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Microsoft Entra ID SAML Implementation

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Microsoft Entra ID SAML Implementation

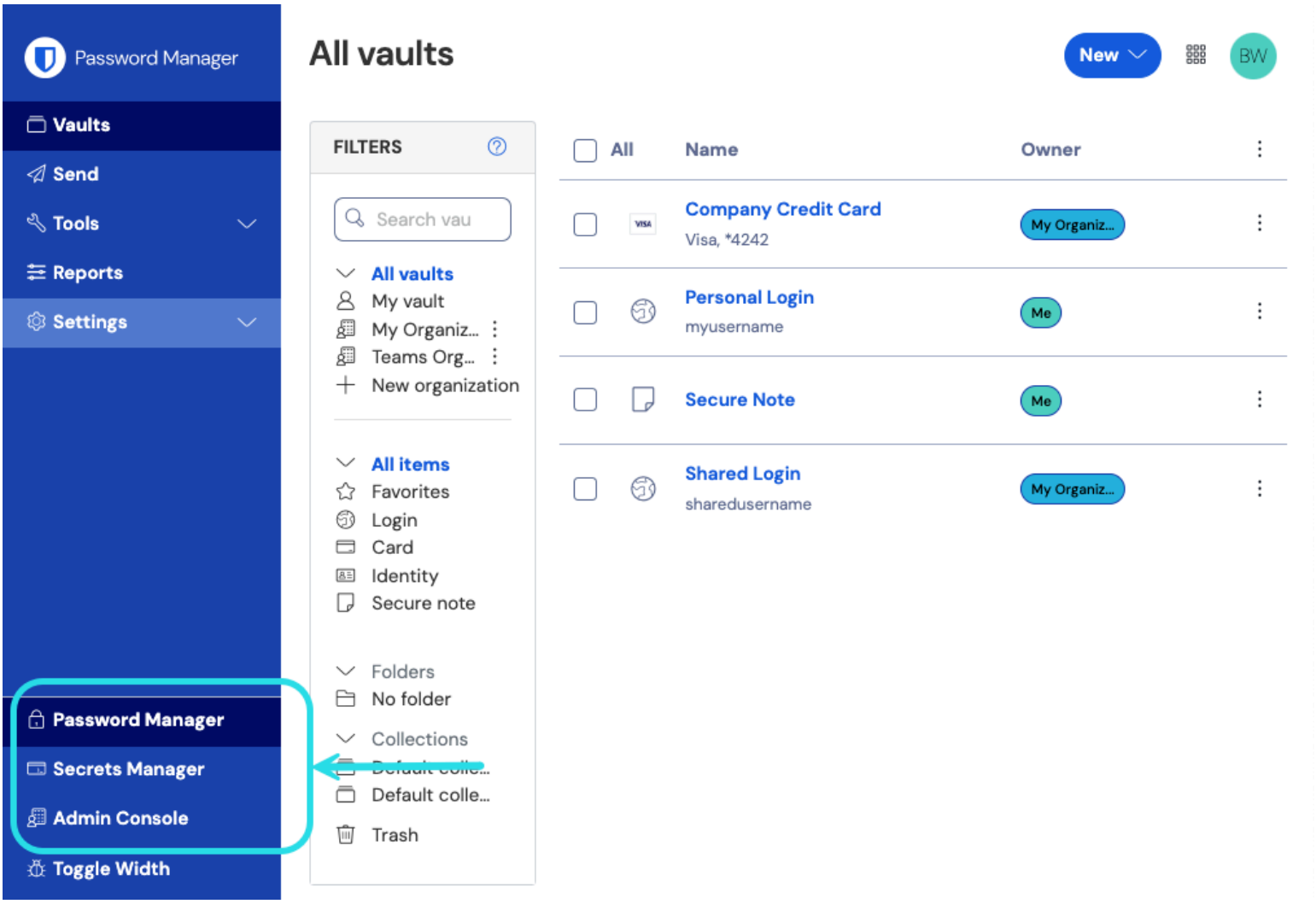
This article contains **Azure-specific** help for configuring Login with SSO via SAML 2.0. For help configuring login with SSO for another IdP, refer to SAML 2.0 Configuration.

Configuration involves working simultaneously with the Bitwarden web app and the Azure Portal. As you proceed, we recommend having both readily available and completing steps in the order they are documented.

> **Tip**
>
> **Already an SSO expert?** Skip the instructions in this article and download the quick configuration guide to compare against your own.
>
> Quick reference guide

Open SSO in the web app

Log in to the Bitwarden web app and open the Admin Console using the product switcher:



Product switcher

Open your organization's **Settings** → **Single sign-on** screen:

SAML 2.0 configuration

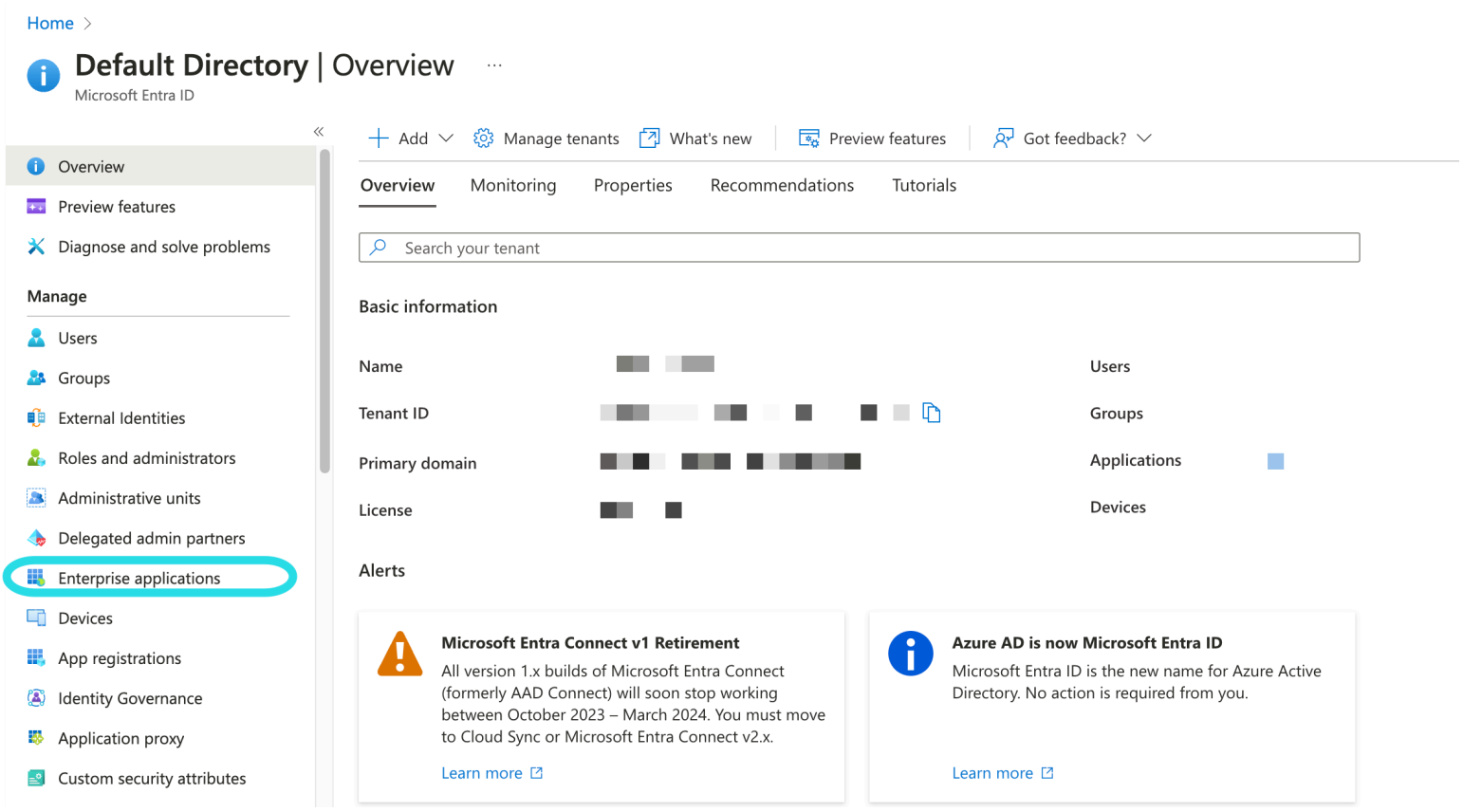
If you haven't already, create a unique **SSO identifier** for your organization and select **SAML** from the the **Type** dropdown. Keep this screen open for easy reference.

You can turn off the **Set a unique SP entity ID** option at this stage if you wish. Doing so will remove your organization ID from your SP entity ID value, however in almost all cases it is recommended to leave this option on.

> **Tip**
>
> There are alternative **Member decryption options**. Learn how to get started using SSO with trusted devices or Key Connector.

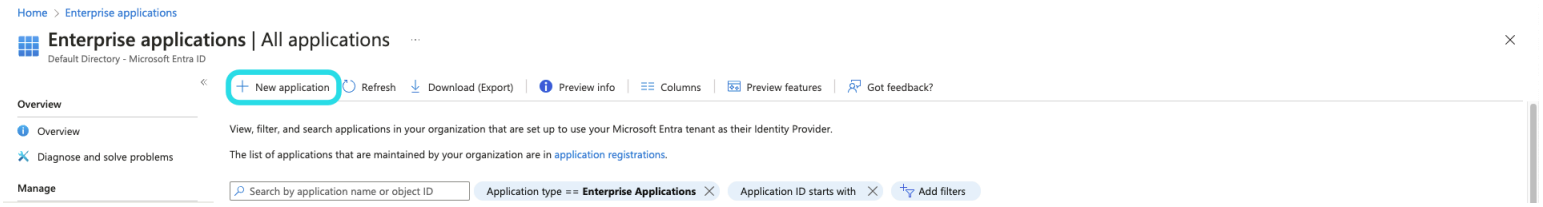
Create an enterprise application

In the Azure Portal, navigate to **Microsoft Entra ID** and select **Enterprise applications** from the navigation menu:



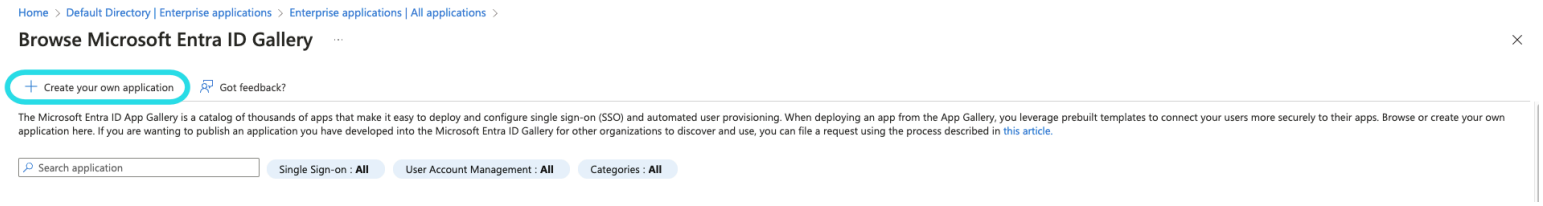
Enterprise applications

Select the + **New application** button:



Create new application

On the Browse Microsoft Entra ID Gallery screen, select the + **Create your own application** button:

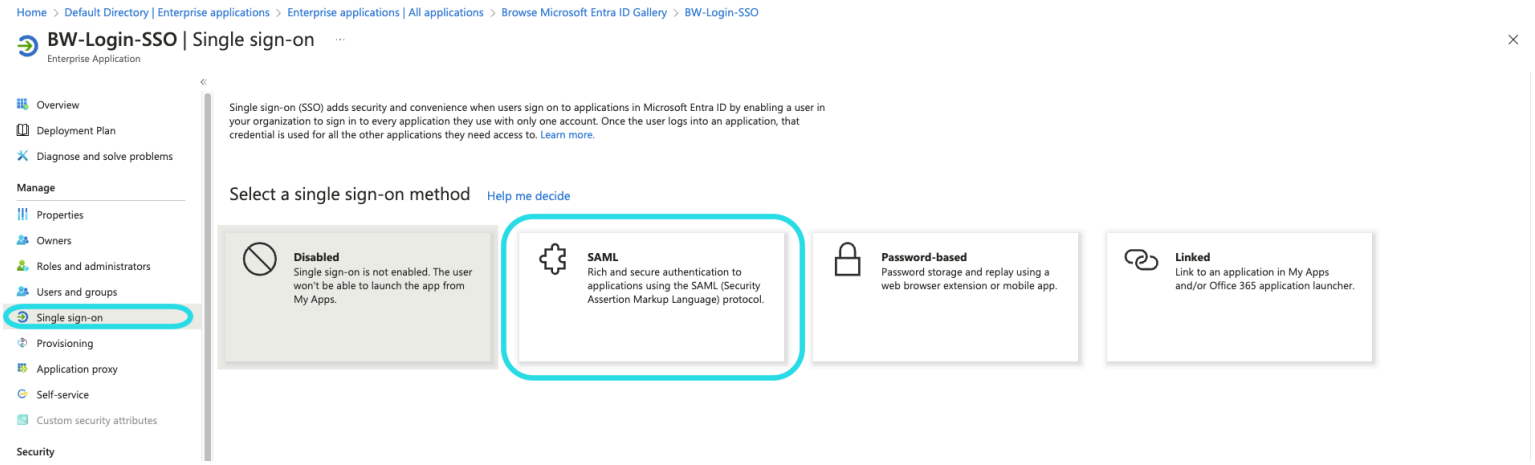


Create your own application

On the Create your own application screen, give the application a unique, Bitwarden-specific name and select the (Non-gallery) option. Once you are finished, click the **Create** button.

Enable single sign-on

From the Application Overview screen, select **Single sign-on** from the navigation:



Configure Single sign-on

On the Single Sign-On screen, select **SAML**.

SAML setup

Basic SAML configuration

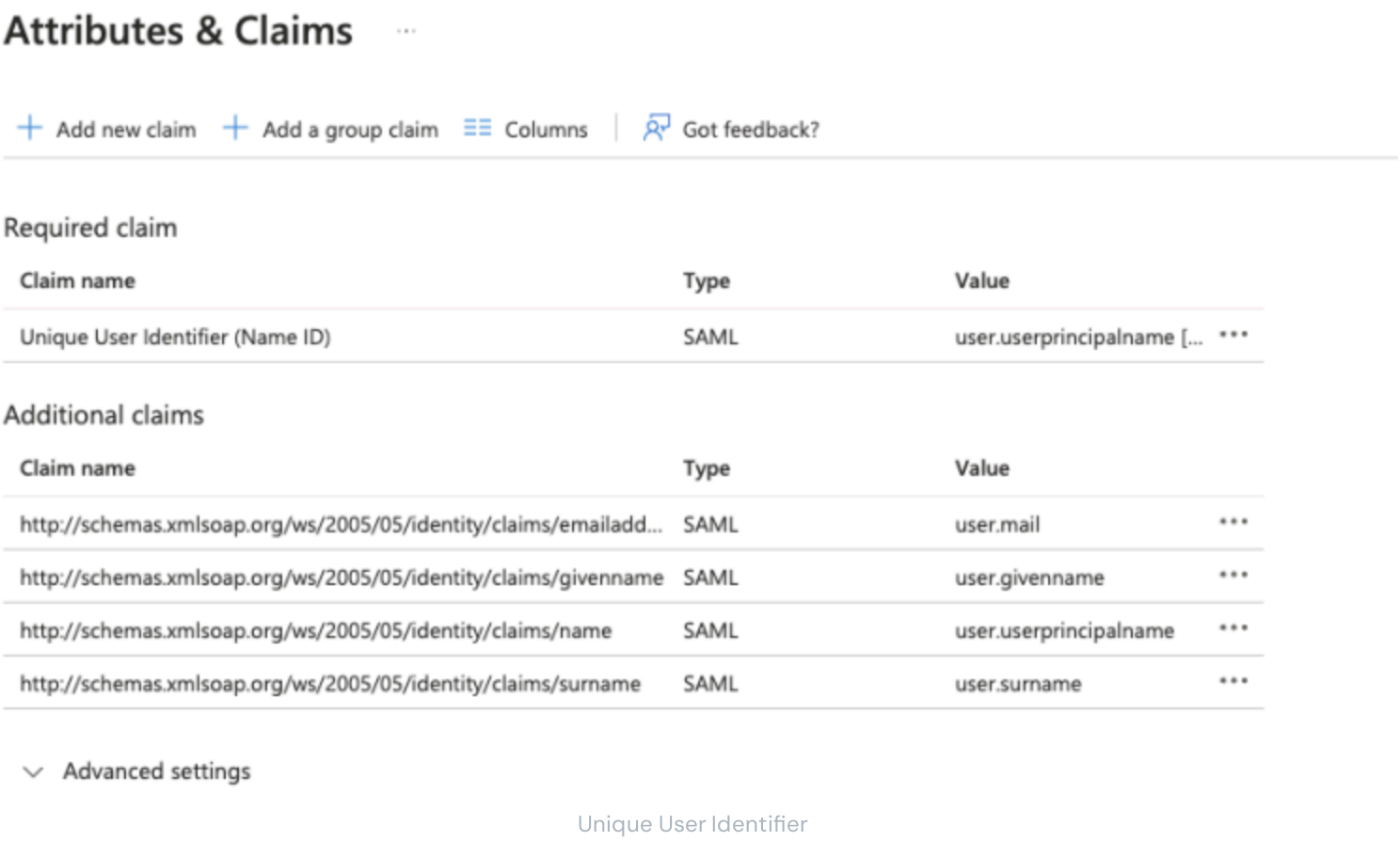
Select the **Edit** button and configure the following fields:

Field	Description
Identifier (Entity ID)	Set this field to the pre-generated **SP Entity ID**. This automatically-generated value can be copied from the organization's **Settings** → **Single sign-on** screen and will vary based on your setup.
Reply URL (Assertion Consumer Service URL)	Set this field to the pre-generated **Assertion Consumer Service (ACS) URL**. This automatically-generated value can be copied from the organization's **Settings** → **Single sign-on** screen and will vary based on your setup.
Sign on URL	Set this field to the login URL from which users will access Bitwarden. For cloud-hosted customers, this is `https://vault.bitwarden.com/#/sso` or `https://vault.bitwarden.eu/#/sso`. For self-hosted instances, this is determined by you configured server URL, for example `https://your-domain.com/#/sso`.

User attributes & claims

The default claims constructed by Azure will work with login with SSO, however you can optionally use this section to configure the NameID format used by Azure in SAML responses.

Select the **Edit** button and select the **Unique User Identifier (Name ID)** entry to edit the NameID claim:



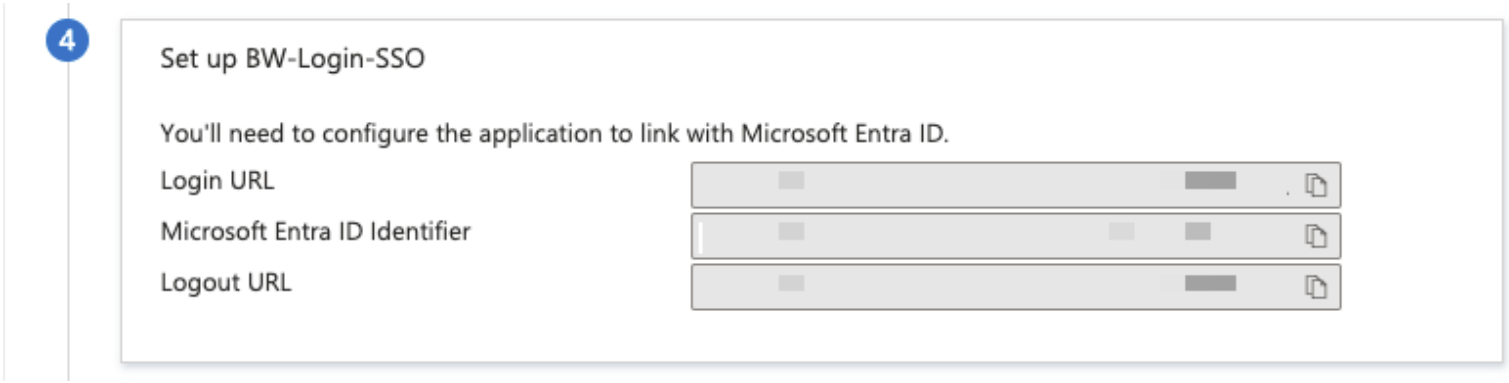
Options include Default, Email Address, Persistent, Unspecified, and Windows qualified domain name. For more information, refer to Microsoft Azure documentation.

SAML signing certificate

Download the Base64 Certificate for use during a later step.

Set up your application

Copy or take note of the **Login URL** and **Microsoft Entra ID Identifier** in this section for use during a later step:

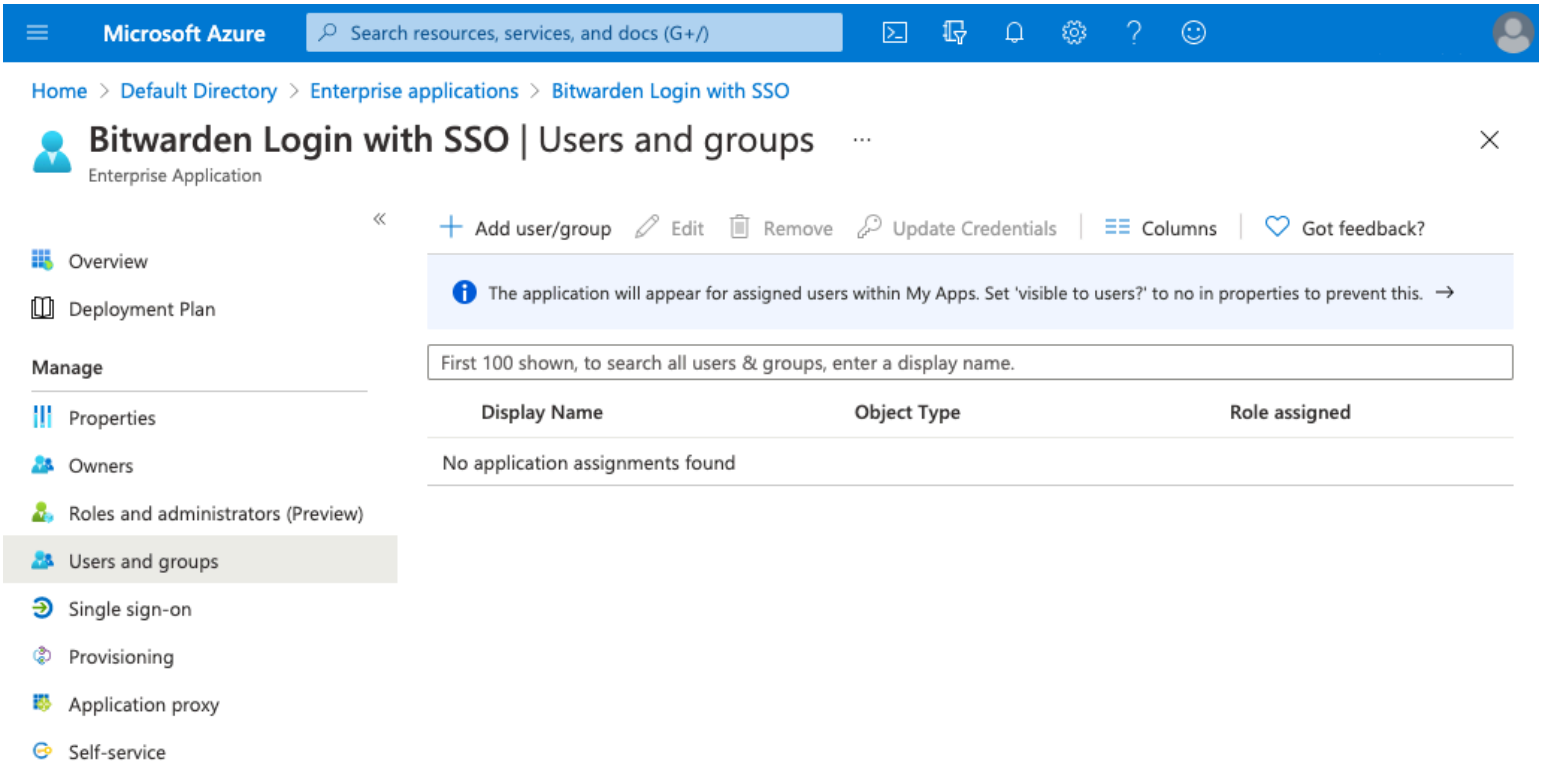


Azure URLs

> **Note**
> If you receive any key errors when logging in via SSO, try copying the X509 certificate information from the Federation Metadata XML file instead.

Users and groups

Select **Users and groups** from the navigation:



Assign users or groups

Select the **Add user/group** button to assign access to the login with SSO application on a user or group-level.

Back to the web app

At this point, you have configured everything you need within the context of the Azure Portal. Return to the Bitwarden web app to complete configuration.

The Single sign-on screen separates configuration into two sections:

- **SAML service provider configuration** will determine the format of SAML requests.
- **SAML identity provider configuration** will determine the format to expect for SAML responses.

Service provider configuration

Configure the following fields:

Field	Description
Name ID Format	By default, Azure will use email address. If you changed this setting, select the corresponding value. Otherwise, set this field to **Unspecified** or **Email Address**.
Outbound Signing Algorithm	The algorithm Bitwarden will use to sign SAML requests.
Signing Behavior	Whether/when SAML requests will be signed.
Minimum Incoming Signing Algorithm	By default, Azure will sign with RSA SHA-256. Select `rsa-sha256` from the dropdown.
Want Assertions Signed	Whether Bitwarden expects SAML assertions to be signed.
Validate Certificates	Check this box when using trusted and valid certificates from your IdP through a trusted CA. Self-signed certificates may fail unless proper trust chains are configured with the Bitwarden login with SSO docker image.

When you are done with the service provider configuration, **Save** your work.

Identity provider configuration

Identity provider configuration will often require you to refer back to the Azure Portal to retrieve application values:

Field	Description
Entity ID	Enter your **Microsoft Entra ID Identifier**, retrieved from the Azure Portal's Set up your application section. This field is case sensitive.
Binding Type	Set to **HTTP POST** or **Redirect**.
Single Sign On Service URL	Enter your **Login URL**, retrieved from the Azure Portal's Set up your application section.
Single Log Out Service URL	Login with SSO currently **does not** support SLO. This option is planned for future development, however you may preconfigure it with your **Logout URL** if you wish.

X509 Public Certificate	Paste the downloaded certificate, removing
	`-----BEGIN CERTIFICATE-----`
	and
	`-----END CERTIFICATE-----`
	The certificate value is case sensitive, extra spaces, carriage returns, and other extraneous characters **will cause certificate validation to fail**.

Outbound Signing Algorithm	By default, Azure will sign with RSA SHA-256. Select `rsa-sha256` from the dropdown.
Disable Outbound Logout Requests	Login with SSO currently **does not** support SLO. This option is planned for future development.
Want Authentication Requests Signed	Whether Azure expects SAML requests to be signed.

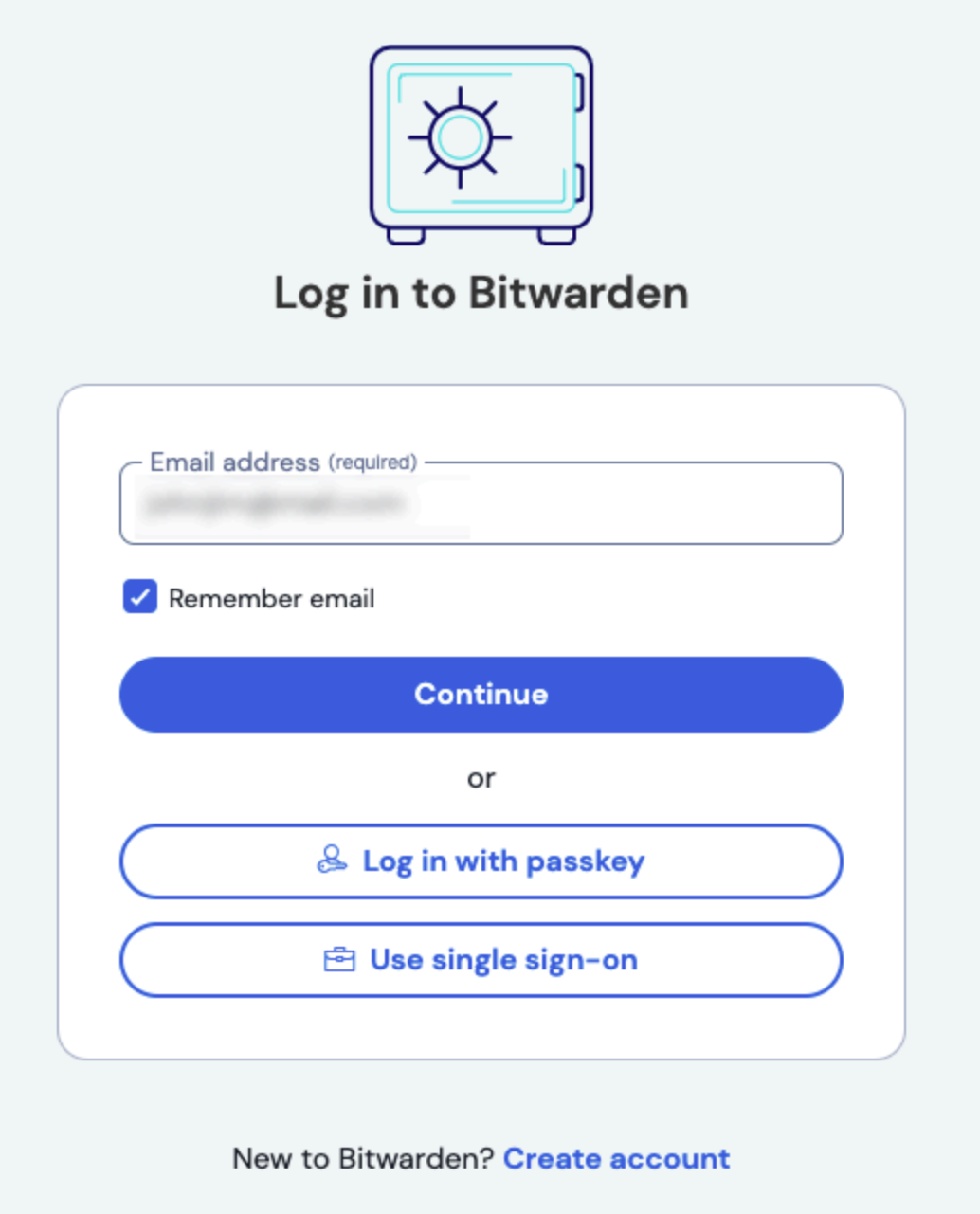
> **Note**
>
> When completing the X509 certificate, take note of the expiration date. Certificates will have to be renewed in order to prevent any disruptions in service to SSO end users. If a certificate has expired, Admin and Owner accounts will always be able to log in with email address and master password.

When you are done with the identity provider configuration, **Save** your work.

> **Tip**
>
> You can require users to log in with SSO by activating the single sign-on authentication policy. Please note, this will require activating the single organization policy as well. Learn more.

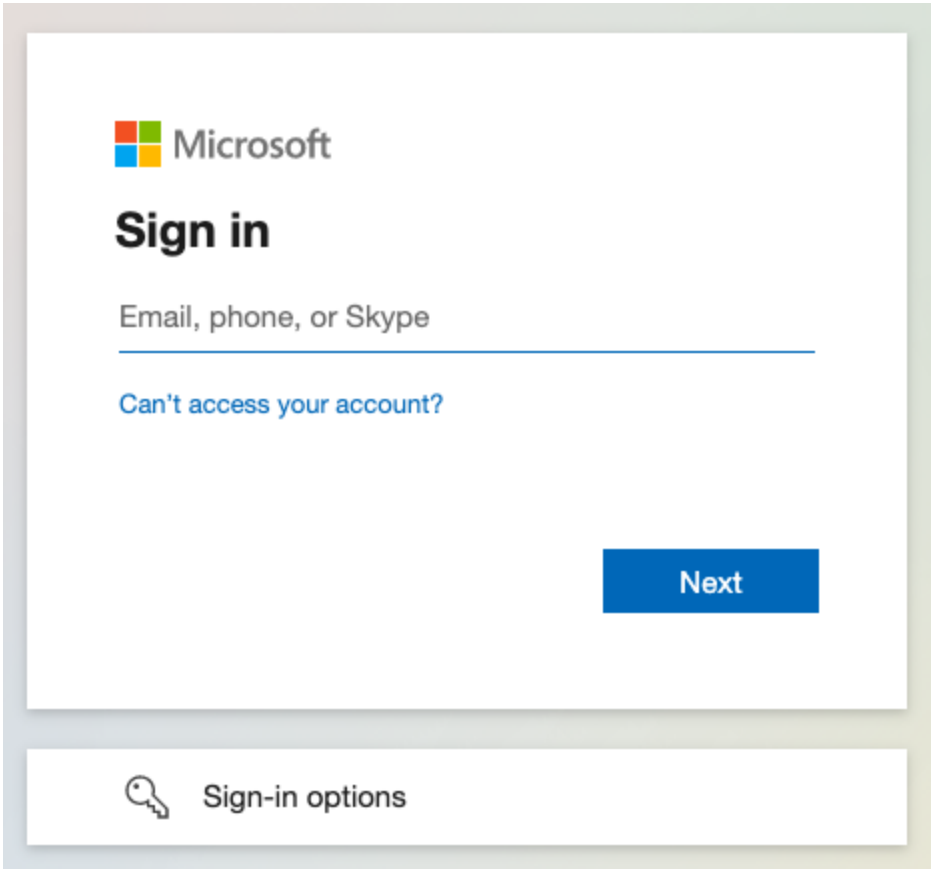
Test the configuration

Once your configuration is complete, test it by navigating to https://vault.bitwarden.com, entering your email address and selecting the **Use single sign-on** button:



Log in options screen

Enter the configured organization identifier and select **Log In**. If your implementation is successfully configured, you will be redirected to the Microsoft login screen:



Azure login screen

After you authenticate with your Azure credentials, enter your Bitwarden master password to decrypt your vault!

Note

Bitwarden does not support unsolicited responses, so initiating login from your IdP will result in an error. The SSO login flow must be initiated from Bitwarden. Entra ID SAML administrators can setup an App Registration for users to be directed to the Bitwarden web vault login page:

1. Disable the existing Bitwarden button in the **All Applications** page by navigating to the current Bitwarden enterprise Application, selecting **Properties**, and setting the **Visible to users** option to **No**.
2. Create a new app registration by navigating to **App Registrations** and selecting **New Registration**.
3. Provide a name for the application such as **Bitwarden SSO**, but do not specify a Redirect URL. Select **Register** to complete the form.
4. Once the app has been created, navigate to **Branding & Properties** located on the navigation menu.
5. Add the following settings to the application:
    1. Upload a logo for end-user recognition. You can retrieve the Bitwarden logo here.
    2. Set the **Home page URL** to your Bitwarden client login page, such as `https://vault.bitwarden.com/#/login.`

Once this process has been completed, assigned users will have a Bitwarden application that will link them directly to the Bitwarden web vault login page.