SIP Feature Server Deployment Guide

Appendix: Configure JMX port security when running Feature Server with Embedded Cassandra

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Appendix: Configure JMX port security when running Feature Server with Embedded Cassandra

Security configuration discussed in this article allows you to protect the JMX management port that is used by the embedded Cassandra module of Feature Servers to communicate with its host process and receive monitoring and management requests. Note that the JMX port is not a data access port.

Embedded Cassandra JMX Authentication

You can follow this procedure to activate the JMX anonymous authentication and view your FS Cassandra nodes status in the FS UI.

> **Important**
> This feature is not available for versions prior to 8.1.201.82.

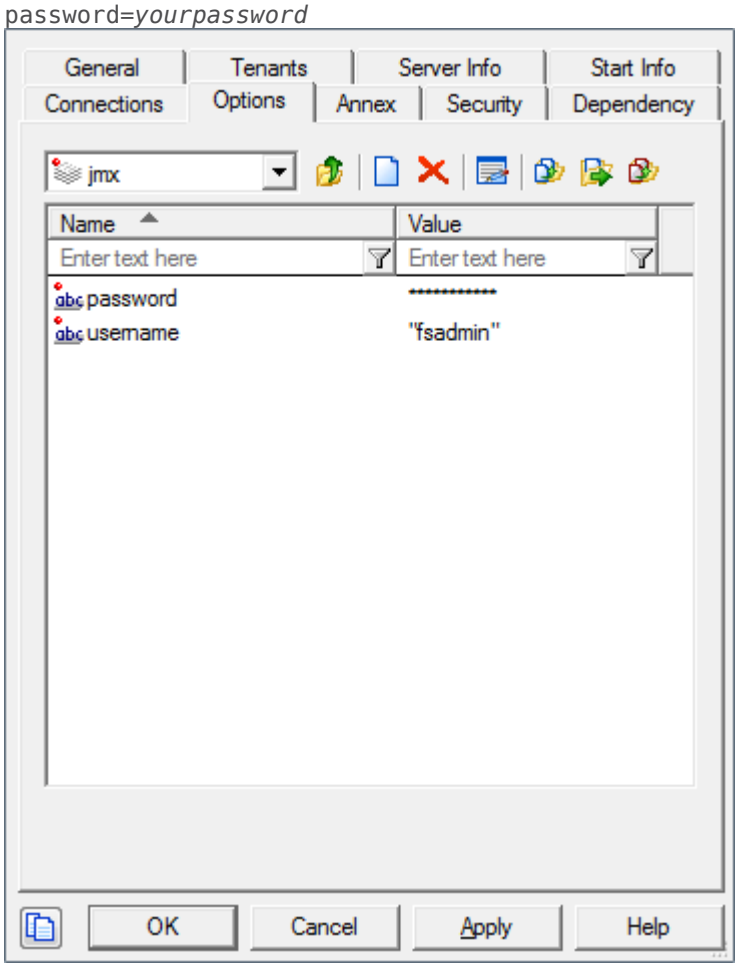
1. Edit the launcher.xml file and set the following parameters to true:
   `-Dcom.sun.management.jmxremote.authenticate=true`
2. Edit the parameter as follows:
   `-Dcom.sun.management.jmxremote.password.file=./etc/jmxremote.password`
3. Copy: `jmxremote.password.template`
   from: `/jdk_install_location/jre/lib/management/`
   to: `<FS Installation directory>/etc/`
   then rename it: `jmxremote.password`

   For OpenJDK 11,
   Copy: `jmxremote.password.template`
   from: `/jdk_install_location/jre/conf/management/`
   to: `<FS Installation directory>/etc/`
   then rename it: `jmxremote.password`
4. Edit the `<FS Installation directory>/etc/jmxremote.password` file to add the following username:
   `fsadmin` *`yourpassword`*

   For OpenJDK 11,
   Edit the `<FS Installation directory>/etc/jmxremote.password` file to add the following username:
   ```
   monitorRole yourpassword
   controlRole yourpassword
   fsadmin yourpassword
   ```
5. Change the ownership of `jmxremote.password` to the user you run FS with and change permission to read only.

For Linux,
`chown fsadmin:fsadmin <FS Installation directory>/etc/jmxremote.password`
`chmod 400 <FS Installation directory>/etc/jmxremote.password`
For Windows, see the Oracle documentation.

6. Enable read and write permission to the FS user in:
`/jdk_install_location/lib/management/jmxremote.access` file by adding the following:
`fsadmin readwrite`
For OpenJDK 11:
Edit `/jdk_install_location/conf/management/jmxremote.access` file by adding the following:
`fsadmin readwrite`
7. Edit your FS configuration and create the following options in the **Options** tab:
`Section jmx`
`username=fsadmin`
`password=`*`yourpassword`*



8. Start FS. You can see the status of the Cassandra nodes by using the Nodetool's ring command. For more details on ring command and it's usage, see Appendix: Performing maintenance operations on embedded Cassandra.

Cassandra JMX TLS

A Java Management Extensions (JMX) tool manages and monitors Cassandra. The JMX access must be protected to avoid any remote managing on the FS embedded Cassandra.

1. To protect JMX access, edit the launcher.xml file and modify the parameters as follows:
   ```
   -Dcom.sun.management.jmxremote.ssl.enabled.protocols=TLSv1.3
   -Dcom.sun.management.jmxremote.port=9192
   -Dcom.sun.management.jmxremote.ssl=true
   -Dcom.sun.management.jmxremote.authenticate=true
   -Dcom.sun.management.jmxremote.registry.ssl=true
   ```
2. Set up Transport Layer Security (TLS). For information on how to create a server certificate, see the Genesys Security Deployment Guide.
3. Create a keystore in <FS Installation directory>/etc/ and upload the custom-generated server certificates to the keystore. See the Oracle documentation.
   Note: If FS HTTPS is already enabled with a server certificate, the same keystore and certificate can also be used to secure the embedded Cassandra JMX port.
4. Edit and configure the following JVM options in launcher.xml.
   - `javax.net.ssl.trustStore = ./etc/keystore [path of the trust store file]`
   - `javax.net.ssl.trustStorePassword = <trust store password>`
   - `javax.net.ssl.keyStore =./etc/keystore [path of the keystore file]`
   - `javax.net.ssl.keyStorePassword  = <keystore password>`
5. Restart the FS to enable a secure JMX connection with the embedded Cassandra.