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Introduction

This document describes how to configure Single Security Assertion Markup Language (SAML) Identity Provider (IdP) connection/agreement per cluster with Active Directory Federation Service (AD FS).

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Cisco Unified Communications Manager (CUCM) 11.5 or later
- Cisco Unified Communications Manager IM and Presence version 11.5 or later
- Active Directory Federation Service version 2.0

Components Used

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

- Active Directory Federation Service version 2.0 as IdP
- Cisco Unified Communications Manager version 11.5
- Cisco IM and Presence Server version 11.5

Background Information

For SAML SSO, needs to be a circle of trust between the Service Provider (SP) and the IdP. This trust is created as part of SSO Enablement, when trust (metadata) is exchanged. Download the Metadata from CUCM and uploads it to IdP, similarly download the metadata from IdP and upload it to CUCM.

Prior CUCM 11.5, originating node generates the metadata file, also it collects the metadata files from other nodes in the cluster. It adds all Metadata files to a single zip file then presents to the administrator. Administrator has to unzip this file and provision each files on the IdP. For example, 8 metadata files for an 8 node cluster.

Single SAML IdP connection/agreement per cluster feature is introduced from 11.5. As part of this feature, CUCM generates a single Service Provider metadata file for all CUCM and IMP nodes in the cluster. The new name format for the metadata file is **<hostname>-single-agreement.xml**

Basically, one node creates the Metadata and pushes it to other SP nodes in the cluster. This enables ease of provisioning, maintenance and management. For example, 1 metadata files for an 8 node cluster.

The cluster wide metadata file make use of Multiserver tomcat certificate which ensures the key pair is used is same for all nodes in the cluster. The metadata file also have a list of Assertion Consumer Service (ACS) urls for each nodes in the cluster.

CUCM and Cisco IM and Presence version 11.5 Supports both the SSO Modes, **cluster-wide** (one metadata file per cluster) and per node (existing model).

This document describes how to configure the cluster-wide mode of the SAML SSO with AD FS 2.0.

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, make sure that you understand the potential impact of any command.

Configure

Step 1. Export SP metadata from CUCM

Open a web browser, log in to CUCM as administrator, and navigate to**System >**

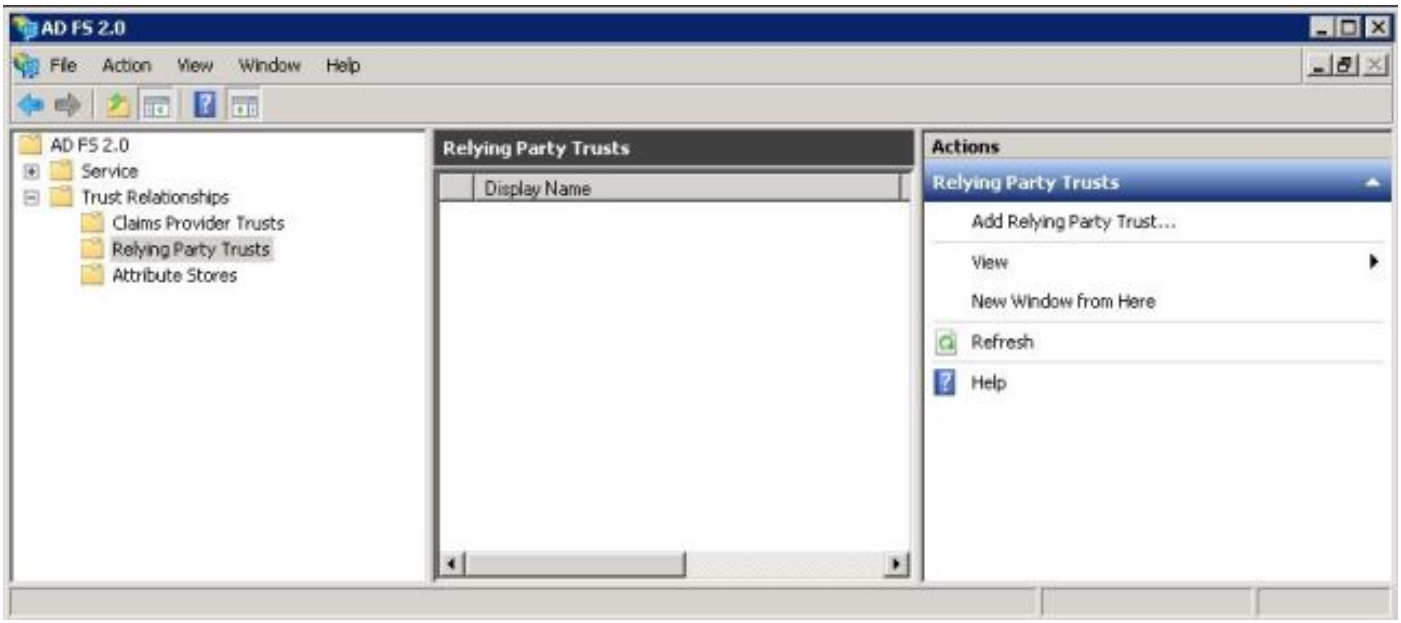
By default, **Cluster Wide** radio button is selected. Click **Export All Metadata.** The metadata data file presented to administrator in the name **<hostname>-single-agreement.xml**

Step 2. Download IDP metadata from AD FS

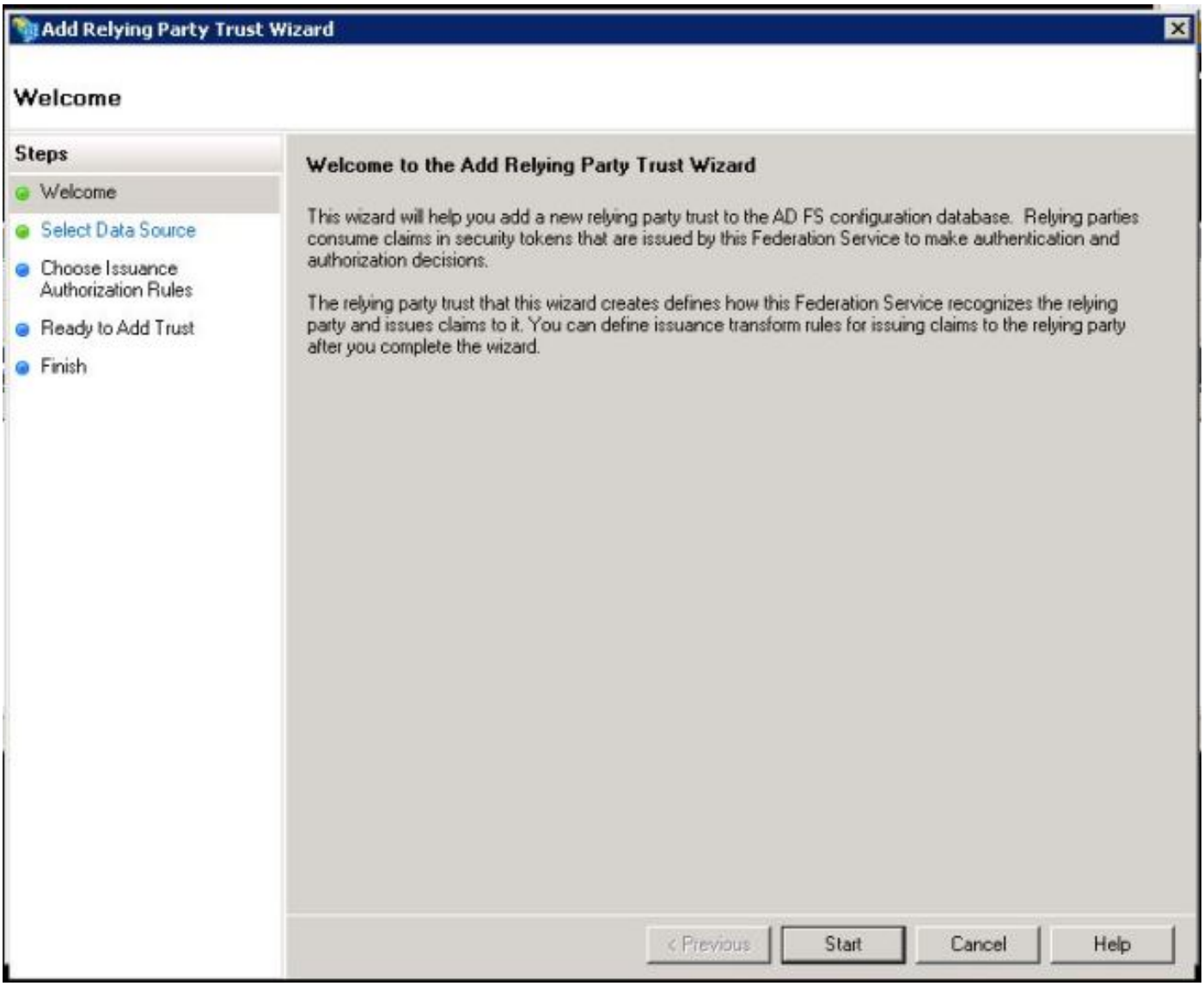
In order to download IdP metadata, refer to the link https:// <FQDN of ADFS>/federationmetadata/2007-06/federationmetadata.xml

Step 3. Provision IdP

As shown in the image, navigate to **AD FS 2.0 Management/Trust Relation Ships/ Relying Party trust**. Click **Add Relying Party Trust**.

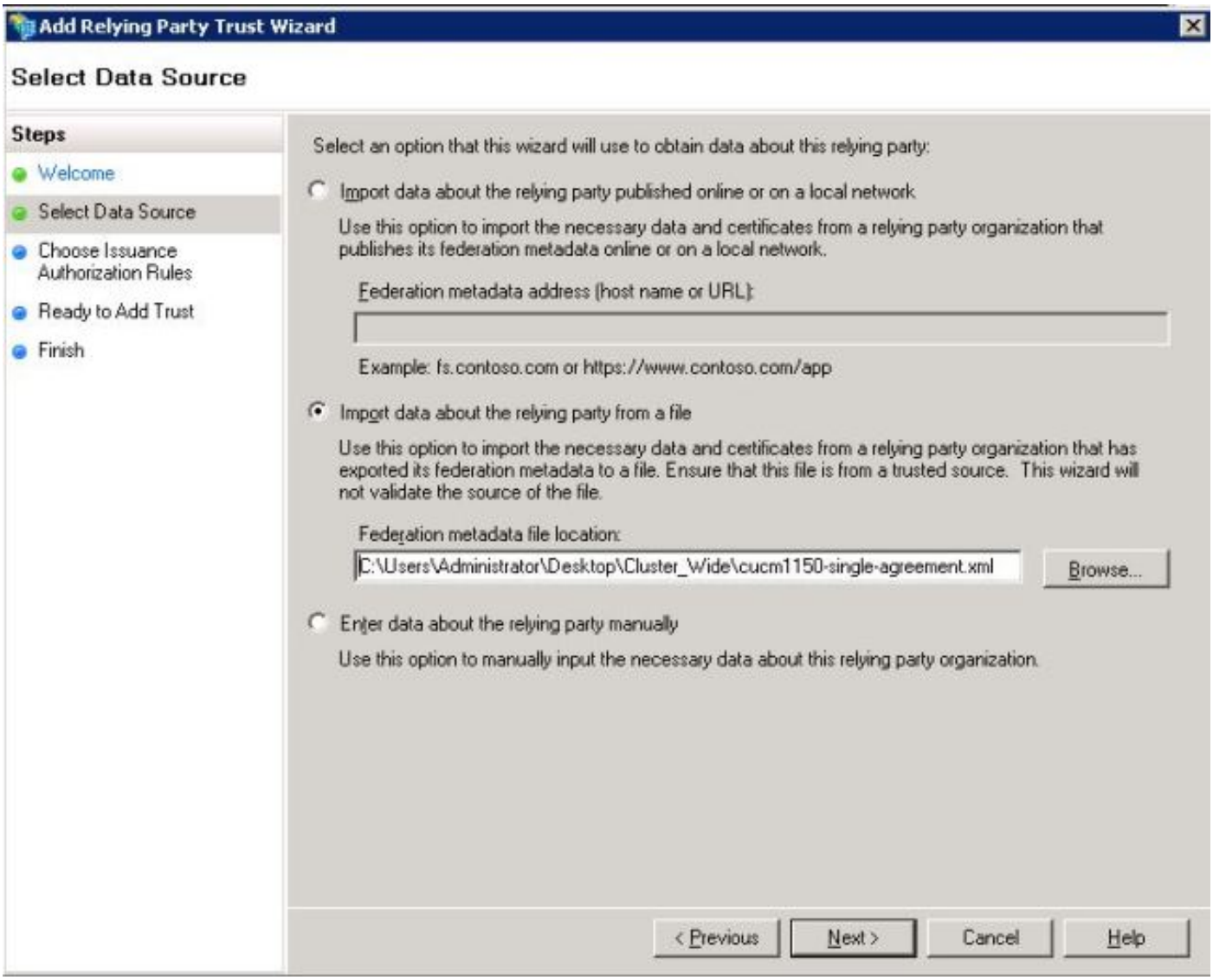


Add Relying Party Trust Wizard opens as shown in the image, now click on **Start**.

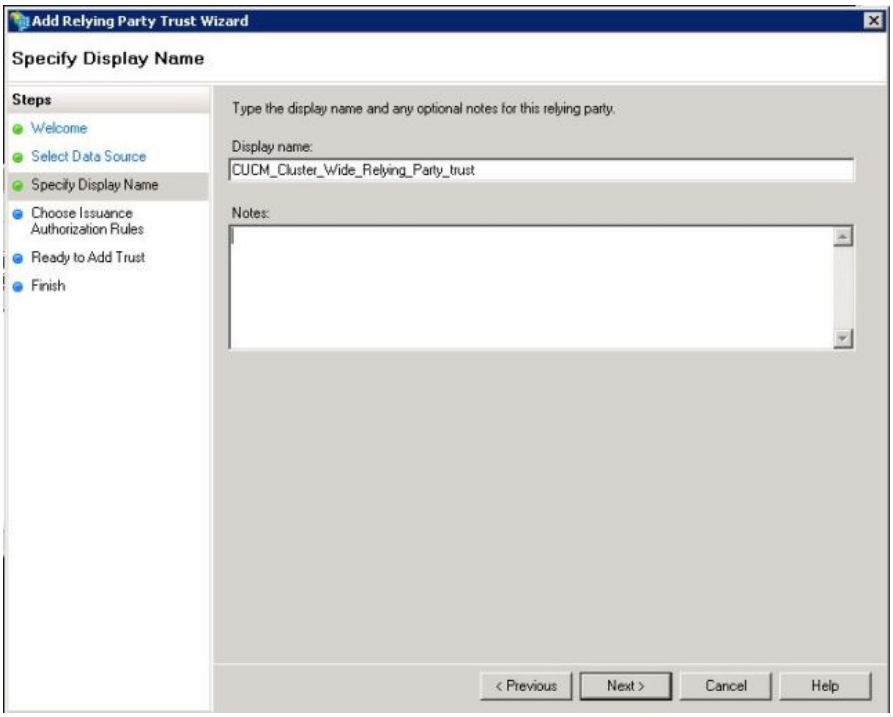


Click the import data about relying party from a file. Browse the SP metadata downloaded from

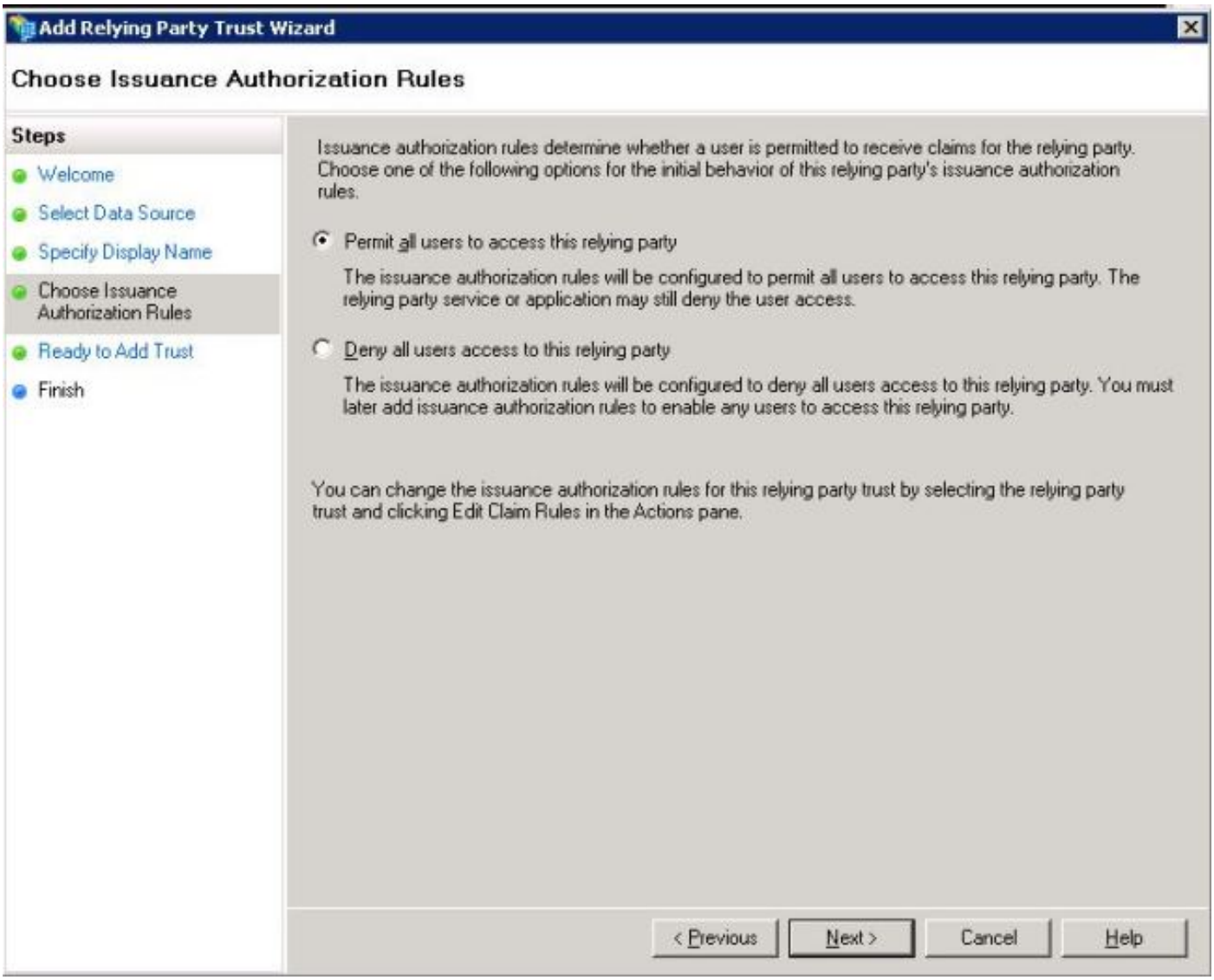
CUCM SAML SSO Configuration Page. Then Click **Next**, as shown in the image:



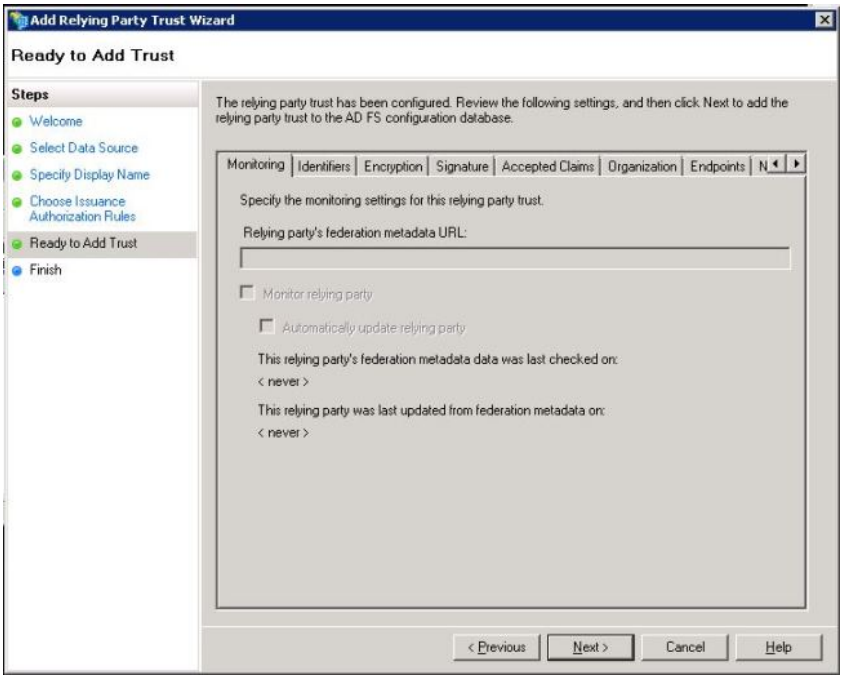
Type the Display Name and any optional notes for the Relying Party. Click **Next**., as shown in the image:



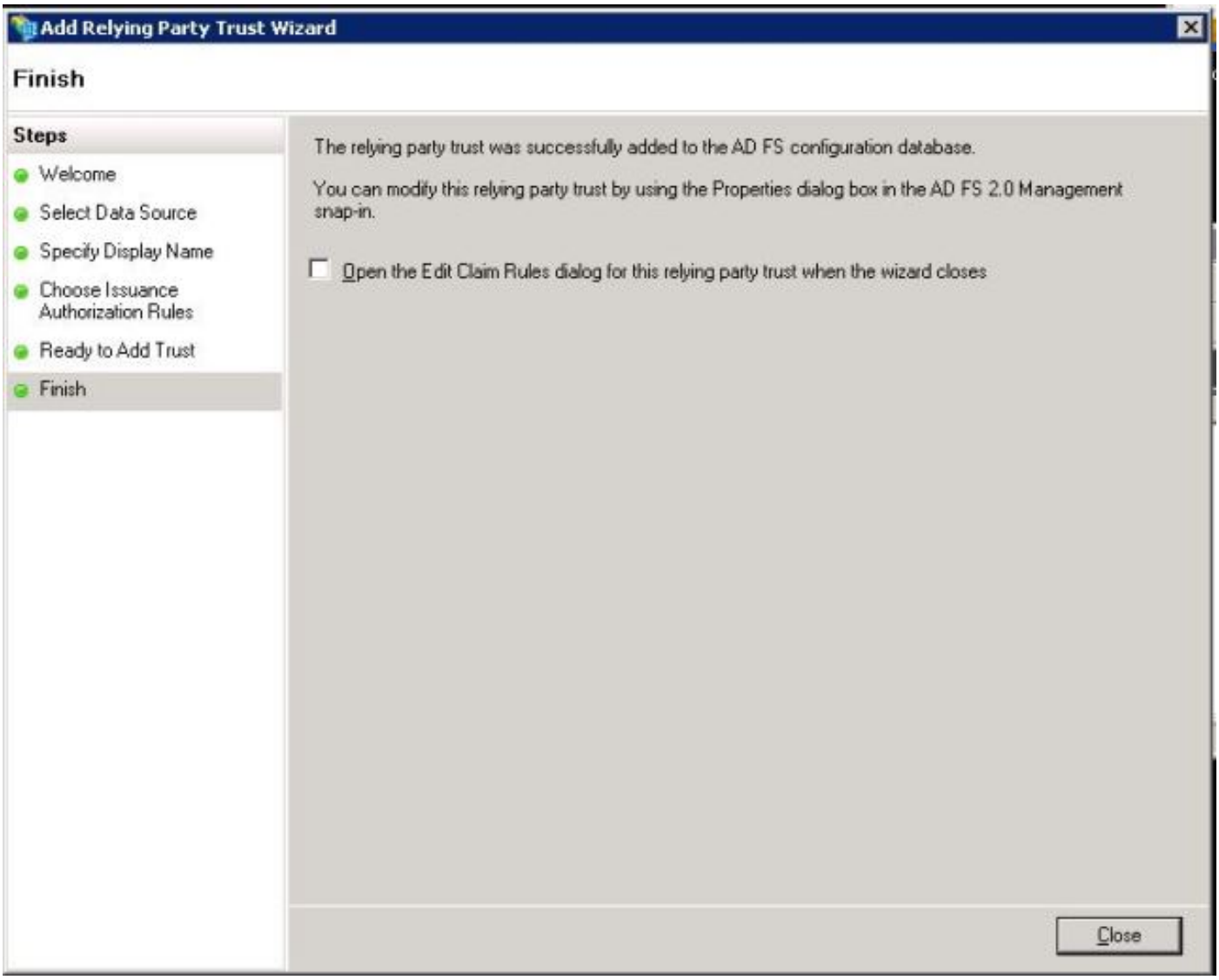
Select **Permit all users to access this relying party** to permit all users to access this relying party and then click **Next**, as shown in the image:



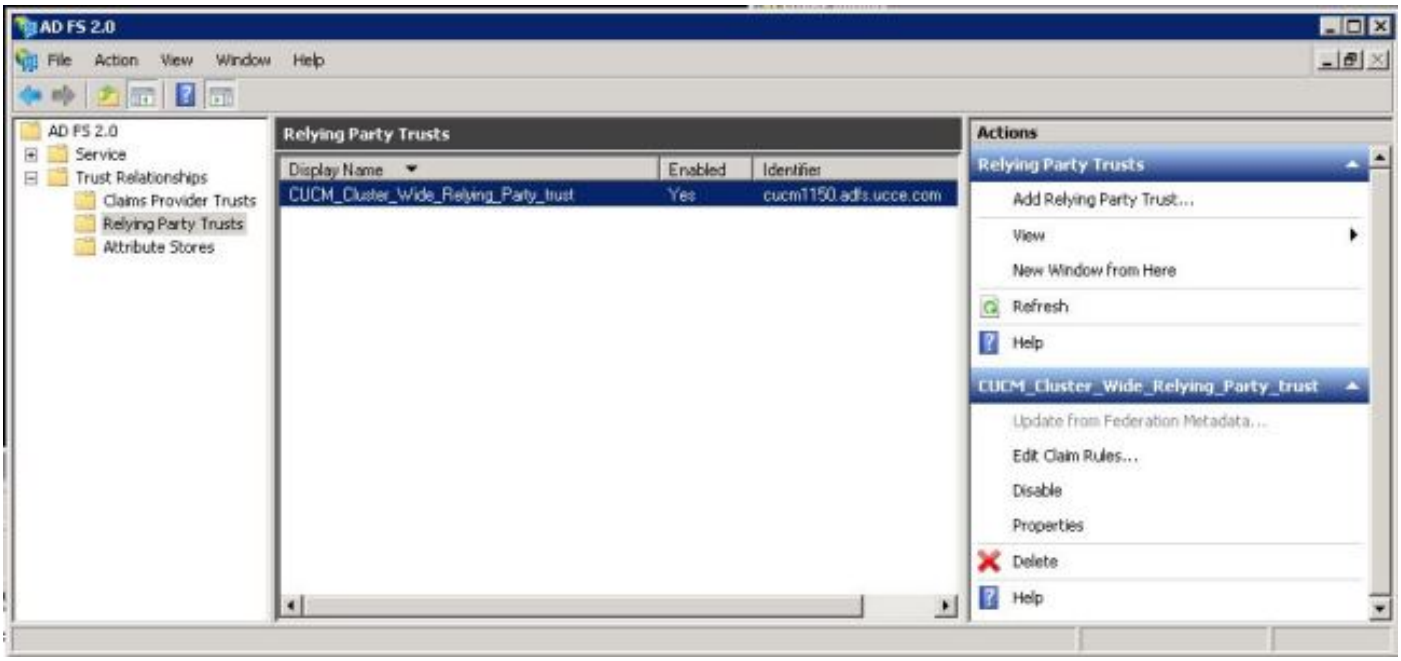
Under **Ready to Add Trust** page, you can review the settings for the Relying Party Trust, which has been configured. Now click **Next**, as shown in the image:



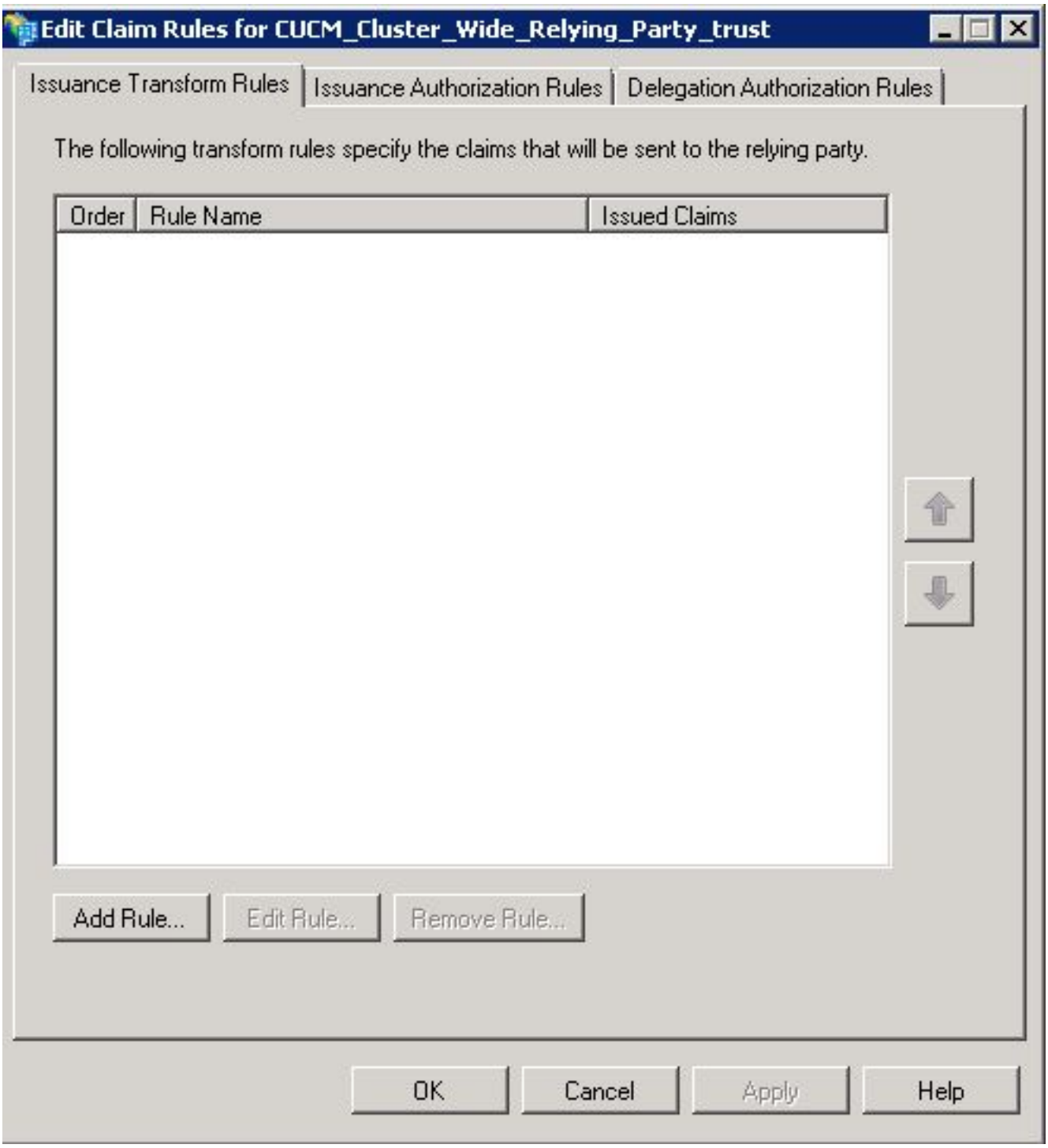
Finish Page confirms that relying party trust was successfully added to the AD FS configuration Database. Uncheck the Box and Click **Close**, as shown in the image:



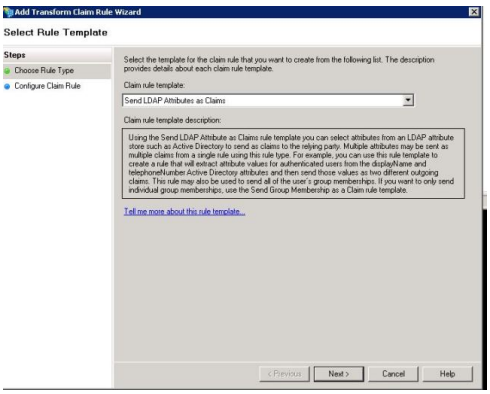
Right Click the **Relying Party Trusts** and click on **Edit Claim Rules**, as shown in the image:



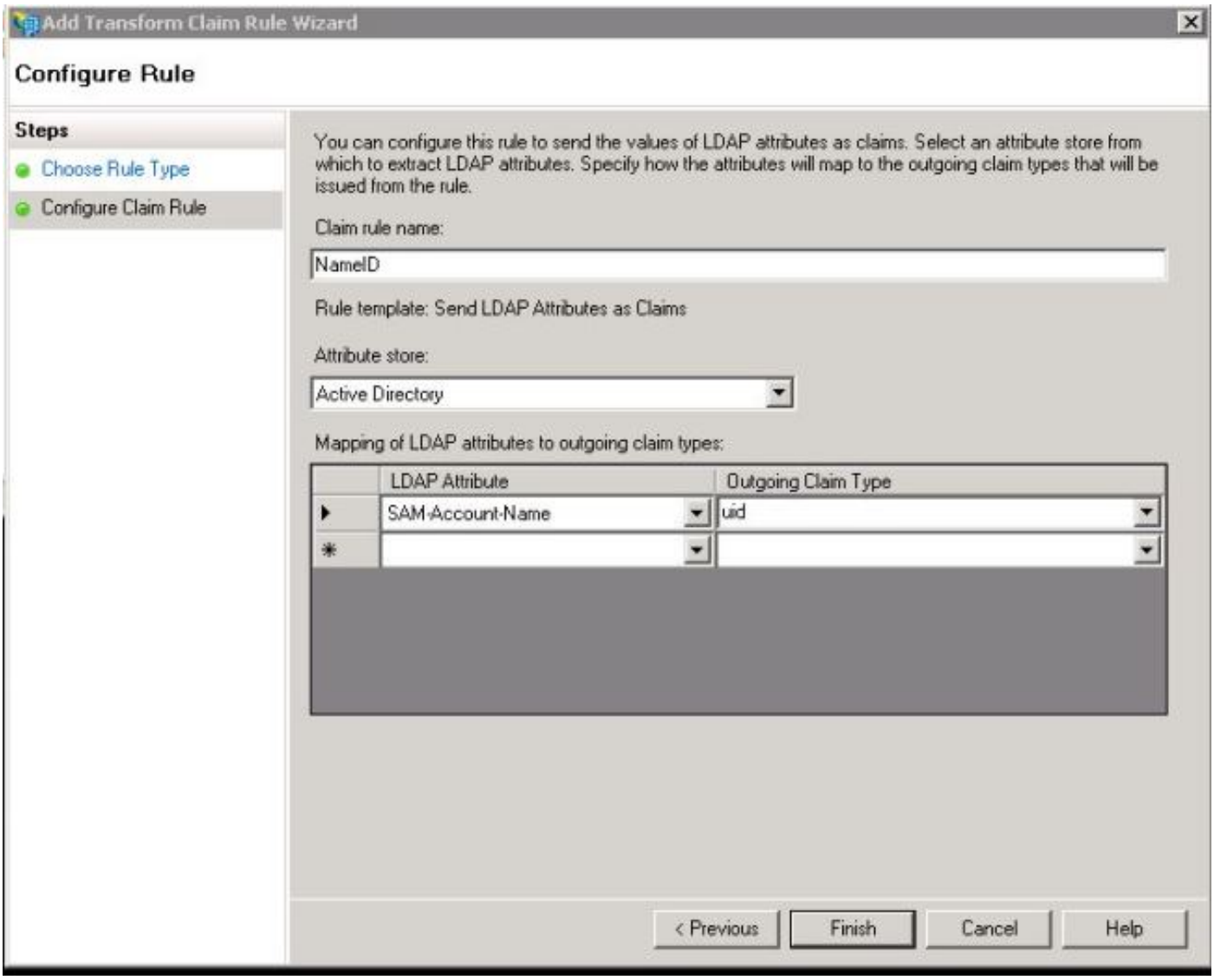
Now click on **Add Rule**., as shown in the image:



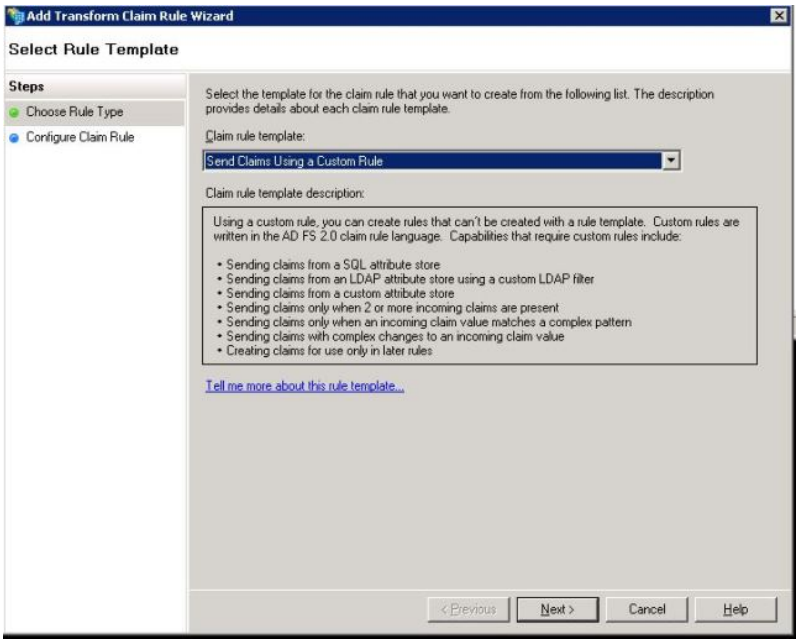
When the **Add Transform Claim Rule** opens, click **Next** with the default claim rule template **Send LDAP Attributes as Claims**, as shown in the image:



Click **Configure Claim Rule** as shown in this image. LDAP Attribute must match with the LDAP Attribute in LDAP Directory configuration in the CUCM. Manage outgoing claim type as **uid**. Click **Finish**, as shown in the image:

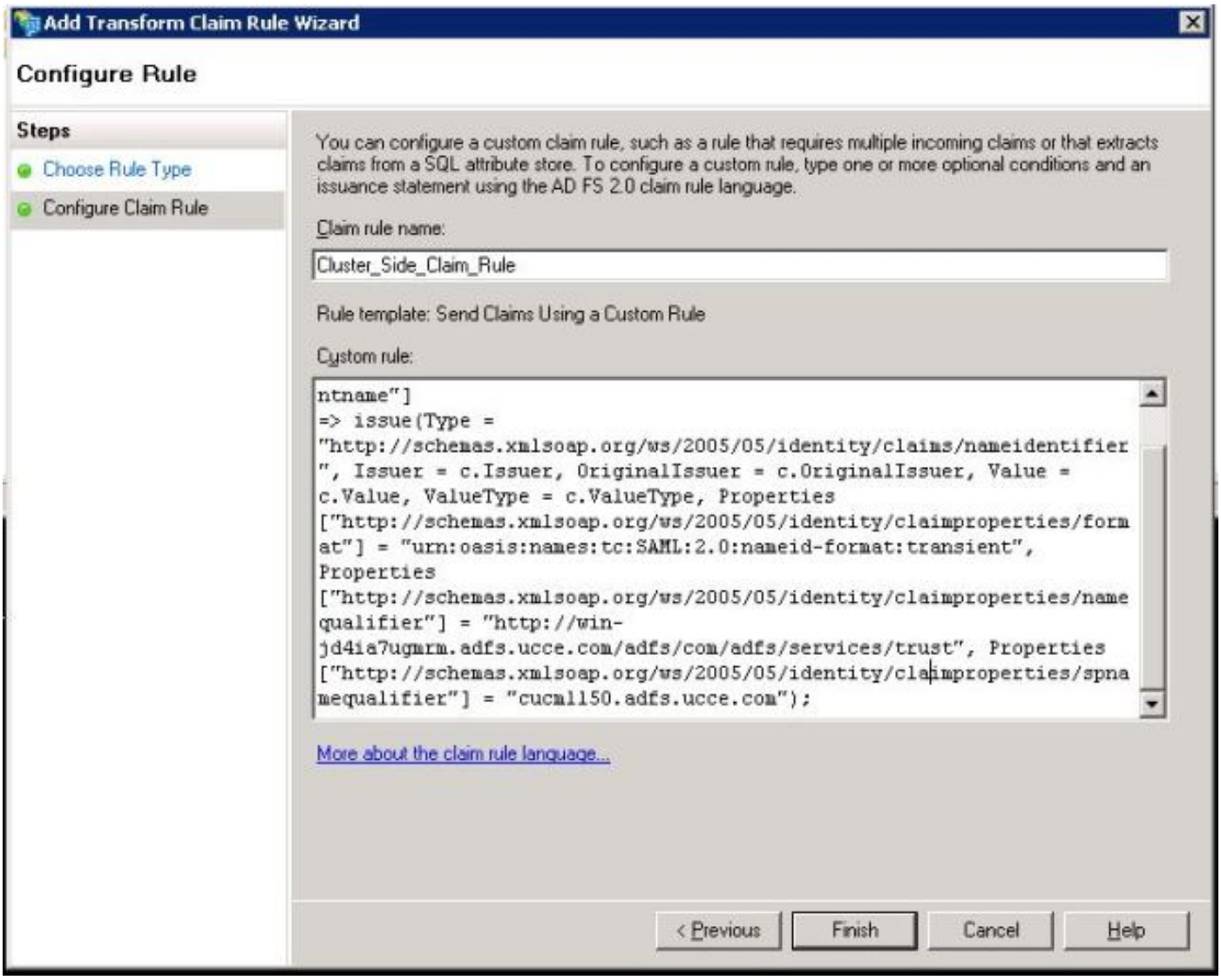


Add the custom rule for the relying party. Click **Add rule**. Select **Send Claims using a Custom Rule** and then click **Next,** as shown in the image:

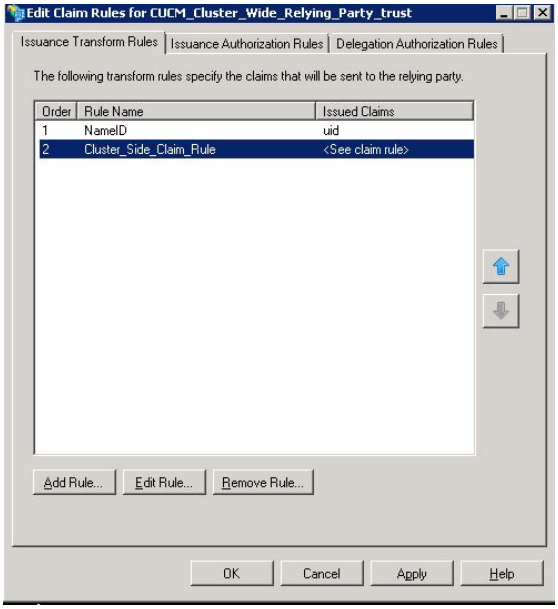


In Configure Claim rule, type a Claim Rule Name then Copy the Claim Rule given and past in the Custom Rule field in the wizard modifying the namequalifier and spname qualifier in the Claim rule. Click **Finish**., as shown in the image:

Claim Rule:



As shown in the image, Click **Apply** then **OK**.

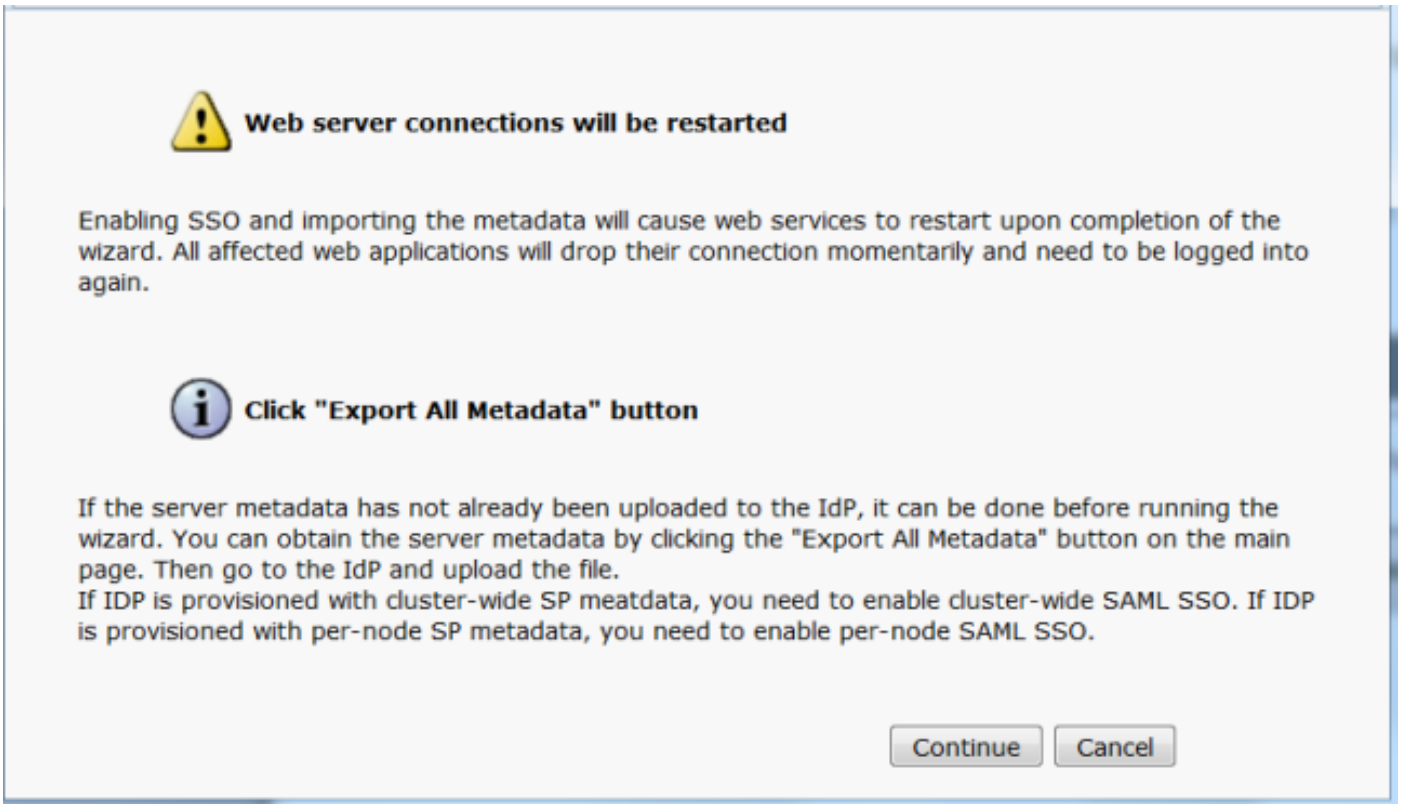


Step 4. Enable SAML SSO

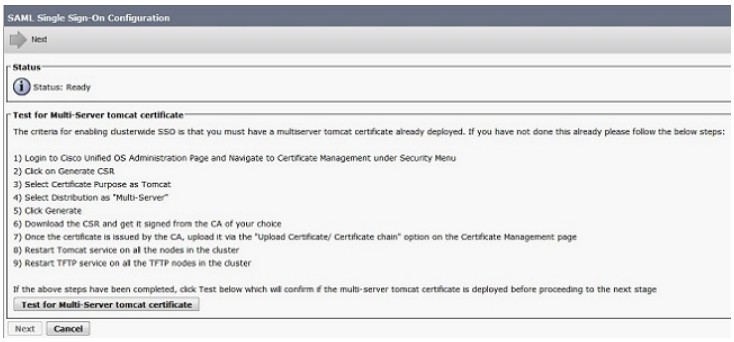
Open a web browser, log in to CUCM as administrator, and navigate to**System >**.

By default, **Cluster Wide** radio button is selected. Click **Enable Saml SSO**, as shown in the image:

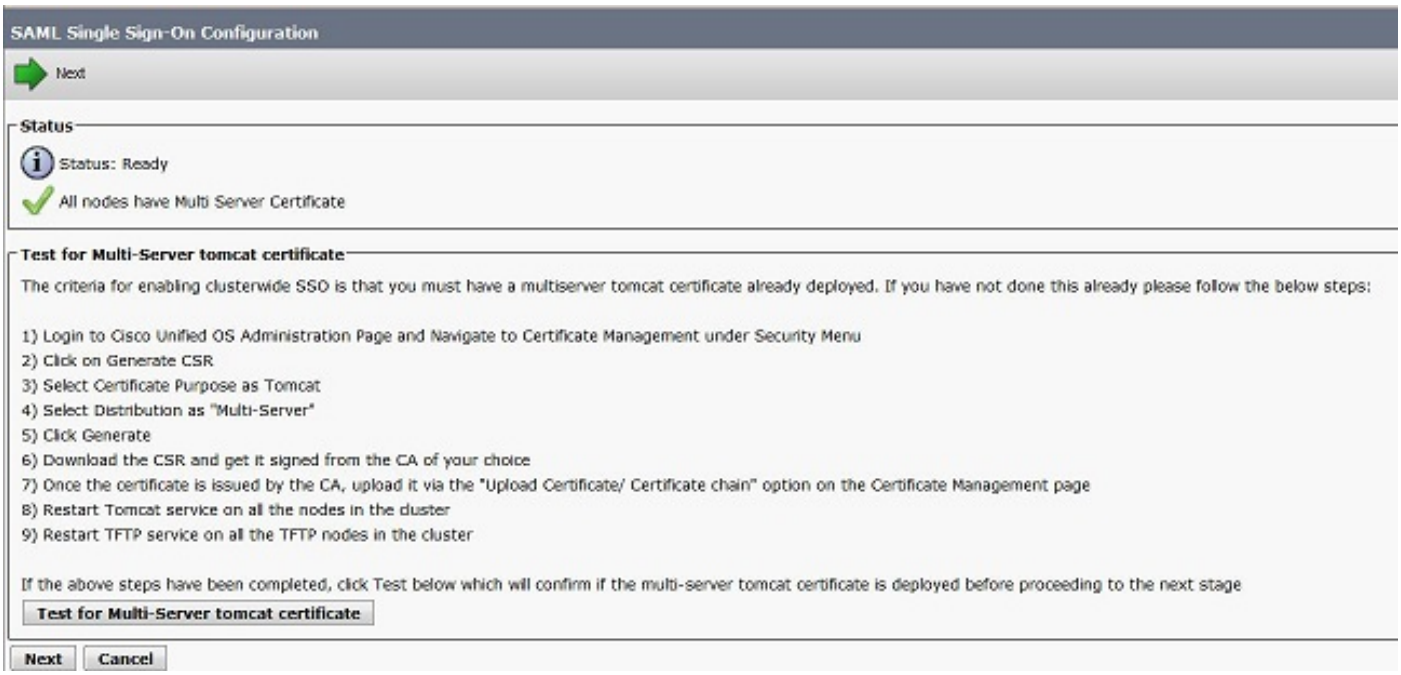
As shown in the image, the pop up notifies the warning for webserver restart and information to choose the cluster wide SAML SSO or Per-Node SAML SSO according to idp. Click **Continue**.



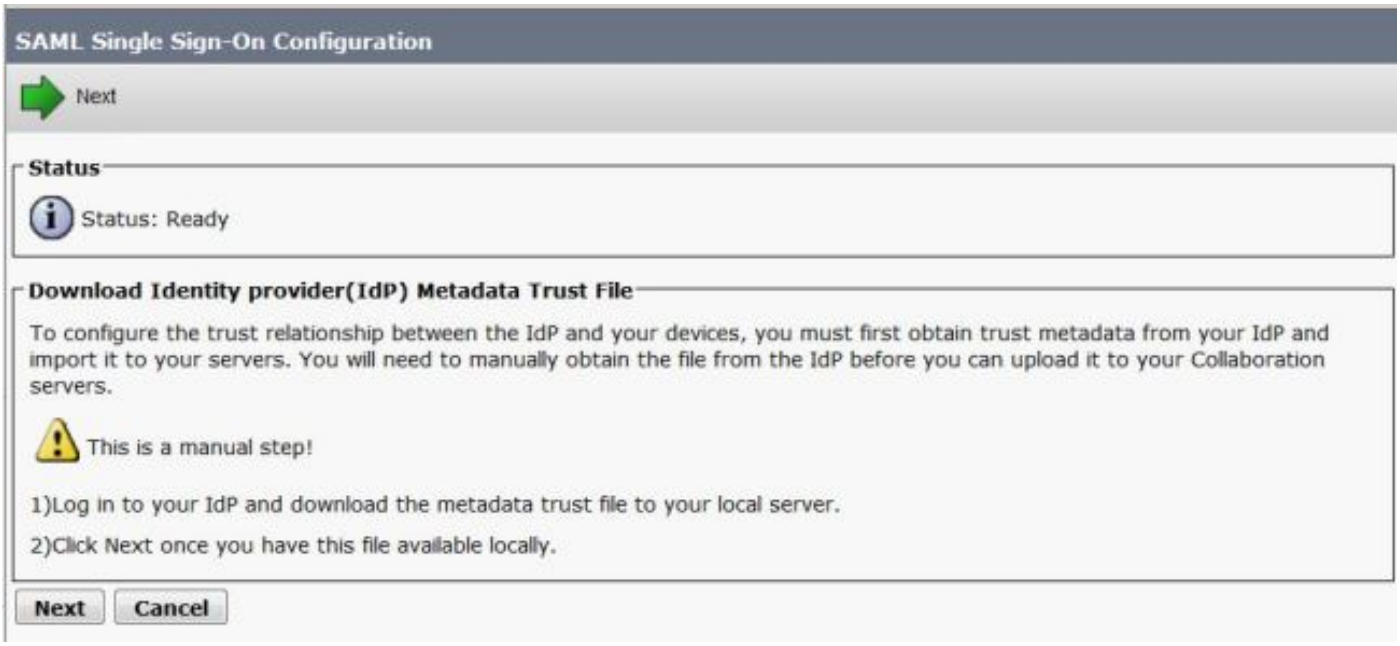
The criteria to enable Cluster-wide SSO is that you must have a multiserver tomcat certificate already deployed. Click **Test for Multi-Server tomcat Certificate**, as shown in the image:



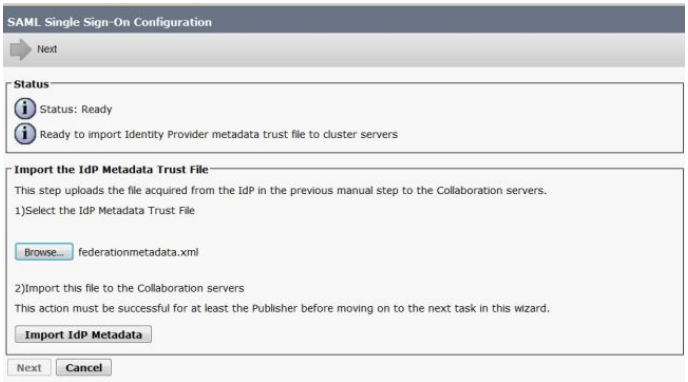
Once it is confirmed, all nodes have Multi Server Certificate displays an **All Nodes have Multi Server Certificate**, and then click **Next**, as shown in the image:



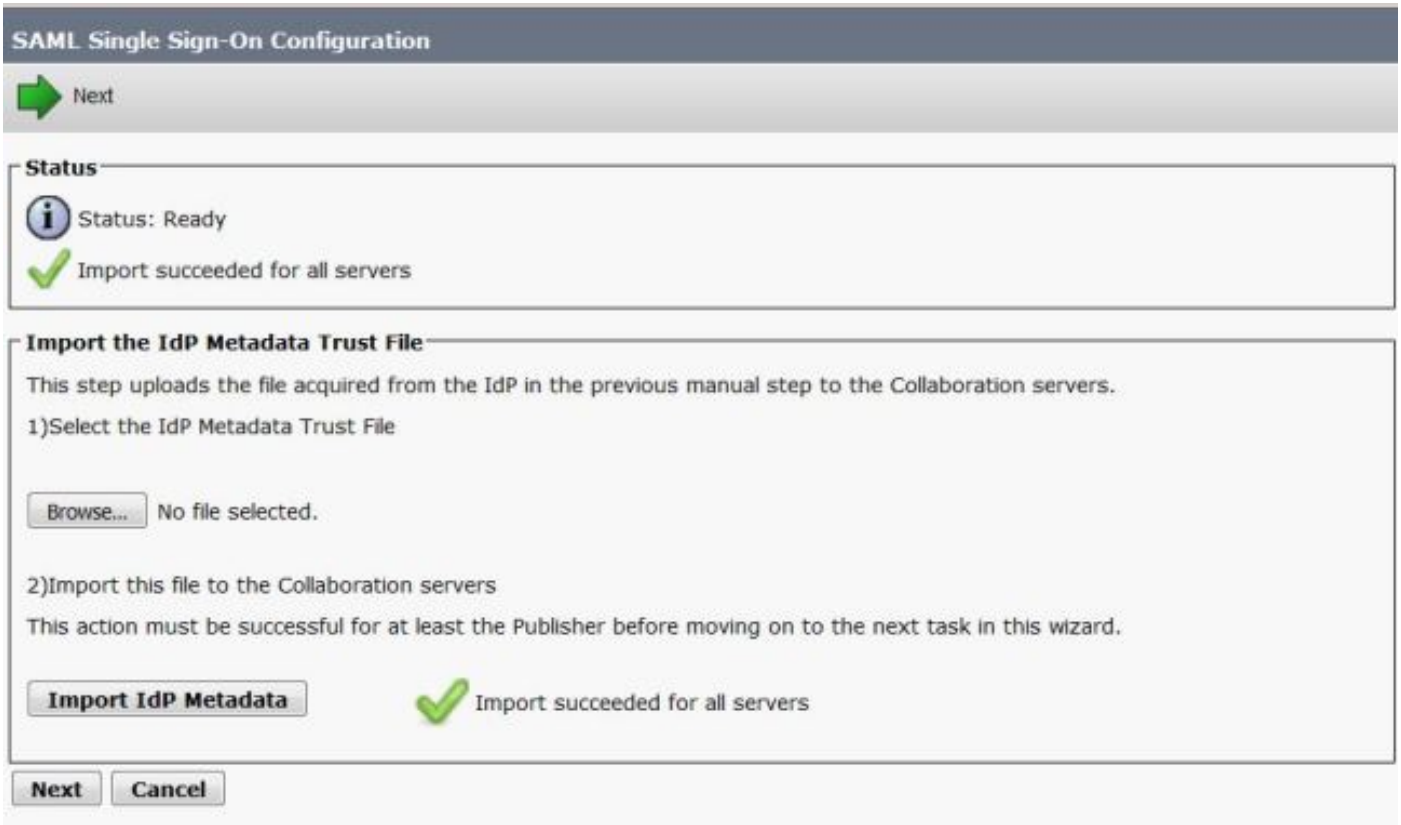
As shown in the image, click **Next**.



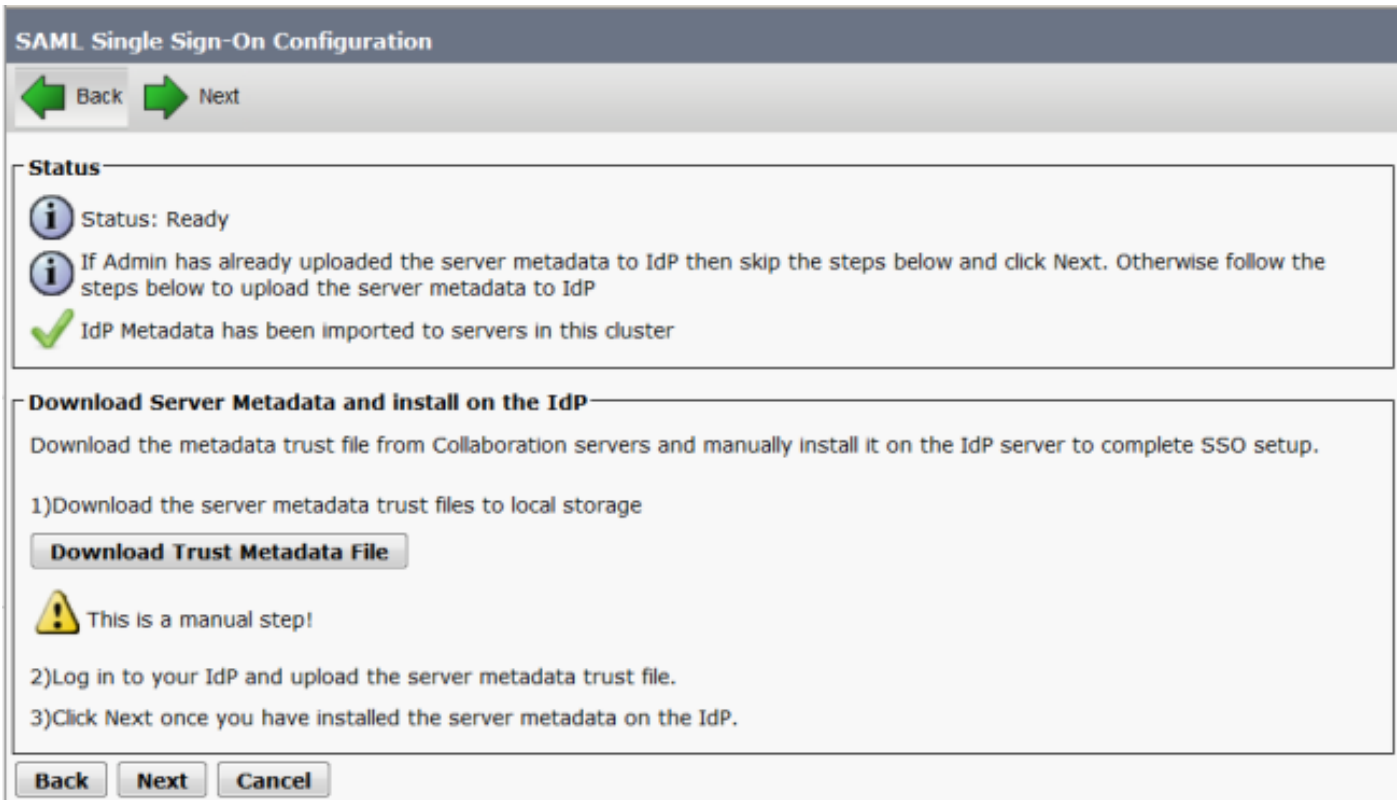
Browse and select the IdP metadata downloaded. Click **Import IdP Metadata**, as shown in the image:



The page confirms the Import succeeded for all servers and then click **Next**, as shown in the image:



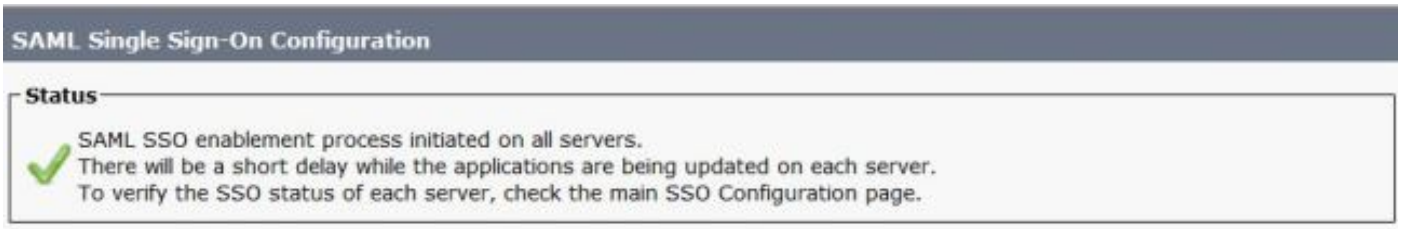
As shown in the image, click **Next**, since already exported the SP metadata from the initial SAML SSO configuration Page.



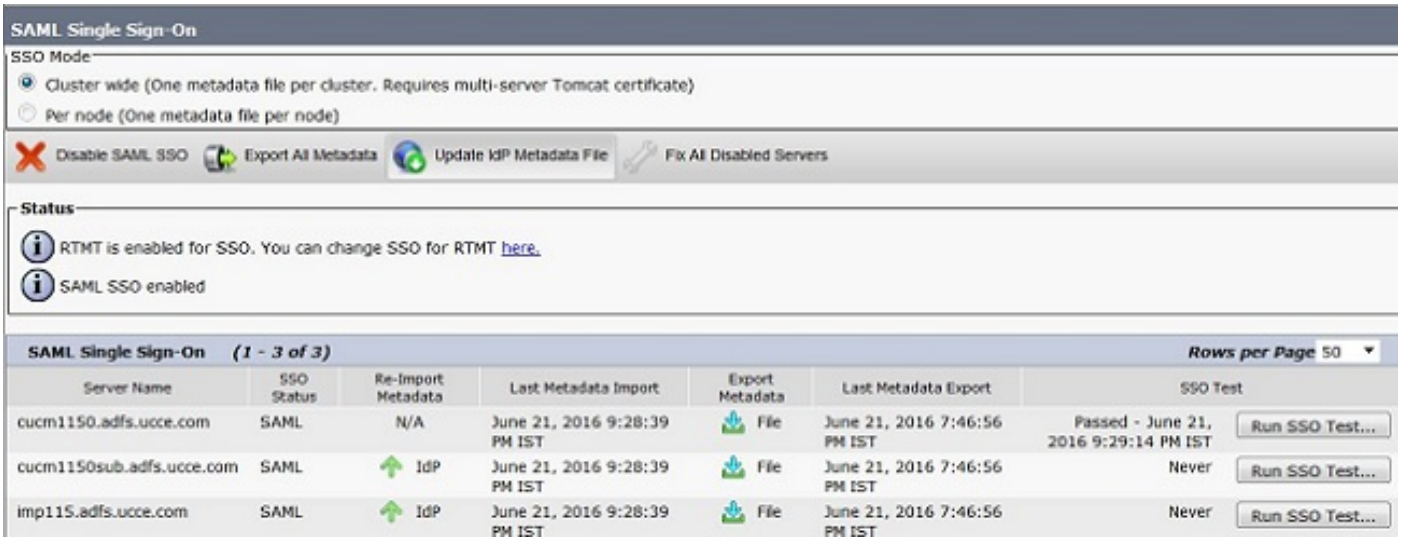
CUCM has to be in sync with the LDAP Directory. Wizard shows the valid administrator users configured in the LDAP Directory. Select the user and click **Run SSO Test**, as shown in the image:

A popup, as shown in the image, will appear. Enter the password of the test user and click **Run SSO Test** to initiate the SSO test. Upon successful authentication, the message "SSO Test Succeeded" appears in the popup window, indicating that the configuration for enabling SSO.

The page shown in the image confirms that SAML SSO Enabling process is initiated on all servers.



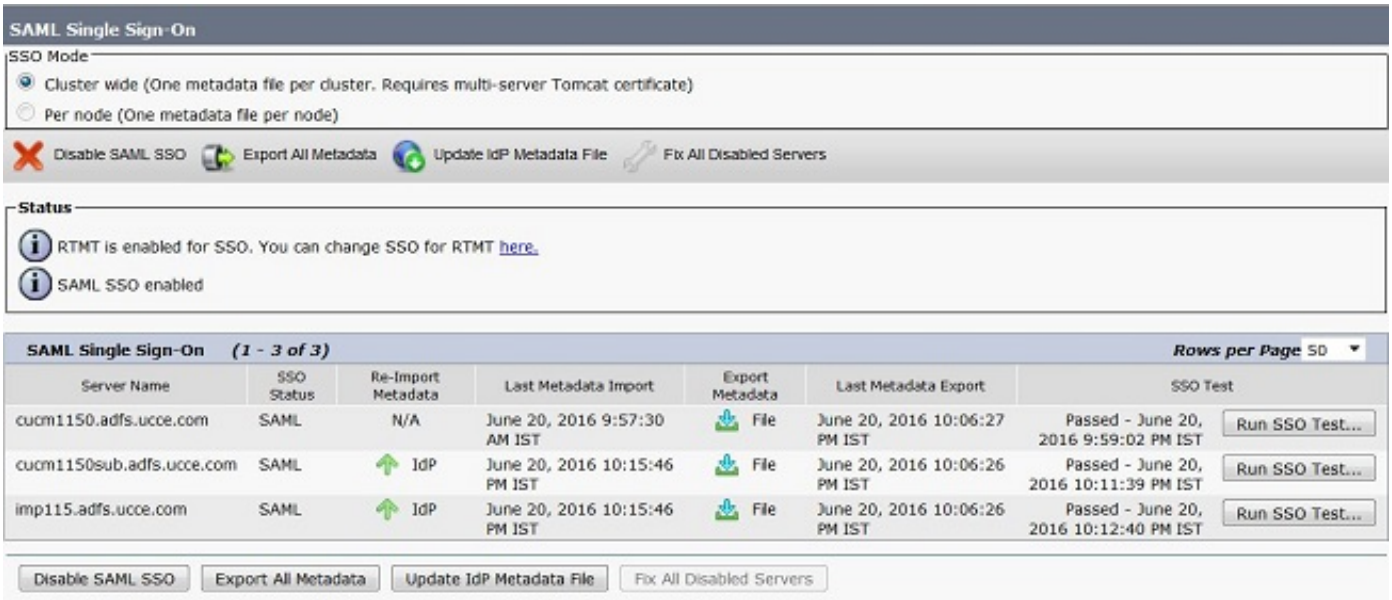
Log out and log in back to CUCM using SAML SSO credentials. Navigate to **System >**. Click **Run SSO Test** for other nodes in the cluster, as shown in the image:



Verify

Use this section to confirm that your configuration works properly.

Confirm the SSO Test is succesful for the nodes which are SAML SSO enabled. Navigate to **System >**. Successful SSO tests shows the status Passed.



Once the SAML SSO is activated, Installed Applications and Platform Applications are listed for CUCM login page, as shown in this image.

Installed Applications

- Cisco Unified Communications Manager
  - Recovery URL to bypass Single Sign On (SSO)
- Cisco Unified Communications Self Care Portal
- Cisco Prime License Manager
- Cisco Unified Reporting
- Cisco Unified Serviceability

Platform Applications

- Disaster Recovery System
- Cisco Unified Communications OS Administration

Once the SAML SSO is activated, Installed Applications and Platform Applications are listed for IM and Presence login page, as shown in this image:

Installed Applications

- Cisco Unified Communications Manager IM and Presence
  - Recovery URL to bypass Single Sign On (SSO)
- Cisco Unified Reporting
- Cisco Unified Serviceability

Platform Applications

- Disaster Recovery System
- Cisco Unified Communications OS Administration

Troubleshoot

This section provides information you can use to troubleshoot your configuration.

In order to set the SSO logs to debug, use command **set samltrace level DEBUG**

Collect the SSO logs Using RTMT or from **activelog /tomcat/logs/ssosp/log4j/*.log** location using CLI.

Example for SSO logs shows the metadata generated and sending to other nodes