Configure SWA External Authentication with ISE as a RADIUS Server

Contents

Introduction

This document describes the steps to configure external authentication on Secure Web Access (SWA) with Cisco ISE as a RADIUS server.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Basic knowledge in Cisco Secure Web Appliance.
- Knowledge of authentication and authorization policies configuration on ISE.
- Basic RADIUS knowledge.

Cisco recommends that you also have:

- SWA and ISE administration access.
- Compatible WSA and ISE versions.

Components Used

The information in this document is based on these software versions:

- SWA 14.0.2-012
- ISE 3.0.0

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

Background Information

When you enable external authentication for administrative users of your SWA, the device verifies the user credentials with a Lightweight Directory Access Protocol (LDAP) or RADIUS server as specified in external authentication configuration.

Network Topology

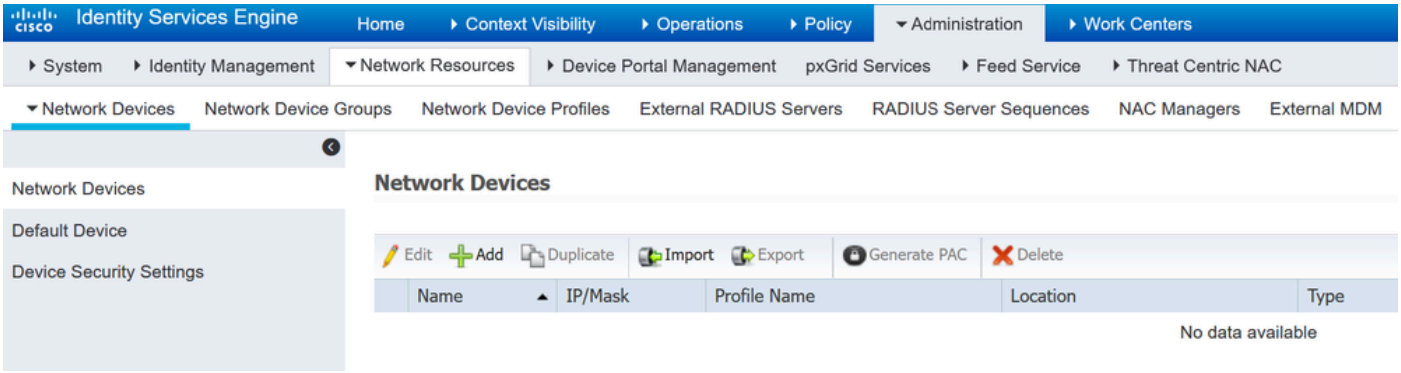
Network Topology Diagram

Administrative users access SWA on port 443 with their credentials. SWA verifies the credentials with the RADIUS server.

Configure

ISE Configuration

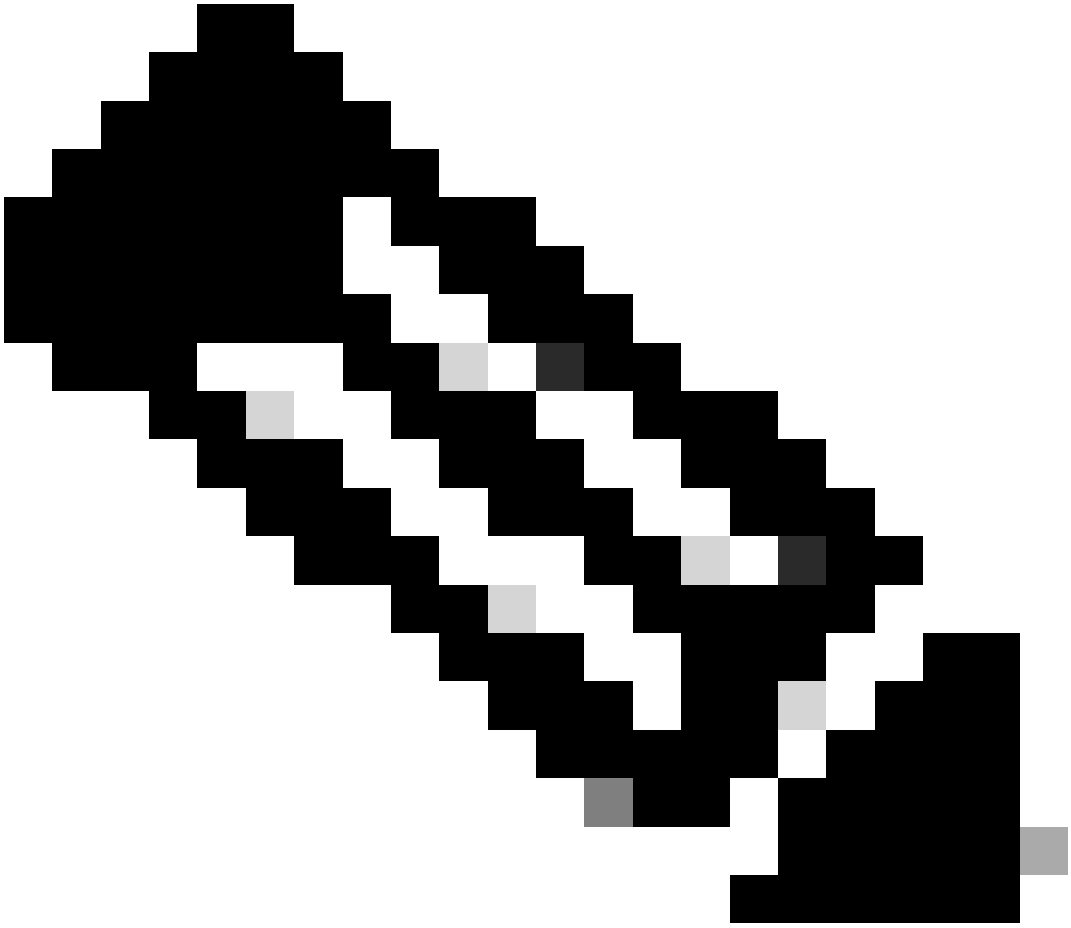
Step 1. Add a new Network Device. Navigate to **Administration** > **Network Resources** > **Network Devices** > **+Add**.



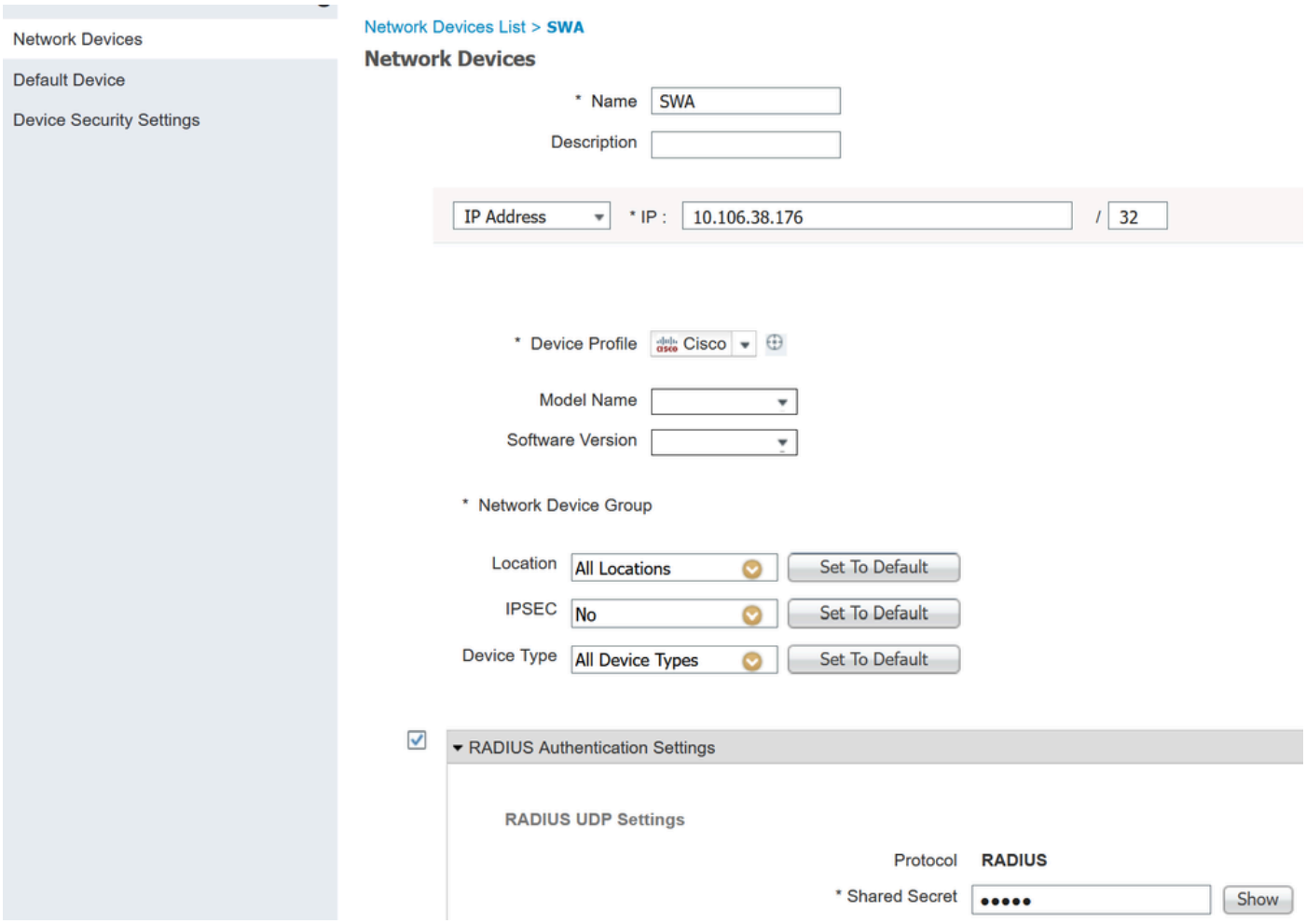
Add SWA as Network Device in ISE

Step 2. Assign a **Name** to the network device object and insert the SWA **IP address**.

Check the RADIUS **checkbox** and define a **Shared Secret**.

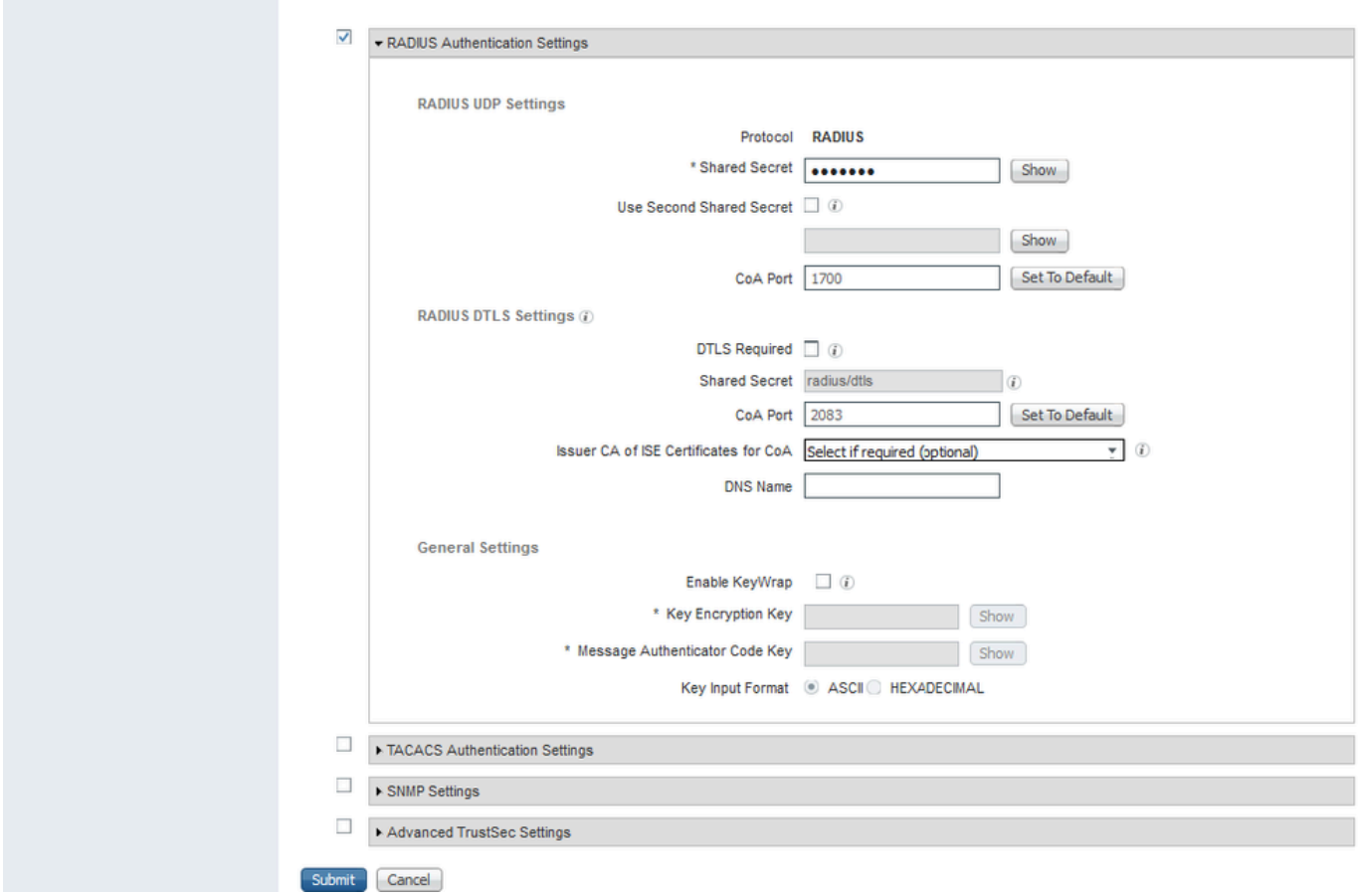


Note: The same key must be used later to configure the RADIUS server in SWA.



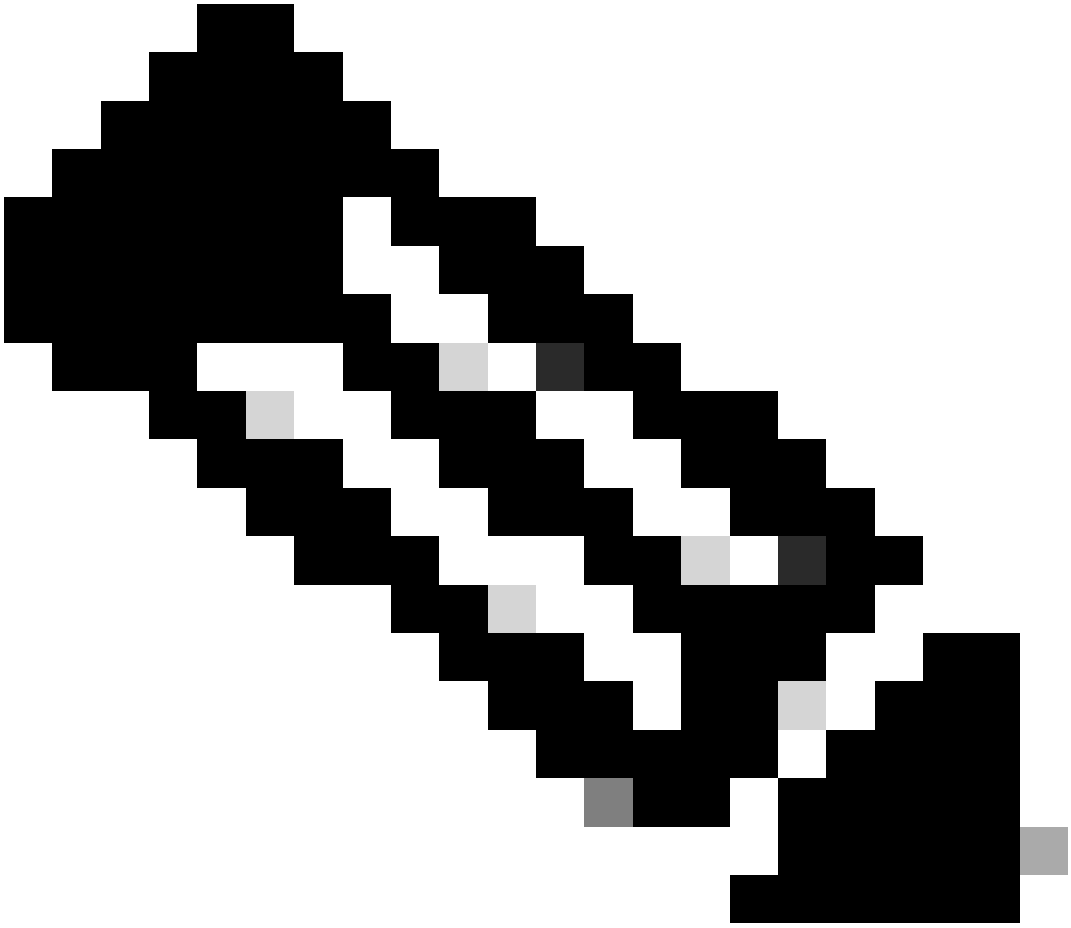
Configure SWA Network Device Shared Key

Step 2.1. Click **Submit**.

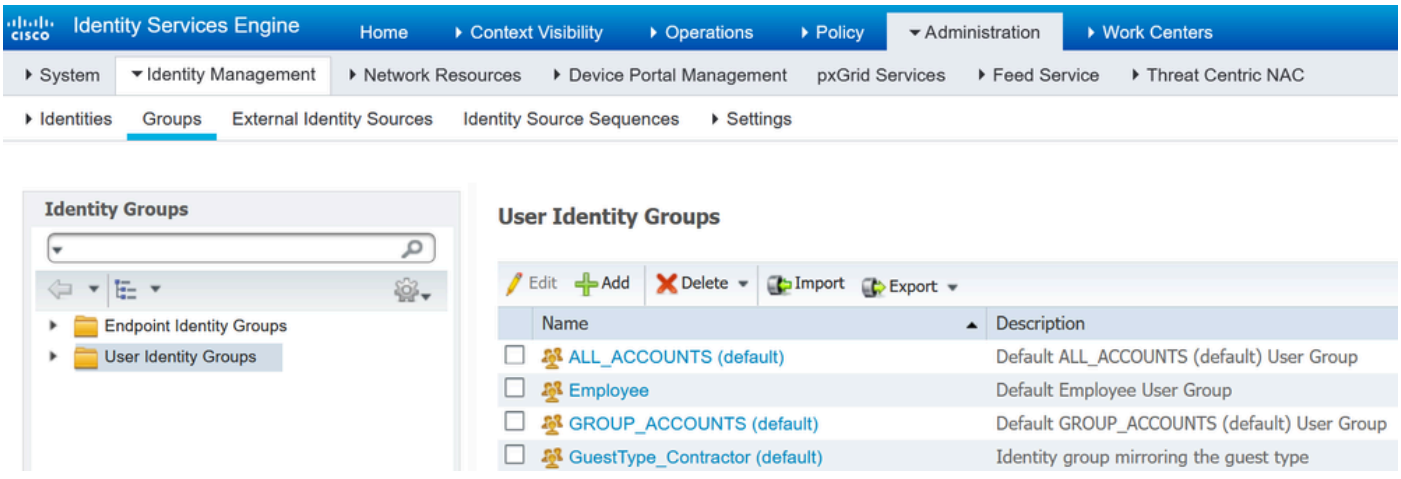


Submit Network Device Configuration

Step 3. Create the required User Identity Groups. Navigate to **Administration > Identity Management > Groups > User Identity Groups > + Add**.

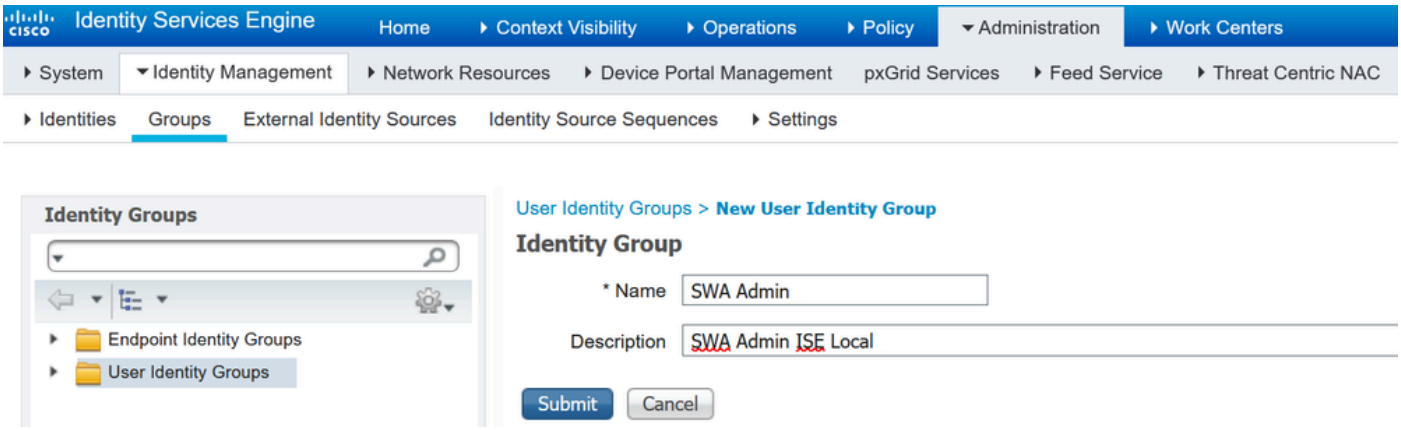


Note: You need to configure different user groups to match different type of users.

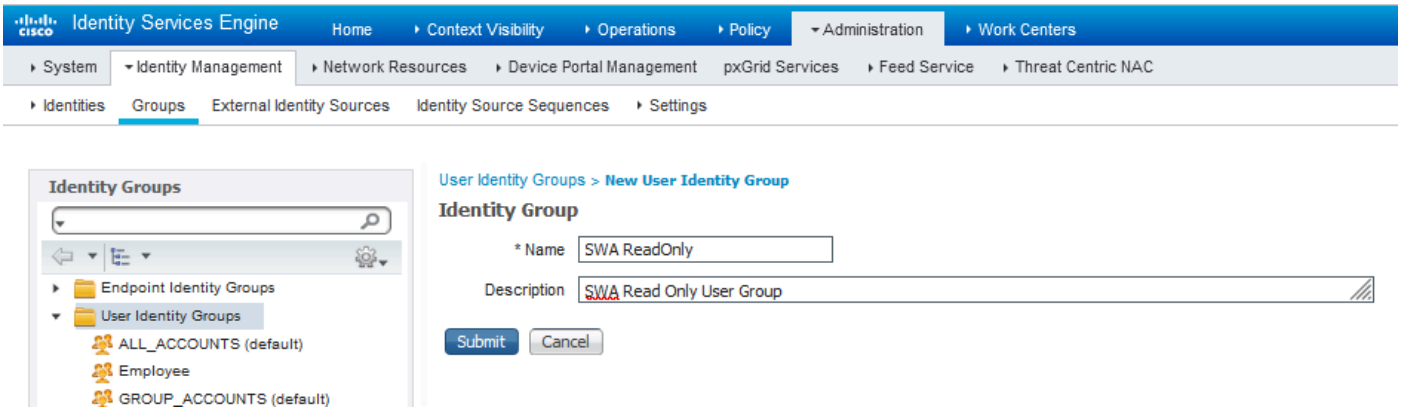


Add User Identity Group

Step 4. Input group name, description (optional) and **Submit**. Repeat these steps for each group. In this example, you ceate a group for Administrator users, and another one for Read-Only users.



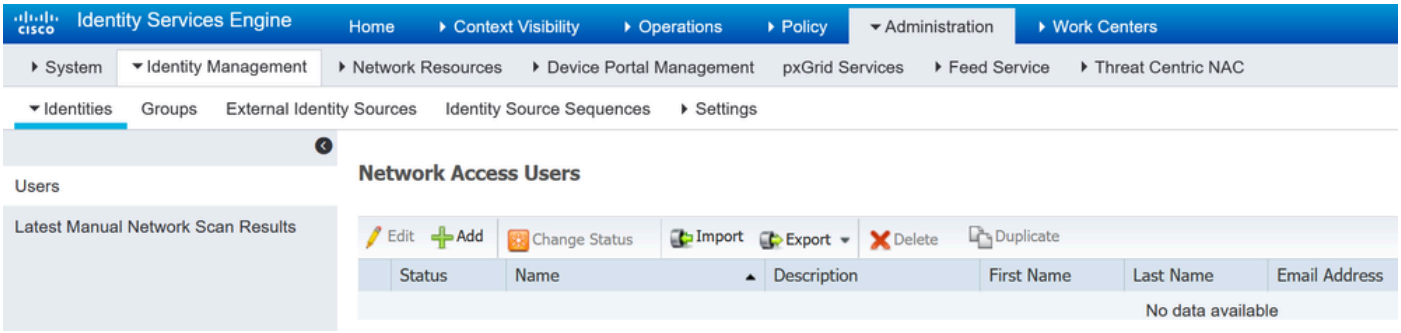
Add User Identity Group



Add User Identity Group for SWA Read Only Users

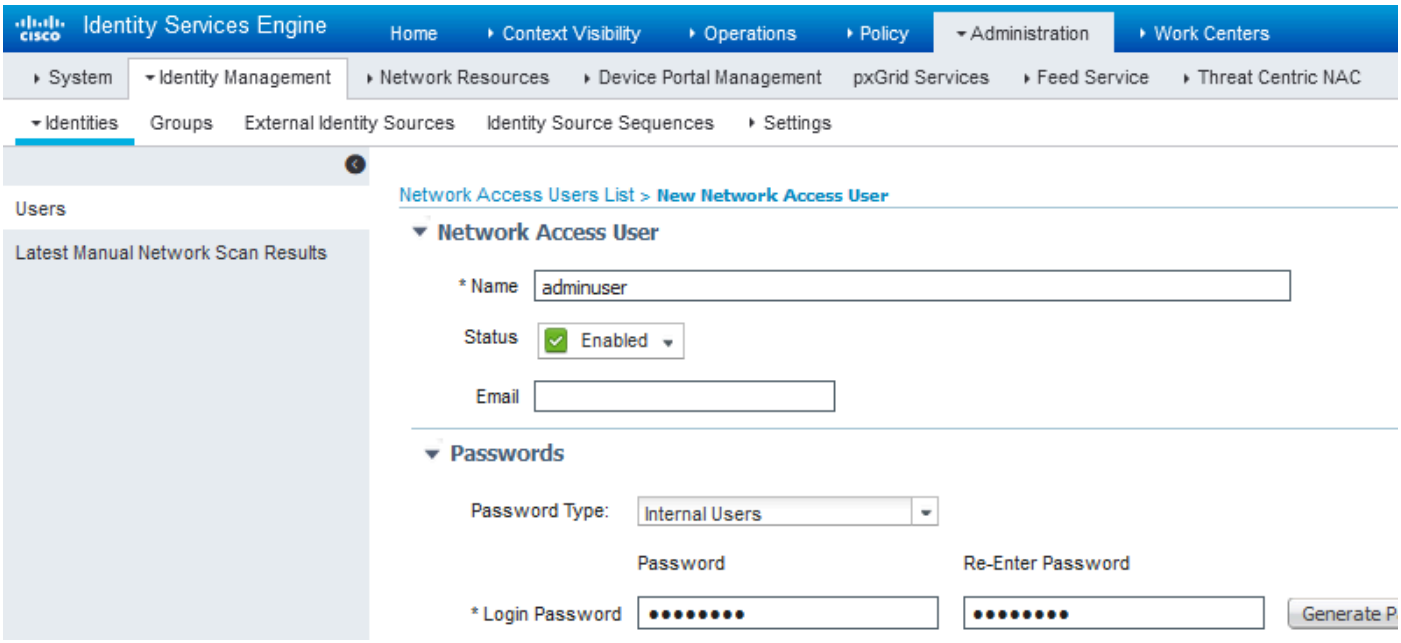
Step 5. You need to create Network access users that match with user name configured in SWA.

Create the **Network Access Users** and add them to their correspondent group. Navigate to **Administration > Identity Management > Identities > + Add**.

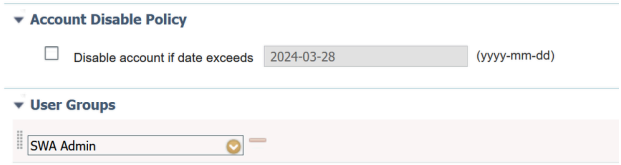


Add Local Users in ISE

Step 5.1. You need to create a **Network Access Users** with Administrator rights. Assign a name and password.



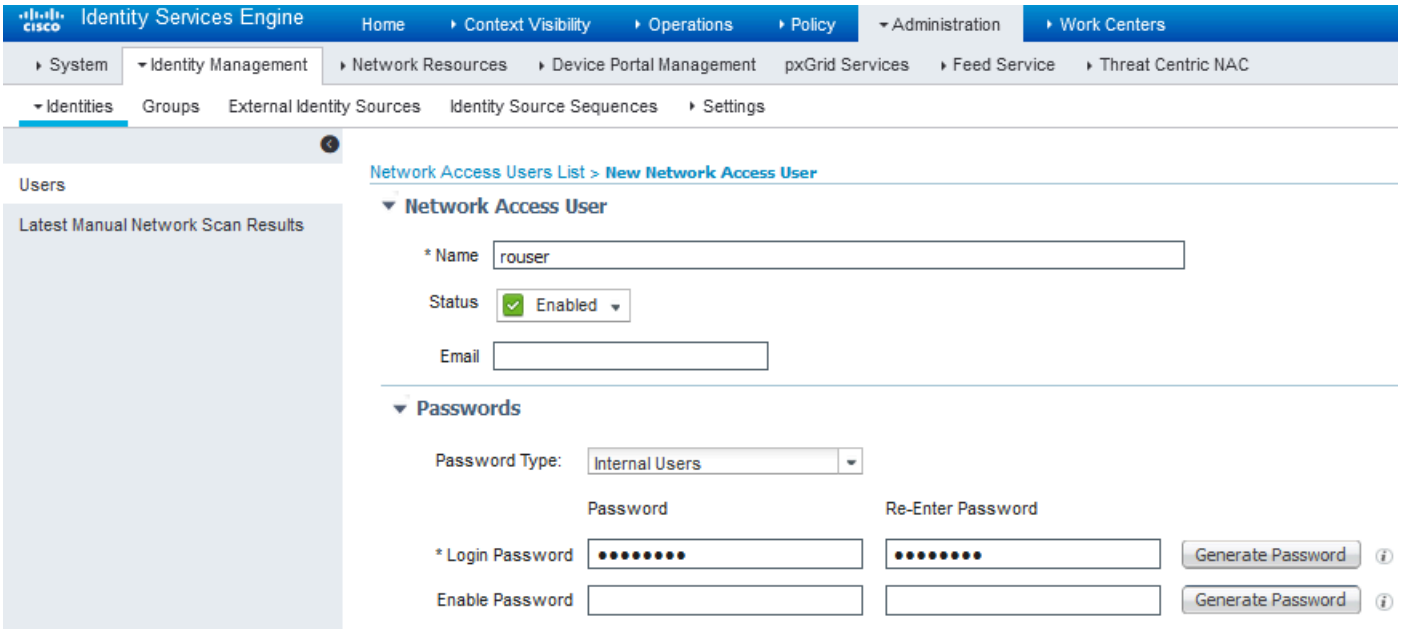
Add Admin User



Step 5.2. Choose **SWA Admin** in the **User Groups** section.

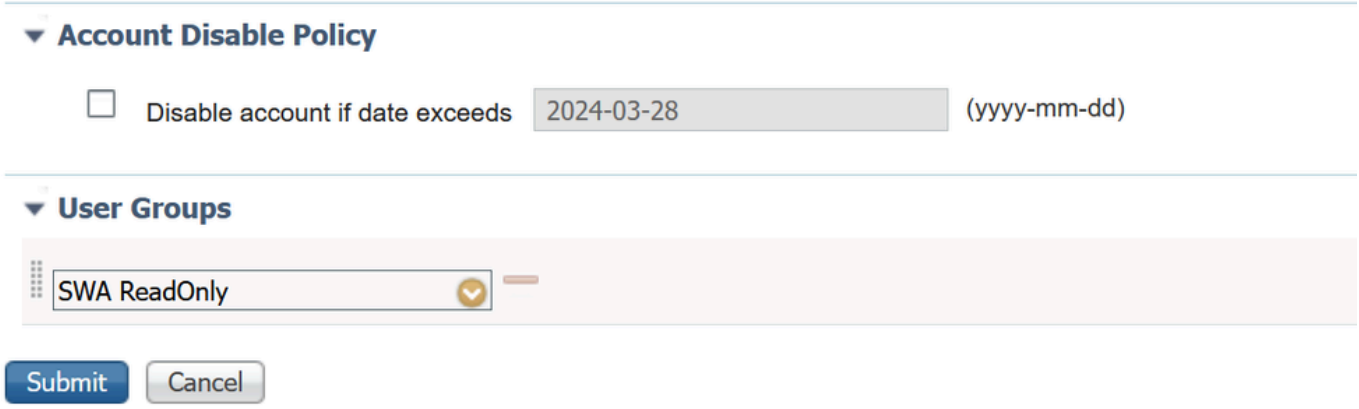
Assign Admin Group to the Admin User

Step 5.3. You need to create a user with Read Only rights. Assign a name and password.



Add Read Only User

Step 5.4. Choose **SWA ReadOnly** in the **User Groups** section.

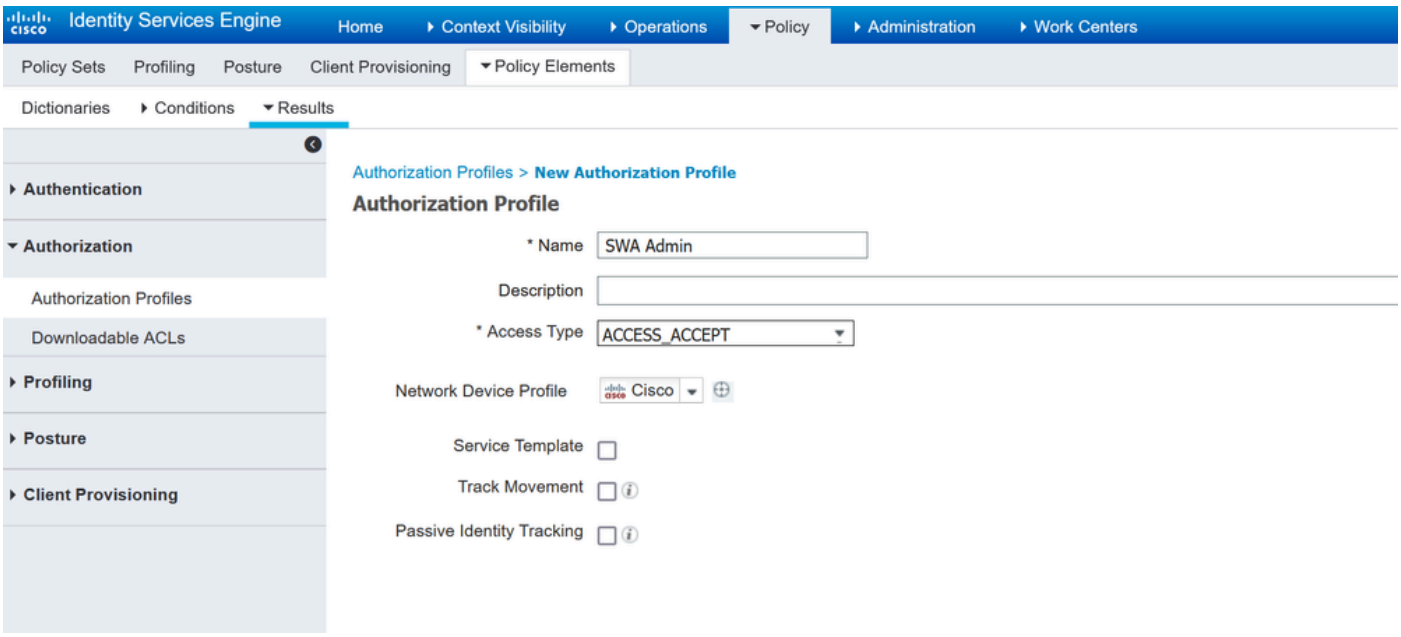


Assign Read Only User group to the Read Only User

Step 6. Create the **Authorization Profile** for the Admin user.

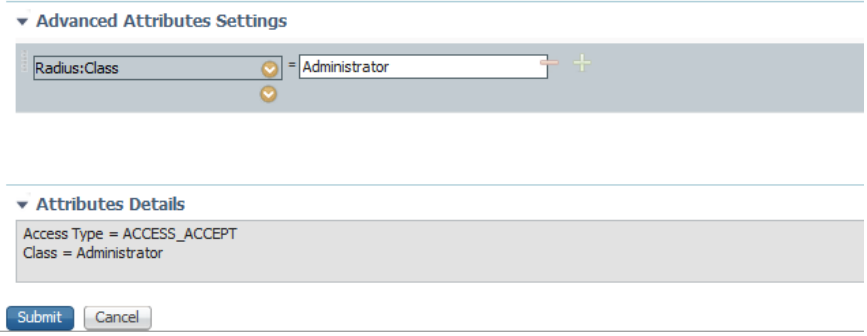
Navigate to **Policy > Policy Elements > Results > Authorization > Authorization Profiles > +Add**.

Define a name for the **Authorization Profile** and make sure the **Access Type** is set to **ACCESS_ACCEPT**.



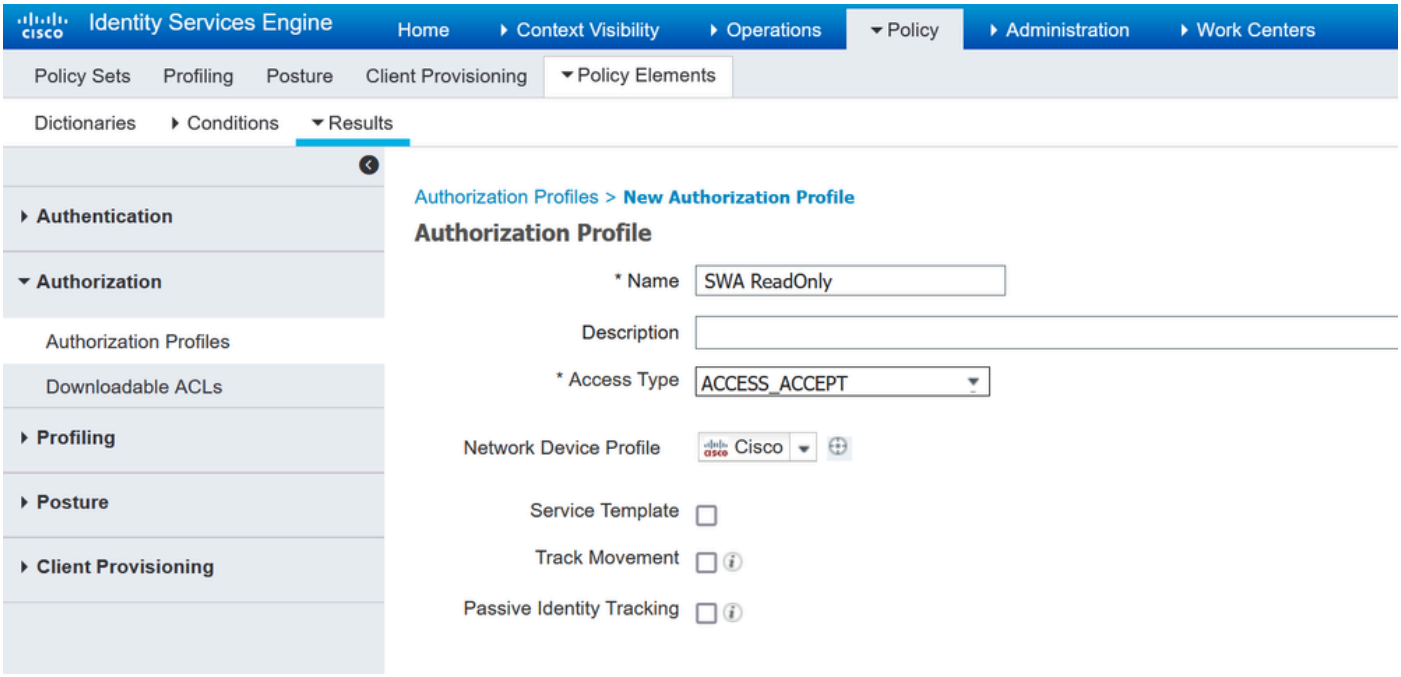
Add Authorization Profile for Admin Users

Step 6.1. In the **Advanced Attributes Settings**, navigate to **Radius** > **Class--[25]** and enter the value **Administrator** and click **Submit**.



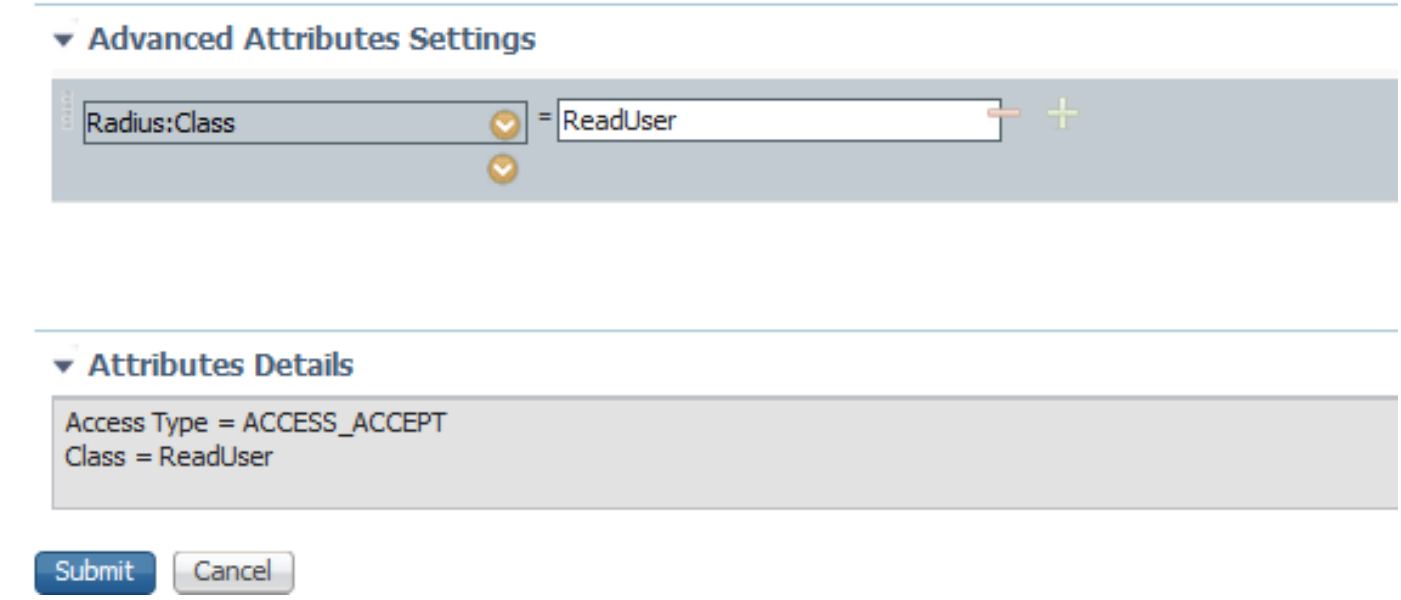
Add Authorization Profile for Admin Users

Step 7. Repeat step 6 to create the **Authorization Profile** for the Read Only User.



Add Authorization Profile for Read Only Users

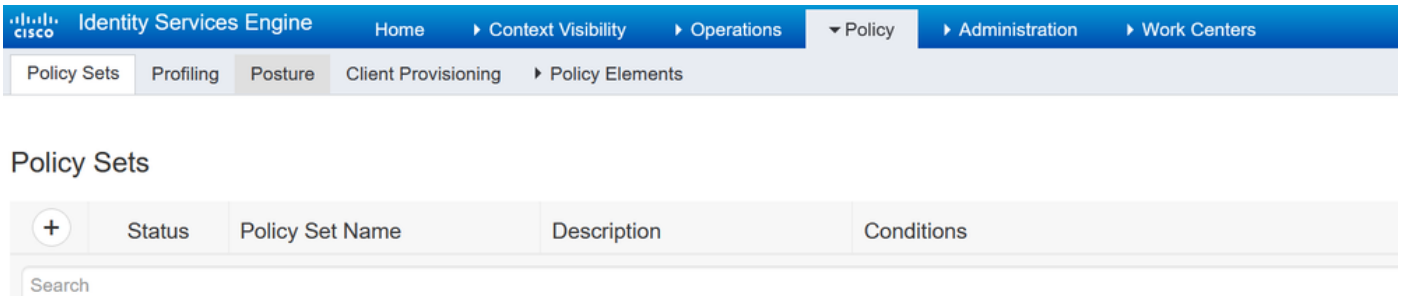
STEP 7.1. Create the **Radius:Class** with the value **ReadUser** instead Administrator this time.



Add Authorization Profile for Read Only Users

Step 8. Create **Policy Sets** that matches the SWA IP address. This is to prevent access to other devices with these user credentials.

Navigate to **Policy** > **PolicySets** and click + icon placed at the upper left corner.

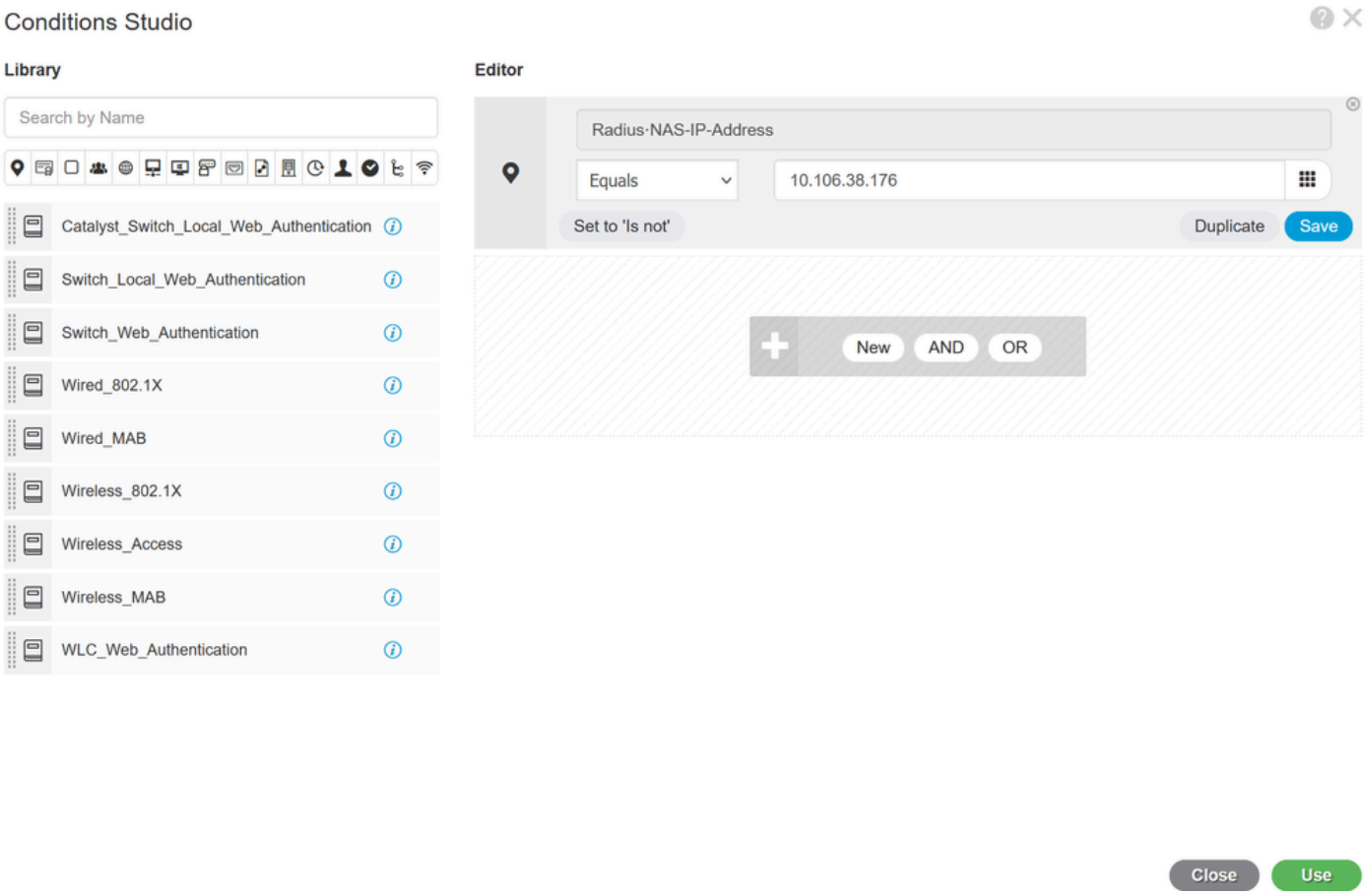


Add Policy Set in ISE

Step 8.1. A new line is placed at the top of your **Policy Sets**.

Name the new policy and add a condition for **RADIUS NAS-IP-Address** attribute to match the SWA IP address.

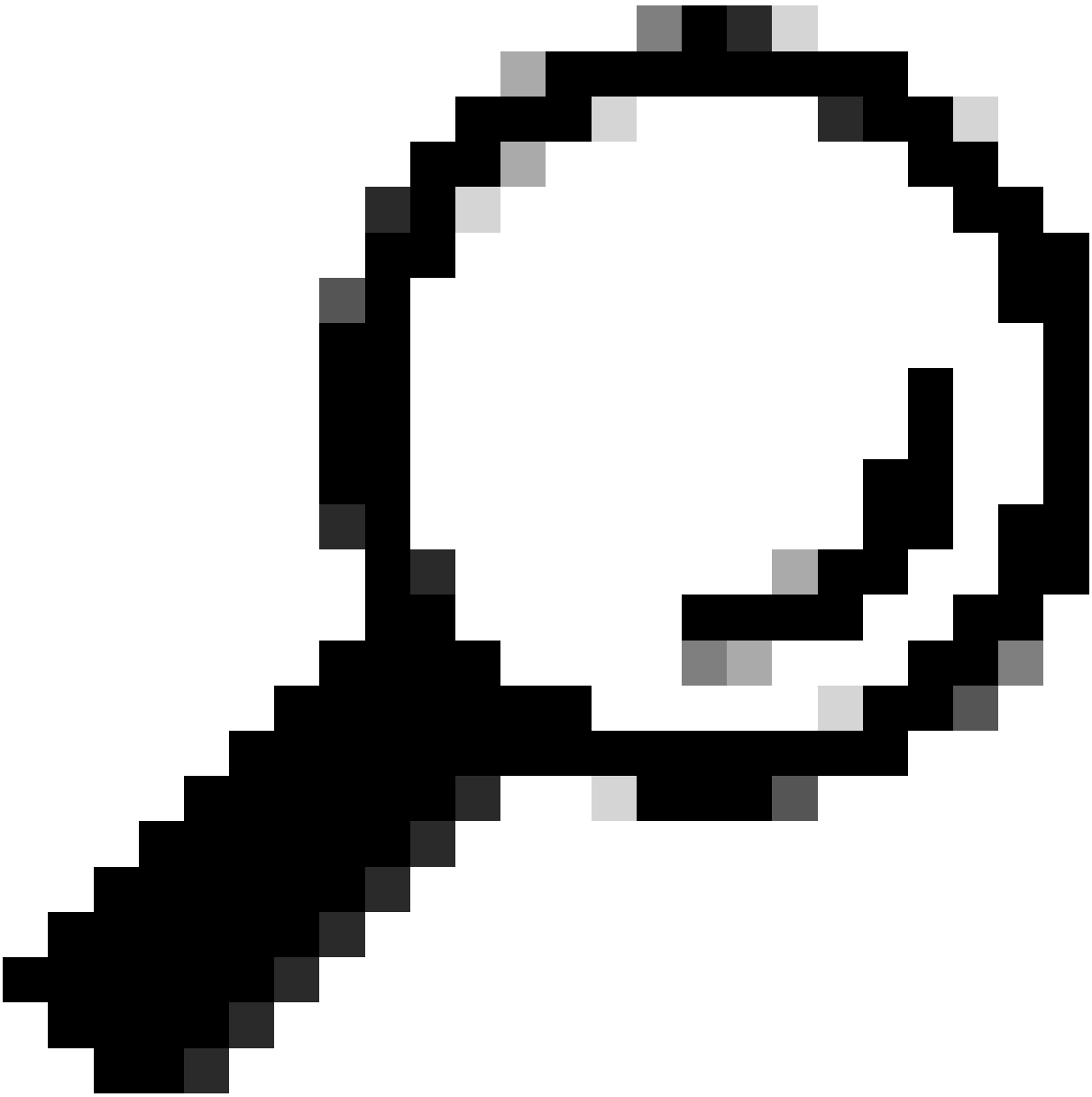
Click **Use** to keep the changes and exit the editor.



Add Policy to Map SWA Network Device

Step 8.2. Click **Save**.

Policy Save

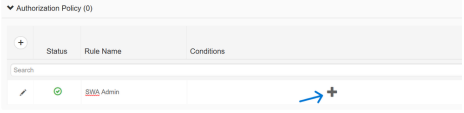


Tip: In this article, the Default Network Access Protocols list is allowed. You can create a new list and narrow down as needed.

Step 9. To view the new **Policy Sets**, click the **>** icon in the **View** column. Expand the **Authorization Policy** menu and click the **+** icon to add a new rule to allow the access to the user with admin rights.

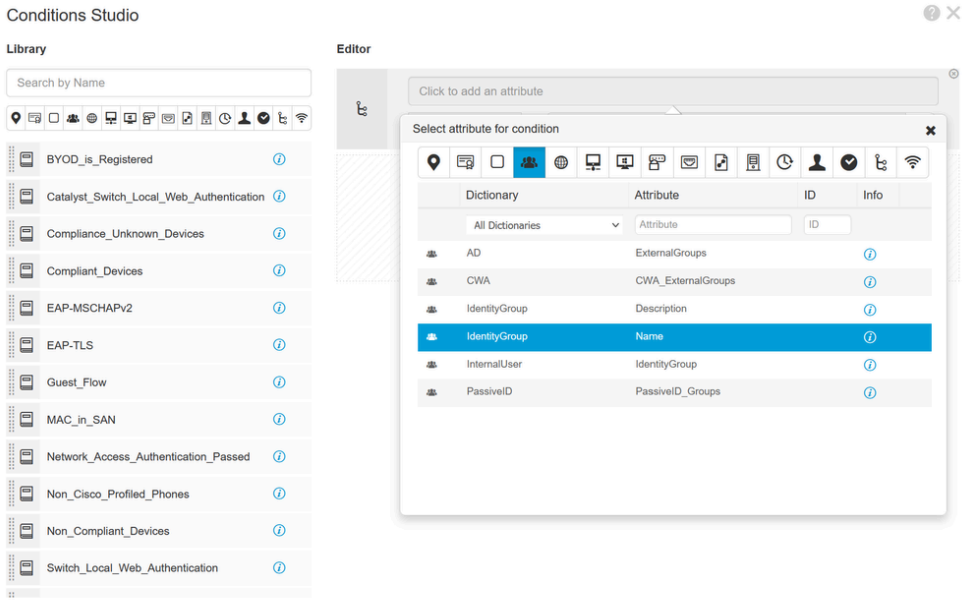
Set a name.

Step 9.1. To create a condition to match Admin user group, click **+** icon.



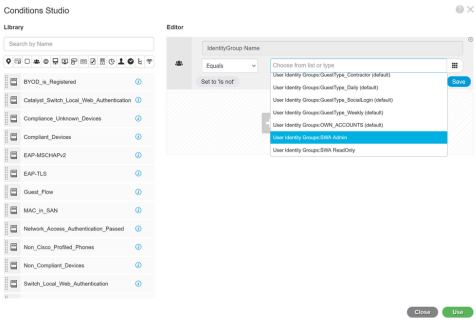
Add Authorization Policy Condition

Step 9.2. Set the conditions to match the **Dictionary Identity Group** with **Attribute Name Equals User**



Identity Groups: SWA admin.

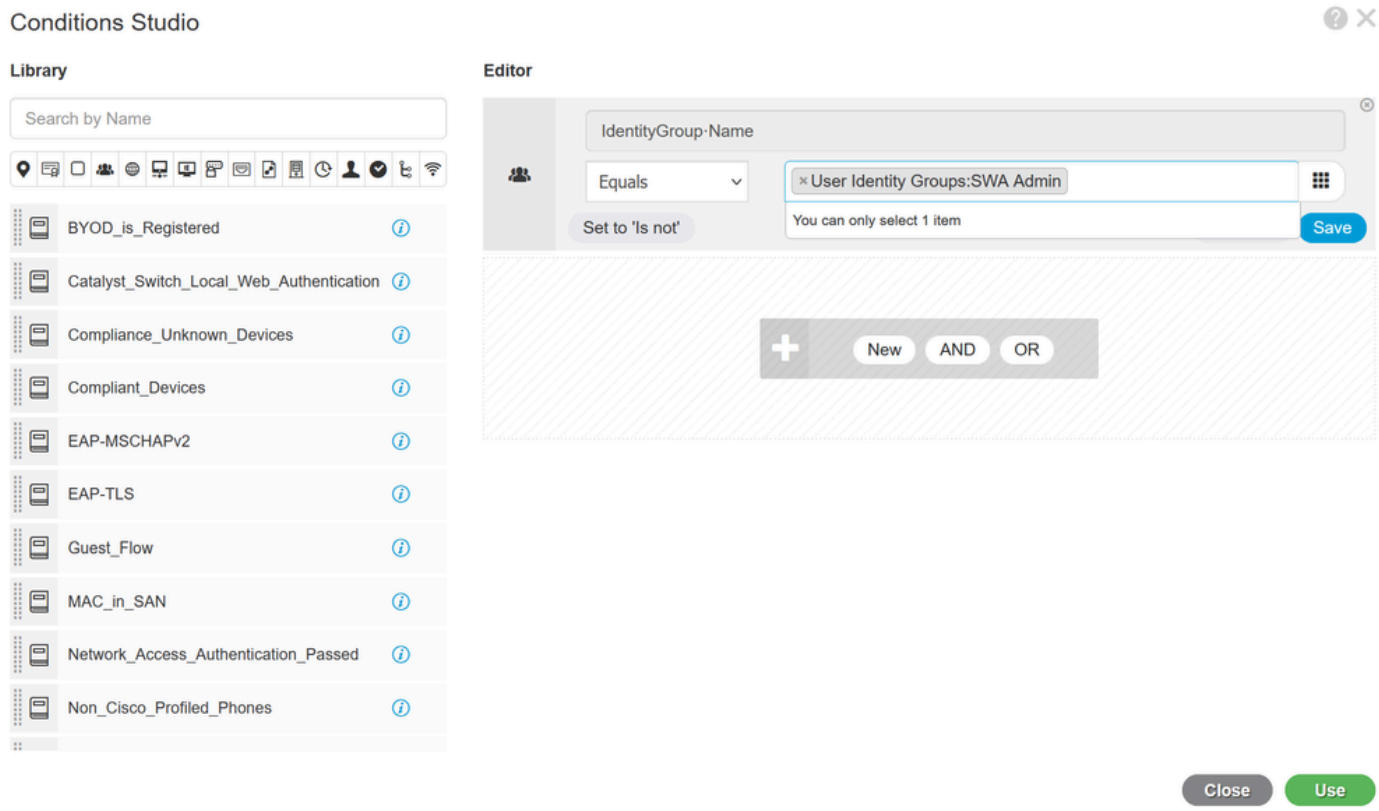
Select Identity Group as Condition



Step 9.3. Scroll down and select **User Identity Groups: SWA admin**.

Scroll Down abd Select Identity Group Name

Step 9.4. Click **Use**.

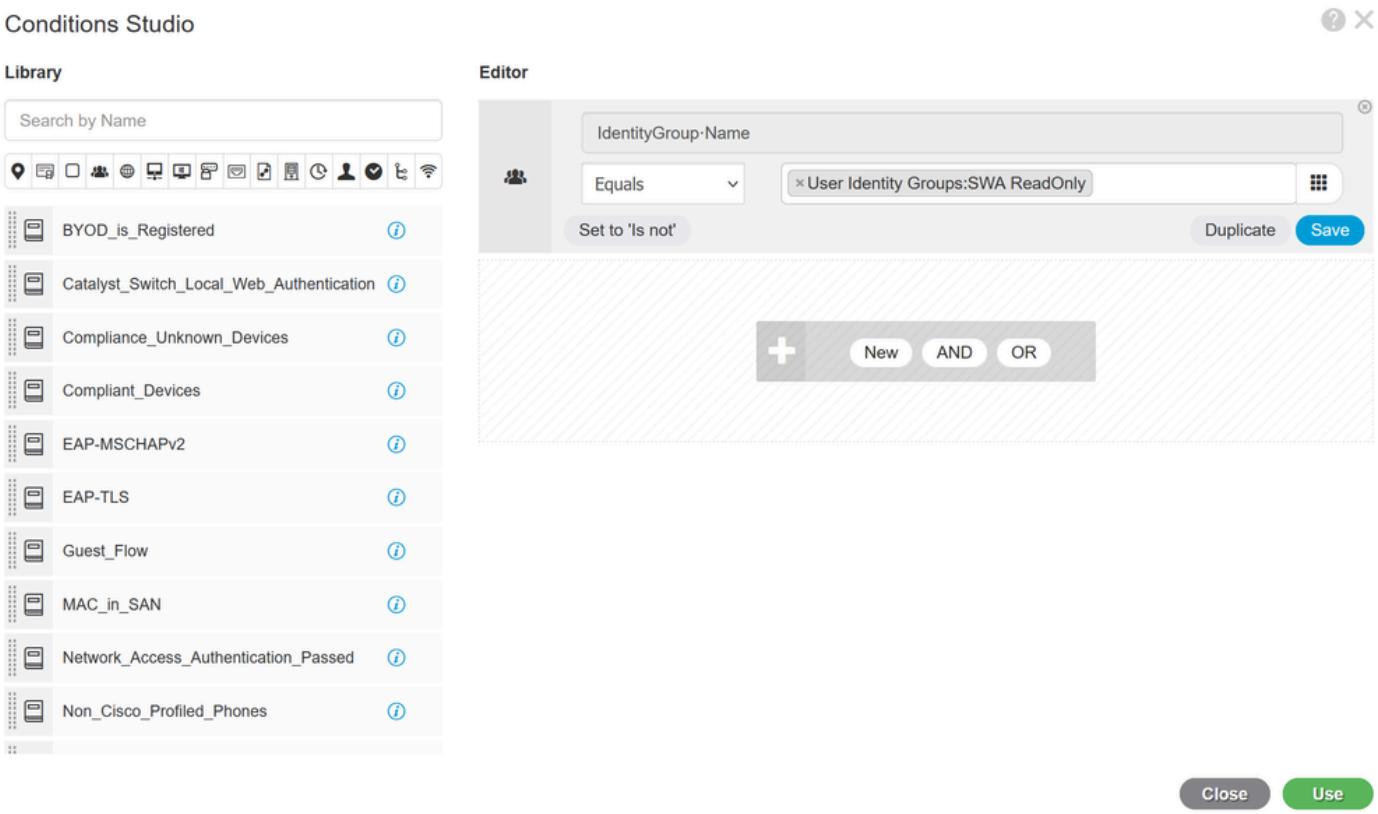


Select Authorization Policy for SWA Admin User Group

Step 10. Click the **+** icon to add a second rule to allow the access to the user with read-only rights.

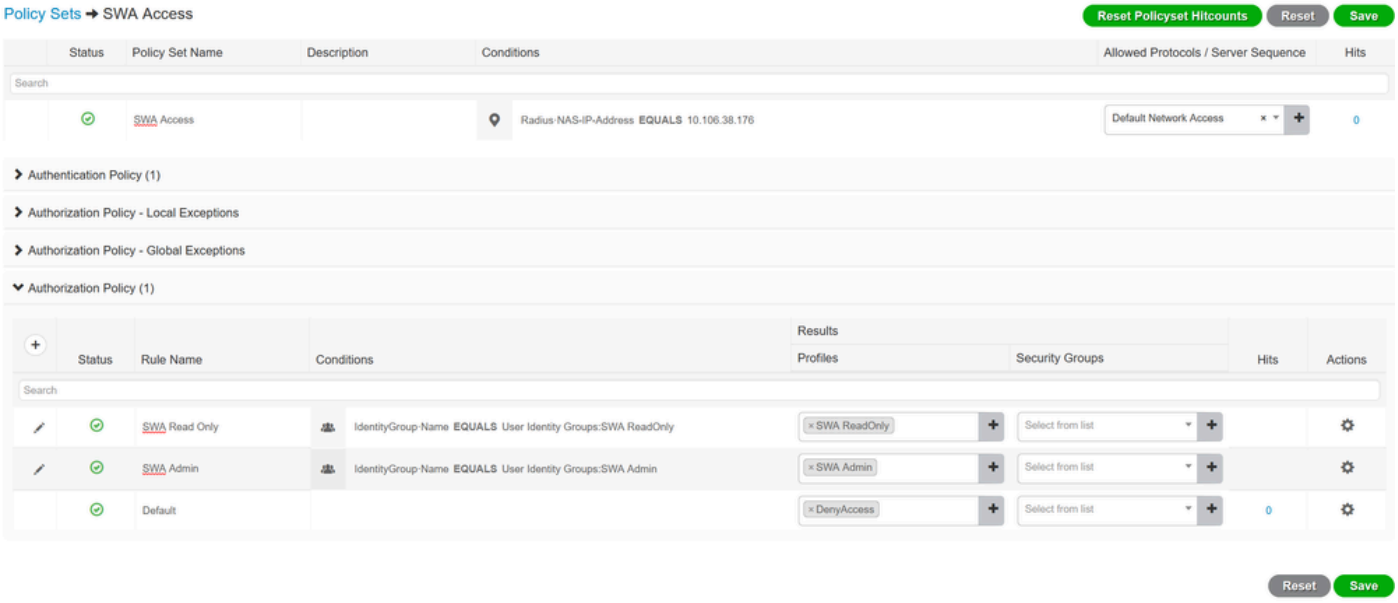
Set a name.

Set the conditions to match the **Dictionary Identity Group** with **Attribute Name Equals User Identity Groups: SWA ReadOnly** and click **Use**.



Select Authorization Policy for ReadOnly User Group

Step 11. Set the **Authorization Profile** respectively for each rule and click **Save**.

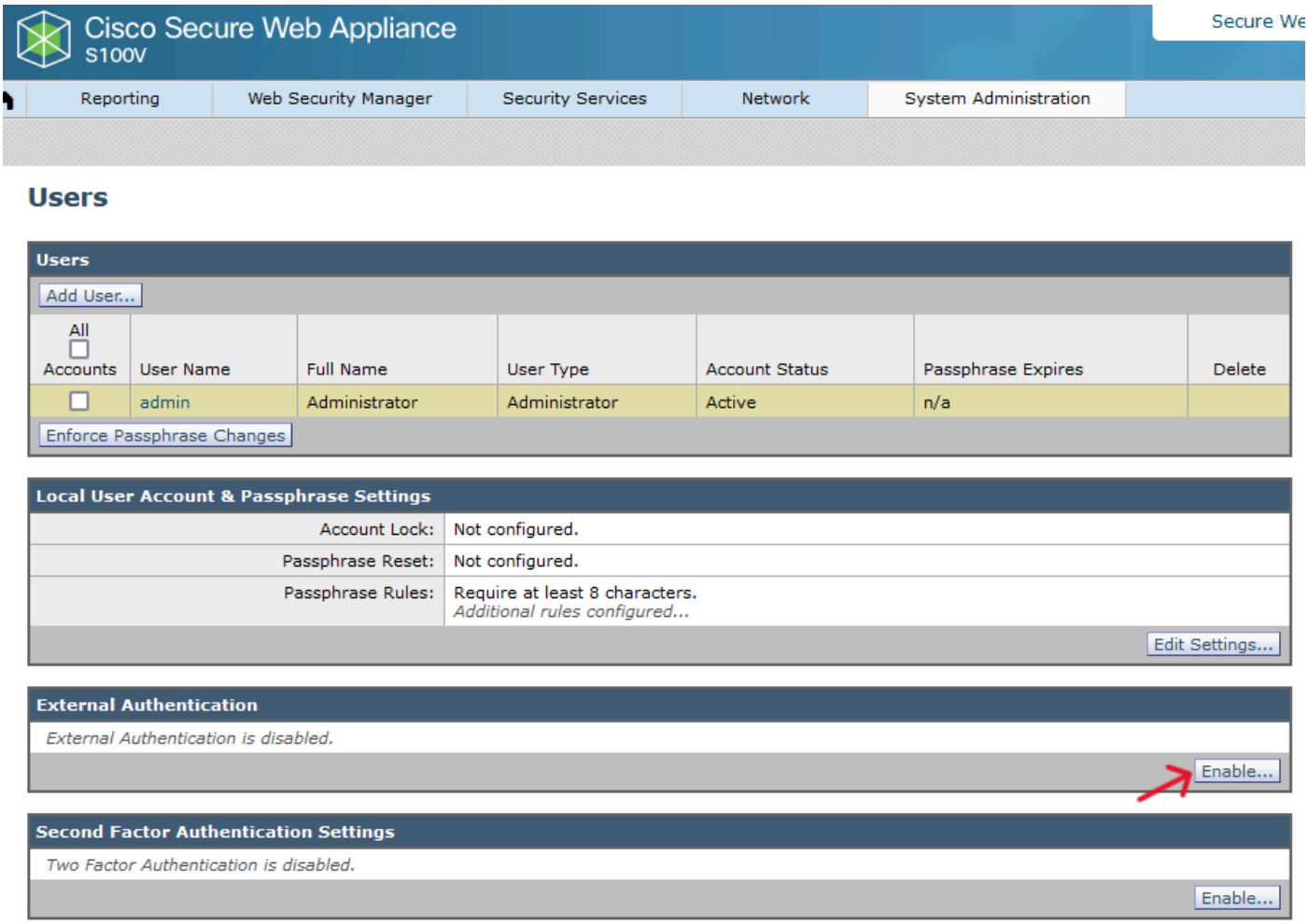


Select Authorization Profile

SWA Configuration

Step 1. From SWA GUI navigate to **System Administration** and click **Users**.

Step 2. Click **Enable** in **External Authentication**.



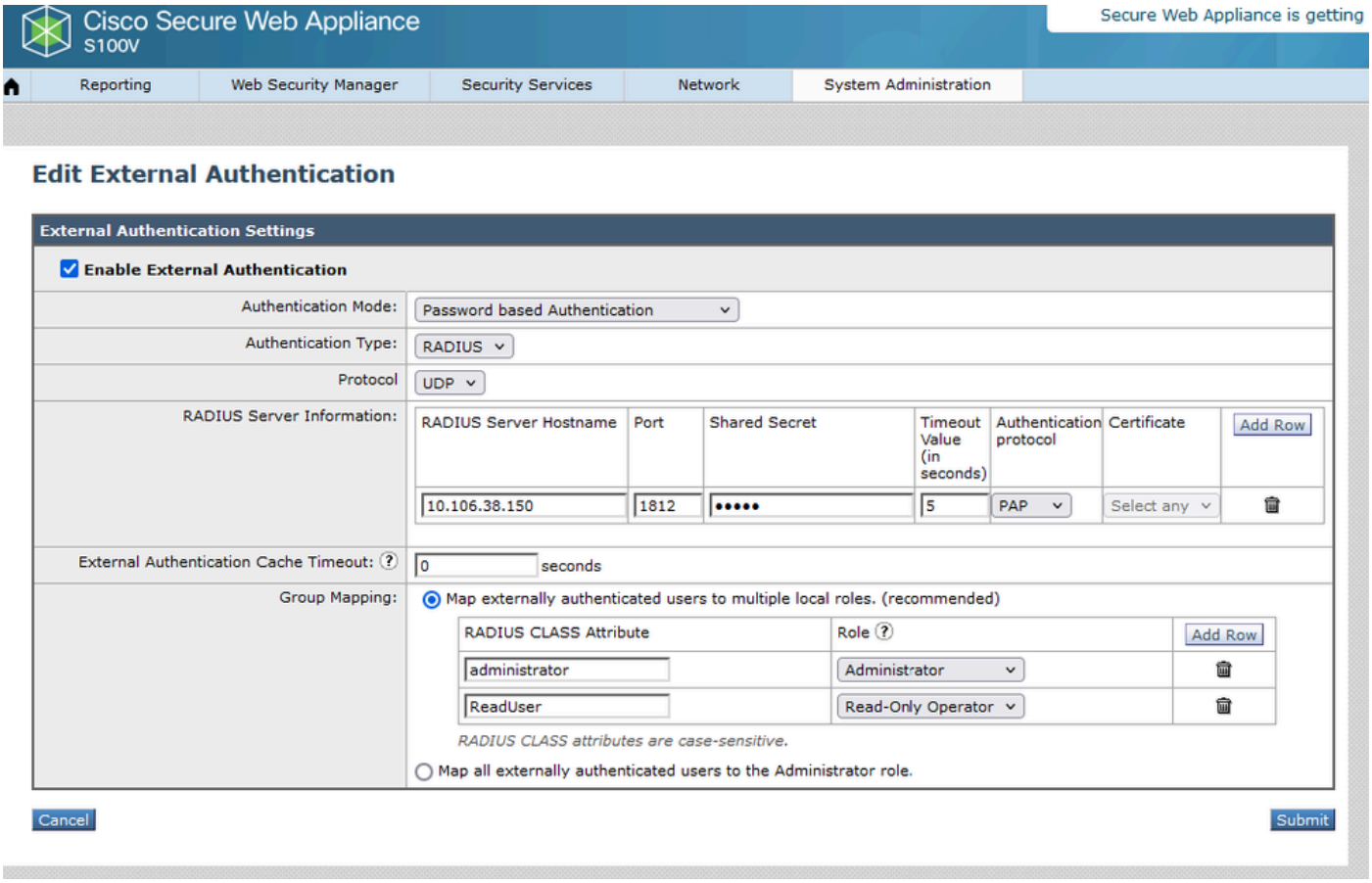
Enable External Authentication in SWA

Step 3. Enter IP address or FQDN of the ISE in **RADIUS Server Hostname** field and enter the same Shared Secret that is configured in the Step 2, ISE Configuration.

Step 4. Select **Map externally authenticated users to multiple local roles** in **Group Mapping**.

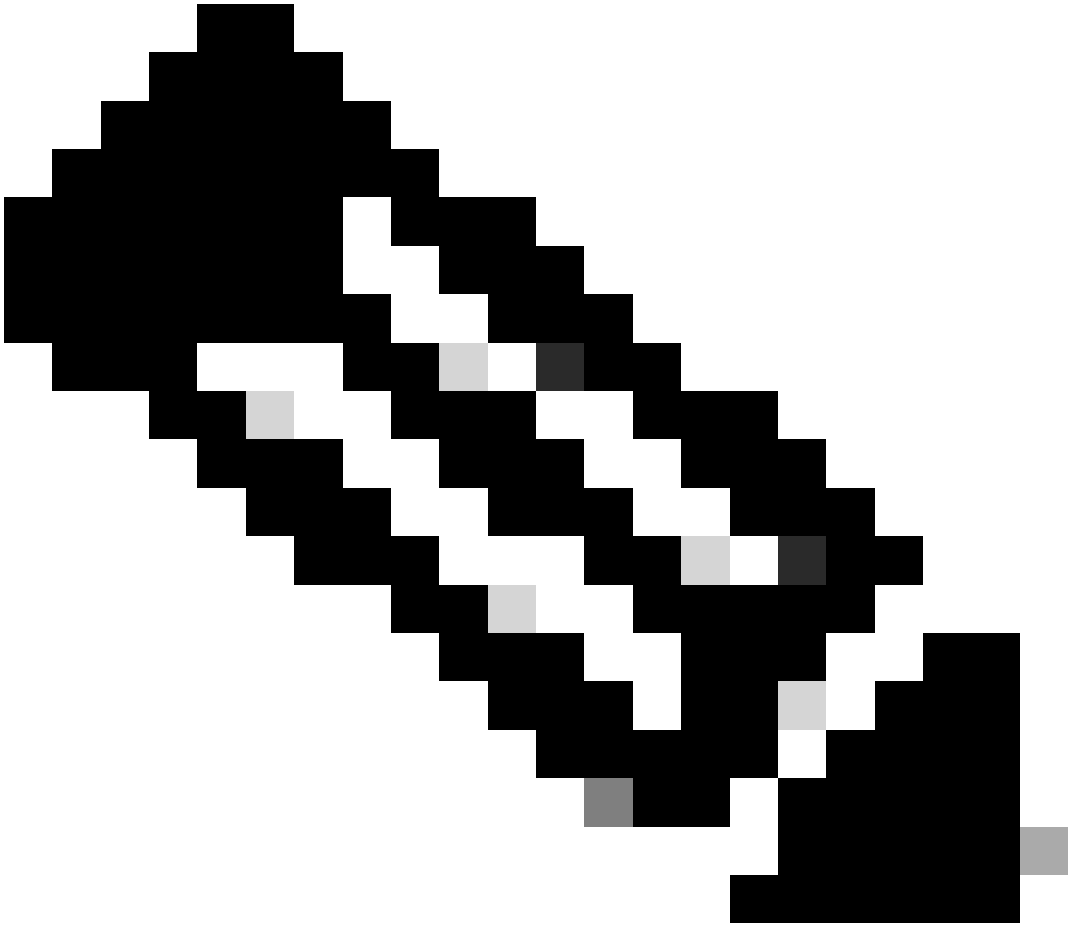
Step 4.1. Enter **Administrator** in the RADIUS CLASS Attribute field and select the Role **Administrator**.

Step 4.2. Enter **ReadUser** in the RADIUS CLASS Attribute field and select the Role **Read-Only Operator**.



External Authentication Configuration for RADIUS Server

Step 5: To configure **Users** in SWA, click **Add User.** Enter **User Name** and select **User Type** required for the desired role. Enter **Passphrase** and **Retype Passphrase,** which is required for GUI access if the appliance cannot connect to any external RADIUS server.



Note: If the appliance cannot connect to any external server, it tries to authenticate the user as a local user defined on the Secure Web Appliance.

Users

Users

Add User...

** When RADIUS external authentication is enabled, all local user accounts except "admin" are disabled. If all RADIUS services fail, local user accounts will be used for authentication.*

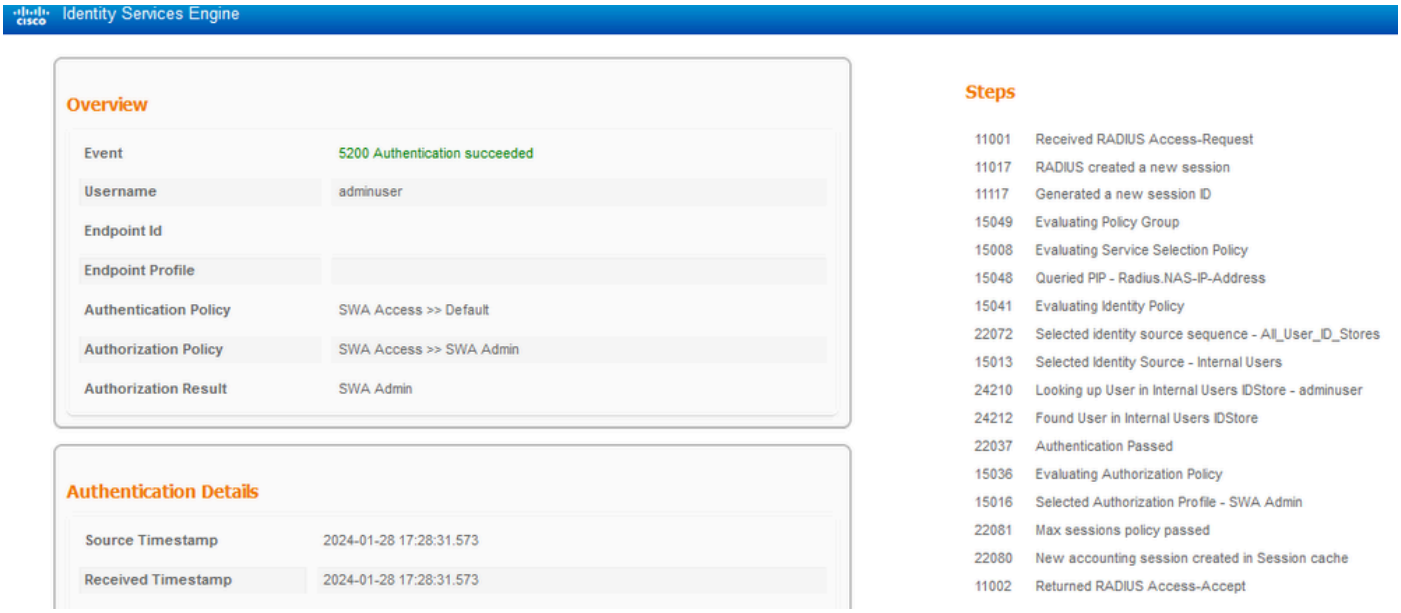
All Accounts	User Name	Full Name	User Type*	Account Status	Passphrase Expires	Delete
☐	adminuser	Admin User	*Administrator*	Active	n/a	🗑
☐	rouser	RO User	*Read-Only Operator*	Active	n/a	🗑

User configuration in SWA

Step 6: Click **Submit** and **Commit Changes**.

Verify

Access SWA GUI with the configured user credentials and check the live logs in ISE. To check the live logs in ISE navigate to **Operations > Live Logs**:



Verify User Login ISE

Related Information

- User Guide for AsyncOS 14.0 for Cisco Secure Web Appliance
- ISE 3.0 Admin Guide
- ISE Compatibility Matrix for Secure Web Appliance
- Cisco Technical Support & Downloads