

# WebSphere Process Server V6.1: Clustering

## Generate custom deployment environment

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## What this exercise is about

The objective of this lab is to provide instructions on how to configure a highly available business integration environment using multiple WebSphere® Process Server clusters. You will design and generate a custom deployment environment and then review all the resources created and applications configured.

## Lab requirements

List of system and software required for the student to complete the lab.

- WebSphere Process Server V6.1
- DB2 ESE

## What you should be able to do

At the end of this lab you should be able to achieve the following based on the options you choose:

- Install WebSphere Process Server V6.1 core product files on all the host machines
- Update the WebSphere Process Server installations with available critical fixes or refresh packs
- Create a deployment manager profile with the advanced profile creation as an option on the deployment manager host machine using the Profile Management Tool
- Manually create WebSphere Process Server common database and tables
- Create custom profiles with advanced profile creation option on the host machines designated as managed nodes host machines
- Create there clusters and their member servers, and a single managed server
- Create and generate a custom deployment environment
- Finally review the configured resources and applications

## Exercise instructions

Some instructions in this lab are Windows® operating-system specific. If you plan on running the lab on an operating-system other than Windows, you will need to run the appropriate commands, and use appropriate files (.sh or .bat) for your operating system. The directory locations are specified in the lab instructions using symbolic references, as follows:

Reference variable	Windows location	Description
<WPS_HOME>	C:\IBM\WebSphere\ProcServer	
<DMGR_PROFILE_HOME>	<WPS_HOME>\profiles\Dmgr01	
<CUSTOM01_PROFILE_HOME>	<WPS_HOME>\profiles\Custom01	
<CUSTOM02_PROFILE_HOME>	<WPS_HOME>\profiles\Custom02	
<CUSTOM03_PROFILE_HOME>	<WPS_HOME>\profiles\Custom03	
<DB2_HOME>	C:\IBM\DB2\SQLLIB	

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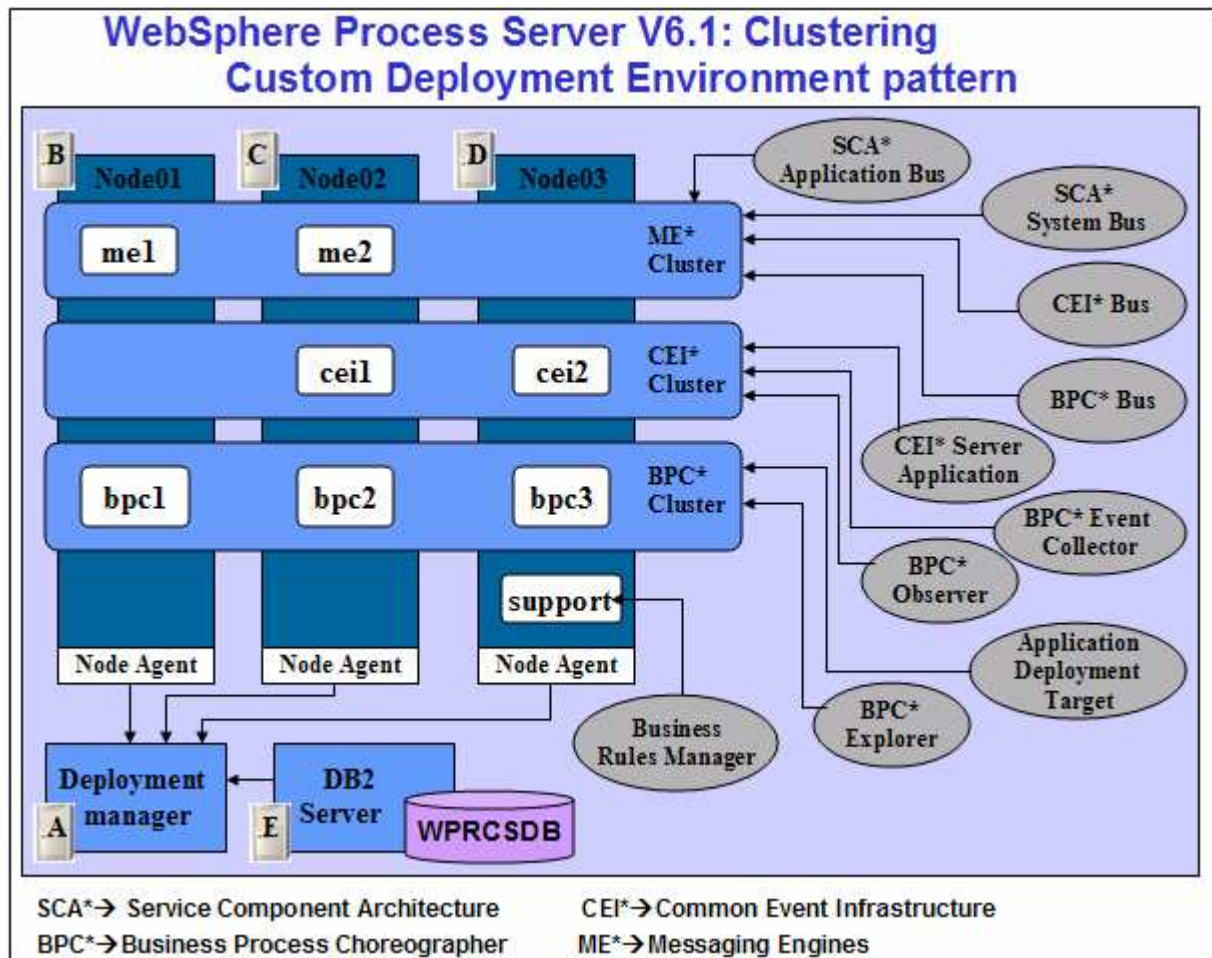
**Note for Windows users:** When directory locations are passed as parameters to a Java™ program such as EJBdeploy or wsadmin, it is necessary to replace the backslashes with forward slashes to follow the Java convention. For example, replace C:\LabFiles61\ with C:/LabFiles61/

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## Introduction

A deployment environment is a collection of configured clusters, servers, and middleware that collaborates to provide an environment to host Service Component Architecture (SCA) interactions. For example, a deployment environment might include a host for message destinations, a processor of business events, and administrative programs.

Taking advantage of the network deployment capability, clusters and servers can collaborate or to be precise, interconnected while they provide specific functionality. Depending on your requirements, you can assign specific functions to each cluster or server within the environment, to provide performance, failover, and capacity. In this lab, you will configure a custom deployment environment with a collection of three clusters and a single managed server scaled across three managed nodes as shown in the diagram below:



In this lab, you will be installing the WebSphere Process Server core product files on all the designated host machines. You will use the WebSphere update installer to update the WebSphere Process Server installations with the available critical fixes or refresh packs. Eventually you will use the 'Profile Management Tool' and create a deployment manager profile, create WebSphere Process Server Common database manually, and then create three custom profiles which get federated to the deployment manager. Finally you will create and generate a custom deployment environment designed to meet the business integration requirements using the deployment environment creation wizard.

## Part 1: Identify the deployment environment pattern and assign functions

In this part of the lab you will identify a custom deployment environment pattern and assign the functions to the deployment targets. To design a custom deployment environment, you need to understand the functionality of each component, interrelationships, dependencies, restrictions, and then designate the functionality to each cluster and servers (deployment targets). To achieve this you need to learn about the various components, their interrelationships and considerations.

Component	Related component	Considerations
Service Component Architecture (SCA)	Messaging	Not available if messaging is not configured or made available on the deployment target where SCA is being configured. Messaging can be configured local to the deployment target or can be remote. In this lab messaging is made available locally.
Common Event Infrastructure (CEI) server	Messaging	CEI server configuration is not available if the deployment target is not configured for messaging
Business Process Choreographer (BPC) container	Messaging, SCA, BPC Explorer	BPC Container configuration is not available if the deployment target is not configured for messaging and SCA support.
Business Process Choreographer (BPC) Explorer	BPC Container	BPC Explorer is only available if BPC Container is made available in the same collaborative unit*.
Business Process Choreographer (BPC) Event Collector	BPC Container, Common Event Infrastructure, BPC Observer	Configure first the Common Event infrastructure server on the same deployment target that you plan to use for the BPC Event Collector.  BPC Event Collector is only available once you have configured the BPC container in the same collaborative unit*.
Business Process Choreographer (BPC) Observer	BPC Container, BPC Event Collector	BPC Observer configuration is available once you select a BPC Event Collector in the same collaborative unit*.
Business Rules Manager	SCA	Business Rules Manager configuration is available once you configured SCA support on the same deployment target.  Only one Business Rules Manager can be configured for a given deployment environment.

**Collaborative unit\*:** The configuration of the part of a deployment environment that delivers required behavior to an application module. For example, a messaging collaborative unit includes the host of the messaging engine and deployment targets of the application module, and provides messaging support to the application module.

**Assign the components and define the function of each deployment target:**

Clusters and managed servers	Components assigned	Functional considerations
<b>ME* Cluster</b> ( <b>custom.Messaging</b> )	<ul style="list-style-type: none"> <li>→ SCA application</li> <li>→ Service Component Architecture (SCA) application bus</li> <li>→ SCA system bus</li> <li>→ Business Process Choreographer (BPC) bus</li> <li>Common Event Interface (CEI) bus</li> </ul>	<p>Messaging is configured for <b>local</b> making available for SCA application configuration.</p> <p><b>ME* Cluster</b> is where all the messaging engines are located. The messaging engines enable communication amongst the nodes in the deployment environment. This cluster can consist of members on nodes created with WebSphere Application Server instead of WebSphere Process Server if the cluster solely provides the messaging function.</p>
<b>CEI* Cluster</b> ( <b>custom.EventSupport</b> )	<ul style="list-style-type: none"> <li>→ CEI server application</li> <li>→ Business Process Choreographer (BPC) Event Collector application</li> <li>→ Business Process Choreographer (BPC) Observer</li> </ul>	<p><b>CEI* Cluster</b> hosts the Common Event Infrastructure (CEI) server and provides infrastructural support to other clusters and servers in the deployment environment.</p> <p>Configured to use remote messaging provided by '<b>ME* Cluster</b>'</p>
<b>BPC* Cluster</b> ( <b>custom.Application</b> )	<ul style="list-style-type: none"> <li>→ SCA support</li> <li>→ Business Process Choreographer container</li> <li>→ Human Tasks manager</li> <li>→ Business Process Choreographer Explorer</li> </ul>	<p><b>BPC* Cluster</b> is configured to support Business Process Choreographer components followed by the SCA support configuration.</p> <p>SCA support is configured to use remote messaging provided by '<b>ME* Cluster</b>'</p> <p>Remote CEI support is provided by the '<b>CEI* Cluster</b>'</p>
<b>support</b> (managed server) ( <b>support</b> )	<ul style="list-style-type: none"> <li>→ SCA support</li> <li>→ Business Rules Manager</li> </ul>	<p>'<b>support</b>' is a managed server exclusively used to configure Business Rules Manager application.</p> <p>SCA support configured to use remote messaging provided by '<b>ME* Cluster</b>'</p>

**Note:** The assignment of components and functions to various deployment targets in this lab are done to walk you through all the configuration actions that take place during a custom deployment environment creation process.

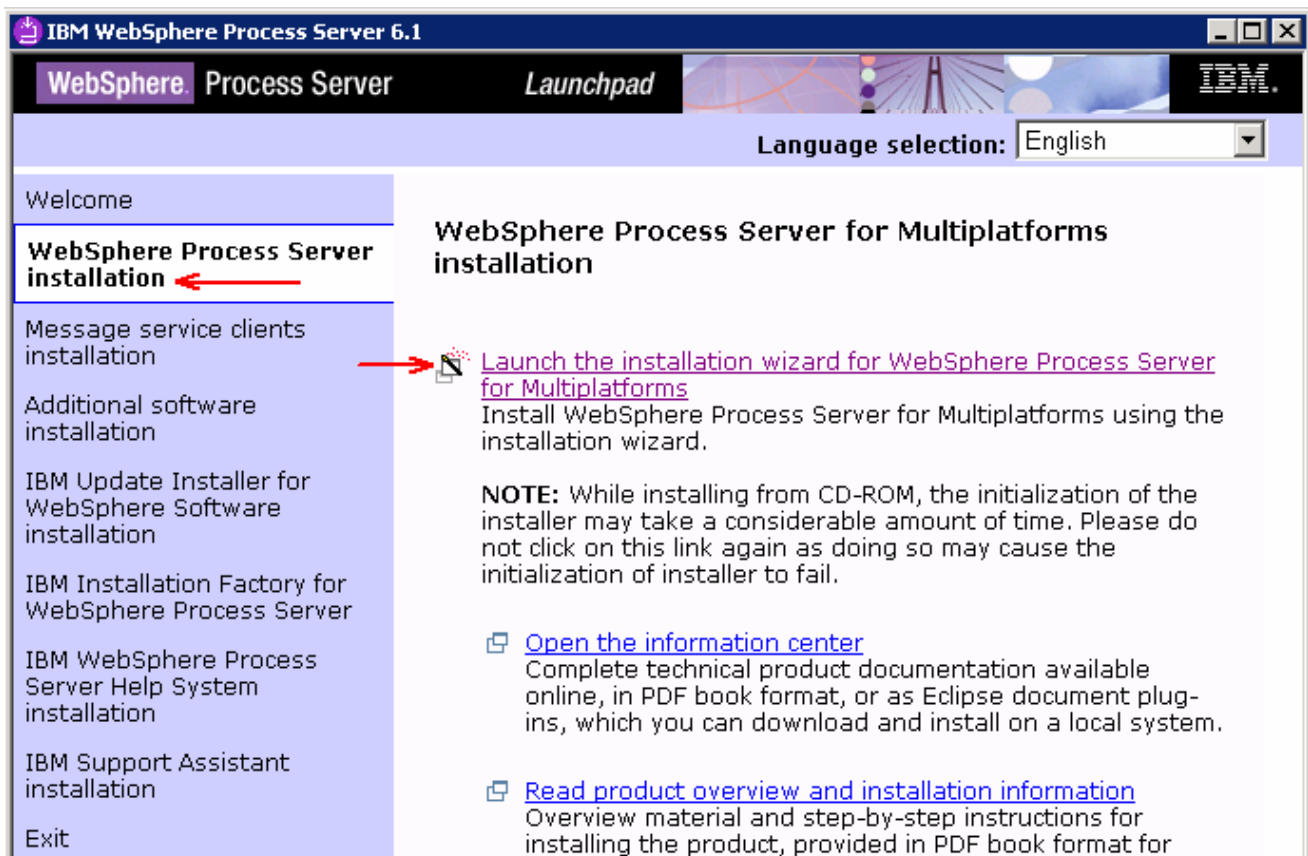
## Part 2: Installing the WebSphere Process Server core product files

In this part of the lab you will install WebSphere Process Server core product files on all the host machines. This gives an opportunity to update the installation with available critical fixes or refresh packs and create profiles of your choice using the WebSphere Process Server 'Profile Management Tool (PMT)'.

**Note:** Installing only the WebSphere Process Server core product files, that is without any profiles being created allows you to update the installation with available critical fixes or refresh packs. Visit '[Appendix 4: Installing the Update Installer for WebSphere Software](#)' at the end of this document.

Complete the following instructions to install the WebSphere Process Server core product files using the WebSphere Installation Manager:

- \_\_\_\_ 1. Unpack the WebSphere Process Server installation archive file into a directory to create an on-disk image. ( Example:- **C:\CDImageV61\** ), double click on **launchpad.exe** to launch the Common Launchpad program
- \_\_\_\_ 2. On the welcome screen, click on the '**WebSphere Process Server Installation**' link in the left pane and then click the '**Launch the installation wizard for WebSphere Process Server for Multiplatforms**' link to the right

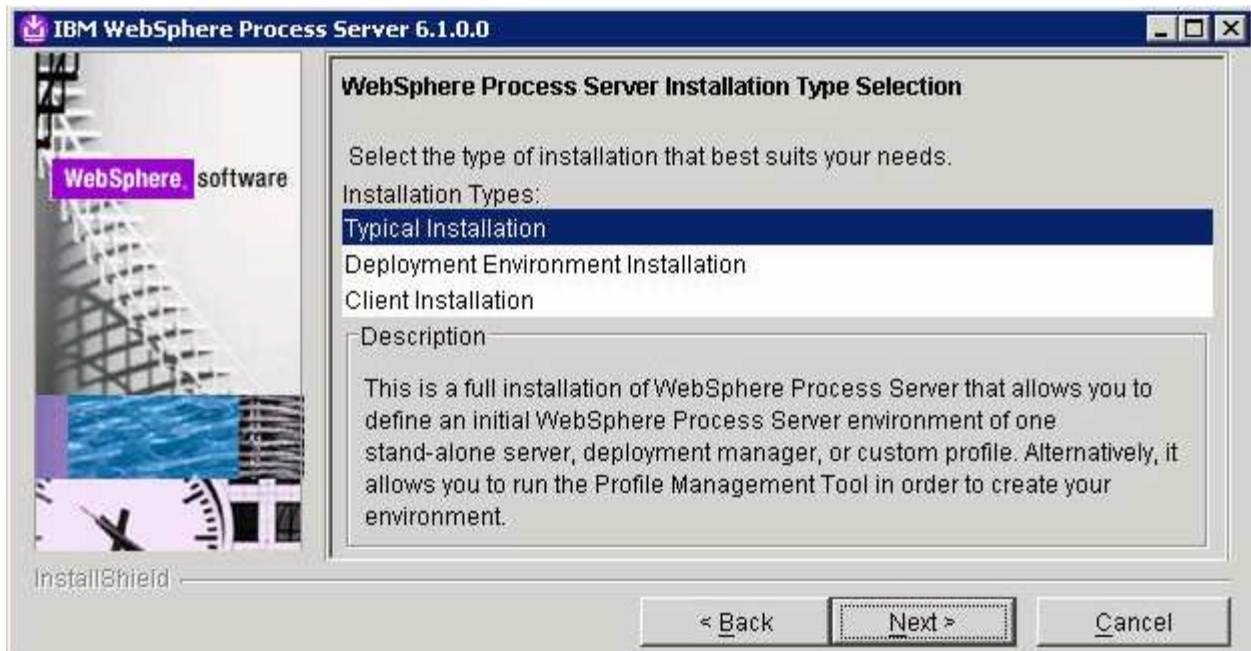


- \_\_\_\_ 3. The install shield wizard for the WebSphere Process Server is launched

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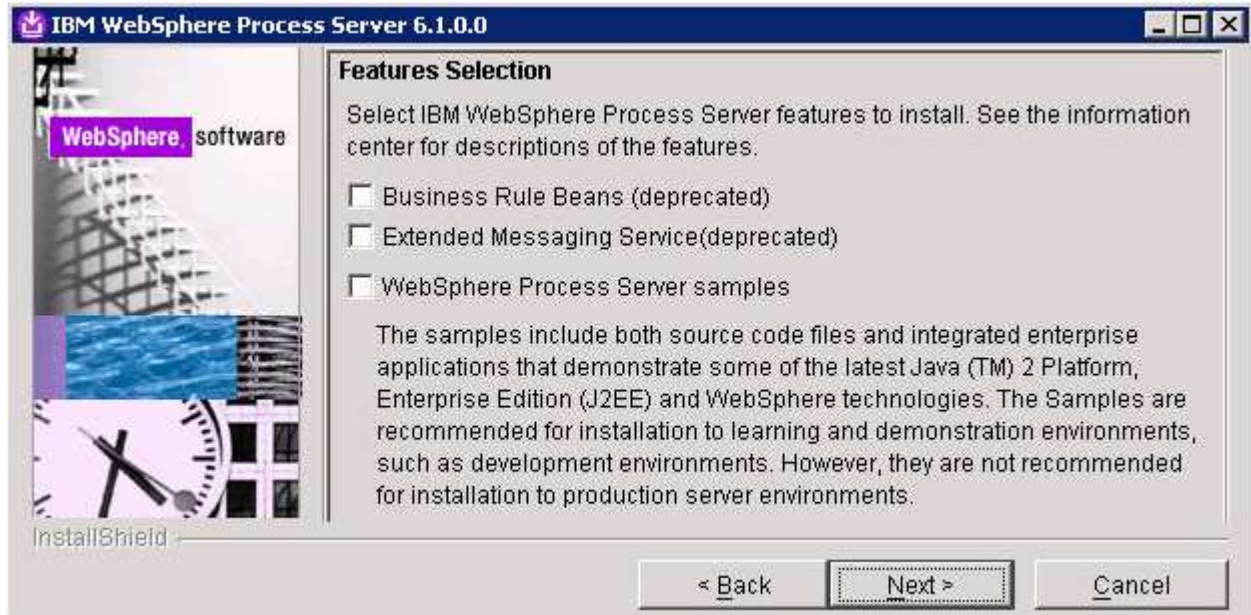
- \_\_\_ 4. Click **Next**
- \_\_\_ 5. In the following panel, read the license agreement. If you agree to the terms, select the radio button for '**I accept both the IBM and the non-IBM terms**'. Click **Next**
- \_\_\_ 6. In the following panel, review the system pre-requisite information panel. Click **Next**
- \_\_\_ 7. In the following '**WebSphere Process Server Installation Type Selection**' panel, select '**Typical Installation**' from the available '**Installation Types**'



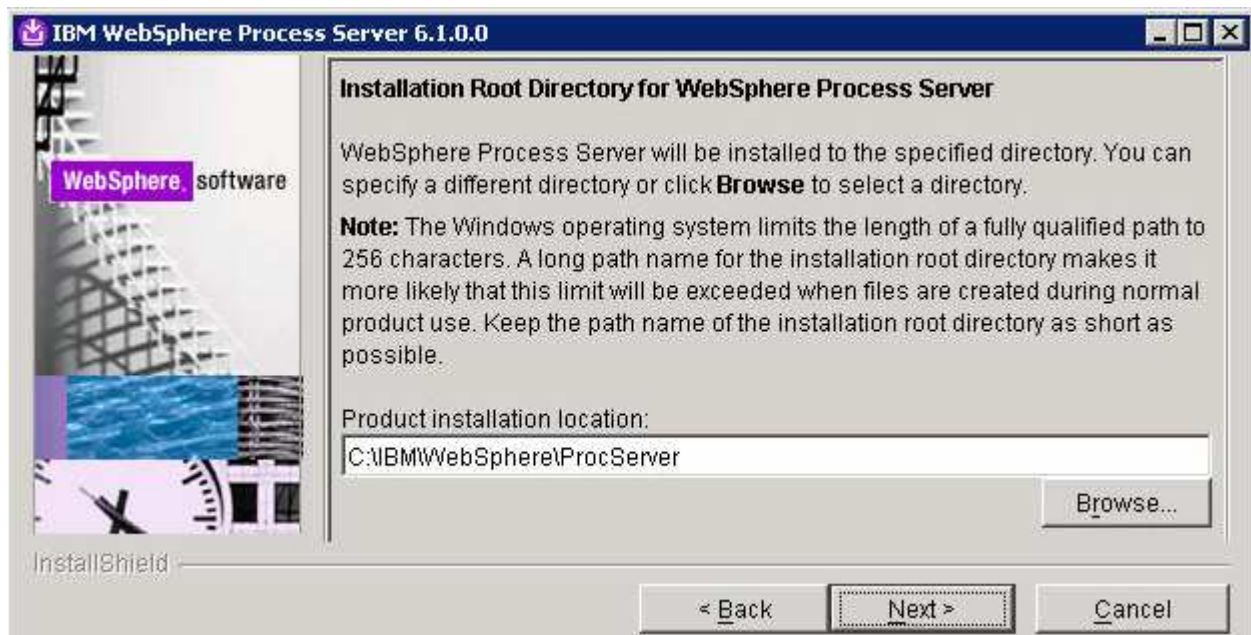
- \_\_\_ 8. Click **Next**
- \_\_\_ 9. In the following '**Feature Selection**' panel, accept the defaults



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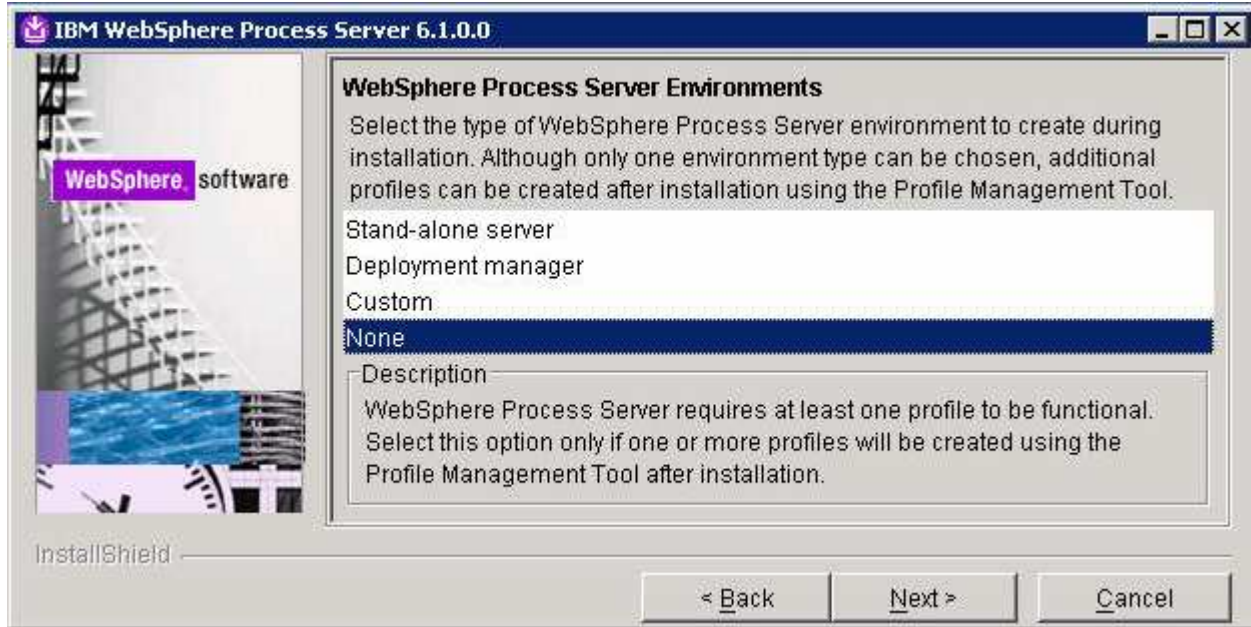


- \_\_\_ 10. Click **Next**
- \_\_\_ 11. In the following 'Installation Root Directory for WebSphere Process Server' panel, to specify a different for the 'Product installation location', click the **Browse** button
- Product installation location : **C:\IBM\WebSphere\ProcServer**



- \_\_\_ 12. Click **Next**
- \_\_\_ 13. In the following 'WebSphere Process Server Environments' panel, select **None**

**Note:** Selecting '**None**' for WebSphere Process Server environment, installs the core product files and does not create any profiles or runtime servers. You can update the installation with the available critical fixes or refresh packs and use the Profile Management Tool (PMT) which provides several options for creating or augmenting new WebSphere Process Server profiles.



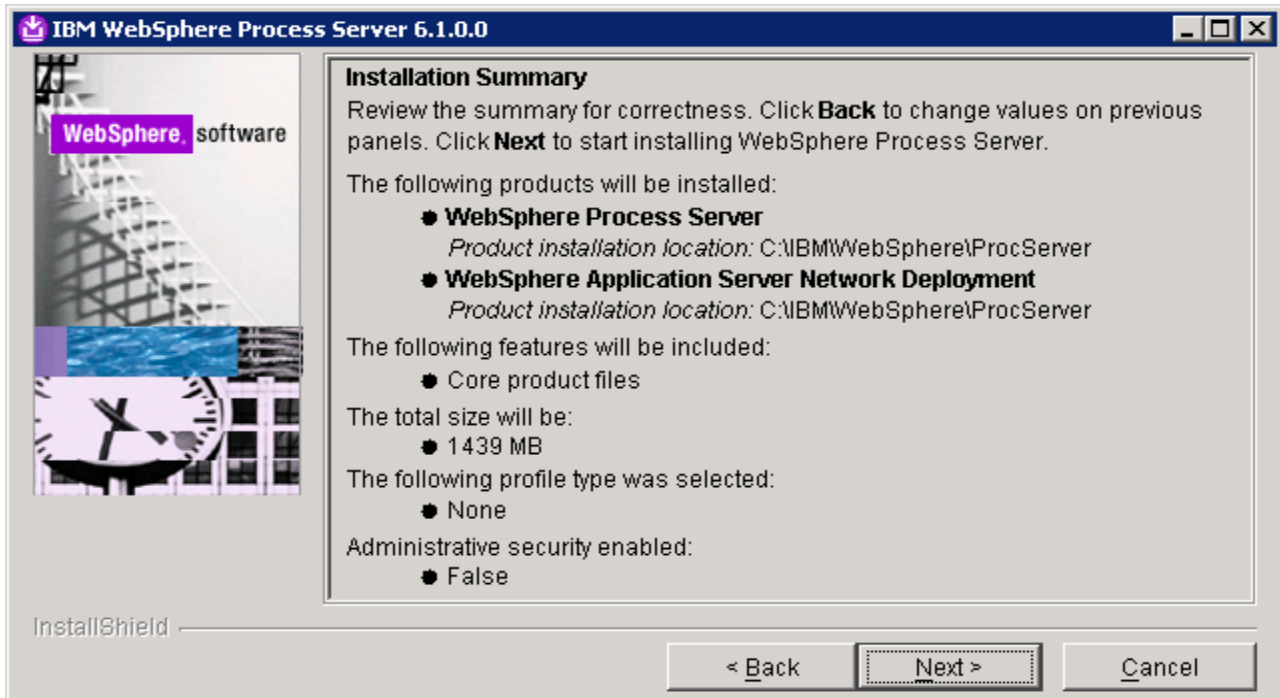
\_\_\_ 14. Click **Next**

\_\_\_ 15. Click **Yes** over the warning dialog

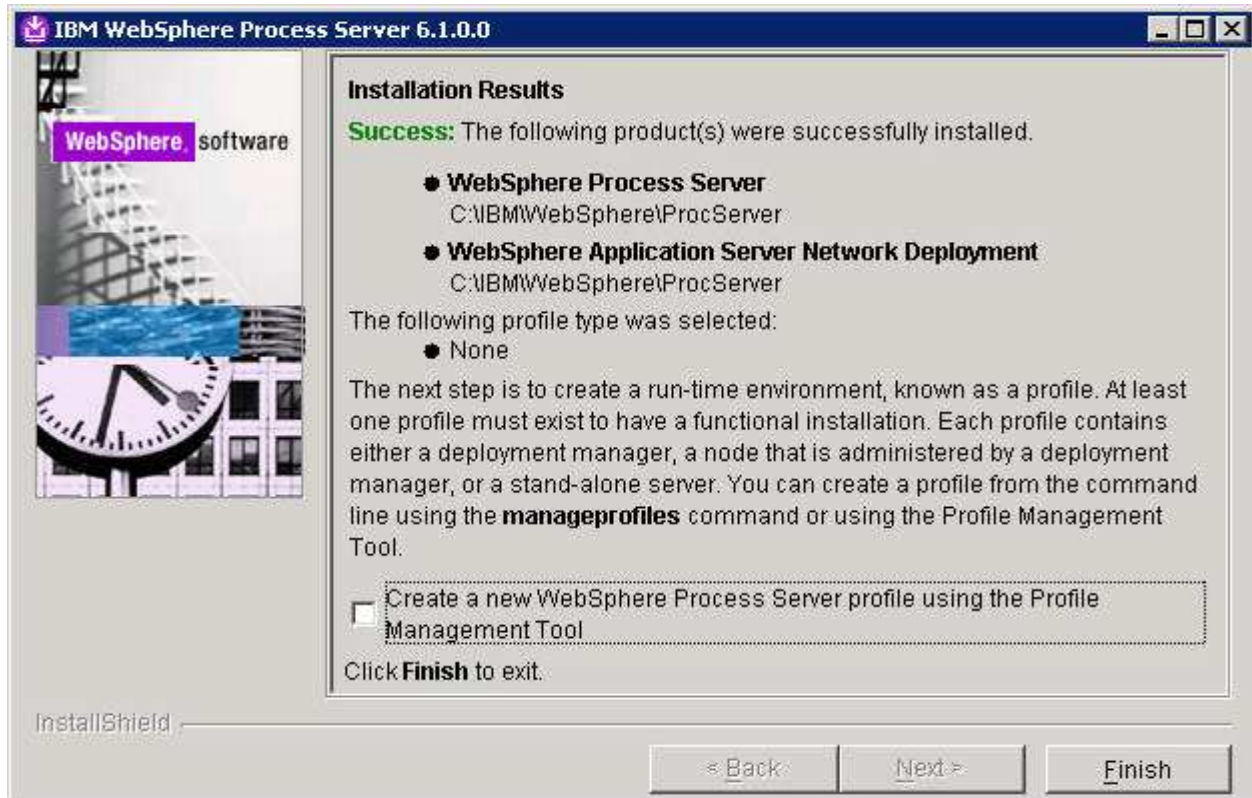


\_\_\_ 16. In the following '**Installation Summary**' panel, review the process server installation summary

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17. Click **Next** to continue with the installation. The installation progresses and would take a couple of minutes to complete. Once the installation is complete, review the 'Installation Results' panel



18. Unselect the check box for launching the profile management tool and click **Finish**

## Part 3: Creating the deployment manager profile

In this part of the lab, you will create a WebSphere Process Server deployment manager profile with an advanced profile creation option.

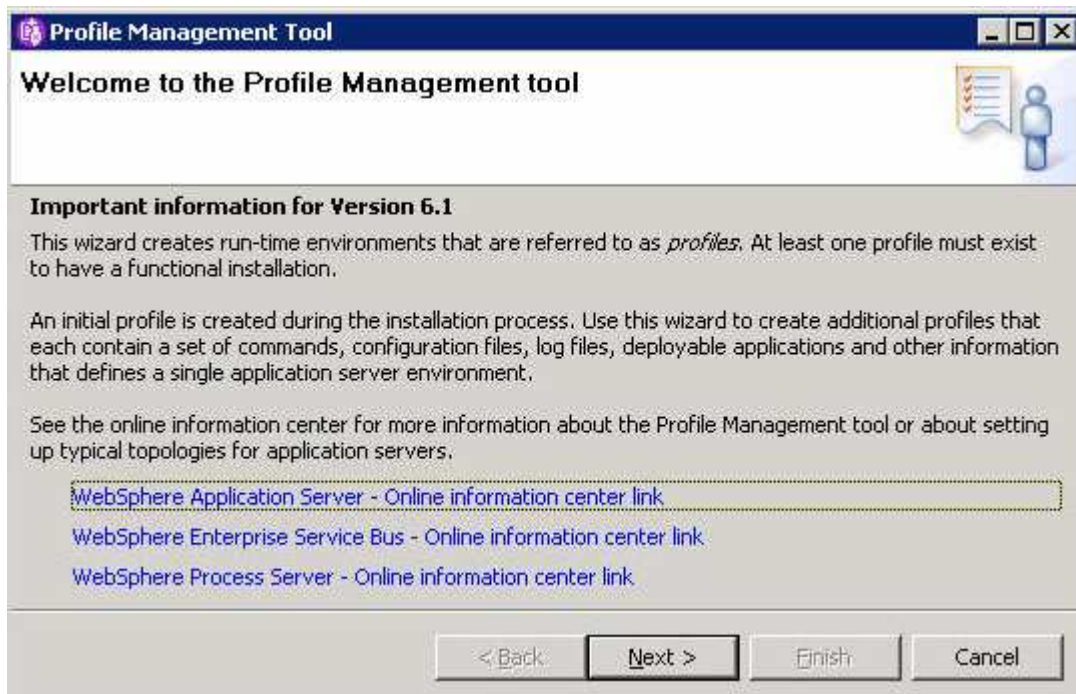
### Pre-requisites:

- Make a decision on where the database server will reside. 'Local' or 'Remote' to this deployment manager host machine
- Make a note of the fully qualified host name of the database server host machine
- Make a note of the database server port number

Complete the following instructions to create a WebSphere Process Server deployment manager profile using the **Profile Management Tool**:

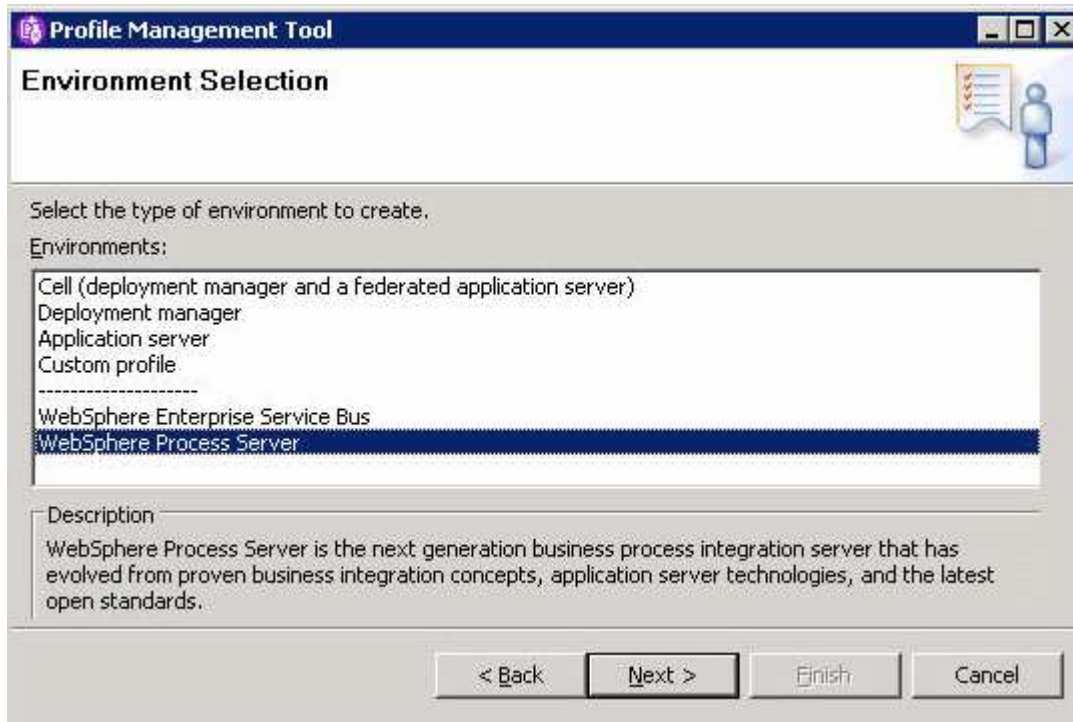
1. From the start menu under **IBM WebSphere → Process Server 6.1** select the **Profile Management Tool**. The WebSphere Process Server Profile Management Tool is launched.

**Note:** Alternatively, you can launch the Profile Management Tool by running the '**pmt.bat (sh)**' script located at '**<WPS\_HOME>\bin\ProfileManagement**'

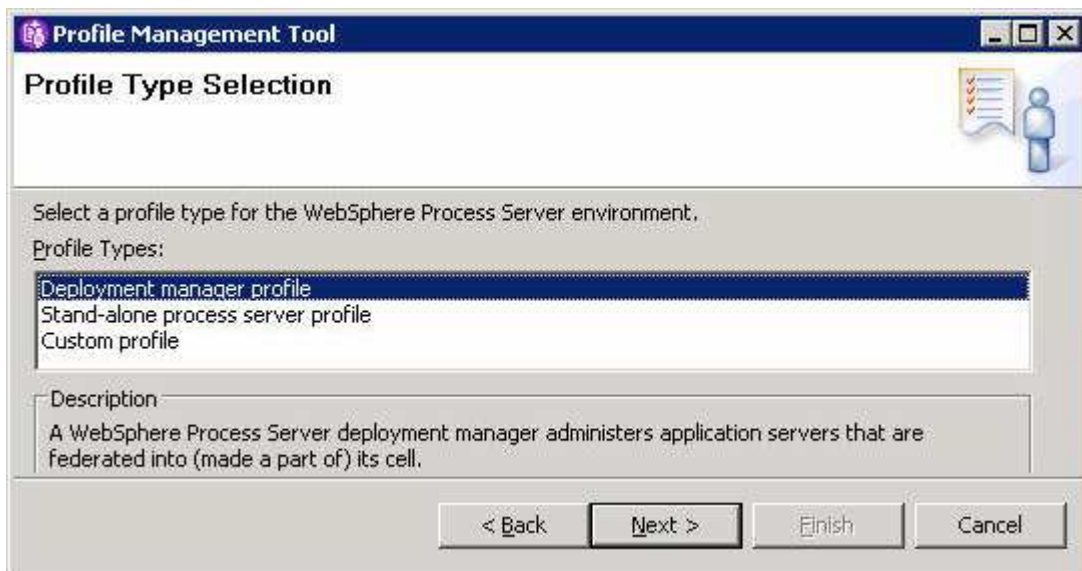


2. Click **Next** on the **Welcome** panel
3. In the following '**Environment Selection**' panel, select '**WebSphere Process Server**'

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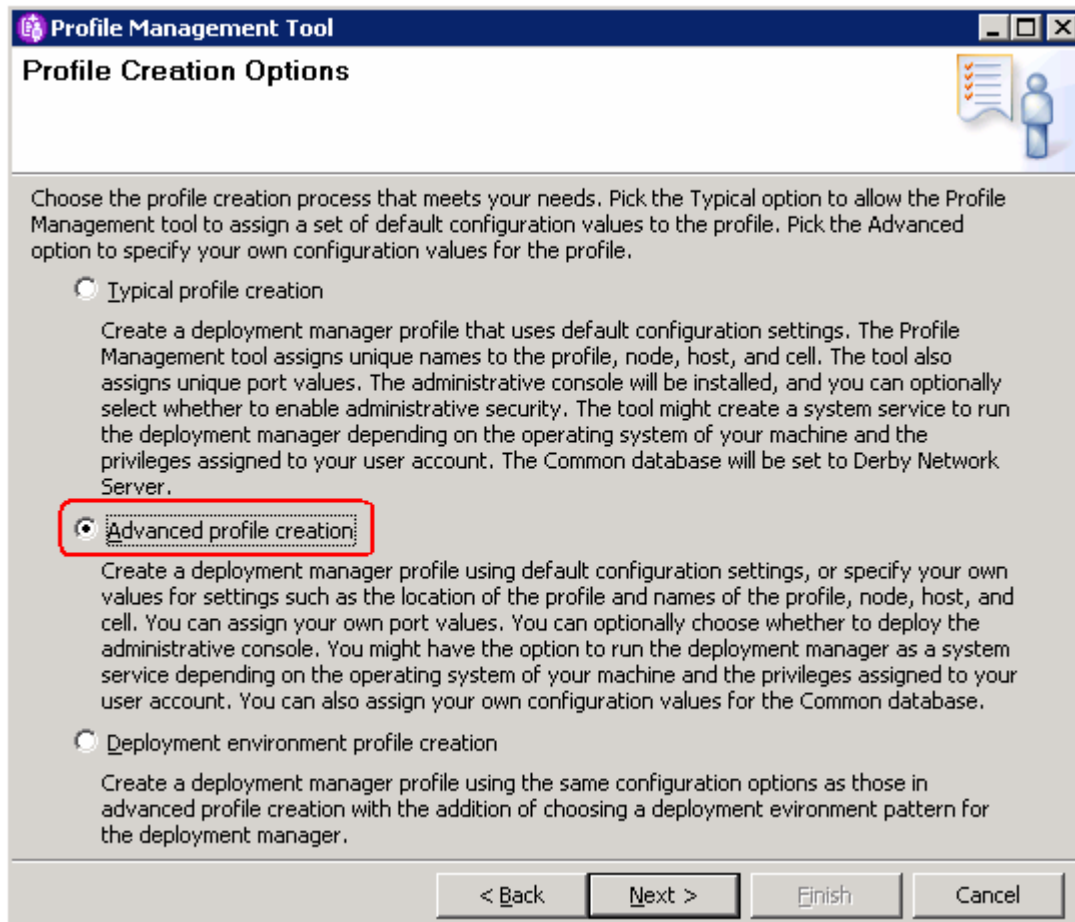


- \_\_\_ 4. Click **Next**
- \_\_\_ 5. In the following '**Profile Type Selection**' panel, select '**Deployment manager profile**' from the available '**Profile types**'



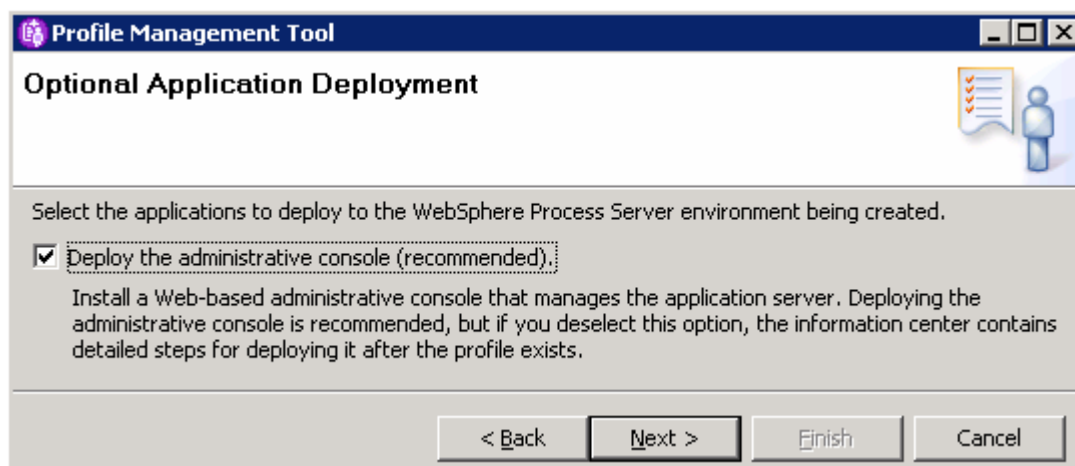
- \_\_\_ 6. Click **Next**
- \_\_\_ 7. In the following '**Profile Creation Options**' panel, select the radio button for '**Advanced profile creation**'

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**Note:** Selecting the 'Advanced profile creation' option gives you a privilege to control your environment setup is ideal for creating a custom deployment environment.

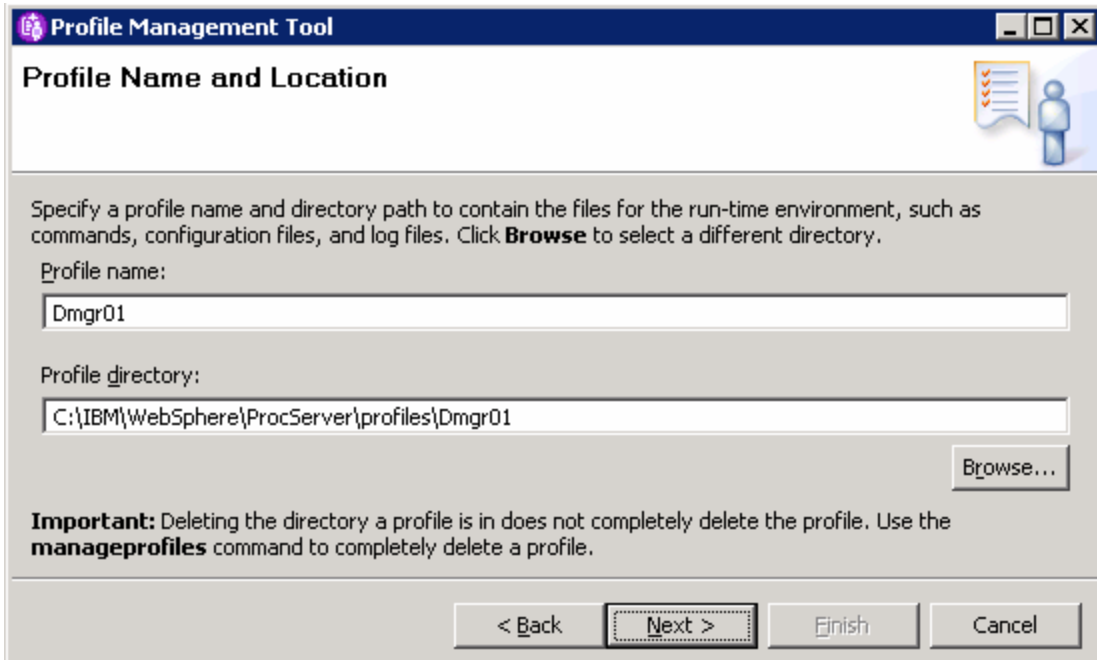
- \_\_\_ 8. Click **Next**
- \_\_\_ 9. In the following 'Optional Application Deployment' panel, select the radio button for 'Deploy the administrative console (recommended)'



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- \_\_\_ 10. Click **Next**
- \_\_\_ 11. In the following '**Profile Name and Location**' panel, enter the deployment manager profile name and the location where it will be created
  - \_\_\_ a. Profile name : **Dmgr01**
  - \_\_\_ b. Profile Directory : **<WPS\_HOME>\profiles\Dmgr01**

Ex: - C:\IBM\WebSphere\ProcServer\profiles\Dmgr01



- \_\_\_ 12. Click **Next**
- \_\_\_ 13. In the following '**Node, Host and Cell Names**' panel, enter the following parameters:
  - \_\_\_ a. Node name : **dmgr01CellManager01**
  - \_\_\_ b. Host name : **dmgr01.austin.ibm.com** ( fully qualified host name of the host machine)
  - \_\_\_ c. Cell name : **dmgr01Cell01**

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\_\_\_ 14. Click **Next**

\_\_\_ 15. In the following ‘**Administrative Security**’ panel, enter username and password

\_\_\_ a. Select the check box for ‘**Enable administrative security**’

\_\_\_ b. User name : **wps61admin**

\_\_\_ c. Password : **wps61admin**

\_\_\_ a. Confirm Password : **wps61admin**



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- \_\_\_ 16. Click **Next**
- \_\_\_ 17. In the following '**Port Values Assignment**' panel, review the ports assigned. You can change them to the new values, but ensure that the port numbers do not conflict with other services running on this host machine

The values in the following fields define the ports for the deployment manager and do not conflict with other profiles in this installation. Another installation of WebSphere Application Server, WebSphere Process Server, WebSphere Enterprise Service Bus, or other programs might use the same ports. To avoid run-time port conflicts, verify that each port value is unique.

Default Port Values	Recommended Port Values
Administrative console port (Default 9060):	9060
Administrative console secure port (Default 9043):	9043
Bootstrap port (Default 9809)(W):	9809
SOAP connector port (Default 8879)(X):	8879
SAS SSL ServerAuth port (Default 9401)(Z):	9401
CSIV2 ServerAuth listener port (Default 9403)(J):	9403
CSIV2 MultiAuth listener port (Default 9402)(K):	9402
ORB listener port (Default 9100)(S):	9100
Cell discovery port (Default 7277)(G):	7277
High availability manager communication port (DCS)(Default 9352)(Z):	9352

< Back   **Next >**   Finish   Cancel

- \_\_\_ 18. Click **Next**
- \_\_\_ 19. In the following '**Windows Service Definition**' panel, clear the check box for '**Run the deployment manager process as a Windows service**' and click **Next**
- \_\_\_ 20. In the following '**Database Configuration**' panel, ensure the following parameters are set:
- \_\_\_ a. Choose a database product : **DB2 Universal Database**
  - \_\_\_ b. Select the check box for '**Override the destination directory for generated scripts**' and then click the '**Browse**' button to specify a different '**Database scripts output directory**'
    - Ex: <DMGR\_PROFILE\_HOME>\dbscripts\CommonDB\DB2\<DB\_NAME>
  - \_\_\_ c. Select the radio button for '**Use an existing database**
  - \_\_\_ d. Database name : **WPRCSDB**

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- \_\_\_ e. Select the check box for 'Delay execution of database scripts for new or existing database'

**Profile Management Tool**

### Database Configuration

Various components use WebSphere Process Server common database. Choose a database type and enter the information based on that type.

Choose a database product:

DB2 Universal Database

Override the destination directory for generated scripts.

Database script output directory:

C:\IBM\WebSphere\ProcServer\profiles\Dmgr01\dbscripts\CommonDB\DB2\WPRCSDB

Create a new local database.

Use an existing database.

Database name:

WPRCSDB

Delay execution of database scripts for new or existing database.

< Back   Next >   Finish   Cancel

**Note:** You can select the 'Create a new database' if the supported database product or a client is local to the deployment manager profile. If the database product is remote to this deployment manager host machine, select the 'Use an existing database' option. Also select the option to delay the execution of the database scripts if the WPRCSDB database is not yet created. You can use the generated database scripts to create the WPRCSDB database and tables once the deployment manager profile is created. WPRCSDB is the name of the WebSphere Process Server Common database.

- \_\_\_ 21. Click **Next**
- \_\_\_ 22. In the following 'Database Configuration (Part 2)' panel, enter the following parameters:
- \_\_\_ a. User name to authenticate with the database : **db2admin**
  - \_\_\_ b. Password for database authentication : **passw0rd**
  - \_\_\_ c. Confirm Password : **passw0rd**
  - \_\_\_ d. Location of JDBC driver classpath files : **<accept the defaults>**
  - \_\_\_ e. Database server host name : Ex: **dbserver.austin.ibm.com**
  - \_\_\_ f. JDBC driver type : **4**
  - \_\_\_ g. Server port : **50000**

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**Profile Management Tool**

### Database Configuration (Part 2)

Additional information is required to complete configuration for the DB2 Universal Database database.

User name to authenticate with the database:

Password for database authentication:

Confirm password:

Location (directory) of JDBC driver classpath files:

JDBC driver type:  
 2  
 4

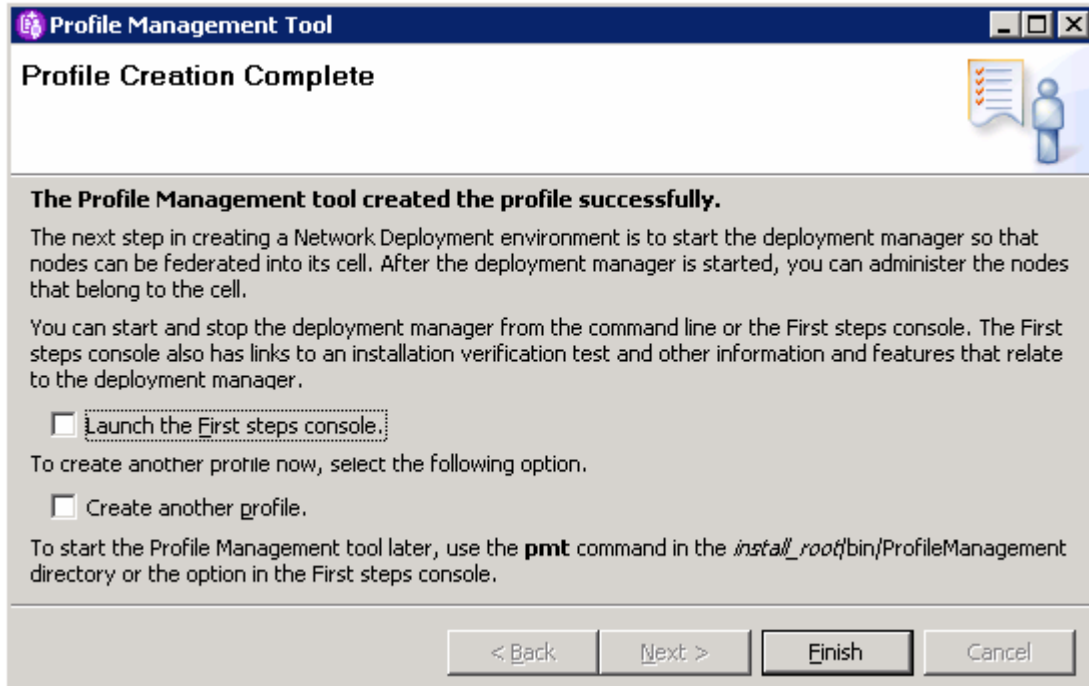
Database server host name (for example IP address):

Server port:

< Back    Next >    Finish    Cancel

**Note:** If you are not sure about the database server host name and the port number at this time, you should choose the delay execution of database scripts option in the previous panel. To continue further, enter some dummy host name and port number. However you should update the data sources with the correct information once the profile creation task is complete.

- \_\_\_ 23. Click **Next**
- \_\_\_ 24. In the following '**Profile Creation Summary**' panel, review the deployment manager profile creation summary and click '**Create**' button. The profile creation progresses. Once the installation is complete, ensure the check box for '**Launch the First steps console**' is selected to verify for a successful deployment manager profile creation



\_\_\_\_ 25. Click **Finish**

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**Note:** Now that you successfully created the WebSphere Process Server deployment manager profile, run the generated database scripts to create the WebSphere Process Server Common database and tables.

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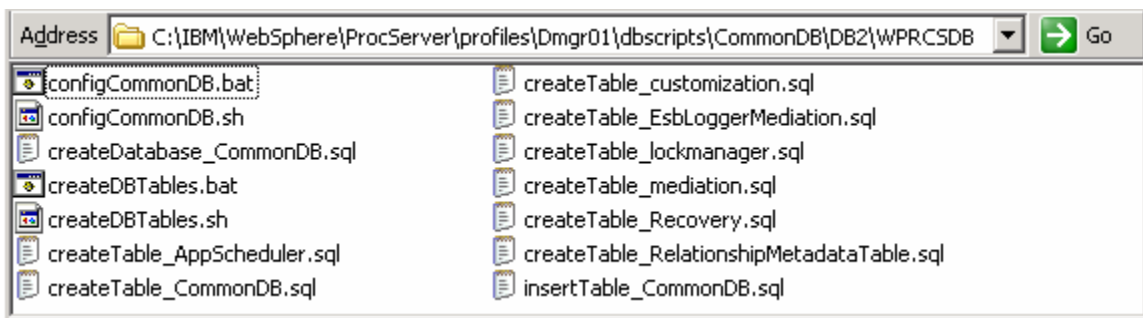
## Part 4: Creating the common database and tables

In this part of the lab, you will create the WebSphere Process Server Common database and tables. WebSphere Process Server installation requires the common database and its tables to function.

**Note:** In this lab, you will use one database for all the tables of all the WebSphere Process Server components and they will be silently created during the configuration.

### Pre-requisites:-

- Install and configure the WebSphere Process Server supported database product on the designated host machine. In this lab, a supported DB2 version is used and the instructions are based on the DB2 product.
- Ensure the DB2 server is running at this time
- Copy the WebSphere Process Server Common database scripts to a temporary location of your database product host machine. The database scripts are generated to the following location:
  - **<DMGR\_PROFILE\_HOME>\dbscripts\**



Complete the following instructions to create the common database:

1. Creating WebSphere Process Server Common database (WPRCSDB)
  - a. Review the following WebSphere Process Server common database scripts and make modifications if necessary:

**Note:** The database scripts are generated based on the information you provided in the database configuration panels during the WebSphere Process Server deployment manager profile creation. The parameters of interest to you are the database name, DB2 administrative user name and password, and the WebSphere Process Server version information. You can modify this information at this time.

- Edit the **configCommonDB.bat** script and review the following parameters:
  - **DB\_NAME=#DB\_NAME#** where as #DB\_NAME# is WPRCSDB  
Ex: DB\_NAME=WPRCSDB
  - **DB\_USER=#DB\_USER#** where as #DB\_USER# is db2admin  
Ex: DB\_USER=db2admin

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- Edit the **insertTable\_CommonDB.sql** script and review the following parameters:
  - **#MajorVersion#, #MinorVersion#, #RefreshPackLevel#, #FixpackLevel#**

Ex: **6,1,0,0**

```
INSERT INTO SchemaVersionInfo VALUES ('recovery.ejb', 6, 1, 0, 0, 0);
INSERT INTO SchemaVersionInfo VALUES ('interfaceMediation', 6, 1, 0, 0, 0);
INSERT INTO SchemaVersionInfo VALUES ('relationshipService', 6, 1, 0, 0, 0);
INSERT INTO SchemaVersionInfo VALUES ('scheduler.wbi', 6, 1, 0, 0, 0);
INSERT INTO SchemaVersionInfo VALUES ('customization', 6, 1, 0, 0, 0);
INSERT INTO SchemaVersionInfo VALUES ('persistentlockmanager', 6, 1, 0, 0, 0);
INSERT INTO SchemaVersionInfo VALUES ('WPS', 6, 1, 0, 0, 0);
```

\_\_\_ b. Open a command window and change directory to where the database scripts are located

- Run the **'db2cmd'**
- Run the following script with the recommended usage:
  - **configCommonDB.bat [createDB]**

Ex: *configCommonDB.bat createDB*

- The above script creates the common database, that is WPRCSDB and prompts for the DB2 administrator password. Enter the DB2 administrator password
- Press **'Enter'**. This action runs all the SQL scripts listed in the picture above. Ensure that there is no failure.

\_\_\_ c. Close the DB2 command window.

- \_\_\_ 2. Start the deployment manager and ensure it starts successfully. Review the SystemOut.log for any database connection related failure messages.
- \_\_\_ 3. Test the data sources for connection to the WebSphere Process Server Common database. The following are the data sources of interest:

\_\_\_ a. Login in to the deployment manager administrative console. In the left navigation pane, expand **'Resources → JDBC'** and click the **'Data Sources'**

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Select	Name	JNDI name	Scope	Provider	Description
<input checked="" type="checkbox"/>	<a href="#">ESBLoggerMediationDataSource</a>	jdbc/mediation/messageLog	Cell=dmgr01Cell01	DB2 Universal JDBC Driver Provider (XA)	Default data source for ESB Logger Mediation
<input checked="" type="checkbox"/>	<a href="#">WBI DataSource</a>	jdbc/WPSDB	Cell=dmgr01Cell01	DB2 Universal JDBC Driver Provider (XA)	WBI_DataSource
Total 2					

- \_\_ b. Select the check boxes for the '**ESBLoggerMediationDataSource**' and '**WBI\_DataSource**' and then click the '**Test connection**' button.
- \_\_ c. Ensure the database is successfully connected

## Part 5: Creating the WebSphere Process Server custom profiles

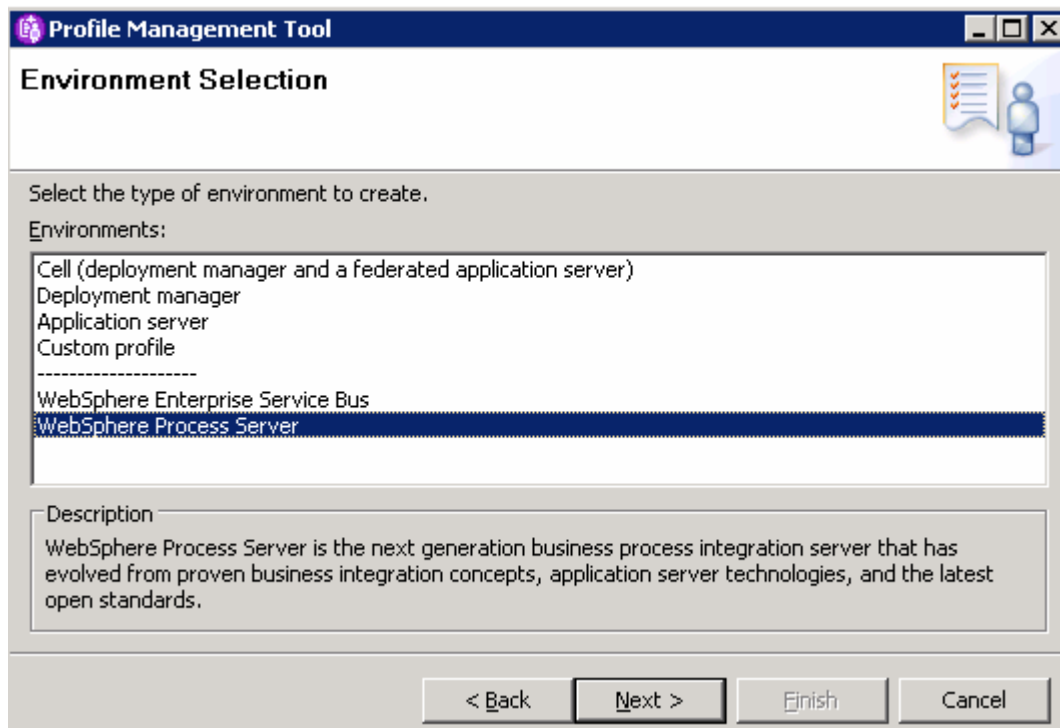
In this part of the lab, you will create a WebSphere Process Server custom profile. A custom profile is an empty profile that gets created and eventually can federate itself to the WebSphere Process Server deployment manager profile.

**Note:** It is mandatory that you create a custom profile, which is an empty node that has no runtime servers created or any configuration changes occurred and federate it to the deployment manager.

### Prerequisites: -

- Before proceeding further, ensure the deployment manager you want to federate this custom node is installed and running successfully at this time
- Make a note of the fully qualified host name of the deployment manager host machine
- Make note of the deployment manager SOAP port number
- Make a note of the primary user name and password of the deployment manager administrative security credentials, if enabled

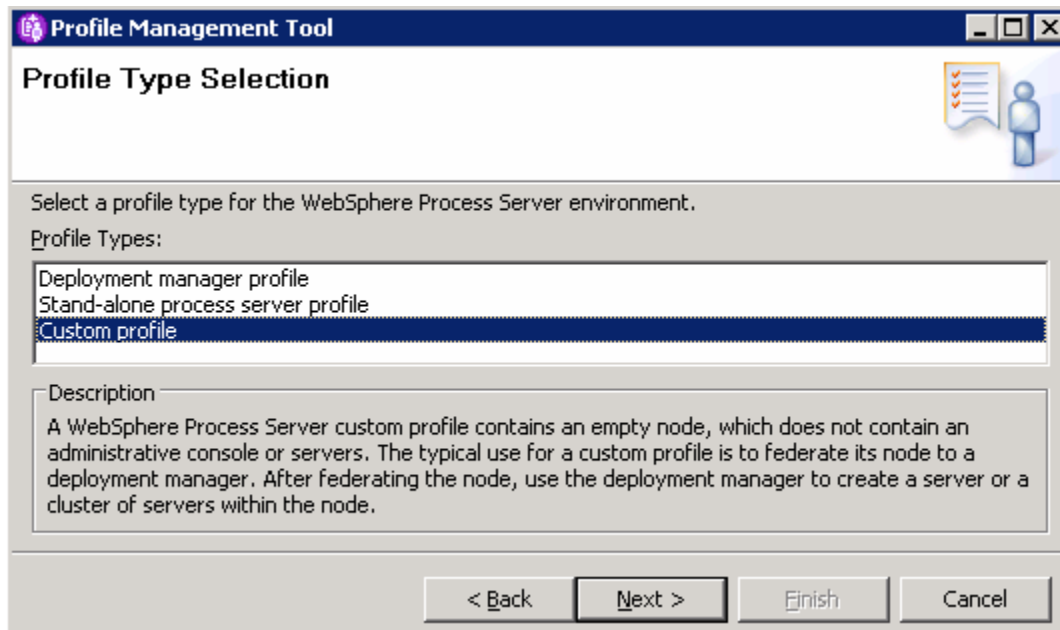
- \_\_\_ 1. From the start menu under **IBM WebSphere> Process Server 6.1** select the **Profile Management Tool**. The WebSphere Process Server Profile Management Tool is launched
- \_\_\_ 2. Click **Next** on the **Welcome** panel
- \_\_\_ 3. In the following '**Environment Selection**' panel, select '**WebSphere Process Server**'



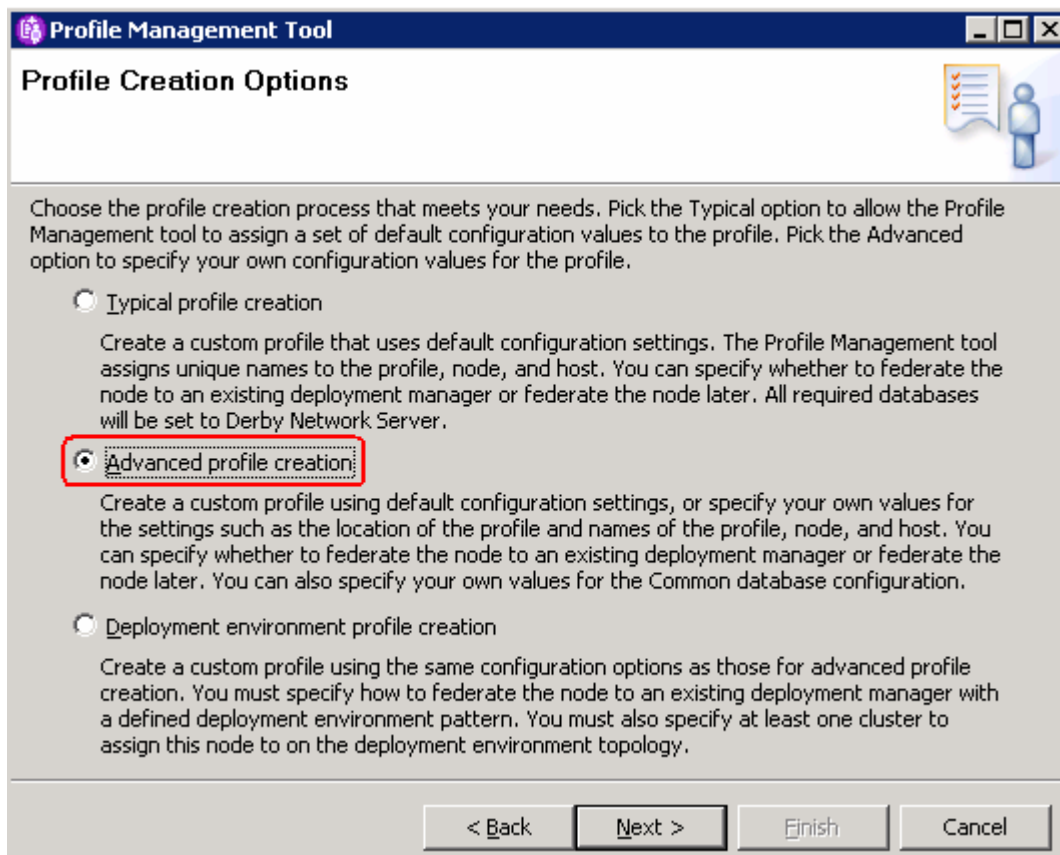
- \_\_\_ 4. Click **Next**
- \_\_\_ 5. In the following '**Profile Type Selection**' panel, select '**Custom profile**' from '**Profile Types**'



## IBM WEBSHERE PROCESS SERVER 6.1 – LAB EXERCISE



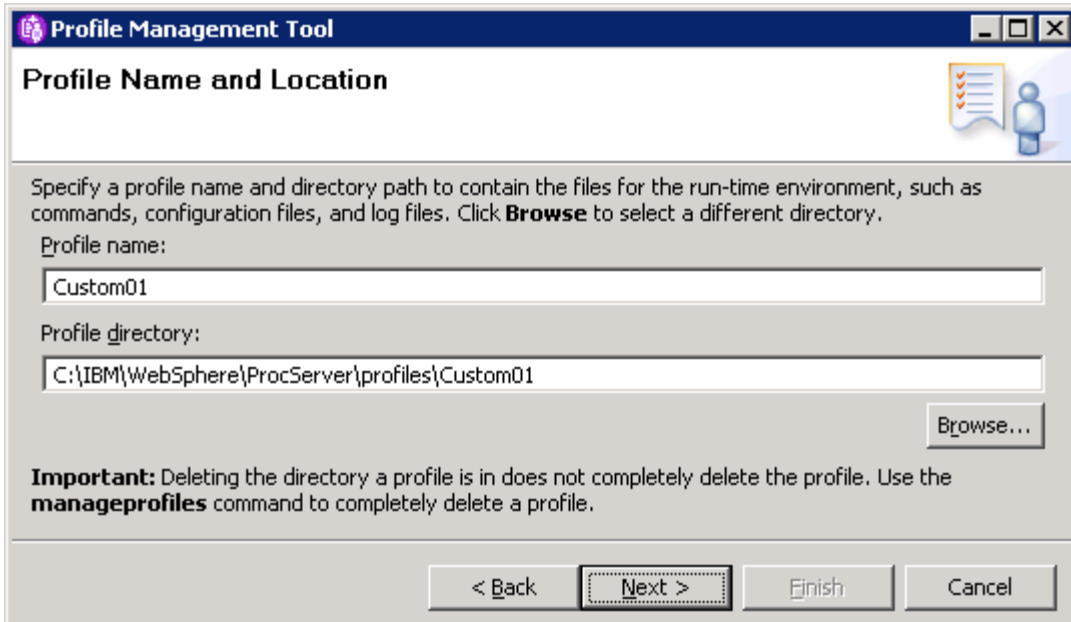
- \_\_\_ 6. Click **Next**
- \_\_\_ 7. In the following '**Profile Creation Options**' panel, select the radio button for '**Advanced profile creation**'



IBM WEBSHERE PROCESS SERVER 6.1 – LAB EXERCISE

- \_\_\_ 8. Click **Next**
- \_\_\_ 9. In the following '**Profile Name and Location**' panel, specify the profile name and the location where it will be created
  - \_\_\_ a. Profile name : **Custom01**
  - \_\_\_ b. Profile Directory : **<WPS\_HOME>\profiles\Custom01**

Ex: - C:\IBM\WebSphere\ProcServer\profiles\Custom01



- \_\_\_ 10. Click **Next**
- \_\_\_ 11. In the following '**Node and Host Names**' panel, enter the following parameters:
  - \_\_\_ a. Node name : **customNode01**
  - \_\_\_ b. Host name : Ex: **node01.asutin.ibm.com** (fully qualified host name)

## IBM WEBSPPHERE PROCESS SERVER 6.1 – LAB EXERCISE

**Profile Management Tool**

**Node and Host Names**

Specify a node name and a host name for this profile.

Node name:

Host name:

**Node name:** A node name is used by the deployment manager for administration. The name must be unique within the cell.

**Host name:** A host name is the domain name system (DNS) name (short or long) or the IP address of this computer.

For more information about profile naming and augmentation considerations, see the online information center.

[Online information center link](#)

< Back    Next >    Finish    Cancel

\_\_\_ 12. Click **Next**

\_\_\_ 13. In the following '**Federation**' panel, enter the following parameters:

- \_\_\_ a. Deployment manager host name or IP address : Ex: **dmgr01.austin.ibm.com** (fully qualified host name)
- \_\_\_ b. Deployment manager SOAP port number : **8879** (Default)
- \_\_\_ c. Deployment manager authentication (if administrative security is enabled)
- User name : **wps61admin**
  - Password : **wps61admin**
- \_\_\_ d. (Optional) Select the check box for '**Federate this node later**' to manually federate this node using the '**addNode**' after the profile creation completes

---

**Note:** The **User name** and **Password** must match the deployment manager **Administrative Security** credentials. Also ensure that the deployment manager SOAP port number is correct. If you are unable to connect, then the deployment manager may not be running or the information you provided in the '**Federation**' panel is not correct.

---

## IBM WEBSHERE PROCESS SERVER 6.1 – LAB EXERCISE

**Profile Management Tool**

### Federation

Specify the host name or IP address and the SOAP port number for an existing deployment manager. Federation can occur only if the deployment manager is running.

Deployment manager host name or IP address:

Deployment manager SOAP port number (Default 8879):

Deployment manager authentication  
 Provide a user name and password that can be authenticated, if administrative security is enabled on the deployment manager.

User name:

Password:

Federate this node later.

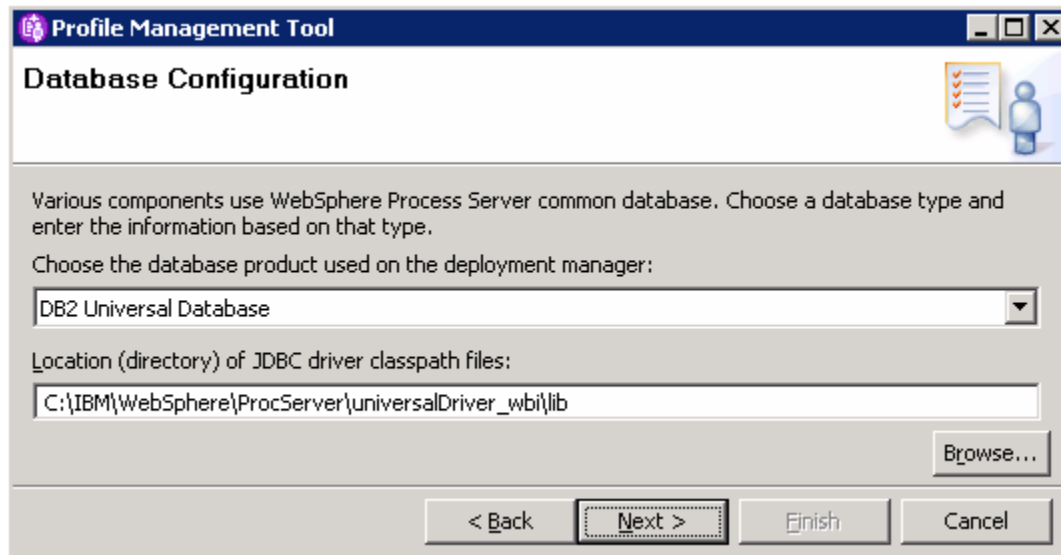
You must federate this node later using the **addNode** command if the deployment manager:

- is not running
- has the SOAP connector disabled

< Back    Next >    Finish    Cancel

- \_\_\_ 14. Click **Next**
- \_\_\_ 15. In the following '**Port Values Assignment**' panel, review the custom profile port values assigned. You can change them to the new values, but ensure that the port numbers do not conflict with other services running on this host machine. Click **Next**
- \_\_\_ 16. In the following '**Database Configuration**' panel, enter the following parameters:
- \_\_\_ a. Select '**DB2 Universal Database**' as the database product used on deployment manager
  - \_\_\_ b. Location of JDBC driver classpath files: **<WPS\_HOME>\universalDriver\_wbi\lib**  
 Ex: C:\IBM\WebSphere\ProcServer\universalDriver\_wbi\lib

## IBM WEBSHERE PROCESS SERVER 6.1 – LAB EXERCISE



- \_\_\_\_ 17. Click **Next**
- \_\_\_\_ 18. In the following panel, review the custom profile creation summary information and click **Create**. The profile creation progresses. Once the installation is complete, ensure the check box for '**Launch the First steps console**' is selected to launch the first steps console
- \_\_\_\_ 19. Click **Finish** once the profile creation is complete

---

**Note:** The above instructions lead you to create a custom profile and federated it with the WebSphere Process Server deployment manager. The node agent should have been started. Remember that this is an empty node as no server (runtime) created at this time.

---

- \_\_\_\_ 20. Create the second and third custom profiles named **Custom02** and **Custom03** by repeating the above instructions on the designated host machines. In this lab, the nodes are named as **customNode02** and **customNode03**

## Part 6: Create Clusters, cluster members and a managed server

In this part of the lab, you will create three clusters, their member servers and a managed server to accommodate the various business integration functions and components.

**Note:** You must use a custom profile with the WebSphere Process Server product functionality, for the deployment targets designated for Common Event Infrastructure server and Business Process Choreographer Container support. Use 'defaultProcessServer' template. However the messaging cluster or server can consist of members on nodes created with WebSphere Application Server instead of WebSphere Process Server if the cluster solely provides the messaging function.

It is a best practice to plan for the number of clusters you will be creating. Also plan for number of member servers, which cluster will be managing the member servers and on which managed node the member servers will be created.

**Clusters → Node → server mapping (Topology) table:**

Clusters & Servers	Nodes	Member Servers & managed servers
custom.Application	customNode01	bpc1
	customNode02	bpc2
	customNode03	bpc3
custom.Messaging	customNode01	me1
	customNode02	me2
custom.EventSupport	customNode02	cei1
	customNode03	cei2
support (managed server)	customNode03	support

### Pre-requisites:

- Ensure the DB2 server is running
- Ensure the Deployment Manager server is running
- Ensure all the node agents of the custom profiles federated to this deployment manager are running
  - In the left navigation pane of the deployment manager administrative console, expand '**System administration**' and then click the '**Node agents**' link
  - In the following '**Node agents**' panel to the right, ensure that all the node agents display the start status as green (➔)

IBM WEBSHERE PROCESS SERVER 6.1 – LAB EXERCISE

Select	Name	Node	Version	Status
<input type="checkbox"/>	<a href="#">nodeagent</a>	customNode03	Business Process Choreographer 6.1.0.0 ND 6.1.0.13	
<input type="checkbox"/>	<a href="#">nodeagent</a>	CustomNode02	Business Process Choreographer 6.1.0.0 ND 6.1.0.13	
<input type="checkbox"/>	<a href="#">nodeagent</a>	customNode01	Business Process Choreographer 6.1.0.0 ND 6.1.0.13	

Complete the following instructions to create the clusters, their member servers and a single managed server:

\_\_\_\_ 1. Launch the WebSphere Process Server deployment manager administrative console, enter the security credentials and then click the **‘Log in’** button

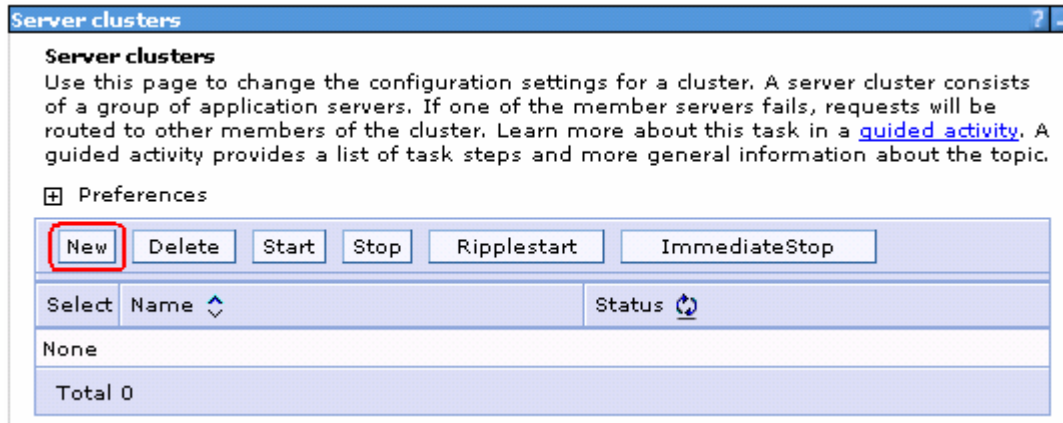
- URL: <http://localhost:9060/admin>

\_\_\_\_ 2. In the left navigation pane of the administrative console, expand **‘Servers’** and then click the **‘Clusters’** link

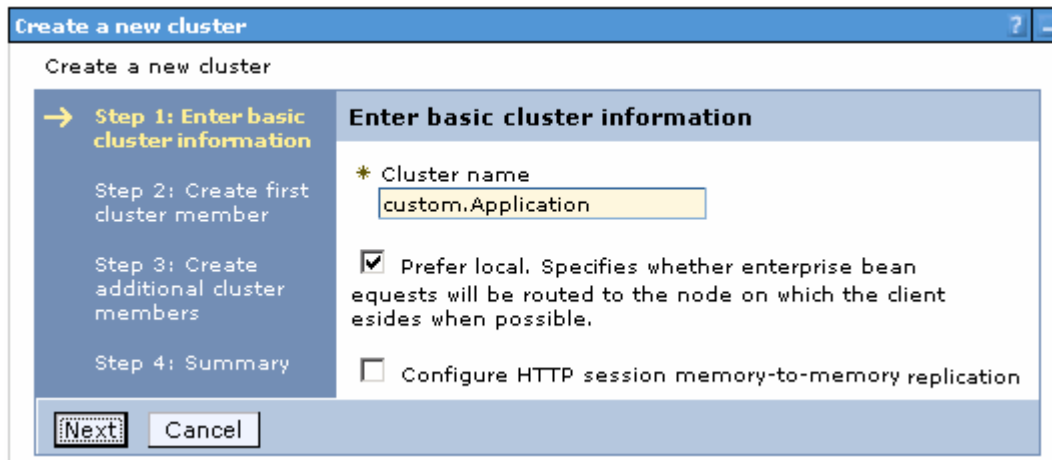


\_\_\_\_ 3. In the following **‘Server clusters’** panel, click the **‘New’** button to launch the cluster creation wizard

## IBM WEBSHERE PROCESS SERVER 6.1 – LAB EXERCISE



- \_\_\_ 4. In the following 'Step 1: Enter basic cluster information' panel, enter the 'Cluster name'
- Cluster name : Ex: **custom.Application**
  - Accept the defaults for the remaining parameters



- \_\_\_ 5. Click **Next**
- \_\_\_ 6. In the following 'Step 2: Create first cluster member' panel, enter the following parameters to create the first cluster member on 'customNode01':
- \_\_\_ a. Member name : **bpc1**
  - \_\_\_ b. Select node : **customNode01** (from the drop down list)
  - \_\_\_ c. Weight : **2** (default). Depends on your environment
  - \_\_\_ d. Select the check box for '**Generate unique HTTP ports**'
  - \_\_\_ e. Select the '**Select the member using an application server template**' option
    - Select '**defaultProcessServer**' from the drop down list



**Note:** You must use a server template with the WebSphere Process Server product functionality, for the deployment targets designated for Common Event Infrastructure server and Business Process Choreographer Container support. Use '**defaultProcessServer**' template.

- \_\_\_ 7. Click **Next**
- \_\_\_ 8. In the following '**Step 3: Create additional cluster members**' panel, enter the following parameters to create the second cluster member on '**customNode02**':
- \_\_\_ a. Member name : **bpc2**
  - \_\_\_ b. Select node : **customNode02**
  - \_\_\_ c. Weight : **2** (default). Depends on you're your environment
  - \_\_\_ d. Select the check box for '**Generate unique HTTP ports**'

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Step 1: Enter basic cluster information

Step 2: Create first cluster member

→ Step 3: Create additional cluster members

Step 4: Summary

### Create additional cluster members

Enter information about this new cluster member, and click Add Member to add this cluster member to the member list. A server configuration template is created from the first member and stored as part of the cluster data. Additional cluster members are copied from this template.

\* Member name  
 ←

Select node

\* Weight  
 (0..20)

Generate unique HTTP ports

Add Member

Use the Edit function to edit the properties of a cluster member that is already included in this list. Use the Delete function to remove a cluster member from this list. You are not allowed to edit or remove the first cluster member or an already existing cluster member.

Edit Delete

Select	Member name	Nodes	Version	Weight
<input type="checkbox"/>	bpc1	customNode01	Business Process Choreographer 6.1.0.0 ND 6.1.0.13	2

\_\_\_ e. Click the 'Add Member' button. This action adds the additional cluster member server to the table as shown below:

Edit Delete

Select	Member name	Nodes	Version	Weight
<input type="checkbox"/>	bpc1	customNode01	Business Process Choreographer 6.1.0.0 ND 6.1.0.13	2
<input type="checkbox"/>	bpc2	customNode02	Business Process Choreographer 6.1.0.0 ND 6.1.0.13	2

\_\_\_ 9. In the following 'Step 3: Create additional cluster members' panel, enter the following parameters to create the third cluster member on 'customNode03':

- \_\_\_ a. Member name : **bpc3**
- \_\_\_ b. Select node : **customNode03**
- \_\_\_ c. Weight : **2** (default). Depends on your environment

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\_\_\_ d. Select the check box for 'Generate unique HTTP ports'

Step 1: Enter basic cluster information

Step 2: Create first cluster member

→ Step 3: Create additional cluster members

Step 4: Summary

### Create additional cluster members

Enter information about this new cluster member, and click Add Member to add this cluster member to the member list. A server configuration template is created from the first member and stored as part of the cluster data. Additional cluster members are copied from this template.

\* Member name  
 ←

Select node

\* Weight  
 (0..20)

Generate unique HTTP ports

Add Member

Use the Edit function to edit the properties of a cluster member that is already included in this list. Use the Delete function to remove a cluster member from this list. You are not allowed to edit or remove the first cluster member or an already existing cluster member.

Select	Member name	Nodes	Version	Weight
	bpc1	customNode01	Business Process Choreographer 6.1.0.0 ND 6.1.0.13	2
<input type="checkbox"/>	bpc2	customNode02	Business Process Choreographer 6.1.0.0 ND 6.1.0.13	2

\_\_\_ e. Click the 'Add Member' button. This action adds the additional cluster member server to the table as shown below:

Select	Member name	Nodes	Version	Weight
	bpc1	customNode01	Business Process Choreographer 6.1.0.0 ND 6.1.0.13	2
<input type="checkbox"/>	bpc2	customNode02	Business Process Choreographer 6.1.0.0 ND 6.1.0.13	2
<input type="checkbox"/>	bpc3	customNode03	Business Process Choreographer 6.1.0.0 ND 6.1.0.13	2

\_\_\_ 10. Click **Next**

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\_\_\_ 11. In the following ‘**Step 4: Summary**’ panel, review the summary of actions:

Step 1: Enter basic cluster information

Step 2: Create first cluster member

Step 3: Create additional cluster members

→ **Step 4: Summary**

Summary	
Summary of actions:	
Options	Values
Cluster Name	custom.Application
Core Group	DefaultCoreGroup
Node group	DefaultNodeGroup
Prefer local	true
Configure HTTP session memory-to-memory replication	false
Server name	bpc1
Node	customNode01(Business Process Choreographer 6.1.0.0 ND 6.1.0.13)
Weight	2
Clone Template	defaultProcessServer
Clone Type	default
Generate unique HTTP ports	true
Server name	bpc2
Node	customNode02(Business Process Choreographer 6.1.0.0 ND 6.1.0.13)
Weight	2
Clone Template	defaultProcessServer
Clone Type	default
Generate unique HTTP ports	true
Server name	bpc3
Node	customNode03(Business Process Choreographer 6.1.0.0 ND 6.1.0.13)
Weight	2
Clone Template	defaultProcessServer
Clone Type	default
Generate unique HTTP ports	true

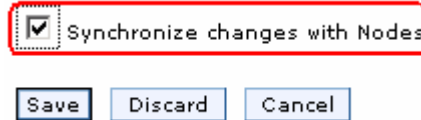
Previous
Finish
Cancel

\_\_\_ 12. Click **Finish**

\_\_\_ 13. Save to the master configuration and synchronize changes with the nodes

- \_\_\_ a. In the left navigation pane of the administrative console, expand ‘**System administration**’ and then click the ‘**Save Changes to Master Repository**’

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\_\_\_ b. In the following panel, select the check box for **'Synchronize changes with the Nodes'** and then click the **'Save'** button

\_\_\_ 14. Repeat the above steps to create the **custom.Messaging** and **custom.EventSupport** and their member servers. Take the **'Cluster → Node → member server mapping table'** as a reference.

\_\_\_ 15. You should see the following three clusters created in the **'Server clusters'** panel

Select	Name	Status
<input type="checkbox"/>	<a href="#">custom.Application</a>	✘
<input type="checkbox"/>	<a href="#">custom.EventSupport</a>	✘
<input type="checkbox"/>	<a href="#">custom.Messaging</a>	✘

\_\_\_ 16. Now create a managed server

\_\_\_ a. In the left navigation pane of the administrative console, expand **'Servers'** and then click the **'Application Servers'** link



\_\_\_ b. In the following **'Application servers'** panel, click the **'New'** button.

\_\_\_ c. In the following **'Step 1: Select a node'** panel, enter the following parameters:

- Select node : **customNode03**
- Server name : Ex: **support**

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\_\_ d. Click **Next**

\_\_ e. In the following ‘**Step 2: Select a server template**’ panel, select the radio button for ‘**defaultProcessServer**’

Select	Name	Type	Specifies a description of an application server template.
<input type="radio"/>	DeveloperServer	System	This template is optimized to perform well for development uses.
<input type="radio"/>	default	System	The WebSphere Default Server Template
<input checked="" type="radio"/>	defaultProcessServer	System	The WebSphere Process Server (WPS) Default Server Template
<input type="radio"/>	defaultESBServer	System	The WebSphere ESB Default Server Template

\_\_ f. Click **Next**

\_\_ g. In the following ‘**Step 3: Specify the server specific properties**’ panel, ensure the check box for ‘**Generate Unique ports**’ is selected

\_\_ h. In the following ‘**Step 4: Confirm new server**’ panel, review the summary of actions

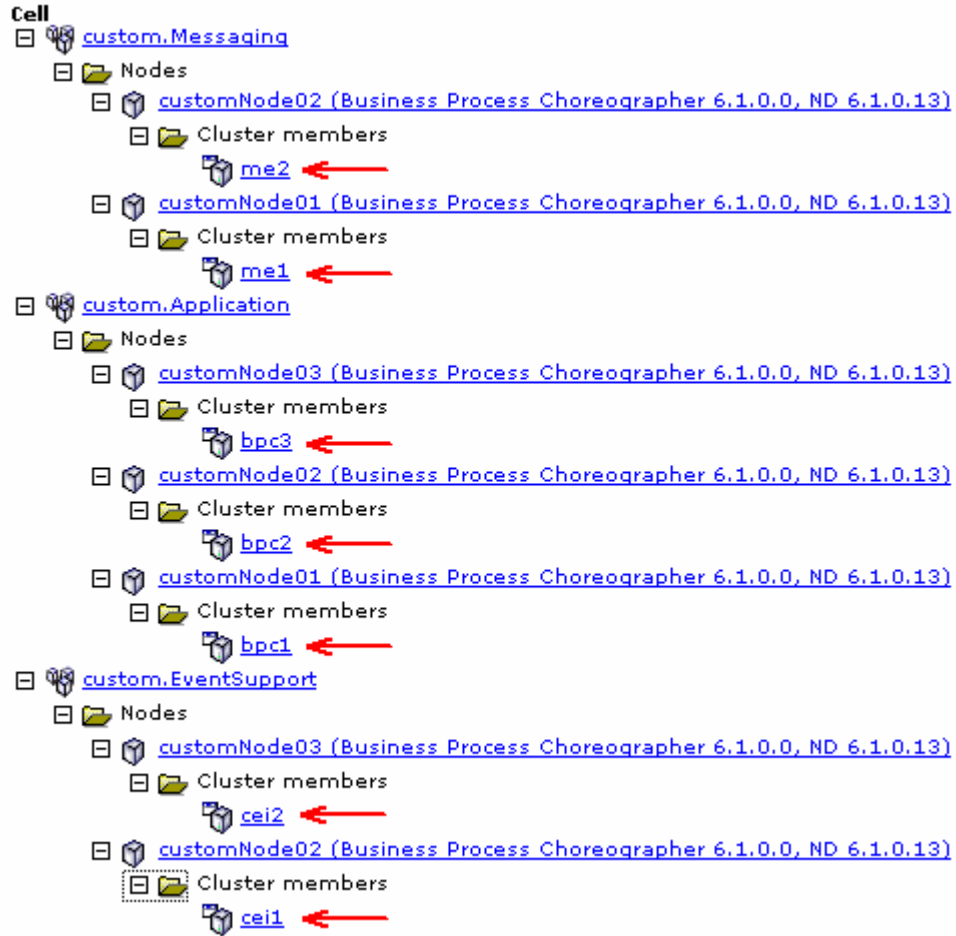
\_\_ i. Click **Finish**

\_\_ j. Save to the master configuration and synchronize changes with the nodes

\_\_\_ 17. Review the ‘**Cluster Topology**’

\_\_ a. In the left navigation pane of the administrative console, expand ‘**Servers**’ and then click the ‘**Cluster topology**’ link. Expand all the clusters to the full extent

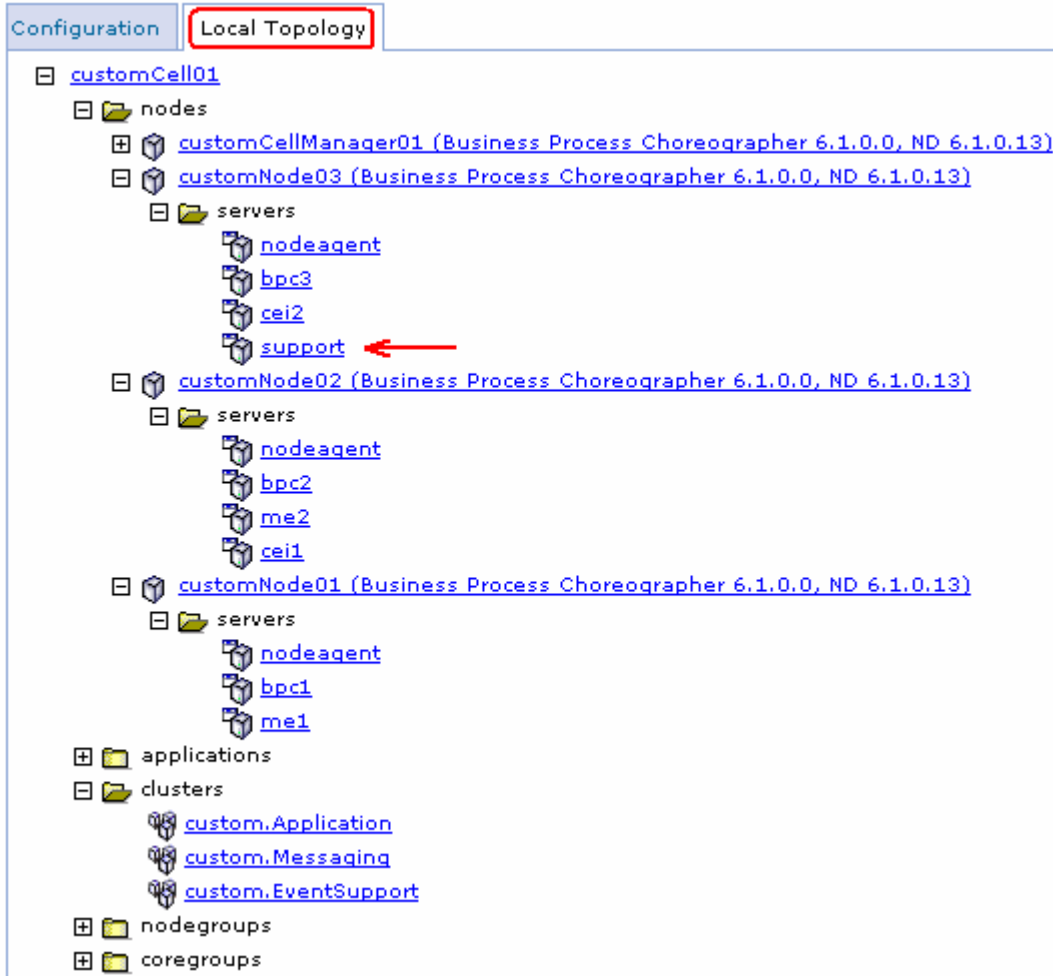
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\_\_\_ 18. Review the 'Cell Topology'

- \_\_\_ a. In the left navigation pane of the administrative console, expand 'System Administration' and then click the 'Cell' link.
- \_\_\_ b. In the following 'Cell' panel, select the 'Local Topology' tab and expand all the entities to the full extent

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\_\_\_ 19. Start the clusters and the managed server

**Note:** Ensure all node agents are running at this time. (**System Administration** → **Node agents**)

\_\_\_ a. In the left navigation pane of the administrative console, expand ‘**Servers**’ and then click the ‘**Clusters**’ link

\_\_\_ b. In the following ‘**Clusters**’ panel, select the check box for all the cluster listed

<input type="button" value="New"/> <input type="button" value="Delete"/> <input type="button" value="Start"/> <input type="button" value="Stop"/> <input type="button" value="Ripplestart"/> <input type="button" value="ImmediateStop"/>		
Select	Name	Status
<input checked="" type="checkbox"/>	<a href="#">custom.Application</a>	✘
<input checked="" type="checkbox"/>	<a href="#">custom.EventSupport</a>	✘
<input checked="" type="checkbox"/>	<a href="#">custom.Messaging</a>	✘

\_\_\_ c. Click the ‘**Start**’ button. This action starts all the member servers assigned to the respective clusters. Review the runtime logs for all the member servers

\_\_\_ 20. Now start the managed server



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- \_\_\_ a. In the left navigation pane of the administrative console, expand '**Servers**' and then click the '**Application servers**' link
- \_\_\_ b. In the following '**Application servers**' panel, select the check box for '**support**' and then click the start button.
- \_\_\_ c. Review the runtime logs and ensure the managed server has successfully started

---

## Part 7: Create and generate a custom deployment environment

In this part of the lab, you will create and eventually generate a custom deployment environment. You will use the deployment manager administrative console and launch the deployment environment creation wizard; assign clusters and managed servers to the collaborative units based on the functionality assigned to them and eventually generate the custom deployment environment. Generating a custom deployment environment configures the necessary resources, creates database tables, and configures applications on the designated deployment targets (clusters and managed servers assigned).

To configure a custom deployment environment, you need to divide the functions amongst clusters using the collaborative units. Collaborative units allow functions to be spread depending on your needs onto different clusters and managed servers that work together as a unit to further increase isolation, function consolidation, throughput capabilities and failover.

---

**Note:** Ensure that the clusters and servers that you are adding to the custom deployment environment do not have anything configured on them.

---

### Understanding the grouping of clusters and servers into collaborative units:

#### **Messaging unit:**

Messaging units contain a server within the cluster hosting a local messaging engine and the other clusters and servers within the unit use that messaging engine as a destination for messages.

#### **Common Event Infrastructure unit:**

Common Event Infrastructure units consist of the server hosting the Common Event Infrastructure (CEI) server and other clusters and servers that need support of the CEI functions. Common base events received at each cluster or server in the unit are routed to the server hosting the CEI server. You can use as many collaborative units as your deployment environment needs to host more CEI servers to isolate events from different event sources.

#### **Application Support:**

Application support units consist of group of clusters and servers onto which you are deploying your applications. One application support unit supports one business process choreographer container configuration. However you can add as many units as you need depending on how many business process choreographer configurations required. One unit defines a business process cluster and one or more SCA support clusters and support applications on the same or different clusters in that unit.

### Grouping the clusters and managed servers into collaborative units:

**Messaging unit:** The following table depicts that the '**custom.Messaging**' cluster in the unit, hosts the local messaging engines and the other clusters and servers with in the unit use these messaging engines as a destination. When you select a cluster or server in the messaging unit for '**Local Bus Member**' option, all other clusters or servers in the unit are automatically configured for remote messaging destinations.

---

**Note:** You must complete the messaging units for each component before you can configure the application support unit. For example, if the check box is unavailable for Service Component Architecture in the application support units, then the associated messaging units have not been configured.

---

## IBM WEBSHERE PROCESS SERVER 6.1 – LAB EXERCISE

Clusters or Servers	Local Bus Member
custom.Messaging	Yes (local)
custom.EventSupport	No (remote)
custom.Application	No (remote)
support (managed server)	No (remote)

**Common Event Infrastructure unit:** The following table depicts that the 'custom.EventSupport' cluster in the unit, hosts the Common Event Infrastructure (CEI) server and the other clusters or servers added (custom.Application cluster in this scenario) support the CEI functions. Common base events received at the 'custom.Application' cluster in this unit are routed to the 'custom.EventSupport' cluster which will be hosting the CEI server. All other clusters or servers are automatically configured for remote Common Event Infrastructure destinations.

Clusters or Servers	Server
custom.EventSupport	Yes
custom.Application	No

**Application Support unit:** The following tables depicts that the two clusters and a managed server in the application support unit host applications depending on the assigned functional support.

Clusters or Servers	SCA	BPC Container	BPC Explorer	BPC Event Collector	BPC Observer	Business Rules Manager
custom.Application	Selected	Yes Requires SCA support	Yes	No Requires a CEI server)	No	No
custom.EventSupport	Not Selected	No	No	Yes Requires a CEI server)	Yes BPC Event Collect must be selected	No
support (managed server)	Selected	No	No	No	No	Yes Requires SCA support. Only one Business Rules Manager per deployment environment

**Pre-requisites:**

- Ensure the DB2 server is running
- Ensure the deployment manager is running
- Ensure all the node agents are running (**System Administration → Node agents**)
- Ensure all the member servers of all the clusters and the managed servers are running
- Decide if you want to create tables for various components during the custom deployment environment generation

Complete the following instructions to create and generate a custom deployment environment:

- \_\_\_ 1. In the left navigation pane of the administrative console, expand '**Servers**' and then click the '**Deployment Environments**' link.



- \_\_\_ 2. Click the '**New**' button. The deployment environments panel is launched
- \_\_\_ 3. In the following '**Create new deployment environment**' panel, enter the following parameters:
- \_\_\_ a. Select the radio button for '**Create a new deployment environment**'
  - \_\_\_ b. Deployment environment name : Ex: **customDE**
  - \_\_\_ c. Select '**WPS**' for '**Runtime capability**'

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**Create new deployment environment**

Create a new deployment environment or load an external deployment environment definition. Choose the deployment environment name and its runtime capability. At the end of the wizard, you can start the deployment environment generation by clicking on "Finish and Generate Environment". If you like to save the deployment environment definition, then you can click on "Finish" instead. The environment generation option is only valid if all needed parameters are met in order to generate the deployment environment.

If you would like to hide steps that have well defined default values, then check "Show only steps that need my attention".

**Create Deployment Environment**

Create a new deployment environment

Load an external deployment environment definition

File path

\* Deployment environment name

Runtime capability

Show only steps that need my attention

\_\_\_ 4. Click **Next**

\_\_\_ 5. In the following 'Deployment Environment Patterns' panel, select the radio button for 'Custom'

**Deployment Environment Patterns**

Remote Messaging and Remote Support  
 This pattern defines one cluster for application deployment, one remote cluster for the messaging infrastructure, and one remote cluster for the Common Event Infrastructure and other supporting applications. This pattern configures a setup that performs well for most of your business integration needs. If in doubt, select this pattern.

Remote Messaging  
 The remote messaging pattern defines one cluster for application deployment and one remote cluster for the messaging infrastructure. The Common Event Infrastructure and other supporting applications are configured on the application deployment target cluster.

Single Cluster  
 The single cluster is the simplest pattern that defines one cluster for application deployment. Both messaging infrastructure and Common Event Infrastructure with supporting applications are configured on the application deployment target cluster.

Custom  
 If none of the given patterns suit your needs, you can customize the deployment environment by configuring your own clusters and servers. This option is intended for advanced users who know how to tune their deployment environment.

\_\_\_ 6. Click **Next**. The 'Custom deployment topology configuration' wizard is launched

7. In the following 'Step 1: Deployment Environment' panel, complete the following instructions:

**Note:** Add the clusters and servers to be used with the deployment environment to table in section one. You can then use the clusters and servers listed in this table to populate the configuration units in section two.

a. In the section one of 'Step 1: Deployment Environment' panel, select the radio button for 'Cluster', select a cluster from the drop down list and then click the 'Add' button. This action adds the selected cluster to the table. Repeat this action until all the clusters are added to the table. The table should look like the picture shown below:

Select	Cluster or Server	Node	Status
<input type="checkbox"/>	custom.Messaging		→
<input type="checkbox"/>	custom.Application		→
<input type="checkbox"/>	custom.EventSupport		→

b. In the section one of 'Step 1: Deployment Environment' panel, select the radio button for 'Server', select a server from the drop down list and then click the 'Add' button. This action adds the selected server to the table. The table should now look like the picture shown below:

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Select	Cluster or Server	Node	Status
<input type="checkbox"/>	custom.Messaging		➔
<input type="checkbox"/>	custom.Application		➔
<input type="checkbox"/>	custom.EventSupport		➔
<input type="checkbox"/>	support	customNode03	➔

\_\_\_ c. Ensure the **'Messaging'** tab is selected in section two. Now, add clusters and servers you want to assign the messaging function from the table in section one to the **'Messaging Unit 1'** table in section two. To achieve this, select all the clusters and servers you want to add and then select **'Messaging Unit 1'** from the **'Add selected to unit'** list as shown below:

Remove    Add selected to unit...  
 Add selected to unit...  
 Messaging Unit 1

Select	Cluster or Server	Node	Status
<input checked="" type="checkbox"/>	custom.Messaging		➔
<input checked="" type="checkbox"/>	custom.Application		➔
<input checked="" type="checkbox"/>	custom.EventSupport		➔
<input checked="" type="checkbox"/>	support	customNode03	➔

**2. Specify the Deployment Environment Configuration**

Messaging    Common Event Infrastructure    Application Support

Add New Unit

Messaging Unit 1

Remove Cluster or Server    Remove This Unit

Select	Cluster or Server	Node	Local Bus Member
	None		

\_\_\_ d. Now set the **'custom.Messaging'** cluster as **'Local Bus Member'**. To do this, select the radio button corresponding to the **'custom.Messaging'** cluster row as shown in picture below:

**2. Specify the Deployment Environment Configuration**

Messaging    Common Event Infrastructure    Application Support

Add New Unit

Messaging Unit 1

Remove Cluster or Server    Remove This Unit

Select	Cluster or Server	Node	Local Bus Member
<input checked="" type="checkbox"/>	custom.Messaging		<input checked="" type="radio"/>
<input type="checkbox"/>	custom.Application		<input type="radio"/>
<input type="checkbox"/>	custom.EventSupport		<input type="radio"/>
<input type="checkbox"/>	support	customNode03	<input type="radio"/>

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- e. Select the 'Common Event Infrastructure' tab in section two. Now, add clusters and servers you want to assign CEI support from the table in section one to the 'Common Event Infrastructure Unit 1' table in section two. To achieve this, select all the clusters and servers you want to add and then select 'Common Event Infrastructure Unit 1' from the 'Add selected to unit' list as shown below:

Select	Cluster or Server	Node	Status
<input type="checkbox"/>	custom.Messaging		→
<input checked="" type="checkbox"/>	custom.Application		→
<input checked="" type="checkbox"/>	custom.EventSupport		→
<input type="checkbox"/>	support	customNode03	→

**2. Specify the Deployment Environment Configuration**

Messaging **Common Event Infrastructure** Application Support

Add New Unit

Common Event Infrastructure Unit 1

Remove Cluster or Server Remove This Unit

Select	Cluster or Server	Node	Server
<input type="checkbox"/>	None		

- f. Now set the 'custom.EventSupport' cluster to host the Common Event Infrastructure (CEI) server. To do this, select the radio button corresponding to the 'custom.EventSupport' cluster row as shown in the picture below:

Messaging **Common Event Infrastructure** Application Support

Add New Unit

Common Event Infrastructure Unit 1

Remove Cluster or Server Remove This Unit

Select	Cluster or Server	Node	Server
<input type="checkbox"/>	custom.Application		<input type="radio"/>
<input checked="" type="checkbox"/>	custom.EventSupport		<input checked="" type="radio"/>

- g. Select the 'Application Support' tab in section two. Now, add clusters and servers you want to assign from the table in section one to the 'Application Support Unit 1' table in section two. To achieve this, select all the clusters and servers you want to add and then select 'Application Support Unit 1' from the 'Add selected to unit' list as shown below:



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Remove				Add selected to unit...			
				Add selected to unit...			
				Application Support Unit 1			
<input type="checkbox"/>	custom.Messaging						→
<input checked="" type="checkbox"/>	custom.Application						→
<input checked="" type="checkbox"/>	custom.EventSupport						→
<input checked="" type="checkbox"/>	support		customNode03				→

2. Specify the Deployment Environment Configuration

Messaging    Common Event Infrastructure    **Application Support**

Add New Unit

Application Support Unit 1

Remove Cluster or Server    Remove This Unit

Select	Cluster or Server	Node	Service Component Architecture	Business Process Choreographer Container	Business Process Choreographer Explorer	Business Process Event Collector	Business Process Choreographer Observer	Business Rules Manager
	None							

\_\_\_ h. Follow the instructions below to host the application on the designated deployment targets:

1. **custom.Application** cluster row (follow the sequence)
  - Select the check box for **'Service Component Architecture'** (required for BPC container)
  - Select the radio button for **'Business Process Choreographer Container'** (not available unless the check box for SCA is selected in this deployment target)
  - Select the check box for **'Business Process Choreographer Explorer'** (not available unless the BPC container is selected in this collaborative unit)
2. **custom.EventSupport** cluster row (follow the sequence)
  - Select the radio button for **'Business Process Event Collector'** (only available on the deployment target where the CEI support is selected for configuration. Additionally it is only available once the BPC container is selected in this collaborative unit)
  - Select the radio button for **'Business Process Choreographer Observer'** (only available if the business process event collector is selected in this collaboration unit)
3. **support** server row (follow the sequence)
  - Select the check box for **'Service Component Architecture'** (required for Business Rules Manager)
  - Select the radio button for **'Business Rules Manager'**

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2. Specify the Deployment Environment Configuration

Messaging Common Event Infrastructure **Application Support**

Add New Unit

Application Support Unit 1

Remove Cluster or Server Remove This Unit

Select	Cluster or Server	Node	Service Component Architecture	Business Process Choreographer Container	Business Process Choreographer Explorer	Business Process Event Collector	Business Process Choreographer Observer	Business Rules Manager
<input type="checkbox"/>	custom.Application		<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	custom.EventSupport		<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	support	customNode03	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

- \_\_\_ 8. Click **Next**
- \_\_\_ 9. In the following 'Step 2: Database' panel, edit the following database parameters for the data sources needed for this deployment environment:
  - \_\_\_ a. Database Instance : **WPRCSDB** (default). Enter the correct database name
  - \_\_\_ b. Schema : Accept the default or enter the correct schema name
  - \_\_\_ c. User Name & Password : Ex: **db2admin**
  - \_\_\_ d. Create Table : Clear the check boxes to defer database table creation.
  - \_\_\_ e. Server : Ex: **dbserver.austin.ibm.com** (fully qualified host name)

Step 1: Deployment Environment  
 → Step 2: Database  
 Step 3: Security  
 Step 4: Business Process Choreographer Container  
 Step 5: Web Application Context Roots  
 Step 6: Summary

**Database**

Edit the database parameters for the data sources that are needed by this deployment environment.

Edit... Reset Test Connection Edit Provider...

Select	Component	Database Instance	Schema	Create Tables	User Name	Password	Server	Provider
<input type="checkbox"/>	WBI_CEI_EVENT	WPRCSDB		<input checked="" type="checkbox"/>	db2admin	.....	dbserver.austin.ibm.com	DB2 Uni
<input type="checkbox"/>	WBI_CEI_EVENTCATALOG	WPRCSDB		<input checked="" type="checkbox"/>	db2admin	.....	dbserver.austin.ibm.com	DB2 Uni
<input type="checkbox"/>	WBI_CEI_ME	WPRCSDB	WPRCM00	<input checked="" type="checkbox"/>	db2admin	.....	dbserver.austin.ibm.com	DB2 Uni
<input type="checkbox"/>	WBI_BPC	WPRCSDB	WPRBE00	<input checked="" type="checkbox"/>	db2admin	.....	dbserver.austin.ibm.com	DB2 Uni
<input type="checkbox"/>	WBI_BPC_ME	WPRCSDB	WPRBM00	<input checked="" type="checkbox"/>	db2admin	.....	dbserver.austin.ibm.com	DB2 Uni
<input type="checkbox"/>	WBI_SCA_SYS_ME	WPRCSDB	WPRSS00	<input checked="" type="checkbox"/>	db2admin	.....	dbserver.austin.ibm.com	DB2 Uni
<input type="checkbox"/>	WBI_SCA_APP_ME	WPRCSDB	WPRSA00	<input checked="" type="checkbox"/>	db2admin	.....	dbserver.austin.ibm.com	DB2 Uni
<input type="checkbox"/>	WBI_BPCEventCollector	WPRCSDB	WPRBC00	<input checked="" type="checkbox"/>	db2admin	.....	dbserver.austin.ibm.com	DB2 Uni

Previous Next Cancel

**Note:** The number of components listed for configuration depends on the functionality you assigned to the deployment targets.

**Note:** To make it simple, you will be using one database, which is WPRCSDB to create tables for all the components. By default the deployment environment wizard populates the database parameters for the data sources for various components. By selecting the check boxes for '**Create tables**', the wizard silently creates tables in the respective databases provided. However you can defer creating the tables at this time by clearing the create table check boxes and eventually run the generated scripts manually after generating the deployment environment.

\_\_\_ 10. Click **Next**

\_\_\_ 11. In the following '**Step 3: Security**' panel, edit user names and passwords for the authentication aliases

**Step 3: Security**

Edit the user names and passwords for the authentication aliases that are needed by this deployment environment.

Component	User name	Password	Confirm Password	Description
WBI_BPC	wps61admin	*****	*****	Business Process Choreographer JMS authentication alias
WBI_CEI_EVENT	wps61admin	*****	*****	CEI JMS authentication alias

Previous Next Cancel

\_\_\_ 12. Click **Next**

\_\_\_ 13. In the following '**Step 4: Business Process Choreographer Container**' panel, complete the following configuration steps:

- \_\_\_ a. Configure security. Click the pull down icon (▼) to view the '**Security**' configuration properties
- \_\_\_ b. In the '**Security**' configuration panel, enter the following parameters:
  - Enter user and (or) group values for the '**Administrator**' and '**Monitor**' roles
  - Enter user name and password for the authentication aliases

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▼ Security

Role	User	Group	Description
Administrator	wps61admi		User name(s) and/or group name (s) for the business flow and human task administrator role. Users assigned to this role have all privileges.
Monitor	wps61admi		User name(s) and/or group name (s) for the business flow and human task monitor role. Users assigned to this role can view the properties of all of the business process and task objects.

Authentication	User	Password	Confirm Password	Description
JMS API Authentication	wps61admi	*****	*****	Authentication for business flow manager message-driven bean to process asynchronous API calls
Escalation User Authentication	wps61admi	*****	*****	Authentication for human task manager message-driven bean to process asynchronous API calls

\_\_ c. Configure SCA bindings. Click the pull down icon (▼) to view the 'SCA Bindings' configuration properties

- Accept the defaults for the 'SCA Bindings' configuration

▼ SCA Bindings

Host	Context Root	Relative Path	Description
http://host:port	/BFMIF_cus	/sca/com/ibm/bpe/spi/sca/BFMWS	Business Flow Manager Web Service Endpoint
http://host:port	/HTMIF_cus	/sca/com/ibm/bpe/spi/sca/HTMWS	Human Task Manager Web Service Endpoint

\_\_ d. Configure Human Tasks Manager Mail session. Click the pull down icon (▼) to view the 'Human Tasks Manager Mail session' configuration properties

- Clear the check box for 'Enable e-mail server' to defer the e-mail service configuration

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▼ **Human Task Manager Mail Session**

↑  Enable e-mail service

Mail transport host

Mail transport user

Mail transport password

Confirm mail transport password

Business Process Choreographer Explorer URL

\_\_\_ e. Configure state observers. Click the pull down icon (▼) to view the 'State Observers' configuration properties. Accepts the defaults for the 'State Observers' configuration

▼ **State Observers**

↑

Logging	Business Flow Manager	Human Task Manager
Audit Logging	<input type="checkbox"/>	<input type="checkbox"/>
Common Event Infrastructure Logging	<input type="checkbox"/>	<input type="checkbox"/>

\_\_\_ 14. Click **Next**

\_\_\_ 15. In the following 'Step 5: Web Application Context Roots' panel, review the web applications selected for configuration, and the context roots the web applications will be using.

[Step 1: Deployment Environment](#)

[Step 2: Database](#)

[Step 3: Security](#)

[Step 4: Business Process Choreographer Container](#)

→ **Step 5: Web Application Context Roots**

[Step 6: Summary](#)

**Web Application Context Roots**

Edit the context roots for the listed web applications.

**Business Process Choreographer Explorer**

Deployment Target	Container Deployment Target	Context Root
custom.Application	custom.Application	/bpc

**Business Process Choreographer Observer**

Deployment Target	Container Deployment Target	Context Root
custom.EventSupport	custom.Application	/bpcobserver

**Business Rules Manager**

Deployment Target	Context Root
customNode03:support	/br

Previous
Next
Cancel

\_\_\_ 16. Click **Next**

\_\_\_ 17. In the following 'Step 2: Summary' panel, review the custom deployment environment configuration summary:

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[Step 1: Deployment Environment](#)

[Step 2: Database](#)

[Step 3: Security](#)

[Step 4: Business Process Choreographer Container](#)

[Step 5: Web Application Context Roots](#)

**→ [Step 6: Summary](#)**

### Summary

#### Overview

Parameter	Value
Deployment Environment Pattern	Custom
Deployment environment name	customDE
Runtime capability	WPS
Deployment Environment Status	Incomplete

#### Deployment Targets

Cluster or Server	Node
custom.Messaging	
custom.Application	
custom.EventSupport	
support	customNode03

#### Data Sources

Component	Database Instance	Schema	Database Provider	Database Host
WBI_BPC	WPRCSDB	WPRBE00	DB2_UNIVERSAL	dbserver.austin.ibm.com
WBI_BPCEventCollector	WPRCSDB	WPRBC00	DB2_UNIVERSAL	dbserver.austin.ibm.com
WBI_BPC_ME	WPRCSDB	WPRBM00	DB2_UNIVERSAL	dbserver.austin.ibm.com
WBI_CEI_EVENT	WPRCSDB		DB2_UNIVERSAL	dbserver.austin.ibm.com
WBI_CEI_EVENTCATALOG	WPRCSDB		DB2_UNIVERSAL	dbserver.austin.ibm.com
WBI_CEI_ME	WPRCSDB	WPRCM00	DB2_UNIVERSAL	dbserver.austin.ibm.com
WBI_SCA_APP_ME	WPRCSDB	WPRSA00	DB2_UNIVERSAL	dbserver.austin.ibm.com
WBI_SCA_SYS_ME	WPRCSDB	WPRSS00	DB2_UNIVERSAL	dbserver.austin.ibm.com

#### Security

Component	Authentication	User Name
WBI_BPC	BPC_Auth_Alias	wps61admin
WBI_CEI_EVENT	CommonEventInfrastructureJMSAuthAlias	wps61admin

#### Business Process Choreographer Container

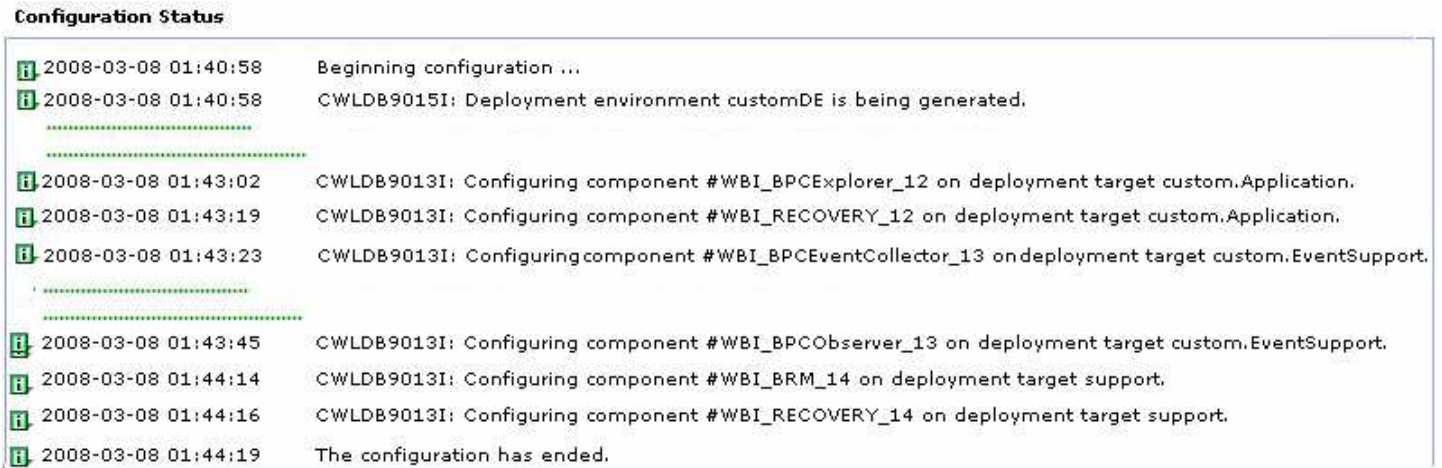
Parameter	Value
custom.Application	custom.Application
User for Administrator role	wps61admin
Group for Administrator role	
User for Monitor role	wps61admin
Group for Monitor role	
SCA Bindings for Business Flows	/BFMIF_custom.Application
SCA Bindings for Human Tasks	/HTMIF_custom.Application
Create a mail session to send e-mails	false
Mail session host	
Business Process Choreographer Explorer URL	
Audit logging on for	
Common Event Infrastructure logging on for	

#### Web Application Context Roots

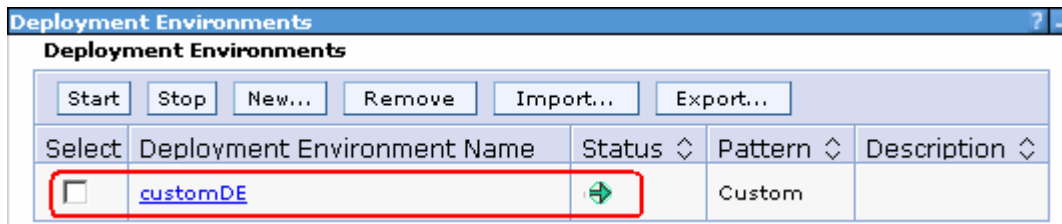
Web Application	custom.Application	custom.EventSupport	customNode03: support
Business Process Choreographer Explorer	/bpc		
Business Process Choreographer Observer		/bpcobserver	
Business Rules Manager			/br

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18. Click **Finish and Generate Environment**. This action generates a custom deployment environment, configures resources, creates tables, and configures applications and Web resources on the designated deployment targets.



19. Save to the master configuration and synchronize changes with the nodes
20. Restart the node agents (**System Administration → Node agents**)
21. Restart all the clusters and managed servers
22. Ensure the new custom deployment environment is started.
- a. In the left navigation pane of the deployment manager, expand **'Servers'** and then click the **'Deployment Environments'** link



**Note:** If the status of the environment is showing an **'Unknown'** icon, you can not control the environment from this panel. In this case **'Start'** and **'Stop'** the clusters individually from the **'Clusters'** panel.

- b. If not started, select the check for the deployment environment and then click the **'Start'** button. This action controls all the deployment targets (clusters and servers) configured with this deployment environment

**Note:** Amazing! You successfully created all the resources and applications on the assigned deployment targets at the click of a button. However, there might be situations where you have to configure components manually. The following are some of the important component configurations:

- [Appendix 1: Configure Service Component Architecture support](#)
- [Appendix 2: Configuring Common Event Infrastructure support](#)
- [Appendix 3: Configure Business Process Choreographer container support](#)

## Part 8: Review the resources and applications configured

In this part of the lab, you will review and ensure all the resources and applications are configured successfully on the designated deployment targets, as a result of the custom deployment environment creation. The following table depicts the important resources and application configurations for review:

<b>Messaging Deployment Target (custom.Messaging)</b>	
<b>Data sources</b>	Business Process Choreographer ME data source
	CEI ME data source
	SCA Application Bus ME data source
	SCA System Bus ME data source
<b>Message Engines</b>	<DEPLOYMENT_TARGET_NAME>.BPC.<CELL_NAME>.Bus
	<DEPLOYMENT_TARGET_NAME>.CommonEventInfrastructure_Bus
	<DEPLOYMENT_TARGET_NAME>.SCA.APPLICATION.<CELL_NAME>.Bus
	<DEPLOYMENT_TARGET_NAME>.SCA.SYSTEM.<CELL_NAME>.Bus
<b>Common Event Infrastructure support Deployment Target (custom.EventSupport)</b>	
<b>Data sources</b>	event
	Business Process Choreographer Event Collector data source
<b>Applications</b>	Event Server
	BPCECollector_<DEPLOYMENT_TARGET_NAME>
	BPCObserver_<DEPLOYMENT_TARGET_NAME>
<b>Queue Connection Factories</b>	BPCCEIConsumerQueueConnectionFactory
	CommonEventInfrastructure_QueueCF
<b>Topic Connection Factories</b>	CommonEventInfrastructure_AllEventsTopicCF
<b>Queues</b>	BPCCEIConsumerQueue_<DEPLOYMENT_TARGET_NAME>
	BPCTransformerQueue_<DEPLOYMENT_TARGET_NAME>
	CommonEventInfrastructure_Queue
<b>Topics</b>	CommonEventInfrastructure_AllEventsTopic
<b>Activation Specifications</b>	BPCCEIConsumerActivationSpec
	BPCTransformerActivationSpec
	CommonEventInfrastructure_ActivationSpec



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Business Process Choreographer Container support Deployment Target (custom.Application)	
<b>Data sources</b>	Business Process Choreographer data source
<b>Connection Factories</b>	BFMJMSReplyCF
	BPECF
	BPECFC
	HTMCF
<b>Queues</b>	BFMJMSAPIQueue_<DEPLOYMENT_TARGET_NAME>
	BFMJMSCallbackQueue_<DEPLOYMENT_TARGET_NAME>
	BFMJMSReplyQueue_<DEPLOYMENT_TARGET_NAME>
	BPEHidQueue_<DEPLOYMENT_TARGET_NAME>
	BPEIntQueue_<DEPLOYMENT_TARGET_NAME>
	BPERetQueue_<DEPLOYMENT_TARGET_NAME>
	HTMHidQueue_<DEPLOYMENT_TARGET_NAME>
	HTMIntQueue_<DEPLOYMENT_TARGET_NAME>
<b>Activation Specifications</b>	BFMJMSAS
	BPEInternalActivationSpec
	HTMInternalActivationSpec
<b>Applications</b>	BPCExplorer_<DEPLOYMENT_TARGET_NAME>
	BPEContainer_<DEPLOYMENT_TARGET_NAME>
	TaskContainer_<DEPLOYMENT_TARGET_NAME>
	Failed Event Manager (wpsFEMgr)
<b>SCA Modules</b>	BFMIF_<DEPLOYMENT_TARGET_NAME>
	HTMIF_<DEPLOYMENT_TARGET_NAME>
Business Rules Manager Deployment Target (support server)	
<b>Applications</b>	BusinessRulesManager_<DEPLOYMENT_TARGET_NAME>
	Failed Event Manager (wpsFEMgr)

**Reviewing the WebSphere variables configured:**

- \_\_\_\_ 1. To review the WebSphere variables configured on a deployment target, in the left navigation pane of the administrative console, expand '**Environment**' and then click on the '**WebSphere Variables**' link
- \_\_\_\_ 2. In the following panel, select the scope from the drop down list

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**Reviewing the data sources configured:**

- \_\_\_ 1. To review the data sources configured on a deployment target, in the left navigation pane of the administrative console, expand **'Resources → JDBC'** and then click on the **'Data sources'** link
- \_\_\_ 2. In the following **'Data sources'** panel, select the scope from the drop down list.

**Reviewing the business integration data sources configured:**

- \_\_\_ 1. To review the data sources configured on a deployment target, in the left navigation pane of the administrative console, expand **'Resources → JDBC'** and then click on the **'Business Integration Data Sources'** link

**Reviewing the authentication aliases configured:**

- \_\_\_ 1. To review the authentication aliases configured on a deployment target, in the left navigation pane of the administrative console, expand **'Security'** and then click on the **'Secure administration, applications and infrastructure'** link
- \_\_\_ 2. In the following panel, expand **'Java Authentication and Authorization service'** and then click the **'J2C authentication data'**

**Reviewing the JMS resources configured:**

- \_\_\_ 1. To review the JMS resources configured on a deployment target, in the left navigation pane of the administrative console, expand **'Resources → JMS'** and then click on the resource link
- \_\_\_ 2. The resources of interest to you are Connection Factories, Queue connection factories, Topic connection factories, Queues, Topic and Activation specifications

**Reviewing the components and functions configured on the messaging cluster:**

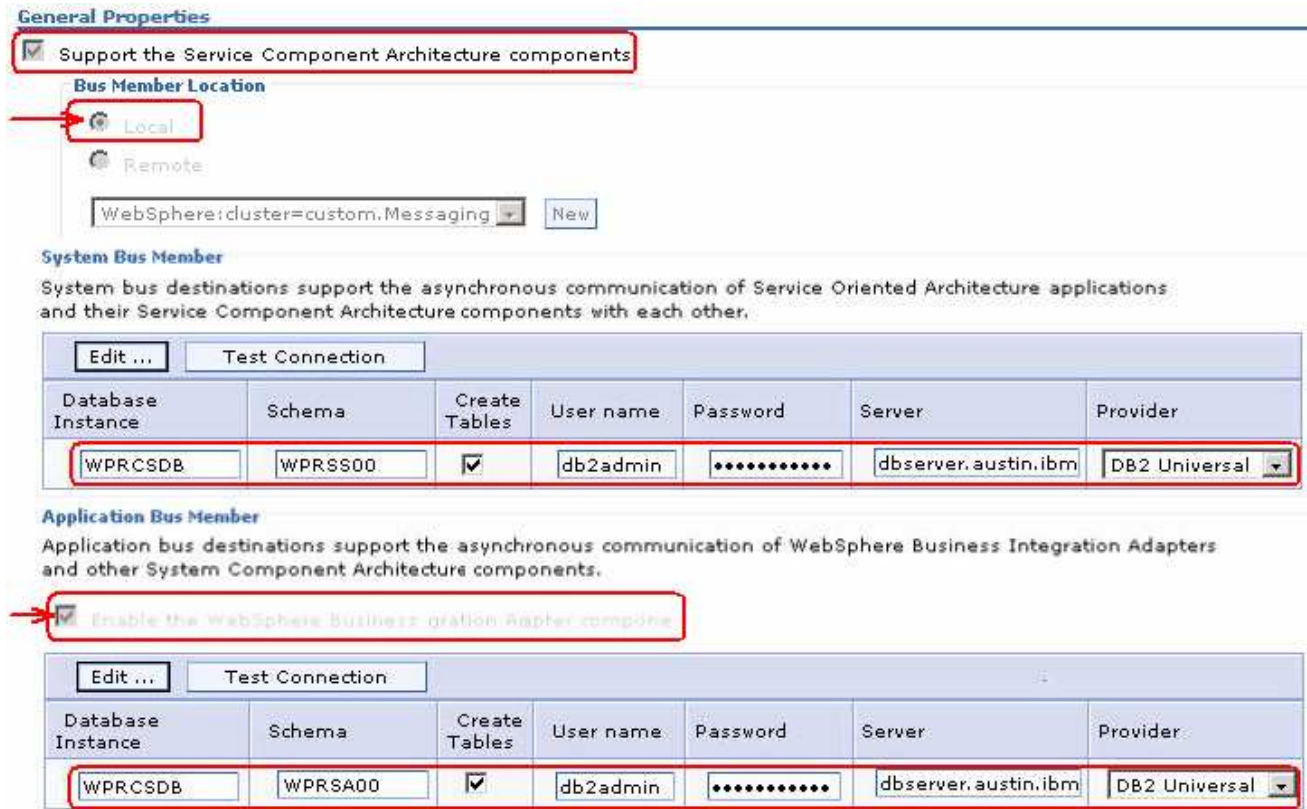
In this lab, the SCA support and messaging engines are configured on the **'custom.Messaging'** cluster

- \_\_\_ 1. In the left navigation pane of the deployment manager, expand **'Servers'** and then click the **'Clusters'** link
- \_\_\_ 2. In the following **'Clusters'** panel, click the **'custom.Messaging'** link
- \_\_\_ 3. In the following **'Server clusters → custom.Messaging'** panel, ensure the **'Configuration'** tab is selected and then click the **'Messaging Engines'** link under the **'Cluster Messaging'** section

Select	Name	Description	Status
<input type="checkbox"/>	<a href="#">custom.Messaging.000-BPC.customCell01.Bus</a>		➔
<input type="checkbox"/>	<a href="#">custom.Messaging.000-CommonEventInfrastructure Bus</a>		➔
<input type="checkbox"/>	<a href="#">custom.Messaging.000-SCA.APPLICATION.customCell01.Bus</a>		➔
<input type="checkbox"/>	<a href="#">custom.Messaging.000-SCA.SYSTEM.customCell01.Bus</a>		➔

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4. In the **'Server clusters → custom.Messaging'** panel, ensure the **'Configuration'** tab is selected and then click the **'Service Component Architecture'** link under the **'Business Integration'** section
  - a. The following **'Service Component Architecture'** panel should indicate that **'Service Component Architecture'** has been configured.
  - b. Ensure the check box for **'Support the Service Component Architecture components'** is disabled indicating that SCA support has been configured on this deployment target
  - c. You can see the radio button for **'Local'** is selected and disabled, indicating that the message engines are located local to this deployment target.
  - d. However you can edit the data source configuration information



**Reviewing the components and functions configured on the CEI cluster:**

In this lab, the Common Event Infrastructure server support, BPC Event Collector and BPC Observer are configured on the **'custom.EventSupport'** cluster

1. In the left navigation pane of the deployment manager, expand **'Servers'** and then click the **'Clusters'** link
2. In the following **'Clusters'** panel, click the **'custom.EventSupport'** link
3. In the following **'Server clusters → custom.EventSupport'** panel, ensure the **'Configuration'** tab is selected, expand **'Common Event Infrastructure'** and then click the **'Common Event Infrastructure Server'** link under the **'Business Integration'** section

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- \_\_\_ a. The following ‘**Common Event Infrastructure**’ panel should indicate that ‘Common Event Infrastructure’ server has already been configured
- \_\_\_ b. Ensure the ‘Common Event Infrastructure Bus member location’ is configured for remote messaging

**General Properties**

Enable the event infrastructure server

**Common Event Infrastructure Event Database**  
The Common Event infrastructure event database stores Common Base Events for historic data processing.

Edit ... Test Connection

Database Instance	Schema	Create Tables	User name	Password	Server	Provider
WPRCSDB		<input type="checkbox"/>	db2admin	*****	dbserver.austin.ibm	DB2 Universal

**Common Event Infrastructure Bus Member Location**

Local

Remote

Cluster=custom.Messaging New...

**Common Event Infrastructure Bus Member**  
Common Event Infrastructure bus destination support the asynchronous transmission and distribution of Common Base Events.

Edit ... Test Connection

Database Instance	Schema	Create Tables	User name	Password	Server	Provider
WPRCSDB	WPRCM00	<input checked="" type="checkbox"/>	db2admin	*****	dbserver.austin.ibr	DB2 Universal

- \_\_\_ 4. In the ‘**Server clusters → custom.EventSupport**’ panel, ensure the ‘**Configuration**’ tab is selected, expand ‘**Business Process Choreographer**’ and then click the ‘**Business Process Choreographer Event Collector**’ link under the ‘**Business Integration**’ section
  - \_\_\_ a. Ensure the ‘**Business Process Choreographer Event Collector**’ panel should indicate the BPC Event Collector has already been configured

**General Properties**

**Data Source**

Edit... Test Connection...

Database Instance	Schema Name	Create Tables	User Name	Password	Server	Provider
WPRCSDB	WPRBC00	<input checked="" type="checkbox"/>	db2admin	*****	dbserver.3	DB2 Universal

**Observation Target**

Managed business process choreographer container

Existing event group name

Event group name

Apply OK Reset Cancel

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- \_\_\_ 5. In the **'Server clusters → custom.EventSupport'** panel, ensure the **'Configuration'** tab is selected, expand **'Business Process Choreographer'** and then click the **'Business Process Choreographer Observer'** link under the **'Business Integration'** section

Select	Observer ▾	Context Root ▾	Business Process Choreographer Event Collector ▾
<input type="checkbox"/>	<a href="#">BPCObserver_custom.EventSupport</a>	/bpcobserver	Cluster=custom.EventSupport

### Reviewing the components and functions configured on the application target cluster:

In this lab, the Business Process Choreographer container support, SCA support and BPC Explorer are configured on the **'custom.Application'** cluster

- \_\_\_ 1. In the left navigation pane of the deployment manager, expand **'Servers'** and then click the **'Clusters'** link
- \_\_\_ 2. In the following **'Clusters'** panel, click the **'custom.Application'** link
- \_\_\_ 3. In the **'Server clusters → custom.Application'** panel, ensure the **'Configuration'** tab is selected and then click the **'Service Component Architecture'** link under the **'Business Integration'** section
- \_\_\_ a. The following **'Service Component Architecture'** panel should indicate that **'Service Component Architecture'** has already been configured.
- \_\_\_ b. Ensure the check box for **'Support the Service Component Architecture components'** is disabled indicating that SCA support has been configured on this deployment target
- \_\_\_ c. Ensure the member bus location is configured to use **'Remote'** messaging
- \_\_\_ d. However you can edit the data source configuration information
- \_\_\_ 2. In the **'Server clusters → custom.Application'** panel, ensure the **'Configuration'** tab is selected, expand **'Business Process Choreographer Container Settings'** and then click the **'Business Process Choreographer Containers'** link under the **'Container Settings'** section
- \_\_\_ a. In the following **'Business Process Choreographer Containers'** panel should indicate that **'Business Process manager'** and **'Human tasks Manager'** are currently installed
- \_\_\_ b. Review the data source and security configuration parameters
- \_\_\_ c. Ensure the BPC bus is configured for **'Remote'** messaging
- \_\_\_ 3. In the **'Server clusters → custom.Application'** panel, ensure the **'Configuration'** tab is selected, expand **'Business Process Choreographer'** and then click the **'Business Process Choreographer Explorer'** link under the **'Business Integration'** section

Select	Explorer ▾	Context Root ▾	Managed Container ▾
<input type="checkbox"/>	<a href="#">BPCExplorer_custom.Application</a>	/bpc	Cluster=custom.Application

## Appendix 1: Configure Service Component Architecture support

In this part of the lab, you will configure Service Component Architecture (SCA) support for a cluster. By default, new clusters in a network deployment or managed node environment are not configured to host SCA applications and their destinations. You will choose a cluster and enable it to host service applications, configure required messaging engines and destinations. To achieve this, you should select an option such that the messaging engines are configured using the local bus members as SCA function needs messaging support.

The SCA System and Application bus members are configured locally if the corresponding messaging configuration is local, otherwise you must select an existing remote destination location. In this lab, you will use the local option.

### Make a decision:

The following are the decisions made to configure SCA support:

- Choose a cluster, for SCA support, Ex: **custom.Messaging**
- **Local Bus Member configuration:** On choosing this configuration, you plan to host SCA applications, destinations, and messaging engines on this cluster

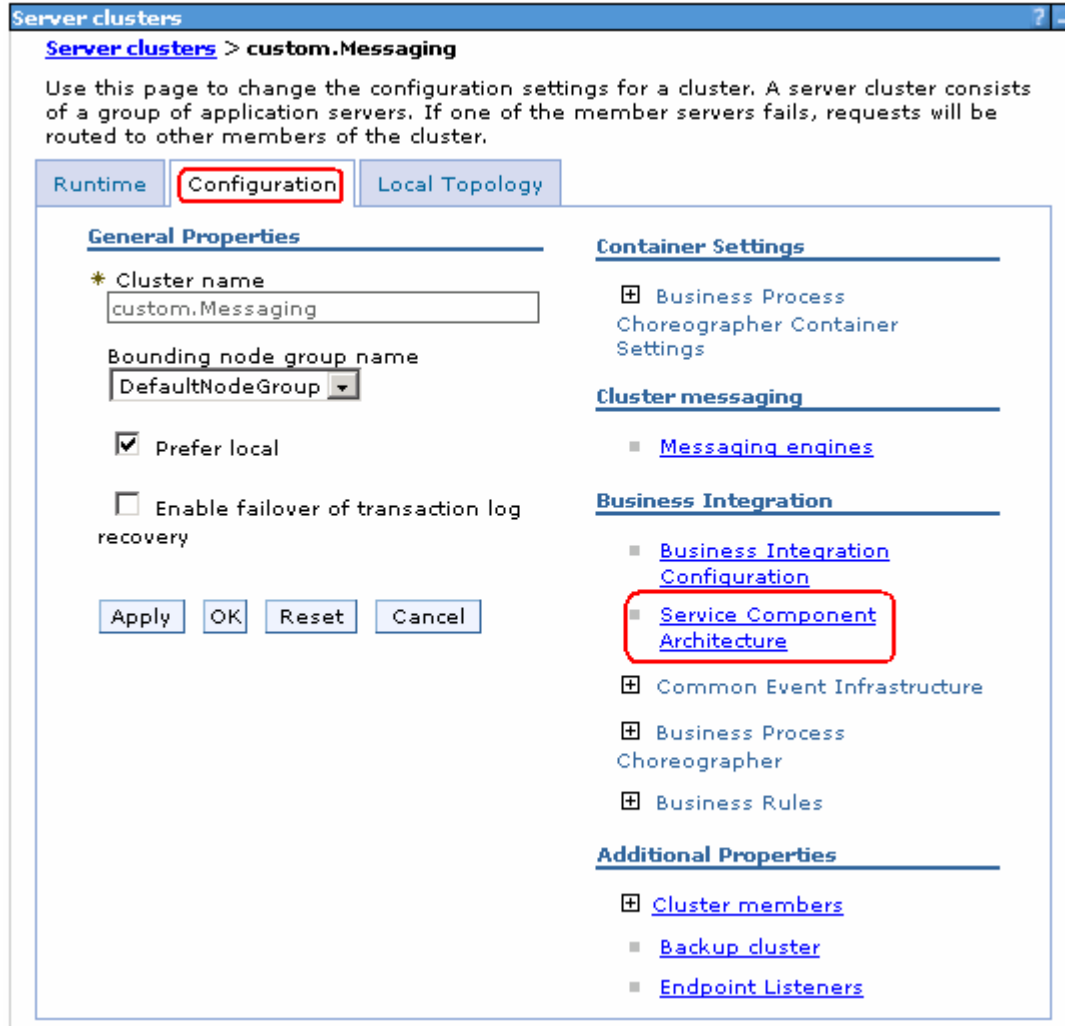
### Pre-requisites:

- Ensure the DB2 server is running

Complete the following steps to configure SCA support for a cluster:

1. In the left navigation pane of the deployment manager administrative console, expand '**Servers**' and then click the '**Clusters**' link
2. In the following '**Server clusters**' panel, click the '**custom.Messaging**' link
3. In the following '**Server clusters → custom.Messaging**' panel, ensure the '**Configuration**' tab is selected and then click the '**Service Component Architecture**' link under the '**Business Integration**' section

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4. In the following 'Service Component Architecture' panel, select the check box for 'Support the Service Component Architecture components'. This action enables all the available configuration options

## IBM WEBSHERE PROCESS SERVER 6.1 – LAB EXERCISE

## General Properties

 Support the Service Component Architecture components

## Bus Member Location

- Local  
 Remote

## System Bus Member

System bus destinations support the asynchronous communication of Service Oriented Architecture applications and their Service Component Architecture components with each other.

<input type="button" value="Edit ..."/> <input type="button" value="Test Connection"/>						
Database Instance	Schema	Create Tables	User name	Password	Server	Provider
WPRCSDB	WPRSS00	<input checked="" type="checkbox"/>	db2admin	*****	dbserver.austin.ibm	DB2 Universal

## Application Bus Member

Application bus destinations support the asynchronous communication of WebSphere Business Integration Adapters and other System Component Architecture components.

 Enable the WebSphere Business Integration Adapter components

<input type="button" value="Edit ..."/> <input type="button" value="Test Connection"/>						
Database Instance	Schema	Create Tables	User name	Password	Server	Provider
WPRCSDB	WPRSA00	<input checked="" type="checkbox"/>	db2admin	*****	dbserver.austin.ibm	DB2 Universal

\_\_\_ 5. In the current 'Service Component Architecture' panel, enter the following parameters:

\_\_\_ a. Bus Member Location:

- Select the radio button for 'Local'

\_\_\_ b. System Bus Member (system bus data source configuration):

- Database Instance : **WPRCSDB**
- Schema : <Accept the default> (Ex: **WPRSS00**)
- Create tables : Select the check box
- User name : **db2admin**
- Password : **passw0rd**
- Server : **dbserver.austin.ibm.com**
- Provider : **DB2 Universal**

\_\_\_ c. Application Bus Member (application bus data source configuration):



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- Select the check box for **'Enable the WebSphere Business Integration Adapter components'**
- Database Instance : **WPRCSDB**
- Schema : <Accept the default> (Ex: **WPRSS00**)
- Create tables : Select the check box
- User name : **db2admin**
- Password : **passw0rd**
- Server : **dbserver.austin.ibm.com**
- Provider : **DB2 Universal**

**Note:** Verify any default values in the **Database Instance**, **Schema**, **Create Tables**, **User name Password**, **Server**, and **Provider** fields. If no default values exist in these fields, or if the default values are incorrect, enter the appropriate values for the system bus data source.

**General Properties**

Support the Service Component Architecture components

**Bus Member Location**

Local  
 Remote

**System Bus Member**

System bus destinations support the asynchronous communication of Service Oriented Architecture applications and their Service Component Architecture components with each other.

Database Instance	Schema	Create Tables	User name	Password	Server	Provider
WPRCSDB	WPRSS00	<input checked="" type="checkbox"/>	db2admin	.....	dbserver.austin.ibm	DB2 Universal

**Application Bus Member**

Application bus destinations support the asynchronous communication of WebSphere Business Integration Adapters and other System Component Architecture components.

Enable the WebSphere Business Integration Adapter components

Database Instance	Schema	Create Tables	User name	Password	Server	Provider
WPRCSDB	WPRSS00	<input checked="" type="checkbox"/>	db2admin	.....	dbserver.austin.ibm	DB2 Universal

\_\_\_ 6. Click **OK**

\_\_\_ 7. Save to the master configuration and synchronize the changes with the nodes

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- \_\_\_ 8. Review and test data sources created during the SCA configuration
- \_\_\_ a. In the left navigation pane of the administrative console, expand '**Resources**' and then click the '**Data sources**' link. Select '**custom.Messaging**' as scope
- \_\_\_ b. The following two database sources created are created as the part of the SCA configuration at the '**custom.Messaging**' cluster scope:
- **SCA Application Bus ME data source**
  - **SCA System Bus ME data source**

**Data sources**

Scope: Cell=**dmgr01Cell01**, Cluster=**custom.Messaging**

Cluster=custom.Messaging

Preferences

New Delete **Test connection** Manage state...

Select	Name	JNDI name	Scope	Provider	Description
<input type="checkbox"/>	<a href="#">SCA Application Bus ME data source</a>	jdbc/com.ibm.ws.sib/custom.Messaging-SCA.APPLICATION.dmgr01Cell01.Bus	Cluster=custom.Messaging	DB2 Universal JDBC Driver Provider (XA)	SCA Application Bus Messaging Engine data source
<input type="checkbox"/>	<a href="#">SCA System Bus ME data source</a>	jdbc/com.ibm.ws.sib/custom.Messaging-SCA.SYSTEM.dmgr01Cell01.Bus	Cluster=custom.Messaging	DB2 Universal JDBC Driver Provider (XA)	SCA System Bus Messaging Engine data source

Total 2

- \_\_\_ c. Select the check box for the data sources and then click the 'Test Connection' button. Ensure the database connection is successful

**Troubleshooting:** If the test connection is failed and is reporting the following message:

The test connection operation failed for data source SCA Application Bus ME data source on server nodeagent at node customNode01 with the following exception: java.sql.SQLException: [ibm][db2][jcc][t4][10205][11234] Null userid is not supported.DSRA0010E: SQL State = null, Error Code = -99,999. [View JVM logs](#) for further details.

Restart the node agent of the corresponding node name reported in the failure message and then continue testing the data sources.

- \_\_\_ 9. Review the Messaging Engines configured and ensure they are in '**started**' status
- \_\_\_ a. In the left navigation pane of the administrative console, expand '**Servers**' and then click the '**Clusters**' link.
- \_\_\_ b. In the following '**Clusters**' panel, click the '**custom.Messaging**' link

## IBM WEBSPPHERE PROCESS SERVER 6.1 – LAB EXERCISE

- \_\_\_ c. In the following ‘**Clusters → custom.Messaging**’ panel, click the ‘**Messaging engines**’ link under the ‘**Cluster Messaging**’ section

Cluster messaging

- [Messaging engines](#)

- \_\_\_ d. Ensure the following ‘**Messaging engines**’ panel, lists two messaging engines named as:

- <CLUSTER\_NAME>.SCA.APPLICATION.<DMGER\_CELL\_NAME>.Bus
- <CLUSTER\_NAME>.SCA.SYSTEM.<DMGER\_CELL\_NAME>.Bus

Server clusters > custom.Messaging > Messaging engines

Preferences

Start Stop mode: Immediate Stop

Select	Name	Description	Status
<input type="checkbox"/>	<a href="#">custom.Messaging.000-SCA.APPLICATION.dmqr01Cell01.Bus</a>		Available
<input type="checkbox"/>	<a href="#">custom.Messaging.000-SCA.SYSTEM.dmqr01Cell01.Bus</a>		Available
Total 2			

**Troubleshooting:** If the messaging engines show an ‘unavailable’ status and report the following message when attempted to start them:

The messaging engine custom.Messaging.000-SCA.SYSTEM.dmqr01Cell01.Bus cannot be started as there is no runtime initialized for it yet, retry the operation once it has initialized. If dynamic configuration reload is not enabled for this bus then the server will need to be restarted.

Restart the member servers of the corresponding cluster where these messaging engines exist. Alternatively restart the cluster itself which restarts the member servers.

## Appendix 2: Configure Common Event Infrastructure server support

In this part of the lab, you will configure a cluster to support the Common Event Infrastructure (CEI) function.

Complete the following steps to configure the CEI support for a cluster:

- \_\_\_\_ 1. In the left navigation pane of the deployment manager administrative console, expand '**Servers**' and then click the '**Clusters**' link
- \_\_\_\_ 2. In the following '**Server clusters**' panel, click the '**custom.EventSupport**' link
- \_\_\_\_ 3. In the following '**Server clusters → custom.EventSupport**' panel, ensure the '**Configuration**' tab is selected, expand '**Common Event Infrastructure**' and then click the '**Common Event Infrastructure Server**' link under the '**Business Integration**' section



- \_\_\_\_ 4. In the following '**Common Event Infrastructure Server**' panel, select the check box for '**Enable the event infrastructure server**'. This action enables all the available configuration options

## IBM WEBSPPHERE PROCESS SERVER 6.1 – LAB EXERCISE

## General Properties

 Enable the event infrastructure server

## Common Event Infrastructure Event Datab

The Common Event infrastructure event database stores Common Base Events for historic data processing.

Edit ... Test Connection						
Database Instance	Schema	Create Tables	User name	Password	Server	Provider
WPRCSDB		<input checked="" type="checkbox"/>	db2admin	*****	dbserver.austin.ibm	DB2 Universal

## Common Event Infrastructure Bus Member Location

- Local  
 Remote

## Common Event Infrastructure Bus Member

Common Event Infrastructure bus destination support the asynchronous transmission and distribution of Common Base Events.

Edit ... Test Connection						
Database Instance	Schema	Create Tables	User name	Password	Server	Provider
WPRCSDB	WPRCM00	<input checked="" type="checkbox"/>	db2admin	*****	dbserver.austin.ibm	DB2 Universal

\_\_\_ 5. In the current 'Enable the event infrastructure server' panel, enter the following parameters:

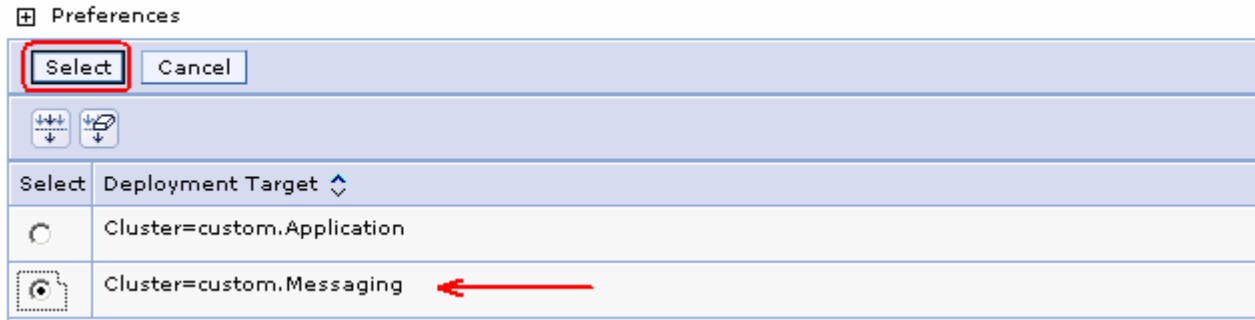
\_\_\_ a. Common Event Infrastructure event database:

- Database Instance : **WPRCSDB**
- Schema : <Accept the default>
- Create tables : Select the check box
- User name : **db2admin**
- Password : **passw0rd**
- Server : **dbserver.austin.ibm.com**
- Provider : **DB2 Universal**

\_\_\_ b. Common Event Infrastructure Bus Member Location:

- Select the radio button for '**Remote**'
  - Click the '**New**' button to select the an existing remote messaging cluster
  - In the following 'Browse **Deployment target**' panel select '**custom.Messaging**'

[Server clusters](#) > [custom.EventSupport](#) > [Common Event Infrastructure Server](#) > **Browse deployment target**



- Click the '**Select**' button

\_\_\_ c. Common Event Infrastructure Bus Member (CEI bus data source configuration):

- Database Instance : **WPRCSDB**
- Schema : <Accept the default> (Ex: **WPRCM00**)
- Create tables : Select the check box
- User name : **db2admin**
- Password : **passw0rd**
- Server : **dbserver.austin.ibm.com**
- Provider : **DB2 Universal**

---

**Note:** Verify any default values in the **Database Instance**, **Schema**, **Create Tables**, **User name Password**, **Server**, and **Provider** fields. If no default values exist in these fields, or if the default values are incorrect, enter the appropriate values if required.

---

## IBM WEBSHERE PROCESS SERVER 6.1 – LAB EXERCISE

**General Properties**

Enable the event infrastructure server

**Common Event Infrastructure Event Database**

The Common Event infrastructure event database stores Common Base Events for historic data processing.

<input type="button" value="Edit ..."/> <input type="button" value="Test Connection"/>						
Database Instance	Schema	Create Tables	User name	Password	Server	Provider
WPRCSDB		<input checked="" type="checkbox"/>	db2admin	*****	dbserver.austin.ibm	DB2 Universal

**Common Event Infrastructure Bus Member Location**

Local

Remote

Cluster=custom.Messaging

**Common Event Infrastructure Bus Member**

Common Event Infrastructure bus destination support the asynchronous transmission and distribution of Common Base Events.

<input type="button" value="Edit ..."/> <input type="button" value="Test Connection"/>						
Database Instance	Schema	Create Tables	User name	Password	Server	Provider
WPRCSDB	WPRCM00	<input checked="" type="checkbox"/>	db2admin	*****	dbserver.austin.ibm	DB2 Universal

- \_\_\_ 6. Click **OK**
- \_\_\_ 7. Save to the master configuration and synchronize with the nodes
- \_\_\_ 8. Review and test data sources created during the CEI server configuration. You should see three data sources, two at the '**custom.EventSupport**' cluster scope and one at the '**custom.Messaging**' cluster scope created
  - \_\_\_ a. In the left navigation pane of the administrative console, expand '**Resources**' and then click the '**Data sources**' link. Select '**custom.EventSupport**' as scope
  - \_\_\_ b. The following two database sources created are created as the part of the SCA configuration at the '**custom.EventSupport**' cluster scope:
    - **event**
    - **event\_catalog**

IBM WEBSHERE PROCESS SERVER 6.1 – LAB EXERCISE

☐ Scope: Cell=**dmgr01Cell01**, Cluster=**custom.EventSupport**

Cluster=custom.EventSupport

New Delete **Test connection** Manage state...

Select	Name	JNDI name	Scope	Provider	Description
<input type="checkbox"/>	<a href="#">event</a>	jdbc/cei	Cluster=custom.EventSupport	DB2 Universal JDBC Driver Provider (XA)	Event server data source
<input type="checkbox"/>	<a href="#">event_catalog</a>	jdbc/eventcatalog	Cluster=custom.EventSupport	DB2 Universal JDBC Driver Provider (XA)	Event catalog data source

\_\_ c. Select the check box for the data sources and then click the 'Test Connection' button. Ensure the database connection is successful

**Troubleshooting:** If the test connection is failed and is reporting the following message:

**\* The test connection operation failed for data source event on server nodeagent at node customNode03 with the following exception: java.sql.SQLException: [ibm][db2][jcc][t4][10205][11234] Null userid is not supported.DSRA0010E: SQL State = null, Error Code = -99,999. [View JVM logs](#) for further details.**

Restart the node agent of the corresponding node name reported in the failure message and then continue testing the data sources.

\_\_ d. Now select the scope to '**custom.Messaging**' cluster. You should see a new data source created exclusively for the CEI member bus as shown below:

- **CEI\_ME\_data\_source**

☐ Scope: Cell=**dmgr01Cell01**, Cluster=**custom.Messaging**

Cluster=custom.Messaging

New Delete **Test connection** Manage state...

Select	Name	JNDI name	Scope	Provider	Description
<input type="checkbox"/>	<a href="#">CEI ME data source</a>	jdbc/com.ibm.ws.sib/custom.Messaging-CommonEventInfrastructure_Bus	Cluster=custom.Messaging	DB2 Universal JDBC Driver Provider (XA)	CEI Messaging Engine data source
<input type="checkbox"/>	<a href="#">SCA Application Bus ME data source</a>	jdbc/com.ibm.ws.sib/custom.Messaging-SCA.APPLICATION.dmgr01Cell01.Bus	Cluster=custom.Messaging	DB2 Universal JDBC Driver Provider (XA)	SCA Application Bus Messaging Engine data source
<input type="checkbox"/>	<a href="#">SCA System Bus ME data source</a>	jdbc/com.ibm.ws.sib/custom.Messaging-SCA.SYSTEM.dmgr01Cell01.Bus	Cluster=custom.Messaging	DB2 Universal JDBC Driver Provider (XA)	SCA System Bus Messaging Engine data source



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\_\_\_ e. Select the check box for the data source and then click the ‘Test Connection’ button. Ensure the database connection is successful

\_\_\_ 9. Review Messaging Engine is created and ensure they are in ‘started’ status

\_\_\_ a. In the left navigation pane of the administrative console, expand ‘Servers’ and then click the ‘Clusters’ link

\_\_\_ b. In the following ‘Clusters’ panel, click the ‘custom.Messaging’ link

\_\_\_ c. In the following ‘Clusters → custom.Messaging’ panel, click the ‘Messaging engines’ link under the ‘Cluster Messaging’ section

Cluster messaging

- [Messaging engines](#)

\_\_\_ d. Ensure the following ‘Messaging engines’ panel, lists a new CEI messaging engines named as:


- <CUSTER\_NAME>.CommonEventInfrastructure\_Bus

[Server clusters](#) > [custom.Messaging](#) > **Messaging engines**

Start Stop mode: Immediate Stop

Select	Name	Description	Status
<input type="checkbox"/>	<a href="#">custom.Messaging.000-CommonEventInfrastructure_Bus</a>		➡
<input type="checkbox"/>	<a href="#">custom.Messaging.000-SCA.APPLICATION.dmqr01Cell01.Bus</a>		➡
<input type="checkbox"/>	<a href="#">custom.Messaging.000-SCA.SYSTEM.dmqr01Cell01.Bus</a>		➡

**Troubleshooting:** If the messaging engines show an ‘unavailable’ status and report the following message when attempted to start them:

 The messaging engine custom.Messaging.000-CommonEventInfrastructure\_Bus cannot be started as there is no runtime initialized for it yet, retry the operation once it has initialized. If dynamic configuration reload is not enabled for this bus then the server will need to be restarted.

Restart the member servers of the corresponding cluster where these messaging engines exist. Alternatively restart the cluster itself which restarts the member servers.

## Appendix 3: Configure business process choreographer container support

In this part of the lab, you will configure business process choreographer (BPC) container for a cluster followed by the Service Component Architecture support. Note that the BPC container is not available unless the SCA support is made available on the deployment target.

Complete the following steps to configure the Service Component Architecture support for this cluster:

- \_\_\_\_ 1. In the left navigation pane of the deployment manager administrative console, expand '**Servers**' and then click the '**Clusters**' link
- \_\_\_\_ 2. In the following '**Server clusters**' panel, click the '**custom.Application**' link
- \_\_\_\_ 3. In the following '**Server clusters → custom.Application**' panel, ensure the '**Configuration**' tab is selected and then click the '**Service Component Architecture**' link under the '**Business Integration**' section

[Server clusters](#) > [custom.Application](#)

Runtime **Configuration** Local Topology

<p><b>General Properties</b></p> <p>* Cluster name  <input type="text" value="custom.Application"/></p> <p>Bounding node group name  <input type="text" value="DefaultNodeGroup"/></p> <p><input checked="" type="checkbox"/> Prefer local</p> <p><input type="checkbox"/> Enable failover of transaction log recovery</p> <p><input type="button" value="Apply"/> <input type="button" value="OK"/> <input type="button" value="Reset"/> <input type="button" value="Cancel"/></p>	<p><b>Container Settings</b></p> <p>⊕ Business Process Choreographer Container Settings</p> <p><b>Cluster messaging</b></p> <p>▪ <a href="#">Messaging engines</a></p> <p><b>Business Integration</b></p> <p>▪ <a href="#">Business Integration Configuration</a></p> <p>▪ <a href="#">Service Component Architecture</a></p> <p>⊕ Common Event Infrastructure</p> <p>⊕ Business Process Choreographer</p> <p>⊕ Business Rules</p> <p><b>Additional Properties</b></p> <p>⊕ <a href="#">Cluster members</a></p> <p>▪ <a href="#">Backup cluster</a></p> <p>▪ <a href="#">Endpoint Listeners</a></p>
---	---

- \_\_\_\_ 4. In the following '**Service Component Architecture**' panel, select the check box for '**Support the Service Component Architecture components**'. This action enables all the available configuration options

IBM WEBSHERE PROCESS SERVER 6.1 – LAB EXERCISE

**General Properties**

Support the Service Component Architecture components

**Bus Member Location**

Local

Remote

WebSphere:cluster=custom.Messaging

**System Bus Member**

System bus destinations support the asynchronous communication of Service Oriented Architecture applications and their Service Component Architecture components with each other.

<input type="button" value="Edit ..."/> <input type="button" value="Test Connection"/>						
Database Instance	Schema	Create Tables	User name	Password	Server	Provider
WPRCSDB	WPRSS00	<input checked="" type="checkbox"/>	db2admin	*****	dbserver.austin.ibm	DB2 Universal

**Application Bus Member**

Application bus destinations support the asynchronous communication of WebSphere Business Integration Adapters and other System Component Architecture components.

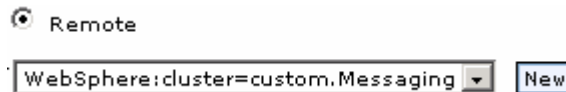
Enable the WebSphere Businessgation Asjter compone

<input type="button" value="Edit ..."/> <input type="button" value="Test Connection"/>						
Database Instance	Schema	Create Tables	User name	Password	Server	Provider
WPRCSDB	WPRSA00	<input checked="" type="checkbox"/>	db2admin	*****	dbserver.austin.ibm	DB2 Universal

\_\_\_ 5. In the current 'Service Component Architecture' panel, enter the following parameters:

\_\_\_ a. Bus Member Location:

- Select the radio button for 'Remote'
- Select 'custom.Messaging' cluster from the drop down list or click the 'New' button to select another cluster which is configured for messaging support



\_\_\_ b. System Bus Member (system bus data source configuration):

- Database Instance : **WPRCSDB**
- Schema : <Accept the default> (Ex: **WPRSS00**)
- Create tables : Select the check box
- User name : **db2admin**
- Password : **passw0rd**
- Server : **dbserver.austin.ibm.com**

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- Provider : **DB2 Universal**

\_\_\_ c. Application Bus Member (application bus data source configuration):

- Select the check box for 'Enable the WebSphere Business Integration Adapter components'
- Database Instance : **WPRCSDB**
- Schema : <Accept the default> (Ex: **WPRSS00**)
- Create tables : Select the check box
- User name : **db2admin**
- Password : **passw0rd**
- Server : **dbserver.austin.ibm.com**
- Provider : **DB2 Universal**

**Note:** Verify any default values in the **Database Instance, Schema, Create Tables, User name Password, Server, and Provider** fields. If no default values exist in these fields, or if the default values are incorrect, enter the appropriate values for the system bus data source.

**General Properties**

Support the Service Component Architecture components

**Bus Member Location**

Local

Remote

WebSphere:cluster=custom.Messaging

**System Bus Member**

System bus destinations support the asynchronous communication of Service Oriented Architecture applications and their Service Component Architecture components with each other.

Database Instance	Schema	Create Tables	User name	Password	Server	Provider
WPRCSDB	WPRSS00	<input checked="" type="checkbox"/>	db2admin	.....	dbserver.austin.ibm	DB2 Universal

**Application Bus Member**

Application bus destinations support the asynchronous communication of WebSphere Business Integration Adapters and other System Component Architecture components.

Enable the WebSphere Business Integration Adapter components

Database Instance	Schema	Create Tables	User name	Password	Server	Provider
WPRCSDB	WPRSS00	<input checked="" type="checkbox"/>	db2admin	.....	dbserver.austin.ibm	DB2 Universal

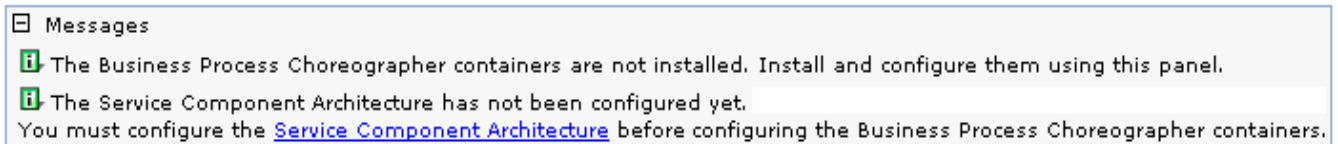
\_\_\_ 6. Click **OK**

\_\_\_ 7. Save to the master configuration and synchronize the changes to the nodes

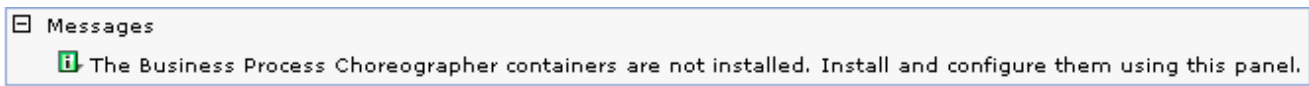
**Complete the following steps to configure the BPC container for a cluster:**

- \_\_\_ 8. In the left navigation pane of the deployment manager administrative console, expand '**Servers**' and then click the '**Clusters**' link
- \_\_\_ 9. In the following '**Server clusters**' panel, click the '**custom.Application**' link
- \_\_\_ 10. In the following '**Server clusters → custom.Application**' panel, ensure the '**Configuration**' tab is selected, expand '**Business Process Choreographer Container Settings**' and then click the '**Business Process Choreographer Containers**' link under the '**Container Settings**' section

**Note:** A message indicates whether the BPC container is configured on the top of the **Business Process Choreographer Containers** panel. Also mentions that the Service Component Architecture support should be configured on this cluster before configuring the BPC container.



If the Service Component Architecture support is already configured for this cluster, you see the following message:



- \_\_\_ 11. In the following '**Business Process Choreographer Containers**' panel, complete the following configuration steps:
- \_\_\_ a. Configure the data source and create BPC tables. Click the pull down icon (▼) to view the '**Data source**' configuration properties
- \_\_\_ b. In the '**Data Source**' configuration panel, enter the following parameters:
- Database Instance : **WPRCSDB**
  - Schema Name : <Accept the default> Ex: **WPRBE00**
  - Create tables : Select the check box
  - User Name : **db2admin**
  - Password : **passw0rd**
  - Server : **dbserver.austin.ibm.com**
  - Provider : **DB2 Universal**

**Note:** Verify any default values in the **Database Instance**, **Schema**, **Create Tables**, **User name Password**, **Server**, and **Provider** fields. If no default values exist in these fields, or if the default values are incorrect, enter the appropriate values if necessary.

▼ **Data Source** ←

Edit... Test Connection...

Database Instance	Schema Name	Create Tables	User Name	Password	Server	Provider
WPRCSDB	WPRBE00	<input checked="" type="checkbox"/>	db2admin	*****	dbserver.3	DB2 Universal ▼

\_\_ c. Configure Human Tasks Manager Mail session. Click the pull down icon (▼) to view the ‘Human Tasks Manager Mail session’ configuration properties

- Clear the check box for ‘Enable e-mail server’

▼ **Human Task Manager Mail Session**

Enable e-mail service

Mail transport host

Mail transport user

Mail transport password

Confirm mail transport password

Business Process Choreographer Explorer URL

\_\_ d. Configure security. Click the pull down icon (▼) to view the ‘Security’ configuration properties

\_\_ e. In the ‘Security’ configuration panel, enter the following parameters:

- Enter user or group values for the ‘Administrator’ and ‘Monitor’ roles
- Enter user name and password for the authentication aliases

▼ **Security**

Role	User	Group	Description
Administrator	wps61admi	<input style="width: 50%;" type="text"/>	User name(s) and/or group name(s) for the business flow and human task administrator role. Users assigned to this role have all privileges.
Monitor	wps61admi	<input style="width: 50%;" type="text"/>	User name(s) and/or group name(s) for the business flow and human task monitor role. Users assigned to this role can view the properties of all of the business process and task objects.

Authentication	User	Password	Confirm Password	Description
JMS Authentication	wps61admi	*****	*****	Authentication used to authorize communication between messaging engines on the system integration bus
JMS API Authentication	wps61admi	*****	*****	Authentication for business flow manager message-driven bean to process asynchronous API calls
Escalation User Authentication	wps61admi	*****	*****	Authentication for human task manager message-driven bean to process asynchronous API calls

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- \_\_ f. Configure state observers. Click the pull down icon (▼) to view the **'State Observers'** configuration properties
- \_\_ g. Accepts the defaults for the **'State Observers'** configuration

▼ **State Observers**

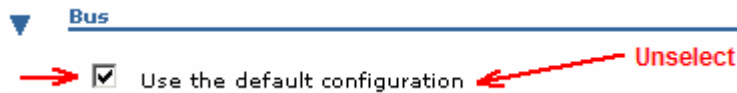
Logging	Business Flow Manager	Human Task Manager
Audit Logging	<input type="checkbox"/>	<input type="checkbox"/>
Common Event Infrastructure Logging	<input type="checkbox"/>	<input type="checkbox"/>

- \_\_ h. Configure SCA bindings. Click the pull down icon (▼) to view the **'SCA Bindings'** configuration properties
- \_\_ i. Accept the defaults for the **'SCA Bindings'** configuration

▼ **SCA Bindings**

Host	Context Root	Relative Path	Description
http://host:port	/BFMIF_cus	/sca/com/ibm/bpe/spi/sca/BFMWS	Business Flow Manager Web Service Endpoint
http://host:port	/HTMIF_cus	/sca/com/ibm/bpe/spi/sca/HTMWS	Human Task Manager Web Service Endpoint

- \_\_ j. Configure the BPC Bus (Message Engine). Click the pull down icon (▼) to view the **'Bus'** configuration properties
- \_\_ k. By default the **'Bus'** configuration uses the default configuration as shown below:



- \_\_ l. Clear the check box for **'Use the default configuration'**. This action displays the BPC bus configuration properties. Complete the following steps to configure the BPC bus:

1) Bus Member Location:

- Select the radio button for **'Remote'**
- Select **'custom.Messaging'** cluster from the drop down list or click the **'New'** button to select another cluster which is configured for messaging support



2) Configure data source and create tables (BPC bus data source configuration):

- Database Instance : **WPRCSDB**

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- Schema : <Accept the default> (Ex: **WPRBM00**)
- Create tables : Select the check box
- User name : **db2admin**
- Password : **passw0rd**
- Server : **dbserver.austin.ibm.com**
- Provider : **DB2 Universal**

**Bus**

Use the default configuration

**Bus Member Location**

Local

Remote

WebSphere:cluster=custom.Messaging

Database Instance	Schema Name	Create Tables	User Name	Password	Server	Provider
WPRCSDB	WPRBM00	<input checked="" type="checkbox"/>	db2admin	.....	.dbserver.austin.ibm.com	DB2 Universal

\_\_ m. Click **OK**. Review the **'Configuration status'** carefully

**Configuration Status**

```

2008-03-05 15:24:05 Beginning configuration ...
2008-03-05 15:24:44 ADMA5016I: Installation of BPEContainer_custom.Application started.
2008-03-05 15:24:56 ADMA5011I: The cleanup of the temp directory for application BPEContainer_custom.Application is complete.
2008-03-05 15:24:56 ADMA5013I: Application BPEContainer_custom.Application installed successfully.
2008-03-05 15:25:08 ADMA5016I: Installation of TaskContainer_custom.Application started.
2008-03-05 15:25:13 ADMA5016I: Installation of SchedulerCalendars started.
2008-03-05 15:25:13 ADMA5011I: The cleanup of the temp directory for application SchedulerCalendars is complete.
2008-03-05 15:25:13 ADMA5013I: Application SchedulerCalendars installed successfully.
2008-03-05 15:25:15 The configuration has ended.
    
```

\_\_ n. Click the **'Save Changes'** button

\_\_ o. Save to the master configuration and synchronize changes with the nodes

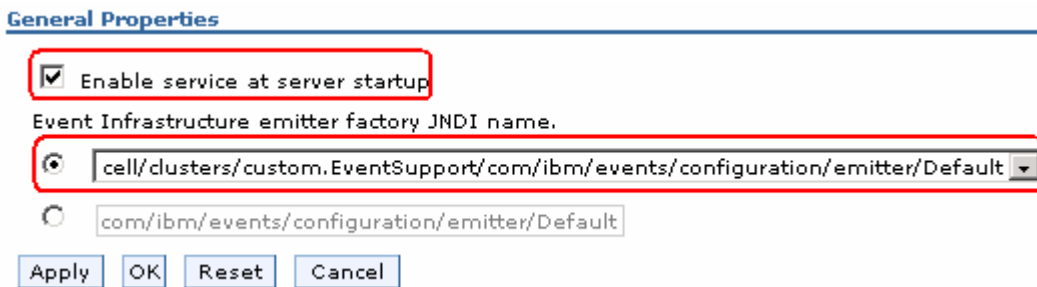


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- \_\_\_ 12. Configure '**Common Event Infrastructure Destination**'. This service enables WebSphere® Process Server applications and clients to create and manage events. The Common Event Infrastructure serves as an integration point for consolidation and persistence of business events from multiple, heterogeneous sources, and distribution of those events to event consumers
- \_\_\_ a. In the left navigation pane of the deployment manager administrative console, expand '**Servers**' and then click the '**Clusters**' link
  - \_\_\_ b. In the following '**Server clusters**' panel, click the '**custom.Application**' link
  - \_\_\_ c. In the following '**Server clusters → custom.Application**' panel, ensure the '**Configuration**' tab is selected, expand '**Common Event Infrastructure**' and then click the '**Common Event Infrastructure Destination**' link under the '**Business Integration**' section



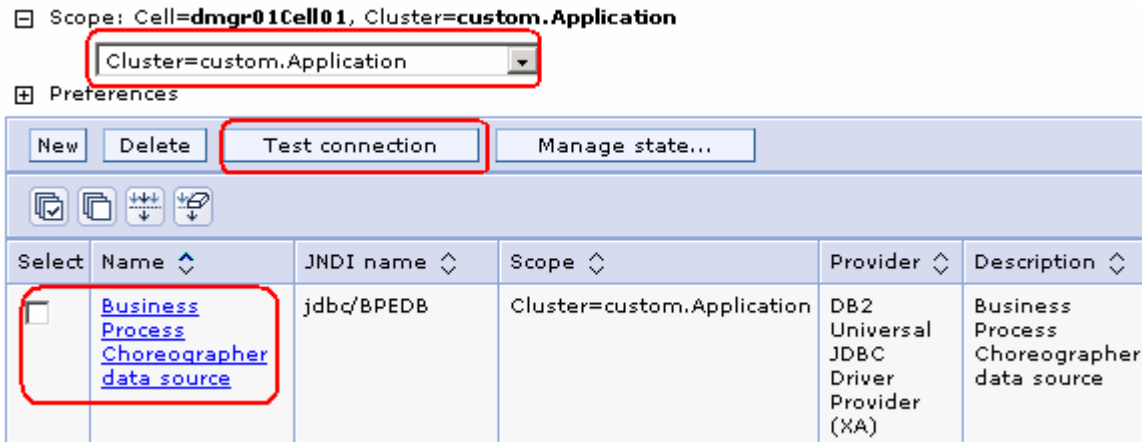
- \_\_\_ d. In the following panel, ensure the following parameters are selected:
  - Select the check box for '**Enable Service at server startup**'
  - Select the appropriate '**Event Infrastructure emitter factory JNDI name**'. In this scenario you use the remote CEI server.



- \_\_\_ e. Click **OK**. Save to the master configuration and synchronize changes with the nodes
- \_\_\_ 10. Review and test data sources created during the BPC container configuration. You should see one data source created at the '**custom.Application**' cluster scope and the other in the '**custom.Messaging**' cluster scope
- \_\_\_ a. In the left navigation pane of the administrative console, expand '**Resources**' and then click the '**Data sources**' link. Select '**custom.Application**' as scope
  - \_\_\_ b. The following database source is created as the part of the BPC container configuration at the '**custom.Application**' cluster scope:

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- **Business Process Choreographer data source**



\_\_\_ c. Select the check box for the data source and then click the 'Test Connection' button. Ensure the database connection is successful

**Troubleshooting:** If the test connection is failed and is reporting the following message:

**\* The test connection operation failed for data source Business Process Choreographer data source on server nodeagent at node CustomNode02 with the following exception: java.sql.SQLException: [ibm][db2][jcc][t4][10205][11234] Null userid is not supported.DSRA0010E: SQL State = null, Error Code = -99,999. [View JVM logs](#) for further details.**

Restart the node agent of the corresponding node name reported in the failure message and then continue testing the data sources.

\_\_\_ d. Now select the scope to '**custom.Messaging**' cluster. You should see a new data source created exclusively for the BPC member bus as shown below:

- **Business Process Choreographer ME data source**

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Scope: Cell=**dmgr01Cell01**, Cluster=**custom.Messaging**

Select	Name	JNDI name	Scope	Provider	Description
<input type="checkbox"/>	<a href="#">Business Process Choreographer ME data source</a>	jdbc/com.ibm.ws.sib/custom.Messaging-BPC.dmgr01Cell01.Bus	Cluster=custom.Messaging	DB2 Universal JDBC Driver Provider (XA)	Business Process Choreographer Messaging Engine data source
<input type="checkbox"/>	<a href="#">CEI ME data source</a>	jdbc/com.ibm.ws.sib/custom.Messaging-CommonEventInfrastructure_Bus	Cluster=custom.Messaging	DB2 Universal JDBC Driver Provider (XA)	CEI Messaging Engine data source
<input type="checkbox"/>	<a href="#">SCA Application Bus ME data source</a>	jdbc/com.ibm.ws.sib/custom.Messaging-SCA.APPLICATION.dmgr01Cell01.Bus	Cluster=custom.Messaging	DB2 Universal JDBC Driver Provider (XA)	SCA Application Bus Messaging Engine data source
<input type="checkbox"/>	<a href="#">SCA System Bus ME data source</a>	jdbc/com.ibm.ws.sib/custom.Messaging-SCA.SYSTEM.dmgr01Cell01.Bus	Cluster=custom.Messaging	DB2 Universal JDBC Driver Provider (XA)	SCA System Bus Messaging Engine data source

\_\_\_ e. Select the check box for the data source and then click the 'Test Connection' button. Ensure the database connection is successful

\_\_\_ 11. Review Messaging Engine is created and ensure it is in '**started**' status

\_\_\_ a. In the left navigation pane of the administrative console, expand '**Servers**' and then click the '**Clusters**' link

\_\_\_ b. In the following '**Clusters**' panel, click the '**custom.Messaging**' link

\_\_\_ c. In the following '**Clusters → custom.Messaging**' panel, click the '**Messaging engines**' link under the '**Cluster Messaging**' section

#### Cluster messaging

- [Messaging engines](#)

\_\_\_ d. Ensure the following '**Messaging engines**' panel, lists a new CEI messaging engines named as:

- <CUSTER\_NAME>.BPC.<DMGR\_CELL\_NAME>.Bus

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[Server clusters](#) > [custom.Messaging](#) > **Messaging engines**

Start		Stop mode: Immediate	Stop
Select	Name	Description	Status
<input type="checkbox"/>	<a href="#">custom.Messaging.000-BPC.dmqr01Cell01.Bus</a>		➔
<input type="checkbox"/>	<a href="#">custom.Messaging.000-CommonEventInfrastructure.Bus</a>		➔
<input type="checkbox"/>	<a href="#">custom.Messaging.000-SCA.APPLICATION.dmqr01Cell01.Bus</a>		➔
<input type="checkbox"/>	<a href="#">custom.Messaging.000-SCA.SYSTEM.dmqr01Cell01.Bus</a>		➔

**Troubleshooting:** If the messaging engines show an 'unavailable' status and report the following message when attempted to start them:

The messaging engine custom.Messaging.000-BPC.dmqr01Cell01.Bus cannot be started as there is no runtime initialized for it yet, retry the operation once it has initialized. If dynamic configuration reload is not enabled for this bus then the server will need to be restarted.

Restart the member servers of the corresponding cluster where these messaging engines exist. Alternatively restart the cluster itself which restarts the member servers.

\_\_\_ 12. Ensure the Business Process Engine container application and Task container application are successfully running

\_\_\_ a. In the left navigation pane of the administrative console, expand '**Applications**' and then click the '**Enterprise Applications**' link.

**Enterprise Applications**

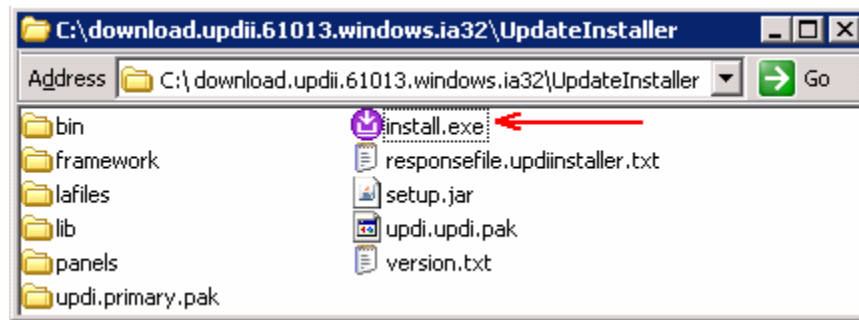
Start		Stop	Install	Uninstall	Update	Rollout Update	Remove File	Export	Export DDL	Export File
Select	Name	Application Status								
<input type="checkbox"/>	<a href="#">AppScheduler</a>	➔								
<input type="checkbox"/>	<a href="#">BPEContainer custom.Application</a>	➔								
<input type="checkbox"/>	<a href="#">RemoteAL</a>	➔								
<input type="checkbox"/>	<a href="#">TaskContainer custom.Application</a>	➔								
<input type="checkbox"/>	<a href="#">persistentLkMgr</a>	➔								
<input type="checkbox"/>	<a href="#">sca.sib.mediation</a>	➔								
<input type="checkbox"/>	<a href="#">wpsFEMqr 6.1.0</a>	➔								

## Appendix 4: Installing the Update Installer for WebSphere software

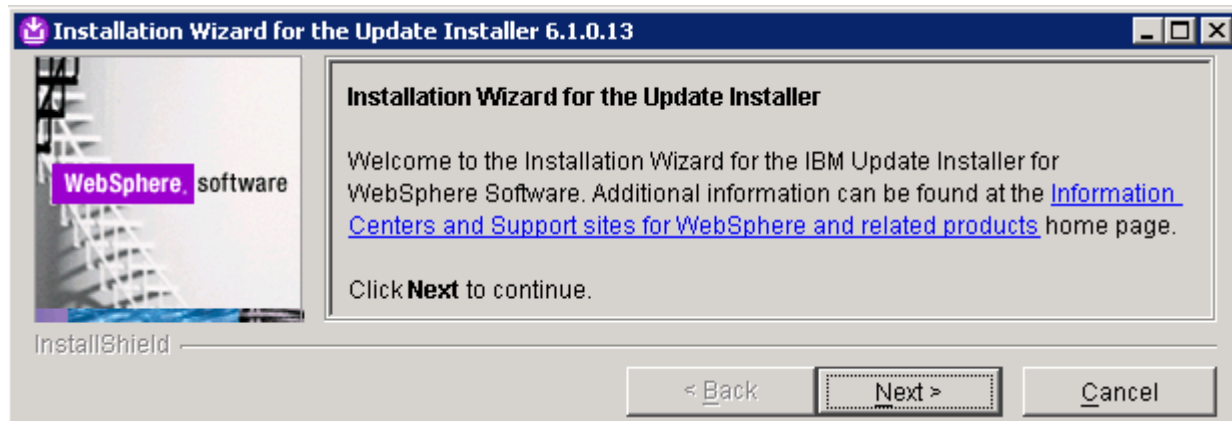
The Update Installer for WebSphere Software has a new installation program for Version 6.1, Installation Wizard for the Update Installer. The Update Installer now uses the Common Install Engine for WebSphere Software.

Obtain the update installer archive; **download.updii.61013.windows.ia32.zip** and extract it to a temporary location.

- \_\_\_ 1. To install the Update Installer, navigate to the directory **UpdateInstaller** directory and double click **install.exe** to launch the installer

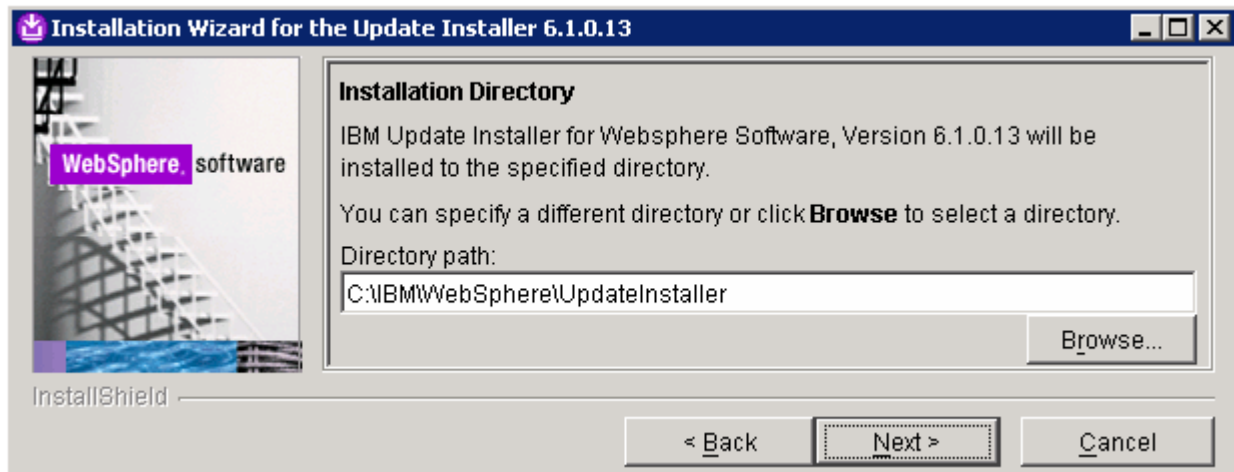


- \_\_\_ 2. Read the instruction on the Welcome screen

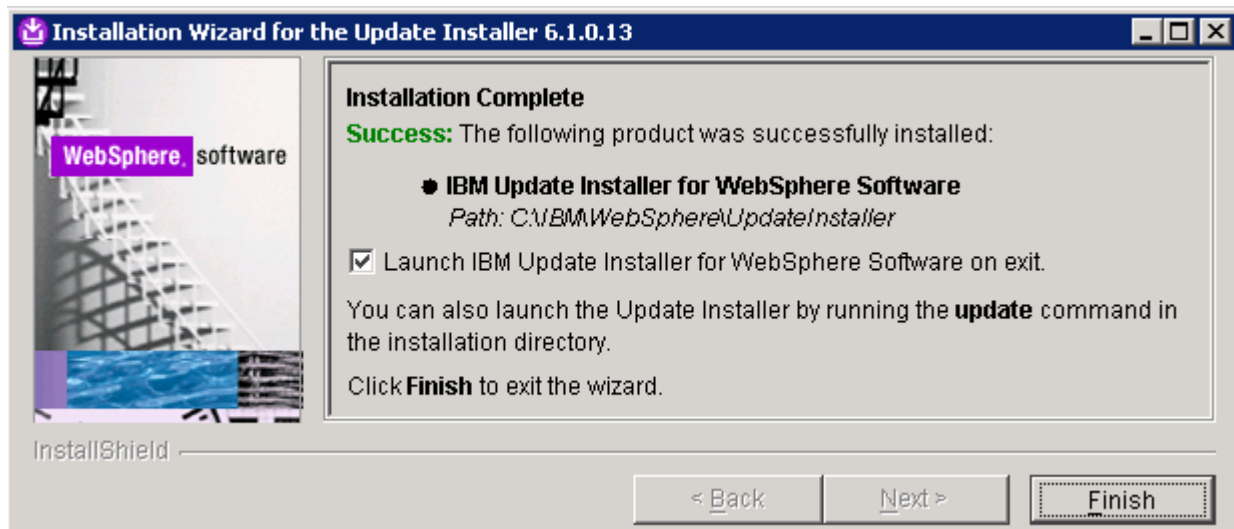


- \_\_\_ 3. Click **Next**
- \_\_\_ 4. In the following panel, read the license agreement and select the radio button next to **I accept both the IBM and non-IBM terms** and click **Next**
- \_\_\_ 5. The installation wizard runs the system prerequisite check
- \_\_\_ 6. Click **Next**
- \_\_\_ 7. Click the **Browse** button to set the installation path to **C:\IBM\WebSphere\UpdateInstaller**

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- \_\_\_ 8. Click **Next**. In the following panel, review the installation summary
- \_\_\_ 9. Click **Next** to continue with the installation
- \_\_\_ 10. Once the installation is complete, ensure the check box next to '**Launch IBM Update Installer for WebSphere Software on exit**'

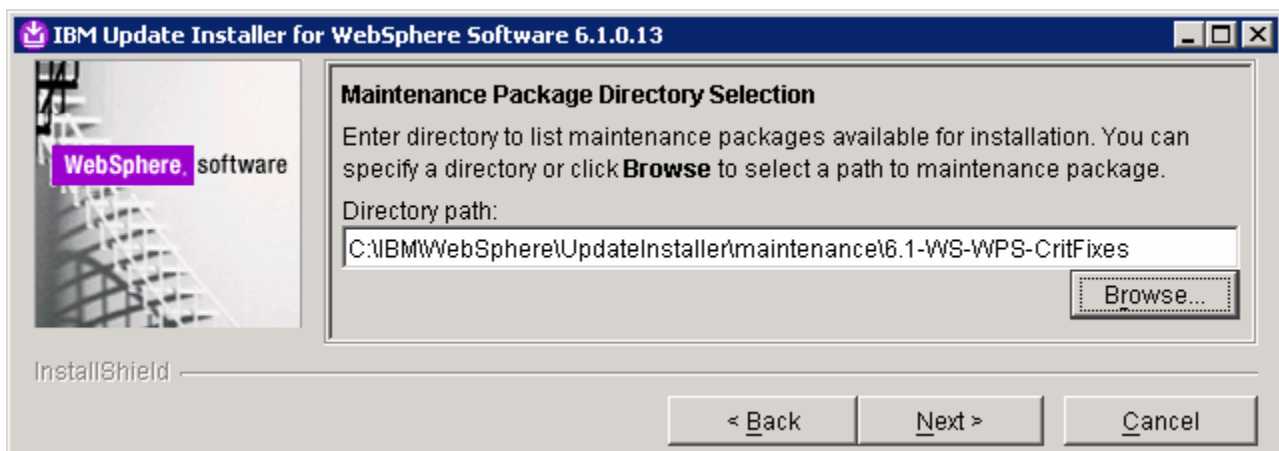


- \_\_\_ 11. Click **Finish**. The IBM Update Installer is launched

## →Updating the WebSphere Process Server V6.1

Update the WebSphere Process Server with the patches. It is a best practice to update the WebSphere Process Server installation with the patches before creating any profiles. This is done using the UpdateInstaller tool.

- \_\_\_ 1. Obtain and copy the WebSphere Process Server V6.1 patches to the **maintenance** directory located at **C:\IBM\WebSphere\UpdateInstaller**, that is the Update Installer installation location
- \_\_\_ 2. Launch the WebSphere Application Server update installer from the start menu
- \_\_\_ 3. Read the instructions carefully on the Welcome page
- \_\_\_ 4. In the following panel, ensure the WebSphere Process Server V6.1 installation root is correct
- \_\_\_ 5. Click **Next**
- \_\_\_ 6. In the following panel, click the **Browse** button to specify the '**Directory Path**' of the WebSphere Process Server installation
- \_\_\_ 7. Click **Next**
- \_\_\_ 8. In the following panel, select the radio button for '**Install maintenance package**'
- \_\_\_ 9. Click **Next**
- \_\_\_ 10. In the following panel, click the **Browse** button to select the maintenance packages directory



- \_\_\_ 11. Click **Next**
- \_\_\_ 12. In the following panel, select the check boxes for **all the fixes listed**
- \_\_\_ 13. Click **Next**
- \_\_\_ 14. In the following panel, review the installation summary
- \_\_\_ 15. Click **Finish** when the installation is complete

## What you did in this exercise

- You installed the WebSphere Process Server core files on all the host machines
- You created a deployment manager profile on the deployment manager host machine using the Profile Management Tool (PMT)
- You manually created the WebSphere Process Server Common database scripts using the database scripts which were generated during the deployment manager profile creation
- You created three custom profiles on the designated host machines and federated them to the deployment manager cell using the Profile Management Tool (PMT)
- You identified a custom deployment pattern and assigned functions and components to the deployment targets (clusters and servers)
- You created three clusters, their member servers and a managed server scaled across the three federated custom nodes
- You created and generated the custom deployment environment, in which the required resources and applications were configured across the designated deployment targets assigned.