Capture Trace Events related to SSL when using Windows Keystore with .NET client

ANILKSAHU |Feb 1 2017 Updated

From MQ v8 onwards, managed .Net clients can establish a secure SSL connection to the Queue Manager. IBM MQ ships a number of samples [Here](https://www.ibm.com/support/knowledgecenter/SSFKSJ_8.0.0/com.ibm.mq.dev.doc/q029410_.htm)that demonstrate creating SSL connections to a queue manager in .Net Managed mode. One of challenges that comes across while debugging SSL issues with a managed .Net client using windows keystore is that standard [strmqtrc](https://www.ibm.com/support/knowledgecenter/en/SSFKSJ_8.0.0/com.ibm.mq.ref.adm.doc/q083660_.htm%22%20%5Ct%20%22_blank) does not capture all SSL tracing artifacts when the scenario involves usage of Windows keystore in the client application side.

The blog aims are articulating the steps to be followed to capture a detailed managed .Net client SSL flow when configured when using Windows keystore to aid in debugging and problem determination.

**Steps To capture Managed .Net SSL client Trace:**
-----------------------------------------------------------------------
**1**. Create an application configuration (App.Config) file for your application project.

**2**. Add the following system diagnostics configuration section.

<system.diagnostics>
           <sources>
                 <source name="System.Net" tracemode="includehex">
                       <listeners>
                             <add name="ExternalSourceTrace"/>
                       </listeners>
                 </source>
                 <source name="System.Net.Sockets">
                       <listeners>
                             <add name="ExternalSourceTrace"/>
                       </listeners>
                 </source>
                 <source name="System.Net.Cache">
                       <listeners>
                             <add name="ExternalSourceTrace"/>
                       </listeners>
                 </source>
                 <source name="System.Net.Security">
                       <listeners>
                             <add name="ExternalSourceTrace"/>
                       </listeners>
                 </source>
                 <source name="System.Security">
                       <listeners>
                             <add name="ExternalSourceTrace"/>
                       </listeners>
                 </source>
           </sources>
           <switches>
                 <add name="System.Net" value="Verbose"/>
                 <add name="System.Net.Sockets" value="Verbose"/>
                 <add name="System.Net.Cache" value="Verbose"/>
                 <add name="System.Security" value="Verbose"/>
                 <add name="System.Net.Security" value="Verbose"/>
           </switches>

           <sharedListeners>
                 <add name="ExternalSourceTrace" type="IBM.WMQ.ExternalSourceTrace, amqmdnet, Version=8.0.0.0, Culture=neutral,

PublicKeyToken=dd3cb1c9aae9ec97" />
           </sharedListeners>
         <trace autoflush="true"/>
     </system.diagnostics>

**3**. Add the App.Config to your project

 i.e Add->Existing Item..

**4**. Once Build/Compile is successful start the trace using the following command

strmqtrc -p Application.exe -t all -t detail

**5**. Run the application

**6**.The required trace will be captured in the following path

<IBM\_DataPath>/MQ/trace

To confirm whether the Trace is captured or not please check the call i.e. *MQExternalSourceTracer\_MS* .If the Call is present in the captured application Trace ,then SSL flow is traced.

**Note:** No additional/new log file or .TRC file will be created to capture the SSL flow by application. The application trace itself will contain the captured. (SSL flow e.g AMQ<pid>.trc)