

Lab Exercises

Configuring SAML 2.0 Federation using IBM Access Manager

Course code LIL0430X



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Lab environment

The following three virtual machines are used to perform the exercises in this lab:

1. Access Manager Appliance VM - IAM1

This VM hosts the IBM Access Manager (IAM) V9.0.4 appliance that acts as a SAML Identity Provider

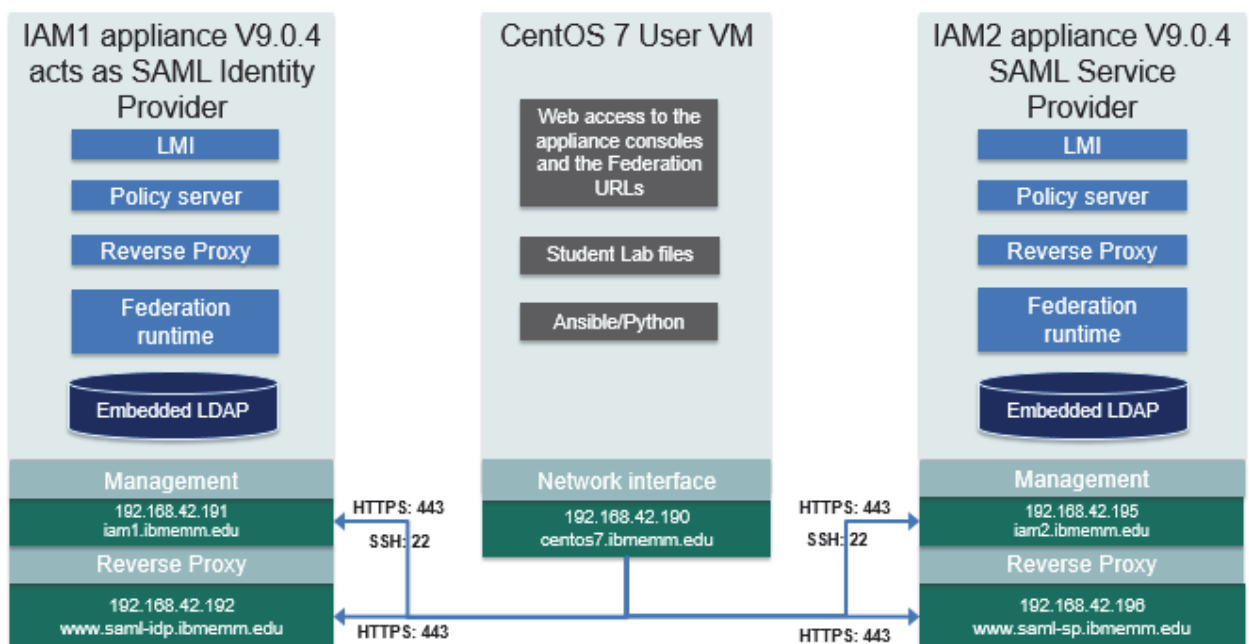
2. Access Manager Appliance VM - IAM2

This VM hosts the IBM Access Manager (IAM) V9.0.4 appliance that acts as a SAML Service Provider

3. CentOS 7 User VM

This CentOS 7 user VM hosts the resources required to demonstrate various Access Manager scenarios. The users log on to this system to perform the lab exercises.

The major deployment components of the lab are summarized in the following diagram.



Use the information in the following tables to log on to the lab systems.

System details	IP Address	Host name
CentOS User VM	192.168.42.190	centos7.ibmemm.edu
Appliance 1 VM Management interface	192.168.42.191	iam1.ibmemm.edu
Appliance 1 VM Reverse Proxy interface	192.168.42.192	www.saml-idp.ibmemm.edu
Appliance 2 VM Management interface	192.168.42.195	iam2.ibmemm.edu
Appliance 2 VM Reverse Proxy interface	192.168.42.196	www.saml-sp.ibmemm.edu

Application/Server	User	Password
IAM Appliance 1 and 2 login	admin	P@ssw0rd
CentOS VM login	admin (or root)	P@ssw0rd
Appliance 1 dashboard https://iam1.ibmemm.edu	admin	P@ssw0rd
Appliance 2 dashboard https://iam2.ibmemm.edu		

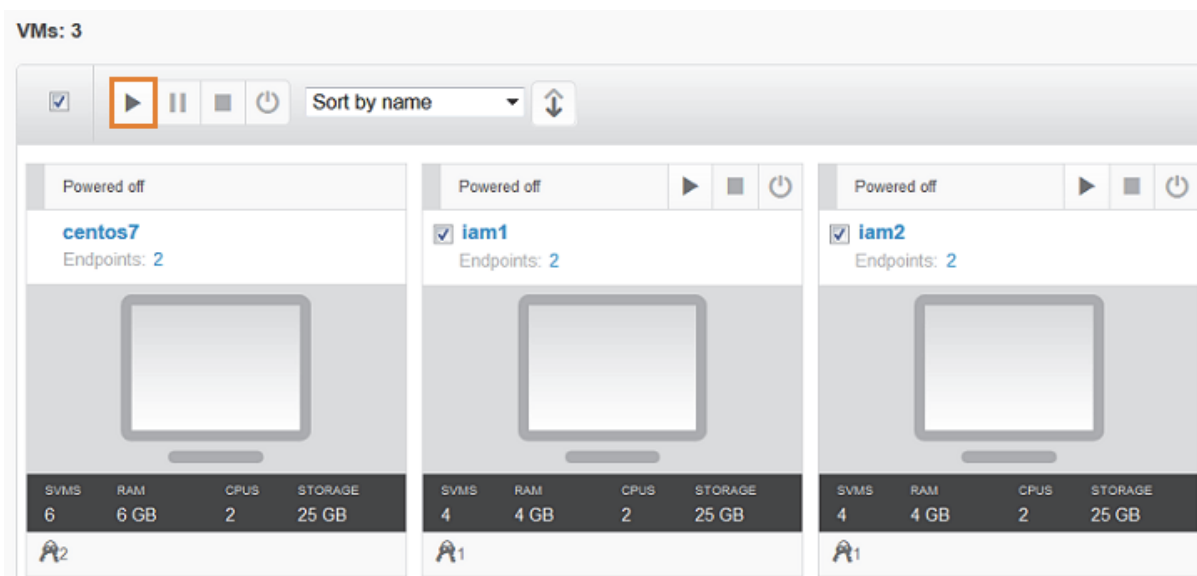
Lab startup

If the systems are not already powered on and available, complete these steps to start the systems:

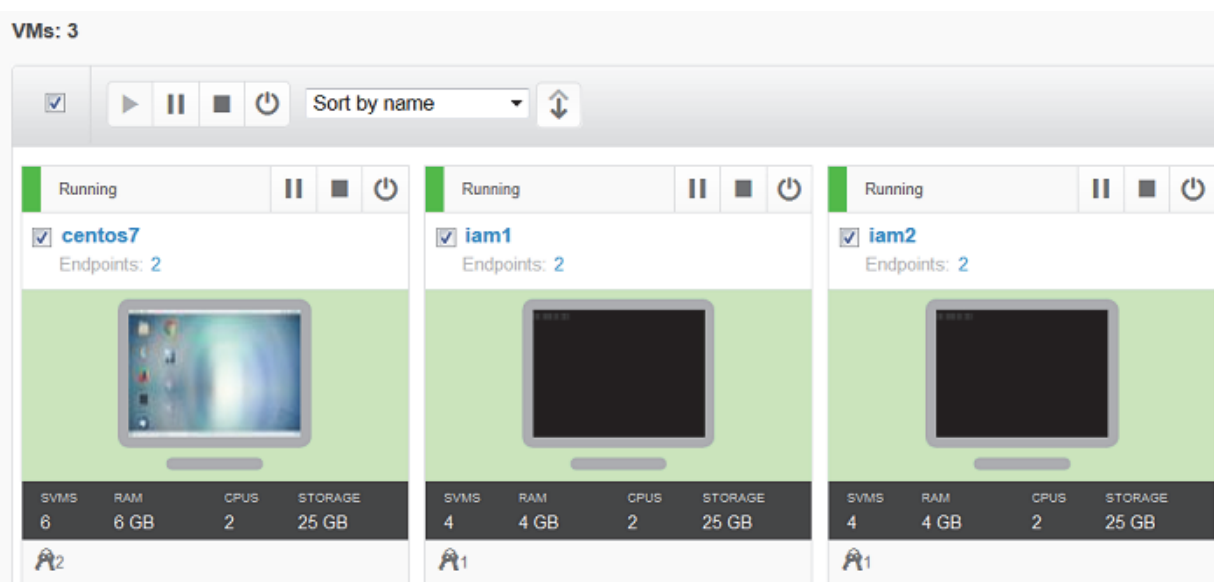
1. Power on the **iam1**, **iam2** and **centos7** VMs using the **Play** button as shown below.



Note: The startup order is not important.



The status changes from *Powered off* to *Running* once the VMs are successfully started.



2. Log in to the **centos7** VM as `admin` and password `P@ssw0rd`.
3. Optionally, log in to the **iam1** or **iam2** VM as `admin` and password `P@ssw0rd`.




Note: You do not need to log in to the **iam1** or the **iam2** VMs as you are performing all exercises using the **centos7** VM.

The VMs will be available for 4 hours of runtime so be sure to set aside enough time to complete the lab in one setting. Labs are designed to run in 30-90 minutes. You will only have access to the lab for a 5 day period from when you start this lab.

The message bar on the top of the e-lab page shows the date at which the lab expires. It also shows your remaining runtime in the hrs:min:sec format.

This URL is active until **May 15, 2018 at 10AM - America/Los_Angeles** or run time expires.

Run time remaining:

 **2 : 41 : 11** / 4h
hrs min sec

In order to take advantage of the full 4 hours of lab run time, be sure to Pause or Power off the virtual machines when you are not working on the lab.

Exercises

IBM Access Manager provides a Federation module so that collaborating organizations can gain secure access to each other's applications. The Federation module supports SAML 2.0 federations.

This course provides a lab setup and step-by-step instructions on how to set up the SAML 2.0 federation using IBM Access Manager V9.0.4. The lab provides two AM appliances: iam1 and iam2. The iam1 appliance is used as a SAML Identity Provider (IdP) and the iam2 appliance acts as a SAML Service Provider (SP). You will use the built-in demo application running on the Service Provider appliance to verify federation capabilities.

Exercise 1 Running the automated script to setup the appliances

The iam1 and the iam2 appliances in the lab are installed with minimum configuration.

Before you start setting up the appliances for SAML Federation, you need to perform the initial tasks such as configuring the appliance interfaces, the runtime component and the Reverse Proxy. In this exercise, you use an Ansible/Python based automated script to create the runtime and the Reverse Proxy components on both appliances.



Note: You can perform the appliance configuration tasks manually from the Local Management Interface (LMI). To learn more about these tasks, refer to the following lab:
<https://www.securitylearningacademy.com/course/view.php?id=2296>

1. Log on to the **centos7** system as **admin** using password **P@ssw0rd**.
2. Open the GNOME terminal by double-clicking the icon () on the Desktop.
3. Go to the **/home/admin/studentfiles/isam-ansible-playbook** directory using this command:
`cd studentfiles/isam-ansible-playbook`
4. To configure the environment, run the command:
`/opt/bin/ansible-playbook -i inventories initsamlconfig.yml`

```
admin@centos7:~/studentfiles/isam-ansible-playbook
File Edit View Search Terminal Help
[admin@centos7 ~]$ cd /home/admin/studentfiles/isam-ansible-playbook/
[admin@centos7 isam-ansible-playbook]$ /opt/bin/ansible-playbook -i inventories initsamlconfig.yml
```


- Wait for 2 minutes for the script to finish the run. You receive the following output after successful run:

```

RUNNING HANDLER [start_config : Restart Reverse Proxy] *****
*****
changed: [192.168.42.195]

RUNNING HANDLER [start_config : Restart all Reverse Proxys - checks if flagged for restart] *****
*****
changed: [192.168.42.195] => (item={u'started': u'yes', u'enabled': u'yes', u'instance_name': u'saml-s
u'version': u'1526311321', u'id': u'saml-sp', u'restart': u'true'})

PLAY RECAP *****
*****
192.168.42.191      : ok=16   changed=13   unreachable=0    failed=0
192.168.42.195      : ok=16   changed=13   unreachable=0    failed=0

[admin@centos7 isam-ansible-playbook]$ █


```



Note: The Ansible configuration file *initsamlconfig.yml* in this lab performs the following tasks:

- Configure the runtime component for both iam1 and the iam2 appliances
- Add the IP address 192.168.42.192 on the iam1 appliance. Map this IP to the host name www.saml-idp.ibmemm.edu
- Configure the Reverse Proxy instance *saml-idp* on the iam1 appliance using the IP address 192.168.42.192
- Add the IP address 192.168.42.196 on the iam2 appliance. Map this IP to the host name www.saml-sp.ibmemm.edu
- Configure the Reverse Proxy instance *saml-sp* on the iam2 appliance using the IP 192.168.42.196

Optionally, verify that the script has configured the runtime component and the Reverse Proxy on both iam1 and iam2 appliances using the following steps.

- Open Firefox () and select the **IAM1 LMI** bookmark. This bookmark opens the Access Manager appliance Local Management Interface (LMI) at <https://iam1.ibmemm.edu>.
- Log in as user `admin` with password `P@ssw0rd`.
The **Appliance Dashboard** is displayed.
- Select **Secure Web Settings** from the top menu bar and navigate to **Manage: Reverse Proxy**.

9. Verify that the Reverse Proxy instance **saml-idp** is displayed.

Reverse Proxy			
New Edit Delete Start Stop Restart Refresh Manage ▼			
Instance Name	State	Changes are Active	Last Modified
No filter applied			
saml-idp	Started	True	May 14, 2018, 8:20:55 AM
1 - 1 of 1 item			

10. Open another tab in Firefox () and select the **IAM2 LMI** bookmark. This bookmark opens the Access Manager appliance Local Management Interface (LMI) at <https://iam2.ibmerrm.edu>.
11. Log in as user `admin` with password `P@ssw0rd`.
The **Appliance Dashboard** is displayed.
12. Select **Secure Web Settings** from the top menu bar and navigate to **Manage: Reverse Proxy**.
Verify that the Reverse Proxy instance **saml-sp** is displayed.

Reverse Proxy			
New Edit Delete Start Stop Restart Refresh Manage ▼			
Instance Name	State	Changes are Active	Last Modified
No filter applied			
saml-sp	Started	True	May 14, 2018, 8:22:01 AM
1 - 1 of 1 item			

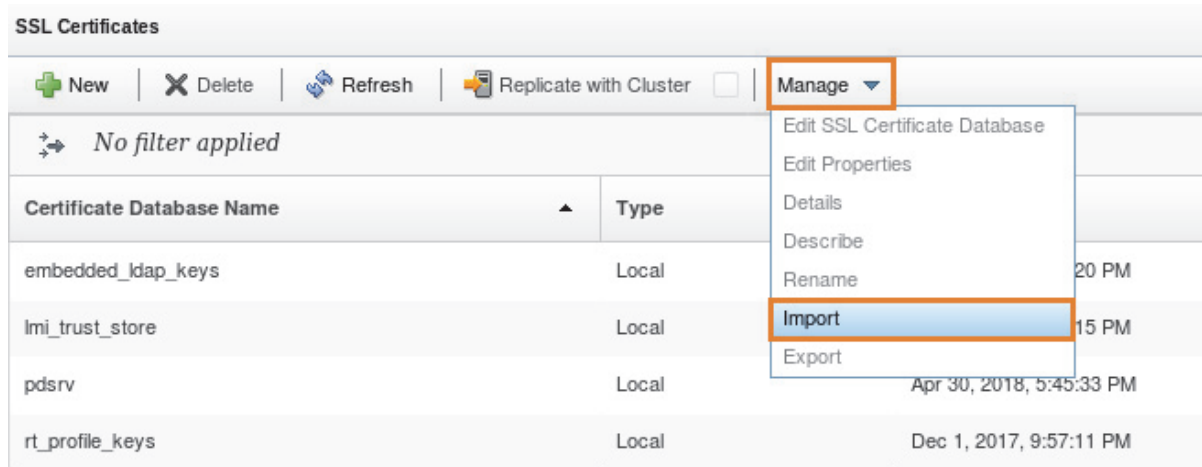
Exercise 2 Creating the SAML 2.0 Identity Provider (IdP) federation

In this exercise, you set up the iam1 appliance as the SAML Identity Provider by creating a federation in the Identity Provider role. You also perform some pre-requisite tasks such as uploading an SSL keystore and a mapping rule used by the IdP.

Task 1 Uploading the keystore

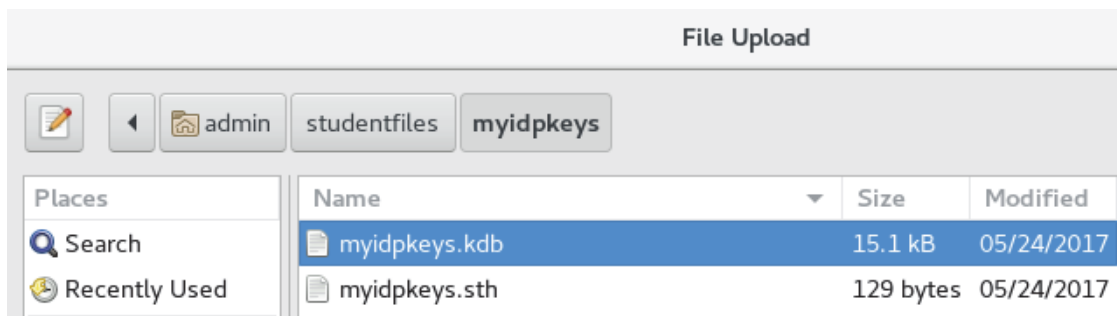
A sample keystore and a stash file for the IdP is available in the `/home/admin/studentfiles/myidpkeys` directory. The keystore contains all the certificates required for a SAML flow to work based on the configuration used in this lab.

1. Open the **IAM1 LMI** bookmark in Firefox (🦊), if not already open. This bookmark opens the link: <https://iam1.ibmemm.edu>.
2. Log in as user `admin` with password `P@ssw0rd`.
3. Select **Manage Systems Settings** from the top menu bar. Then, navigate to **Secure Settings: SSL Certificates**.
4. Click **Manage > Import**.



The *Import SSL Certificate Database* window appears.

5. In the **Certificate Database File** field, click **Browse**. Then, navigate to `/home/admin/studentfiles/myidpkeys` and select `myidpkeys.kdb`.



6. In the **Stash File** field, click **Browse**. Then, navigate to `/home/admin/studentfiles/myidpkeys` and select `myidpkeys.sth`.

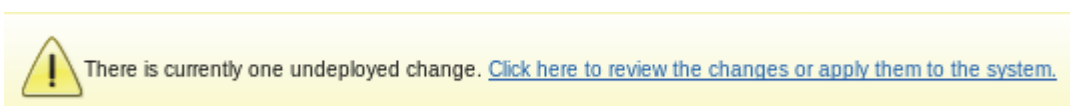
7. To import the keystore in the appliance, click **Import**.

Import SSL Certificate Database

Certificate Database File *

Stash File *

8. To deploy the changes, click the link **Click here to review the changes or apply them to the system** in the yellow banner.



9. To confirm the changes, select **Deploy**.

Deploy Pending Changes

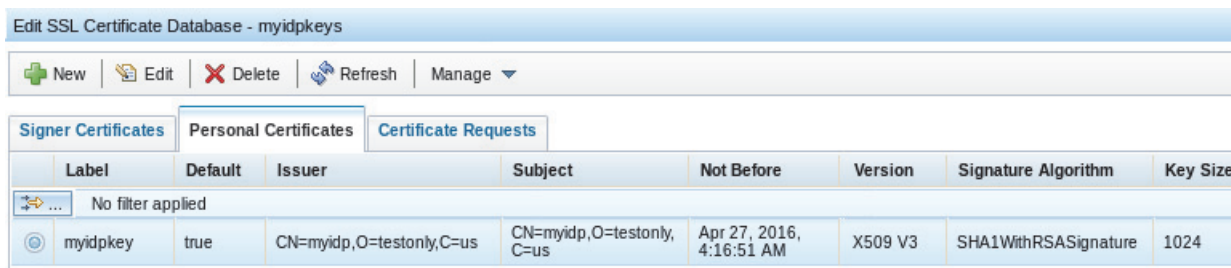
Module	Date Modified
SSL Certificates	May 16, 2018, 3:25:15 PM

10. Verify that the **myidpkeys** database now appears in the *SSL Certificates* page.

SSL Certificates		
<input type="button" value="New"/> <input type="button" value="Delete"/> <input type="button" value="Refresh"/> <input type="button" value="Replicate with Cluster"/> <input type="checkbox"/> <input type="button" value="Manage"/>		
No filter applied		
Certificate Database Name	Type	Last Modified
embedded_ldap_keys	Local	Dec 1, 2017, 9:57:20 PM
lmi_trust_store	Local	Dec 1, 2017, 9:57:15 PM
myidpkeys	Local	May 14, 2018, 8:49:23 AM
pdsrv	Local	Apr 30, 2018, 5:45:03 PM
rt_profile_keys	Local	Dec 1, 2017, 9:57:11 PM

Optionally you can open the database using the following steps and take a look at the certificate that the IdP will use for signing and encryption.

11. Select **myidpkeys** from the list and click the **Manage > Edit SSL Certificate Database** option. The *Edit SSL Certificate Database* window appears.
12. Go to the *Personal Certificates* tab and confirm that the certificate **myidpkey** is present.

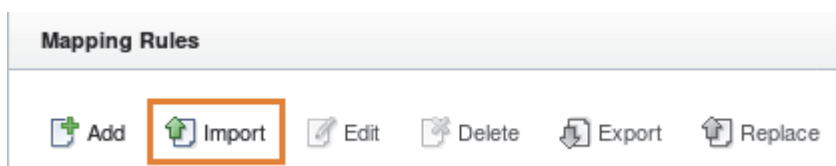


13. Close the *Edit SSL Certificate Database* window.

Task 2 Uploading the mapping rule

Now, you upload a JavaScript mapping rule that will be used by the Identity Provider. This mapping specifies how to create an assertion that contains attributes that are mapped from a local user account.

14. In the **IAM1 LMI**, navigate to **Secure Federation > Global Settings: Mapping Rules**.
15. To import a rule from a file, select **Import**.



16. In the *Import Mapping Rule* window,
 - a. For **Name**, type `ip_saml20`.
 - b. For **Category**, select **SAML2_0**.
 - c. Click **Browse**. Then, locate and select file **ip_saml20.js** present in the path `/home/admin/studentfiles/mappingrules/idp`.

- d. To import the rule, click **OK**.

Import Mapping Rule

Name:

Category:

17. Deploy the changes using the link in the yellow banner.

18. Confirm that the new rule now appears in the *Mapping Rules* page.

Mapping Rules

Mapping Rules

OIDCIDToken
Category: OIDC

OIDCRP
Category: OIDC

OIDCRP_ADV
Category: OIDC

ip_saml20
Category: SAML2_0

Task 3 Creating a federation

Next, use the *Federations Management* page to create a new Identity Provider federation.

19. In the **IAM1 LMI**, navigate to **Secure Federation > Manage: Federations**.

20. To add a new federation, click **Add** ( Add).

The *Create New Federation* wizard opens.

21. Enter `saml20idp` as a **Federation Name**. Then, select **SAML 2.0** as a protocol for the federation and click **Next**.

Create New Federation

Federation Protocol

Choose the name and protocol for this federation.

* Federation Name

* Select the protocol for this federation:

☒ SAML 2.0

☐ WS-Federation

☐ OpenID Connect Relying Party

OpenID Connect Provider

To create a Provider, use [OpenID Connect and API Protection](#), unless you require a legacy Provider.

☐ Legacy OpenID Connect(Provider or Relying Party)

Previous Next OK Cancel

22. On the *Template* screen, select **SAML 2.0** and click **Next**.

Template

☐ Quick Connect

☒ SAML 2.0

23. For **Company Name**, type `IdP Company`, select **Identity Provider** as a role and click **Next**.

General Information

Provide basic information about this federation.

* Company Name

* Identify your role:

☒ Identity Provider

☐ Service Provider

24. For **Point of Contact**, type `https://www.saml-idp.ibmemm.edu/isam` and click **Next**.

Create New Federation

The screenshot shows the 'Point of Contact Server' configuration screen. On the left is a navigation pane with links: Federation Protocol, Template, General Information, Point of Contact Server (selected), Profile Selection, Single Sign-on Settings, Signature Options, Encryption Options, SAML Message Settings, Access policy, Identity Mapping, and Summary. The main area has a title bar 'Point of Contact Server' and a prompt 'Enter the endpoint URL of your point of contact server.' Below this is a label '* Point of Contact' and a text input field containing 'w.saml-idp.ibmemm.edu/isam' followed by '/sps'. At the bottom are four buttons: Previous, Next, OK, and Cancel.

25. Under *Profile Selection*, select **Web Browser Single Sign-on** and **Single Logout**. Click **Next**.

Create New Federation

The screenshot shows the 'Profile Selection' configuration screen. The left navigation pane is identical to the previous screen, with 'Profile Selection' now selected. The main area has a title bar 'Profile Selection' and a prompt 'Select the SAML 2.0 profiles to use in this federation.' Below this are three checkboxes: 'Web Browser Single Sign-on' (checked), 'Name Identifier Management' (unchecked), and 'Single Logout' (checked). At the bottom are four buttons: Previous, Next, OK, and Cancel.

26. On the *Single Sign-on Settings* page,
- Clear the **HTTP Artifact** check box.
 - Verify that **HTTP POST** is selected
 - Select the following check boxes:
 - ◆ **HTTP Redirect**
 - ◆ **Require consent to federate**
 - ◆ **Require signature on incoming SAML authentication requests**
 - ◆ **Require outgoing SAML authentication responses to be signed**
 - Click **Next**.

Create New Federation

Single Sign-on Settings

Provide the details for the SAML 2.0 Web Browser Single Sign-on profile.

* Supported bindings:

☐ HTTP Artifact

☒ HTTP POST

☒ HTTP Redirect

* The default NameID format:

urn:oasis:names:tc:SAML

* Amount of time, in seconds, before the issue date that an assertion is considered valid:

300

* Amount of time, in seconds, that the assertion is valid after being issued:

300

☒ Require consent to federate.

☒ Require signature on incoming SAML authentication requests.

☒ Require outgoing SAML authentication responses to be signed.

Previous Next OK Cancel

27. On the *Single Logout Settings* page,
- Clear the **HTTP Artifact** check box.
 - Verify that **HTTP POST** is selected.
 - Select the following check boxes.
 - ◆ **HTTP Redirect**
 - ◆ **Single logout requests**

◆ Single logout responses

d. Click **Next**.

Create New Federation

28. On the *Signature Options* screen,

- For **Certificate Database**, select **myidpkeys**.
- For **Certificate Label**, select **myidpkey**.
- Verify that **X509 Certificate Data** is selected
- Click **Next**.

29. On the *Encryption Options* screen,
- For **Certificate Database**, select **myidpkeys**.
 - For **Certificate Label**, select **myidpkey**.
 - Click **Next**.

Encryption Options

Select a public/private key pair that the federation partners can use to encrypt cert it available to the federation partners.

Certificate Database
myidpkeys

Certificate Label
myidpkey

30. On the *SAML Message Settings* screen, keep the default settings. Then, click **Next**.
31. On the *Access policy* screen, keep the default settings. Then, click **Next**.
32. In the *Identity Mapping* screen, select **Use JavaScript transformation for identity mapping** and click **Next**.

Create New Federation

Identity Mapping

If configuring an identity provider, this mapping specifies how to create an assertion that contains
If configuring a service provider, this mapping specifies how to match an assertion from the partn
Select one of the following identity mapping options:

☐ Do not perform identity mapping

☒ Use JavaScript transformation for identity mapping

☐ Use an external web service for identity mapping

Previous Next OK Cancel

33. In the *Identity Mapping Rule* screen, select **ip_saml20**. Click **Next**.

Create New Federation

[Federation Protocol Template](#)
[General Information](#)
[Point of Contact Server](#)
[Profile Selection](#)
[Single Sign-on Settings](#)
[Single Logout Settings](#)
[Signature Options](#)
[Encryption Options](#)
[SAML Message Settings](#)
[Access policy](#)
[Identity Mapping](#)
[Identity Mapping Rule](#)
[Summary](#)

Identity Mapping Rule

Specify the JavaScript file that contains the identity mapping rule.

↔ No filter applied

Name	Category
OIDCIDToken	OIDC
OIDCRP	OIDC
OIDCRP_ADV	OIDC
ip_saml20	SAML2_0

Previous

Next

OK

Cancel

34. To create the federation, click **OK** on the *Summary* page.

Create New Federation

[Federation Protocol Template](#)
[General Information](#)
[Point of Contact Server](#)
[Profile Selection](#)
[Single Sign-on Settings](#)
[Single Logout Settings](#)
[Signature Options](#)
[Encryption Options](#)
[SAML Message Settings](#)
[Access policy](#)
[Identity Mapping](#)
[Identity Mapping Rule](#)
[Summary](#)

Summary

Ensure that the values are correct. Click OK to complete the federation configuration. Click Previous to n

Federation name:	saml20idp
Protocol:	SAML2_0
Protocol template:	SAML2_0
Company name:	Idp Company
Role:	ip
Point of contact:	https://www.saml-idp.ibm.ibm.edu/isam/sps
Web browser single sign-on profile:	True
Name identifier management profile:	False
Single logout profile:	True
HTTP Artifact binding for single sign-on:	False







Previous

Next

OK

Cancel







35. Deploy the changes using the link in the yellow banner.
36. Notice that the new federation now appears in the *Federation Management* list.

Federation Management		
Federations		
 Add  Edit  Delete  Export  Partners  Refresh		
Federation Name ▲	Federation Protocol	Role
saml20idp	SAML 2.0	Identity Provider

Task 4 Exporting metadata

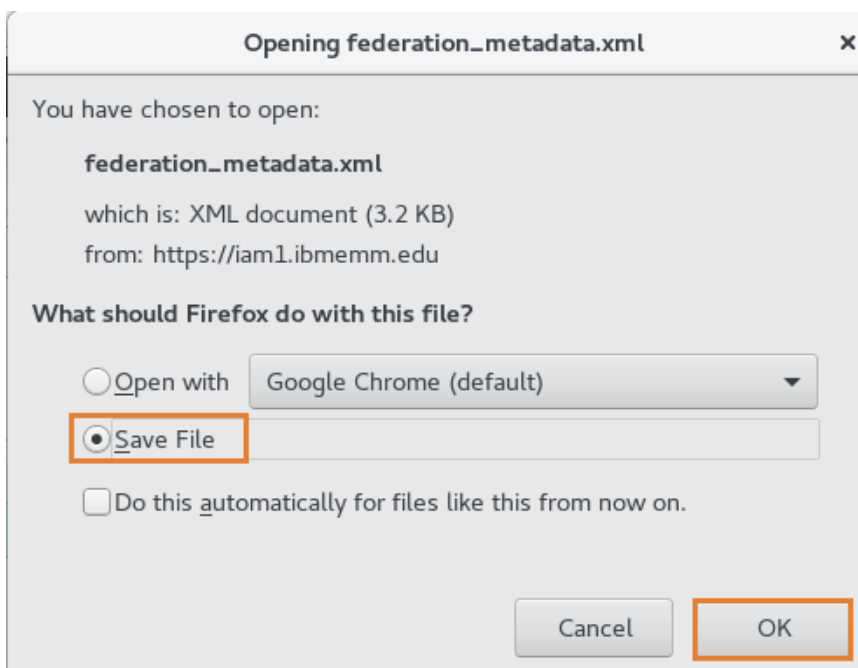
In this task, you export the properties of the Identity Provider federation you just created to a file. This is a metadata file which the federation partners can use to expedite their configuration.

37. In the **IAM1 LMI**, navigate to **Secure Federation > Manage: Federations**, if not already there.
38. In the *Federations* list, select **saml20idp** and click **Export**.

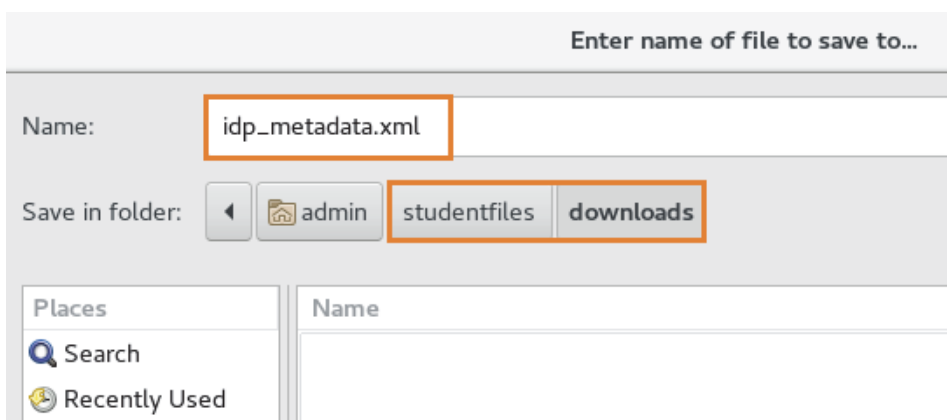
Federations		
 Add  Edit  Delete  Export  Partners  Refresh		
Federation Name ▲	Federation Protocol	Role
saml20idp	SAML 2.0	Identity Provider

A Firefox window opens asking if you want to open or save the file.

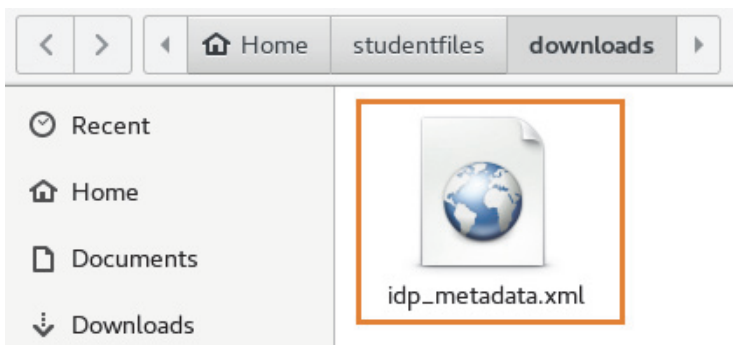
39. Select **Save File** and click **OK**.



40. Save the file using name `idp_metadata.xml` in the `/home/admin/studentfiles/downloads` directory.



41. Optionally, verify that the file is now present in the specified directory.



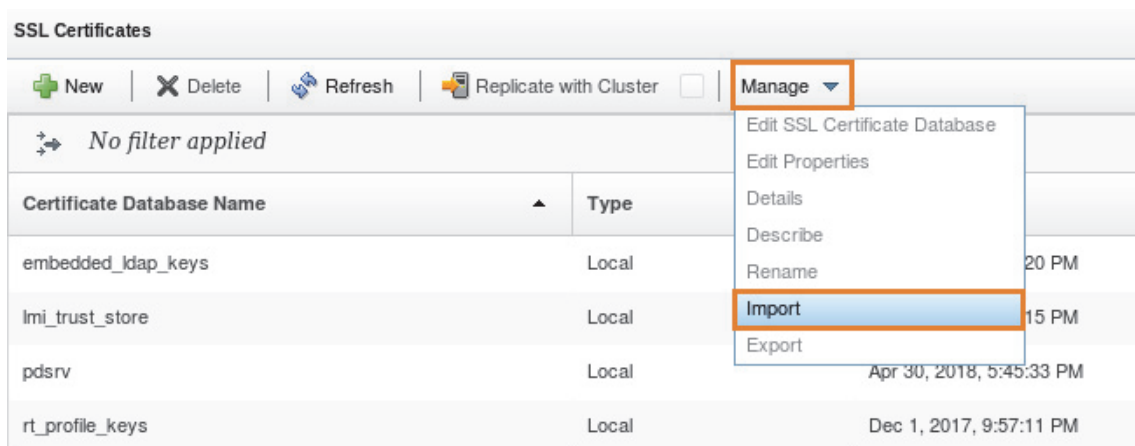
Exercise 3 Creating the SAML 2.0 Service Provider (SP) federation

Now, you set up the iam2 appliance as the SAML Service Provider by creating a federation in the Service Provider role. You also perform some pre-requisite tasks such as uploading an SSL keystore and a mapping rule used by the SP.

Task 1 Uploading the keystore

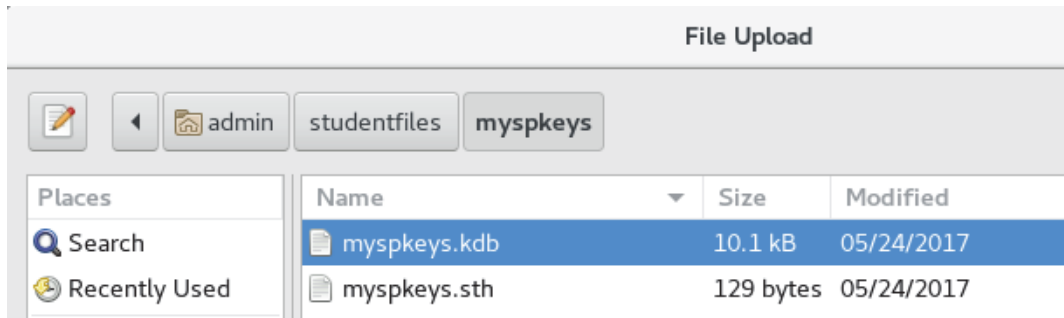
A sample keystore and a stash file for the SP is available in the `/home/admin/studentfiles/myspkeys` directory. The keystore contains all the certificates required for a SAML flow to work based on the configuration used in this lab.

1. Open Firefox (🦊) and select the **IAM2 LMI** bookmark, if not already open. This bookmark opens the link: <https://iam2.ibmemm.edu>.
2. Log in as user `admin` with password `P@ssw0rd`.
3. Select **Manage Systems Settings** from the top menu bar. Then, navigate to **Secure Settings: SSL Certificates**.
4. Click **Manage > Import**.

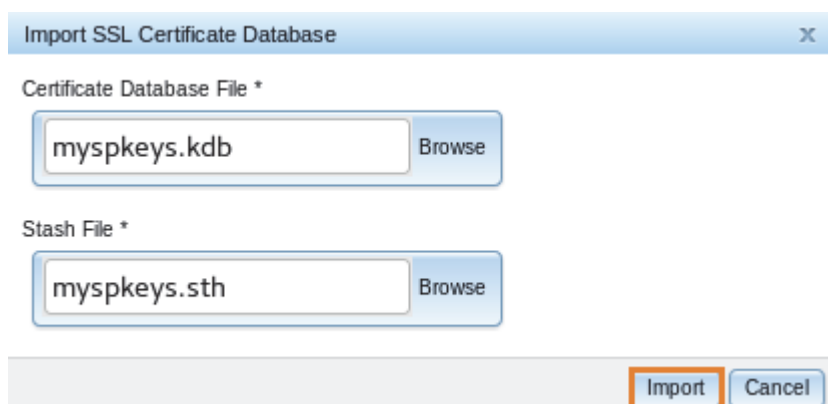


The *Import SSL Certificate Database* window appears.

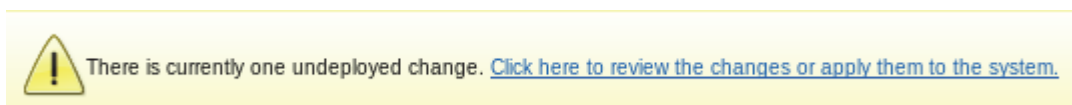
5. In the **Certificate Database File** field, click **Browse**. Then, navigate to `/home/admin/studentfiles/myspkeys` and select `myspkeys.kdb`.



6. In the **Stash File** field, click **Browse**. Then, navigate to `/home/admin/studentfiles/myspkeys` and select `myspkeys.sth`.
7. To import the keystore in the appliance, click **Import**.



8. Deploy the changes using the **Click here to review the changes or apply them to the system** link in the yellow banner.



9. Verify that the **mypkeys** database now appears in the *SSL Certificates* page.

SSL Certificates		
New Delete Refresh Replicate with Cluster <input type="checkbox"/> Manage ▼		
No filter applied		
Certificate Database Name ▲	Type	Last Modified
embedded_ldap_keys	Local	Dec 1, 2017, 9:57:20 PM
lmi_trust_store	Local	Dec 1, 2017, 9:57:15 PM
mypkeys	Local	May 14, 2018, 5:09:20 PM
pdsrv	Local	Apr 30, 2018, 5:45:33 PM
rt_profile_keys	Local	Dec 1, 2017, 9:57:11 PM

Optionally, you can open the database using the following steps and take a look at the certificate that the SP will use for signing and encryption.

10. Select **mypkeys** from the list and click the **Manage > Edit SSL Certificate Database** option.
The *Edit SSL Certificate Database* window appears.
11. Go to the *Personal Certificates* tab and confirm that the certificate **mypkey** is present.

Edit SSL Certificate Database - myspkeys

New

Edit

Delete

Refresh

Manage

Signer Certificates

Personal Certificates

Certificate Requests

	Label	Default	Issuer	Subject	Not Before	Version	Signature Algorithm	Key Size
<div></div> ...	No filter applied							
	myspkey	true	CN=mysp, O=testonly ,C=us	CN=mysp, O=testonly ,C=us	Apr 27, 2016, 5:19:18 AM	X509 V3	SHA1WithRSASignature	1024

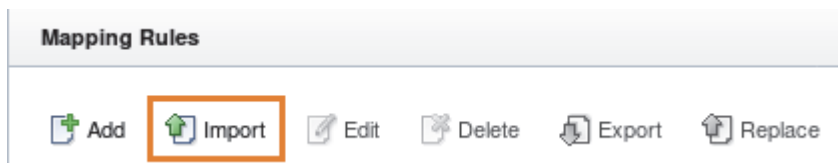
12. Close the *Edit SSL Certificate Database* window.

Task 2 Uploading the mapping rule

Now, you upload a JavaScript mapping rule that will be used by the Service Provider. This mapping specifies how to match an assertion from the partner to the local user accounts.

13. In the **IAM2 LMI**, navigate to **Secure Federation > Global Settings: Mapping Rules**.

14. To import the rule from a file, select **Import**.



15. In the *Import Mapping Rule* window,

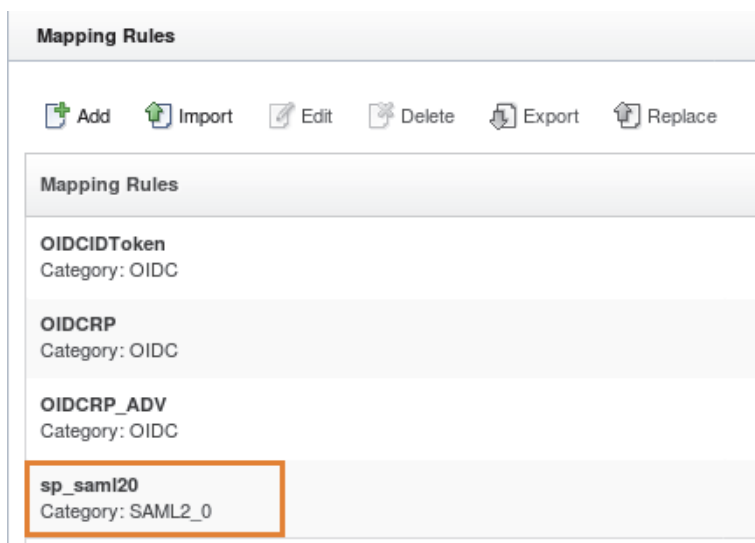
- a. For **Name**, type `sp_saml20`.
- b. For **Category**, select **SAML2_0**.
- c. Click **Browse**. Then, locate and select file **sp_saml20.js** present in the path `/home/admin/studentfiles/mappingrules/sp`.
- d. To import the rule, click **OK**.

Import Mapping Rule

A screenshot of the 'Import Mapping Rule' dialog box. It has a title bar at the top. Below the title bar, there are three labeled fields: 'Name:' with a text box containing 'sp_saml20', 'Category:' with a dropdown menu showing 'SAML2_0', and a text box for the file path containing 'sp_saml20.js' next to a 'Browse' button. At the bottom of the dialog, there are two buttons: 'OK' and 'Cancel'. The 'OK' button is highlighted with an orange rectangular box.

16. Deploy the changes using the link in the yellow banner.

17. Confirm that the new rule appears in the *Mapping Rules* page.



Task 3 Creating a federation

Next, use the *Federations Management* page to create a new Service Provider federation.

18. In the **IAM2 LMI**, navigate to **Secure Federation > Manage: Federations**.

19. To add a new federation, click **Add** ( Add).

The *Create New Federation* wizard opens.

20. Enter `saml20sp` as a **Federation Name**. Then, select **SAML 2.0** as a protocol for the federation and click **Next**.

Create New Federation

21. On the *Template* screen, select **SAML 2.0** and click **Next**.

22. For **Company Name**, type `SP Company`, select **Service Provider** as a role and click **Next**.

23. For **Point of Contact**, type `https://www.saml-sp.ibmemm.edu/isam` and click **Next**.

Create New Federation

[Federation Protocol Template](#)
[General Information](#)
[Point of Contact Server](#)
Profile Selection
Single Sign-on Settings
Signature Options
Encryption Options
SAML Message Settings
Identity Mapping
Summary

Point of Contact Server

Enter the endpoint URL of your point of contact server.

* Point of Contact

`ww.saml-sp.ibmemm.edu/isam` /sps

Previous

Next

OK

Cancel

24. Under *Profile Selection*, select **Web Browser Single Sign-on** and **Single Logout**. Click **Next**.

Create New Federation

[Federation Protocol Template](#)
[General Information](#)
[Point of Contact Server](#)
[Profile Selection](#)
Single Sign-on Settings
Signature Options
Encryption Options
SAML Message Settings
Identity Mapping
Summary

Profile Selection

Select the SAML 2.0 profiles to use in this federation.

☒ Web Browser Single Sign-on

☐ Name Identifier Management

☒ Single Logout

Previous

Next

OK

Cancel

25. On the *Single Sign-on Settings* screen,
- Clear the **HTTP Artifact** check box.
 - Verify that **HTTP POST** is selected.
 - Also, select the following check boxes:
 - ◆ **HTTP Redirect**
 - ◆ **Require signature on incoming SAML assertions**
 - ◆ **Require outgoing SAML authentication requests to be signed**
 - Click **Next**.

Create New Federation

Single Sign-on Settings

Provide the details for the SAML 2.0 Web Browser Single Sign-on profile.

* Supported bindings:

☐ HTTP Artifact

☒ HTTP POST

☒ HTTP Redirect

* The default NameID format:

urn:oasis:names:tc:SAML

☒ Require signature on incoming SAML assertions.

☒ Require outgoing SAML authentication requests to be signed.

Previous Next OK Cancel

26. On the *Single Logout Settings* screen,
- Clear the **HTTP Artifact** check box.
 - Verify that **HTTP POST** is selected.
 - Select the following check boxes:
 - ◆ **HTTP Redirect**
 - ◆ **Single logout requests**
 - ◆ **Single logout responses**

- d. Click **Next**.

Create New Federation

Single Logout Settings

Provide the details for SAML 2.0 Single Logout profile.

* Supported bindings:

☐ HTTP Artifact

☒ HTTP POST

☒ HTTP Redirect

☐ HTTP SOAP

Select which outgoing SAML messages require a signature:

☒ Single logout requests

☒ Single logout responses

Previous Next OK Cancel

27. On the *Signature Options* screen,
- For **Certificate Database**, select **mypkeys**.
 - For **Certificate Label**, select **myspkey**.
 - Verify that **X509 Certificate Data** is selected.
 - Click **Next**.

Signature Options

Select a public/private key pair for signing the SAML messages and the assertion.

Certificate Database

myspkeys

Certificate Label

myspkey

Include the following KeyInfo elements:

☒ X509 Certificate Data

28. On the *Encryption Options* screen,
- For **Certificate Database**, select **mypkeys**.
 - For **Certificate Label**, select **mypkey**.
 - Click **Next**.

Encryption Options

Select a public/private key pair that the federation partners can use to encrypt certain message content. It is available to the federation partners.

Certificate Database
mypkeys

Certificate Label
mypkey

29. On the *SAML Message Settings* screen, keep the default settings. Then, click **Next**.
30. In the *Identity Mapping* screen, select **Use JavaScript transformation for identity mapping** and click **Next**.

Create New Federation

Identity Mapping

If configuring an identity provider, this mapping specifies how to create an assertion that contains...
If configuring a service provider, this mapping specifies how to match an assertion from the partner.
Select one of the following identity mapping options:

☐ Do not perform identity mapping

☒ Use JavaScript transformation for identity mapping

☐ Use an external web service for identity mapping

Previous Next OK Cancel

31. In the *Identity Mapping Rule* screen, select **sp_saml20**. Click **Next**.

Create New Federation

[Federation Protocol Template](#)
[General Information](#)
[Point of Contact Server](#)
[Profile Selection](#)
[Single Sign-on Settings](#)
[Single Logout Settings](#)
[Signature Options](#)
[Encryption Options](#)
[SAML Message Settings](#)
[Identity Mapping](#)
[Identity Mapping Rule](#)
[Summary](#)

Identity Mapping Rule

Specify the JavaScript file that contains the identity mapping rule.

↔ No filter applied	
Name	Category
OIDCIDToken	OIDC
OIDCRP	OIDC
OIDCRP_ADV	OIDC
sp_saml20	SAML2_0

Previous

Next

OK

Cancel

32. To create the federation, click **OK** on the *Summary* page.

Create New Federation

[Federation Protocol Template](#)
[General Information](#)
[Point of Contact Server](#)
[Profile Selection](#)
[Single Sign-on Settings](#)
[Single Logout Settings](#)
[Signature Options](#)
[Encryption Options](#)
[SAML Message Settings](#)
[Identity Mapping](#)
[Identity Mapping Rule](#)
[Summary](#)

Summary

Ensure that the values are correct. Click OK to complete the federation configuration. Click Previous to make

Federation name:	saml20sp
Protocol:	SAML2_0
Protocol template:	SAML2_0
Company name:	SP Company
Role:	sp
Point of contact:	https://www.saml-sp.ibmemm.edu/isam/sps
Web browser single sign-on profile:	True
Name identifier management profile:	False
Single logout profile:	True
HTTP Artifact binding for single sign-on:	False

Previous







Next

OK

Cancel

33. Deploy the changes using the link in the yellow banner.

34. Notice that the new federation appears in the *Federation Management* list.







Federation Management		
Federations  Add  Edit  Delete  Export  Partners  Refresh		
Federation Name ▲	Federation Protocol	Role
saml20sp	SAML 2.0	Service Provider

Task 4 Exporting metadata

In this task, you export the properties of the Service Provider federation you just created to a file. This is a metadata file which the federation partners can use to expedite their configuration.

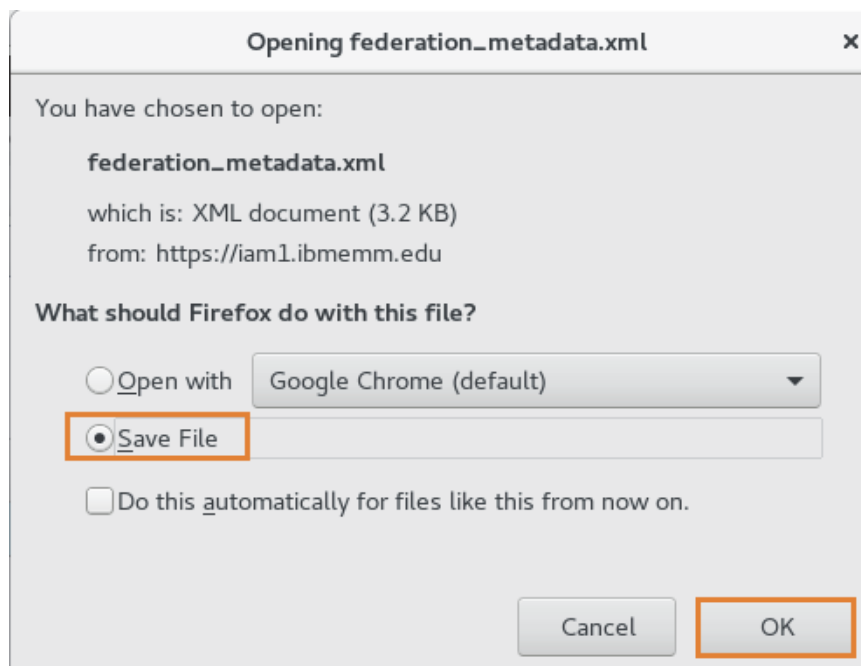
35. In the **IAM2 LMI**, navigate to **Secure Federation > Manage: Federations**, if not already there.

36. In the *Federations* list, select **saml20sp** and click **Export**.

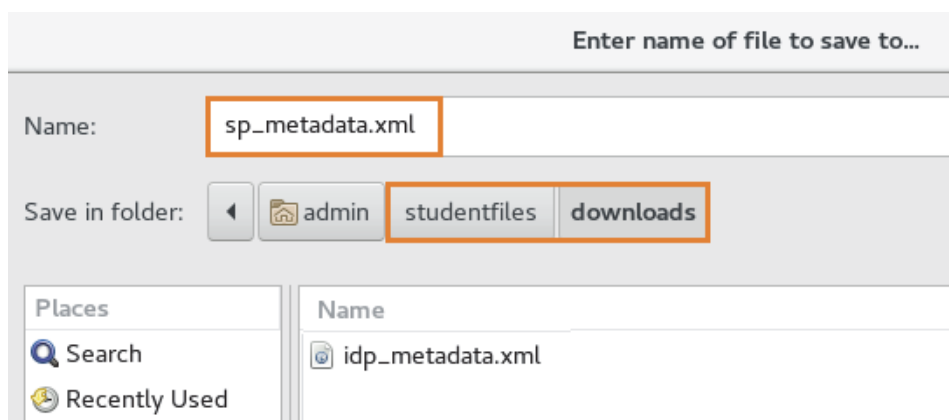
Federations  Add  Edit  Delete  Export  Partners  Refresh		
Federation Name ▲	Federation Protocol	Role
saml20sp	SAML 2.0	Service Provider

A Firefox window opens asking if you want to open or save the file.

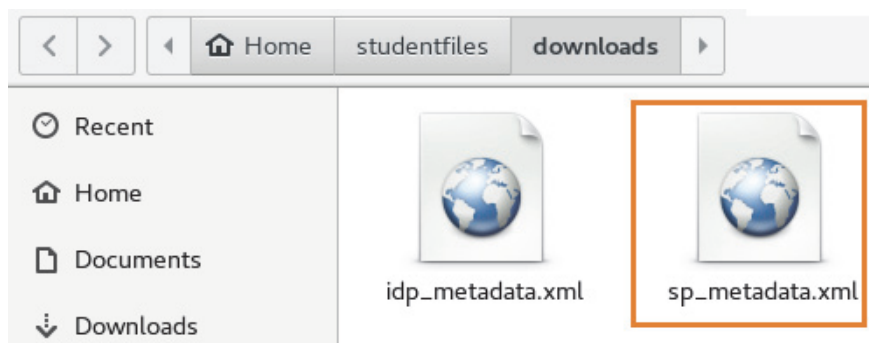
37. Select **Save File** and click **OK**.



38. Save the file using name `sp_metadata.xml` in the `/home/admin/studentfiles/downloads` directory.



39. Optionally, verify that the file is now present in the specified directory.



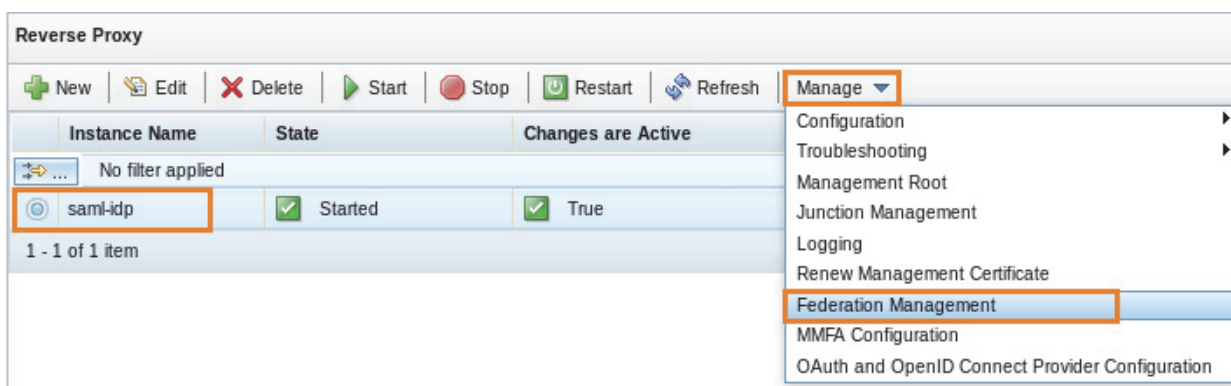
Exercise 4 Configuring the IdP Reverse Proxy for federation

To make use of a configured federation, a Reverse Proxy instance must be configured to act as the Point of Contact. This Reverse Proxy needs to be configured with a junction to the federation runtime server and have the appropriate access controls set up for the endpoints.

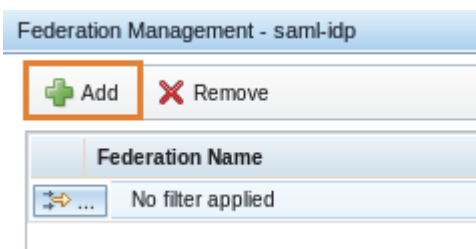
The Reverse Proxy section in the LMI provides a *Federation Management* page which triggers all of the required actions for configuring a federation Point of Contact.

In this exercise, you configure the Reverse Proxy instance *saml-idp* running on the *iam1* appliance as a Point of Contact for the Identity Provider federation.

1. In the **IAM1 LMI**, navigate to **Secure Web Settings > Manage: Reverse Proxy**.
2. Select the **saml-idp** instance.
3. Then, go to **Manage > Federation Management**.



4. On the *Federation Management* page, click **Add**.



The window with title *Add Federation to Reverse Proxy - saml-idp* appears.

5. Provide the following information in the *Runtime* tab.

Field	Value	Comment
Host name	localhost	This is a host name that the Reverse Proxy uses to reach the federation runtime.
Port	443	The federation runtime port.

Field	Value	Comment
Username	easuser	This credential is used for authenticating to the runtime server.
Password	passw0rd	Important: This is a default initial password of the <i>easuser</i> user in the appliance. Notice that it is different than the standard password used in this lab.

The completed form looks like the following figure.

Add Federation to Reverse Proxy - saml-idp

Runtime Federation ACLs and Certificates

Provide the details to authenticate with the federation runtime.

Host name *
localhost

Port *
443

User name *
easuser

Password *
passw0rd

- Go to the *Federation* tab and select **saml20idp** as a **Federation Name** from the drop down.

Add Federation to Reverse Proxy - saml-idp

Runtime Federation ACLs and Certificates

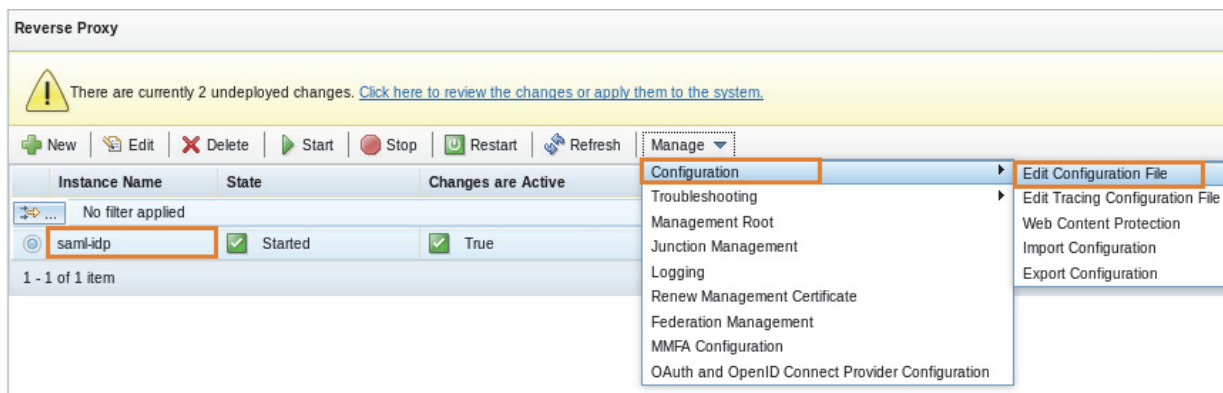
Select the federation to add.

Federation Name *
saml20idp

- Click **Submit** and wait until the message *Federation added successfully* appears.
- Close the *Federation Management - saml-idp* window.

Do not deploy the changes yet.

- Select the **saml-idp** instance, if not already selected.

10. Navigate to **Manage > Configuration > Edit Configuration File**.

The Reverse Proxy configuration file opens in the *Advanced Configuration File Editor* window.

11. Scroll down to the bottom and add the following text in the configuration file.

```
[junction:/isam]
reset-cookies-list = *ac.uuid,*JSESSIONID
```

```
[manager]
master-host = iam1

[isam-fed-autocfg]
uuid607ce252-0163-1336-ba4f-803901b65d6d = saml20idp

[isam-fed-autocfg:uuid607ce252-0163-1336-ba4f-803901b65d6d]
junction = /isam
federationRuntimeHost = localhost

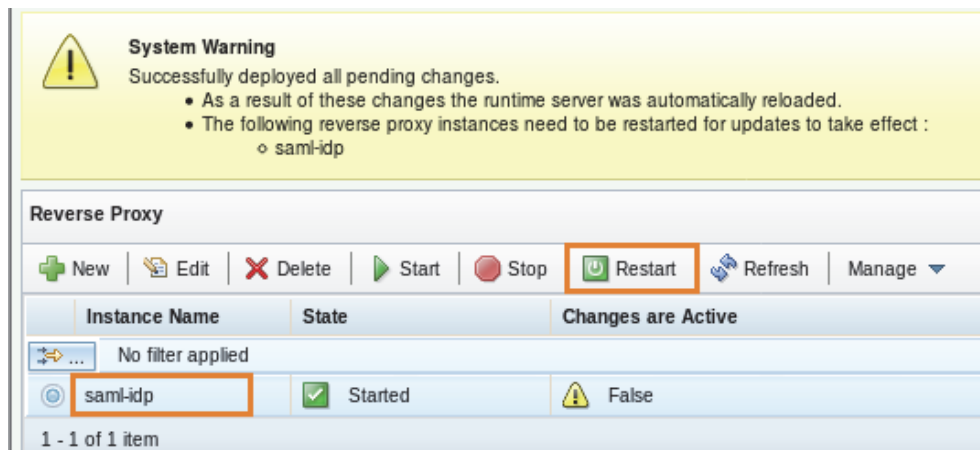
[junction:/isam]
reset-cookies-list = *ac.uuid,*JSESSIONID
```



Hint: You have an option to copy-paste the text required in the lab exercises instead of typing it. You can either use the Clipboard function or use the text from the `saml_lab_lil0430x.txt` file located in `/home/admin/studentfiles/textfiles`.

12. To save the configuration file, click **Save**.
13. Deploy the changes using the link in the yellow banner.
Notice the warning prompting you to restart the Reverse Proxy.

14. Restart the Reverse Proxy instance *saml-idp* using the **Restart** button.

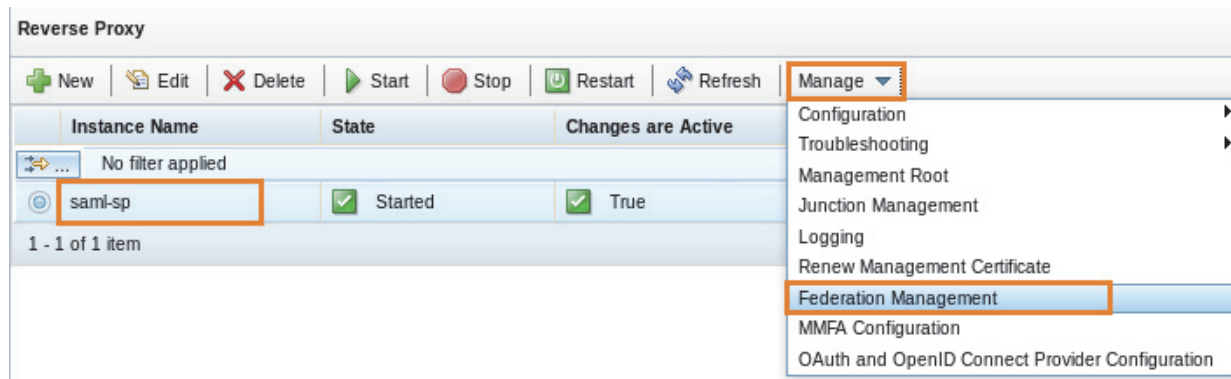


The **Changes are Active** column for the *saml-idp* instance changes from **False** to **True** after restart.

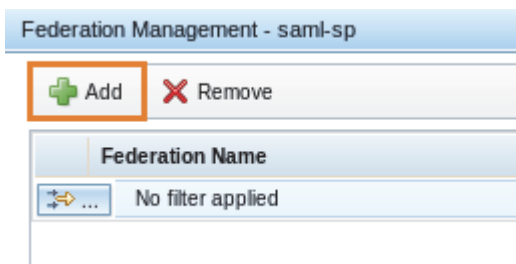
Exercise 5 Configuring the SP Reverse Proxy for federation

In this exercise, you configure the Reverse Proxy instance *saml-sp* running on the *iam2* appliance as a Point of Contact for the Service Provider federation.

1. In the **IAM2 LMI**, navigate to **Secure Web Settings > Manage: Reverse Proxy**.
2. Select the **saml-sp** instance.
3. Then, go to **Manage > Federation Management**.



4. On the *Federation Management* page, click **Add**.



The window with title *Add Federation to Reverse Proxy - saml-sp* appears.

5. Provide the following information in the *Runtime* tab.

Field	Value	Comment
Host name	localhost	This is a host name that the Reverse Proxy uses to reach the federation runtime.
Port	443	The federation runtime port.
Username	easuser	This credential is used to authenticate to the runtime server.
Password	passw0rd	Important: This is a default initial password of the <i>easuser</i> user. Notice that it is different than the standard password used in this lab.

The completed form looks like the following figure.

6. Go to the *Federation* tab and select **saml20sp** as a **Federation Name** from the drop down.

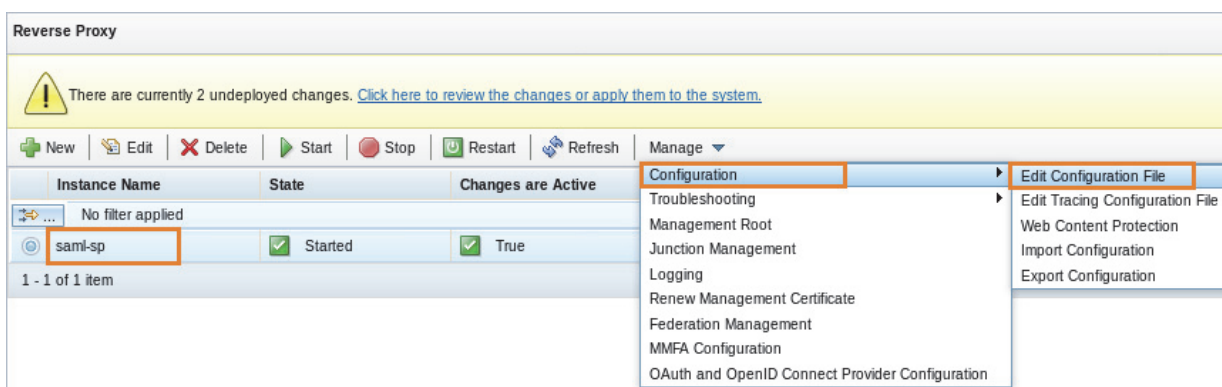
7. Click **Submit** and wait until the message *Federation added successfully* appears.

8. Close the *Federation Management* window.

Do not deploy the changes yet.

9. Select the **saml-sp** instance, if not already selected.

10. Go to **Manage > Configuration > Edit Configuration File**.



The Reverse Proxy configuration file opens in the *Advanced Configuration File Editor* window.

11. Scroll down and add the following text at the bottom of the configuration file.

```
[junction:/isam]
reset-cookies-list = *ac.uuid,*JSESSIONID
```

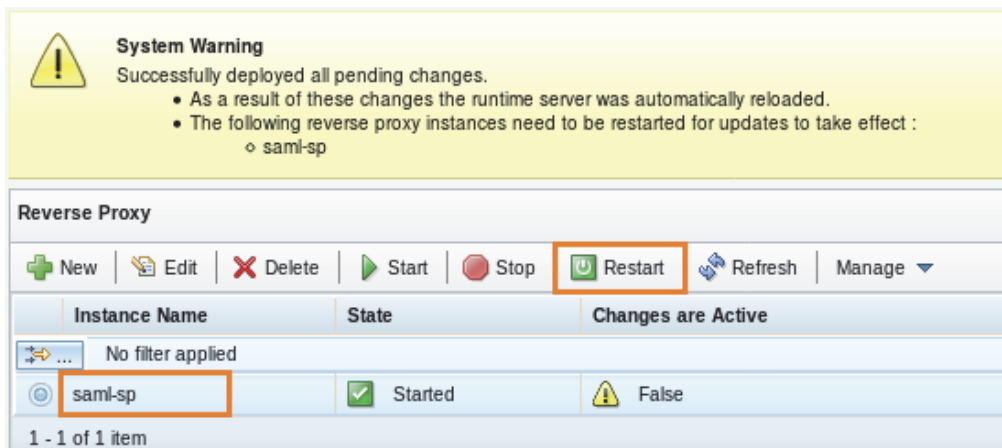
```
[manager]
master-host = iam2

[isam-fed-autocfg]
uuid6141f516-0163-1b95-9a9e-9c779666aea3 = saml20sp

[isam-fed-autocfg:uuid6141f516-0163-1b95-9a9e-9c779666aea3]
junction = /isam
federationRuntimeHost = localhost

[junction:/isam]
reset-cookies-list = *ac.uuid,*JSESSIONID
```

12. To save the configuration file, click **Save**.
13. Deploy the changes using the link in the yellow banner.
Notice the warning prompting you to restart the Reverse Proxy.
14. Restart the Reverse Proxy instance *saml-sp* using the **Restart** button.

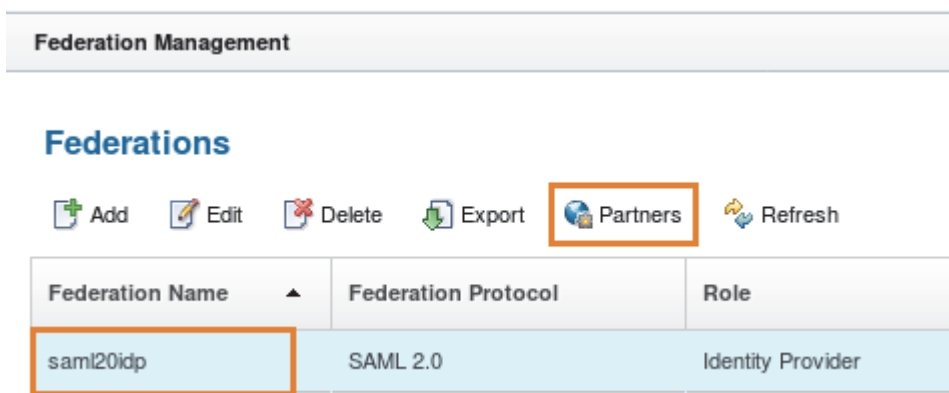


The **Changes are Active** column for the *saml-sp* instance changes from **False** to **True** after restart.

Exercise 6 Configuring the Federation Partner for the IdP

In this exercise, you configure the federation partner for the Identity Provider by importing the metadata file `sp_metadata.xml` created in the task [Exporting metadata](#).

1. In the **IAM1 LMI**, navigate to **Secure Federation > Manage: Federations**.
2. Select the **saml20idp** Federation and click **Partners**.



The *Partners* page displays.

3. To add a new partner, click (**Add**).
The *Create New Partner* wizard appears.



Hint: If the fields in the *Create New Partner* wizard are not displayed properly, try changing the screen resolution to one of the following: 1920 x 1080, 1280 x 1024, 1400 x 1050, 1600 x 900, or 1024 x 768.

4. In the *Metadata* screen, click **Browse**.

Create New Partner

Metadata

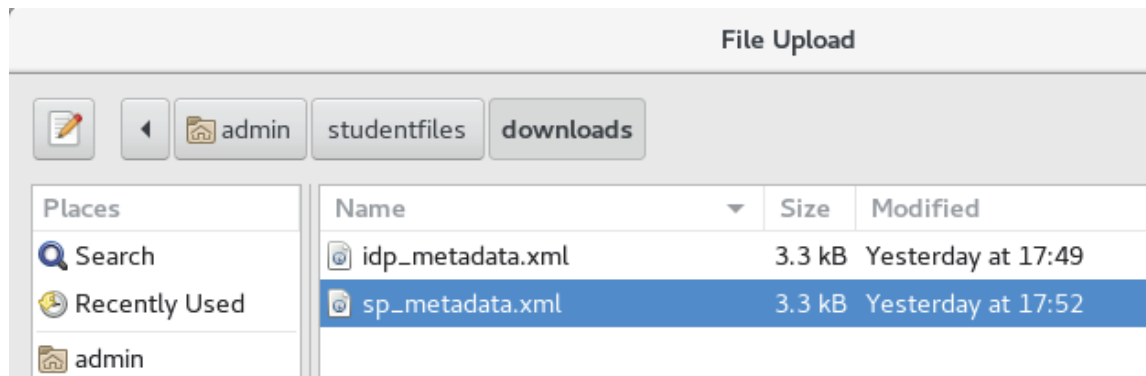
Upload the partner metadata file

* Select the metadata file

Browse

Previous **Next** **OK** **Cancel**

5. Select the file `/home/admin/studentfiles/downloads/sp_metadata.xml` and click **Open**.



6. Ensure that the metadata file is now populated and click **Next**.

Metadata

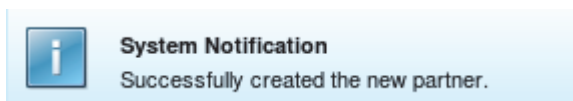
Upload the partner metadata file

* Select the metadata file

sp_metadata.xml

Browse

A message is briefly displayed to indicate that the partner has been created.



The next few wizard screens are useful to configure the partner according to your requirements.

7. Because this lab uses default partner configuration, keep clicking **Next** in each screen until you see the *Summary* screen.
8. Click **OK** in the *Summary* screen.

Create New Partner

System Notification
Successfully created the new partner.

[Metadata](#)

[Single Sign-on Settings](#)

[SOAP SSL Connection Settings](#)

[Access policy](#)

[Identity Mapping](#)

[Summary](#)

Summary

Ensure that the values are correct. Click OK to complete the federation configuration. Click Previous to r

Connection template:	SAML2_0
Attribute mapping:	Attribute Name Attribute Source
Assertion attribute types:	Attribute Types
Session timeout (seconds):	3600

Previous






Next

OK

Cancel

- Verify that the partner is added successfully as shown in the following figure.

Partners

 Add
  Edit
  Delete
  Enable
  Refresh

Partner Name	Partner Role	Status
SP Company	Service Provider	Enabled

- To close the *Partners* window, click **Close**.
- Deploy the changes by clicking the link in the yellow banner.







Exercise 7 Configuring the Federation Partner for the SP

In this exercise, you configure the federation partner for the Service Provider by importing the metadata file `idp_metadata.xml` created in [Exporting metadata](#).

- In the **IAM2 LMI**, navigate to **Secure Federation > Manage: Federations**.
- Select the **saml20sp** Federation and click **Partners**.


Federation Management

Federations

 Add
  Edit
  Delete
  Export
  Partners
  Refresh

Federation Name	Federation Protocol	Role
saml20sp	SAML 2.0	Service Provider

The *Partners* page displays.

- To add a new partner, click ( Add).
The *Create New Partner* wizard appears.



Hint: If the fields in the *Create New Partner* wizard are not displayed properly, try changing the screen resolution to one of the following: 1920 x 1080, 1280 x 1024, 1400 x 1050, 1600 x 900, or 1024 x 768.

4. In the *Metadata* screen, click **Browse**.

Create New Partner

Metadata

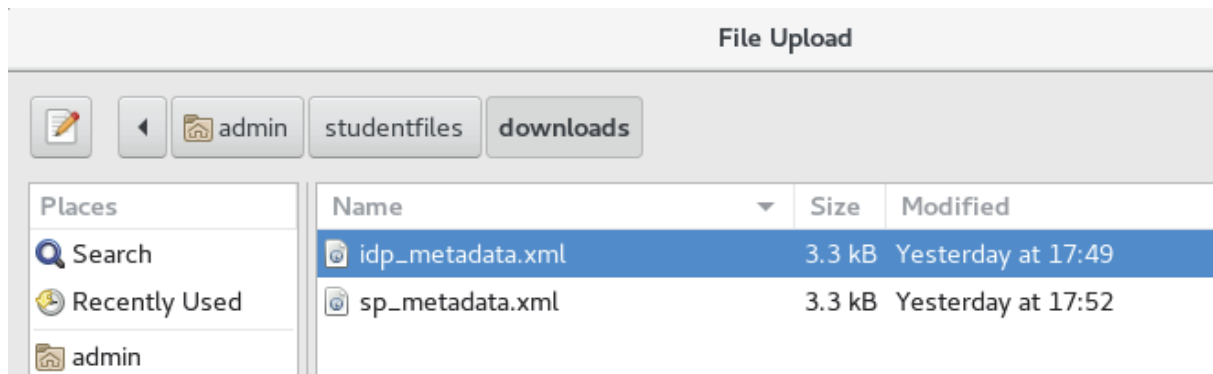
Upload the partner metadata file

* Select the metadata file

Browse

Previous **Next** **OK** **Cancel**

5. Select the file `/home/admin/studentfiles/downloads/idp_metadata.xml` and click **Open**.



6. Ensure that the metadata file is now populated and click **Next**.

Metadata

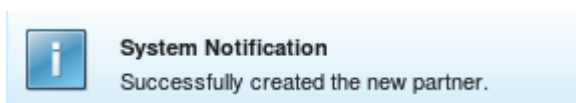
Upload the partner metadata file

* Select the metadata file

idp_metadata.xml

Browse

A message indicating success is displayed.



The next few wizard screens are useful to configure the partner according to your requirements.

7. Because this lab uses default partner configuration, keep clicking **Next** in each screen until you see the *Summary* screen.
8. Click **OK** in the *Summary* screen.

Create New Partner

i

System Notification
 Successfully created the new partner.

[Metadata](#)
[Single Sign-on Settings](#)
[SOAP SSL Connection Settings](#)
[Identity Mapping](#)
[Summary](#)

Summary

Ensure that the values are correct. Click OK to complete the federation configuration. Click Previous

Connection template:	SAML2_0
Attribute mapping:	Attribute Name Attribute Source
Force authentication for account linkage:	False
Federation ID included in alias lookup:	False
Anonymous username:	anonymous

Previous






Next

OK

Cancel

- Verify that the partner is added successfully as shown in the following figure.

Partners

 Add
  Edit
  Delete
  Enable
  Refresh

Partner Name	Partner Role	Status
Idp Company	Identity Provider	Enabled

- To close the *Partners* window, click **Close**.
- Deploy the changes by clicking the link in the yellow banner.




Exercise 8 Enabling and configuring the live demo application

The Access Manager runtime server has a built-in demonstration application which can be used to showcase federation capabilities.

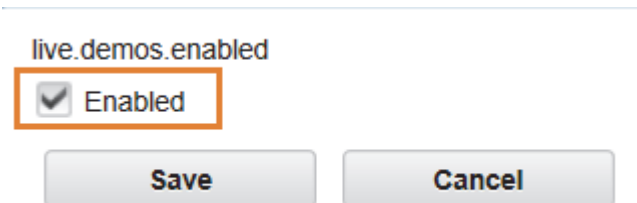
In this exercise, you enable and configure the demo application in the Service Provider (iam2) appliance to prepare it for testing the federation scenarios.

Task 1 Enabling the demo application

- In the **IAM2 LMI**, navigate to **Secure Federation > Global Settings: Advanced Configuration**.
- Locate and enable the key **live.demos.enabled** using the following procedure.
 - To locate the **live.demos.enabled** key, enter `demo` in the filter field.
 - Click the edit icon associated with the key.

Advanced Configuration		
Filter by Category ▼	demo	 
Key	Value	
live.demos.enabled	false	

- c. Select the **Enabled** check box and click **Save**.



live.demos.enabled

☒ Enabled

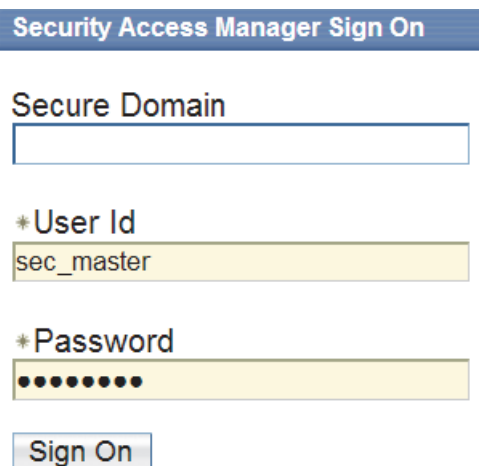
Save Cancel

3. Deploy the changes by clicking the link in the yellow banner.
Wait until the changes are deployed and the success message appears.

Task 2 Authorizing access to the demo application

The demo application is protected by the `/isam` junction which, by default, only allows access to specified resources. In this task, you modify the *default-webseal* ACL to grant the authenticated users access to the demo application accessible at `/isam/mobile-demo`.

4. In the **IAM2 LMI**, navigate to **Secure Web Settings > Manage: Policy Administration**.
The *Security Access Manager Sign On* page is displayed in the right pane.
5. On the *Sign On* page,
- Leave **Secure Domain** blank.
 - Provide `sec_master` as **User Id** and `P@ssw0rd` as **Password**
 - To log on to the `Default` domain, click **Sign On**.



Security Access Manager Sign On

Secure Domain

*User Id

sec_master

*Password

••••••••

Sign On

6. From the **Task List** in the left pane, expand **ACL**, then select **Search ACLs**.

7. Search for the **default-webseal** ACL.

The screenshot shows the 'Policy Administration' interface. On the left is a 'Task List' sidebar with categories like User, Group, Object Space, ACL, POP, AuthzRule, GSO Resource, and Secure Domain. The 'ACL' category is expanded, showing options like 'Search ACLs', 'Create ACL', 'Import ACL', 'Export All ACLs', 'List Action Groups', and 'Create Action Group'. The main area is titled 'Search ACLs' and contains search criteria: '*ACL Name' with the value '*webseal' and '*Maximum Results' with the value '100'. A 'Search' button is present. Below the search criteria, it states '1 ACLs matched the search criteria'. There are buttons for 'Create...', 'Delete', 'Export', 'Options', and 'Filters'. A table shows the search results with columns 'Select' and 'ACL Name'. The first row has a checkbox and the text 'default-webseal', which is highlighted with an orange box. At the bottom, it says 'Page 1 of 1' and 'Total: 1'.

8. To open the ACL properties page, click the **default-webseal** link.
9. Then, go to the **Attach** tab and click **Attach**.
10. For **Protected Object Path**, type `/WebSEAL/iam2.ibmcomm.edu-saml-sp/isam/mobile-demo` and click **Attach**.
11. Confirm that the specified path now appears in the **Attach** tab.

The screenshot shows the 'ACL Properties' dialog box with the 'Attach' tab selected. The 'ACL Name' field contains 'default-webseal' and is highlighted with an orange box. Below, it says 'The ACL is attached to these objects'. There are 'Attach...' and 'Detach' buttons. A table shows the attached objects with columns 'Select' and 'Protected Object'. The first row has a checkbox and the text '/WebSEAL'. The second row has a checkbox and the text '/WebSEAL/iam2.ibmcomm.edu-saml-sp/isam/mobile-demo', which is highlighted with an orange box.



Hint: The ACL is successfully updated at this time. You do not need to click *Apply* after attaching a resource to save the changes.

Task 3 Configuring initial parameters for the demo application

The demo application by default runs at the Reverse Proxy URL:

<https://www.saml-sp.ibmemm.edu/iam/mobile-demo>. It must be configured on the first use.

12. In Firefox (🦊) open a new tab and go to the bookmark **SAML links > Live demo app (iam2 appliance)**.

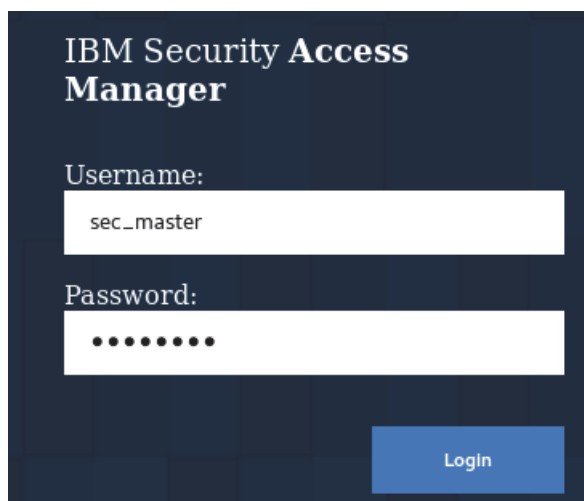
Because the website presents a self-signed certificate, the certificate warning appears.

13. To remove the warning, click **Advanced** and then **Add Exception**.

14. To permanently accept the certificate, click **Confirm Security Exception**.

The login screen appears.

15. Log on using `sec_master` and `P@ssw0rd`.



The application settings screen appears. This screen comes up when you access the application for the first time.

16. Update the settings using the information in the following table.

Field	Value
Runtime Host and Port	localhost:443
Management UI Host and Port	iam2.ibmemm.edu:443
Management UI Username	admin
Management UI Password	P@ssw0rd
Reverse Proxy Host and Port	www.saml-sp.ibmemm.edu:443
Attribute Collector Cookie Name	ac:uuid

17. Click **Save**.

The success message appears.

Settings

Configurations are saved successfully

Runtime Host and Port	<input type="text" value="localhost:443"/>
Management UI Host and Port	<input type="text" value="iam2.ibmemm.edu:443"/>
Management UI Username	<input type="text" value="admin"/>
Management UI Password	<input type="password" value="P@ssw0rd"/>
Reverse Proxy Host and Port*	<input type="text" value="www.saml-sp.ibmemm.edu:443"/>
Attribute Collector Cookie Name	<input type="text" value="ac.uuid"/>


18. To log out, click the **Logout** link at the top right corner of the page.

Exercise 9 Creating users for testing

In order to run the SAML flow, a user needs to be created at both the IdP and the SP side.

In this exercise, you log on to the iam1 and the iam2 appliances using the ssh command line session to create the `testuser` user. You also create an additional user named `anonymous` on the iam2 appliance to test the transient ID flow later during this lab.

Task 1 Creating a test user on the Identity Provider

1. Open the GNOME terminal ().
2. Initiate the ssh session to the iam1 appliance using this command:
`ssh admin@iam1.ibmemm.edu`
3. Provide `P@ssw0rd` as a password when prompted. After successful login, you see an `iam1.ibmemm.edu>` prompt.
4. Type `isam admin` and press **Enter**.

The pdadmin prompt appears.

5. At the `pdadmin>` prompt, run the command: `login -a sec_master -p P@ssw0rd`

You are logged to the pdadmin utility as **sec_master** user as shown in the following figure.

```
[admin@centos7 downloads]$ ssh admin@iam1.ibmemm.edu
admin@iam1.ibmemm.edu's password:
Last login: Mon Apr 30 17:53:22 2018
Welcome to the IBM Security Access Manager appliance
Enter "help" for a list of available commands
iam1.ibmemm.edu> isam admin

pdadmin> login -a sec_master -p P@ssw0rd
pdadmin sec_master> █
```

6. To create and enable a test user, run the following commands, one at a time:

```
user create testuser cn=testuser,dc=iswga Test User P@ssw0rd
user modify testuser account-valid yes
```


```
pdadmin> login -a sec_master -p P@ssw0rd
pdadmin sec_master> user create testuser cn=testuser,dc=iswga Test User P@ssw0rd
pdadmin sec_master> user modify testuser account-valid yes
pdadmin sec_master> █
```



Note: The pdadmin commands are available in the `/home/admin/studentfiles/textfiles/saml_lab_lil0430x.txt` file for copy/paste purposes.

7. Run `exit` command twice to log out of the pdadmin utility and the SSH session.

Task 2 Creating test users on the Service Provider

8. In the GNOME Terminal (), initiate the ssh session to the iam2 appliance using this command:
`ssh admin@iam2.ibmemm.edu`
9. Provide `P@ssw0rd` as a password when prompted. After successful login, you see an `iam2.ibmemm.edu>` prompt.
10. Type `isam admin` and press **Enter**.
The *pdadmin* prompt appears.
11. At the `pdadmin>` prompt, run the command: `login -a sec_master -p P@ssw0rd`

You are logged to the pdadmin utility as **sec_master** user as shown in the following figure.

```
[admin@centos7 ~]$ ssh admin@iam2.ibmemm.edu
admin@iam2.ibmemm.edu's password:
Last login: Tue May 15 18:16:10 2018 from 192.168.42.190
Welcome to the IBM Security Access Manager appliance
Enter "help" for a list of available commands
iam2.ibmemm.edu> isam admin

pdadmin> login -a sec_master -p P@ssw0rd
pdadmin sec_master> █
```

12. To create a test user and an anonymous user, run the following commands:

```
user create testuser cn=testuser,dc=iswga Test User P@ssw0rd
user modify testuser account-valid yes
user create anonymous cn=anonymous,dc=iswga anonymous anonymous P@ssw0rd
user modify anonymous account-valid yes
```

```
pdadmin> login -a sec_master -p P@ssw0rd
pdadmin sec_master> user create testuser cn=testuser,dc=iswga Test User P@ssw0rd
pdadmin sec_master> user modify testuser account-valid yes
pdadmin sec_master> user create anonymous cn=anonymous,dc=iswga anonymous anonymous
P@ssw0rd
pdadmin sec_master> user modify anonymous account-valid yes
pdadmin sec_master> █
```



Hint: The anonymous user is used for testing the transient name login scenario in the lab.

13. Run `exit` command twice to log out of the pdadmin utility and the SSH session.


Exercise 10 Testing and verifying the SAML federation flow

Now that you have configured the Identity Provider and the Service Provider entities, it is time to test the SAML federation flow. You will use the demo application running on the Service Provider (iam2) appliance to verify the federation.

Under SAML, clients can initiate Single Sign-On (SSO) and Single Log-Out (SLO) at either the Identity Provider (IdP) or the Service Provider (SP). You can control whether the Service Provider accepts SAML messages initiated at the IdP or the SP. The following tasks demonstrates various (SSO) and SLO scenarios.

Task 1 Verifying the IdP initiated SSO and SLO

This task demonstrates IdP initiated Single Sign-On (SSO) and Single Logout (SLO). In this scenario, the user gains access to the IdP site first, authenticates and then is redirected to the target SP site. IdP initiated Logout is triggered when the user triggers a logout option from the IdP site.

1. Close all instances of Firefox () if open to remove the current sessions and cached data.
2. Reopen Firefox.
3. Trigger IdP initiated SAML flow which uses the HTTP POST binding by clicking the bookmark **SAML links > IdP initiated SSO**.



Note: The IdP initiated SSO flow can be triggered using this URL template: `https://<IdP Reverse Proxy:port>/<junction name>/sps/<Identity Provider federation name>/saml20/logininitial?RequestBinding=HTTPPost&PartnerId=https://<SP Reverse Proxy:port>/<junction name>/sps/<Service Provider federation name>/saml20&NameIdFormat=Email&Target=https://<TargetURL>`

The actual URL used in this scenario is:

`https://www.saml-idp.ibmemm.edu/isam/sps/saml20idp/saml20/logininitial?RequestBinding=HTTPPost&PartnerId=https%3A%2F%2Fwww.saml-sp.ibmemm.edu%2Fisam%2Fsps%2Fsaml20s%2Fsaml20&NameIdFormat=Email&Target=https://www.saml-sp.ibmemm.edu/isam/mobile-demo/diag/`

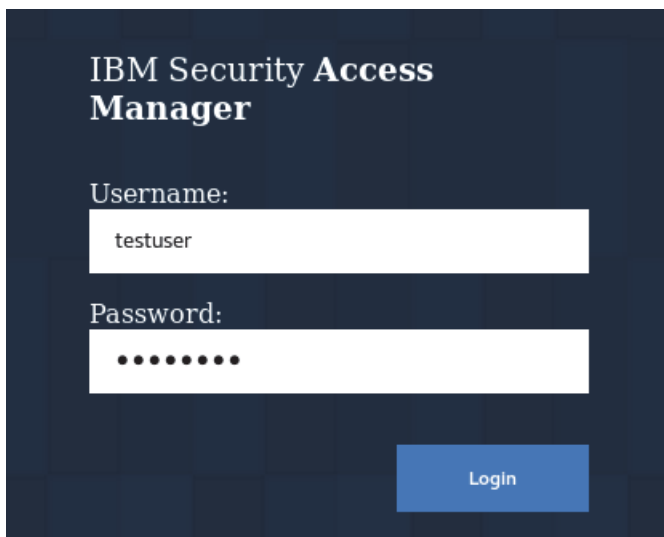
Where the demo application running on the Service Provider appliance is the target URL.

Because the website presents a self-signed certificate, the certificate warning appears.

4. To remove the warning, click **Advanced** and then **Add Exception**.
5. To permanently accept the certificate, click **Confirm Security Exception**.

The IdP login screen appears.

6. Log in to the IdP Reverse Proxy using the user name `testuser` and password `P@ssw0rd`.



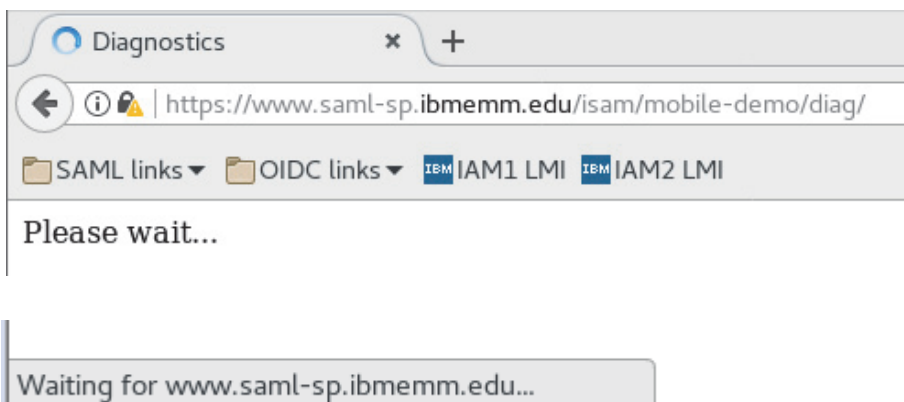
IBM Security Access Manager

Username:

Password:

Login

7. If you notice the browser URL, page and footer you can see that the browser is now redirecting to the SP.

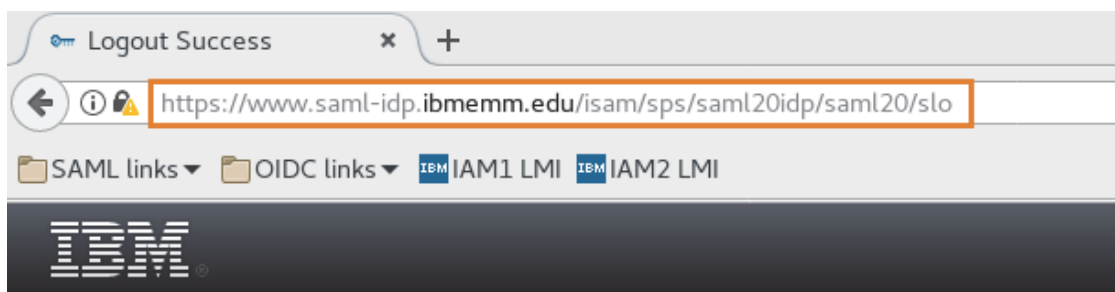


8. After a successful login by the IdP, the diagnostics page of the demo application running on the SP appears. Take a look at the username and other SAML attributes on this page.

Access Manager Credential:User: **testuser**

Name	Value(s)
AuthenticationInstant[0]	2018-05-16T01:30:10Z
AZN_CRED_NETWORK_ADDRESS_BIN[0]	0xc0a82abe
AUTHENTICATION_LEVEL[0]	2
AZN_CRED_AUTH_METHOD[0]	ext-auth-interface
tagvalue_user_session_id[0]	aWfItMi5pYm1lbW0uZWRLXNhbWwtc3AA_WvuJogAAAAIAAAwoon7WuluA8RhfwAAamstOHBDMVZJZ2xldzFxcVVRbkhzeTB6WE1WQjlwekpdn2RIM1BxYy1va0dLNjVR:default
AuthenticationMethod[0]	urn:oasis:names:tc:SAML:2.0:ac:classes:Password
AZN_CRED_MECH_ID[0]	IV_LDAP_V3.0
IssueInstant[0]	2018-05-16T01:30:10Z
issuer[0]	https://www.saml-idp.ibmemm.edu/isam/sps/saml20idp/saml20
tagvalue_session_index[0]	ac925878-58a8-11e8-b0db-000c2959cfa7
AZN_CRED_IP_FAMILY[0]	AF_INET

9. To trigger IdP initiated Single Logout (SLO), click the bookmark **SAML links > IdP initiated Single Logout (SLO)**. This bookmark opens the link:
<https://www.saml-idp.ibmemm.edu/isam/sps/saml20idp/saml20/sloinitial?RequestBinding=HTTPPost>
10. Verify that you receive a following success page at the end of the IdP initiated SLO flow.

**Logout Success**

/sps/saml20idp/saml20/slo
2018-05-16T01:33:42Z

Detail

Successfully completed single sign out for user testuser.

Task 2 Verifying the SP initiated SSO and SLO

This task demonstrates SP initiated Single Sign-On (SSO) and Single Logout (SLO). During SP initiated SSO, the user gains access to the SP site first, authenticates via IdP and then is redirected back to the target SP site. Similarly, SP initiated SLO is triggered when the user triggers a logout option from the SP site. The SP sends the logout request to the IdP which in turn sends the messages to each SP participating in the same SSO session.

11. Trigger SP initiated SAML SSO flow which uses HTTP POST binding by clicking the bookmark **SAML links > SP initiated SSO**.



Note: The SP initiated flow can be triggered using this URL template: `https://<SP Reverse Proxy:port>/<junction name>/sps/<Service Provider federation name>/saml20/logininitial?RequestBinding=HTTPPost&PartnerId=https://<IdP Reverse Proxy:port>/<junction name>/sps/<Identity Provider federation name>/saml20&NameIdFormat=Email&Target=https://<TargetURL>`

The actual URL used in this scenario is:

`https://www.saml-sp.ibmemm.edu/isam/sps/saml20sp/saml20/logininitial?RequestBinding=HTTPPost&PartnerId=https://www.saml-idp.ibmemm.edu/isam/sps/saml20idp/saml20&NameIdFormat=Email&Target=https://www.saml-sp.ibmemm.edu/isam/mobile-demo/diag/`

Where the demo application running on the Service Provider appliance is the target URL.

The IdP login screen comes up.

12. Log in to the IdP Reverse Proxy using the user name `testuser` and password `P@ssw0rd`.

13. After a successful login by the IdP, verify that you see the diagnostics page of the demo application running on the SP.

14. To trigger SP initiated Single Logout (SLO) using HTTP Post, click the bookmark **SAML links > SP initiated Single Logout (SLO)**. This bookmark opens the link:

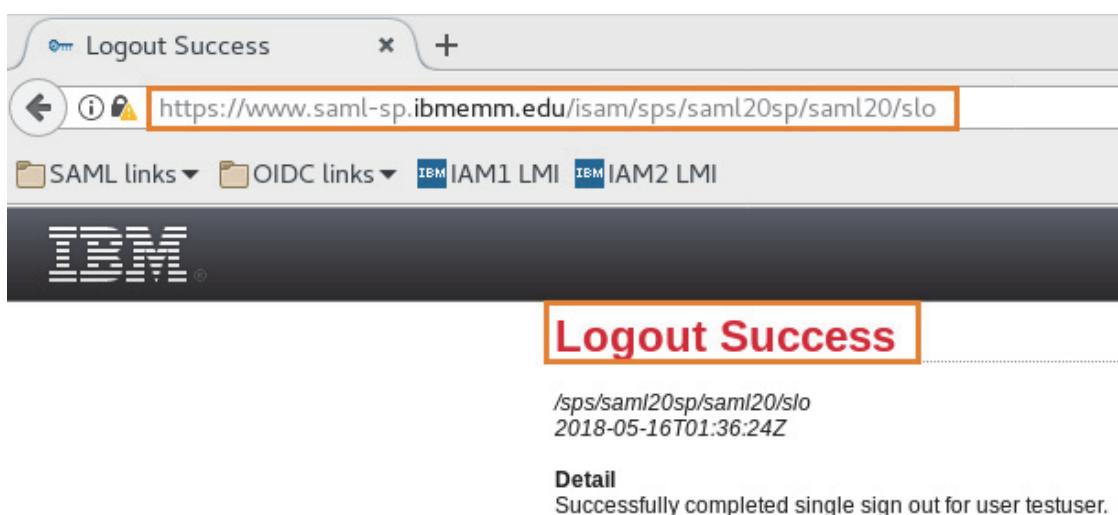
`https://www.saml-sp.ibmemm.edu/isam/sps/saml20sp/saml20/sloinitial?RequestBinding=HTTPPost`



Note: Alternatively, trigger SP initiated SLO using HTTP Redirect by clicking the bookmark **SAML links > SP initiated SLO using HTTPRedirect**. This bookmark opens the link:

`https://www.saml-sp.ibmemm.edu/isam/sps/saml20sp/saml20/sloinitial?RequestBinding=HTTPRedirect`

15. Verify that you receive a following success page at the end of the SP initiated SLO flow.



Task 3 Mapping the IdP user accounts to the shared anonymous user in the SP

This scenario demonstrates how IBM Access Manager supports SAML transient name ID format. In this scenario, there is no user data on the Service Provider side. All users passed from the Identity Provider to the Service Provider will be mapped to a single user account, for example, the anonymous user in this lab.



Note: Recall that you created an anonymous user on the Service Provider appliance in the task [Creating test users on the Service Provider](#). The Service Provider by default uses this user as a shared user during SSO for the transient IDs. You can use the Service Provider Partner configuration wizard to change the anonymous user settings.

16. Trigger IdP initiated SAML flow using the transient name ID format, by clicking the bookmark **SAML links > IdP initiated SSO using Transient NameID format**.

This bookmark opens the URL:

```
https://www.saml-idp.ibmemm.edu/isam/sps/saml20idp/saml20/logininitial?RequestBinding=HTTPPost&PartnerId=https%3A%2F%2Fwww.saml-sp.ibmemm.edu%2Fisam%2Fsps%2Fsaml20sp%2Fsaml20&NameIdFormat=Transient&Target=https://www.saml-sp.ibmemm.edu/isam/mobile-demo/diag/
```

The IdP login screen comes up.

17. Log in to the IdP Reverse Proxy using the user name `testuser` and password `P@ssw0rd`.
18. After a successful login by the IdP, verify that you see the diagnostics page of the demo application running on the SP. Notice that the user name displayed on the SP is **anonymous** despite logging in using the **testuser** credential on the IdP side.

Access Manager Credential:

User: **anonymous**

AZN_CRED_IP_FAMILY[0]	AF_INET
AZN_CRED_PRINCIPAL_UUID[0]	82018648-58a7-11e8-9924-000c2959cfa7
AZN_CRED_QOP_INFO[0]	SSK: TLSV12: 2F
AZN_CRED_AUTHZN_ID[0]	anonymous
AudienceRestrictionCondition.Audience[0]	https://www.saml-sp.ibmemm.edu/isam/sps/saml20sp/saml20
AZN_CRED_PRINCIPAL_DOMAIN[0]	Default
AZN_CRED_REGISTRY_ID[0]	cn=anonymous,dc=iswga
am_eai_xattr_session_lifetime[0]	1526438290
AZN_CRED_PRINCIPAL_NAME[0]	anonymous
tagvalue_login_user_name[0]	anonymous
tagvalue_max_concurrent_web_sessions[0]	unset
testattr[0]	myvalue

19. Log out of the SSO session either using the IdP initiated SLO or the SP initiated SLO.



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