

# Configuring Secure Socket Layer (SSL) for use with BPM

## 7.5.x

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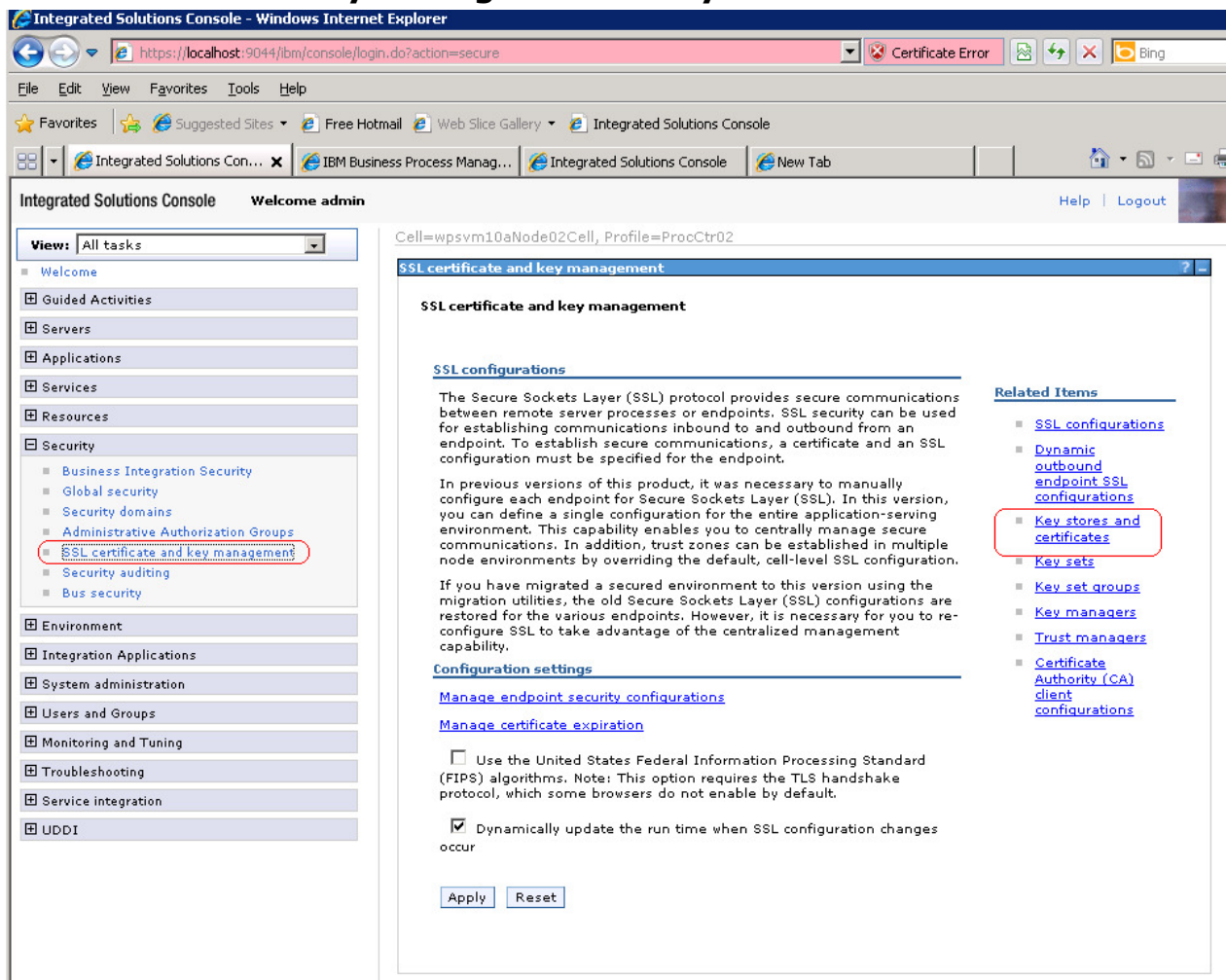
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# Configuring Secure Socket Layer (SSL) communication for a standalone environment

The following steps are required to make the communication between the Process Center and the Process Server work with https in a standalone environment.

## Import the Process Server WAS root SSL certificate into Process Center

1. On the Process center WAS admin console, navigate to **Security > SSL certificate and key management > Key stores and certificate.**



The screenshot shows the Integrated Solutions Console interface in a Windows Internet Explorer browser. The address bar displays the URL `https://localhost:9044/ibm/console/login.do?action=secure`. The browser shows a "Certificate Error" warning. The console page is titled "Integrated Solutions Console - Welcome admin" and includes a navigation menu on the left. The "Security" menu item is expanded, and "SSL certificate and key management" is selected and highlighted with a red box. The main content area displays the "SSL certificate and key management" configuration page. It includes a "View: All tasks" dropdown, a "Welcome admin" message, and a "Cell=wpsvm10aNode02Cell, Profile=ProcCtr02" identifier. The page content is divided into sections: "SSL configurations", "Configuration settings", and "Related Items". The "SSL configurations" section contains text explaining the SSL protocol and its configuration. The "Configuration settings" section includes two checkboxes: "Use the United States Federal Information Processing Standard (FIPS) algorithms" (unchecked) and "Dynamically update the run time when SSL configuration changes occur" (checked). The "Related Items" section lists several links, with "Key stores and certificates" highlighted by a red box. At the bottom of the page, there are "Apply" and "Reset" buttons.

## 2. Click **NodeDefaultTrustStore**.

Cell=wpsvm10aNode02Cell, Profile=ProcCtr02 Close page

**SSL certificate and key management**

[SSL certificate and key management](#) > **Key stores and certificates**

Defines keystore types, including cryptography, RACF(R), CMS, Java(TM), and all truststore types.

Keystore usages

SSL keystores

Preferences

New Delete Change password... Exchange signers...

Select	Name	Description	Management Scope	Path
<input type="checkbox"/>	<a href="#">NodeDefaultKeyStore</a>	Default key store for wpsvm10aNode02	(cell):wpsvm10aNode02Cell; (node):wpsvm10aNode02	\${CONFIG_ROOT}/cells/wpsvm10aNode02Cell/nodes/wpsvm10aNode02/key.p12
<input type="checkbox"/>	<a href="#">NodeDefaultTrustStore</a>	Default trust store for wpsvm10aNode02	(cell):wpsvm10aNode02Cell; (node):wpsvm10aNode02	\${CONFIG_ROOT}/cells/wpsvm10aNode02Cell/nodes/wpsvm10aNode02/trust.p12

Total 2

## 3. Click **Signer certificates**.

Cell=wpsvm10aNode02Cell, Profile=ProcCtr02

**SSL certificate and key management**

[SSL certificate and key management](#) > [Key stores and certificates](#) > **NodeDefaultTrustStore**

Defines keystore types, including cryptography, RACF(R), CMS, Java(TM), and all truststore types.

**General Properties**

Name: NodeDefaultTrustStore

Description: Default trust store for wpsvm10aNode02

Management scope: (cell):wpsvm10aNode02Cell;  
(node):wpsvm10aNode02

Path: \${CONFIG\_ROOT}/cells/wpsvm10aNode02Cell/nodes/wpsvm10aNode02/trust.p12

\* Password:

Type: PKCS12

Read only

Initialize at startup

Enable cryptographic operations on hardware device

Apply OK Reset Cancel

**Additional Properties**

- [Signer certificates](#)
- [Personal certificates](#)
- [Personal certificate requests](#)
- [Custom properties](#)

#### 4. Click **Retrieve from port**.

Cell=wpsvm10aNode02Cell, Profile=ProcCtr02

The screenshot shows the 'SSL certificate and key management' console. The breadcrumb navigation is: **SSL certificate and key management** > **Key stores and certificates** > **NodeDefaultTrustStore** > **Signer certificates**. Below the breadcrumb, there is a description: 'Manages signer certificates in key stores.' and a 'Preferences' section with buttons for 'Add', 'Delete', 'Extract', and 'Retrieve from port'. The 'Retrieve from port' button is highlighted with a red box. Below the buttons is a table of certificates:

Select	Alias	Issued to	Fingerprint (SHA Digest)	Expiration
<input type="checkbox"/>	<a href="#">datapower</a>	OU=Root CA, O="DataPower Technology, Inc.", C=US	A9:BA:A4:B5:BC:26:2F:5D:2A:80:93:CA:BA:F4:31:05:F2:54:14:17	Valid from Jun 11, 2003 to Jun 6, 2023.
<input type="checkbox"/>	<a href="#">ps10b</a>	CN=wpsvm10b.svl.ibm.com, OU=Root Certificate, OU=wpsvm10bNode02Cell, OU=wpsvm10bNode02, O=IBM, C=US	DD:EC:32:F0:26:8E:1C:25:C7:30:19:8F:67:DB:74:A8:6F:45:E4:C4	Valid from Oct 25, 2011 to Oct 21, 2026.
<input type="checkbox"/>	<a href="#">root</a>	CN=wpsvm10a.wps.svl.ibm.com, OU=Root Certificate, OU=wpsvm10aNode02Cell, OU=wpsvm10aNode02, O=IBM, C=US	04:4E:06:E2:FB:9B:84:4B:1A:66:54:CA:16:68:78:F0:B5:13:82:8A	Valid from Oct 25, 2011 to Oct 21, 2026.

Total 3

5. Enter the **Host** name, secure **Port** of the Profile (*WC\_defaulthost\_secure* of Process Server profile), and **Alias**, and click **Retrieve signer information**.

Note: The *WC\_defaulthost\_secure* is located in the WAS admin console.

Navigate to **Servers** > **Server Types** > **WebSphere Application Servers** > **SERVER\_NAME** > **Ports**.

The screenshot shows the 'Retrieve signer information' dialog box. The breadcrumb navigation is: **SSL certificate and key management** > **Key stores and certificates** > **NodeDefaultTrustStore** > **Signer certificates** > **Retrieve from port**. Below the breadcrumb, there is a description: 'Makes a test connection to a Secure Sockets Layer (SSL) port and retrieves the signer from the server during the handshake.' and a 'General Properties' section with the following fields:

- \* Host: wpsvm10b.svl.ibm.com
- \* Port: 9444
- SSL configuration for outbound connection: NodeDefaultSSLSettings
- \* Alias: psRoot

The 'Retrieve signer information' button is highlighted with a red box. At the bottom of the dialog are buttons for 'Apply', 'OK', 'Reset', and 'Cancel'.

6. Click **Apply** and save your changes.

SSL certificate and key management

[SSL certificate and key management](#) > [Key stores and certificates](#) > [NodeDefaultTrustStore](#) > [Signer certificates](#) > **Retrieve from port**

Makes a test connection to a Secure Sockets Layer (SSL) port and retrieves the signer from the server during the handshake.

**General Properties**

\* Host  
wpsvm10b.svl.ibm.com

\* Port  
9444

SSL configuration for outbound connection  
NodeDefaultSSLSettings

\* Alias  
psRoot

Retrieve signer information

**Retrieved signer information**

Serial number  
897647998696673

Issued to  
CN=wpsvm10b.svl.ibm.com, OU=Root Certificate, OU=wpsvm10bNode02Cell, OU=wpsvm10bNode02, O=IBM, C=US

Issued by  
CN=wpsvm10b.svl.ibm.com, OU=Root Certificate, OU=wpsvm10bNode02Cell, OU=wpsvm10bNode02, O=IBM, C=US

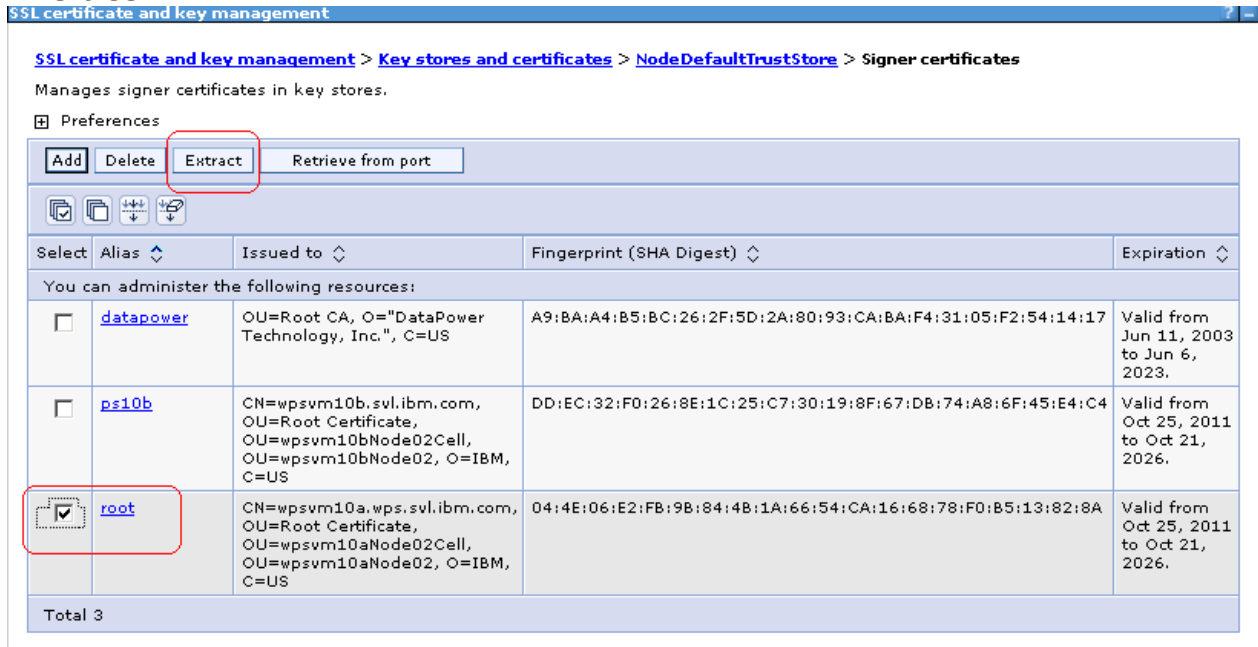
Fingerprint (SHA digest)  
DD:EC:32:F0:26:8E:1C:25:C7:30:19:8F:67:DB:74:A8:6F:45:E4:C4

Validity period  
Oct 21, 2026

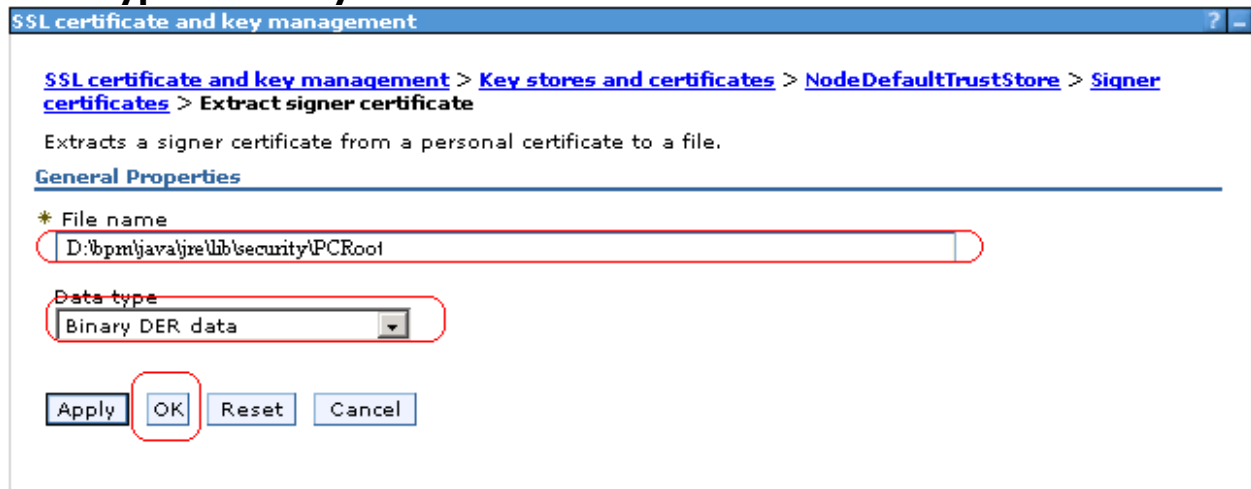
Apply OK Reset Cancel

## Export the Process Center root signer certificate

1. On the Process center WAS admin console, navigate to **Security > SSL certificate and key management > Key stores and certificate > NodeDefaultTrustStore > Signer certificates**.
2. From the Signer certificates panel, click the **root** checkbox and select **Extract**.



3. Specify the **File name** path where you want to save the certificate and set the **Data type** to **Binary DER data**. Click **OK**.



4. Copy the extracted Process Center root certificate to the Process Server system.

## Import the Process Center root SSL certificate into Process Server

---

1. On the Process Server WAS admin console, navigate to **Security > SSL certificate and key management > Key stores and certificate > NodeDefaultTrustStore > Signer certificates > Retrieve from port.**
2. Enter the **Host** name, secure **Port** of the Process Center Profile (*WC\_defaulthost\_secure* of Process Center profile), and **Alias**, and click **Retrieve signer information.**

Note: The *WC\_defaulthost\_secure* is located in the WAS admin console. Navigate to **Servers > Server Types > WebSphere Application Servers > SERVER\_NAME > Ports.**

3. Click **Apply** and save your changes.

## Export the Process Server root signer certificate

---

1. On the Process Server WAS admin console, navigate to **Security > SSL certificate and key management > Key stores and certificate > NodeDefaultTrustStore > Signer certificates.**
2. From the Signer certificates panel, click on the **Root** checkbox and select **Extract.**
3. Specify the **File name** path where you want to save the certificate and set the **Data type** to **Binary DER data** and click **OK.**
4. Copy the extracted Process Server root certificate to the Process Center system.

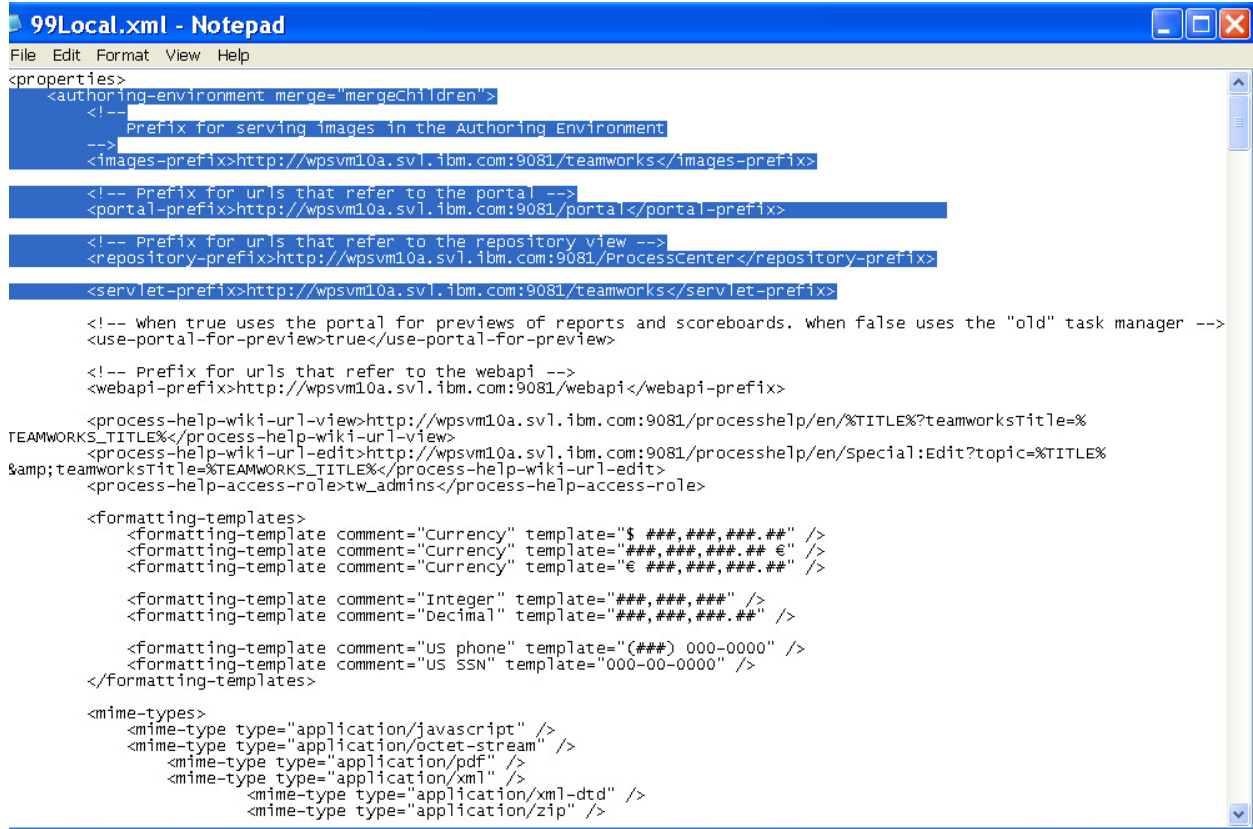
## Edit 100Custom.xml on Process Center

---

1. Edit *WAS\_HOME\profiles\profile name\config\cells\cell name\nodes\node name\servers\server name\process-center\config\100Custom.xml* to overwrite values from *99Local.xml*.  
For example:  
*c:\BPM\profiles\ProcCtr01\config\cells\gascogne01Cell\nodes\gascogneNode01\servers\server1\process-center\config\100Custom.xml.*
2. Open *WAS\_HOME\profiles\profile name\config\cells\cell name\nodes\node name\servers\server name\process-center\config\system\99local.xml*.  
For example:

c:\BPM\profiles\ProcCtr01\config\cells\gascoigne01Cell\nodes\gascoigne Node01\servers\server1\process-center\config\system\99local.xml.

- Copy all occurrences of [http://<PC\\_hostname>:<non\\_secured\\_port>](http://<PC_hostname>:<non_secured_port>) in the 99local.xml file, including the enclosing xml tags, and paste them in to the 100Custom.xml file.



```
<properties>
  <authoring-environment merge="mergeChildren">
    <!--
      Prefix for serving images in the Authoring Environment
    -->
    <images-prefix>http://wpsvm10a.svl.ibm.com:9081/teamworks</images-prefix>

    <!-- Prefix for urls that refer to the portal -->
    <portal-prefix>http://wpsvm10a.svl.ibm.com:9081/portal</portal-prefix>

    <!-- Prefix for urls that refer to the repository view -->
    <repository-prefix>http://wpsvm10a.svl.ibm.com:9081/ProcessCenter</repository-prefix>

    <!-- Prefix for urls that refer to the repository view -->
    <repository-prefix>http://wpsvm10a.svl.ibm.com:9081/ProcessCenter</repository-prefix>

    <!-- when true uses the portal for previews of reports and scoreboards. when false uses the "old" task manager -->
    <use-portal-for-preview>true</use-portal-for-preview>

    <!-- Prefix for urls that refer to the webapi -->
    <webapi-prefix>http://wpsvm10a.svl.ibm.com:9081/webapi</webapi-prefix>

    <process-help-wiki-url-view>http://wpsvm10a.svl.ibm.com:9081/processhelp/en/%TITLE%teamworksTitle=%
TEAMWORKS_TITLE%</process-help-wiki-url-view>
    <process-help-wiki-url-edit>http://wpsvm10a.svl.ibm.com:9081/processhelp/en/Special:Edit?topic=%TITLE%
&amp;teamworksTitle=%TEAMWORKS_TITLE%</process-help-wiki-url-edit>
    <process-help-access-role>tw_admins</process-help-access-role>

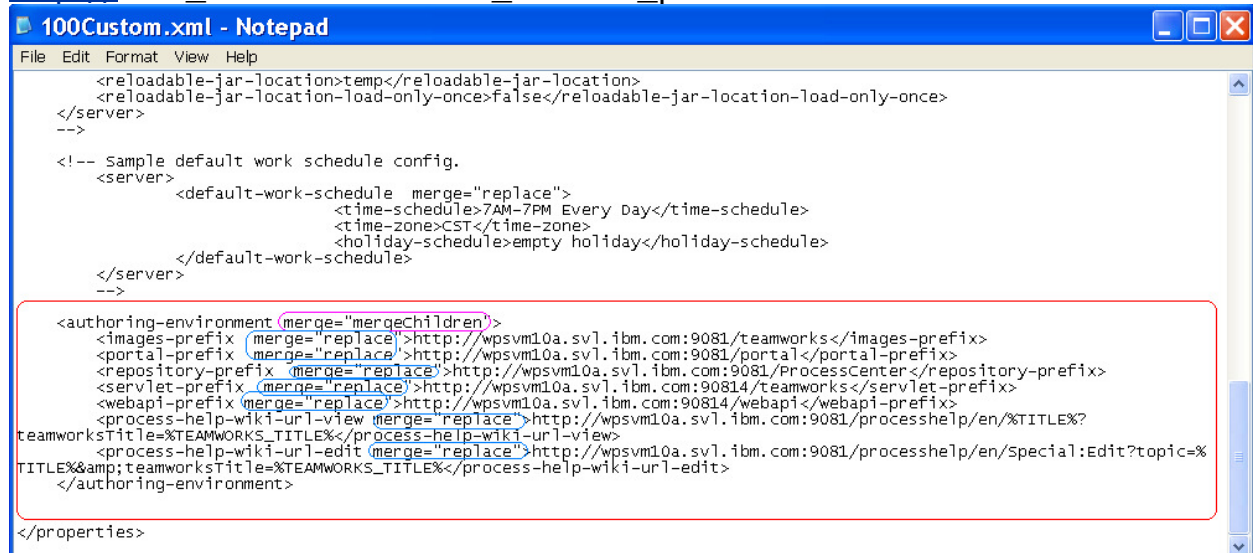
    <formatting-templates>
      <formatting-template comment="Currency" template="$ ###,###,###.##" />
      <formatting-template comment="Currency" template="###,###,###.## €" />
      <formatting-template comment="Currency" template="€ ###,###,###.##" />

      <formatting-template comment="Integer" template="###,###,###" />
      <formatting-template comment="Decimal" template="###,###,###.##" />

      <formatting-template comment="US phone" template="((###) 000-0000" />
      <formatting-template comment="US SSN" template="000-00-0000" />
    </formatting-templates>

    <mime-types>
      <mime-type type="application/javascript" />
      <mime-type type="application/octet-stream" />
      <mime-type type="application/pdf" />
      <mime-type type="application/xml" />
      <mime-type type="application/xml-dtd" />
      <mime-type type="application/zip" />
    </mime-types>
  </authoring-environment>
</properties>
```

- Add **merge="mergeChildren"** to the parent xml tags that contain the [http://<PC\\_hostname>:<non\\_secured\\_port>](http://<PC_hostname>:<non_secured_port>).
- Add **merge="replace"** to the xml tag that contains the [http://<PC\\_hostname>:<non\\_secured\\_port>](http://<PC_hostname>:<non_secured_port>).



```
<reloadable-jar-location>temp</reloadable-jar-location>
<reloadable-jar-location-load-only-once>>false</reloadable-jar-location-load-only-once>
</server>
-->
<!-- Sample default work schedule config.
<server>
  <default-work-schedule merge="replace">
    <time-schedule>7AM-7PM Every Day</time-schedule>
    <time-zone>CST</time-zone>
    <holiday-schedule>empty holiday</holiday-schedule>
  </default-work-schedule>
</server>
-->

<authoring-environment merge="mergeChildren">
  <images-prefix merge="replace">http://wpsvm10a.svl.ibm.com:9081/teamworks</images-prefix>
  <portal-prefix merge="replace">http://wpsvm10a.svl.ibm.com:9081/portal</portal-prefix>
  <repository-prefix merge="replace">http://wpsvm10a.svl.ibm.com:9081/ProcessCenter</repository-prefix>
  <servlet-prefix merge="replace">http://wpsvm10a.svl.ibm.com:9081/teamworks</servlet-prefix>
  <webapi-prefix merge="replace">http://wpsvm10a.svl.ibm.com:9081/webapi</webapi-prefix>
  <process-help-wiki-url-view merge="replace">http://wpsvm10a.svl.ibm.com:9081/processhelp/en/%TITLE%
teamworksTitle=%TEAMWORKS_TITLE%</process-help-wiki-url-view>
  <process-help-wiki-url-edit merge="replace">http://wpsvm10a.svl.ibm.com:9081/processhelp/en/Special:Edit?topic=%
TITLE%&amp;teamworksTitle=%TEAMWORKS_TITLE%</process-help-wiki-url-edit>
</authoring-environment>
</properties>
```



- Change all occurrences of [http://<PC\\_hostname>:<non\\_secured\\_port>](http://<PC_hostname>:<non_secured_port>) to [https://<PC\\_hostname>:<secured-port>](https://<PC_hostname>:<secured-port>).
- Add the corresponding closing xml tags.

```

</server>

<!-- sample connector configuration
<server>
  <reloadable-jar-location>temp</reloadable-jar-location>
  <reloadable-jar-location-load-only-once>>false</reloadable-jar-location-load-only-once>
</server>
-->

<!-- sample default work schedule config.
<server>
  <default-work-schedule merge="replace">
    <time-schedule>7AM-7PM Every Day</time-schedule>
    <time-zone>CST</time-zone>
    <holiday-schedule>empty holiday</holiday-schedule>
  </default-work-schedule>
</server>
-->

<authoring-environment merge="mergeChildren">
  <images-prefix merge="replace">https://wpsvm10a.svl.ibm.com:9444/teamworks</images-prefix>
  <portal-prefix merge="replace">https://wpsvm10a.svl.ibm.com:9444/portal</portal-prefix>
  <repository-prefix merge="replace">https://wpsvm10a.svl.ibm.com:9444/ProcessCenter</repository-prefix>
  <servlet-prefix merge="replace">https://wpsvm10a.svl.ibm.com:9444/teamworks</servlet-prefix>
  <webapi-prefix merge="replace">https://wpsvm10a.svl.ibm.com:9444/webapi</webapi-prefix>
  <process-help-wiki-url-view merge="replace">https://wpsvm10a.svl.ibm.com:9444/processhelp/en/%TITLE%?
teamworksTitle=%TEAMWORKS_TITLE%</process-help-wiki-url-view>
  <process-help-wiki-url-edit merge="replace">https://wpsvm10a.svl.ibm.com:9444/processhelp/en/Special:Edit?topic=%
TITLE%&teamworksTitle=%TEAMWORKS_TITLE%</process-help-wiki-url-edit>
</authoring-environment>

</properties>

```

- Copy the parent tags for the `<client-link>` that contains [http://<PC\\_hostname>:<non\\_secured\\_port>](http://<PC_hostname>:<non_secured_port>), and paste them to the server tag.

```

<enable-javascript-execution>>false</enable-javascript-execution>
</common>

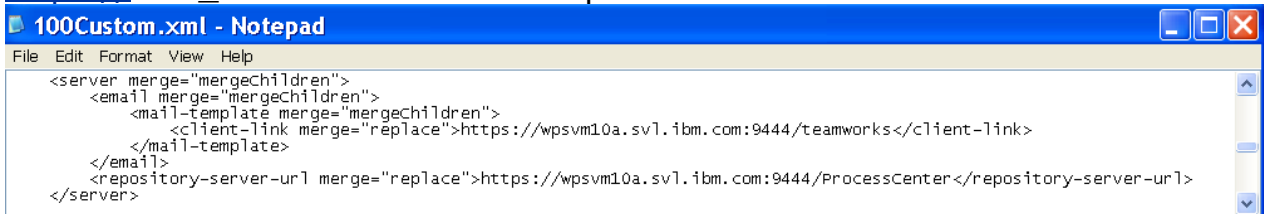
<server merge="mergeChildren">
  <!-- email properties -->
  <email>
    <!-- SMTP server that mail should be sent to -->
    <smtp-server>smtp.yourcompany.com</smtp-server>
    <!-- Information generating the email from templates -->
    <mail-template>
      <!-- The two templates that should be used to generate the text of -->
      <!-- the email message. You should choose one "process" and one -->
      <!-- "noprocess" entry. The process entry is used if the task send -->
      <!-- has an associated process, the noprocess entry if there is -->
      <!-- no associated process. externalmailprocess uses javascript -->
      <!-- and a button to start the process, this does not work with -->
      <!-- some email clients that disable javascript. If this affects you -->
      <!-- choose the externalmailprocesslink which uses a link instead, -->
      <!-- _{0} prefix represents language and is replaced at runtime with lang code (e.g. _en) -->
      <!-- <process>externalmailprocess_{lang}.html</process> -->
      <process>externalmailprocesslink_{0}.html</process>
      <no-process>externalmailnoprocess_{0}.html</no-process>

      <!-- The URL which defines how to get to the teamworks client to -->
      <!-- display the provided task. Do not put a trailing slash as the -->
      <!-- template provides the slash. This URL is also used to generate -->
      <!-- the url for the background images in the mail if //webimages/prefix -->
      <!-- not set, -->
      <client-link>http://wpsvm10a.svl.ibm.com:9081/teamworks</client-link>
    </mail-template>
    <!-- If this is set to true then the from address set on external email will -->
    <!-- include a valid email address, which is either the user's contact email -->
    <!-- address or the default address below if no contact address is found. -->
    <valid-from-required>true</valid-from-required>
    <!-- Used when sending external email if the sender has no email contact info set -->
    <default-from-address>twadmin@lombardisoftware.com</default-from-address>
    <send-external-email>true</send-external-email>
  </email>

  <!-- XML and other transform info. -->
  <transformations merge="mergeChildren">
    <!-- Sets the default prefix for xsl files so that they can be found by XSLTransformations code. -->
    <!-- change this if you need to override the value set in 50AppServer.xml -->
    <!--

```

9. Add the server section to the 100custom.xml file. Add **merge="mergeChildren"** to the parent xml tags and add **merge="replace"** to the xml tag that contains the [http://<PC\\_hostname>:<non\\_secured\\_port>](http://<PC_hostname>:<non_secured_port>). Then update [http://<PC\\_hostname>:<non\\_secured\\_port>](http://<PC_hostname>:<non_secured_port>) to [https://<PC\\_hostname>:<secured-port>](https://<PC_hostname>:<secured-port>).



```

100Custom.xml - Notepad
File Edit Format View Help
<server merge="mergeChildren">
  <email merge="mergeChildren">
    <mail-template merge="mergeChildren">
      <client-link merge="replace">https://wpsvm10a.sv1.ibm.com:9444/teamworks</client-link>
    </mail-template>
  </email>
  <repository-server-url merge="replace">https://wpsvm10a.sv1.ibm.com:9444/ProcessCenter</repository-server-url>
</server>

```

10. Add the following lines to the <server> section to enable https for deploying the snapshot and specify the correct Process Center secure port:
 

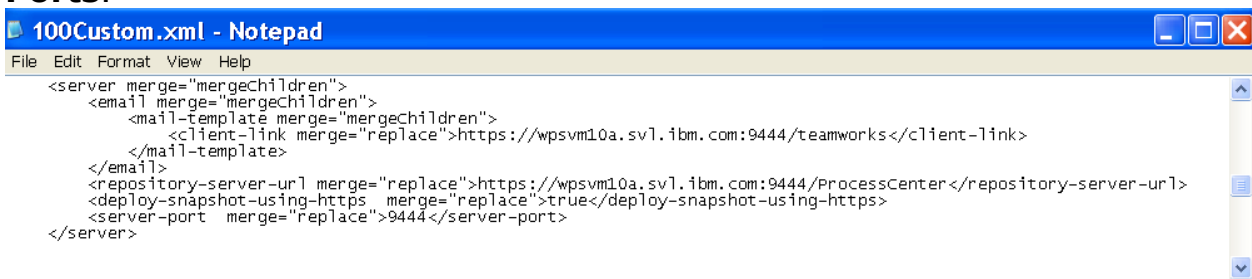
```

<deploy-snapshot-using-https merge="replace">true</deploy-snapshot-using-https>
<server-port merge="replace"><PC WC_defaulthost_secure port></server-port>
      
```

 (set value to *WC\_defaulthost\_secure* of Process Center profile)

Note: The *WC\_defaulthost\_secure* is located in the WAS admin console. Navigate to **Servers > Server Types > WebSphere Application Servers > SERVER\_NAME >**

### Ports.



```

100Custom.xml - Notepad
File Edit Format View Help
<server merge="mergeChildren">
  <email merge="mergeChildren">
    <mail-template merge="mergeChildren">
      <client-link merge="replace">https://wpsvm10a.sv1.ibm.com:9444/teamworks</client-link>
    </mail-template>
  </email>
  <repository-server-url merge="replace">https://wpsvm10a.sv1.ibm.com:9444/ProcessCenter</repository-server-url>
  <deploy-snapshot-using-https merge="replace">true</deploy-snapshot-using-https>
  <server-port merge="replace">9444</server-port>
</server>

```

11. Open `WAS_HOME\profiles\profile name\config\cells\cell name\nodes\node name\servers\server name>\process-center\config\system\99Sharepoint.xml`.  
For example:  
`profiles\ProcCtr01\config\cells\gascogne01Cell\nodes\gascogneNode01\servers\server1\process-center\config\system\99Sharepoint.xml`).
12. Copy all occurrences of [http://<PC\\_hostname>:<non\\_secured\\_port>](http://<PC_hostname>:<non_secured_port>) from the 99Sharepoint.xml, including its parent xml tags, and paste them to the 100Custom.xml file.
13. Change all occurrences of [http://<PC\\_hostname>:<non\\_secured\\_port>](http://<PC_hostname>:<non_secured_port>) to [https://<PC\\_hostname>:<secured-port>](https://<PC_hostname>:<secured-port>).
14. Save and close the 100Custom.xml file.

Here is an example of the Process Center 100Custom.xml file:  
<properties>

```

    <!--Properties file for customer cluster scoped properties. -->

    <!-- set unversioned-po-caching-enable to false for clustering
    <common merge="mergeChildren">
        <environment-name merge="replace">My Environment</environment-name>
        <default-unversioned-po-cache-size merge="replace">500</default-unversioned-
po-cache-size>
        <default-versioned-po-cache-size merge="replace">500</default-versioned-po-
cache-size>
        <unversioned-po-caching-enable merge="replace">>false</unversioned-po-
caching-enable>
        <default-webapi-userid-cache-size merge="replace">500</default-webapi-userid-
cache-size>
    </common>
    -->

    <!-- Sample connector configuration
    <server>
        <reloadable-jar-location>temp</reloadable-jar-location>
        <reloadable-jar-location-load-only-once>>false</reloadable-jar-location-load-
only-once>
    </server>
    -->

    <!-- Sample default work schedule config.
    <server>
        <default-work-schedule merge="replace">
            <time-schedule>7AM-7PM Every Day</time-schedule>
            <time-zone>CST</time-zone>
            <holiday-schedule>empty holiday</holiday-schedule>
        </default-work-schedule>
    </server>
    -->

    <common merge="mergeChildren">
        <portal-prefix
merge="replace">https://wpsvm10a.svl.ibm.com:9444/portal</portal-prefix>
        <process-admin-prefix
merge="replace">https://wpsvm10a.svl.ibm.com:9444/ProcessAdmin</process-admin-
prefix>
        <teamworks-webapp-prefix
merge="replace">https://wpsvm10a.svl.ibm.com:9444/teamworks</teamworks-webapp-
prefix>
        <webservices merge="mergeChildren">
            <base-url
merge="replace">https://wpsvm10a.svl.ibm.com:9444/teamworks/webservices</base-url>
        </webservices>
        <xml-serialization merge="mergeChildren">
            <default-namespace-uri
merge="replace">https://wpsvm10a.svl.ibm.com:9444/schema/</default-namespace-uri>
        </xml-serialization>
        <coach-designer-xsl-url
merge="replace">https://wpsvm10a.svl.ibm.com:9444/teamworks/coachdesigner/transform/
CoachDesigner.xsl</coach-designer-xsl-url>
        <office merge="mergeChildren">

```

```
<sharepoint merge="mergeChildren">
<default-workspace-site-description merge="replace"><![CDATA[This site has been
automatically generated for managing collaborations and documents
for the Lombardi TeamWorks process instance: <#= tw.system.process.name #> <#=
tw.system.process.instanceId #>

TeamWorks Link:
https://wpsvm10a.svl.ibm.com:9444/portal/jsp/getProcessDetails.do?bpdInstanceId=<#=
tw.system.process.instanceId #>

]]></default-workspace-site-description>
  </sharepoint>
</office>
</common>
<server merge="mergeChildren">
  <email merge="mergeChildren">
    <mail-template merge="mergeChildren">
      <client-link
merge="replace">https://wpsvm10a.svl.ibm.com:9444/teamworks</client-link>
    </mail-template>
  </email>
  <repository-server-url
merge="replace">https://wpsvm10a.svl.ibm.com:9444/ProcessCenter</repository-server-
url>
  <deploy-snapshot-using-https merge="replace">true</deploy-snapshot-using-
https>
  <server-port merge="replace">9444</server-port>
</server>
<authoring-environment merge="mergeChildren">
  <images-prefix
merge="replace">https://wpsvm10a.svl.ibm.com:9444/teamworks</images-prefix>
  <portal-prefix
merge="replace">https://wpsvm10a.svl.ibm.com:9444/portal</portal-prefix>
  <repository-prefix
merge="replace">https://wpsvm10a.svl.ibm.com:9444/ProcessCenter</repository-prefix>
  <servlet-prefix
merge="replace">https://wpsvm10a.svl.ibm.com:9444/teamworks</servlet-prefix>
  <webapi-prefix
merge="replace">https://wpsvm10a.svl.ibm.com:9444/webapi</webapi-prefix>
  <process-help-wiki-url-view
merge="replace">https://wpsvm10a.svl.ibm.com:9444/processhelp/en/%TITLE%?teamworksTi
tle=%TEAMWORKS_TITLE%</process-help-wiki-url-view>
  <process-help-wiki-url-edit
merge="replace">https://wpsvm10a.svl.ibm.com:9444/processhelp/en/Special:Edit?topic=
%TITLE%&teamworksTitle=%TEAMWORKS_TITLE%</process-help-wiki-url-edit>
  </authoring-environment>
</properties>
```

---

## Edit 100Custom.xml on Process Server

---

1. Edit `WAS_HOME\profiles\profile name\config\cells\cell name\nodes\node name\servers\server name\process-server\config\100Custom.xml` to **overwrite values from the 99Local.xml file. For example:**  
`c:\BPM\profiles\ProcSrv01\config\cells\gascoigne01Cell\nodes\gascoigne Node01\servers\server1\process-server\config\100Custom.xml.`
2. Open `WAS_HOME\profiles\profile name\config\cells\cell name\nodes\node name\servers\server name\process-server\config\99local.xml`. **For example:**  
`c:\BPM\profiles\ProcSrv01\config\cells\gascoigne01Cell\nodes\gascoigne Node01\servers\server1\process-server\config\system\99local.xml.`
3. Copy all occurrences of `http://<PS\_hostname>:<non\_secured\_port>` from the 99local.xml file, including its enclosing parent xml tags, and paste the same to the 100Custom.xml file.
4. Add `merge="mergeChildren"` to the parent xml tags that contain `http://<PS\_hostname>:<non\_secured\_port>`.
5. Add `merge="replace"` to the xml tag that contains `http://<PS\_hostname>:<non\_secured\_port>`.
6. Change `http://<PS\_hostname>:<non\_secured\_port>` to `https://<PS\_hostname>:<secured-port>`.
7. Add the corresponding closing xml tags.
8. For the `<client-link>` tag that contains `http://<PS\_hostname>:<non\_secured\_port>`, copy its parent tags up to the server tag.
9. Add the server section to the 100Custom.xml file.
  - a. Add `merge="mergeChildren"` to the parent xml tags
  - b. Add `merge="replace"` to the xml tag that contains `http://<PS\_hostname>:<non\_secured\_port>`.
  - c. Change `http://<PS\_hostname>:<non\_secured\_port>` to `https://<PS\_hostname>:<secured-port>`.
10. Add the following to the `<server>` section to specify the correct Process Server secure port:  
`<server-port merge="replace"><PS WC_defaulthost_secure port></server-port>` (set the value to `WC_defaulthost_secure` of Process Server profile).

Note: The *WC\_defaulthost\_secure* is located in the WAS admin console. Navigate to **Servers > Server Types > WebSphere Application Servers > SERVER\_NAME > Ports.**

11. Open `WAS_HOME\profiles\profile name\config\cells\cell name\nodes\node name\servers\server name\process-server\config\system\99Sharepoint.xml`. For example:  
`c:\BPM\profiles\ProcSrv01\config\cells\gascogne01Cell\nodes\gascogneNode01\servers\server1\process-server\config\system\99Sharepoint.xml`.
12. Copy all occurrences of `http://<PS_hostname>:<non_secured_port>` from the `99Sharepoint.xml` file, including its parent xml tags, and paste them to the `100Custom.xml` file.
13. Change `http://<PS_hostname>:<non_secured_port>` to `https://<PS_hostname>:<secured-port>`.
14. Save and close the `100Custom.xml` file.

Here is a sample Process Server `100Custom.xml` file:

```
<properties>
  <!--Properties file for customer cluster scoped properties. -->

  <!-- set unversioned-po-caching-enable to false for clustering
  <common merge="mergeChildren">
    <environment-name merge="replace">My Environment</environment-name>
    <default-unversioned-po-cache-size merge="replace">500</default-unversioned-
po-cache-size>
    <default-versioned-po-cache-size merge="replace">500</default-versioned-po-cache-
size>
    <unversioned-po-caching-enable merge="replace">>false</unversioned-po-caching-
enable>
    <default-webapi-userid-cache-size merge="replace">500</default-webapi-userid-cache-
size>
  </common>
  -->

  <!-- Sample connector configuration
  <server>
    <reloadable-jar-location>temp</reloadable-jar-location>
    <reloadable-jar-location-load-only-once>>false</reloadable-jar-location-load-
only-once>
  </server>
  -->

  <!-- Sample default work schedule config.
  <server>
  <default-work-schedule merge="replace">
    <time-schedule>7AM-7PM Every Day</time-schedule>
    <time-zone>CST</time-zone>
    <holiday-schedule>empty holiday</holiday-schedule>
```

```

    </default-work-schedule>
</server>
-->

    <common merge="mergeChildren">
        <portal-prefix
merge="replace">https://wpsvm10b.svl.ibm.com:9444/portal</portal-prefix>
        <process-admin-prefix
merge="replace">https://wpsvm10b.svl.ibm.com:9444/ProcessAdmin</process-admin-prefix>
        <teamworks-webapp-prefix
merge="replace">https://wpsvm10b.svl.ibm.com:9444/teamworks</teamworks-webapp-prefix>
        <webservices merge="mergeChildren">
            <base-url
merge="replace">https://wpsvm10b.svl.ibm.com:9444/teamworks/webservices</base-url>
            </webservices>
            <xml-serialization merge="mergeChildren">
                <default-namespace-uri
merge="replace">https://wpsvm10b.svl.ibm.com:9444/schema/</default-namespace-uri>
                </xml-serialization>
                <coach-designer-xsl-url
merge="replace">https://wpsvm10b.svl.ibm.com:9444/teamworks/coachdesigner/transform/CoachDesigner.xsl</coach-designer-xsl-url>
                <office merge="mergeChildren">
                    <sharepoint merge="mergeChildren">
                        <default-workspace-site-description merge="replace"><![CDATA[This site
has been automatically generated for managing collaborations and documents
for the Lombardi TeamWorks process instance: <#= tw.system.process.name #> <#=
tw.system.process.instanceId #>
TeamWorks Link:
https://wpsvm10b.svl.ibm.com:9444/portal/jsp/getProcessDetails.do?bpdInstanceId=<#=
tw.system.process.instanceId #>
]]></default-workspace-site-description>
                    </sharepoint>
                </office>
            </common>
            <server merge="mergeChildren">
                <email merge="mergeChildren">
                    <mail-template merge="mergeChildren">
                        <client-link
merge="replace">https://wpsvm10b.svl.ibm.com:9444/teamworks</client-link>
                    </mail-template>
                </email>
                <repository-server-url
merge="replace">https://wpsvm10a.svl.ibm.com:9444/ProcessCenter</repository-server-
url>
                <server-port merge="replace">9444</server-port>
            </server>
            <authoring-environment merge="mergeChildren">
                <images-prefix
merge="replace">https://wpsvm10b.svl.ibm.com:9444/teamworks</images-prefix>
                <portal-prefix
merge="replace">https://wpsvm10b.svl.ibm.com:9444/portal</portal-prefix>

```

```

    <repository-prefix
merge="replace">https://wpsvm10b.svl.ibm.com:9444/ProcessCenter</repository-prefix>
    <servlet-prefix
merge="replace">https://wpsvm10b.svl.ibm.com:9444/teamworks</servlet-prefix>
    <webapi-prefix
merge="replace">https://wpsvm10b.svl.ibm.com:9444/webapi</webapi-prefix>
    <process-help-wiki-url-view
merge="replace">https://wpsvm10b.svl.ibm.com:9444/processhelp/en/%TITLE%?teamworksTitl
e=%TEAMWORKS_TITLE%</process-help-wiki-url-view>
    <process-help-wiki-url-edit
merge="replace">https://wpsvm10b.svl.ibm.com:9444/processhelp/en/Special:Edit?topic=%T
ITLE%&teamworksTitle=%TEAMWORKS_TITLE%</process-help-wiki-url-edit>
    </authoring-environment>
</properties>

```

## SSL communication between Process Server and Process Center Server

**Important:** If the Process Center and clustered runtime servers were started before you begin to configure SSL, and the LSW\_SERVER table on the Process Center database contains the non-secure port of the Process Server, you must delete the Process Server from the Process Center repository:

1. Stop Process Server.
2. From the Servers tab on the Process Center Console, delete Process Server from the Process Center repository.
3. Delete the record with the non-secure port from the LSW\_SERVER table on the Process Center database.
4. Start Process Server.

Make sure that the SSL communication between the Process Server and the Process Center Server work by adding the certificates to each other's trust store.

1. Install the Process Server signer certificate in to the Process Center trust store.
  - a) Invoke Process Center `WAS_HOME/java/jre/bin/ikeyman`.



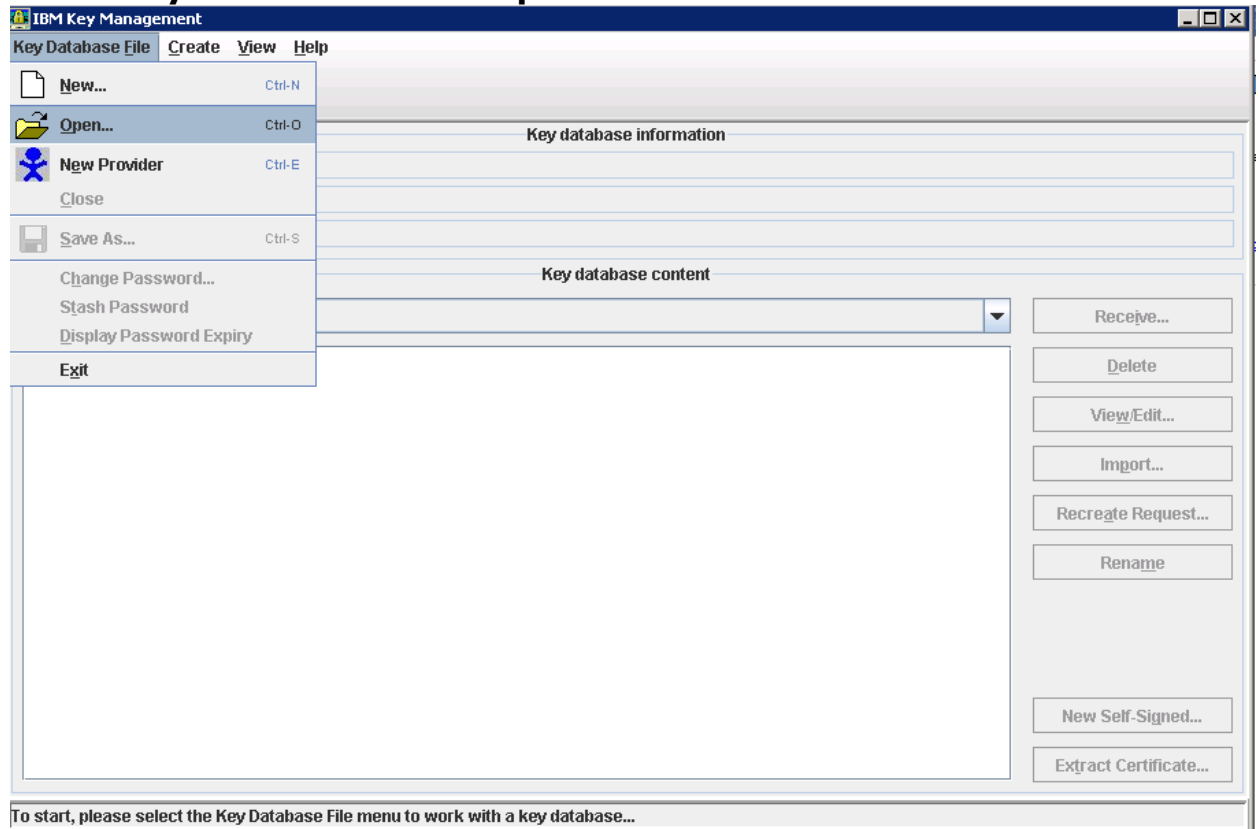
```

C:\ Documents and Settings\Administrator>d:
D:\>cd bpm4302\bin
D:\bpm4302\bin>cd ..\java\jre
D:\bpm4302\java\jre>cd bin
D:\bpm4302\java\jre\bin>ikeyman
D:\bpm4302\java\jre\bin>ikeyman_

```



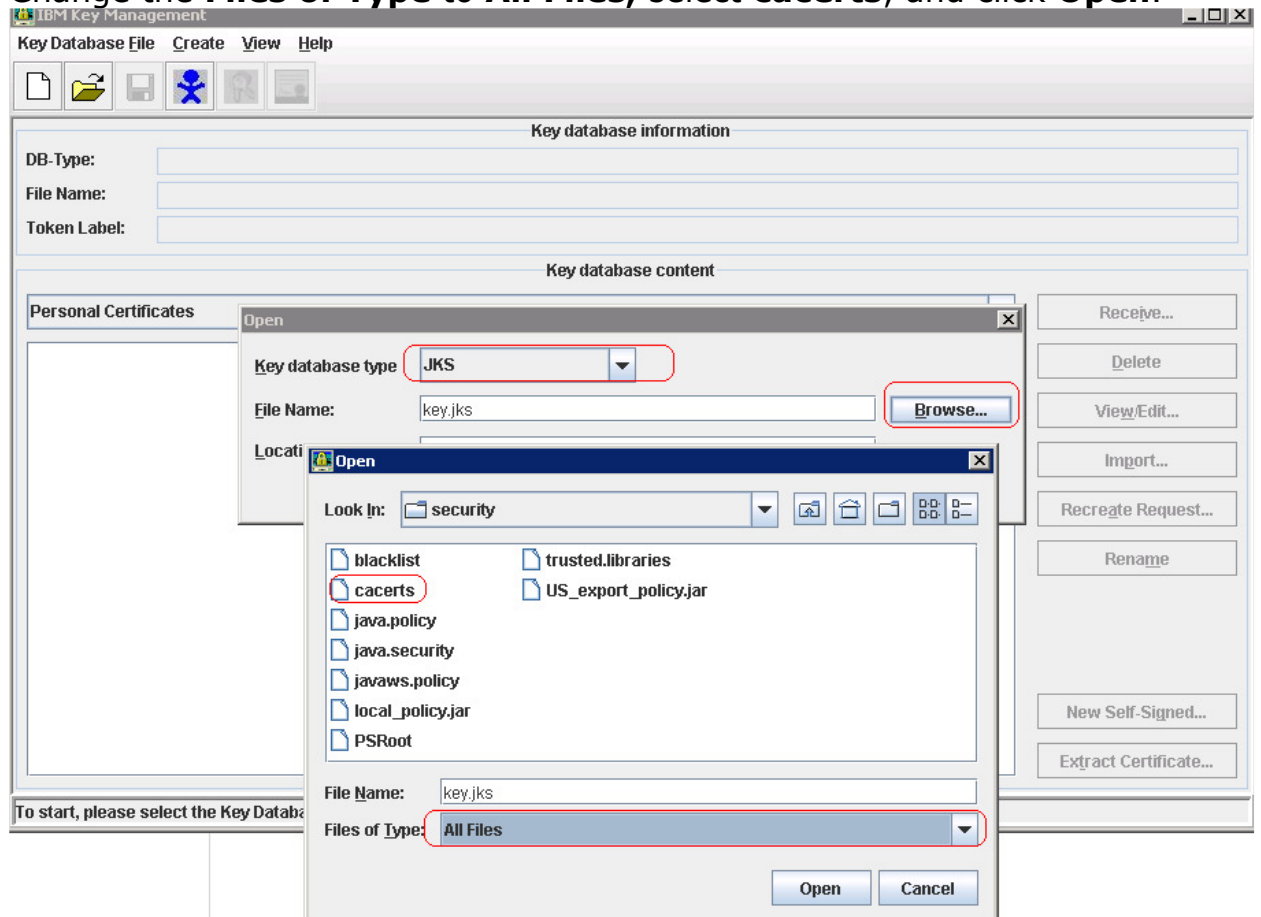
b) Select **Key Database File > Open.**



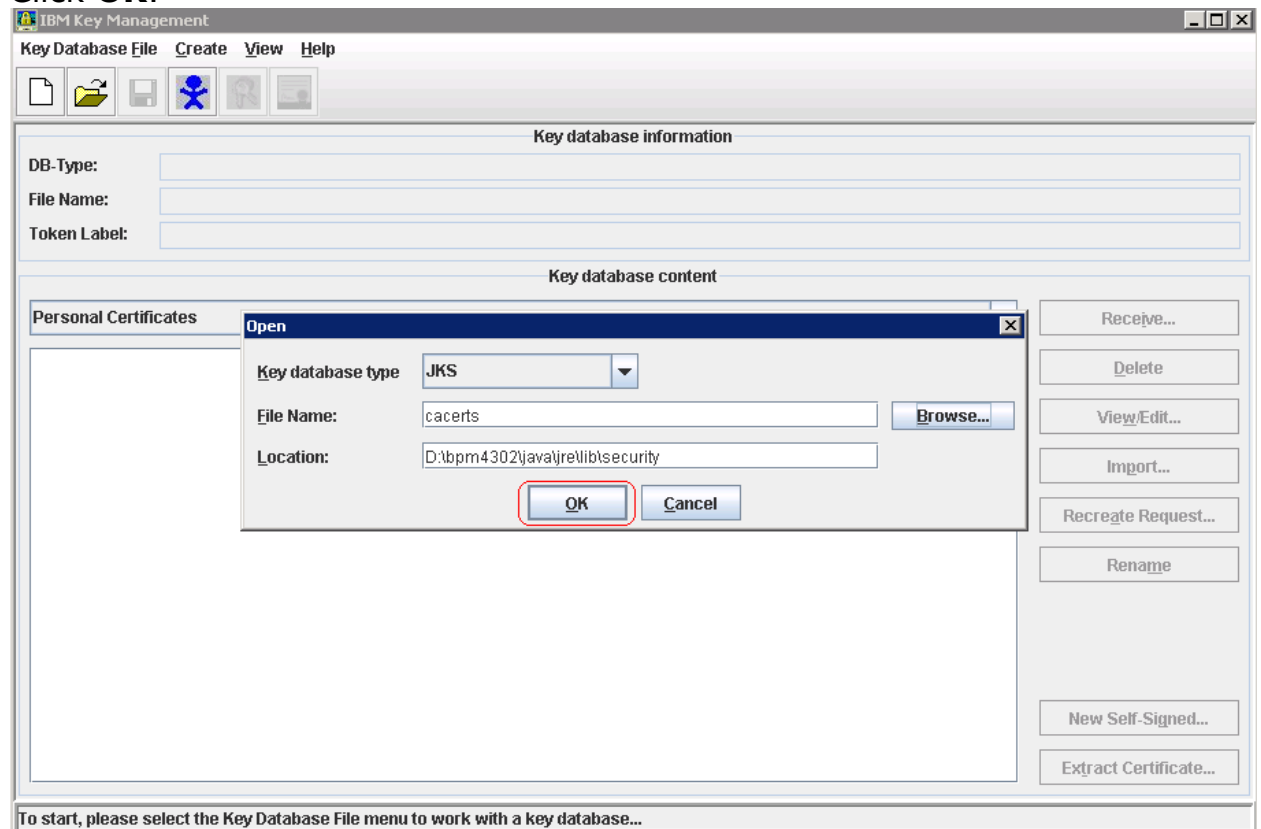
c) Set the Key database type to JKS.

d) Click **Browse** and set the file location to `WAS_HOME/java/jre/lib/security`.

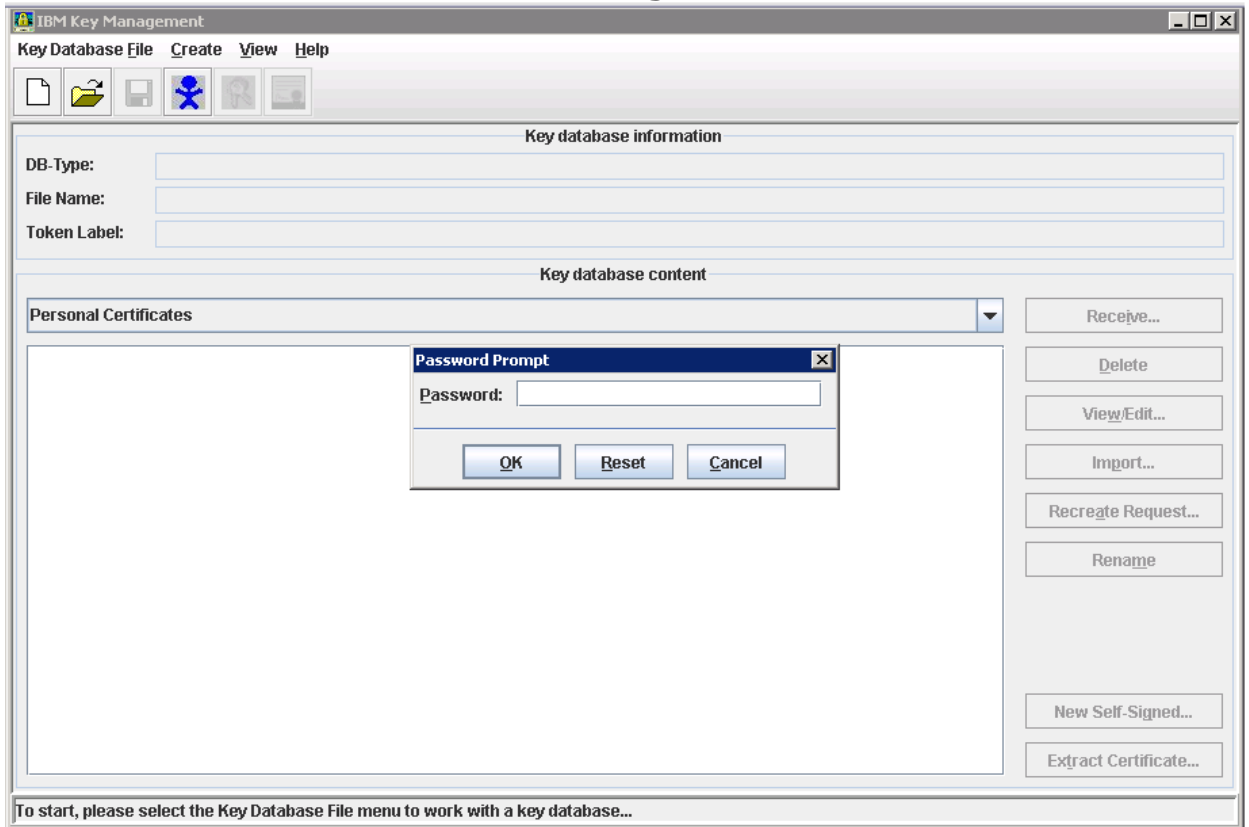
e) Change the **Files of Type** to **All Files**, select **cacerts**, and click **Open**.



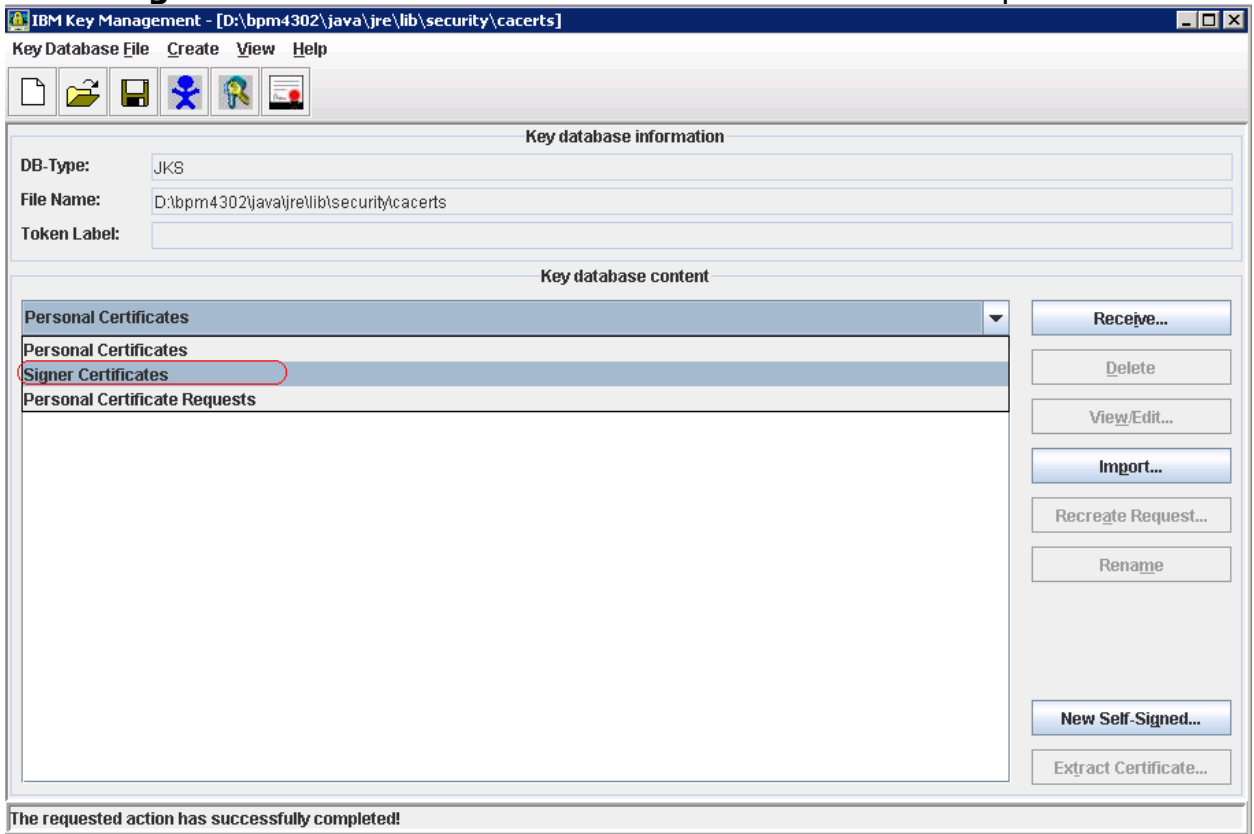
f) Click **OK**.



g) Provide the **Password**. Default is **changeit**.

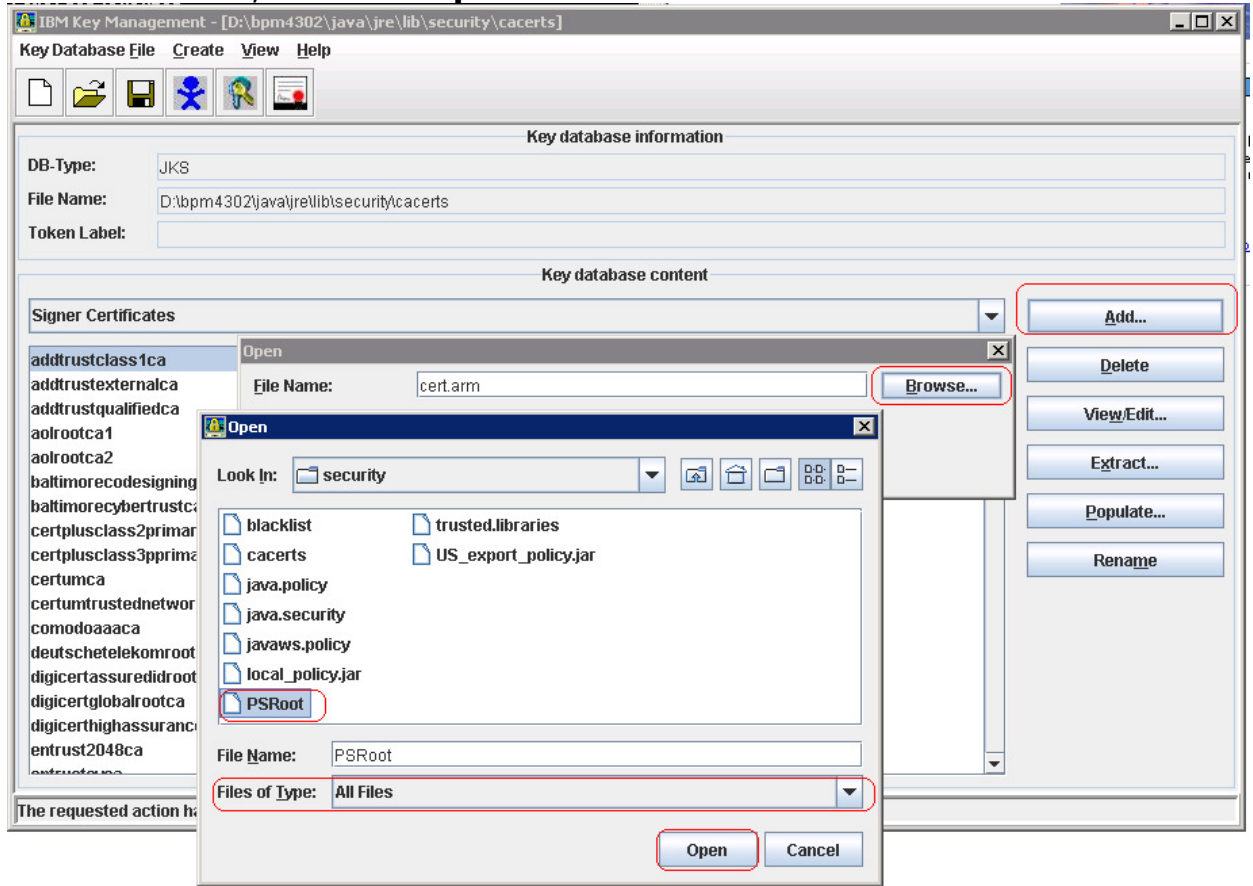


h) Select **Signer Certificates** from the Personal Certificates dropdown menu.

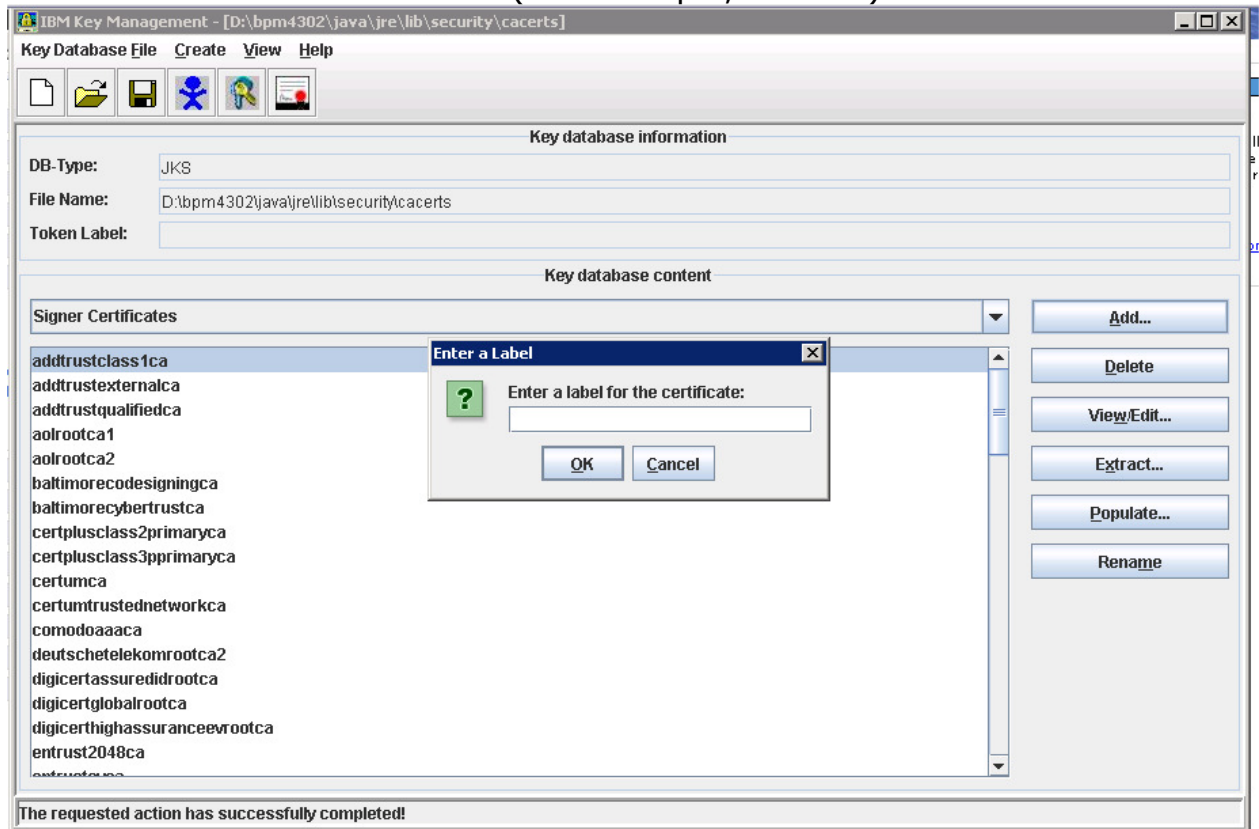


i) Click **Add**.

j) Change the **Files of Type** to **All Files**, select the location of the Process Server DER file, and click **Open**.



k) Enter a label for the certificate (For example, PS-root) and click **OK**.



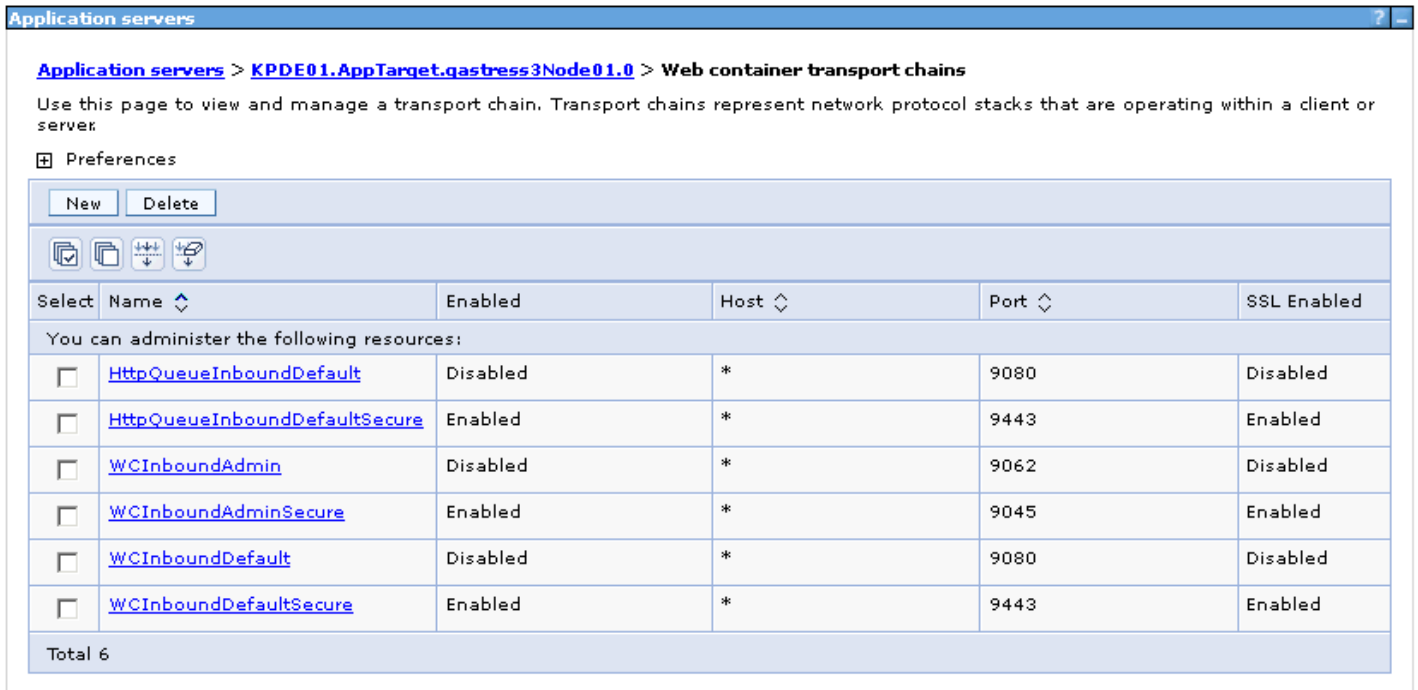
l) Close the ikeyman window.

2. Install the Process Center signer certificate in to the Process Server trust store.
  - a) Invoke Process Server `WAS_HOME/java/jre/bin/ikeyman`.
  - b) Set the Key database type to JKS.
  - c) Click **Browse** and set the file location to `WAS_HOME/java/jre/lib/security`.
  - d) Change the **Files of Type** to **All Files**, select **cacerts**, and click **Open**.
  - e) Click **OK**.
  - f) Provide the **Password**. Default is **changeit**.
  - g) Select **Signer Certificates** from the Personal Certificates dropdown menu.
  - h) Click **Add**.
  - i) Change the **Files of Type** to **All Files**, select the location of the Process Center DER file, and click **Open**.
  - j) Enter a label for the certificate (For example, Process Center-root) and click **OK**.
  - k) Close the ikeyman window.

3. Restart the Process Server and Process Center servers.

## Disable all unsecured ports on all Process Center and Process Server servers.

1. Log in to the WebSphere administrative console and navigate to **Servers > Server Types > WebSphere Application Servers**.
2. For each server, click on the server link, then go to **Container Settings > Web Container Settings > Web container transport chains**.
3. Click on each link for the unsecured port, for example, **HttpQueueInboundDefault**, and deselect the **Enabled** checkbox.
4. Repeat these steps for all Application Servers and all Nodes.



Application servers > KPDE01.AppTarget.gastress3Node01.0 > Web container transport chains

Use this page to view and manage a transport chain. Transport chains represent network protocol stacks that are operating within a client or server.

Preferences

New Delete

Select	Name	Enabled	Host	Port	SSL Enabled
<input type="checkbox"/>	<a href="#">HttpQueueInboundDefault</a>	Disabled	*	9080	Disabled
<input type="checkbox"/>	<a href="#">HttpQueueInboundDefaultSecure</a>	Enabled	*	9443	Enabled
<input type="checkbox"/>	<a href="#">WCInboundAdmin</a>	Disabled	*	9062	Disabled
<input type="checkbox"/>	<a href="#">WCInboundAdminSecure</a>	Enabled	*	9045	Enabled
<input type="checkbox"/>	<a href="#">WCInboundDefault</a>	Disabled	*	9080	Disabled
<input type="checkbox"/>	<a href="#">WCInboundDefaultSecure</a>	Enabled	*	9443	Enabled

Total 6

## Verify the Process Server 100Custom.xml file changes in the server

1. Open the TeamWorksConfiguration.running.xml file, which is located in the `WAS_HOME\profiles\profile name\config\cells\cell name\nodes\node name\servers\server name\process-server\` directory. Note: The TeamWorksConfiguration.running.xml file may not be available in every environment.

Confirm the changes in the 100Custom.xml file. For example:

```
c:\BPM\profiles\ProcSrv01\config\cells\gascogne01Cell\nodes\gascogneNode01\servers\server1\process-server\TeamWorksConfiguration.running.xml
```

## Verify the Process Center 100Custom.xml file changes in the server

1. Open the TeamWorksConfiguration.running.xml file, which is located in the `WAS_HOME\profiles\profile name\config\cells\cell name\nodes\node name\servers\server name\process-center\` directory. Confirm the changes in the 100Custom.xml. For example:  

```
c:\BPM\profiles\ProcCtr01\config\cells\gascogne01Cell\nodes\gascogneNode01\servers\server1\process-
```

center\TeamWorksConfiguration.running.xml

**\*Note:**

Depending on your environment, you may need to repeat the following steps for the personal certificate:

- Export the Process Center **root signer certificate**
- Export the Process Server **root signer certificate**
- Install Process Center signer certificate in Process Server trust store
- Install Process Server signer certificate in Process Center trust store

## **Verify your configuration**

1. Log in to the Process Center console using an https connection.
2. From the Server tab, select **runtime server**, and click **configure server**. Confirm that it is opened in a secure browser with https.

## **Restart the Process Server and Process Center servers**

---

1. Use admin console to stop the clusters.
2. Stop the node agent and deployment manager.
3. Re-start the node agent.
4. Re-start the deployment manager.
5. Use Admin console to start the clusters.

## **Importing an SSL security certificate into Integration Designer**

---

In order to connect to an HTTPS enabled server, you need to import the SSL security certificate (X509Certificate ) for the server. The steps described in this procedure are performed using Internet Explorer.

1. Launch your web browser and enter `https://hostname:secure_port/ProcessCenter/login.jsp` where hostname is the fully-qualified domain name of the process center server, and secure\_port is the process center secure SSL port number.
2. On the Security Alert window, click View Certificate.
3. On the Certificate window, click the Details tab.
4. Click Copy to File to specify where to save the certificate file on your system.
5. In the wizard, click Next, accept the default values, and then click Next again.
6. Enter a file name for the security certificate, for example, pc\_cert.cer, and click Next.
7. Click Finish. After you have created the SSL certificate, you can import it into the Java JRE that you will be using for Integration Designer.
8. Copy the certificate to IIDInstall\jdk\jre\bin where IIDInstall is the directory where you installed Integration Designer.

9. Switch to the same location in the command line and run the keytool command line as follows:
  - a. `keytool.exe -import -v -file <certificate file> -keystore ..\lib\security\cacerts`  
If you previously imported SSL certificates into the Integration Designer, add the `-alias <key name>` parameter to specify a different key name to avoid name conflicts. The default value is `mykey`.
  - b. Enter the keystore password: `changeit` (this is usually the default password).
  - c. Enter `y` at the prompt to trust the certificate.

## Configuring Secure Socket Layer (SSL) communication for a Network Deployment environment

The following steps are required to make the communication between the Process Center and the Process Server work with https in a Network Deployment environment.

### Import the Process Server WAS root SSL certificate into Process Center

1. On the Process center WAS admin console, navigate to **Security > SSL certificate and key management > Key stores and certificate.**

The screenshot shows the Integrated Solutions Console (ISC) interface. The browser address bar indicates the URL is `https://localhost:9044/ibm/console/login.do?action=secure`. The page title is "Integrated Solutions Console - Welcome admin". The left sidebar contains a navigation tree with the following items: Welcome, Guided Activities, Servers, Applications, Services, Resources, Security (selected), Environment, Integration Applications, System administration, Users and Groups, Monitoring and Tuning, Troubleshooting, Service integration, and UDDI. Under the "Security" category, the following sub-items are listed: Business Integration Security, Global security, Security domains, Administrative Authorization Groups, **SSL certificate and key management** (highlighted with a red box), Security auditing, and Bus security. The main content area is titled "SSL certificate and key management" and contains the following sections:

- SSL configurations**: A paragraph explaining the SSL protocol and its use for secure communications between remote server processes or endpoints. It states that in previous versions, manual configuration was required, but in this version, a single configuration can be defined for the entire application-serving environment.
- Configuration settings**: A section with two checkboxes:
  - Use the United States Federal Information Processing Standard (FIPS) algorithms. Note: This option requires the TLS handshake protocol, which some browsers do not enable by default.
  - Dynamically update the run time when SSL configuration changes occur.
- Related Items**: A list of links to other configuration pages:
  - SSL configurations
  - Dynamic outbound endpoint SSL configurations
  - Key stores and certificates** (highlighted with a red box)
  - Key sets
  - Key set groups
  - Key managers
  - Trust managers
  - Certificate Authority (CA) client configurations

At the bottom of the configuration area, there are "Apply" and "Reset" buttons.



## 2. Click **CellDefaultTrustStore**.

Cell=PC01Cell, Profile=PC1Dmgr

SSL certificate and key management

[SSL certificate and key management](#) > **Key stores and certificates**

Defines keystore types, including cryptography, RACF(R), CMS, Java(TM), and all truststore types.

Keystore usages

SSL keystores

Preferences

New Delete Change password... Exchange signers...

Select	Name	Description	Management Scope	Path
<input type="checkbox"/>	<a href="#">CellDefaultKeyStore</a>	Default key store for PC01Cell	(cell):PC01Cell	\${CONFIG_ROOT}/cells/PC01Cell/key.p12
<input type="checkbox"/>	<a href="#">CellDefaultTrustStore</a>	Default trust store for PC01Cell	(cell):PC01Cell	\${CONFIG_ROOT}/cells/PC01Cell/trust.p12
<input type="checkbox"/>	<a href="#">JKSCopyOfTrustStore</a>		(cell):PC01Cell	/opt/IBM/BPM/java/jre/lib/security/JKSCopyOfTrustStore.jks
<input type="checkbox"/>	<a href="#">NodeDefaultKeyStore</a>	Default key	(cell):PC01Cell:	\${CONFIG_ROOT}/cells

## 3. Click **Signer certificates**.

## 4. Click **Retrieve from port**.

Cell=PC01Cell, Profile=PC1Dmgr

SSL certificate and key management

[SSL certificate and key management](#) > [Key stores and certificates](#) > [CellDefaultTrustStore](#) > **Signer certificates**

Manages signer certificates in key stores.

Preferences

Add Delete Extract **Retrieve from port**

Select	Alias	Issued to	Fingerprint (SHA Digest)	Expiration
<input type="checkbox"/>	<a href="#">root</a>	CN=PC1CellRoot, OU=swg, O=ibm.com	2D:B8:3A:54:12:14:E5:61:5D:6A:41:8B:89:1A:D1:17:C8:B3:84:53	Valid from Sep 5, 2011 to Sep 1, 2026.

Total 1

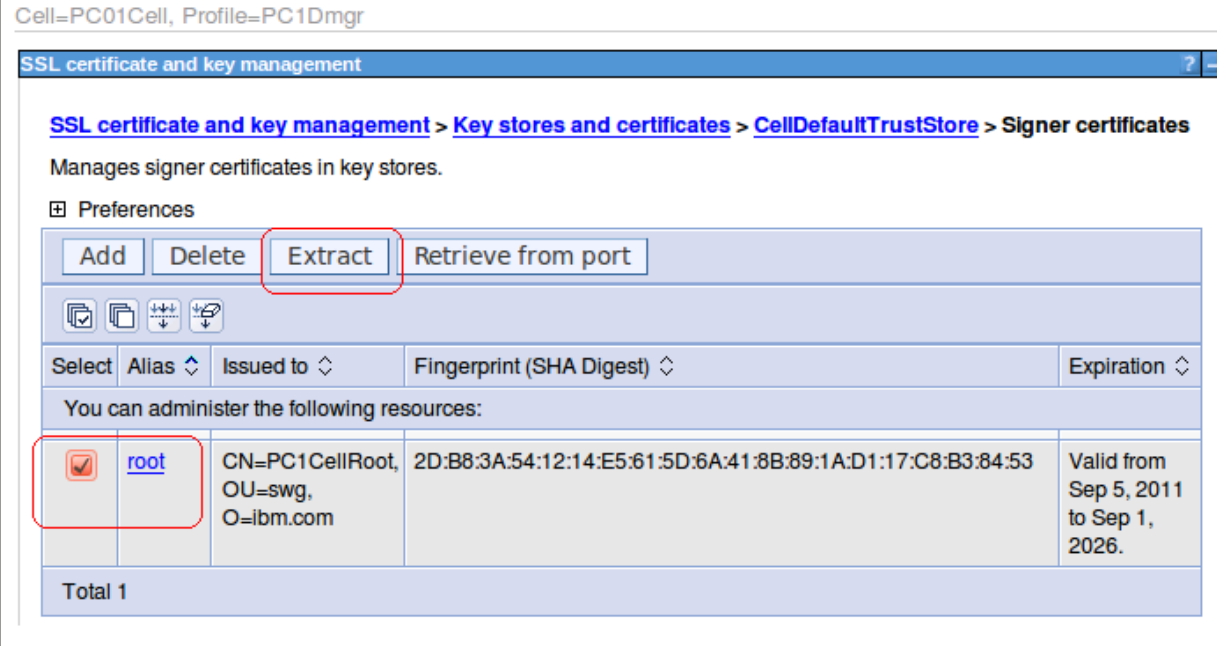
5. Enter the **Host** name, secure **Port** of the Profile (*WC\_defaulthost\_secure* of Process Server profile), and **Alias**, and click **Retrieve signer information**. You can retrieve the signer information for any of the servers listed.

Note: The *WC\_defaulthost\_secure* is located in the WAS admin console. Navigate to **Servers > Server Types > WebSphere Application Servers > SERVER\_NAME > Ports**.

6. Click **Apply** and save your changes.

## Export the Process Center root signer certificate

1. On the Process center WAS admin console, navigate to **Security > SSL certificate and key management > Key stores and certificate > CellDefaultTrustStore > Signer certificates**.
2. From the Signer certificates panel, click the **root** checkbox and select **Extract**.



Cell=PC01Cell, Profile=PC1Dmgr

SSL certificate and key management

[SSL certificate and key management](#) > [Key stores and certificates](#) > [CellDefaultTrustStore](#) > Signer certificates

Manages signer certificates in key stores.

⊞ Preferences

Add Delete **Extract** Retrieve from port

⊞ ⊞ ⊞ ⊞

Select	Alias	Issued to	Fingerprint (SHA Digest)	Expiration
<input checked="" type="checkbox"/>	root	CN=PC1CellRoot, OU=swg, O=ibm.com	2D:B8:3A:54:12:14:E5:61:5D:6A:41:8B:89:1A:D1:17:C8:B3:84:53	Valid from Sep 5, 2011 to Sep 1, 2026.

Total 1

3. Specify the **File name** path where you want to save the certificate and set the **Data type** to **Binary DER data**. Click **OK**.
4. Copy the extracted Process Center root certificate to the Process Server system

## Import the Process Center WAS root SSL certificate into Process Server

1. On the Process server WAS admin console, navigate to **Security > SSL certificate and key management > Key stores and certificates > CellDefaultTrustStore > Signer certificates > Retrieve from port**.
2. Enter the **Host** name, secure **Port** of the Profile (*WC\_defaulthost\_secure* of Process Center profile), and **Alias**, and click **Retrieve signer information**. You

can retrieve the signer information for any of the servers listed.

Note: The *WC\_defaulthost\_secure* is located in the WAS admin console. Navigate to **Servers > Server Types > WebSphere Application Servers > SERVER\_NAME > Ports**.

3. Click **Apply** and save your changes.

## Export the Process Server root signer certificate

---

1. On the Process server WAS admin console, go to **Security > SSL certificate and key management > Key stores and certificates > CellDefaultTrustStore > Signer certificates**.
2. From the Signer certificates panel, click on the **Root** checkbox and select **Extract**.
3. Specify the **File name** path where you want to save the certificate and set the **Data type** to **Binary DER data** and click **OK**.

## Edit 100Custom.xml on Process Center

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1. Edit `WAS_HOME\profiles\PC dmgr profile name\config\cells\cell name\nodes\node name\servers\app target server name\process-center\config\100Custom.xml` to overwrite values from the 99Local.xml file. For example: `c:\BPM\profiles\PCDmgr01\config\cells\gascogne01Cell\nodes\gascogneNode01\servers\PC1.AppTarget.PC1Node1.0\process-center\config\100Custom.xml`.
2. Open `WAS_HOME\profiles\PC dmgr profile name\config\cells\cell name\nodes\node name\servers\app target server name\process-center\config\99local.xml`. For example: `c:\BPM\profiles\PCDmgr01\config\cells\gascogne01Cell\nodes\gascogneNode01\servers\PC1.AppTarget.PC1Node1.0\process-center\config\system\99local.xml`.
3. Copy all occurrences of `http://<PC_hostname>:<non_secured_port>` from the 99local.xml file, including its enclosing parent xml tags, and paste the same to the 100Custom.xml file.

```

99Local.xml - Notepad
File Edit Format View Help
<properties>
  <authoring-environment merge="mergeChildren">
    <!--
      Prefix for serving images in the Authoring Environment
    -->
    <images-prefix>http://wpsvm10a.svl.ibm.com:9081/teamworks</images-prefix>

    <!-- Prefix for urls that refer to the portal -->
    <portal-prefix>http://wpsvm10a.svl.ibm.com:9081/portal</portal-prefix>

    <!-- Prefix for urls that refer to the repository view -->
    <repository-prefix>http://wpsvm10a.svl.ibm.com:9081/ProcessCenter</repository-prefix>

    <!-- Prefix for urls that refer to the repository view -->
    <repository-prefix>http://wpsvm10a.svl.ibm.com:9081/ProcessCenter</repository-prefix>

    <!-- Prefix for urls that refer to the repository view -->
    <repository-prefix>http://wpsvm10a.svl.ibm.com:9081/ProcessCenter</repository-prefix>

    <!-- Prefix for urls that refer to the repository view -->
    <repository-prefix>http://wpsvm10a.svl.ibm.com:9081/ProcessCenter</repository-prefix>

    <!-- when true uses the portal for previews of reports and scoreboards, when false uses the "old" task manager -->
    <use-portal-for-preview>true</use-portal-for-preview>

    <!-- Prefix for urls that refer to the webapi -->
    <webapi-prefix>http://wpsvm10a.svl.ibm.com:9081/webapi</webapi-prefix>

    <process-help-wiki-url-view>http://wpsvm10a.svl.ibm.com:9081/processhelp/en/%TITLE%?teamworksTitle=%
TEAMWORKS_TITLE%</process-help-wiki-url-view>
    <process-help-wiki-url-edit>http://wpsvm10a.svl.ibm.com:9081/processhelp/en/Special:Edit?topic=%TITLE%
&amp;teamworksTitle=%TEAMWORKS_TITLE%</process-help-wiki-url-edit>
    <process-help-access-role>tw_admins</process-help-access-role>

    <formatting-templates>
      <formatting-template comment="Currency" template="$ ###,###,###.##" />
      <formatting-template comment="Currency" template="###,###,###.## e" />
      <formatting-template comment="Currency" template="e ###,###,###.##" />

      <formatting-template comment="Integer" template="###,###,###" />
      <formatting-template comment="Decimal" template="###,###,###.##" />

      <formatting-template comment="US phone" template="(###) 000-0000" />
      <formatting-template comment="US SSN" template="000-00-0000" />
    </formatting-templates>

    <mime-types>
      <mime-type type="application/javascript" />
      <mime-type type="application/octet-stream" />
      <mime-type type="application/pdf" />
      <mime-type type="application/xml" />
      <mime-type type="application/xml-dtd" />
      <mime-type type="application/zip" />
    </mime-types>
  </authoring-environment>
</properties>

```

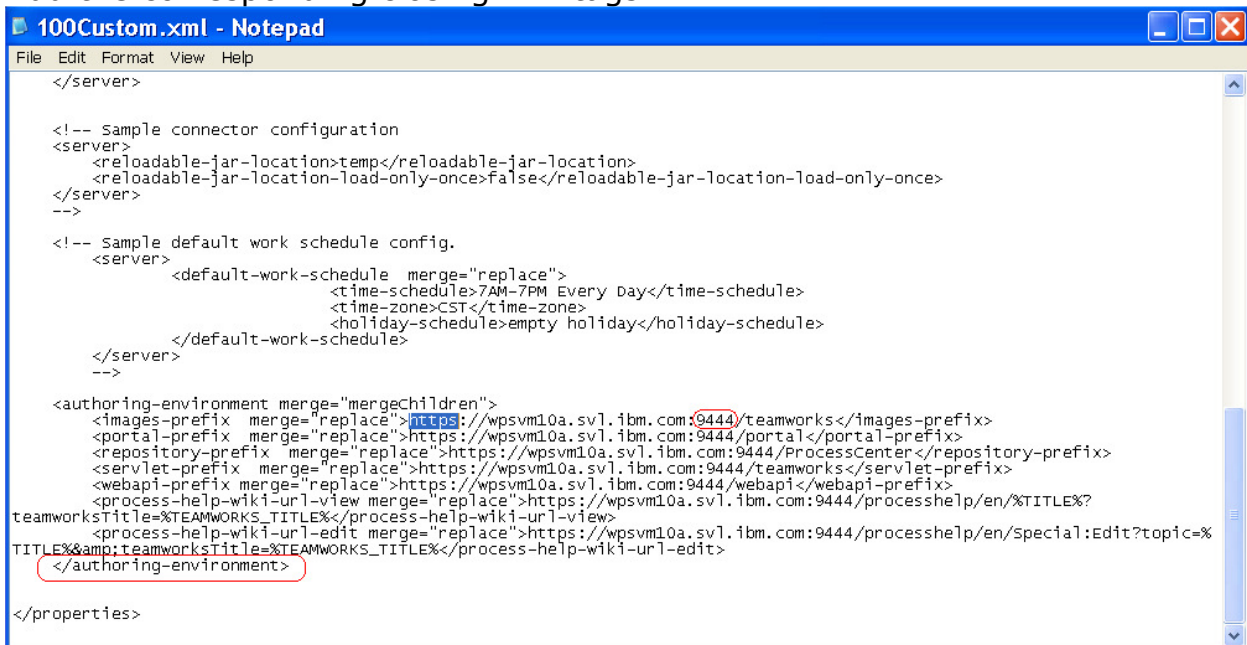
4. Add merge="mergeChildren" to the parent xml tags that contain [http://<PC\\_hostname>:<non\\_secured\\_port>](http://<PC_hostname>:<non_secured_port>).
5. Add merge="replace" to the xml tag that contains [http://<PC\\_hostname>:<non\\_secured\\_port>](http://<PC_hostname>:<non_secured_port>).
6. Change [http://<PC\\_hostname>:<non\\_secured\\_port>](http://<PC_hostname>:<non_secured_port>) to [https://<PC\\_hostname>:<secured-port>](https://<PC_hostname>:<secured-port>).

```

100Custom.xml - Notepad
File Edit Format View Help
<reloadable-jar-location>temp</reloadable-jar-location>
<reloadable-jar-location-load-only-once>>false</reloadable-jar-location-load-only-once>
</server>
-->
<!-- Sample default work schedule config.
<server>
  <default-work-schedule merge="replace">
    <time-schedule>7AM-7PM Every Day</time-schedule>
    <time-zone>CST</time-zone>
    <holiday-schedule>empty holiday</holiday-schedule>
  </default-work-schedule>
</server>
-->
<authoring-environment (merge="mergeChildren">
  <images-prefix (merge="replace">http://wpsvm10a.svl.ibm.com:9081/teamworks</images-prefix>
  <portal-prefix (merge="replace">http://wpsvm10a.svl.ibm.com:9081/portal</portal-prefix>
  <repository-prefix (merge="replace">http://wpsvm10a.svl.ibm.com:9081/ProcessCenter</repository-prefix>
  <servlet-prefix (merge="replace">http://wpsvm10a.svl.ibm.com:9081/teamworks</servlet-prefix>
  <webapi-prefix (merge="replace">http://wpsvm10a.svl.ibm.com:9081/webapi</webapi-prefix>
  <process-help-wiki-url-view (merge="replace">http://wpsvm10a.svl.ibm.com:9081/processhelp/en/%TITLE%?
teamworksTitle=%TEAMWORKS_TITLE%</process-help-wiki-url-view>
  <process-help-wiki-url-edit (merge="replace">http://wpsvm10a.svl.ibm.com:9081/processhelp/en/Special:Edit?topic=%
TITLE%&amp;teamworksTitle=%TEAMWORKS_TITLE%</process-help-wiki-url-edit>
</authoring-environment>
</properties>

```

## 7. Add the corresponding closing xml tags.



```
100Custom.xml - Notepad
File Edit Format View Help
</server>

<!-- sample connector configuration
<server>
  <reloadable-jar-location>temp</reloadable-jar-location>
  <reloadable-jar-location-load-only-once>>false</reloadable-jar-location-load-only-once>
</server>
-->

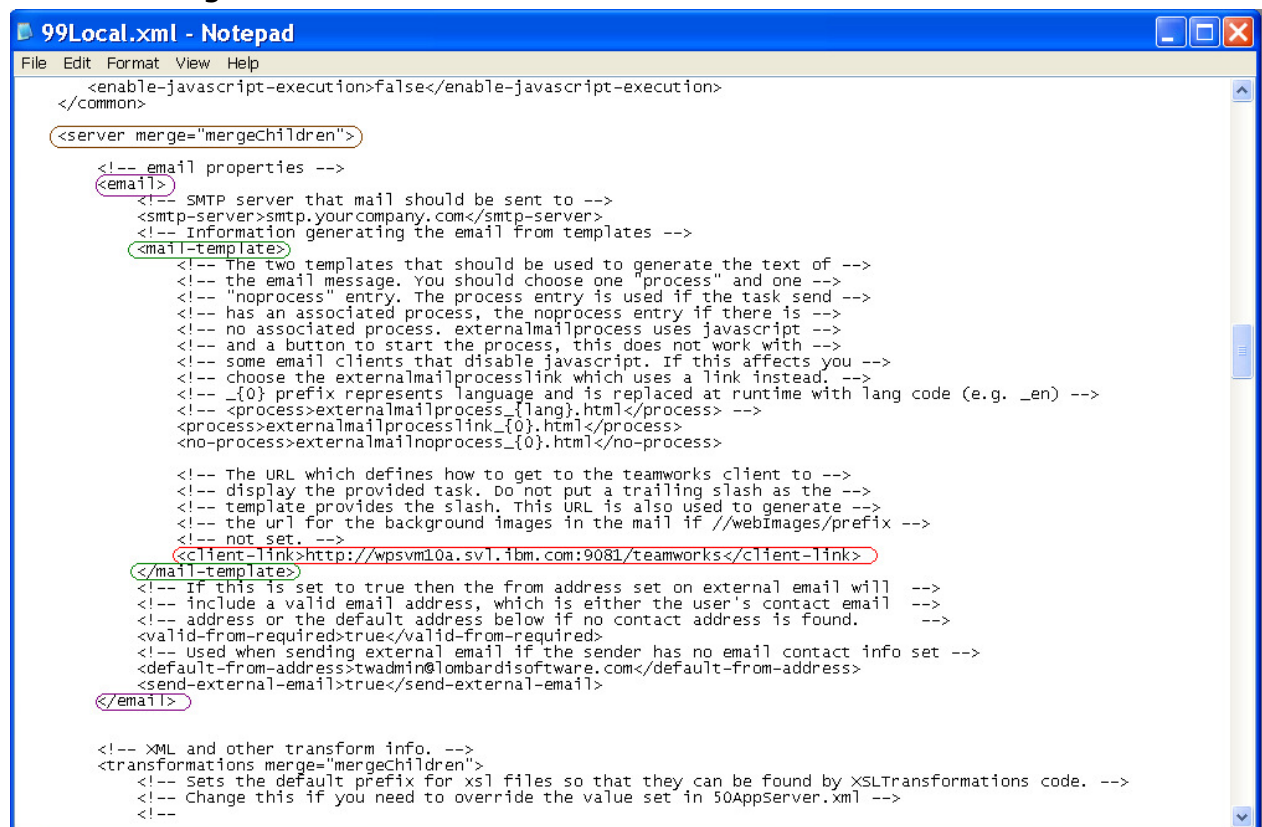
<!-- sample default work schedule config.
<server>
  <default-work-schedule merge="replace">
    <time-schedule>7AM-7PM Every Day</time-schedule>
    <time-zone>CST</time-zone>
    <holiday-schedule>empty holiday</holiday-schedule>
  </server>
</default-work-schedule>
-->

<authoring-environment merge="mergeChildren">
  <images-prefix merge="replace">https://wpsvm10a.svl.ibm.com:9444/teamworks</images-prefix>
  <portal-prefix merge="replace">https://wpsvm10a.svl.ibm.com:9444/portal</portal-prefix>
  <repository-prefix merge="replace">https://wpsvm10a.svl.ibm.com:9444/ProcessCenter</repository-prefix>
  <servlet-prefix merge="replace">https://wpsvm10a.svl.ibm.com:9444/teamworks</servlet-prefix>
  <webapi-prefix merge="replace">https://wpsvm10a.svl.ibm.com:9444/webapi</webapi-prefix>
  <process-help-wiki-url-view merge="replace">https://wpsvm10a.svl.ibm.com:9444/processhelp/en/%TITLE%?
teamworksTitle=%TEAMWORKS_TITLE%</process-help-wiki-url-view>
  <process-help-wiki-url-edit merge="replace">https://wpsvm10a.svl.ibm.com:9444/processhelp/en/Special:Edit?topic=%
TITLE%&teamworksTitle=%TEAMWORKS_TITLE%</process-help-wiki-url-edit>
</authoring-environment>

</properties>
```

## 8. For the <client-link> tag that contains

[http://<PC\\_hostname>:<non\\_secured\\_port>](http://<PC_hostname>:<non_secured_port>), copy its parent tags up to the server tag.



```
99Local.xml - Notepad
File Edit Format View Help
<enable-javascript-execution>>false</enable-javascript-execution>
</common>

<server merge="mergeChildren">
  <!-- email properties -->
  <email>
    <!-- SMTP server that mail should be sent to -->
    <smtp-server>smtp.yourcompany.com</smtp-server>
    <!-- Information generating the email from templates -->
    <mail-template>
      <!-- The two templates that should be used to generate the text of -->
      <!-- the email message. You should choose one "process" and one -->
      <!-- "noprocess" entry. The process entry is used if the task send -->
      <!-- has an associated process, the noprocess entry if there is -->
      <!-- no associated process. externalmailprocess uses javascript -->
      <!-- and a button to start the process, this does not work with -->
      <!-- some email clients that disable javascript. If this affects you -->
      <!-- choose the externalmailprocesslink which uses a link instead. -->
      <!-- _{0} prefix represents language and is replaced at runtime with lang code (e.g. _en) -->
      <!-- <process>externalmailprocess_{lang}.html</process> -->
      <process>externalmailprocesslink_{0}.html</process>
      <no-process>externalmailnoprocess_{0}.html</no-process>

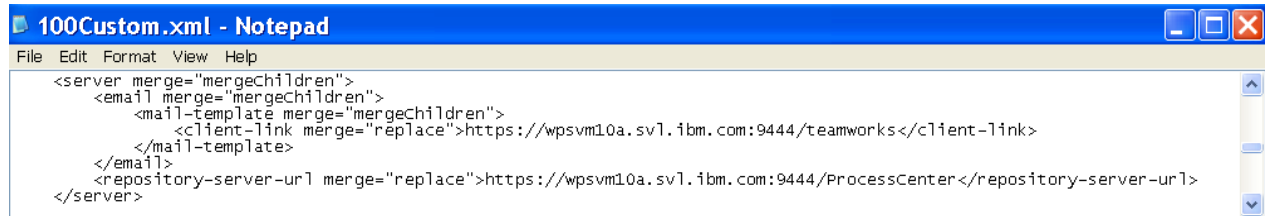
      <!-- The URL which defines how to get to the teamworks client to -->
      <!-- display the provided task. Do not put a trailing slash as the -->
      <!-- template provides the slash. This URL is also used to generate -->
      <!-- the url for the background images in the mail if //webimages/prefix -->
      <!-- not set. -->
      <client-link>http://wpsvm10a.svl.ibm.com:9081/teamworks</client-link>
    </mail-template>
    <!-- If this is set to true then the from address set on external email will -->
    <!-- include a valid email address, which is either the user's contact email -->
    <!-- address or the default address below if no contact address is found. -->
    <valid-from-required>true</valid-from-required>
    <!-- Used when sending external email if the sender has no email contact info set -->
    <default-from-address>twadmin@lombardsoftware.com</default-from-address>
    <send-external-email>true</send-external-email>
  </email>

  <!-- XML and other transform info. -->
  <transformations merge="mergeChildren">
    <!-- Sets the default prefix for xsl files so that they can be found by XSLTransformations code. -->
    <!-- change this if you need to override the value set in 50AppServer.xml -->
    <!--
```

## 9. Add the server section to the 100Custom.xml file.

- Add merge="mergeChildren" to the parent xml tags
- Add merge="replace" to the xml tag that contains [http://<PC\\_hostname>:<non\\_secured\\_port>](http://<PC_hostname>:<non_secured_port>).

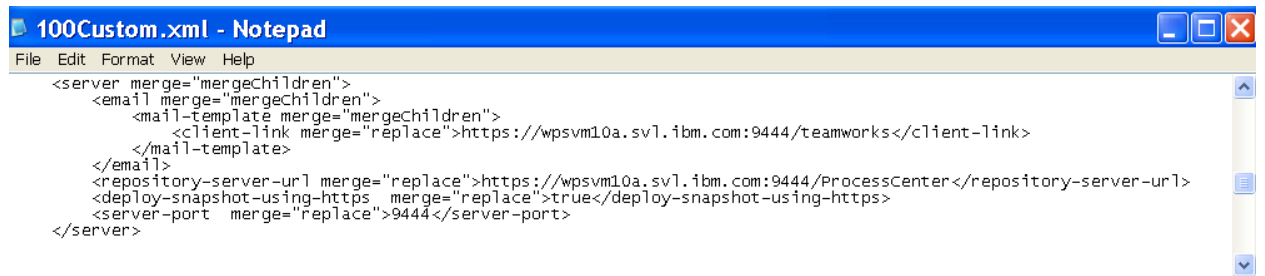
c. Change [http://<PS\\_hostname>:<non\\_secured\\_port>](http://<PS_hostname>:<non_secured_port>) to [https://<PS\\_hostname>:<secured-port>](https://<PS_hostname>:<secured-port>).



```
<server merge="mergechildren">
  <email merge="mergechildren">
    <mail-template merge="mergechildren">
      <client-link merge="replace">https://wpsvm10a.sv1.ibm.com:9444/teamworks</client-link>
    </mail-template>
  </email>
  <repository-server-url merge="replace">https://wpsvm10a.sv1.ibm.com:9444/ProcessCenter</repository-server-url>
</server>
```

10. Add the following to the `<server>` section to specify the correct Process Center secure port:
- ```
<server-port merge="replace"><PC WC_defaulthost_secure
port></server-port>
```
- (set the value to `WC_defaulthost_secure` of Process Center profile).

Note: The `WC_defaulthost_secure` is located in the WAS admin console. Navigate to **Servers > Server Types > WebSphere Application Servers > SERVER\_NAME > Ports**.



```
<server merge="mergechildren">
  <email merge="mergechildren">
    <mail-template merge="mergechildren">
      <client-link merge="replace">https://wpsvm10a.sv1.ibm.com:9444/teamworks</client-link>
    </mail-template>
  </email>
  <repository-server-url merge="replace">https://wpsvm10a.sv1.ibm.com:9444/ProcessCenter</repository-server-url>
  <deploy-snapshot-using-https merge="replace">true</deploy-snapshot-using-https>
  <server-port merge="replace">9444</server-port>
</server>
```

11. Open `WAS_HOME\profiles\PC dmgr profile name\config\cells\cell name\nodes\node name\servers\app target server name\process-center\config\system\99Sharepoint.xml`. For example: `c:\BPM\profiles\PCDmgr01\config\cells\gascogne01Cell\nodes\gascogneNode01\servers\PC1.AppTarget.PC1Node1.0\process-center\config\system\99Sharepoint.xml`.
12. Copy all occurrences of [http://<PC\\_hostname>:<non\\_secured\\_port>](http://<PC_hostname>:<non_secured_port>) from the `99Sharepoint.xml` file, including its parent xml tags, and paste them to the `100Custom.xml` file.

```

File Edit Format View Help
<!-- since the Sharepoint collaboration feature was taken away this is not being used. (Commented out at MPBPDEditor) -->
<properties>
  <common merge="mergechildren">
    <!-- Teamworks For Sharepoint 2007 configuration settings -->
    <office>
      <sharepoint>
        <!-- Multiple servers can be defined here. Please make sure that the urls are unique and that only one is
        <connection-config default-connection="true">
          <url>http://mysharepointserver</url>
          <user-name>username</user-name>
          <!-- passwords are encrypted using the same technique used in 99local.xml - Use java -cp utility.jar c
          <password></password>
        </connection-config>
        <connection-config>
          <url>http://mysecondsharepointserver</url>
          <user-name>username</user-name>
          <password></password>
        </connection-config>
        <default-sharepoint-integration-enabled>false</default-sharepoint-integration-enabled>
        <default-site-disabled>true</default-site-disabled>
        <default-parent-site-name><![CDATA[<#> tw.system.process.name #>]]</default-parent-site-name>
        <default-parent-site-template>ParentSiteTemplate.stp</default-parent-site-template>
        <default-workspace-site-name><![CDATA[<#> tw.system.process.name #> <#> tw.system.process.instanceId #>]]>
        <default-workspace-site-template>workspacesiteTemplate.stp</default-workspace-site-template>
        <default-workspace-site-description><![CDATA[This site has been automatically generated for managing colla
for the Lombardi Teamworks process instance: <#> tw.system.process.name #> <#> tw.system.process.instanceId #>
Teamworks Link: http://wpsvm10a.svl.ibm.com:9081/portal/jsp/getProcessDetails.do?bpdInstanceId=<#> tw.system.process.inst
]]></default-workspace-site-description>
        <default-forum-name>Process Discussion</default-forum-name>
        <default-forum-thread-title><![CDATA[<#> tw.system.step.name #>]]></default-forum-thread-title>
        <discussion-invitation-email-template>
          <!--
          Parameters:

```

13. Change [http://<PC\\_hostname>:<non\\_secured\\_port>](http://<PC_hostname>:<non_secured_port>) to [https://<PC\\_hostname>:<secured-port>](https://<PC_hostname>:<secured-port>).

14. Save and close the 100Custom.xml file.

Here is a sample Process Center 100Custom.xml file:

```

<properties>
  <!--Properties file for customer cluster scoped properties. -->

  <!-- set unversioned-po-caching-enable to false for clustering
  <common merge="mergeChildren">
    <environment-name merge="replace">My Environment</environment-name>
    <default-unversioned-po-cache-size merge="replace">500</default-unversioned-
po-cache-size>
    <default-versioned-po-cache-size merge="replace">500</default-versioned-po-
cache-size>
    <unversioned-po-caching-enable merge="replace">false</unversioned-po-
caching-enable>
    <default-webapi-userid-cache-size merge="replace">500</default-webapi-userid-
cache-size>
  </common>
  -->

  <!-- Sample connector configuration
  <server>
    <reloadable-jar-location>temp</reloadable-jar-location>
    <reloadable-jar-location-load-only-once>false</reloadable-jar-location-load-
only-once>
  </server>
  -->

  <!-- Sample default work schedule config.

```

```

<server>
  <default-work-schedule merge="replace">
    <time-schedule>7AM-7PM Every Day</time-schedule>
    <time-zone>CST</time-zone>
    <holiday-schedule>empty holiday</holiday-schedule>
  </default-work-schedule>
</server>
-->
  <authoring-environment merge="mergeChildren">
    <images-prefix
merge="replace">https://qastress3.eng1.svl.ibm.com:9443/teamworks</images-prefix>

    <portal-prefix
merge="replace">https://qastress3.eng1.svl.ibm.com:9443/portal</portal-prefix>

    <repository-prefix
merge="replace">https://qastress3.eng1.svl.ibm.com:9443/ProcessCenter</repository-
prefix>

    <servlet-prefix
merge="replace">https://qastress3.eng1.svl.ibm.com:9443/teamworks</servlet-prefix>

    <webapi-prefix
merge="replace">https://qastress3.eng1.svl.ibm.com:9443/webapi</webapi-prefix>

    <process-help-wiki-url-view
merge="replace">https://qastress3.eng1.svl.ibm.com:9443/processhelp/en/%TITLE%?teamw
orksTitle=%TEAMWORKS_TITLE%</process-help-wiki-url-view>
    <process-help-wiki-url-edit
merge="replace">https://qastress3.eng1.svl.ibm.com:9443/processhelp/en/Special:Edit?
topic=%TITLE%&teamworksTitle=%TEAMWORKS_TITLE%</process-help-wiki-url-edit>

  </authoring-environment>

  <common merge="mergeChildren">
    <portal-prefix
merge="replace">https://qastress3.eng1.svl.ibm.com:9443/portal</portal-prefix>

    <process-admin-prefix
merge="replace">https://qastress3.eng1.svl.ibm.com:9443/ProcessAdmin</process-admin-
prefix>

    <teamworks-webapp-prefix
merge="replace">https://qastress3.eng1.svl.ibm.com:9443/teamworks</teamworks-webapp-
prefix>
    <webservices merge="mergeChildren">
      <base-url
merge="replace">https://qastress3.eng1.svl.ibm.com:9443/teamworks/webservices</base-
url>
    </webservices>

    <xml-serialization merge="mergeChildren">
      <default-namespace-uri
merge="replace">https://qastress3.eng1.svl.ibm.com:9443/schema/</default-namespace-
uri>

```



```

    </xml-serialization>
    <coach-designer-xsl-url
merge="replace">https://qastress3.eng1.svl.ibm.com:9443/teamworks/coachdesigner/trans
form/CoachDesigner.xsl</coach-designer-xsl-url>
    <office merge="mergeChildren">
        <sharepoint merge="mergeChildren">
            <default-workspace-site-description merge="replace"><![CDATA[This
site has been automatically generated for managing collaborations and documents
for the Lombardi TeamWorks process instance: <#= tw.system.process.name #> <#=
tw.system.process.instanceId #>
TeamWorks Link:
https://qastress3.eng1.svl.ibm.com:9443/portal/jsp/getProcessDetails.do?bpdInstanceI
d=<#= tw.system.process.instanceId #>
]]></default-workspace-site-description>
        </sharepoint>
    </office>
</common>

    <server merge="mergeChildren">
        <email merge="mergeChildren">
            <mail-template merge="mergeChildren">
                <client-link
merge="replace">https://qastress3.eng1.svl.ibm.com:9443/teamworks</client-link>
            </mail-template>
        </email>
        <repository-server-url
merge="replace">https://qastress3.eng1.svl.ibm.com:9443/ProcessCenter</repository-
server-url>
        <deploy-snapshot-using-https merge="replace">true</deploy-snapshot-using-
https>
        <server-port merge="replace">9443</server-port>

    </server>

</properties>

```

## Edit 100Custom.xml on Process Server

---

1. Edit `WAS_HOME\profiles\PS dmgr profile name\config\cells\cell name\nodes\node name\servers\app target server name\process-server\config\100Custom.xml` to overwrite values from the `99Local.xml` file. For example: `c:\BPM\profiles\PSDmgr01\config\cells\gascogne01Cell\nodes\gascogneNode01\servers\server1\PS1.AppTarget.PS1Node1.0\config\100Custom.xml`.
2. Open `WAS_HOME\profiles\PS dmgr profile name\config\cells\cell name\nodes\node name\servers\app target server name\process-server\config\99local.xml`. For example:

c:\BPM\profiles\PSDmgr01\config\cells\gascogne01Cell\nodes\gascogneNode01\servers\PS1.AppTarget.PS1Node1.0\process-server\config\system\99local.xml.

3. Copy all occurrences of [http://<PS\\_hostname>:<non\\_secured\\_port>](http://<PS_hostname>:<non_secured_port>) from the 99local.xml file, including its enclosing parent xml tags, and paste the same to the 100Custom.xml file.
4. Add merge="mergeChildren" to the parent xml tags that contain [http://<PS\\_hostname>:<non\\_secured\\_port>](http://<PS_hostname>:<non_secured_port>).
5. Add merge="replace" to the xml tag that contains [http://<PS\\_hostname>:<non\\_secured\\_port>](http://<PS_hostname>:<non_secured_port>).
6. Change [http://<PS\\_hostname>:<non\\_secured\\_port>](http://<PS_hostname>:<non_secured_port>) to [https://<PS\\_hostname>:<secured-port>](https://<PS_hostname>:<secured-port>).
7. Add the corresponding closing xml tags.
8. For the <client-link> tag that contains [http://<PS\\_hostname>:<non\\_secured\\_port>](http://<PS_hostname>:<non_secured_port>), copy its parent tags up to the server tag.
9. Add the server section to the 100Custom.xml file.
  - a. Add merge="mergeChildren" to the parent xml tags
  - b. Add merge="replace" to the xml tag that contains [http://<PS\\_hostname>:<non\\_secured\\_port>](http://<PS_hostname>:<non_secured_port>).
  - c. Change [http://<PS\\_hostname>:<non\\_secured\\_port>](http://<PS_hostname>:<non_secured_port>) to [https://<PS\\_hostname>:<secured-port>](https://<PS_hostname>:<secured-port>).
10. Search for *repository-server-url* in the server section of the 99local.xml file and copy it to the server section in the 100Custom.xml.
11. Change [http://<PC\\_hostname>:<non\\_secured\\_port>](http://<PC_hostname>:<non_secured_port>) to [https://<PC\\_hostname>:<secured-port>](https://<PC_hostname>:<secured-port>).
12. Add the following to the <server> section to specify the correct Process Server secure port:  
<server-port merge="replace"><PS WC\_defaulthost\_secure port></server-port> (set the value to WC\_defaulthost\_secure of Process Server profile).

Note: The WC\_defaulthost\_secure is located in the WAS admin console. Navigate to **Servers > Server Types > WebSphere Application Servers > SERVER\_NAME > Ports**.

13. Open `WAS_HOME\profiles\PS dmgr profile name\config\cells\cell name\nodes\node name\servers\app target server name\process-server\config\system\99Sharepoint.xml`. **For example:**  
`c:\BPM\profiles\PSDmgr01\config\cells\gascogne01Cell\nodes\gascogneNode01\servers\PS1.AppTarget.PS1Node1.0\process-server\config\system\99Sharepoint.xml`).
14. Copy all occurrences of `http://<PS_hostname>:<non_secured_port>` in the `99Sharepoint.xml` file, including its parent xml tags, to the `100Custom.xml` file.
15. Change `http://<PS_hostname>:<non_secured_port>` to `https://<PS_hostname>:<secured-port>`.
16. Save and close the `100Custom.xml` file.

Here is a sample Process Server `100Custom.xml` file:

```
<properties>
  <!--Properties file for customer cluster scoped properties. -->

  <!-- set unversioned-po-caching-enable to false for clustering
  <common merge="mergeChildren">
    <environment-name merge="replace">My Environment</environment-name>
    <default-unversioned-po-cache-size merge="replace">500</default-unversioned-
po-cache-size>
    <default-versioned-po-cache-size merge="replace">500</default-versioned-po-
cache-size>
    <unversioned-po-caching-enable merge="replace">>false</unversioned-po-
caching-enable>
    <default-webapi-userid-cache-size merge="replace">500</default-webapi-userid-
cache-size>
  </common>
  -->
<xml-serialization merge="mergeChildren">
  <default-namespace-uri
merge="replace">https://wpsvm10b.svl.ibm.com:9443/schema/</default-namespace-uri>
</xml-serialization>
  <!-- Sample connector configuration
  <server>
    <reloadable-jar-location>temp</reloadable-jar-location>
    <reloadable-jar-location-load-only-once>>false</reloadable-jar-location-load-
only-once>
  </server>
  -->

  <!-- Sample default work schedule config.
  <server>
    <default-work-schedule merge="replace">
      <time-schedule>7AM-7PM Every Day</time-schedule>
      <time-zone>CST</time-zone>
```

```
        <holiday-schedule>empty holiday</holiday-schedule>
    </default-work-schedule>
</server>
-->

    <authoring-environment merge="mergeChildren">
        <images-prefix
merge="replace">https://wpsvm10b.svl.ibm.com:9443/teamworks</images-prefix>

        <portal-prefix
merge="replace">https://wpsvm10b.svl.ibm.com:9443/portal</portal-prefix>

        <repository-prefix
merge="replace">https://wpsvm10b.svl.ibm.com:9443/ProcessCenter</repository-prefix>

        <servlet-prefix
merge="replace">https://wpsvm10b.svl.ibm.com:9443/teamworks</servlet-prefix>

        <use-portal-for-preview merge="replace">true</use-portal-for-preview>

        <webapi-prefix
merge="replace">https://wpsvm10b.svl.ibm.com:9443/webapi</webapi-prefix>

        <process-help-wiki-url-view
merge="replace">https://wpsvm10b.svl.ibm.com:9443/processhelp/en/%TITLE%?teamworksTi
tle=%TEAMWORKS_TITLE%</process-help-wiki-url-view>
        <process-help-wiki-url-edit
merge="replace">https://wpsvm10b.svl.ibm.com:9443/processhelp/en/Special:Edit?topic=
%TITLE%&teamworksTitle=%TEAMWORKS_TITLE%</process-help-wiki-url-edit>
    </authoring-environment>

    <common merge="mergeChildren">
        <portal-prefix
merge="replace">https://wpsvm10b.svl.ibm.com:9443/portal</portal-prefix>

        <process-admin-prefix
merge="replace">https://wpsvm10b.svl.ibm.com:9443/ProcessAdmin</process-admin-
prefix>

        <teamworks-webapp-prefix
merge="replace">https://wpsvm10b.svl.ibm.com:9443/teamworks</teamworks-webapp-
prefix>

        <webservices merge="mergeChildren">
            <base-url
merge="replace">https://wpsvm10b.svl.ibm.com:9443/teamworks/webservices</base-url>
            </webservices>
            <coach-designer-xsl-url
merge="replace">https://wpsvm10b.svl.ibm.com:9443/teamworks/coachdesigner/transform/
CoachDesigner.xsl</coach-designer-xsl-url>

        <office merge="mergeChildren">
            <sharepoint merge="mergeChildren">
                <default-workspace-site-description merge="replace"><![CDATA[This
site has been automatically generated for managing collaborations and documents
```

```
for the Lombardi TeamWorks process instance: <#= tw.system.process.name #> <#=
tw.system.process.instanceId #>
```

TeamWorks Link:

```
https://wpsvm10b.svl.ibm.com:9443/portal/jsp/getProcessDetails.do?bpdInstanceId=<#=
tw.system.process.instanceId #>
```

```
]]></default-workspace-site-description>
    </sharepoint>
  </office>
</common>

<server merge="mergeChildren">

  <!-- email properties -->
  <email merge="mergeChildren">
    <mail-template merge="mergeChildren" >
      <client-link
merge="replace">https://wpsvm10b.svl.ibm.com:9443/teamworks</client-link>
      </mail-template>
    </email>

    <repository-server-url
merge="replace">https://qastress3.svl.ibm.com:9443/ProcessCenter</repository-server-
url>
    <server-port merge="replace">9443</server-port>
  </server>

</properties>
```

## SSL communication between Process Server and Process Center Server

---

Make sure that the SSL communication between the Process Server and the Process Center Server work by adding the certificates to each other's trust store.

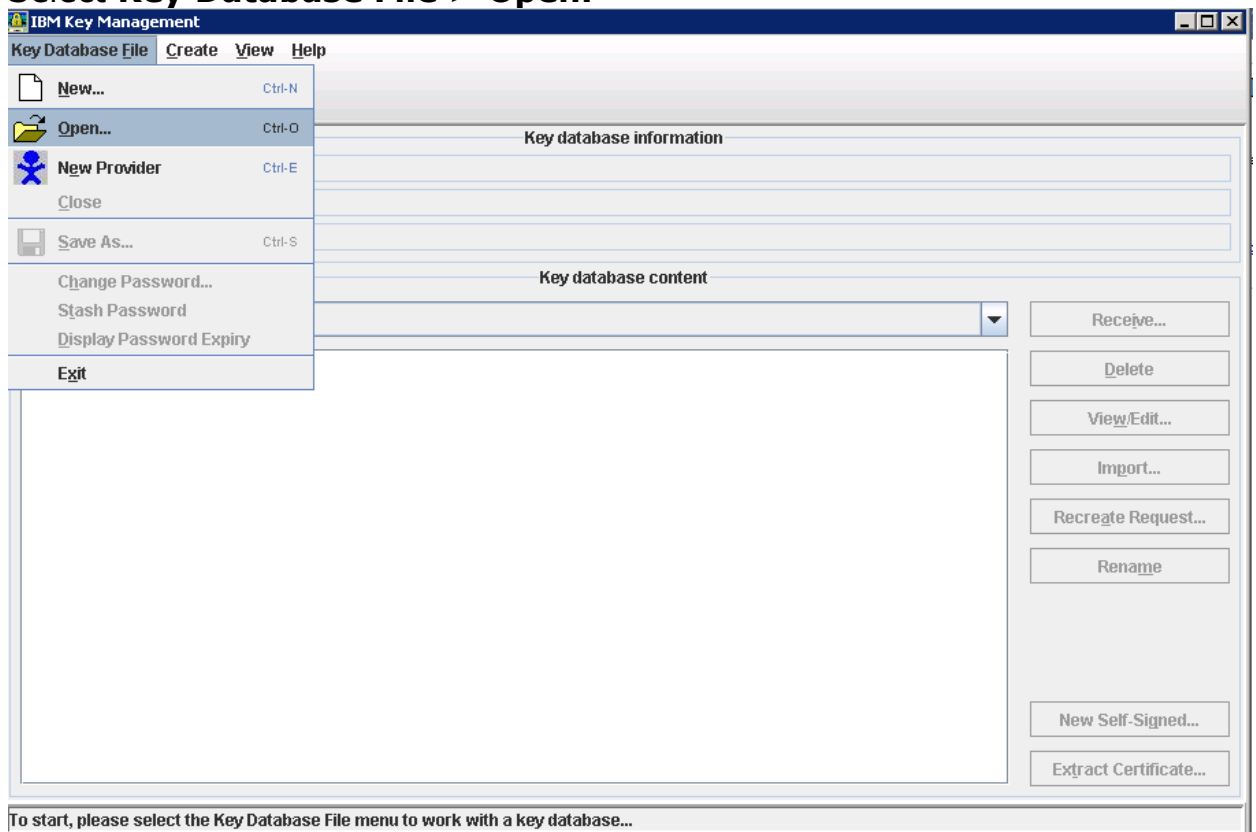
**Important:** If the Process Center and clustered runtime servers were started before you begin to configure SSL, and the LSW\_SERVER table on the Process Center database contains the non-secure port of the Process Server, you must delete the Process Server from the Process Center repository:

1. Stop Process Server.
  2. From the Servers tab on the Process Center Console, delete Process Server from the Process Center repository.
  3. Delete the record with the non-secure port from the LSW\_SERVER table on the Process Center database.
  4. Start Process Server.
1. Install the Process Server signer certificate in to the Process Center trust store.
    - a) Invoke Process Center: WAS\_HOME/java/jre/bin/ikeyman.

```
C:\ Command Prompt
Microsoft Windows [Version 5.2.3790]
(C) Copyright 1985-2003 Microsoft Corp.

C:\Documents and Settings\Administrator>d:
D:\>cd bpm4302\bin
D:\bpm4302\bin>cd ..\java\jre
D:\bpm4302\java\jre>cd bin
D:\bpm4302\java\jre\bin>ikeyman
D:\bpm4302\java\jre\bin>ikeyman
```

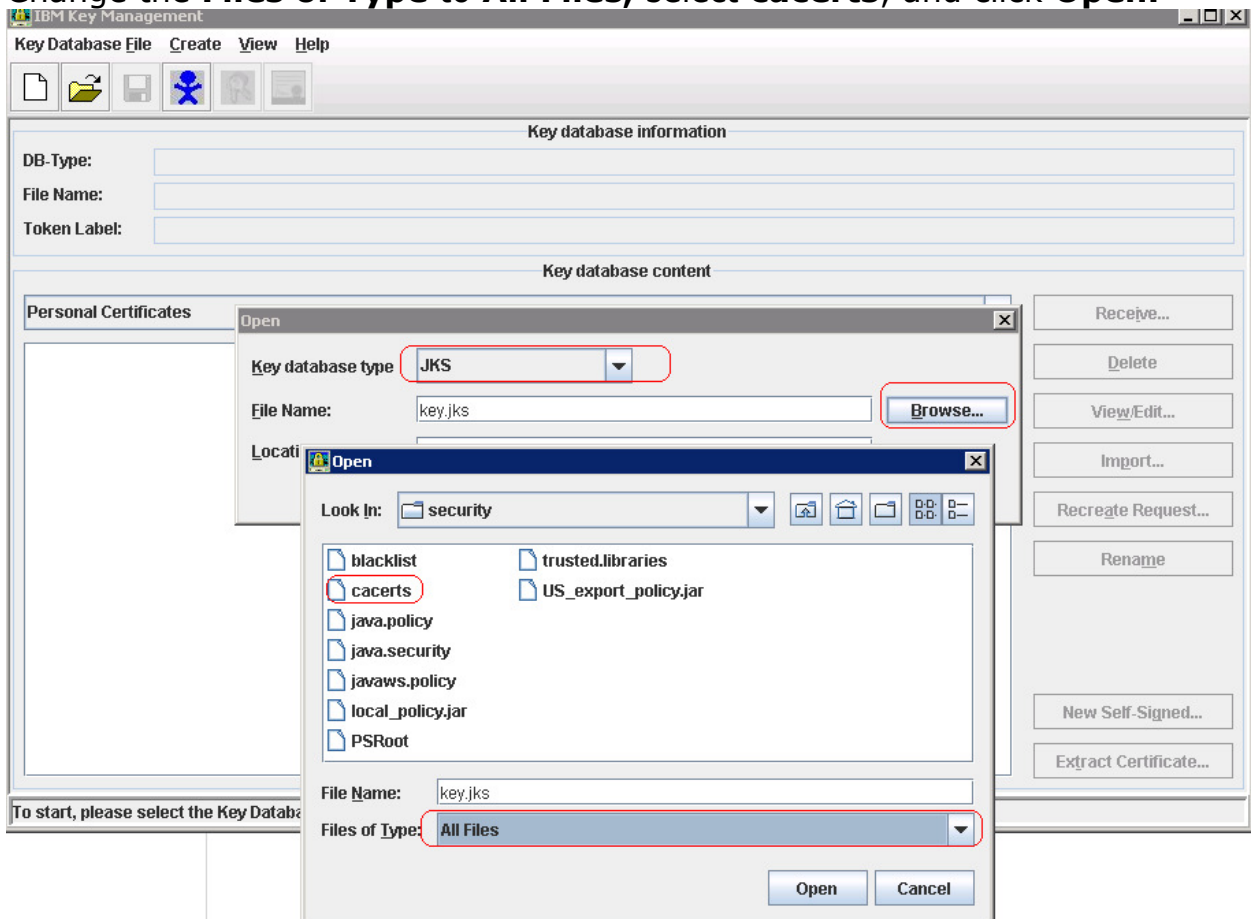
b) Select **Key Database File > Open**.



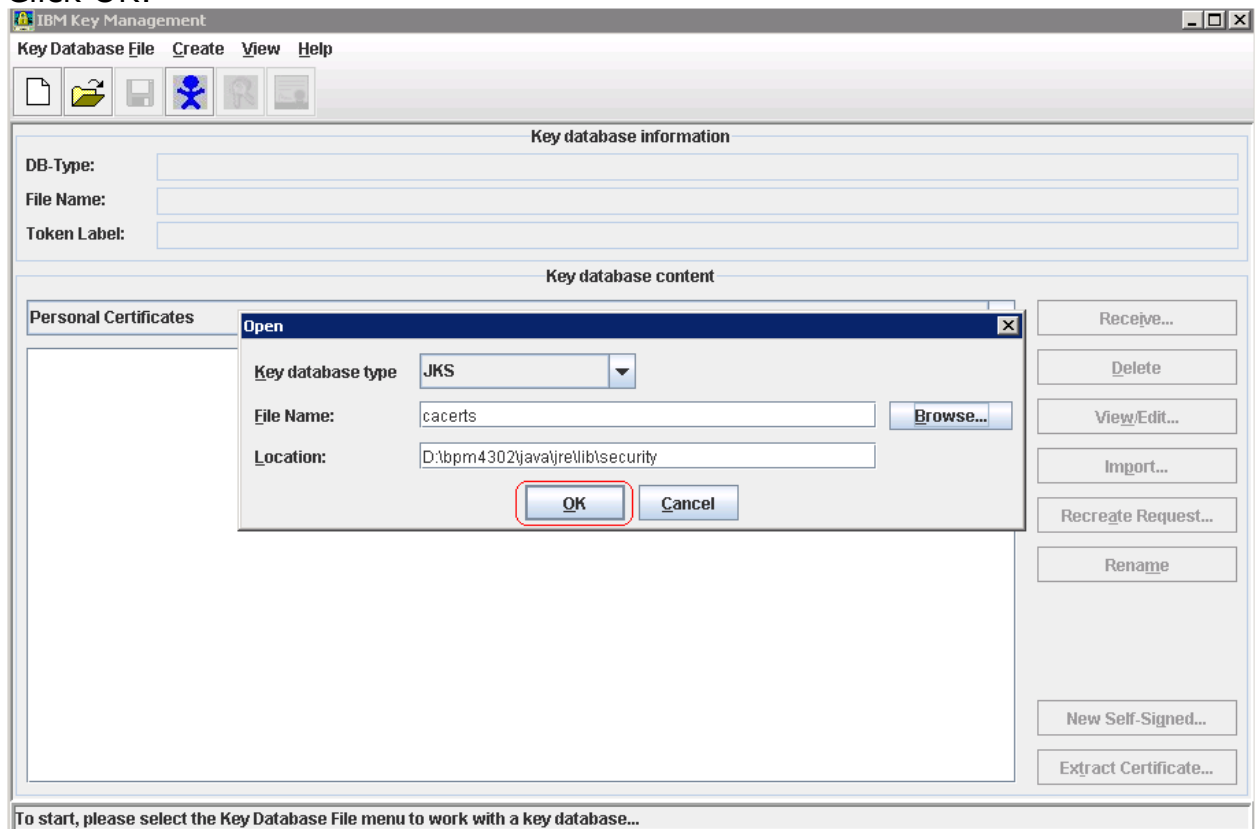
c) Set the Key database type to JKS.

d) Click **Browse** and set the file location to *WAS\_HOME/java/jre/lib/security*.

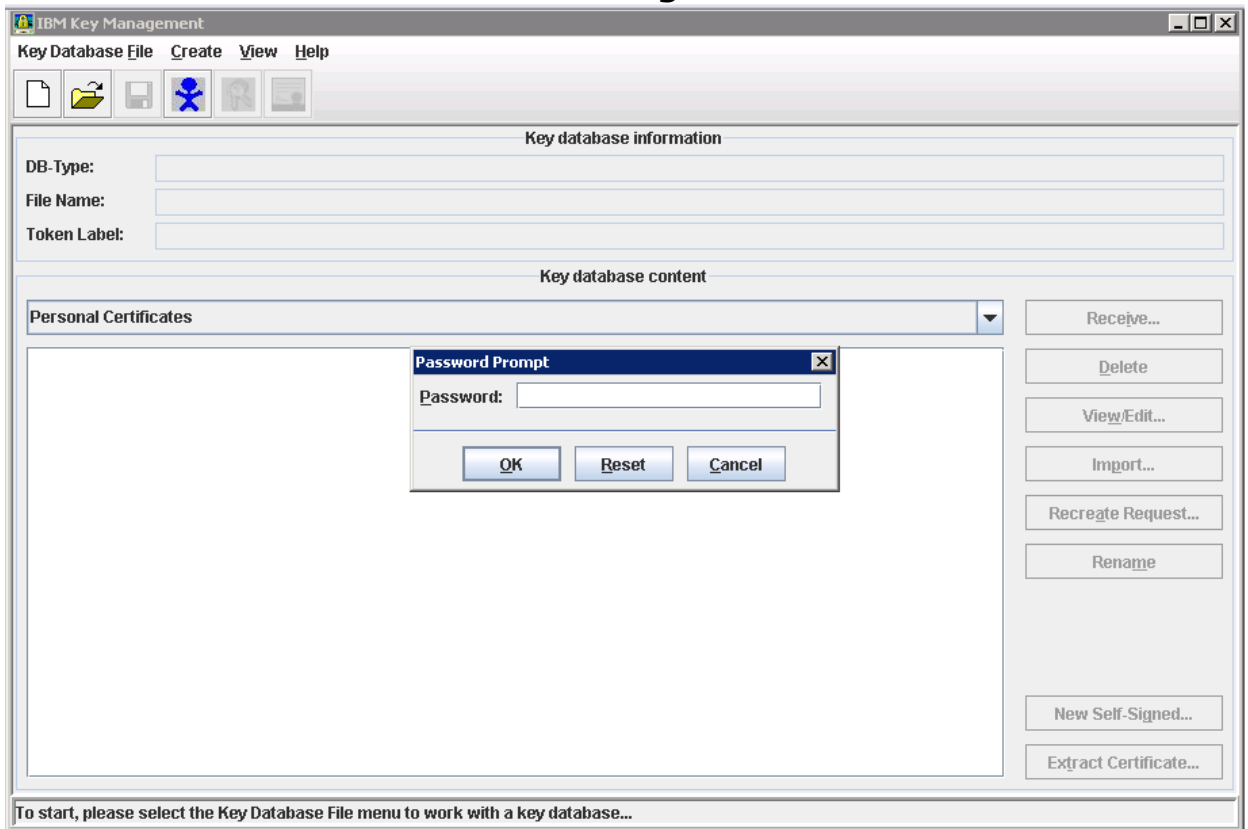
e) Change the **Files of Type** to **All Files**, select **cacerts**, and click **Open**.



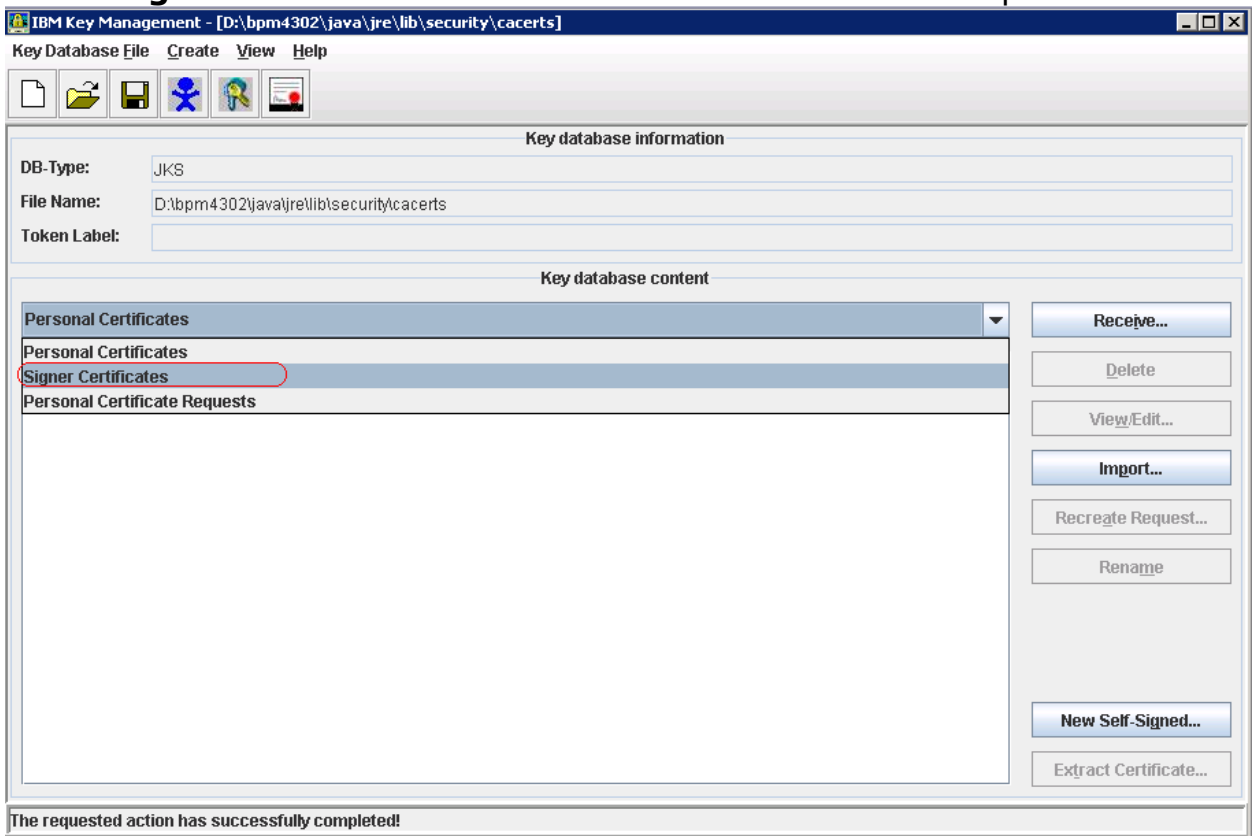
f) Click **OK**.



g) Provide the **Password**. Default is **changeit**.



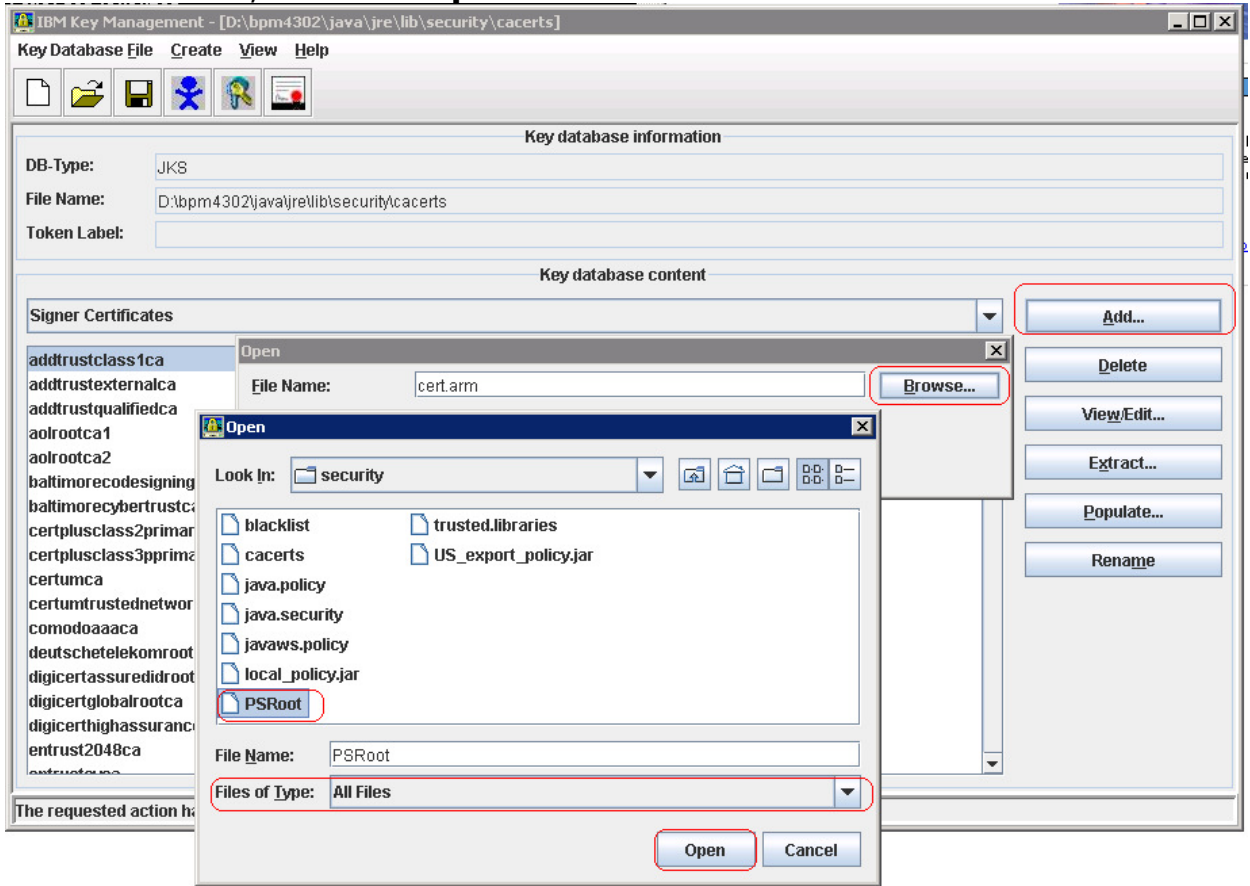
h) Select **Signer Certificates** from the Personal Certificates dropdown menu.



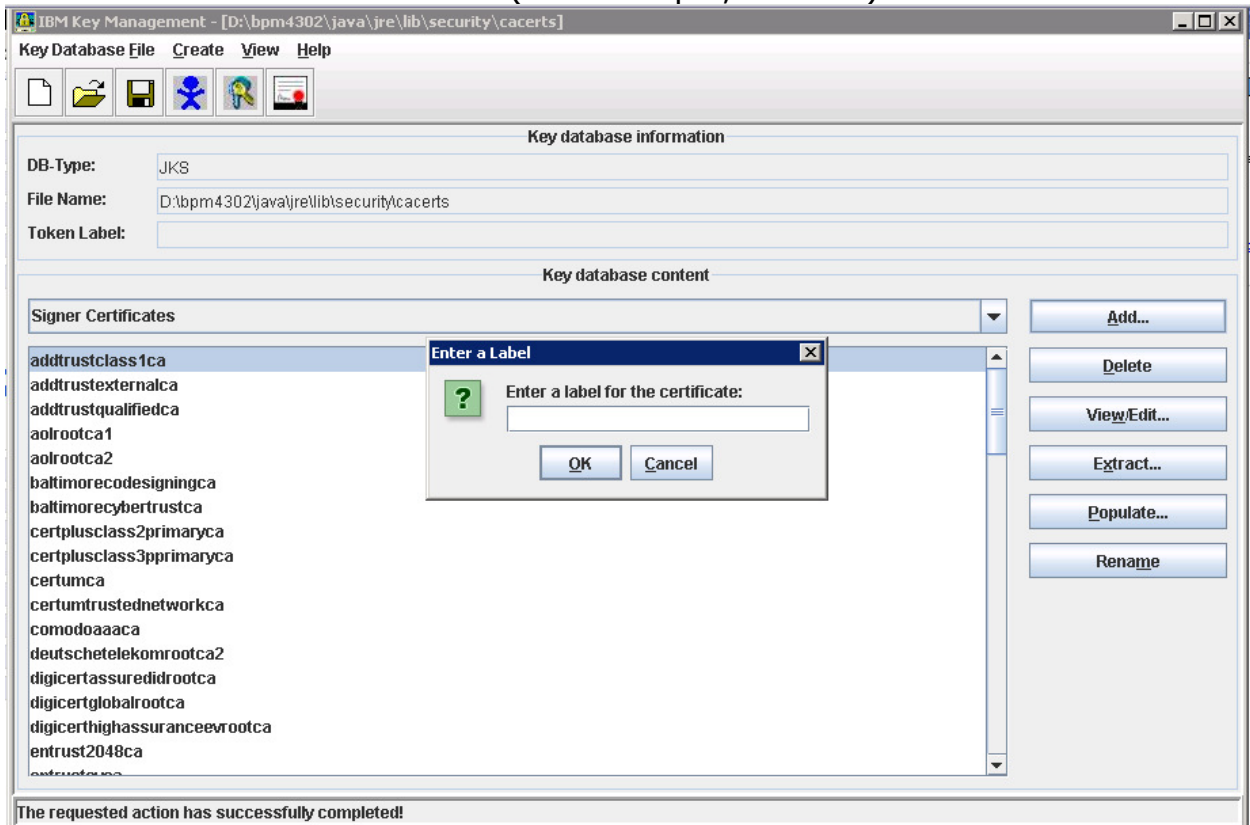
i) Click **Add**.



- j) Change the **Files of Type** to **All Files**, select the location of the Process Server DER file, and click **Open**.



- k) Enter a label for the certificate (For example, PS-root) and click **OK**.



- l) Close the ikeyman window.
2. Install the Process Center signer certificate in to the Process Server trust store.
  - a) Invoke Process Server `WAS_HOME/java/jre/bin/ikeyman`.
  - b) Set the Key database type to JKS.
  - c) Click **Browse** and set the file location to `WAS_HOME/java/jre/lib/security`.
  - d) Change the **Files of Type** to **All Files**, select **cacerts**, and click **Open**.
  - e) Click **OK**.
  - f) Provide the **Password**. Default is **changeit**.
  - g) Select **Signer Certificates** from the Personal Certificates dropdown menu.
  - h) Click **Add**.
  - i) Change the **Files of Type** to **All Files**, select the location of the Process Center DER file, and click **Open**.
  - j) Enter a label for the certificate (For example, Process Center-root) and click **OK**.
  - k) Close the ikeyman window.

## **Disable all unsecured ports on all Process Center and Process Server servers.**

---

1. Log in to the WebSphere administrative console and navigate to **Servers > Server Types > WebSphere Application Servers**.
2. For each server, click on the server link, then go to **Container Settings > Web Container Settings > Web container transport chains**.
3. Click on each link for the unsecured port, for example, **HttpQueueInboundDefault**, and deselect the **Enabled** checkbox.
4. Repeat these steps for all WebSphere Application Server cluster members on all nodes. For example, if the `xxx.AppTarget` cluster has members on Node1 and Node2, these steps must be performed on both nodes.

**Application servers** > **KPDE01.AppTarget.gastress3Node01.0** > **Web container transport chains**

Use this page to view and manage a transport chain. Transport chains represent network protocol stacks that are operating within a client or server.

Preferences

New Delete

Select Name Enabled Host Port SSL Enabled

You can administer the following resources:

Select	Name	Enabled	Host	Port	SSL Enabled
<input type="checkbox"/>	<a href="#">HttpQueueInboundDefault</a>	Disabled	*	9080	Disabled
<input type="checkbox"/>	<a href="#">HttpQueueInboundDefaultSecure</a>	Enabled	*	9443	Enabled
<input type="checkbox"/>	<a href="#">WCInboundAdmin</a>	Disabled	*	9062	Disabled
<input type="checkbox"/>	<a href="#">WCInboundAdminSecure</a>	Enabled	*	9045	Enabled
<input type="checkbox"/>	<a href="#">WCInboundDefault</a>	Disabled	*	9080	Disabled
<input type="checkbox"/>	<a href="#">WCInboundDefaultSecure</a>	Enabled	*	9443	Enabled

Total 6

## Verify the Process Server 100Custom.xml file changes in the server

1. Open the TeamWorksConfiguration.running.xml file, which is located in the `WAS_HOME\profiles\PS dmgr profile name\config\cells\cell name\nodes\node name\servers\app target server name\process-server\` directory. Confirm the changes in the 100Custom.xml file. For example:  
`c:\BPM\profiles\PSDmgr01\config\cells\gascogne01Cell\nodes\gascogneNode01\servers\PS1.AppTarget.PS1Node1.0\process-server\TeamWorksConfiguration.running.xml`

## Verify the Process Center 100Custom.xml file changes in the server

1. Open the TeamWorksConfiguration.running.xml file, which is located in the `WAS_HOME\profiles\PC dmgr profile name\config\cells\cell name\nodes\node name\servers\app target server name\process-center\` directory. Note: The TeamWorksConfiguration.running.xml file may not be available in every environment. Confirm the changes in the 100Custom.xml. For example:  
`c:\BPM\profiles\PCDmgr01\config\cells\gascogne01Cell\nodes\gascogneNode01\servers\PC1.AppTarget.PC1Node1.0\process-center\TeamWorksConfiguration.running.xml`

### \*Note:

Depending on your environment, you may need to repeat the following steps for the personal certificate:

- Export the Process Center **root signer certificate**
- Export the Process Server **root signer certificate**
- Install Process Center signer certificate in Process Server trust store
- Install Process Server signer certificate in Process Center trust store

## Restart the Process Server and Process Center servers

---

6. Use admin console to stop the clusters.
7. Stop the node agent and deployment manager.
8. Re-start the node agent.
9. Re-start the deployment manager.
10. Use Admin console to start the clusters.

### Verify your configuration

1. Log in to the Process Center console using an https connection.
2. From the Server tab, select **runtime server**, and click **configure server**. Confirm that it is opened in a secure browser with https.

## Importing an SSL security certificate into Integration Designer

---

In order to connect to an HTTPS enabled server, you need to import the SSL security certificate (X509Certificate ) for the server. The steps described in this procedure are performed using Internet Explorer.

1. Launch your web browser and enter `https://hostname:secure_port/ProcessCenter/login.jsp` where hostname is the fully-qualified domain name of the process center server, and secure\_port is the process center secure SSL port number.
2. On the Security Alert window, click View Certificate.
3. On the Certificate window, click the Details tab.
4. Click Copy to File to specify where to save the certificate file on your system.
5. In the wizard, click Next, accept the default values, and then click Next again.
6. Enter a file name for the security certificate, for example, `pc_cert.cer`, and click Next.
7. Click Finish. After you have created the SSL certificate, you can import it into the Java JRE that you will be using for Integration Designer.
8. Copy the certificate to `IIDInstall\jdk\jre\bin` where IIDInstall is the directory where you installed Integration Designer.
9. Switch to the same location in the command line and run the keytool command line as follows:
  - a. `keytool.exe -import -v -file <certificate file> -keystore ..\lib\security\cacerts`  
If you previously imported SSL certificates into the Integration Designer, add the -alias <key name> parameter to specify a different key name to avoid name conflicts. The default value is mykey.
  - b. Enter the keystore password: changeit (this is usually the default password).
  - c. Enter y at the prompt to trust the certificate.

## Configure Process Designer to access Process Center using SSL

---

1. Navigate to the Process Designer installation location. For example:  
C:\W751\IBMProcessDesigner751.
2. Edit the eclipse.ini file
3. Locate `-Dcom.ibm.bpm.processcenter.url` and change [http://PC\\_hostname:non\\_secured\\_port](http://PC_hostname:non_secured_port) to [https://PC\\_hostname:secured-port](https://PC_hostname:secured-port).

```

eclipse.ini - Notepad
File Edit Format View Help
-install
file:.
-configuration
configuration
-name
IBM BPM
-consoleLog
-clean
-vm
./AppClient/java/jre/bin/javaw.exe
-vmargs
-Xms128m
-Xmx512m
-XX:PermSize=128m
-XX:MaxPermSize=128m
-Dcom.ibm.CORBA.ConfigURL="file:resources/sas.client.props"
-Dcom.ibm.SSL.ConfigURL="file:resources/ssl.client.props"
-Djava.security.auth.login.config="file:resources/wsjaas_client.conf"
-Djava.naming.factory.initial=com.ibm.websphere.naming.wsnInitialContextFactory
-Dcom.ibm.bpm.processcenter.url=https://wpsvm10a.svl.ibm.com:9444
-Djava.ext.dirs=".;./AppClient/java/jre/lib/ext;./AppClient/lib;./AppClient/plugins"
-Dcom.lombardisoftware.core.TWEnvironment.environmentName=AUTHORING_ENVIRONMENT
-DentityExpansionLimit=2147483647

```

4. Save and close the eclipse.ini file.
5. Launch the Process Designer and verify access to the Process Center using SSL.
6. Optional: If you have created and configured your own trust store, you must modify one of the following configuration files to point to the correct location for your trust store:
  - Standalone configuration: `NodeDefaultTrustStore`
  - Network deployment configuration: `CellDefaultTrustStore`

Note: When the Process Designer is downloaded, by default a `trust.p12` file will be included with the zip file. The `trust.p12` file that is included reflects what is specified for the `NodeDefaultTrustStore` (stand-alone server) or `CellDefaultTrustStore` (network deployment environment) found in the Administrator console under **Global Security > SSL certificate and key management > Key stores and certificates**. The `trust.p12` file from that server location is copied and the password is set to `WebAS` before it is included in the zip file. If you have configured a custom trust store with a different password or have multiple trust stores, you must manually copy the `trust.p12` file from the server to your Process Designer install directory and update the `-Djavax.net.ssl.trustStoreType`, `-Djavax.net.ssl.trustStore`, and `-Djavax.net.ssl.trustStorePassword` properties in the `eclipse.ini` file.

7. Verify your configuration.
  - a. Log in to the Process Designer.
  - b. Right click the Process Apps tab and select Properties.
  - c. Confirm that the Address: (URL) section contains the `https://PC`  
`hostname:secured port secure address`.