Single Sign On

Contents

Copyright GE Digital

Chapter 1

Overview

Topics:

Overview of Single Sign-On

SSO is a process that allows pre-authenticated users to access GE Digital APM, without having to re-enter their credentials.

The GE Digital APM user logs on initially using a form-based enterprise login screen. SSO is a common procedure in enterprises, where a user logs in once and gains access to different applications without the need to re-enter log-in credentials at each application. SSO authentication facilitates seamless network resource usage. SSO mechanisms vary, depending on application type.

SSO advantages include:

- Eliminates credential re-authentication.
- Streamlines local and remote application and desktop workflow.
- Minimizes phishing.
- Improves compliance through a centralized database.
- Provides detailed user access reporting.

GE Digital APM supports the following types of authentication for SSO:

- Pass-through authentication

  Enables the users to enter their Windows credentials in the GE Digital APM login page and GE Digital APM validates the credentials against Active Directory.
- Security Assertion Markup Language (SAML) authentication

  Enables the users to navigate to the SSO URL (hosted on the APM Application Server) that redirects the browser to a preconfigured URL (not hosted on the APM Application Server), which is the Identity Provider (IDP). If there are multiple databases, and when the user selects a database, the user account is then authenticated and the IDP provides the web browser a token through a cookie. If the token is valid, the user can access GE Digital APM.

About Host Names

Using the Host Names feature, you can:

- Enable Single Sign-On (SSO) off-site authentication and SSO on-site authentication.
- Filter Data Sources to access the related GE Digital APM database.
- Create a unique URL to access GE Digital APM.

When you use a URL to access GE Digital APM, you can access the data sources that are mapped to the host name. For example, if two data sources (data_source1 and data_source2) are associated with a GE Digital APM server, you can create two different URLs (https://data_source1/meridium/index.html and https://data_source2/meridium/index.html) using the host names that are mapped to the data sources. If you log in to GE Digital APM with https://data_source1/meridium/index.html or https://data_source2/meridium/index.html, you can access data_source1 or data_source2, respectively.

In the **Host Names** page, you can add multiple host names. However, only the host name of the URL with which you have logged in to GE Digital APM is listed.

Chapter 2

Set up GE Digital APM SSO

Topics:

About Setting Up GE Digital APM SSO

To set up GE Digital APM SSO, you must perform the following tasks:

- Configure identity provider on Active Directory Federation Services (AD FS)
- Configure GE Digital APM

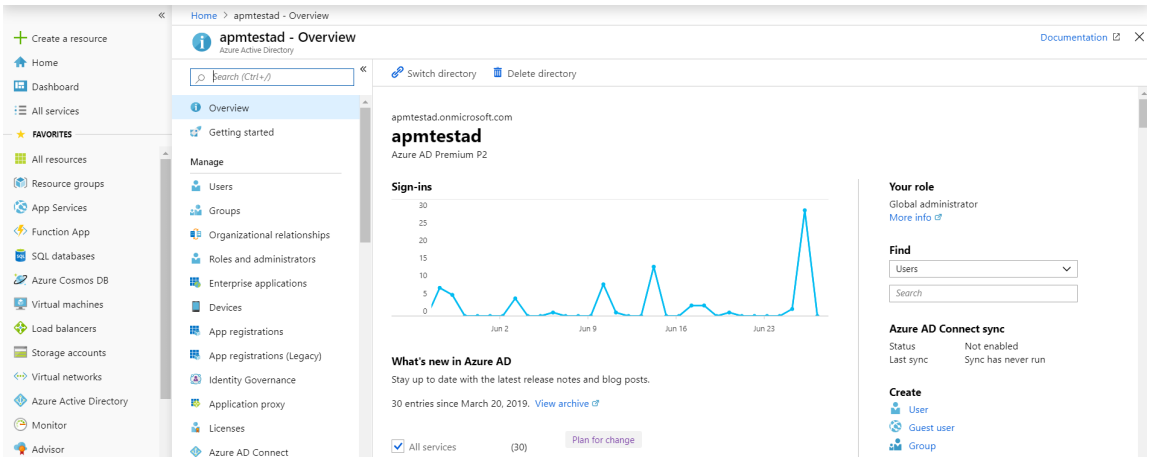
Configure Azure Active Directory as the Identity Provider (IDP)

Before You Begin

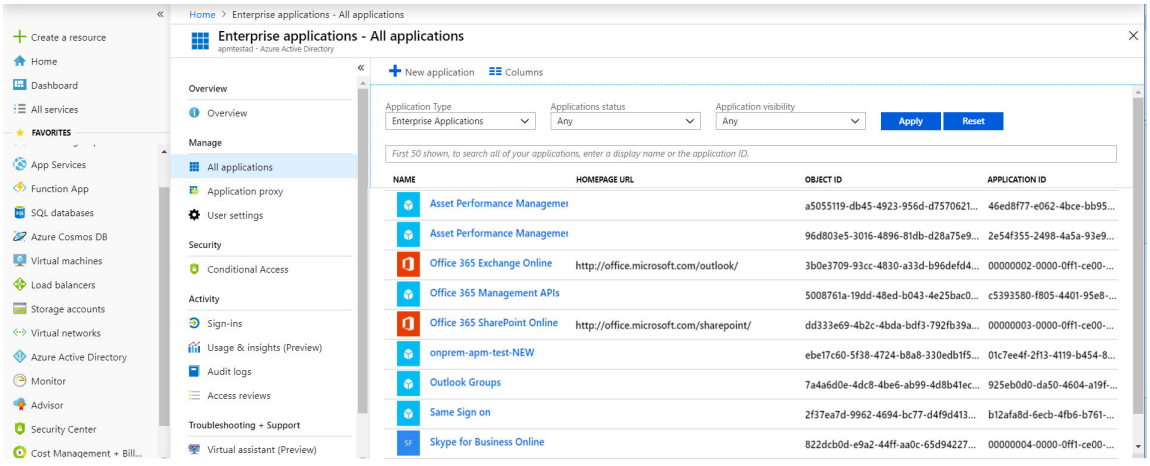
You must have an Azure Active Directory (Azure AD) instance.

Procedure

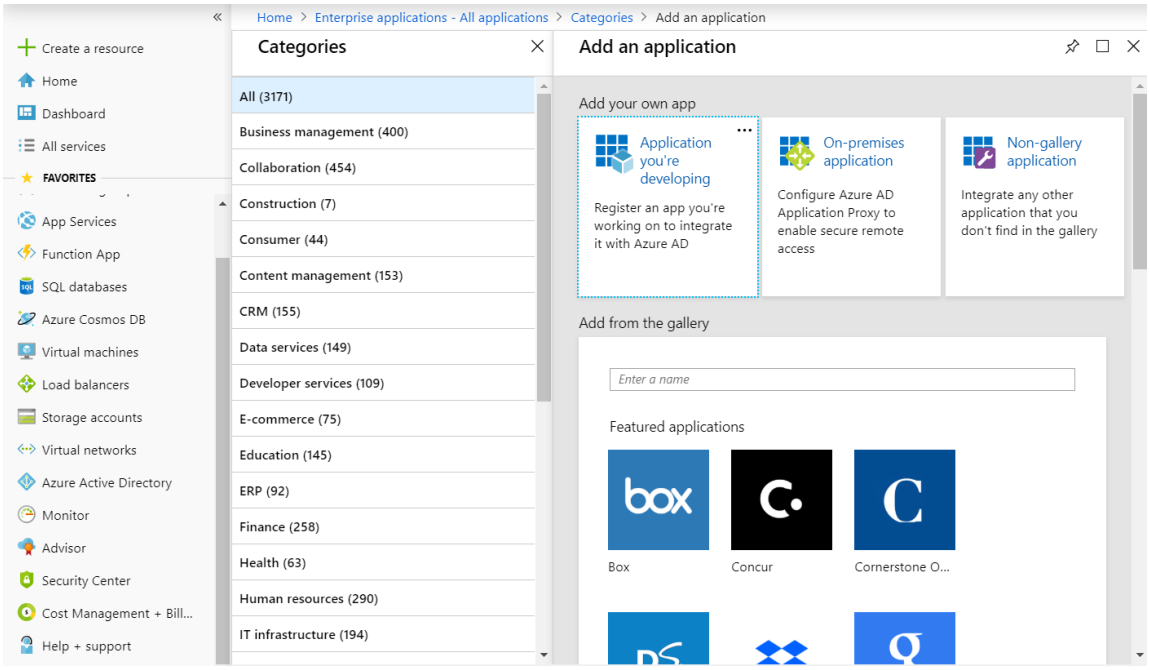
1. Sign in to the Azure portal.



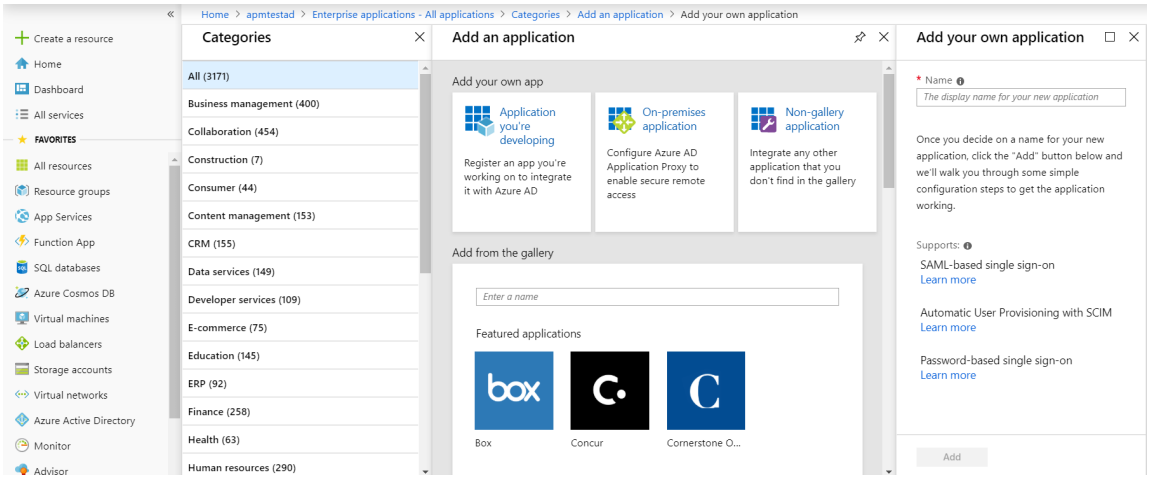
2. In the navigation pane, select **Azure Active Directory**, and then select **Enterprise applications**.
   The **Enterprise applications – All applications** page appears.



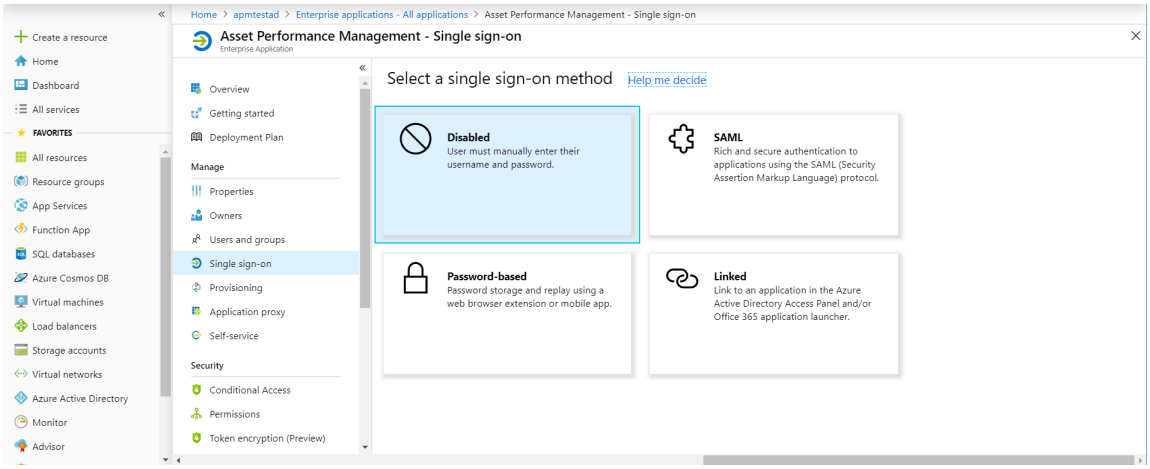
3. Select **New application**.
   The **Add an application** section appears.



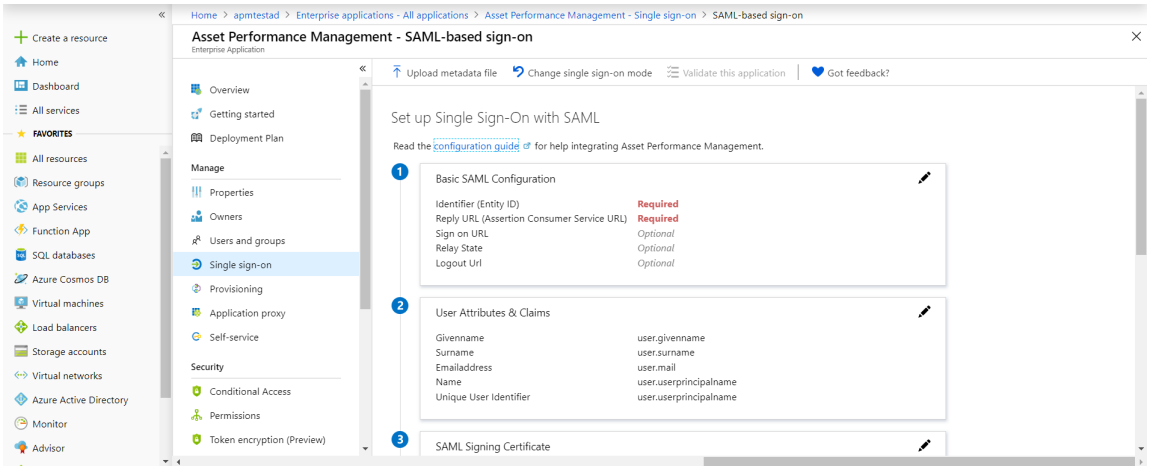
4. Select **Non-gallery application**.
   The **Add your own application** section appears.



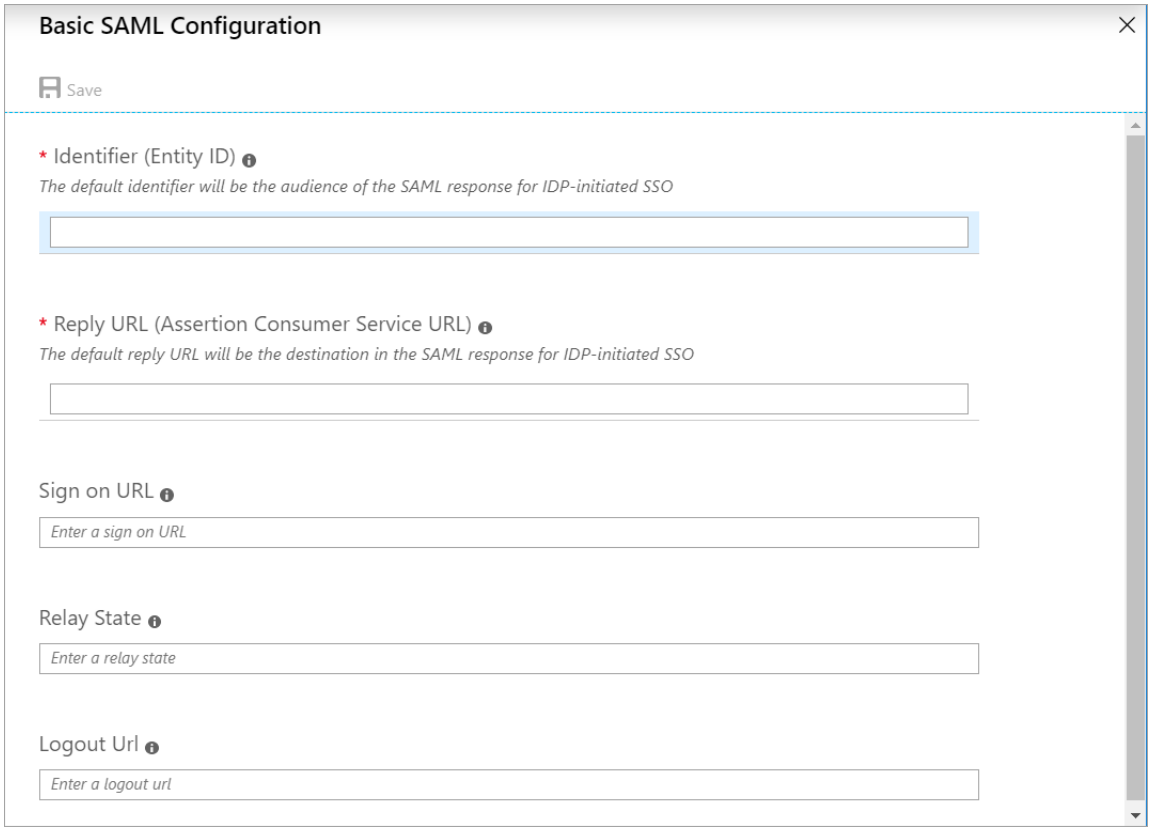
5. In the **Name** box, enter a name for the application that you want to configure with Azure AD, and then select **Add**.
   The page of the added application appears.
6. In the navigation pane of the application page, select **Single sign-on**.
   The **Select a single sign-on method** section appears.



7. Select **SAML**.
   The **Set up Single Sign-On with SAML** section appears.



8. In the **Basic SAML Configuration** section, select  .
   The **Basic SAML Configuration** window appears.



9. Enter the following details.

Identifier (Entity ID)	Enter a unique ID. **Note:** This ID will be used in the `saml.json` file for the service provider name. Therefore, note the ID.
Reply URL (Assertion Consumer Service URL)	The application callback URL where the response will be posted. Enter `https://<app_server>/Meridium/api/core/security/ssologinauth`.
Sign on URL	The application URL, which initiates the same sign-on. Enter `https://<app_server>/meridium/index.html`.

10. Select **Save**.
11. In the **SAML Signing Certificate** section, select **Download** corresponding to `Certificate (Base 64)`.
12. From the **Set up <user name>- sso** section, note the Login URL and Azure AD Identifier.

    Note: The Login URL and Azure AD Identifier will be used in the `saml.json` file for SingleSignOnServiceURL and PartnerIdentityProvider name, respectively.
13. In the application server, copy the downloaded `Certificate (Base 64)` to `C:\Program Files\Meridium\ApplicationServer\api`.
14. Modify the `saml.json` file as follows:

    - `LocalServiceProviderConfiguration Name` with the value that you entered and noted for the **Identifier (Entity ID)** box.
    - `PartnerIdentityProviderConfigurations Name` with the Azure AD Identifier.

- `SingleSignOnServiceURL` with the Login URL.

```
{
    "SAML": {
        "$schema": "https://www.componentspace.com/schemas/saml-
config-schema-v1.0.json",
        "Configurations": [
            {
                "LocalServiceProviderConfiguration": {
                    "Name": "sdsso",
                    "AssertionConsumerServiceUrl": "~/core/security/
ssologinauth",
                    "LocalCertificates": [
                        {
                            "FileName": "sp.pfx",
                            "Password": "password"
                        }
                    ]
                },
                "PartnerIdentityProviderConfigurations": [
                    {
                        "Name": "https://sts.windows.net/78dd76d6-
f3b7-4b89-9efc-ef8d5483b7ea/",
                        "Description": "Azure AD",
                        "SignAuthnRequest": true,
                        "WantSamlResponseSigned": false,
                        "WantAssertionSigned": true,
                        "WantAssertionEncrypted": false,
                        "UseEmbeddedCertificate": true,
                        "SingleSignOnServiceUrl": "https://
login.microsoftonline.com/78dd76d6-f3b7-4b89-9efc-ef8d5483b7ea/
saml2",
                        "DigestAlgorithm": "http://www.w3.org/
2001/04/xmlenc#sha256",
                        "SignatureAlgorithm": "http://www.w3.org/
2001/04/xmldsig-more#rsa-sha256",
                        "PartnerCertificates": [
                            {
                                "FileName": "sdsso.cer"
                            }
                        ]
                    }
                ]
            }
        ]
    }
}
```

15. Add users to the enterprise application by accessing the **Users and groups** section.
16. Modify the host page with the IDP URL.

Configure Identity Provider (IDP) on Active Directory

About Configuring Identity Provider (IDP) on Active Directory

About This Task

You must configure IDP on Active Directory using the Active Directory Federation System (AD FS) Management Console.

Note: The strings and the URLs in AD FS are case-sensitive.

To configure IDP on Active Directory, you must perform the following tasks:

Procedure

1. Add Relying Party Trusts on page 9
2. Add Claim Rules on page 20
3. Add Certificates on page 26

Add Relying Party Trusts

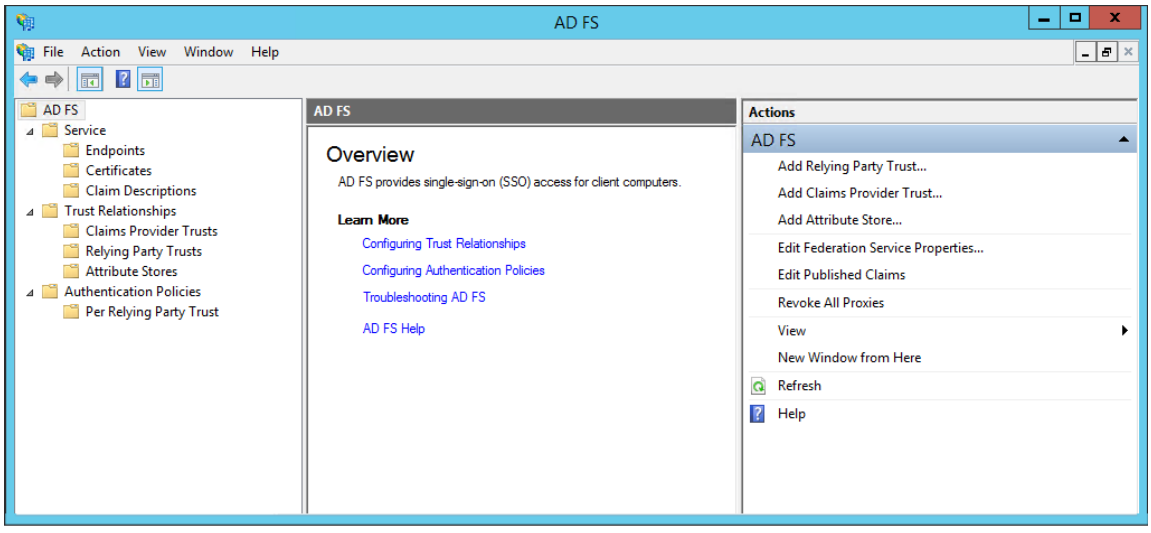
Before You Begin

- You must have administrative privileges to configure AD FS.
- Ensure that the /adfs/ls endpoint exists for SAML v2.0.

  Note: To add adfs/ls endpoint, refer to the AD FS documentation.
- Ensure that the token encrypting certificates exist.

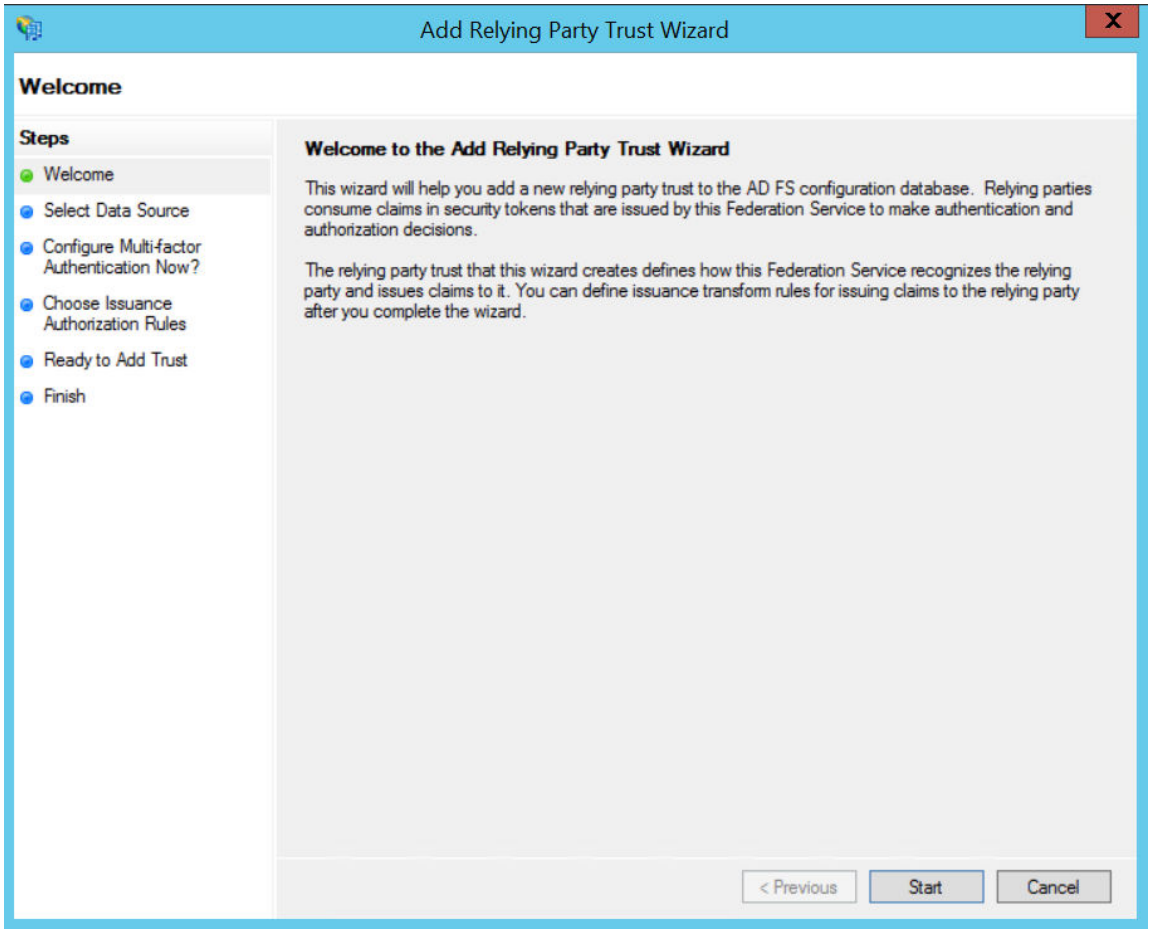
Procedure

1. Access **Control Panel**, then select **System and Security**, and then select **Administrative Tools**.
2. Select **AD FS Management**.
   The **AD FS** window appears.

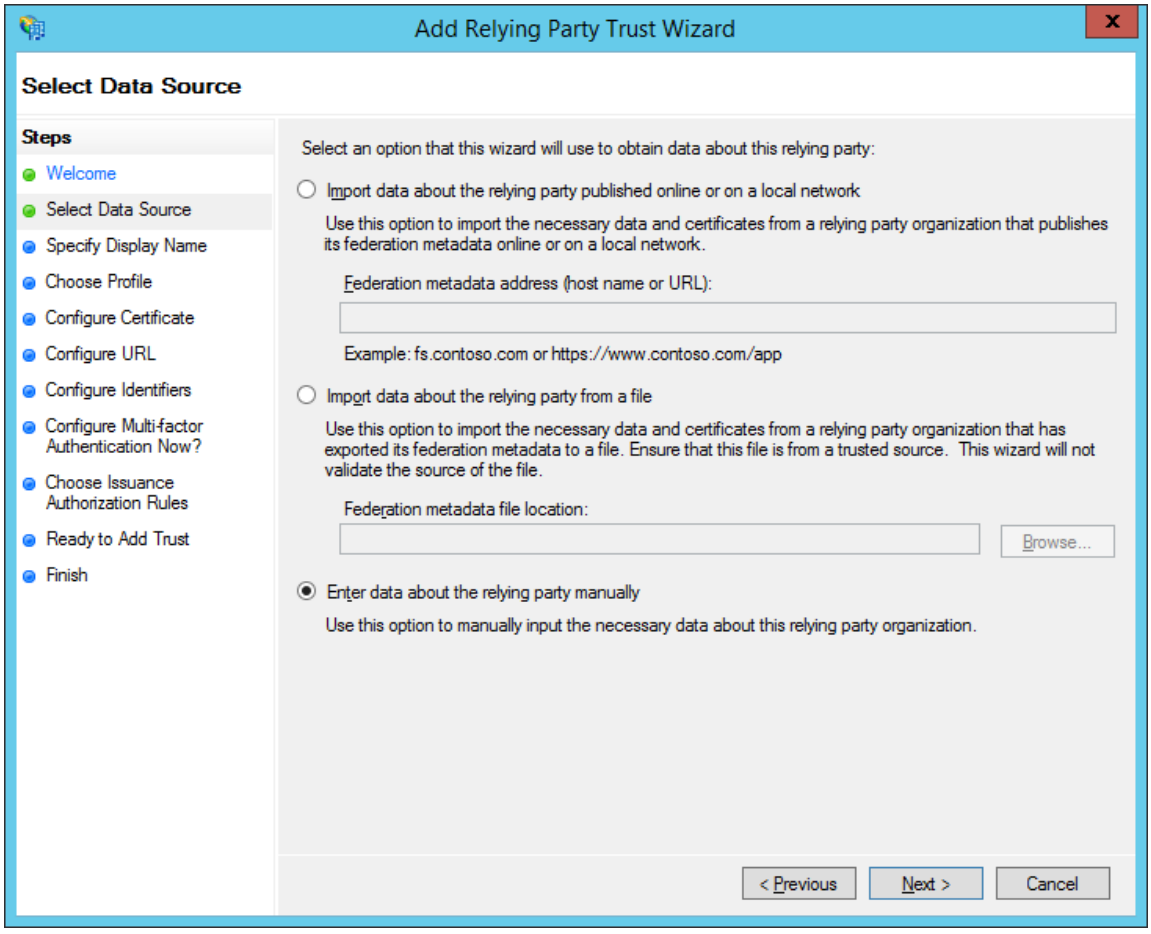


3. In the **Actions** section, select **Add Relying Party Trust**.

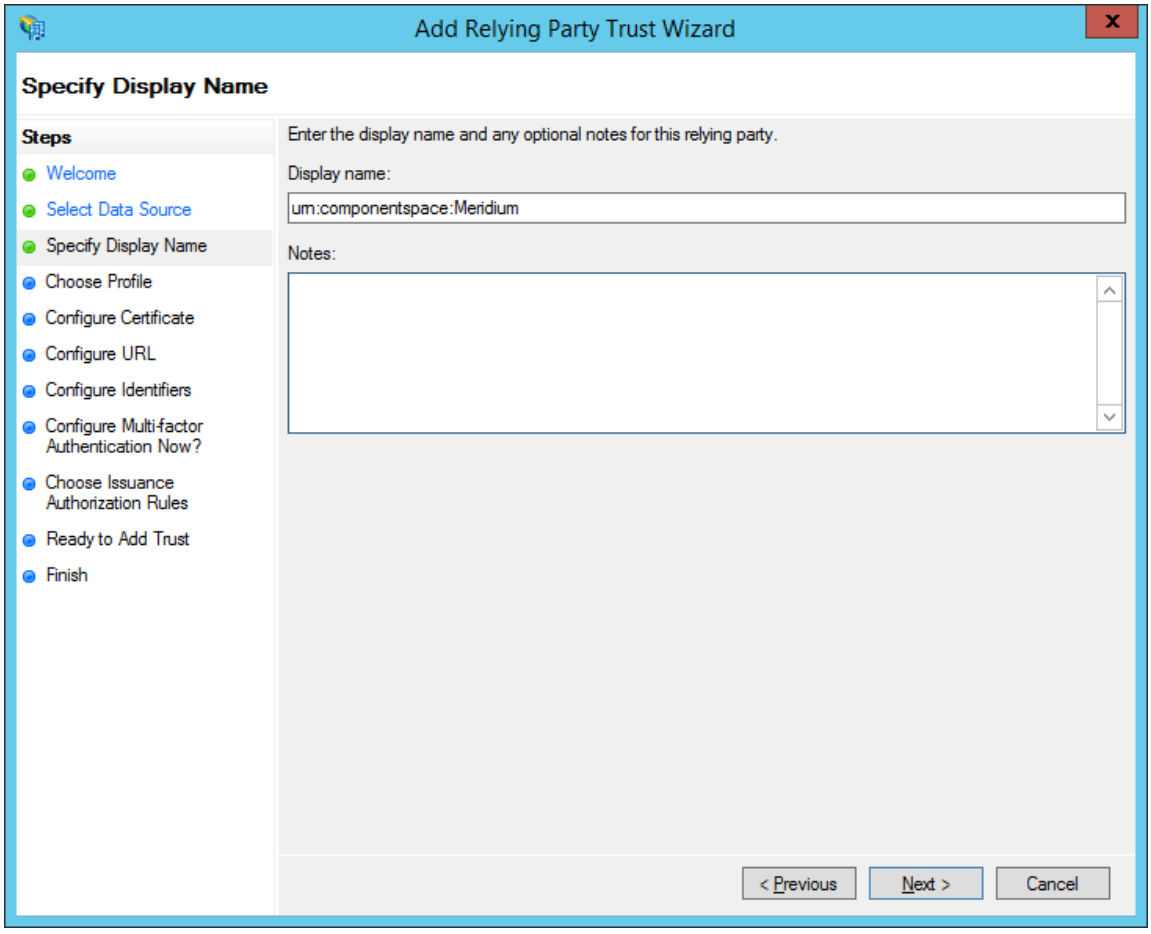
The **Add Relying Party Trust Wizard** appears.



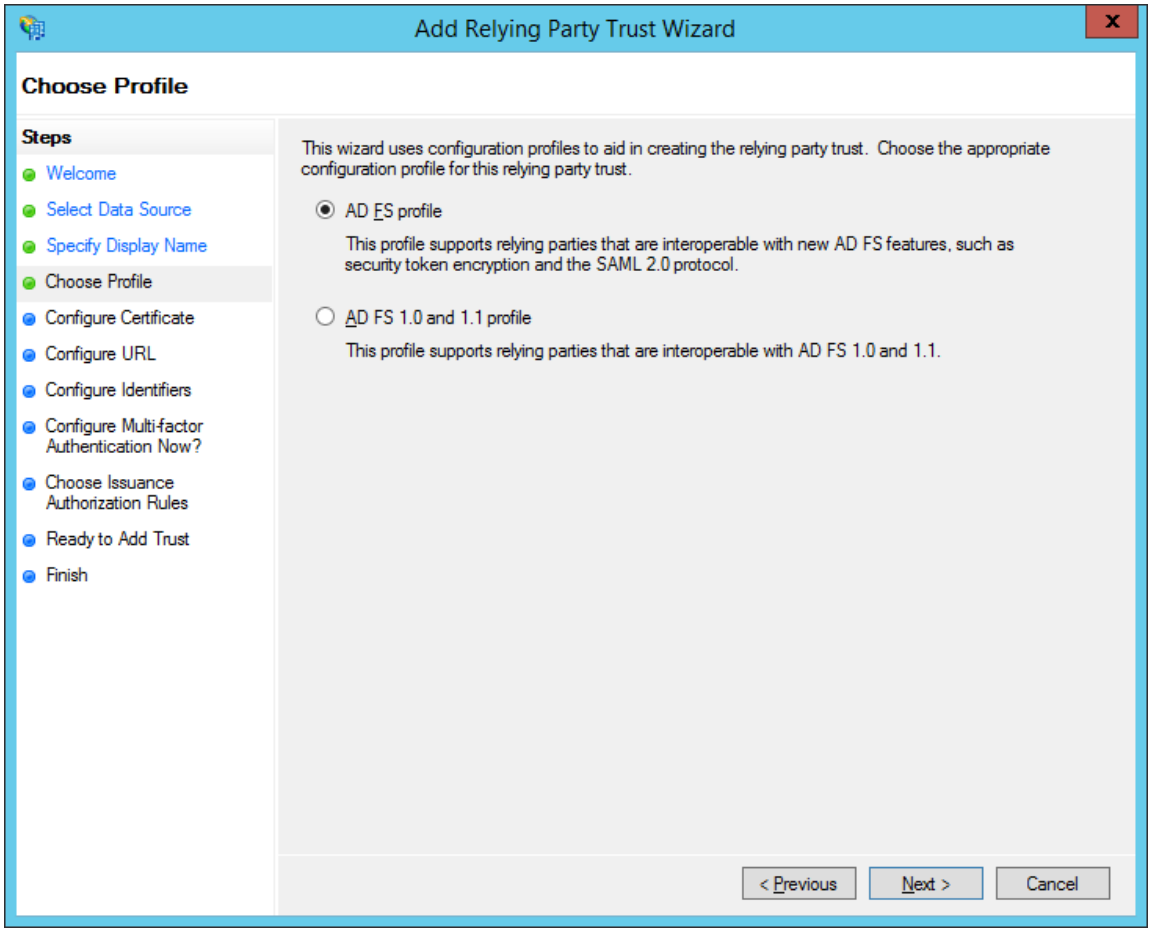
4. Select **Start**.
   The **Select Data Source** page appears.



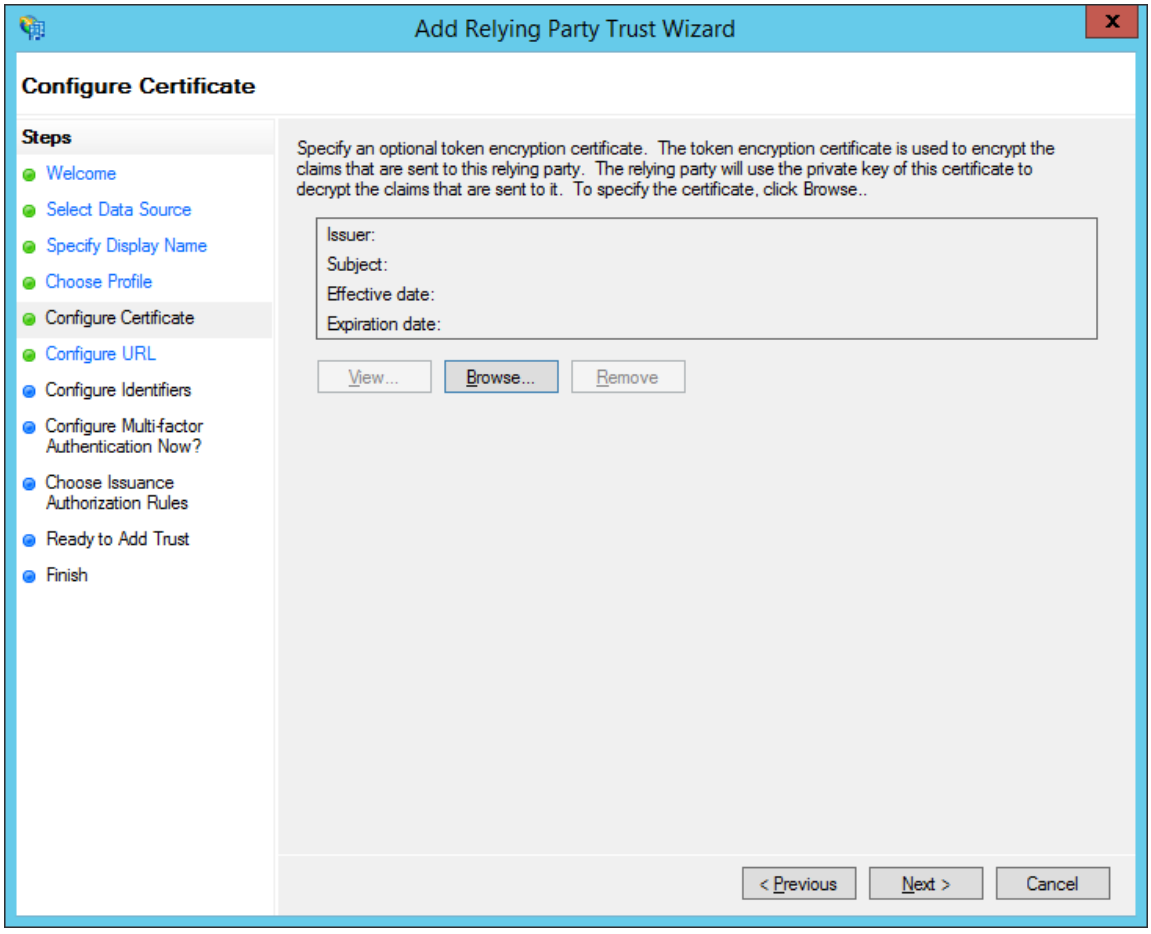
5. Select **Enter data about relying party manually**, and then select **Next**.
   The **Specify Display Name** page appears.



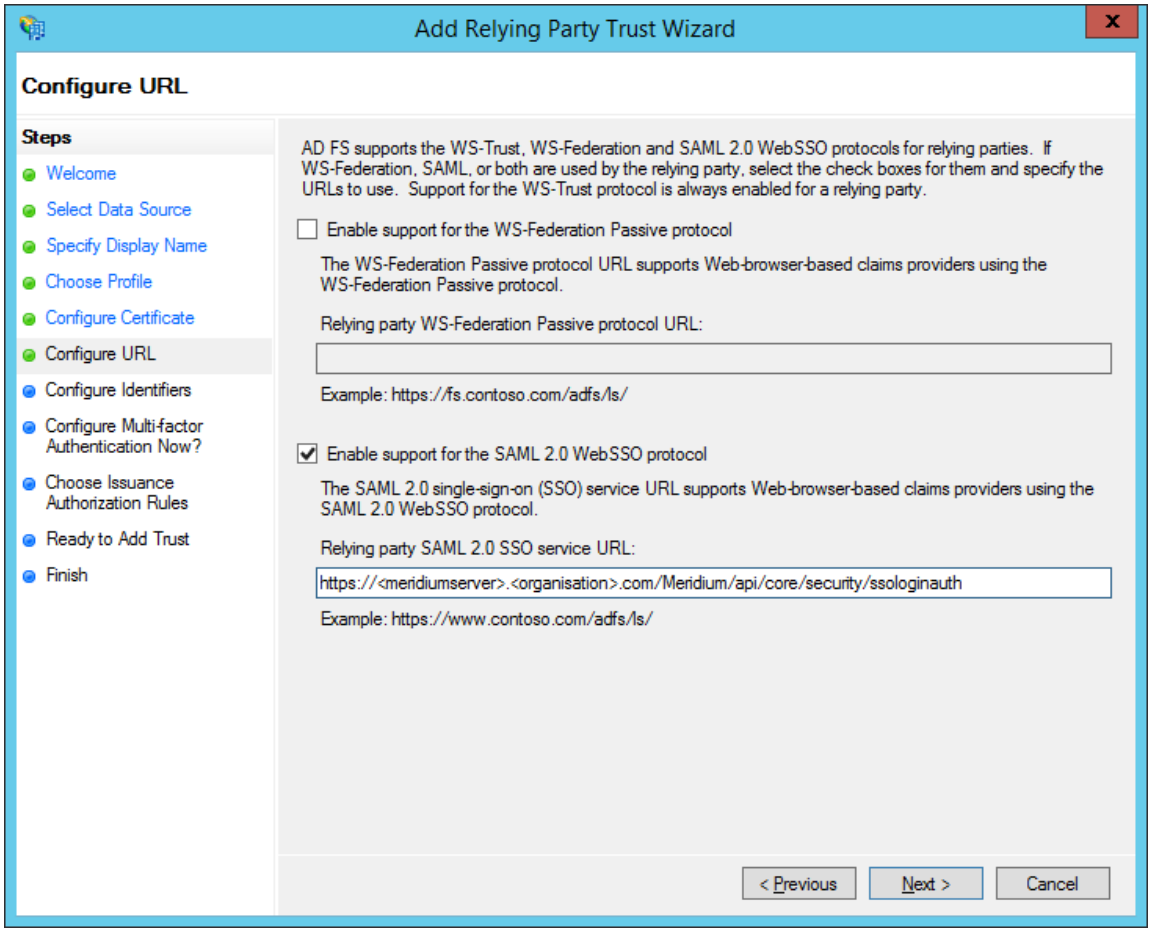
6. In the **Display name** box, enter **urn:componentspace:Meridium**, and then select **Next**.
   The **Choose Profile** page appears.



7. Select the **AD FS profile** option, and then select **Next**.
   The **Configure Certificate** page appears.



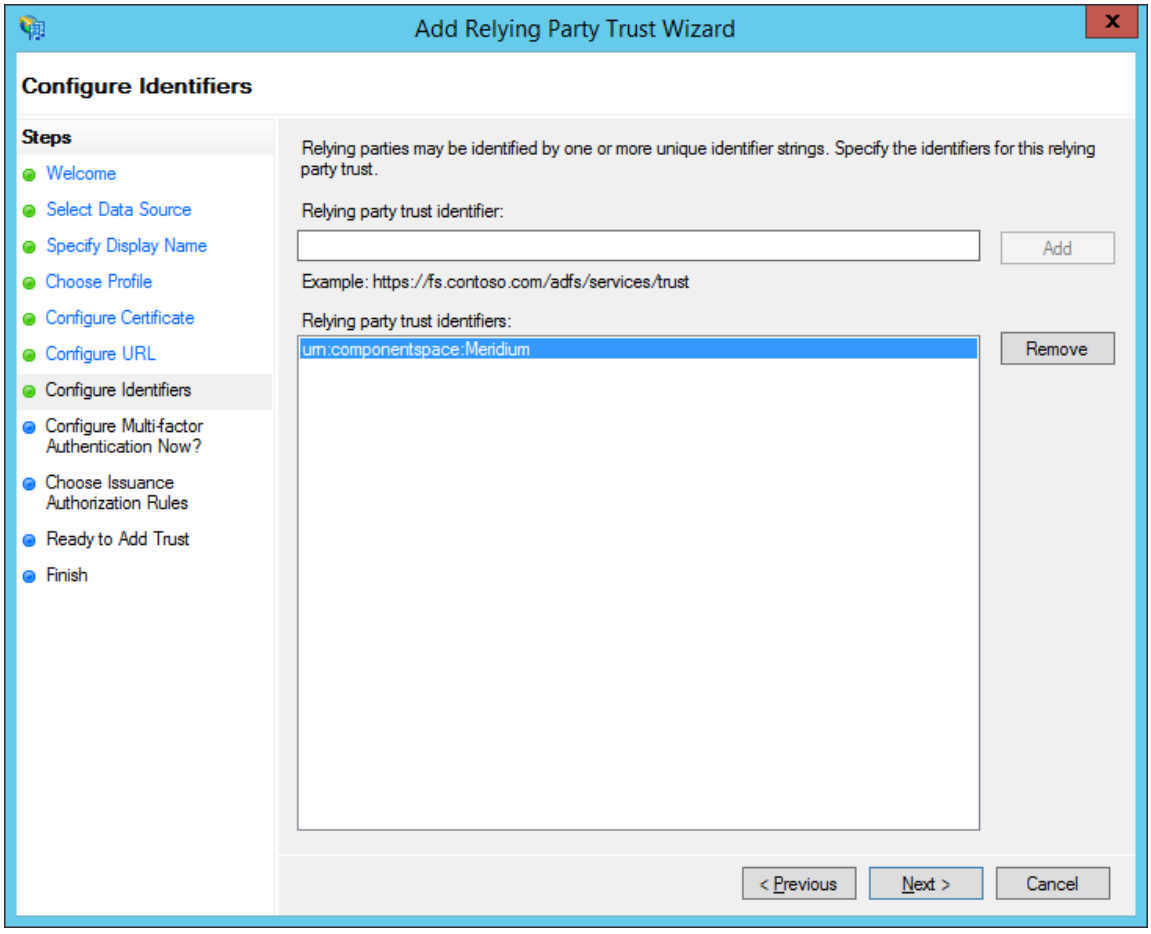
8. Select **Next**.
   The **Configure URL** page appears.



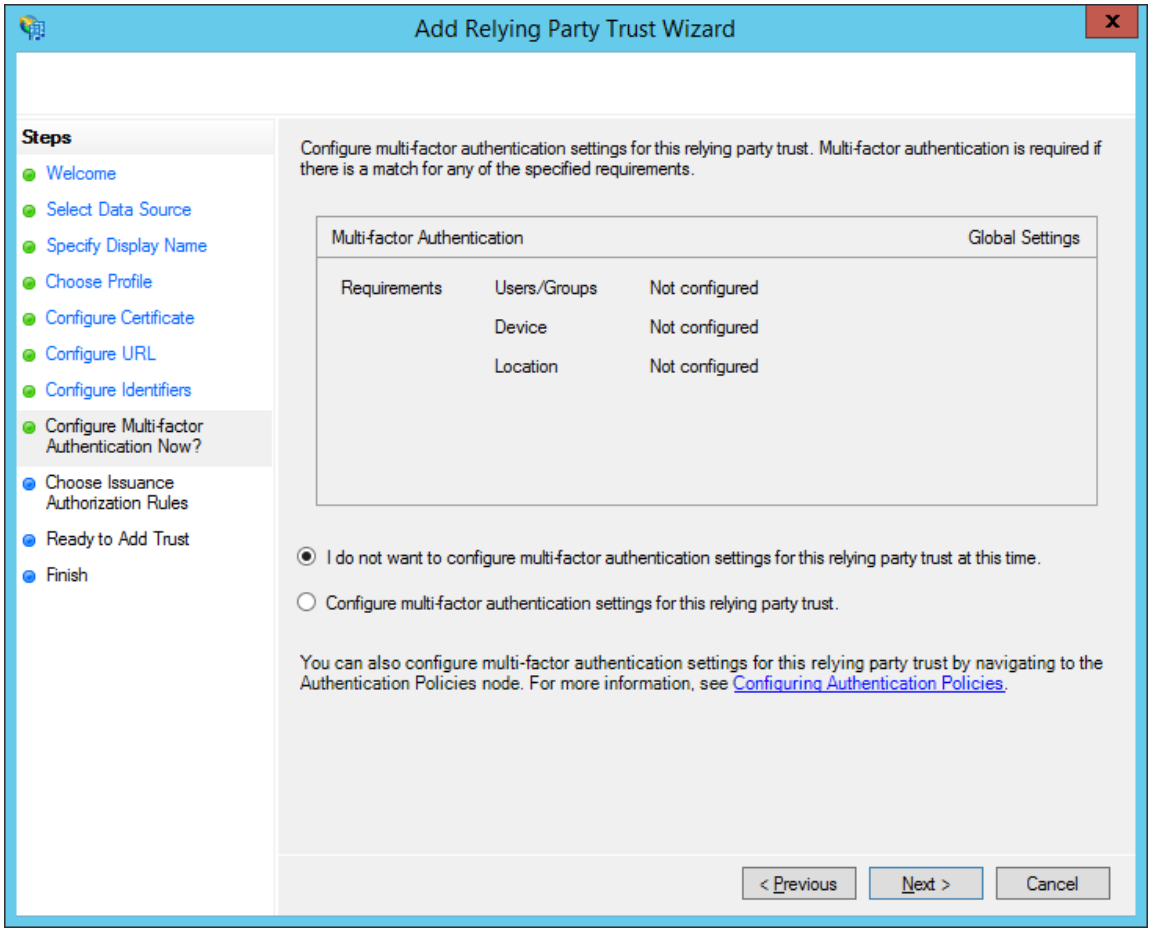
9. Select the **Enable Support for the SAML 2.0 WebSSO protocol** check box.
10. In the **Relying Party SAML 2.0 SSO service URL** box, enter`https://<name of the GE Digital APM server>/Meridium/api/core/security/ssologinauth`, and then select **Next**.

    Note: The word Meridium is case-sensitive. Therefore, ensure that the first letter of the word is capitalized. Also, the URL must be same as the URL in the `saml.json` file.

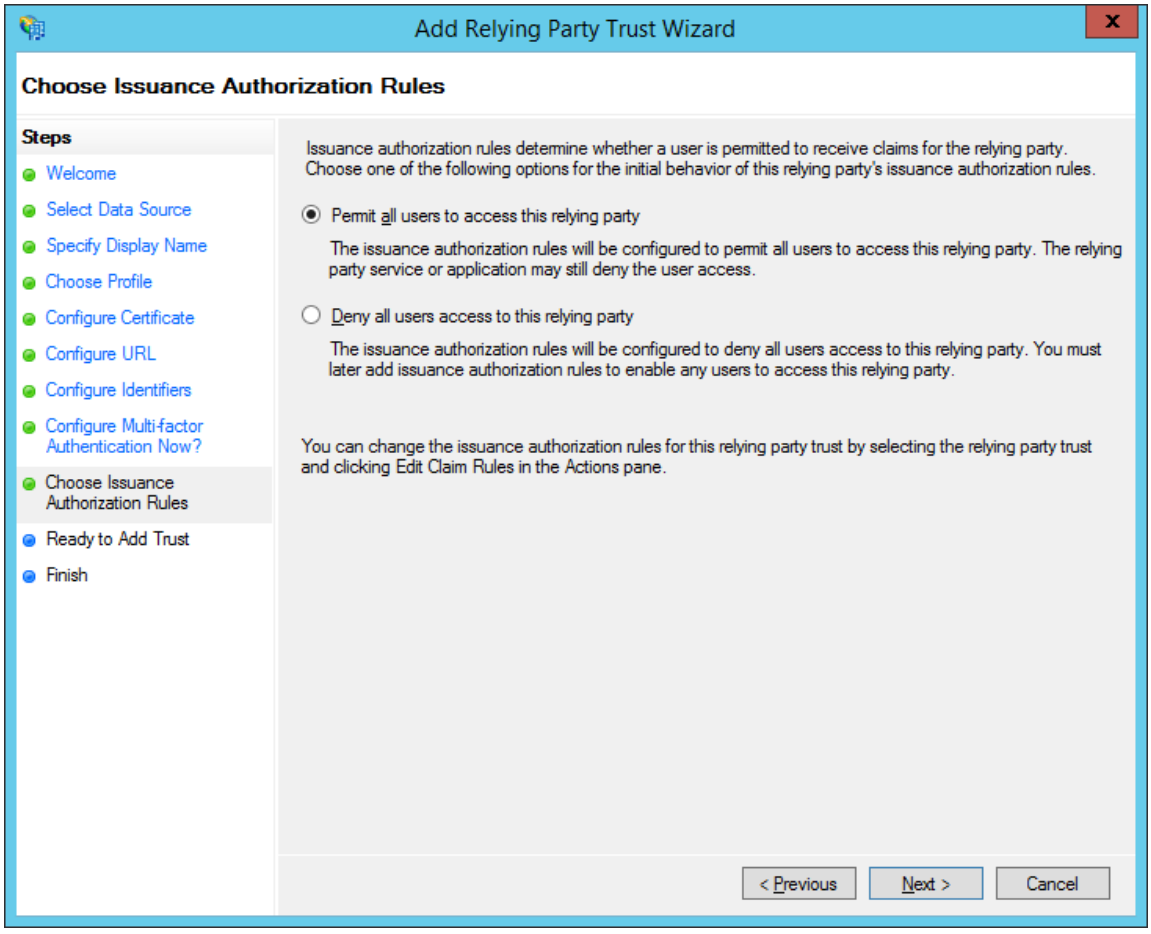
    The **Configure Identifiers** page appears.



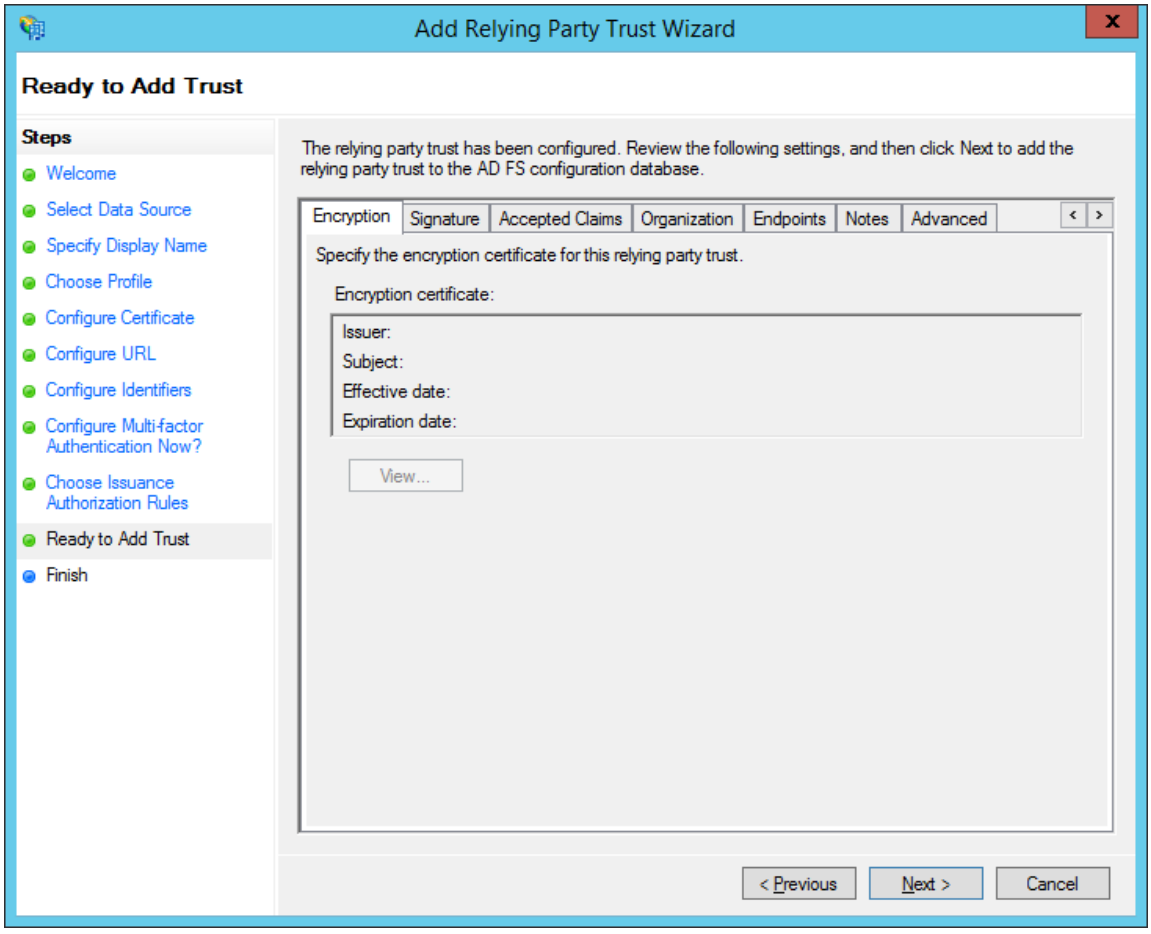
11. In the **Relying party trust identifier** box, enter `urn:componentspace:Meridium`, then select **Add**, and then select **Next**.
    The **Configure Multi-factor Authentication Now** page appears.



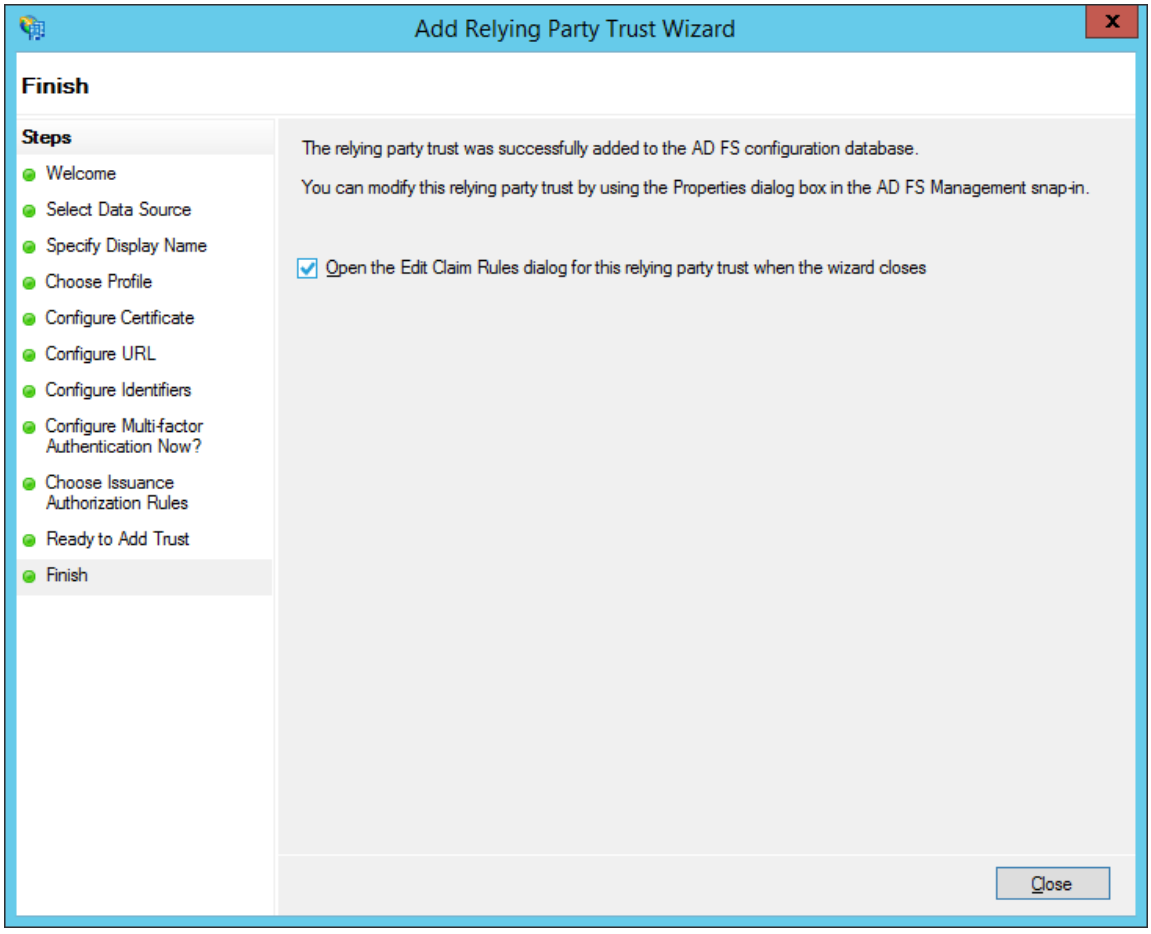
12. Select **I do not want to configure multi-factor authentication settings for this relying party trust at this time**, and then select **Next**.
    The **Choose Issuance Authorization Rules** page appears.



13. Select **Permit all users to access this relying party**, and then select **Next**.
    The **Ready to Add Trust** page appears.



14. Select **Next**.
    The **Finish** page appears.

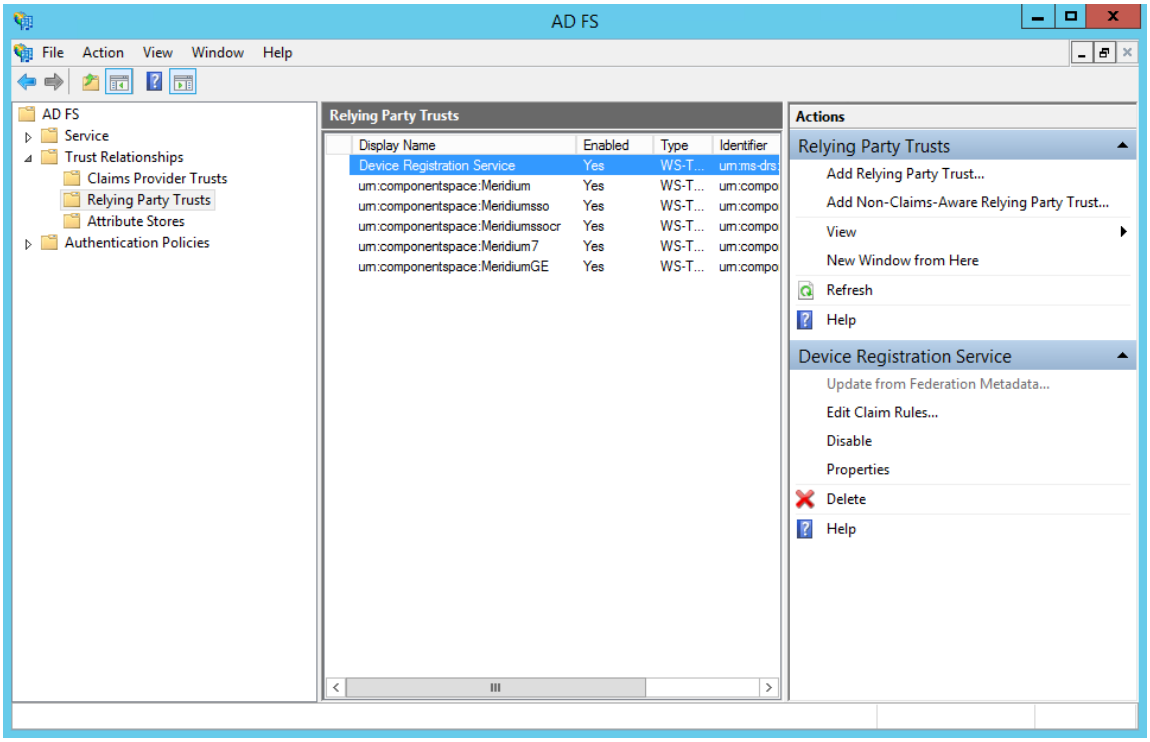


15. Clear the **Open the Edit Claim Rules dialog for this relying party trust when the wizard closes** check box, and then select **Close**.

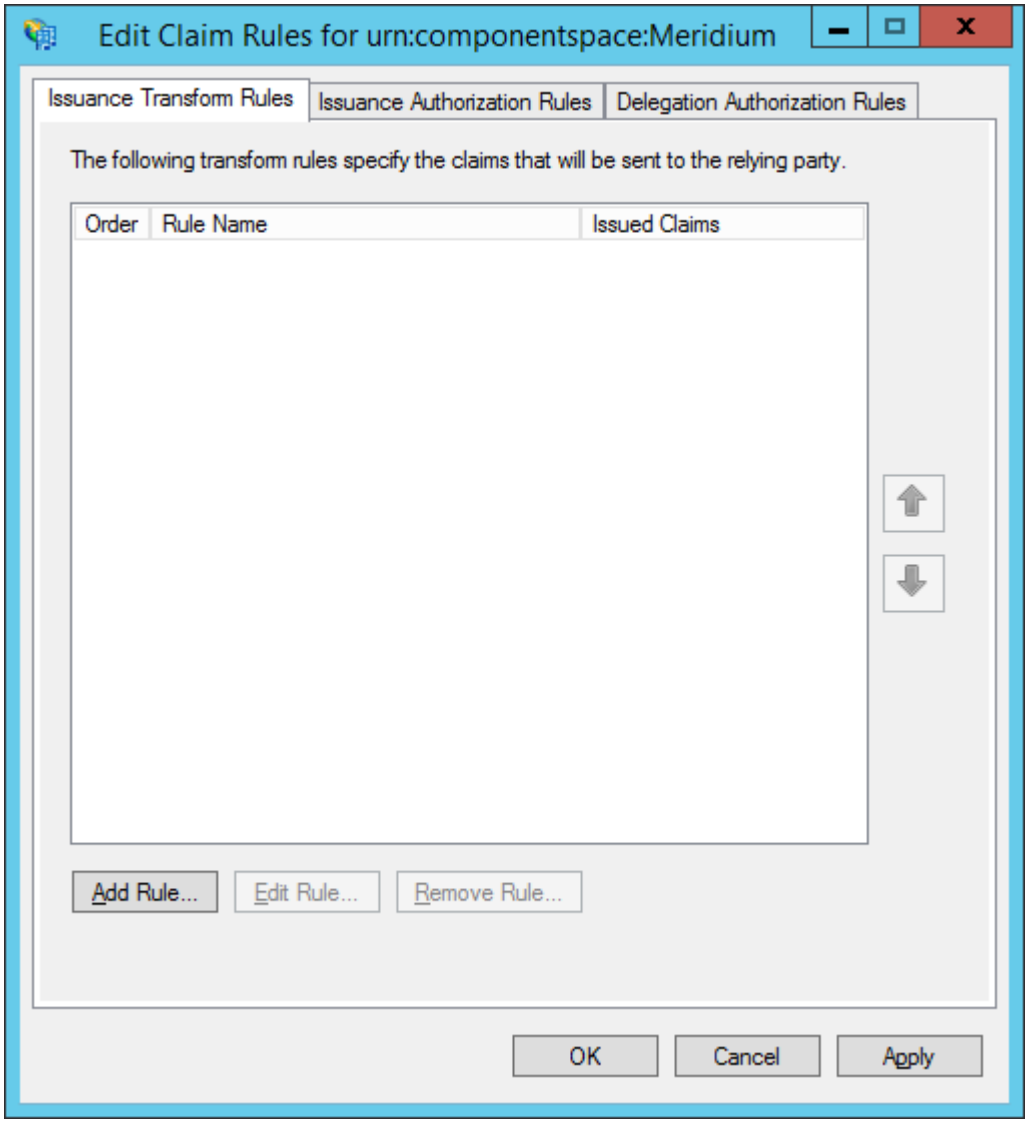
Add Claim Rules

Procedure

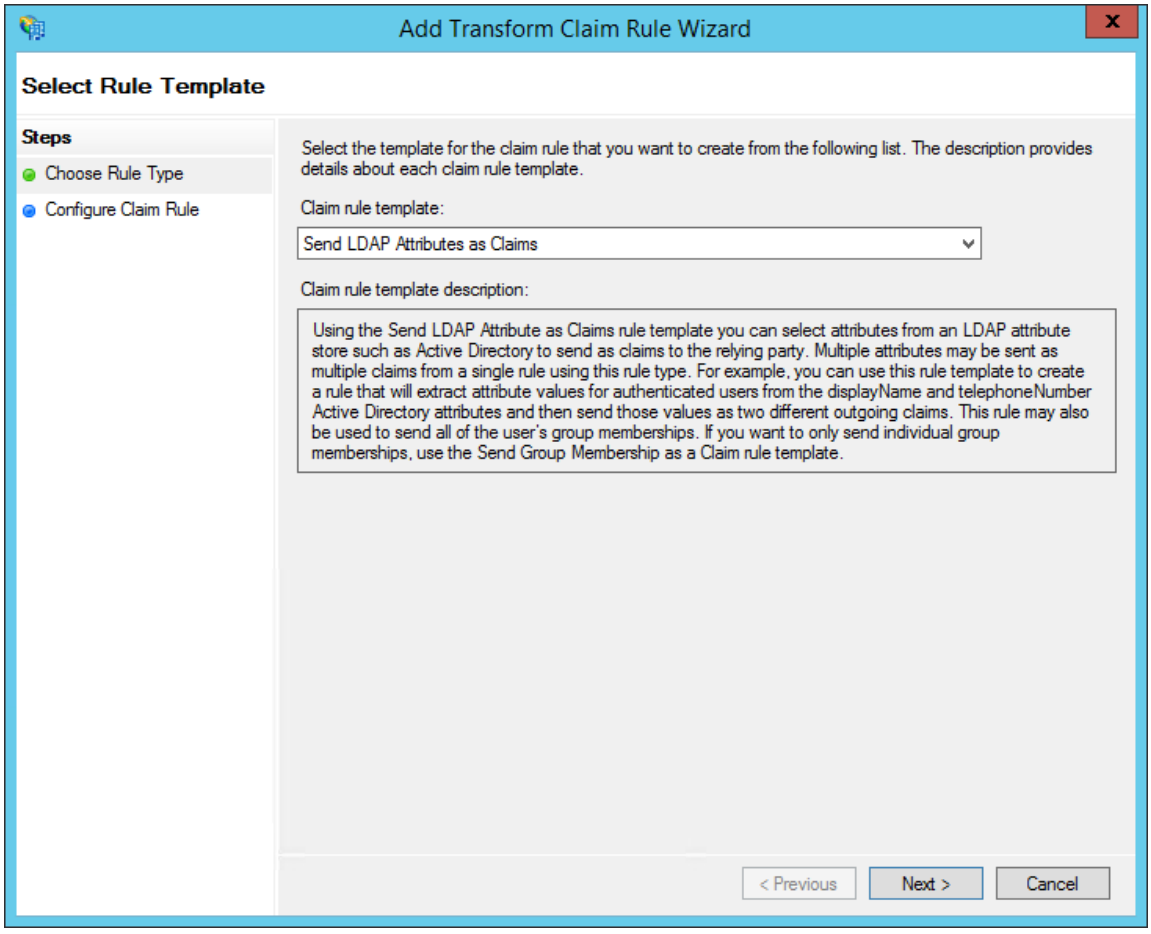
1. In the **AD FS** window, expand the **Trust Relationships** folder, and then select **Relying Party Trusts**. The **Relying Party Trusts** page appears.



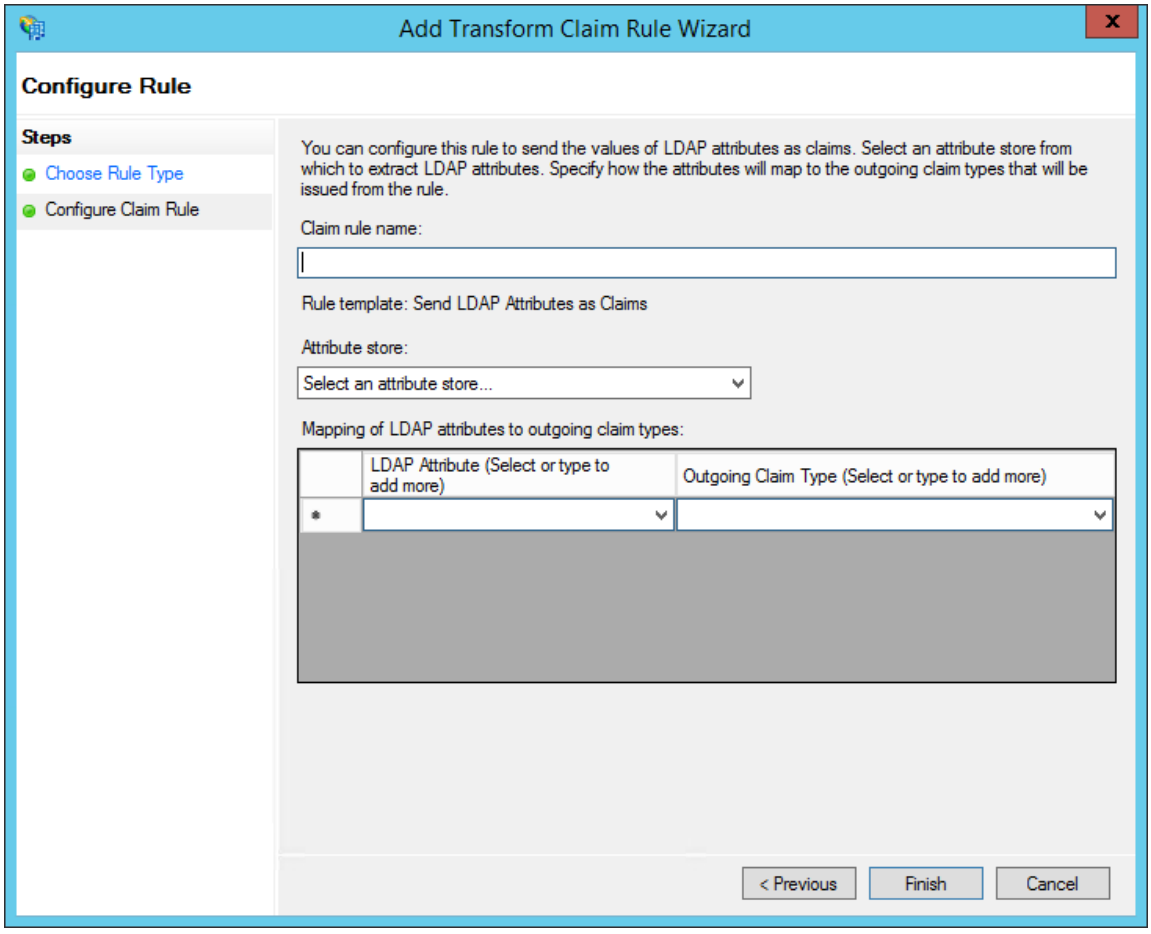
2. Select **urn:componentspace:Meridium**, and then, in the **Actions** section, select **Edit Claim Rules**. The **Edit Claim Rules for urn:componentspace:Meridium** window appears.



3. Select **Add Rule**.
   The **Add Transform Claim Rule Wizard** window appears.

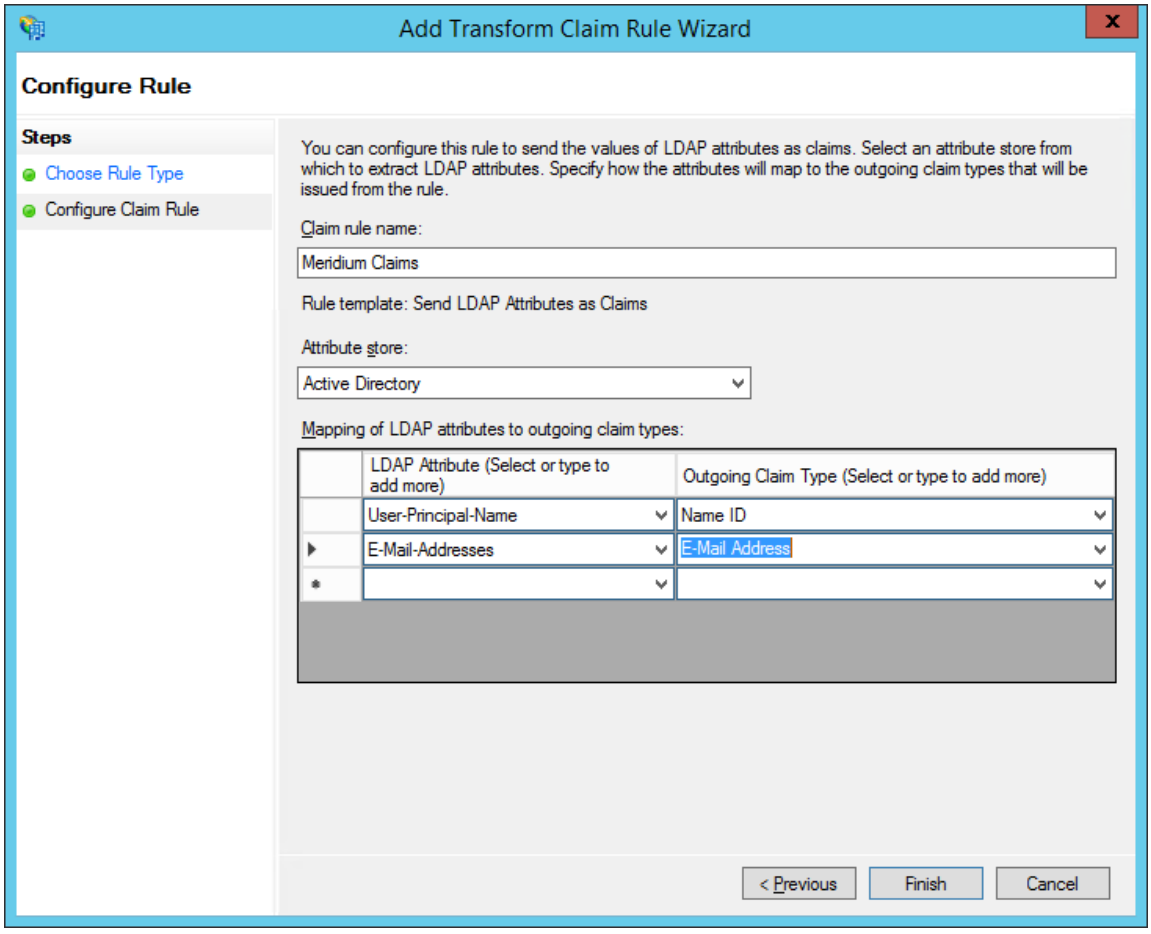


4. In the **Claim rule template** drop-down list box, select **Send LDAP Attributes as Claims**, and then select **Next**.
   The **Configure Rule** page appears.

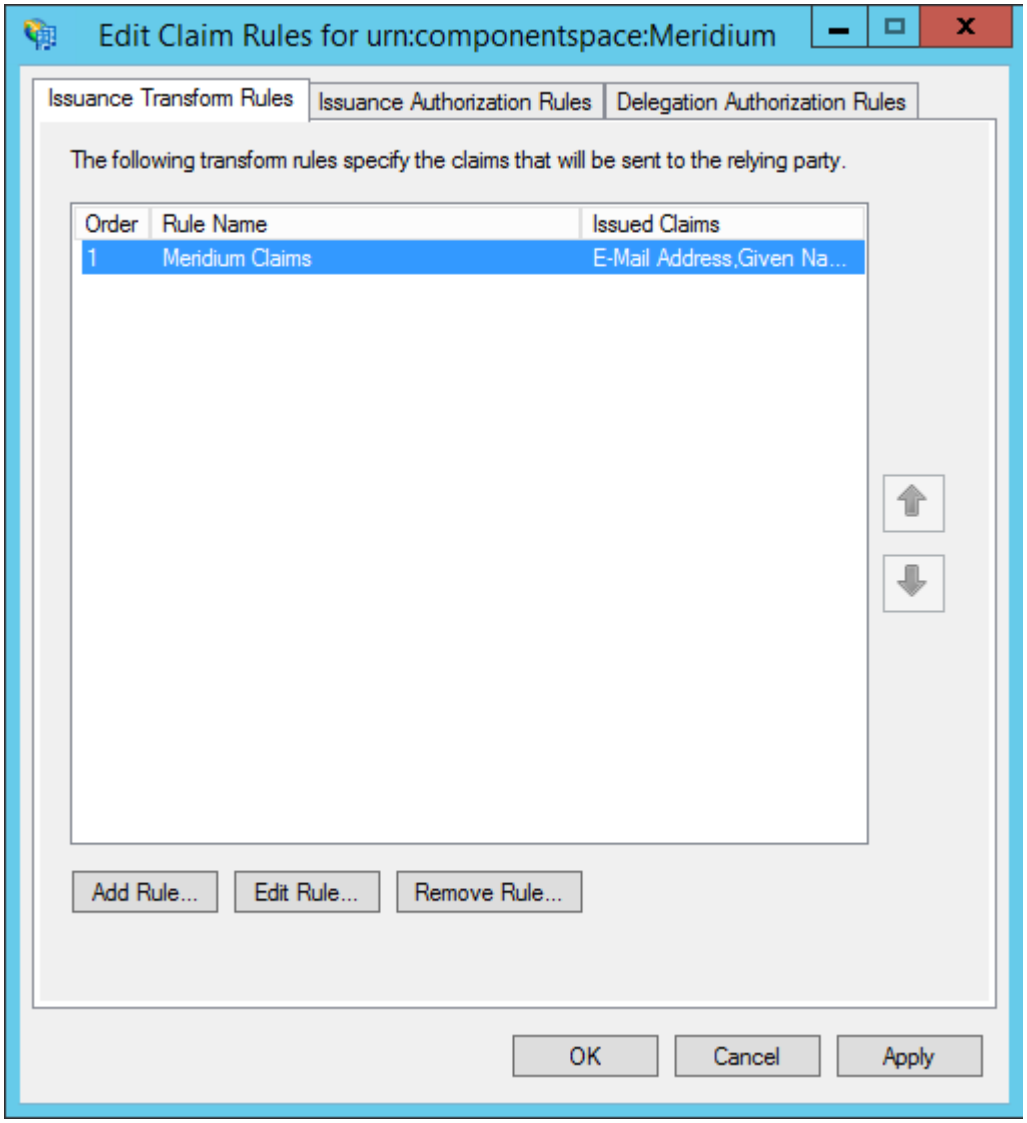


5. In the **Claim rule name** box, enter **Meridium Claims**, and then, in the **Attribute store** drop-down list box, select **Active Directory**.
6. Perform the following steps:
   - In the first drop-down list box in the **LDAP Attribute** column, select **User-Principal-Name**, and then, in the corresponding **Outgoing Claim Type** drop-down list box, select **Name ID**.
   - In the second drop-down list box in the **LDAP Attribute** column, select **E-mail-Addresses**, and then, in the corresponding **Outgoing Claim Type** drop-down list box, select **E-Mail Address**.

   The **Configure Rule** page is populated with the selected values.



7. Select **Finish**.
   The **Edit Claim Rules for urn:componentspace:Meridium** window appears.



8. Select **OK**.
   The claim rule is added to the **Edit Claim Rules for urn:componentspace:Meridium** window.

Add Certificates

About This Task

To add certificates, you must perform the following tasks:

Procedure

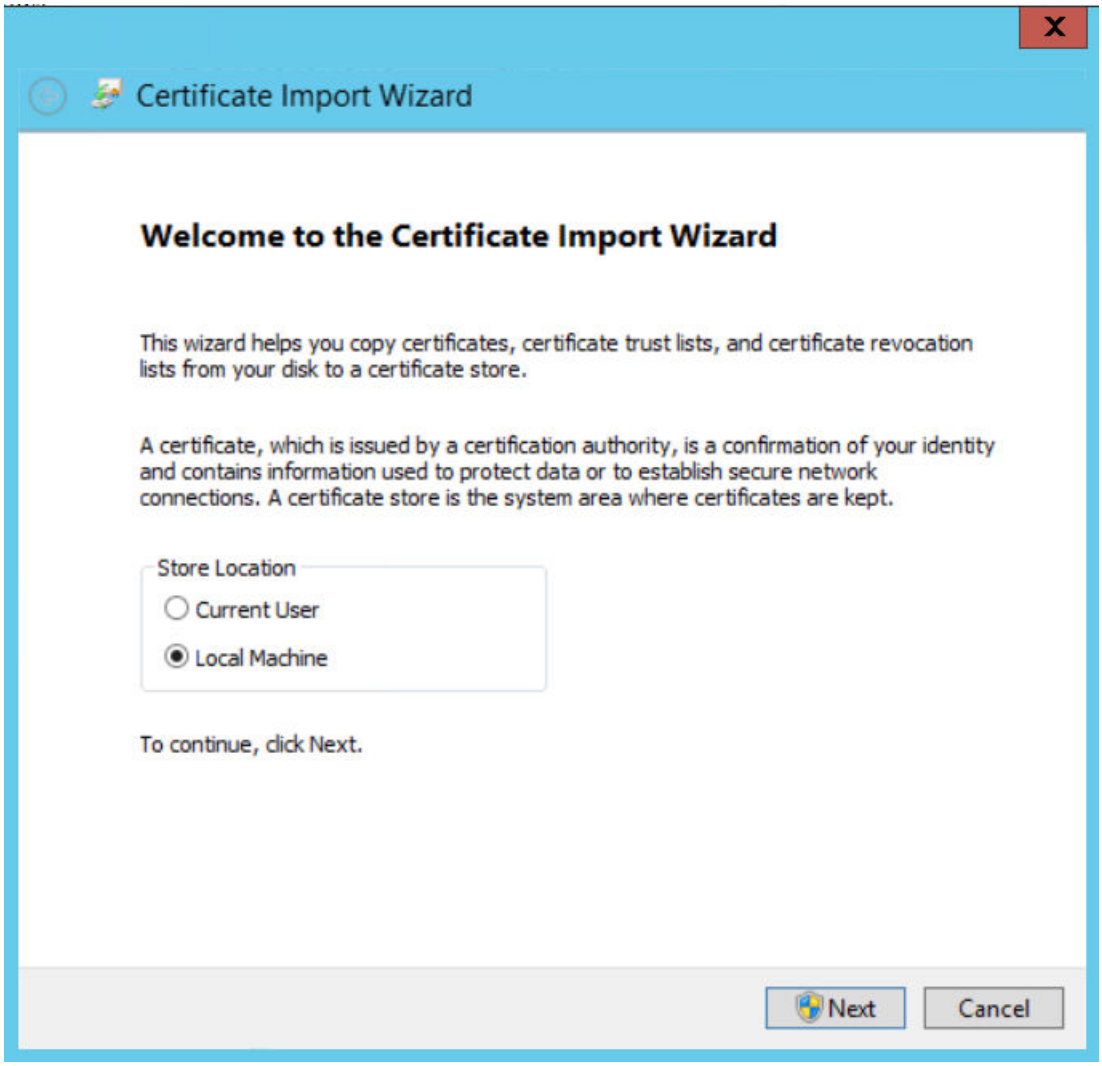
1. Install the Public Key Certificate File (sp.pfx) on page 27
2. Export the Certificate on page 31
3. Copy the Certificate to Active Directory on page 38
4. Install the Token Signing idp.cer Certificate on the Application Server on page 40

Install the Public Key Certificate File (sp.pfx)

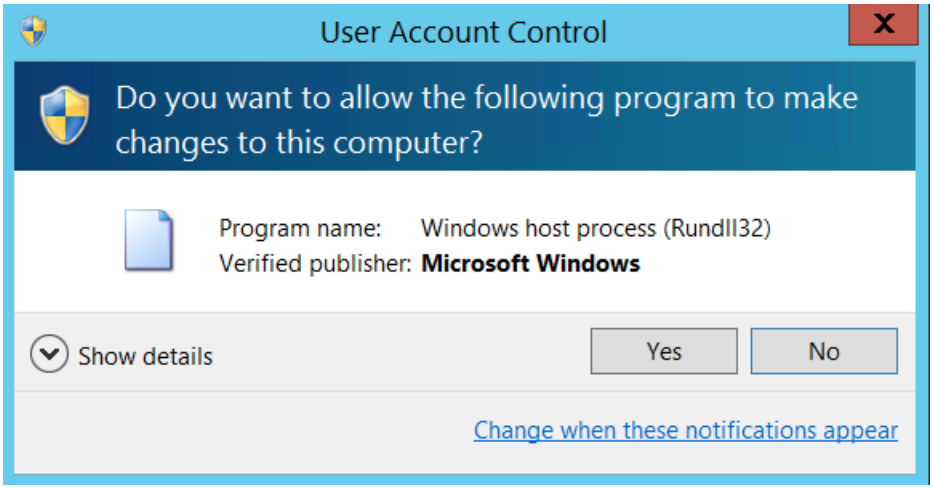
Procedure

1. Navigate to C:\Program Files\Meridium\ApplicationServer\api, where the public key certificate file (sp.pfx) is located.

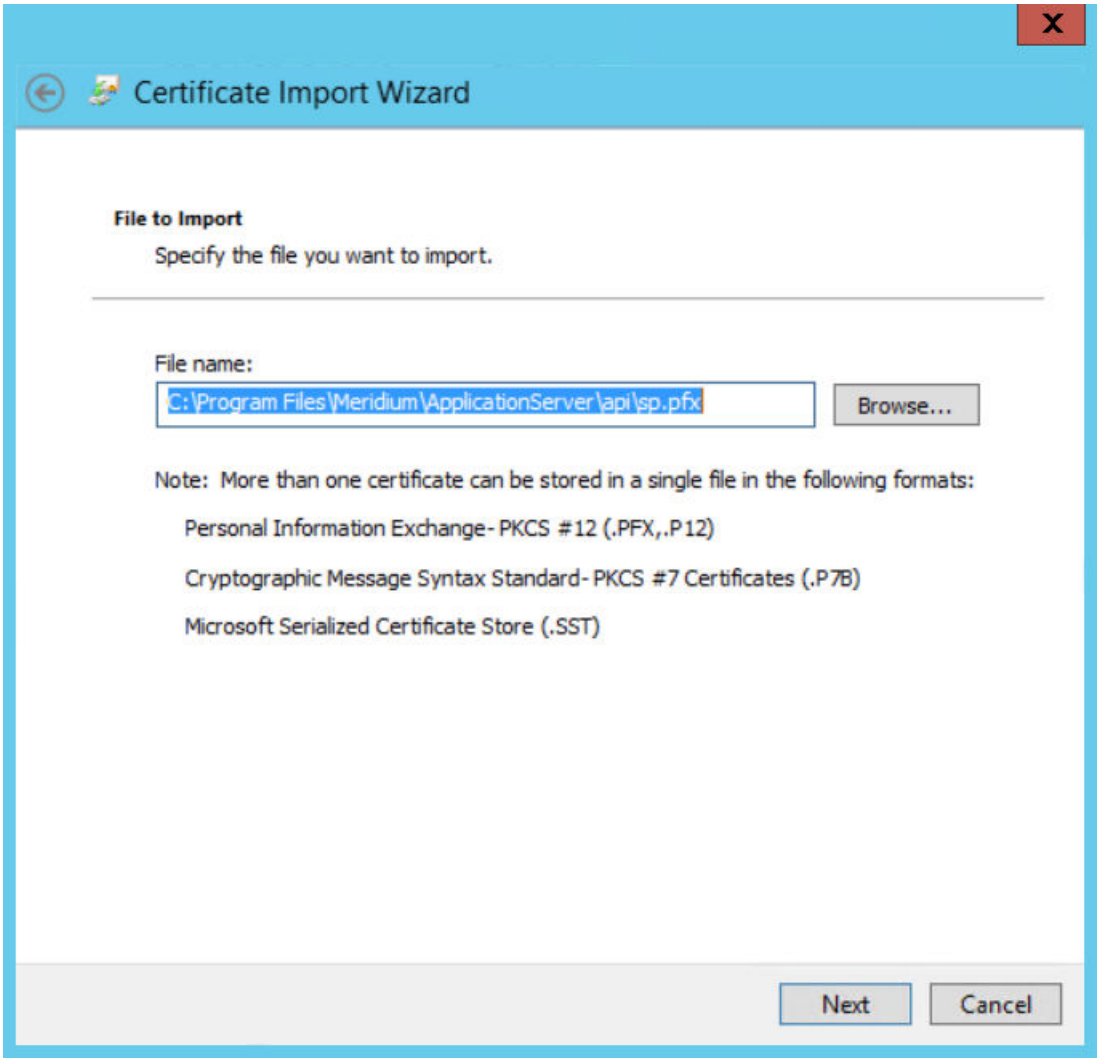
   Note: GE Digital provides the public key certificate file (sp.pfx). pfx is personal information exchange.
2. Right-click **sp**, and then select **Install PFX**.
   The **Certificate Import Wizard** appears.



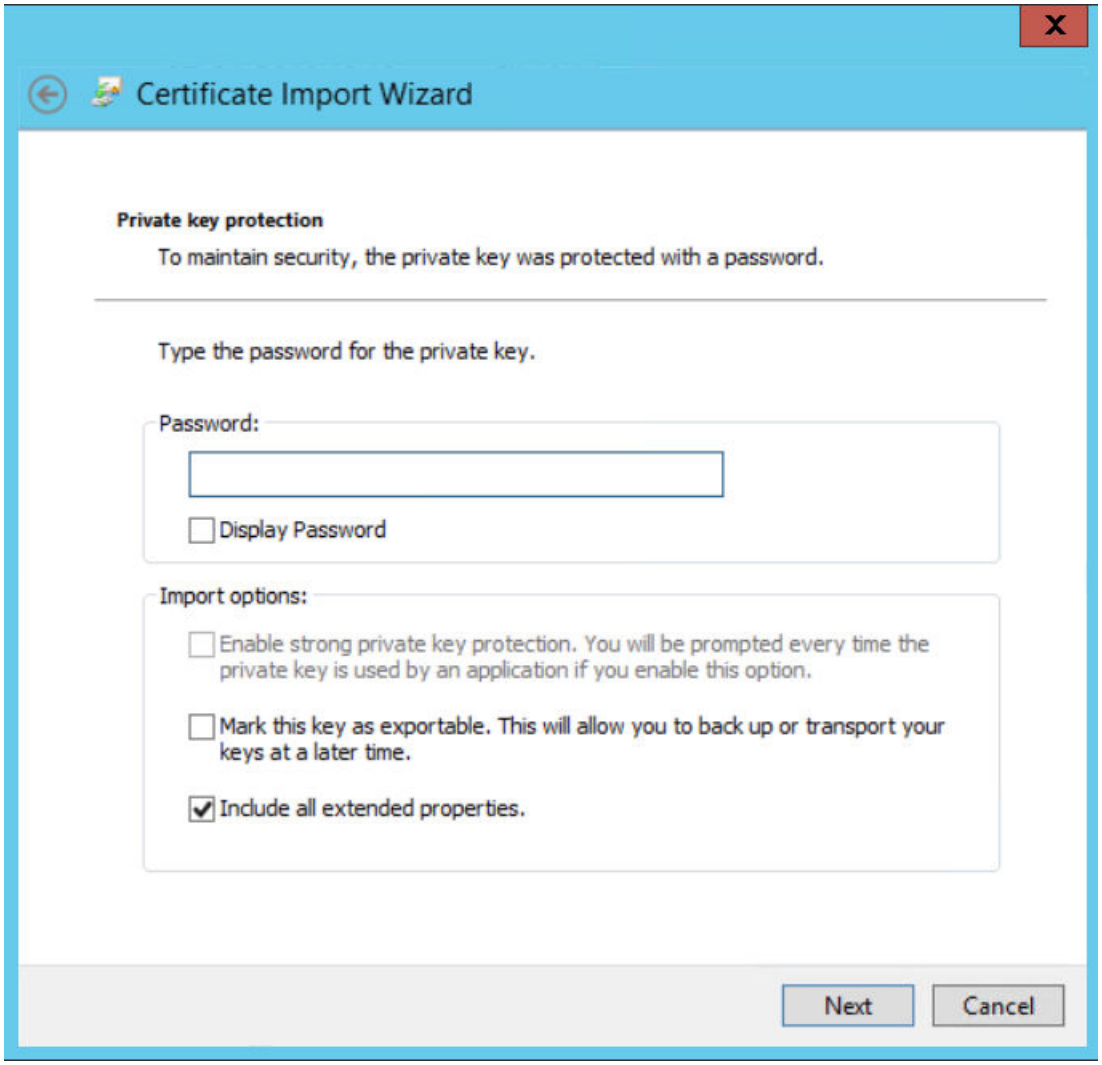
3. Select **Local Machine**, and then select **Next**.
   The **User Account Control** window appears.



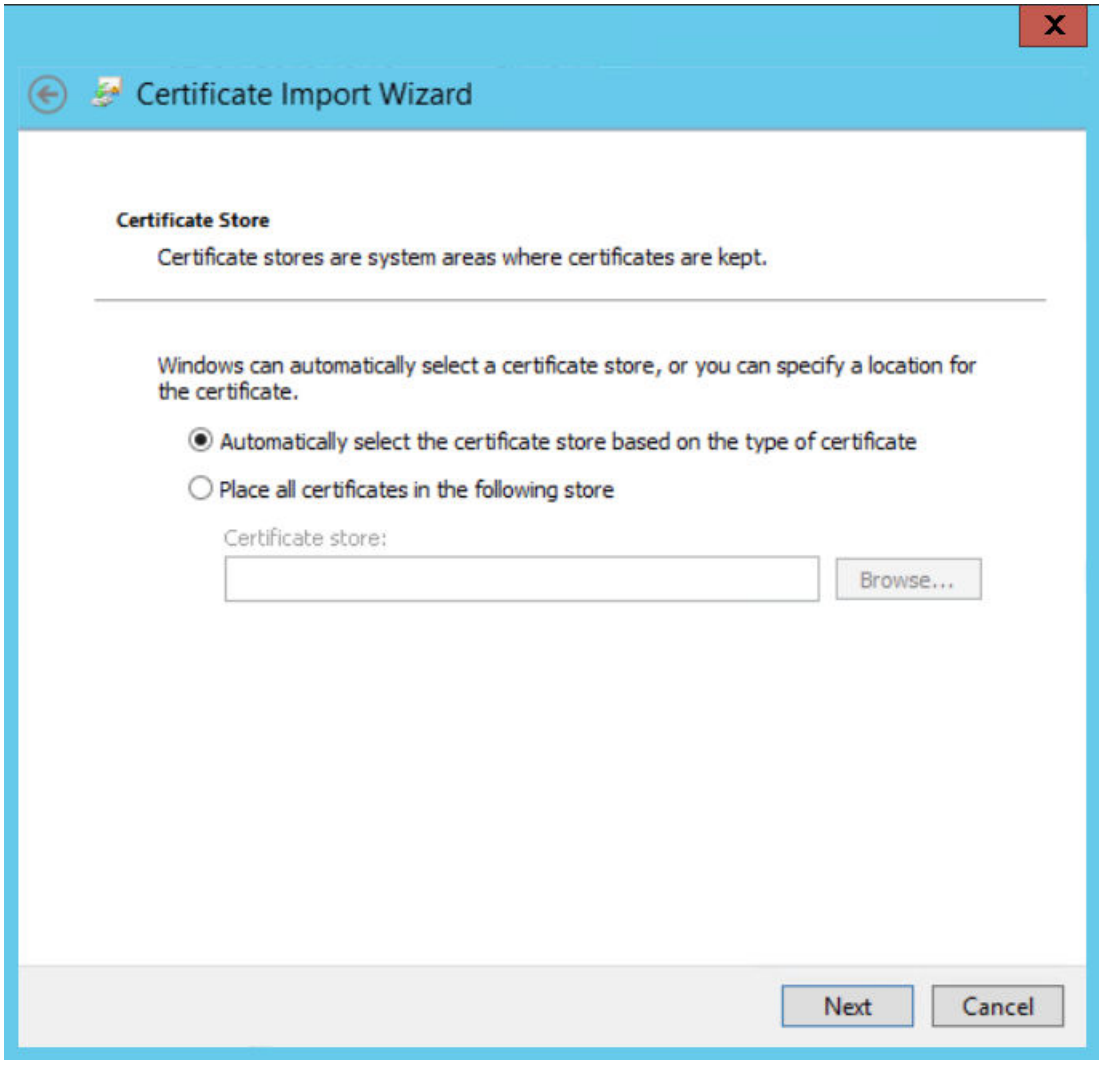
4. Select **Yes**.
   The **Certificate Import Wizard** appears, and the **File Name** box displays the file path where the certificate is located.



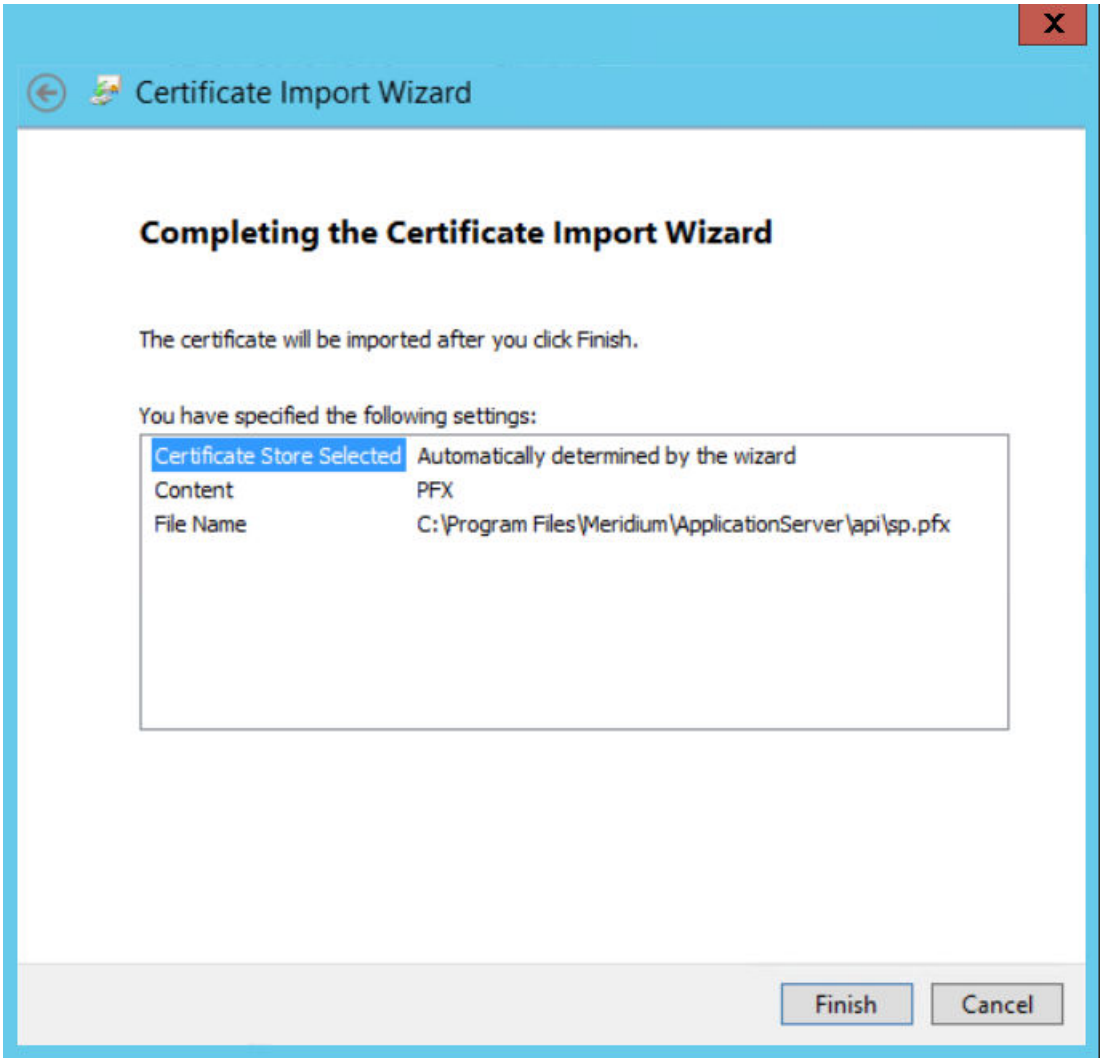
5. Select **Next**.



6. Enter a password, and then select **Next**.



7. Select **Automatically select the certificate store based on the type of certificate**. The **Completing the Certificate Import Wizard** appears.

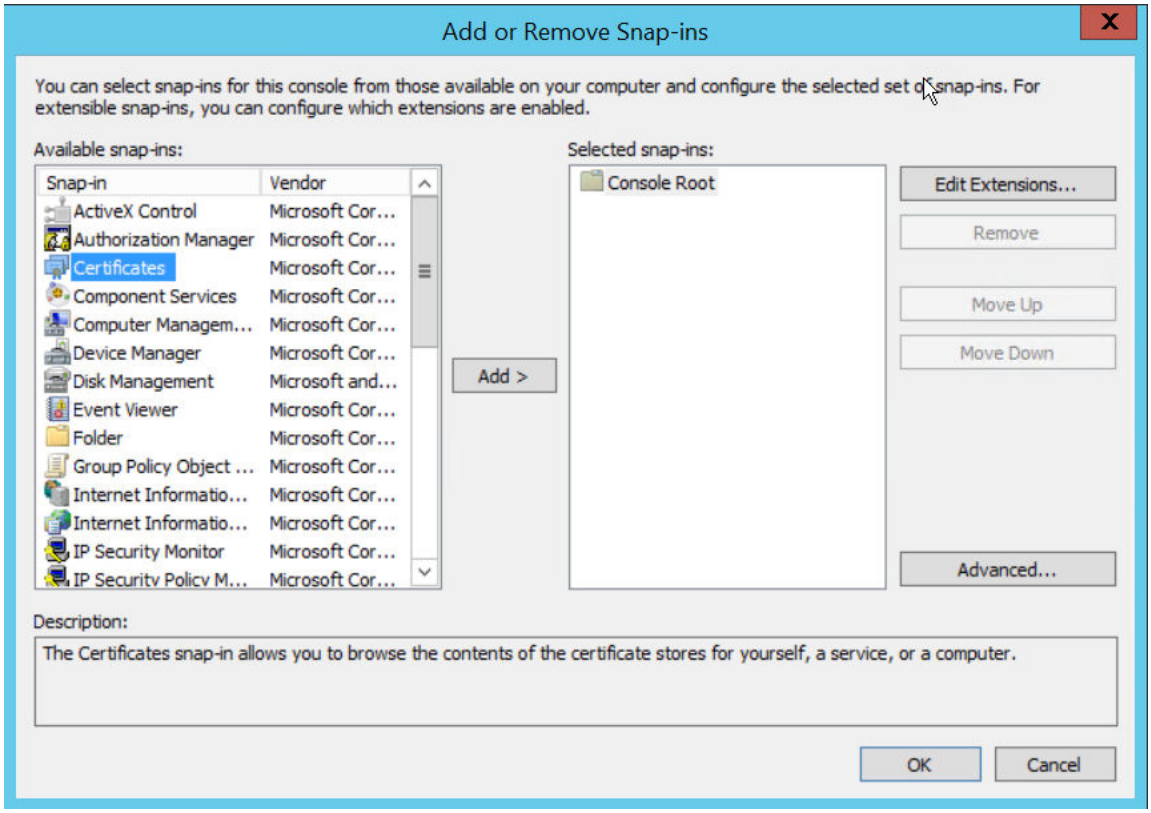


8. Select **Finish**.

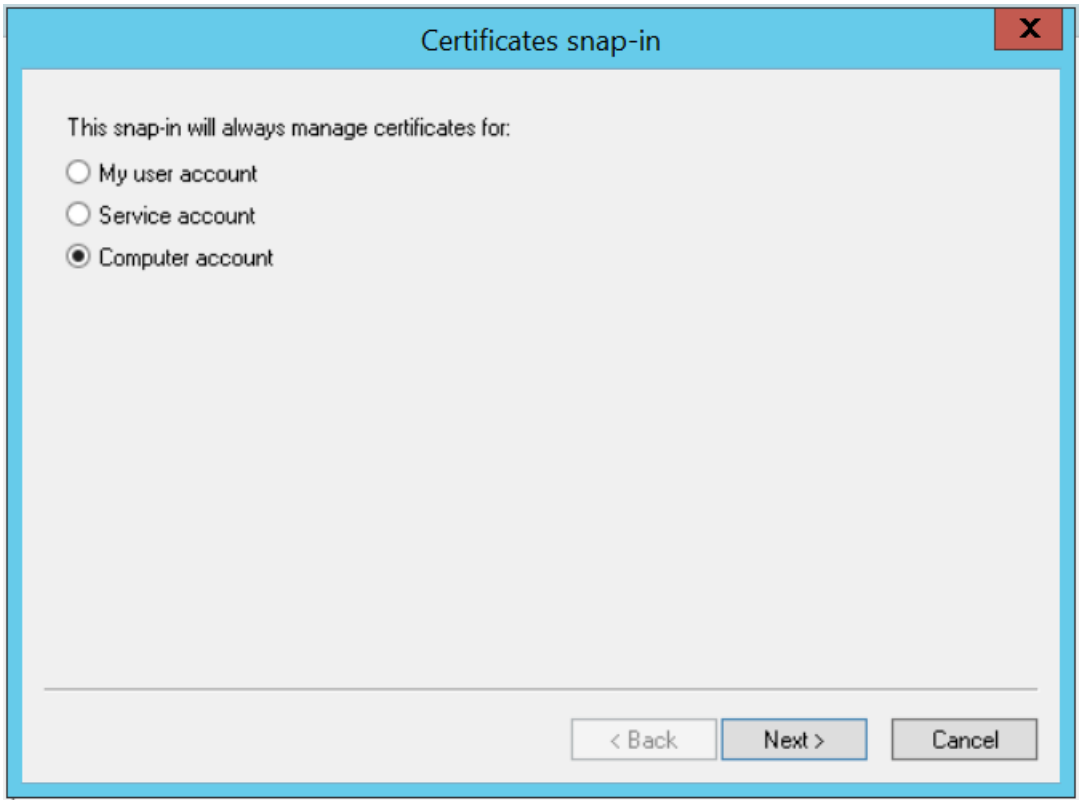
Export the Certificate

Procedure

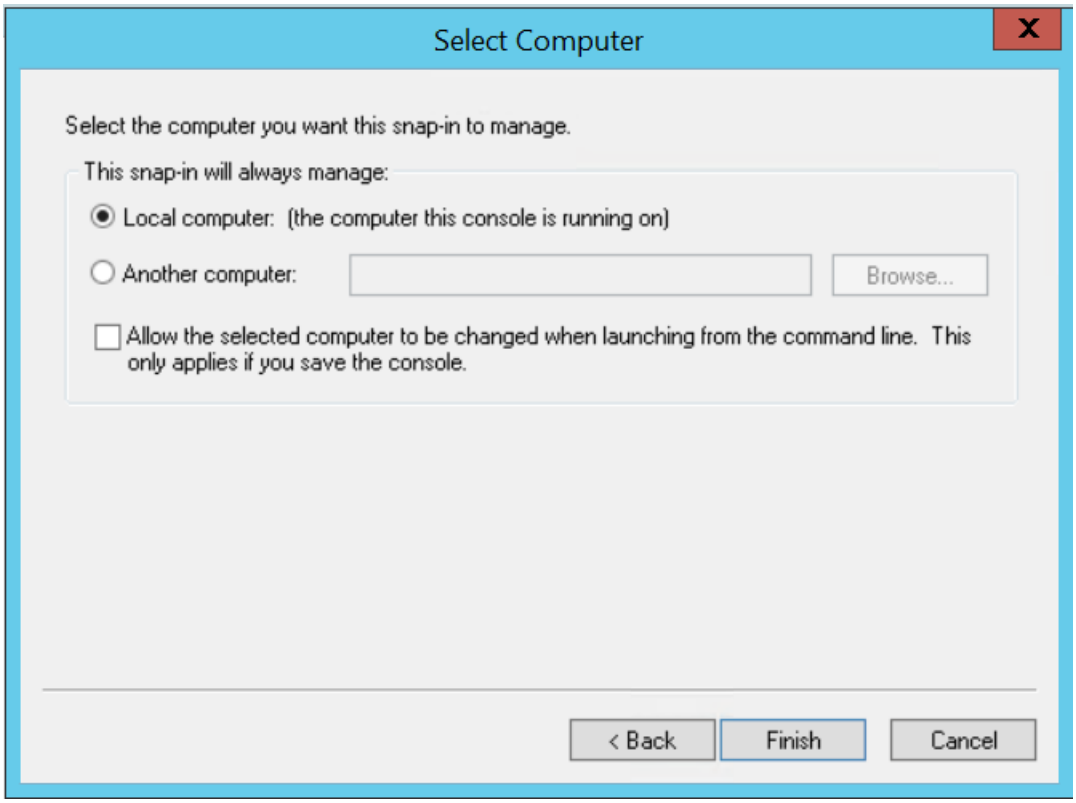
1. Access **Microsoft Management Console**.
2. In the main navigation bar, select **File**, then select **Add/Remove Snap-in**, and then select **Certificates**.
   The **Add or Remove Snap-ins** window appears.



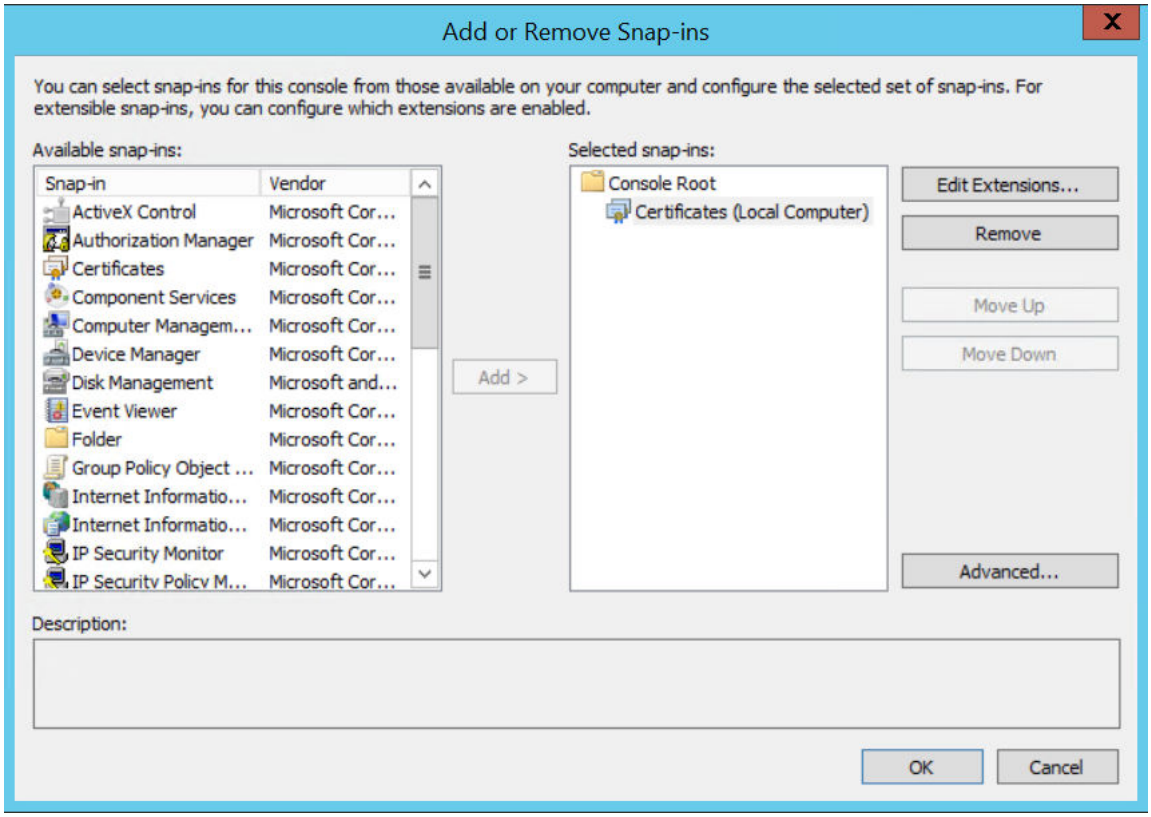
3. Select **Add**.
   The **Certificates snap-in** window appears.



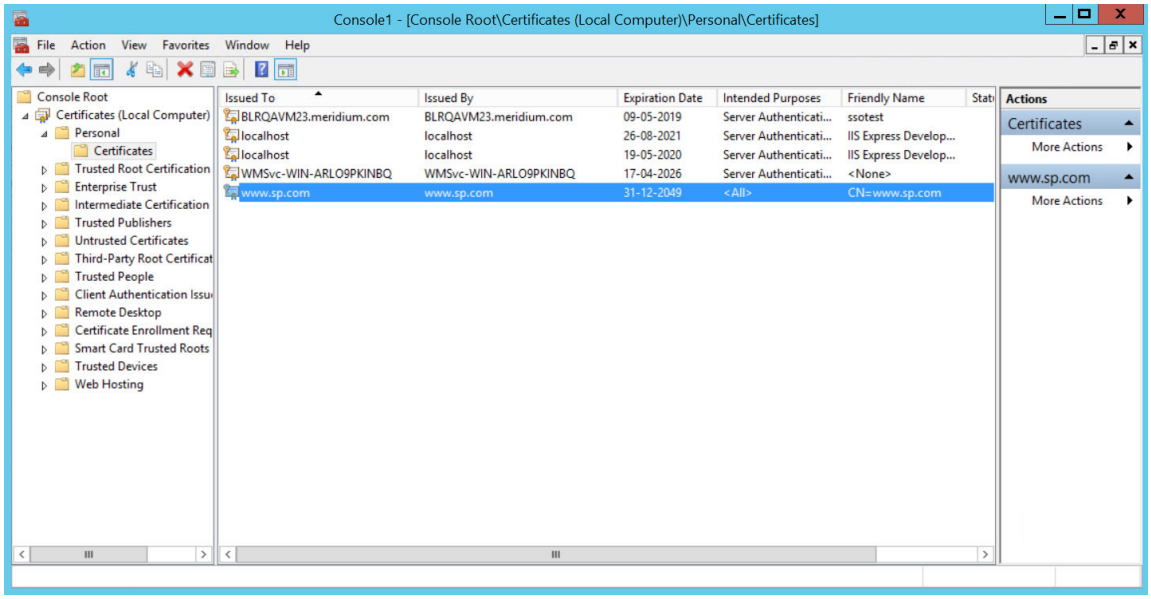
4. Select the **Computer account** option, and then select **Next**.
   The **Select Computer** window appears.



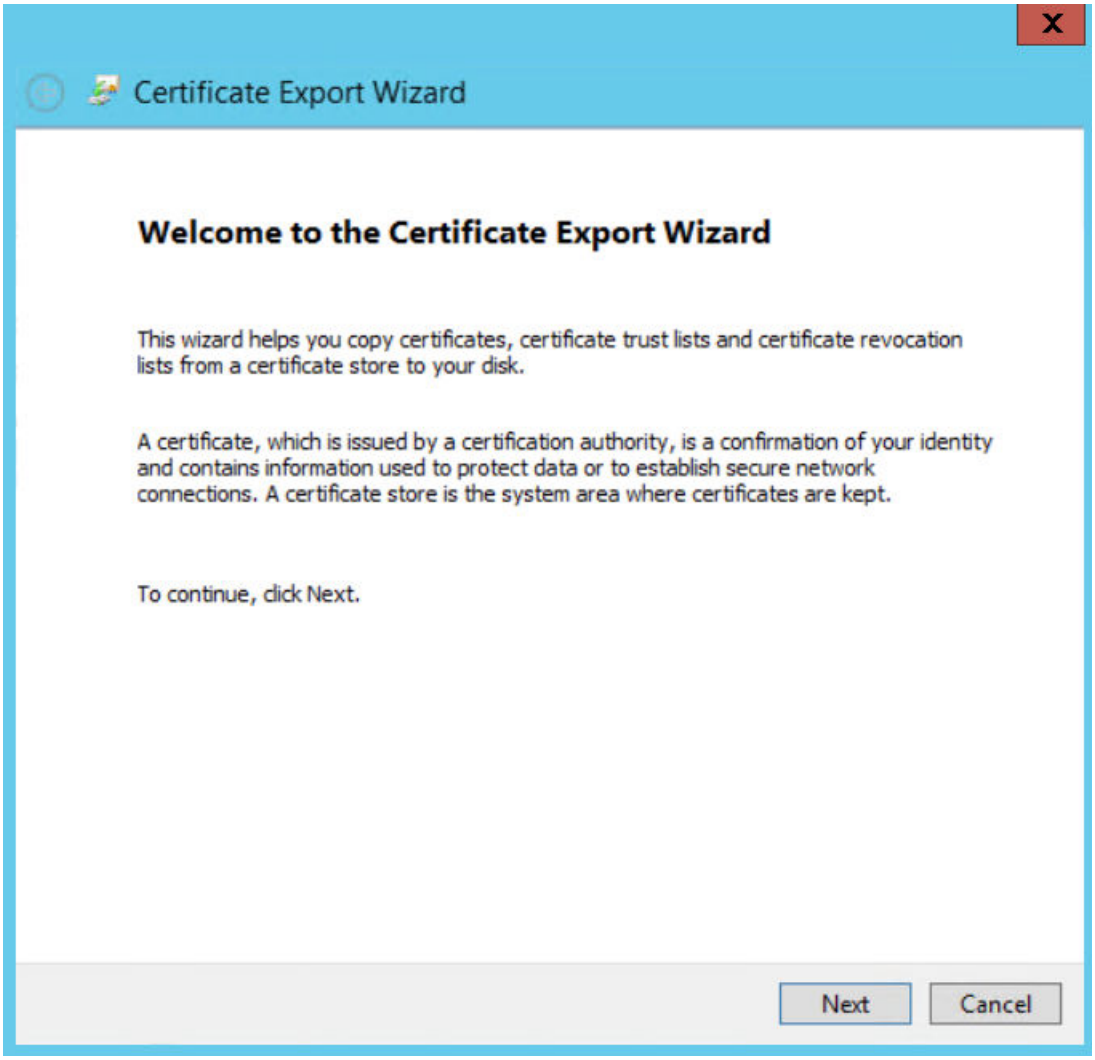
5. Select the **Local computer** option, and then select **Finish**.



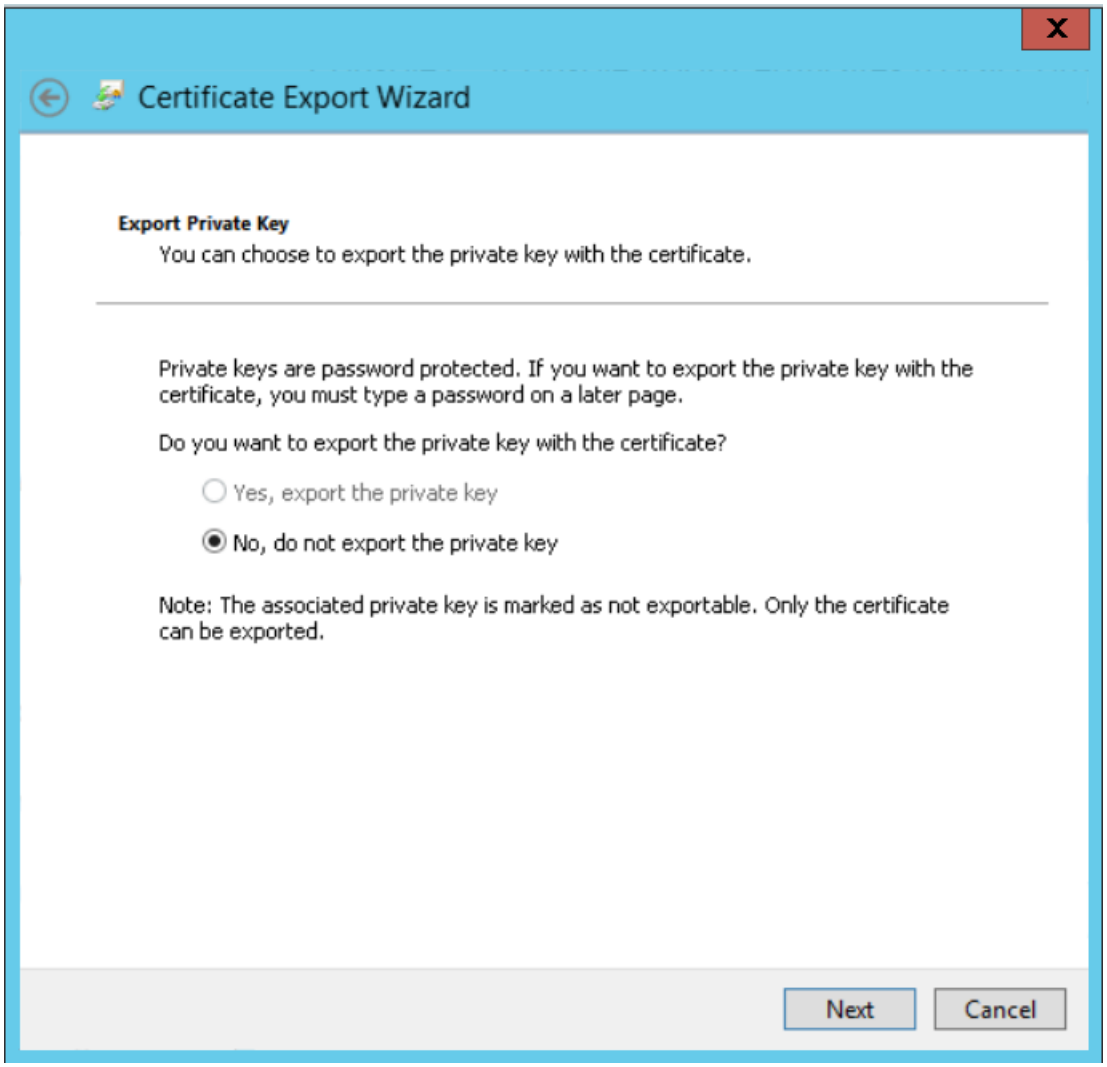
6. In the **Add or Remove Snap-ins** window, select **OK**.
   The certificate appears in the **Personal** > **Certificates** folder of the **Certificates (Local Computer)** folder.
7. Select **Certificates (Local Computer)**, then select **Personal**, and then select **Certificates**.



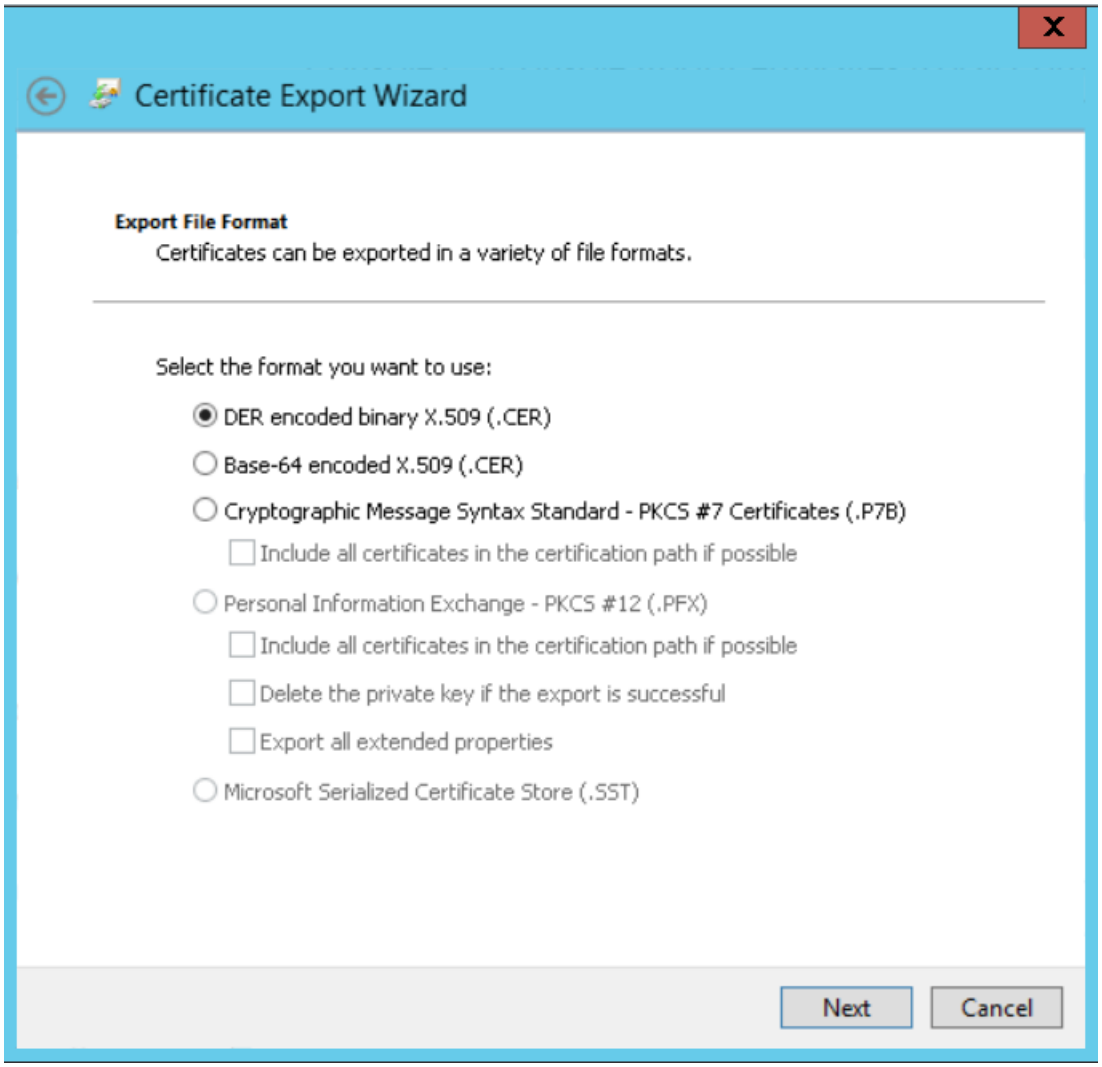
8. Right-click the certificate that you have installed, select **All Tasks**, and then select **Export**.
   The **Certificate Export Wizard** appears.



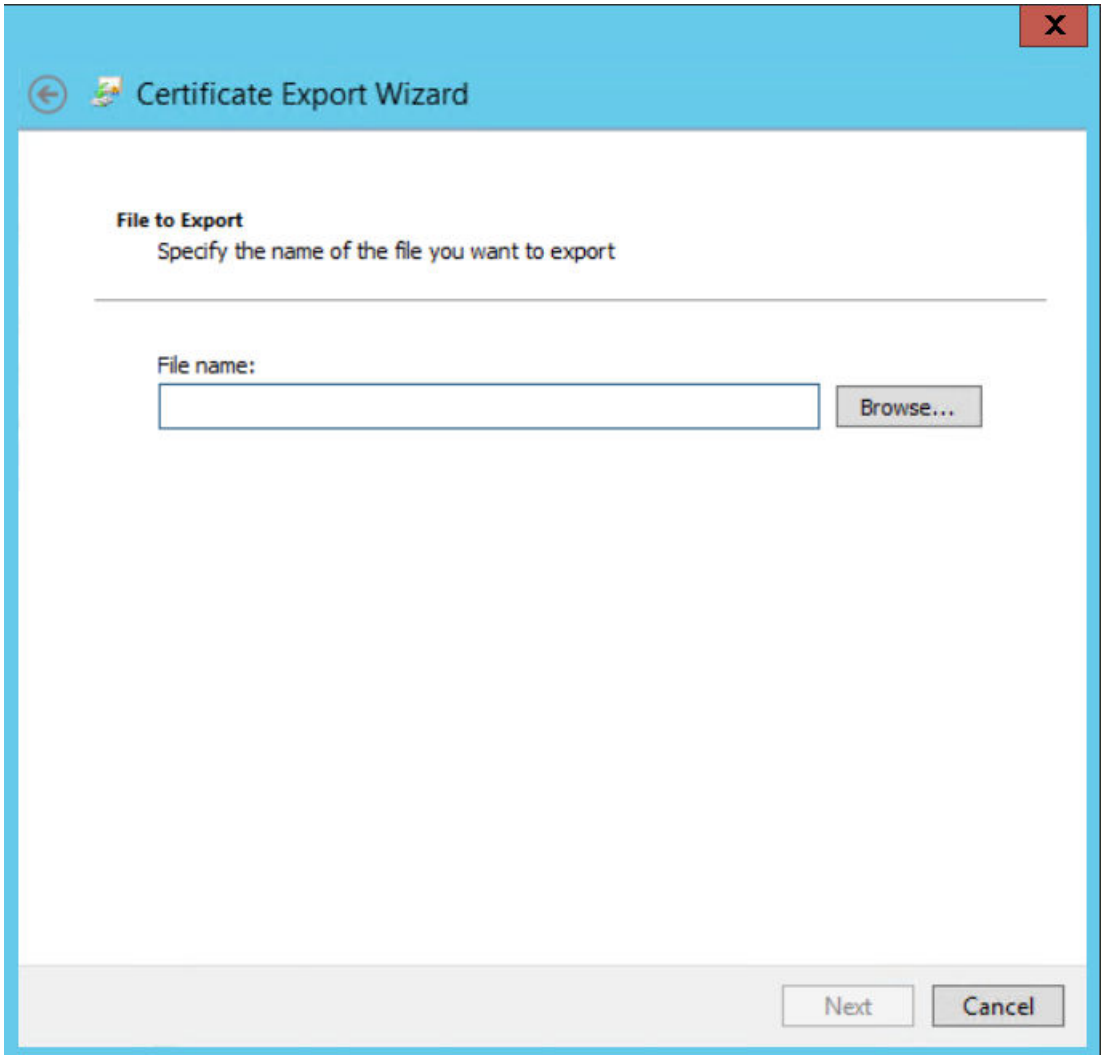
9. Select **Next**.



10. Select the **No, do not export the private key** option, and then select **Next**.



11. Select **DER encoded binary X.509 (.CER)**, and then select **Next**.

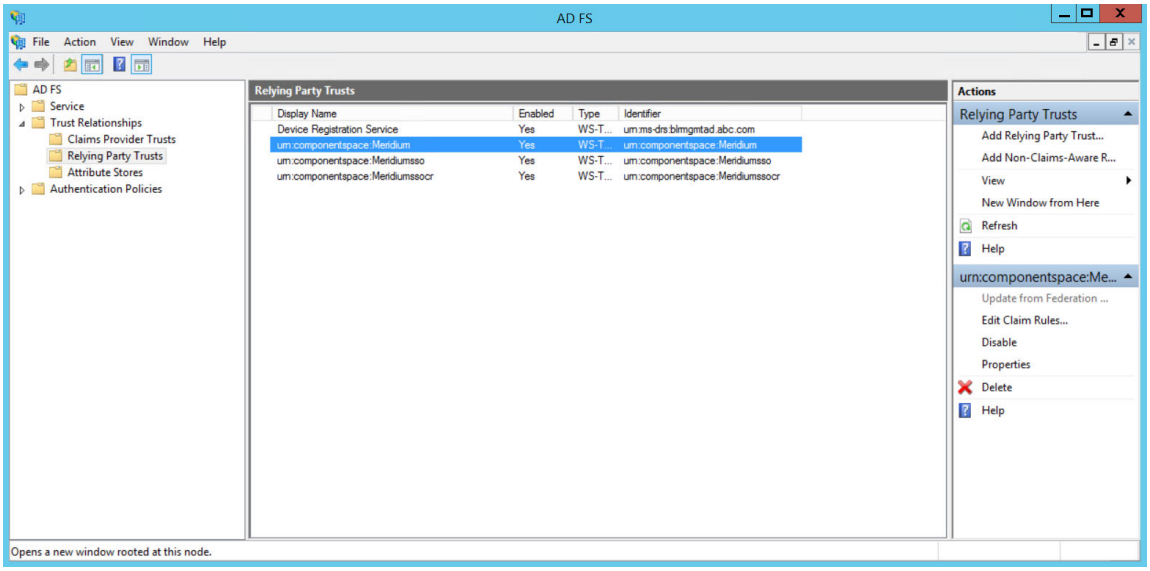


12. Select **Browse**, and then navigate to the location to which you want to export the certificate.
13. In the **File name** box, enter the same name that was mentioned while installing the certificate, and then, in the **Save as type** drop-down list box, select **DER Encoded Binary X.509 (.cer)**.
14. Select **Next**, and then select **Finish**.

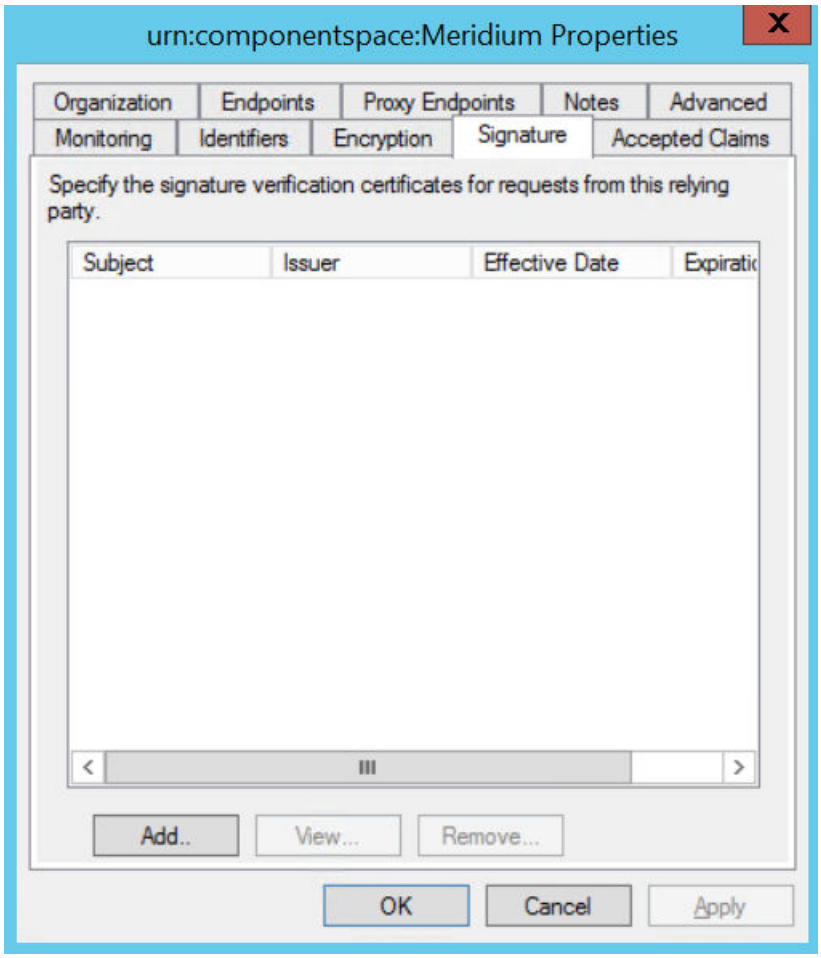
Copy the Certificate to Active Directory

Procedure

1. Access **Control Panel**, then select **System and Security**, and then select **Administrative Tools**.
2. Select **AD FS Management**.
   The **AD FS** window appears.

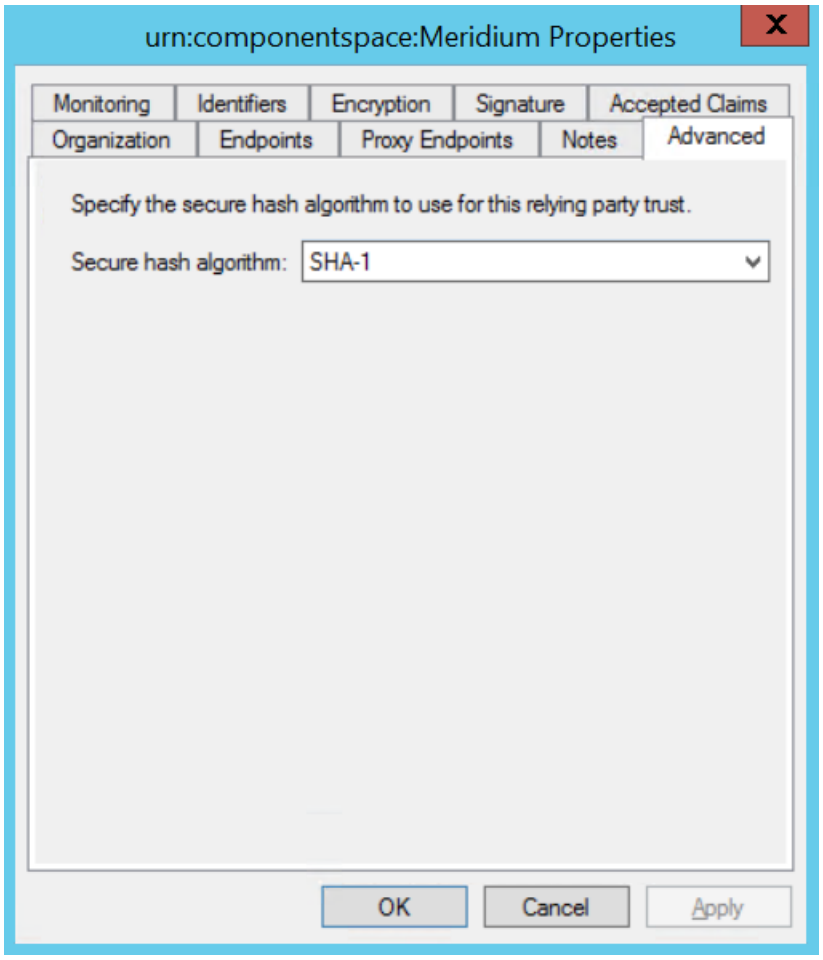


3. Expand **Trust Relationships**, and then select **Relying Party Trusts**.
4. Select **urn:componentspace:Meridium**, and then, in the **Actions** section, select **Properties**. The **urn:componentspace:Meridium Properties** window appears.



5. Select the **Signature** tab, and then select **Add**.
6. Navigate to the location in which you have saved the certificate, and then select the file.

7. Select **Yes** to ignore the warning about certificate key length.
8. Select the **Advanced** tab.
9. In the **Secure hash algorithm** drop-down list box, based on the policy of your organization, select **SHA-1** or **SHA-256**.

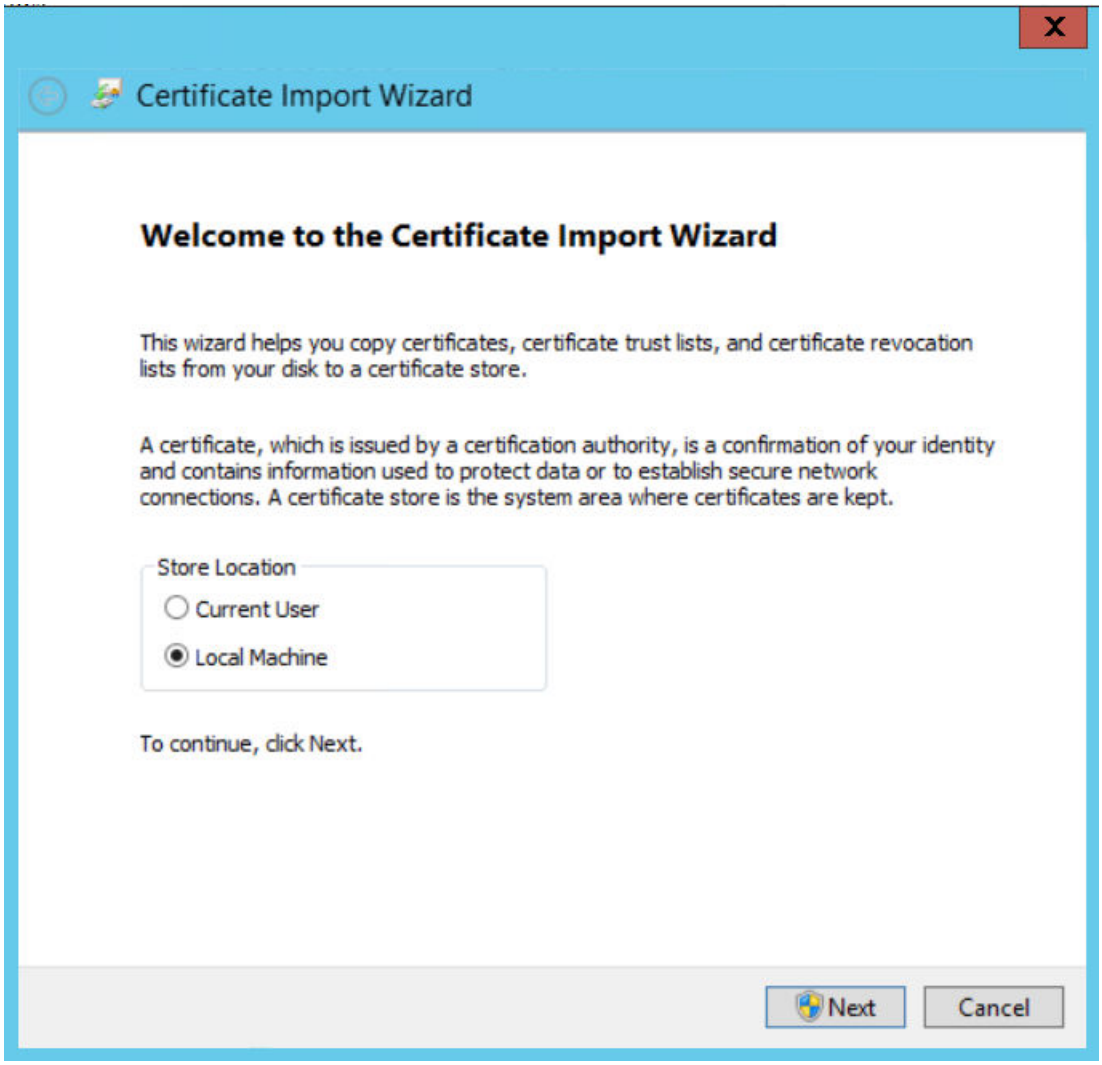


10. Select **Apply**, and then select **OK**.

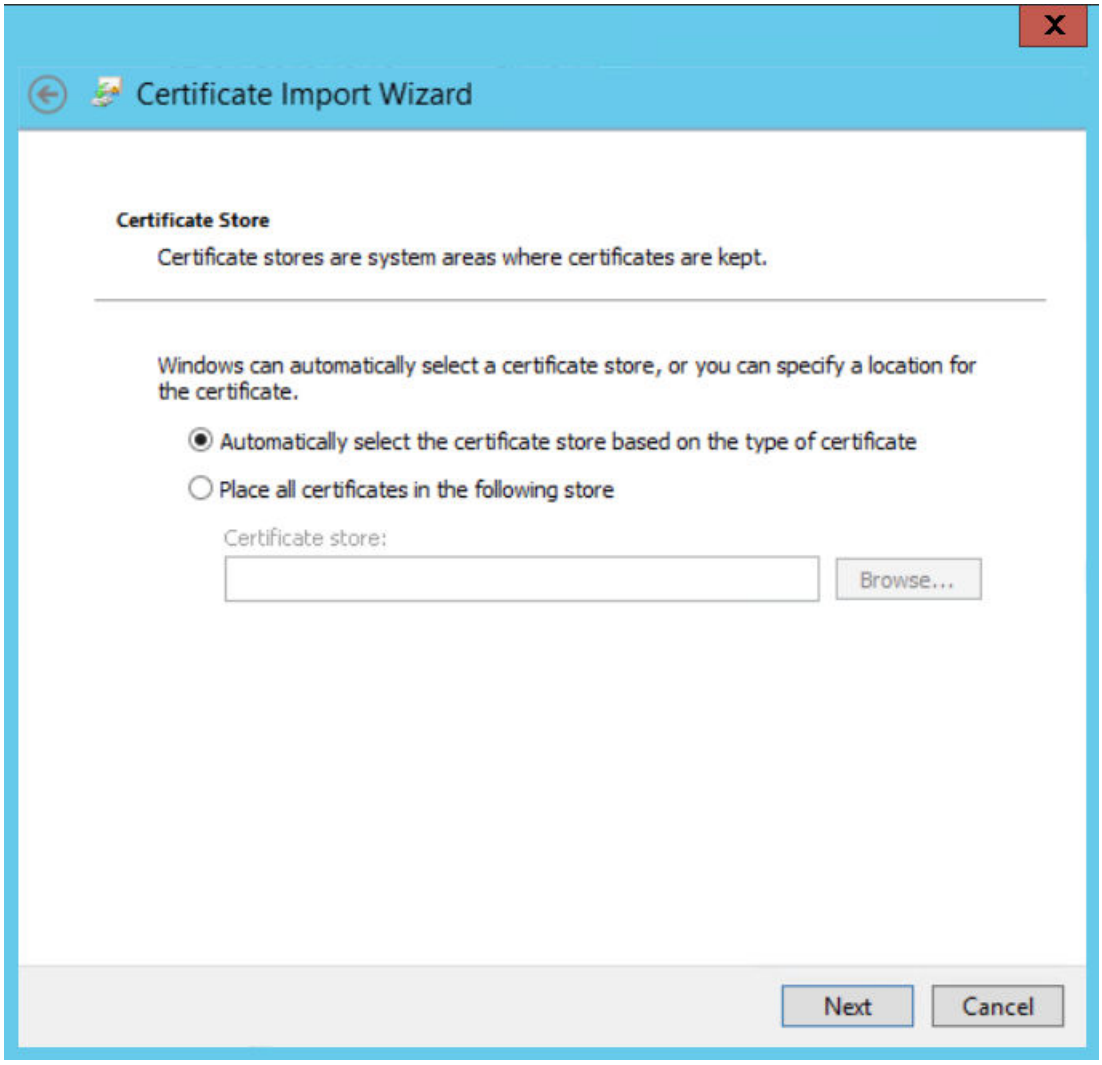
Install the Token Signing idp.cer Certificate on the Application Server

Procedure

1. Access the Active Directory.
2. Export the token signing certificate and save the certificate.
3. Select **Finish**.
4. Copy the certificate to the api folder of the application server.
5. Right-click the file, and then select **Install Certificate**.
   The **Certificate Import wizard** appears.



6. Select **Local Machine**, and then select **Next**.



7. Select **Automatically select the certificate store based on the type of certificate.**
8. Select **Next**, and then select **Finish**.

Configure GE Digital APM Server

Configure GE Digital APM Server

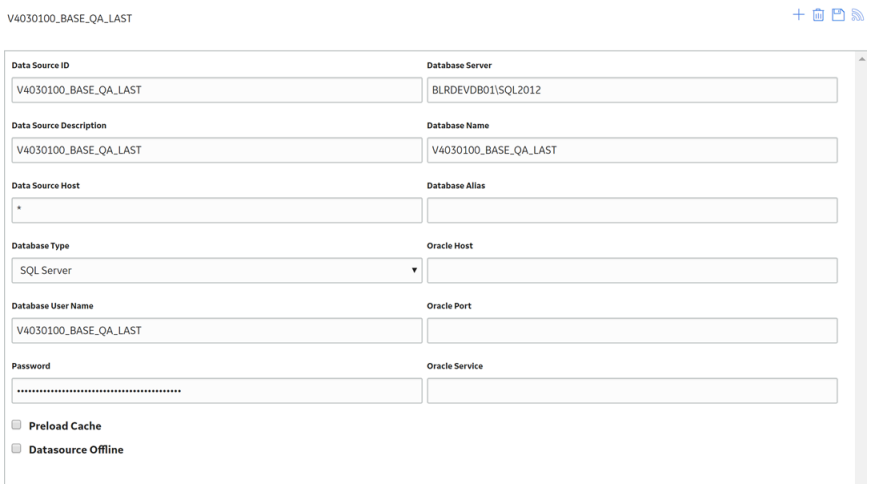
Before You Begin

- Ensure that the GE Digital APM Server is installed and the server is configured to use SSL.
- Ensure that you can access the GE Digital APM application in a web browser using HTTPS protocol.
- Ensure that the GE Digital data source is configured and you can log in with administrative privileges.

Procedure

1. Using a web browser, log in to GE Digital APM as an Administrator.
2. In the module navigation menu, select **Admin**, then select **Operations Manager**, and then select **Data Sources**.

The **Data Sources** page appears.



3. In the **Data Source Host** box, enter the name of the GE Digital APM server, and then select **Save**.
4. Enable LDAP Integration, configure Domain Record, and then schedule and run LDAP synchronization.

   Note: For more information on how to enable LDAP Integration, configure a Domain Record, and schedule LDAP synchronization, refer to the Lightweight Directory Access Protocol documentation.

   The users from Active Directory are now imported to GE Digital APM and are assigned the appropriate Security Roles and Groups.
5. Stop IIS, the Redis service, and all Meridium Windows services.
6. Navigate to `C:\Program Files\Meridium\ApplicationServer\api`
7. Using a json or text editor, access the file `saml.json`.
8. Add a new configuration to `<PartnerIdentityProviderConfigurations>` json array or update the existing configuration by setting the following attributes:

   - Name: urn:componentspace:Meridium

     Note: The value for the Name element is same as the IDP name.
   - WantSAMLResponseSigned: false
   - WantAssertionSigned: true
   - WantAssertionEncrypted: false
   - UseEmbeddedCertificate: false
   - SingleSignOnServiceUrl: {https version of Federation Service identifier} + “/adfs/ls”. For example, https://myadfsserver/adfs/ls

     Note:

     For SHA-256, you must add the following two attributes to the `saml.json` file:

     - DigestMethod="http://www.w3.org/2001/04/xmlenc#sha256"
     - SignatureMethod="http://www.w3.org/2001/04/xmldsig-more#rsa-sha256"

   The following example shows the configured `saml.json` file:

```
{
    "SAML": {
        "$schema": "https://www.componentspace.com/schemas/saml-
config-schema-v1.0.json",
        "Configurations": [
            {
                "LocalServiceProviderConfiguration": {
```

```
                    "Name": "urn:componentspace:Meridium",
                    "AssertionConsumerServiceUrl": "~/core/security/
ssologinauth",
                    "LocalCertificates": [
                        {
                            "FileName": "sp.pfx",
                            "Password": "password"
                        }
                    ]
                },
                "PartnerIdentityProviderConfigurations": [
                    {
                        "Name": "http://fs.xyz.com/adfs/services/
trust",
                        "Description": "ADFS",
                        "SignAuthnRequest": true,
                        "WantSamlResponseSigned": false,
                        "UseEmbeddedCertificate": true,
                        "WantAssertionEncrypted": false,
                        "WantAssertionSigned": true,
                        "SingleSignOnServiceUrl": "https://
fs.xyz.com/adfs/ls/idpinitiatedsignon.aspx",
                        "PartnerCertificates": [
                            {
                                "FileName": "idp.cer"
                            }
                        ]
                    }
                ]
            }
        ]
    }
}
```

9. Save and close the file `saml.json`.
10. Start IIS, the Redis service, and all Meridium Windows Services.

Chapter 3

Enable SSO

Topics:

Enable SSO On Site Authentication Using Active Directory

Procedure

1. Run the LDAP Synchronization Process Manually or Schedule a LDAP Synchronization Process .
2. Log out of GE Digital APM.
3. Log in to GE Digital APM with the Windows user name and password.
   You are logged in.

Results

- SSO On-Site Authentication is enabled.

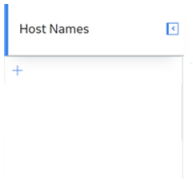
Enable SSO Off-Site Authentication Using GE Digital APM Server Setup

About This Task

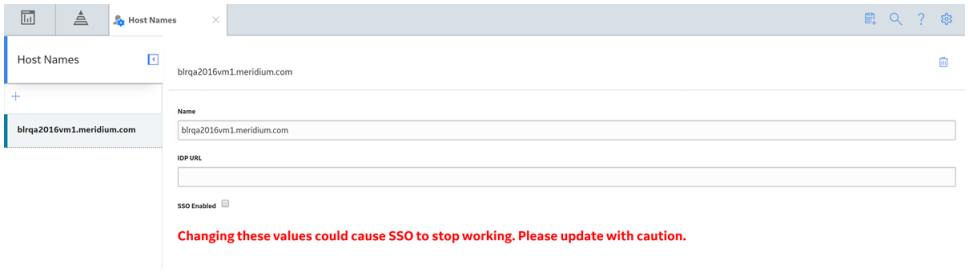
Note: The settings shown below may vary depending on your system.

Procedure

1. In the module navigation menu, select **Admin** > **Operations Manager** > **Host Names**.
   The **Host Names** page appears.



2. In the left pane, select  .
   The workspace for a new host name appears, displaying default values.



3. In the **Name** box, replace the default text with the GE Digital APM Server's fully qualified hostname.
4. In the **IDP URL** box, replace the default text with the SAML Issuer ID that is specified on the IDP.
5. Select the **SSO Enabled** check box.
6. Select  .
   The host name is saved.
7. Log out of GE Digital APM.

8. On the GE Digital APM Server, in the GE Digital APM program files, navigate to the folder `..\ApplicationServer\api`.

   Note: If you installed the software in the default location, the folder location will be `C:\Program Files\Meridium\ApplicationServer\api`.
9. Replace the text `urn:componentspace:MvcExampleIdentityProvider` with the SAML Issuer ID that is specified on the IDP.

   Note: The settings in saml.json must be configured to match the environment to which you are connecting. For example, the URL listed in `SingleSignOnServiceUrl` should point to the URL where you want to authorize the users.
10. Modify the assertion and response signing settings to match the signing settings that are specified on the IDP, and then save and close the file.
11. In your system's IDP, specify **urn:componentspace:Meridium** as the Audience Restriction.

    Note: If the IDP is doing assertion and/or response signing, then the IDP signature algorithm must be **SHA1**.
12. Place the `idp.cer` file in the following location `C:\Program Files\Meridium\ApplicationServer\api`.

    Note: The `idp.cer` file should be obtained from the team responsible for setting up the SAML Identity Provider (IDP).
13. Reset IIS.
    IIS is reset.
14. Access GE Digital APM via a web browser.
    The user is logged in, and SSO off-site authentication is enabled.