How to Create a SAML Endpoint in Microsoft Azure and Client-to-Site SAML Configuration

https://campus.barracuda.com/doc/98210143/

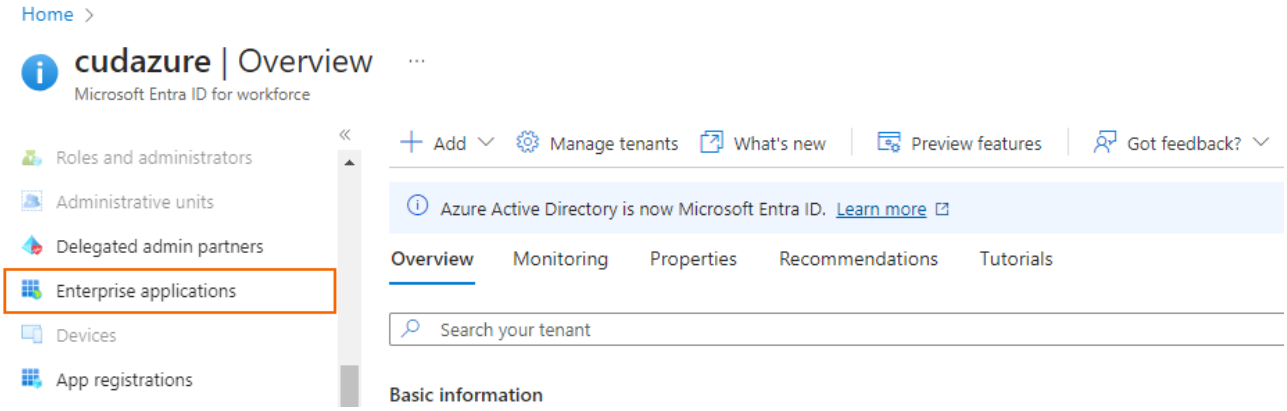
Follow the guide below to create a SAML endpoint in Microsoft Azure and to configure a Barracuda CloudGen Firewall to use SAML authentication for the client-to-site VPN service.

Before You Begin

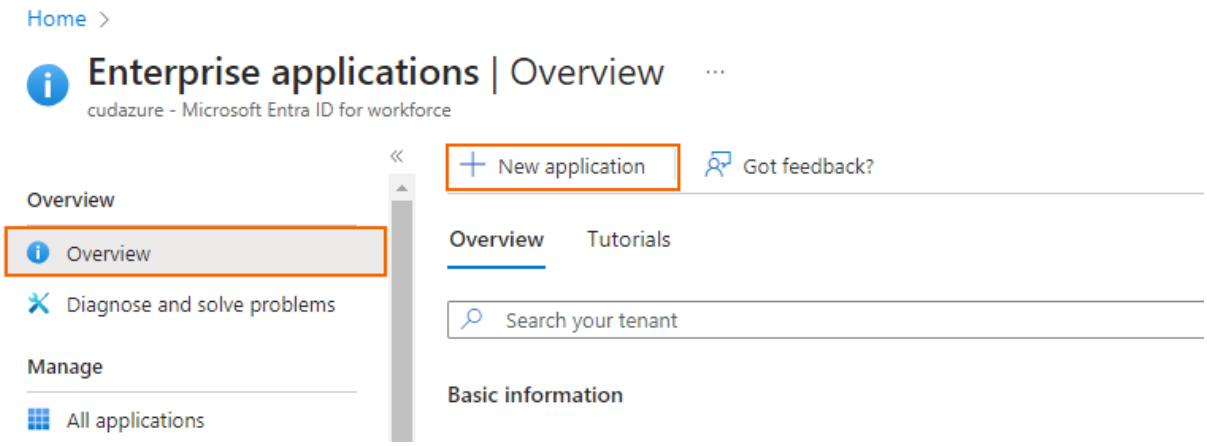
- Create and configure a VPN service. For more information, see VPN.
- You must have an existing user group in Microsoft Entra ID. For more information, see https://learn.microsoft.com/en-us/entra/fundamentals/how-to-manage-groups.
- An Advanced Remote Access subscription is required. For more information on subscriptions, see Base Licensing and Subscriptions.

Step 1. Create a SAML Endpoint in Microsoft Azure

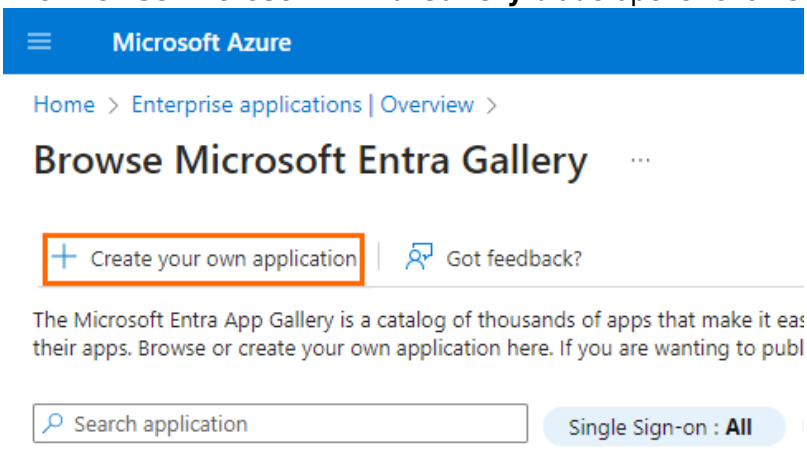
1. Log into the Azure portal: https://portal.azure.com
2. In the left menu, click **All services** and search for *Microsoft Entra ID*.
3. Click **Microsoft Entra ID**.
4. In the left menu of the **Microsoft Entra ID** blade, click **Enterprise applications**.



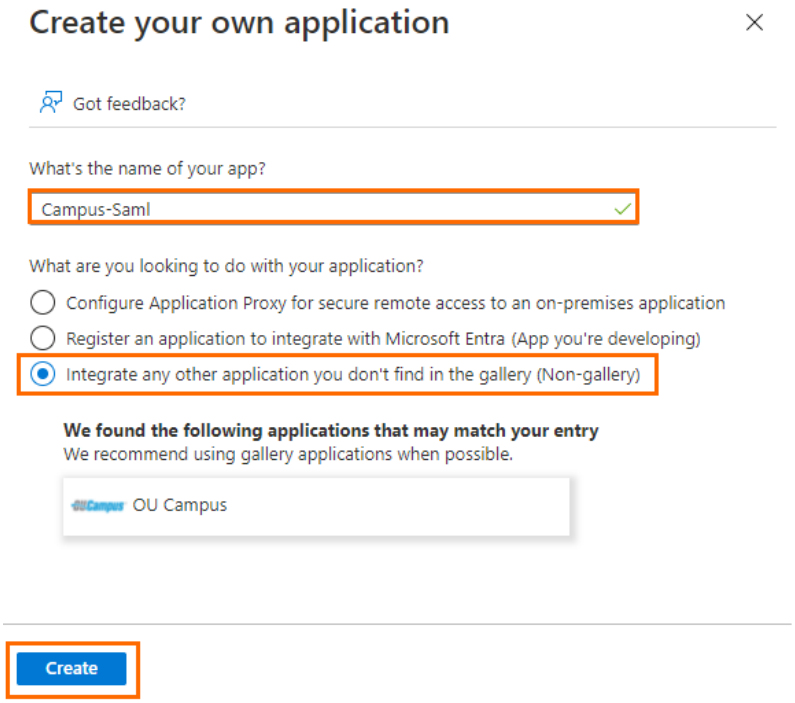
5. The **Enterprise applications** blade opens. Click **Overview**.
6. In the **Overview** blade, click **New application**.



7. The **Browse Microsoft Entra Gallery** blade opens. Click **Create your own application**.



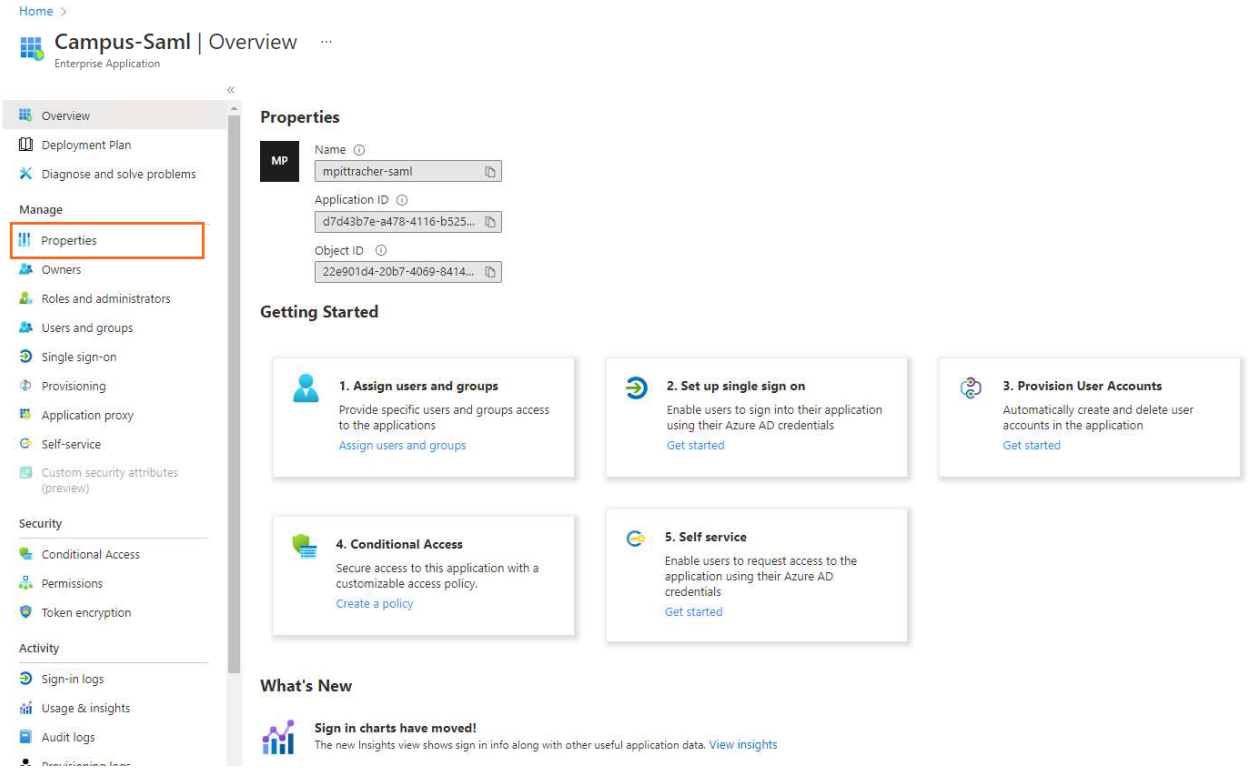
8. Enter the name of your application, and select **Integrate any other application you don't find in the gallery (Non-gallery)**.



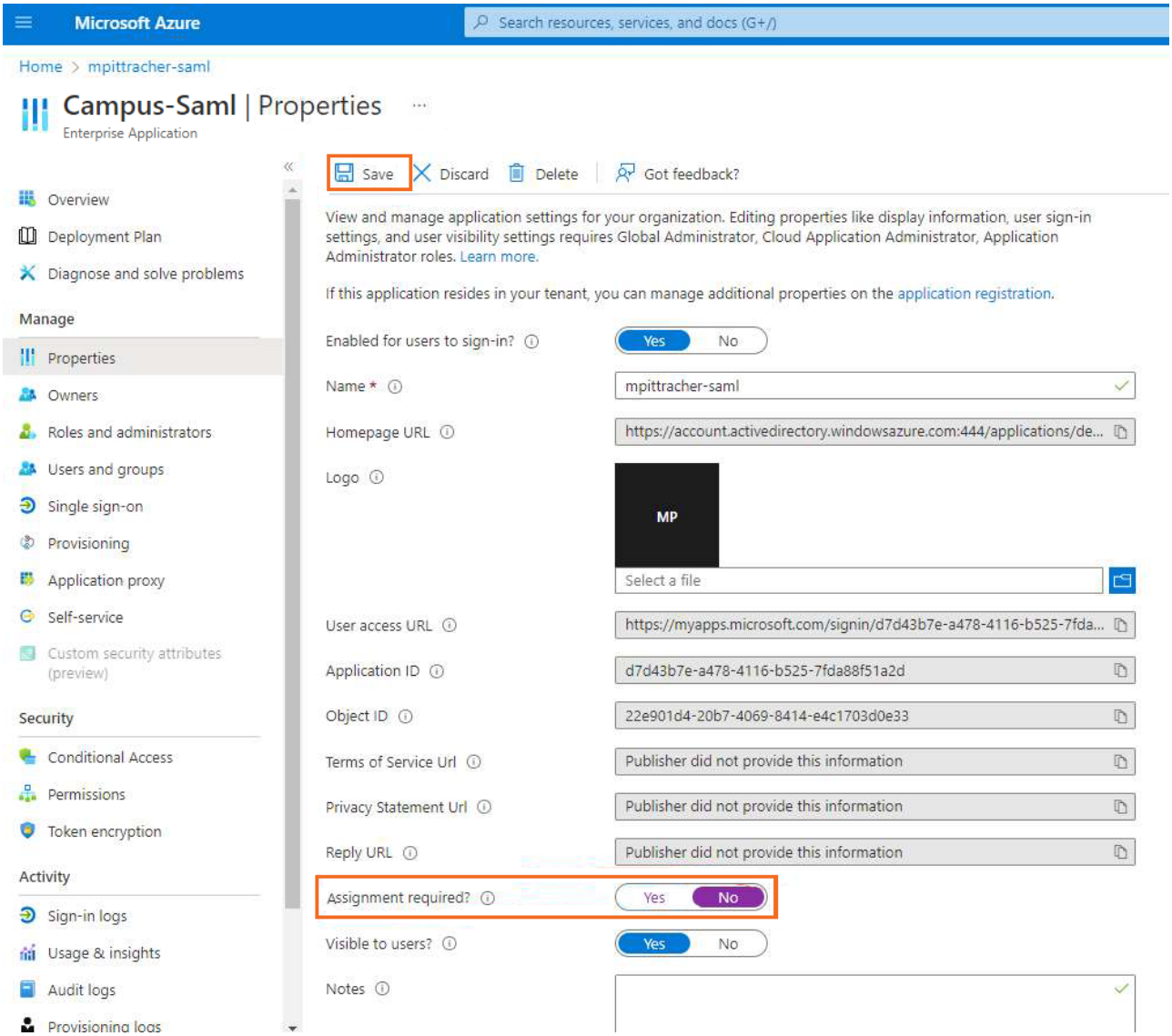
9. Click **Create**.

After the application is successfully deployed, it automatically opens the **Overview** blade of the created application.

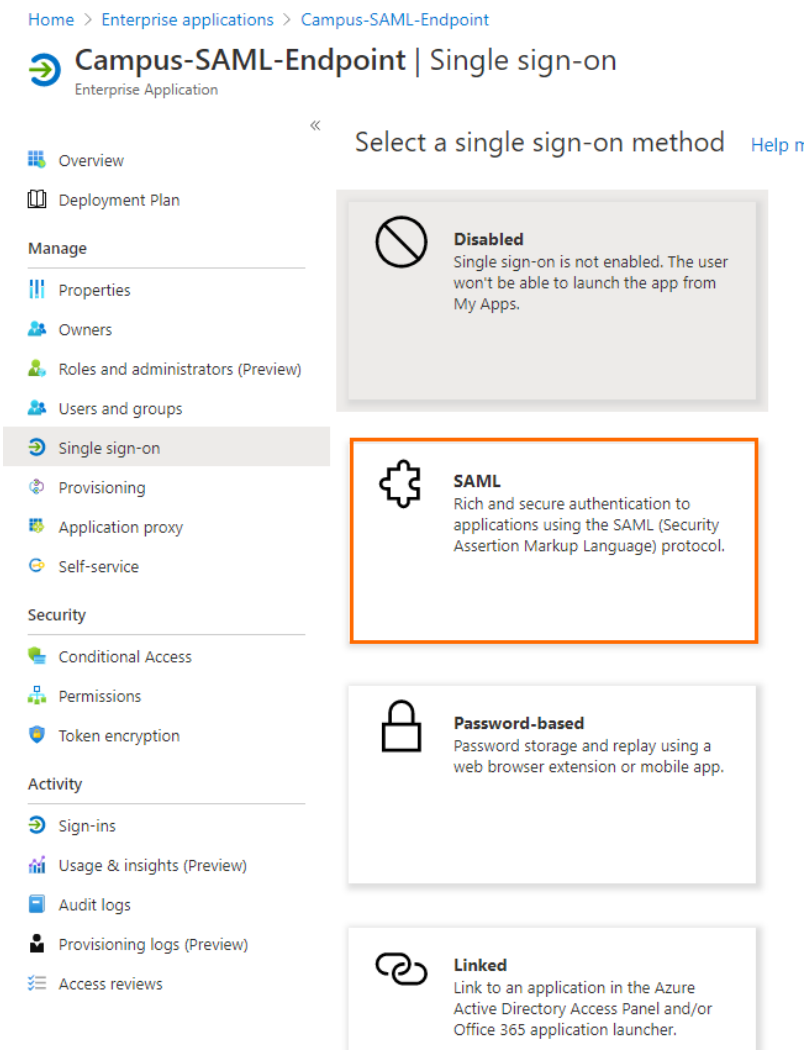
10. In the left menu, select **Properties**.



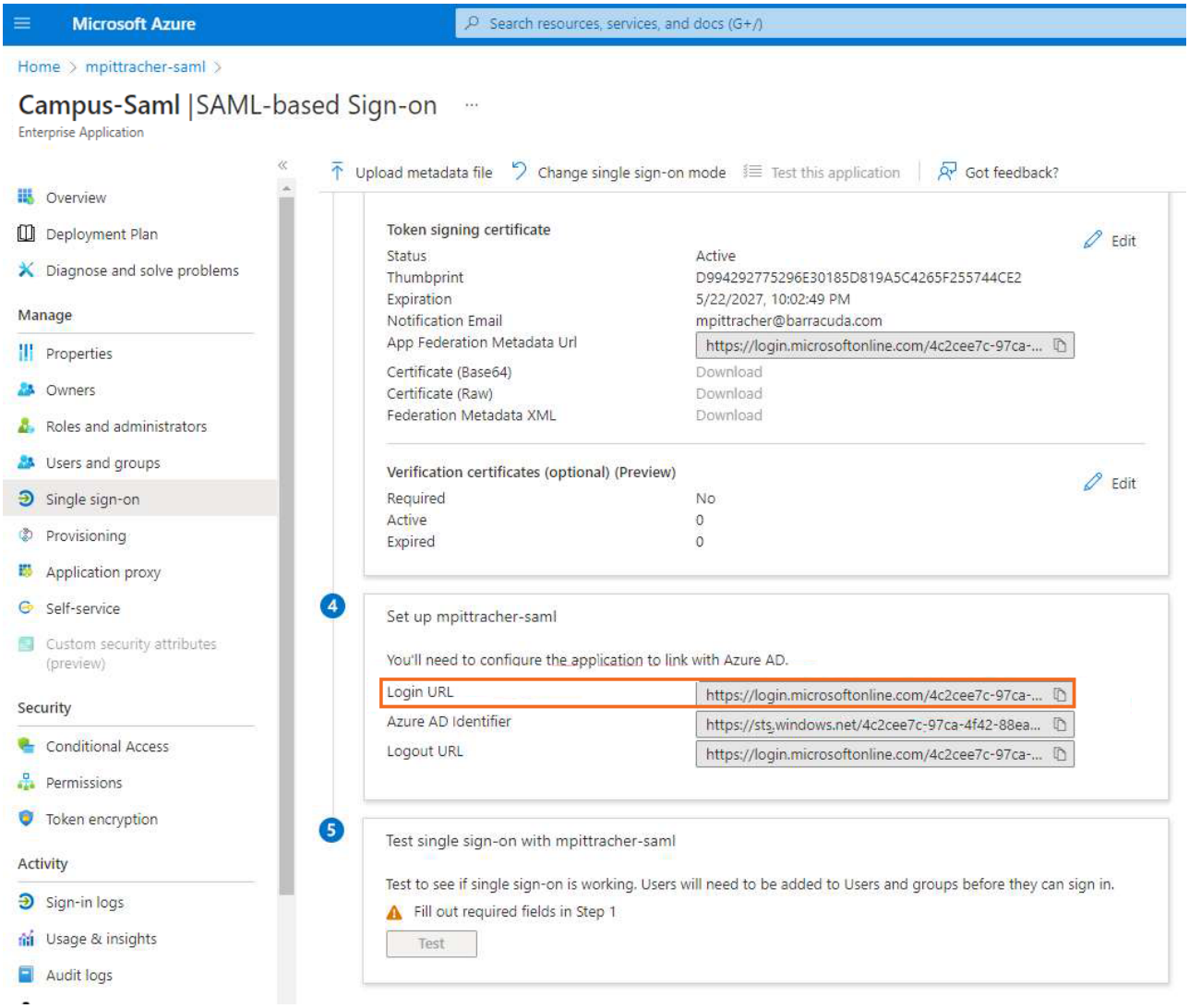
11. In the **Properties** blade, disable **Assignment required** and click **Save**.



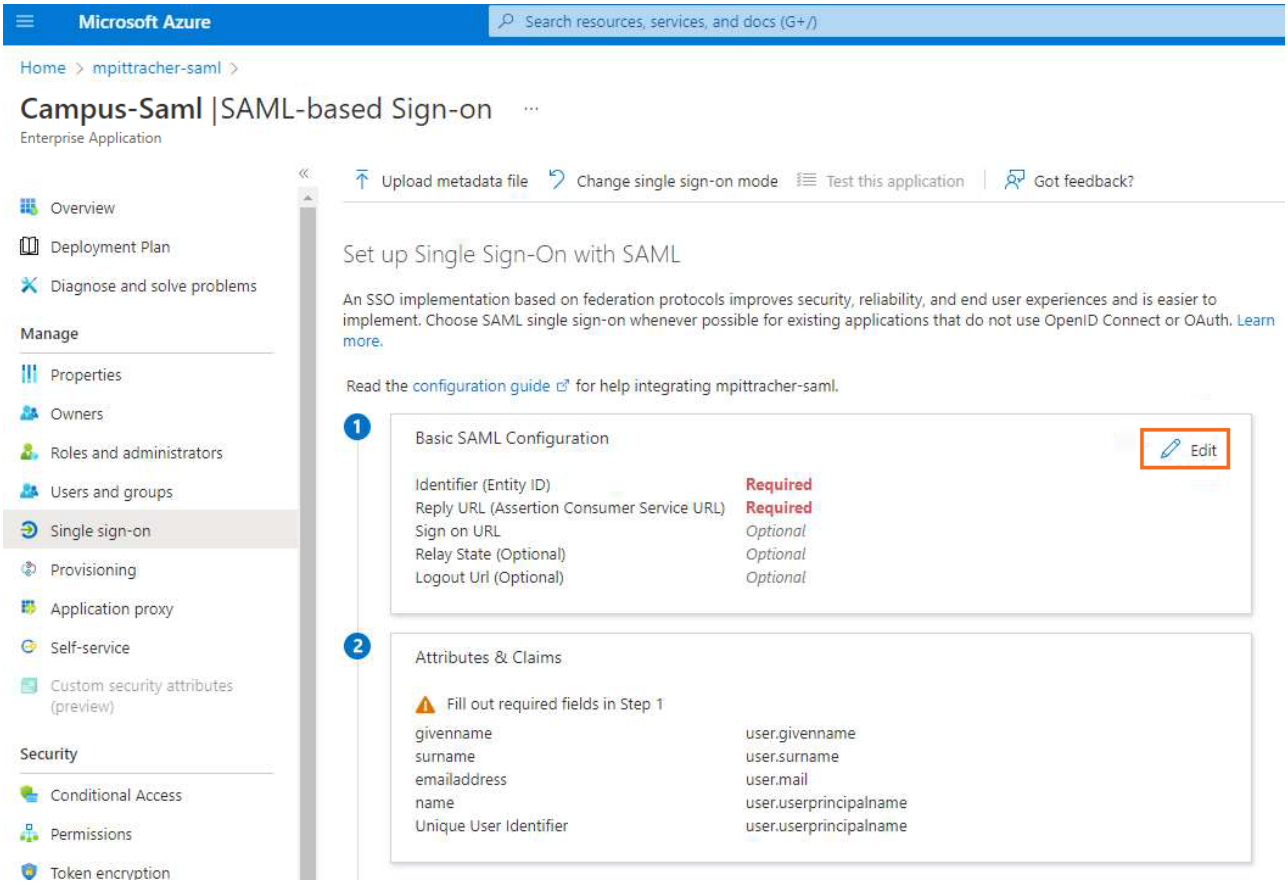
12. In the left menu, click **Single sign-on**.
13. The **Single sign-on** blade opens. Select **SAML**.



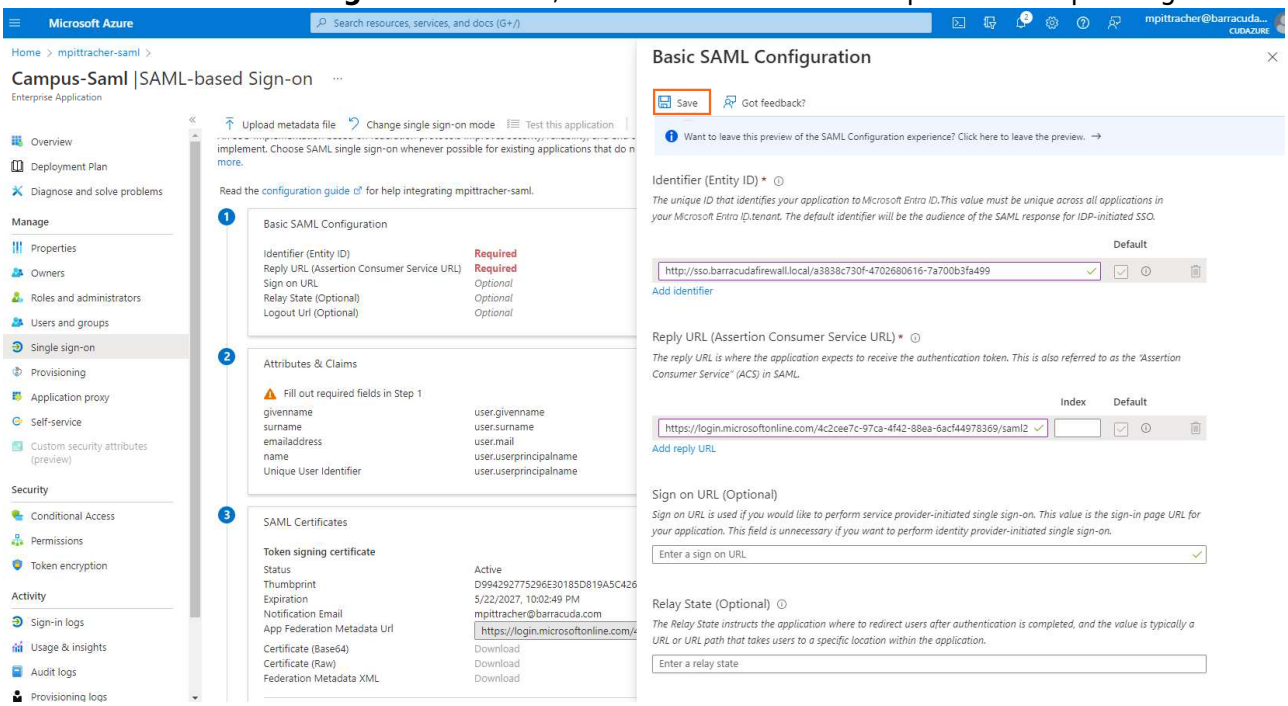
14. The **SAML-based Sign-on** blade opens. Copy the **Login URL**.



15. Click **Edit** next to **Basic SAML Configuration**.

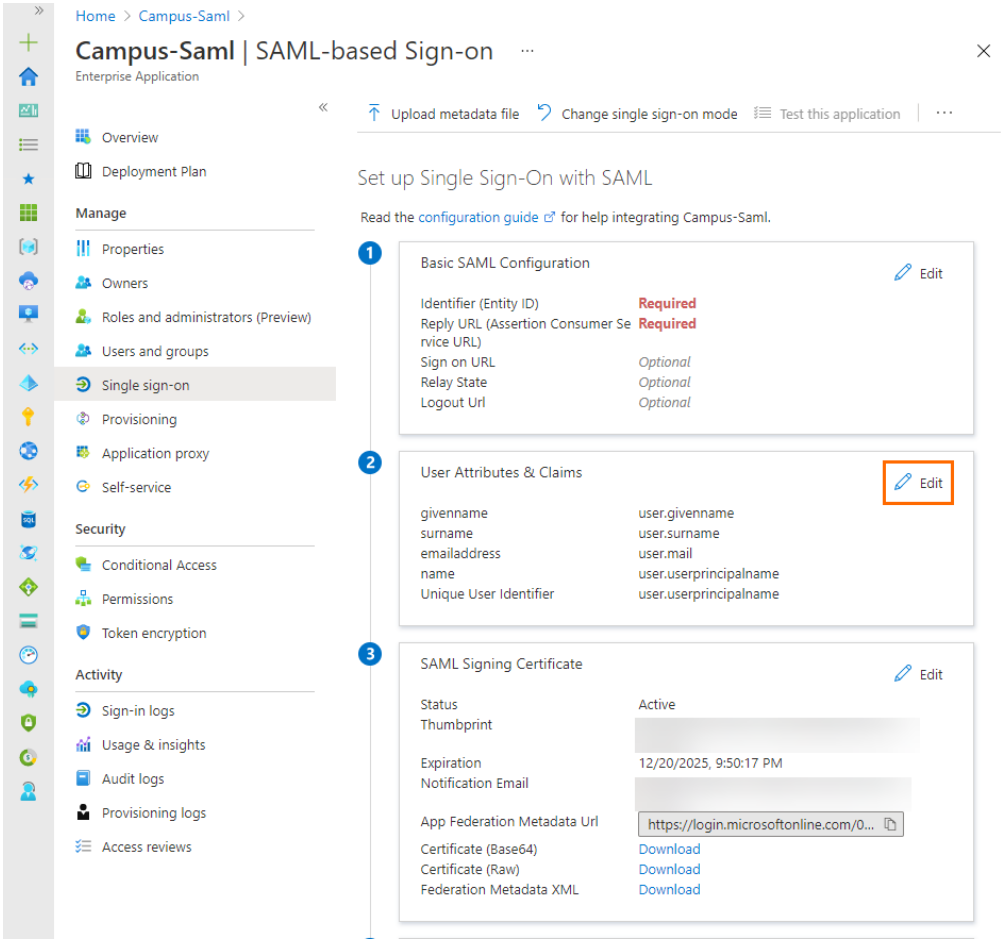


16. Click **Add reply URL** and paste the copied URL.
17. Open the SAML configuration on your Barracuda CloudGen Firewall, and copy the **Service Provider Entity ID**.
18. In the **Basic SAML Configuration** blade, click **Add identifier** and paste the copied login URL.

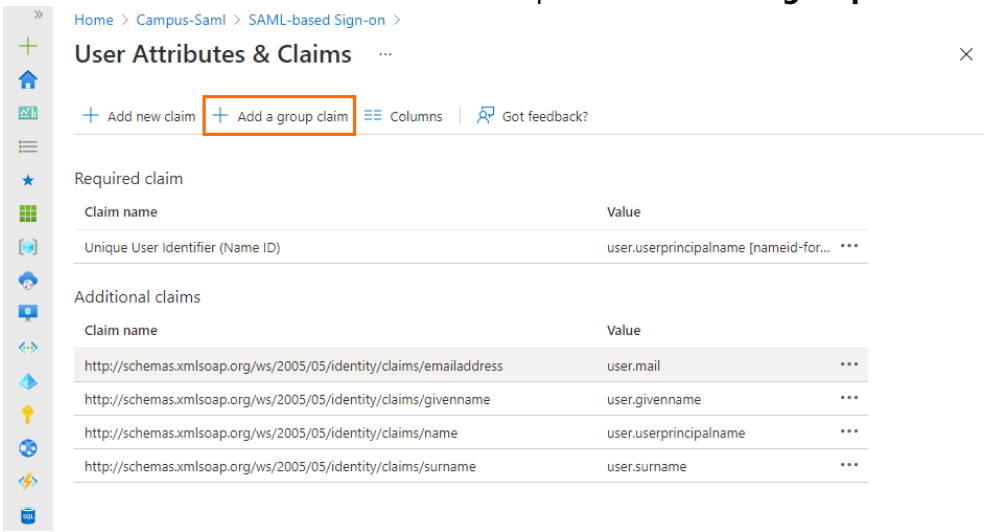


19. Click **Save**.

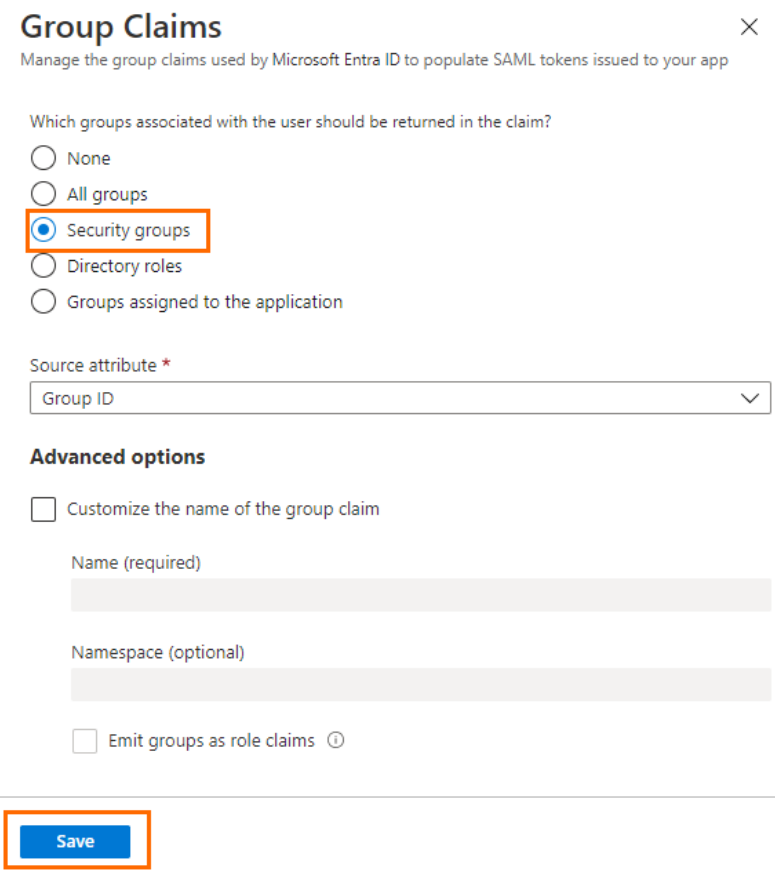
20. Click **X** to close the **Basic SAML Configuration** blade.
21. In the **User Attribute & Claims** section, click **Edit**.



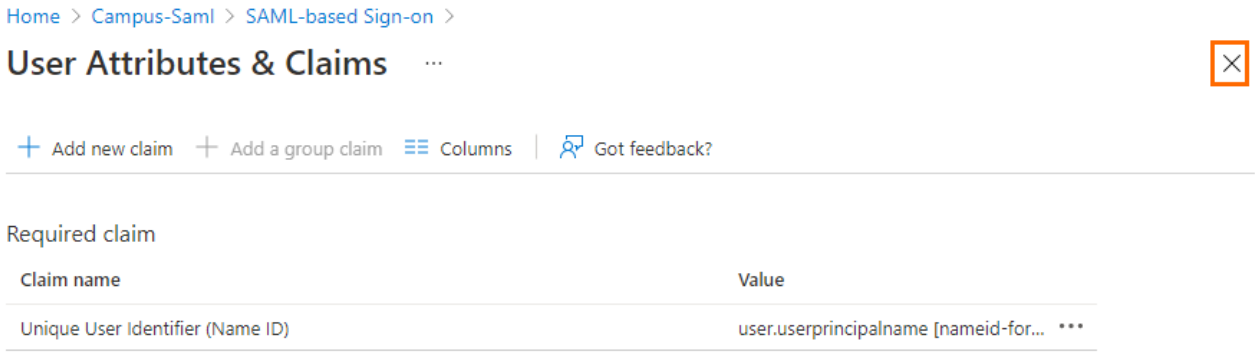
22. The **User Attributes & Claims** blade opens. Click **Add a group claim**.



23. The **Group Claims** blade opens. Select **Security groups** and click **Save**.

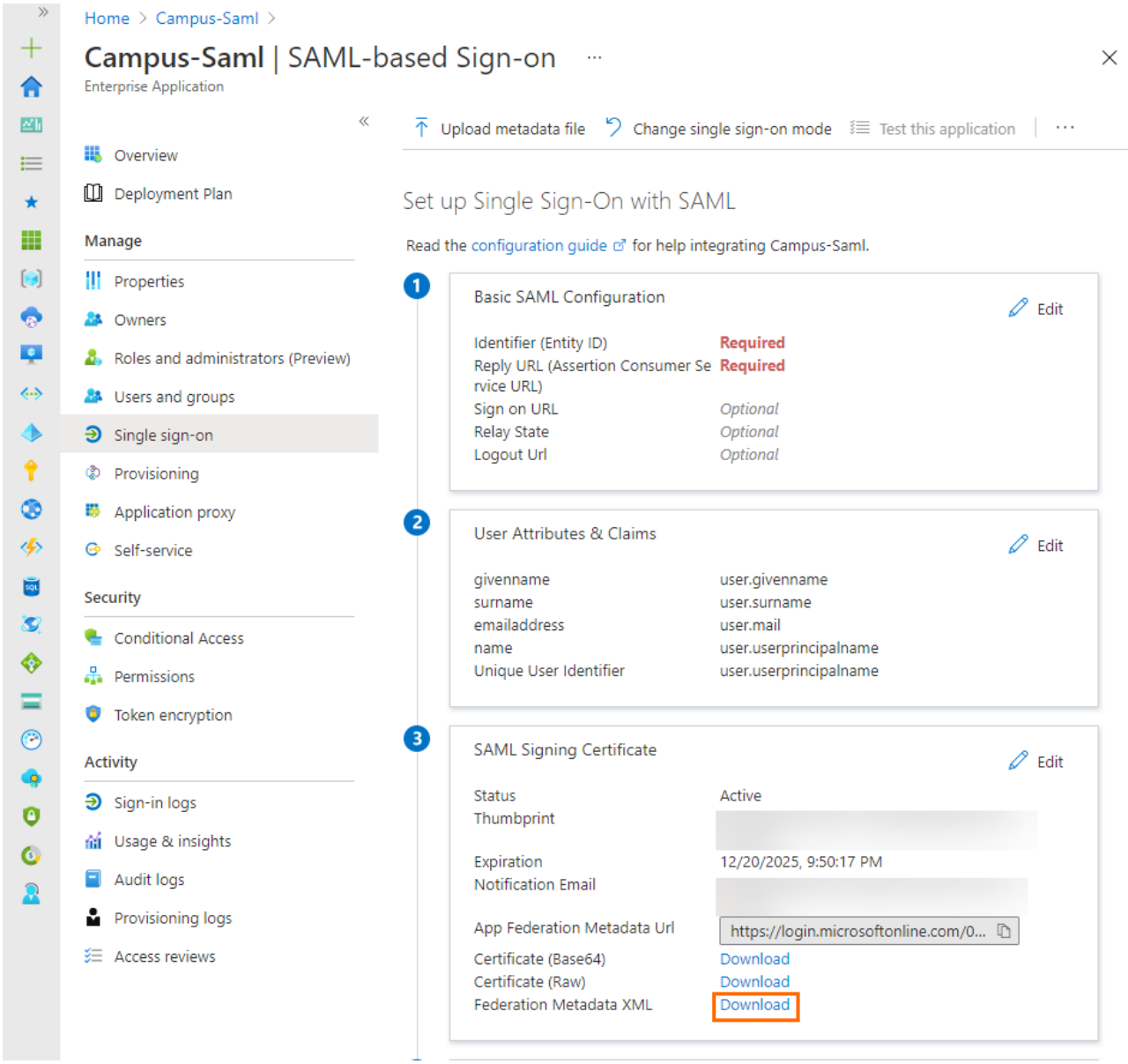


24. Click **X** to close the **User Attributes & Claims** blade.



If the number of groups a user is in exceeds a certain limit (150 for SAML, 200 for JWT) then an overage claim will be added, the claim sources pointing at the graph endpoint containing the list of groups for the user. (For detailed information, see Claims in SAML tokens in the Microsoft documentation.) The firewall does not use this link to extract user groups and therefore generates a "DENY: Group did not match" security entry in the VPN logs in this case, as no group policy containing a group filter will match. This can be avoided by creating a group filter, preventing Microsoft from sending a link pointing to the groups. For more information, see Configure group claims for applications by using Microsoft Entra ID.

25. In the **SAML-based Sign-on** blade, click **Download** to download the *Federation Metadata XML*.

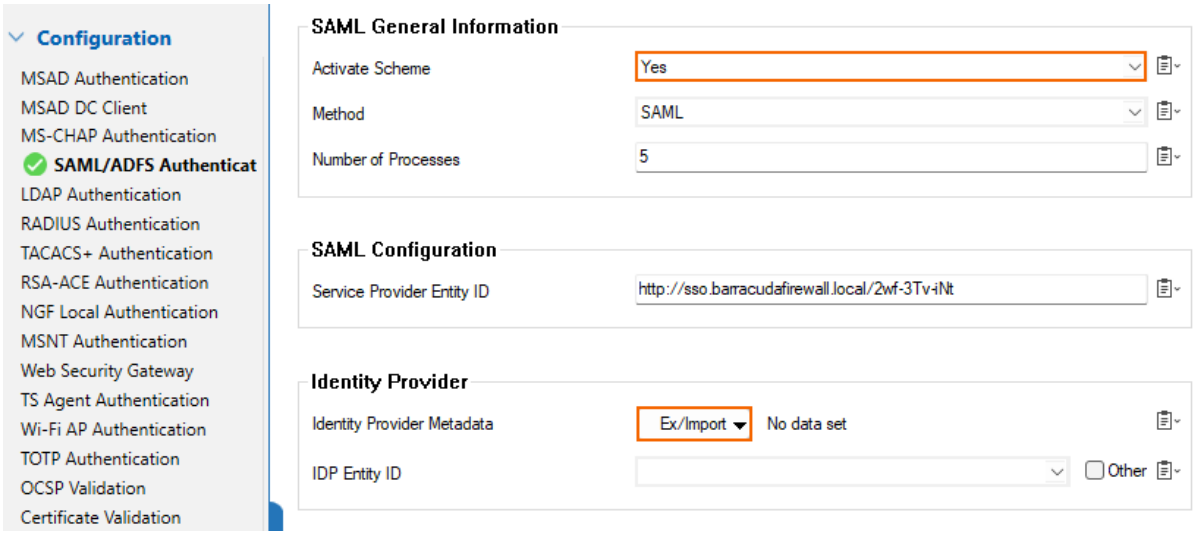


Note that some browsers might block the *.xml file.

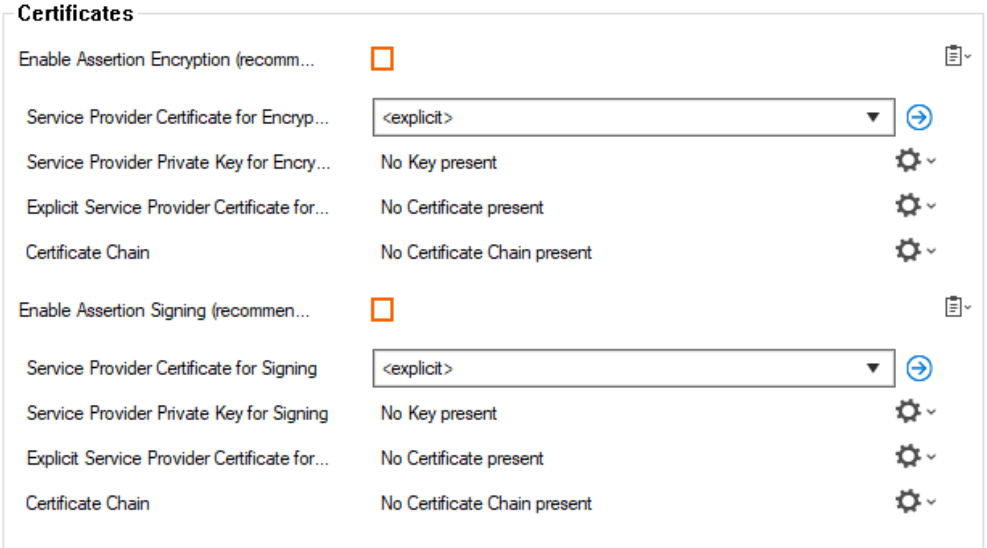
26. Save the file to your local machine.

Step 2. Configure the Barracuda CloudGen Firewall to Use SAML Authentication

1. Connect to your Barracuda CloudGen Firewall and log in.
2. Go to **CONFIGURATION > Configuration Tree > Infrastructure Services > Authentication Service**.
3. In the left menu, click **SAML/ADFS Authentication**.
4. Click **Lock**.
5. In the **SAML General Information** section, set **Activate Scheme** to **yes**.
6. In the **Identity Provider** section, click **Ex/Import**. Then, click **Import from File...** and select the file retrieved in Step 1.

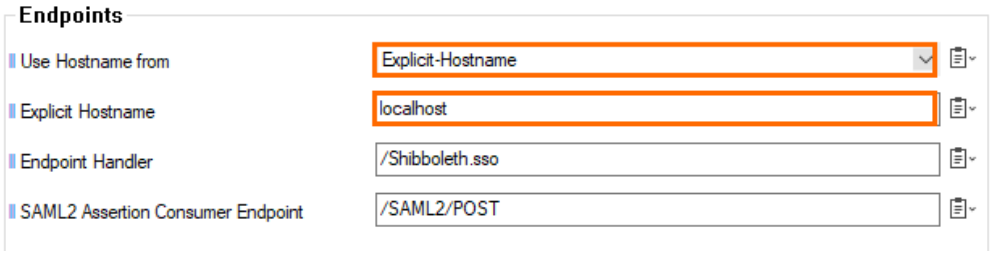


7. Click **Send Changes**.
8. In the **Attributes** section, specify the **Assertion Name ID** and select **um:oasis:names:tc:SAML:1.1:nameid-format:emailAddress** from the drop-down menu.
9. Click **Send Changes**.
10. Specify values for the following:
    - **User Attribute** – Select **Name ID (um:oasis:names:tc:SAML:1.1:nameid-format:emailAddress)** from the drop-down menu.
    - **Group Attribute** – Select **Attribute(Groups)** from the drop-down menu.
11. In the **Certificates** section, specify values for the following:
    - **Enable Assertion Encryption** – Clear the check box.
    - **Enable Assertion Signing** – Clear the check box.

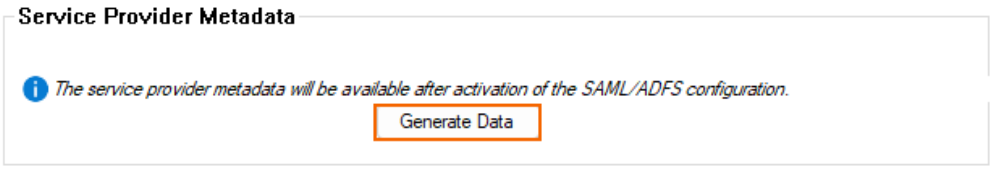


12. In the left menu of the **SAML/ADFS Authentication** window, click **Configuration Mode** and select **Switch to Advanced**.
13. In the **Endpoints** section, specify values for the following if SAML/ADFS is not used for Firewall Authentication. Otherwise, you can skip this step.
    - **Use Hostname from** – Select **Explicit-Hostname** from the drop-down menu.

- **Explicit Hostname** – Enter `localhost`.



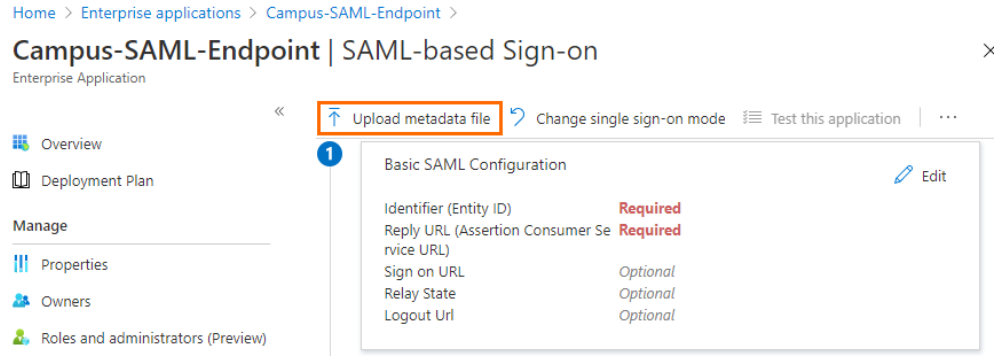
14. Click **Send Changes** and **Activate**.
15. On the firewall, go to **CONTROL > Services > Box Services**.
16. Restart the authentication daemon (phibs).
    For High Availability (HA) setups, you must restart the service on both units.
17. Go back to **CONFIGURATION > Configuration Tree > Infrastructure Services > Authentication Service**.
18. In the left menu, click **SAML/ADFS Authentication**.
19. Click **Lock**.
20. In the **Service Provider Metadata** section, export the metadata by clicking **Generate Data**.



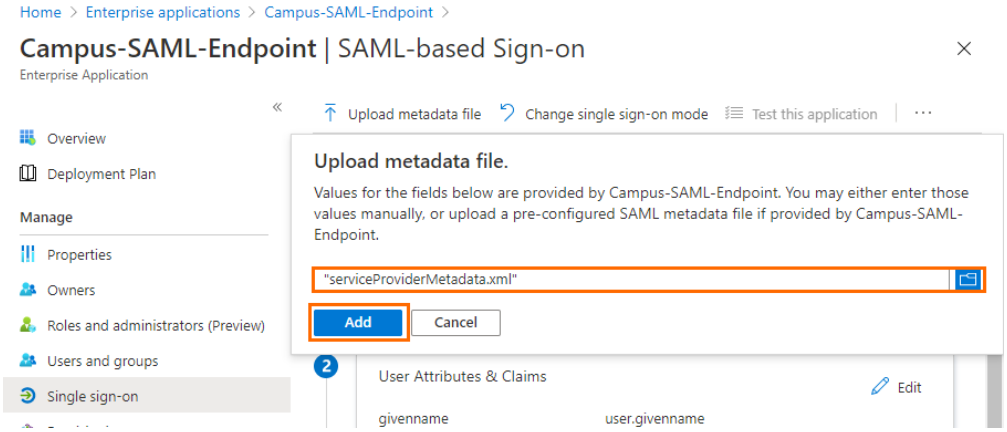
21. Copy the information and save it to your local machine in an .xml file. This file has to be updloaded in Azure at a later stage.
    Specify the hostname only if SAML/ADFS is not used for Firewall Authentication.
22. Click **Send Changes** and **Activate**.

Step 3. Finalize the SAML Configuration in Microsoft Azure

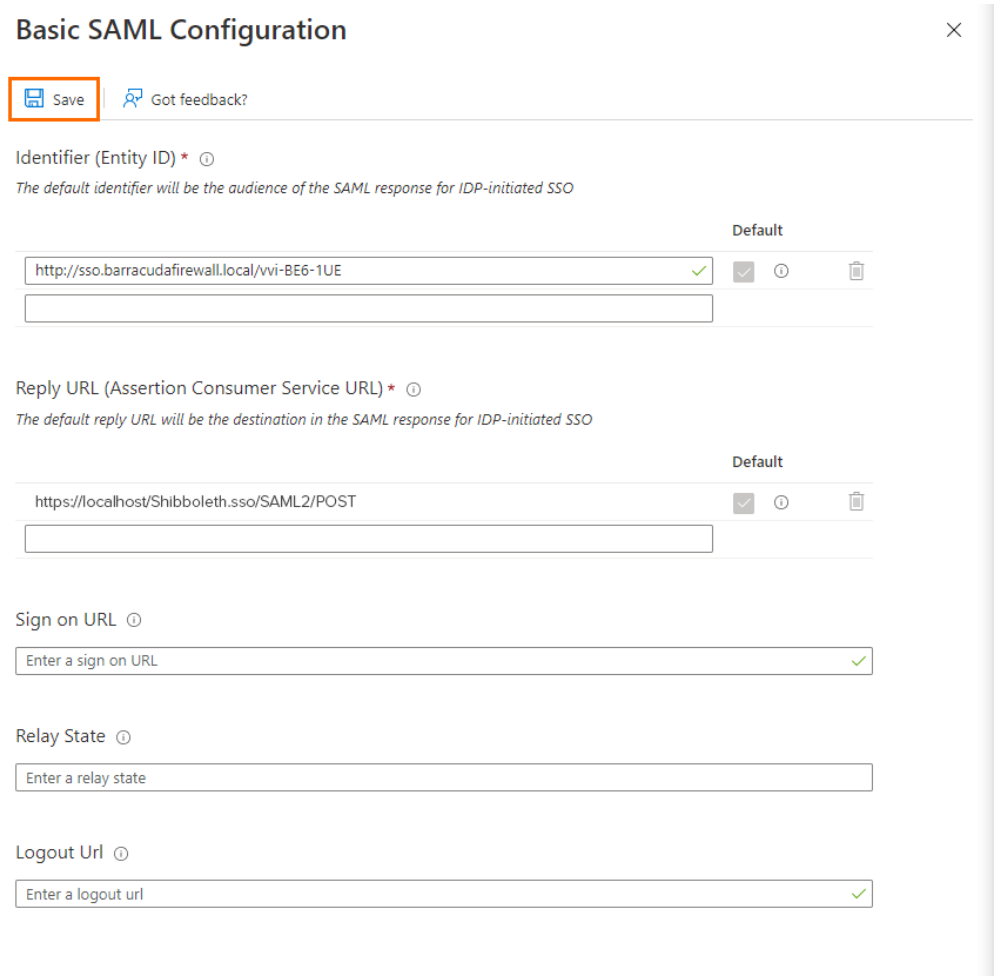
1. Log into the Azure portal: https://portal.azure.com
2. In the left menu, click **All services** and search for **Microsoft Entra ID**.
3. Click **Microsoft Entra ID**. The **Microsoft Entra ID** blade opens.
4. In the left menu, select **Enterprise applications**.
5. In the **Enterprise applications** blade, click **All applications**.
6. Click on the application you created in Step 1, e.g., *Campus-SAML-Endpoint*.
7. In the left menu, click **Single sign-on**.
8. Select **SAML**. The **Single sign-on** blade opens.
9. Click **Upload metadata file**.



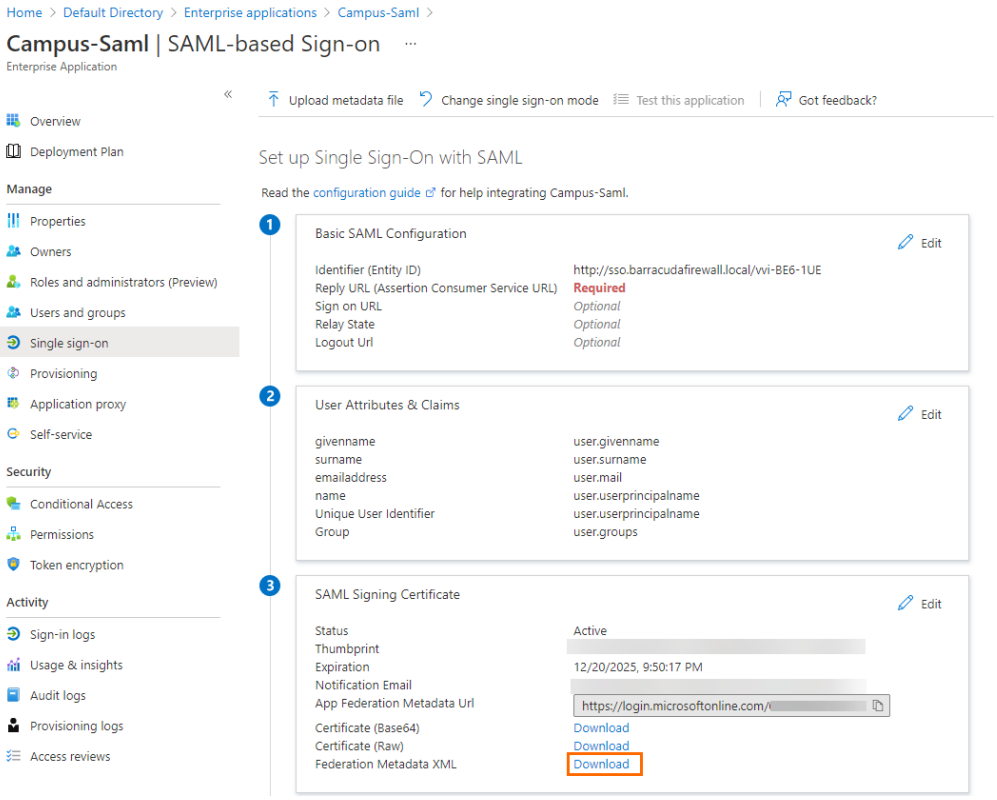
10. Select the file downloaded in Step 2 and click **Add**.



11. Click **Save**.

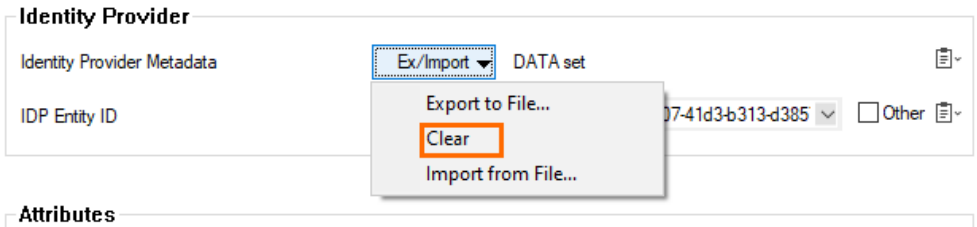


12. Close the **Basic SAML Configuration** blade.
    You are now back in the **Single sign-on** blade.
13. Click **Download** to download the *Federation Metadata XML file* and save it to your local machine.



Step 4. Finalize the Barracuda CloudGen Firewall SAML Configuration

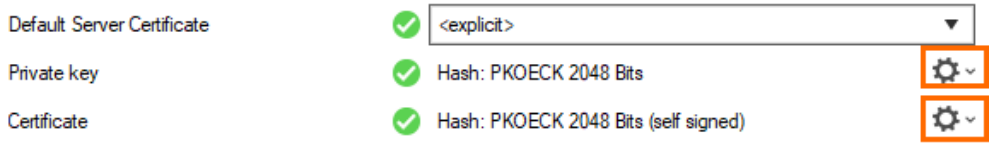
1. Connect to your Barracuda CloudGen Firewall and log in.
2. Go to **CONFIGURATION > Configuration Tree > Infrastructure Services > Authentication Service**.
3. In the left menu, click **SAML/ADFS Authentication**.
4. Click **Lock**.
5. In the **Identity Provider** section, click **Ex/Import.**
6. From the drop-down menu, select **Clear**.



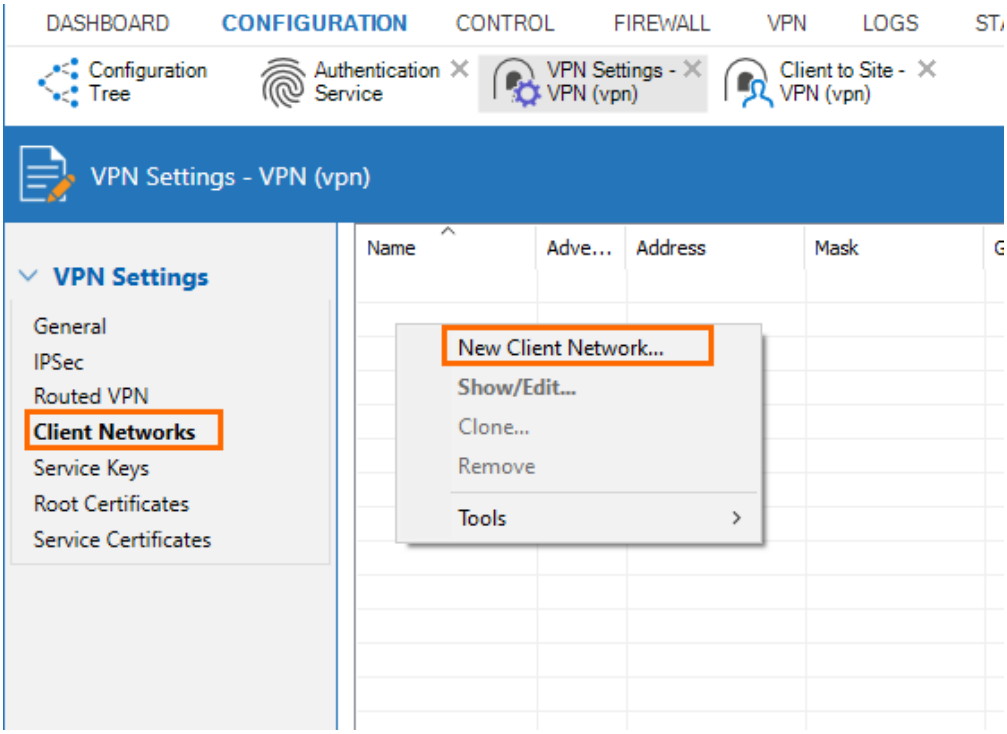
7. In the **Identity Provider** section, click **Ex/Import**.
8. From the drop-down menu, select **Import from File**.
9. Select the file downloaded in Step 3 and import it.
10. Click **Send Changes** and **Activate**.
11. Restart the authentication daemon (phibs) in **CONTROL > Services > Box Services**.
    For High Availability (HA) setups, you must restart the service on both units.

Step 5. VPN Configuration of the Barracuda CloudGen Firewall

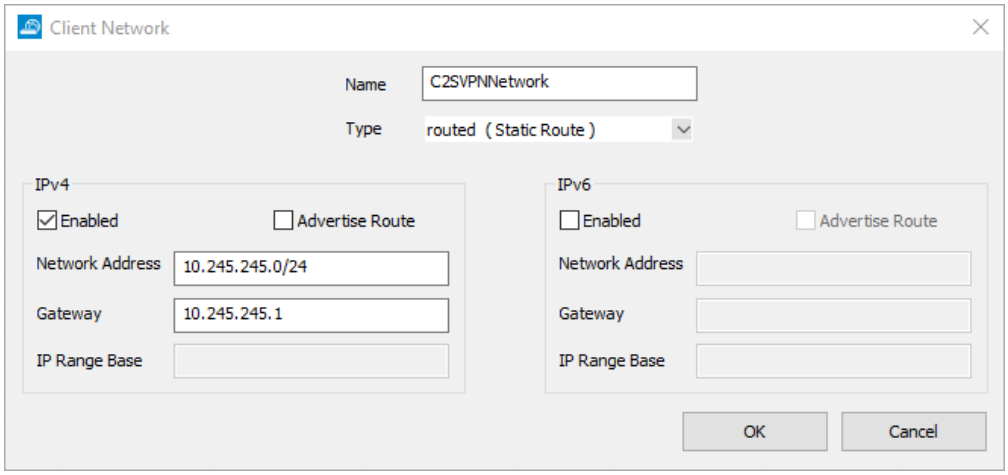
1. Connect to your Barracuda CloudGen firewall and log in.
2. Go to **CONFIGURATION > Configuration Tree > Assigned Services > VPN (VPN-Service) > VPN Settings**.
3. In the left menu, click **General**.
4. Click **Lock**.
5. In the **Service** section, specify values for the following:
   - **Private key** – Click to generate a new private key. Select a key length and click **OK**.
   - **Certificate** – Click to generate a new certificate. Enter a name and click **OK**.



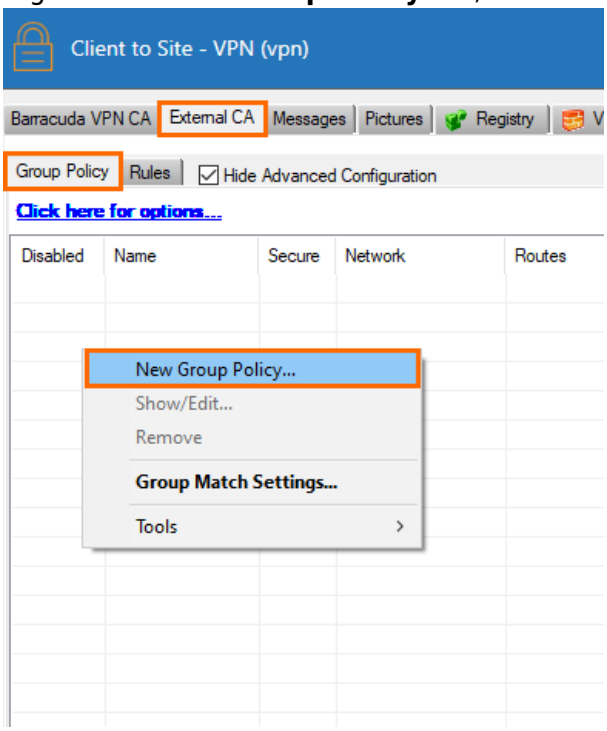
6. Click **Send Changes** and **Activate**.
7. In the left menu, click **Client Networks**.
8. Click **Lock**.
9. In the right menu, right-click in the table and select **New Client Network** from the drop-down menu.



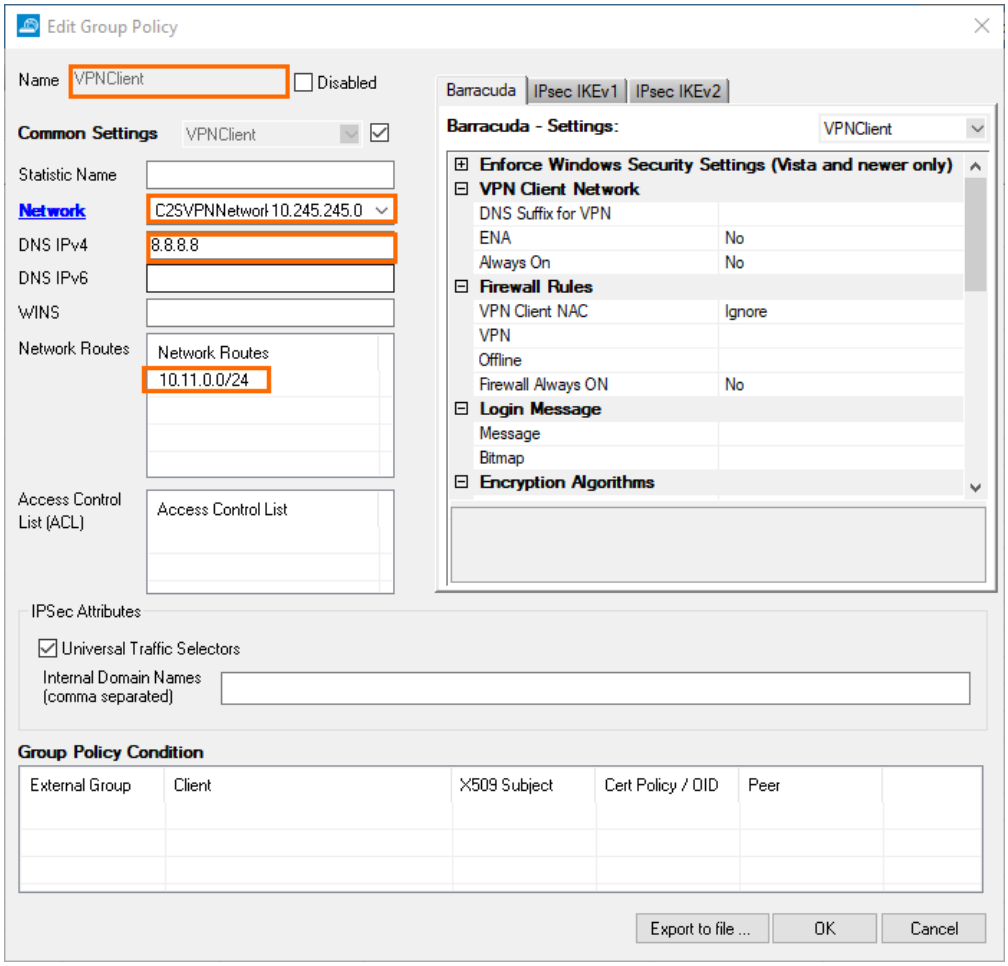
10. The **Client Network** window opens. Specify values for the following:
    - **Name** – Enter a name.
    - **Network Address** – Enter the network address.
    - **Gateway** – Enter the gateway.



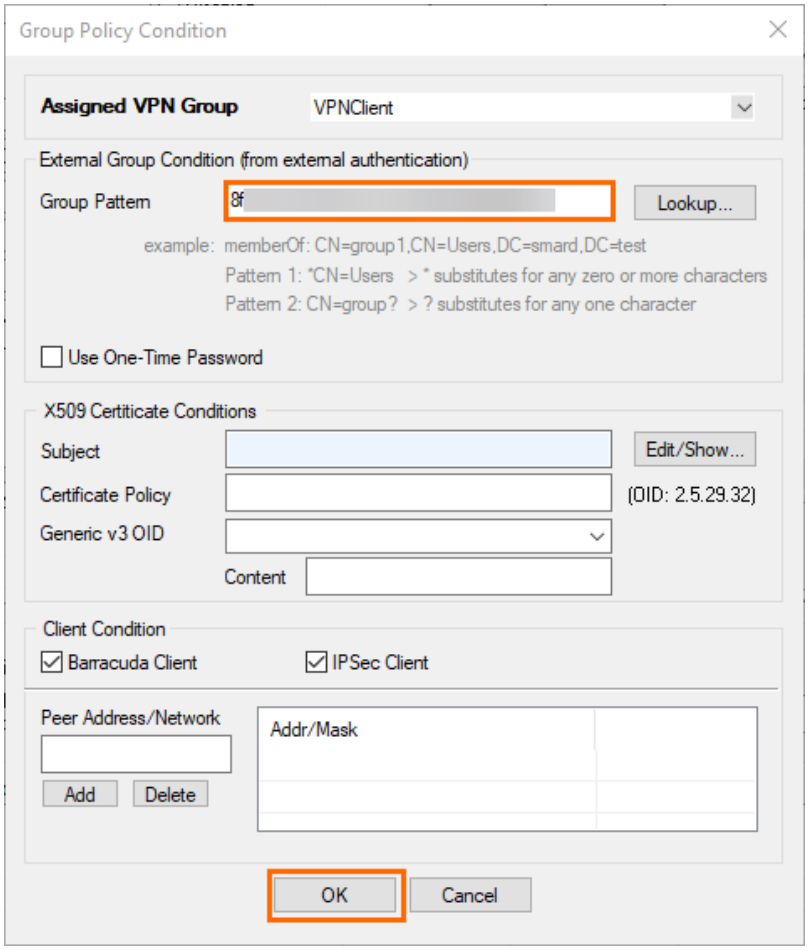
11. Click **OK**.
12. Click **Send Changes** and **Activate**.
13. Go to **CONFIGURATION > Configuration Tree > Assigned Services > VPN (VPN-Service) > Client to Site**.
14. Click **Lock**.
15. Open the **External CA** tab.
16. Select **Click here for options**.
17. Select the check-box to **Enable SAML support**.
18. Click **OK**.
19. Right-click in the **Group Policy** tab, and select **New Group Policy** from the drop-down menu.



20. The **Edit Group Policy** window opens. Specify values for the following:
    - **Name** – Enter a name.
    - **Network** – Select the client network created before.
    - **DNS IPv4** – Enter a DNS server.
    - **Network Routes** – Enter one or more routes if applicable.



21. Stay in the **Edit Group Policy** window. In the **Group Policy Condition** section, double-click to add a new entry.
22. The **Group Policy Condition** window opens. Specify values for the following:
    - **Group Pattern** – Enter the object ID of your Microsoft Entra ID group that will be enabled to use client-to-site VPN.



23. Click **OK**.
24. Click **OK**.
25. Click **Send Changes** and **Activate**.

Step 6. Configuration of the VPN Client

- In the VPN configuration, you must select **SAML** as **Authentication Method**.
- Transport mode for the VPN tunnel must be either **TCP** or **Optimized** to guarantee 100% functionality.

- For the configuration of the Windows client, see How to Configure the Barracuda VPN Client for Windows.
- For the configuration of the macOS client, see How to Configure the Barracuda VPN Client for macOS.
- For more information on establishing VPN connections, see How to Establish a VPN Connection Using Barracuda VPN Client for Windows or How to Establish a VPN Connection Using Barracuda VPN Client for macOS.

Further Information

- For more information on client-to-site configuration, see Client-to-Site VPN.
- For more information on the VPN client, see Overview - VPN Client & Network Access Client 5.x.

Figures

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