Project B
CSC-2017/2018

SAML2.0 Federation

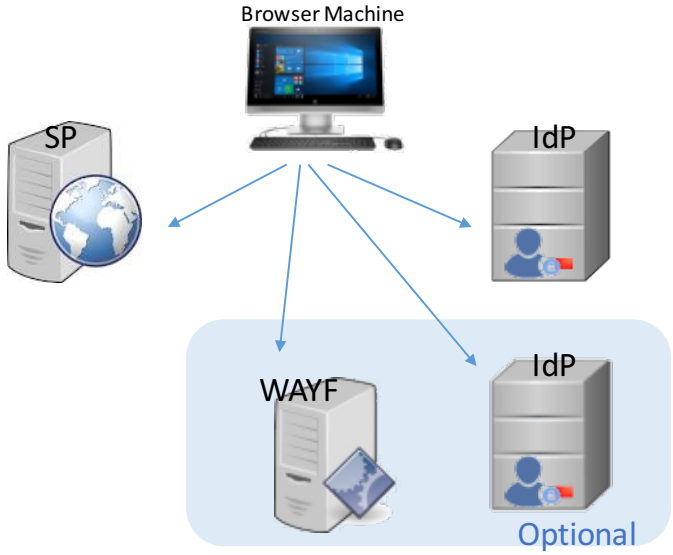
1 Goal

Create a SAML2 federation

2 Introduction

The goal of this project is to build an identity federation the minimum setup to test a federation is 5 machines. However, two are optional and a third one is going to be used just as a browser, no installation will be necessary in this machine besides configuring the DNS as in any other.

Students will be using the virtual Network created for the labs with the necessary changes. Recall that every machine is connected to the same subnet as in assignment 1 and 2.



3 DNS

In order to have a local network know by there DNS names, the students should start by installing a DNS Server. DNS may be installed on any of the servers, but must be configured in the other, so that that becomes its primary domain server. Follow the instructions in the link to install a DNS server

https://www.digitalocean.com/community/tutorials/how-to-configure-bind-as-a-private-network-dns-server-on-ubuntu-14-04

4 Installing the IdP

The IdP will be the Identity Provider, i.e. it will be where the users will authenticate and from where the SP receives the data about the users, ensuring that the user behind the browser machine is correctly authenticated.

To install the Idp please follow the instructions:

https://github.com/malavolti/HOWTO-Install-and-Configure-Shibboleth-Identity-Provider

5 Installing the SP

The SP machine will run a WebServer that will be protected by the SP. The SP will sit in front of the WebServer, ensuring that every one accessing the SP is authenticated and providing the WebServer (through a special API) the data with the user attributes (the user accessing the WebServer.

The easiest way to implement a WebServer is building a PHP app. To install a PHP for Apache2 on Lubuntu follow the instructions in

https://www.digitalocean.com/community/tutorials/how-to-install-linux-apache-mysql-php-lamp-stack-on-ubuntu-16-04#step-3-install-php

There are two possible SP that may be installed:

- Shibboleth
- SimpleSampphp

5.1 Install Shibboleth SP

There are several sources of information on how to install a Shibboleth SP. Most are toward a specific federation. The next three sources are more or less equivalent. The student should identify the places where the instructions are specific to a federation and adapt to its own federation.

http://federation.belnet.be/node/24

https://wiki.library.ucsf.edu/pages/viewpage.action?pageId=187957305

https://help.it.ox.ac.uk/iam/federation/shibsp-apache-howto

The official installation instructions do not provide packages for Lubuntu, Ubuntu or Debian Linux. It still possible to follow the official instruction either by installing from source or install a CentOS machine (similar packaging to RedHat). For the official instructions go to

https://wiki.shibboleth.net/confluence/display/SHIB2/NativeSPLinuxInstall

5.2 Install SimpleSAMLphp

To install the simple SAML php follow the instructions below.

https://www.digitalocean.com/community/tutorials/how-to-install-and-configure-simplesamlphp-for-saml-authentication-on-ubuntu-16-04

6 Building a Federation (Option)

In order to build a federation, the student will need to setup another IdP (follow the same instructions or clone the machine. In the last case beware with MAC addresses, IPs, and DNS names, all of that must be changed.

The student will also need to install a WAYF machine and find a place to deposit the metadata of the federation. The one place where every will go to fetch metadata about every one else.

To install a federation follow the instructions below.

https://wiki.shibboleth.net/confluence/display/SHIB2/BuildAFederation