User Control with the pxGrid Cloud Identity Source (ISE 3.3 and Earlier)

The following topics discuss how to configure and use the pxGrid Cloud Identity Source with Cisco ISE version 3.3 and earlier.

About the pxGrid Cloud Identity Source

The Cisco Identity Services Engine (Cisco ISE) pxGrid cloud identity source enables you to use subscription and user data from Cisco ISE in Cloud-Delivered Firewall Management Center access control rules. Also, the identity source uses constantly changing dynamic objects from Cisco ISE in access control policies in the Cloud-Delivered Firewall Management Center.

The pxGrid cloud identity source also uses:

- The Cisco Platform Exchange Grid (pxGrid), which enables multivendor, cross-platform network system collaboration in things like security monitoring and detection systems, network policy platforms, asset and configuration management, identity, and access management. pxGrid Cloud is the cloud-based interface to Cisco ISE.

  More information about pxGrid can be found in resources such as What is PxGrid? on devnet.

- The Cisco Digital Network Architecture (Cisco DNA) delivers automation, security, predictive monitoring, and a policy-driven approach. It provides end-to-end network visibility and uses network insights to optimize network performance and deliver the best user and application experience.

  To use the pxGrid cloud identity source with the Cisco Security Cloud Control, you must Create a Cisco Account.

- What is pxGrid? on devnet
- Cisco Platform Exchange Grid Cloud on devnet

Prerequisites

- *ISE-PIC is not supported*
- Cisco ISE 3.1 patch 3 and all later patches and versions

Related Topics

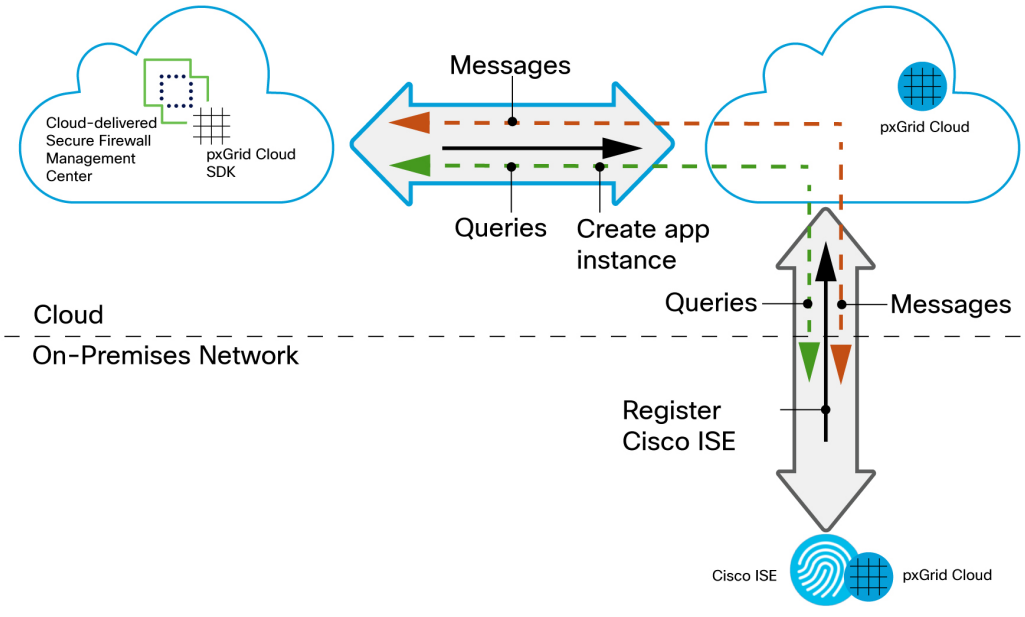
How to Configure a pxGrid Cloud Identity Source (Cisco ISE 3.4 or Later)
How to Configure a pxGrid Cloud Identity Source (Cisco ISE 3.3 or Earlier), on page 3

Limitations of the pxGrid Cloud Identity Source

Before you set up the pxGrid cloud identity source, note the following:

How the pxGrid Cloud Identity Source Works

The following figure shows how the identity source works.



Your Cloud-Delivered Firewall Management Center uses the pxGrid Cloud SDK to programmatically retrieve user information from an on-premises Cisco ISE server so these users can be used in identity policies on the Cloud-Delivered Firewall Management Center.

To authorize and authenticate this data exchange, you must:

1. In Cisco ISE, enable the use of pxGrid Cloud.
2. Register Cisco ISE as a product in pxGrid Cloud, which authenticates Cisco ISE and pxGrid Cloud and enables them to communicate with each other.

The authentication process requires you to paste a one-time password (OTP) from pxGrid Cloud into Cisco ISE.

3. In pxGrid Cloud, create an "app instance" that generates an OTP for you to use in the Cloud-Delivered Firewall Management Center to authenticate the two with each other.
4. After completing all the preceding tasks, the Cloud-Delivered Firewall Management Center (which includes the pxGrid Cloud SDK) can query Cisco ISE using pxGrid Cloud and retrieve sessions containing user information, SGT, endpoint profile, and other details.
5. Many types of dynamic objects can be filtered and sent to the Cloud-Delivered Firewall Management Center as dynamic objects to be used in access control rules. These include: SGT, endpoint profile, posture status, and machine authentication.

   We retrieve user information from Cisco ISE and group information from either Microsoft Active Directory or Azure Active Directory.

Related Topics

How to Configure a pxGrid Cloud Identity Source (Cisco ISE 3.4 or Later)
How to Configure a pxGrid Cloud Identity Source (Cisco ISE 3.3 or Earlier), on page 3

How to Configure a pxGrid Cloud Identity Source

These topics summarize how to configure a pxGrid Cloud Identity Source either for ISE 3.3 and earlier or for ISE 3.4 and later. The steps are different so make sure you follow them exactly.

Related Topics

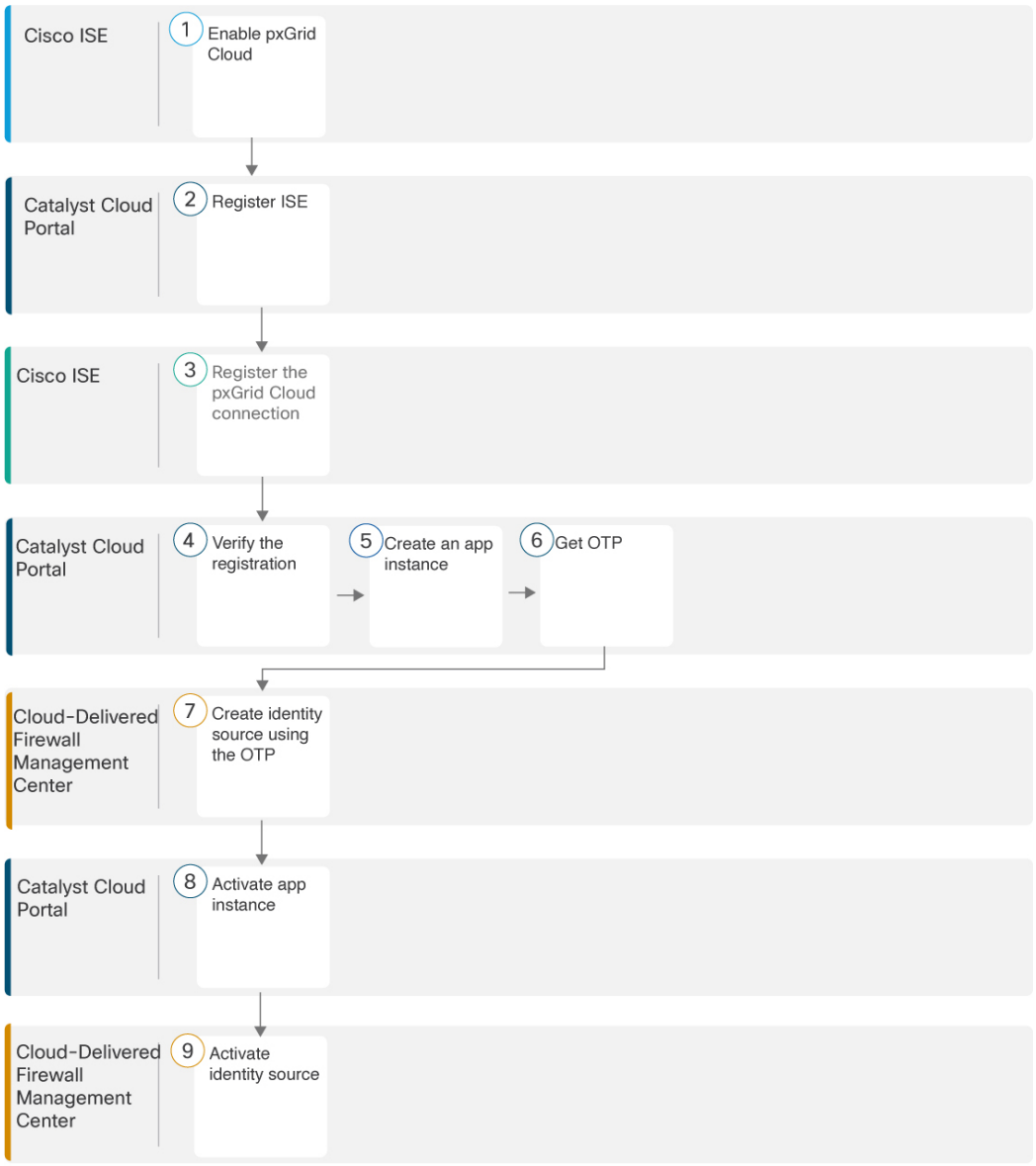
How to Configure a pxGrid Cloud Identity Source (Cisco ISE 3.4 or Later)
How to Configure a pxGrid Cloud Identity Source (Cisco ISE 3.3 or Earlier), on page 3
Enable the pxGrid Cloud Service in Cisco ISE
Create an App Instance
Create the Identity Source
Activate the App Instance
Activate the pxGrid Cloud Identity Source, on page 15

How to Configure a pxGrid Cloud Identity Source (Cisco ISE 3.3 or Earlier)

Before you begin, create a Cisco Account.

Important *This topic applies to Cisco ISE version 3.3 or earlier*. If you are using a later version, see How to Configure a pxGrid Cloud Identity Source (Cisco ISE 3.4 or Later) instead.

The following figure shows the steps to configure a pxGrid cloud identity source using Cisco ISE, the Catalyst Cloud Portal, and Cloud-Delivered Firewall Management Center.



Lorem ipsum

1 Enable the pxGrid Cloud Service in Cisco ISE
2 Register Cisco ISE with the Catalyst Cloud Portal
3 Register the pxGrid Cloud Connection with Cisco ISE
4 Create an App Instance
5 Create the Identity Source
6 Activate the App Instance
7 Activate the App Instance

Table 1: Configure a pxGrid cloud identity source

1	Cisco ISE	Enable the pxGrid Cloud in Cisco ISE. pxGrid Cloud enables you to subscribe to offers and to register apps (in this case, the Cloud-Delivered Firewall Management Center) for secure data exchange in a cloud environment. For more information, see Enable the pxGrid Cloud Service in Cisco ISE.
2	Catalyst Cloud Portal	Register Cisco ISE in the Catalyst Cloud Portal and authenticate communication between Cisco ISE and the Catalyst Cloud Portal. For more information, see Register Cisco ISE with the Catalyst Cloud Portal.
3, 4	Cisco ISE, Catalyst Cloud Portal	Register the pxGrid Cloud with Cisco ISE and verify the registration. For more information, see Register the pxGrid Cloud Connection with Cisco ISE.
5, 6	Catalyst Cloud Portal, Cloud-Delivered Firewall Management Center	Create an application instance in the Catalyst Cloud Portal and get the one-time password (OTP). The application instance enables the Cloud-Delivered Firewall Management Center to authenticate with Cisco ISE using the pxGrid Cloud service. The OTP, required for the next step, expires in 60 minutes.
7	Cloud-Delivered Firewall Management Center	Create the pxGrid cloud identity source using the OTP you got in the previous step. Linking the app enables the Cloud-Delivered Firewall Management Center to authenticate with Cisco ISE and the Catalyst Cloud Portal so it can receive user data from Cisco ISE. For more information, see Create the Identity Source.
8	Catalyst Cloud Portal	Activate the app instance. For more information, see Activate the App Instance.
9	Cloud-Delivered Firewall Management Center	Activate the pxGrid cloud identity source. For more information, see Activate the pxGrid Cloud Identity Source, on page 15.

After you have completed all the preceding tasks, you can:

- Test the pxGrid cloud identity source to make sure it's working properly.

  For more information, see Test the pxGrid Cloud Identity Source, on page 17.

- Create dynamic attributes filters, which define what dynamic objects are sent to the Cloud-Delivered Firewall Management Center.

  For more information, see Create Dynamic Attributes Filters.

- After you configure the pxGrid cloud identity source, you can use any of the following in access control rules:

  - Dynamic objects
  - Microsoft AD user and groups

- Azure AD users and groups

Related Topics

Enable the pxGrid Cloud Service in Cisco ISE

Enable the pxGrid Cloud Service in Cisco ISE

Before you begin

- Ensure that you install and activate the Advantage license tier in your Cisco ISE deployment.
- The pxGrid Cloud agent creates an outbound HTTPS connection to Cisco pxGrid Cloud. Therefore, you must configure Cisco ISE proxy settings if the customer network uses a proxy to reach the internet. To configure proxy settings in Cisco ISE, click the **Menu** icon (☰) and choose **Administration > System > Settings > Proxy**.
- The Cisco ISE Trusted Certificates Store must include the root CA certificate required to validate the server certificate presented by Cisco pxGrid Cloud. Ensure that the **Trust for Authentication of Cisco Services** option is enabled for this root CA certificate. To enable **Trust for Authentication of Cisco Services**, navigate to **Administration** > **System** > **Certificates**.

Procedure

Step 1 In the Cisco ISE GUI, click the **Menu** icon (☰) and choose **Administration > System > Deployment**.

Step 2 Click the node on which you want to enable the pxGrid Cloud service.

Step 3 In the **General Settings** tab, enable the **pxGrid** service.

Step 4 Check the **Enable pxGrid Cloud** check box.

The pxGrid Cloud service can be enabled on two nodes to enable high availability.

Note
You can enable the **pxGrid Cloud** option only when the **pxGrid** service is enabled on that node.

Register Cisco ISE with the Catalyst Cloud Portal

This task discusses how to register Cisco ISE as an app in the Catalyst Cloud Portal and to authenticate communication between the Catalyst Cloud Portal and Cisco ISE.

Also refer to Register Cisco ISE in the *pxGrid Cloud Solution Guide*.

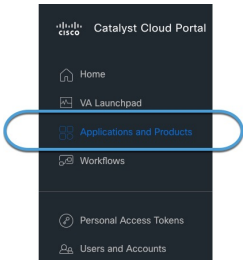
Procedure

Step 1 Log in to the Cisco Cloud Catalyst Portal.

Step 2 If prompted, choose an account to use.

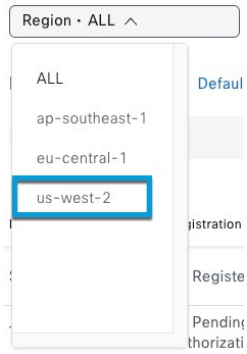
Step 3 Click **Register**.

Step 4 In the Catalyst Cloud Portal, click ☰ > **Applications and Products** as the following figure shows:

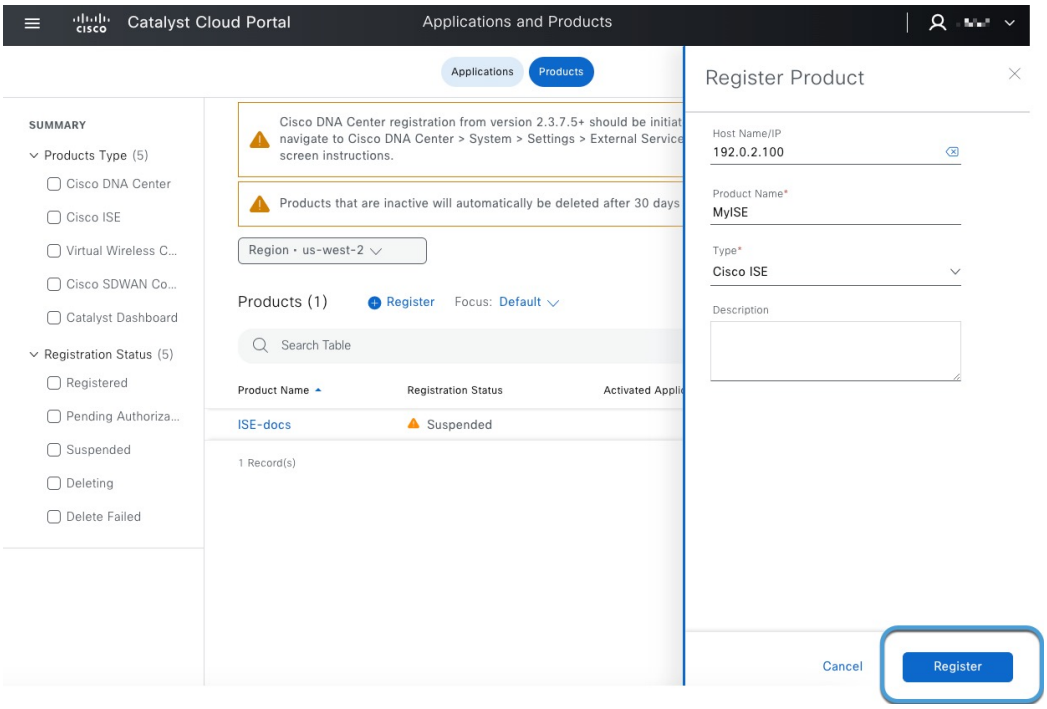


Step 5 At the top of the page, click **Products**.

Step 6 From the **Region** list, click **us-west-2**.



Step 7 Click **Register**.
The following figure shows a sample registration page.



Step 8 Enter the following information.

- **Host Name/IP**: (Optional.) Enter the ISE server's fully qualified domain name or IP address. If you enter an IP address, omit the scheme (for example, **https://**) and the port, if any.
- **Product Name**: Enter a unique name to identify this server.
- **Type**: From the list, click **Cisco ISE**.
- **Description**: Enter an optional description.

Step 9 Click **Register**.

Step 10 Generate a one-time password (OTP) in any of the following ways:

- If you've previously registered ISE apps and see yours listed, click **Generate OTP** in the **Actions** column; you'll need it in the next part of this procedure.
- If you're registering your app now, the OTP is displayed. Click to copy it to the clipboard; you'll need it in the next part of this procedure.

What to do next

See Register the pxGrid Cloud Connection with Cisco ISE.

Register the pxGrid Cloud Connection with Cisco ISE

This task discusses how to register the pxGrid Cloud connection with Cisco ISE, which enables pxGrid Cloud to send user data to the pxGrid cloud identity source in Cisco Security Cloud Control.

Before you begin

Complete the tasks discussed in Register Cisco ISE with the Catalyst Cloud Portal.

Procedure

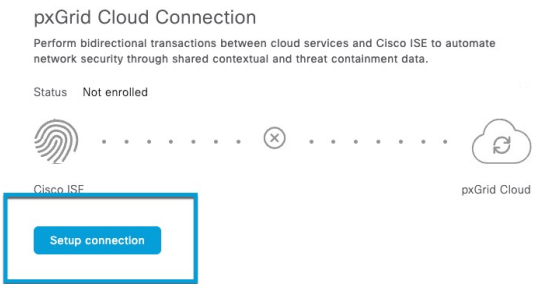
Step 1 Log in to Cisco ISE as an administrator.

Step 2 Click ☰ > **Administration** > **pxGrid Services** > **Client Management** > **pxGrid Cloud Connection**.

Step 3 Make sure all services are enabled with read/write privileges.

Step 4 In the left navigation bar, click **pxGrid Cloud Connection**.

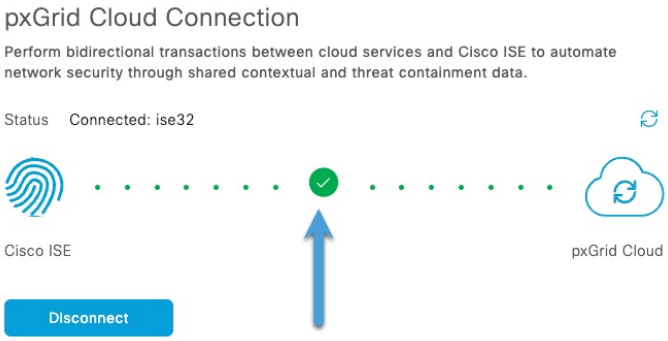
Step 5 Click **Setup Connection** as the following figure shows.



Step 6 Paste the OTP value in the provided field.

Step 7 Click **Connect**.

A green check mark like the following confirms that connection was successful.

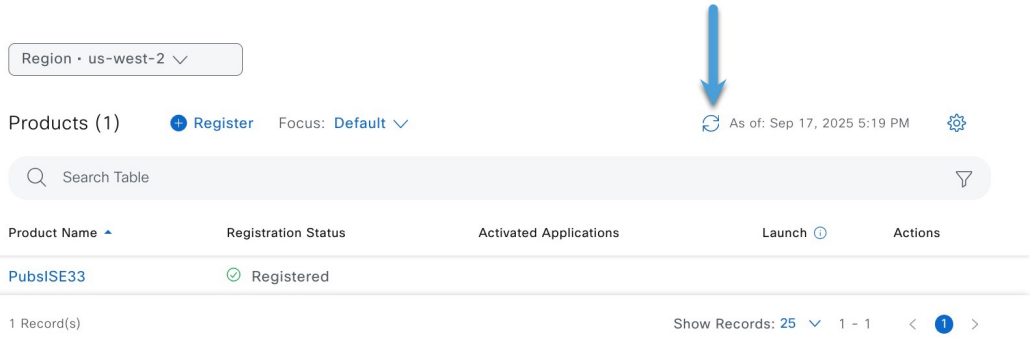


Step 8 Confirm the setup has been successful so far:

a) Log in to the Catalyst Cloud Portal.

b) Click the **Products** tab.

c) Click **Refresh** as the following figure shows.



d) Verify that **Registered** is displayed as the status of your product.

What to do next

Continue with Create the Identity Source.

Create a pxGrid Cloud Identity Source

The following tasks discuss how to create a pxGrid cloud identity source using Cisco ISE, the Catalyst Cloud Portal, and Cisco Security Cloud Control. You must complete all tasks in the order shown; in some cases, there is a time limit due to the expiration of a required One-Time Password (OTP).

Related Topics

Create an App Instance
Create the Identity Source
Activate the App Instance
Verify It's Working
Activate the pxGrid Cloud Identity Source, on page 15
Test the pxGrid Cloud Identity Source, on page 17

Create an App Instance

This task is one of several tasks you must perform to create a a pxGrid cloud identity source to send user session data to the Cloud-Delivered Firewall Management Center.

There is a one-hour time limit on the one-time password (OTP) required to complete this procedure successfully. You do not need to log in to Cisco ISE.

Before you begin

Complete all of the following tasks first:

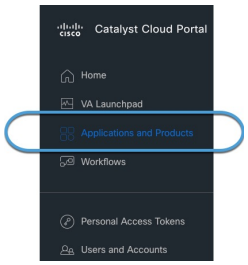
- Enable the pxGrid Cloud Service in Cisco ISE
- Register Cisco ISE with the Catalyst Cloud Portal

- Register the pxGrid Cloud Connection with Cisco ISE

Procedure

Step 1 Log in to the Cisco Catalyst Cloud Portal.

Step 2 In the Catalyst Cloud Portal, click ☰ > **Applications and Products** as the following figure shows:



Step 3 At the top of the page, click **Applications**.

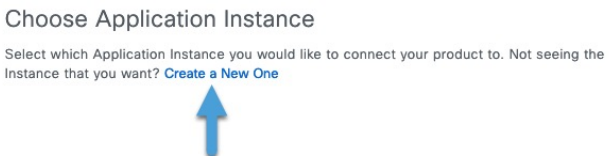
Step 4 From the **Regions** list, click **us-west-2**.

Step 5 Click **Manage** (or **Activate**) next to **Firepower Management Center**.

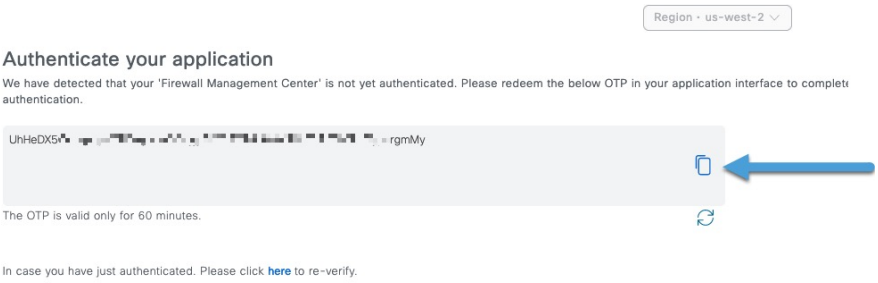
Step 6 Click **Add**.

Step 7 Click **Create a New One**.

The following figure shows an example.



Step 8 Click the copy button next to the displayed OTP as the following figure shows:



Step 9 Copy the OTP to a text file; it expires in 60 minutes.

Step 10 Continue with Create the Identity Source.

Create the Identity Source

This task is one of several required to create a pxGrid cloud identity source to send user session data to the Cloud-Delivered Firewall Management Center.

Before you begin

Complete the task discussed in Create an App Instance.

Procedure

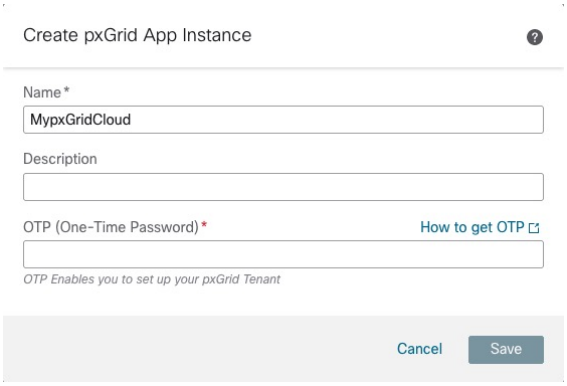
Step 1 Log in to Cisco Security Cloud Control as a user with the Super Admin role.

Step 2 Click **Policies** > **Threat Defense** > **Integration** > **Other Integrations** > **Identity Sources**

Step 3 Click **Identity Services Engine (pxGrid Cloud)**.

Step 4 Click **Create pxGrid Application Instance**.

The following figure shows an example.



Step 5 Enter the following information.

Value	Description
Name	Enter a name to uniquely identify this connector.
Description	Optional description.
OTP (One-Time Password)	Enter the OTP.

Step 6 Click **Create**.

Step 7 At the top of the page, click **Save**.

Step 8 Continue with Activate the App Instance.

Activate the App Instance

This task discusses how to create a pxGrid cloud identity source to send user session data to the Cloud-Delivered Firewall Management Center.

There is a one-hour time limit on the one-time password (OTP) required to complete this procedure successfully. You do not need to log in to Cisco ISE.

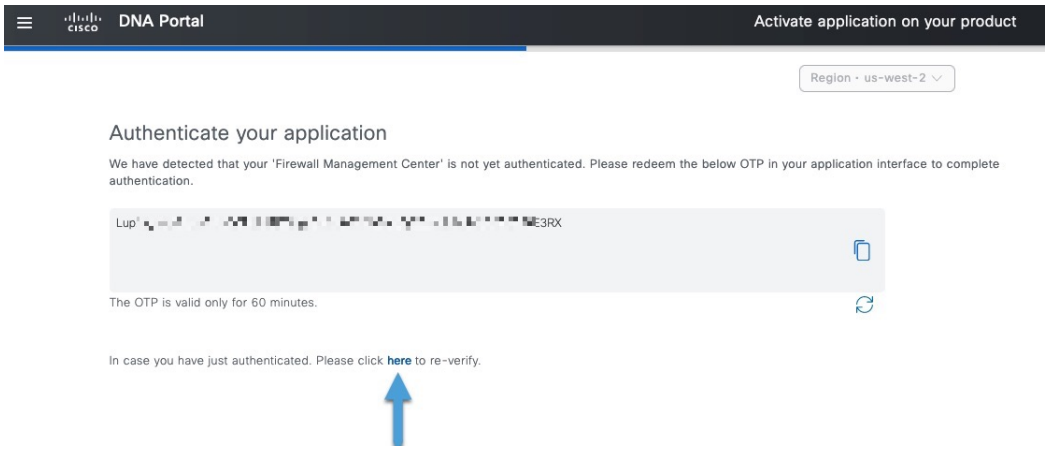
Before you begin

Complete the task discussed in Create the Identity Source.

Procedure

Step 1 Log in to the Cisco Catalyst Cloud Portal.

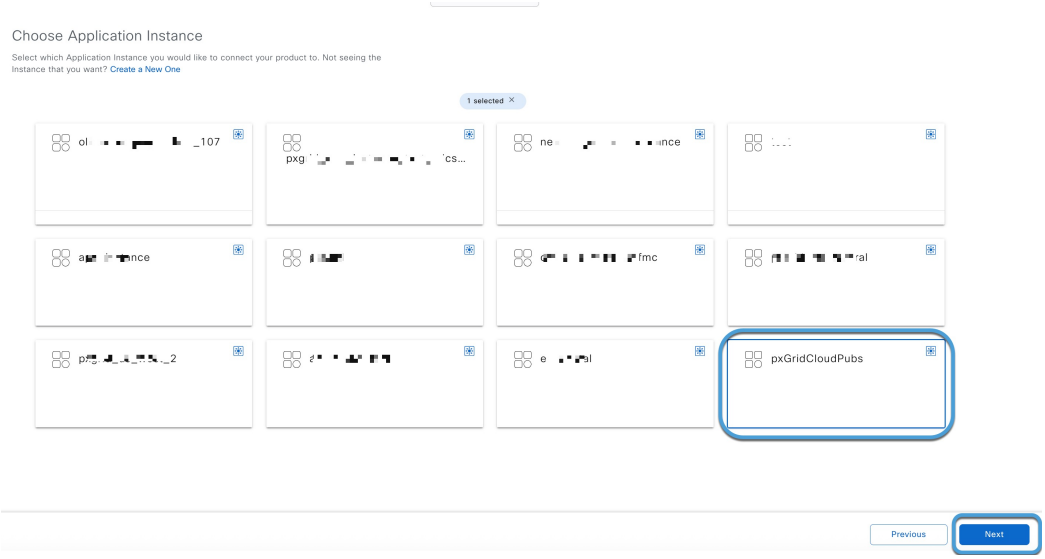
Step 2 Reverify the app by clicking the word **here** as the following figure shows.



Step 3 Click the name of the application instance you just created in Cloud-Delivered Firewall Management Center.

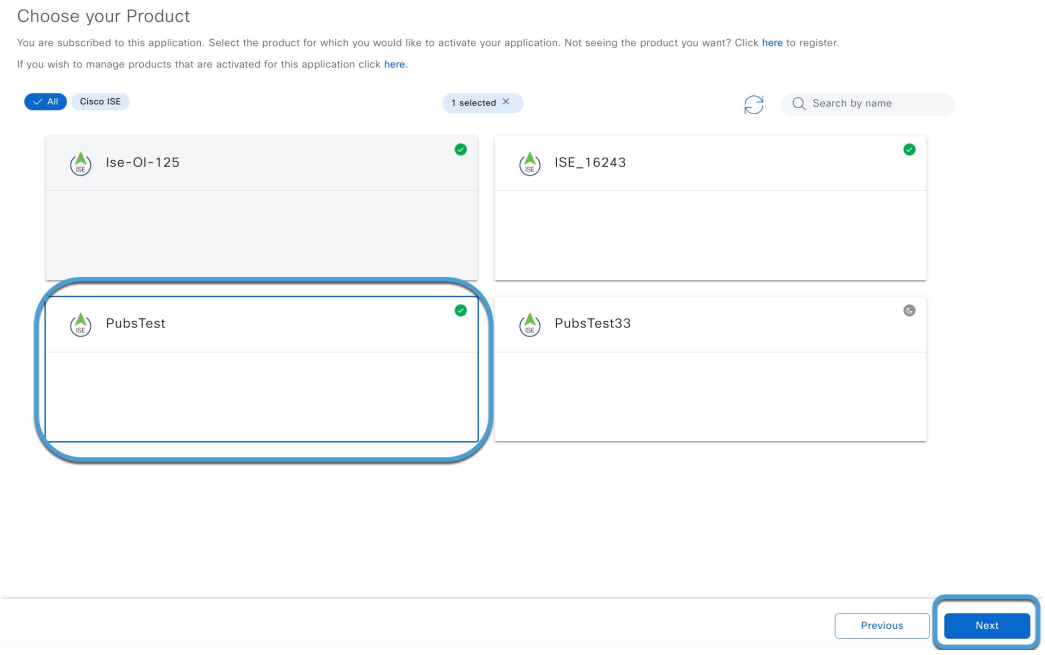
Step 4 Click **Next**.

Example:

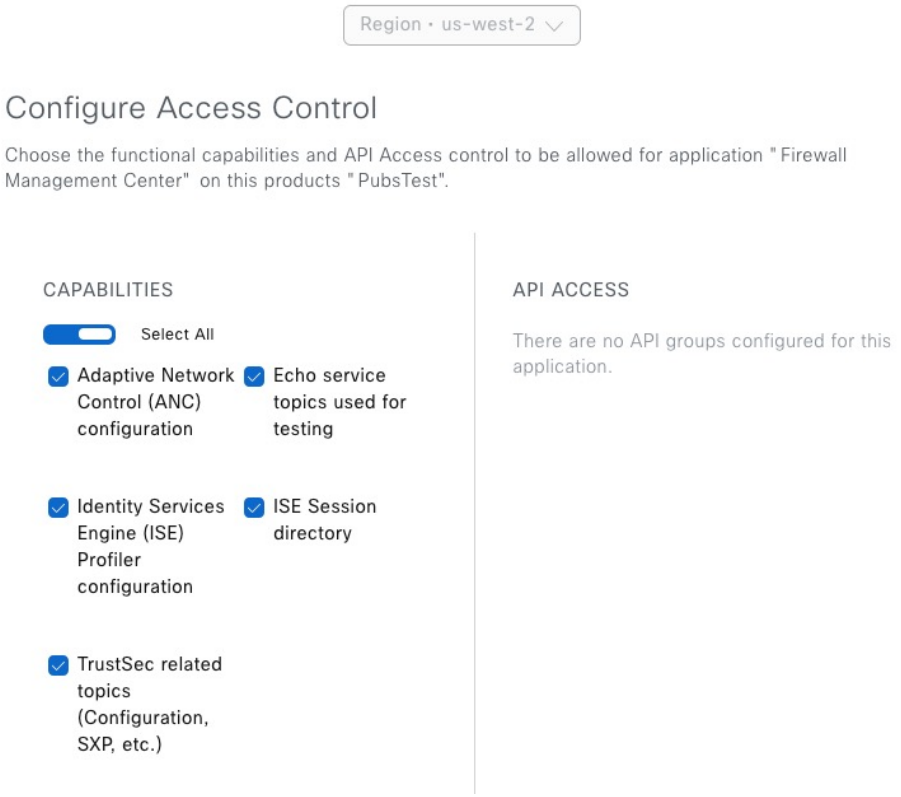


Step 5 On the Choose Product page, click the name of the Cisco ISE product and click **Next**.

Example:



Step 6 Select the check box next to each scope.
The following figure shows an example.



Step 7 Click **Next**.

Step 8 Review the displayed information for accuracy. Make sure all scopes are selected.

Step 9 Click **Activate**.

It can take several minutes for the app instance to be activated.

Activate the pxGrid Cloud Identity Source

This task explains how to activate the pxGrid cloud identity source in the Cisco Security Cloud Control.

Before you begin

Complete the tasks discussed in Activate the App Instance.

Note Only one pxGrid cloud identity source can be active at a time.

Procedure

Step 1 Log in to Cisco Security Cloud Control as a user with the Super Admin role.

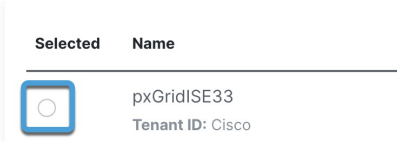
Step 2 Click **Policies** > **Threat Defense** > **Integration** > **Other Integrations** > **Identity Sources**

Step 3 Click **Identity Services Engine (pxGrid Cloud)**.

Step 4 Click **Save** at the top of the page.

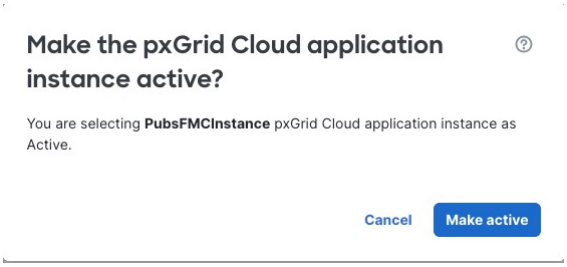
Step 5 If a green check mark is *not* displayed next to the name of the identity source, select it.

Example:



Step 6 Click **Make Active**.

Example:



Step 7 (Optional.) Select the following options if desired:

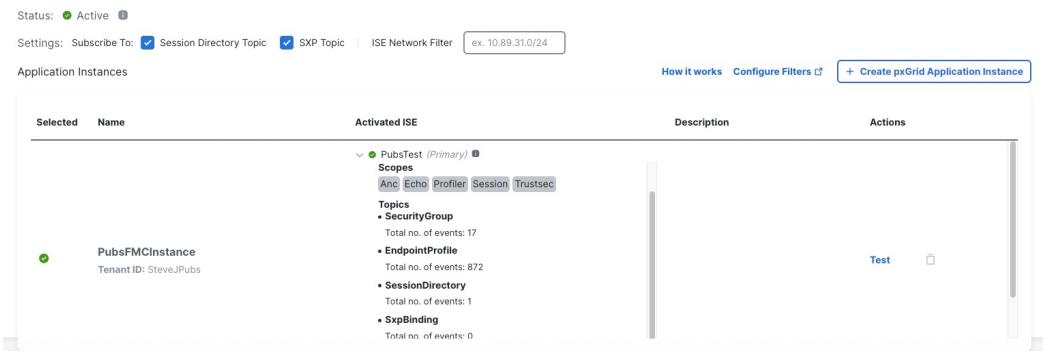
- **Session Directory Topic**: Select the check box to receive ISE user session information from the Cisco ISE server.
- **SXP Topic**: Select the check box to receive updates to SGT-to-IP mappings when available from the ISE server. This option is required to use destination SGT tagging in access control rules.
- **ISE Network Filter**: Optional filter you can set to restrict the data that Cisco ISE reports. If you provide a network filter, Cisco ISE reports data from the networks in that filter.

  You have the following options:

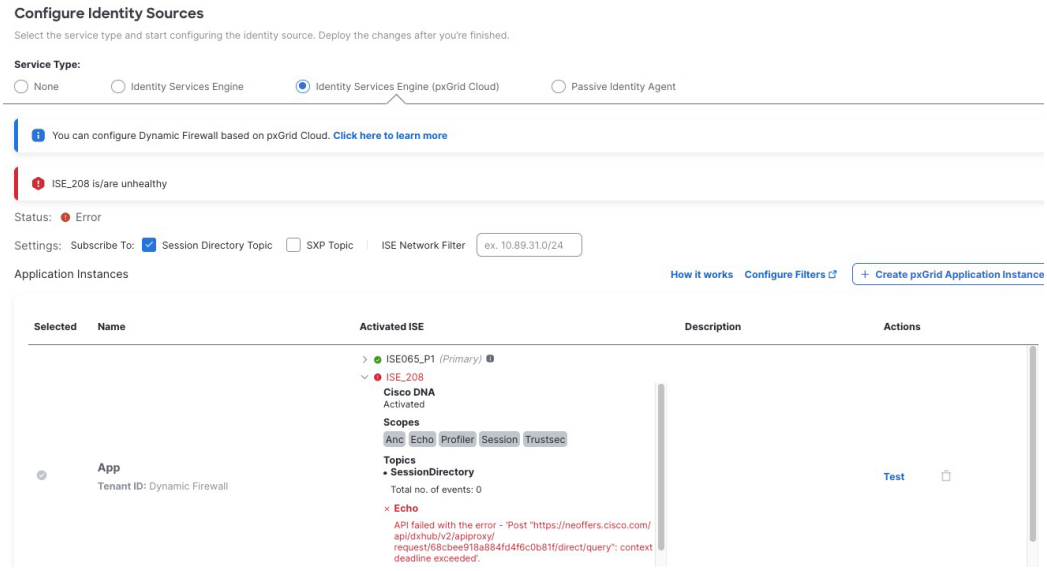
  - Leave the field blank to specify **`any`**.
  - Enter a single IPv4 address block using CIDR notation.
  - Enter a list of IPv4 address blocks using CIDR notation, separated by commas.

Step 8 Under Activated ISE, expand the identity source.

Example *normal* result:



Example *error* result:



In the event of an error, see Test the pxGrid Cloud Identity Source, on page 17.

Step 9 Verify the status is Active and that all scopes and topics are displayed.

Step 10 Wait a few minutes for data to be downloaded.

What to do next

See Test the pxGrid Cloud Identity Source, on page 17.

Test the pxGrid Cloud Identity Source

This topic discusses diagnostics you can perform using the Cisco Security Cloud Control to determine if the identity source is working. Errors might include communication with Cisco ISE, or with the Cisco ISE configuration with Catalyst Cloud Portal.

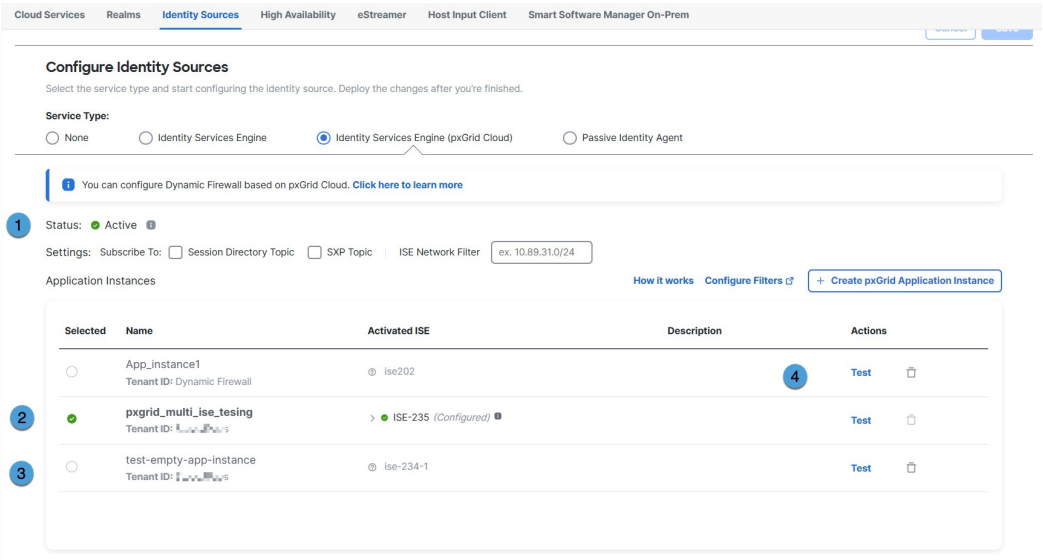
View the current configuration

To get started:

1. Log in to Cisco Security Cloud Control as a user with the Super Admin role.
2. Click **Policies** > **Threat Defense** > **Integration** > **Other Integrations** > **Identity Sources**
3. Click **Identity Services Engine (pxGrid Cloud)**.

Sample configuration status

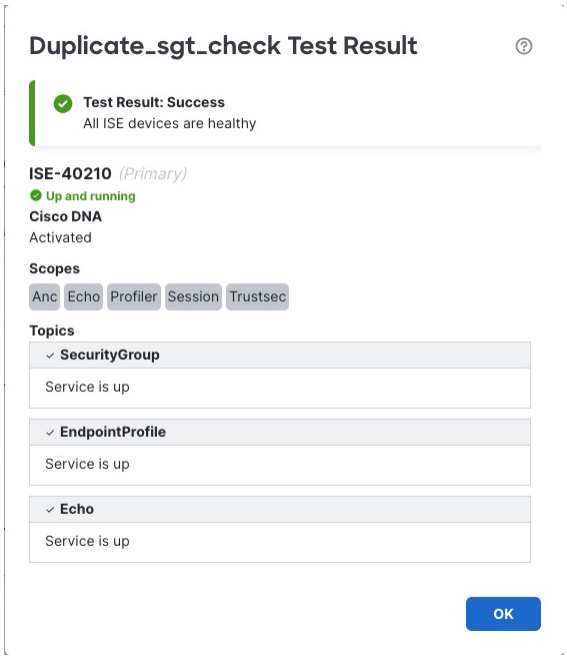
The following figure shows an example configuration.



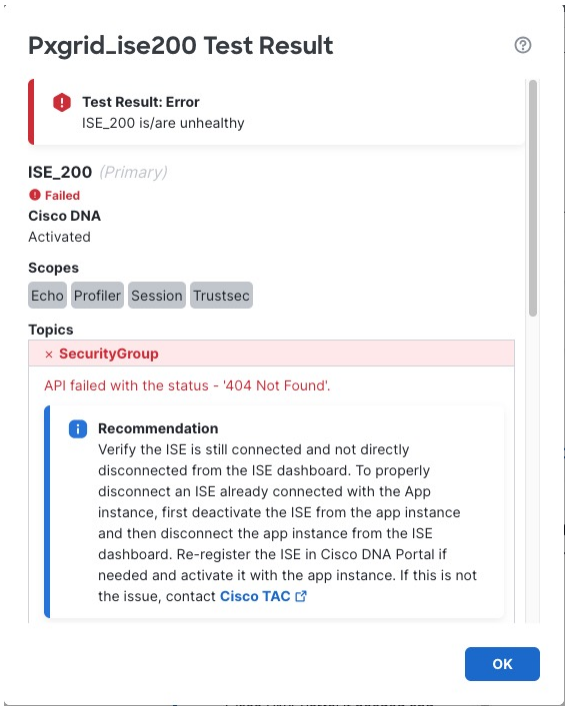
The following table has more information about the numbered areas in the figure.

Number	Meaning
1	Overall status Any errors in the overall status of the Cisco ISE app instances are displayed. In that case, scroll to that instance and either expand the error message or click **Test** for more information.
2	Active A green check mark indicates the app is active.
3	Inactive A dimmed app instance is inactive. You can activate it by selecting the check box next to its name and then clicking **Make active**.
4	**Test** button Click **Test** to perform diagnostic tests that show more detailed status of the app instance. See the next section for more information.

The following figure shows a sample success message.



The following figure shows an example error result.



The following section provides a reference for the possible errors.

Error code reference

The following information is provided to help you diagnose and solve issues with Cisco ISE, pxGrid Cloud, and the Catalyst Cloud Portal. If these suggestions do not work, or if you have a different issue, contact Cisco TAC.

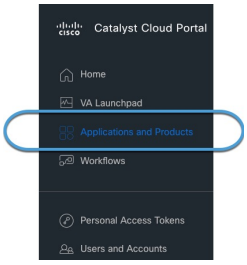
403 – Forbidden

Verify the Cisco ISE product is not in a **Pending** or **Suspended** state in the Catalyst Cloud Portal. If suspended, verify that Cisco ISE is registered as discussed in Enable pxGrid Cloud service in Cisco ISE and register your device.

Additionally, verify pxGrid Cloud services are publicly available.

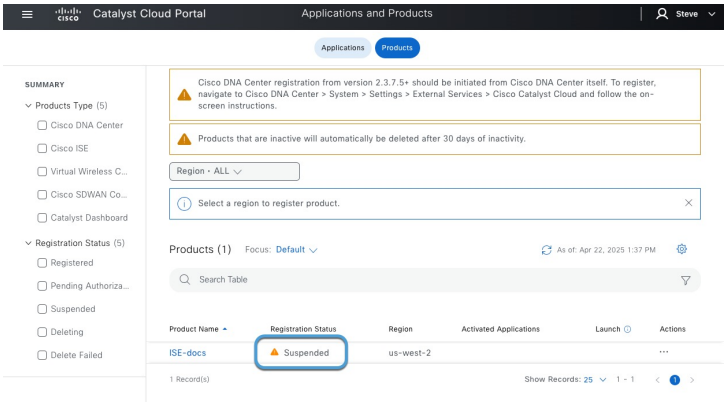
To verify whether or not your product is active:

1. Log in to the Catalyst Cloud Portal.
2. In the Catalyst Cloud Portal, go to ☰ > **Applications and Products** as the following figure shows:



3. Click the **Products** tab.

   The following figure shows an example of a suspended product.



4. To correct the issue, in the Actions column, click ••• and click **Generate OTP**.
5. Use the OTP as discussed in Create an App Instance.

404 – Not Found

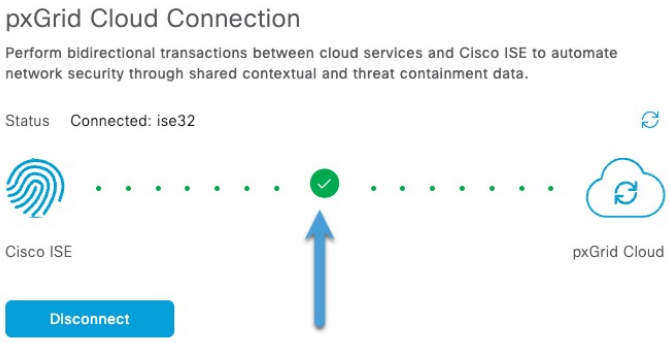
Verify the Cisco ISE server is not directly disconnected from the Cisco ISE dashboard. To properly disconnect Cisco ISE already connected with the app instance, first deactivate Cisco ISE from the app instance and then disconnect the app instance from the Cisco ISE dashboard.

408 – Request Timeout

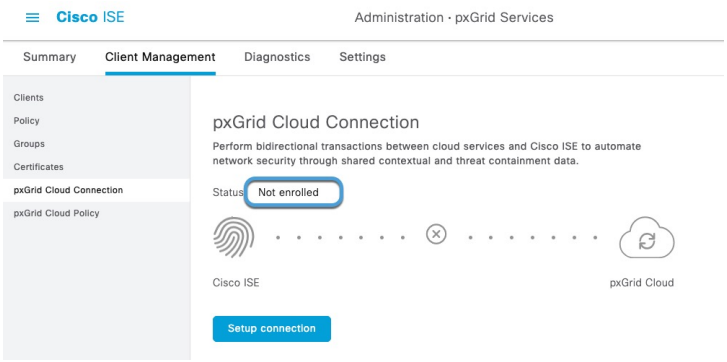
General connectivity

Check whether there are any general connectivity issues with Cisco ISE and verify pxGrid Cloud connectivity status is **Connected** in the ISE dashboard under ☰ > **Administration** > **pxGrid Services** > **Client Management** > **pxGrid Cloud Connection**.

The following figure shows an example of a system that is connected.



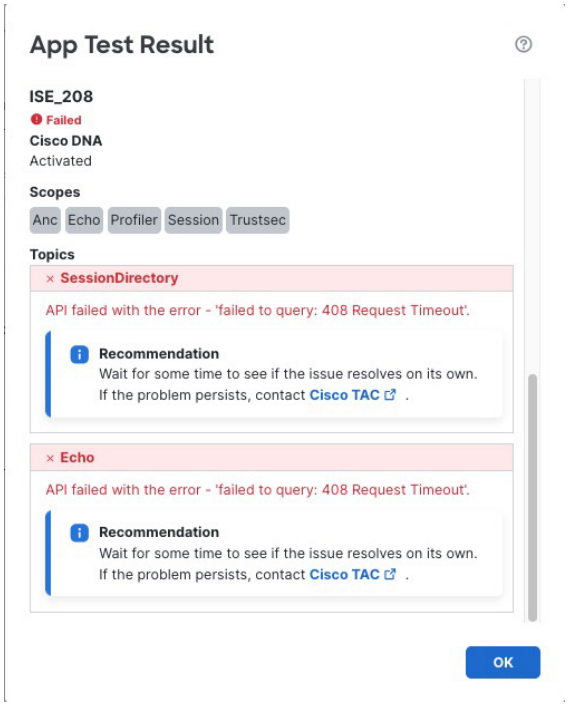
The following figure shows an example of a system that is not enrolled (meaning, not connected.)



Verify the Cisco ISE server is not directly disconnected from the Cisco ISE dashboard. To properly disconnect Cisco ISE already connected with the app instance, first deactivate Cisco ISE from the app instance and then disconnect the app instance from the Cisco ISE dashboard.

Cluster member not reachable

If a member of the Cisco ISE cluster is not reachable, a page like the following is displayed:



To find what node is not reachable, log in to Cisco ISE primary administration node as an administrator and click click the **Menu** icon (☰) and choose **Administration** > **System** > **Deployment**, then see Node Status in a Cisco ISE Deployment.

413 – Content Too Large

We recommend you review the pxGrid Cloud API limitations on GitHub. If needed, consider upgrading your Cisco ISE version to fully utilize pxGrid Cloud support.

500 – Internal Server Error

Check that the Cisco ISE server is operational and that pxGrid Cloud services are active (verify MNT, SXP, pxGrid nodes, and so on).

For more information, see Monitoring and debugging in the Cisco pxGrid chapter in the *Cisco Identity Services Engine Administrator Guide*.

Test the pxGrid Cloud Identity Source

This topic discusses diagnostics you can perform using the Cisco Security Cloud Control to determine if the identity source is working. Errors might include communication with Cisco ISE, or with the Cisco ISE configuration with Catalyst Cloud Portal.

View the current configuration

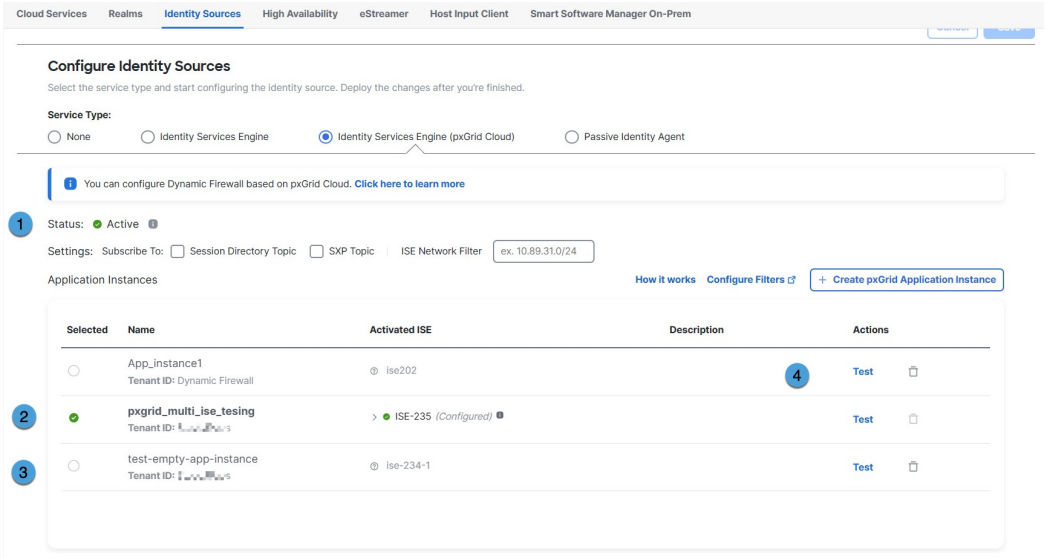
To get started:

1. Log in to Cisco Security Cloud Control as a user with the Super Admin role.

2. Click **Policies** > **Threat Defense** > **Integration** > **Other Integrations** > **Identity Sources**
3. Click **Identity Services Engine (pxGrid Cloud)**.

Sample configuration status

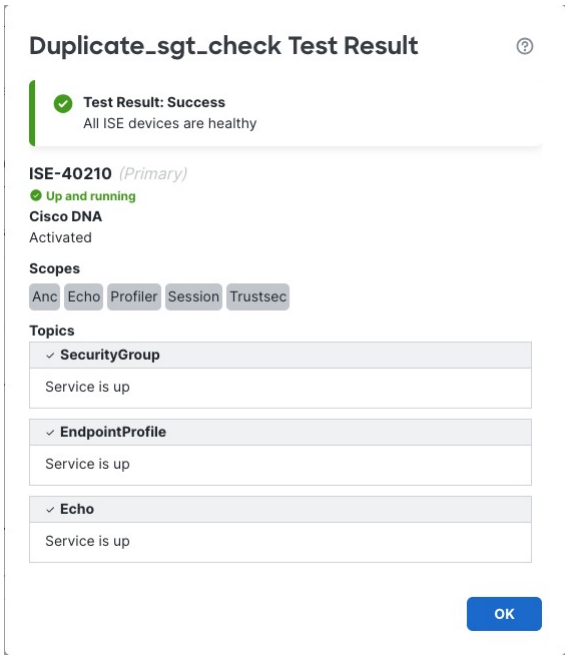
The following figure shows an example configuration.



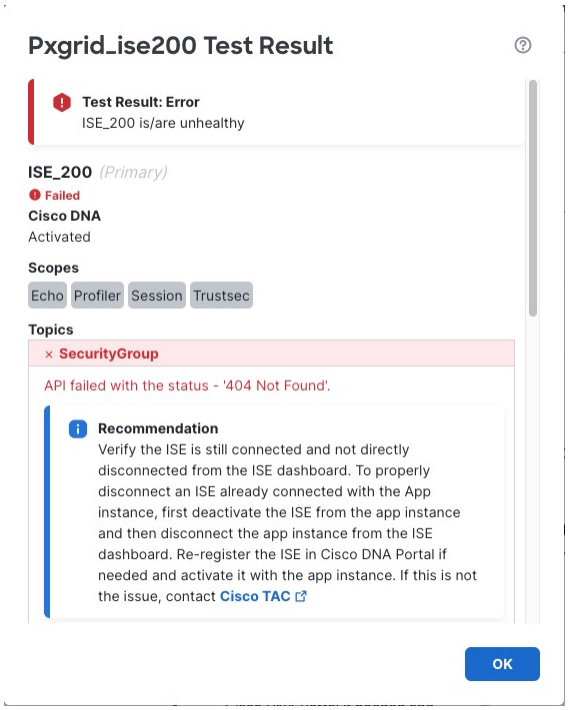
The following table has more information about the numbered areas in the figure.

Number	Meaning
1	Overall status Any errors in the overall status of the Cisco ISE app instances are displayed. In that case, scroll to that instance and either expand the error message or click **Test** for more information.
2	Active A green check mark indicates the app is active.
3	Inactive A dimmed app instance is inactive. You can activate it by selecting the check box next to its name and then clicking **Make active**.
4	**Test** button Click **Test** to perform diagnostic tests that show more detailed status of the app instance. See the next section for more information.

The following figure shows a sample success message.



The following figure shows an example error result.



The following section provides a reference for the possible errors.

Error code reference

The following information is provided to help you diagnose and solve issues with Cisco ISE, pxGrid Cloud, and the Catalyst Cloud Portal. If these suggestions do not work, or if you have a different issue, contact Cisco TAC.

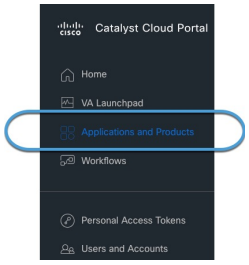
403 – Forbidden

Verify the Cisco ISE product is not in a **Pending** or **Suspended** state in the Catalyst Cloud Portal. If suspended, verify that Cisco ISE is registered as discussed in Enable pxGrid Cloud service in Cisco ISE and register your device.

Additionally, verify pxGrid Cloud services are publicly available.

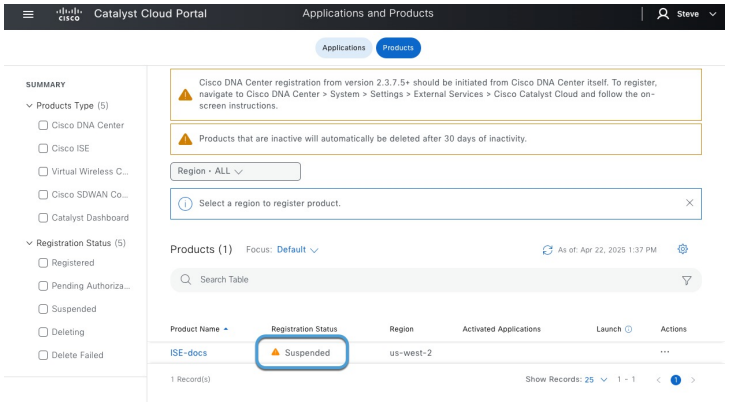
To verify whether or not your product is active:

1. Log in to the Catalyst Cloud Portal.
2. In the Catalyst Cloud Portal, go to ☰ > **Applications and Products** as the following figure shows:



3. Click the **Products** tab.

   The following figure shows an example of a suspended product.



4. To correct the issue, in the Actions column, click ••• and click **Generate OTP**.
5. Use the OTP as discussed in Create an App Instance.

404 – Not Found

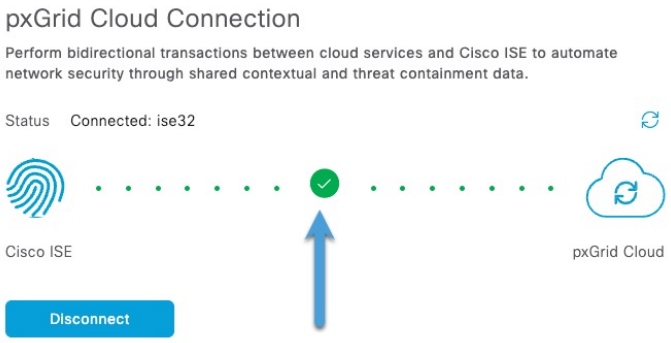
Verify the Cisco ISE server is not directly disconnected from the Cisco ISE dashboard. To properly disconnect Cisco ISE already connected with the app instance, first deactivate Cisco ISE from the app instance and then disconnect the app instance from the Cisco ISE dashboard.

408 – Request Timeout

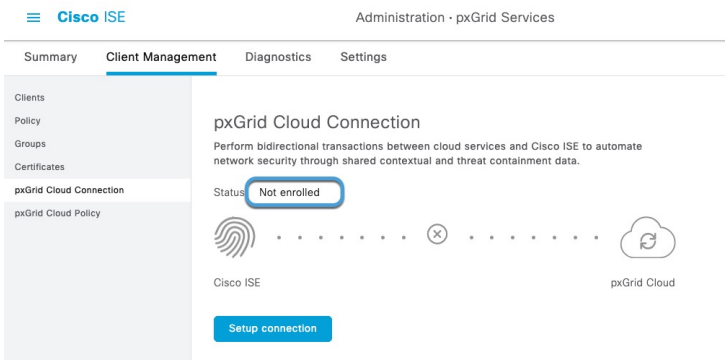
General connectivity

Check whether there are any general connectivity issues with Cisco ISE and verify pxGrid Cloud connectivity status is **Connected** in the ISE dashboard under ☰ > **Administration** > **pxGrid Services** > **Client Management** > **pxGrid Cloud Connection**.

The following figure shows an example of a system that is connected.



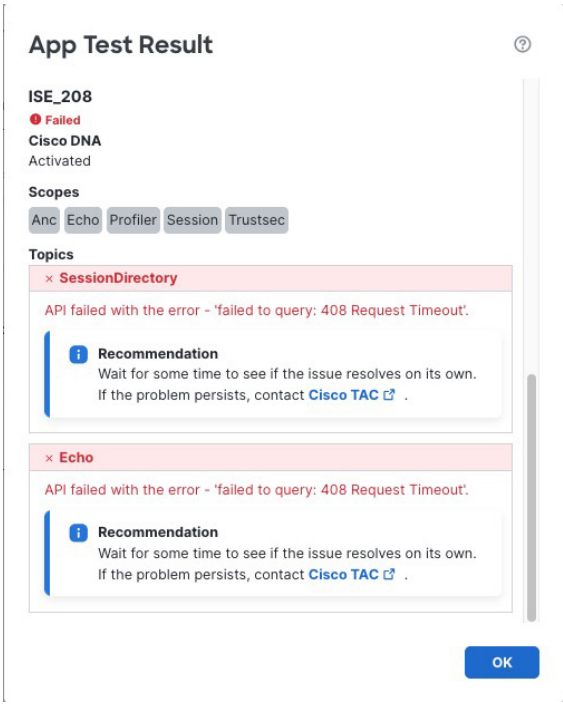
The following figure shows an example of a system that is not enrolled (meaning, not connected.)



Verify the Cisco ISE server is not directly disconnected from the Cisco ISE dashboard. To properly disconnect Cisco ISE already connected with the app instance, first deactivate Cisco ISE from the app instance and then disconnect the app instance from the Cisco ISE dashboard.

Cluster member not reachable

If a member of the Cisco ISE cluster is not reachable, a page like the following is displayed:



To find what node is not reachable, log in to Cisco ISE primary administration node as an administrator and click click the **Menu** icon (☰) and choose **Administration** > **System** > **Deployment**, then see Node Status in a Cisco ISE Deployment.

413 – Content Too Large

We recommend you review the pxGrid Cloud API limitations on GitHub. If needed, consider upgrading your Cisco ISE version to fully utilize pxGrid Cloud support.

500 – Internal Server Error

Check that the Cisco ISE server is operational and that pxGrid Cloud services are active (verify MNT, SXP, pxGrid nodes, and so on).

For more information, see Monitoring and debugging in the Cisco pxGrid chapter in the *Cisco Identity Services Engine Administrator Guide*.

Create Dynamic Attributes Filters

Dynamic attributes filters that you define using the Cisco Secure Dynamic Attributes Connector are exposed in the Security Cloud Control as dynamic objects that can be used in access control policies. For example, restrict access to an AWS server for the Finance Department to only members of the Finance group defined in Microsoft Active Directory.

Note You cannot create dynamic attributes filters for AWS, Azure, Azure Service Tags, Cisco Multicloud Defense, Generic Text, GitHub, Google Cloud, and Outlook 365, pxGrid cloud identity source, vCenter, Webex, and Zoom). These types of cloud objects provide their own IP addresses.

For more information about access control rules, see Create Access Control Rules Using Dynamic Attributes Filters.

Before you begin

Create a Connector

Procedure

Step 1 Click **Administration** > **Dynamic Attributes Connector**.

Step 2 Click **Dynamic Attributes Filters**.

- Add a new filter: click **Add** ( ).
- Edit or delete a filter: Click **More** ( ), then click **Edit** or **Delete** at the end of the row.

Step 3 Enter the following information.

Item	Description
Name	Unique name to identify the dynamic filter (as a dynamic object) in a policy and in the Security Cloud Control Object Manager (**External Attributes** > **Dynamic Object**).
Connector	From the list, click the name of a connector to use.
Query	Click Add .

Step 4 To add or edit a query, enter the following information.

Item	Description
Key	Click a key from the list. Keys are fetched from the connector.
Operation	Click one of the following: • **Equals** to exactly match the key to the value. • **Contains** to match the key to the value if any part of the value matches.

Item	Description
Values	Click either **Any** or **All** and click one or more values from the list. Click **Add another value** to add values to your query.

Step 5 Click **Show Preview** to display a list of networks or IP addresses returned by your query.

Step 6 When you're finished, click **Save**.

Step 7 (Optional.) Verify the dynamic object in the Security Cloud Control.

a) Log in to the Security Cloud Control.

b) Click **Manage > Policies** > **Firewall Threat Defense**.

c) Click **Objects** > **Object Management** > **External Attributes** > **Dynamic Object**.

The dynamic attribute query you created should be displayed as a dynamic object.

Create Access Control Rules Using Dynamic Attributes Filters

This topic discusses how to create access control rules using dynamic objects (these dynamic objects are named after the dynamic attributes filters you created previously).

To add dynamic attributes filters to DNS policies, see (ADD URL AFTER GUIDE IS PUBLISHED.

Before you begin

Create dynamic attributes filters as discussed in Create Dynamic Attributes Filters.

Note You cannot create dynamic attributes filters for AWS, Azure, Azure Service Tags, Cisco Multicloud Defense, Generic Text, GitHub, Google Cloud, and Outlook 365, pxGrid cloud identity source, vCenter, Webex, and Zoom). These types of cloud objects provide their own IP addresses.

Procedure

Step 1 Log in to Cisco Security Cloud Control as a user with the Super Admin role.

Step 2 Click **Firewall**.

Step 3 Click **Administration** > **Dynamic Attributes Connector** > **Connectors**.

Step 4 Click **Manage > Policies** > **Firewall Threat Defense** > **Access Control heading** > **Access Control**.

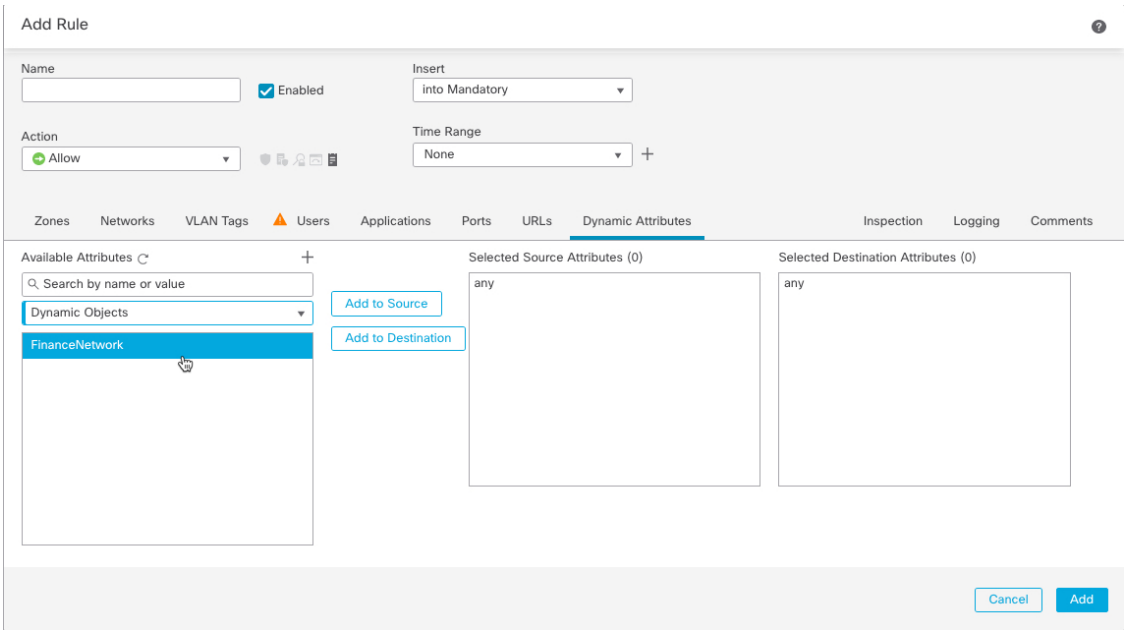
Step 5 Click **Edit** ( ) next to an access control policy.

Step 6 Click **Add Rule**.

Step 7 Click the **Dynamic Attributes** tab.

Step 8 In the Available Attributes section, from the list, click **Dynamic Objects**.

The following figure shows an example.



The preceding example shows a dynamic object named `APIC Dynamic Attribute` that corresponds to the dynamic attribute filter created in the Cisco Secure Dynamic Attributes Connector.

Step 9 Add the desired object to source or destination attributes.

Step 10 Add other conditions to the rule if desired.

What to do next

See Dynamic Attributes Rule Conditions.

Deactivate and Delete the pxGrid Cloud Identity Source

These topics discuss how to optionally:

- Deactivate the FMC app instance in the Catalyst Cloud Portal.

  You can perform this optional task to troubleshoot issues with the Cisco ISE integration.

- Delete the pxGrid cloud identity source from the Cisco Security Cloud Control.

  You should delete the identity source only if you're certain you don't want to use it again.

Related Topics

Deactivate the pxGrid Cloud App Instance, on page 30
Delete the pxGrid Cloud Identity Source, on page 32

Deactivate the pxGrid Cloud App Instance

(Optional.) This task explains how to deactivate a pxGrid Cloud app instance using the Catalyst Cloud Portal. You should do this only if your Cisco ISE or pxGrid Cloud stops working or you need to update it.

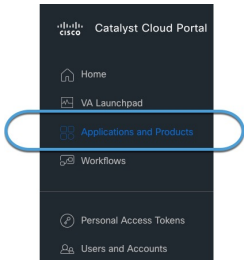
Before you begin

Make sure your current pxGrid cloud identity source is active as discussed in Activate the pxGrid Cloud Identity Source, on page 15.

Procedure

Step 1 Log in to the Cisco Catalyst Cloud Portal.

Step 2 In the Catalyst Cloud Portal, click ☰ > **Applications and Products** as the following figure shows:

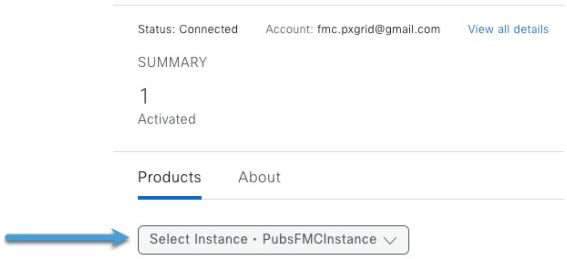


Step 3 Click **Applications**.

Step 4 Click **Manage** for Firewall Management Center.

Step 5 From the **Select Instance** list, click the name of the firewall application you created earlier.

Example:



Step 6 In the Actions column, click More icon (···) > **Deactivate**.

Step 7 Wait until the product is removed.

You can click **Refresh** (↻) to see updated status if necessary.

Step 8 To verify the app instance is deactivated in Cisco Security Cloud Control:

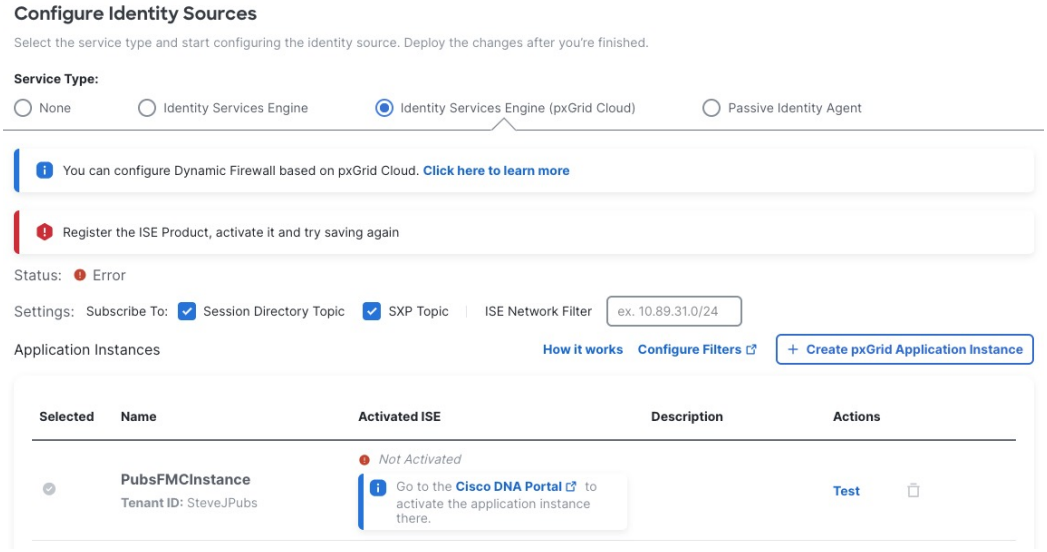
a) Log in to Cisco Security Cloud Control.

b) Click **Policies** > **Threat Defense** > **Integration** > **Other Integrations** > **Identity Sources**

c) Click **Identity Services Engine (pxGrid Cloud)**.

d) Verify that **Not Activated** is displayed in the Activated ISE column.

Example:



What to do next

To completely remove the identity source, see Delete the pxGrid Cloud Identity Source, on page 32.

Delete the pxGrid Cloud Identity Source

(Optional.) This task explains how to delete the pxGrid cloud identity source from Cisco Security Cloud Control, which is necessary if you do not want to use it again.

Before you begin

Deactivate the FMC app instance from the Catalyst Cloud Portal as discussed in Deactivate the pxGrid Cloud App Instance, on page 30.

Procedure

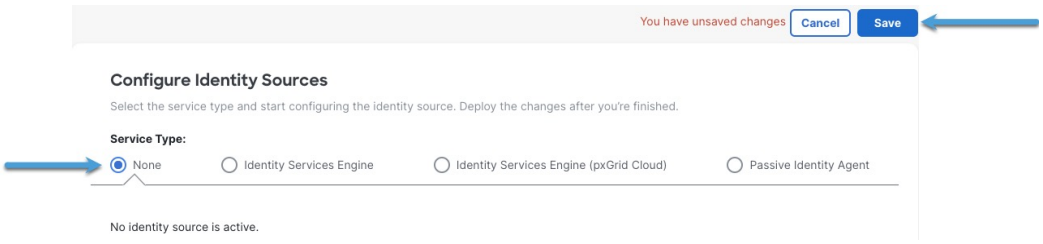
Step 1 Log in to Cisco Security Cloud Control as a user with the Super Admin role.

Step 2 Click **Policies** > **Threat Defense** > **Integration** > **Other Integrations** > **Identity Sources**

Step 3 Click **Identity Services Engine (pxGrid Cloud)**.

Step 4 For Service Type, click **None**.

Example:



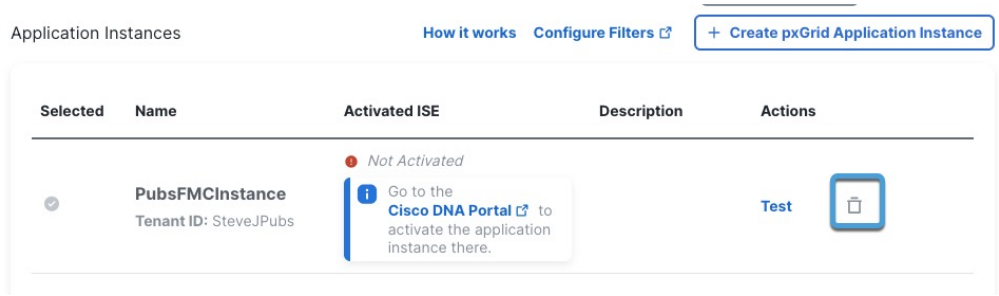
Step 5 Click **Save**.

Step 6 You are required to confirm your choice.

Step 7 Click **Identity Services Engine (pxGrid Cloud)**.

Step 8 Click **Delete** ( ).

Example:



Step 9 You are required to confirm the action.