BELNET

Federation Documentation

AD FS 3.0 IDP for windows 2012R2 server and the Belnet Federation

Belnet
8/11/2015

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1 Preparing the server

1.1 Domain membership

The server on which we will install shibboleth IDP needs to be a member of the domain. This will not be covered by this document.

1.2 DNS

DNS resolution should be properly configured for internal and external addresses. Also not covered in this document.

1.3 NTP

You have to make sure that your server is synchronized with NTP. We advise using the NTP server of Belnet (ntp.belnet.be)

1.4 IIS (optional)

We suppose that IIS Role has already been installed on the server. There are no more dependencies between AD FS and IIS since the 2012 R2 release, but we will use it to create a self-signed certificate. If you already have a certificate, you can use this one.

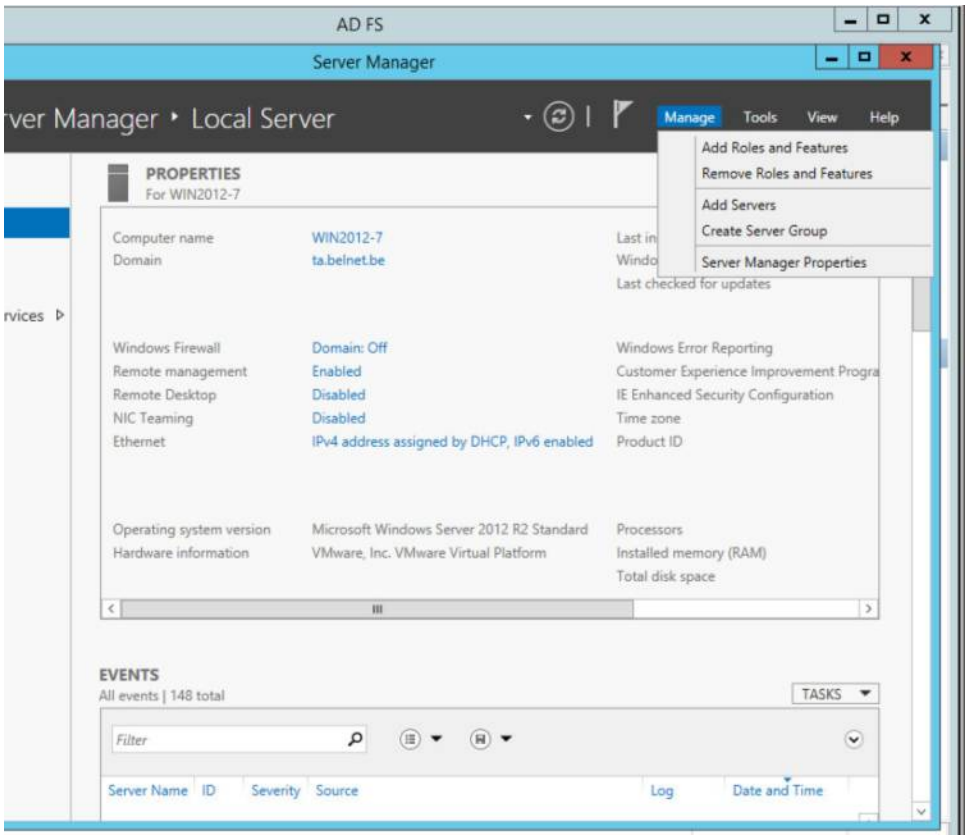
1.5 Service account

You will need a service account in order to launch the service.

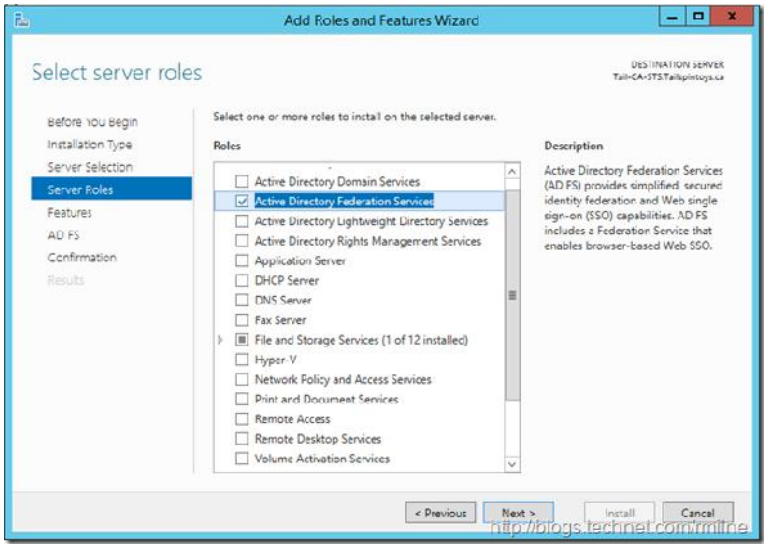
2 Install AD FS 3.0

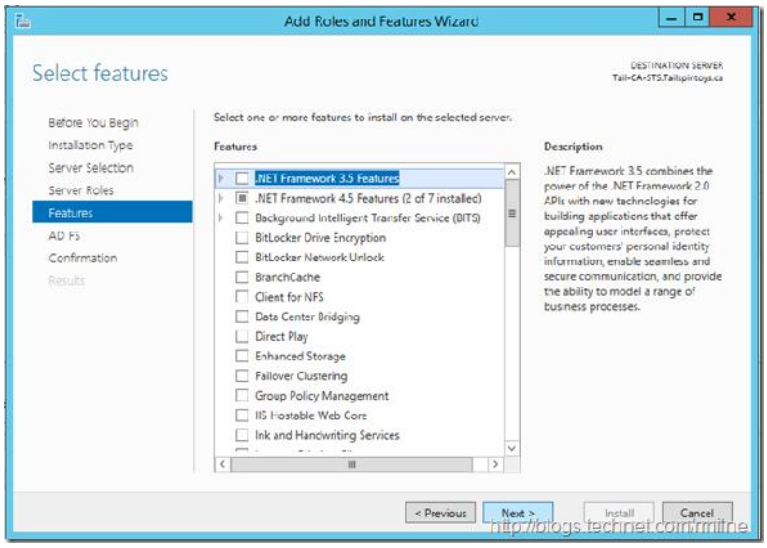
In this document, we will only cover the creation of a federation server, in a new federation with a standalone server. If you already have a federation server active, you probably can skip this part and go directly to the configuration.

You will have to add the ADFS role to your server.

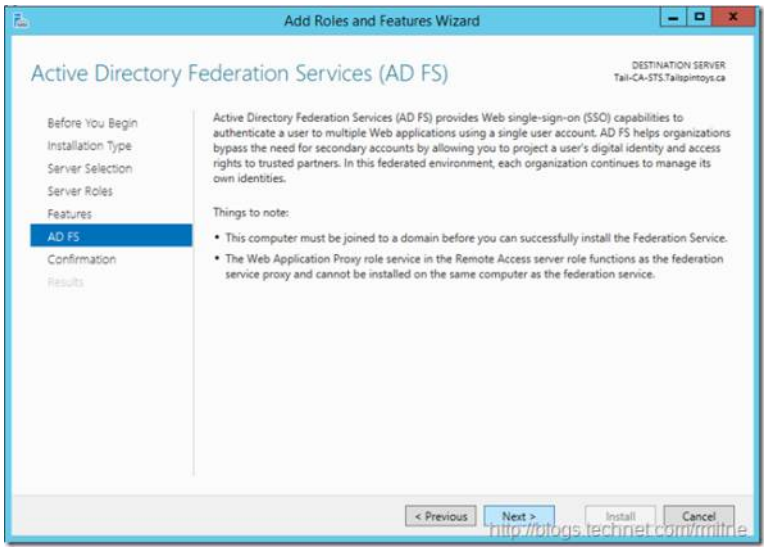


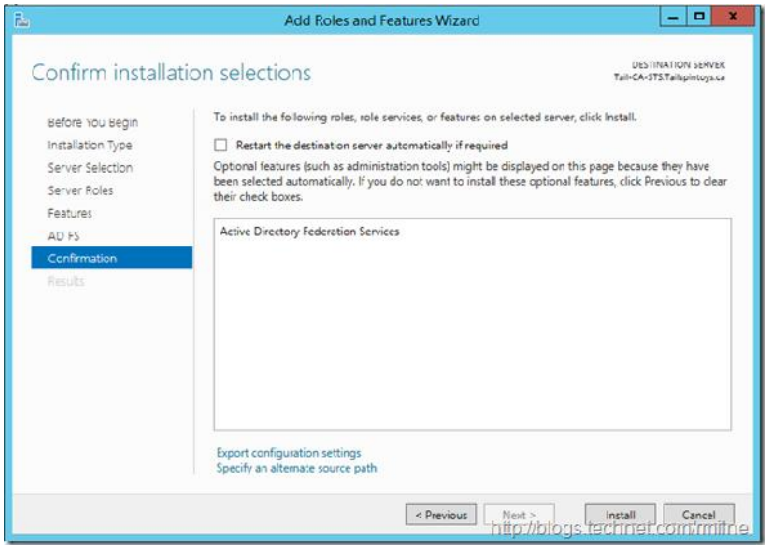
Then follow the instructions:

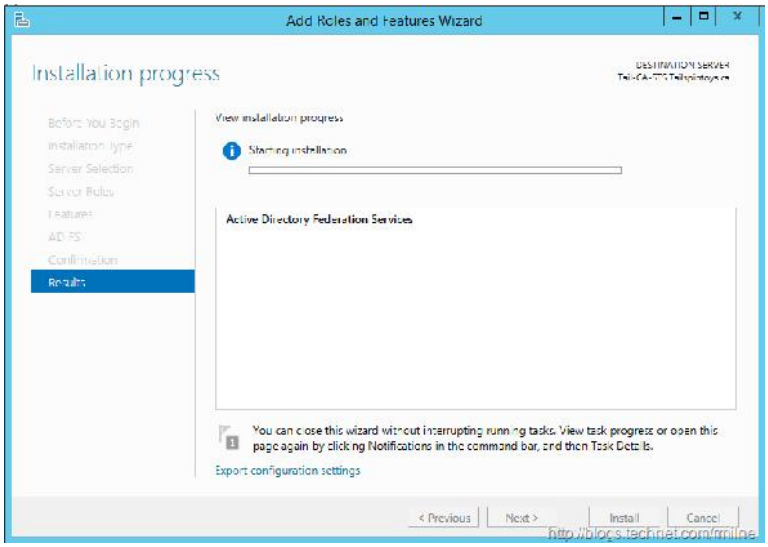


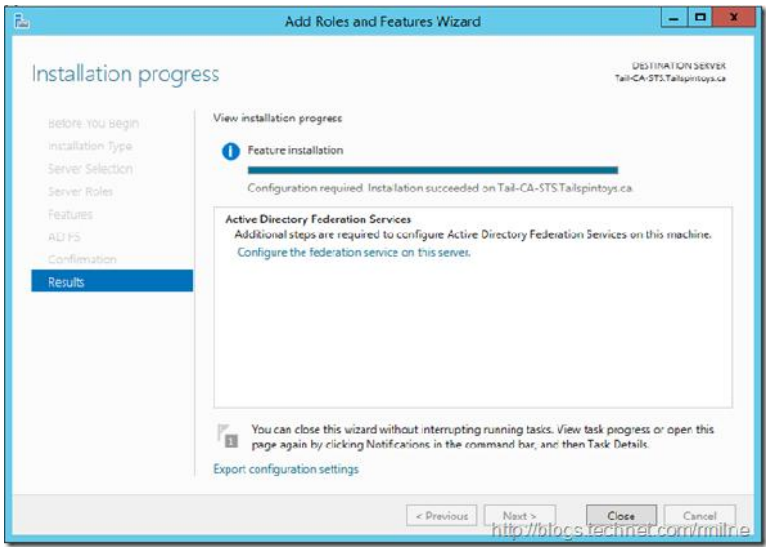


No additional feature is needed.




Add Roles and Features Wizard
Confirm installation selections
DESTINATION SERVER
Tail-CA-STS.Tailspintoys.ca
Before You Begin
Installation Type
Server Selection
Server Roles
Features
AD FS
Confirmation
Results
To install the following roles, role services, or features on selected server, click Install.
Restart the destination server automatically if required
Optional features (such as administration tools) might be displayed on this page because they have been selected automatically. If you do not want to install these optional features, click Previous to clear their check boxes.
Active Directory Federation Services
Export configuration settings
Specify an alternate source path
< Previous
Next >
Install
Cancel
http://blogs.technet.com/rmilne

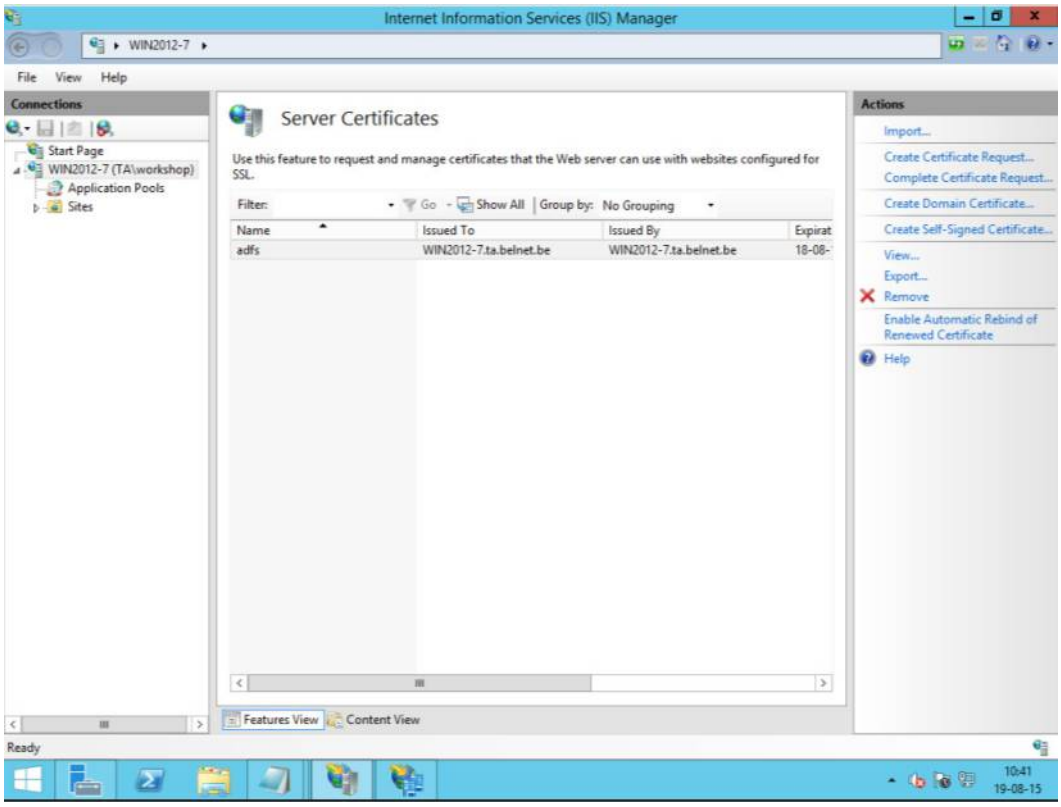

Add Roles and Features Wizard
Installation progress
DESTINATION SERVER
Before You Begin
Installation Type
Server Selection
Server Roles
Features
AD FS
Confirmation
Results
View installation progress
Starting installation
Active Directory Federation Services
You can close this wizard without interrupting running tasks. View task progress or open this page again by clicking Notifications in the command bar, and then Task Details.
Export configuration settings
< Previous
Next >
Install
Cancel
http://blogs.technet.com/rmilne


Add Roles and Features Wizard
Installation progress
DESTINATION SERVER
Tail-CA-STS.Tailspintoys.ca
Before You Begin
Installation Type
Server Selection
Server Roles
Features
AD FS
Confirmation
Results
View installation progress
Feature installation
Configuration required. Installation succeeded on Tail-CA-STS.Tailspintoys.ca.
Active Directory Federation Services
Additional steps are required to configure Active Directory Federation Services on this machine.
Configure the federation service on this server.
You can close this wizard without interrupting running tasks. View task progress or open this page again by clicking Notifications in the command bar, and then Task Details.
Export configuration settings
< Previous
Next >
Close
Cancel
http://blogs.technet.com/rmilne

3 Before Configuring AD FS 3.0

3.1 Certificate

You will need a certificate for the AD FS implementation to work. In this document we will create a self-signed certificate that we will generate from IIS8



This certificate will be used for accessing the AD FS server.
You can also download your own certificate created specifically for the AD FS implementation.

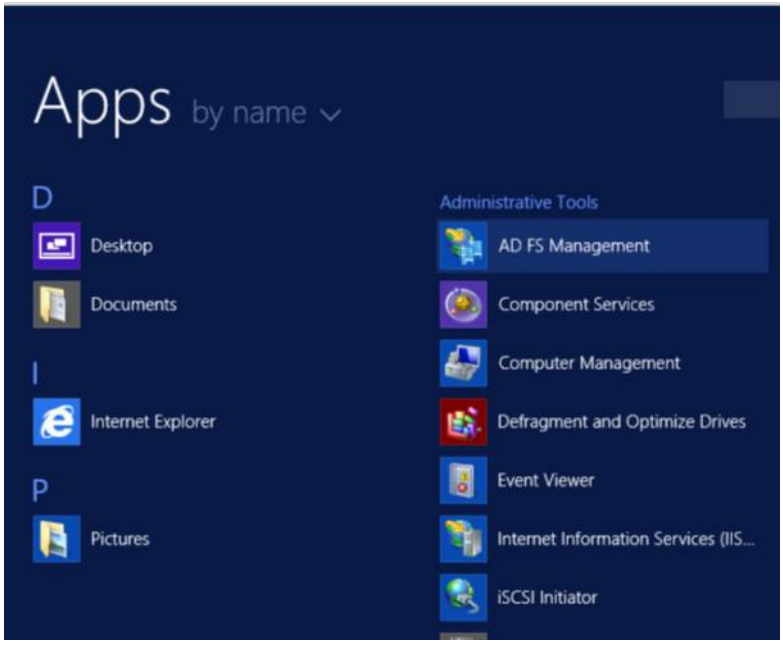
Other certificate will be automatically generated to sign the sending of the attributes.

4 Configure AD FS 3.0

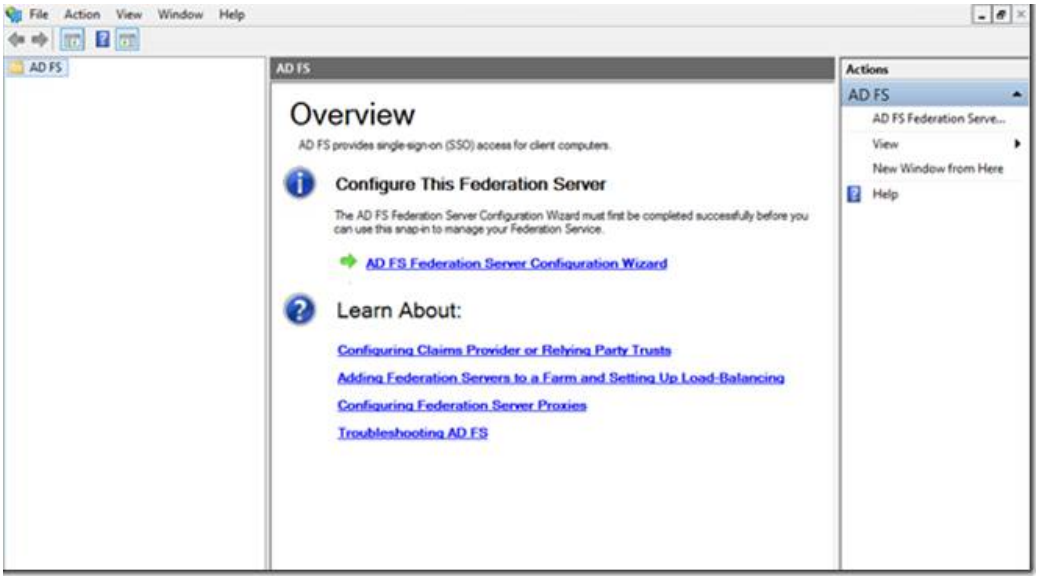
4.1 General configuration of the AD FS server

In order to configure AD FS 3.0 you will need **Domain Admin** rights

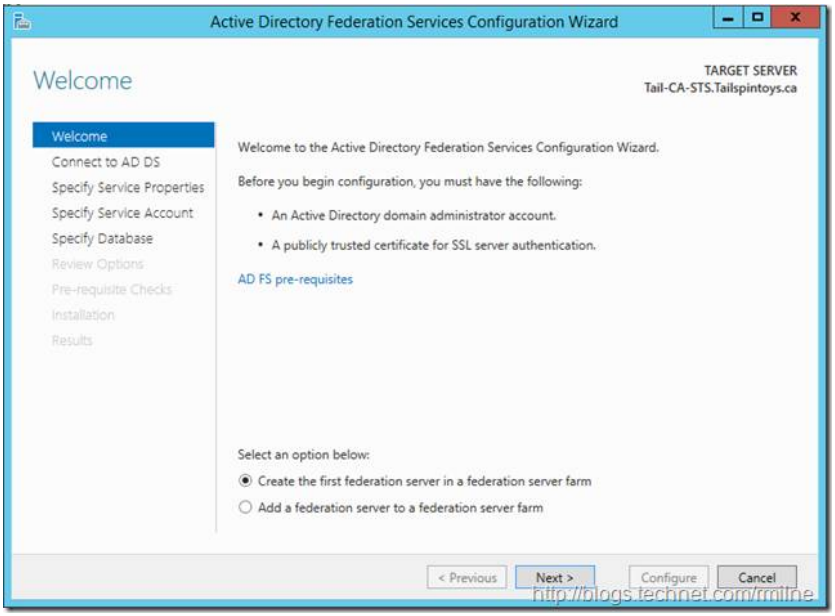
You can now go in the AD FS management snap-in

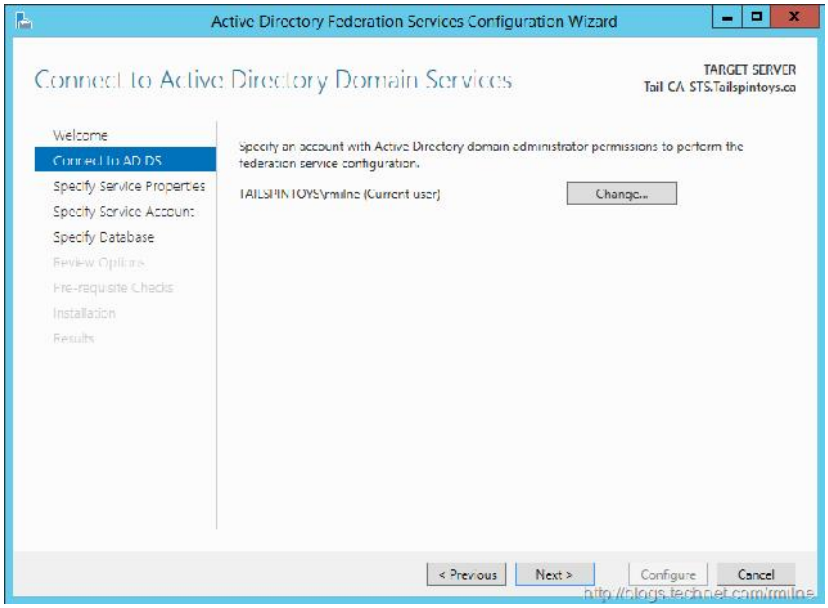


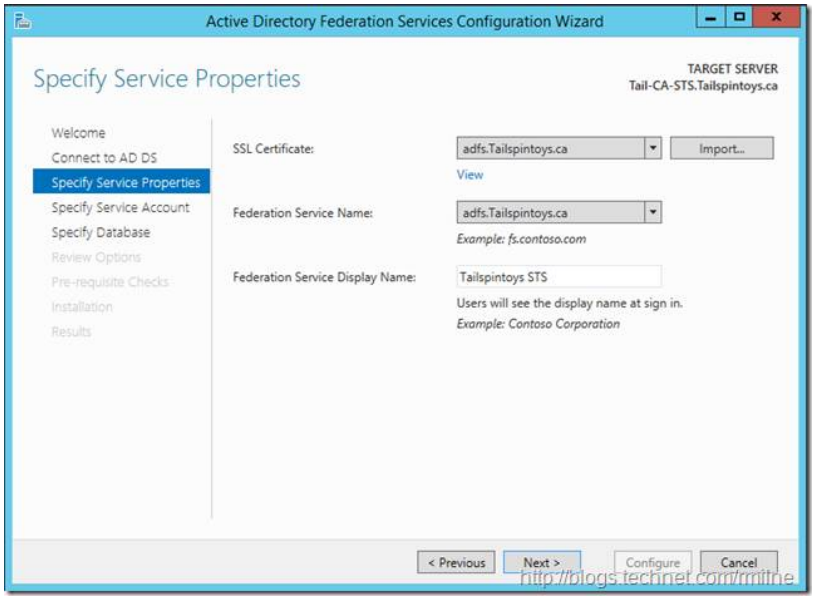
You can start configuring your AD FS server by clicking on the configuration wizard



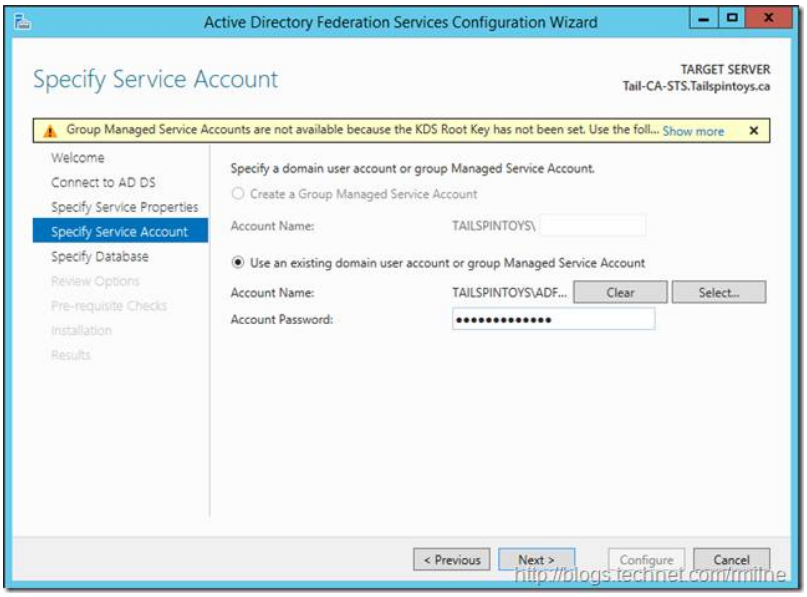
We will now create a new federation with one standalone AD FS server


Active Directory Federation Services Configuration Wizard
Welcome
TARGET SERVER
Tail-CA-STS.Tailspintoys.ca
Welcome
Connect to AD DS
Specify Service Properties
Specify Service Account
Specify Database
Review Options
Pre-requisite Checks
Installation
Results
Welcome to the Active Directory Federation Services Configuration Wizard.
Before you begin configuration, you must have the following:
An Active Directory domain administrator account.
A publicly trusted certificate for SSL server authentication.
AD FS pre-requisites
Select an option below:
Create the first federation server in a federation server farm
Add a federation server to a federation server farm
< Previous
Next >
Configure
Cancel
http://blogs.technet.com/rmilne

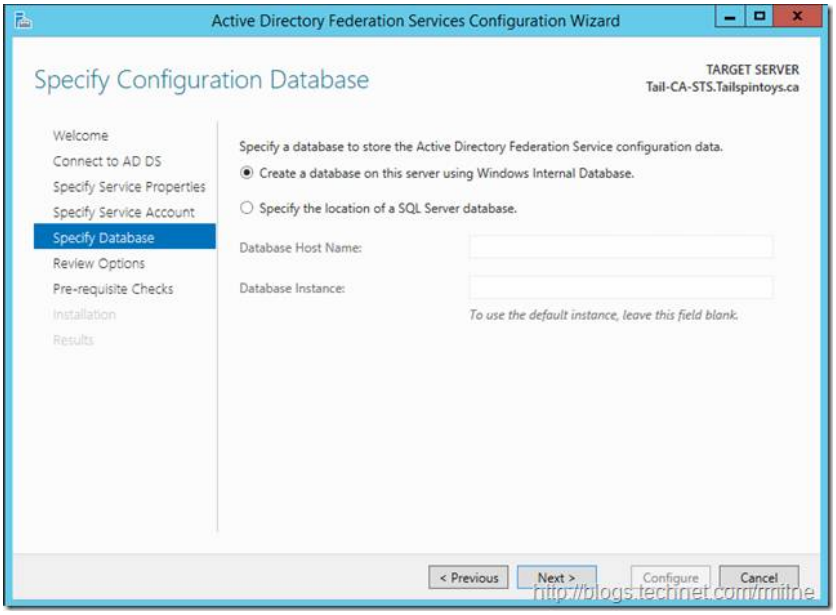

Active Directory Federation Services Configuration Wizard
Connect to Active Directory Domain Services
TARGET SERVER
Tail CA STS.Tailspintoys.ca
Welcome
Connect to AD DS
Specify Service Properties
Specify Service Account
Specify Database
Review Options
Pre-requisite Checks
Installation
Results
Specify an account with Active Directory domain administrator permissions to perform the federation service configuration.
TAILSPINTOYS\rmilne (Current user)
Change...
< Previous
Next >
Configure
Cancel
http://blogs.technet.com/rmilne

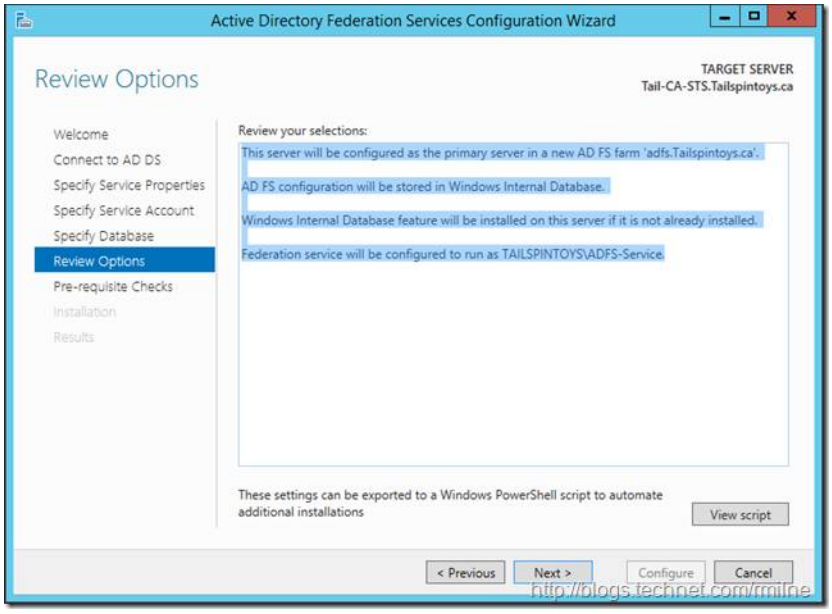


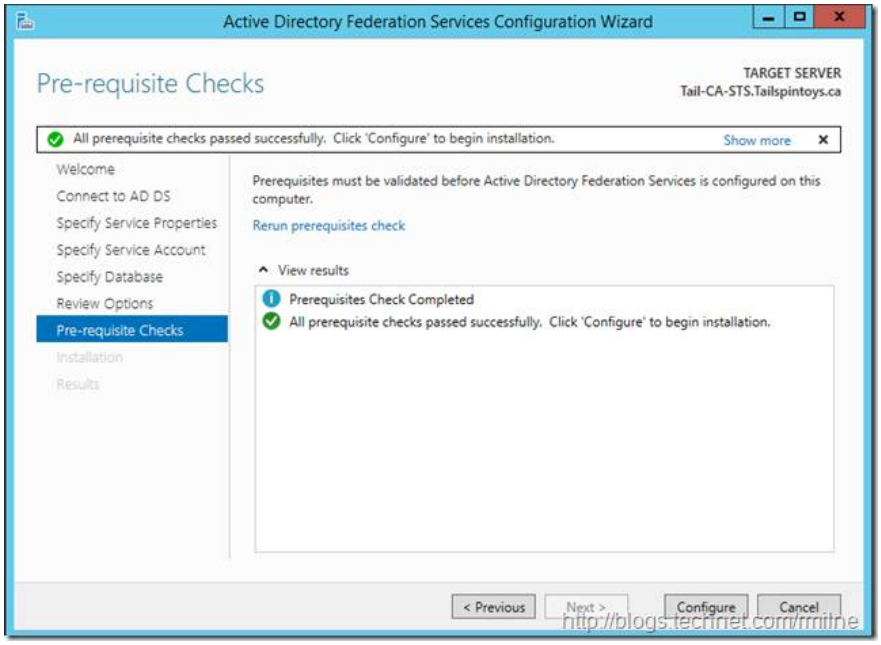
You should see here the Self Signed certificate that you created. Please note that the name of your server MUST match the name in your certificate (actually, you can't change it anyway)

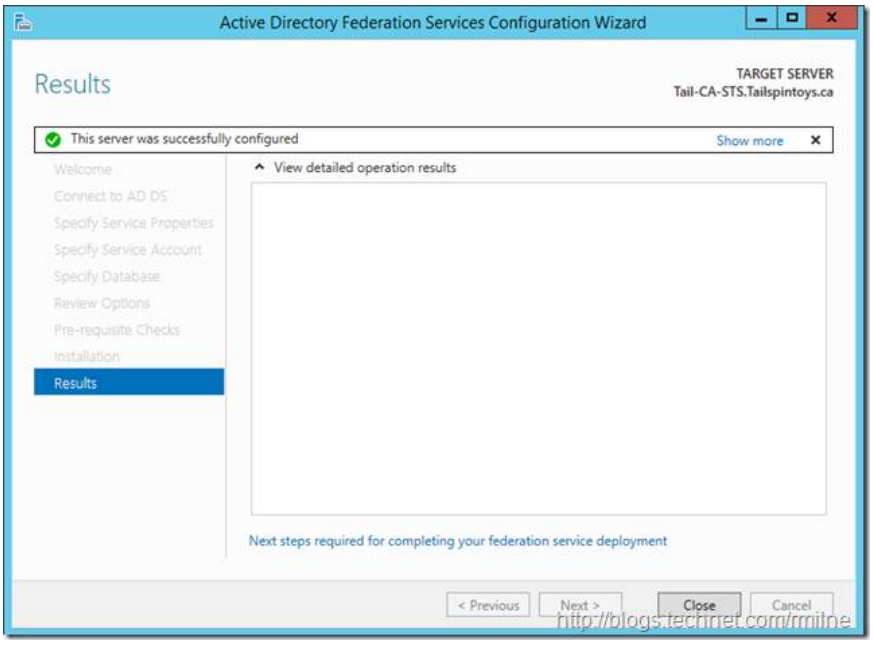


If you plan to use a group Managed Service account, you will need a win2012 server AD. In this document we will be using a windows 2008R2 server so we will simply use a service account.


Active Directory Federation Services Configuration Wizard
Specify Configuration Database
TARGET SERVER
Tail-CA-STS.Tailspintoys.ca
Welcome
Connect to AD DS
Specify Service Properties
Specify Service Account
Specify Database
Review Options
Pre-requisite Checks
Installation
Results
Specify a database to store the Active Directory Federation Service configuration data.
Create a database on this server using Windows Internal Database.
Specify the location of a SQL Server database.
Database Host Name:
Database Instance:
To use the default instance, leave this field blank.
< Previous
Next >
Configure
Cancel
http://blogs.technet.com/rmilne

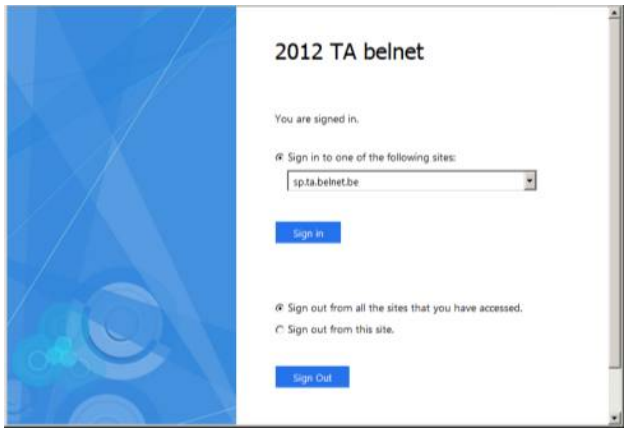

Active Directory Federation Services Configuration Wizard
Review Options
TARGET SERVER
Tail-CA-STS.Tailspintoys.ca
Welcome
Connect to AD DS
Specify Service Properties
Specify Service Account
Specify Database
Review Options
Pre-requisite Checks
Installation
Results
Review your selections:
This server will be configured as the primary server in a new AD FS farm 'adfs.Tailspintoys.ca'.
AD FS configuration will be stored in Windows Internal Database.
Windows Internal Database feature will be installed on this server if it is not already installed.
Federation service will be configured to run as TAILSPINTOYS\ADFS-Service.
These settings can be exported to a Windows PowerShell script to automate additional installations
View script
< Previous
Next >
Configure
Cancel
http://blogs.technet.com/rmilne





You can test the installation by following the url https://hostname/adfs/ls/idpinitiatesignon.htm

You can test here the authentication.

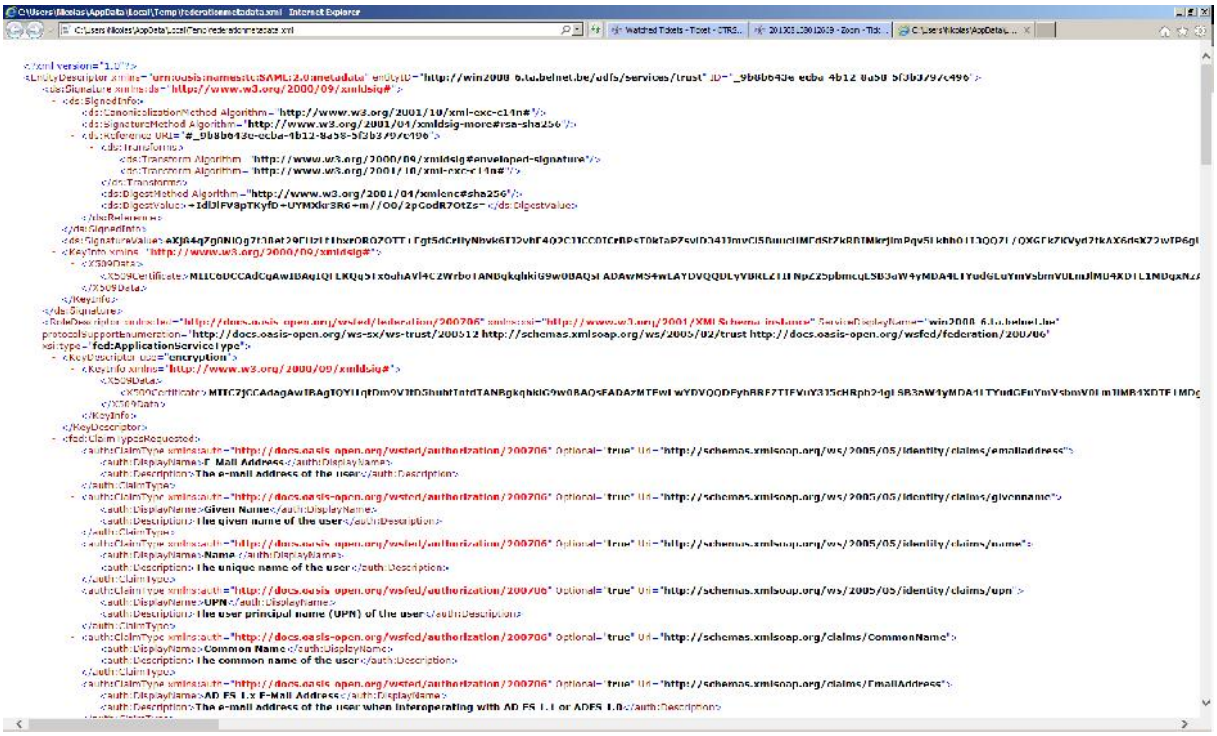


4.2 Upload your Metadata

If the installation has been completed successfully, to get your metadata, follow this URL:

https://hostname/federationmetadata/2007-06/federationmetadata.xml where hostname should be replaced by the name of your server.

You should see :



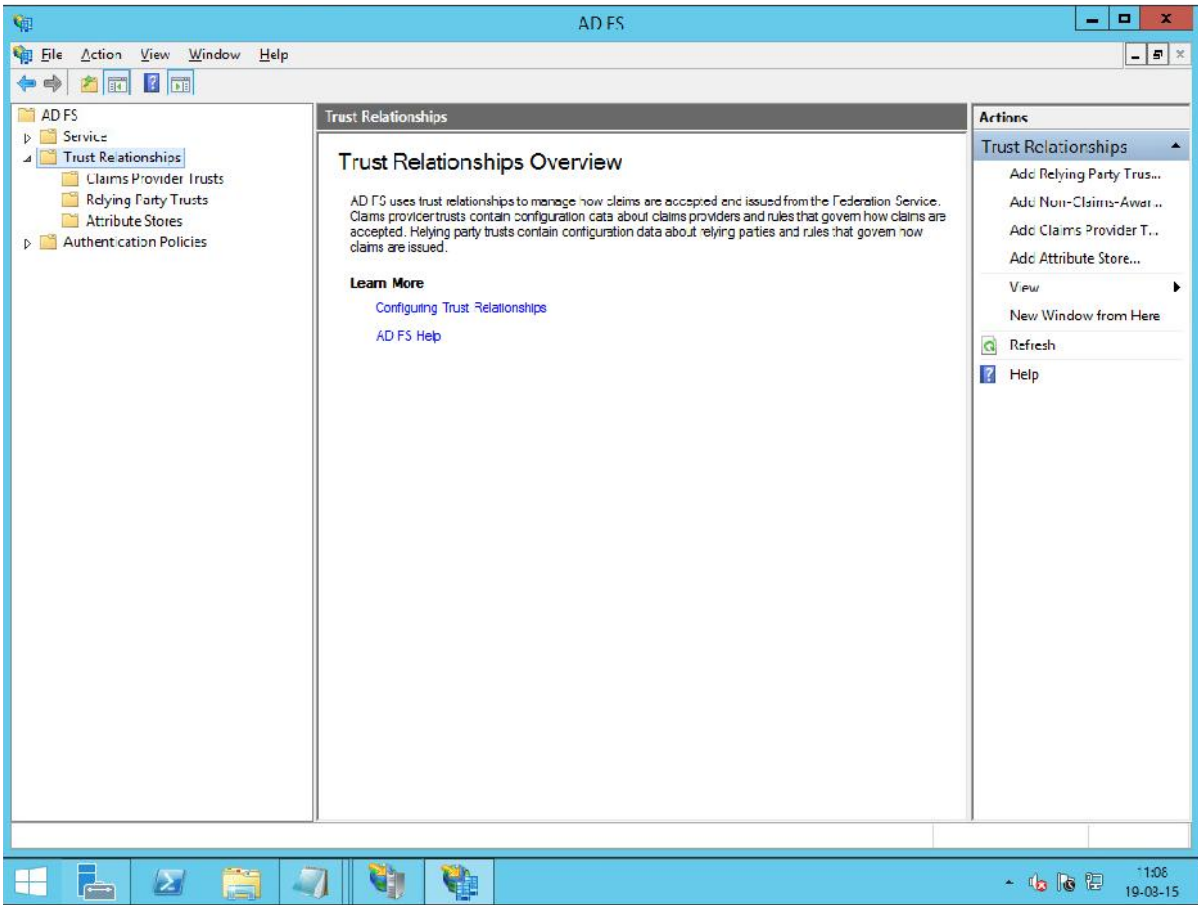
Prior to upload your metadata to the Belnet federation, you must clean it up as it contains a lot of information dedicated to Microsoft federation:

- Remove all tags between <ds:Signature …> </ds:Signature>
- Remove all tags between: <Role Descriptor xmlns:fed….></Role Descriptor> x2
- Add scoped element:
    - <EntityDescriptor xmlns="urn:oasis:names:tc:SAML:2.0:metadata" **xmlns:shibmd="urn:mace:shibboleth:metadata:1.0"** entityID="…>
    -
    - Just after <IDPSSODescriptor protocolSupportEnumeration="urn:oasis:names:tc:SAML:2.0:protocol">
    - **<Extensions><shibmd:Scope regexp="false">ta.belnet.be</shibmd:Scope></Extensions>**
- Keep the rest

You can upload this to https://federation.belnet.be

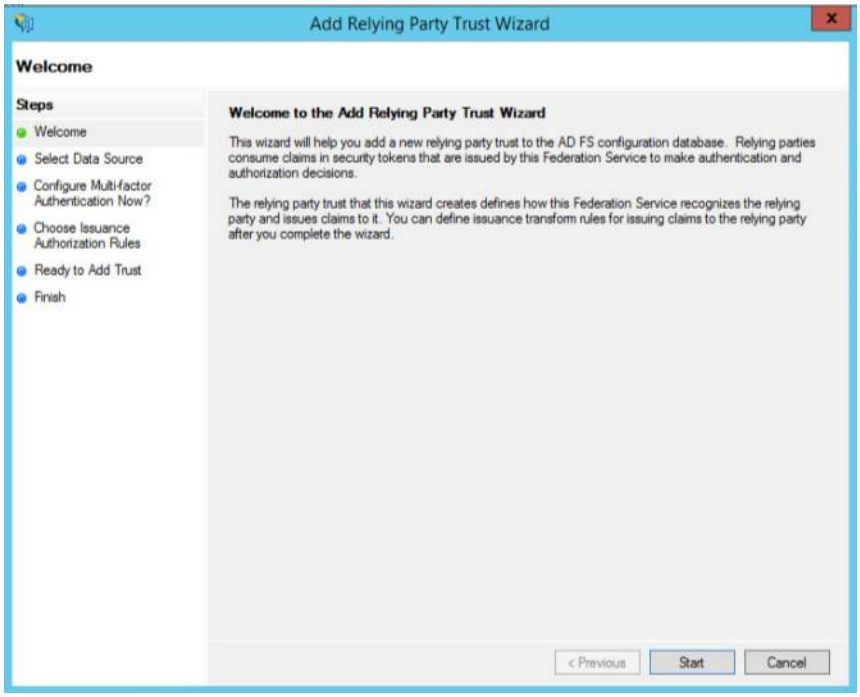
4.3 Configure the Service provider

Open the AD FS management console:



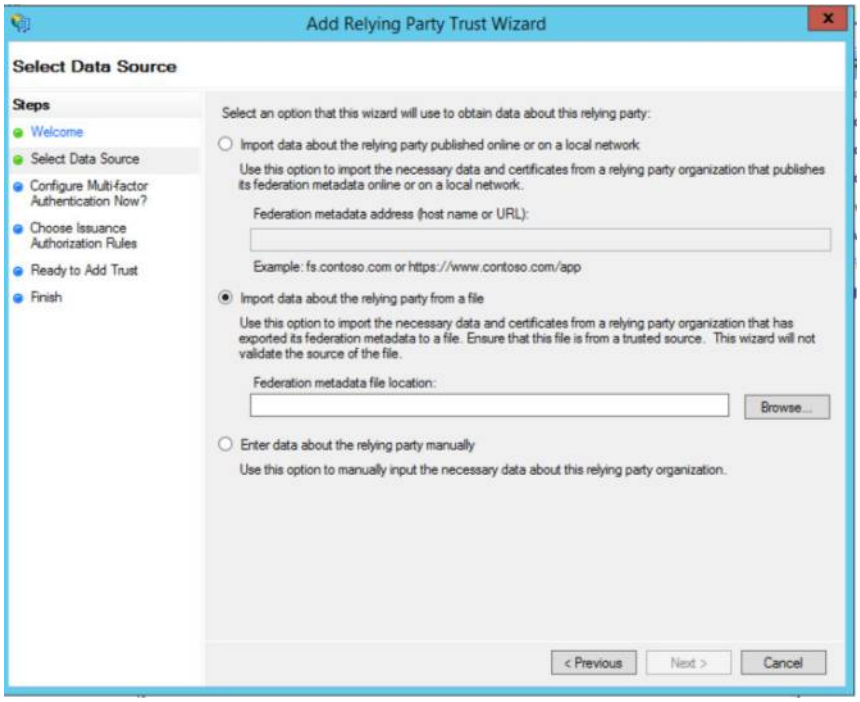
The service provider is configured under “Relaying Party Trust”

In our case, we will add a relaying party trust called sp.ta.belnet.be:

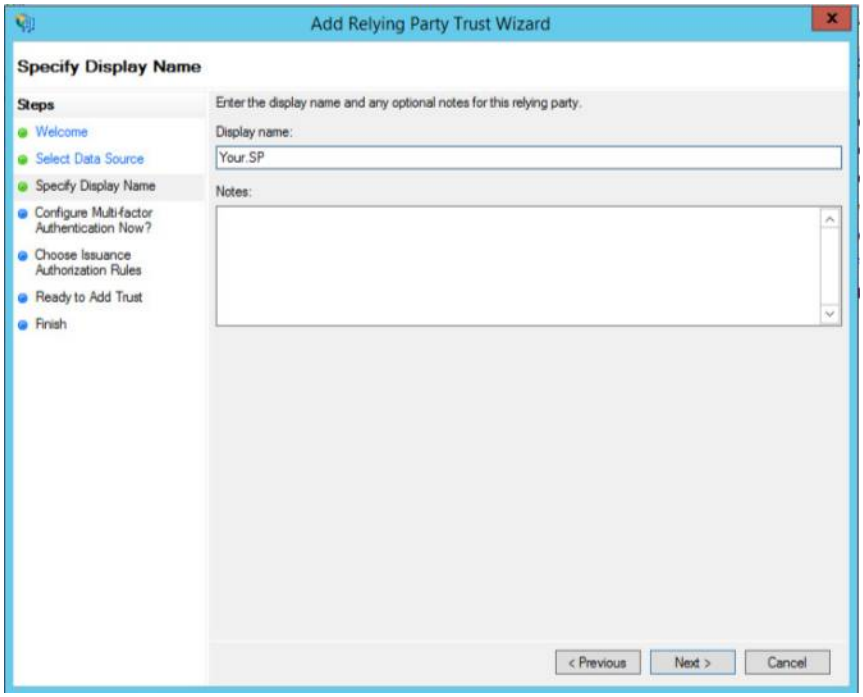


The biggest problem with AD FS is that it can't read the federated metadata. So you will have to get the metadata related to your SP. You will have to do this for every single SP you want to work with.

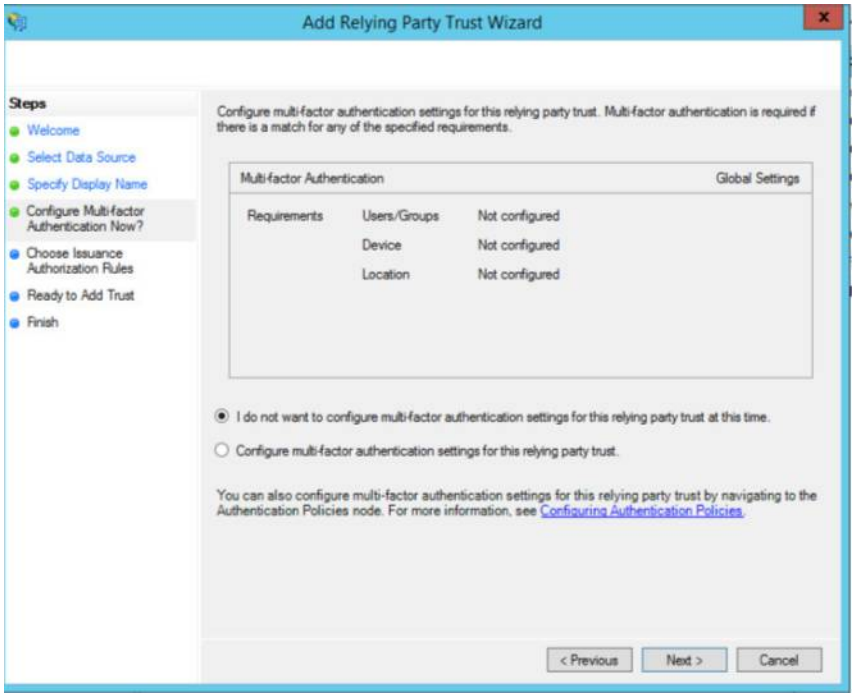
In the next step you can download the metadata (either from a URL or from a file). I would avoid the "manual" part:



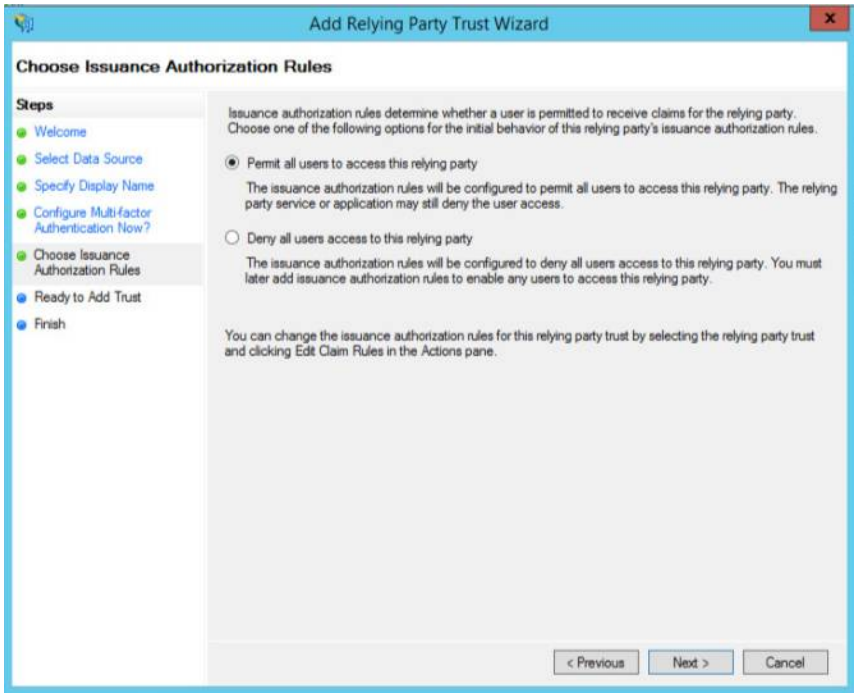
Give your SP a name and some information:

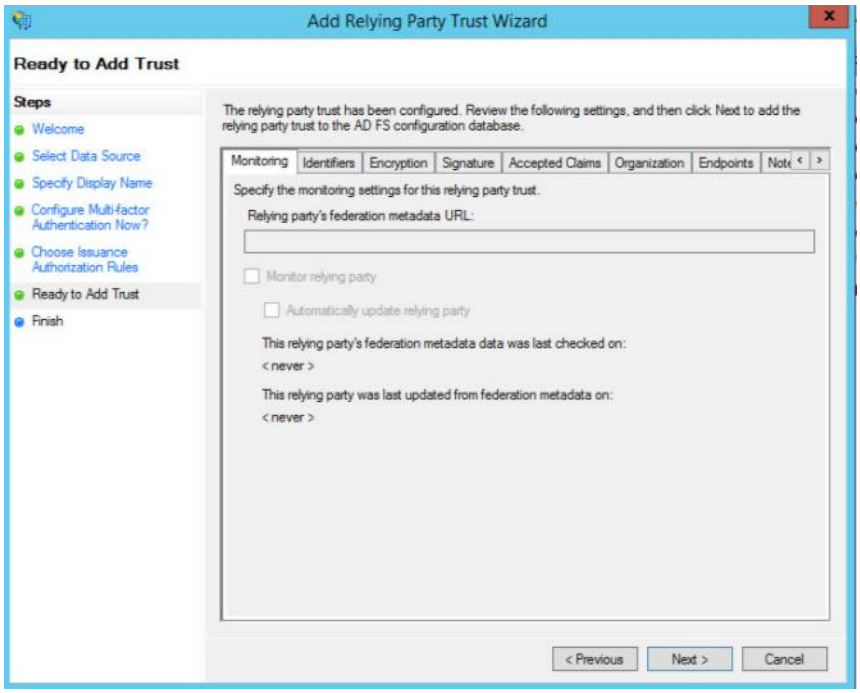


You can configure Multi-Factor Authentication. This is not convered in this document.



Permit all users by default:



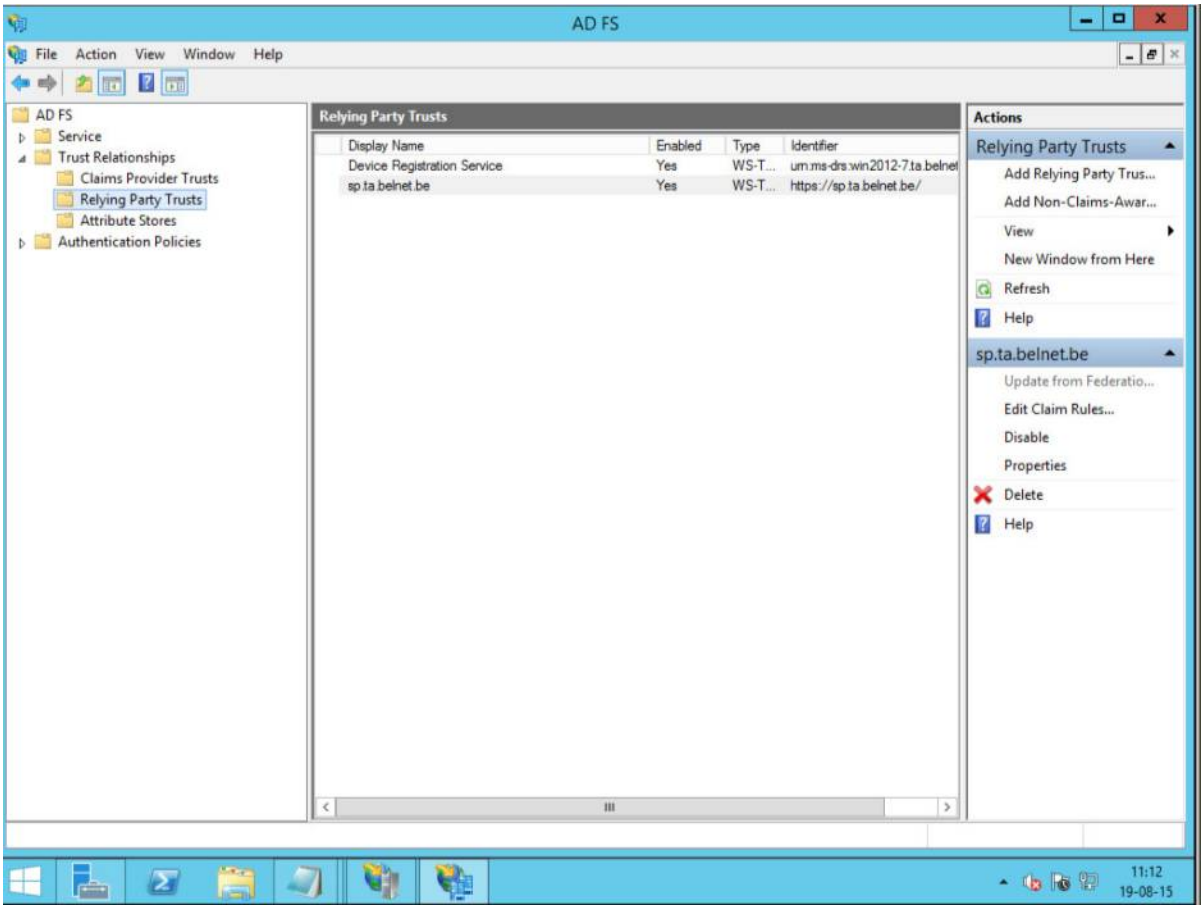


And you're done (well, to define the SP).

You can now test the authentication. You should be able to login with no attributes being sent to the SP.

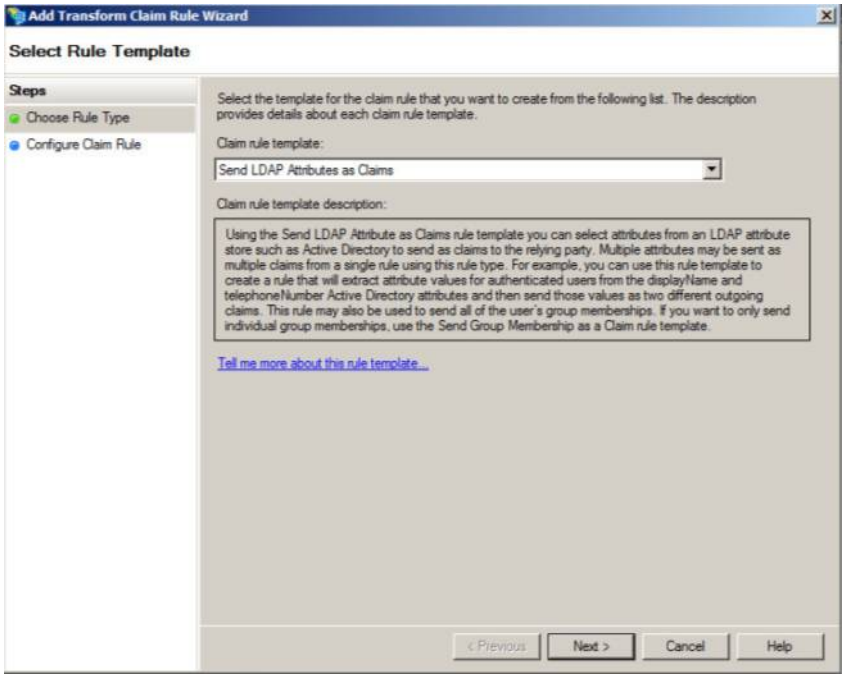
4.4 Configure the attribute release

Now, go and edit the “Claims Rules” (that’s the way attribute release policy is called)

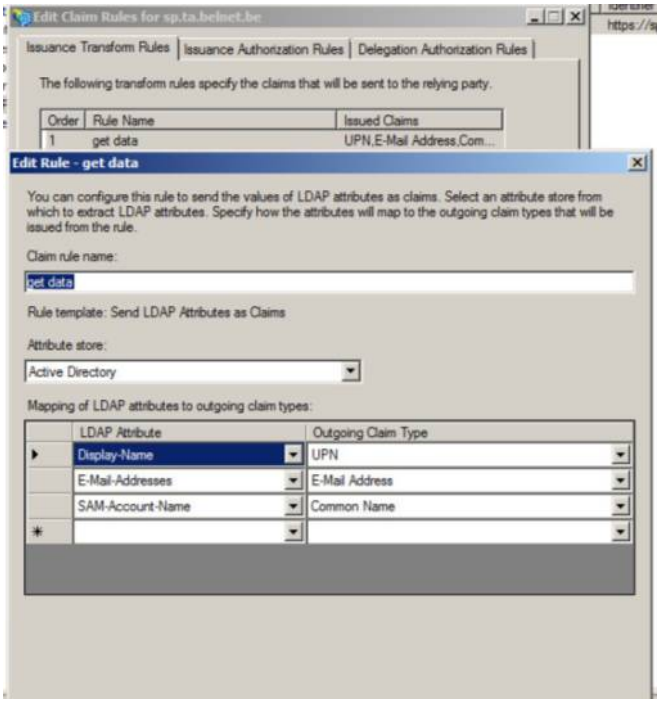


And this is where the fun begins.

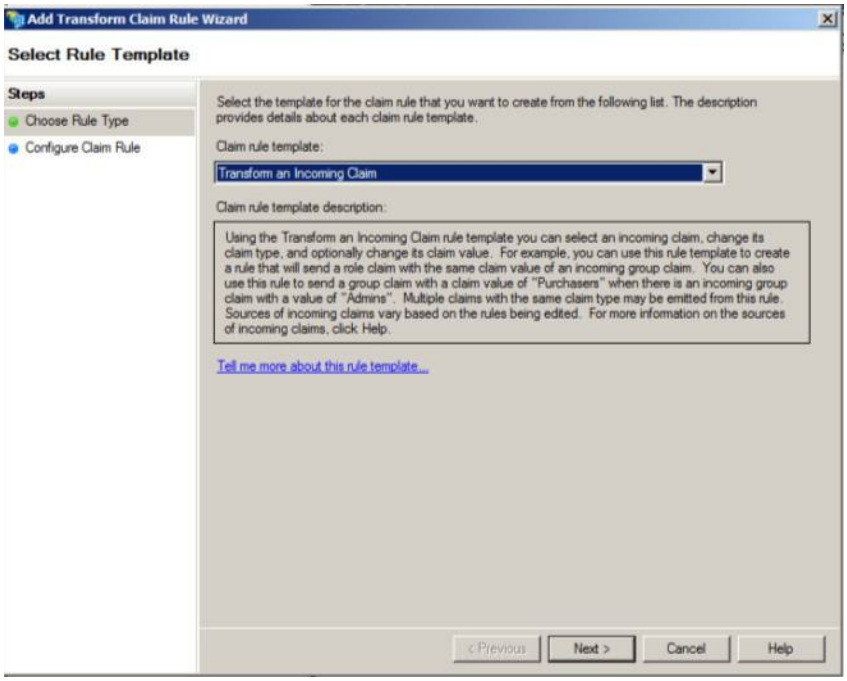
Click on add rules in the “Issuance Transform Rules”



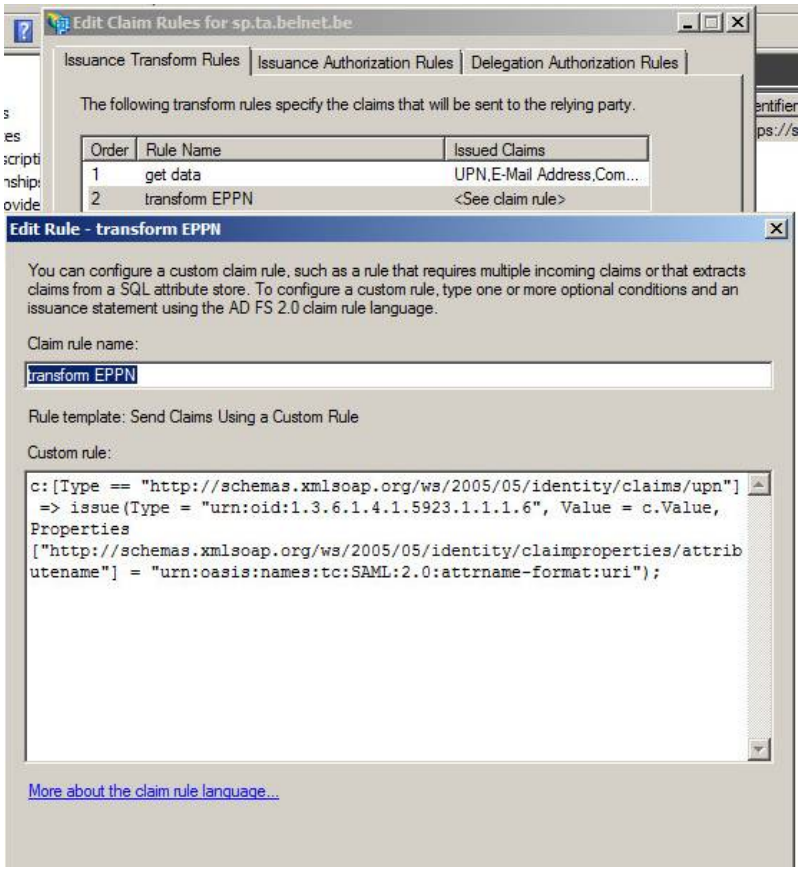
The goal is to release 3 attributes: **EPPN**, **CN** and **email**. Of course, **EPPN** doesn't exist in windows AD FS by so temporarily we will use the **UPN** (user principal name) instead.



And of course, out of the box, those attributes will not be understood by shibboleth so we have to play a bit. We will create "transform rules" in order to translate an attribute from the AD into an attribute known by Shibboleth.

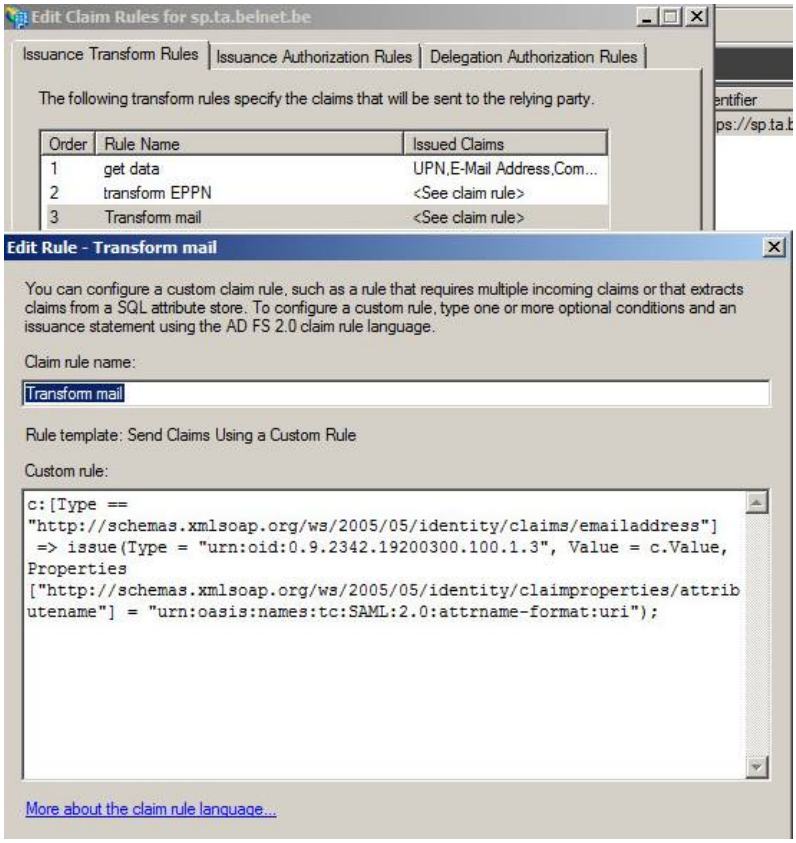


First **UPN** to **EPPN**:



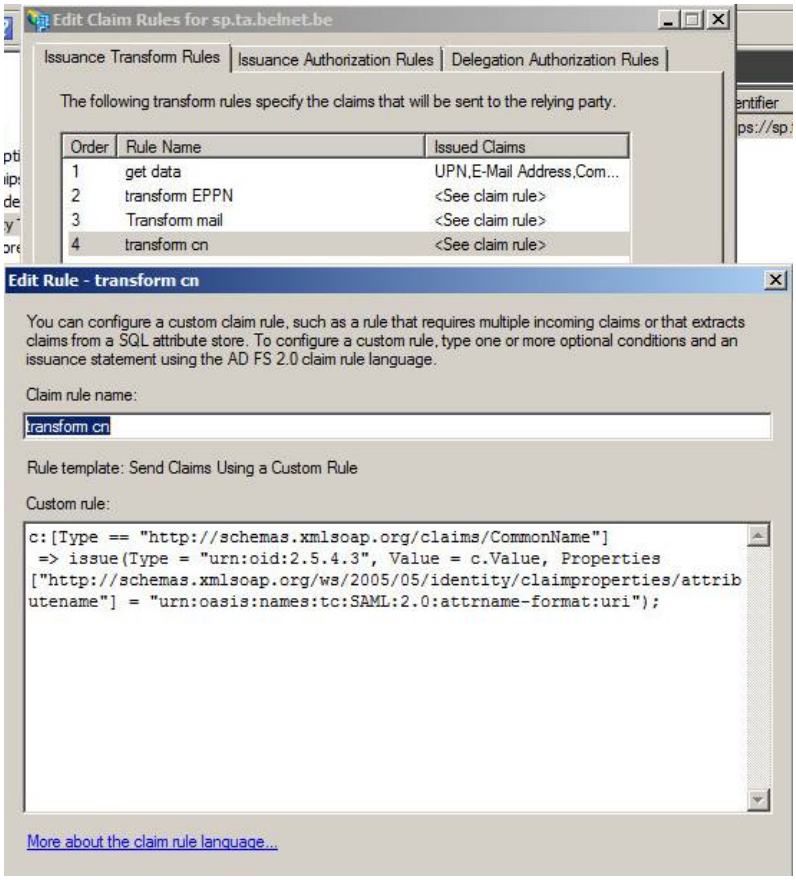
Here, we translate the claim **UPN** into SAML attribute with **OID 1.3.6.1.4.1.5923.1.1.1.6**. (Normally, your service provider should be able to provide you this information as those attribute mappings are defined in the Shibboleth SP (attribute-map.xml). “c.Value” is the value that was taken from the AD.

We will do the same for mail:



Here, we translate the claim **emailaddress** into SAML attribute with **OID 0.9.2342.19200300.100.1.3**.

And finally the cn:



Here, we translate the claim **CommonName** into SAML attribute with **OID 2.5.4.3**.

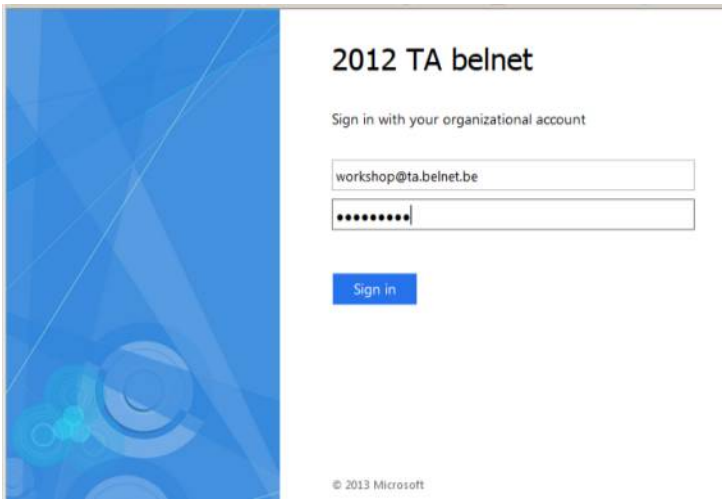
FYI, some extract of the SP “attribute-map.xml”

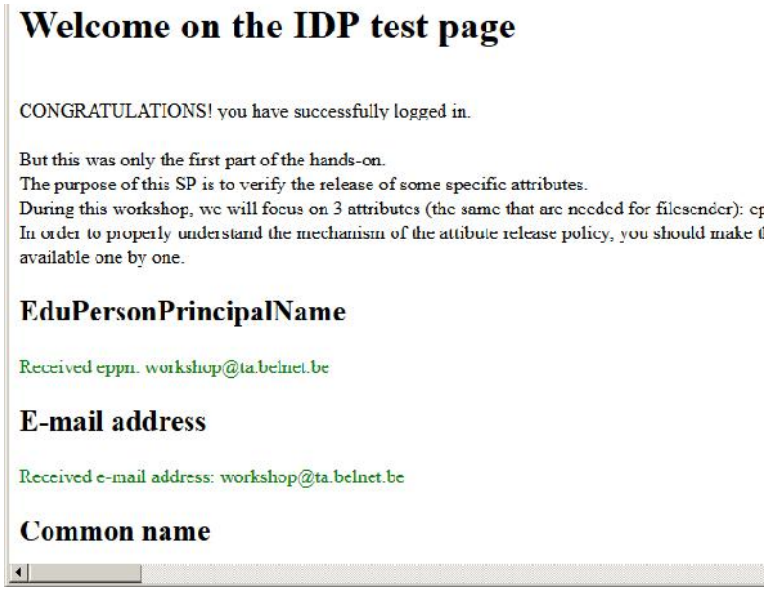
```
**************************************************************

    <Attribute name="urn:oid:1.3.6.1.4.1.5923.1.1.1.6" id="eppn">
        <AttributeDecoder xsi:type="StringAttributeDecoder"/>
    </Attribute>
    <Attribute name="urn:oid:2.5.4.3" id="cn"/>
    <Attribute name="urn:oid:0.9.2342.19200300.100.1.3" id="mail"/>

**************************************************************
```

You can now try to login again and you should see your attributes:





5 Some “claim rules” for Belnet SP:

5.1 sptest.belnet.be:

1) Get attribute (UPN, E-mail-Address, Common Name)
2) Transform UPN to EPPN:

```
c:[Type == "http://schemas.xmlsoap.org/ws/2005/05/identity/claims/upn"]
 => issue(Type = "urn:oid:1.3.6.1.4.1.5923.1.1.1.6", Value = c.Value,
Properties["http://schemas.xmlsoap.org/ws/2005/05/identity/claimproperties/attributename"] =
"urn:oasis:names:tc:SAML:2.0:attrname-format:uri");
```

3) Transform email

```
c:[Type == "http://schemas.xmlsoap.org/ws/2005/05/identity/claims/emailaddress"]
 => issue(Type = "urn:oid:0.9.2342.19200300.100.1.3", Value = c.Value,
Properties["http://schemas.xmlsoap.org/ws/2005/05/identity/claimproperties/attributename"] =
"urn:oasis:names:tc:SAML:2.0:attrname-format:uri");
```

4) Transform cn

```
c:[Type == "http://schemas.xmlsoap.org/claims/CommonName"]
 => issue(Type = "urn:oid:2.5.4.3", Value = c.Value,
Properties["http://schemas.xmlsoap.org/ws/2005/05/identity/claimproperties/attributename"] =
"urn:oasis:names:tc:SAML:2.0:attrname-format:uri");
```

5.2 filesender.belnet.be

1) Get attribute (UPN, E-mail-Address, Common Name)
2) Transform namedID

```
c:[Type == "http://schemas.xmlsoap.org/ws/2005/05/identity/claims/upn"]
 => issue(Type = "http://schemas.xmlsoap.org/ws/2005/05/identity/claims/nameidentifier",
Issuer = c.Issuer, OriginalIssuer = c.OriginalIssuer, Value = c.Value,
Properties["http://schemas.xmlsoap.org/ws/2005/05/identity/claimproperties/format"] =
"urn:oasis:names:tc:SAML:2.0:nameid-format:transient");
```

3) Transform UPN to EPPN:

```
c:[Type == "http://schemas.xmlsoap.org/ws/2005/05/identity/claims/upn"]
issue(Type = "urn:oid:1.3.6.1.4.1.5923.1.1.1.6", Value = c.Value,
Properties["http://schemas.xmlsoap.org/ws/2005/05/identity/claimproperties/attributename"] =
"urn:oasis:names:tc:SAML:2.0:attrname-format:uri");
```

4) Transform email

```
c:[Type == "http://schemas.xmlsoap.org/ws/2005/05/identity/claims/emailaddress"]
issue(Type = "urn:oid:0.9.2342.19200300.100.1.3", Value = c.Value,
Properties["http://schemas.xmlsoap.org/ws/2005/05/identity/claimproperties/attributename"] =
"urn:oasis:names:tc:SAML:2.0:attrname-format:uri");
```

5) Transform cn

```
c:[Type == "http://schemas.xmlsoap.org/claims/CommonName"]
issue(Type = "urn:oid:2.5.4.3", Value = c.Value,
Properties["http://schemas.xmlsoap.org/ws/2005/05/identity/claimproperties/attributename"] =
"urn:oasis:names:tc:SAML:2.0:attrname-format:uri");
```

5.3 mconf.belnet.be

1) Get attribute (UPN, E-mail-Address, Common Name)
2) Transform UPN to EPPN:

```
c:[Type == "http://schemas.xmlsoap.org/ws/2005/05/identity/claims/upn"]
 => issue(Type = "urn:oid:1.3.6.1.4.1.5923.1.1.1.6", Value = c.Value + "@yourdomain.be",
Properties["http://schemas.xmlsoap.org/ws/2005/05/identity/claimproperties/attributename"] =
```

```
"urn:oasis:names:tc:SAML:2.0:attrname-format:uri");
```

3) Transform email

```
c:[Type == "http://schemas.xmlsoap.org/ws/2005/05/identity/claims/emailaddress"]
 => issue(Type = "urn:oid:0.9.2342.19200300.100.1.3", Value = c.Value,
Properties["http://schemas.xmlsoap.org/ws/2005/05/identity/claimproperties/attributename"] =
"urn:oasis:names:tc:SAML:2.0:attrname-format:uri");
```

4) Transform cn

```
c:[Type == "http://schemas.xmlsoap.org/claims/CommonName"]
 => issue(Type = "urn:oid:2.5.4.3", Value = c.Value,
Properties["http://schemas.xmlsoap.org/ws/2005/05/identity/claimproperties/attributename"] =
"urn:oasis:names:tc:SAML:2.0:attrname-format:uri");
```

6 Interesting docs:

- https://technet.microsoft.com/en-us/library/hh831502.aspx
- http://blogs.technet.com/b/rmilne/archive/2014/04/28/how-to-install-adfs-2012-r2-for-office-365.aspx
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