FedSender - AzureAD as IdP - setup guide (External)

Description

In this document, we will give an example of how to configure an Azure AD as IdP (Identity Provider) for Single Sign On management on Belnet Fedsender (acting as Service Provider).

This documentation is published on the Belnet website, section Fedsender FAQ, to help Belnet customers configure/set up their Azure AD Identity Provider.

Contact you Belnet Account Manager

Belnet FedSender is a paid service.

Please contact your Account Manager before continuing with this documentation in order to subscribe to this service.

Microsoft Azure AD as Identity Provider (IdP) & Belnet FedSender as Service Provider (SP).

Prerequisites

- The Azure AD must be created with at least one (non-admin) user.
- The Azure AD must have access to **Token encryption** and **Single sign-on** functionalities which are part of Azure AD Premium P1 or P2 subscription.
- The Azure AD, the simpleSAMLphp and the FedSender server must have their respective domain and **SSL certificate** generated and correct.
- Both servers/service must be **reachable** from each other.

For the time being, the Belnet Fedsender service is not linked to a Belnet Federation.

However, we were investigating the feasibility and necessity of integrating this service into a new Federation for our Public Organizations customers (Federal, Regional, Municipals).

Please take note of the important note below for your Azure AD IdP setup:

Note about Azure AD application(s) certificates

A note about Azure AD application certificates

By default, Azure AD creates a new certificate per application. This is not a good idea, as you must have the same certificate for all applications in the same federation.

So, unless you know for sure that you will never use several applications of the Belnet federation, we strongly advice you to not use the default certificate created by Azure AD but rather create a dedicated certificate for all the Azure ID applications that you'll create.

Such a certificate, with a validity of 10 years, can easily be created using openssl with the following commands (please update the "-subj" field to whatever best suit you eg: "/C=BE/ST=BRUSSEL/L=BRUSSEL/O=ACME/OU=ICT/CN=AZUREAD"):

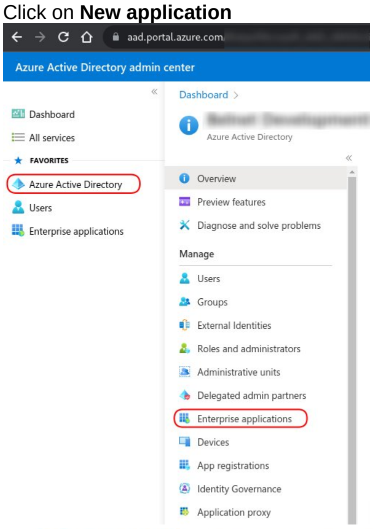
```
openssl req -x509 -newkey rsa:4096 -keyout key.pem -out cert.pem -sha256 -days 3650 -nodes -subj "
/C=XX/ST=StateName/L=CityName/O=CompanyName/OU=CompanySectionName/CN=CommonNameOrHostname"

openssl pkcs12 -inkey key.pem -in cert.pem -export -out certiticate.pfx
```

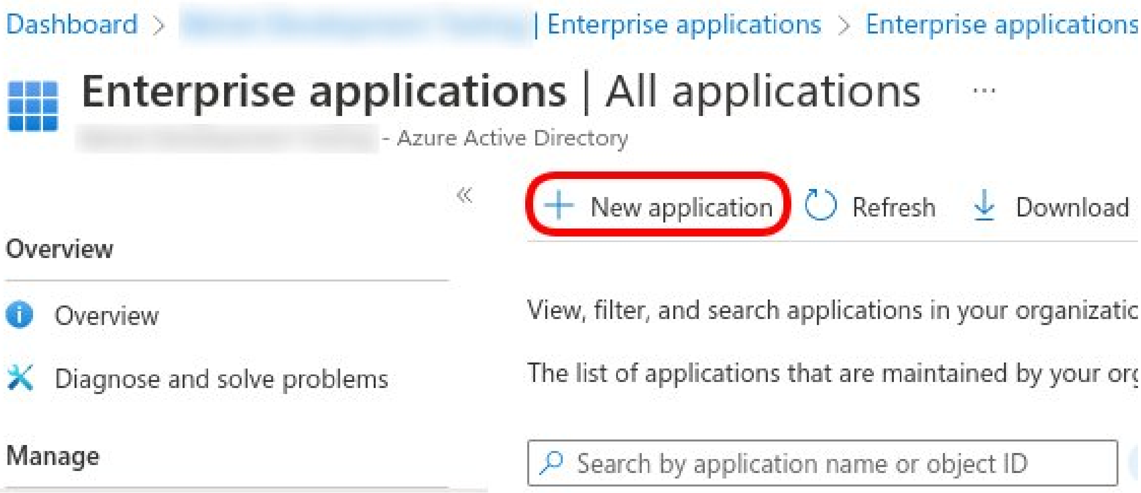
Note that you MUST use a passphrase for your .pfx file; an empty passphrase won't be accepted by Azure AD later.

Failure to do so means you'll have to modify your first application's certificate if ever you want to use a second service from the Belnet federation.

Step 1: Create an Enterprise application in Azure AD

- On Microsoft Azure Portal or Azure Active Directory admin center **Azure Active Directory** --> **Enterprise applications**
- Click on **New application**

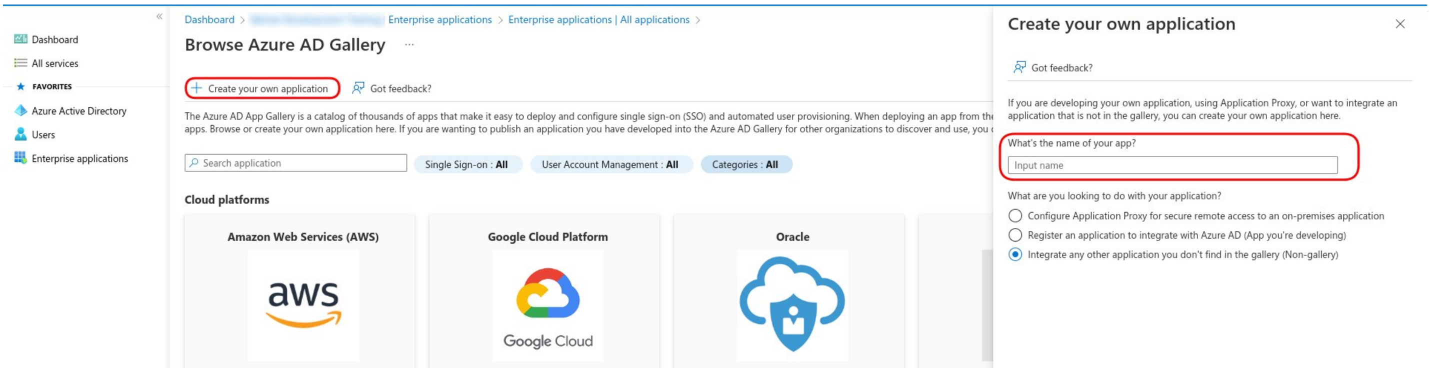



Dashboard > [redacted] | Enterprise applications > Enterprise applications
Enterprise applications | All applications
[redacted] - Azure Active Directory
New application
Refresh
Download
Overview
Overview
Diagnose and solve problems
Manage
Search by application name or object ID

View, filter, and search applications in your organizatic

The list of applications that are maintained by your org

- Click on ⊕ **Create your own application,** enter **Belnet FedSender** in the **Name** field and click **Create**



The Azure AD App Gallery is a catalog of thousands of apps that make it easy to deploy and configure single sign-on (SSO) and automated user provisioning. When deploying an app from the apps. Browse or create your own application here. If you are wanting to publish an application you have developed into the Azure AD Gallery for other organizations to discover and use, you

Create your own application

Got feedback?

If you are developing your own application, using Application Proxy, or want to integrate an application that is not in the gallery, you can create your own application here.

What's the name of your app?

Input name

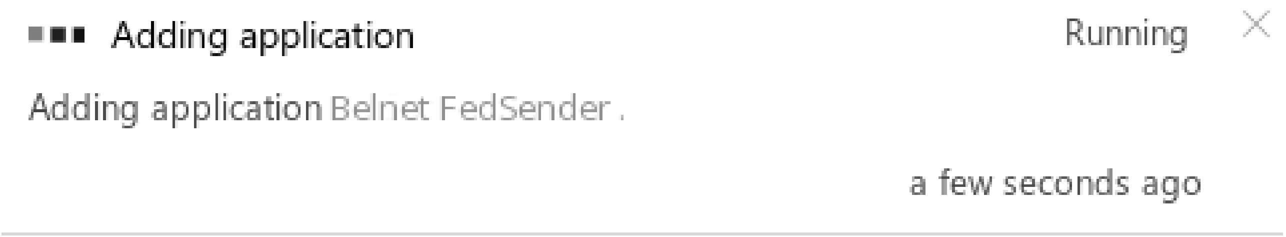
What are you looking to do with your application?

○ Configure Application Proxy for secure remote access to an on-premises application

○ Register an application to integrate with Azure AD (App you're developing)

● Integrate any other application you don't find in the gallery (Non-gallery)

- Enter **Belnet FedSender** as your App**Name** in the field, then click **Add**
- Wait while Azure AD is adding the application



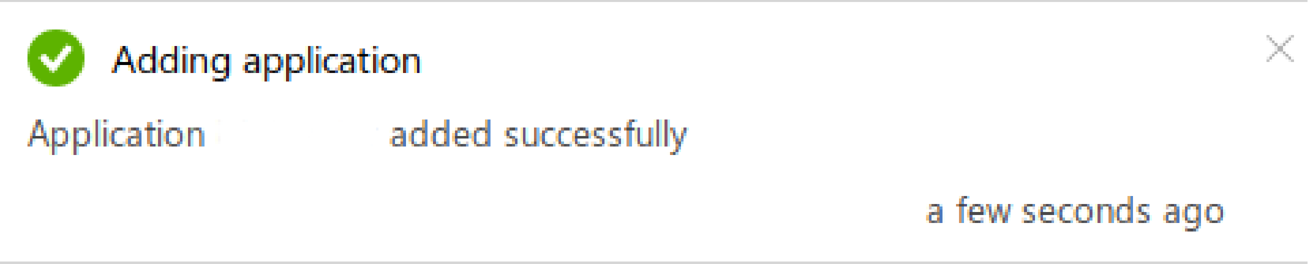
Adding application

Running

Adding application Belnet FedSender .

a few seconds ago

- After the application is added successfully, proceed to next step



Adding application

Application added successfully

a few seconds ago

Step 2: Configure the Token encryption

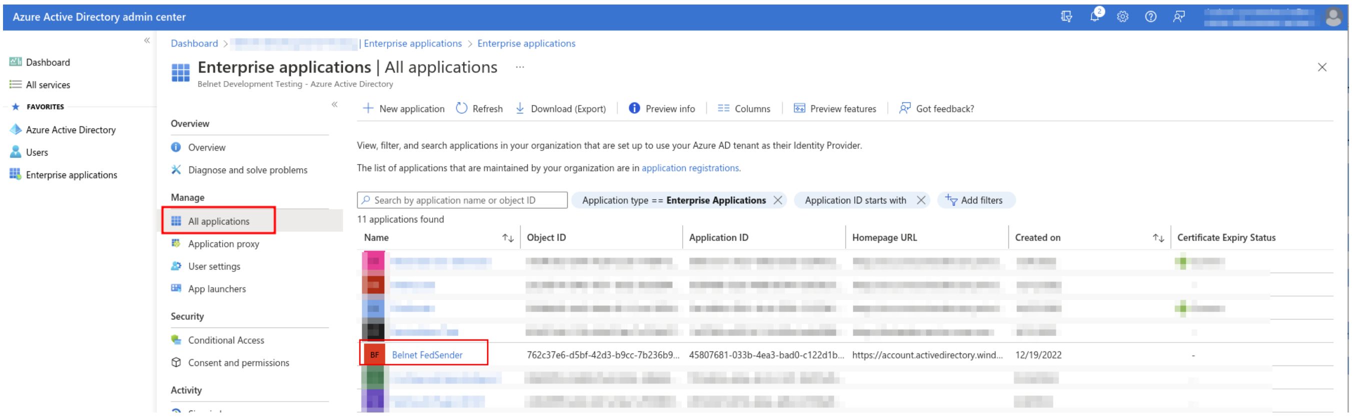
- Retrieve/Donwload now the Belnet Fedsender certificate used for metadatas:

  This can be done in two different ways:

  - by downloading the certificate itself on: https://fedsender.belnet.be/fedsender.belnet.be-metadata-ss.crt
    or
  - by consulting SAML Metadata on the Service Provider itself (FedSender SP) at url: https://fedsender.belnet.be/simplesaml/module.php/saml/sp/metadata.php/belnet-gcloud-idp

    certificate content is available within Tags <ds:X509Certificate> </ds:X509Certificate> .

- On Microsoft Azure Portal or Azure Active Directory admin center **Azure Active Directory** --> **Enterprise applications** **All Applications**
- **Select** your newly created application named Belnet **FedSender**


Azure Active Directory admin center
Dashboard
All services
FAVORITES
Azure Active Directory
Users
Enterprise applications
Dashboard > | Enterprise applications > Enterprise applications
Enterprise applications | All applications
Belnet Development Testing - Azure Active Directory
Overview
Overview
Diagnose and solve problems
Manage
All applications
Application proxy
User settings
App launchers
Security
Conditional Access
Consent and permissions
Activity
New application
Refresh
Download (Export)
Preview info
Columns
Preview features
Got feedback?
Search by application name or object ID
Application type == Enterprise Applications
Application ID starts with
Add filters

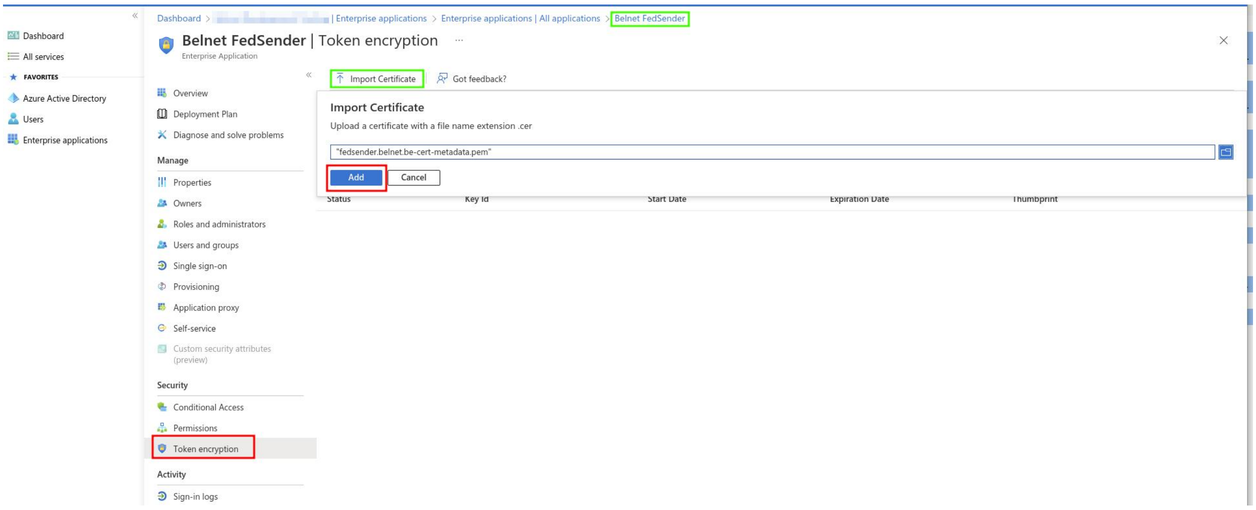
View, filter, and search applications in your organization that are set up to use your Azure AD tenant as their Identity Provider.

The list of applications that are maintained by your organization are in application registrations.

11 applications found

Name	Object ID	Application ID	Homepage URL	Created on	Certificate Expiry Status
BF Belnet FedSender	762c37e6-d5bf-42d3-b9cc-7b236b9...	45807681-033b-4ea3-bad0-c122d1b...	https://account.activedirectory.wind...	12/19/2022	-

- Click on **Token encryption**, then click on **Import Certificate**
- Select the **certificate** fetched previously and click on **Add**

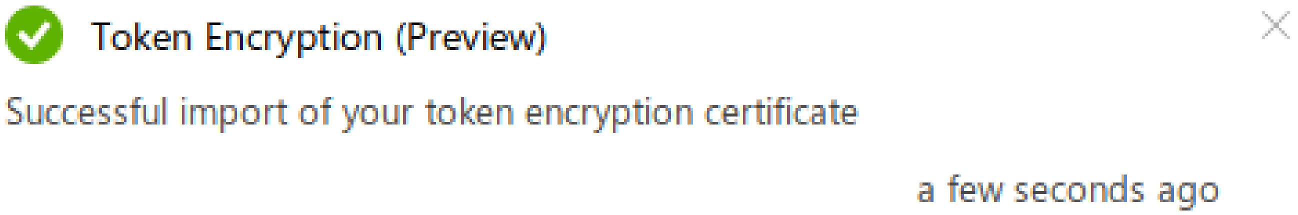


Import Certificate

Upload a certificate with a file name extension .cer

"fedsender.belnet.be-cert-metadata.pem"

- Wait for the **successful** import of the certificate

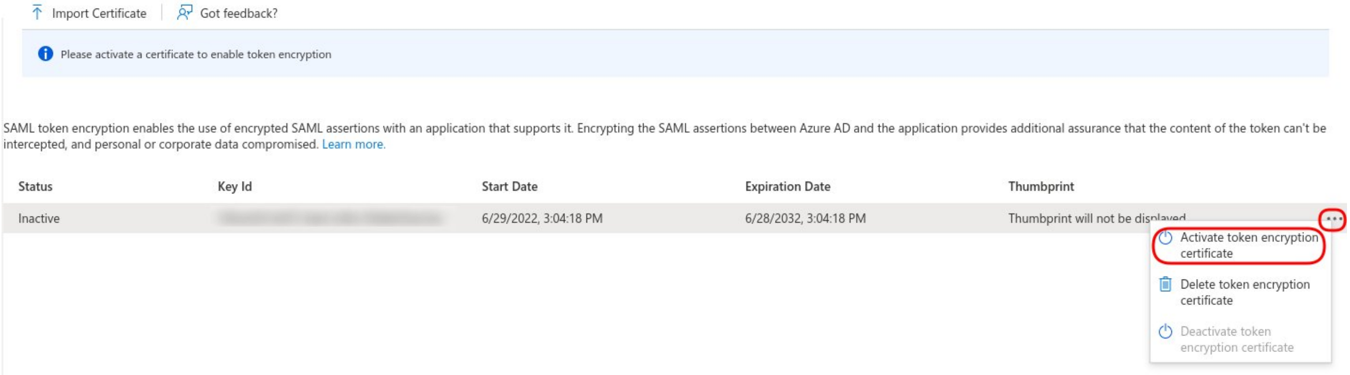


Token Encryption (Preview)

Successful import of your token encryption certificate

a few seconds ago

- Click on the **3 dots button** and click on **Activate token encryption**



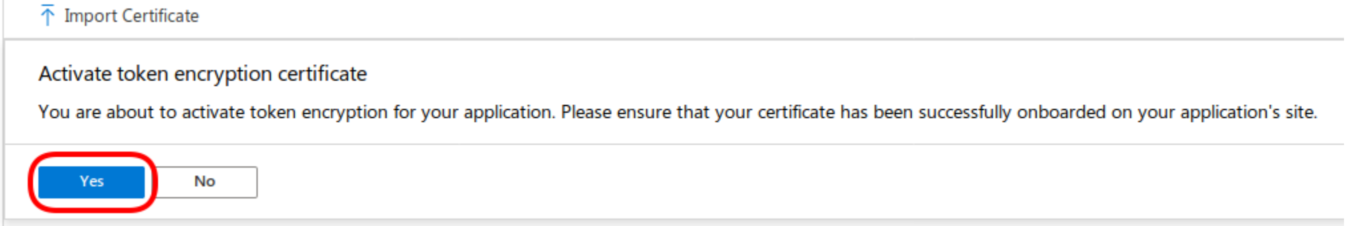
Please activate a certificate to enable token encryption

SAML token encryption enables the use of encrypted SAML assertions with an application that supports it. Encrypting the SAML assertions between Azure AD and the application provides additional assurance that the content of the token can't be intercepted, and personal or corporate data compromised. Learn more.

Status	Key Id	Start Date	Expiration Date	Thumbprint
Inactive	[redacted]	6/29/2022, 3:04:18 PM	6/28/2032, 3:04:18 PM	Thumbprint will not be displayed

Activate token encryption certificate
Delete token encryption certificate
Deactivate token encryption certificate

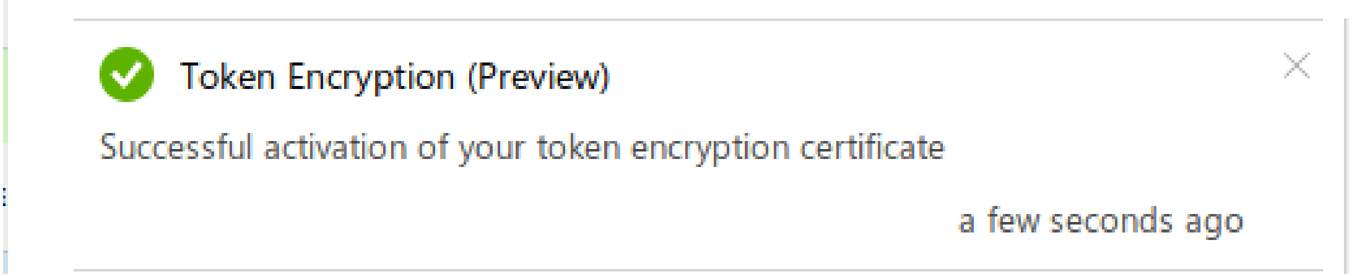
- Click on **Yes**



Activate token encryption certificate

You are about to activate token encryption for your application. Please ensure that your certificate has been successfully onboarded on your application's site.

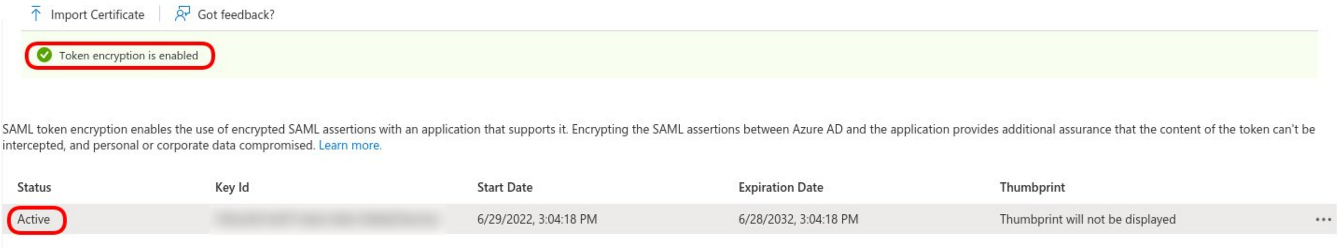
- Verify the **successful** activation of the token encryption certificate



Token Encryption (Preview)

Successful activation of your token encryption certificate

a few seconds ago



Token encryption is enabled

SAML token encryption enables the use of encrypted SAML assertions with an application that supports it. Encrypting the SAML assertions between Azure AD and the application provides additional assurance that the content of the token can't be intercepted, and personal or corporate data compromised. Learn more.

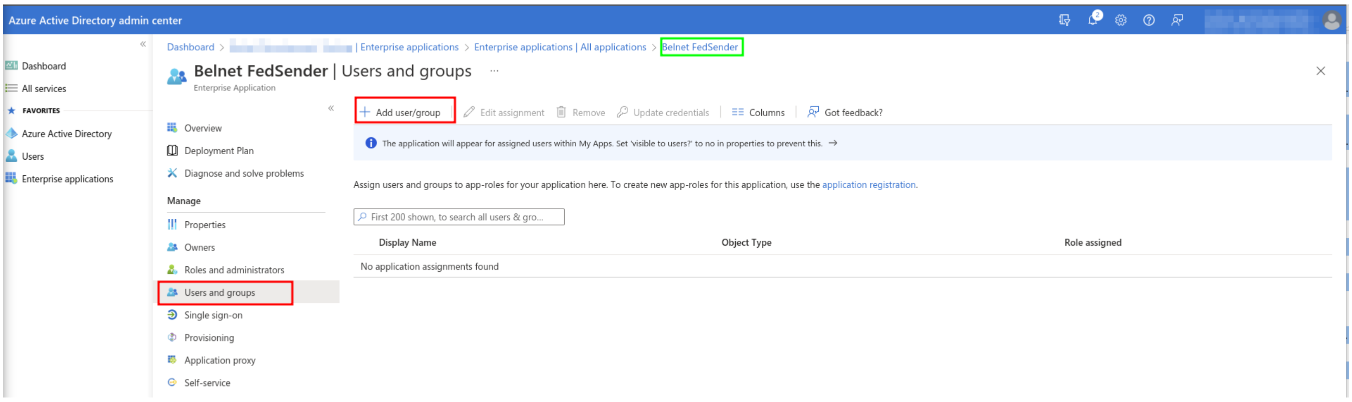
Status	Key Id	Start Date	Expiration Date	Thumbprint
Active	[redacted]	6/29/2022, 3:04:18 PM	6/28/2032, 3:04:18 PM	Thumbprint will not be displayed

⚠ **Monitor on your Tenant the expiration of the certificate!**

To prevent or minimize outage due to a certificate expiring, use roles and email distribution lists to ensure that certificate-related change notifications are closely monitored.

Step 3: Manage Users and groups

- On Microsoft Azure Portal or Azure Active Directory admin center, go to **Azure Active Directory** **Enterprise applications** **All applications** **Belnet FedSender** Under **Manage** (Left Pane) **Users and groups**, click on **Add user**



Azure Active Directory admin center [redacted]

Dashboard > [redacted] | Enterprise applications > Enterprise applications | All applications > Belnet FedSender

Belnet FedSender | Users and groups ···
Enterprise Application

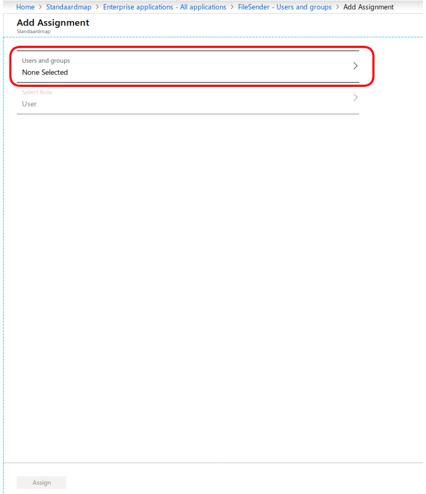
The application will appear for assigned users within My Apps. Set 'visible to users?' to no in properties to prevent this. →

Assign users and groups to app-roles for your application here. To create new app-roles for this application, use the application registration.

First 200 shown, to search all users & gro...

Display Name	Object Type	Role assigned
No application assignments found		

- Click on **User and groups**



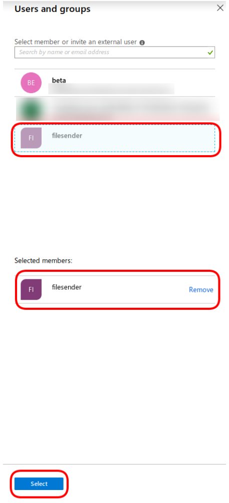
Home > Standaardmap > Enterprise applications - All applications > FileSender - Users and groups > Add Assignment

Add Assignment
Standaardmap

Users and groups
None Selected

Select Role
User

- For this example, we will select the group **fedsender** with user **beta** as member of. <u>**Please adapt as it fits to your organisation.**</u>
Click on **Select**



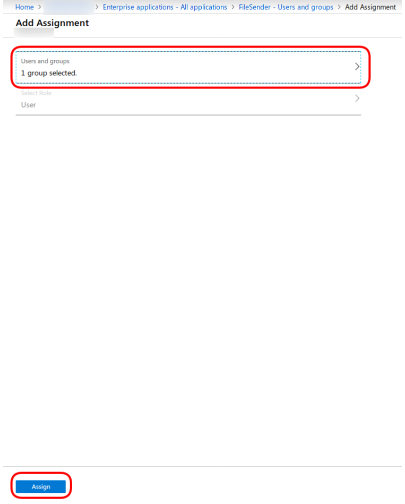
Users and groups

Select member or invite an external user
Search by name or email address

[redacted]

Selected members:

- Click on Assign



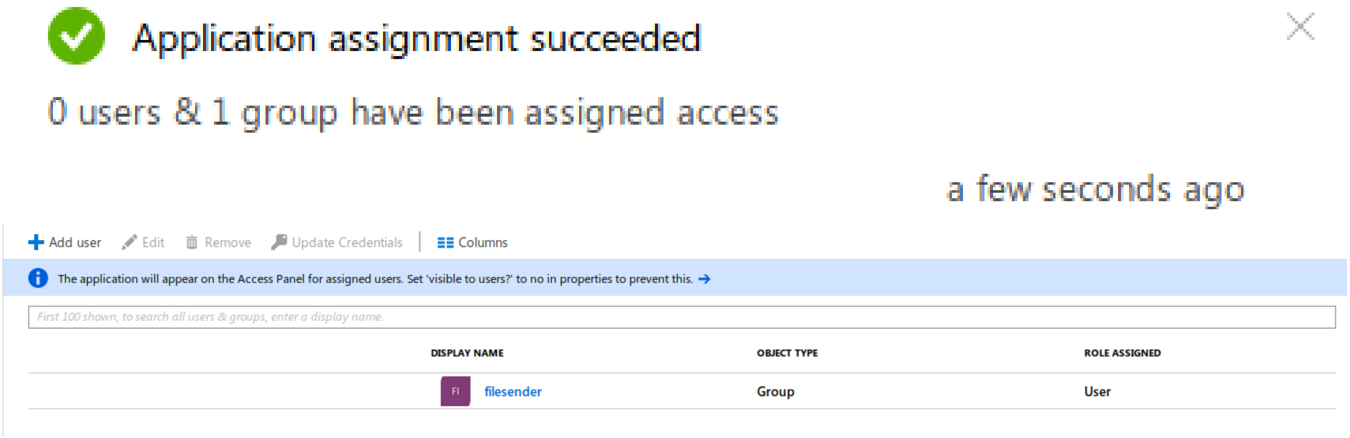
Home > [redacted] > Enterprise applications - All applications > FileSender - Users and groups > Add Assignment

Add Assignment

Users and groups
1 group selected.

Select Role
User

- Group **fedsender** has been assigned access (as **user**) to the **Belnet FedSender** application



Application assignment succeeded

0 users & 1 group have been assigned access

a few seconds ago

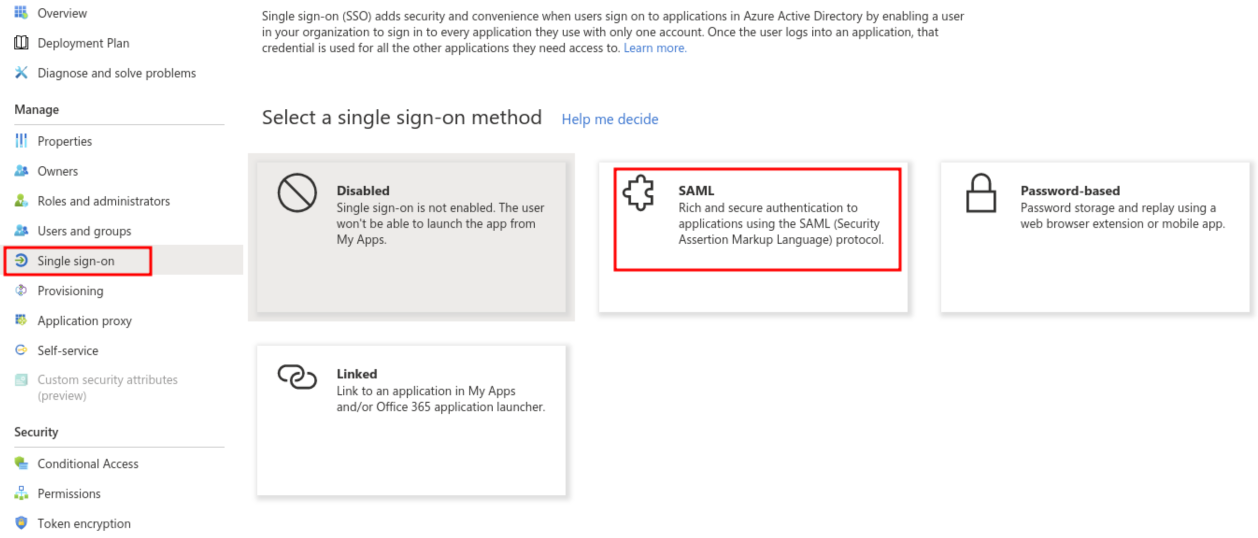
The application will appear on the Access Panel for assigned users. Set 'visible to users?' to no in properties to prevent this. →

First 100 shown, to search all users & groups, enter a display name.

DISPLAY NAME	OBJECT TYPE	ROLE ASSIGNED
FI filesender	Group	User

Step 4: Configure the Single sign-on (SAML)

- On Microsoft Azure Portal, go to **Azure Active Directory Enterprise applications All applications Belnet FedSender Manage Single sign-on**, click on **SAML**



Single sign-on (SSO) adds security and convenience when users sign on to applications in Azure Active Directory by enabling a user in your organization to sign in to every application they use with only one account. Once the user logs into an application, that credential is used for all the other applications they need access to. Learn more.

Select a single sign-on method

Disabled
Single sign-on is not enabled. The user won't be able to launch the app from My Apps.

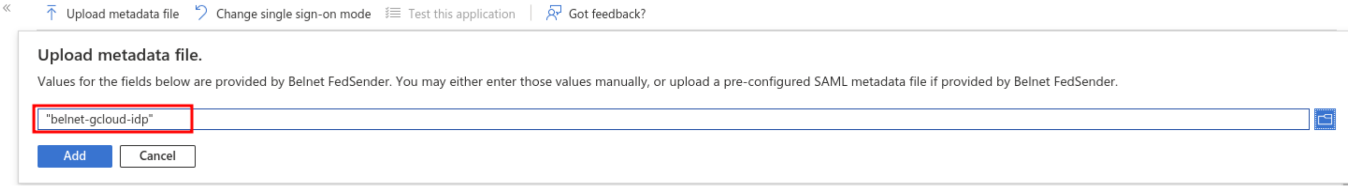
SAML
Rich and secure authentication to applications using the SAML (Security Assertion Markup Language) protocol.

Password-based
Password storage and replay using a web browser extension or mobile app.

Linked
Link to an application in My Apps and/or Office 365 application launcher.

- Download the Belnet FedSender metadatas from https://fedsender.belnet.be/simplesaml/module.php/saml/sp/metadata.php/belnet-gcloud-idp as an **.xml** file

- Click on **Upload metadata file**, select the **Belnet FedSender metadata xml file** and click on **Add**

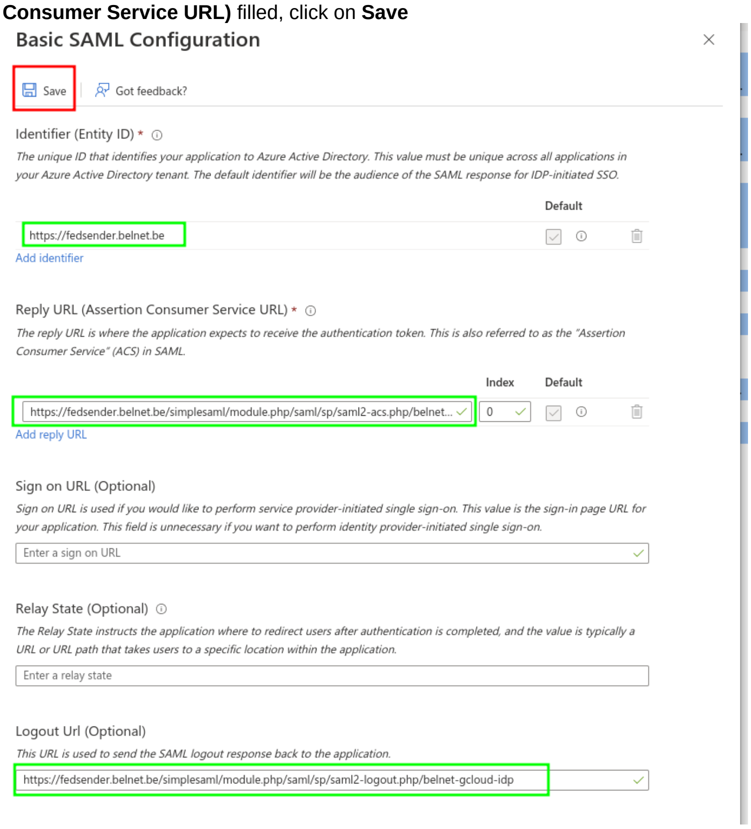


Upload metadata file.

Values for the fields below are provided by Belnet FedSender. You may either enter those values manually, or upload a pre-configured SAML metadata file if provided by Belnet FedSender.

"belnet-gcloud-idp"

- If the metadata file upload is **successful**, you will get the **Basic SAML Configuration** with the fields **Identifier (Entity ID)** and **Reply URL (Assertion Consumer Service URL)** filled, click on **Save**



Basic SAML Configuration

Save | Got feedback?

Identifier (Entity ID) *

The unique ID that identifies your application to Azure Active Directory. This value must be unique across all applications in your Azure Active Directory tenant. The default identifier will be the audience of the SAML response for IDP-initiated SSO.

	Default
https://fedsender.belnet.be	☑

Add identifier

Reply URL (Assertion Consumer Service URL) *

The reply URL is where the application expects to receive the authentication token. This is also referred to as the "Assertion Consumer Service" (ACS) in SAML.

	Index	Default
https://fedsender.belnet.be/simplesaml/module.php/saml/sp/saml2-acs.php/belnet...	0	☑

Add reply URL

Sign on URL (Optional)

Sign on URL is used if you would like to perform service provider-initiated single sign-on. This value is the sign-in page URL for your application. This field is unnecessary if you want to perform identity provider-initiated single sign-on.

Enter a sign on URL

Relay State (Optional)

The Relay State instructs the application where to redirect users after authentication is completed, and the value is typically a URL or URL path that takes users to a specific location within the application.

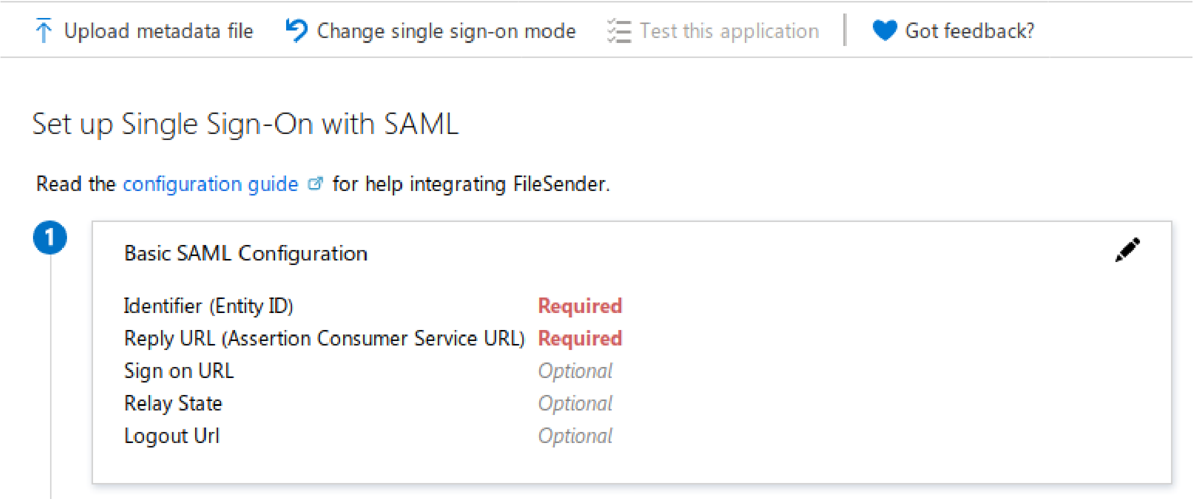
Enter a relay state

Logout Url (Optional)

This URL is used to send the SAML logout response back to the application.

https://fedsender.belnet.be/simplesaml/module.php/saml/sp/saml2-logout.php/belnet-gcloud-idp

- If the metadata file upload is **unsuccessful**, click on the **edit button** of **Basic SAML Configuration**



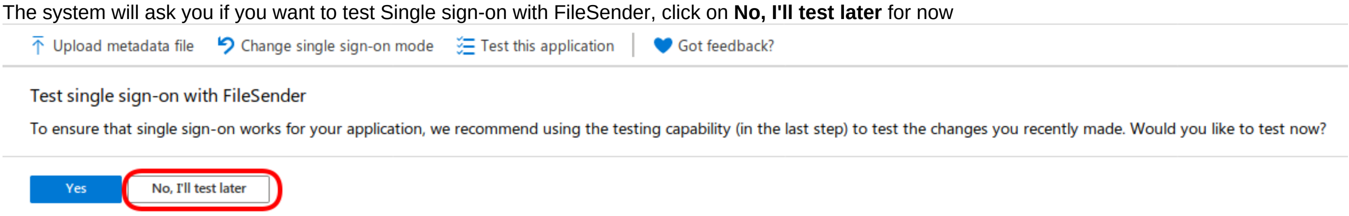
Set up Single Sign-On with SAML

Read the configuration guide for help integrating FileSender.

1 Basic SAML Configuration

Identifier (Entity ID)	Required
Reply URL (Assertion Consumer Service URL)	Required
Sign on URL	Optional
Relay State	Optional
Logout Url	Optional

- And fill the following fields:
  Identifier (Entity ID): https://fedsender.belnet.be
  Reply URL (Assertion Consumer Service URL): https://fedsender.belnet.be/simplesaml/module.php/saml/sp/saml2-acs.php/belnet-gcloud-idp
  Click on **Save**
- The system will ask you if you want to test Single sign-on with FileSender, click on **No, I'll test later** for now

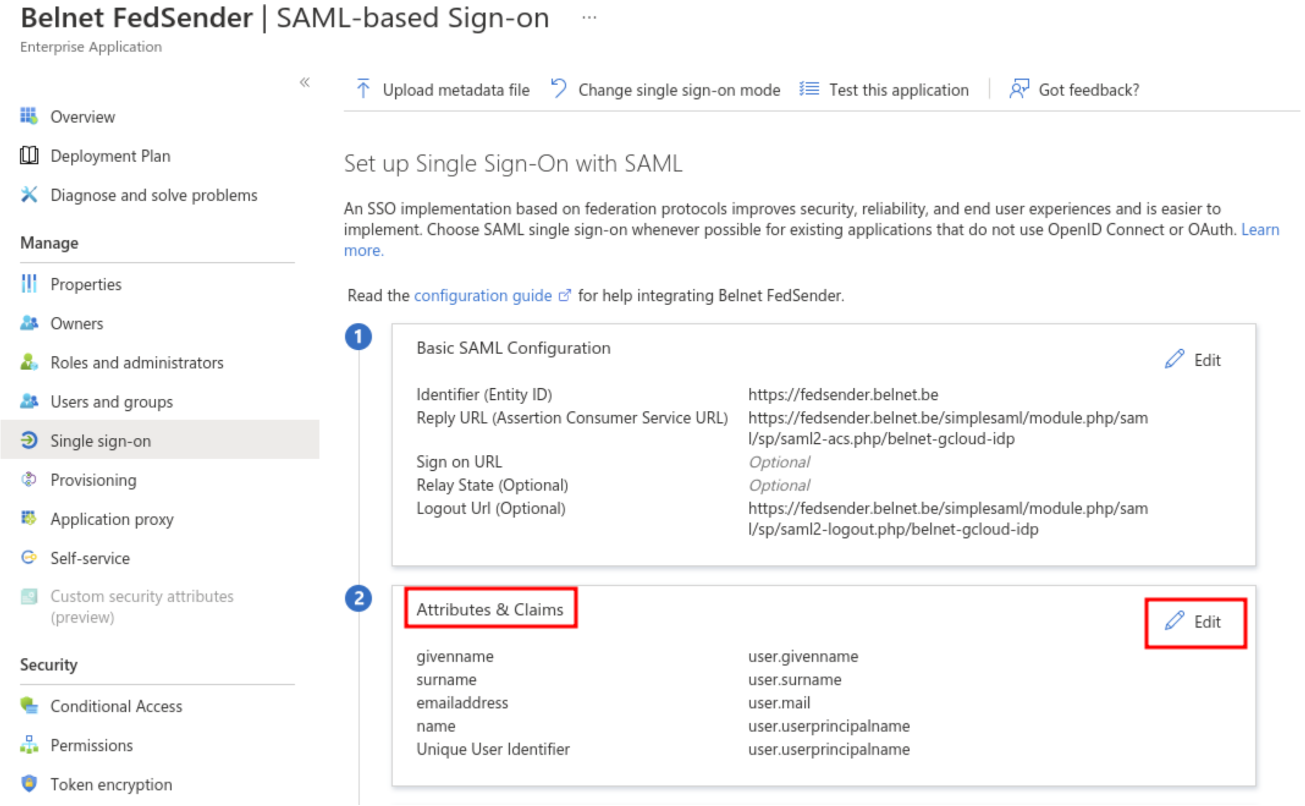


Test single sign-on with FileSender

To ensure that single sign-on works for your application, we recommend using the testing capability (in the last step) to test the changes you recently made. Would you like to test now?

Step 5: Configure User Attributes & Claims

- Click on the **edit** button of **User Attributes & Claims**



Belnet FedSender | SAML-based Sign-on ...

Enterprise Application

Set up Single Sign-On with SAML

An SSO implementation based on federation protocols improves security, reliability, and end user experiences and is easier to implement. Choose SAML single sign-on whenever possible for existing applications that do not use OpenID Connect or OAuth. Learn more.

Read the configuration guide for help integrating Belnet FedSender.

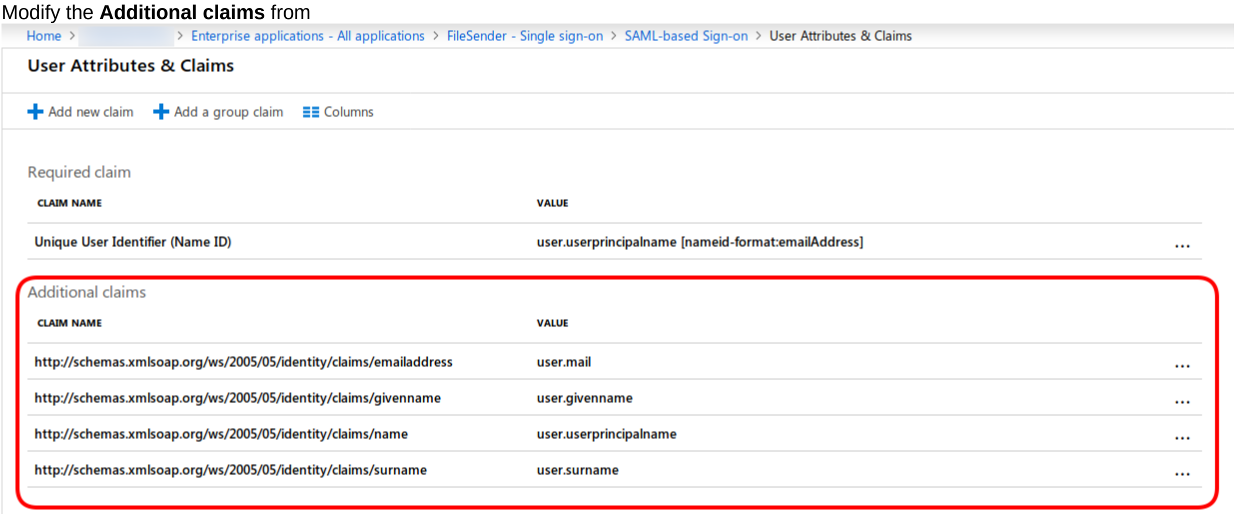
1 Basic SAML Configuration — Edit

Identifier (Entity ID)	https://fedsender.belnet.be
Reply URL (Assertion Consumer Service URL)	https://fedsender.belnet.be/simplesaml/module.php/saml/sp/saml2-acs.php/belnet-gcloud-idp
Sign on URL	*Optional*
Relay State (Optional)	*Optional*
Logout Url (Optional)	https://fedsender.belnet.be/simplesaml/module.php/saml/sp/saml2-logout.php/belnet-gcloud-idp

2 Attributes & Claims — Edit

givenname	user.givenname
surname	user.surname
emailaddress	user.mail
name	user.userprincipalname
Unique User Identifier	user.userprincipalname

- Modify the **Additional claims** from



Home > [redacted] > Enterprise applications - All applications > FileSender - Single sign-on > SAML-based Sign-on > User Attributes & Claims

User Attributes & Claims

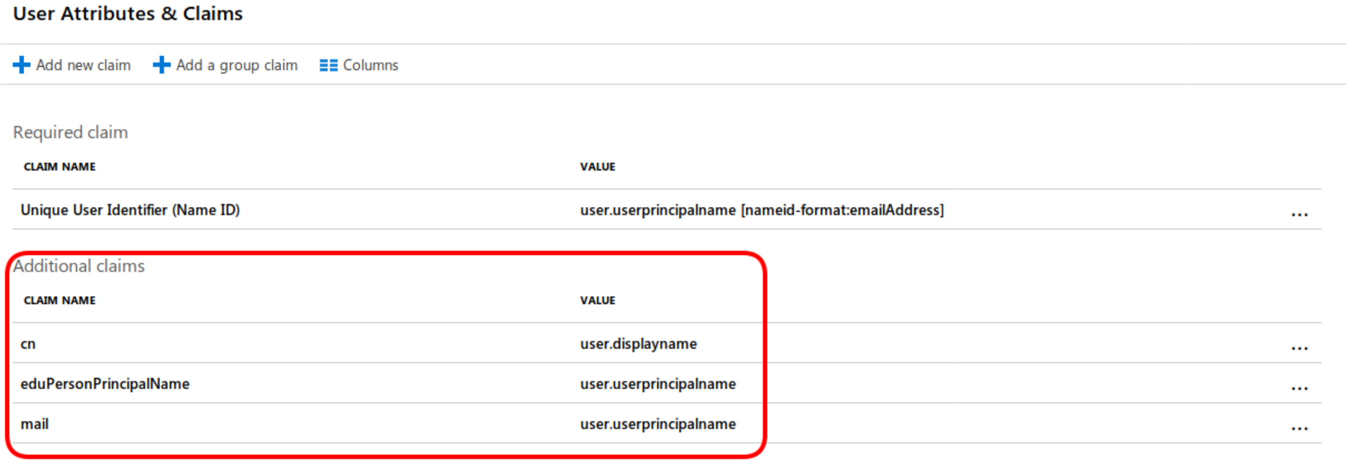
Required claim

CLAIM NAME	VALUE	
Unique User Identifier (Name ID)	user.userprincipalname [nameid-format:emailAddress]	...

Additional claims

CLAIM NAME	VALUE	
http://schemas.xmlsoap.org/ws/2005/05/identity/claims/emailaddress	user.mail	...
http://schemas.xmlsoap.org/ws/2005/05/identity/claims/givenname	user.givenname	...
http://schemas.xmlsoap.org/ws/2005/05/identity/claims/name	user.userprincipalname	...
http://schemas.xmlsoap.org/ws/2005/05/identity/claims/surname	user.surname	...

- To:



User Attributes & Claims

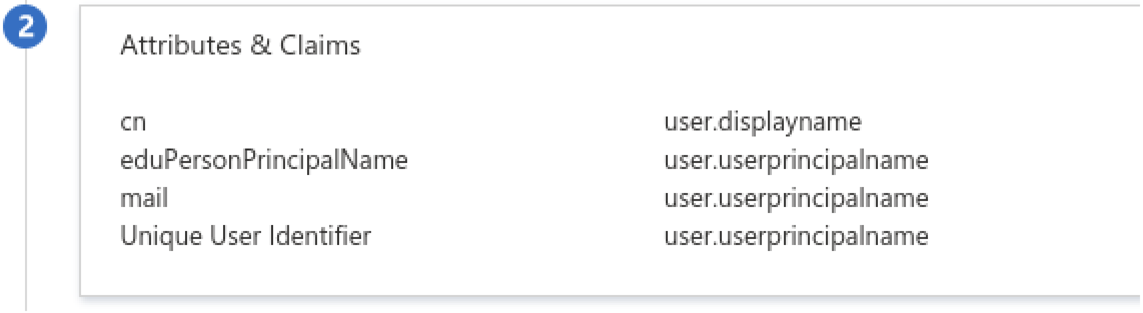
Required claim

CLAIM NAME	VALUE	
Unique User Identifier (Name ID)	user.userprincipalname [nameid-format:emailAddress]	...

Additional claims

CLAIM NAME	VALUE	
cn	user.displayname	...
eduPersonPrincipalName	user.userprincipalname	...
mail	user.userprincipalname	...

- Result:



2

Attributes & Claims

cn	user.displayname
eduPersonPrincipalName	user.userprincipalname
mail	user.userprincipalname
Unique User Identifier	user.userprincipalname

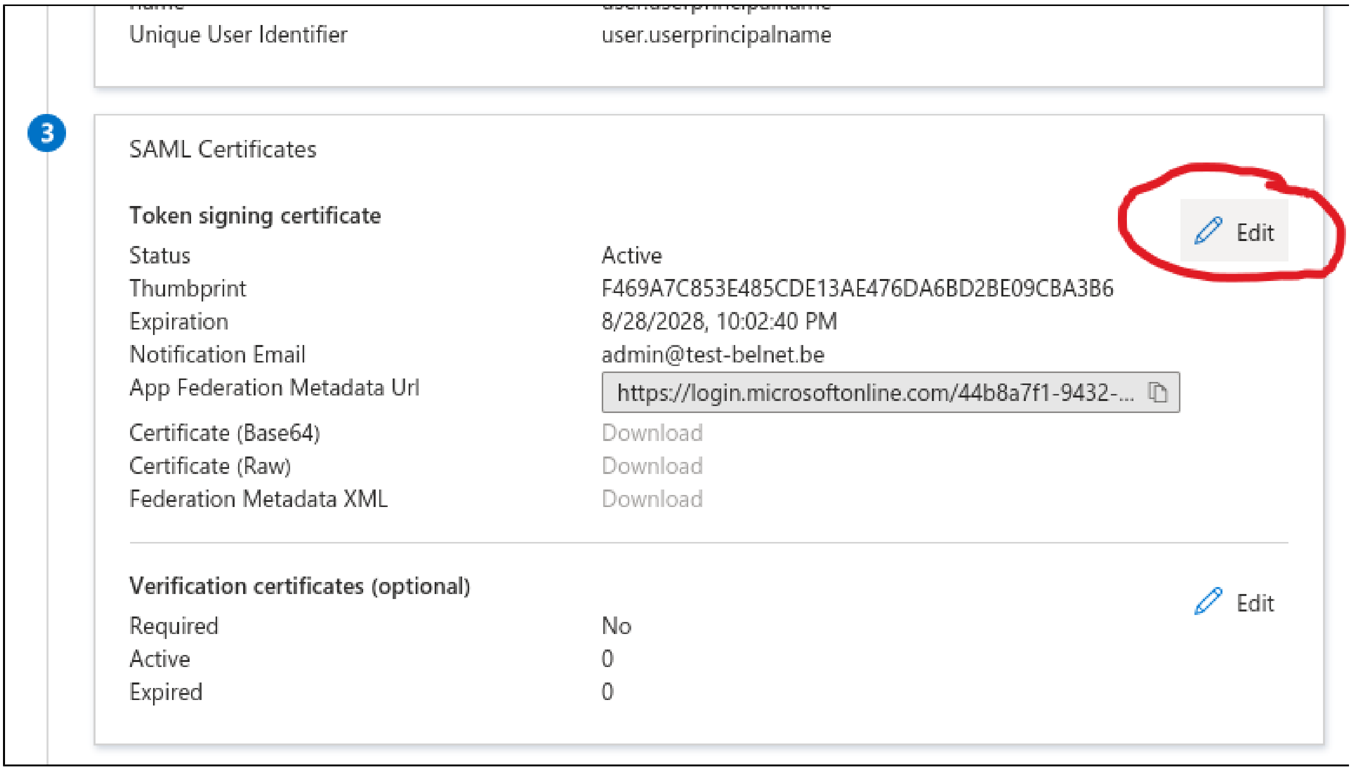
Step 6: SAML Signing Certificate (Optional - only if you created a dedicated certificate for all your Azure AD applications)

You may decided to created a dedicated certificate for all your Azure AD applications. See the introduction note in the Prerequisites.

In this case, you now have to import it in your application.

⚠ **You can skip this step if you didn't create a dedicated certificate for all your Azure AD** and this is the first Azure AD application you create, but you'll break things later when you create your second application (because you cannot skip this step for your second application).

- Click on "Edit" on the "SAML Certificates" tile of your application:



Unique User Identifier	user.userprincipalname

3

SAML Certificates

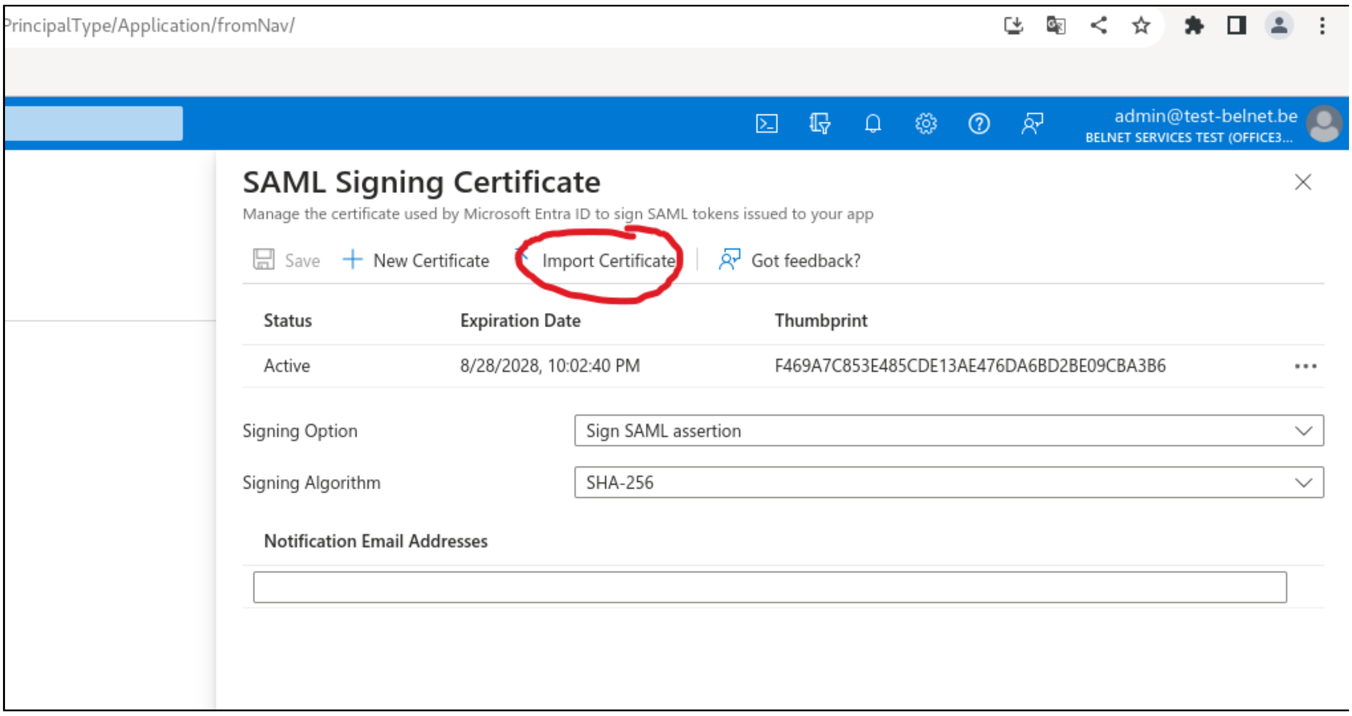
Token signing certificate — Edit

Status	Active
Thumbprint	F469A7C853E485CDE13AE476DA6BD2BE09CBA3B6
Expiration	8/28/2028, 10:02:40 PM
Notification Email	admin@test-belnet.be
App Federation Metadata Url	https://login.microsoftonline.com/44b8a7f1-9432-...
Certificate (Base64)	Download
Certificate (Raw)	Download
Federation Metadata XML	Download

Verification certificates (optional) — Edit

Required	No
Active	0
Expired	0

- In the "SAML Signing Certificate" pane on the right, click "Import Certificate":



SAML Signing Certificate

Manage the certificate used by Microsoft Entra ID to sign SAML tokens issued to your app

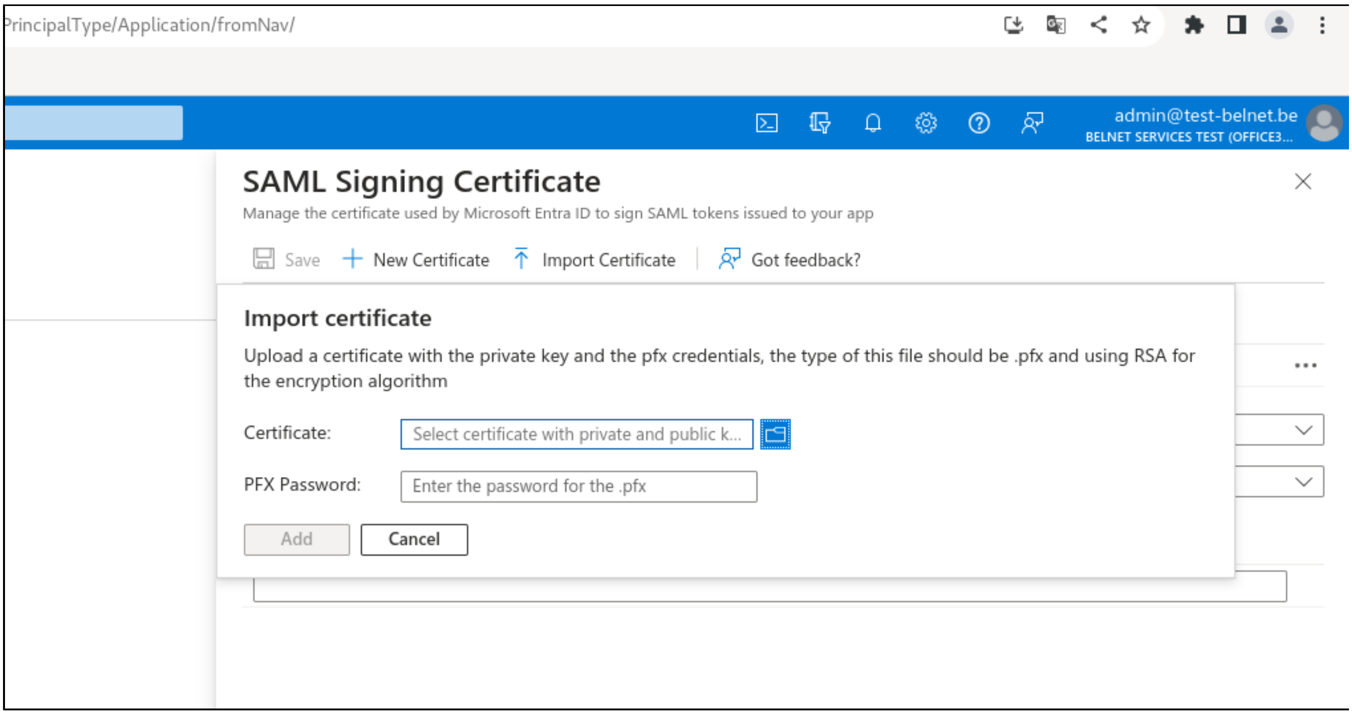
Status	Expiration Date	Thumbprint
Active	8/28/2028, 10:02:40 PM	F469A7C853E485CDE13AE476DA6BD2BE09CBA3B6

Signing Option: Sign SAML assertion

Signing Algorithm: SHA-256

Notification Email Addresses

- Select the .pfx file you have created earlier, type its passphrase, and click on "Add":



SAML Signing Certificate

Manage the certificate used by Microsoft Entra ID to sign SAML tokens issued to your app

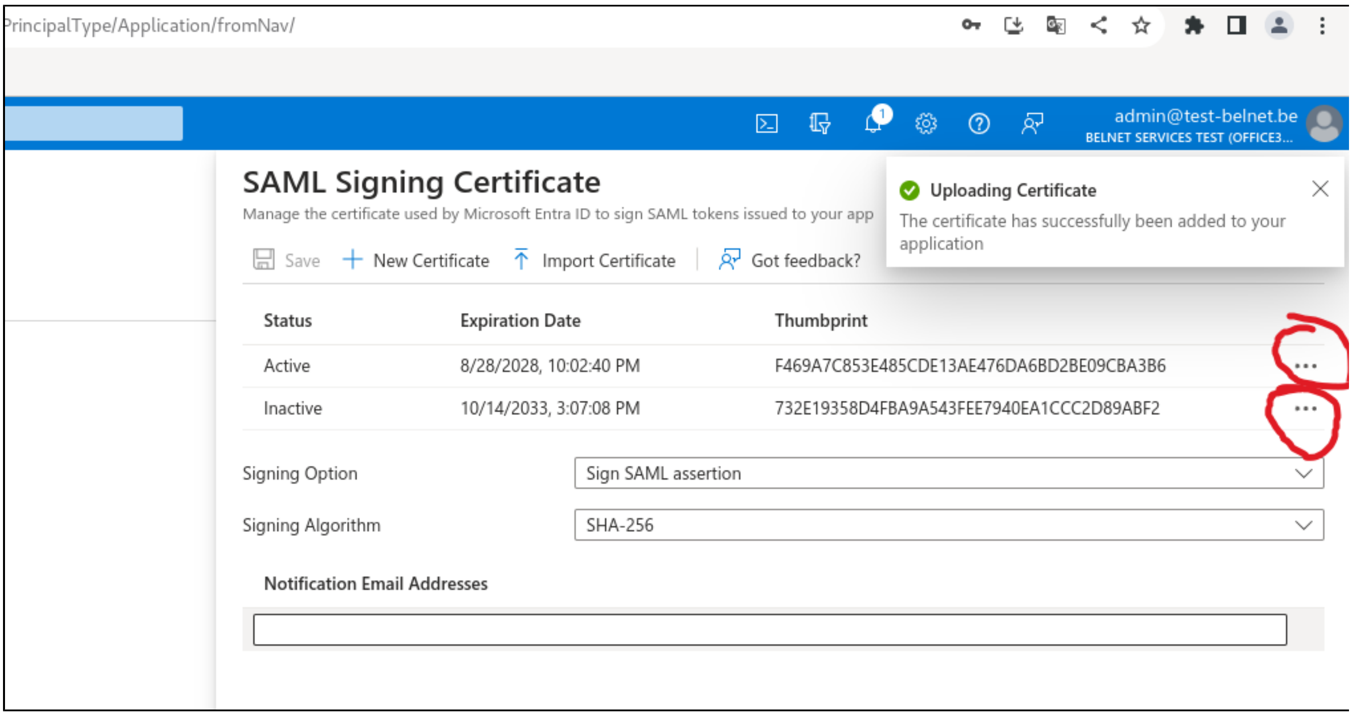
Import certificate

Upload a certificate with the private key and the pfx credentials, the type of this file should be .pfx and using RSA for the encryption algorithm

Certificate: Select certificate with private and public k...

PFX Password: Enter the password for the .pfx

- Your certificate is now uploaded. Now, activate it and deactivate the autogenerated one by using their 3-dots menu:



PrincipalType/Application/fromNav/

admin@test-belnet.be
BELNET SERVICES TEST (OFFICE3...

SAML Signing Certificate

Manage the certificate used by Microsoft Entra ID to sign SAML tokens issued to your app

Uploading Certificate
The certificate has successfully been added to your application

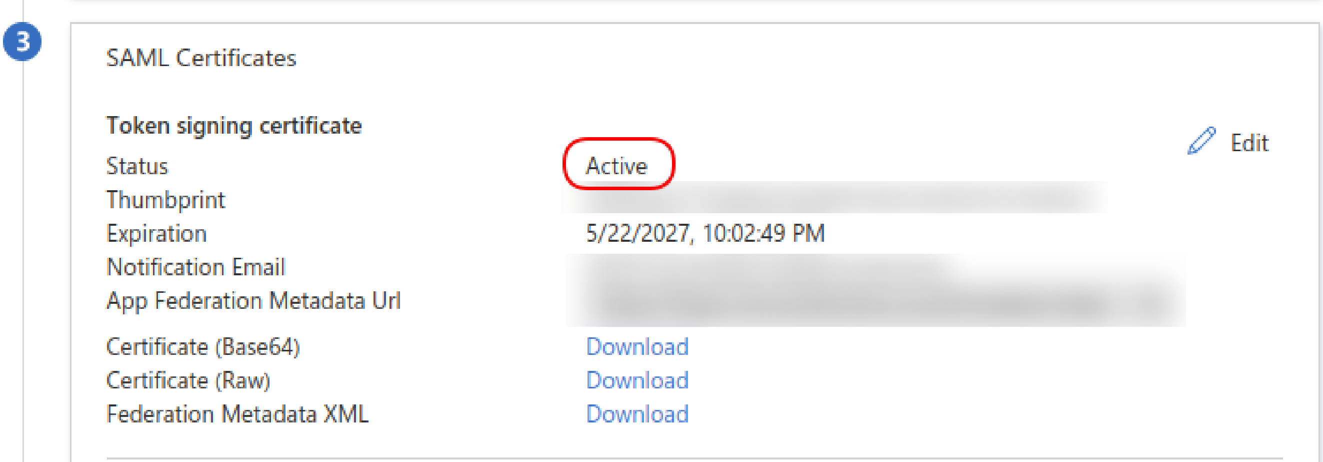
Status	Expiration Date	Thumbprint
Active	8/28/2028, 10:02:40 PM	F469A7C853E485CDE13AE476DA6BD2BE09CBA3B6
Inactive	10/14/2033, 3:07:08 PM	732E19358D4FBA9A543FEE7940EA1CCC2D89ABF2

Signing Option: Sign SAML assertion

Signing Algorithm: SHA-256

Notification Email Addresses

- Verify that the SAML Signing Certificate is Active

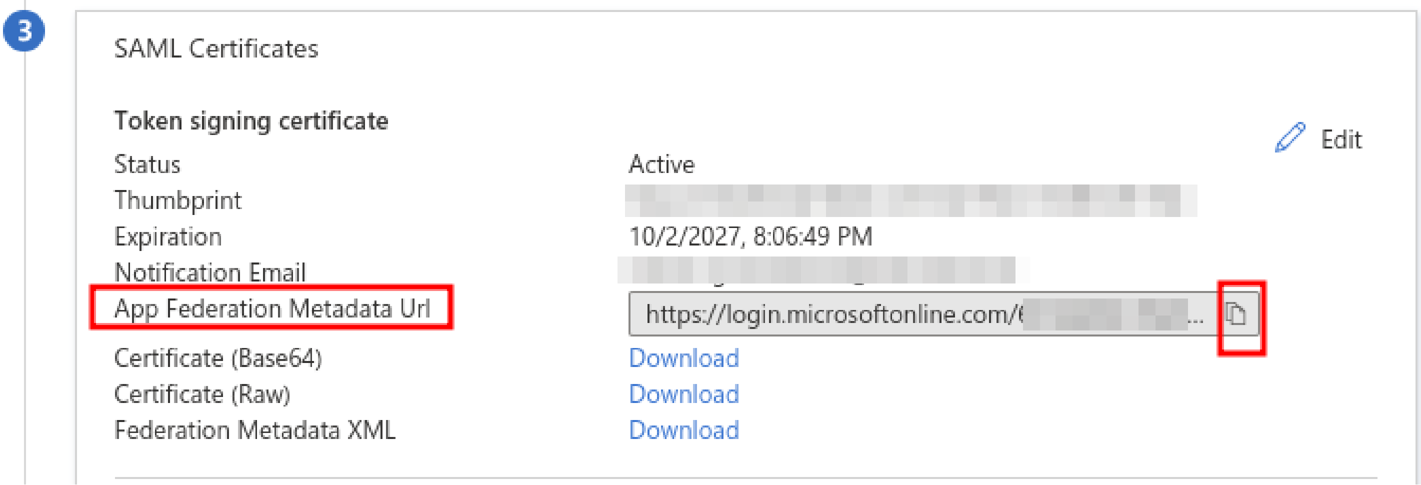


3 SAML Certificates

Token signing certificate

Status	Active
Thumbprint	[redacted]
Expiration	5/22/2027, 10:02:49 PM
Notification Email	[redacted]
App Federation Metadata Url	[redacted]
Certificate (Base64)	Download
Certificate (Raw)	Download
Federation Metadata XML	Download

Step 7: Send/Provide your App Federation Metadata URL to Belnet



3 SAML Certificates

Token signing certificate

Status	Active
Thumbprint	[redacted]
Expiration	10/2/2027, 8:06:49 PM
Notification Email	[redacted]
App Federation Metadata Url	https://login.microsoftonline.com/[redacted]...
Certificate (Base64)	Download
Certificate (Raw)	Download
Federation Metadata XML	Download

- Open a ticket by sending an email to Belnet Servicedesk providing these details:
  - Subject: **FedSender: Add Azure IdP for <your Organisation name>**
  - In the message body, mention:
    - **Onboarding request to Belnet FedSender**
    - Technical Contact responsible for the IdP setup: **First name, Last name & email address**
    - Business service: **FED_APPS_87: FedSender**
    - Assignment group: **Customer Relations**
    - Paste your **App Federation Metadata Url** (see above capture, 3rd window in SAML config for your app).

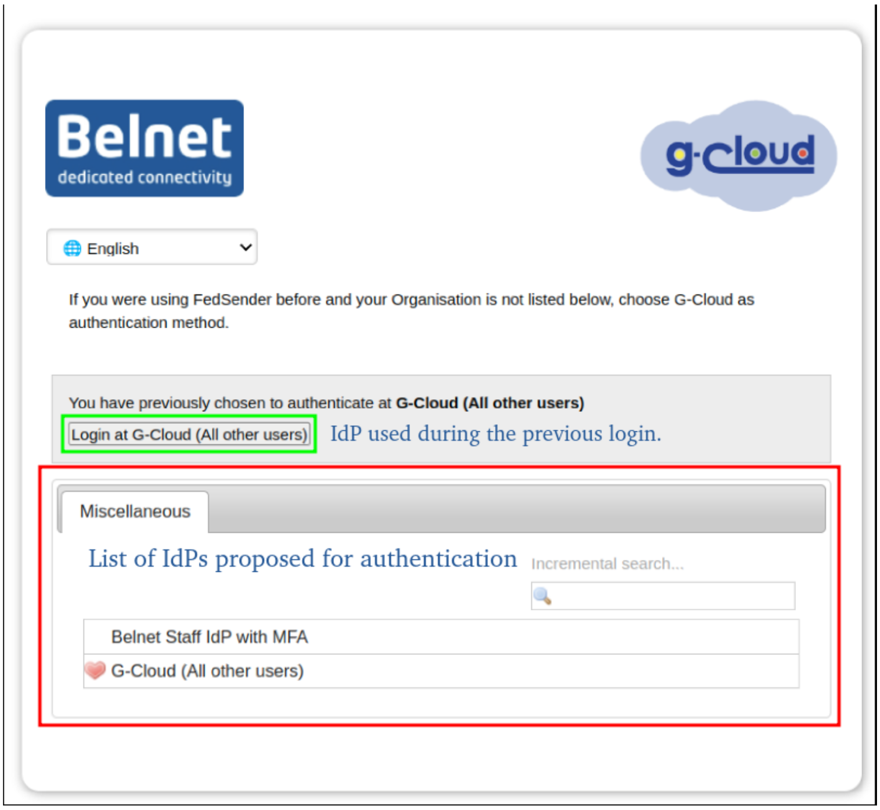
- Wait for confirmation from your Account Manager and/or Belnet's technical team.

Step 8: Test Single sign-on with Belnet FedSender

Once Belnet has added your IdP to the Service Provider (FedSender) configuration files, your IdP will be listed when you connect to Belnet Fedsender.

Your organisation's employees will have to choose your organisation's name in the IdP list on fedsender.belnet.be in order to be able to authenticate via your IdP.

Example of the Idp selection menu during the login phase:


Belnet
dedicated connectivity
g-cloud
English

If you were using FedSender before and your Organisation is not listed below, choose G-Cloud as authentication method.

You have previously chosen to authenticate at **G-Cloud (All other users)**

Login at G-Cloud (All other users)

IdP used during the previous login.

List of IdPs proposed for authentication

Incremental search...
Belnet Staff IdP with MFA
G-Cloud (All other users)

The choice of IdP in the discovery service is cached by the user's web browser.

If one of your user has selected the wrong IdP, clear the browser cache on the user's computer.