optionally a **Description** for the resource profile.

NODE86-SULTHAN / RESOURCE PROFILES

### PSAM Destinations Resource Profiles ⓘ

Search

#	Resource Profile	Roles	Supporting Policies

3. In the PSAM Destinations section, click '+', specify which servers you want to secure using PSAM. You can specify the servers as hostname or IP/netmask pairs. You may also include a port. and click **Save Changes**.
4. Select the **Create an access control policy allowing SAM access to this server** check box to enable access to the server specified in the previous step (enabled by default).
5. Click **Save Changes**.

The screenshot displays the configuration interface for a new PSAM destination resource profile. The main area is titled 'New PSAM Destination Resource Profile' and includes a 'Resource' section with input fields for 'Name' and 'Description'. Below this is a table for 'Destination' entries, which is currently empty and shows a 'No Data Available' message. A sidebar on the right, titled 'Destination', contains a 'Destination' input field and 'Cancel' and 'Save Changes' buttons. At the bottom of the main area, there is a checkbox labeled 'Create an access control policy allowing SAM access to these servers'.

## Secure Mail

To use Secure Mail for iOS devices, you must enable it at the role level and then create a resource profile that specifies the Exchange server and encryption settings. You must also obtain and import an S/MIME certificate.

To define the Secure Mail resource profile:

1. Navigate to **Users > Resource Profiles > Mobile**.



2. Specify the information in the following table:

The screenshot shows the 'Secure Mail' configuration page. The page title is 'Secure Mail' with a help icon. Below the title, there is a navigation menu with 'Secure Mail' and 'S/MIME Certificates'. The main content area contains a description: 'This section configures an Exchange Server to proxy connections through this device. The mobile device must be on-boarded to use the features listed here (on-boarding requires authentication and will install a mail profile)'. There are two input fields: 'Virtual Hostname' and 'Exchange Server', both with help icons. Below them is a 'Description' text area. A note states: 'The configuration options below will apply only for the devices that are onboarded via Ivanti Connect Secure.' There are two dropdown menus: 'INSERT VALUE FOR SERVER' and 'USERNAME <USER>', both with help icons. Under 'Secure Mail Options:', there are three checkboxes: 'Encrypt Body' (with subtext 'The SMIME certificate will be used for encryption.'), 'Encrypt Attachments' (with a 'FILE EXTENSIONS' field containing '.bmp;.csv;.doc;.docx;.ht'), and 'Allow Outbound E-mail Attachments'. A 'NOTE' at the bottom states: 'NOTE: This is a "preview feature". This feature currently entitles you to test and manage up to 15 mailboxes on Apple iOS devices (This message is not applicable for Pulse WorkSpace onboarded devices)'. A 'Save Changes' button is at the bottom right.

Secure Mail Settings

Setting	Guidelines
Virtual Hostname	Enter a hostname alias for the Exchange server, and update your DNS server to map the alias to the IP address of Ivanti Connect Secure. The name must be unique among all virtual hostnames.

Setting	Guidelines
	<p>For example, if the virtual hostname is email.com, and the backend URL is https://mail.pulsesecure.net:8080, a client request to https://email.com/test1 via Ivanti Connect Secure is converted to https://mail.pulsesecure.net:8080/test1. The response to the converted request is sent to the client web browser.</p>
Exchange Server	<p>Enter the URL and port number of the Microsoft Exchange server, such as https://mail.pulsesecure.net:379. If the port number is omitted, it defaults to 80.</p>
Description	<p>Description of the Exchange server (optional).</p>
Username	<p>Select one of the following to specify the e-mail account format used by the Exchange server:</p> <ul style="list-style-type: none"> <li>• <b>None:</b> Inserts the &lt;USER&gt; variable for the user's login name for Ivanti Connect Secure (the default).</li> <li>• <b>Exchange 2007/2010/2013:</b> Inserts the &lt;NTDOMAIN&gt; &lt;USER&gt; variables to include the user's domain before the login name.</li> <li>• <b>Office 365:</b> Inserts &lt;USER&gt;@domain.com, and you can enter the appropriate domain, such as &lt;USER&gt;@pulsesecure.net.</li> </ul>
Secure Mail Options	<p>Select one or more of the following encryption options:</p> <ul style="list-style-type: none"> <li>• <b>Encrypt Body:</b> Encrypts the body of the e-mail using an S/MIME certificate. The encrypted e-mail body can be viewed by any native e-mail client.</li> </ul> <p>Graphics embedded in the encrypted e-mail body are displayed twice on iOS devices.</p>

Setting	Guidelines
	<ul style="list-style-type: none"> <li> <b>Encrypt Attachments:</b> Encrypts the e-mail attachments using a key generated by Ivanti Connect Secure. Encrypted attachments, which must be opened with Ivanti Mobile Client, are identified by a pulsesecure file extension, such as report.pdf.pulsesecure. The encrypted file types are listed in the File Extensions text box, separated by semicolons. You can add or delete file extensions from the list. <p style="margin-left: 40px;">If you add .gif, .jpeg, .jpg, .png or .htm to the list of encrypted file types, graphics embedded in the e-mail body are not displayed correctly on iOS devices.</p> </li> <li> <b>Allow Outbound E-Mail Attachments:</b> Decrypts attachments before forwarding an e-mail to an external account. If this option is not selected, e-mails are forwarded without attachments and include a note indicating that attachments were removed. <p style="margin-left: 40px;">If you change the encryption settings, onboarded devices must be re-onboarded to obtain the new settings.</p> </li> </ul>

3. Click **Save Changes**.

## S/MIME Certificate

If you enable Secure Mail, an S/MIME is required for each client device. You can generate an S/MIME certificate for each device or use a global certificate for all devices by requesting an S/MIME certificate from a Certificate Authority (CA) and importing the certificate and private key to Ivanti Connect Secure.

To generate or import an S/MIME certificate:

1. Navigate to **Users > Resource Profiles > Mobile > S/MIME Certificate**.

The screenshot shows the 'S/MIME Certificates' configuration page. At the top left, the breadcrumb path is 'NODE88-SULTHAN / S/MIME CERTIFICATES'. The main heading is 'S/MIME Certificates' with an information icon. On the left, there is a sidebar with 'Secure Mail' and 'S/MIME Certificates' (the latter is selected and has a right-pointing arrow). The main content area features a dropdown menu labeled 'S/MIME CERTIFICATES' with the option 'Upload and Use Single Global Certificate' selected. Below the dropdown is a blue button labeled 'Import Certificate & Key'. A text block explains: 'The following S/MIME certificate is used to encrypt the e-mail body. The settings for Secure Mail are also a prerequisite for profile generation.' Below this text, the following information is displayed: 'Issued To: N/A', 'Issued By: N/A', and 'Valid: N/A'.

2. Specify one of the following options:

S/MIME Certificate Settings

Setting	Guidelines
<b>Generate per User Certificate</b>	<p>Select this option to use the SCEP server and a CSR template to generate a certificate for each client. Select a CSR template from the Use Certificate Template list. To create a CSR template, see Configuring Enterprise Onboarding.</p>
Upload and Use Single Global Certificate	<p>Select this option to use the same certificate for all client devices. Click <b>Import Certificate &amp; Key</b>, click <b>file</b> field in one of the following forms to locate the <b>certificate file</b>, enter the <b>password key</b> if the file is encrypted, and then click <b>Import</b>.</p> <ul style="list-style-type: none"> <li>• <b>If certificate file includes private key:</b> When the certificate and key are contained in one file.</li> <li>• <b>If certificate and private key are separate files:</b> When the certificate and key are in separate files.</li> <li>• <b>Import via System Configuration file:</b> When the certificate and key are contained in a system configuration file that has been exported from Ivanti Connect Secure.</li> </ul>

NODE88-SULTHAN / S/MIME CERTIFICATES

### Import Certificate and Key

Use one of the forms below to import an existing certificate and its corresponding p

**If certificate file includes private key**

FILE  
Certificate File  
No file chosen

Password Key

IMPORT

**If certificate and private key are separate files**

FILE  
Certificate File  
No file chosen

PRIVATE KEY FILE  
Private Key File  
No file chosen

Password Key

IMPORT

**Import via System Configuration file**

All SMIME Certificates will be imported and added to the existing certificates.

SYSTEM CONFIGURATION FILE  
System Configuration File  
No file chosen

Password Key

IMPORT

## Resource Policies

A resource policy is a system rule that specifies resources and actions for a particular access feature. A resource is either a server or file that can be accessed through the system, and an action is to "allow" or "deny" a resource or to perform or not perform a function. Each access feature has one or more types of policies, which determine the system's response to a user request or how to enable an access feature. You may also define detailed rules for a resource policy, which enable you to evaluate additional requirements for specific user requests.

You can create the following types of resource policies through the Resource Policies pages:

- **Web Resource Policies** - specify the Web resources to which users may or may not browse. They also contain additional specifications such as header caching requirements, servers to which java applets can connect, code-signing certificates that the system should use to sign java applets, resources that the system should and should not rewrite, applications for which the system performs minimal intermediation, and single sign-on options.
- **File Resource Policies** - specify the Windows, UNIX, and NFS file resources to which users may or may not browse. They also contain additional specifications such as file resources for which users need to provide additional credentials.
- **Secure Application Manager Resource Policies** - allow or deny access to applications configured to use JSAM or PSAM to make socket connections.
- **Terminal Services Policies** - allow or deny access to the specified Windows servers or Citrix Metaframe servers.
- **VPN Tunneling Resource Policies** - allow or deny access to the specified servers and specified IP address pools.
- **HTML5 Access Resource Policies** - allow or deny clientless to terminal servers using RDP/SSH/Telnet protocols.



You can also create resource policies as part of the resource profile configuration process. In this case, the resource policies are called "advanced policies."

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Resource policies are an integral part of the access management framework, and therefore are available on all Ivanti Connect Secure products. However, you can access only resource policy types that correspond to your licensed features.

**Resource Policies** ⓘ

Resource policies enable or disable access to specific types of resources. Resource policies also include low-level rules specifying how the device handles requests

**Web**  
Web Policies Enable/disable Access to Web Resources Such as Intranet or Internet Pages.

- Access Control 1**  
Enable/disable access to web resources
- SSo (Single Sign-on) 1**  
Enable/disable Single sign-on from the device to protected resources
- Caching 0**  
Specify rules for content-caching headers

**Files**  
Files Policies Enable/disable Access to Network file systems and directories

- Access Control 1**  
Enable/disable access to web resources
- SSo (Single Sign-on) 0**  
Enable/disable Single sign-on from the device to protected resources
- Compression 1**  
Specify content to compress using GZIP compression

**Other**  
Other Policies

- SAM 0**  
SAM policies enable/disable access to client-server application
- Terminal Services 0**  
Terminal Services Policies enable/disable access to windows and citrix terminal servers
- VPN Tunneling 0**  
VPN Tunneling Policies enable/disable intermediation of user traffic through tunnels
- HTML5 Access 0**  
HTML5 Access resource policies enable/disable clientless to terminal servers using RDP/SSH/telnet protocols

## Ivanti Secure Access Client Connections

An Ivanti Secure Access component set includes specific software components that provide Ivanti Secure Access Client connectivity and services.

ICS-BNG

**Ivanti Secure Access Client Connections** ⓘ

**Connections** > An Ivanti Secure Access Client connection set determines client settings and provides a listing of available connections for users.

**Components**

**ASSUME OWNERSHIP**    **UPDATE CLIENTS**

Search      RECORDS PER PAGE 10

<input type="checkbox"/>	#	Name	Description	Owner	Last Modified
<input type="checkbox"/>	1	Default	Default Ivant	91r141....	2022-09...

## Ivanti Secure Access Client Connection Set Options

The following items apply to all connections in a connection set.



- Allow saving logon information: Controls whether the Save Settings check box is available in login dialog boxes in Ivanti Secure Access Client. If you clear this check box, Ivanti Secure Access Client always requires users to provide credentials. If you select this check box, users have the option of saving their credentials.
- Ivanti Secure Access Client can retain learned user settings: These settings are retained securely on the endpoint, evolving as the user connects through different Ivanti servers. Ivanti Secure Access Client can save the following settings:
  - Certificate acceptance
  - Certificate selection
  - Realm
  - Username and password
  - Proxy username and password
  - Secondary username and password
  - Role
- VPN only access: When Ivanti Secure Access Client connects to Ivanti Connect Secure having lock down mode enabled, it will enable lock-down mode and block network if VPN is not in connected state.

When VPN only access option is enabled, the Enable captive portal detection and Enable embedded browser for captive portal will be automatically checked and cannot be edited.

- Display splash screen: Clear this check box to hide the Ivanti Secure Access Client splash screen that normally appears when Ivanti Secure Access Client starts.
- Dynamic certificate trust: Determines whether users can opt to trust unknown certificates. If you select this check box, a user can ignore warnings about invalid certificates and connect to the target Ivanti server.

- **Dynamic connections:** Allows connections within this connection set to be automatically updated or added to Ivanti Secure Access Client when the user connects to Ivanti Connect Secure through the user Web portal, and then starts Ivanti Secure Access Client through the Web portal interface. Dynamic connections are created as manual rather than automatic connections, which means that they are run only when the user initiates the connection or the user browses to a Ivanti server and launches Ivanti Secure Access Client from the server's Web interface.

If dynamic connections are disabled, and the user logs in through the Web portal of a Ivanti server that is not already included in Ivanti Secure Access Client's connection set, then starting Ivanti Secure Access Client from the Web portal does not add a new Ivanti Secure Access Client connection for that Ivanti server. If you choose to disable dynamic connections, you can still allow users to manually create connections by enabling Allow User Connections.

- **Enable captive portal detection:** To detect the presence of a captive portal hotspot enable this option. It can be applied only to Ivanti Connect Secure and Ivanti Policy Secure (L3) connections.
- **Enable embedded browser for captive portal:** When enabled, Ivanti Secure Access Client uses an embedded web browser that the end user can use to traverse captive portal pages and to gain network connectivity for establishing a VPN connection. This applies only when captive portal detection is enabled.
- **Enable embedded browser for authentication:** When enabled, Ivanti Secure Access Client uses an embedded browser for web authentication, rather than external browser.
- **FIPS mode enabled:** Enable FIPS mode communications for all Ivanti Secure Access Client connections in the connection set. The Federal Information Processing Standard (FIPS) defines secure communications for the U.S. government. When a Ivanti Secure Access Client connection is operating in FIPS mode, FIPS On appears in the lower corner of the Ivanti Secure Access Client interface. If your Ivanti Connect Secure hardware does not support FIPS mode operations, FIPS mode configuration options are not present in the admin console interface. FIPS mode operations are supported on PSA-V Series Ivanti Gateways and some SA series appliances. The device must be running Ivanti Policy Secure R5.0 or later or Ivanti Connect Secure R8.0 or later.
- **Prevent caching smart card PIN:** Enabling this field will allow system administrators to prevent smart card PIN values from being cached. This feature is applicable only to Windows.

- **Wireless suppression:** Disables wireless access when a wired connection is available. If the wired connection is removed, Ivanti Secure Access Client enables the wireless connections with the following properties:
  - Connect even if the network is not broadcasting.
  - Authenticate as computer when computer information is available.
  - Connect when this network is in range.

## Creating a Client Connection Set for Ivanti Connect Secure

To create a Ivanti Secure Access Client connection set:

1. Select **Users > Ivanti Secure Access Client > Connections**.
2. Click '+' to create a new connection set.

3. Enter a name and, optionally, a description for this connection set.

ICS-ENG / IVANTI SECURE ACCESS CLIENT / CONNECTIONS

### New Connection Set ?

**Connection Set**

OWNER: 91r141.ppeqs.local      LAST MODIFIED: 2022-10-27 03:38:25 UTC      SERVER ID: VASPHVUEUNSOFE7S

**Always-on vpn wizard**

CONFIGURE ALWAYS-ON VPN USING WIZARD

**Options**

Name	Value
<b>Always-on Ivanti Secure Access Client</b> <small>Prevents end users from circumventing Ivanti Secure Access Client connections. This option will disable all configuration settings that allow the end user to disable or remove Ivanti Secure Access Client connections, services or software.</small>	<input type="checkbox"/>
<b>VPN only access</b> <small>When Ivanti Secure Access Client connects to a ICS having look down mode enabled, it will enter look-down mode and won't let any traffic flow through unless a Looked-down VPN connection is in connected state. User is allowed to connect or disconnect any connection. User is allowed to add any new connection/server URL. User is allowed to delete a connection if the connection is not looked down.</small>	<input type="checkbox"/>
<b>Allow saving logon information</b> <small>Enables the Save settings checkbox in the certificate trust and password prompts.</small>	<input checked="" type="checkbox"/>
<b>Allow user connections</b> <small>Allows user to create connections via the Ivanti Secure Access Client UI.</small>	<input checked="" type="checkbox"/>
<b>Display Splash Screen</b> <small>Controls whether the splash screen is displayed when Ivanti Secure Access Client starts.</small>	<input checked="" type="checkbox"/>
<b>Dynamic certificate trust</b> <small>Controls whether users may except to trust unknown certificates.</small>	<input type="checkbox"/>
<b>Dynamic connections</b> <small>Allows connections to be deployed automatically from devices.</small>	<input checked="" type="checkbox"/>
<b>EAP Fragment Size</b> <small>Maximum number of bytes in an EAPoL message from the client for 802.1x connections. Range: 480 - 3000 bytes</small>	<input style="width: 60px;" type="text" value="1400"/>
<b>Engine for authentication embedded browser on Windows</b> <small>Applies when embedded browser for authentication is enabled.</small>	<input style="width: 100%;" type="text" value="Microsoft Edge"/>
<b>FIPS mode enabled</b> <small>Deploy client with Federal Information Processing Standard enabled.</small>	<input type="checkbox"/>
<b>Enable FIDO2 U2F for SAML authentication</b> <small>Ivanti Secure Access Client will use Chromium Embedded framework for embedded browser for SAML authentication for Identity Provider that supports WebAuthN (FIDO2 U2F).</small>	<input type="checkbox"/>
<b>Wireless suppression</b> <small>Disconnect all wireless interfaces when a wired interface gets connected to a network. Applies to all wireless connections (not just those managed by Ivanti Secure Access Client).</small>	<input type="checkbox"/>
<b>Prevent caching smart card PIN</b> <small>Enabling this will ensure the smart card PIN value is not cached by the client process.</small>	<input type="checkbox"/>

Cancel
Save Changes

4. Under Options, select or clear the following check boxes:
  - **Allow saving logon information:** Controls whether the Save Settings check box is available in login credential dialog boxes in Ivanti Secure Access Client. If you clear this check box, Ivanti Secure Access Client always requires users to provide credentials. If you select this check box, users have the option of saving their credentials.
  - **Allow user connections:** Controls whether connections can be added by the user through the Ivanti Secure Access Client interface.
  - **Display splash screen:** Clear this check box to hide the Ivanti Secure Access Client splash screen that normally appears when Ivanti Secure Access Client starts.
  - **Dynamic certificate trust:** Determines whether users can opt to trust unknown certificates. If you select this check box, a user can ignore warnings about invalid certificates and connect to the target Ivanti server.
  - **Dynamic connections:** Allows new connections to be added automatically to Ivanti Secure Access Client when the user logs into a Ivanti server through the server's Web portal, and then starts Ivanti Secure Access Client through the Web portal interface.
  - **FIPS mode enabled:** Enable FIPS mode communications for all Ivanti Secure Access Client connections in the connection set. The Federal Information Processing Standard (FIPS) defines secure communications for the U.S. government. When a Ivanti Secure Access Client connection is operating in FIPS mode, FIPS On appears in the lower corner of the Ivanti Secure Access Client interface.
  - **Wireless suppression:** Disables wireless access when a wired connection is available. Wireless suppression occurs only when the wired connection is connected and authorized.
5. Under Connections, click '+' to define a new connection.
6. Enter a name and, optionally, a description for this connection.

7. Select a type for the connection and then specify the connection. Type can be any of the following:
  - **Policy Secure (802.1X):** Select this type if the connection establishes connectivity to an 802.1X wired or wireless device.
  - **Connect Secure or Policy Secure (L3):** Select this type to define a connection for Ivanti Connect Secure or Ivanti Policy Secure.
8. The connection configuration options that appear depend on the connection type you select.

After you have created the client connection set:

- create a client component set and select this connection set.
- open this saved connection set and create sub connection set for it.

## Creating a Client Component Set for Ivanti Connect Secure

To create a Ivanti Secure Access Secure Client component set:

1. Select **Users > Ivanti Secure Access Client > Components**.
2. Click '+' to create a new component set.

The screenshot shows a web-based configuration form titled "New Component Set" with a help icon. The breadcrumb path is "ICS-BNG / IVANTI SECURE ACCESS CLIENT / COMPONENTS". The form includes a "Name" text input, a "Description" text area, a "CONNECTION SET" dropdown menu currently set to "None", and an "IVANTI SECURE ACCESS CLIENT COMPONENTS" dropdown menu currently set to "All components". A small note below the second dropdown states: "Client component options affect Web-based installations only. For a preconfigured installer, specify components as part of the MSISEXEC command." At the bottom, there are "Cancel" and "Save Changes" buttons.

3. If you have not yet created a client connection set, select **Users > Ivanti Secure Access Client > Connections** and create a new connection set. Or you can use the default client configuration, which permits dynamic connections, and allows Ivanti Secure Access Client to automatically connect to Ivanti Policy Secure or Ivanti Connect Secure.
4. Specify a name for the client component set.
5. (Optional) Enter a description for this client component set.
6. Select a connection set that you have created, or use the default connection set.
7. For Ivanti Secure Access Client components, select one of the following options:
  - All components: Supports all Ivanti Secure Access Client connection types.
  - No components: Updates existing Ivanti Secure Access Client configurations, for example, to add a new connection. Do not use this setting for a new installation.
8. Click **Save Changes**.
9. After you create a component set, distribute Ivanti Secure Access Client to users through a role. When users access the role, the installer automatically downloads to the endpoint. The installer components and connections are applied to the endpoint client.
  - If client connections associated with the component set for a role are changed even though the list of components has not, the existing configuration on the endpoint is replaced immediately if the endpoint is currently connected, or the next time the endpoint connects.
  - If a user is assigned to multiple roles and the roles include different component sets, the first role in an endpoint's list of roles is the one that determines which client (component set) is deployed.

## Manage Ivanti Secure Access Client Versions

This feature is supported for Ivanti Secure Access Client on macOS and Windows, and supported for iOS Mobile Client and Android Mobile Client also.

This feature allows admin to configure a minimum client version. If the client has version lower than the configured minimum version, then the ICS server will reject the client connection.

If the client is older than the configured minimum client version, then ICS gateway will reject the connection. User can upgrade it later through browser or SCCM server.

To enable this feature on Ivanti Connect Secure:

1. From the admin console, select **Users > Ivanti > Components**.
2. Select the Enable minimum client version enforcement check box (see ). The following options appear:
  - Ivanti Secure Access Desktop Clients
  - Android Mobile Clients
  - iOS Mobile Clients

## Enterprise Onboarding

Enterprise onboarding allows users to securely access enterprise network resources with almost any device. WiFi, VPN and certificate profiles can be defined for enterprise resources and downloaded to a device during onboarding, depending on the device type.

The profiles can be defined on a single Ivanti Connect Secure server dedicated to onboarding or they can be defined on each server. Alternatively, the profiles can be defined on a third-party MDM server, in which case users will see a link and instructions on the onboarding page to continue onboarding using the external MDM server.

Onboarding is initiated from the browser. The supported profiles depend on the device type and whether the Ivanti Secure Access Client is installed. Device Onboarding Profile supports:

- Android 4.0 or later: Supports all profiles, but the Ivanti Secure Access Client must be installed during onboarding.
- iOS 6.0 or later: Supports all profiles (Safari browser).
- Windows 7.0, 8.0, and 8.1: Supports WiFi and certificate profiles (IE, Firefox, or Chrome browser). The Ivanti Secure Access Client onboarding application must be installed during onboarding. Windows 8 RT and Windows 8 Phone are not supported.
- MAC OS X: Supports WiFi and certificate profiles (Safari browser).

Enterprise onboarding is enabled in the user role, and each profile can be applied to all user roles or specific roles. The SCEP server and CSR templates allow certificates to be generated dynamically for device and server authentication.

## Defining the SCEP Server

The Simple Certificate Enrollment Protocol (SCEP) server configuration and CSR templates allows each client device to dynamically obtain certificates for authentication.



To define the SCEP server:

1. Log into the nSA as a Tenant Admin.
2. From the ICS menu, click the **Gateway > Gateway List** and then select any standalone ICS Gateway.
3. Navigate to **Users > Enterprise Onboarding**.

The screenshot shows the 'SCEP Configuration' page. On the left is a navigation menu with items: SCEP Configuration, CSR Templates, VPN Profiles, WiFi Profiles, Certificate Profiles, and Secure mail. The main content area has four input fields: 'SCEP SERVER URL' (with a blue lock icon), 'CHALLENGE' (with a blue lock icon), 'RETRIES' (set to 0), and 'RETRY DELAY' (set to 0). Below these is an 'Upload Encryption Certificate' section with a 'FILENAME' input field and a blue lock icon. A note says: 'Manually upload the encryption certificate or run Test Configuration below with Test Enrollment to upload it automatically.' Below this is a 'Response Signing Certificate' table with two columns. The first column has 'Issued To' (N/A), 'Issued By:' (N/A), and 'Valid' (N/A). The second column has 'Version' (N/A), 'Signature Algorithm' (N/A), and 'Thumbprint Algorithm' (N/A). The third column has 'Serial Number' (N/A) and 'Thumbprint' (N/A). At the bottom of this section are three buttons: 'Test Configuration' (blue), 'Test Connectivity' (with a blue lock icon), and 'Test Enrollment' (checkbox). A 'Save Changes' button is at the bottom right of the page.

4. Enter the URL for the SCEP server.
5. Specify the password required by the SCEP server.
6. Specify the number of attempts to access the server when the first attempt fails.
7. Specify the number of seconds between retry attempts.
8. Click Browse to upload the certificate used to encrypt SCEP requests. To upload the certificate automatically, select the Test Enrollment check box, select a CSR template, and click **Test Configuration**.
9. Click **Save Changes**.

## Defining CSR Templates

If the SCEP server is configured, the Certificate Signing Request (CSR) templates can be used in the VPN, WiFi, and certificate profiles to allow each onboarded device to dynamically obtain certificates for authentication on all mobile devices. Up to 10 templates can be defined.

To define CSR templates:

1. Navigate to **Users > Enterprise Onboarding** and select **CSR Templates**.

The screenshot shows a web form titled "New Certificate Signing Request Template". The form has the following fields and options:

- Name \***: A text input field with a help icon.
- Subject DN \***: A text input field with a help icon.
- Email**: A text input field.
- SUBJECT ALTERNATIVE NAME TYPE**: A dropdown menu currently set to "None" with a help icon.
- Subject Alternative Name Value**: A text input field.
- KEY SIZE**: A dropdown menu currently set to "2048-bit" with a help icon.
- Save Changes**: A button located at the bottom right of the form.

2. Click '+' to add a new template.
3. Enter a unique template name.
4. Specify the subject distinguished name. For example:  
CN=<USERNAME>,OU=Engineering=Ivanti
5. (Optional) Specify an email address with the <USER> variable, such as <USER>@ivanti.com.
6. Select an alternative name type if the CA requires an alternative subject name.
7. Specify one or more values for the selected alternative name type. Multiple values must be separated by a comma or space.
8. Select the key size used by the SCEP server.
9. Click **Save Changes**.

## Defining VPN Profiles

VPN profiles provide Android and iOS devices with secure access to enterprise networks. One or more VPN profiles can be assigned to specific user roles or to all roles. Up to 10 profiles can be defined.

To define VPN profiles:

1. Navigate to **Users > Enterprise Onboarding** and select **VPN Profiles**.

The screenshot displays the 'New VPN Profile' configuration interface. At the top, the breadcrumb path is 'EADHIRPSA3K / ENTERPRISE ONBOARDING / VPN PROFILES'. The main heading is 'New VPN Profile' with an information icon. The form includes the following fields and sections:

- Name \***: A text input field with an information icon.
- Description**: A larger text input area.
- Apply to Client Types**: Two checkboxes for 'iOS' and 'Android'.
- Server URL \***: A text input field with an information icon.
- Realm**: A text input field.
- Role**: A text input field.
- Username**: A text input field.
- AUTHENTICATION METHOD**: A dropdown menu currently set to 'Password'.
- Roles**: A section with a note: 'Enterprise Onboarding' in the Role must be enabled in order for this policy to take effect. Below this is a dropdown menu showing 'Policy applies to ALL roles'.
- Available Roles 9**: A list of roles with checkboxes, including 'Android\_CloudSecure\_Role', 'CloudSecure\_Remedy\_Role', 'CTX\_User', 'Ecp\_CloudSecure\_Role', 'iOS\_CloudSecure\_Role', 'Mac\_CloudSecure\_Role', 'Outlook Anywhere User Role', 'Users', and 'Windows\_CloudSecure\_Role'. Navigation arrows are present between the available and selected roles lists.
- Selected Roles 0**: A list that is currently empty, showing 'No Items'.
- Save Changes**: A button in the bottom right corner.

2. Click '+' to add a new VPN profile.
3. Enter a unique name for the VPN profile.
4. (Optional) Enter a description of the VPN profile.
5. Select the device types the profile applies to (Android and iOS only).
6. Specify the URL of the VPN server.

7. Specify the realm name. The realm is required only if the sign-in URL has the User picks from a list of authentication realms option enabled.
8. Specify the user role. The user role is required if the role mapping rules for the user realm specify multiple roles and the User must select from among assigned roles option is enabled.
9. Specify the <USER> variable for the user name.
10. Select Password or Certificate for the user authentication method.
11. Select one of the following options:
  - Policy applies to ALL roles - To apply this profile to all users.
  - Policy applies to SELECTED roles - To apply this profile only to users who are mapped to roles in the Selected roles list. Make sure to add roles to this list from the Available roles list.
  - Policy applies to all roles OTHER THAN those selected below - To apply this profile to all users except for those who map to the roles in the Selected roles list. Make sure to add roles to this list from the Available roles list.
12. Click **Save Changes**.

## Defining WiFi Profiles

WiFi profiles provide Android, iOS, MAC OS X, and Windows devices with secure access to wireless networks. One or more WiFi profiles can be assigned to specific user roles or to all roles. Up to 10 profiles can be defined.

To define WiFi profiles:

1. Navigate to **Users > Enterprise Onboarding** and select **WiFi Profiles**.

EADHIRPSASK / ENTERPRISE ONBOARDING / WIFI PROFILES

### New WiFi Profiles (i)

Name \* (i)

Description

Apply to Client Types

- iOS
- Android
- Mac OS X
- Windows

SSID \* (i)

Non-Broadcast SSID

Auto Connect  
Not applicable for Android clients.

SECURITY TYPE  
NONE

Roles  
'Enterprise Onboarding' in the Role must be enabled in order for this policy to take effect.

ROLES  
Policy applies to ALL roles

Available Roles 9

Select All

- Android\_CloudSecure\_Role
- CloudSecure\_Remed\_Role
- CTX\_User
- Ecp\_CloudSecure\_Role
- iOS\_CloudSecure\_Role
- Mac\_CloudSecure\_Role
- Outlook Anywhere User Role
- Users
- Windows\_CloudSecure\_Role

Selected Roles 0

Select All

No Items

2. Click '+' to add a new WiFi profile.
3. Enter a unique name for the WiFi profile.
4. (Optional) Enter a description of the profile.

5. Select the device types the profile applies to (Android, iOS, MAC OS X, and Windows).
6. Specify the server set ID of the wireless network.
7. Select the **Non-Broadcast SSID** check box if the wireless network does not broadcast its identity.
8. Select the **Auto Connect** check box to connect the client automatically when the network is detected (not supported by Android clients).
9. Select the type of authentication used by the network, and specify the password or enterprise settings, as required.
10. For the WPA Enterprise and WPA2 Enterprise security types, select the supported EAP protocols and specify the associated authentication settings.
11. The PEAP protocol is supported by all clients. Specify inner authentication method, username and password, outer identity, Trusted Server name, Trusted CA certificate.
12. The EAP-TLS protocol is supported by all clients. Specify User name, CSR template, IP address or FQDN name, Trusted CA certificate.
13. The TTLS protocol is supported by all clients. Specify inner authentication method, username and password, Trusted Server name, Trusted CA certificate.
14. Select a role from Policy applies to ALL roles, Policy applies to SELECTED roles, Policy applies to all roles OTHER THAN those selected below.
15. Click **Save Changes**.

## Defining Certificate Profiles

Certificate profiles specify the device certificates sent to each client device during onboarding. Up to 10 profiles can be defined.

To define certificate profiles:

1. Navigate to **Users > Enterprise Onboarding** and select **Certificate Profiles**.

The screenshot shows the 'Certificate profile' configuration page. At the top, the breadcrumb is 'EADHIRPSA3K / ENTERPRISE ONBOARDING / CERTIFICATE PROFILE'. The page title is 'Certificate profile' with a help icon. There are three main sections: 1. 'Name' and 'Description' text input fields. 2. 'Apply to Client Types' section with checkboxes for 'iOS', 'Android', 'Mac OS X', and 'Windows' (all checked), and three unchecked options: 'Import and Use Global Certificate', 'Import and Use CA Certificate', and 'Generate per User Certificate'. 3. 'Roles' section with a note: 'Enterprise Onboarding' in the Role must be enabled in order for this policy to take effect. Below this is a dropdown menu showing 'ROLES' and 'Policy applies to ALL roles'. There are two columns of role selection: 'Available Roles 9' and 'Selected Roles 0'. The 'Available Roles' list includes: 'Android\_CloudSecure\_Role', 'CloudSecure\_Remed\_Role', 'CTX\_User', 'Ecp\_CloudSecure\_Role', 'iOS\_CloudSecure\_Role', 'Mac\_CloudSecure\_Role', 'Outlook Anywhere User Role', 'Users', and 'Windows\_CloudSecure\_Role'. The 'Selected Roles' area is empty with a 'No Items' message. A 'Save Changes' button is located at the bottom right.

2. Click '+' to add a new certificate profile.
3. Select the device types the profile applies to (Android, iOS, MAC OS X, and Windows).
4. Select the **Import and Use Global Certificate** option to use the Ivanti Connect Secure global certificate to authenticate the client device. Click **Import Certificate & Key**, click **Browse** to locate the certificate file, and then click **Import**.

5. Select the **Import and Use CA Certificate** option to import any CA certificate (public Root CA, private Root CA, public intermediate CA, or private intermediate CA). These CA's can be used in WiFi profiles and must be downloaded to the client devices. Click Import and Use CA Certificate, click **Browse** to locate the certificate, and then click **Import CA Certificate**.
6. Select the **Generate per User Certificate** option to use the SCEP server and a CSR template to generate a certificate for each client. Select a CSR template from the Use Certificate Template list.
7. Select a role from Policy applies to ALL roles, Policy applies to SELECTED roles, Policy applies to all roles OTHER THAN those selected below.
8. Click **Save Changes**.

## Defining Secure Mail

To define secure mail:



1. Navigate to **Users > Enterprise Onboarding** and select **Secure Mail**.

**EADHIRPSAK3 / SECURE MAIL**  
**Secure Mail** ⓘ

**Secure Mail** > This section configures an Exchange Server to proxy connections through this device. The mobile device must be on-boarded to use the features listed here (on-boarding requires authentication and will install a mail profile).

S/MIME Certificates

Virtual Hostname ⓘ Exchange Server ⓘ

Description

The configuration options below will apply only for the devices that are onboarded via Ivanti Connect Secure.

INSERT VALUE FOR SERVER ⓘ

USERNAME <USER> ⓘ

**Secure Mail Options:**

**Encrypt Body**  
The SMIME certificate will be used for encryption.

**Encrypt Attachments**  
FILE EXTENSIONS  
.bmp;.csv;.doc;.docx;.ht ⓘ

**Allow Outbound E-mail Attachments**

NOTE: This is a "preview feature". This feature currently entitles you to test and manage up to 15 mailboxes on Apple iOS devices (This message is not applicable for Pulse WorkSpace onboarded devices).

**Save Changes**

For the configuration details, see "[Secure Mail](#)" on page 451.

# nSA Administration

- ["Introduction" below](#)
- ["Viewing Admin Authentication Methods" on the next page](#)
- ["Viewing Admin Authentication Policies" on page 481](#)
- ["Creating Admin Policies" on page 482](#)
- ["Creating Admin Rules and Admin Groups" on page 484](#)
- ["Associating Admin Groups with Admin Roles" on page 492](#)
- ["Role-based Access Control for Admin Users" on page 494](#)
- ["Workflow: Creating a Local Authentication Policy" on page 498](#)
- ["Workflow: Creating a SAML Authentication Policy With Azure AD and SAML\(Custom\)" on page 507](#)

## Introduction

After you have logged into the nSA for the first time, you can create **authentication methods** and apply them to the **authentication policies** you define in your nSA deployment. You then apply an authentication policy, together with **admin rules**, to a **admin group**. A admin group forms part of a *Secure Access Policy*.

To view admin authentication methods currently defined on the nSA, see ["Viewing Admin Authentication Methods" on the next page](#). To view user authentication policies, see ["Viewing Admin Authentication Policies" on page 481](#).

This chapter includes workflows for configuring admin authentication according to each supported authentication type. nSA supports the following types:

- **Local authentication:** An authentication system that is internal to the nSA. You must create all users manually on the nSA, and update any required authentication policies. see ["Workflow: Creating a Local Authentication Policy" on page 498](#).

- **Azure AD SAML authentication:** An existing remote SAML authentication system based on an Azure AD server. See "[Workflow: Creating a SAML Authentication Policy With Azure AD and SAML\(Custom\)](#)" on page 507.
- **SMAL Custom:** An customized remote SAML authentication system based on an on-premises ICS server. See "[Workflow: Creating a SAML Authentication Policy With Azure AD and SAML \(Custom\)](#)" on page 507

After you have created the required authentication method and updated your admin authentication policies, you create admin rules and admin groups, see "[Creating Admin Rules and Admin Groups](#)" on page 484

Optionally, you can associate each admin group with an *admin role*, see "[Associating Admin Groups with Admin Roles](#)" on page 492.

## Viewing Admin Authentication Methods

To view the admin authentication methods defined on the nSA, click the **Administration** icon in the nSA menu, then select **Admin Management > Authentication Servers**.

The *Authentication Servers* page appears, showing all admin authentication methods:

**Admin Management** ⓘ

Admin Groups   Admin Rules   Admin Policies   Device Policies   **Authentication Servers**

⚠ Authentication Servers which **default** OR linked to any **Admin Policy**, will be disabled from deletion.  
Local Authentication Servers which have one or more admins linked to them will be disabled from deletion.

Actions ▾ + Create Authentication Server  ⓘ ☰ ☰

<input type="checkbox"/>	STATUS	NAME ↑	DEFAULT ↑	AUTHENTICATION METHOD ↑	USERS
<input type="checkbox"/>	>	22.5R1-Azure-AD-Enroll		SAML (Azure AD)	N/A
<input type="checkbox"/>	>	22.5R1-AzureAD-Auth		SAML (Azure AD)	N/A
<input type="checkbox"/>	>	Admin Auth	☑	Local	25 Users
<input type="checkbox"/>	>	AzureAD-auth		SAML (Azure AD)	N/A
<input type="checkbox"/>	>	AzureAD-enroll		SAML (Azure AD)	N/A
<input type="checkbox"/>	>	cxo		Local	2 Users
<input type="checkbox"/>	>	dummy		Local	0 Users
<input type="checkbox"/>	>	multi-auth		SAML (Azure AD)	N/A
<input type="checkbox"/>	>	multi-enroll		SAML (Azure AD)	N/A
<input type="checkbox"/>	>	network_admin_user		Local	1 Users

Rows per page: 10 ▾ 1 - 10 of 18 found. < >

From this page, you can:

- Add a new authentication method by clicking **Create Authentication Server**.
- Edit an existing authentication method by selecting its check box and clicking **Actions > Edit**. Make any required updates and save the changes.
- Delete an unused authentication method by selecting its check box and clicking **Actions > Delete**. You must confirm the deletion.
- View the configured attributes for a SAML authentication method, where that method is configured for use with an authentication policy. To do this, click the arrow indicator to the left of the method name, where shown.

## Viewing Admin Authentication Policies

To view the user authentication policies defined on the nSA, click the **Administration** icon in the nSA menu, then select **Admin Management > Admin Policies**.

The *Admin Policies* page appears, showing all user authentication policies.

**Admin Management** ⓘ

Admin Groups   Admin Rules   **Admin Policies**   Device Policies   Authentication Servers

⚠ To create a Admin Policy, you need a prerequisite entity - [Authentication Servers](#).  
Admin Policies which are **default** OR linked to any **Admin Group** will be disabled from deletion.

Actions ▾   [+ Create Admin Policy](#)   Search   ⓘ   ☰

<input type="checkbox"/>	STATUS	NAME ↑	DEFAULT ↑	POLICY USER	ACCESS URL	SERVER	SERVER TYPE	DEV POL
<input type="checkbox"/>		Admin SignIn	☑	admin	*/login/admin/	Admin Auth	Local	
<input type="checkbox"/>		AdminAccess		admin	*/login/access/	Admin Auth	Local	File_
<input type="checkbox"/>		AdminAccess2		admin	*/login/access2/	Admin Auth	Local	MSD
<input type="checkbox"/>		cxo-policy		admin	*/login/cxouser/	cxo	Local	
<input type="checkbox"/>		network_admin_policy		admin	*/login/networkuser/	network_ad...	Local	
<input type="checkbox"/>		NWAdmin_Policy		admin	*/login/nwadmin/	Admin Auth	Local	
<input type="checkbox"/>		rbac		admin	*/login/rbac/	rbac	Local	
<input type="checkbox"/>		ReadOnly_Policy		admin	*/login/roadmin/	Admin Auth	Local	

Rows per page: 10 ▾   1 - 8 of 8 found. <

nSA provides default/built-in authentication policies, suitable for the primary use-cases of administrative sign-in, user enrollment, and user sign-in:

- *Admin SignIn*. This policy is used whenever admin users log in. That is, for connection requests to the `*/login/admin/` URL. It is referenced by the `ALLADMINUSERS` user rule, which associates it with the `ADMINISTRATORS` user rule group.

This policies is fixed and cannot be deleted. However, you can edit to reference a specific authentication method.

Furthermore, you can create additional custom authentication policies to enable bespoke authentication for specific groups of users or parts of your organization. Each policy should contain a unique access URL to which your users connect, and each should then be configured to link to an authentication method applicable for that purpose.

To learn more about how admin authentication policies are used in a nSA service.

From this page, you can:

- (For SAML authentication) Download policy metadata files that are required for external SAML enrollment or sign-in apps. To do this, select the check box for the required policy and click **Download**. Save the file to your local workstation.
- View the configured attributes for a SAML-authenticated policy, where that policy is configured with a valid SAML authentication method. To do this, click the arrow indicator to the left of the policy name, where shown.
- Add an authentication policy by clicking **Create Admin Policy**.
- Edit an existing authentication policy by selecting its check box and clicking **Actions > Edit**. Make any required updates and save the changes.
- Delete an unused authentication policy by selecting its check box and clicking **Actions > Delete**. You must confirm the deletion.

## Creating Admin Policies

You can use the existing default policies or can create new policy and use the default admin policy.

To configure Admin Policy for users:

1. From the nSA menu, click the **Administration** icon, then select **Admin Management**.
2. In the Admin Management page, select **Admin Policies**.

3. Click **Create Admin Policy**.

## Manage User Policy

4. Enter the **Policy Name**, **Login URL** using the format \*/login/<path>.
5. Select the **User Type: Enrollment Users/ Users/Administrators**.
6. Select the **Device Policy** from the drop-down menu. For example, Deny\_Location.



There are a few exceptions while creating User Policies when user Type is Administrator. The following device policies are not applicable to Administrator user.

- Any device policy having Risk Sense rule.
- Any device policy having Time of Day rule.
- Any device policy having combination of Location and Network rules.

7. Select the **Auth Server**.
8. Click **Create Admin Policy**.

9. Users can also edit the existing Default policy to include the Device policy during the enrollment sign-in/user authentication.

**Edit Admin Policies** ⓘ

---

**Update Authentication Policy**  
Enter a name and description for the Authentication Policy

POLICY NAME \*  
Admin Signin ⓘ

LOGIN URL \*  
\*/login/admin/ ⓘ

DESCRIPTION  
Add a description of the Authentication Policy

USER TYPE  
Administrators ▼

DEVICE POLICY  
Select a Device Policy ▼

---

**Auth Servers**  
**Note:**  
Only Local and SAML servers will be available for selection as a Primary Auth Server.  
*A server which is selected as secondary(if applicable) would not be available for selection as primary.*

PRIMARY AUTH SERVER \*  
Admin Auth ▼

Only Local and TOTP servers will be available for selection as a Secondary Auth Server.  
*A server which is selected as primary(if applicable) would not be available for selection as secondary.*

SECONDARY AUTH SERVER  
None ▼

Cancel
Update Admin Policy

### Edit User Policy

10. Make required changes and click **Update Admin Policy**.

## Creating Admin Rules and Admin Groups

After your authentication method is established and associated with an authentication policy, you can set up any required *admin rules* and *admin groups*. A admin rule identifies one or more admin users based on a test against a selected attribute present in a admin credential or profile, checked against either a local authentication record or from a SAML authentication service. For information about creating admin rules, see "[Creating Admin Rules](#)" on the next page.



**Admin Management** ⓘ

Admin Groups   Admin Rules   Admin Policies   Device Policies   Authentication Servers

⚠ To create a Admin Group, you need three prerequisite entities - **Admin Rules, Authentication Servers and Admin Policies**. Admin Groups which are **default OR** linked to any **Admin Rules / Admin Roles**, will be disabled from deletion.

Actions ▾ + Create Admin Group   Search   ⓘ   ☰

<input type="checkbox"/>	STATUS	NAME ↑	DEFAULT ↑	AUTHENTICATION POLICY ↑	DESCRIPTION
<input type="checkbox"/>	>	eatest		AdminAccess	
<input type="checkbox"/>	>	eatest2		AdminAccess2	
<input type="checkbox"/>	>	admin_grp1		AdminAccess2	Admin Group 1
<input type="checkbox"/>	>	Administrators	☑	Admin Signin	
<input type="checkbox"/>	>	CXO_group		cxo-policy	
<input type="checkbox"/>	>	network_admin_group		network_admin_policy	
<input type="checkbox"/>	>	NWAdmin_Group		NWAdmin_Policy	
<input type="checkbox"/>	>	RBAC		rbac	
<input type="checkbox"/>	>	ROAdmin_Group		ReadOnly_Policy	

Rows per page: 10 ▾   1 - 9 of 9 found. <

You associate one or more user rules with an *authentication policy* to form a *user group* (see "[Creating Admin Groups](#)" on page 490). Users requesting authorization for a service controlled by a Secure Access Policy must pass all the rules contained in the admin Group attached to the policy.

A admin group is required when defining a *secure access policy*. The admin group identifies the users and the authentication policy to which a secure access policy applies.

Optionally, you can associate each user group with an admin role, see "[Associating Admin Groups with Admin Roles](#)" on page 492.

## Creating Admin Rules

Through admin rules, an admin can construct a test to provide authorization to only those users of a particular name, role, group, or some other stored attribute. In the rule configuration, you select the admin attribute on which you want a test to be performed.

nSA includes the following default admin rule:

- **ALLADMINUSERS.** This matches all admin users, and is referenced by the default **ADMINISTRATORS** admin group, which associates it with the built-in *Admin Signin* authentication policy.



To read more about default admin groups, see ["Creating Admin Groups" on page 490](#). To read more about built-in authentication policies, see ["Viewing Admin Authentication Policies" on page 481](#).

---

This preset configuration of rules, groups, and policies is suitable for typical use cases involving whole-organization authorization needs. In other words, where you require only a single admin user authorization path that matches all users. For scenarios where you require more specific admin user authorization checks, you can create additional rules to match specific types of users.

When you create a rule, you select the admin attribute with which you want this rule to test. nSA provides the following rule attribute types:

- **username:** For local authentication methods, choose this attribute type to match against locally-defined user names.
- **SAML (Azure AD):** For SAML authentication methods, choose this attribute type to match against user names or groups provided by the SAML service.
- **Custom:** For SAML authentication methods, choose this attribute type to match against a custom SAML attribute expression.


To create a admin rule:

1. From the nSA menu, click the **Administration** icon, then select **Admin Management > Admin Rules**.

The *Admin Rules* page appears. This page lists all admin rules.

2. Click **Add**.

The **Add Admin Rule** form appears.

ADMIN RULES				ADD	EDIT	DELETE	
20 ADMIN RULES							
<input type="checkbox"/>		NAME ↑	ATTRIBUTE TYPE	EXPRESSION			
<input type="checkbox"/>		AppdiscoveryOne User	username	MATCHING " appdiscone@psecure.net "			
<input type="checkbox"/>		AppdiscoveryTwo User	username	MATCHING " appdisctwo@psecure.net "			
<input type="checkbox"/>		Custom_new	saml (Azu...	samlMultiValAttr.{http://schemas.microsoft.com...			
<input type="checkbox"/>		custom_test	saml (Azu...	samlMultiValAttr.{http://schemas.microsoft.com...			
<input type="checkbox"/>		custom3	saml (Azu...	samlMultiValAttr.{http://schemas.microsoft.com...			
<input type="checkbox"/>		customAttr_Rule	saml (Azu...	samlMultiValAttr.{http://schemas.microsoft.com...			
<input type="checkbox"/>		group_rule_dummy	saml (Azu...	userAttr.{http://schemas.microsoft.com/ws/2008...			
<input type="checkbox"/>		Matching Saml User	username	MATCHING " autouser1@ztaperfqa.net "			
<input type="checkbox"/>		Non-Matching User	username	NOT MATCHING " test@psecure.net "			
<input type="checkbox"/>		NWSAML_USER	username	MATCHING " autouser* "			
<input type="checkbox"/>		rbac	username	MATCHING " rbac* "			
<input type="checkbox"/>		ROASAML_USER	username	MATCHING " autouser* "			

3. Enter a **Rule Name**.

4. Click **Select Attribute Type** and select one of the available options:

- *Username*: Matches user names in a local authentication method. When you select this option, you must then:
  - Select an **Expression** type, either *Matching* or *Not Matching*.
  - For the **Admin** value, enter a match expression for the selected **Expression** type. For the value:
    - A comma-separated list of items is supported where required.
    - Wildcard matches are supported.
    - Special characters are supported.
    - Single and double quotes are not supported.



Ivanti recommends that a basic asterisk wildcard is not used when you intend to associate admin roles with user groups. Instead, a more-specific wildcard that only includes admin users is required in this case to prevent all users having total access rights.

---

- *SAML (Azure AD)*: Matches user names or groups in a SAML authentication method. When you select this option, you must then:
  - Select a **SAML Attribute Type**, either *Username* or *Group*.
  - For **Attribute Value**, enter a match expression for the selected **SAML Attribute Type** as a SAML expression.

- *Custom*. Matches against a custom SAML attribute expression. When you select this option, use the **Type or Create an Expression** property to enter an attribute expression. Supported formats include:

- For simple user attribute key-value matching, use the syntax `userAttr.<attr-key> [=|!=] <attr-value>`. For example:

```
- userAttr.memberOf = "CN=sales,DC=example,DC=com"
- userAttr.mail = "user1@example.com"
- userAttr.realm = "Users"
- userAttr.department != "example_department"
```

- To match against attributes that can have multiple values associated with a single attribute key, use the syntax `samlMultiValAttr.<attr-key> [=|!=] (<list>)`. For example:

```
- samlMultiValAttr.memberOf =
("CN=Employee,CN=Users,DC=example_demo,DC=com")
- samlMultiValAttr.memberOf = ("CN=Users,DC=example_
demo,DC=com")
```

- Use brackets and AND/OR operators to construct logical compound expressions:

```
- userAttr.groups = ("Group1" or "Group2")
- userAttr.realm = ("ztaqa") and samlMultiValAttr.memberOf =
("CN=sales,DC=uisdp,DC=com")
- userAttr.realm = ("ztaqa") or samlMultiValAttr.memberOf =
("CN=sales,DC=uisdp,DC=com")
- userAttr.realm != ("ztaqa") and samlMultiValAttr.memberOf
= ("CN=sales,DC=uisdp,DC=com")
```

5. Click **Create**.

The new admin rule is added to the list of admin rules.

6. Repeat steps 3-6 for each required user rule.
7. (Optional) Edit an existing admin rule by selecting its check box and clicking **Edit**. Make any required updates and save the changes.
8. (Optional) Delete an unused admin rule by selecting its check box and clicking **Delete**. You must confirm the deletion.

After you have created all required admin rules, you can create admin groups, see "[Creating Admin Groups](#)" below.

## Creating Admin Groups

After you have created admin rules (see "[Creating Admin Rules](#)" on page 485, you associate one or more admin rules with an authentication policy to form a Admin group.



Admin groups are one of the four dimensions of a Secure Access Policy.

---

nSA includes the following default user group:

- *ADMINISTRATORS*. This admin group associates the default *ALLADMINUSERS* admin rule with the built-in *Admin Signin* authentication policy.



To read more about built-in authentication policies, see "[Viewing Admin Authentication Policies](#)" on page 481.

---

This preset configuration of rules, groups, and policies is suitable for typical use cases involving whole-organization authorization needs. In other words, where you require only a single admin user authorization path that matches all users. For scenarios where you require more specific admin user authorization checks, you can create additional admin groups to make different associations of admin rules and custom authentication policies.

To create a admin group:

1. From the nSA menu, click the **Administration** icon, then select **Admin Management > Admin Groups**.

The *Admin Groups* page appears. This page lists all admin rule groups.

STATUS	NAME ↑	DEFAULT ↑	AUTHENTICATION POLICY ↑	DESCRIPTION
<input type="checkbox"/>	aaetest		AdminAccess	
<input type="checkbox"/>	aaetest2		AdminAccess2	
<input type="checkbox"/>	admin_grp1		AdminAccess2	Admin Group 1
<input type="checkbox"/>	Administrators	<input checked="" type="checkbox"/>	Admin Signin	
<input type="checkbox"/>	CXO_group		cxo-policy	
<input type="checkbox"/>	network_admin_group		network_admin_policy	
<input type="checkbox"/>	NWAdmin_Group		NWAdmin_Policy	
<input type="checkbox"/>	RBAC		rbac	
<input type="checkbox"/>	ROAdmin_Group		ReadOnly_Policy	

2. Click **Create Admin Group**.

A form appears to enable you to create the admin group.

3. Enter a **Admin Group Name**.
4. Click **Select an Authentication Policy** and select the required authentication policy.
5. Add a **Description** for the admin group. Click **Next**.
6. Select each of the listed **Admin Rules** that are required in the user group. Click **Next**.
7. Select each of the listed **Admin Policies** that are required in the user group. Click **Next**.

8. Verify the Summary page and click **Create**.  
The new admin group appears in the **admin Groups** list.
9. Repeat steps 2-7 to create all required user groups.
10. (Optional) To edit a listed admin group, select the corresponding check box and click **Actions > Edit**, and make any required updates.
11. (Optional) To delete an *unused* admin group, select the corresponding check box and click **Actions > Delete**, and then confirm the deletion.

After you have created admin groups, you can optionally assign the admin group to an admin role, see "[Associating Admin Groups with Admin Roles](#)" below

## Associating Admin Groups with Admin Roles

An admin role defines the elements of the admin interface that an associated admin user group can access.

The current admin can only access an individual admin interface page/workflow if their admin group is associated with an admin role that permits it. The tasks they can perform within that displayed element depends on the permissions set within the admin role.



When you are using admin roles, Ivanti recommends that any admin rules for administrators does not use a basic asterisk wildcard, see "[Creating Admin Rules](#)" on page 485. Instead, a more-specific wildcard that only includes admin users is required in this case to prevent all users having total access rights.



The default admin roles are not created by the tenant admin using the nSA user interface. Rather, they are set up by the Ivanti DevOps team.

---

For example, the DevOps team might define the following admin roles:

- The *.Administrators* admin role has access to all user interface elements (full read, create, update, delete rights).
- The *.Read-Only Administrators* admin role has access to all user interface elements except workflows (read only).
- The *.Network Administrators* admin role has access to Gateways and Insights (read only).
- The *.CxOs* admin role has access to Insights only (read only).



 For more information about your assigned admin roles, please contact Ivanti DevOps.

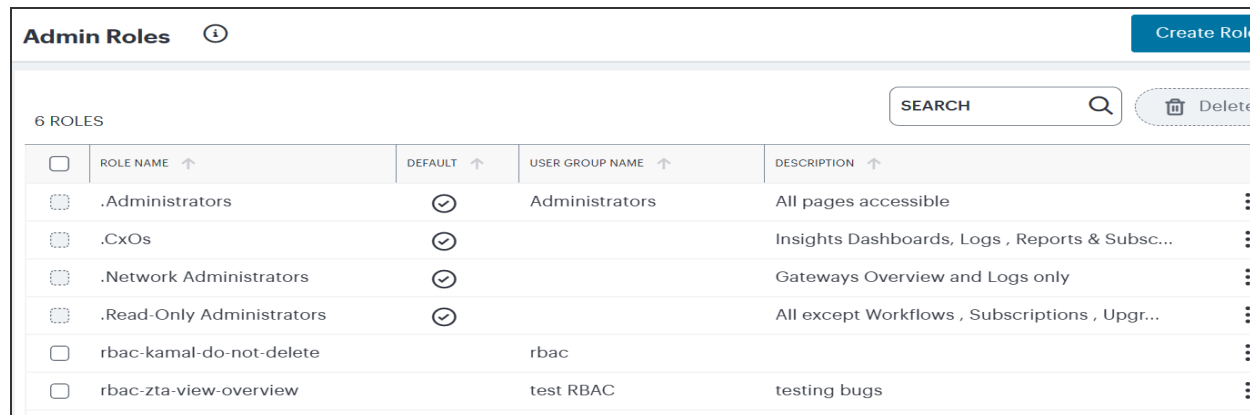
The Admin can view admin roles in the **Administration > Admin Roles** page, and associate each role with a single user group.

To associate a user group with an admin role:

1. Log into the nSA as a Tenant Admin.
2. From the nSA menu, click the **Administration** icon, then select **Admin Roles**.

A list of Admin Roles appears. This includes default admin roles and custom admin roles (RBAC).

For example:



<input type="checkbox"/>	ROLE NAME ↑	DEFAULT ↑	USER GROUP NAME ↑	DESCRIPTION ↑
<input checked="" type="checkbox"/>	.Administrators	<input checked="" type="checkbox"/>	Administrators	All pages accessible
<input checked="" type="checkbox"/>	.CxOs	<input checked="" type="checkbox"/>		Insights Dashboards, Logs , Reports & Subsc...
<input checked="" type="checkbox"/>	.Network Administrators	<input checked="" type="checkbox"/>		Gateways Overview and Logs only
<input checked="" type="checkbox"/>	.Read-Only Administrators	<input checked="" type="checkbox"/>		All except Workflows , Subscriptions , Upgr...
<input type="checkbox"/>	rbac-kamal-do-not-delete		rbac	
<input type="checkbox"/>	rbac-zta-view-overview		test RBAC	testing bugs

- Click the *Edit* icon for the admin role you want to update.

A dialog appears. For example:

**Edit Admin Role** Preview ⓘ

**Role Details**

ROLE NAME: rbac-kamal-do-not-delete

SELECT USER GROUP: rbac

DESCRIPTION: Add a description for the accessible pages

SELECT A ROLE TO COPY

**Permission Settings**

Controller Permissions | ICS Gateway Configuration

> Insights  Hide  View  Modify

> Secure Access **ZTA**  Hide  View  Modify

> Integrations **ZTA**  Hide  View  Modify

CANCEL SAVE

- Under **Choose group**, select the user group that you want the admin group to be associated with.
- Click **Save Changes**.
- (Optional) Repeat steps 3 to 5 for each admin role.

## Role-based Access Control for Admin Users

With Role-based access control (RBAC), organizations can easily add admins and assign them specific roles, with differing levels of access to the nSA Admin Portal. In addition to an existing set of default roles, Administrators can now create custom granular roles for specific functions within the nSA admin portal.

The following examples illustrate how an organization can leverage role-based administration for a variety of scenarios.

To create a custom admin role:

1. Log into the *Controller* as a Tenant Admin, see "[Logging in to the Ivanti Neurons for Secure Access as a Tenant Admin](#)" on page 12.
2. From the *ICS* menu, select **Administration**, then select **Admin Roles**.
3. In the Admin Roles page, click **Create Role**. The Create Admin Role page appears.

< **Create Admin Role** Preview ⓘ

**Role Details**

ROLE NAME  SELECT USER GROUP  
None

DESCRIPTION  
Add a description for the accessible pages

SELECT A ROLE TO COPY

**Permission Settings**

Controller Permissions ICS Gateway Configuration

> Insights  Hide  View  Modify

> Secure Access **ZTA**  Hide  View  Modify

> Integrations **ZTA**  Hide  View  Modify

> Administration  Hide  View  Modify

CANCEL CREATE

4. Enter a unique name for the role.
5. From the drop-down list, select the User Group that you want to associate with this role. For details, see "[Associating Admin Groups with Admin Roles](#)" on page 492.
6. Optionally, enter a **Description**.
7. From the drop-down list, select an existing role that suits your requirements.

- Under Permission Settings, the *Controller Permissions* list shows the list of resources. The resources specific to nZTA are tagged with **ZTA** and resources specific to ICS are tagged with **ICS**.

Permission Settings				
Controller Permissions		ICS Gateway Configuration		
▼ Insights		<input checked="" type="radio"/> Hide	<input type="radio"/> View	<input type="radio"/> Modify
Overview		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Users		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Applications		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gateways		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Policy Failures	ZTA	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Logs		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Actionable Insights		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reports		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Session Management	ICS	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
▼ Secure Access	ZTA	<input checked="" type="radio"/> Hide	<input type="radio"/> View	<input type="radio"/> Modify
Secure Access Policies		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Onboarding		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manage Users		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manage Devices		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manage Applications		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manage Gateways		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
▼ Integrations	ZTA	<input checked="" type="radio"/> Hide	<input type="radio"/> View	<input type="radio"/> Modify
CASB/SWG		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enterprise Integrations		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
▼ Administration		<input checked="" type="radio"/> Hide	<input type="radio"/> View	<input type="radio"/> Modify
Upgrade		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admin Management		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subscriptions		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Custom Geo IP	ZTA	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

- Select the Hide, View only, or Modify permissions for each resource and its attributes. This determines which pages to show and which actions to allow.
- Under Permission Settings, the ICS Gateway Configuration list shows the list of ICS Gateway resources.

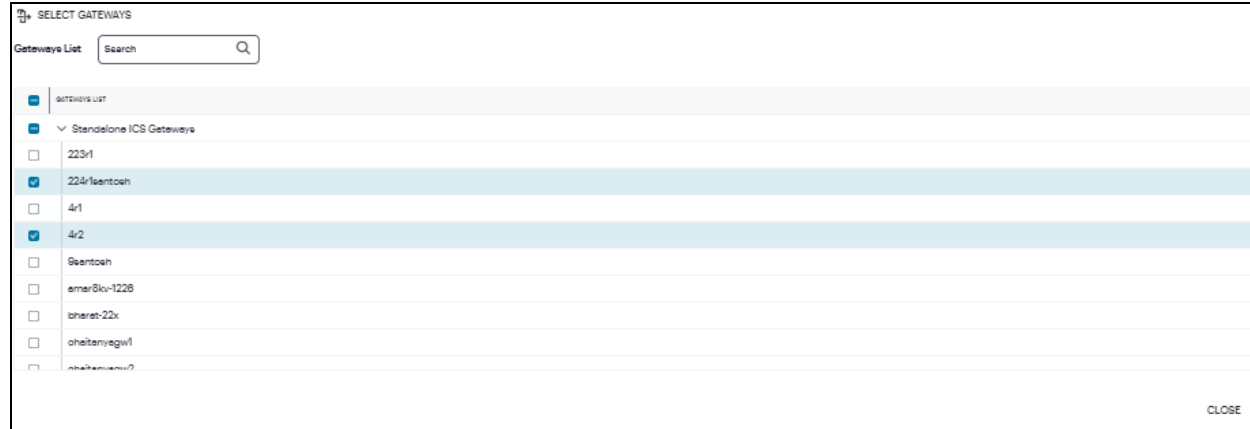
Permission Settings

Controller Permissions    ICS Gateway Configuration

SELECT GATEWAYS

Category	Item	Hide	View	Modify
Gateways	Gateways list	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Multinode Configuration	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	System			
System	NTP	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Configuration	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Network	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	IF-MAP Federation	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Log/Monitoring	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Behavioral Analytics	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Authentication	Signing in	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Endpoint Security	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Authentication Servers	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Users	User Realms	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	User Roles	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Resource Profiles	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Resource Policies	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Ivanti Secure Access Client	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Enterprise Onboarding	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintenance	System	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Import/Export	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Archiving	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Click **Select Gateways**. In the Select Gateways dialog, select one or more Gateways / Clusters from the list and click **Apply**.



12. Select the Hide, View only, or Modify permissions for each resource and its attributes. This determines which pages to show and which actions to allow.
13. Click **Create**. The newly created custom admin role is displayed in the Admin Roles page.
14. (Optional) Edit an existing admin role by clicking the adjacent three dots, and then selecting **Edit**. Make any required updates and save the changes.
15. (Optional) Delete an unused custom admin rule by clicking the adjacent three dots, and then selecting **Delete**. You must confirm the deletion.

## Workflow: Creating a Local Authentication Policy

This process involves creating a local authentication *method* and defining within it all user credentials necessary to identify and authenticate your end-users. Before you begin, make sure you have all user details (name and password) ready.



nSA includes built-in default authentication policies, each of which references a built-in local authentication method.

To configure a *new* local authentication method:

1. Log into the nSA as a Tenant Admin
2. From the nSA menu, click the **Administration** icon, then select **Admin Management > Authentication Servers**.

The **Authentication Servers** page appears. This page lists all existing admin authentication methods. For example:

**Admin Management** ⓘ

Admin Groups   Admin Rules   Admin Policies   Device Policies   **Authentication Servers**

⚠ Authentication Servers which **default** OR linked to any **Admin Policy**, will be disabled from deletion.  
Local Authentication Servers which have one or more admins linked to them will be disabled from deletion.

Actions ▾ + Create Authentication Server  ⓘ

<input type="checkbox"/>	STATUS	NAME ↑	DEFAULT ↑	AUTHENTICATION METHOD ↑	USERS
<input type="checkbox"/>	>	22.5R1-Azure-AD-Enroll		SAML (Azure AD)	N/A
<input type="checkbox"/>	>	22.5R1-AzureAD-Auth		SAML (Azure AD)	N/A
<input type="checkbox"/>	>	Admin Auth	☑	Local	25 Users
<input type="checkbox"/>	>	AzureAD-auth		SAML (Azure AD)	N/A
<input type="checkbox"/>	>	AzureAD-enroll		SAML (Azure AD)	N/A
<input type="checkbox"/>	>	cxo		Local	2 Users
<input type="checkbox"/>	>	dummy		Local	0 Users
<input type="checkbox"/>	>	multi-auth		SAML (Azure AD)	N/A
<input type="checkbox"/>	>	multi-enroll		SAML (Azure AD)	N/A
<input type="checkbox"/>	>	network_admin_user		Local	1 Users

Rows per page: 10 ▾ 1 - 10 of 18 found. <

3. Click **Create Authentication Server**.

A form appears that enables you to define the authentication method.

**Create Authentication Server** ⓘ

authentication methods: Local, SAML (Azure AD), SAML (Custom) and TOTP.

Choose Server Name and Authentication Type

Authentication Server Name \* ⓘ AUTHENTICATION TYPE: Local ⓘ

Password Options

Characters: MIN 8 MAX 128

Passwords must have:

- 1 digits
- 1 letters
- Passwords must have mix of UPPERCASE and lowercase letters
- 1 special characters
- New passwords can't be similar to the current password
- New passwords can't be similar to the username
- New password must be different from 1 previous passwords
- Password expires after 180 days
- Allow users to change their passwords

LIST OF LOCAL USERS

0 USER(S) FOUND

+ CREATE USER ⓘ Batch Delete ⓘ

Cancel Create Authentication Serv



At any point during this process, you can reset the form data by clicking **Reset**. You can also view existing authentication methods in a pop-up dialog by clicking **View Auth Methods**.



4. Under **Choose name and type**:

- Enter an **Authentication Server Name**.
- Select the **Authorization Type** of *Local*.

5. Configure the password options. This is applicable to default Admin Auth and default User Auth.

Settings	Guidelines
Minimum length	Specify a number of characters. The valid range is 6-128. 6 is the default.
Maximum length	Specify a number of characters. The valid range is 6-128. 128 is the default. The maximum length cannot be less than the minimum length.
Minimum digits	Specify the number of digits required in a password. Do not require more digits than the value of the maximum length option.
Minimum letters	Specify the number of letters required in a password. Do not require more letters than the value of the maximum length option. If you enable the previous option, the combined total of the two options cannot exceed that of the value specified in the maximum length option.
Uppercase and lowercase required	Select this option if you want all passwords to contain a mixture of uppercase and lowercase letters. Require passwords to contain at least two letters if you also require a mix of uppercase and lowercase letters.
Special Characters	Select this option if you want password should contain any special characters
Different from current password	Select this option if the password must not be same as the current password.
Different from username	Select this option if the password must not be same as the username.
Different from previous password	Select this option and then select a number from the drop-down if a new password must not be same as the previous number of passwords.
Force password change	Select this option to specify the number of days after which a password expires. The default is 180 days.

Settings	Guidelines
Allow users to change passwords	Select this option if you want users to be able to change their passwords. In addition to selecting local authentication password management options, you must select the Enable Password Management option for the associated realm authentication policy.
Prompt users to change password	Select this option to specify when to prompt the user to change passwords.

6. Click **Create User** and enter the following settings:
  - Enter **User Name**, **Full Name**, and **Email** for the user.
  - Enter **Password** and **Confirm Password** for the user.
  - (Optional) Select the **Temporary Password** check box if you want the user to change their password when they first log in.
  - Click **Add To Users List**.

The user is added to the list of users.

7. Repeat the previous step for each required user.
8. Click **Create Authentication Server**.

The new local user authentication method is added to the list of methods and the process is complete.

9. (Optional) To edit a listed authentication method, select its check box and select **Actions** drop-down and then click **Edit**. Make any required updates and confirm.
10. (Optional) To delete one (or more) *unused* authentication methods, select the check box for each, select **Actions** drop-down and click **Delete**. You must confirm the deletion.

After you have created your local authentication method, create or update your authentication policy with the new authentication method. In most cases, you need a minimum of one policy:

- admin sign-in



nSA allows for the definition of custom policies to facilitate separate authentication endpoints for specific groups of users. To learn more, see ["Viewing Admin Authentication Policies" on page 481](#).

Repeat the following steps for each policy, starting with enrollment:

1. From the nSA menu, click the **Administration** icon, then select **Admin Management > Admin Policies**.

The **Admin Policies** page appears. This page lists all existing user authentication policies.

**Admin Management** ⓘ

Admin Groups   Admin Rules   **Admin Policies**   Device Policies   Authentication Servers

⚠ To create a Admin Policy, you need a prerequisite entity - **Authentication Servers**.  
Admin Policies which are **default** OR linked to any **Admin Group** will be disabled from deletion.

Actions ▾   [+ Create Admin Policy](#)   Search   ⓘ   ☰

<input type="checkbox"/>	STATUS	NAME ↑	DEFAULT ↑	POLICY USER	ACCESS URL	SERVER	SERVER TYPE	DEVI POLI
<input type="checkbox"/>		Admin Signin	☑	admin	*/login/admin/	Admin Auth	Local	
<input type="checkbox"/>		AdminAccess		admin	*/login/access/	Admin Auth	Local	File_
<input type="checkbox"/>		AdminAccess2		admin	*/login/access2/	Admin Auth	Local	MSD
<input type="checkbox"/>		cxo-policy		admin	*/login/cxouser/	cxo	Local	
<input type="checkbox"/>		network_admin_policy		admin	*/login/networkuser/	network_ad...	Local	
<input type="checkbox"/>		NWAdmin_Policy		admin	*/login/nwadmin/	Admin Auth	Local	
<input type="checkbox"/>		rbac		admin	*/login/rbac/	rbac	Local	
<input type="checkbox"/>		ReadOnly_Policy		admin	*/login/roadmin/	Admin Auth	Local	

Rows per page: 10 ▾   1 - 8 of 8 found. <

To learn more about the policies on this page, see ["Viewing Admin Authentication Policies" on page 481](#).

From this page, either create a new custom policy or edit an existing policy.

- To add a new custom policy, click **Create Admin Policy**.

The **Create Admin Policies** form appears.

- Enter a **Policy Name**.
- Enter a **Login URL** using the format `*/login/<path>/`.

The URL must start with `*/login/` and cannot contain any special characters. `<path>` should be set to a unique value reflecting the endpoint URL you want to define for this authentication policy (appended with a backslash):

- In the case of admin sign-in policies, this is the URL endpoint (appended to the tenant FQDN) to which new users are invited to connect to enroll or sign-in a device with the nSA. Example value: `*/login/admin/`.

- (Optional) Enter a description for the authentication policy.

6. Select a **User Type** based on the intended authentication activity for this policy. Choose from:
  - **Administrators**: Select this option to define the authentication endpoint for administrator-level sign-in. This endpoint is used for administrator login to the nSA only.
7. Under **Auth Servers**, click **Primary Auth Server**, and select the required authentication method for the policy from the drop-down list.
8. Click **Secondary Auth Server**, and select the required authentication method for the policy from the drop-down list.
9. Click **Create Admin Policy** to create the new policy.

The new policy is added to the list of authentication policies.

The new policy is added to the list of authentication policies.

If you instead elect to update an existing custom or built-in policy:

1. Select the check box adjacent to the relevant policy, select **Actions** drop-down and click **Edit**.

The **Edit Admin Policies** form appears.



For built-in authentication policies, all properties except **Primary Auth Server** are read-only.

---

- Set the **Primary Auth Server** to be the new local user authentication method (indicated):

**Edit Admin Policies** ⓘ

---

**Update Authentication Policy**  
Enter a name and description for the Authentication Policy

**POLICY NAME\*** AdminAccess ⓘ      **LOGIN URL\*** \*/login/access/ ⓘ

**DESCRIPTION**  
Add a description of the Authentication Policy

**USER TYPE**  
Administrators ▼

**DEVICE POLICY**  
File\_Accept ▼

---

**Auth Servers**  
**Note:**  
Only Local and SAML servers will be available for selection as a Primary Auth Server.  
A server which is selected as secondary(if applicable) would not be available for selection as primary.

**PRIMARY AUTH SERVER\***  
Admin Auth ▼

Only Local and TOTP servers will be available for selection as a Secondary Auth Server.  
A server which is selected as primary(if applicable) would not be available for selection as secondary.

**SECONDARY AUTH SERVER**  
None ▼

Cancel    Update Admin Poli

- Click **Update Admin Policy**.

The list of authentication policies updates.

- Repeat until all required authentication policies are updated.

To ensure that your admin can access the authentication mechanism defined in the policies you configure through this process, make sure your *Secure Access Policies* are configured with a **Admin Group** in which these authentication policies are defined.

## Workflow: Creating a SAML Authentication Policy With Azure AD and SAML(Custom)



You can use the same work flow for creating SAML (Custom) as well.

nSA supports the use of a cloud-based Active Directory (AD) SAML service to provide authentication for your users.

If you choose to use AD as a SAML Identity Provider (IdP), you do not create any users locally on the nSA. All users will already be present in your remote SAML service.

Configuring nSA to use SAML authentication requires you to create separate SAML apps on the Azure AD platform for the following primary activities:

- Admin sign-in

The nSA includes built-in default authentication policies for each of these purposes, and also includes the ability to create your own custom policies for separate authentication of specific admin groups. You create an authentication method referencing one of the Azure AD SAML apps described above and then assign the method to an authentication policy of the same type (either the built-in policy, or one you create). Begin with enrollment, and then repeat the process for user sign-in.



1. Log into the nSA as a Tenant Admin.
2. From the nSA menu, click the **Administration** icon, then select **Admin Management > Admin Authentication**.

The *Admin Authentication* page appears. This page lists all existing user authentication methods:

### Admin Management ?

Admin Groups
Admin Rules
Admin Policies
Device Policies
Authentication Servers

⚠ Authentication Servers which **default** OR linked to any **Admin Policy**, will be disabled from deletion.  
 Local Authentication Servers which have one or more admins linked to them will be disabled from deletion.

Actions ▼

+ Create Authentication Server

Search ?

	STATUS	NAME <span style="font-size: 0.8em;">↑</span>	DEFAULT <span style="font-size: 0.8em;">↑</span>	AUTHENTICATION METHOD <span style="font-size: 0.8em;">↑</span>	USERS
<input type="checkbox"/>	>	22.5R1-Azure-AD-Enroll		SAML (Azure AD)	N/A
<input type="checkbox"/>	>	22.5R1-AzureAD-Auth		SAML (Azure AD)	N/A
<input type="checkbox"/>	>	Admin Auth	✔	Local	25 Users
<input type="checkbox"/>	>	AzureAD-auth		SAML (Azure AD)	N/A
<input type="checkbox"/>	>	AzureAD-enroll		SAML (Azure AD)	N/A
<input type="checkbox"/>	>	cxo		Local	2 Users
<input type="checkbox"/>	>	dummy		Local	0 Users
<input type="checkbox"/>	>	multi-auth		SAML (Azure AD)	N/A
<input type="checkbox"/>	>	multi-enroll		SAML (Azure AD)	N/A
<input type="checkbox"/>	>	network_admin_user		Local	1 Users

Rows per page: 10 ▼ 1 - 10 of 18 found.

3. Click **Create Authentication Server**.

A form appears that enables you to define the authentication method:

**Create Authentication Server** ⓘ

authentication methods: Local, SAML (Azure AD), SAML (Custom) and TOTP.

Choose Server Name and Authentication Type

Authentication Server Name\* ⓘ AUTHENTICATION TYPE: Local ⓘ

Password Options

Characters: MIN 6 MAX 128

Passwords must have:

1 digits

1 letters

Passwords must have mix of UPPERCASE and lowercase letters

1 special characters

New passwords can't be similar to the current password

New passwords can't be similar to the username

New password must be different from 1 previous passwords

Password expires after 180 days

Allow users to change their passwords

---

LIST OF LOCAL USERS  
0 USER(S) FOUND

[+ CREATE USER](#)    [Batch Delete](#)

At any point during this process, you can reset the form data by clicking **Reset**. You can also view existing authentication methods in a pop-up dialog by clicking **View Auth Methods**.

4. Under **Choose name and type:**

- Enter an **Authentication Server Name**. For example: *Enrollment* or *SignIn*.
- Select the **Authorization Type** of *SAML (Azure AD)*.

The form expands to show additional settings:

The screenshot shows a web form titled "Add Authentication Method". At the top right, there are two icons: "View Auth Methods" and "Reset". The form is divided into sections. The first section, "Choose name and type", contains two input fields: "AUTHENTICATION SERVER NAME" with the value "test" and "AUTHENTICATION TYPE" with the value "SAML (Azure AD)". Below this is the section "Fields required for SAML Authentication Server", which includes a checkbox for "Allow Unsigned Metadata" (unchecked), a text input for "Single Logout URL", and radio buttons for "Upload" (selected) and "Enter Manually". Under "Upload", there is a "LOCATION" dropdown menu set to "File" and a "FILE" input field with the placeholder text "Upload a file here". At the bottom right of the form, there are two buttons: "Cancel" and "Add Admin Authentication".

5. (Optional) Enter a **Single Logout URL**. For more information.

6. To provide your SAML IdP settings, select one of the following:

- Select **Upload** to upload a digitally-signed (or unsigned) federation metadata XML definition file downloaded for this SAML activity from Azure AD. That is, for either user enrollment or user sign-in.



By default, the ICS expects a signed metadata definition file. To allow an unsigned metadata file, select **Allow Unsigned Metadata**.

---


Then, upload your metadata file by clicking **Upload a file here**.


- Select **Enter Manually** to manually enter the required IdP SAML settings. Use this option in scenarios where a SAML federation metadata file is not available or incomplete.


Then, enter the following details:


**Fields required for SAML Authentication Server**


Upload  Enter Manually

IDP Entity Id 

IDP SSO URL 

IDP SLO Service 

USER NAME TEMPLATE  
<assertionNameDN.uid> 

IDP Signing Certificate 

The following minimum settings are required for your SAML authentication service to function correctly. Each setting relates to a value configured in the SAML application on your IdP. Contact your IdP administrator to obtain the relevant details:

- **IDP Entity ID:** The entity ID is sent as the Issuer value in the SAML assertion generated by the IdP. Enter the Issuer value in assertions generated by the SAML identity provider.
- **IDP SSO URL:** A URL provisioned by the SAML IdP to support service-provider-initiated Single Sign-On. Use the format `https://<FQDN>`.
- **IDP SLO Service:** (Optional) A URL to specify the Single Log-Out/sign out endpoint if you want to force re-authentication for increased security. Use the format `https://<FQDN>`. For more information.

- **User Name Template:** Specify how the system is to derive the username from the SAML assertion. The default value can be used, or replaced with an alternative specifier. For example: <assertionNameDN.uid>, the NameID value where ICS is the IdP, the UID from X509SubjectName, <userAttr.attr>, attr from AttributeStatement attributes.
- **IDP Signing Certificate:** The signing certificate to be used with the SAML app on the IdP. Type or paste in the contents of your Base-64 encoded public key.



If, at a later date, you need to modify the metadata definition file, edit the authentication method through the *User Authentication* page and repeat this step. However, note that federation metadata files from Azure AD are digitally-signed and so cannot be manually edited prior to upload back into nSA. This process supports replacing a definition file *only* with another digitally-signed and validated definition file.

---

7. Confirm that your settings are correct, then select **Add Admin Authentication** to create the authentication method.

The new SAML user authentication method is added to the list of methods displayed in the **Admin Authentication** page, and the process completes.

After you have created your SAML authentication method, create or update your authentication policies with the new authentication method:

- From the nSA menu, click the **Administration** icon, then select **Admin Management > Admin Policies**.

The **Admin Policies** page appears. This page lists all existing user authentication policies.

**Admin Management** ⓘ

Admin Groups   Admin Rules   **Admin Policies**   Device Policies   Authentication Servers

⚠ To create a Admin Policy, you need a prerequisite entity - **Authentication Servers**.  
Admin Policies which are **default** OR linked to any **Admin Group** will be disabled from deletion.

Actions ▾   [+ Create Admin Policy](#)   Search   ⓘ   ☰

<input type="checkbox"/>	STATUS	NAME ↑	DEFAULT ↑	POLICY USER	ACCESS URL	SERVER	SERVER TYPE	DEVICE POLICY
<input type="checkbox"/>		Admin Signin	⊙	admin	*/login/admin/	Admin Auth	Local	
<input type="checkbox"/>		AdminAccess		admin	*/login/access/	Admin Auth	Local	File_A
<input type="checkbox"/>		AdminAccess2		admin	*/login/access2/	Admin Auth	Local	MSD.
<input type="checkbox"/>		cxo-policy		admin	*/login/cxouser/	cxo	Local	
<input type="checkbox"/>		network_admin_policy		admin	*/login/networkuser/	network_ad...	Local	
<input type="checkbox"/>		NWAdmin_Policy		admin	*/login/nwadmin/	Admin Auth	Local	
<input type="checkbox"/>		rbac		admin	*/login/rbac/	rbac	Local	
<input type="checkbox"/>		ReadOnly_Policy		admin	*/login/roadmin/	Admin Auth	Local	

Rows per page: 10 ▾   1 - 8 of 8 found. <

To learn more about the policies on this page, see ["Viewing Admin Authentication Policies" on page 481](#).

From this page, either create a new custom policy or edit an existing policy.

- To add a new custom policy, click **Create Admin Policy**.

The **Create Admin Policies** form appears.

**Create Admin Policies** ⓘ

**Create Authentication Policy**  
Enter a name and description for the Authentication Policy

**POLICY NAME\***  
Enter a name ⓘ

**LOGIN URL\***  
\*/login/your-path ⓘ

**DESCRIPTION**  
Add a description of the Authentication Policy

**USER TYPE**  
Administrators ▼

**DEVICE POLICY**  
Select a Device Policy ▼


**Auth Servers**  
**Note:**  
Only Local and SAML servers will be available for selection as a Primary Auth Server.  
*A server which is selected as secondary(if applicable) would not be available for selection as primary.*

**PRIMARY AUTH SERVER\***  
Select from Local and SAML Auth Servers ▼

Only Local and TOTP servers will be available for selection as a Secondary Auth Server.  
*A server which is selected as primary(if applicable) would not be available for selection as secondary.*

**SECONDARY AUTH SERVER\***  
Select from Local and TOTP Auth Servers ▼

Cancel Create Admin Policy

 At any point during this process, you can reset the form data by clicking **Reset**. You can also view existing authentication policies in a pop-up dialog by clicking **View Auth Policies**.

- Enter a **Policy Name**.



4. Enter a **Login URL** using the format `*/login/<path>/`.

The URL must start with `*/login/` and cannot contain any special characters. `<path>` should be set to a unique value reflecting the endpoint URL you want to define for this authentication policy (appended with a backslash):

- In the case of admin sign-in policies, this is the URL endpoint (appended to the tenant FQDN) to which new users are invited to connect to enroll or sign-in a device with the nSA. Example value: `*/login/adminlogin/`.



In some enrollment circumstances, such as when using a device pre-installed with an older version of Ivanti Secure Access Client, you connect directly to the enrollment policy endpoint to enroll the device. For more details, see ["Viewing Admin Authentication Policies" on page 481](#).

---

5. (Optional) Enter a description for the authentication policy.
6. Select a **User Type** based on the intended authentication activity for this policy. Choose from:
  - **Administrators**: Select this option to define the authentication endpoint for administrator-level sign-in. This endpoint is used for administrator login to the nSA only.
7. Under **Policy Server Details**, click **Primary Auth Server**, and select the required authentication method for the policy from the drop-down list:

Alternatively, select *Add New Server* and create a new authentication method as per the steps described earlier in this section.

8. Click **Create Admin Policy** to create the new policy.

The new policy is added to the list of authentication policies.

If you instead select to update an existing custom or built-in policy:

1. Select the check box adjacent to the relevant policy and click **Actions > Edit**.

The **Edit authentication policy** form appears.



For built-in authentication policies, all properties except **Primary Auth Server** are read-only.

---

- Set the **Primary Auth Server** to be the new SAML user authentication method (indicated):

**Edit Admin Policies** ⓘ

---

**Update Authentication Policy**  
Enter a name and description for the Authentication Policy

POLICY NAME \*  
AdminAccess ⓘ

LOGIN URL \*  
\*/login/access/ ⓘ

DESCRIPTION  
Add a description of the Authentication Policy

USER TYPE  
Administrators ▼

DEVICE POLICY  
File\_Accept ▼

---

**Auth Servers**

**Note:**  
Only Local and SAML servers will be available for selection as a Primary Auth Server.  
*A server which is selected as secondary(if applicable) would not be available for selection as primary.*

PRIMARY AUTH SERVER \*  
Admin Auth ▼

Only Local and TOTP servers will be available for selection as a Secondary Auth Server.  
*A server which is selected as primary(if applicable) would not be available for selection as secondary.*

SECONDARY AUTH SERVER  
None ▼

Cancel
Update Admin P

- Click **Update Admin Policy**.

The list of authentication policies updates.

- Repeat until all required authentication policies are updated.

At this point, the nSA uses the uploaded Federation Metadata to contact the SAML service. After this process completes, a **Download** function becomes available for each relevant policy. This metadata file is required to configure trusted communication with the remote SAML service.

- Refresh your browser until the **Download** action is visible for the relevant policies.
- Select the check box for the policy metadata you want to download and clear all other check boxes.

3. Click **Download** and save the metadata file.



As mentioned previously, make sure you repeat this procedure for each required SAML app on your Azure AD platform. That is, you require separate XML metadata files for the enrollment authentication policy and the login authentication policy.

---

After the **Admin Authentication** workflow is complete, you can configure the Azure AD platform with the XML configuration of the nSA.

Finally, to ensure that your users can access the authentication mechanism defined in the policies you configure through this process, make sure your *Secure Access Policies* are configured with a **Admin Group** in which these authentication policies are defined. To learn more.

# Configuration File Administration

## Configuring System Maintenance Options

You can use the maintenance options page to enable various system maintenance features.

To enable various system maintenance features:

1. Select **Maintenance > System > Options** to display the maintenance options page.

**System Maintenance** ⓘ

**Options** >

- Automatic version monitoring**  
By enabling this feature, you allow the retention of any data regarding usage and performance statistics to be transmitted to and used by Pulse Secure, including for improvement of future versions of the product and related support. The data is transmitted over a secure (SSL) connection.
- Enable gzip compression**  
Use gzip compression to reduce the amount of data sent to browsers that support HTTP compression. This can result in faster page downloads for some users.
- Enable resource throttling**  
Enables resource throttling to give more resources to high priority processes under load. Changing this option will cause a system reboot.
- Enable Kernel Watchdog**  
Enables the kernel watchdog that automatically restarts the system under kernel deadlock or when kernel runs low on some key resources.
- Enable File System Auto-clean Feature**  
Enables the system to automatically clean up the file system when disk utilization reaches 90%. (IMPORTANT: when enabled, this feature may result in loss of data that may be relevant in debugging system problems that occurred a week or earlier in the past.) (e.g. old debuglogs, core files, and snapshots may be removed.)
- Enable web installation and automatic upgrade of Ivanti Secure Access Clients**  
By default, the Ivanti Secure Gateway automatically installs and upgrades Ivanti Secure Access Clients of users who have connected to it. This option can be used to enable/disable the automatic installation and upgrade of the Ivanti Secure Access Client. Uncheck this option only if you intend to manage installation and upgrade of the Pulse Secure client through some other mechanism. For more information, refer to the documentation.
- Enable Pulse Client Components removal Tool for Cert issue Remediation.**
  1. This option runs Pulse Client Components removal tool on Windows End User machines upon Browser access and remediates the certificate expiry issue described in KB article KB44781. More details/instructions about this tool can be found in KB44810
  2. This will run only once per browser (One-time activity only).
  3. The end users need not have Admin Rights, if they have Pulse Secure Installer service or/and Pulse Desktop Client installed.
- Enable Virtual Terminal console.**  
Disable this to get serial console access. The system will reboot when this setting is modified.
- Enable Java instrumentation caching**  
Caching of Java instrumentation to improve the performance of Java applications. This can result in faster Java application downloads for some users.
- Show Auto-allow**  
Enable this to view auto-allow options under the role settings.
- Do not show Task Guidance/Help page on admin login**  
This checkbox is applicable only in case there are no licenses installed on the box. By enabling this checkbox, Task Guidance/Help page will not be shown automatically upon admin login.
- Clear all configuration data at this device**  
This checkbox will clear keys and trigger a config reset and reboot the device
- Prevent system overload**  
Ivanti Connect Secure will mitigate heavy load, by temporarily blocking logins and access to some resources
- Auto reboot the system**  
Enabling the check box will automatically reboot when the appliance is in kernel panic state
- Monitor SAML server processes**  
By enabling this checkbox, saml-server instance(s) will get monitored for high memory usage and the saml-server instance(s) will be killed if it consumes more than 3.5GB of virtual memory.
- Monitor WEB server processes**  
By enabling this checkbox, web server instance(s) will get monitored for high memory usage and the web server instance(s) will be killed if it consumes more than 3.5GB of virtual memory.
- Enable Browser Extension**  
By enabling this PSAL, follows browser Extension path.

PSAL State Timeout:  
  
min-2 max-60min

End-user Localization:

2. Select options as described in the following table.
3. Save the configuration.

The following table lists the System Maintenance Options Configuration GuidelinesE:

Options	Guidelines
Automatic version monitoring	<p>If you enable this option, the system reports to Ivanti the following data:</p> <ul style="list-style-type: none"> <li>Machine identifier.</li> <li>Information describing your current software, including:               <ul style="list-style-type: none"> <li>Software build number and build name.</li> <li>An MD5 hash of your license settings.</li> <li>An MD5 hash of the internal interface IP address.</li> </ul> </li> <li>If this node is in a cluster, the number of nodes within that cluster.</li> <li>Current state of the node.</li> <li>Cluster type (active/active, active/passive).</li> <li>Total number of unique subnets on the cluster nodes.</li> <li>Version of Ivanti Secure Access Client.</li> <li>Version of ESAP.</li> <li>Cluster log synchronization status.</li> <li>Total number of concurrent users on the device.</li> <li>Number of Ivanti tunnels.</li> </ul> <p>We strongly recommend that you enable this service.</p>
Enable gzip compression	<p>Connect Secure only. Use gzip compression to reduce the amount of data sent to browsers that support HTTP compression. This can result in faster page downloads for some users.</p>
Enable Kernel Watchdog	<p>Enables the kernel watchdog that automatically restarts the system under kernel deadlock or when kernel runs low on some key resources.</p> <p>Enable the kernel watchdog only when instructed by Technical Support.</p>
Enable resource throttling	<p>Enables system resource throttling in the system that gives system processes higher priority. High priority processes will get high resources under system load. Changing this option will cause a system reboot.</p>
Enable File System Auto-clean Feature	<p>Enables the system to automatically clean up the file system when disk utilization reaches 90%.</p> <p>The clean-up operation deletes files that might be relevant in debugging- for example, debug logs, core files, and snapshots might be deleted.</p>

Options	Guidelines
Enable Web installation and automatic upgrade of Ivanti Secure Access Client	<p>After you deploy Ivanti Secure Access Client software to endpoints, software updates occur automatically. A Ivanti Secure Access Client can receive updates from the server. If you upgrade the Ivanti software on your Ivanti server, updated software components are pushed to a client the next time it connects.</p> <p>A bound endpoint receives connection set options and connections from its binding server, but it can have its Ivanti Secure Access Client software upgraded from any Ivanti server that has the automatic upgrade option enabled. During a client software upgrade the client loses connectivity temporarily.</p>
Enable Ivanti Secure Access Client Components removal Tool for Cert issue Remediation	<p>Provides an option for the Admin to enable users to download the Ivanti Secure Access Client Components removal (Ivanti Upgrade Helper) tool on Windows End User machines upon Browser access and remediates the certificate expiry issue. For more information, refer <a href="#">KB44781</a> and <a href="#">KB44810</a>.</p>
Virtual Terminal console	<p>Enables the virtual terminal on a virtual appliance. Clear this check box to use the serial console. Changing this setting will restart the system.</p>
Java instrumentation caching	<p>Connect Secure only. Caches the Java instrumentation to improve the performance of Java applications.</p>
Show Auto-allow	<p>Connect Secure only. The auto-allow option provides the means to automatically add bookmarks for a given role to an access control policy, for example, Web bookmarks with auto-allow set are added to the Web access control policy. You only use this feature if you also use Resource Policies. We recommend that you use Resource Profiles instead.</p>
Do not show Task Guidance/Help page on admin login	<p>This option is applicable only in case there are no licenses installed. When enabled, Task Guidance/Help page does not appear automatically upon administrator login.</p>
Clear all configuration data at this device	<p>This option clears all keys and triggers a configuration reset and reboots the device.</p>
Prevent system overload	<p>Disallows user login, user login via Ivanti Secure Access Client, HTML5 connection or connection to a web resource when the CPU load is above a certain threshold. By default, this option is disabled for ICS upgrades and enabled for new installation.</p>

Options	Guidelines
	<p><b>Exception:</b> Admin logins, DMI and inbound REST calls are not blocked due to CPU overload.</p> <p>When a login to the HTML5 connection or connection to a web resource is blocked and when a user tries to log in, the login page will display an appropriate system busy message.</p> <p>To configure log events for User Access, in the <b>System &gt; Log/Monitoring &gt; User Access &gt; Settings</b> tab, select the <b>System Too Busy</b> check box. By default, this option is enabled.</p> <p>Select <b>System &gt; Log Monitoring &gt; User Access &gt; Log</b> to view the logs.</p>
Auto reboot the system	This option automatically reboots the system when the appliance is in kernel panic state.
Monitor SAML server processes	Enabling this check box, saml-server instance(s) gets monitored for high memory usage and kills if it consumes more than 3.5GB of virtual memory.
Monitor WEB server processes	Enabling this check box, web server instance(s) gets monitored for high memory usage and kills if it consumes more than 3.5GB of virtual memory.
Enable Browser Extension	Enabling this PSAL, follows browser Extension path.
PSAL State Timeout	Specify timeout in minutes, maximum is 9 minutes and minimum is 2 minutes.
End-user Localization	<p>Select one of the following options:</p> <ul style="list-style-type: none"> <li>Automatic (based on browser settings)</li> <li>English (U.S.)</li> <li>Chinese (Simplified)</li> <li>Chinese (Traditional)</li> <li>French</li> <li>German</li> <li>Japanese</li> <li>Korean</li> <li>Spanish</li> </ul>
<b>External User Records Management</b>	

Options	Guidelines
Persistent user records limit	Specify the maximum number of user records. This feature is useful when system performance is affected due to a large number of user records. We highly recommend you consult Technical Support prior to using this feature. Deleting a user record removes all persistent cookies, SSO information, and other resources for that user. It does not remove the user record from the external or internal authentication server. If you delete a user record and that user logs back in to the authentication server, new user records are created. Records are not removed if that user is currently logged in.
Number of records to delete when the limit is exceeded	Specify a number. Older records are removed first. A user record is not deleted if that user is currently logged in.
Delete records now	Check whether the persistent user records limit has been exceeded. If it is, delete the number of user records specified in the option above.
Automatic deletion of user records periodically	Check whether the persistent user records limit will be exceeded whenever a new user record is about to be created. If true, delete the records prior to creating the user new record.

## Using the Import/Export Feature for Binary System Configuration Files

This topic describes the import/export feature for binary system configuration files.

### Binary System Configuration File Overview

The access management framework enables you to import and export the system and network settings using binary system configuration files. When importing a system configuration file, you can exclude the device certificate and the server's IP address or network settings from the imported information. For example, to set up multiple Ivanti Connect Secure systems behind a load balancer, import everything except for the IP address. To set up the system as a backup server, import everything except for the digital certificate and the network settings.

The binary system configuration file includes the following settings:

- Network settings



- Certificates. The system imports only device certificates, not the chains that correspond to the device certificates or trusted client CAs.
- Cluster configuration
- Licenses. When you import a configuration file that contains licenses, the system gives precedence to any existing licenses. Licenses are imported only if no licenses are currently installed.
- SNMP settings
- Sensor configuration. Sensor configurations are included in the system configuration file while sensor event policies are included in the user configuration file. To import or export all sensor-related settings, import or export both the system and user configuration files. The user configuration file, not the system configuration file, includes resource profiles, resource policies, and the local user database. To perform a complete backup, export both the system and user configuration files.
- Client-side logs. To import or export client-side logs, import or export both the system and user configuration files.
- Web proxy servers. Ivanti Connect Secure only. To export all web proxy related information, both the system and user configuration files are needed.
- Web caching options. Ivanti Connect Secure only.
- Rewriter filters. Ivanti Connect Secure only.

## Exporting a Binary System Configuration File

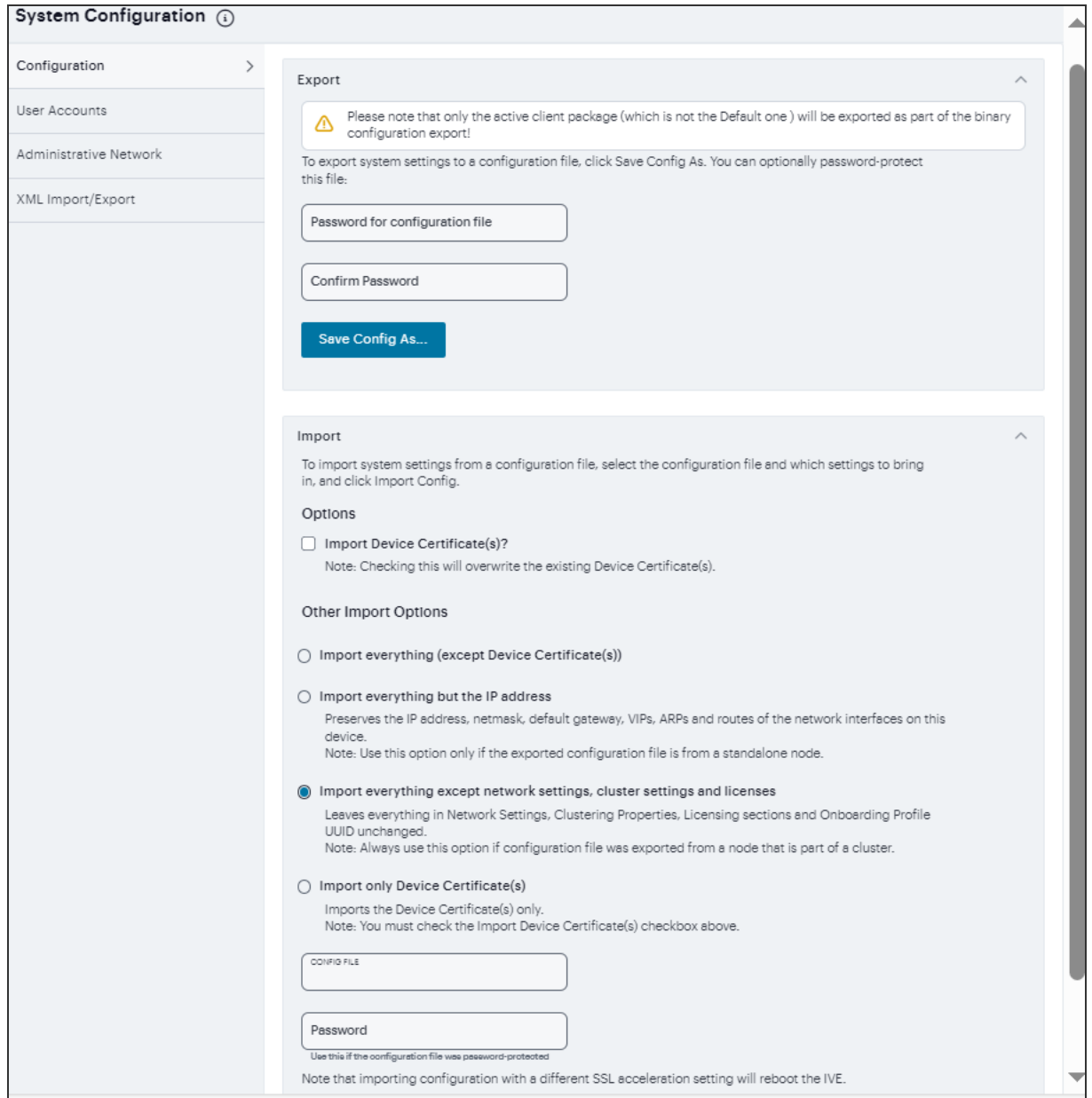
To export a binary system configuration file:

1. Select **Maintenance > Import/Export > Import/Export Configuration** to display the configuration page.

[Export Binary System Configuration File Configuration Page - Ivanti Connect Secure](#) shows the configuration page for Ivanti Connect Secure.

2. Complete the configuration and export operation as described in [Table](#).

Export Binary System Configuration File Configuration Page - Ivanti Connect Secure



The following table lists the Export Binary System Configuration File Configuration and Action Guidelines:

Settings	Guidelines
Password for configuration file	Specify a password to encrypt and secure the configuration file.
Confirm password	Specify the password.

Settings	Guidelines
Save Config As	Display a dialog box to save the file to your local host.

## Importing a Binary System Configuration File

To import a binary system configuration file:

1. Select **Maintenance > Import/Export > Import/Export Configuration** to display the configuration page.
2. Complete the configuration and import operation as described in the following table.

The following table lists the Import Binary System Configuration File Configuration and Action Guidelines:

Settings	Guidelines
<b>Options</b>	
Import Device Certificate(s)?	Overwrite the existing device certificate(s) with the ones in the imported configuration file. When importing a device certificate in to a FIPS device, note that you must choose a certificate that uses a FIPS-compliant private key. To ensure FIPS-compliance, select a certificate and corresponding security world private keys were generated on a FIPS device.
<b>Other Import Options</b>	
Import everything (except Device Certificate(s))	Import all settings except the device certificate.
Import everything but the IP address	Do not overwrite the existing configuration for network interface IP addresses, netmask, default gateway, virtual interfaces, ARP tables, and route tables. Use this option only if the exported configuration file is from a standalone node. <i>To set up multiple nodes in a cluster behind a load balancer, import everything except the IP address.</i>

Settings	Guidelines
Import everything except network settings, cluster settings, and licenses	Do not allow the imported configuration to change the existing configuration for settings found in the Network Settings and Licensing sections. With this option, network configurations, licenses, cluster configurations, certificates, defined SNMP settings and syslog configurations are not imported. Always use this option if configuration file was exported from a node that is part of a cluster. <i>To set up a backup node, import everything except network settings and digital certificates.</i>
Import only Device Certificate(s)	Import the device certificate(s) only. You must also select the Import Device Certificate(s) check box.
Config file	Use the browse button to locate and select the file from your local host.
Password	Specify the password (if applicable).
Import Config	Import the configuration file.

## Using the Import/Export Feature for Binary User Configuration Files

This topic describes the import/export feature for user configuration binary files.

### Binary User Configuration File Overview

In general, if a menu item falls under the Authentication, Administration, or Users menu, the item is included in the user configuration file (user.cfg). The exception is Sensors event policies, which are under System, but which are exported in the user configuration file. In particular, the user configuration file includes the following settings:

- Sign-in settings (includes sign-in policies, sign-in pages, all authentication servers, authentication protocol sets, and Ivanti settings)
- Authentication realms (including admin realms, user realms, and MAC authentication realms)
- Roles
- Resource profiles. Ivanti Connect Secure only.
- Resource policies

- Sensor event policies
- User accounts
- Client-side logs. To export or import client-side logs, export or import both the system and user configuration files.

## Exporting a Binary User Configuration File

To export a binary user configuration file:

1. Select **Maintenance > Import/Export > Import/Export Users** to display the configuration page.

[Binary Export User Configuration File Configuration Page - Ivanti Connect Secure](#) shows the configuration page for Ivanti Connect Secure.

2. Complete the configuration and export operation as described in [Table](#).

Binary Export User Configuration File Configuration Page - Ivanti Connect Secure

The screenshot displays the 'User Configuration' interface. On the left is a navigation menu with the following items: 'Configuration', 'User Accounts' (highlighted with a right-pointing chevron), 'Administrative Network', and 'XML Import/Export'. The main content area is divided into two sections: 'Export' and 'Import'. The 'Export' section includes the text 'Export user settings to a configuration file. You can optionally password-protect this file:' followed by two input fields labeled 'Password for configuration file' and 'Confirm Password', and a blue 'Save Config As...' button. The 'Import' section includes the text 'Import user settings by selecting the configuration file and clicking Import Config. Import User Accounts invalidate all existing End-User and Administrators sessions.' followed by two input fields labeled 'CONFIG FILE' and 'Password', and a blue 'Import Config' button. A small note below the 'Password' field reads 'Use this if the configuration file was password-protected'.

The following table lists the Binary Export User Configuration File Configuration and Action Guidelines:

Settings	Guidelines
Password for configuration file	(Optional) Specify a password to encrypt and secure the configuration file.
Confirm password	Specify the password.
Save Config As	Display a dialog box to save the file to your local host.

## Importing a Binary User Configuration File

To import a binary user configuration file:

1. Select **Maintenance > Import/Export > Import/Export Users** to display the configuration page.
2. Complete the configuration and import operation as described in the following table.

Import User Configuration Binary File Configuration Page

The following table lists the Import Binary User Configuration File Configuration and Action Guidelines:

Settings	Guidelines
Config file	Locate and select the file from your local host.
Password	Specify the password (if applicable).
Import Config	Import the configuration file.

## Using the Import/Export Feature for XML Configuration Files

This topic describes the import/export feature for XML configuration files.

## XML Configuration File Overview

The system maintains its configuration in a structured XML file. This enables the system to support an alternative to the complete configurations that are exported and imported with the configuration binary files. You can use the export/import configuration XML pages to export and import selected configuration elements.

You might find the feature useful when performing the following tasks:

- Adding to the configurations of peer nodes, for example, adding a large number of users.
- Modifying multiple instances of a single setting, for example, an authentication server name.
- Deleting settings, for example, deleting authentication servers that are no longer used.
- Creating a configuration template to use for setting up new nodes.
- Tracking configuration changes by comparing differences on periodic exports.

## Guidelines and Limitations

The following table summarizes the guidelines and limitations for using the XML import/export feature.

The following table lists the XML Import/Export Guidelines and Limitations:

Category	Guidelines and Limitations
General	<p>The following guidelines and limitations apply:</p> <p>You can import and export configuration files only between systems running the same software version.</p> <p>If XML configuration to be imported contains one or more Ivanti Secure Access Client packages, we recommend to split the configuration to import only Ivanti Secure Access Client packages first considering one Ivanti Secure Access Client package per import and then import the remaining configurations.</p> <p>You might find it useful to use a text editor to modify configuration elements that ought to be distinguished, such as configuration object names and descriptions. Never modify the names of the NIC identifiers. The system relies on knowing that each appliance has two interface cards, known as NIC0 and NIC1.</p> <p>Immediately after importing an Active Directory authentication server configuration, you must edit the configuration to change the Computer Object name. Unexpected problems might arise if two systems join an Active Directory domain using the same Computer Object name.</p>
Licenses	<p>The following rules apply to exported and imported licenses:</p> <p>You cannot edit the license data that is exported. It is encrypted.</p> <p>An XML import of licenses is valid only if the system does not currently have a license installed. If a license is installed already, any imported licenses are dropped. If you still intend to import a license, you must perform a factory reset before you perform the import operation.</p> <p>If you import a license after deleting a temporary license, the imported license is dropped because you might still be able to reactivate the deleted license. The import operation preserves any licensing data.</p>



Category	Guidelines and Limitations
Clusters	<p>The following guidelines apply to importing a configuration file for nodes that belong to a cluster:</p> <p>When you perform an import operation on a cluster, all of the cluster nodes must be enabled and running. If you attempt to import a configuration into a cluster in which a node is not running, the import operation might hang or your import results might be unpredictable.</p> <p>The XML configuration that you import must contain the same set of nodes as the original cluster. The signature used to synchronize the cluster when the nodes are reenabled is derived from the IP addresses of the cluster nodes. Therefore, the remaining nodes cannot rejoin the cluster if the imported configuration yields a different signature.</p> <p>When import occurs, the imported configuration file overwrites the node-specific cluster configuration network settings of the remaining nodes. If you change the node-specific network settings, make sure you do not make the remaining nodes unreachable.</p> <p>After you have exported the file, do not modify settings that could render the primary node unreachable, such as changes to network settings.</p> <p>After you have exported the file, do not modify the XML to change the node name, IP address, or IP netmask.</p> <p>After you have exported the file, do not modify virtual port settings or add new virtual port settings.</p>

## Exporting an XML Configuration File

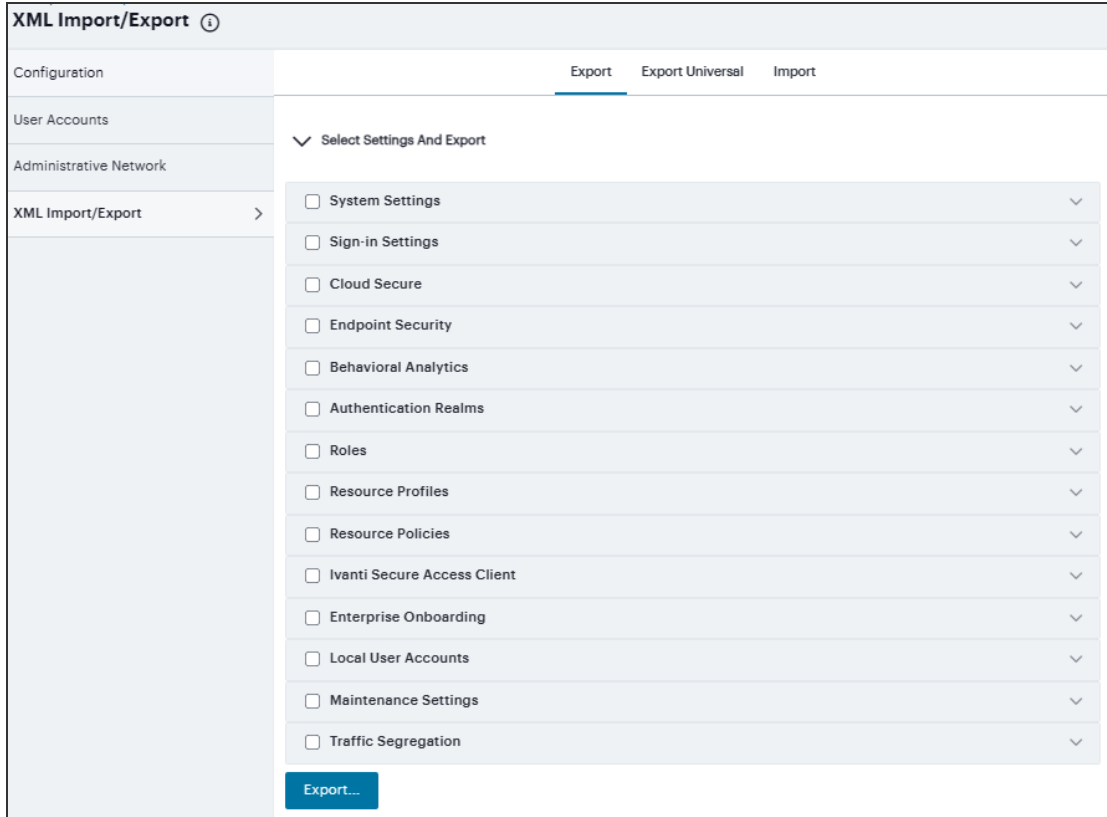
To export an XML configuration file:

1. Select **Maintenance > Import/Export > Export XML** to display the configuration page.

[Export XML File Configuration Page - Ivanti Connect Secure](#) shows the configuration page for Ivanti Connect Secure.

2. Complete the configuration and export operation as described in [Table](#).

[Export XML File Configuration Page - Ivanti Connect Secure](#)



The following table lists the Exporting an XML Configuration File settings and guidelines:

Settings	Guidelines
<b>Select Settings and Export</b>	
Expand All	Expand the display of all settings groups.
Select All	Select all settings for all groups.
Export	Export the selected configuration data to an XML file.
System	Expand this group and select settings found under the System menu. Do not select the DMI Agent unless Technical Support instructs you to do so.
Sign-in	Expand this group and select settings found under the Sign-in menu.
Endpoint Security	Expand this group and select settings found under the Endpoint Security menu. ESAP packages are encrypted when exported.

Settings	Guidelines
Authentication Realms	Expand this group and select authentication realm settings, including user realms and MAC address authentication realms.
Roles	Expand this group and select settings found under the Roles menu.
Resource Profiles	Ivanti Connect Secure only. Expand this group and select settings found under the Resource Profiles menu.
Resource Policies	Expand this group and select settings resource policies settings.
Ivanti Secure Access Client	Expand this group and select settings found under the client menu.
Local User Accounts	Expand this group and select local authentication server settings.
Maintenance	Expand this group and select settings found under the Maintenance menu.
Export	Export the selected configuration data to an XML file.

## Importing an XML Configuration File

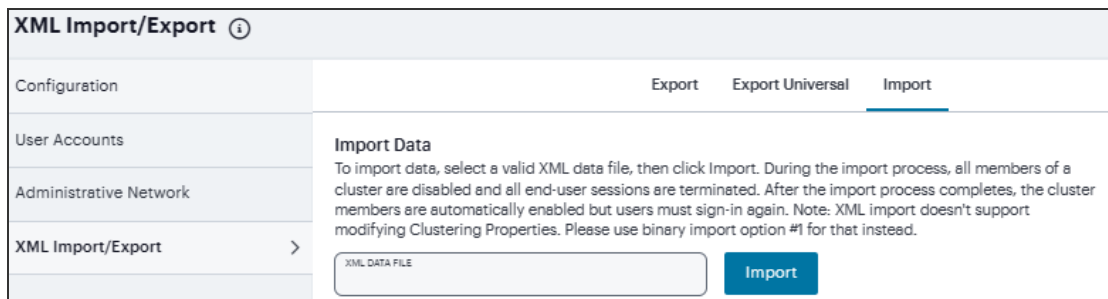
To import an XML configuration file:

1. Select **Maintenance > Import/Export > Import XML** to display the configuration page.

Figure underneath shows the configuration page for Ivanti Connect Secure.

2. Complete the configuration and import operation as described in [Table](#).

Import XML File Configuration Page



The following table lists the Import XML File Configuration and Action Guidelines:

Settings	Guidelines
XML data file	Locate and select the XML file.
Import	Import the file. The Import XML Results page is displayed. This page contains information about the imported network settings, roles, resource policies, and other settings. If there are errors in the XML, the import operation stops and rolls back the configuration to the previous state. Error messages are displayed on the Import XML Results page.

## Archiving Servers

You can schedule periodic archiving for system logs, system configuration files, and system snapshots. Periodic archiving occurs only at the scheduled time. "Unscheduled" archiving does not occur automatically.

To configure log archiving:

1. In the **Maintenance > Archiving > Archiving Servers** page, select **Method** from the drop-down list.

**Archiving Servers** ⓘ

Archiving

Use Backups to save and restore up to 5 copies of your current system settings or user accounts

Archiving Servers >

**Archive Settings**

METHOD  
SCP

Archive Server  
Name or IP address. Please make sure that the server is reachable via port configured at Advanced Networking page

Destination Directory

Username

Password

**Archive Schedule**

- Archive admin access log
- Archive client-side log uploads
- Archive XML configuration
- Archive Debug Log
- Archive events log
- Archive Administrative Network Configuration
- Archive Periodic SnapShots
- Archive system configuration
- Archive user access log
- Archive user accounts

Cancel

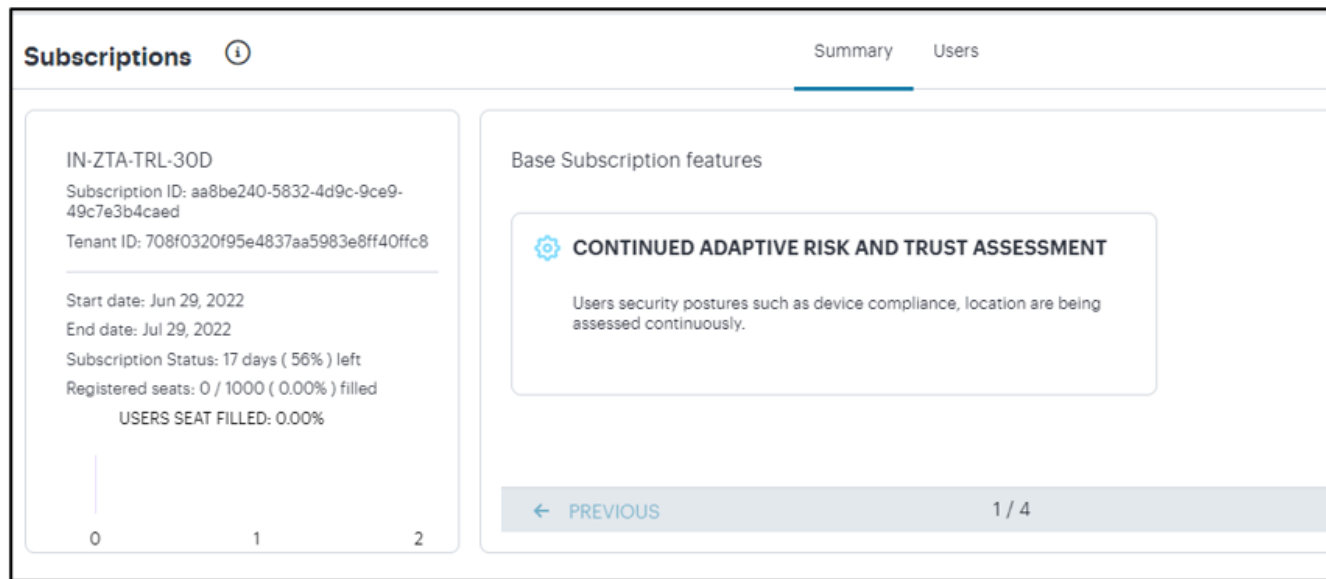
2. Enter the fully qualified Domain name or IP address of the server to which to send the archive files.
3. Enter the **Destination directory**.

4. Enter a **Username** and **Password** that has privileges to log into the server and write to the destination directory.
5. Select the required **Archive Schedule** options.
6. Click **Save Changes**.

# nSA Licensing/Subscription

Licenses/subscriptions are added to your nSA by Ivanti.

The **Subscriptions** page displays the licenses/subscriptions that are active on your nSA. To access this page, click **Administration > Subscriptions**.



The **Summary** tab displays for each subscription/license:

- License/Subscription high-level details, including dates and usage metrics.
- One or more descriptions of the features in the license/subscription. Where there are multiple features, use **Previous** / **Next** to navigate.

When any defined limit on the license/subscription is met, a message appears:

- At 75% utilization of seats, an information message appears at the bottom of the screen. You can optionally click **Close**.
- At 90% utilization of seats, a modal message appears at login. Click **Dismiss** to clear the message.
- When 25% of the duration of the license/subscription remains, a modal message appears at login. Click **Dismiss** to clear the message.

The **Users** page lists users and their devices registered on nSA.

nSA named user licensing normalization feature allows a user to use different login formats - Domain\username, Common Name (CN), and User Principal Name (UPN) - from different devices, but consumes only one seat for the user. Single license is consumed instead of two through associating devices with users for Machine Cert Authentication and subsequent User Authentication. This feature is supported only for ICS 22.6R2 Gateway with ISAC 22.6R1 Client and later versions.

Summary information for the nSA licenses/subscriptions is displayed at the top of the page:

- Total number of seats.
- Total number of issued named user license seats. Each of these is listed in the table below the summary.
- The percentage of seats consumed.

The screenshot shows the 'Subscriptions' page with a 'Summary' tab selected. The summary displays 10000 Licensed Seats, 4 Users, and 0.04% Seat Filled. Below the summary is a 'DELETE' button and a search bar. A table lists users with columns for USERNAME, GATEWAYS, DEVICES, CREATED, and UPDATED.

USERNAME ↑	GATEWAYS ↑	DEVICES	CREATED ↑	UPDATED ↑
U1	kamal-8k-130	DESKTOP-OU033R8.e2e-in	Sep 27, 2023 10:37:13 AM	Sep 27, 2023 10:37:13 AM
U2	kamal-6k-69	DESKTOP-OU033R9.e2e-in	Sep 27, 2023 10:37:04 A...	Sep 27, 2023 10:37:04 A...
U4	kamal-6k-69	N/A	Sep 27, 2023 10:38:44 ...	Sep 27, 2023 10:38:43 ...
U5	kamal-8k-130	N/A	Sep 27, 2023 10:39:06 ...	Sep 27, 2023 10:39:06 ...

For each named user, the following information is displayed:

- The name of the user.
- The gateways enrolled for that user.
- Updated time shows an N/A for ICS gateways.
- The status of the named user license seat of that user.



You may need to remove users when there is any changes in the organization. To delete one or more named users, select the corresponding check boxes and click **Delete**.

You may want to automatically remove the license of users who have not logged-in in the last 30 days. To delete those users automatically, select the **Auto Delete** check box.

The counts in the Users page, and information in the Summary page get updated accordingly.

**Grace Period:** When nSA Named User licensing is enabled on Gateway, and if there is connectivity issue between Gateway and Controller, grace period of five days is applied for new user logins up to platform limit.

# Using the Troubleshooting Tools

- ["Introduction" below](#)
- ["Using the Debug Log" on page 544](#)
- ["Using Network Troubleshooting Commands" on page 545](#)
- ["Using System Snapshots" on page 547](#)
- ["Using the TCP Dump Utility" on page 547](#)

## Introduction

The Troubleshooting page enables you to investigate issues that might be affecting your Gateway or preventing it from operating normally.

This page is intended to enable Ivanti Technical Support teams to help resolve problems with your Gateway infrastructure. Due to the potential for system performance to be impacted through the use of these features, Ivanti recommends you only use this page when advised to do so.

The following tools are available through the Gateways > Troubleshooting page:

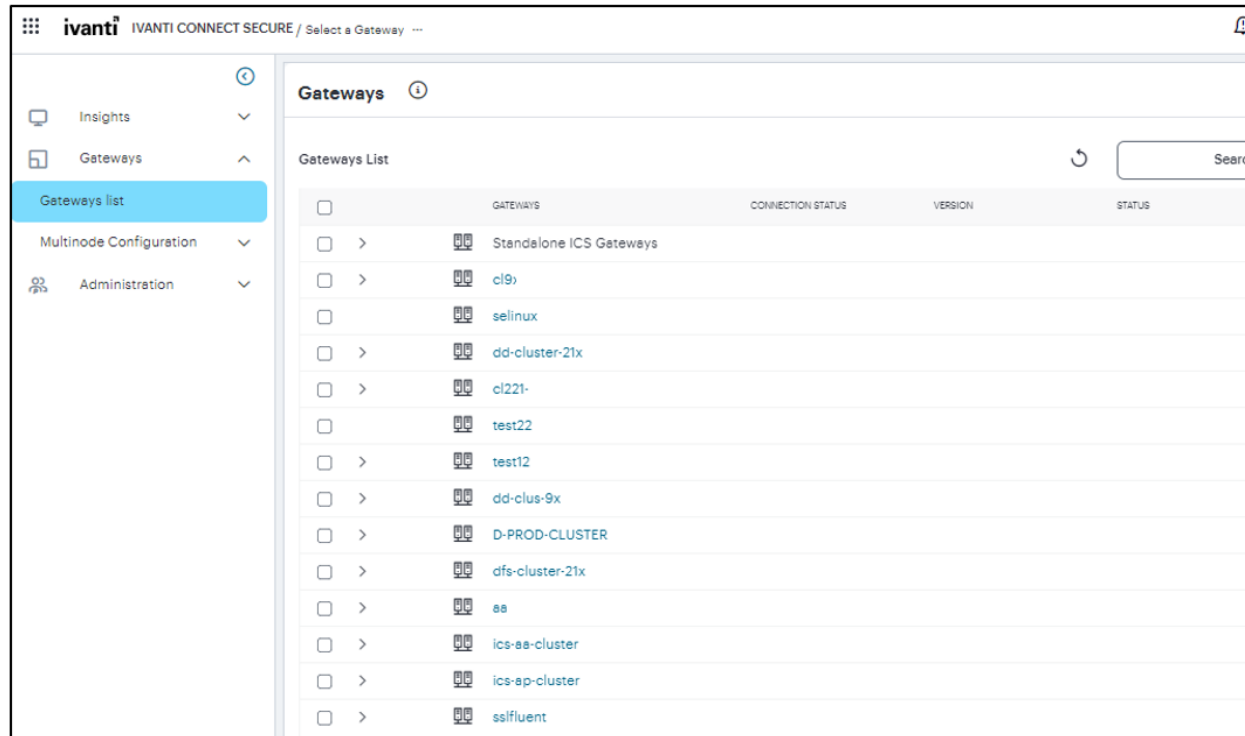
- **Debug logs** - Work with Ivanti Technical Support teams to diagnose system issues.
- **Network troubleshooting commands** - Use standard network commands, such as ping, traceroute, NSlookup, and other commands to diagnose networking issues.
- **System snapshots** - Work with Ivanti Technical Support teams to reproduce and diagnose system issues.
- **tcpdump** - Sniff packet headers to diagnose networking issues.

### To access Troubleshooting page:

1. Log in to the Ivanti Neurons for Secure Access portal as a Tenant Admin. See ["Logging in to Ivanti Neurons for Secure Access" on page 12](#).
2. Use the Gateway Switcher and select **Ivanti Connect Secure**.

- From the Ivanti Connect Secure menu, click the **Gateways** icon, then select **Gateways > Gateways List**.

The All Gateways page is displayed showing a list of standalone ICS Gateways and cluster nodes.



- In the All Gateways page, double-click the required Gateway from the list.

- From the Ivanti Connect Secure menu, click the **Gateways** icon, then select **Gateways > Troubleshooting**.

The Troubleshooting Overview page appears.

The screenshot displays the Ivanti Connect Secure interface for gateway 22vm. The sidebar on the left includes navigation options: Insights, Gateways, Gateways list, Overview, Logs, Tasks, Troubleshooting (highlighted), Multinode Configuration, System, Authentication, Users, Maintenance, and Administration. The main content area shows the gateway status as 'Gateway Ready' and a section for 'Troubleshooting Logs and System Snapshots'. Below this, there are dropdown menus for selecting a troubleshooting task (currently 'Troubleshooting Overview') and a troubleshooting type (currently 'All Types'). A table lists 8 items found, each with a checkbox, type (Ict Report), details (N/A), size, date, and status (Ready).

8 ITEMS FOUND						DELETE
	TYPE	DETAILS	SIZE	DATE	STATUS	
<input type="checkbox"/>	Ict Report	N/A	297 Bytes	21:58 Jul 13, 2022	Ready	
<input type="checkbox"/>	Ict Report	N/A	303 Bytes	00:01 Jul 14, 2022	Ready	
<input type="checkbox"/>	Ict Report	N/A	307 Bytes	02:03 Jul 14, 2022	Ready	
<input type="checkbox"/>	Ict Report	N/A	312 Bytes	04:06 Jul 14, 2022	Ready	
<input type="checkbox"/>	Ict Report	N/A	316 Bytes	06:09 Jul 14, 2022	Ready	
<input type="checkbox"/>	Ict Report	N/A	324 Bytes	10:15 Jul 14, 2022	Ready	

## Using the Debug Log

The Ivanti Technical Support teams might direct you to create a debug log to assist them in helping you debug an issue with the system.

**To use debug logging:**

1. From the **Troubleshooting Logs and System Snapshots** drop-down menu, select **Debug Log**.

GATEWAYS  
**gwpcsn121**  
Gateway Ready

**Troubleshooting Logs and System Snapshots**

SELECT TROUBLESHOOTING TASK  
Debug Log

Various sections in troubleshooting allows Admin to upload the session to the controller. Once they finish uploading, Admin can download the files from this page. This also includes the system snapshots.

When a user is having issues viewing a website, you can make a trace recording and send it to Ivanti Support for review. Here's how. Note: the user will be aware they are being traced and have to re-sign in after the trace

Process Names

Event Codes

MAX DEBUG LOG SIZE (MB)  
2

LOG DETAIL LEVEL  
0

Include System Logs

Enable Debug Logs

Upload Save Settings Cancel

2. Specify the **Process Name**.
3. Specify the **Event Code**.
4. Specify a **Maximum debug log file size**. The default is 2 MB. The maximum is 250 MB.
5. Specify the debug **Log detail level**.
6. Select *Include System Logs\** option to include system logs in the debug log file. Recommended.
7. Select **Enable Debug Logs**.
8. Click **Save Settings**. The system begins generating debug log entries.
9. Click **Upload**.

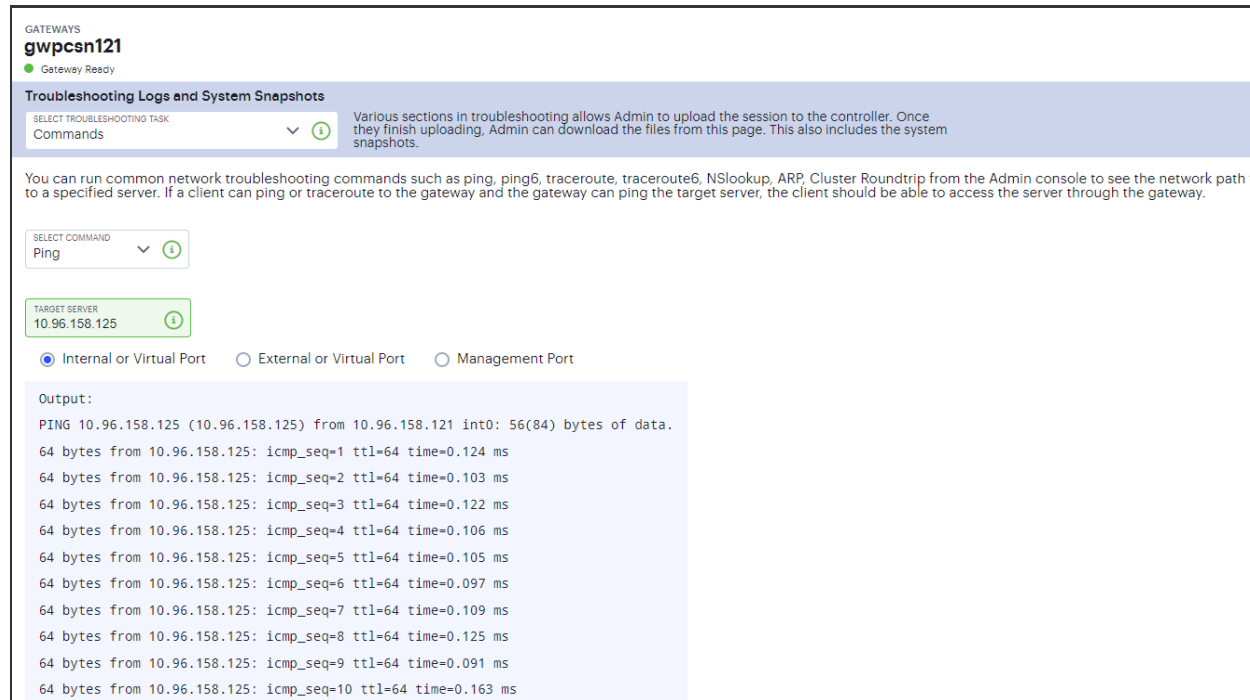
A confirmation message is displayed. You can then download the file from the Troubleshooting Overview page and analyze the logs.

## Using Network Troubleshooting Commands

You can run common network troubleshooting commands such as arp, ping, ping6, traceroute, traceroute6, NSlookup, and AvgRTTs from the admin console. You can use these connectivity tools to see the network path from the system to a specified server. If a client can ping or traceroute to the access system, and the access system can ping the target server, any remote users should be able to access the server through the access system.

### To run network troubleshooting commands:

1. From the **Troubleshooting Logs and System Snapshots** drop-down menu, select **Commands**.



GATEWAYS  
**gwpcsn121**  
Gateway Ready

**Troubleshooting Logs and System Snapshots**

SELECT TROUBLESHOOTING TASK  
Commands

Various sections in troubleshooting allows Admin to upload the session to the controller. Once they finish uploading, Admin can download the files from this page. This also includes the system snapshots.

You can run common network troubleshooting commands such as ping, ping6, traceroute, traceroute6, NSlookup, ARP, Cluster Roundtrip from the Admin console to see the network path to a specified server. If a client can ping or traceroute to the gateway and the gateway can ping the target server, the client should be able to access the server through the gateway.

SELECT COMMAND  
Ping

TARGET SERVER  
10.96.158.125

Internal or Virtual Port  External or Virtual Port  Management Port

Output:  
PING 10.96.158.125 (10.96.158.125) from 10.96.158.121 int0: 56(84) bytes of data.  
64 bytes from 10.96.158.125: icmp\_seq=1 ttl=64 time=0.124 ms  
64 bytes from 10.96.158.125: icmp\_seq=2 ttl=64 time=0.103 ms  
64 bytes from 10.96.158.125: icmp\_seq=3 ttl=64 time=0.122 ms  
64 bytes from 10.96.158.125: icmp\_seq=4 ttl=64 time=0.106 ms  
64 bytes from 10.96.158.125: icmp\_seq=5 ttl=64 time=0.105 ms  
64 bytes from 10.96.158.125: icmp\_seq=6 ttl=64 time=0.097 ms  
64 bytes from 10.96.158.125: icmp\_seq=7 ttl=64 time=0.109 ms  
64 bytes from 10.96.158.125: icmp\_seq=8 ttl=64 time=0.125 ms  
64 bytes from 10.96.158.125: icmp\_seq=9 ttl=64 time=0.091 ms  
64 bytes from 10.96.158.125: icmp\_seq=10 ttl=64 time=0.163 ms

2. Select a network troubleshooting command from the options:

- Ping/Ping6
- Traceroute/Traceroute6
- NSLookup
- ARP
- AvgRTTs
- Portprobe
- Cluster Roundtrip

3. When prompted:

- Specify the IP address or hostname for the target server.
- Select the interface from which to send the command.

4. Click **Start** to run the command and write the output to the screen.

## Using System Snapshots

A snapshot of the system state captures details that can help Ivanti Technical Support teams diagnose system performance problems. The system stores up to ten snapshots, which are packaged into an encrypted "dump" file that you can download and then e-mail to Ivanti Technical Support teams.

### To create and manage system snapshots:

1. From the **Troubleshooting Logs and System Snapshots** drop-down menu, select **System Snapshots**.

GATEWAYS  
gwpcsn121  
Gateway Ready

**Troubleshooting Logs and System Snapshots**

SELECT TROUBLESHOOTING TASK  
System Snapshot

Various sections in troubleshooting allows Admin to upload the session to the controller. Once they finish uploading, Admin can download the files from this page. This also includes the system snapshots.

The 10 most recent snapshots are stored below and can be downloaded as an encrypted package you can send to Ivanti Support to troubleshoot system performance. Scheduling automation result in a performance hit so only do this at the request of a Ivanti Support member. It is not recommended to take snapshots more frequently than once every four hours.

**Snapshot Options**

Include System Config  Include Debug Log

**Start Snapshot(s)** Cancel

2. Select **Include system config** to include the system configuration file in the snapshot.
3. Select **Include debug log** to include debug logs (if any).
4. Click **Start Snapshot(s)**.

A confirmation message is displayed. You can then download the file from the Troubleshooting Overview page and analyze the logs.

## Using the TCP Dump Utility

### To use TCP Dump utility:

1. From the **Troubleshooting Logs and System Snapshots** drop-down menu, select **TCP Dump**.
2. Configure the following:
  - Select the ports on which to sniff (Internal, External, Management).
  - Specify a Filter expression.
  - Select a promiscuous mode option.

The screenshot shows the configuration page for the TCP Dump task. At the top, it identifies the gateway as 'gwpcsn121' and shows a 'Gateway Ready' status. The main heading is 'Troubleshooting Logs and System Snapshots'. A dropdown menu is set to 'TCP Dump', with a help icon. A text box explains that various sections in troubleshooting allow Admin to upload sessions to the controller, and once finished, Admin can download files from this page, including system snapshots. Below this, a paragraph states: 'TCP Dump allows you to sniff the packet headers on the network. To check that the expected packet really reached a node, run the tcpdump utility and save the output on a dump file of your choice.' There are three checkboxes for port selection: 'Internal Or Virtual Port', 'External Or Virtual Port', and 'Management Port', all currently unchecked. Below the checkboxes are three input fields: 'FILTER' with the value 'Filter', 'OPTIONS' with the value 'Options', and 'SELECT PROMISCUOUS MODE' with the value 'Select Promiscuous Mode' and a warning icon. An 'Output:' section shows 'None'. At the bottom, there are four buttons: 'Upload' (blue), 'Start' (blue), 'Stop' (blue), and 'Cancel' (white).

3. Click **Start** to start the TCP Dump process.
4. Click **Stop** to write the TCP Dump output to the screen.
5. Click **Upload**.

A confirmation message is displayed. You can then download the file from the Troubleshooting Overview page and analyze the logs.