

Streams Replication Manager for HDF and HDP 1.0.0

Securing SRM

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Security overview

Learn how to set up security for SRM.

SRM can operate in both secure and unsecure environments, as well as a mix of both. In addition, it can also connect to clusters that have differing security setups. Configuring security can be achieved by adding the appropriate security related properties to your `srm.properties` configuration file. The properties set should match the security setup of the cluster or clusters that SRM is connecting to.

Configuring SSL encryption

Learn how to set up SSL encryption for SRM.

About this task

Configuring SSL encryption for SRM can be achieved by adding the appropriate configuration properties to your `srm.properties` configuration file.



Note: Depending on your security environment, other, optional configuration settings may be required.

Procedure

1. Specify the security protocols:

```
security.protocol = SSL
```

2. Specify truststore information:

```
ssl.truststore.location = /var/private/ssl/kafka.client.truststore.jks  
ssl.truststore.password = test1234
```

Configuring SSL encryption and authentication

Learn how to set up SSL encryption and authentication for SRM.

About this task

Configuring SSL encryption and authentication for SRM can be achieved by adding the appropriate configuration properties to your `srm.properties` configuration file.



Note: Depending on your security environment, other, optional configuration settings may be required.

Procedure

1. Specify the security protocols:

```
security.protocol = SSL
```

2. Specify truststore information:

```
ssl.truststore.location = /var/private/ssl/kafka.client.truststore.jks
```

```
ssl.truststore.password = test1234
```

3. Specify keystore information:

```
ssl.keystore.location = /var/private/ssl/kafka.client.keystore.jks
ssl.keystore.password = test1234
ssl.key.password = test1234
```

Configuring authentication with Kerberos

Learn how to set up Kerberos authentication for SRM.

About this task

Configuring authentication with Kerberos for SRM can be achieved by adding the appropriate configuration properties to your `srm.properties` configuration file.

Procedure

1. Specify the security protocols:

```
security.protocol = SASL_PLAINTEXT
```

2. Specify the authentication mechanism:

```
sasl.mechanism = GSSAPI
```

3. Specify the service name:

```
sasl.kerberos.service.name = kafka
```

4. Configure the JAAS.

You have two options when configuring the JAAS:

a) Embed it in the `srm.properties` file with the `sasl.jaas.config` property:

```
sasl.jaas.config = \
  com.sun.security.auth.module.Krb5LoginModule required \
    useKeyTab=true \
    keyTab="path/to/keytab file" \
    storeKey=true \
    useTicketCache=false \
    principal="streamsrepmgr@STREAMANALYTICS.COM";
```

b) Create a JAAS configuration file containing the properties and pass its location with the `SRM_KERBEROS_OPTS` environment variable:

```
export SRM_KERBEROS_OPTS="-Djavax.security.auth.useSubjectCredsOnly=false \
-Djava.security.auth.login.config=/opt/streams-replication-manager/conf/srm-jaas.conf"
```

For convenience, this and other environment variables can be added to `/opt/streams-replication-manager/config/srm-env.sh`.

Configuring authentication with Kerberos and encryption with SSL

Learn how to set up Kerberos authentication and SSL encryption for SRM.

About this task

Configuring Kerberos authentication and SSL encryption for SRM can be achieved by adding the appropriate configuration properties to your `srm.properties` configuration file.



Note:

Depending on your security environment, other, optional configuration settings may be required.

Procedure

1. Specify the security protocols:

```
security.protocol = SASL_SSL
```

2. Specify truststore information:

```
ssl.truststore.location = /var/private/ssl/kafka.client.truststore.jks
ssl.truststore.password = test1234
```

3. Specify the authentication mechanism:

```
sasl.mechanism = GSSAPI
```

4. Specify the service name:

```
sasl.kerberos.service.name = kafka
```

5. Configure the JAAS.

You have two options when configuring the JAAS:

- a) Embed it in the `srm.properties` file with the `sasl.jaas.config` property:

```
sasl.jaas.config = \
  com.sun.security.auth.module.Krb5LoginModule required \
  useKeyTab=true \
  keyTab="path/to/keytab file" \
  storeKey=true \
  useTicketCache=false \
  principal="streamsrepmgr@STREAMANALYTICS.COM";
```

- b) Create a JAAS configuration file containing the properties and pass its location with the `SRM_KERBEROS_OPTS` environment variable:

```
export SRM_KERBEROS_OPTS="-Djavax.security.auth.useSubjectCredsOnly=false \
-Djava.security.auth.login.config=/opt/streams-replication-manager/conf/srm-jaas.conf"
```

For convenience, this and other environment variables can be added to `/opt/streams-replication-manager/config/srm-env.sh`.

Configuring security for clusters with differing security setups

Learn how to set up SRM security for clusters with differing security setups.

About this task

In a complex system you might have clusters that require no encryption or authentication while others do. SRM is capable of operating in environments where the security setup of each cluster SRM is connecting to is different. Configuring security is achieved by adding the appropriate configuration properties to your `srm.properties` configuration file. When connecting SRM to clusters with non-uniform security setups, you have to add each

configuration property separately for each cluster in your system. This can be done by prepending the configuration property with the cluster name. For example, `primary.security.protocol` specifies the security protocol for the cluster named “primary”.

Procedure

1. Specify the security protocols for each cluster:

```
primary.security.protocol = SSL
backup.security.protocol = SASL_SSL
```

2. Add truststore information:

Truststore information is only required if you are using SSL encryption.

```
backup.ssl.truststore.location=/var/private/ssl/kafka.client.truststore.
jks
backup.ssl.truststore.password=test1234
primary.ssl.truststore.location=/var/private/ssl/kafka.client.truststore
.jks
primary.ssl.truststore.password=test1234
```

3. Add keystore information:

Keystore information is only required if you are using SSL authentication.

```
primary.ssl.keystore.location=/var/private/ssl/kafka.client.keystore.jks
primary.ssl.keystore.password=test1234
primary.ssl.key.password=test1234
```

4. Specify the authentication mechanism:

Specifying the authentication mechanism is only required if you are using SASL.

```
backup.sasl.mechanism = GSSAPI
```

5. Specify the service name:

Service name information is only required if you are using Kerberos.

```
primary.sasl.kerberos.service.name = kafka
backup.sasl.kerberos.service.name = srm
```

6. Configure the JAAS.

JAAS configuration is only required if you are using SASL.

If one or more of your clusters operates in a different kerberos realm, you have to specify a unique JAAS configuration for each. Configuring multiple kerberos realms is only possible by embedding the JAAS configuration in the `srm.properties` file. Passing JAAS configuration files with the `SRM_KERBEROS_OPTS` environment variable is not supported in this scenario.

```
primary.sasl.jaas.config = \
com.sun.security.auth.module.Krb5LoginModule required \
useKeyTab=true \
keyTab="path/to/keytab file" \
storeKey=true \
useTicketCache=false \
principal="streamsrepmgr@STREAMANALYTICS.COM" ;

backup.sasl.jaas.config = \
com.sun.security.auth.module.Krb5LoginModule required \
useKeyTab=true \
keyTab="path/to/keytab file" \
```

```
storeKey=true \  
useTicketCache=false \  
principal="streamsrepmgr@EXAMPLE.COM";
```