Avaya Solution & Interoperability Test Lab

Configuring Lombardi Teamworks with Avaya Communications Process Manager to Provide a Solution for Avaya Communications Enabled Business Processes - Issue 1.0

Abstract

These Application Notes describe the procedures for configuring Lombardi Teamworks with Avaya Communications Process Manager (CPM) to provide a solution for Avaya Communications Enabled Business Processes (CEBP). For these Application Notes, a sample Avaya CEBP solution for processing fraudulent credit card transactions is presented.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

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1. Introduction

These Application Notes describe the procedures for configuring Lombardi Teamworks with Avaya Communications Process Manager (CPM) to provide a solution for Avaya Communications Enabled Business Processes (CEBP). For these Application Notes, a sample Avaya CEBP solution for processing fraudulent credit card transactions is presented.

Figure 1 illustrates the sample configuration utilized for these Application Notes. Lombardi Teamworks is a Business Process Management (BPM) system that, when used in conjunction with Avaya CPM, provides continuous closed-loop communications for Avaya CEBP. Lombardi Teamworks manages the overall process, tasks, etc. and utilizes Avaya CPM for continuous closed-loop communications. Lombardi Teamworks was installed [**4**] on a PC with the Microsoft Windows Server 2003 R2 operating system (Host or Local PC). Additionally, the Host PC also had the following installed:

- Oracle Database 10g Enterprise Edition
- Java® 2 Runtime Environnent, Standard Edition
- JBoss® Application Server

Avaya CPM is a Service-Oriented Architecture (SOA) based platform that exposes web services to enable continuous, closed-loop communications. All Avaya CEBP communications are continuous and "closed loop", e.g., information about actions taken by users can be communicated back to the originating system that triggers an event, affecting the business process in real-time. Once an action is set in motion, Avaya CEBP helps assure that the business process keeps moving toward resolution. Refer to [**1**] and [**2**] for required/optional hardware/software components regarding Avaya CPM deployments.

For this sample configuration, Avaya CPM was comprised of a server hosting the Avaya CPM software application, Avaya SIP Enablement Services, Avaya Meeting Exchange Express Edition (Meeting Exchange), Avaya Voice Portal and Nuance RealSpeak. The Avaya Voice Portal VPMS and MPP components were configured on one physical server. Avaya CPM provided notification for fraudulent credit card transactions to users, where a user has an account defined on Avaya CPM.

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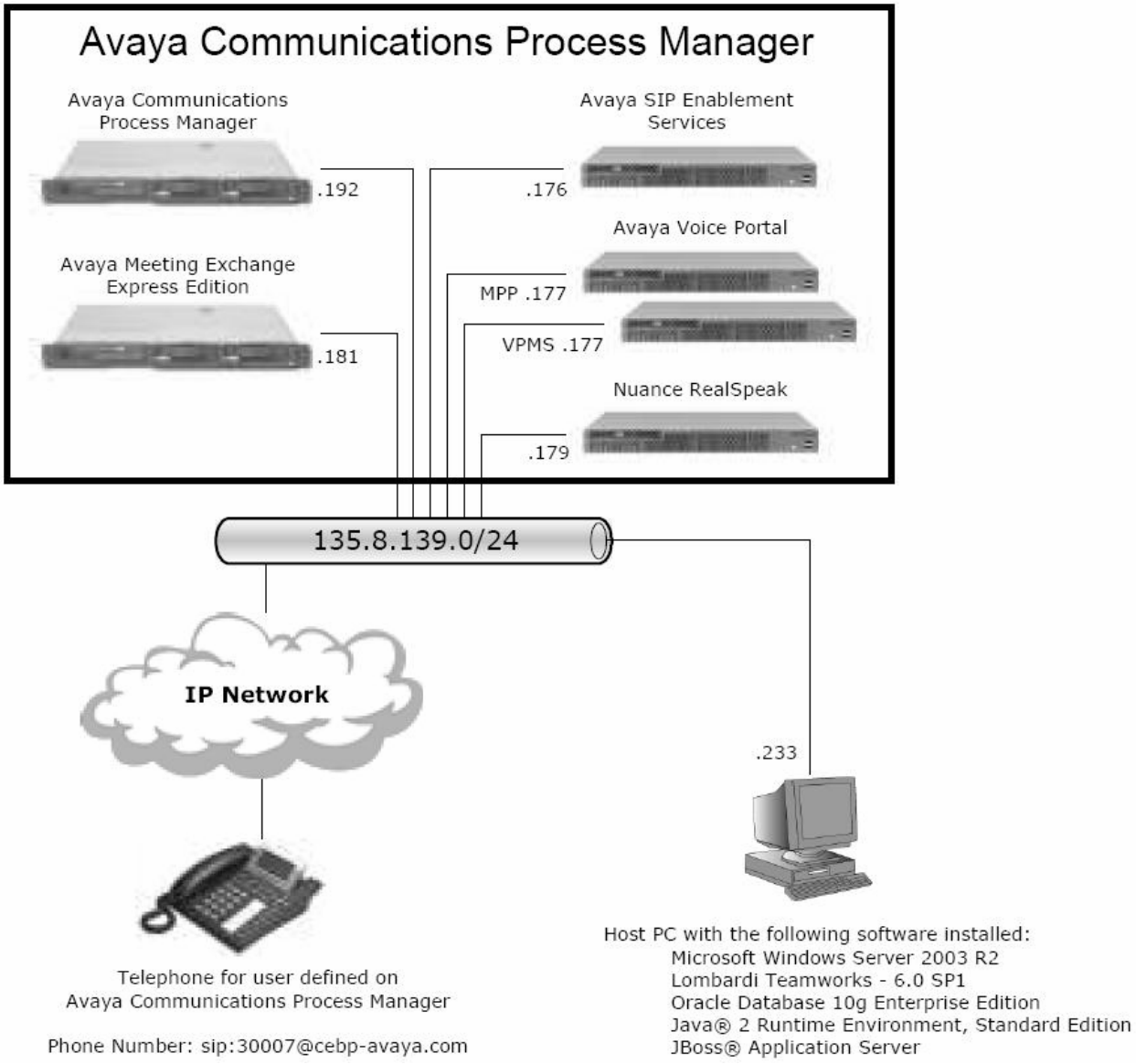

Figure 1: Sample Configuration

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2. Equipment and Software Validated

The following equipment and software versions were used for this sample configuration:

Equipment	Software Version
Host PC - Microsoft Windows Server 2003 R2 • Lombardi Teamworks - 6.0 SP1 • Oracle Database 10g Enterprise Edition • Java® 2 Runtime Environnent, Standard Edition • JBoss® Application Server	 6.0.1 10.2.0.1.0 build 1.5.0_14-b03 4.0.5
Avaya Communications Process Manager - 2.1 • Avaya Communications Process Manager • Avaya SIP Enablement Services • Avaya Meeting Exchange Express Edition • Avaya Voice Portal • Nuance RealSpeak	 cpm 2.1.53 4.0-04.0.033.6 2.5.60.0 4.0.0.0.2901 4.0.10

Table 1: Equipment and Software Versions

3. Avaya Communications Process Manager Configuration

This section describes the configuration utilized by Avaya CPM to interoperate with Lombardi Teamworks. For this sample configuration, it is assumed that Avaya CPM is provisioned to communicate with Avaya communication resources, e.g., Avaya Voice Portal, Avaya Meeting Exchange and Avaya SIP Enablement Services. Refer to [**1**] and [**2**] for additional information regarding the administration of Avaya CPM. Avaya CPM has two user interfaces:

- Web Portal - A web-based thin client that lets users manage their account, e.g., provision contact rules so their notifications are based on their preferences and availability. For this sample configuration, the Web Portal interface was used to invoke web services [**2**] to both users and transient users. The Web Portal is accessed over a secure connection by entering **https://<Avaya CPM IP Address or Fully Qualified Domain Name (FQDN)>** into a web browser's Uniform Resource Locator (URL) bar.
- Operations Administration and Maintenance (OAM) - A web-based thin client user interface that lets a system administrator configure Avaya CPM with connectivity to Avaya communication resources. The OAM interface also provides access to system status, statistics, licenses, security certificates, logs, and alarms. For this sample configuration, the OAM interface was used to provision Avaya CPM for dial-in services. The OAM interface is accessed over a secure connection by entering **https://<Avaya CPM IP Address or FQDN>/admin** into a web browser's URL bar.

***Note**: Some features described in these Application Notes require licensing. If a required feature is not enabled or there is insufficient capacity, contact an authorized Avaya account representative to make the appropriate changes.*

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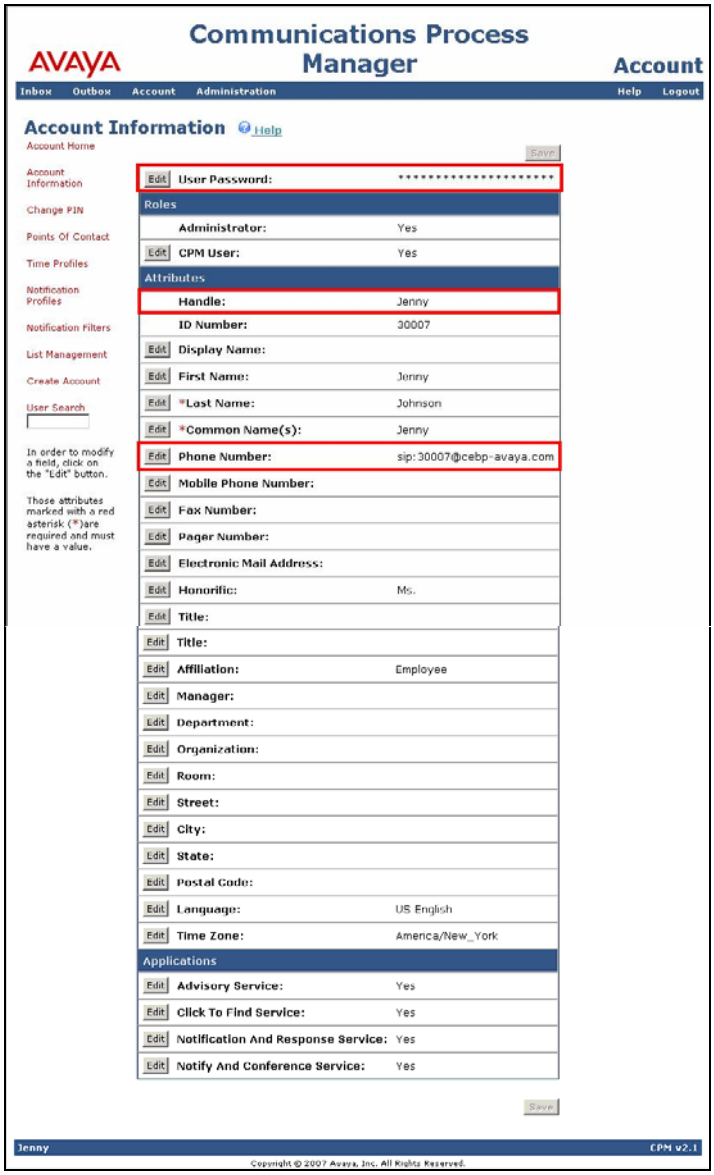
3.1. Verify Avaya Communications Process Manager

This section describes the steps for verifying a user account that has been provisioned on Avaya CPM. It is assumed this account is operational and has an associated telephone configured.

Step	Description
3.1.1	From the Avaya CPM OAM interface, open a user account as follows: • Click **Account ➔ Account Information**. • From the **Account Information** page, Note the **Handle** and **User Password** [***Not Shown***, ***30007***] fields respectively. This user should also have a **Phone Number** provisioned. 

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4. Lombardi Teamworks Configuration

This section describes the configuration for enabling Lombardi Teamworks to interoperate with Avaya CPM. The configuration in this section assumes that Lombardi Teamworks is installed and has network connectivity with Avaya CPM. Refer to **Appendix B** for information regarding installation requirements for Lombardi Teamworks. Refer to [**4**] for information regarding the administration of Lombardi Teamworks.

4.1. Install Avaya Specific System Components

This section describes the steps for installing Avaya specific system components via graphical user interface provided in the Authoring Environment. These components will enable processes for processing fraudulent credit card transactions.

Step	Description
4.1.1	Repeat the steps in **Appendix B3** to install Avaya specific system components. Contact an authorized Avaya account representative to obtain the Avaya settings file.

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4.2. Web Services Description Language and XML Schema

This section describes the steps to account for the directory where the Web Services Description Language (WSDL) and XML schema files are located on the Host PC. These files are utilized by the Avaya Specific Components installed in **Section 4.1**. Contact an authorized Avaya account representative to obtain theses files.

Step	Description
4.2.1	Copy the WSDL and XML schema files to a directory on the Host PC. For this sample configuration, the files were copied to: **C:\Temp**. The directory where the files are copied must match the directory denoted by the **schemaLocation** variable in the files. • Open the **NotificationAndResponseService.xsd** file with a text editor to verify the setting for the **schemaLocation** variable. o If the root directory where the WSDL files were copied is not equal to the **schemaLocation** variable, edit the **schemaLocation** variable appropriately and save the changes.
	<?xml version="1.0" encoding="UTF-8"?> <!-- Definition of the common types that are used in various Diamond Services. --> <xsd:schema targetNamespace="http://xml.avaya.com/diamond/schema/2007/07/**NotificationAndResponseService**" xmlns="http://www.w3.org/2001/XMLSchema" xmlns:externalcommon="http://xml.avaya.com/diamond/schema/2007/07/external-common" xmlns:nrsSchema="http://xml.avaya.com/diamond/schema/2007/07/NotificationAndResponseService" xmlns:xsd="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified"> <!-- minor_version=1 --> <xsd:import namespace="http://xml.avaya.com/diamond/schema/2007/07/external-common" **schemaLocation**="file:///**C:/Temp**/cpmwsdl/services/external-common.xsd"/>
4.2.2	Repeat **Step 4.2.1** for the following files: • NotificationAndResponseService.wsdl • SessionIdGenerator.wsdl • AdvisoryService.xsd • AdvisoryService.wsdl

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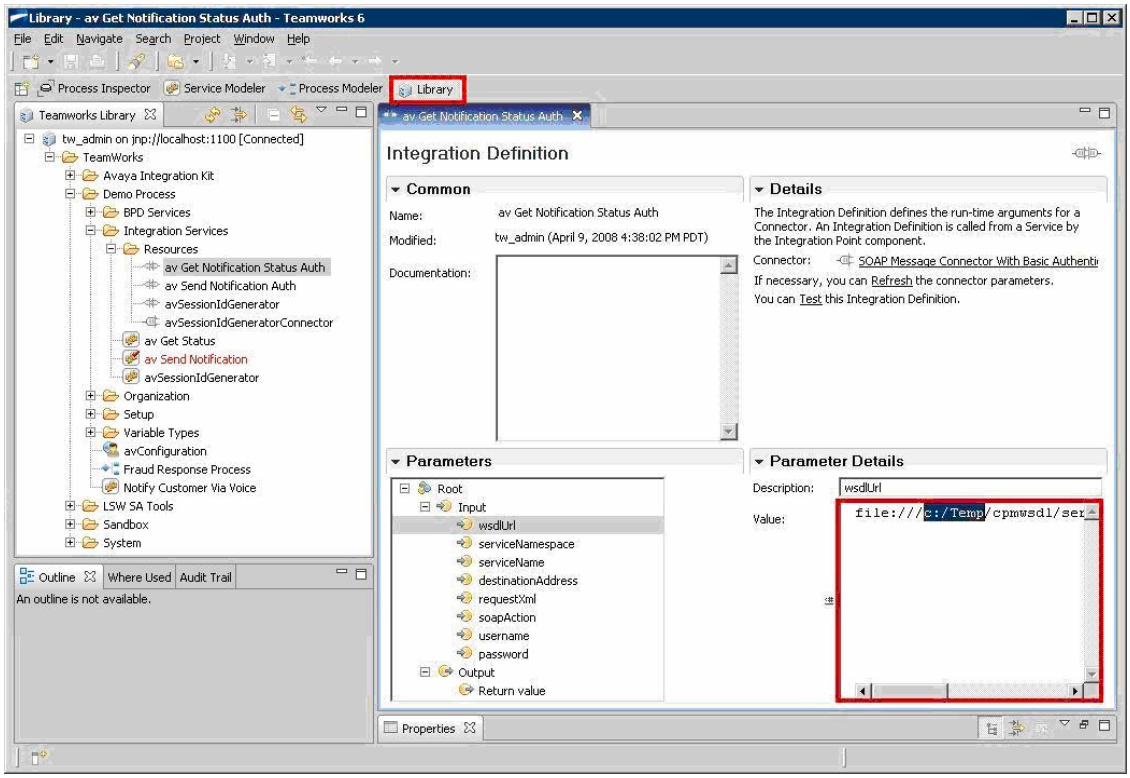
4.3. Modify Avaya Specific Components

This section describes the steps to modify the Avaya Specific Components installed in **Section 4.1**. These steps enable Avaya CPM to process fraudulent credit card transactions delivered from Lombardi Teamworks.

Step	Description
4.3.1	From the Authoring Environment, verify the configuration as follows: • If the Process Server is not initialized, start the Process Server (see **Appendix C**). • Start the Authoring Environment and then log on to Lombardi Teamworks as an administrative user [**1**]. • From the **Library** tab, select **TeamWorks ➔ Demo Processes ➔ Integration Services ➔ Resources ➔ av Get Notification Status Auth**. • Verify the **wsdlUrl** parameter for the **av Get Notification Status Auth** resource corresponds to the root directory (**c:/Temp**) where the WSDL and XML schema files were copied (see **Section 4.2**). ***Note**: If modifications are necessary, right-click on the resource name (**av Get Notification Status Auth**) and select **Check Out**. Save changes by selecting **File ➔ Save** from the Authoring Environment main menu. Then right-click on the resource name and select **Check In**.* 

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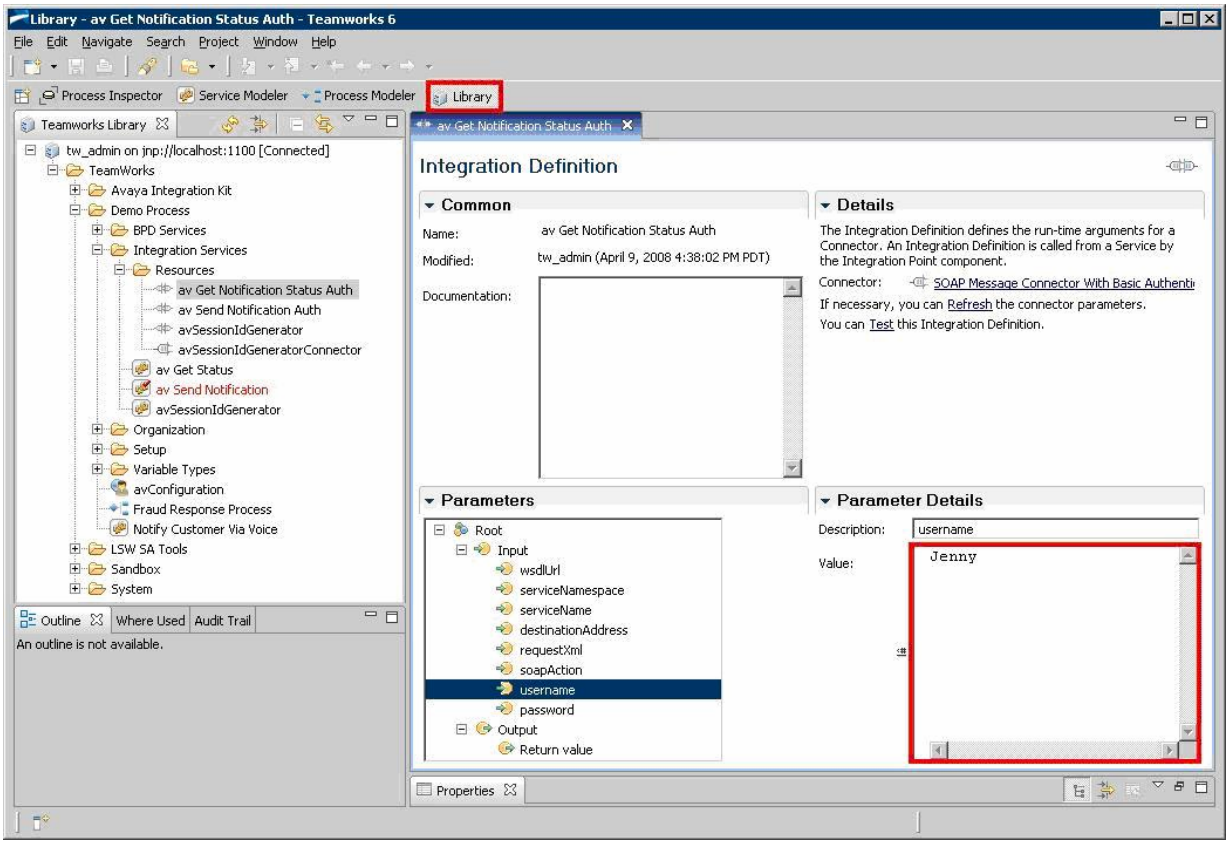
Step	Description
4.3.2	Verify the **username** parameter corresponds to the user configured on Avaya CPM (see **Section 3.1**). ***Note**: If modifications are necessary, right-click on the resource name (**av Get Notification Status Auth**) and select **Check Out**. Save changes by selecting **File ➔ Save** from the Authoring Environment main menu. Then right-click on the resource name and select **Check In**.* 

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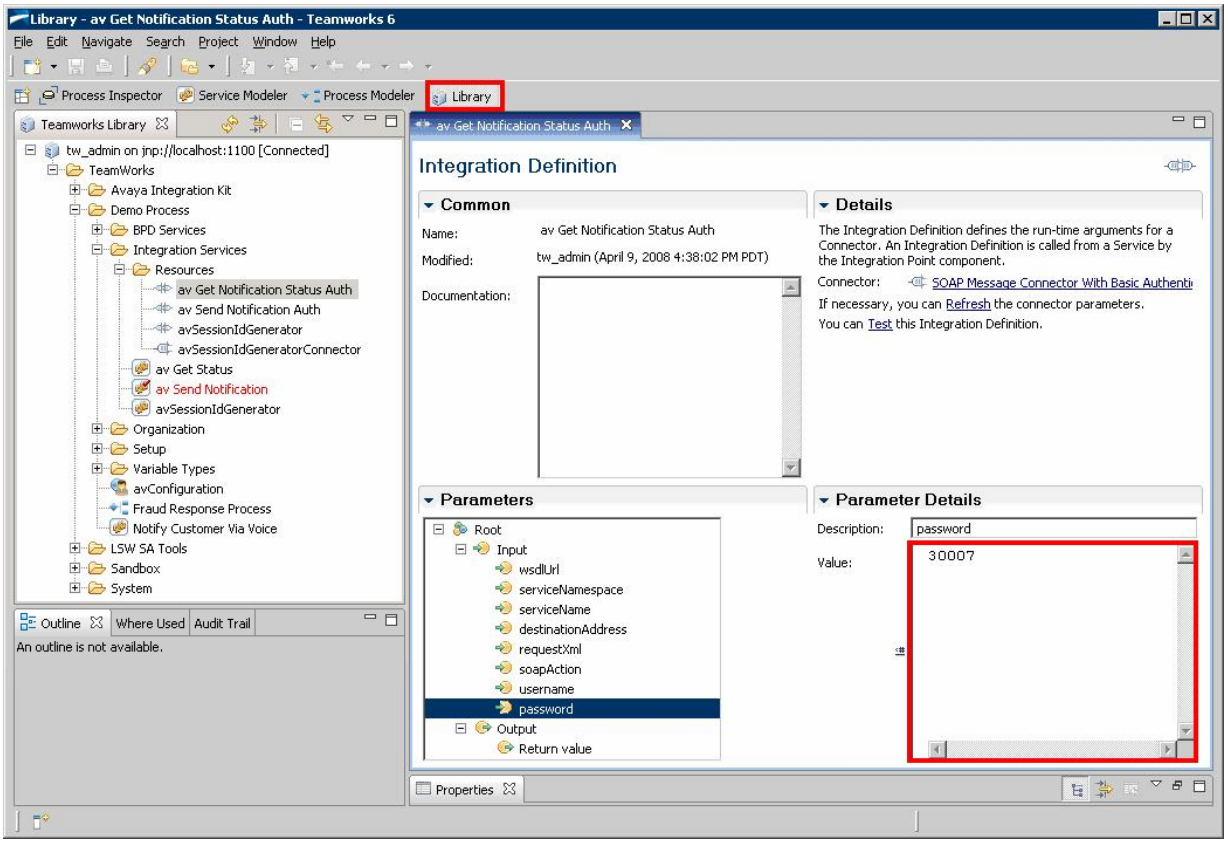
Step	Description
4.3.3	Verify the **password** parameter corresponds to a user account provisioned on Avaya CPM. For this sample configuration, the user account displayed in **Step 3.1.1** was utilized. ***Note**: If modifications are necessary, right-click on the resource name (**av Get Notification Status Auth**) and select **Check Out**. Save changes by selecting **File ➔ Save** from the Authoring Environment main menu. Then right-click on the resource name and select **Check In**.* 
4.3.4	Repeat the **Steps 4.3.1 - 4.3.3** for the **av Send Notification Auth** resource.

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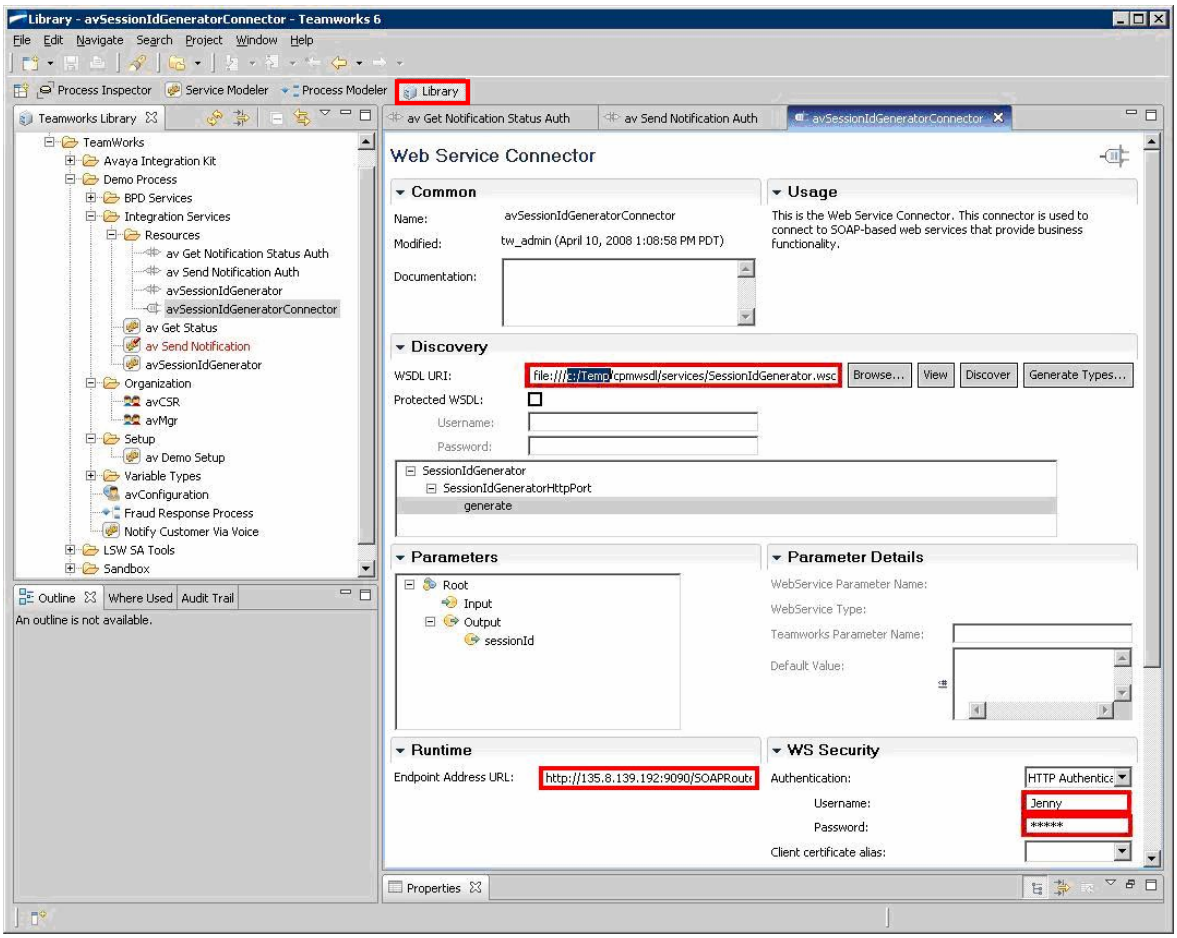
Step	Description
4.3.5	From the **Library** tab, select **TeamWorks ➔ Demo Processes ➔ Integration Services ➔ Resources ➔ avSessionIdGeneratorConnector**. • Verify the **WSDL URI** entry corresponds to the root directory (**c:/Temp**) where the WSDL and XML schema files were copied (see **Section 4.2**). • Verify the **Endpoint Address URL** entry corresponds to the IP address or FQDN of Avaya CPM. Note port **9090** is used and must be open on Avaya CPM (see **Step 6.2**). For this sample configuration, the following value was entered: **http://135.8.139.192:9090/SOAPRouter/services/SessionIdGeneratorHttpPort**. • Verify the **Username** and **Password** parameters correspond to the user configured on Avaya CPM (see **Section 3.1**). ***Note**: If modifications are necessary, right-click on the resource name (**avSessionIdGeneratorConnector**) and select **Check Out**. Save changes by selecting **File ➔ Save** from the Authoring Environment main menu. Then right-click on the resource name and select **Check In**.* 

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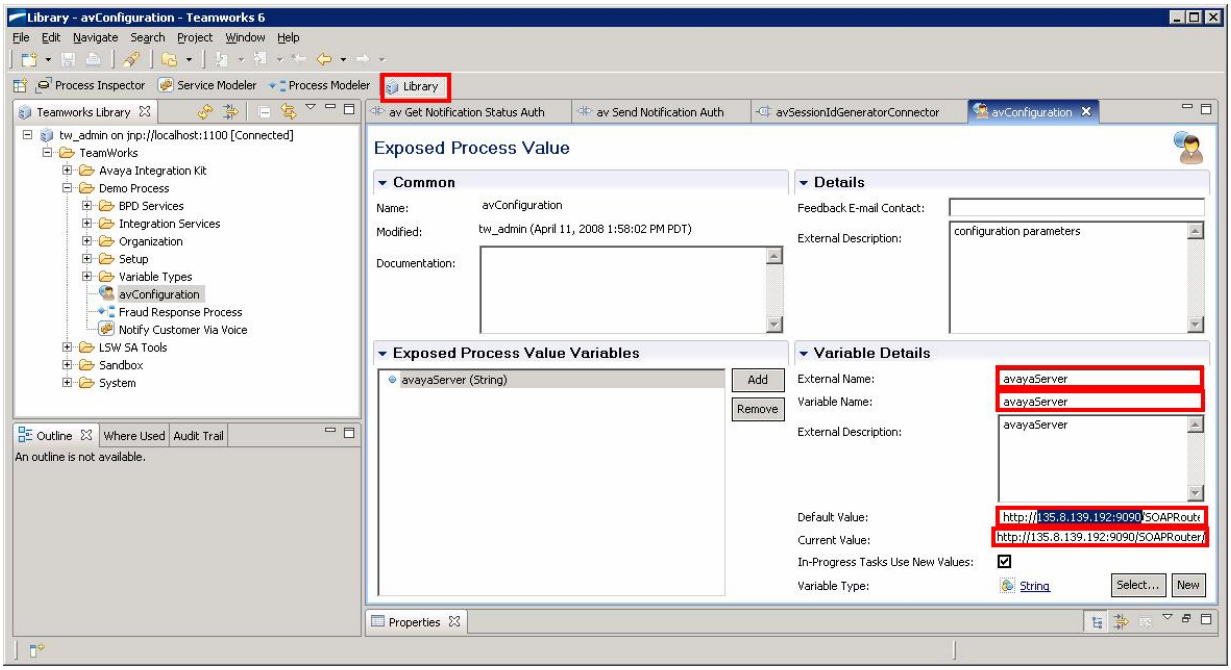
Step	Description
4.3.6	From the **Library** tab, select **TeamWorks ➔ Demo Processes ➔ avConfiguration**. • Verify the **Exposed Process Value** variable is configured. For this sample configuration, it was set to **avayaServer**. • Verify the **Default Value** and **Current Value** entries correspond to the IP address or FQDN of Avaya CPM. Note port **9090** is used and must be open on Avaya CPM (see **Step 6.2**). For this sample configuration, the following value for the **Default Value** was entered: **http:// 135.8.139.192:9090/SOAPRouter/services/NotifyAndRespondService**. ***Note**: If modifications are necessary, right-click on the resource name (**avConfiguration**) and select **Check Out**. Save changes by selecting **File ➔ Save** from the Authoring Environment main menu. Then right-click on the resource name and select **Check In**.* 

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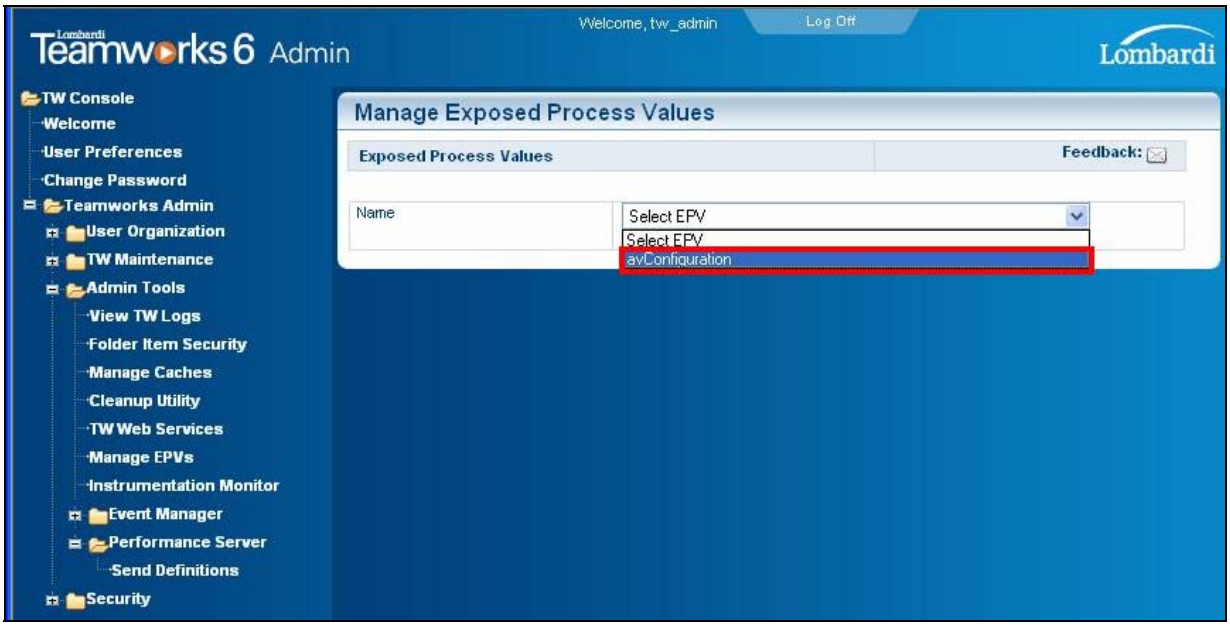
4.4. Configure Process Server

This section describes the steps for configuring Lombardi Teamworks Exposed Process Values (EPVs) via the Lombardi Teamworks Process Server Console. The Process Server Console is made up of the following major areas, parts of which may not be accessible to a user depending on specified user permissions:

- User Organization
- Teamworks Maintenance
- Administrative Tools
- Security.

Step	Description
4.4.1	To enable Lombardi Teamworks to communicate with Avaya CPM, provision Avaya CPM as an EVP as follows: • Verify that the process and performance servers are started (see **Appendix C**). • Open a standard web browser and enter **http://<Lombardi Teamworks IP Address or FQDN>:8081/teamworks** into the web browser's URL bar. • Log in to the Process Server Console with administrative privileges. • From the Process Server Console, select **TW Console ➔ Teamworks Admin ➔ Admin Tools ➔ Manage EPVs**. • From the **Manage Exposed Process Values** page, select **avConfiguration** from the drop-down list for the **Name** field. 

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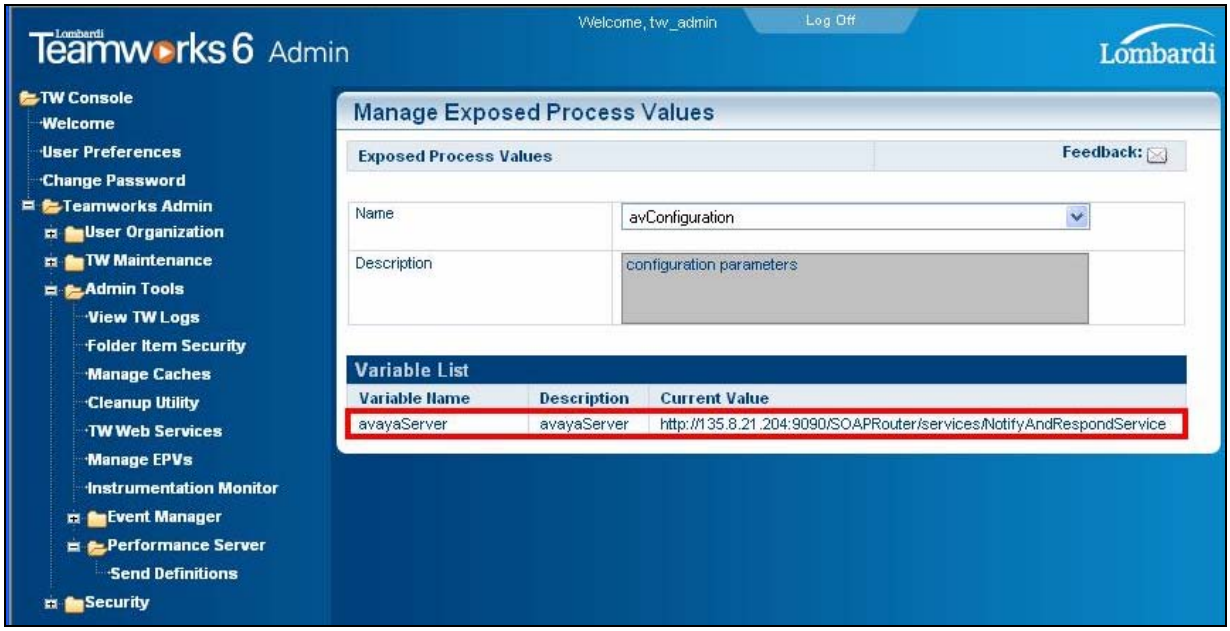
Step	Description
4.4.2	From the **Manage Exposed Process Values** page, click the entry for **avayaServer** in the **Variable List**. 

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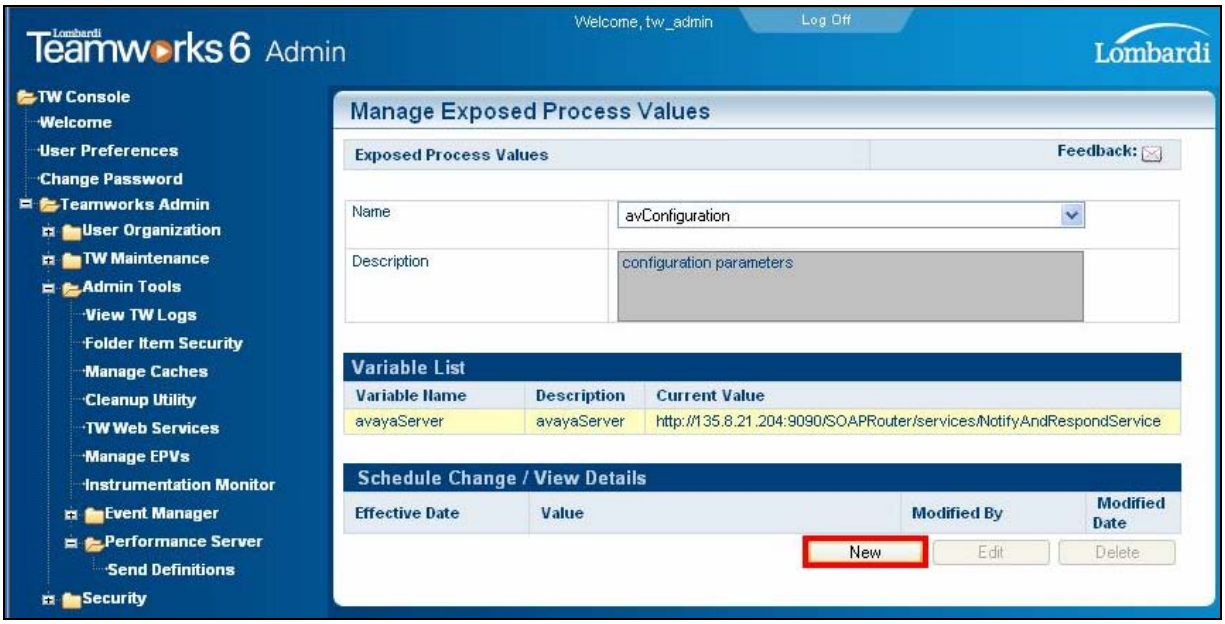
Step	Description
4.4.3	From the **Manage Exposed Process Values** page, click **New**.



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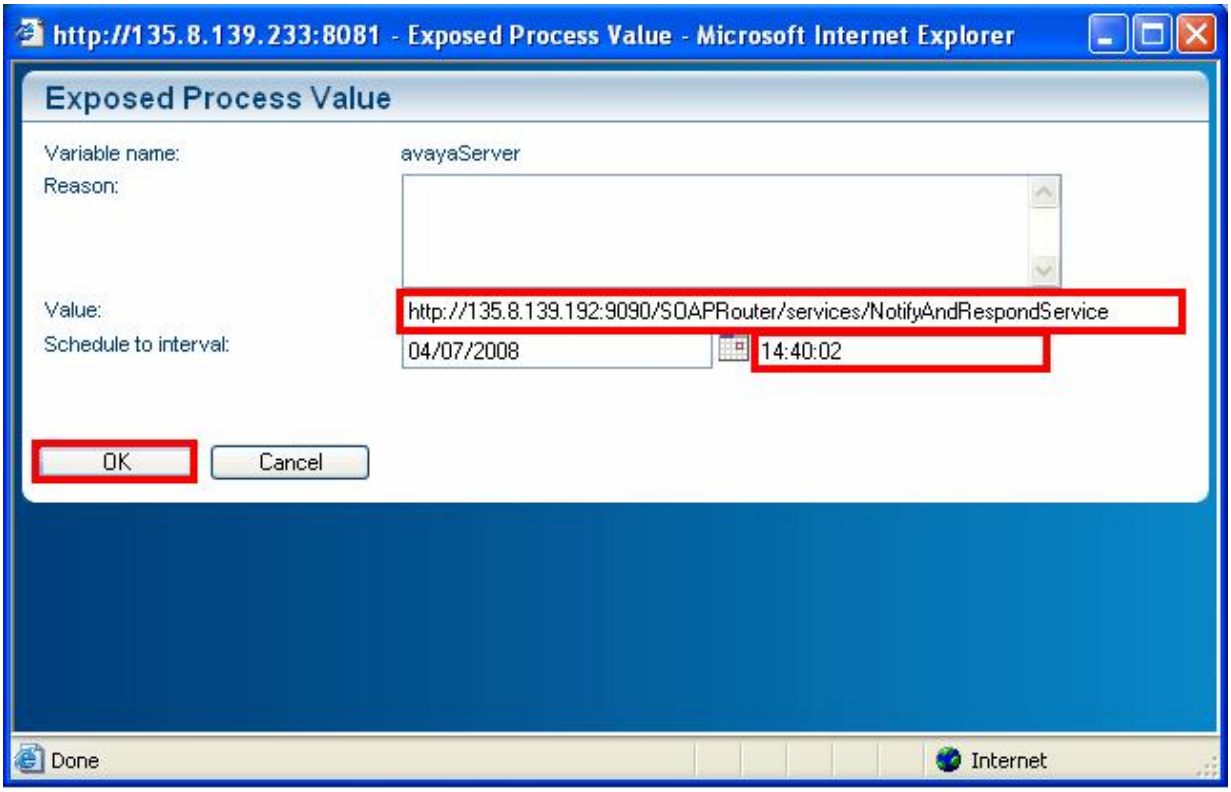
Step	Description
4.4.4	From the **Exposed Process Value** page, provision as displayed. • Enter the URL of Avaya CPM as displayed. For this sample configuration the URL must include: **9090/SOAPRouter/services/NotifyAndRespondService** as defined by **Step 4.3.6**. • Enter a time greater than the default entry for the **Schedule to interval** field. Using the default setting for the time will result in an error (see **Step 6.1**). For this sample configuration, the **Schedule to interval** field was provisioned for two minutes greater than the current time. • Click **OK**. 

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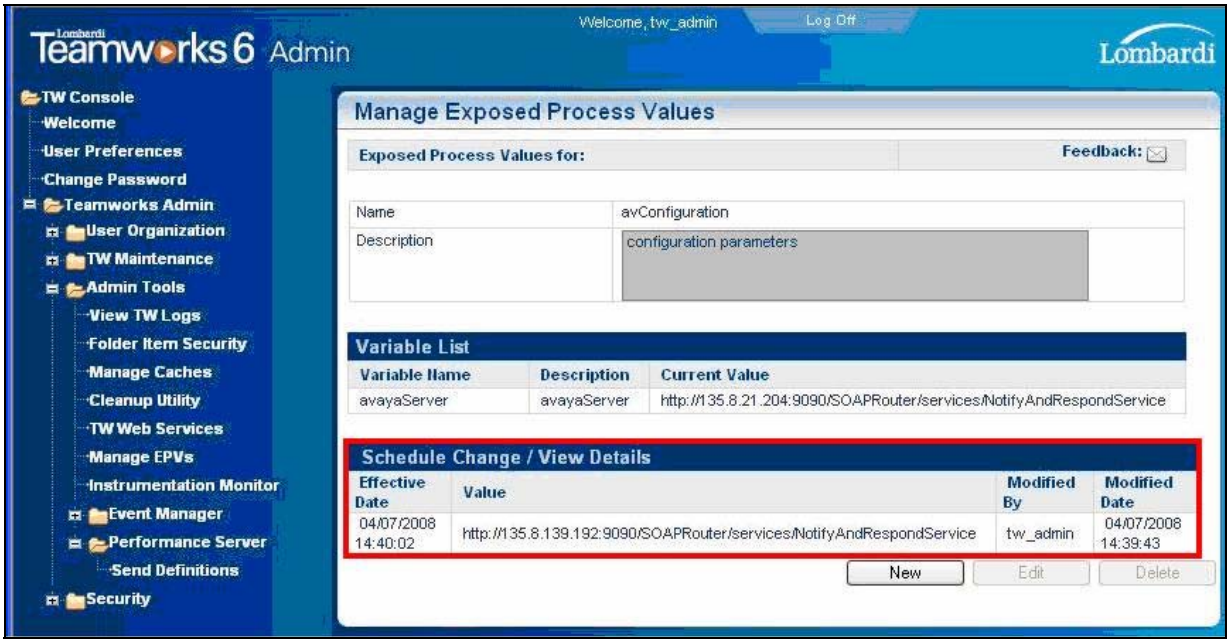
Step	Description
4.4.5	From the **Manage Exposed Process Values** page, verify entry is successfully added under **Schedule Change / View Details**. 

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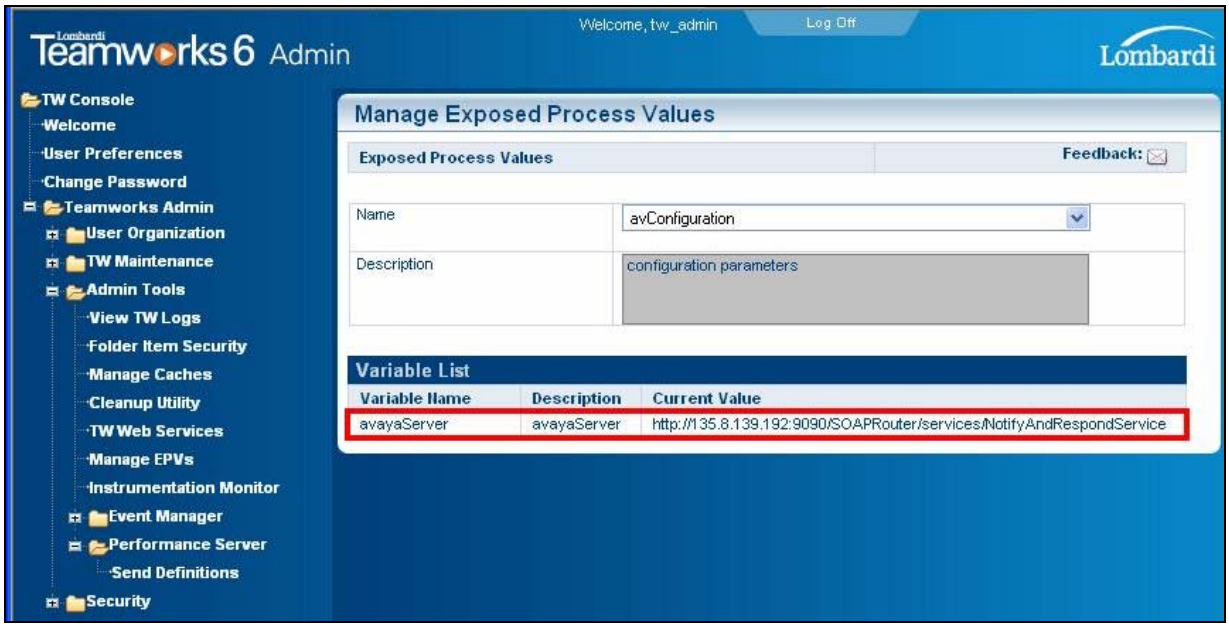
Step	Description
4.4.6	Verify the change to the MPV is successful as follows: • Following the time when the EPV was scheduled to update, refresh to the **Manage Exposed Process Values** page. o Verify the entry for the **avayaServer** has been updated. 

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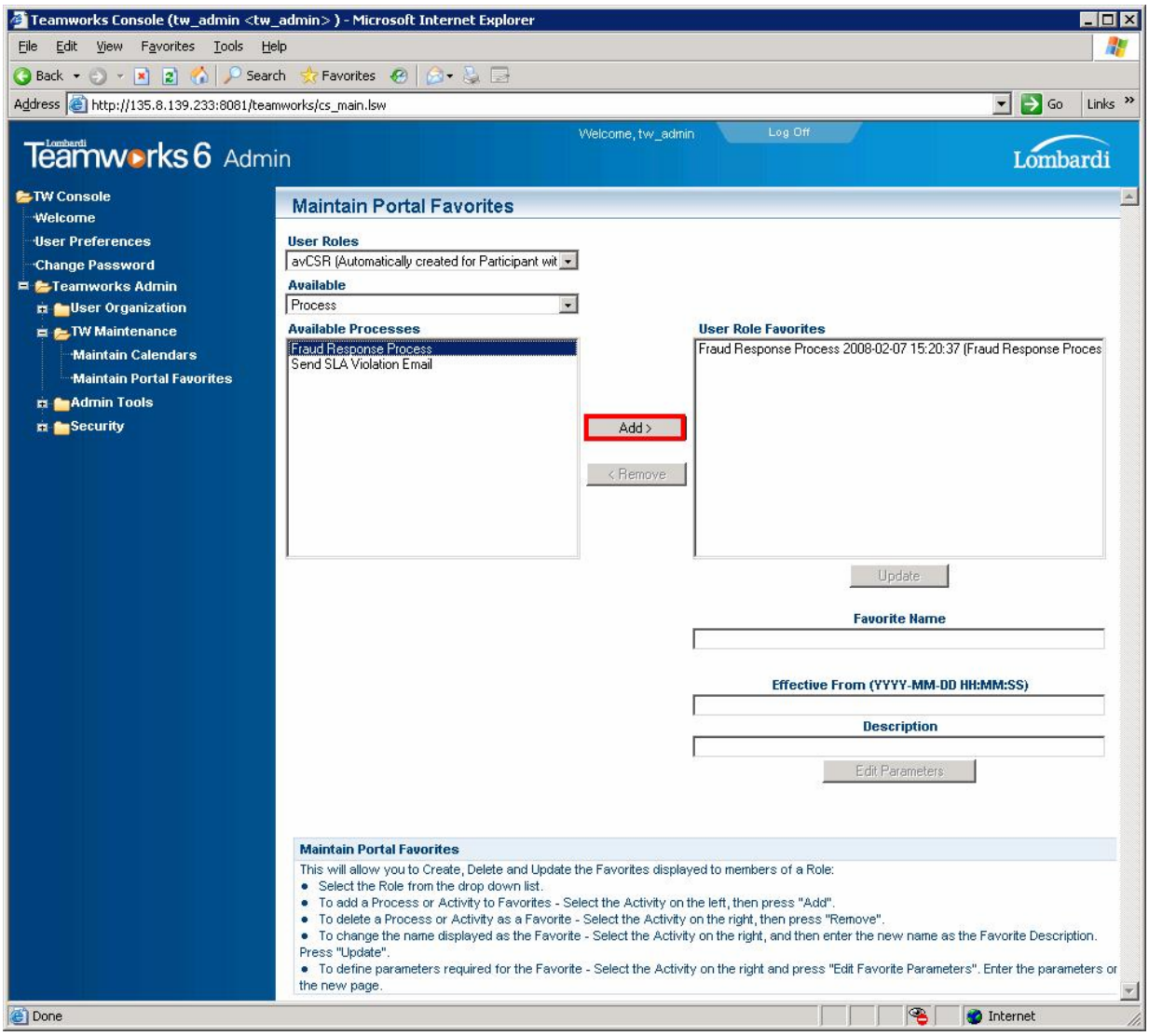
Step	Description
4.4.7	To enable a user to start a process or a service from the Favorites list, provision Portal Favorites as follows: • From the Process Server Console, select **TW Console ➔ Teamworks Admin ➔ TW Maintenance ➔ Manage Portal Favorites**. • From the **Manage Portal Favorites** page: o Select **avCSR (Automatically created for Participant with Id:3)** from the drop-down list for the **User Roles** field. o Select **Process** from the drop-down list for the **Available** field. o Select **Fraud Response Process** and click **Add>**.



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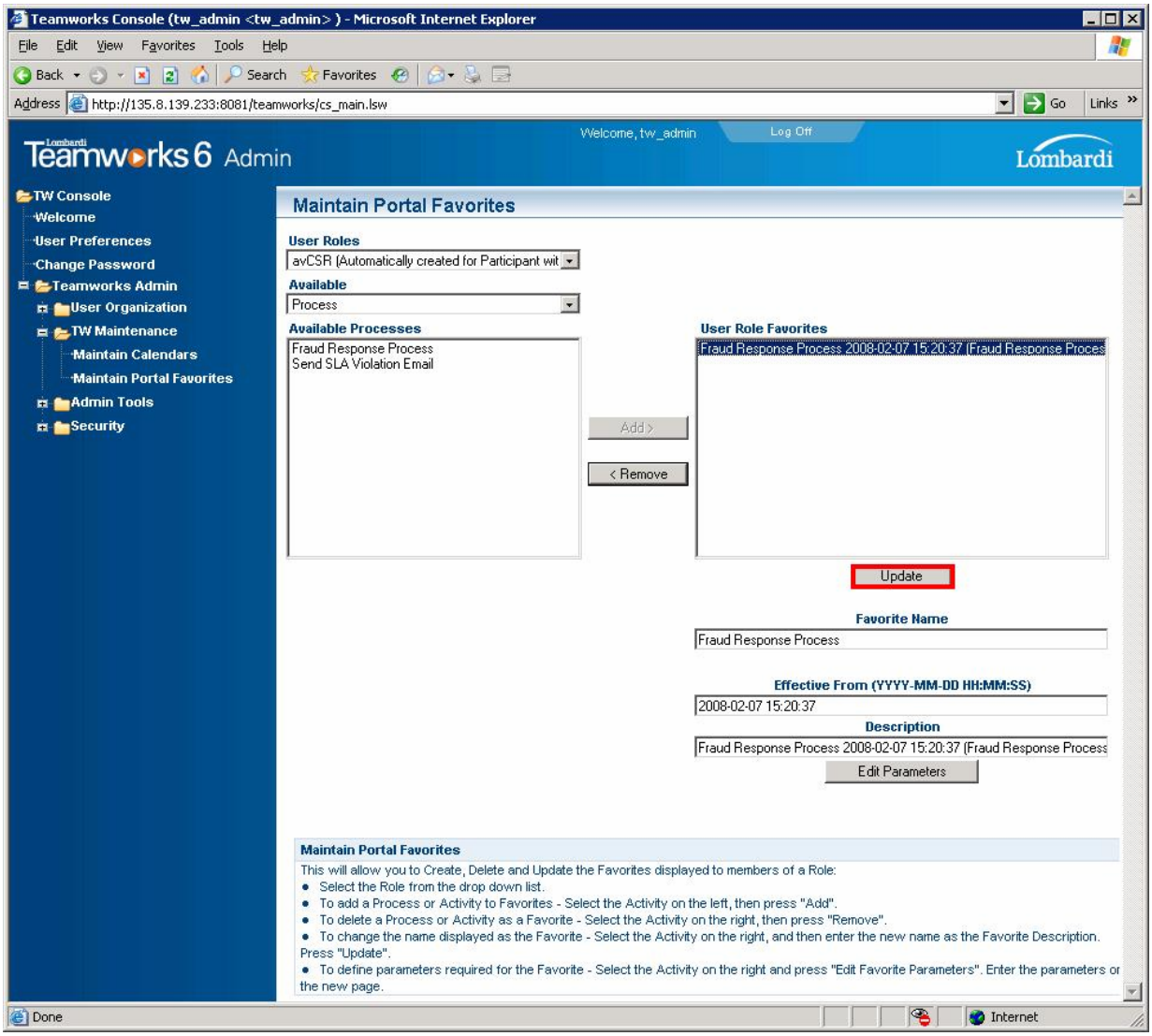
Step	Description
4.4.8	Click **Update**.



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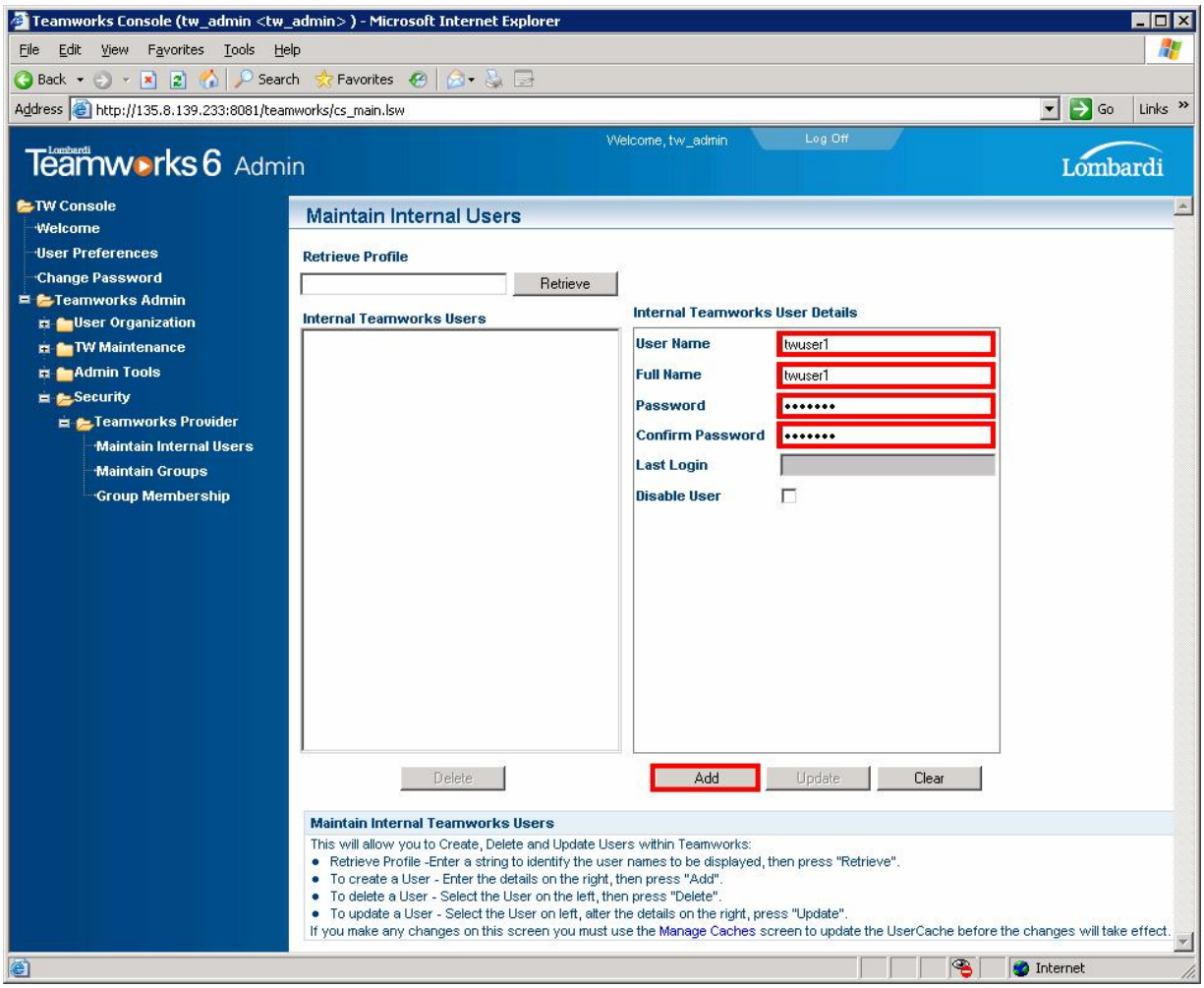
Step	Description
4.4.9	Add Internal Users on Lombardi Teamworks as follows: • From the Process Server Console, select **TW Console ➔ Teamworks Admin ➔ Security ➔ Teamworks Provider ➔ Maintain Internal Users**. • From the **Manage Internal Users** page: o Enter a descriptive name in the **User Name** field. o Enter a descriptive name in the **Full Name** field. o Enter a password in the **Password** and **Confirm Password** fields respectively. o Click **Add**. 
4.4.10	Repeat **Step 4.4.9** to add two additional users configured as follows: • **User Name** field: **twuser2**, **Full Name** field: **twuser2**, **Password** field: **twuser2**. • **User Name** field: **twuser3**, **Full Name** field: **twuser3**, **Password** field: **twuser3**.

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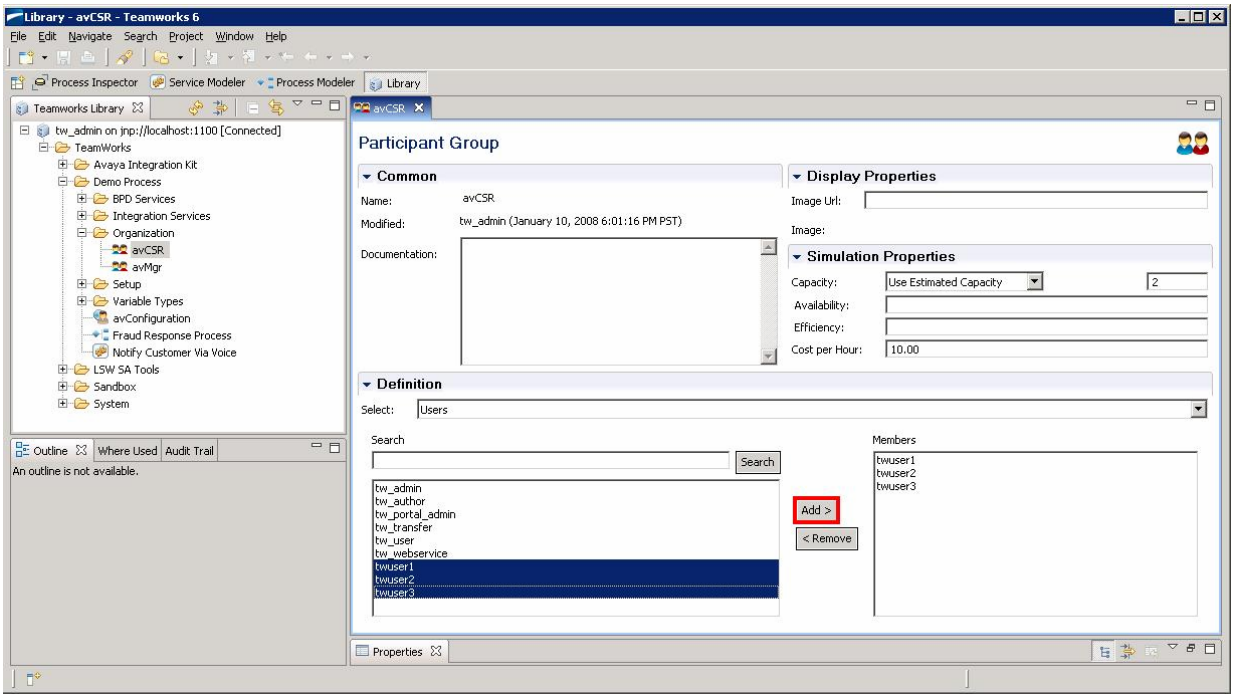
4.5. Add Users to Avaya Specific Components

This section describes the steps to add the users to the Avaya Specific Components installed in **Section 4.1** and modified in **Section 4.3**.

Step	Description
4.5.1	From the Authoring Environment, add the users created in **Steps 4.4.9 - 4.4.10** as follows: • From the **Teamworks Library**, select **TeamWorks ➔ Demo Processes ➔ Organization ➔ avCSR**. • Right-click on the resource name (**avCSR**) and select **Check Out**. • Select the users created in **Steps 4.4.9 - 4.4.10** and click **Add>**. • Save changes by selecting **File ➔ Save** from the Authoring Environment main menu. • Right-click on **avCSR** and select **Check In**. 

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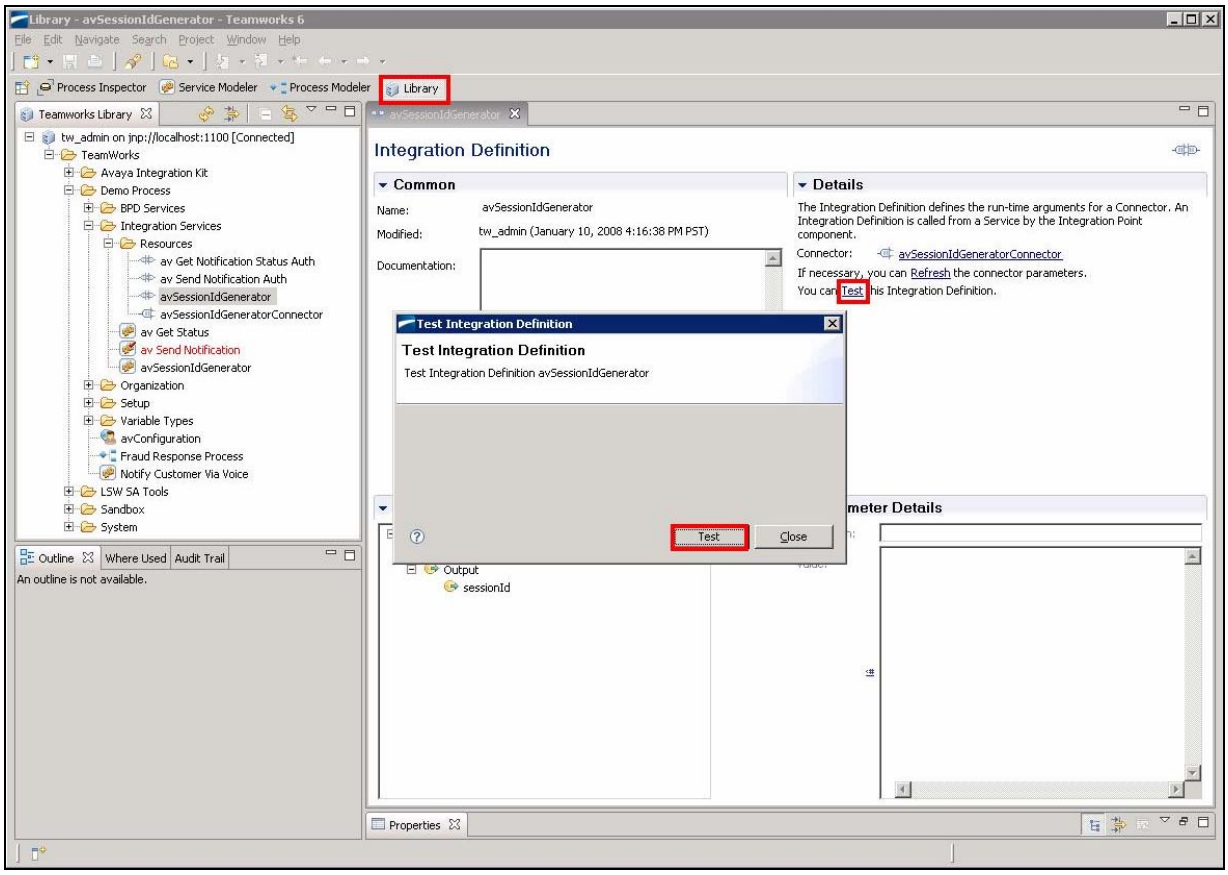
5. Verification Steps

The following steps were used to verify the administrative steps presented in these Application Notes and are applicable for similar configurations in the field.

Step	Description
5.1	From the Authoring Environment, verify connectivity between Avaya CPM and Lombardi Teamworks as follows: • From the **Teamworks Library**, select **avSessionIdGenerator**. • Click **Test**. 

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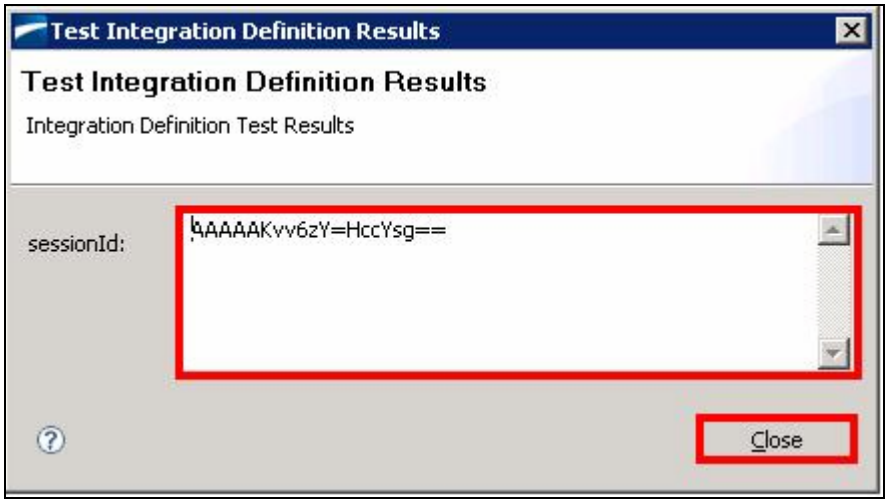
Step	Description
5.2	From the pop-up window, click **Test**. If successful, a value is returned for the **sessionID** parameter. If the test fails, see **Step 6.2** and **Step 6.3**. 

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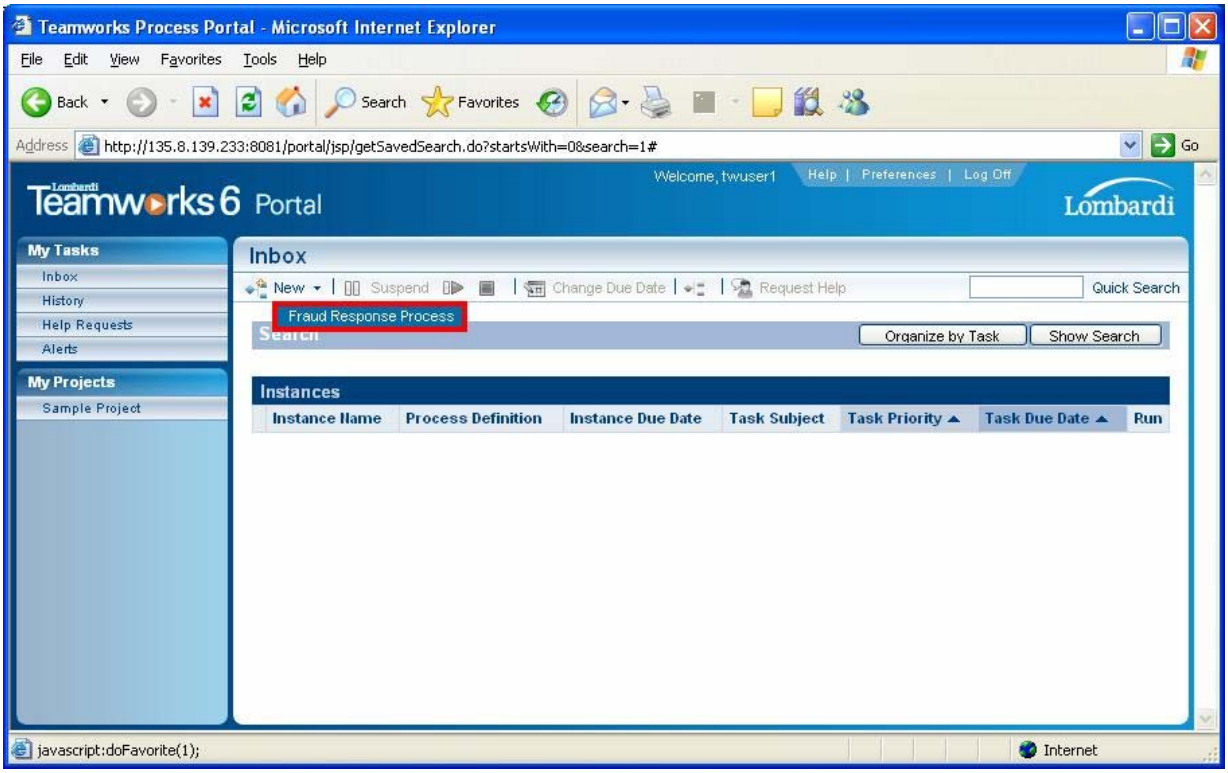
Step	Description
5.3	Validate connectivity between Avaya CPM and Lombardi Teamworks by imitating a transaction for a **Fraud Response Process** as follows: • Verify that the process and performance servers are started (see **Appendix C**). • Open a standard web browser and enter **http://<Lombardi Teamworks IP Address or FQDN>:8081/portal** into the web browser's URL bar. • Log in to the Process Server Console with user privileges, e.g., select a user account created in **Steps 4.4.9 - 4.4.10**. • Select **New ➔ Fraud Response Process**. 

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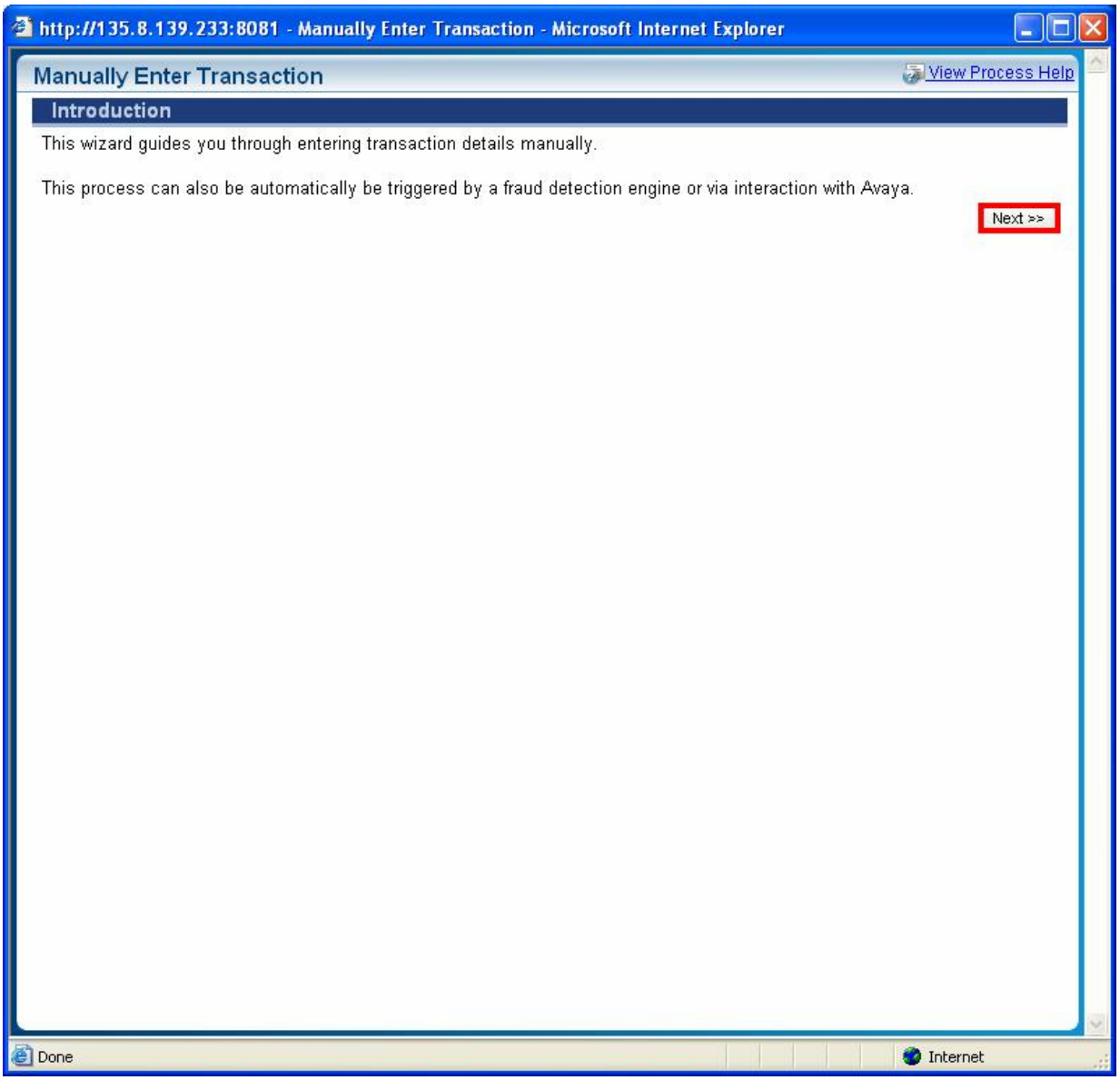
Step	Description
5.4	From the pop-up window, click **Next** >>. 

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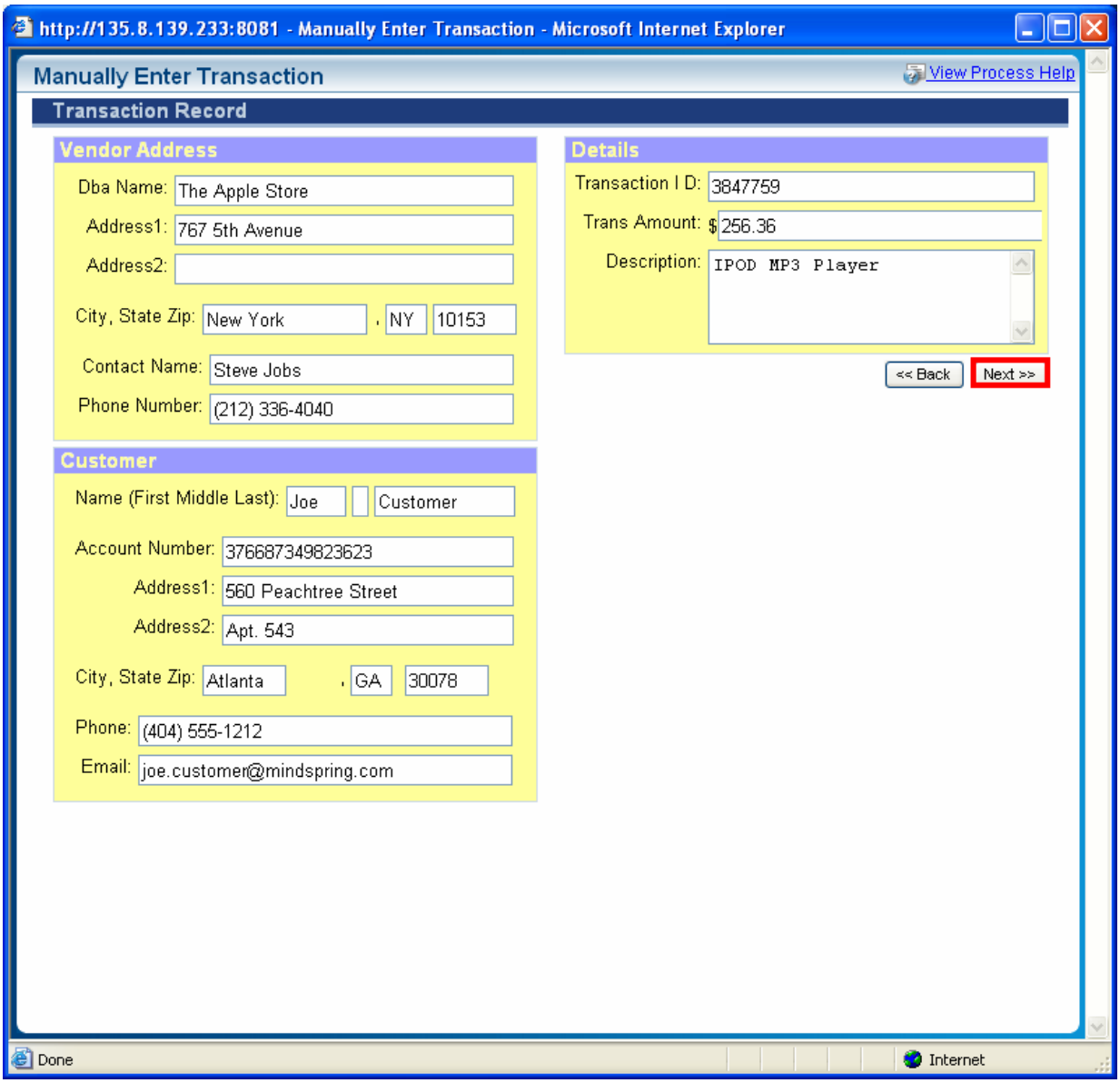
Step	Description
5.5	Accept default text for transaction and click **Next >>**.



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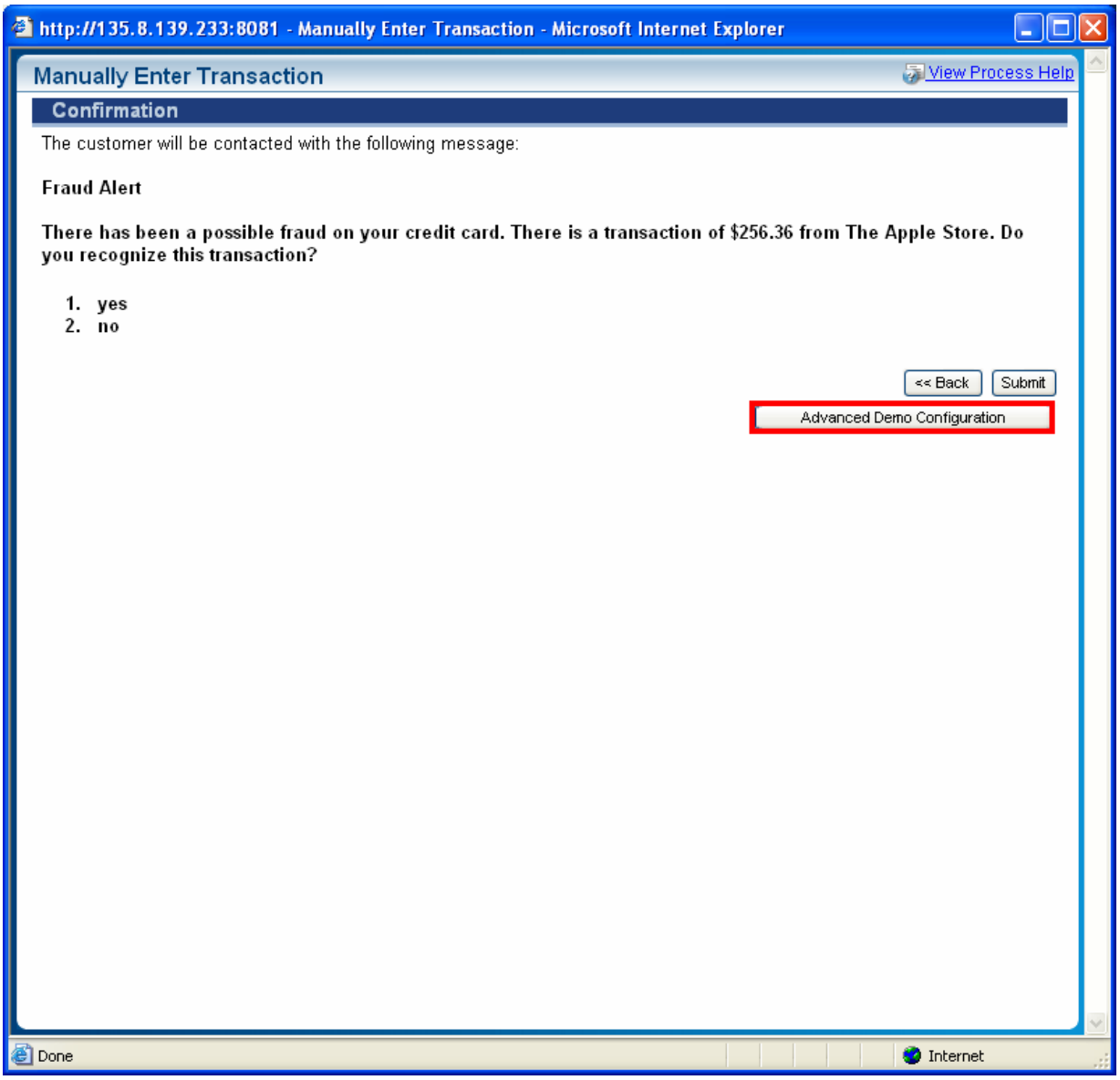
Step	Description
5.6	Click **Advanced Demo Configuration**.



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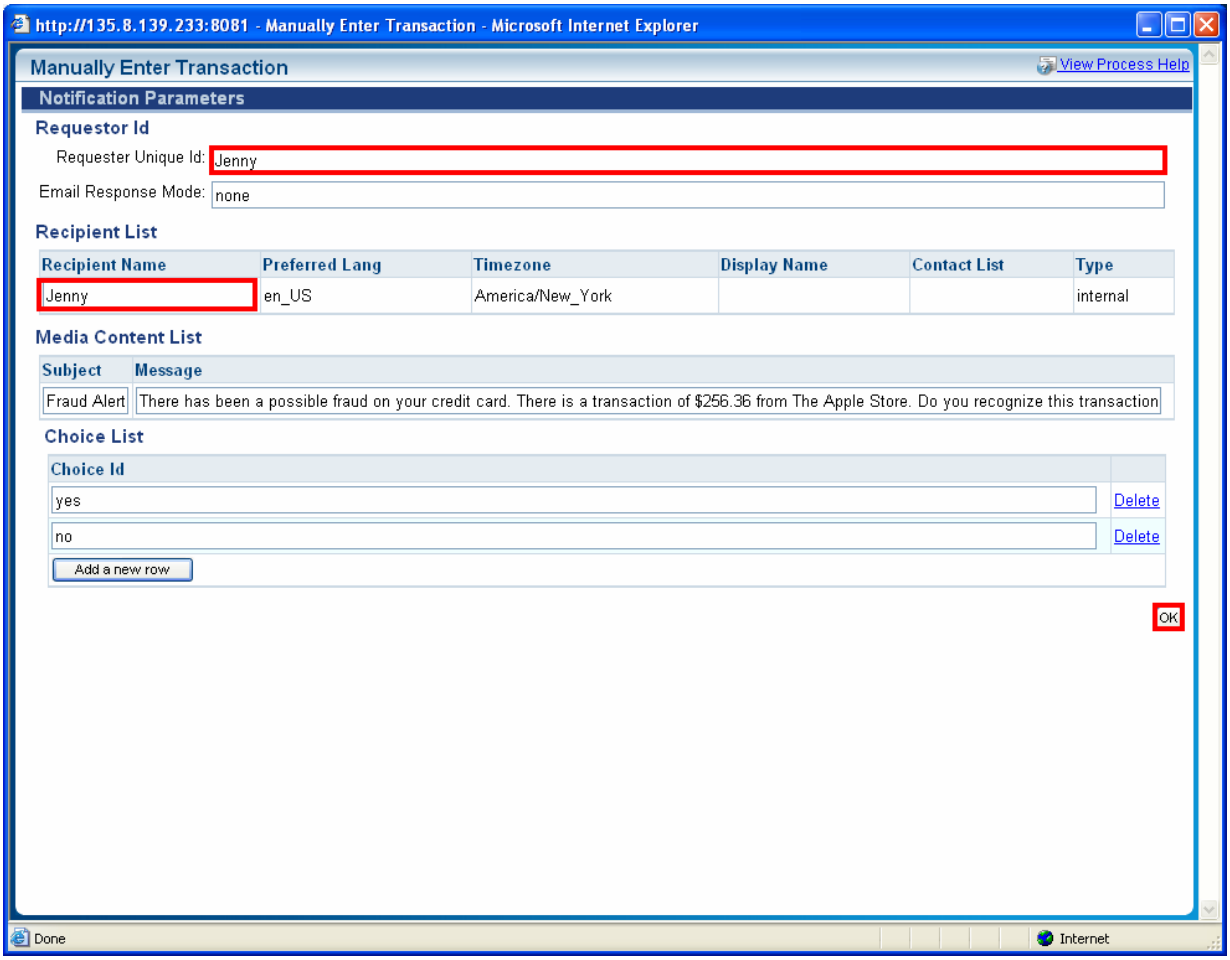
Step	Description
5.7	Verify a user account on Avaya CPM is entered in the **Requester Unique ID** and **Recipient Name** fields. For this sample configuration, the **Handle** for the user account displayed in **Step 3.1.1** was entered for both fields. Click **OK**. 

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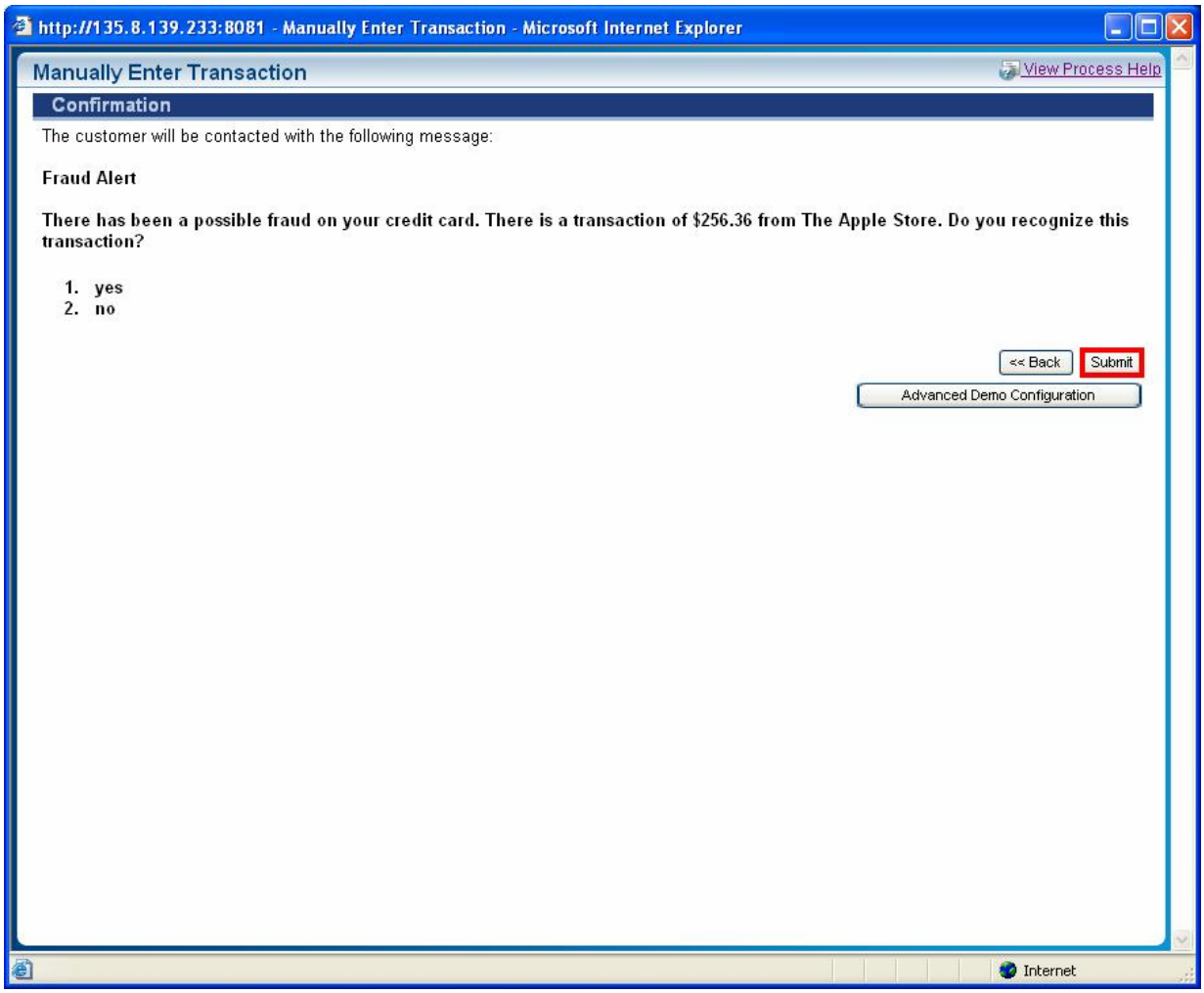
Step	Description
5.8	Click **Submit**.



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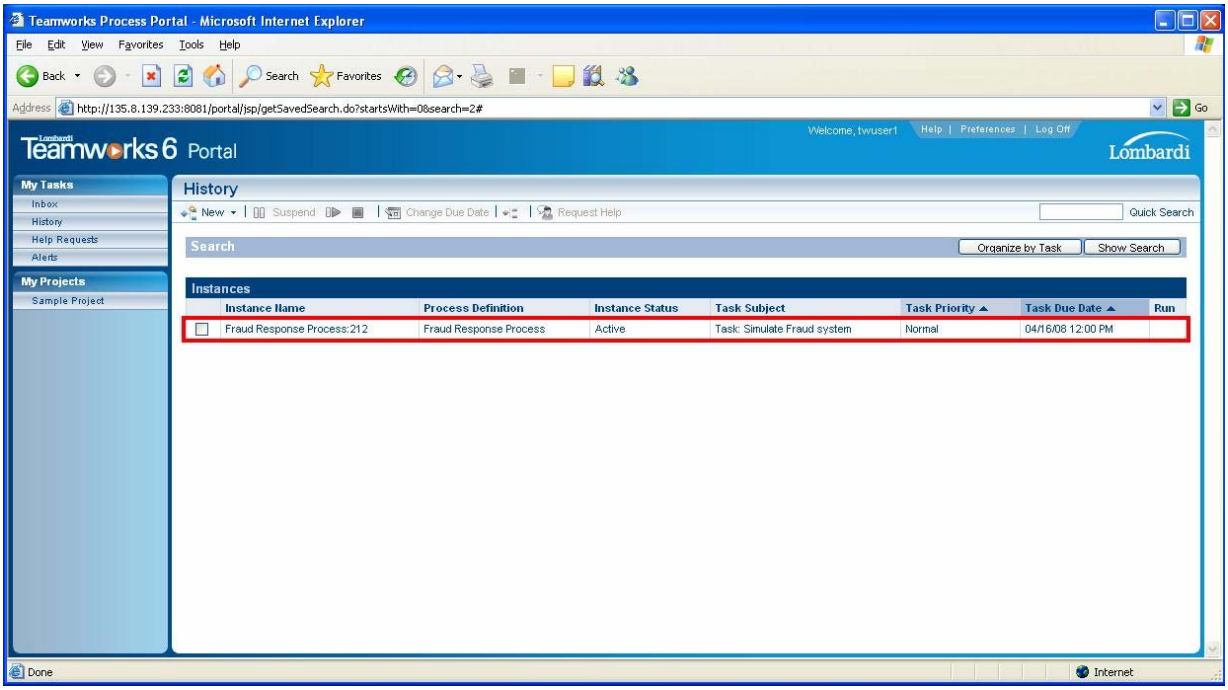
Step	Description
5.9	To view status of the transaction for the **Fraud Response Process**: • Click **History** under **My Tasks**. • Click the entry for **Fraud Response Process 212**. 

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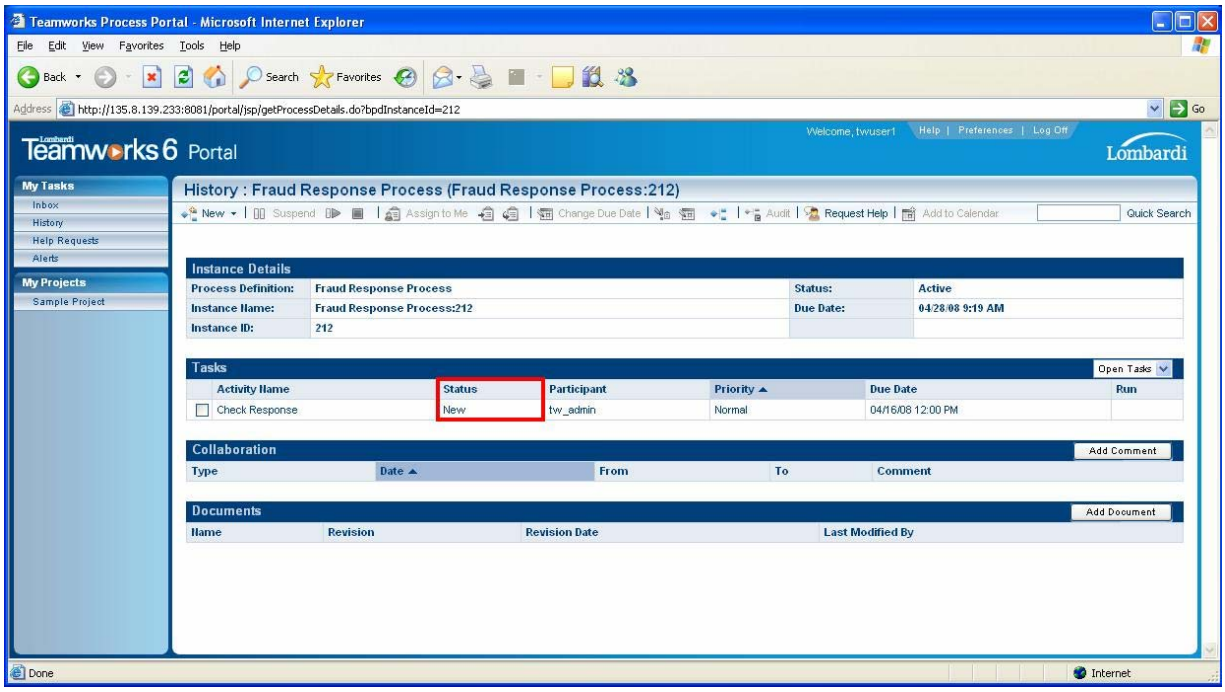
Step	Description
5.10	Verify the **Status** field returns **New**.



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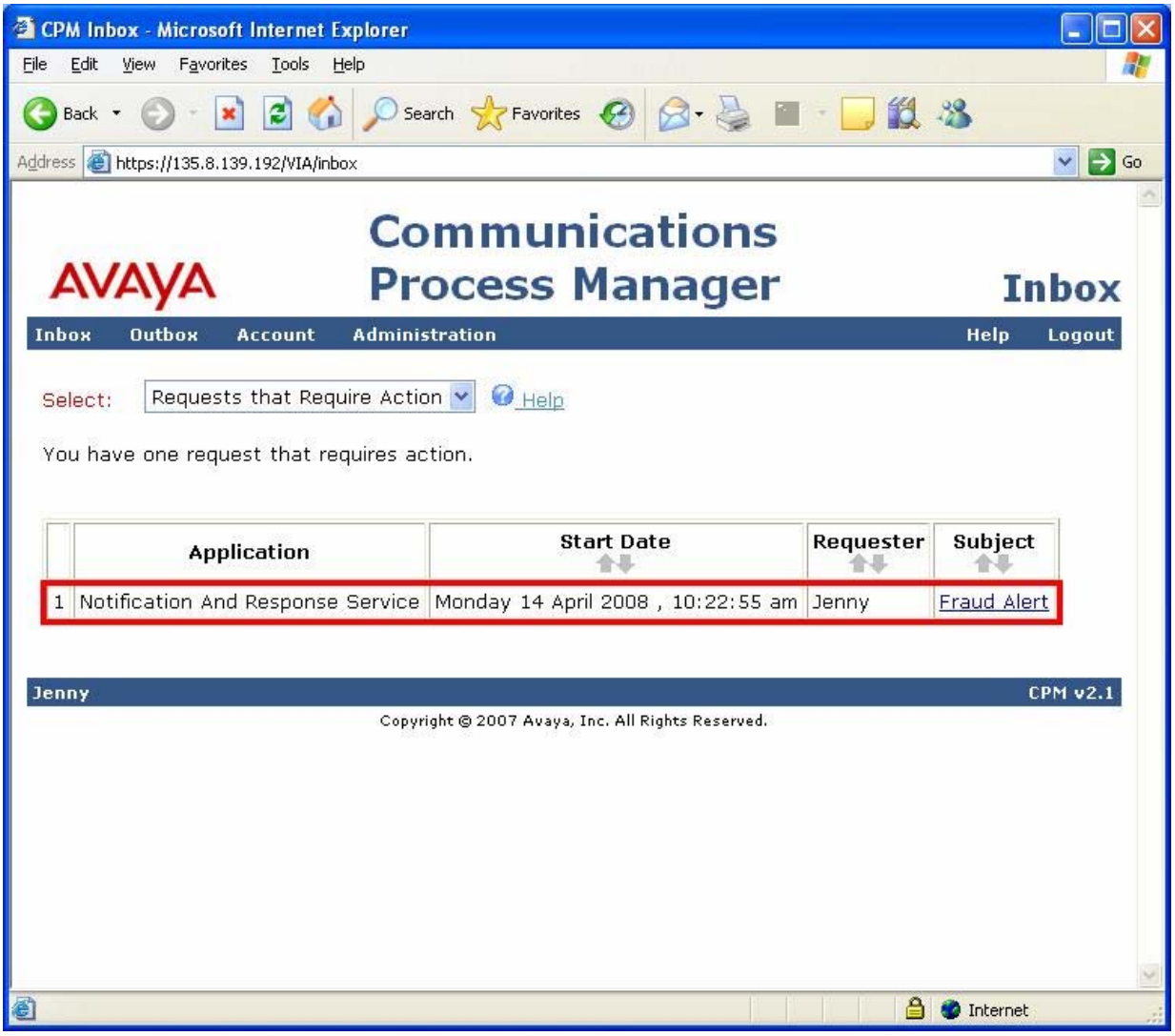
Step	Description
5.11	Verify the following: • The telephone associated with the user account on Avaya CPM (see **Step 3.1.1**) rings. • Log in to the user account on Avaya CPM (see **Step 3.1.1**) and verify the **Inbox** screen reflects the transaction for the **Fraud Response Process** submitted in **Step 5.8**. o Click **Fraud Alert** in the **Subject** column.



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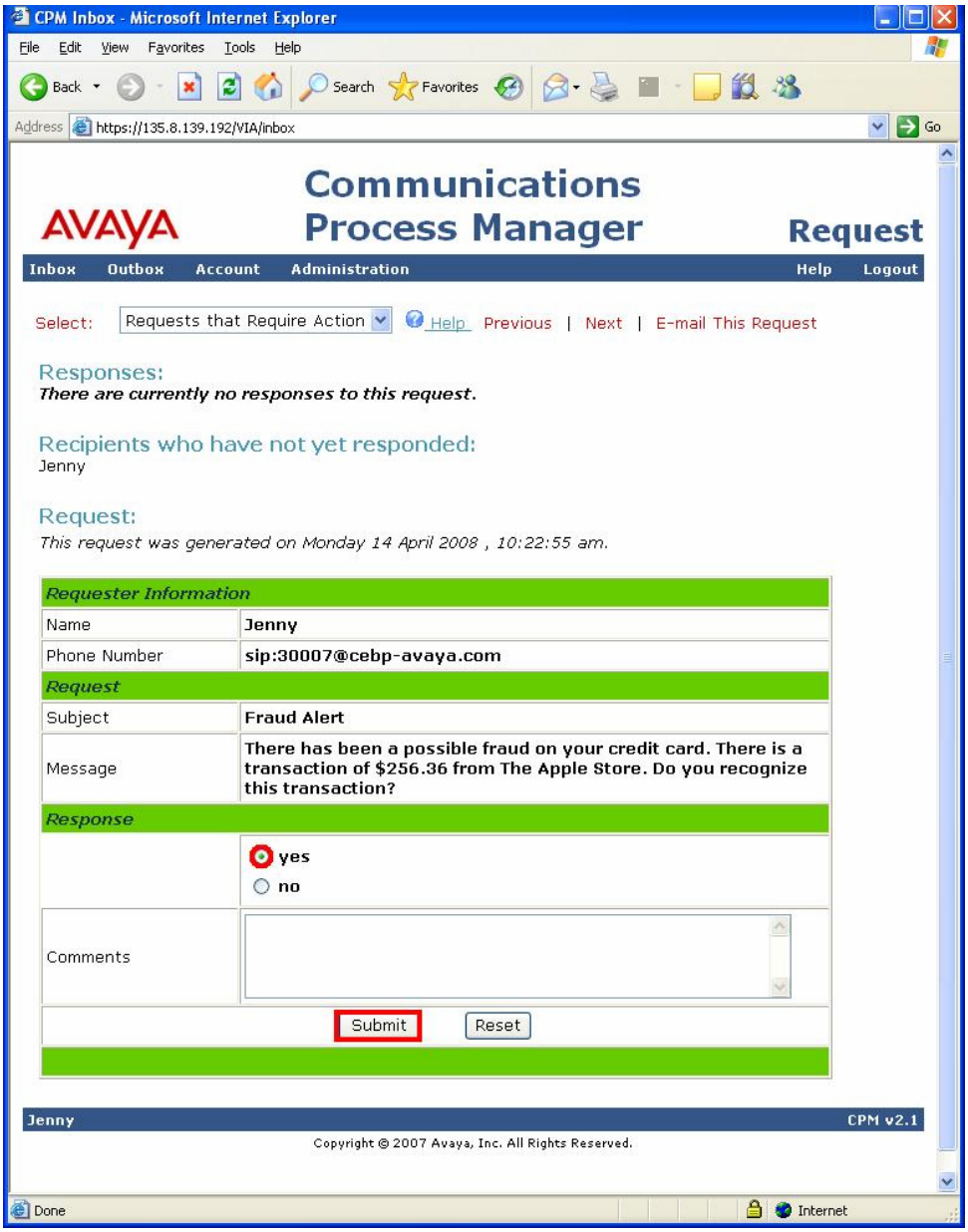
Step	Description
5.12	From the **Request** screen, respond to the **Fraud Alert** and click **Submit**. ***Note**: For these Application Notes, the response was provided via the web interface. The response could also have been provided via the telephone.* 

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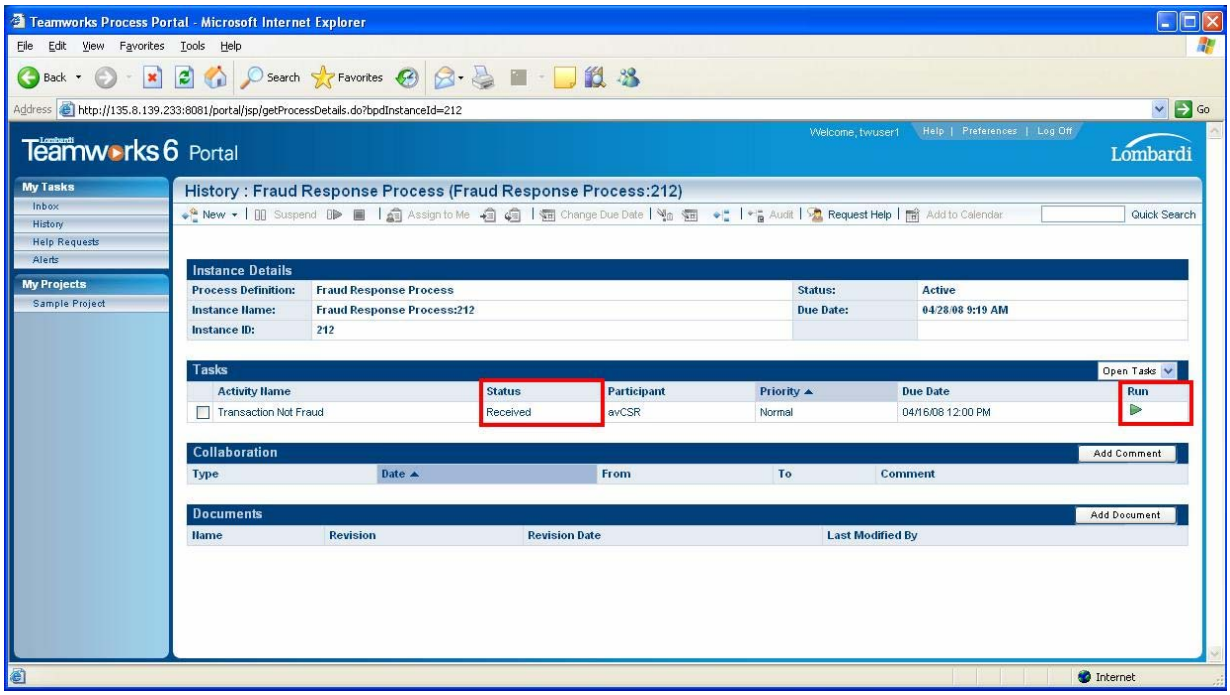
Step	Description
5.13	Following the response from the user on Avaya CPM, verify the **Status** field is updated to **Received**. To complete this transaction, click ▶ in the **Run** column. 

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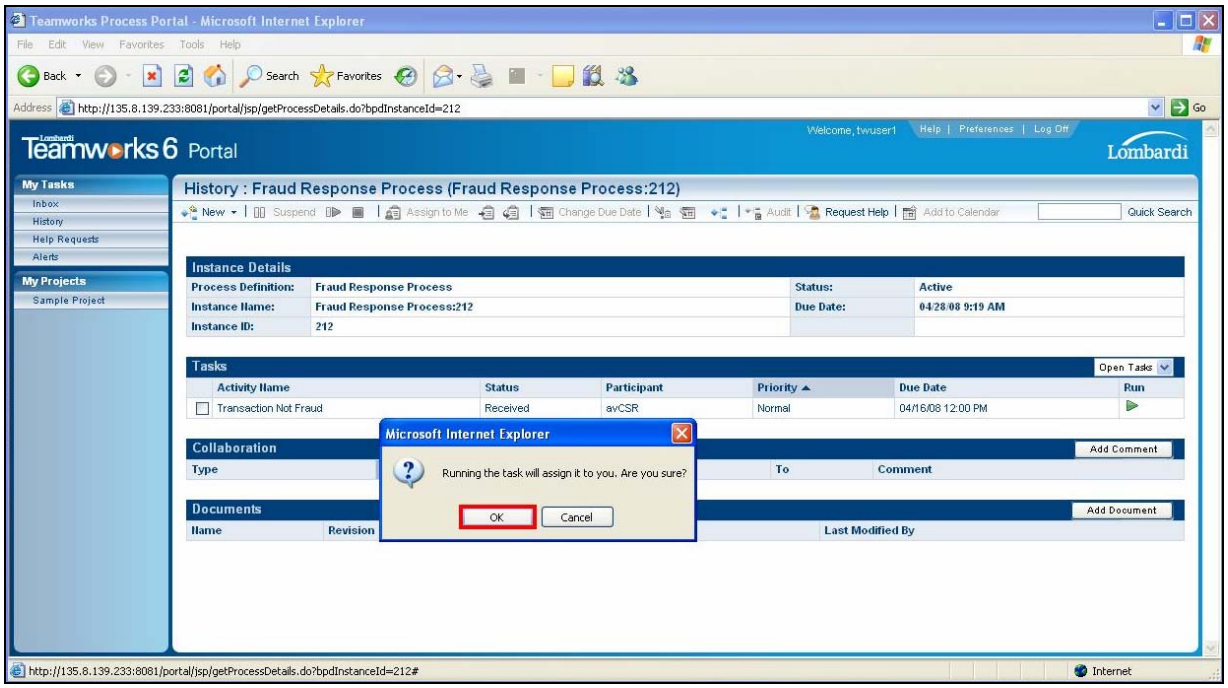
Step	Description
5.14	From the pop-up window, click **OK**. 

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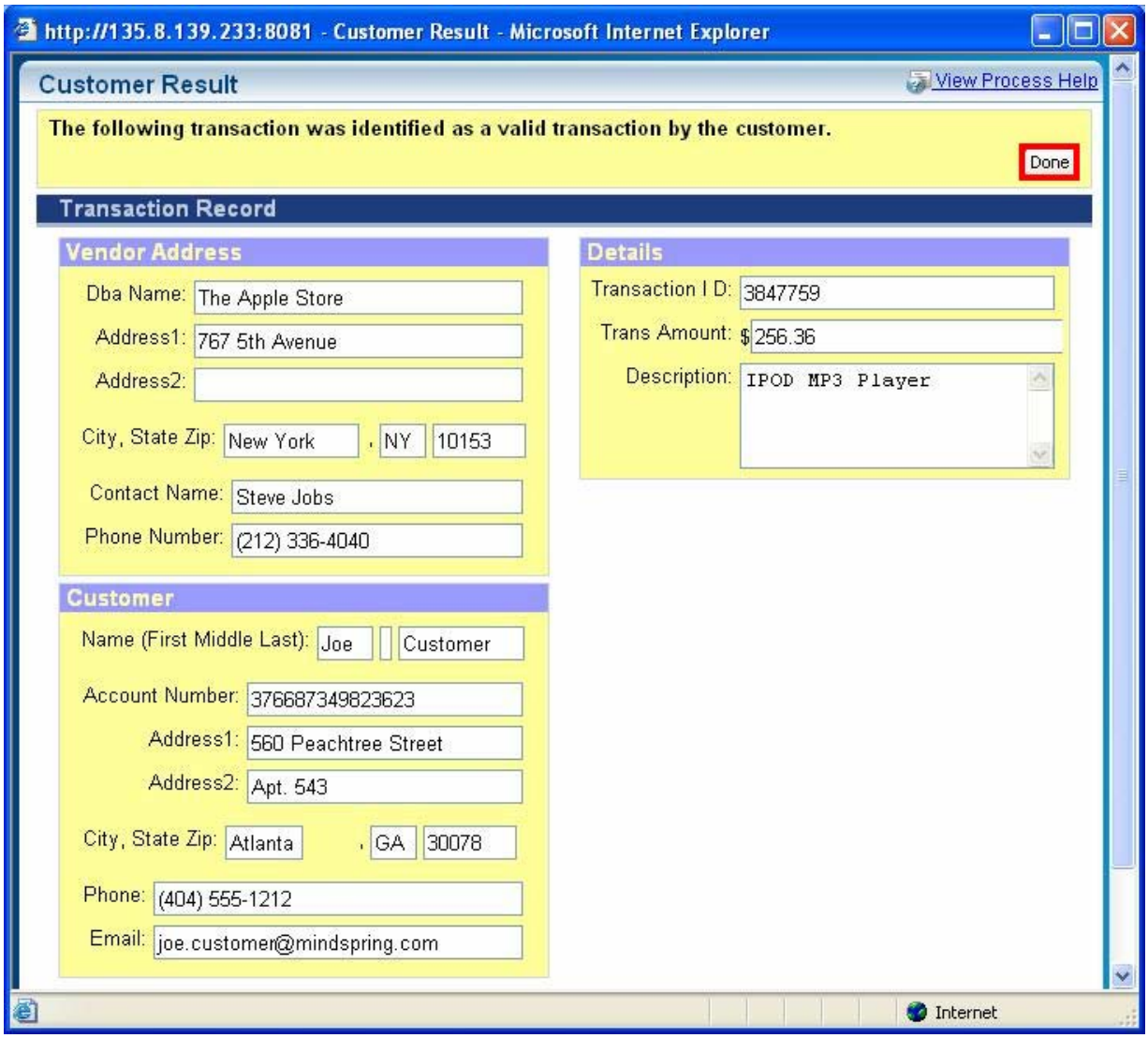
Step	Description
5.15	To confirm the results of this transaction, click **Done**.



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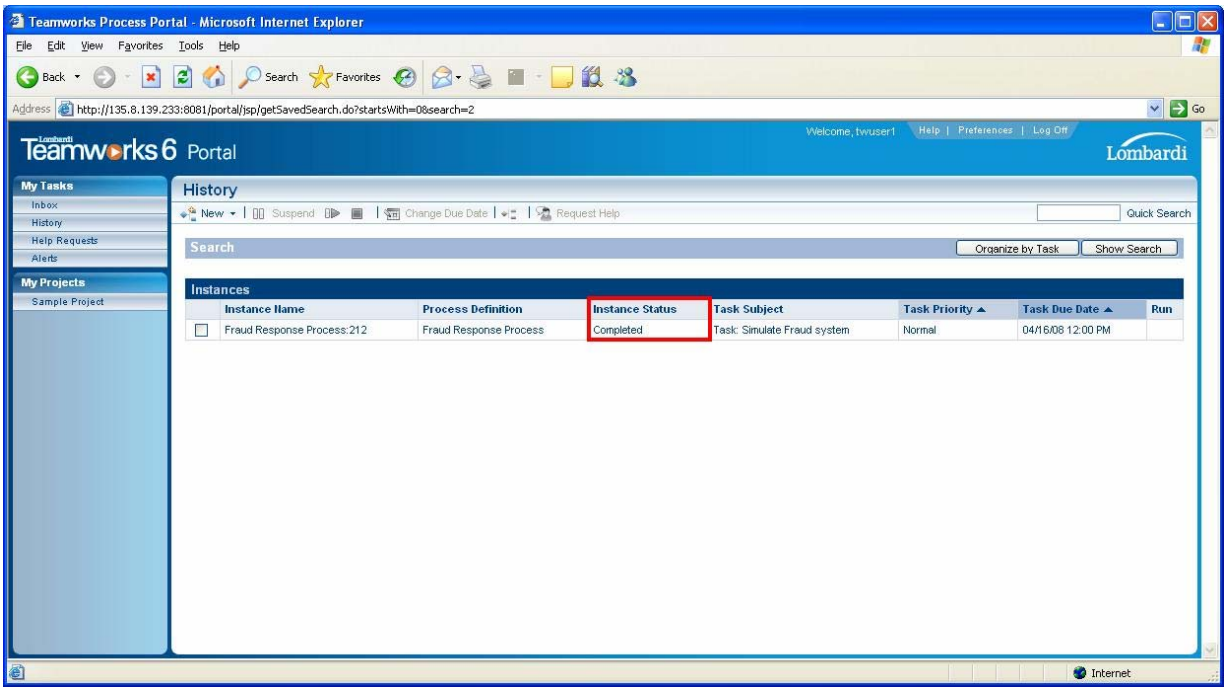
Step	Description
5.16	Verify the **Status** field is updated to **Completed**. 

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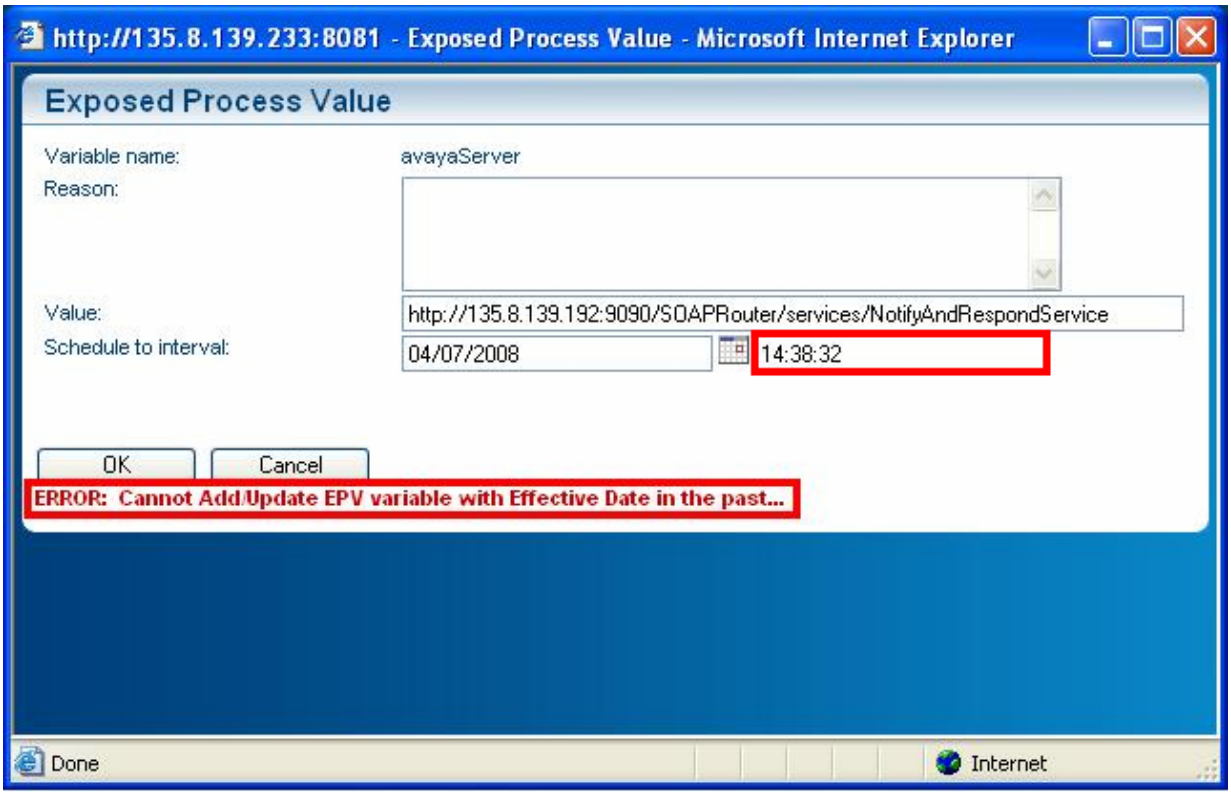
6. Troubleshooting

The following steps were used to troubleshoot the administrative steps presented in these Application Notes and are applicable for similar configurations in the field.

Step	Description
6.1	This error was the due to attempting to schedule an update to an EPV at a time less than or equal to the current time. Correct this error by entering a time greater than the current time. 

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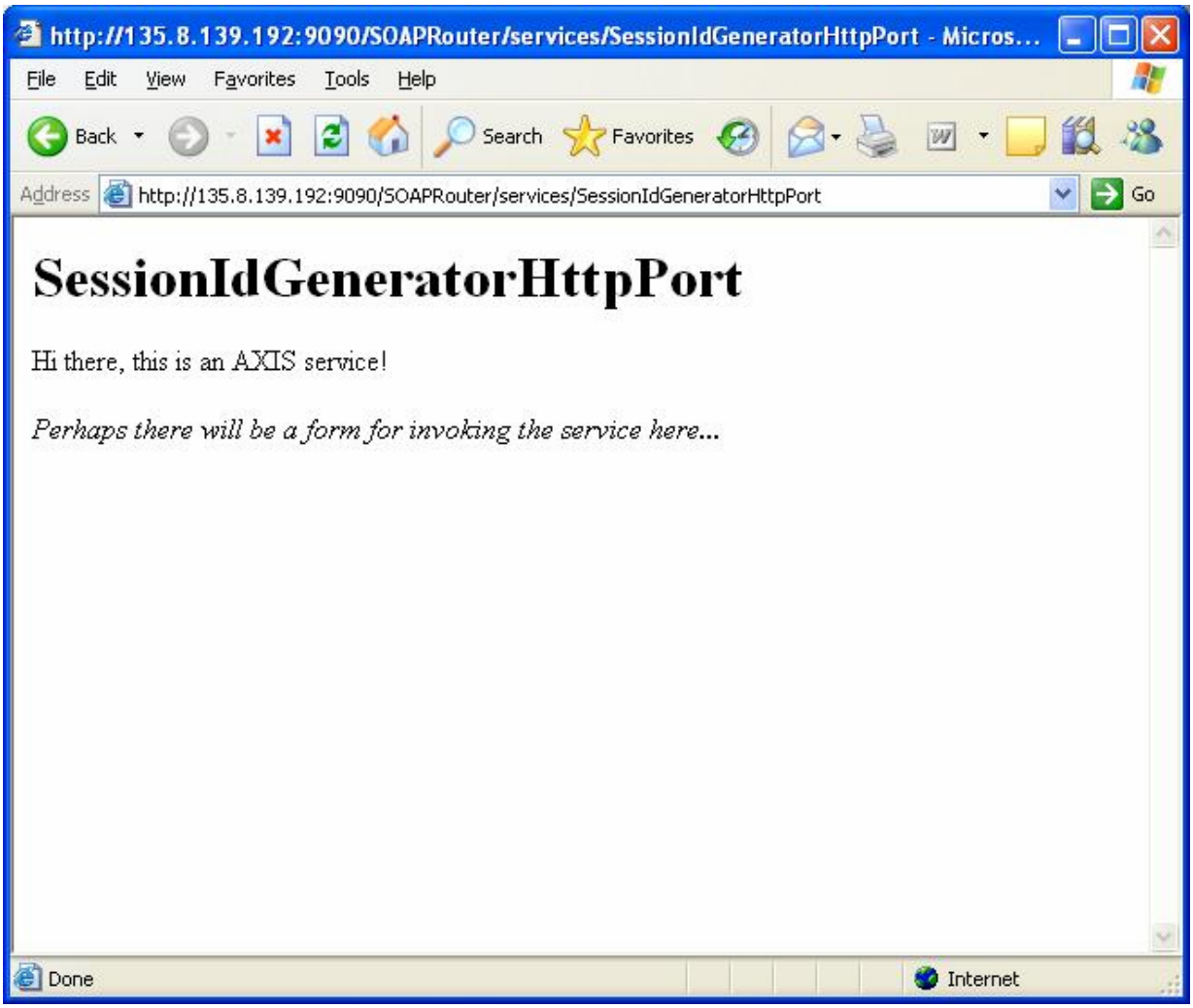
Step	Description
6.2	If the connectivity test between Avaya CPM and Lombardi Teamworks fails in **Step 5.2**, verify port 9090 is open on Avaya CPM as follows: • Enter **http://<Avaya CPM IP Address or FQDN>:9090/SOAPRouter/services/SessionIdGeneratorHttpPort** into a web browser's URL bar. • Verify the response as displayed below. 

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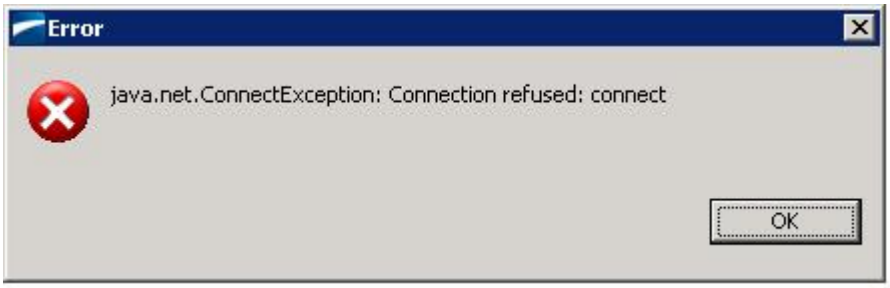
Step	Description
6.3	If the following error message is returned from the connectivity test between Avaya CPM and Lombardi Teamworks in **Step 5.1**, verify the **Endpoint Address URL** entry corresponds to the IP address or FQDN of Avaya CPM (see configuration in **Step 4.3.5**). 

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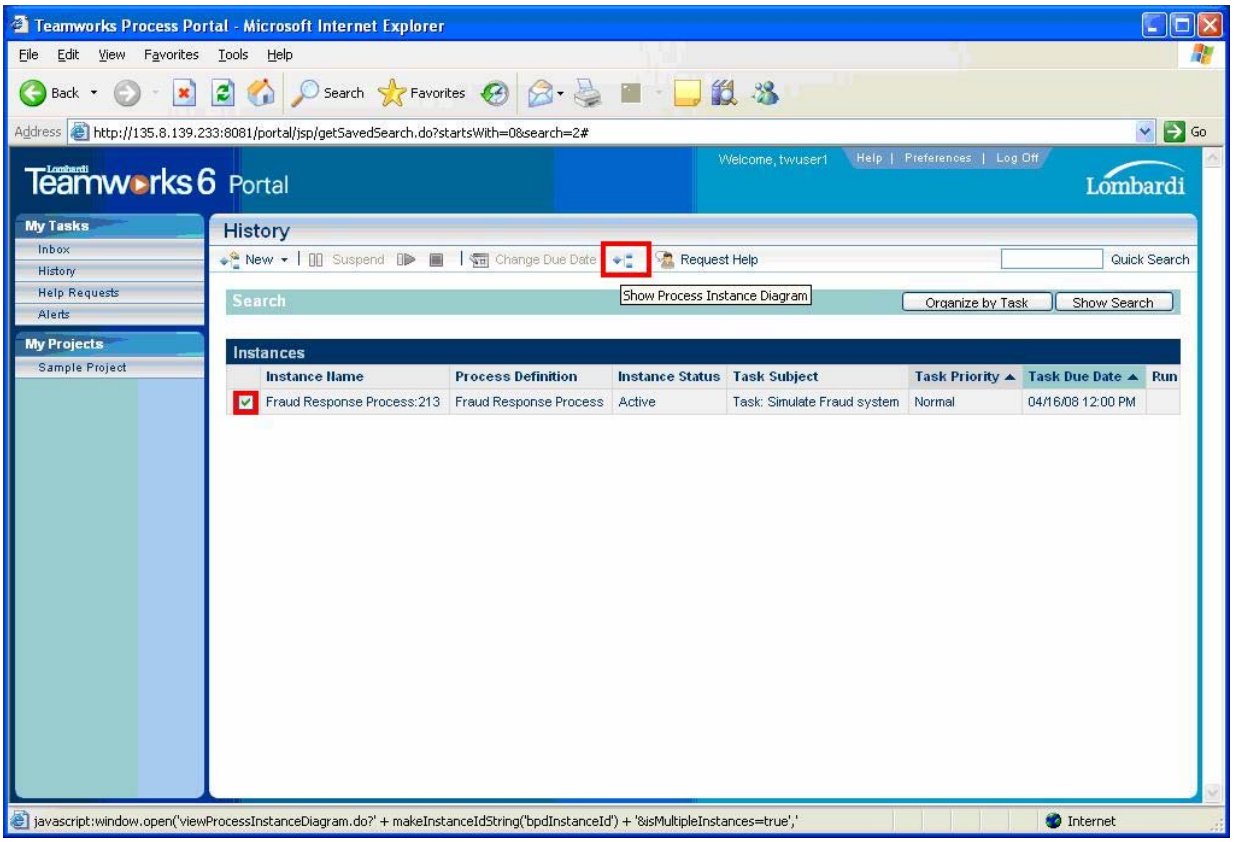
Step	Description
6.4	Verify the **Process Instance Diagram** for the corresponding **Fraud Response Process** as follows: • Verify that the process and performance servers are started (see **Appendix C**). • Open a standard web browser and enter **http://<Lombardi Teamworks IP Address or FQDN>:8081/portal** into the web browser's URL bar. • Log in to the Process Server Console with user privileges, e.g., select a user account created in **Steps 4.4.9 - 4.4.10**. • Click **History** under **My Tasks**. • Select an entry for a **Fraud Response Process <Number>**. • Click . 

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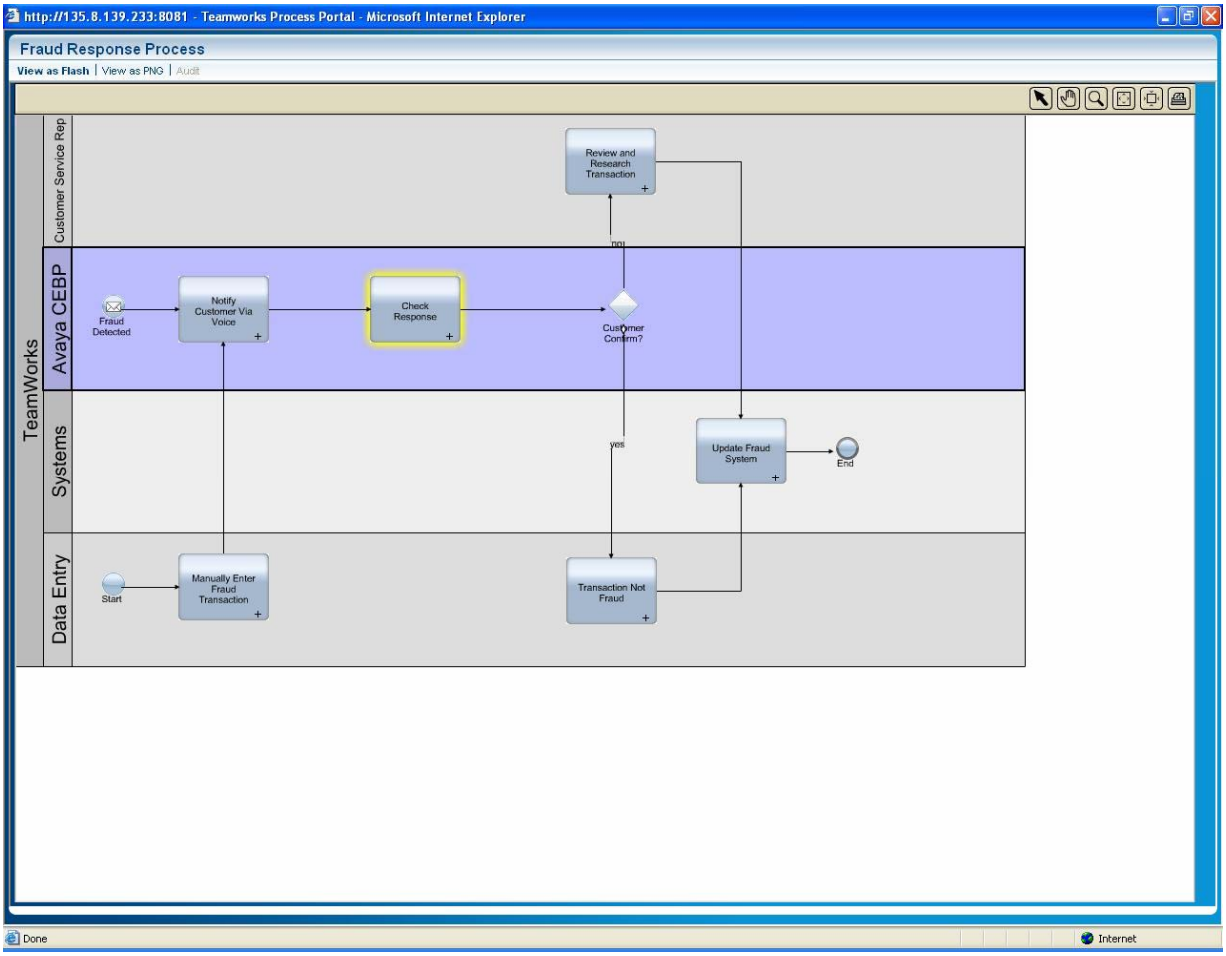
Step	Description
6.5	From the pop-up window, verify the state of the **Fraud Response Process**. For this transaction, the state is **Check Response**, which corresponds to a **Status** field returning **New** (see **Step 5.10**). 

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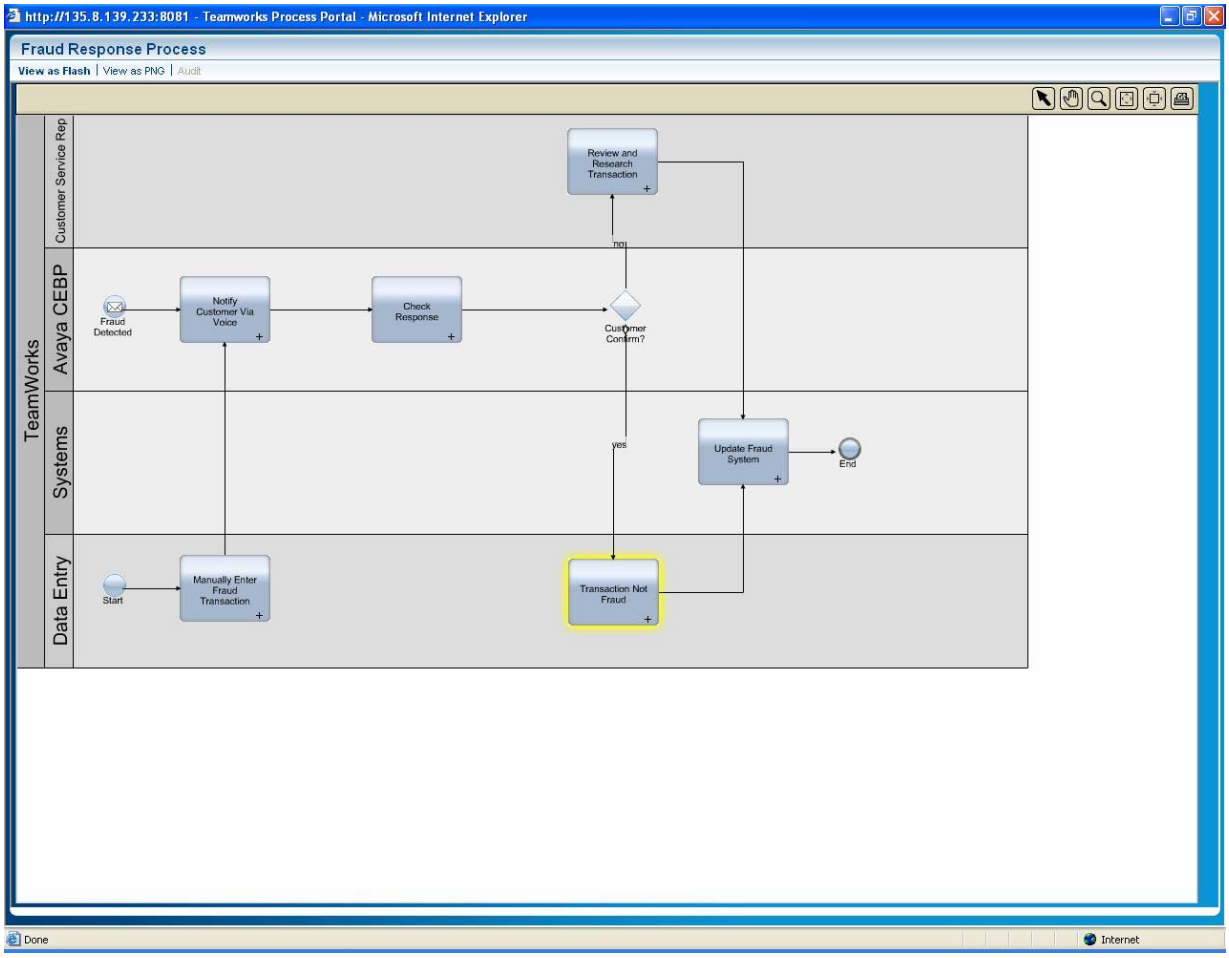
Step	Description
6.6	Following input from a user on Avaya CPM, a **Fraud Response Process** may have the state **Transaction Not Fraud**. This corresponds to a **Status** field returning **Received** (see **Step 5.13**).



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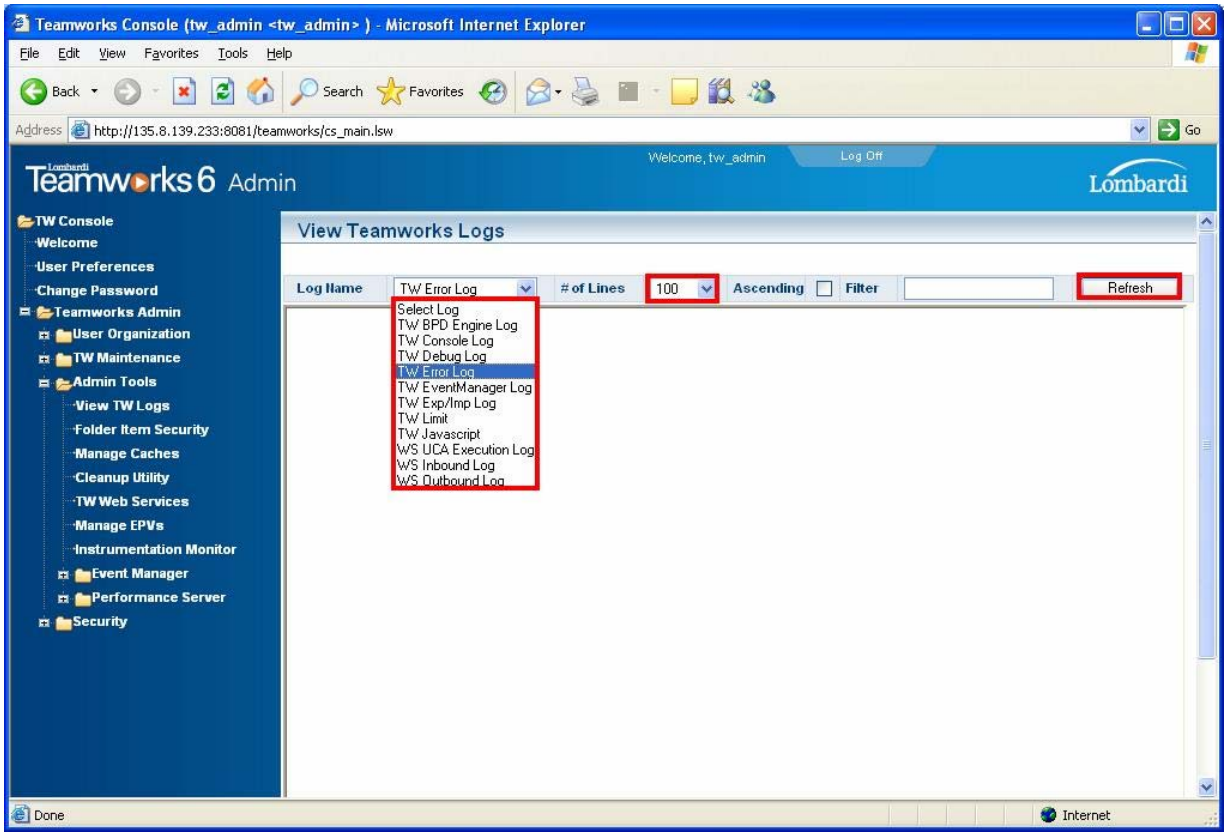
Step	Description
6.7	View log files on Lombardi Teamworks: • Verify that the process and performance servers are started (see **Appendix C**). • Open a standard web browser and enter **http://<Lombardi Teamworks IP Address or FQDN>:8081/teamworks** into the web browser's URL bar. • Log in to the Process Server Console with administrative privileges. • From the Process Server Console, select **TW Console ➔ Teamworks Admin ➔ Admin Tools ➔ View TW Logs**. • Select the appropriate log from the drop-down list for the **Log Name** field. • Select the appropriate number of lines to view from the drop-down list for the **# of Lines** field. • Click **Refresh**. 

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7. Conclusion

These Application Notes present a solution comprised of Lombardi Teamworks with Avaya Communications Process Manager (CPM) to provide a solution for Avaya Communications Enabled Business Processes (CEBP). For these Application Notes, a sample Avaya CEBP solution for processing fraudulent credit card transactions is presented.

8. Additional References

Avaya references are available at http://support.avaya.com.

[1] Communications Process Manager Installation and Configuration Guide, Issue 3, Doc ID 04-601158, December 2007.
[2] Communications Process Manager Administration and Maintenance Guide, Issue 5, Doc ID 04-601159, December 2007.

Lombardi Teamworks references are available at http://support.lombardi.com

[3] Teamworks 6 Enterprise SP1 Express Installation and Configuration Guide, September 28, 2007.
[4] Teamworks 6 Enterprise SP1 Installation and Configuration Guide for JBoss with Windows, September 28, 2007.
[5] Teamworks 6 Enterprise SP1 Administration Guide, September 28, 2007.

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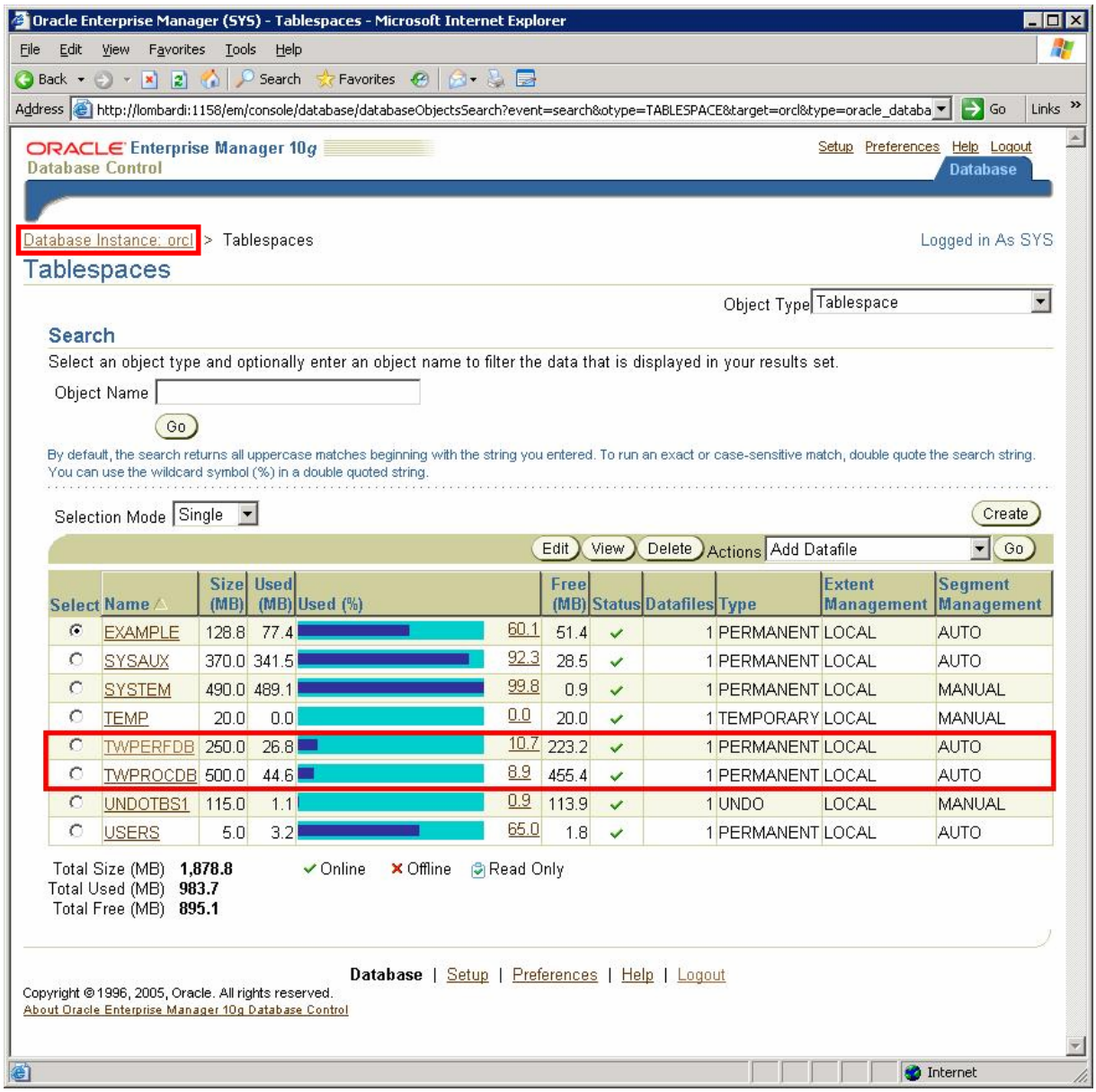
9. Appendix

Appendix A - Oracle Enterprise Manager 10g Configuration

Step	Description
A1	For this sample configuration, it is assumed that the Oracle Enterprise 10g Release 2 software has been installed and the **Tablespaces** for the Lombardi Teamworks Process and Performance servers have been defined.



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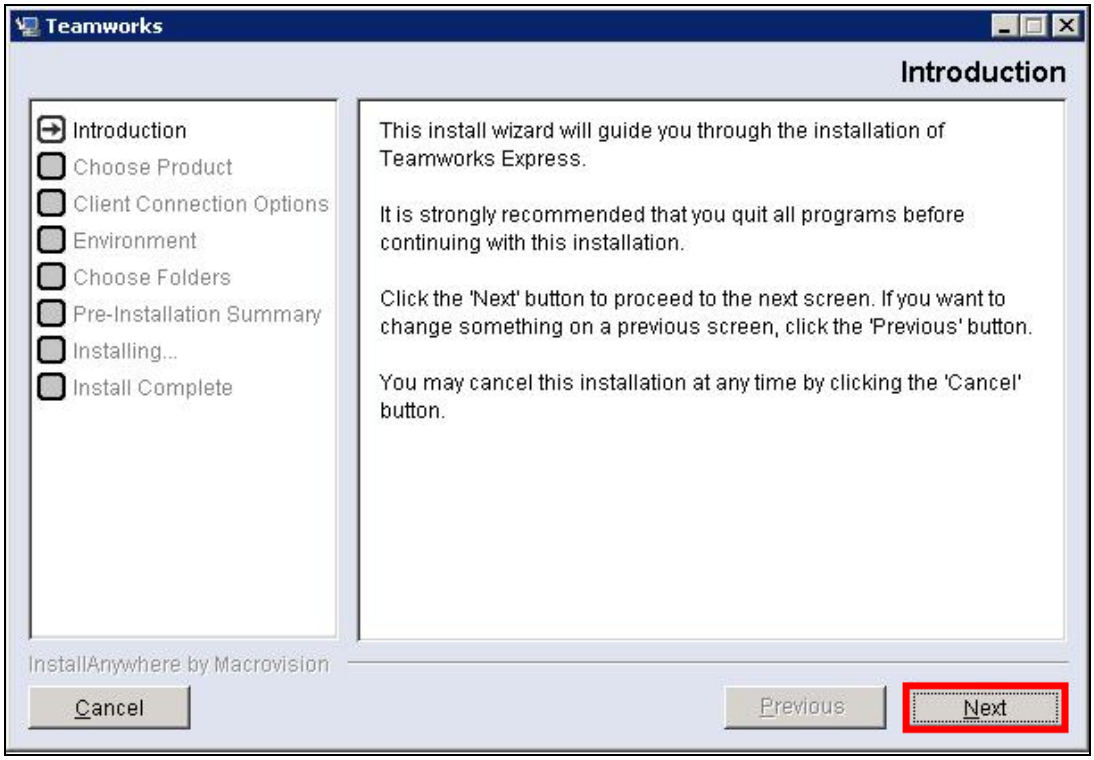
Appendix B - Lombardi Teamworks Installation

This section describes the steps for installing Lombardi Teamworks on a Windows based PC. The configuration described in this section assumes the software requirements to support Lombardi Teamworks are satisfied. Refer to [**3**] and [**4**] for additional information regarding installation requirements for Lombardi Teamworks.

B1 - Lombardi Teamworks Enterprise Express Installer

The Lombardi Teamworks Enterprise Express Installer enables the Lombardi Teamworks Process Server, Performance Server, and Authoring Environment to install on a single machine (Host or Local PC). Optionally, the Authoring Environment and Lombardi Teamworks servers (Process and Performance) can be installed on separate machines. Lombardi Software does not support running Lombardi Teamworks in a production environment that was installed with Lombardi Teamworks Enterprise Express Installer. Lombardi Teamworks Enterprise Installer must be used to set up Lombardi Teamworks in a production environment.

Step	Description
B1.1	Start the Lombardi Teamworks Enterprise Express Installer as follows: • [***Not Shown***] *Double click on the* ***Teamworks-6-Enterprise-SP1-Express-Installer.exe*** *file*. • Click **Next**. 

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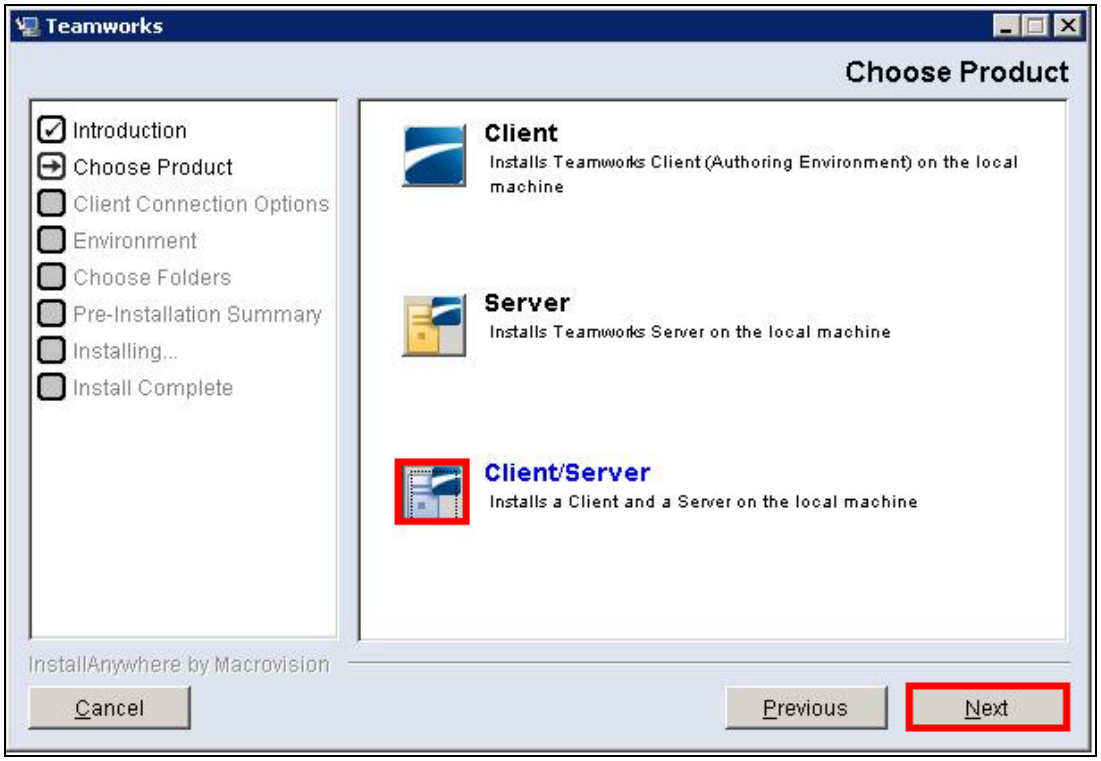
Step	Description
B1.2	From the **Choose Product** screen, select **Client/Server** and click **Next**. ***Note**: For this sample configuration, the client and server applications were installed on the Local PC hosting Lombardi Teamworks. It is also acceptable to install the client application on a PC other than the one hosting Lombardi Teamworks.* 

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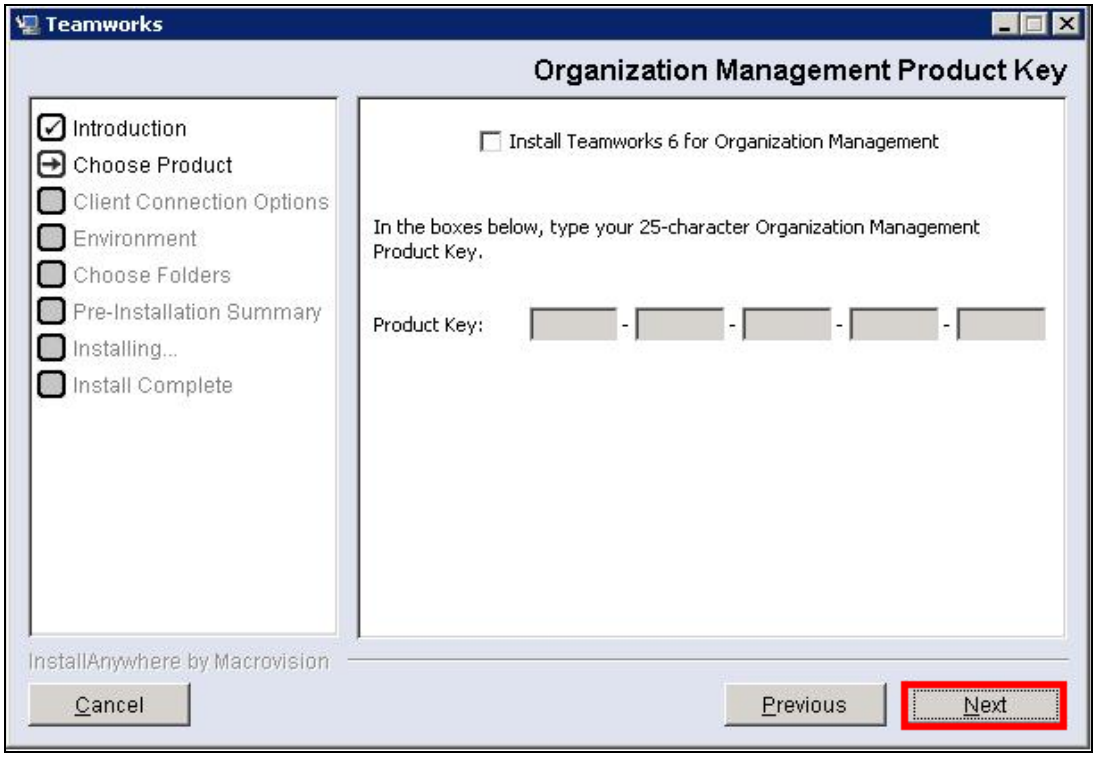
Step	Description
B1.3	From the **Organization Management Product Key** screen, enter the **Product Key** and click **Next**. 

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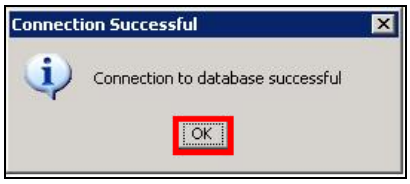
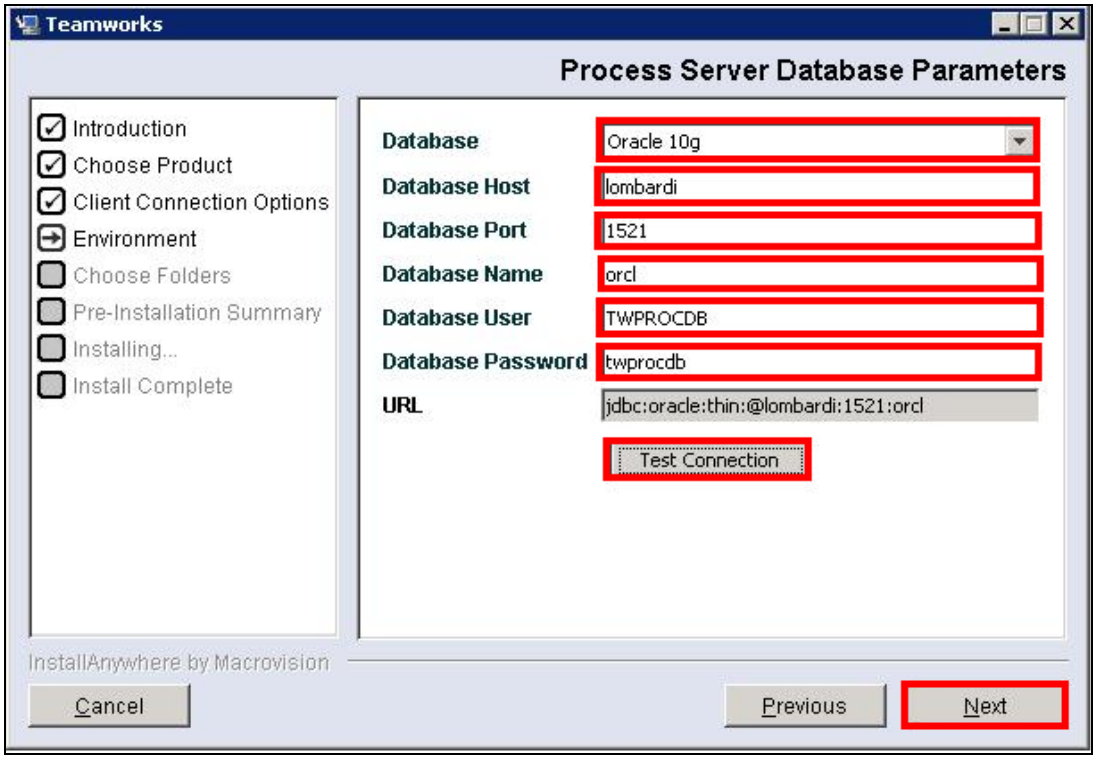
Step	Description
B1.4	From the **Process Server Database Parameters** screen, configure as follows: • Select the appropriate setting from the drop-down list for the **Database** field. • Enter the name of the Host PC in the **Database Host** field. • Enter the port that the database listens on in the **Database Port** field. For Oracle, the database default listener port is **1521**. • Enter the name of the database that Lombardi Teamworks uses for its Process Server repository in the **Database Name** field (see **Database Instance** in **Step A1**). • Enter the username and password for the Tablespace created for the Process Server in the **Database User** and **Database Password** fields respectively (see **Step A1**). • To verify the provisioning in this step, click **Test Connection**. If the connection to the database is successful, a pop-up window will provide confirmation. Click **OK**.  • Click **Next**. 

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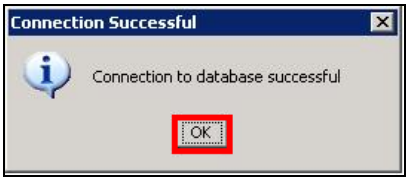
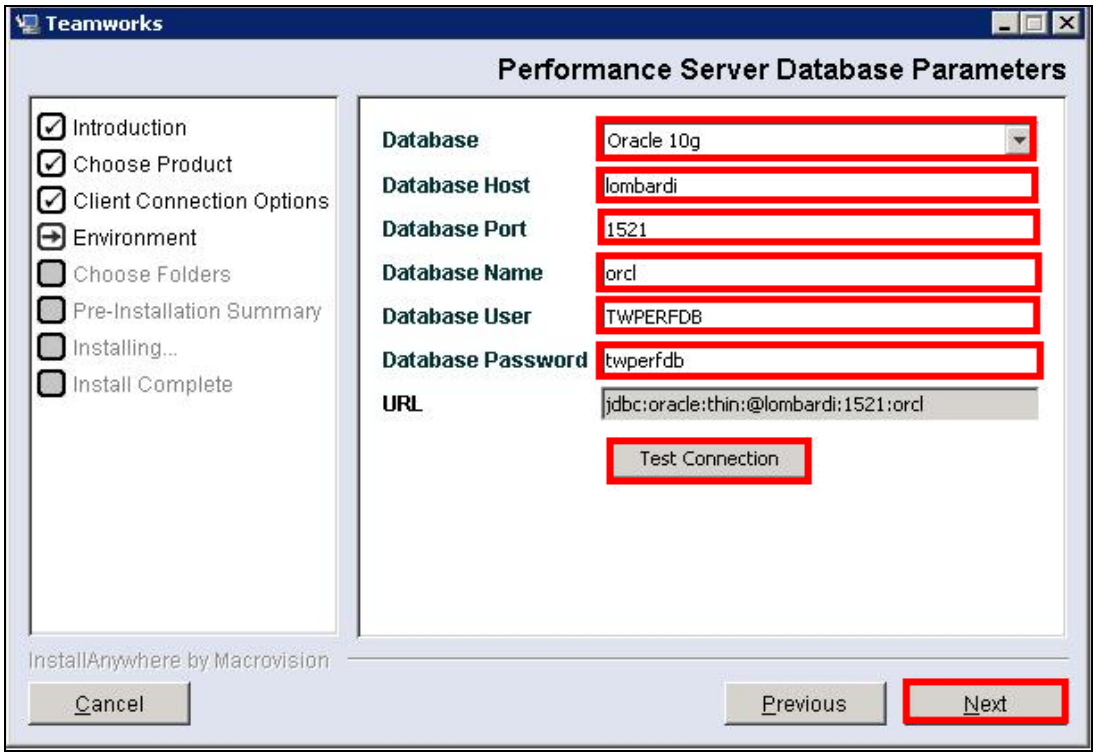
Step	Description
B1.5	From the **Performance Server Database Parameters** screen, configure as follows: • Select the appropriate setting from the drop-down list for the **Database** field. • Enter the name of the Host PC in the **Database Host** field. • Enter the port that the database listens on in the **Database Port** field. For Oracle, the database default listener port is **1521**. • Enter the name of the database that Lombardi Teamworks uses for its Performance Server repository in the **Database Name** field (see **Database Instance** in **Step A1**). • Enter the username and password for the Tablespace created for the Performance Server in the **Database Name** and **Database Password** fields respectively (see **Step A1**). • To verify the provisioning in this step, click **Test Connection**. If the connection to the database is successful, a pop-up window will provide confirmation. Click **OK**.  • Click **Next**. 

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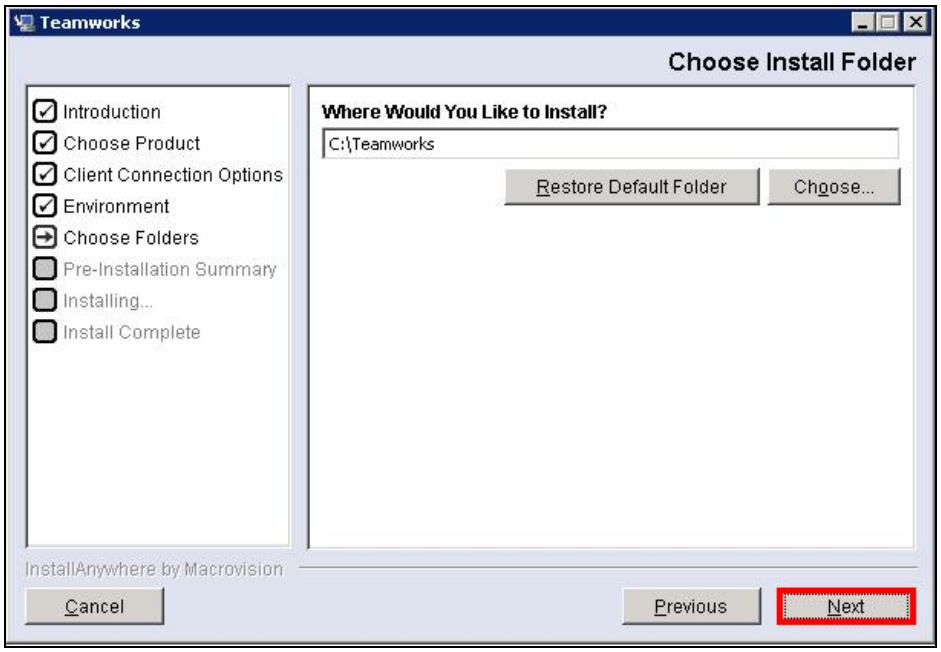
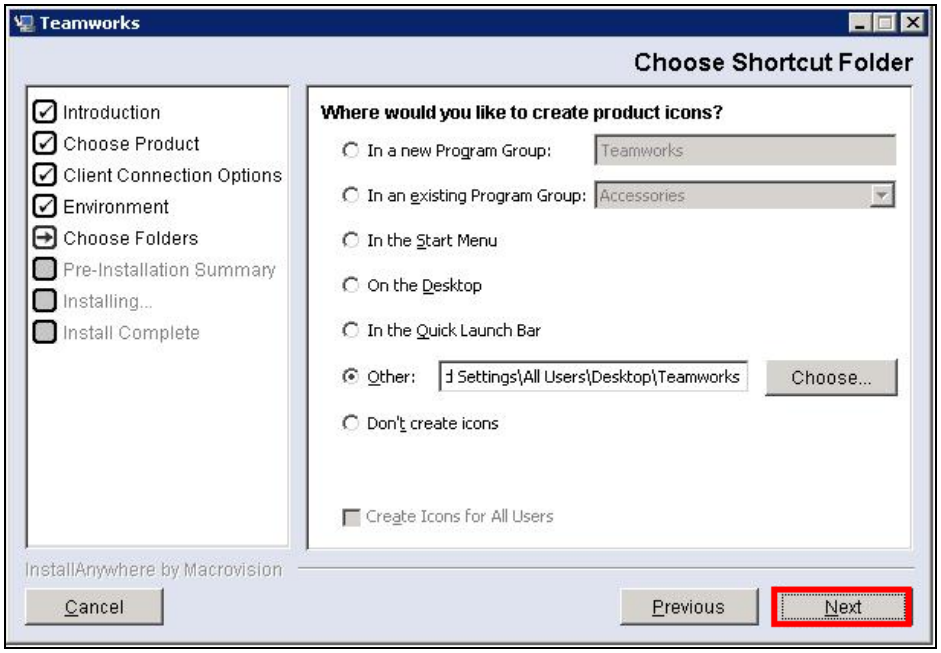
Step	Description
B1.6	From the **Choose Install Folder** screen, accept default settings and click **Next**. 
B1.7	From the **Choose Shortcut Folder** screen, accept default settings and click **Next**. 

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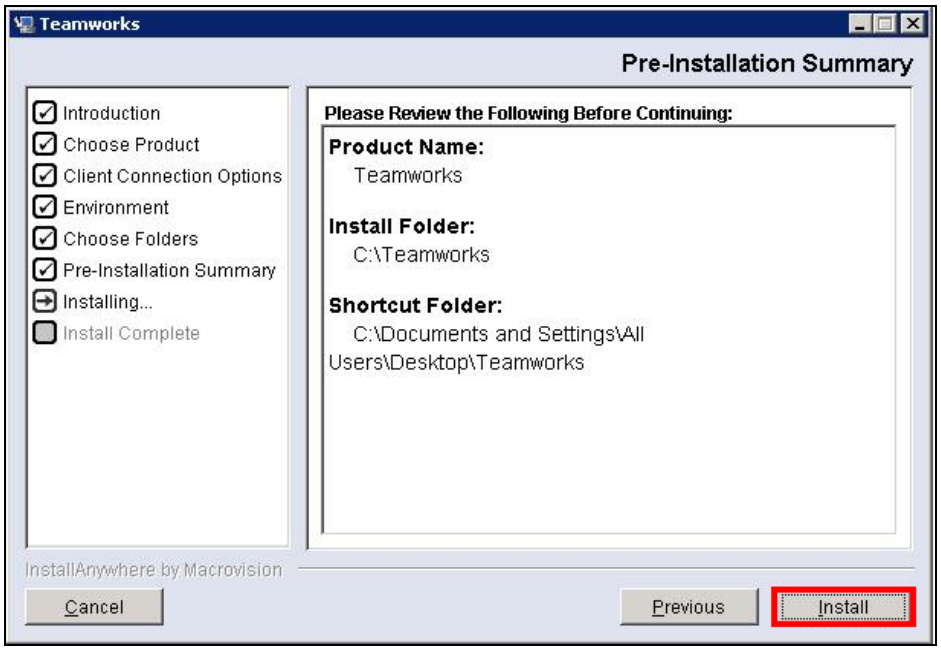
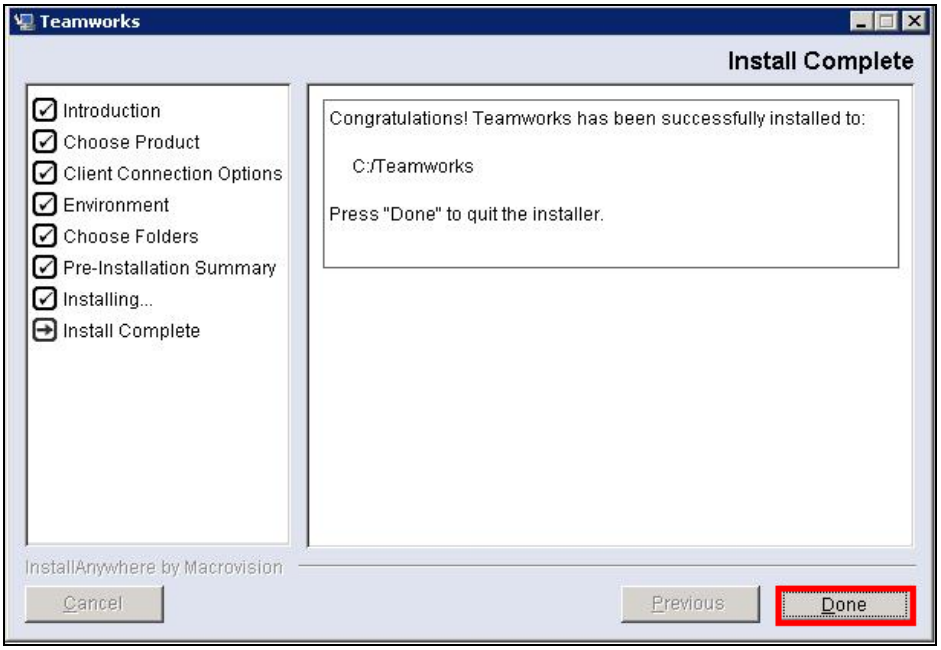
Step	Description
B1.8	From the **Pre-Installation Summary** screen, accept default settings and click **Install**. 
B1.9	From the **Install Complete** screen, click **Done**. 

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B2 - Configure Databases

The Lombardi Teamworks Enterprise Express Installer installs scripts that are used to set up the structure, initial data, stored procedures, and indexes for Lombardi Teamworks databases. Databases for the Process Server and Performance Server should already be configured (see **Appendix A**).

Step	Description
B2.1	Configure the database for the Process Server as follows: • From the command line (DOS console), navigate to the **<Lombardi Teamworks Install-Dir>\process-server\db** directory. • Enter **DBSLoad.bat oracle10g** and verify the script was successful by noting the following line in the DOS console: **DBStructureLoad completed successfully**
	C:\Teamworks\process-server\db>DBSLoad.bat oracle10g DBStructureLoad starting DBStructureLoad dbdriver : oracle.jdbc.driver.OracleDriver DBStructureLoad dburl : jdbc:oracle:thin:@lombardi:1521:orcl DBStructureLoad dbuser : TWPROCDB **DBStructureLoad completed successfully.**
B2.2	From the **<Lombardi Teamworks Install-Dir>\process-server\db** directory, enter **DBSpLoad.bat oracle10g** and verify the script was successful by noting the following line in the DOS console: **DBStructureLoad completed successfully**
	C:\Teamworks\process-server\db>DBSpLoad.bat oracle10g DBStructureLoad starting DBStructureLoad dbdriver : oracle.jdbc.driver.OracleDriver DBStructureLoad dburl : jdbc:oracle:thin:@lombardi:1521:orcl DBStructureLoad dbuser : TWPROCDB **DBStructureLoad completed successfully.**
B2.3	From the **<Lombardi Teamworks Install-Dir>\process-server\db** directory, enter **DBLoad.bat oracle10g** and verify the script was successful by noting the following line in the DOS console: **DBLoad completed successfully**
	C:\Teamworks\process-server\db>DBLoad.bat oracle10g DBLoad starting DBLoad dbdriver : oracle.jdbc.driver.OracleDriver DBLoad dburl : jdbc:oracle:thin:@lombardi:1521:orcl DBLoad dbuser : TWPROCDB **DBLoad completed successfully.**

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Step	Description
B2.4	Configure the database for the Performance Server as follows: • From the command line (DOS console), navigate to the **<Lombardi Teamworks Install-Dir>\performance-server\db** directory. • Enter **DBSLoad.bat oracle10g** and verify the script was successful by noting the following line in the DOS console: **DBStructureLoad completed successfully**
	C:\Teamworks\performance-server\db>DBSLoad.bat oracle10g DBStructureLoad starting DBStructureLoad dbdriver : oracle.jdbc.driver.OracleDriver DBStructureLoad dburl : jdbc:oracle:thin:@lombardi:1521:orcl DBStructureLoad dbuser : TWPERFDB **DBStructureLoad completed successfully.**
B2.5	From the **<Lombardi Teamworks Install-Dir>\performance-server\db** directory, enter **DBLoad.bat oracle10g** and verify the script was successful by noting the following line in the DOS console: **DBLoad completed successfully**
	C:\Teamworks\performance-server\db>DBLoad.bat oracle10g DBLoad starting DBLoad dbdriver : oracle.jdbc.driver.OracleDriver DBLoad dburl : jdbc:oracle:thin:@lombardi:1521:orcl DBLoad dbuser : TWPERFDB **DBLoad completed successfully.**

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B3 - Install System Components

There are system components that Lombardi Teamworks needs to run properly. These are default layouts, variable types, and other assets that are required to author a process successfully. This section describes the steps to import and install system components using the graphical user interface provided in the Authoring Environment.

Step	Description
B3.1	Install system components as follows: • Start the Process Server (see **Appendix C**). • Start the Authoring Environment and then log on to Lombardi Teamworks as an administrative user [**1**]. • [***Not Shown***] *From the Authoring Environment main menu, select* ***File*** ➔ ***Import****.*

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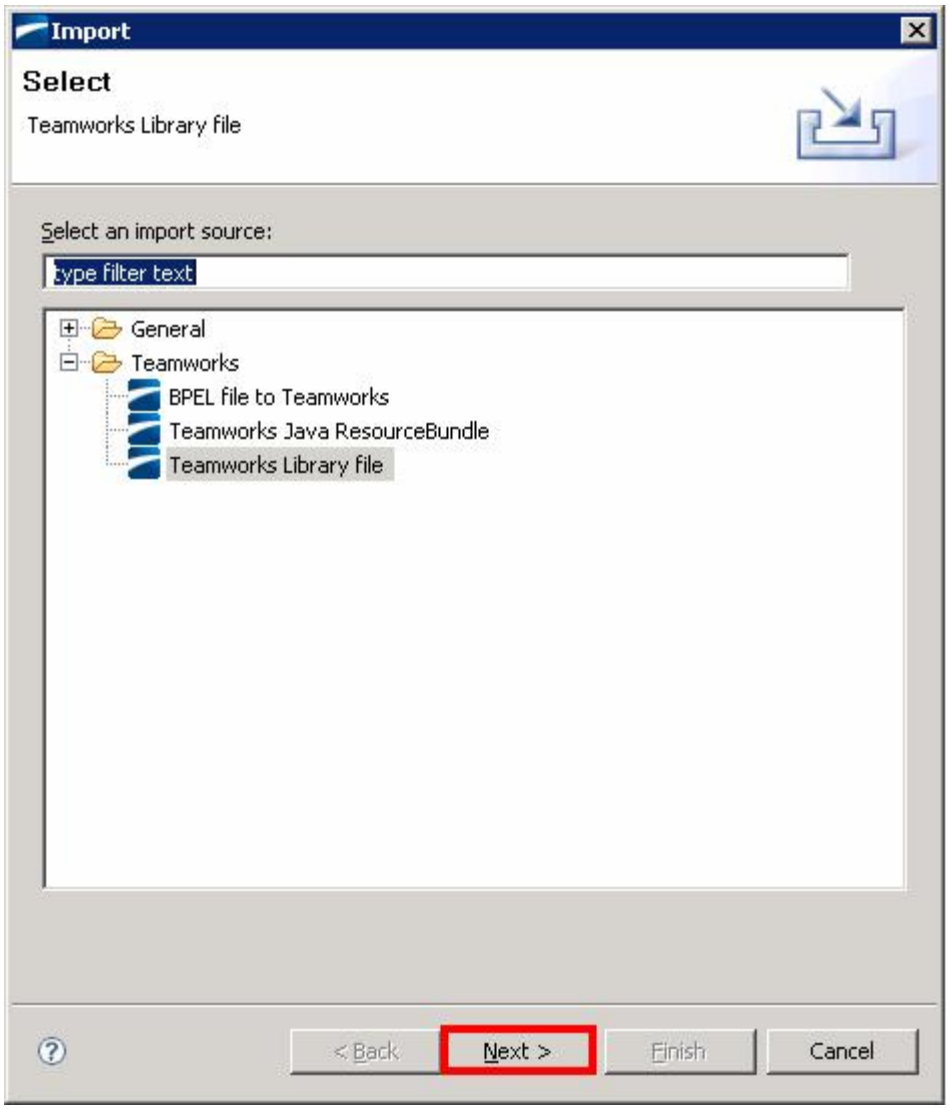
Step	Description
B3.2	From the **Import** dialog box select the **Teamworks Library file** option and then click **Next.** 

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Step	Description
B3.3	From the Import dialog box, click **Browse** and navigate to the **TWSystemData.zip** file located in the **<Lombardi Teamworks Install-Dir>\imports** directory and then click **Next.**

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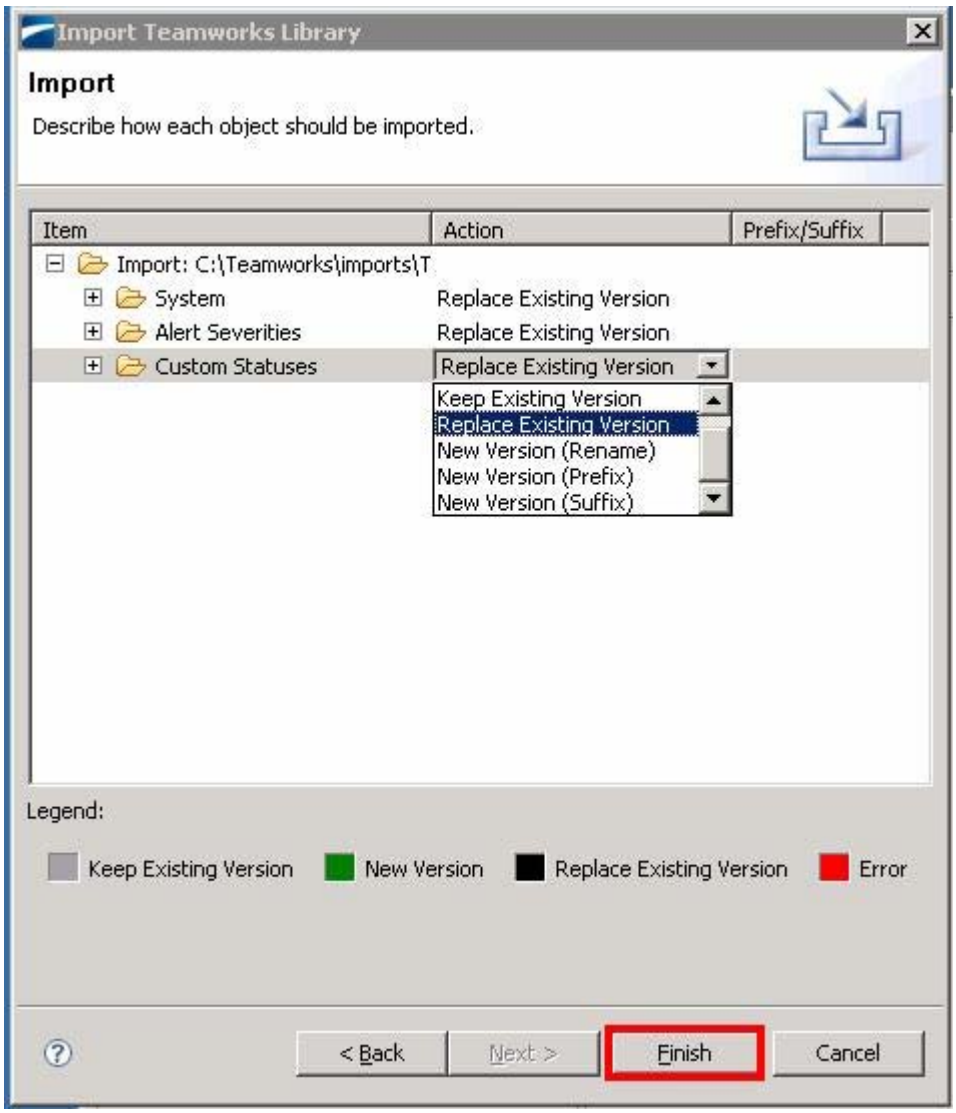
Step	Description
B3.4	From the Import dialog box, ensure that the **Replace Existing Version** option is selected for all folders. The Import facility will then overwrite all existing items with new versions, and inserts all new items. Click **Finish**. 

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Appendix C - Starting Lombardi Teamworks Servers

This section describes the steps to start the Lombardi Teamworks Process and Performance Servers.

Step	Description
C1	Start the Process Server as follows: • From the command line (DOS console), navigate to the **<Lombardi Teamworks Install-Dir>\process-server** directory. • Enter **startProcessServer.cmd** and verify the Process Server is running by noting the following lines in the DOS console: **INFO [ChannelSocket] JK: ajp13 listening on /0.0.0.0:8009** **INFO [JkMain] Jk running ID=0 time=0/79 config=null** ***Note**: Do not close the DOS console where the Process Server was started, as this may stop the Process Server. To stop the Process Server, enter the **Ctrl+C** command in the DOS console where the Process Server was started.*
	C:\Teamworks\process-server>startProcessServer.cmd --> Wrapper Started as Console Launching a JVM... Wrapper (Version 3.0.5) ... 10:36:29,468 **INFO [ChannelSocket] JK: ajp13 listening on /0.0.0.0:8009** 10:36:29,500 **INFO [JkMain] Jk running ID=0 time=0/79 config=null**
C2	Start the Performance Server as follows: • From the command line (DOS console), navigate to the **<Lombardi Teamworks Install-Dir>\performance-server** directory. • Enter **startPerformanceServer.cmd** and verify the Performance Server is running by noting the following lines in the DOS console: **INFO [ChannelSocket] JK: ajp13 listening on /0.0.0.0:9009** **INFO [JkMain] Jk running ID=0 time=0/156 config=null** ***Note**: Do not close the DOS console where the Performance Server was started, as this may stop the Performance Server. To stop the Performance Server, enter the **Ctrl+C** command in the DOS console where the Performance Server was started.*
	C:\Teamworks\performance-server>startPerformanceServer.cmd --> Wrapper Started as Console Launching a JVM... Wrapper (Version 3.0.5) ... 10:38:27,359 **INFO [ChannelSocket] JK: ajp13 listening on /0.0.0.0:9009** 10:38:27,421 **INFO [JkMain] Jk running ID=0 time=0/156 config=null**

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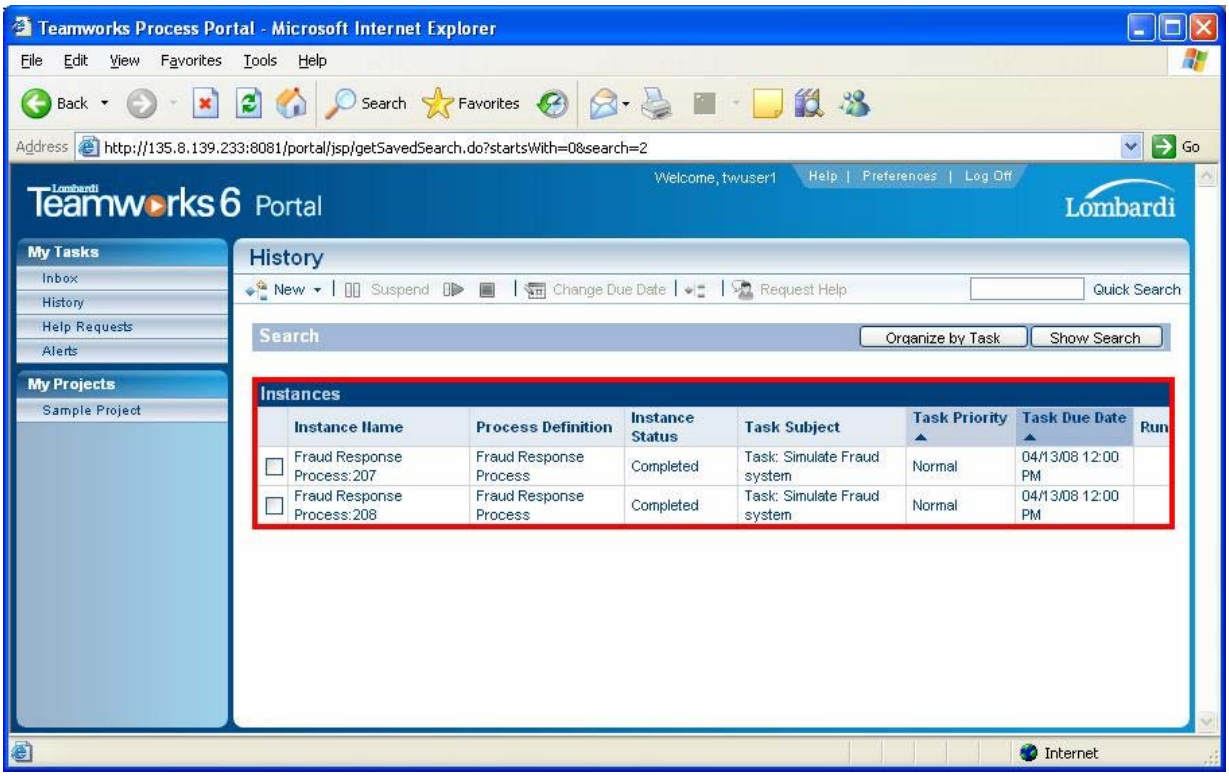
Appendix D - Lombardi Teamworks Maintenance

This section describes the steps to delete transactions for the **Fraud Response Process** on Lombardi Teamworks.

Step	Description
D1	Verify the transactions for **the Fraud Response Process** that are to be deleted as follows: • Verify that the process and performance servers are started (see **Appendix C**). • Open a standard web browser and enter **http://<Lombardi Teamworks IP Address or FQDN>:8081/portal** into the web browser's URL bar. • Log in to the Process Server Console with user privileges, e.g., select a user account created in **Steps 4.4.9 - 4.4.10**. • Click **History** under **My Tasks**. 

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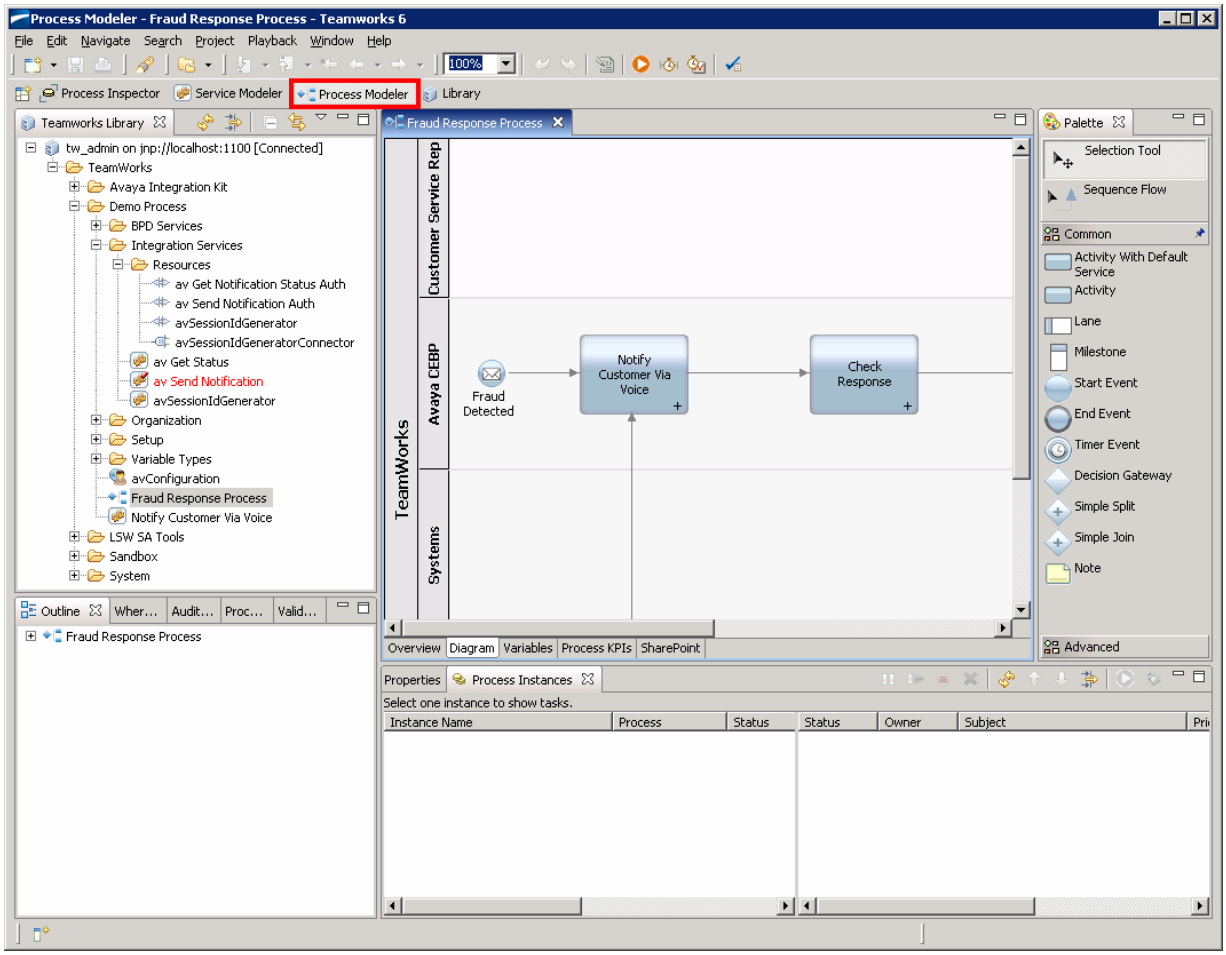
Step	Description
D2	From the Authoring Environment, delete transactions for **the Fraud Response Process** as follows: • If the Process Server is not initialized, start the Process Server (see **Appendix C**). • Start the Authoring Environment and then log on to Lombardi Teamworks as an administrative user [**1**]. • From the **Process Modeler** tab, select **TeamWorks ➔ Demo Processes ➔ Fraud Response Process**. 

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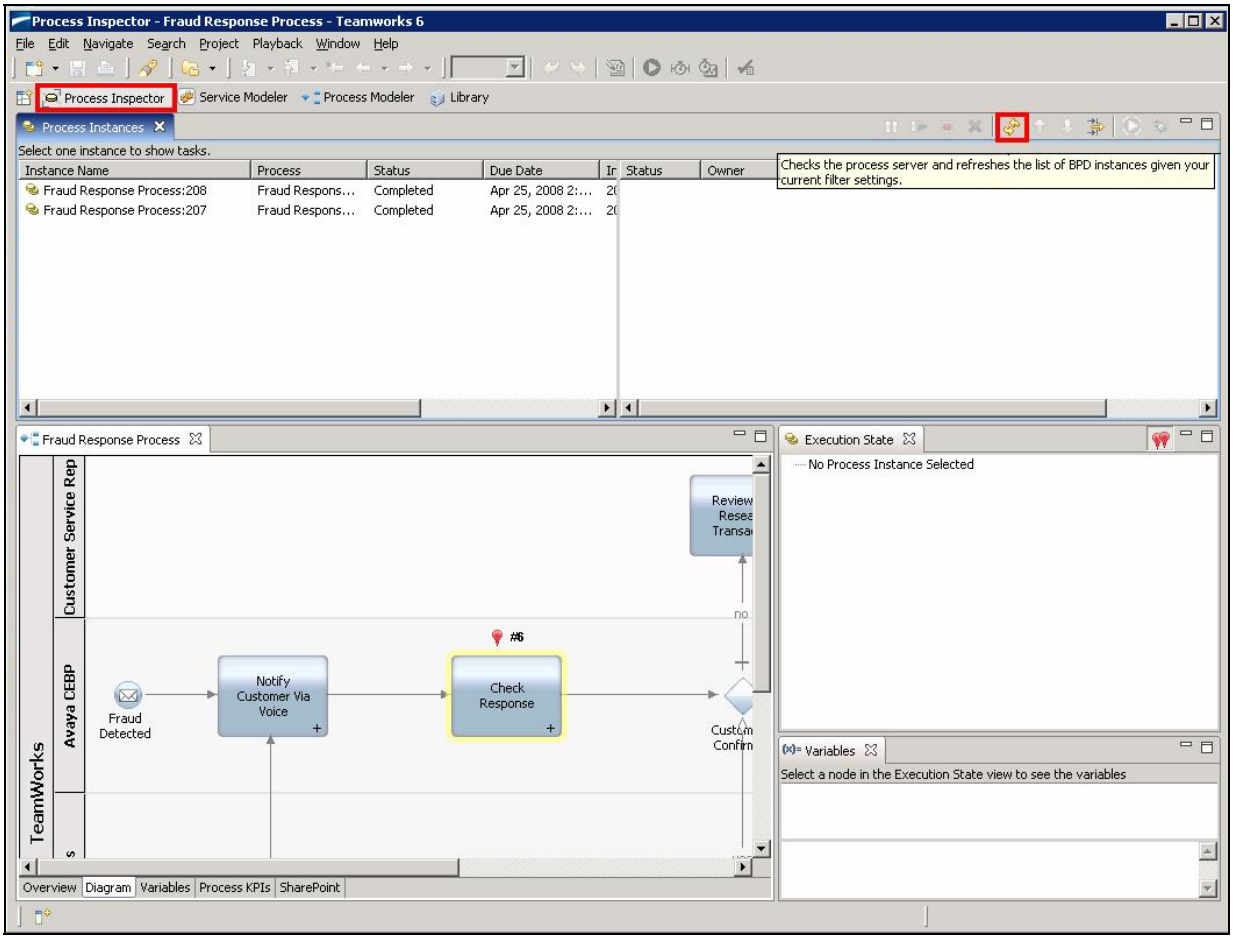
Step	Description
D3	To view the listing and status of transaction for the **Fraud Response Process**, refresh the **Instance Name** window by clicking .



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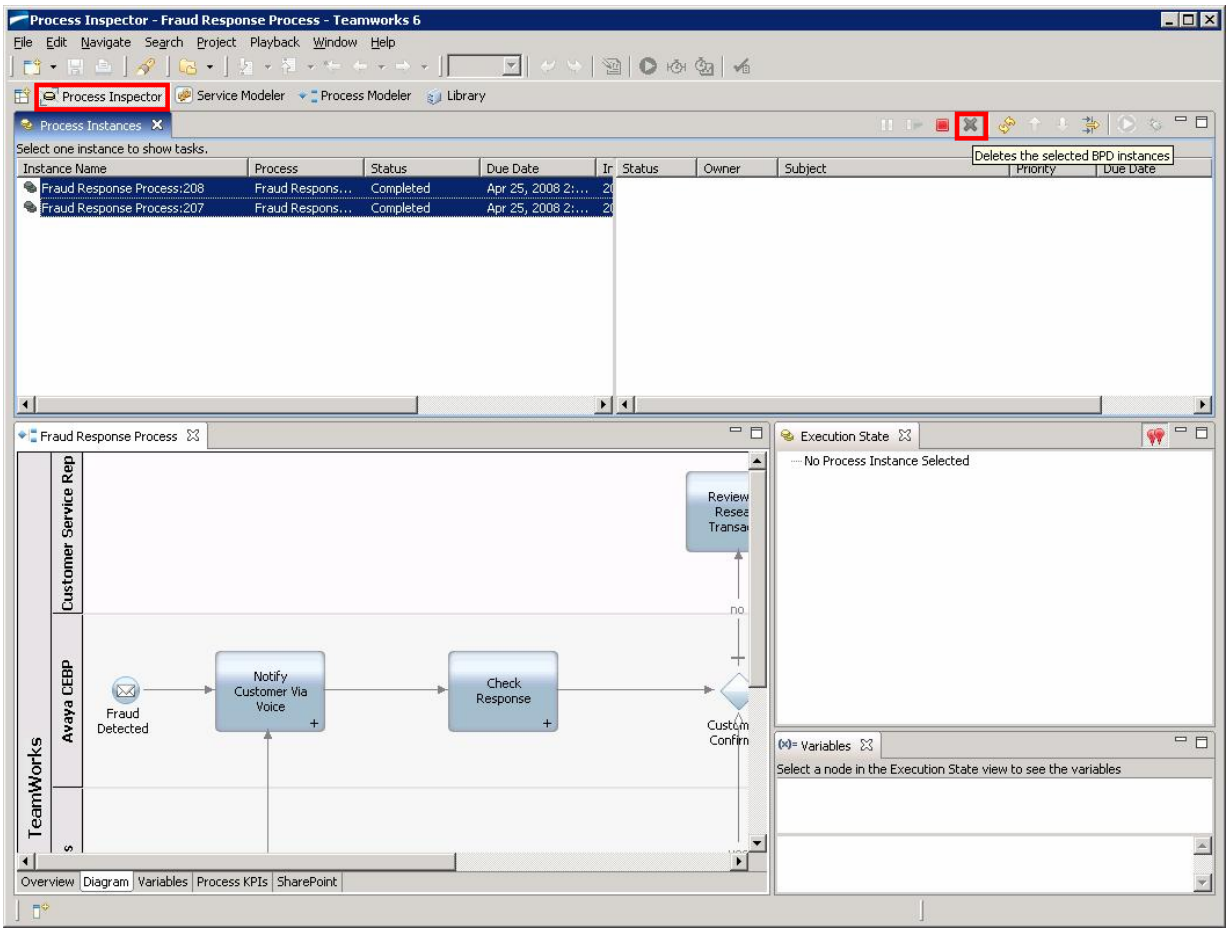
Step	Description
D4	To delete transactions for the **Fraud Response Process**: • Select the appropriate transactions from the **Instance Name** window. • Click . 

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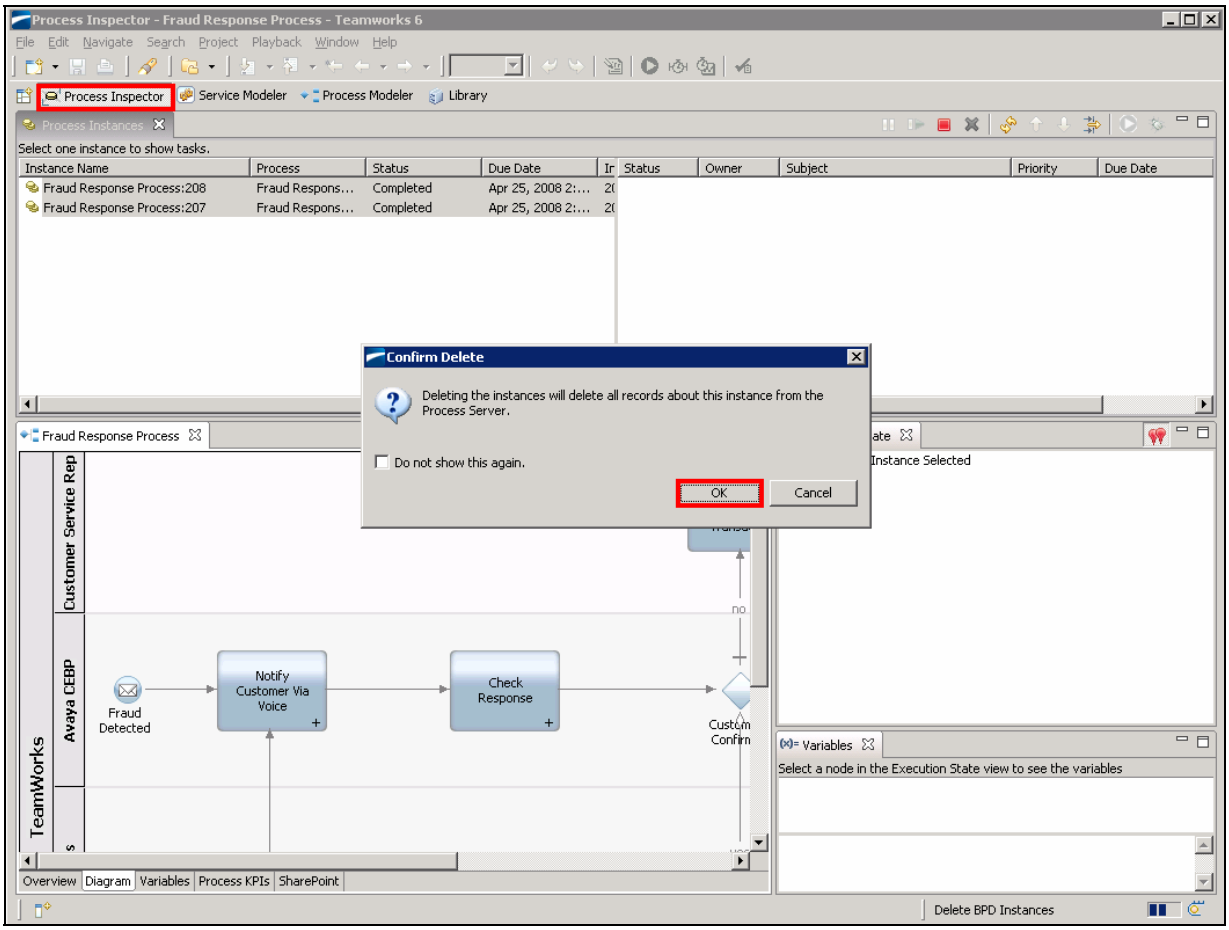
Step	Description
D5	To confirm deletion of transaction, click **OK**.



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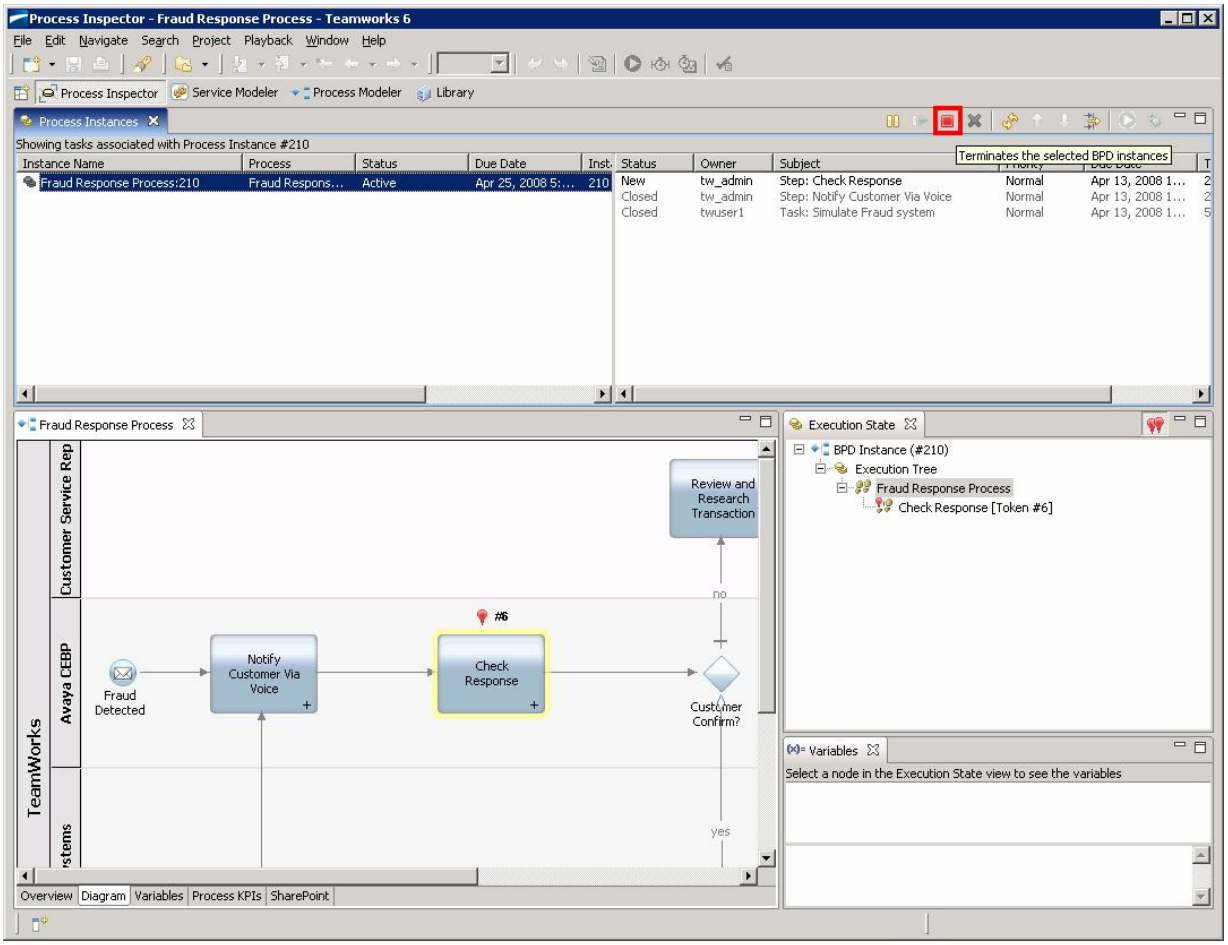
Step	Description
D6	If a transaction has an **Active** status, it is good practice to terminate the transaction prior to deleting them. To terminate the process, select the ones that are **Active** and click .



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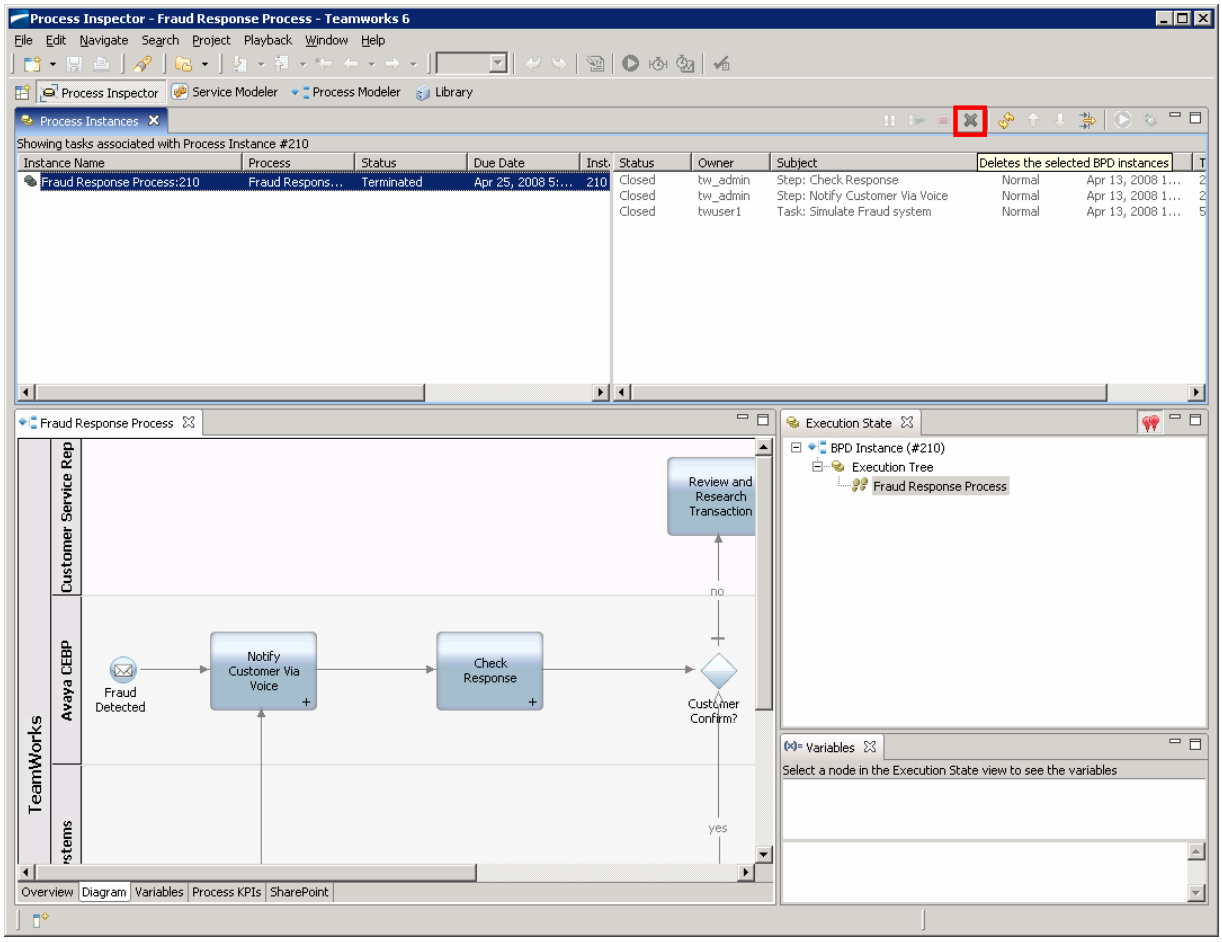
Step	Description
D7	The transactions are **Terminated**. To delete terminated transactions, follow **Steps D3 - D5**.



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