



IBM Software Group

WebSphere® Process Server for z/OS® V6.0.1 WebSphere Enterprise Service Bus for z/OS V6.0.1

Network Deployment Configuration



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This presentation will look at the configuration of a Network Deployment environment to enable WebSphere Process Server for z/OS V6.0.1 or WebSphere Enterprise Service Bus for z/OS V6.0.1 function.

Goals

- Describe the WebSphere Process Server for z/OS V6.0.1 and WebSphere Enterprise Service Bus V6.0.1 configuration process in a Network Deployment Environment



The goal of this presentation is to explain what is necessary to configure WebSphere Process Server for z/OS or WebSphere Enterprise Service Bus for z/OS in a network deployment environment.

Section

WebSphere Process Server or WebSphere Enterprise Service Bus Network Deployment configuration

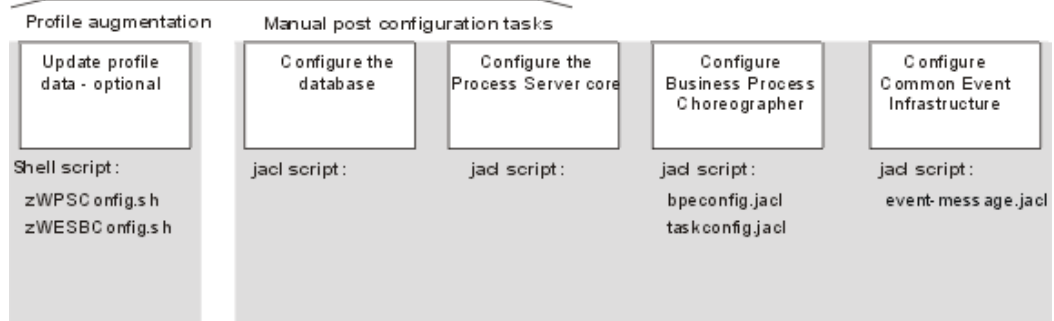


This presentation will take you through the steps necessary to configure WebSphere Process Server for z/OS or WebSphere Enterprise Service Bus for z/OS in the more complicated Network Deployment environment.

Configuration overview

Product configuration WebSphere Process Server for z/OS

Configuring the product after installation



This slide shows the product configuration steps. Notice that there are several manual post-configuration tasks listed on the right. These are all tasks that were taken care of in the simple Stand-alone Application Server configuration. In a Network Deployment configuration, you will have to manually configure more options. Those options will be presented here.

Configure Network Deployment Environment

- The Network Deployment configuration supports a DB2® for z/OS database only
- Need to 'configure' the Deployment Manager Cell and an empty-managed node BEFORE federation (that is, do NOT run BBOWMNAN)
 - ▶ Cloning is available once server is configured as needed
- Response files:
 - ▶ **DmgrDB2.rsp**
 - ▶ **ManagedDB2.rsp**

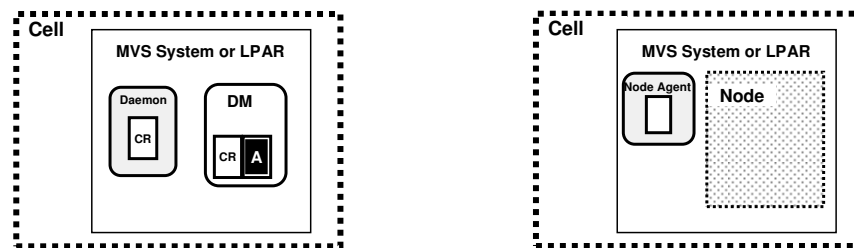


To configure WebSphere Process Server for z/OS V6.0.1 or WebSphere Enterprise Service Bus for z/OS V6.0.1 in a network deployment environment, DB2 for z/OS is a requirement. Cloudscape is not supported in this environment. In order to configure the products in this environment, you will see that you will first 'configure' the Deployment Manager Cell and then 'configure' an empty-managed node BEFORE federating it. In other words, you will create an empty-managed node but not run the BBOWMNAN job until you have run the WebSphere Process Server or WebSphere Enterprise Service Bus configuration scripts against the empty-managed node. You will create a server in this node as a manual process.

There are two new response files to support this environment. The DmgrDB2 response file is used to run the configuration script against the Deployment Manager cell while the ManagedDB2 response file is used to run the configuration script against the empty-managed node.

Configure Network Deployment Environment (cont.)

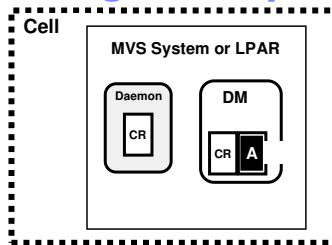
- Three Steps:
 1. Configure Deployment Manager Cell for WebSphere Process Server or WebSphere Enterprise Service Bus
 2. Configure Empty Managed Node for WebSphere Process Server or WebSphere Enterprise Service Bus
 3. Federate Empty Managed Node



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The configuration of WebSphere Process Server for z/OS or WebSphere Enterprise Service Bus for z/OS in a network deployment process can be thought of as a 3-step process. You will run the configuration shell scripts against the Deployment Manager cell first, setting the Deployment Manager up to be able to manage a WebSphere Process Server or Enterprise Service Bus environment. You will then configure an empty-managed node to be able to host servers that have the WebSphere Process Server or Enterprise Service Bus function and finally you will federate this empty-managed node into the Deployment Manager Cell. The starting point is shown in the graphic.

Configure Deployment Manager Cell



1. Run zSMPInstall.sh

```
<WPS_SMP_ROOT>/zos.config/bin/zSMPInstall.sh
  -smproot <WPS_SMP_ROOT>
  -runtime <WAS_HOME>
  -install
```

- -runtime should point to DM configuration
- -runtime=/WebSphere/V6R0M0/**DeploymentManager**

Starting with the Deployment Manager Node, you need to run the zSMPInstall.sh script, pointing the runtime to the Deployment Manager configuration HFS. This will create symlinks in your WebSphere Application Server Deployment Manager configuration to the WebSphere Process Server or WebSphere Enterprise Service Bus product code. This is a task for the system administrator, since it is somewhat of an extension of the SMP/E install. You should use a WebSphere Administrator user ID to run the script. The zSMPInstall.sh script will also add plug-ins to the Administrative Console for new functions needed for the WebSphere Process Server or WebSphere Enterprise Service Bus.

Configure Deployment Manager cell (cont.)

```
<install_root>/zWPS/V6R0/zos.config/wps_DB_StorGrp.sql
```

```
<install_root>/zWESB/V6R0/zos.config/wesb_DB_StorGrp.sql
```

2. Create Databases (see sample sql):

```
cd <WAS_HOME>bin
    that is, cd /WebSphere/V6R0M0/AppServer/bin
ws_ant.sh
-Dbuildfile <WAS_HOME>/dbant/antDBUtility.ant
-DprofilePath=<WAS_HOME>/profiles/default
-Dcommon.dbName=BPEDB
-Dcommon.dbType=DB2UDBOS390_V8_1
-DdbUserId=<DB2USER>
-DdbPassword=<DB2PASSWORD>
-Dcommon.dbJDBCClasspath=<DB2_JCC_HOME>/classes
-Dcommon.dbLocation=<DB2_LOCATION>
-Ddb.sqlScriptPath=<install_root>/zWPS/V6R0/zos.config/
    wps_DB_StorGrp.sql
-DdbJDBCProperties=<DB2_PROPERTIES_LOC>
dbAccess
>/tmp/db2ant.output 2>/tmp/db2ant.err
```

In the next step, you should create the necessary databases and storage groups that are needed. The .sql file to do this is provided in the zos.config directory as wps_DB_StorGrp.sql or wesb_DB_StorGrp.sql. Note that these files are both ASCII text files. This shows an example of using the ws_ant.sh script in order to create the DB2 databases. Note that the common.dbName parameter can be anything here.

Configure Deployment Manager cell (cont.)

3. Copy **DmgrDB2.rsp** and modify it

- Found in <WPS/WESB_SMP_ROOT>zos.config directory
- Same basic fields as StandaloneDB2 but no need for CEI or Business Process Choreographer here

4. Run zWPSConfig.sh

```
export LIBPATH=/db2810/jcc/lib:$LIBPATH
<WAS_HOME>/bin/zWPSConfig.sh
    -response DmgrDB2.rsp
    -augment
```

The DmgrDB2 response file needs to be modified in order to run the augmentation against the Deployment Manager cell. For detailed information on the parameters needed, see the simple configuration presentation. The DmgrDB2 response file has the same basic fields as the StandaloneDB2 response file but note that there is no need for CEI and Business Process Choreographer information here. Those functions need a server host and at this point, there is none.

Once the response file is updated, you will run the zWPSConfig.sh or zWESBConfig.sh script against the Deployment Manager Cell. If you plan to have the augmentation configure the databases for you (you have set dbDefineSQL='true' in the response file), you will need to export your JCC LIBPATH as shown.

Configure Deployment Manager cell (cont.)

5. Run SQL created during augmentation for WPSDB and ESBDB

Use ws_ant.sh

- .sql files for WPSDB are found in <WAS_HOME>/profiles/default/databases

```
WPSDB/createTable_AppScheduler_DB2UDBOS390_V8_1.sql
WPSDB/createTable_Recovery_DB2UDBOS390_V8_1.sql
WPSDB/createTable_Relationship_DB2UDBOS390_V8_1.sql
WPSDB/createTable_customization_DB2UDBOS390_V8_1.sql
WPSDB/createTable_mediation_DB2UDBOS390_V8_1.sql
```

- ESBDB is only necessary if logging

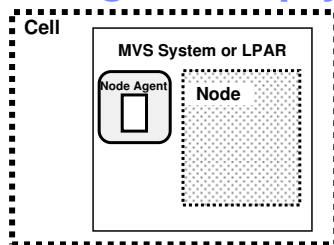
```
<WAS_HOME>/util/EsbLoggerMediation/DB2UDBOS390_V8_1/
Table_esb_DB2UDBOS390_V8_1.ddl
```

need to break the symlink and customize:

```
mv Table_esb_DB2UDBOS390_V8_1.ddl Table_esb_DB2UDBOS390_V8_1.ddl.orig
cp Table_esb_DB2UDBOS390_V8_1.ddl.orig Table_esb_DB2UDBOS390_V8_1.ddl
```

Since a DB2 administrator will most likely be involved with setting up the databases, the next step most likely involves getting the DB2 administrator to run the .sql that was generated during augmentation. This can be done using the ws_ant.sh script. Note again that the .sql files are in ASCII. The generated .sql will configure the WPSDB. If you plan to log Enterprise Service Bus mediation events, you will need to customize the .ddl that is provided in the directory listed here. This file is in EBCDIC, and you will need to break the symlink and copy it to a writable HFS first.

Configure Empty Managed Node Cell



1. Run zSMPInstall.sh

```
<WPS_SMP_ROOT>/zos.config/bin/zSMPInstall.sh  
-smproot <WPS_SMP_ROOT>  
-runtime <WAS_HOME>  
-install
```

- -runtime should point to Empty Managed Node configuration
- -runtime=/WebSphere/V6R0M0/**AppServer**

After completing the Deployment Manager cell configuration, move your attention to the empty-managed node that you have configured. Remember, you should not have run the BBOWMNAN job yet to federate it! You will run the zSMPInstall.sh script again, this time specifying the configuration HFS for the empty-managed node that was created. This will again set up the symlinks to the product code from the configuration HFS.

Configure Empty Managed Node cell (cont.)

2. Copy **ManagedDB2.rsp** and modify it

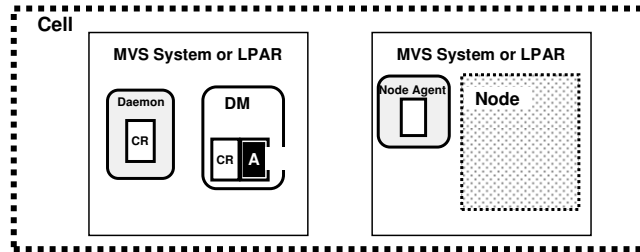
- Found in <WPS/WESB_SMP_ROOT>zos.config directory
- Same basic fields as StandAloneDB2 but again no need for CEI or Business Process Choreographer here

3. Run zWPSConfig.sh

```
export LIBPATH=/db2810/jcc/lib:$LIBPATH
<WAS_HOME>/bin/zWPSConfig.sh
    -response ManagedDB2.rsp
    -augment
```

Before running the augmentation job against the managed node, you need to update a copy of the ManagedDB2 response file. Again, the ManagedDB2 response file has the same basic fields as the StandAloneDB2 response file but note that there is again no need for CEI and Business Process Choreographer information here. Those functions need a server and the empty-managed node, by definition, has no servers defined. Once the response file is modified, you should run the zWPSConfig.sh or zWESBConfig.sh script in order to augment the node with WebSphere Process Server or WebSphere Enterprise Service Bus function.

Federate Empty Managed Node



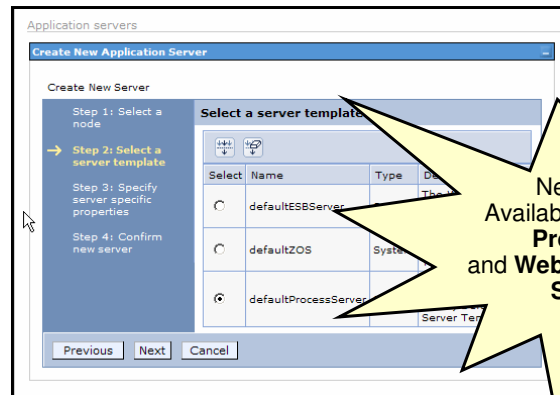
- Run the BBOWMNAN job to federate the empty managed node
- Configuration is now ready for WebSphere Process Server or WebSphere Enterprise Service Bus function

Once both the Deployment Manager Cell and the Empty-managed node are configured, you can run the BBOWMNAN job to federate the empty-managed node into the Deployment Manager Cell. Note that there are still no servers defined where you can run a workload that uses the new functions.

Define Servers to run workloads

1. Create Application Server in the now-federated Empty Managed Node

- Application Servers->**New**



New Templates Available for **WebSphere Process Server** and **WebSphere Enterprise Service Bus**

The next thing to do is to create a server or cluster environment where a WebSphere Process Server or WebSphere Enterprise Service Bus workload can run. You will notice new server templates are available for the WebSphere Process Server and the WebSphere Enterprise Service Bus functions.

Define Servers to run workloads (cont.)

2. Select the new server and change values as appropriate (for example, **short name**, **ClusterTransitionName**, **HTTP Transports**)

The screenshots illustrate the configuration process for a new server:

- Configuration Overview:** Shows the 'short name' field set to 'CL1TEST' under the 'General Properties' section.
- HTTP Transports:** A table listing the ports for HTTP communication.

Select	Host	Port	SSL Enabled
<input type="checkbox"/>	*	9083	false
<input type="checkbox"/>	*	9446	true
- ClusterTransitionName:** A table showing the 'ClusterTransitionName' set to 'BBOC001'.

Select	Name	Value	Description
<input type="checkbox"/>	ClusterTransitionName	BBOC001	

Once you have chosen one of the new templates and created a new server, you will most likely want to change some basic values as you would for a 'basic' application server. Some of the values you might change include the port numbers for the HTTP transports, the server shortname and the ClusterTransitionName as shown here.

System Integration Bus Messaging Engine Databases

- Use sibDDLGenerator.sh script to generate DDL for messaging engine databases in DB2

```
cd <WAS_HOME>/bin
./sibDDLGenerator.sh -system db2 -version 8.1 -platform zos -schema
SIBSCA -user wsadmin -create -database SIBSCA -storagegroup
SIBDBSTO -statementend ";" > SIBSCA.ddl

./sibDDLGenerator.sh -system db2 -version 8.1 -platform zos -schema
SIBAPP -user wsadmin -create -database SIBAPP -storagegroup
SIBDBSTO -statementend ";" > SIBAPP.ddl

./sibDDLGenerator.sh -system db2 -version 8.1 -platform zos -schema
SIBBPC -user wsadmin -create -database SIBBPC -storagegroup
SIBDBSTO -statementend ";" > SIBBPC.ddl

./sibDDLGenerator.sh -system db2 -version 8.1 -platform zos -schema
SIBCEI -user wsadmin -create -database SIBCEI -storagegroup
SIBDBSTO -statementend ";" > SIBCEI.ddl
```

The System Integration Buses that are created during the configuration of the WebSphere Process Server and the WebSphere Enterprise Service Bus will have messaging engines associated with them that will require datastores. These must be created manually in the Network Deployment configuration. You can use the sibDDLGenerator.sh script to create .ddl that can be used to configure the needed databases. Large Objects, or LOBS, cannot be shared between System Integration Buses so each System Integration Bus must have a different database name or STORAGE Group name. Because of this, you will need to edit the generated .ddl file to either change the DBNAMEs or the STORAGE Groups. One option is to change the DBNAME to be equal to the SCHEMA Qualifier and then have all the databases use the same Storage group.

Notice the that slide shows four different databases. Note that the Business Process Choreographer and CEI ones are optional, depending on if you plan to configure those functions.

System Integration Bus Messaging Engine Databases (cont.)

- Use generated DDL to create DB2 definitions
- Create DB2 Universal Provider

```
Select Database Type      DB2
Provider Type            DB2 Universal JDBC Provider
Implementation Type      Connection Pool Datasource
```

- Create DB2 Datasource for each System Integration Bus.
- Use JNDI names currently specified on the System Integration Bus engine datasources

System Integration Bus	Datasource JNDIName
BPC.<cell>.BUS	jdbc/com.ibm.ws.sib/<node>.<server>-BPC.<cell>.Bus
CommonEventInfrastructure_Bus	jdbc/event/CommonEventInfrastructure_JMS_Default_Datasource
SCA.APPLICATION.<node>.BUS	jdbc/com.ibm.ws.sib/<node>.<server>-SCA.APPLICATION.<cell>.Bus
SCA.SYSTEM.<node>.BUS	jdbc/com.ibm.ws.sib/<node>.<server>-SCA.SYSTEM.<cell>.Bus

Once you have the .ddl set up to your DB2 administrator's liking, the generated .ddl should be used to create the DB2 definitions. If not already created, you should create a DB2 Universal provider and then create datasources under that. The table shows the expected JNDI names for each datasource.

System Integration Bus Messaging Engine Databases (cont.)

- Set Datastore on each System Integration Bus
 - ▶ Go to **Buses><BUS_NAME>>Messaging engines><BUS_NAME>>Data store**
 - ▶ Change the Schemas to match what was just created
 - Note that '**CreateTables**' checkbox must **NOT** be selected

System Integration Bus	SchemaID
BPC.<cell>.BUS	SIBBPC
CommonEventInfrastructure_Bus	SIBCEI
SCA.APPLICATION.<node>.BUS	SIBAPP
SCA.SYSTEM.<node>.BUS	SIBSCA



Finally, once you have the datastores defined, you can go back and set the 'Data store' parameter on the messaging engine to point to the new databases. Note that at this point, some of these System Integration Buses (for instance, Business Process Choreographer and CEI) would not yet be created. If you configure those functions at a later point, you will have to set the data stores on those System Integration Buses then.

Note that the 'CreateTables' checkbox must NOT be selected on this panel. You must have already created the tables manually because you are unable to do so here.

Configure Business Process and Human Task Containers manually

- Two options:
 - ▶ Installation Wizards:
 - `Application servers > <SERVERNAME> > Business process container > Business process container installation wizard`
 - `Application servers > <SERVERNAME> > Human task container > Human task container installation wizard`
 - ▶ JACL scripts (recommended)
 - `bpeconfig.jacl`
 - Will also configure human task container
 - `taskconfig.jacl`



Once you have the basic core functions set up for the WebSphere Process Server, you should decide if you need either the Business Process Container or the Human Task Manager Container, or both. Note that these functions are not available if configuring the WebSphere Enterprise Service Bus function. These are available only in the WebSphere Process Server product. If you are configuring the WebSphere Enterprise Service Bus, you can skip ahead to configure the Common Event Infrastructure, if needed.

There are two installation options for these. The path in the Administrative Console to the first option, the installation wizards, is shown. These installation wizards are limited and require some manual steps to complete. The second option, the `bpeconfig.jacl` and `taskconfig.jacl` scripts, is recommended. Notice that the `bpeconfig.jacl` script has the ability to configure the Human Task container as well.

Using bpeconfig.jacl

```
<WAS_HOME>/ProcessChoreographer/sample/bpeconfig.jacl
```

- `../bin/wsadmin.sh -f bpeconfig.jacl parameters`
 - may be run non-interactively if all needed parameters are specified on the command line
 - see 'Using the bpeconfig.jacl script file to configure Business Process Choreographer' article in the Information Center for more detail



If you have any experience with the WebSphere Business Integration Server Foundation, the bpeconfig.jacl script should be familiar. It can be run interactively where you are prompted for all the values it needs OR you can specify all values on the command line. To see all the possible parameters, see the Information Center.

This presentation looks at running the bpeconfig.jacl script interactively. To run it, specify the `-f` parameter and provide the bpeconfig.jacl script as the value on a wsadmin.sh invocation. If you just wanted the human task manager function, you would specify taskconfig.jacl instead.

Using bpeconfig.jacl interactively

```
cd <WAS_HOME>/ProcessChoreographer/sample
../../bin/wsadmin.sh -f bpeconfig.jacl
```

```
HONKEN@MUS226:/etc/cllicell/AppServerNode1/ProcessChoreographer/sample# ../../bin/wsadmin.sh -f bpeconfig.jacl
WASX72091: Connected to process "clisr01" on node clinode1 using SOAP connector; The type of process is: UnManagedProcess
*****
* This script allows to configure Process Choreographer including all needed *
* WebSphere resources, the database, and the queue manager and queues. *
* Supported databases are Cloudscape, DB2, Informix, Oracle, and *
* SQL Server; supported JMS providers are WebSphere Platform Messaging and *
* WebSphere MQ. *
* The prerequisite software must already be installed. *
-----
* You will be prompted for the required information at each step. The *
* default value is always listed first in a prompt, you can select it by *
* simply pressing the 'Enter' key. *
*****
Configuring: Node 'clinode1' / Server 'clisr01'
Install the business process container [Yes/no]? yes
=> Yes
User(s) to add to role BPESystemAdministrator (separator is pipe, '|') []: wsuser
=> wsuser
Group(s) to add to role BPESystemAdministrator (separator is pipe, '|') []: clicfg
=> clicfg
User(s) to add to role BPESystemMonitor (separator is pipe, '|') []: honken
=> honken
Group(s) to add to role BPESystemMonitor (separator is pipe, '|') []: clicfg
=> clicfg
```

Roles need to be added to SAF EJBROLE class if using SAF



After determining that you want to install the Business Process Container, the script will prompt you for some user IDs and groups. These are user IDs that you will have to add to the specified role in RACF or other SAF product, if that is the security product you are using. For instance, in this case wsuser should be added to the BPESystemAdministrator EJBROLE in RACF.

Using bpeconfig.jacl interactively (cont.)

```
RunAs UserId for role JMSAPIUser [NONKRN]: wuser
=> wuser
user's password []: friday
=> friday
Use a Cloudscape or a DB2 database [Cloudscape/zOS-DB2]? zOS-DB2
=> zOS-DB2
Use a DB2 U7 or a DB2 U8 database [7/8]? 8
=> 8
Use WebSphere default messaging or WebSphere MQ [WPM/MQSeries]? WPM
=> WPM
ADMRS0161: Installation of BPEContainer_clnode1_c1sr01 started.
ADMRS0581: Application and module versions validated with versions of deployment targets.
ADMRS0051: The application BPEContainer_clnode1_c1sr01 is configured in the WebSphere Application Server repository.
ADMRS0531: The library references for the installed optional package are created.
ADMRS0051: The application BPEContainer_clnode1_c1sr01 is configured in the WebSphere Application Server repository.
ADMRS0011: The application binaries are saved in /etc/clicell/AppServerModel/profiles/default/wstemp/Script10b9271b47e/worksp
ls/c1ibase1/Applications/BPEContainer_clnode1_c1sr01.ear/BPEContainer_clnode1_c1sr01.ear
ADMRS0051: The application BPEContainer_clnode1_c1sr01 is configured in the WebSphere Application Server repository.
CMSCR30131: Resources for the SCA application BPEContainer_clnode1_c1sr01 are being configured.
CMSCR30231: The EAR file app12406.ear is being loaded for the SCA module.
CMSCR30141: Resources for the SCA application BPEContainer_clnode1_c1sr01 have been configured successfully.
SECJ04001: Successfully updated the application BPEContainer_clnode1_c1sr01 with the appContextIDForSecurity information.
ADMRS0111: The cleanup of the temp directory for application BPEContainer_clnode1_c1sr01 is complete.
ADMRS0131: Application BPEContainer_clnode1_c1sr01 installed successfully.
Done installing BPEContainer_clnode1_c1sr01.
```

- BPEContainer installed and configured

This screen shows that the BPEContainer application is configured and installed on the server. It shows that it has configured some of the needed resource definitions such as System Integration Buses, asking you for information on the database and messaging first.

Using bpeconfig.jacl interactively (cont.)

```

Create the DataSource for the Process Choreographer database [Yes/no]? yes
=> Yes
DB2 user ID [db2inst1]: wsuser
=> wsuser
Subsystem name [BPEDB]: Subsystem name = LOCATION name
=> BPEDB
Database server name (may be empty, set to use the type 4 driver) []:
=>
"/home/wsuser/sqllib/classes/db2jcc.jar" does not exist, enter the JDBC driver directory on clinode1 [ /ho
/usr/lpp/db2810/jcc/classes
=> /usr/lpp/db2810/jcc/classes
Creating Process Choreographer DataSource for server 'cl1sr01' on node 'clinode1'.
Creating J2C authentication data alias 'cl1base1/BPEAuthDataAliasDb2z0S_clinode1_cl1sr01'.
Setting variable DB2UNIVERSAL_JDBC_DRIVER_PATH on node 'clinode1'.
Skipping DB2UNIVERSAL_JDBC_DRIVER_PATH because it is already set to '/usr/lpp/db2810/jcc/classes'.
Skipping DB2UNIVERSAL_JDBC_DRIVER_NATIVEPATH because it is already set to '/usr/lpp/db2810/jcc/lib'.
Using existing JDBC provider 'DB2 Universal JDBC Driver Provider'.
Created DataSource 'BPEDataSourceDb2z0S'.
Creating CMP connector factory 'BPEDataSourceDb2z0S_CF'.
-----
Data source configuration
Server:          cl1sr01
Node:           clinode1
JNDI name:      jdbc/BPEDB
JDBC driver path: /usr/lpp/db2810/jcc/classes
Subsystem name: BPEDB
User:          wsuser
-----
Create the Process Choreographer database [Yes/no]?

```

- Create Datasource for Process Choreographer DB

Continuing on the configuration of the Business Process Container, it will create the datasource for the BPEDB, asking questions about its location, name and connection user ID. Note that the value for subsystem name should be LOCATION name!

Using bpeconfig.jacl interactively (cont.)

```
Create the Process Choreographer database [Yes/no]? yes
=> Yes
Database name [BPEDB]:
=> BPEDB
*****
* WARNING: The z/OS database must already exist and have been catalogued
* locally. This script can only create the Process Choreographer tablespaces
* and tables.
*****
Continue [Yes/no]? yes
=> Yes
Storage group []: BPEDBSTO
=> BPEDBSTO
Schema qualifier (requires the Universal JDBC provider unless empty) []:
=>
*****
* WARNING: Running createDatabaseDb2z0s_gen.ddl
* for DB2 is not (yet) supported on z/OS. Please run
* /etc/cllicell/AppServerNode1/ProcessChoreographer/createDatabaseDb2z0s_gen.ddl manually.
*****
Create the ActivationSpecs for the business flow manager [Yes/no]?
```

- Note the Process Choreographer database cannot be created on z/OS but .ddl file is generated

Note that the process choreographer database cannot be created or configured here! You would have created it already when you ran the wps_DB_StorGrp.sql or webb_DB_StorGrp.sql script. A .ddl file is generated that you will need to run manually to configure the database after the completion of the script.

Using bpeconfig.jacl interactively (cont.)

```
Create the ActivationSpecs for the business flow manager [Yes/no]? yes
==> Yes
User ID for access to default messaging [HONKEN]: wsuser
==> wsuser
Creating J2C authentication data alias 'c1lbase1/BPEAuthDataAliasJMS_c1lnode1_c1l1sr01'.
Creating SIBus 'BPC.c1lbase1.Bus'
Creating SIBusMember for node c1lnode1, server c1l1sr01.
Creating ConnectionFactory BPECF.
Creating ConnectionFactory BPECF.
Creating SIB destination BPEIntQueue_c1lnode1_c1l1sr01.
Creating SIB queue BPEIntQueue_c1lnode1_c1l1sr01.
Creating activation spec BPEInternalActivationSpec.
Creating SIB destination BPEApiQueue_c1lnode1_c1l1sr01.
Creating SIB queue BPEApiQueue_c1lnode1_c1l1sr01.
Creating activation spec BPEApiActivationSpec.
Creating SIB destination BPEHldQueue_c1lnode1_c1l1sr01.
Creating SIB queue BPEHldQueue_c1lnode1_c1l1sr01.
Creating SIB destination BPERetQueue_c1lnode1_c1l1sr01.
Creating SIB queue BPERetQueue_c1lnode1_c1l1sr01.
Creating WorkManagerInfo BPESchedulerWorkManager.
Creating Scheduler BPEScheduler.
Creating WorkAreaPartition BPECompensation.
Install the task container [Yes/no]?
```

- Configure System Integration Buses for Business Flow manager

This slide shows several destinations and queues being created on the System Integration Buses that are also created here.

Using bpeconfig.jacl interactively (cont.)

```

Install the task container [Yes/no]? yes
=> Yes
User(s) to add to role TaskSystemAdministrator (separator is pipe, '|') []: wsuser
=> wsuser
Group(s) to add to role TaskSystemAdministrator (separator is pipe, '|') []: clicfg
=> clicfg
User(s) to add to role TaskSystemMonitor (separator is pipe, '|') []: honken
=> honken
Group(s) to add to role TaskSystemMonitor (separator is pipe, '|') []: clicfg
=> clicfg
Run-as UserId for role EscalationUser [HONKEN]: wsuser
=> wsuser
WASX73271: Contents of was.policy file:
//BEGIN COPYRIGHT
//*****
// Licensed Materials - Property of IBM
// 5655-PLM (C) Copyright IBM Corporation 2004. All Rights Reserved.
// US Government Users Restricted Rights- Use, duplication or disclosure
// restricted by GSA ADP Schedule Contract with IBM Corp.
//*****
//END COPYRIGHT

grant codeBase "file:${application}"
{
    permission java.lang.RuntimePermission "setContextClassLoader";
};

ADM050161: Installation of TaskContainer_clnode1_c11sr01 started.
ADM050091: Application and module versions validated with versions of deployment targets.
ADM050095: The application TaskContainer_clnode1_c11sr01 is configured in the WebSphere Application Server repository.
ADM050031: The library references for the installed optional package are created.
ADM050095: The application TaskContainer_clnode1_c11sr01 is configured in the WebSphere Application Server repository.
ADM050011: The application binaries are saved in /etc/clicell/AppServerNode1/profiles/default/wstemp/Script10b9271b47e/works
1s/c11base1/applications/TaskContainer_clnode1_c11sr01.ear/TaskContainer_clnode1_c11sr01.ear
ADM050095: The application TaskContainer_clnode1_c11sr01 is configured in the WebSphere Application Server repository.
CMSCA30131: Resources for the SCB application TaskContainer_clnode1_c11sr01 are being configured.
CMSCA30231: The EAR file appl2412.ear is being loaded for the SCB module.
CMSCA30141: Resources for the SCB application TaskContainer_clnode1_c11sr01 have been configured successfully.
SECJ04001: Successfully updated the application TaskContainer_clnode1_c11sr01 with the appContextIDForSecurity information.
ADM050111: The cleanup of the temp directory for application TaskContainer_clnode1_c11sr01 is complete.
ADM050131: Application TaskContainer_clnode1_c11sr01 installed successfully.
Done installing TaskContainer_clnode1_c11sr01.
SchedulerCalendars already exists, skipping.
Done installing SchedulerCalendars.
Make sure SchedulerCalendars has a target mapping for server c11sr01 on node c11node1.
Create the mail notification session for the human task manager [Yes/no]?

```

Configure Human
Task Container



You have the option to also configure the Human Task Container. If you decide not to do it now, you can use the taskcontainer.jacl script to install it separately. If you choose to do it now, the Human Task Container application is installed and the necessary resource definitions are created as shown here.

Using bpeconfig.jacl interactively (cont.)

```

Create the mail notification session for the human task manager [Yes/no]? no
A> no
Create the ActivationSpecs for the human task manager [Yes/no]? yes
==> Yes
Using existing SIBusMember for node clinode1, server clisr01.
Creating ConnectionFactory HTMCF.
Creating SIB destination HTMIntQueue_clinode1_clisr01.
Creating SIB queue HTMIntQueue_clinode1_clisr01.
Creating activation spec HTMInternalActivationSpec.
Creating SIB destination HTMHldQueue_clinode1_clisr01.
Creating SIB queue HTMHldQueue_clinode1_clisr01.
Using existing Scheduler BPEScheduler.
Install the Business Process Choreographer Explorer [Yes/no]? yes
==> Yes
Virtual Host for the Business Process Choreographer Explorer [default_host]:
=> default_host
Precompile JSPs (precompiled JSPs cannot be debugged) [No/yes]? yes
==> yes
ADMA5016I: Installation of BPCEXplorer_clinode1_clisr01 started.
ADMA5058I: Application and module versions validated with versions of deployment targets.
ADMA5009I: An application archive is extracted at /etc/clicell/AppServerNode1/profiles/default/ustemp/ustemp/app_10b9291162b/
ADMA5003I: The JavaServer Pages (JSP) files in the Web archive (WAR) files bpexplorer.war compiled successfully.
ADMA5005I: The application BPCEXplorer_clinode1_clisr01 is configured in the WebSphere Application Server repository.
ADMA5053I: The library references for the installed optional package are created.
ADMA5005I: The application BPCEXplorer_clinode1_clisr01 is configured in the WebSphere Application Server repository.
ADMA5001I: The application binaries are saved in /etc/clicell/AppServerNode1/profiles/default/ustemp/Script10b9271b47e/worksp
le/c1lbase1/applications/BPCEXplorer_clinode1_clisr01.sar/BPCEXplorer_clinode1_clisr01.sar
ADMA5005I: The application BPCEXplorer_clinode1_clisr01 is configured in the WebSphere Application Server repository.
CUSA3013I: Resources for the SCA application BPCEXplorer_clinode1_clisr01 are being configured.
CUSA3023I: The EAR file ext is being loaded for the SCA module.
CUSA3014I: Resources for the SCA application BPCEXplorer_clinode1_clisr01 have been configured successfully.
SECJ0400I: Successfully updated the application BPCEXplorer_clinode1_clisr01 with the appContextIDForSecurity information.
ADMA5011I: The cleanup of the temp directory for application BPCEXplorer_clinode1_clisr01 is complete.
ADMA5013I: Application BPCEXplorer_clinode1_clisr01 installed successfully.
Done installing BPCEXplorer_clinode1_clisr01.
Create aliases for clisr01 in host default_host [Yes/no]?

```

- Configure System Integration Buses for the Human Task Manager
- Install BPCEXplorer

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Network Deployment Configuration

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This screen capture shows the needed System Integration Bus being created and configured, and the BPCEXplorer application being installed. The BPCEXplorer is a web interface provided to start and stop processes, and to work with human tasks.

Using bpeconfig.jacl interactively (cont.)

```

Create aliases for c11sr01 in host default_host [Yes/no]? yes
=> Yes
URL for the Business Process Choreographer Explorer [http://nvs226.rtp.raleigh.ibm.com]:
=> http://nvs226.rtp.raleigh.ibm.com
*****
* WARNING: Global security is turned off.  staff-related functions like the
* Business Process Choreographer Explorer will not work properly.
*****
Enable global security using the Local OS user registry [Yes/no]? no
=> no
Delete the temporary directory /tmp/bpeconfig [Yes/no]? no
=> no
The WebSphere configuration has been updated, server "c11sr01" should be restarted.
Stop server c11sr01 now [Yes/no]? no
=> no
Process Choreographer configuration finished.  See /etc/clicell/AppServerNode1/profiles/default/logs/bpeconfig.log for details

```

- Opportunity to turn on security...not recommended here
- Do NOT delete /tmp/bpeconfig directory
 - Customized createDatabaseDb2zOs_gen.ddl found here



Finally, you have the option to turn security on at this point. This is NOT recommended. It should be turned on from the Administrative Console instead if it is not already on and required. Please note that you should specify to NOT delete the /tmp/bpeconfig directory. Your customized .ddl to create the BPEDB is found here. You will need to run this manually after completing the bpeconfig activity.

Configure CEI manually

▪ Deploy event application

```
<PROFILE_PATH>\bin\wsadmin [-conntype none] -profile event-profile.jacl  
-f event-application.jacl -action install -earfile event-application.ear  
-backendid DB2UDBOS390_V8_1 -node <node_name> -server <server_name>  
[-cluster cluster_name] [-appname app_name] [-trace]
```

▪ Using default messaging

```
<PROFILE_PATH>/bin/wsadmin.sh [conntype -none] -profile event-profile.jacl  
-f default-event-message.jacl -action install -earfile event-message.ear  
-node <node_name> -server <server_name>  
[-cluster cluster_name] [-appname app_name] [-trace]
```

▪ Using external JMS Provider

```
$WAS_HOME/bin/wsadmin -profile event-profile.jacl -f event-message.jacl  
-action install -earfile event-message.ear -node node_name  
[-server server_name] [cluster cluster_name]  
-appname app_name -qjndi queue -qcfjndi connection_factory  
[-listenerport listener_port] [-activation-spec-jndi spec_name]  
[-event-profile-scope scope] [-trace]
```

Now that you have the Business Process Container and the Human Task Manager Containers configured, you can move on to Common Event Infrastructure. This is available in both the WebSphere Process Server and WebSphere Enterprise Service Bus environments. The event server enterprise application must be deployed in each WebSphere runtime environment where you plan to use the Common Event Infrastructure. Examples of the wsadmin.sh script to deploy the application is found on the slide, along with configuration of the messaging support needed for the Common Event Infrastructure. One example shows default messaging while the other shows an example where an external JMS provider is used instead.

Configure CEI manually (cont.)

- Configure event databases

- Update:

- ```
<PROFILE_PATH>/event/dbconfig/DB2ZOSResponseFile.txt
```

- Specify EXECUTE\_SCRIPTS=NO

- Run:

- ```
./config_event_database.sh DB2ZOSResponseFile.txt
```



The event server enterprise application needs some database resources. The `config_event_database.sh` script will create `.ddl` to allow you to create and configure the databases needed. The script needs a response file in order to run. You need to update the file specified and specify `EXECUTE_SCRIPTS=NO`.

Configure CEI manually (cont.)

- Configure event databases

- Run the generated .DDL:

```
<PROFILE_PATH>/event/dbscripts/db2zos/ddl/cr_db.db2  
<PROFILE_PATH>/event/dbscripts/db2zos/ddl/cr_db_catalog.db2  
<PROFILE_PATH>event/dbscripts/db2zos/ddl/cr_tbl.db2  
<PROFILE_PATH>event/dbscripts/db2zos/ddl/cr_tbl_catalog.db2  
<PROFILE_PATH>/event/dbscripts/db2zos/ddl/ins_metadata.db2  
<PROFILE_PATH>event/dbscripts/db2zos/ddl/catalogSeed.db2
```

- Create Event Datasource

- Run:

```
<PROFILE_PATH>/event/dsscripts/cr_db2zos_jdbc_provider.sh server  
<SERVER_NAME>
```



Once the .ddl is created, have your DB2 Administrator run it and then create the datasource for the WebSphere Configuration to point to the database. A shell script to create the datasource is shown here. With that, you should have a working Network Deployment configuration that includes WebSphere Process Server or WebSphere Enterprise Service Bus.

Summary

- WebSphere Process Server for z/OS V6.0.1 and WebSphere Enterprise Service Bus for z/OS V6.0.1 configured in a Network Deployment environment is a highly manual
 - ▶ .jacl and shell scripts are available where possible to make the job easier



In summary, the Network Deployment configuration of WebSphere Process Server and WebSphere Enterprise Service Bus is very manual compared to what is possible with the stand-alone configuration. Many .jacl and shell scripts are provided to make the job simpler and less error-prone though.

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