IBM Security Verify Privilege

SAML Configuration Guide

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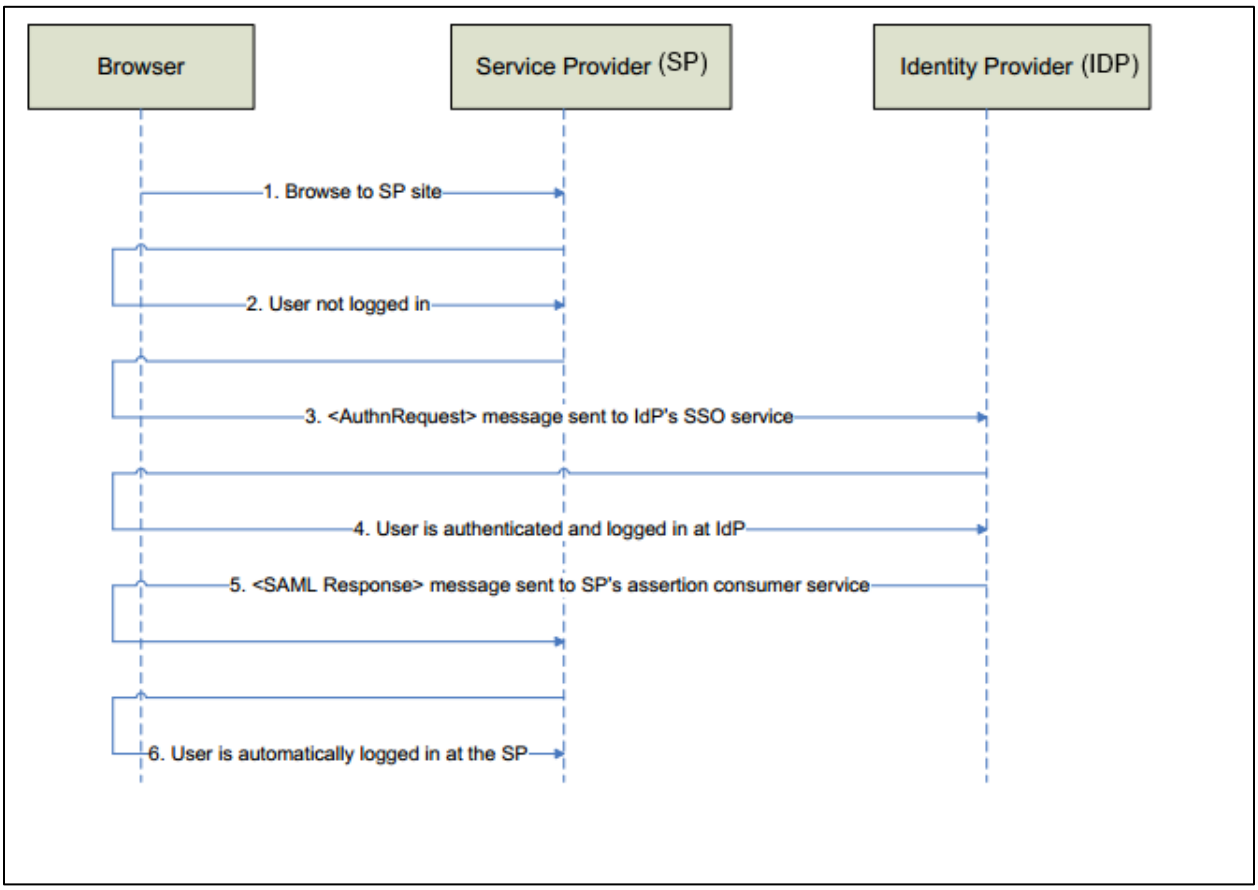
SAML Authentication with Privilege Vault

Privilege Vault allows the use of SAML Identity Provider (IdP) authentication instead of the normal authentication process for single sign-on (SSO). To do this, Privilege Vault acts as a SAML Service Provider (SP) that can communicate with any configured SAML IdP. The documentation below assumes you have a running IdP with a signed certificate.

In the diagram below, Privilege Vault acts as the Service Provider. Any configured SAML Identity Provider can be used for this process and there are several well tested providers, including Shibboleth, SimpleSAMLPHP and Microsoft ADFS.

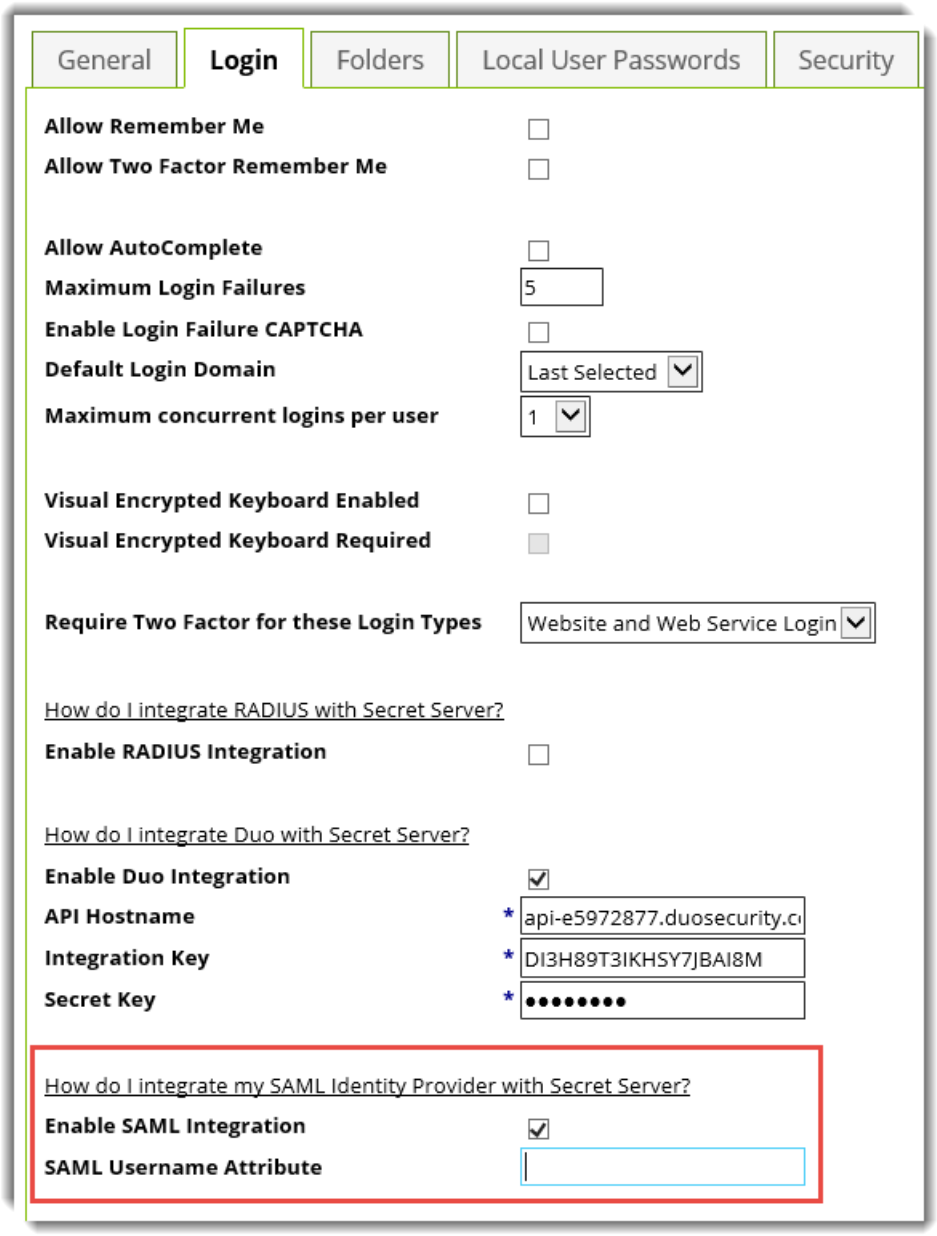


Configure SAML

SAML Configuration in Privilege Vault consist of two parts: Enabling SAML in the Privilege Vault UI and modifying the saml.config file for Identity Provider specific settings.

PRIVILEGE VAULT

1. Go to **ADMIN | Configuration** and click the **Login** tab. Click the Edit button and check the box for **Enable SAML Integration.**



2. **Optional:** Specify the SAML Username Attribute. Most IdP's will pass the username in the 'Subject' of the Assertion / Response. This can typically be left blank.

SAML FILE CONFIGURATION

There are three parts to the backend SAML configuration. After following these steps, recycle the Privilege Vault application pool so the settings take effect.

1. Create the saml.config file
2. Modify the saml.config with your IdP settings
3. Modify the IdP's metadata to contain information on Privilege Vault as a Service Provider

Create the saml.config File

1. In the Privilege Vault directory (typically c:\inetpub\wwwroot\secretserver) copy the saml.config.template to a new file and name the new file saml.config.
2. Run notepad as an admin and edit the saml.config file.

Modify the saml.config With IdP Settings

Service Provider

Modify the Privilege Vault SAML configuration file for your ServiceProvider settings.

1. Choose a ServiceProvider EntityId. Typically this is the Privilege Vault URL and goes in the **Name** attribute of the ServiceProvider node.
2. The **AssertionConsumerServiceUrl** is a relative URL in Privilege Vault that should not need modification. Verify that it is: **AssertionConsumerServiceUrl="~/SAML/AssertionConsumerService.aspx"**
3. **[Optional]** Specify a Certificate to be used for signing a request during a **SP-Initiated login.** See the How to Specify a Certificate for SAML section for more information on using certificates.

Identity Provider

Fill out the PartnerIdentityProvider section in the saml.config file. Privilege Vault only supports one identity provider at a time.

1. Specify the EntityId of the Identity Provider in the Name attribute.
2. Specify the SingleSignOnServiceUrl (the URL on the IdP where users go to sign in).
3. Specify the SingleLogoutServiceUrl (the URL on the IdP where users go to sign out).
4. Specify additional options, such as encryption and signing:
    a. **ClockSkew**
        i. The optional ClockSkew attribute specifies the time difference allowed between local and partner computer clocks when checking time intervals. The default is no clock skew.
    b. **DataEncryptionMethod**
        i. The optional DataEncryptionMethod attribute specifies the XML encryption data encryption method. The default is: http://www.w3.org/2001/04/xmlenc#aes128-cbc.
    c. **DigestMethod**
        i. The optional DigestMethod attribute specifies the XML signature digest method. The default is: http://www.w3.org/2000/09/xmldsig#sha256.
    d. **DisableInboundLogout**
        i. The optional DisableInboundLogout attribute specifies whether logout requests sent by the partner provider are not supported. The default is false.

e. **DisableOutboundLogout**
    i. The optional DisableOutboundLogout attribute specifies whether logout requests sent to the partner provider are not supported. The default is false.
f. **ForceAuthn**
    i. The optional ForceAuthn attribute is included in the authentication request, which requires the Identity Provider to re-authenticate, regardless of whether there is an existing session. The default is false.
g. **KeyEncryptionMethod**
    i. The optional KeyEncryptionMethod attribute specifies the XML encryption key encryption method. The default is: http://www.w3.org/2001/04/xmlenc#rsa-1_5.
h. **LogoutRequestLifeTime**
    i. The optional LogoutRequestLifeTime attribute specifies the NotOnOrAfter time interval for the logout request. The format is hh:mm:ss. The default is 3 minutes.
i. **SignatureMethod**
    i. The optional SignatureMethod attribute specifies the XML signature method. The default is: http://www.w3.org/2000/09/xmldsig#rsa-sha256.
j. **SignLogoutRequest**
    i. The optional SignLogoutRequest attribute specifies whether logout requests sent to the partner provider should be signed. The default is false.
k. **SignLogoutResponse**
    i. The optional SignLogoutResponse attribute specifies whether logout responses sent to the partner provider should be signed. The default is false.
l. **SingleLogoutServiceBinding**
    i. The optional SingleLogoutServiceBinding attribute specifies the transport binding to use when sending logout messages to the partner provider's SLO service. The default is to use the HTTP-Redirect binding.
m. **UseEmbeddedCertificate**
    i. The optional UseEmbeddedCertificate attribute specifies whether the certificate embedded in the XML signature should be used when verifying the signature. If false, a configured certificate retrieved from the certificate manager is used. The default is false.
n. **WantLogoutRequestSigned**
    i. The optional WantLogoutRequestSigned attribute specifies whether the logout request from the partner provider should be signed. The default is false.
o. **WantLogoutResponseSigned**
    i. The optional WantLogoutResponseSigned attribute specifies whether the logout response from the partner provider should be signed. The default is false.

Modify IdP Metadata for Privilege Vault

Following the instructions provided by your Identity Provider (i.e. ADFS, SimpleSAML, Okta, etc...), add the appropriate entries for Privilege Vault as a Service Provider.

- Privilege Vault's assertion consumer service is located at: https://<PATH TO YOUR PRIVILEGE VAULT>/SAML/AssertionConsumerService.aspx.
- Privilege Vault's SingleLogoutService is located at: https://<PATH TO YOUR PRIVILEGE VAULT>//SAML/sloservice.aspx.
- Privilege Vault's EntityId (or URN or other similar reference) is the EntityId chosen in the section Create saml.config file.

Example SAML Configuration File for SimpleSAMLPHP

```
<?xml version="1.0"?>
<SAMLConfigurations ReloadOnConfigurationChange="false"
xmlns="urn:componentspace:SAML:2.0:configuration">
 <SAMLConfiguration>
 <ServiceProvider
    Name="urn:componentspace:SecretServerServiceProvider"
    AssertionConsumerServiceUrl="~/SAML/AssertionConsumerService.aspx"
    LocalCertificateFile="sp.pfx"
    LocalCertificatePassword="password"/>
       <PartnerIdentityProviders>
          <PartnerIdentityProvider Name=https://localhost/simplesaml/saml2/idp/metadata.php
                SignAuthnRequest="false"
                WantSAMLResponseSigned="true"
                WantAssertionSigned="false"
                WantAssertionEncrypted="false"
SingleSignOnServiceUrl="https://localhost/simplesaml/saml2/idp/SSOService.php?spentityid=urn:componentspace:SecretServerServiceProvider"
                PartnerCertificateFile="simplesaml.crt"/>
        </PartnerIdentityProviders>
  </SAMLConfiguration>
</SAMLConfigurations>
```

How to Specify a Certificate for SAML

X.509 certificates are used for XML signatures and XML encryption. A certificate for SAML can be specified in several ways within the saml.config file. A certificate may be stored in a file or the Windows certificate store.

The Certificate parameters should be prefixed with either **Local** or **Partner** depending if the certificate is for Privilege Vault to sign requests or the IdP signing assertions.

Support for authentication request signing using SHA-2

If Privilege Vault is running on .NET 4.6.1 or earlier, the local certificate must use the "Microsoft Enhanced RSA and AES Cryptographic Provider" Cryptographic Service Provider (CSP).

If Privilege Vault is running on .NET 4.6.2 or later, most legacy CSPs will properly function with SHA-2 signing.

HOW TO SPECIFY A SAML CERTIFICATE ON THE FILE SYSTEM

1. Specify a LocalCertificateFile or PartnerCertificateFile depending on if it is for the IdP signing the response or Privilege Vault signing the request. This can be an absolute path or a path relative to the application folder.
2. **[optional]** Specify a LocalCertificatePassword. This is the password associated with the certificate file. Certificate files (*.pfx) that include the private key should be protected by a password. For a production certificate, the password should be stored encrypted in web.config. Refer to the CertificatePasswordKey attribute directly below for more details.
3. **[optional]** Specify a LocalCertificatePasswordKey. This specifies the web.config's appSettings key for the certificate file password. For example, if the CertificatePasswordKey attribute value is localCertificatePassword, then under the web.config's appSettings section, an entry with the key name localCertificatePassword is expected and the entry value is used as the password. By encrypting the appSettings section using the aspnet_regiis utility, the certificate file password is secured.

HOW TO SPECIFY A SAML CERTIFICATE IN THE WINDOWS CERTIFICATE STORE

One of the following methods must be used to reference the certificate.

1. **[optional]** Specify a LocalCertificateSerialNumber or PartnerCertificateSerialNumber attribute. Specifies the X.509 certificate by serial number within the certificate store.
2. **[optional]** Specify a LocalCertificateThumbprint or PartnerCertificateThumbprint attribute. Specifies the X.509 certificate by thumbprint within the certificate store.
3. **[optional]** Specify a LocalCertificateSubject or PartnerCertificateSubject attribute. Specifies the X.509 certificate by subject within the certificate store.
4. **[optional]** Specify a LocalCertificateStoreLocation or PartnerCertificateCertificateStoreLocation attribute. Specifies the X.509 certificate store (LocalMachine or CurrentUser). The default is local machine.

EXAMPLE SAML CONFIG FILE FOR A SIMPLESAMLPHP INSTALLATION: