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Cloudflare Zero Trust SSO Implementation

View in the help center:
https://bitwarden.com/help/cloudflare-zero-trust-sso-implementation/

Cloudflare Zero Trust SSO Implementation

This article contains **Cloudflare Zero Trust-specific** help for configuring login with SSO. Cloudflare Zero Trust is a cloud-based identity and access management platform that can integrate with multiple identity providers (IdPs). You can also configure gateways and tunneling for secure access to the platform.

> ⓘ **Note**
>
> Cloudflare Zero Trust can be configured with any IdP that operates using SAML 2.0 or OIDC SSO configurations. If you are not familiar with these configurations, refer to these articles:
>
> - SAML 2.0 Configuration
> - OIDC Configuration

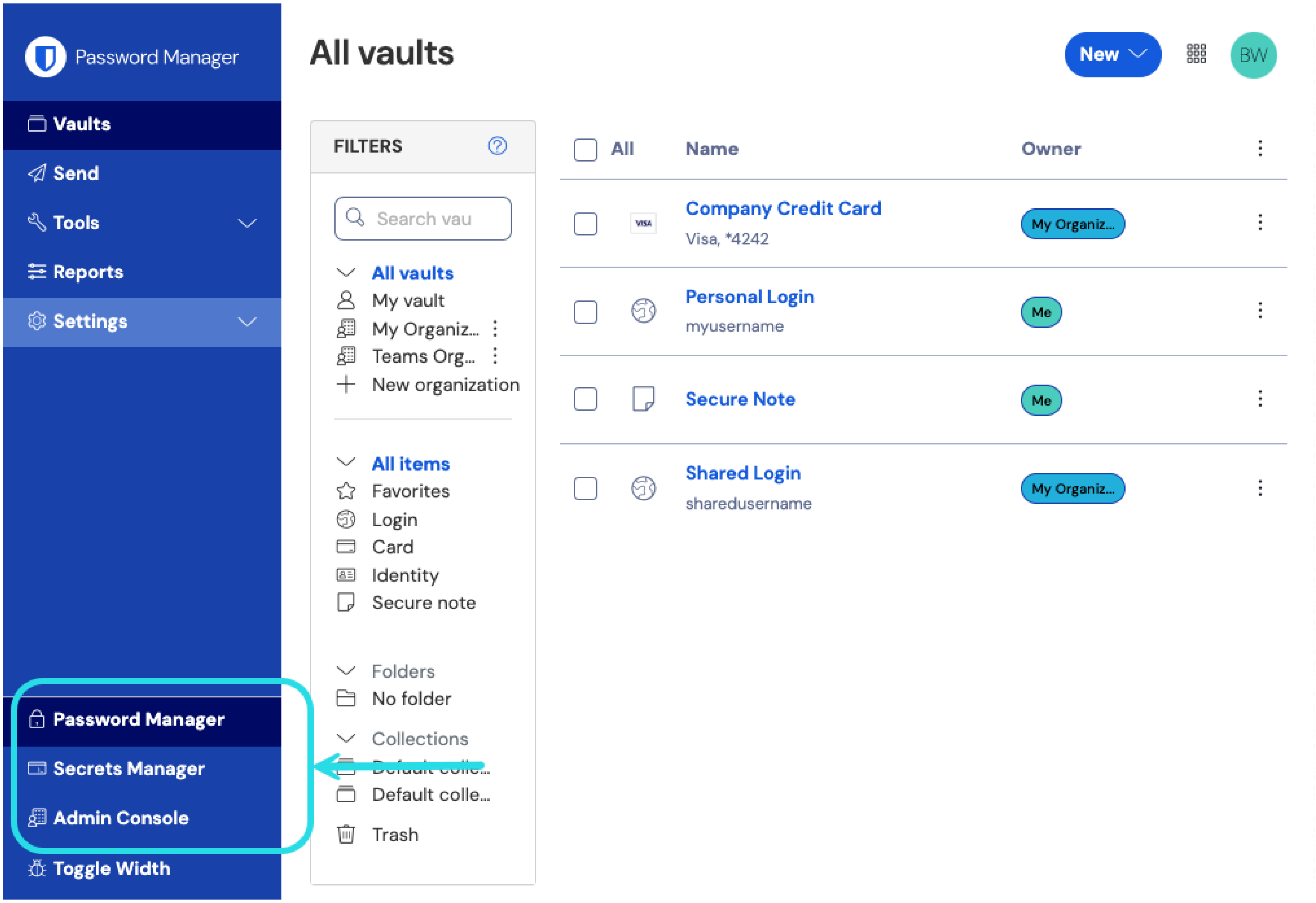
Why use Cloudflare Zero Trust with SSO?

Cloudflare Zero Trust is a cloud-based proxy identity and access management platform that can integrate with multiple identity providers (IdPs). The benefit of using Cloudflare Zero Trust in addition to your standard IdP is its ability to configure multiple IdPs for login. Cloudflare Zero Trust can provide SSO access to Bitwarden from multiple separate directories, or sets of users within a directory.

Open SSO in the web app

> ⓘ **Note**
>
> Cloudflare will only support SAML via the Access Application Gateway. This means that the **SAML 2.0** must be selected in the Bitwarden configuration. OIDC authentication can still be configured from the IdP and Cloudflare.

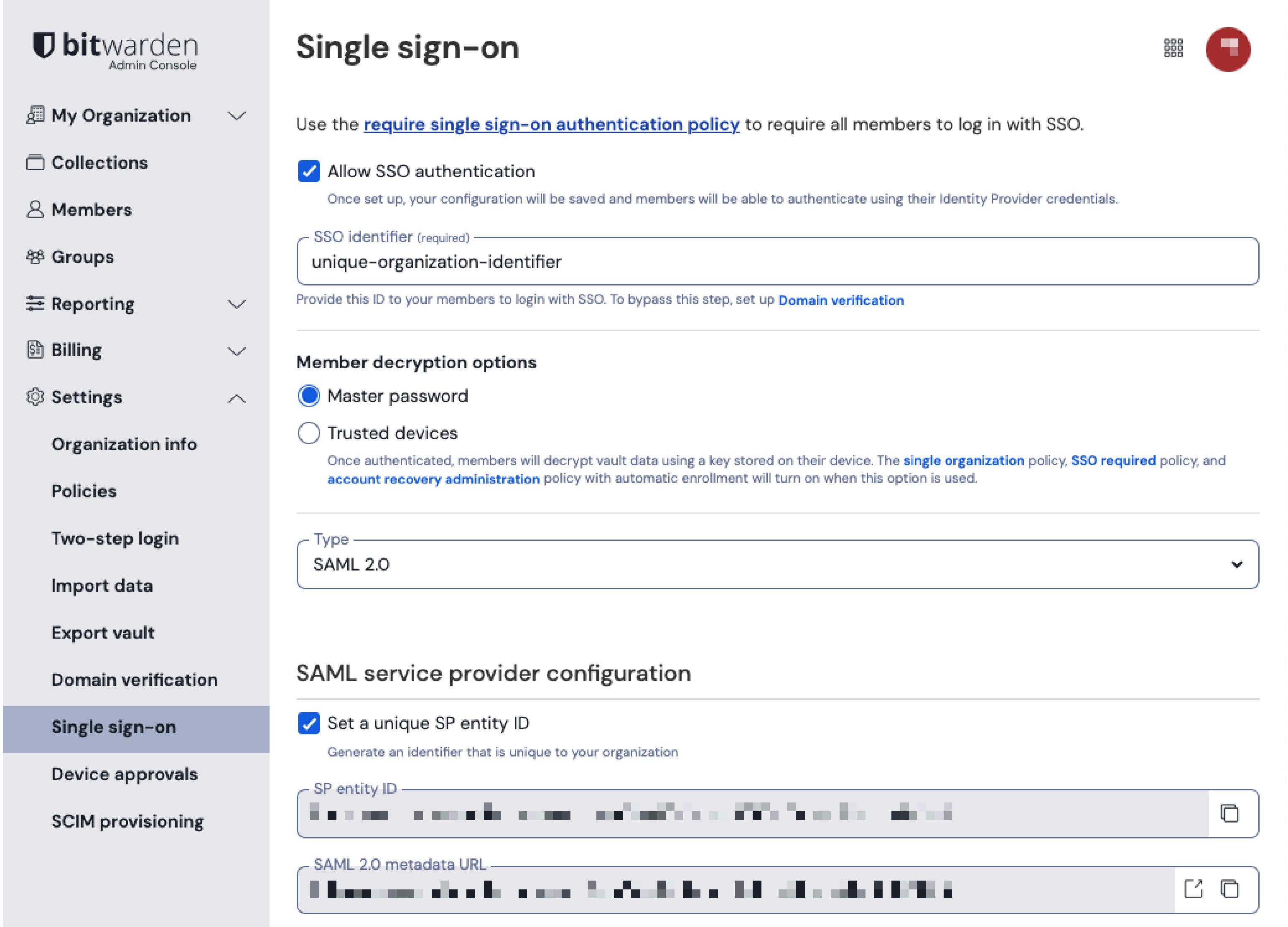
Log in to the Bitwarden web app and open the Admin Console using the product switcher:



□ All	Name	Owner
□	Company Credit Card Visa, *4242	My Organiz...
□	Personal Login myusername	Me
□	Secure Note	Me
□	Shared Login sharedusername	My Organiz...

Product switcher

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



bitwarden Admin Console

- My Organization
- Collections
- Members
- Groups
- Reporting
- Billing
- Settings
  - Organization info
  - Policies
  - Two-step login
  - Import data
  - Export vault
  - Domain verification
  - Single sign-on
  - Device approvals
  - SCIM provisioning

Single sign-on

Use the require single sign-on authentication policy to require all members to log in with SSO.

☑ Allow SSO authentication

Once set up, your configuration will be saved and members will be able to authenticate using their Identity Provider credentials.

SSO identifier (required): unique-organization-identifier

Provide this ID to your members to login with SSO. To bypass this step, set up Domain verification

Member decryption options

● Master password

○ Trusted devices

Once authenticated, members will decrypt vault data using a key stored on their device. The single organization policy, SSO required policy, and account recovery administration policy with automatic enrollment will turn on when this option is used.

Type: SAML 2.0

SAML service provider configuration

☑ Set a unique SP entity ID

Generate an identifier that is unique to your organization

SP entity ID: [redacted]

SAML 2.0 metadata URL: [redacted]

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.

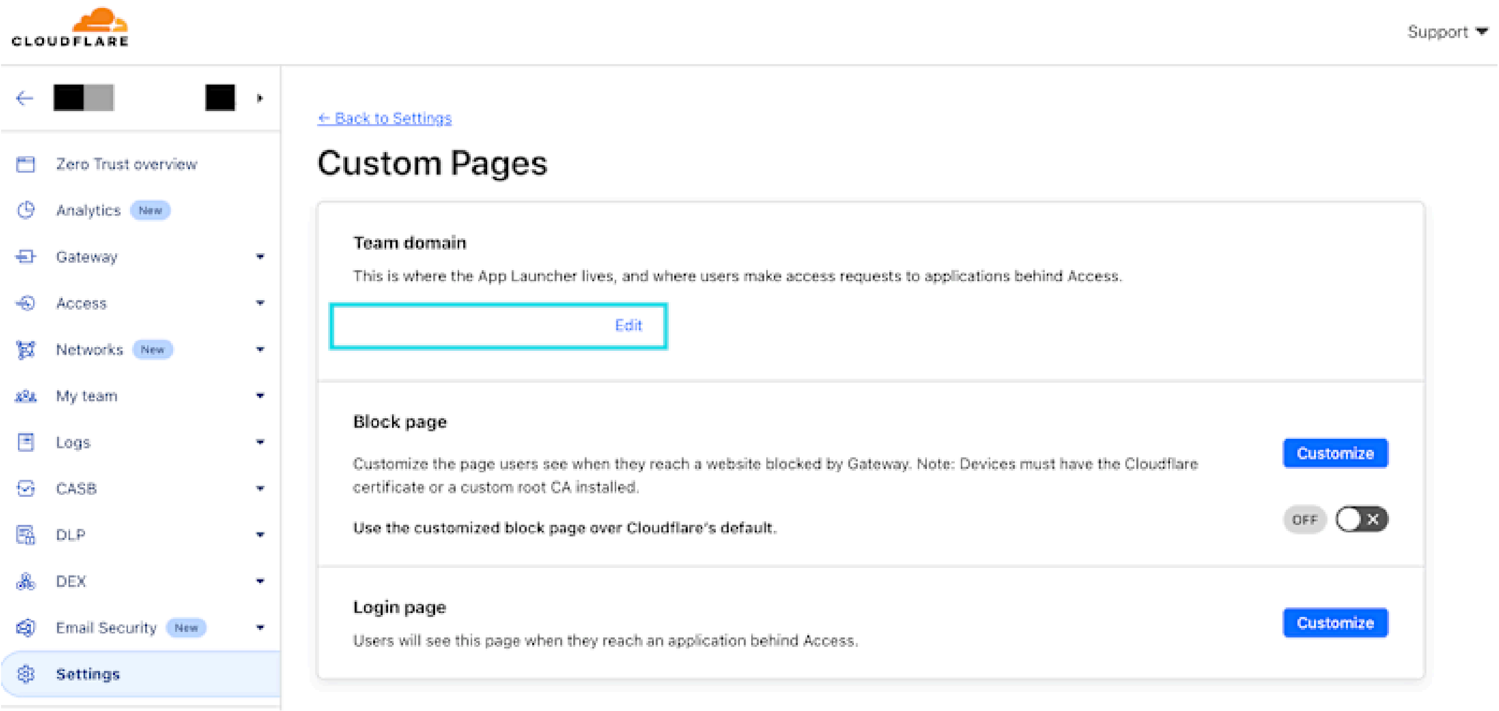
> **Tip**
>
> There are alternative **Member decryption options**. Learn how to get started using SSO with trusted devices or Key Connector.

Create a Cloudflare Zero Trust login method

Create a Cloufdlare Zero Trust login method:

1. Navigate to Cloudflare Zero Trust and log in or create an account.

2. Configure a domain, which will act as the URL used by your users to access your applications or **App Launcher**, for example `https://my-business.cloudflareaccess.com/`. From the Cloudflare Zero Trust menu , select **Settings** → **Custom Pages**:



Custom Pages

Team domain

This is where the App Launcher lives, and where users make access requests to applications behind Access.

Edit

Block page

Customize the page users see when they reach a website blocked by Gateway. Note: Devices must have the Cloudflare certificate or a custom root CA installed.

Customize

Use the customized block page over Cloudflare's default. OFF

Login page

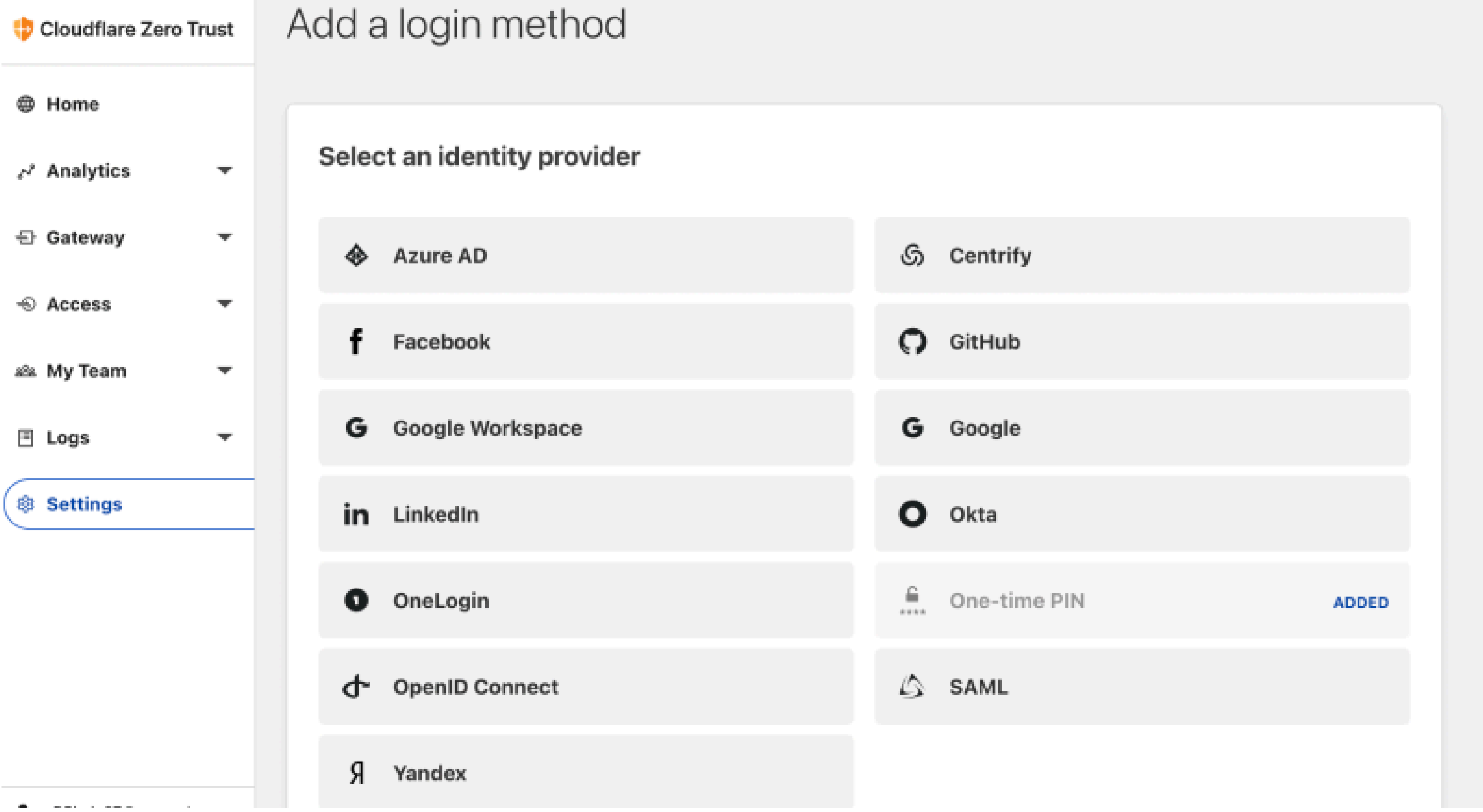
Users will see this page when they reach an application behind Access.

Customize

Team domain setting

3. Begin configuring the first login method by navigating to **Settings** → **Authentication** → **Add new.**

4. Select the login method to connect to Cloudflare Zero Trust. If the IdP you are using is not present on the IdP list, use the SAML or OIDC generic options. In this article, Okta will be used as an example:



Cloudflare Zero Trust IdP list

> **Note**
>
> Google Workspace users should select the generic **SAML** setup during this step. The Google Workspace login method may result in errors.

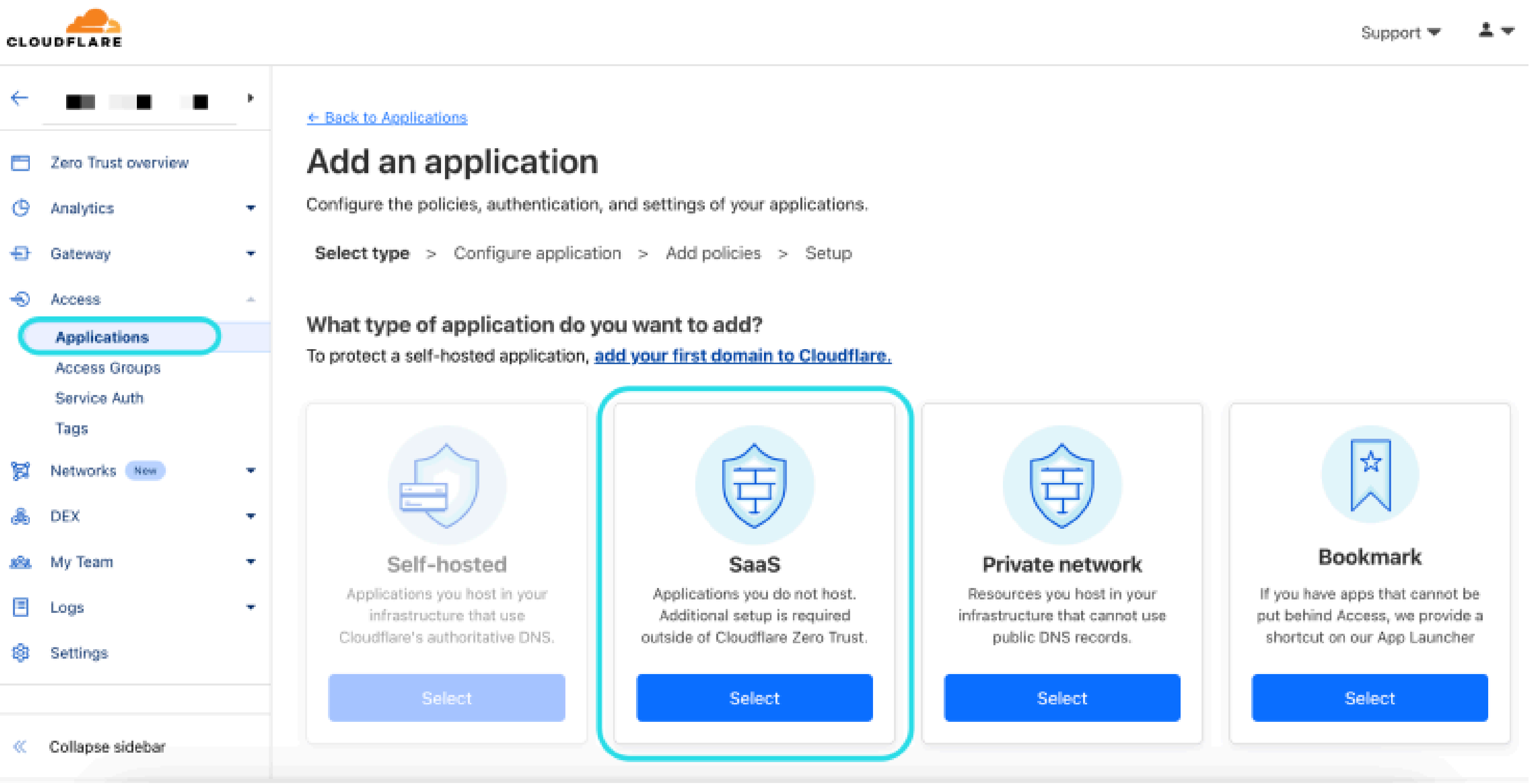
5. After selecting your chosen IdP login method, follow the in-product guide provided by Cloudflare for integrating your IdP.

> **Note**
>
> If the IdP you are using has a **support groups** feature, this option must be **disabled**. Bitwarden does not support group based claims, enabling this option will result in an XML element error on the Bitwarden end.

Create a Cloudflare Zero Trust application

After an IdP has been configured, you'll have to create a Cloudflare Zero Trust application for Bitwarden. **In this example we'll create a SAML application**:

1. Navigate to **Access** → **Applications** → **Add an application** and then select **SaaS**.



Support ▾

[redacted]

Zero Trust overview
Analytics
Gateway
Access
Applications
Access Groups
Service Auth
Tags
Networks New
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My Team
Logs
Settings
Collapse sidebar

← Back to Applications

Add an application

Configure the policies, authentication, and settings of your applications.

Select type > Configure application > Add policies > Setup

What type of application do you want to add?

To protect a self-hosted application, add your first domain to Cloudflare.

Self-hosted
Applications you host in your infrastructure that use Cloudflare's authoritative DNS.
Select

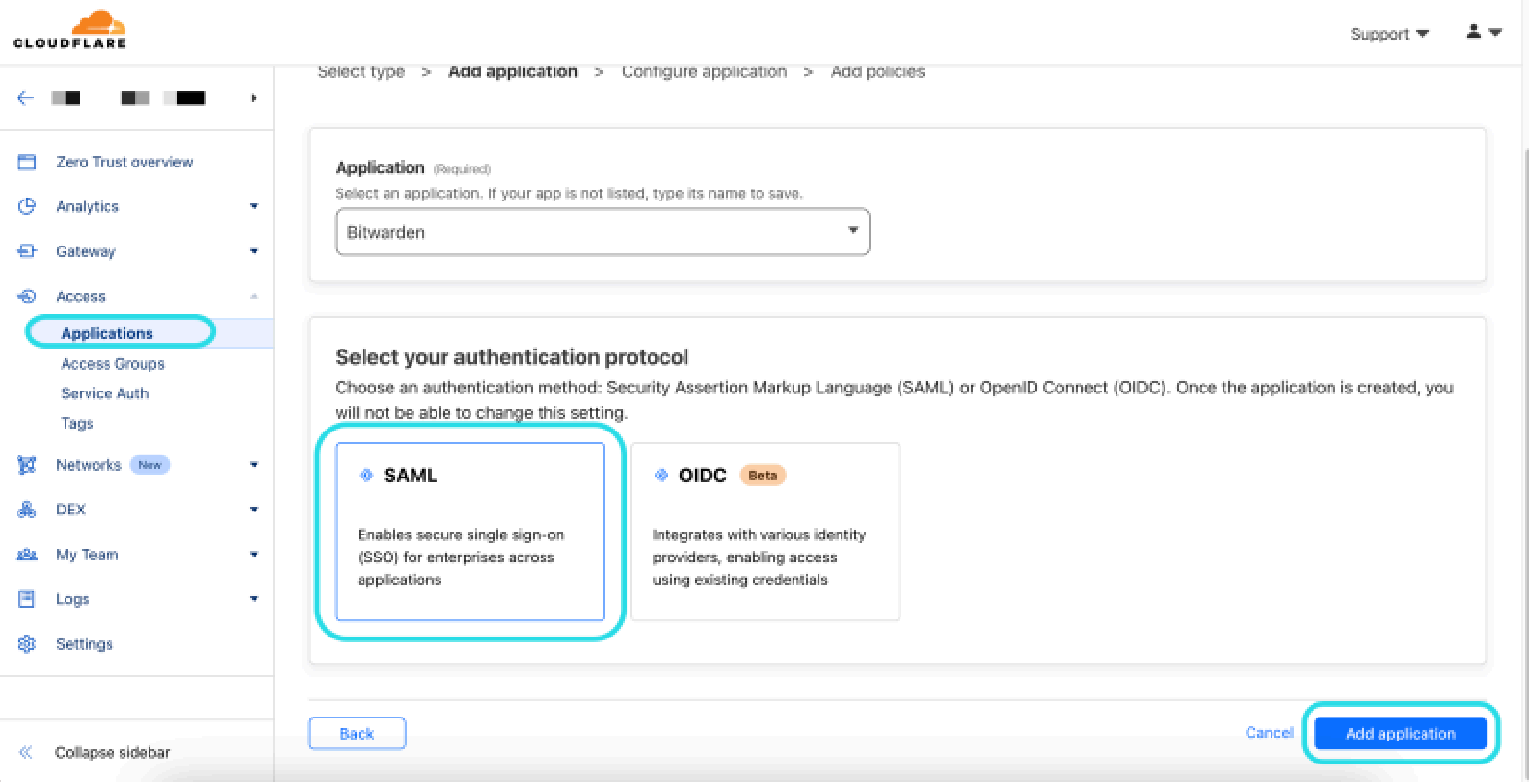
SaaS
Applications you do not host. Additional setup is required outside of Cloudflare Zero Trust.
Select

Private network
Resources you host in your infrastructure that cannot use public DNS records.
Select

Bookmark
If you have apps that cannot be put behind Access, we provide a shortcut on our App Launcher
Select

CFZT add an application

2. On the following screen, add an Application name such as **Bitwarden**. Then, Select the authentication protocol, **SAML**. Once complete, select **Add application**.



Support ▾

[redacted]

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Collapse sidebar

Select type > **Add application** > Configure application > Add policies

Application (Required)
Select an application. If your app is not listed, type its name to save.
Bitwarden

Select your authentication protocol
Choose an authentication method: Security Assertion Markup Language (SAML) or OpenID Connect (OIDC). Once the application is created, you will not be able to change this setting.

● **SAML**
Enables secure single sign-on (SSO) for enterprises across applications

○ **OIDC** Beta
Integrates with various identity providers, enabling access using existing credentials

Back   Cancel   Add application

Add an application Clouflare Zero Trust

3. In the Bitwarden web vault, open your organization and navigate to the **Settings** → **Single Sign-On** screen. Use information from the web vault to fill-in information on the **Configure app** screen:

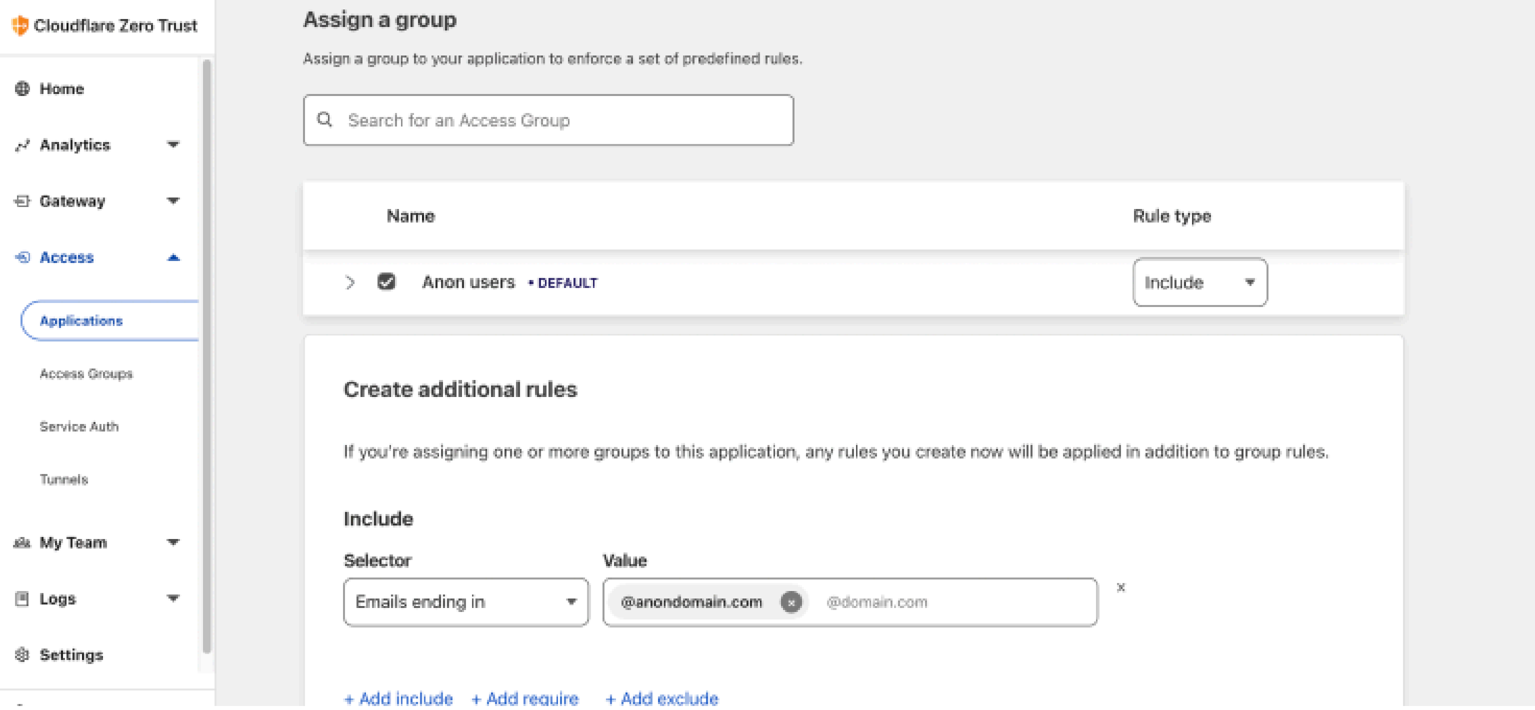
Key	Description
Application	Enter `Bitwarden`.
Entity ID	Copy the **SP entity ID** from the Bitwarden Single Sign-On page into this field.
Assertion Consumer Service URL	Copy the **Assertion consumer service (ACS) URL** from the Bitwarden Single Sign-On page into this field.
Name ID Format	Select **Email** from the dropdown menu.

> ⓘ **Note**
>
> For the generic OIDC configuration, the Auth URL, Token URL, and Certificate URL can be located with the well-known URL.

4. Scroll down to the **Identity providers** menu. Select the IdP(s) that you configured in the previous section, scroll back to the top, and select **Next.**

5. Next, create access policies for user access to the application. Complete the **Policy name**, **Action**, and **Session duration** fields for each policy.

6. You can choose to assign a group policy (**Access** → **Groups**) or explicit user policy rules (such as emails, "emails ending in", "country", or "everyone"). In the following example, the group "Anon Users" has been included in the policy. An additional rule has been added as well to include emails ending in the chosen domain:



Assign a group

Assign a group to your application to enforce a set of predefined rules.

	Name	Rule type
☑	Anon users • DEFAULT	Include

Create additional rules

If you're assigning one or more groups to this application, any rules you create now will be applied in addition to group rules.

Include

Selector	Value
Emails ending in	@anondomain.com

CFZT app policy

> **Note**
>
> You can also apply user access through the **App Launcher** for access to the Bitwarden login with SSO shortcut. This can be managed by navigating to **Authentication** → **App Launcher** → **Manage**. The application policies in the above example can be duplicated or generated here.

7. Once access policies have been configured, scroll to the top and select **Next**.

8. While on the **Setup** screen, copy the following values and input them into their respective fields on the Bitwarden **Single Sign-On** page:

Key	Description
SSO endpoint	The SSO endpoint directs where your SaaS application will send login requests. This value will be entered into the **Single Sign On Service URL** field in Bitwarden.
Access Entity ID or Issuer	The Access Entity ID or Issuer is the unique identifier of your SaaS application. This will value will be entered into the **Entity ID** field on Bitwarden.

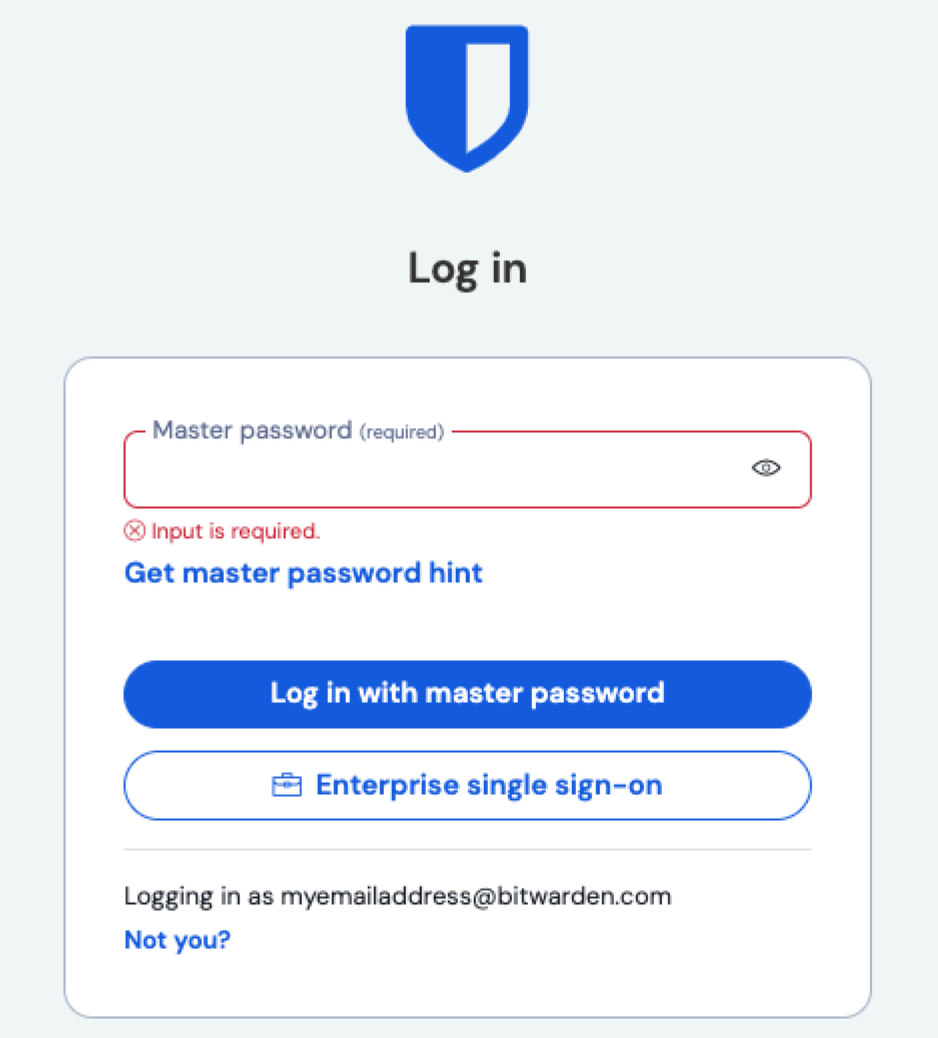
Key	Description
Public key	The Public key is the access public certificate that will be used to verify your identity. This value will be entered into the **X509 Public Certificate** field on Bitwarden.

9. After the values have been entered into Bitwarden, select **Save** on the Bitwarden Single Sign-On screen and select **Done** on the Cloudflare page to save the application.

10. To create a bookmark to the Bitwarden login with SSO screen, select **Add an application** → **Bookmark**. Check that the Bookmark is visible in the **App launcher**.

Test the configuration

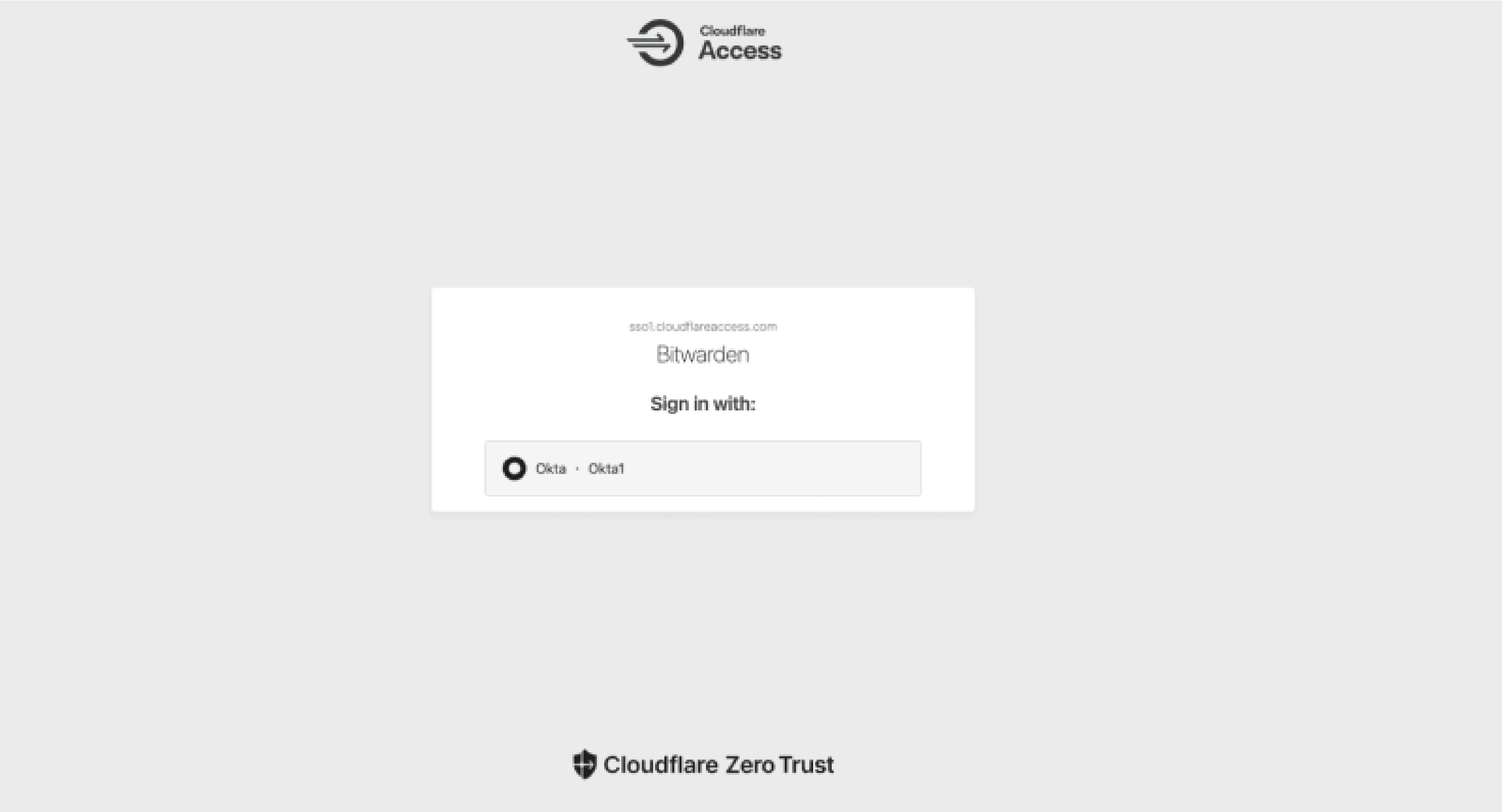
Once your configuration is complete, test it by navigating to https://vault.bitwarden.com or https://vault.bitwarden.eu, entering your email address, selecting **Continue** and selecting the **Enterprise single sign-on** button.


Log in
Master password (required)
Input is required.
Get master password hint
Log in with master password
Enterprise single sign-on

Logging in as myemailaddress@bitwarden.com

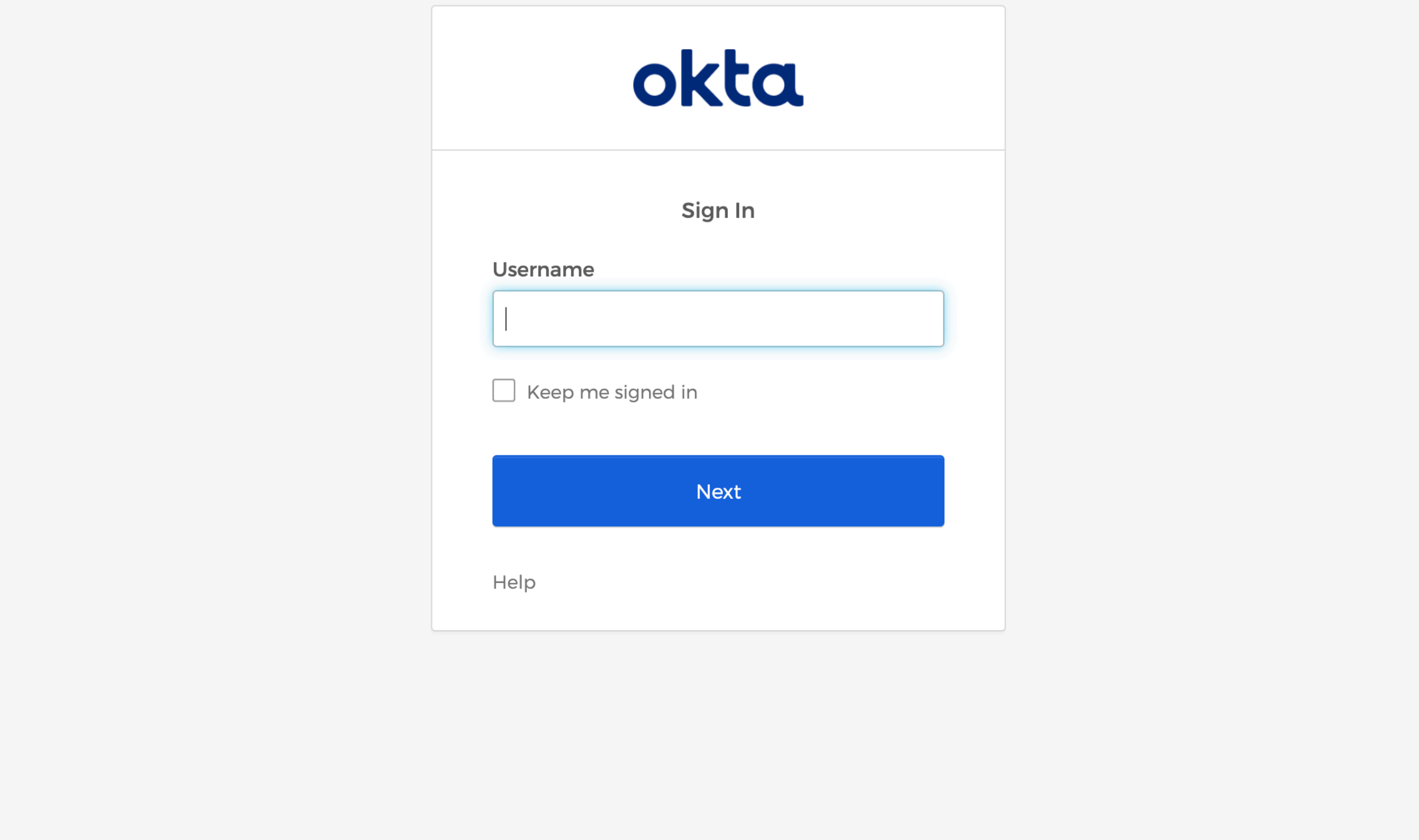
Log in options screen

Enter the configured organization identifier and select **Log In**. If your implementation is successfully configured, you will be redirected to a Cloudflare Access screen, where you can select the IdP to login with:



Cloudflare IdP selection

After selecting your IdP, you will be directed to your IdP login page. Enter in the information used to login via your IdP:



CFZT IdP login

After you authenticate with your IdP credentials, enter your Bitwarden credentials to decrypt your vault!