

CryptoShibHandle

 This page didn't survive the conversion process and is no longer very usable.

An alternative implementation of a Shibboleth handle is called `CryptoShibHandle`. Like `SharedMemoryShibHandle`, a `CryptoShibHandle` is an opaque reference to a SAML subject. Unlike `SharedMemoryShibHandle`, however, a `CryptoShibHandle` introduces no state at the IdentityProvider. Consequently, `CryptoShibHandle` is well suited for [load balanced environments](#).

A `CryptoShibHandle` avoids state at the IdentityProvider by encrypting the local principal name and its associated time-to-live (TTL) into the handle itself. Configuration is more involved, however, since the key used to encrypt/decrypt the handle must be created, packaged, and secured.

To enable `CryptoShibHandle`, perform the following steps:

1. Create a Java keystore. If you're using the default Java cryptography engine you can do this with the `keytool` command as follows:

```
> keytool -genkey -keyalg RSA -keystore cryptohandle.jks -storepass KeyStorePassword -keypasswd KeyStoreKeyPassword -alias KeyStoreKeyAlias
```
2. Place the `cryptohandle.jks` file in the `etc/` directory of your Shibboleth IdP home directory.
3. Insert a `NameMapping` element into the IdP config file (see below).
4. In the IdP config file, set one or more `/IdPConfig/RelyingParty/NameID/@nameMapping` attributes equal to the value of `/IdPConfig/NameMapping/@id` (see below).
5. Restart the IdP (probably means restarting Tomcat+Apache)

To configure an IdP to use `CryptoShibHandle`, a `NameMapping` element similar to the following is inserted into the IdP config file (`idp.xml`):

```
<!-- CryptoShibHandle configuration -->
<NameMapping
  xmlns="urn:mace:shibboleth:namemapper:1.0"
  id="..."
  format="urn:mace:shibboleth:1.0:nameIdentifier"
  handleTTL="1800"
  type="CryptoHandleGenerator">
  <!-- the absolute path to a Java keystore -->
  <KeyStorePath>...</KeyStorePath>
  <!-- the keystore password -->
  <KeyStorePassword>...</KeyStorePassword>
  <!-- the alias of the private key in the keystore -->
  <KeyStoreKeyAlias>...</KeyStoreKeyAlias>
  <!-- the password of the private key in the keystore -->
  <KeyStoreKeyPassword>...</KeyStoreKeyPassword>
  <!-- the keystore type (default: JCEKS) -->
  <KeyStoreType>JCEKS</KeyStoreType>
  <!-- the crypto cipher (default: DESede/CBC/PKCS5Padding) -->
  <Cipher>DESede/CBC/PKCS5Padding</Cipher>
  <!-- the MAC (default: HmacSHA1) -->
  <MAC>HmacSHA1</MAC>
</NameMapping>
```

where the attributes of the `NameMapping` element are the same as `SharedMemoryShibHandle` (except for the value of the `type` attribute). The nested elements are summarized in the following table:

Error rendering macro 'html'

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Error rendering macro 'html'

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Class

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CryptoShibHandle

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Element Name

Error rendering macro 'html'

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Error rendering macro 'html'

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Required

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Error rendering macro 'html'

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Default

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KeyStorePath

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KeyStorePassword

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KeyStoreKeyAlias

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KeyStoreKeyPassword

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KeyStoreType

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Cipher

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DESede/CBC/PKCS5Padding

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MAC

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HmacSHA1

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Note: If you are using a standard Java keystore, the `keyStoreType` element may be omitted. Otherwise, set the `keyStoreType` element to the appropriate type identifier. Also, unless you know what you're doing, use the default values of `cipher` and `MAC` by omitting the child elements from the `nameMapping` element.

See the Shibboleth Identity Provider Deployment Guide for more detail regarding `CryptoShibHandle` configuration. See <http://java.sun.com/j2se/1.5.0/docs/guide/security/CryptoSpec.html> for general information about cryptographic implementations, conventions and syntax.