Hosting PME 8.2 over HTTPS

The PME Web Application can be hosted using SSL/TLS (https). The following sections describe the required configuration changes.

Note: Over pure SSL/TLS, Silverlight applications (Alarms and Tables) may fail to load in Internext Explorer. Clients must add the domain as a Trusted site (Internet Options -> Security -> Sites -> Add)

IIS Configuration

1. Open IIS Manager and install a valid Certificate or create a Self-Signed Certificate. (This document does not cover the scope of installing a valid Certificate!)
2. Right-click on the Sites -> **Default Web Site**, and select **Edit Bindings...**
3. Add a new **https** binding for the desired port, or edit the existing default port 443 binding
4. Select the desired SSL Certificate.
5. Add the Host name value to the binding, this value must match the Certificate's "Issued To" property.
6. Remove all **http** bindings for the Web site.
7. Left-click on the Sites -> **Default Web Site**, and double-click on **SSL Settings**
8. Select **Require SSL**
9. Click the **Apply** button on the far top right.

PME Configuration

Application Modules Database update

1. Open SQL Server Management Studio and connect to the PME instance.
2. Navigate to Databases -> **ApplicationModules** -> Views
3. Right-click on **Configuration.ConfigurationSettings** and selectEdit Top 200 Rows
4. Find the entry in the result set with the following values:
    a. ItemType = *Web Framework*
    b. Item = *Server*
    c. Key = *LocalServerAddress*
5. Update the Value column to include your new SSL host (and port if required).
    a. Example: assuming the https binding certificate is for the host *mysampledomain.com* with the default port then the correct value would be: https://mysampledomain.com/
    b. Example: assuming the https binding certificate is for the host *mysampledomain.com* with the port *567*, then the correct value would be: https://mysampledomain.com:567/

ION_Network Database update

1. Navigate to Databases -> **ION_Network** -> Views
2. Right-click on **dbo.vCFG_ConfigItems** and select **Edit Top 200 Rows**
3. Find the entry in the result set with the following values:
    a. Module = *Reporting*
    b. Category = *General Settings*
    c. Item = *WebServiceUrl*
4. Update the Value column to include your new SSL host (and port if required).

a. Example: assuming the https binding certificate is for the host *mysampledomain.com* with the default port then the correct value would be: https://mysampledomain.com/ionreportdataservice/ReportDataService.asmx
b. Example: assuming the https binding certificate is for the host *mysampledomain.com* with the port *567*, then the correct value would be: https://mysampledomain.com:567/ionreportdataservice/ReportDataService.asmx

Application Framework Web.config update

The following steps are not required for PME 9.

1. Open the following file in a text editor: [INSTALL FOLDER]\Applications\ApplicationFramework\Web.config
2. Navigate to the following section of the XML file: <Configuration> -> <system.serviceModel> -> <services>
3. Replace the entire 'services' section with the following code.

```
<services>
  <service name="UI.ApplicationFramework.Web.Services.RealTimeTablesService"
behaviorConfiguration="metadata">
  <endpoint address="" binding="basicHttpBinding" bindingConfiguration="https"
bindingName="RealTimeTablesService"
contract="UI.ApplicationFramework.Web.Services.IRealTimeTablesService" />
  <!--<endpoint address="" binding="basicHttpBinding" bindingConfiguration="http"
bindingName="RealTimeTablesService"
contract="UI.ApplicationFramework.Web.Services.IRealTimeTablesService" />-->
  <!--<endpoint address="mex" binding="mexHttpBinding" contract="IMetadataExchange" />-->
 </service>
 <service name="UI.ApplicationFramework.Web.Services.InternationalizationService"
behaviorConfiguration="metadata">
  <endpoint address="" binding="basicHttpBinding" bindingConfiguration="https"
bindingName="InternationalizationService"
contract="UI.ApplicationFramework.Web.Services.IInternationalizationService" />
  <!--<endpoint address="" binding="basicHttpBinding" bindingConfiguration="http"
bindingName="InternationalizationService"
contract="UI.ApplicationFramework.Web.Services.IInternationalizationService" />-->
  <!--<endpoint address="mex" binding="mexHttpBinding" contract="IMetadataExchange" />-->
 </service>
</services>
```

WebServices Web.config update

1. Open the following file in a text editor: [INSTALL FOLDER]\system\WebServices\Web.config
2. Navigate to the following section of the XML file: <Configuration> -> <system.serviceModel> -> <services>
3. Replace the entire 'services' section with the following code.

```
<services>
 <service name="WebServices.IONWebServices.Alarms">
  <!--<endpoint binding="webHttpBinding" contract="WebServices.IONWebServices.Alarms"
```

```
behaviorConfiguration="RESTBehavior" bindingConfiguration="http" /-->
  <endpoint binding="webHttpBinding" contract="WebServices.IONWebServices.Alarms"
behaviorConfiguration="RESTBehavior" bindingConfiguration="https" />
 </service>
 <service name="WebServices.IONWebServices.RealTime.WebRealTime">
  <!--<endpoint binding="basicHttpBinding"
contract="WebServices.IONWebServices.RealTime.IWebRealTime"
behaviorConfiguration="SOAPBehavior" bindingConfiguration="http" />-->
  <endpoint binding="basicHttpBinding"
contract="WebServices.IONWebServices.RealTime.IWebRealTime"
behaviorConfiguration="SOAPBehavior" bindingConfiguration="https" />
 </service>
 <service name="PowerQuality.Analytics">
  <!--<endpoint binding="webHttpBinding" contract="PowerQuality.Analytics"
behaviorConfiguration="RESTBehavior" bindingConfiguration="http" />-->
  <endpoint binding="webHttpBinding" contract="PowerQuality.Analytics"
behaviorConfiguration="RESTBehavior" bindingConfiguration="https" />
 </service>
 <service name="PowerQuality.EventProcessor">
  <!--<endpoint binding="webHttpBinding" contract="PowerQuality.EventProcessor"
behaviorConfiguration="RESTBehavior" bindingConfiguration="http" />-->
  <endpoint binding="webHttpBinding" contract="PowerQuality.EventProcessor"
behaviorConfiguration="RESTBehavior" bindingConfiguration="https" />
 </service>
 <service name="PowerQuality.DowntimeService.Impact">
  <!--<endpoint binding="webHttpBinding" contract="PowerQuality.DowntimeService.Impact"
behaviorConfiguration="RESTBehavior" bindingConfiguration="http" />-->
  <endpoint binding="webHttpBinding" contract="PowerQuality.DowntimeService.Impact"
behaviorConfiguration="RESTBehavior" bindingConfiguration="https" />
 </service>
</services>
```

4. Navigate to the following section of the XML file: <Configuration> -> <system.webServer> -> <securtity>

5. Add a new rule to allows connections to this server via the SSL certificate as below.

```
<security>
 <ipSecurity allowUnlisted="false">
  <add ipAddress="127.0.0.1" allowed="true" />
  <add domainName="mysampledomain.com" allowed="true"/>
 </ipSecurity>
</security>
```

There is a potential that this file may require additional configuration steps. Please review the Validating the Configuration section below once you have applied all settings and are in the process of validating the configuration is working as intended. The Web applications may "seem" to be working, but there are some special edge cases to look out for below.

Hosts file update

It is very important the server can identify itself via the domain name registered in the SSL certificate.

1. Navigate to: C:\Windows\System32\drivers\etc and open the file *hosts* in a Notepad.
2. Add an entry for your domain mapped to 127.0.0.1
    1. Example: assuming the https binding certificate is for the host *mysampledomain.com* then the correct value would be: 127.0.0.1 mysampledomain.com

Default Web Application link update

1. Open a Windows explorer window and navigate to: Desktop -> **StruxureWare Power Monitoring Expert**
2. Right-click on **Web Applications** and select **Properties**
3. Update the **URL** value with the updated url
    1. Example: assuming the https binding certificate is for the host *mysampledomain.com* with the default port then the correct value would be: https://mysampledomain.com/Web
    2. Example: assuming the https binding certificate is for the host *mysampledomain.com* with the port *567*, then the correct value would be: https://mysampledomain.com:567/Web

Final Steps

1. Open a windows Command window (cmd.exe) and run **iisreset**
2. Open the windows Services console, and restart the following service: **ApplicationModules CoreServicesHost**
    1. Click Yes to restart ApplicationModules services
3. You may reboot the server before validating the configuration.
4. See the section below "Validating the Configuration" to ensure all features are working as intended.

If any of the above cases failed to run correctly, then the following changes **may** resolve the issue.

1. Install all currently outstanding Windows Updates and perform a reboot.
    1. Microsoft has resolved many issues that affect the above behaviour failing. During our internal testing, we found a very high success rate in all envrionments by installing all Updates.
2. Open the following file in a text editor: [INSTALL FOLDER]\system\WebServices\Web.config
    1. Navigate to the following section of the XML file: <Configuration> -> <system.webServer> -> <securtity>
    2. Add a new rule for the Server's IPv6 address (this can be found in a command window with **ipconfig** command)
    3. Below is a sample entry (assuming the https binding certificate is for the host *mysampledomain.com*):

```
<security>
 <ipSecurity allowUnlisted="false">
  <add ipAddress="127.0.0.1" allowed="true" />
<add ipAddress="fe80::cca9:5dcd:ccd0:4fa1%14" allowed="true" />
  <add domainName="mysampledomain.com" allowed="true"/>
```

```
 </ipSecurity>
</security>
```