Configuring IBM Business Process Manager V.8.5 on z/OS Advanced : Process Server Unit 5 – Adding an Advanced Cluster – Team #

These instructions assume you have completed Lab #3 to complete the IBM Business Process Manager Advanced-Only Configuration.

To make the document specific for Team #, use Find & Replace to make these global changes:
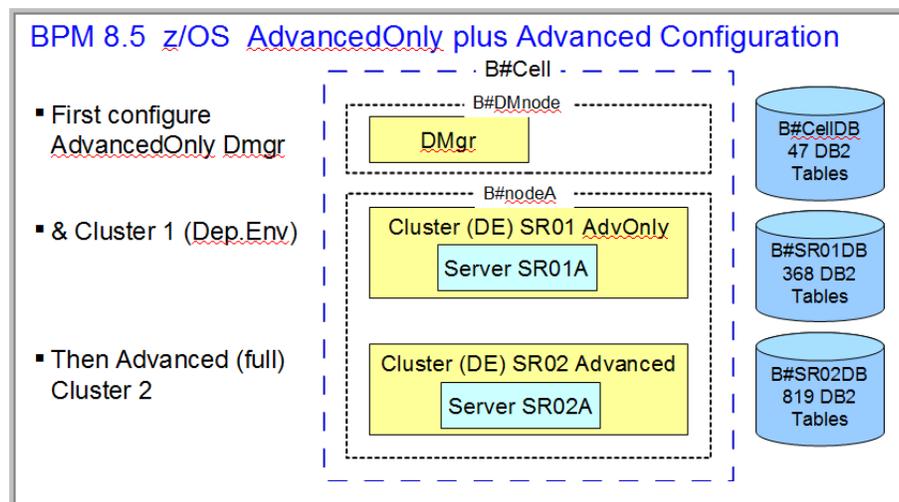- Check "Match case"
- Replace "B#" with the team Number "B#"
- Replace 'b#' with the team Number "b#"

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1a. Add a Second Deployment Environment for the 'Advanced' Config.

Next we will add "Advanced" Cluster (DE) to a cell which is already configured with an "AdvancedOnly" cluster (DE):

Launch the **B#_WG31_WBPMConfigSpreadsheet.xls** spreadsheet located on your workstation in the C:\bpmwork directory using Microsoft Excel.

Set the following values in the "Variables" tab:

(The screen shots here show "b0", but you should enter your unique prefix b#)

☐ Row 16: Dataset HLQ: **USER1.B#CELL.ADVANCED**

16	Enter Save Customization Dataset HLQ for System (1) ==>	USER1.B6CELL.ADVANCED
17	Enter Save Customization Dataset HLQ for System (2) ==>	USER1.B6CELL.ADVANCED

Set the following values in the "BPM Variables" tab:

☐ Row 24: Specify 2 for the Cluster number.
  ○ Note that Rows 25, 28, & 34 – 37 are adjusted to the new Cluster number.

23	BPM Cluster Configuration Properties	
24	Cluster Number ==>	2
25	Cluster Name ==>	b6sr02
26	er Node (LPAR) Qualifier ==>	a
27	Node Name ==>	b6nodea
28	Member Name ==>	b6sr02a
29		
30	BPM Database Topology Conventions	
31	Cell Database ==>	B6CELLDB
32	Schema ==>	B6CELL
33		
34	lication Target Database ==>	B6SR02DB
35	BPM Schema ==>	B6SR02
36	DataWarehouse ==>	B6C2DW
37	l Bus Schema Qualifiers ==>	B6SR02
38		
39	BPM Deployment Environment	
40	DE Type ==>	Advanced
41		
42	Process Center Configuration (Advanced)	
43	ProcessCenter Protocol ==>	http
44	Host ==>	wpspctr
45	Port ==>	9094
46	User ==>	pcadmin
47	Password ==>	pcadmin
48	OffLine ==>	false

Row 40: DE Type: Specify "Advanced"

Row 48: Offline: Specify "false"

Row 57: Specify B#ADMIN
(May not be nec.)

54		USER
55	Cell Admin Alias ==>	B6ADMIN
56	BPM Admin Alias ==>	B6ADMIN
57	BPM Database Alias ==>	B6ADMIN

☐ Use these "Save" buttons at the top of each tab to save them in the C:\wpswork directory:
  • "Deployment Manager" Response file **b#dmnodeAdvanced.rsp**   Save Response File
  • "BPMConfig Properties" file   **b#sr02.properties**   Save properties
 • "Database", StoGroup and GRANT definitions **b#sr02.sql**   Save to Schema File
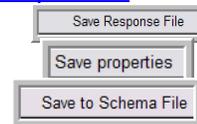
## 2a. Use the PMT to create the jobstreams for the Advanced Cluster

☐ Launch the Profile Management Tool (PMT) by clicking on "WebSphere Customization Toolbox" on your workstation

☐ Highlight the B#Cell and click on "Create"
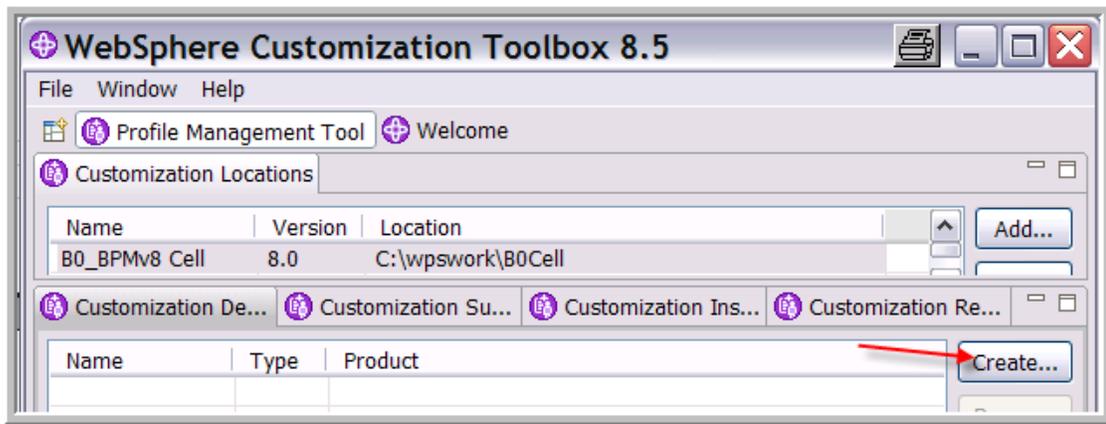
☐ You will see the "Environment Selection" panel which will have many options. Select the "Deployment Manager: **Advanced** configuration."
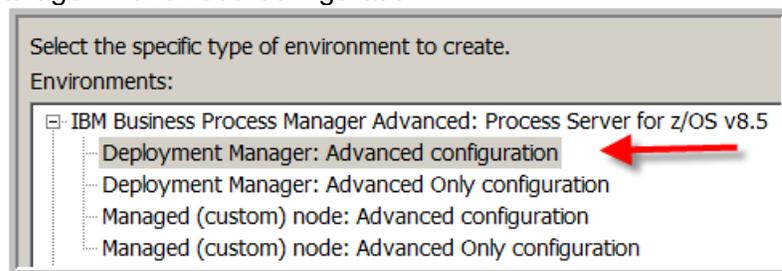
☐ Click "Next" to create a customization definition and specify a name such as "B#_DMGR, and click the "Browse" button to navigate to the new DMgr Response file for BPM Advanced in C:\wpswork\ directory:
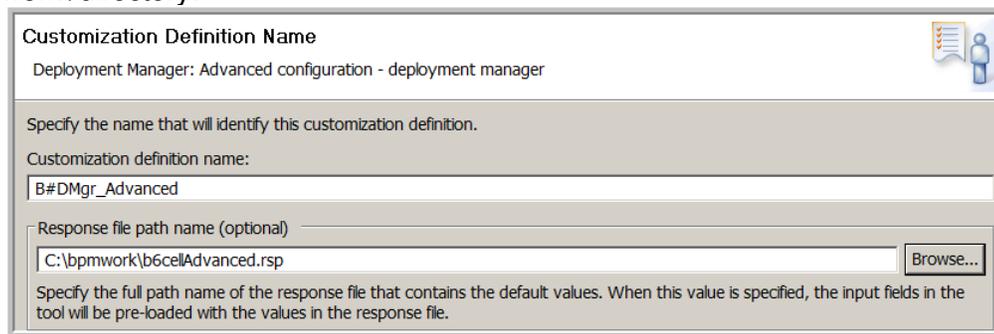
☐ Click "Next" to begin scrolling through the zPMT panels.
☐ Review each panel to make certain you have specified them correctly when you filled out the spreadsheet. (Ask an instructor if you have any questions.)
☐ At the end of the panels, click the "Create" button, and then "Finish" then click on the "Process" button to upload the customization jobs to the target datasets.
☐ Fill in the password for "user1" and check the box saying "Allocate target z/OS datasets" and click on "Finish" to complete the upload.

You can now exit the WCT.

6a. Create a Cluster and Cluster Member with the BPZCNFGD job

The job to create the new cluster (b#sr02) and cluster member (b#sr02a) was generated by the zPMT and uploaded into `USER1.B#CELL.`ADVANCED`.B#DMNODE.CNTL(`BPZCNFGD`)`. This job uses the properties in `USER1.B#CELL.`ADVANCED`.B#DMNODE.DATA(`BPZPROPD`)`.

☐ Edit member BPZPROPD to change the Initial Port Assignment for the second cluster:

> **`bpm.de.node.1.clusterMember.1.initialPortAssignment=8580`**

☐ Submit the new BPZCNFGD job to create the new Cluster and member for the B#SR02 D.E.

☐ Here is an example of the output:

```
Logging to file
/wasv85config/b6cell/b6dmnode/DeploymentManager/logs/config/BPMConfig_20131114-111610.log.
CWMCB0713I: Node b6nodea is not a local node, skipping.
CWMCB0713I: Node b6node0 is not a local node, skipping.
Validating the profile registry.
Ý¨
Configuring the deployment manager.
The deployment manager profile already exists at
/wasv85config/b6cell/b6dmnode/DeploymentManager/profiles/default.
Generating SQL files.
Provisioning cell.
Configuring the cell.
Configuring the deployment manager.
Provisioning deployment environment
Generating database configuration files to
/wasv85config/b6cell/b6dmnode/DeploymentManager/profiles/default/dbscripts/B6SR02
Performing security configuration.
Creating clusters.
Configuring data sources.
Configuring the database(s).
Configuring clusters.
Provisioning managed node b6nodea.
The HTTP and HTTPS ports are added to the virtual hosts list.
Configuring the node
Creating cluster members.
Configuring the REST services end points.
Saving configuration changes, please be patient...
BPMConfig completed successfully.
```

5a. Creating the DB2 tables for Cluster B#SR02

You used the job in USER1.WAS.CNTL(`BPMCRDB`) to define the Storage Groups and database for the Copy this member to BPMCRDB2, change all occurrences of B#SR01 to B#SR02 , and delete all the other statements except those for the new B#SR02DB database.

☐ Submit the job and look at the output to verify that the commands were successful.

We will now use the createDatabase.sh script which was generated by the above BPZCNFGD job which created the new DE:

☐ Telnet or use OMVS to log into the USS environment as "user1" on your WG31 host.

☐ Change to the administrator's ID: **`su b#admin`**

☐ Run the db2setup.sh script in the **`/u/user1/wpswork/`** directory. Specify a period and a space before the command to keep the exported variables in the current USS environment:

> **`. db2setup.sh`**

`cd /wasv85config/b#cell/b#dmnode/DeploymentManager/profiles/default/dbscripts`

`cd  B#SR02/DB2zOS/B#SR02DB`

☐ Make sure you are still logged in as the **b#admin** userID, and go to the above directory

☐ Run the following script to create the 819 tables for BPC, BPC Reporter, Process Server, etc.:

`./createDatabase.sh –DBAlias DSNX –RunSQL`

You should see these messages: (after about 7 minutes)

```
Creating database schema definitions
CONNECT TO DBP2
      Database Connection Information
 Database server        =DB2 DSN10015
 SQL authorization ID   =SYSADM1
 JDBC Driver      =IBM DB2 JDBC Universal Driver Architecture 3.62.73
DSNC101I : The "CONNECT" command completed successfully.
UPDATE COMMAND OPTIONS USING z ON z_output.txt o OFF
 1 SQL statements failed, 3758 SQL statements executed successfully.
```

☐ Look in the z_output.txt file for any error messages. (Find 'SQLCODE'.)

The "1 **SQL statements failed**" were for an extra (unnecessary) statement:
"SET CURRENT SCHEMA = 'B6SR02'.

☐ The B#ADMIN UserID must be granted access to the DB2 tables and sequences in this new B#SR02DB database. (This was created by the **b#sr02.sql** job by the zPMT.) Use the same job in member USER1.WAS.CNTL(B #GRANTS) Edit this member and change all occurrences of 'B#SR01' to 'B#SR02' and submit the job. Look for a return code of '4'.

☐ Verify that a total of 819 tables were created in the B#SR02DB database by the above createDatabase.sh script command. See "*Verify the Database Tables*" in the Appendix for using the ADBL command by sysadm1 to list the tables in the B#SR01DB database.

8a. Bootstrap Database (for full "Advanced" Configurations)

☐ Boot-strap the Process Server Database using the B#BOOTST member of USER1.WAS.CNTL which uses this script: ./bootstrapProcessServerData.sh   Change the name of the cluster to all occurrences of '#' to your team number and change the cluster name to 'b#sr02'. Submit the job, and look for a return code of '0'.

☐ ?????

☐ Also add this BPMAuthor_Auth_Alias to the Deployment Environment Business Integration Security: ???????

☐ In the ISC, click on Severs > Deployment Environments > B#SR02 > Authentication Aliases.

☐ Change the BPMAuthor's Alias from "BPMAdminAlias" to "BPMAuthor_Auth_Alias":

☐ Click "Ok" and Save.

☐ Logout of the ISC.

Full Node Re-synchronization is required:

At this point, we need to re-cycle the Deployment Manager and Node Agent to have these changes hardened in the configuration files.

☐ Stop the B#DEMN address space in SDSF DA panel with the "Y" action character, and wait for them all to terminate.

9a. Validate your Advanced configuration

☐ Restart the deployment manager and node agent.

`START B#DCR,ENV=B#CELL.B#DMNODE.B#DMGR,JOBNAME=B#DMGR`

`START B#ACRA,ENV=B#CELL.B#NODEA.B#AGNTA,JOBNAME=B#AGNTA`

☐ Sign on to the ISC at http://wq31:8505/ibm/console

☐ Navigate to Servers -> Clusters. Select the b#sr02 cluster, and click "Start".

☐ Go to the TSO/SDSF Display Active (DA) panel, and watch the server start up with three address spaces:

  ☐ B#SR02A (the controller),

  ☐ B#SR02AA (the adjunct),

  ☐ B#SR02AS (the servant).

☐ When you start the application servers for the first time after the Database is created, you may see slow startup times caused by a DB2 connection problem. The delay may be up to 12 minutes, but the problem does not occur on future server start-ups.

(Good time for another Break.)

☐ Look in each started task and find any error messages. (Ask an instructor if you have questions about the messages.)

Some of these ERRORS YOU CAN IGNORE during start-up, but they should go away when the server is all the way up:

Adjunct: CHFW0030E: Error starting chain _InboundTCPProxyBridgeService because of exception … when attempting to start the TCPProxyChannel

Servant: SRVE0278E: Error while adding servlet mapping --> /*.

Verify your configuration in the ISC

☐ Sign on to the ISC and note the new artifacts that have been added after the BPM install and augment. (Applications, Buses, JDBC Data Sources & Drivers)

☐ Look under `Applications > Enterprise Applications` - There should be 47 applications Installed, and 25 should be Started.

☐ Look under `Clusters > b#sr02 > Messaging engines` - is the Messaging Engines Started?
etc...

Start up the Process Designer and see if you can talk to the Process Center

☐ (If you have any problems, it may help to re-cycle the cell.)