Install and Config
For IBM BPM 8.5.5

Install and Configure of BPM v8.5.5

Technical Architect: Chuck Misuraca
### Change History

**Table 1: Document Change History**

<table>
<thead>
<tr>
<th>Document Revision &amp; Date</th>
<th>Editor</th>
<th>Summary of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Draft 1.0 12/01/14</td>
<td>Chuck Misuraca</td>
<td>Initial version</td>
</tr>
</tbody>
</table>
Preface
The document is a runbook for creating IBM BPM 8.5.5 Cells that will contain either a Process Center (PC) Deployment Environment (DE) or a Process Server (PS) Deployment Environment (DE). Each DE will have 3 clusters and 6 databases. This will provide for maximum flexibility and scalability.
There will be 12 databases. 6 for Process Center and 6 for Process Server

- **Process Center Specific**
  - CELLPCDB for the Cell Common database.
  - BPMPCDB for the Process database. BPMDB will be used for ECMDB.
  - PDWPCDB for the Performance Data Warehouse database
  - CMNPCDB for Deployment Environment Common database for Process Center. CMNPCDB will be used for BSPCDB.
  - MEPCDB for Message Engine.
  - BPEPCDB for BPEL Engine

- **Process Server Specific**
  - CELLPSDB for the Cell Common database.
  - BPMPSDB for the Process database. BPMDB will be used for ECMDB.
  - PDWPSDB for the Performance Data Warehouse database
  - CMNPSDB for Deployment Environment Common database for Process Server. CMNPSDB will be used for BSPCDB.
  - MEPSDB for Message Engine.
  - BPEPSDB for BPEL Engine.
Two DB2 id with dbadm privileges will act as the owner of all the tables associated with each DE.

The PC acts as a repository and a point of governance. So the process server in the PC is used to vetting, validate and justify the movement from repository to runtime.

The PS has PC components so it can connect and receive deployments. PC DE DEV can connect to multiple PS DE’s.

Looking forward, there is a PS only DE that does not connect to any PC. It is strictly standalone. It is a best practice to use PS only DE for Production. This configuration eliminates and changes of an accident deploy to production. The artifacts have to be exported from a PC as an ear file or deployment package and then deployed to Production.
IBM BPMv8.5.5 - Product Install:
This section is for installing IBM BPM v8.5.5 using the IBM Installation Manager Response files that are shipped with the product.

Pre-requisites:
- WebSphere Install Directory name
- Non-root ID and password

1) untar BPMv85 install media. Media file names are: BPM_Adv_V855_AIX_1_of_2.tar.gz and BPM_Adv_V855_AIX_2_of_2.tar.gz
2) put all 2 untar'ed disk images into BPM_Adv_V855_AIX_2_of_2_Folder
3) make copy of response bpmAdv_aix_response_nonroot_64bit.xml
   Note: bpmAdv_aix_response_nonroot_64bit.xml is located in directory:
   /acme/Software_depot/BPM responsefiles/BPM/
   Example name: My_bpmAdv_aix_response_nonroot_64bit.xml
4) edit response file copy.
5) Change Installation Manager install path name to the match directory naming standards for your IT Shop.
6) Un-comment IMShared and then change the path.
   <!--
   <preference value="/opt/IBM/IMShared" name="com.ibm.cic.common.core.preferences.eclipseCache" />
   -->
7) Change BPM install path name to the match directory naming standards for your IT Shop.
8) save response file.
9) set permissions 755 on response file
10) vi
   /acme/Software_depot/BPM/BPM_Adv_V855_AIX_2_of_2_Folder/IM/configuration/config.ini
11) INSERT this line:
    cic.appDataLocation=/opt/IBM/WebSphere/AppServer/WebSphere/InstallationManager
12) Save config.ini
13) su – wasadmin
14) cd /acme/Software_depot/BPM/BPM_Adv_V855_AIX_2_of_2_Folder
15) run command:
    ./IM64/userinstc -acceptLicense input
    ./responsefiles/BPM/My_bpmAdv_aix_response_nonroot_64bit.xml -log /tmp/silent_install.log
16) Do this procedure for every machine that will make up the PC or PS Cell.

IBM BPMv8.5 – Create Cell:
This section is for creating the PC or PS Cells. Always create your PC Cell first so you can use the
information in the creation of the PS Cell.

Pre-requisites:
- Profile Directory name
- Profile names
- WAS Cell admin ID and password
- Node name
- Cell name
- DB2 hostname
- DB2 port
- DB2 ID and PW

Creating BPM Deployment manager

Create a response file named “createBPMDmgrProfileResponse.txt” from the following template.
Replace and thing in “<>” brackets with real values.

create

templatePath=<BPMINSTDIR>/profileTemplates/dmgr.wbiserver

profileName=<DMGR_PROFILE_NAME>

profilePath=<BPMPROFILESDIR>/<DMGR_PROFILE_NAME>
isDefault=false
nodeName=<DMGR_NODE_NAME>
cellName=<DMGR_CELL_NAME>
enableAdminSecurity=true
adminUserName=<WASADMINID>
adminPassword=<WASADMINPW>
dbCreateNew=false
dbDelayConfig=true
dbDriverType=4
dbHostName=<DB2_HOSTNAME>
dbJDBCClasspath=<DB2_DRV_PATH>
dbName=<CELL Level CMN DB>
dbServerPort=<DB_SRV_PORT>
dbType=DB2_UNIVERSAL
dbUserId=<DB2ID>
dbPassword=<DB2PW>
dbDelayConfig=true
dbCreateNew=true

**EXAMPLE:**

**NOTE:** for PS hostname will be `aix1awas26x`

create
templatePath=/opt/IBM/WebSphere/AppServer/BPM/v8.5/profileTemplates/BPM/BpmDmgr

# Or PS

profileName=prof_aix1awas25x_DM_BPMPC_01x
profilePath=/opt/IBM/WebSphere/AppServer/BPM/v8.5/profiles/prof_aix1awas25x_DM_BPMPC_01x
isDefault=false

nodeName=aix1awas25x_DM_BPMPC_01x

cellName=BPMPC_DMCell01x
enableAdminSecurity=true
adminUserName=wasadmin
adminPassword=<wasadmin password>
dbCreateNew=false
dbDelayConfig=true
dbDriverType=4
dbHostName=aix1diib03x.acme.com
dbJDBCClasspath=/opt/IBM/WebSphere/AppServer/BPM/lib/db2/

dbName=CELLPCDB
dbServerPort=60000
dbType=DB2_UNIVERSAL

# Or ps
dbUserId=db2pcde
dbPassword=<password>
dbDelayConfig=true
dbCreateNew=true
Change to BPM_HOME/bin and execute the following command:

```
./manageprofiles.sh - response /home/wasadmin/script/createBPM_DmgrProfileResponse.txt
```

Results: creation the Dmgr profile.

**Starting the deployment manager**

Navigate to

```
/opt/IBM/WebSphere/AppServer/BPM/v8.5/profiles/prof_aix1awas25x_DM_BPMPC_01x/bin
```

and run the startManager.sh script.

**Creating the Custom profile**

On the machine(s) that will contain the managed profiles, create a response file named “createBPM_CustProfileResponse.txt” from the following template. Replace and thing in <>” brackets with real values.

```
create
templatePath=<BPMINSTDIR>/profileTemplates/managed.wbserver
profileName=<CUSTOM_PROFILE_NAME>
profilePath=<BPMPROFILESDIR>/<CUSTOM_PROFILE_NAME>
isDefault=false
nodeName=<CUSTOM_NODE_NAME>
cellName=<CUSTOM_CELL_NAME>
enableAdminSecurity=false
dbDriverType=4
dbJDBCClasspath=<DB2_DRV_PATH>
dbType=DB2_UNIVERSAL
dbDelayConfig=true
```
dbCreateNew=true

**EXAMPLE:**

**NOTE:** for PS hostname will be **aix1awas26x**

create

templatePath=/opt/IBM/WebSphere/AppServer/BPM/v8.5/profileTemplates/BPM/BpmNode

# Or PS

profileName=prof_aix1awas25x_Node_BPMPC_01x

# Or PS

profilePath=/opt/IBM/WebSphere/AppServer/BPM/v8.5/profiles/prof_aix1awas25x_Node_BPMPC_01x

isEnabled=false

# Or PS

nodeName=aix1awas25x_Node_BPMPC_01x

# Or PS

cellName=BPMPC_DMCell01xtmp

enableAdminSecurity=false

dbDriverType=4

dbJDBCClasspath=/opt/ibm/BPM/v8.5/jdbcdrivers/DB2

dbType=DB2_UNIVERSAL

dbDelayConfig=true

dbCreateNew=true

Change to WPS_HOME/bin and execute the following command:

`./manageprofile.sh --response /home/wasadmin/script/createBPMCustProfileResponse.txt`

Results: creation the Custom profile.
Repeat this process for additional nodes.

**Federating the custom profile**

**NOTE:** for PS hostname will be *aix1awas26x*

To federate the node, navigate to

/opt/IBM/WebSphere/AppServer/BPM/v8.5/profiles/prof_aix1awas25x_Node_BMPC_01x/bin, and issue this command:

```
./addNode.sh aix1awas25x 8879 --username wasadmin --password <password>
```

Repeat this process for additional nodes.
IBM BPMv8.5.5 - Product Config for a PC:
This section is for configuring IBM BPM v8.5 using the Admin Console. The names in this section maybe different, depending on which Environment is being built.

pre-requisites:
- Deployment Environment name. Example: PCDEV
- Process Center Deployment Environment Admin ID and Password. Example: ID = PCDEadmin PW = PCDEadmin. To move off of the file based security these should be in LDAP
- WAS Cell Admin ID and Password. Example: ID = wasadmin PW = wasadmin - these should be in LDAP
- Node names - for Dmgr and all nodes
- Cluster name(s)
- Cluster Member name(s)
- DB2 ID: db2pcde and <password>
- Database names for CELLPcdb, CMNPCDB, BPEPCDB, MEPcDB, BMPcDB, and PDWPCDB

1. Logon to the admin console for the new BPM Cell:

   ![WebSphere Integrated Solutions Console](image)

   WebSphere Integrated Solutions Console
   User ID: wasadmin
   Password: *********
   Login


2. Navigate to: Servers -> Deployment Environments
3. Click New – We are creating our PC DE.
4. Fill in the panel with your values. See example Below:

<table>
<thead>
<tr>
<th>Select IBM BPM Deployment Environment Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ Standard Process Center</td>
<td>Store, test, and administer process applications and toolkits that are authored in Process Designer.</td>
</tr>
<tr>
<td>○ Standard Process Server</td>
<td>Run processes and services in process applications that are deployed from the Standard Process Center.</td>
</tr>
<tr>
<td>○ Advanced Process Center</td>
<td>Store, test, and administer process applications and toolkits that are authored in IBM Process Designer and IBM Integration Designer.</td>
</tr>
<tr>
<td>○ Advanced Process Server</td>
<td>Run processes, services, and SCA modules in process applications that are deployed from the Advanced Process Center, or run modules that are deployed directly.</td>
</tr>
<tr>
<td>○ Advanced-only Process Server</td>
<td>Run SCA modules only. You deploy these modules from the command line on the WebSphere administrative console. This server is the IBM BPM equivalent of IBM WebSphere Process Server.</td>
</tr>
</tbody>
</table>

Select a cluster pattern for the deployment environment.
5. Click Next

6. Select the Nodes you want to use with this DE.

7. Click Next

8. This panel lets you define the number of clusters members.

9. Click Next
10. This panel is where clients can implement their naming standards.

![Customize Cluster Name and Ports](image)

<table>
<thead>
<tr>
<th>Application Cluster</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cluster Name</strong></td>
<td><strong>PC_AppCluster01x</strong></td>
</tr>
<tr>
<td><strong>Node Name</strong></td>
<td><strong>Cluster Member Name</strong></td>
</tr>
<tr>
<td>elix1awas25x_Node_BPMFC_01x</td>
<td>PC_App_AppSrv01x</td>
</tr>
<tr>
<td>elix1awas27x_Node_BPMFC_01x</td>
<td>PC_App_AppSrv02x</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remote Messaging Cluster</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cluster Name</strong></td>
<td><strong>PC_MECluster01x</strong></td>
</tr>
<tr>
<td><strong>Node Name</strong></td>
<td><strong>Cluster Member Name</strong></td>
</tr>
<tr>
<td>elix1awas25x_Node_BPMFC_01x</td>
<td>PC_MEC_AppSrv01x</td>
</tr>
<tr>
<td>elix1awas27x_Node_BPMFC_01x</td>
<td>PC_MEC_AppSrv02x</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remote Support Cluster</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cluster Name</strong></td>
<td><strong>PC_SupCluster01x</strong></td>
</tr>
<tr>
<td><strong>Node Name</strong></td>
<td><strong>Cluster Member Name</strong></td>
</tr>
<tr>
<td>elix1awas25x_Node_BPMFC_01x</td>
<td>PC_Sup_AppSrv01x</td>
</tr>
<tr>
<td>elix1awas27x_Node_BPMFC_01x</td>
<td>PC_Sup_AppSrv02x</td>
</tr>
</tbody>
</table>

11. Click Next

12. This panel is the Database panel. We need to pay close attention to the info we put into this panel.

13. Before we change anything:
14. After we put in our values:

15. We filled in the panel with the info the DBA gave us for the PC. Take note we un-check Create Tables. We are using a remote DB2 server. Once the PC DE is created all the database scripts will be
located in a directory under the Dmgr profile. We will need to tar them up and sent then to the DBA to run. Once the DBA is done the Databases will be populated. The DBA will have a section coming.

16. Review these entries. Once validated, Click Next
17. At this point I usually Click Export for Scripting and Save.

18. Then Click Generate Deployment Environment.

19. This could take 20+ minutes. Depending on RAM and CPU.
20. Now Click Save Changes

21. Tar up

/opt/IBM/WebSphere/AppServer/BPM/v8.5/profiles/prof_aix1awas25x_DM_BPMPC_01x/dbscripts
and give them to the DBA. With the instructions from the next section.

IBM BPMv8.5 - DBA instructions for PC:

This section is for creating tables in the DB2 database created earlier in this doc.

The instructions in this section will demonstrate how to make a script from the contents of the
dbscripts.tar file.

Pre-requisites:

- DB2 DBA
- DB2 instance owner ID and password. Example: db2pcde
- The dbscripts.tar from the BPM admins.

Create Database

1. un-tar the dbscripts tar file.
2. su - db2 instance owner id. Example: db2pcde
3. cd <your location>/dbscripts
4. run command:
   - find . -name createD*.sh -print > createdbs.sh
5. Edit createdbs.sh
6. Your should see:
   ./BPMPC_DMCell01x/DB2/CPELLPCDB/createDatabase.sh
   ./PCDEV/DB2/MEPCDB/createDatabase.sh
   ./PCDEV/DB2/CMNPCDB/createDatabase.sh
   ./PCDEV/DB2/BPEPCDB/createDatabase.sh
   ./PCDEV/DB2/PDWPCDB/createDatabase.sh
   ./PCDEV/DB2/BPMPCDB/createDatabase.sh
7. Change createdbs.sh into what is listed below. Then save it.

```bash
cd ./BPMPC_DMCell01x/DB2/CPELLPCDB
./createDatabase.sh
cd -
cd ./PCDEV/DB2/MEPCDB
./createDatabase.sh
cd -
cd ./PCDEV/DB2/CMNPCDB
./createDatabase.sh
cd -
cd ./PCDEV/DB2/BPEPCDB
./createDatabase.sh
cd -
cd ./PCDEV/DB2/PDWPCDB
./createDatabase.sh
cd -
cd ./PCDEV/DB2/BPMPCDB
./createDatabase.sh
cd –
```
8. chmod 755 createdbs.sh
9. Run:
   ./createdbs.sh

Create Tables

1. run command:
   find . -name create* Advanced.sql -print > createTables.sh
   find . -name create*Messaging.sql -print >> createTables.sh

2. Edit createTables.sh
3. Your should see:
   ./BPMPC_DMCell01x/DB2/CPELLPCDB/createSchema_Advanced.sql
NOTE: The directory names can change as different environments are built.

***NOTE: Review these sql files before running them. Make sure they meet Corporate IT Standards.

4. Change createTables.sh into what is similar as below. Then save it. **Notice the database you need to connect to is listed right after DB2 in the directory path.**

   ```
   db2 connect to CELLPCDB
   db2 -vtf ./BPMPC_DMCell01x/DB2/CELLPCDB/createSchema_Advanced.sql
   db2 connect reset

   db2 connect to CMNPCDB
   db2 -vtf ./PCDEV/DB2/CMNPCDB/createSchema_Advanced.sql
   db2 connect reset

   db2 connect to BPEPCDB
   db2 -vtf ./PCDEV/DB2/BPEPCDB/createSchema_Advanced.sql
   db2 connect reset

   db2 connect to PDWPCDB
   db2 -vtf ./PCDEV/DB2/PDWPCDB/createSchema_Advanced.sql
   db2 connect reset

   db2 connect to BPMPCDB
   db2 -vtf ./PCDEV/DB2/BMPPCDB/createProcedure_Advanced.sql
   db2 -vtf ./PCDEV/DB2/BMPPCDB/createSchema_Advanced.sql
   db2 connect reset

   db2 connect to MEPCDB
   db2 -vtf ./PCDEV/DB2/MEPCDB/createSchema_Messaging.sql
   db2 connect reset
   ```

5. Run: 
   chmod 755 createTables.sh

6. Run: 
   ./createTables.sh
Testing the new PC DE environment:

Now that the DBA work is complete.

1. Run: - this will popular product tables.

   /opt/IBM/WebSphere/AppServer/BPM/v8.5/profiles/prof_aix1awas25x_DM_BMPMC_01x/bin/bootstrapProcessServerData.sh -clusterName PC_AppCluster01x

2. Start the Deployment Environments.

3. For Process Center - Test by using these URLs:

   NOTE:
   1) You must use a supported Browser - IE 10, Chrome 20 or greater, Safari 5 or greater and FireFox 10.
   2) Always use a new Browser session, never just open an additional tab.

   Process Center EXAMPLES:
   Test in this order: - check servers for correct port numbers

   http://aix1awas25x:9080/ProcessCenter/login.jsp
   http://aix1awas25x:9080/ProcessPortal/login.jsp
   http://aix1awas25x:9080/ProcessAdmin/login.jsp
   http://aix1awas25x:9082/PerformanceAdmin/login.jsp

IBM BPMv8.5.5 - Product Config for PS:
This section is for configuring IBM BPM v8.5.5 using the Admin Console. The names in this section maybe different, depending on which Environment is being built.

pre-requisites:

- Deployment Environment name. Example: PSDEV
- Process Server Admin ID and Password. Example: ID = PSDEadmin PW = PSDEadmin. To move off of the file based security these should be in LDAP
- WAS Cell Admin ID and Password. Example: ID = wasadmin PW = wasadmin - these should be in LDAP
- Node names - for Dmgr and all nodes
- Hostnames. If more than one machines in the cell.
- Profile names. Dmgr and node(s).
- Cluster name(s)
- Cluster Member name(s)
- DB2 DE IDs and <passwords>
- Database names for CELLLPSDB, CMNPSDB, BPEPSDB, BPMPSDB, PDWPSDB and MEPSDB.
1. Logon to the admin console for the new BPM Cell:

![Login to admin console](image1.png)

2. Navigate to: Servers -> Deployment Environments

![Deployment Environments](image2.png)

3. Click New – We are creating our PS DE.

4. Fill in the panel with your values. See example Below:
Enter the deployment environment name and the deployment environment administrator user name and password.

- **Deployment environment name**
  - PSDEV

- **Deployment environment administrator user name**
  - PSDEVadmin

- **Password**
  - ********

- **Confirm password**
  - ********

  **Context root prefix**

Virtual host

- default_host

Select the type of deployment environment.

<table>
<thead>
<tr>
<th>Select</th>
<th>IBM BPM Deployment Environment Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>Standard Process Center</td>
<td>Store, test, and administer process applications and toolkits that are authored in Process Designer.</td>
</tr>
<tr>
<td>☐</td>
<td>Standard Process Server</td>
<td>Run processes and services in process applications that are deployed from the Standard Process Center.</td>
</tr>
<tr>
<td>☐</td>
<td>Advanced Process Center</td>
<td>Store, test, and administer process applications and toolkits that are authored in IBM Process Designer and IBM Integration Designer.</td>
</tr>
<tr>
<td>☐</td>
<td>Advanced Process Server</td>
<td>Run processes, services, and SCA modules in process applications that are deployed from the Advanced Process Center, or run modules that are deployed directly.</td>
</tr>
<tr>
<td>☐</td>
<td>Advanced-only Process Server</td>
<td>Run SCA modules only. You deploy these modules from the command line or the WebSphere administrative console. This server is the IBM BPM equivalent of IBM WebSphere Process Server.</td>
</tr>
</tbody>
</table>

Select the Deployment Environment Pattern

- **Application, Remote Messaging, and Remote Support**
  - Defines one cluster for application deployment, one remote cluster for the messaging infrastructure, and one remote cluster for the supporting applications

- **Single Cluster**
  - Defines one application deployment target cluster, which includes the messaging infrastructure and supporting applications

5. **Click Next**
6. **Select the Nodes you want to use with this DE.**
Click Next

This panel lets you define the number of clusters members.

Click Next
10. This panel is where clients can implement their naming standards.

11. Click Next

12. This panel is where the connection info for the PC is entered. The ID and password is for the PC admin. It will be used to make the connection.
13. This panel is the Database panel. We need to pay close attention to the info we put into this panel.

14. Before We change anything:
15. After we put in our values:

16. We filled in the panel with the info the DBA gave us for the PS. Take note we un-check Create Tables. We are using a remote DB2 server. Once the PS DE is created all the database scripts will be located in a directory under the Dmgr profile. We will need to tar them up and sent then to the DBA to run. Once the DBA is done the Databases will be populated. The DBA will a section coming.
17. Review these entries. Once validated, Click Next.
18. At this point I usually Click Export for Script and Save.
19. Then Click Generate Deployment Environment.

Configuration Status

12/1/04 9:51:12 AM  Beginning configuration ...
12/1/04 9:51:13 AM  Generating SQL files.
12/1/04 9:51:13 AM  Provisioning cell.
12/1/04 9:51:13 AM  Generating database configuration files /opt/IBM/WebSphere/AppServer/profiles/prof_aix1awas26x_DM_BPMPC_01x/dbscripts/BPMPBS_DMC8H01x.

Please Wait...

20. This could take 20+ minutes. Depending on RAM and CPU.

12/1/04 10:01:47 AM  The HTTP and HTTPS ports are added to the virtual hosts list.
12/1/04 10:01:47 AM  Configuring the node.
12/1/04 10:01:48 AM  Creating cluster members.
12/1/04 10:02:11 AM  Configuring the REST services and points.
12/1/04 10:02:11 AM  The configuration has ended.

21. Now Click Save Changes

Deployment Environments

Select the deployment environments to manage. You can manage deployment environment that are created using patterns.

Start  Stop  New  

<table>
<thead>
<tr>
<th>Select</th>
<th>Status</th>
<th>Deployment Environment Name</th>
<th>Features</th>
<th>Pattern</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>PSDEV</td>
<td>IBM BPM Advanced Process Server</td>
<td>Application, Remote Messaging, and Remote Support</td>
<td></td>
</tr>
</tbody>
</table>

Total 1

22. Tar up

/opt/IBM/WebSphere/AppServer/BPM/v8.5/profiles/prof_aix1awas26x_DM_BPMPC_01x/dbscripts

and give them to the DBA. With the instructions from the next section.

**IBM BPMv8.5 - DBA instructions for PS:**

This section is for creating tables in the DB2 database created earlier in this doc.

The instructions in this section will demonstrate how to make a script from the contents of the dbscripts.tar file.
Pre-requisites:
- DB2 DBA
- DB2 instance owner ID and password. Example: db2psde
- The dbscripts.tar from the BPM admins.

Create Database
10. un-tar the dbscripts tar file.
11. su - db2 instance owner id. Example: db2psde
12. cd /<your location>/dbscripts
13. run command:
   find . -name createD*.sh -print > createdbs.sh
14. Edit createdbs.sh
15. Your should see:
   ./BPMPS_DMCell01x/DB2/CELLPSDB/createDatabase.sh
   ./PSDEV/DB2/MEPSDB/createDatabase.sh
   ./PSDEV/DB2/CMNPSDB/createDatabase.sh
   ./PSDEV/DB2/BPEPSDB/createDatabase.sh
   ./PSDEV/DB2/PDWPSDB/createDatabase.sh
   ./PSDEV/DB2/BPMPSDB/createDatabase.sh
16. Change createdbs.sh into what is listed below. Then save it.

   cd ./BPMPS_DMCell01x/DB2/CELLPSDB
   ./createDatabase.sh
   cd -
   cd ./PSDEV/DB2/MEPSDB
   ./createDatabase.sh
   cd -
   cd ./PSDEV/DB2/CMNPSDB
   ./createDatabase.sh
   cd -
   cd ./PSDEV/DB2/BPEPSDB
   ./createDatabase.sh
   cd -
   cd ./PSDEV/DB2/PDWPSDB
   ./createDatabase.sh
   cd -
   cd ./PSDEV/DB2/BPMPSDB
   ./createDatabase.sh
   cd –

17. chmod 755 createdbs.sh
18. Run:
Create Tables

7. run command:
   find . -name create* Advanced.sql -print > createTables.sh
   find . -name create*Messaging.sql -print >> createTables.sh

8. Edit createTables.sh

9. Your should see:
   ./BPMPS_DMCell01x/DB2/CELLPSDB/createSchema_Advanced.sql
   ./PSDEV/DB2/CMNPSDB/createSchema_Advanced.sql
   ./PSDEV/DB2/BPEPSDB/createSchema_Advanced.sql
   ./PSDEV/DB2/PDWPDB/createSchema_Advanced.sql
   ./PSDEV/DB2/BPMPSDB/createProcedure_Advanced.sql
   ./PSDEV/DB2/BPMPSDB/createSchema_Advanced.sql
   ./PSDEV/DB2/MEPSDB/createSchema_Messaging.sql

   **NOTE:** The directory names can change as different environments are built.
   ***NOTE:** Review these sql files before running them. Make sure they meet Corporate IT Standards.

10. Change createTables.sh into what is similar as below. Then save it. Notice the database you need to connect to is listed right after DB2 in the directory path.

   db2 connect to CELLPSDB
   db2 -vtf ./BPMPS_DMCell01x/DB2/CELLPSDB/createSchema_Advanced.sql
   db2 connect reset

   db2 connect to CMNPSDB
   db2 -vtf ./PSDEV/DB2/CMNPSDB/createSchema_Advanced.sql
   db2 connect reset

   db2 connect to BPEPSDB
   db2 -vtf ./PSDEV/DB2/BPEPSDB/createSchema_Advanced.sql
   db2 connect reset

   db2 connect to PDWPSDB
   db2 -vtf ./PSDEV/DB2/PDWPSDB/createSchema_Advanced.sql
   db2 connect reset

   db2 connect to BPMPSDB
db2 -vtf ./PSDEV/DB2/BPMPSDB/createProcedure_Advanced.sql
db2 -vtf ./PSDEV/DB2/BPMPSDB/createSchema_Advanced.sql
db2 connect reset

db2 connect to MEPSDB
db2 -vtf ./PSDEV/DB2/MEPSDB/createSchema_Messaging.sql
db2 connect reset

11. Run:
   chmod 755 createTables.sh
12. Run:
   ./createTables.sh

**Testing the new PS DE environment:**

Now that the DBA work is complete.

4. Run: - this will popular product tables.

   /opt/IBM/WebSphere/AppServer/BPM/v8.5/profiles/prof_aix1awas26x_DM_BPMPS_01x/bin/bootstrapProcessServerData.sh -clusterName PS_AppCluster01x

5. Start the Deployment Environments.

6. For Process Center - Test by using these URLs:

   **NOTE:**
   1) You must use a supported Browser - IE 10, Chrome 20 or greater, Safari 5 or greater and Firefox 10.
   2) Always use a new Browser session, never just open a additional tab.

   Process Center **EXAMPLES:**
   **Test in this order: - check servers for correct port numbers**

   http://aix1awas26x:9082/bpc
   http://aix1awas26x:9080/BusinessSpace
   http://aix1awas26x:9082/PerformanceAdmin/login.jsp
   http://aix1awas26x:9080/ProcessAdmin/login.jsp
   http://aix1awas26x:9080/ProcessPortal/login.jsp
Post Config Setup

This section is a summary following URL. This procedure puts all the steps of getting the communication of PC and PS in one place.

**IBM BPM 8.5.5 Info center source:**
http://www-01.ibm.com/support/knowledgecenter/api/content/SSFTDH_8.5.0/com.ibm.wbpm.admin.doc/topics/ti ns_cnfg_ssl_nd.html?locale=en

1. Import the **Process Server** WebSphere® Application Server root SSL certificate into Process Center.
   a. In the Process Center WebSphere Application Server administrative console, click **Security > SSL certificate and key management > Key stores and certificates > CellDefaultTrustStore > Signer certificates > Retrieve from port.**
   b. Enter the Host name, secure Port of the Process Server profile (WC_defaulthost_secure), and Alias, and click Retrieve signer information. You can retrieve the signer information for any of the servers listed.
      **Note:** The WC_defaulthost_secure profile is located in the WebSphere Application Server administrative console. Navigate to **Servers > Server Types > WebSphere Application Servers > SERVER_NAME > Ports.**
   c. Click Apply and save your changes.

2. Import the **Process Center** root SSL certificate into Process Server.
   a. In the Process Server WebSphere Application Server administrative console, click **Security > SSL certificate and key management > Key stores and certificates > CellDefaultTrustStore > Signer certificates > Retrieve from port.**
   b. Enter the Host name, secure Port of the Process Center profile (WC_defaulthost_secure), and Alias, and click Retrieve signer information. You can retrieve the signer information for any of the servers listed.
      **Note:** The WC_defaulthost_secure profile is located in the WebSphere Application Server administrative console. Navigate to **Servers > Server Types > WebSphere Application Servers > SERVER_NAME > Ports.**
   c. Click Apply and save your changes.

3. Specify HTTPS URLs and ports for all Representational State Transfer (REST) services for your environment by using the REST service administrative console page.
   a. Click Services > REST services > REST service providers.
   b. Select all from the Scope selection pull-down menu.
   c. Click on the REST service provider in Provider Application field and specify the Host name or virtual host in a load-balanced environment and the Port.
      **Important:** For a REST Services Gateway deployment manager, use the deployment manager host name and port; do not use the IHS host name and port.
   d. Click Apply and save your changes.

4. Set the `deploySnapshotUsingHttps` property to `true` to make sure that the Process Center connects to the Process Server using SSL for online deployment. Run the following commands on both the Process Center and the Process Server.
   ```
   ON aixlawas25x
   wsadmin -conntype NONE -lang jython
   ```
wsadmin> ps = AdminConfig.getid("/Cell:/ServerCluster:\nPC_AppCluster01x/BPMClusterConfigExtension:/BPMProcessCenter:/BPMServerSecurity:") # You must use BPMProcessCenter or BPMProcessServer depending on your environment
wsadmin> print AdminConfig.show(ps) #look at deploySnapshotUsingHttps to see the current value
wsadmin> AdminConfig.modify(ps, [['deploySnapshotUsingHttps', 'true']]) # default value is false
wsadmin> print AdminConfig.show(ps) #verify your change
wsadmin> AdminConfig.save()
wsadmin> exit

ON aixlawas26x
wsadmin -conntype NONE -lang jython
wsadmin> ps = AdminConfig.getid("/Cell:/ServerCluster:\nPS_AppCluster01x/BPMClusterConfigExtension:/BPMServerSecurity:") # You must use BPMProcessCenter or BPMServer depending on your environment
wsadmin> print AdminConfig.show(ps) #look at deploySnapshotUsingHttps to see the current value
wsadmin> AdminConfig.modify(ps, [['deploySnapshotUsingHttps', 'true']]) # default value is false
wsadmin> print AdminConfig.show(ps) #verify your change
wsadmin> AdminConfig.save()
wsadmin> exit

Note: See below for details on the version support differences:

5. Restart the Process Server and Process Center servers.
   a. Use the WebSphere Application Server administrative console to stop the clusters.
   b. Stop the node agent and deployment manager.
   c. Re-start the node agent.
   d. Re-start the deployment manager.
   e. Use the WebSphere Application Server administrative console to start the clusters.

6. Verify your configuration.
   a. Log in to the Process Center console using an https connection.
   b. From the Server tab, click runtime server > configure server and confirm that it is opened in a secure browser with https.

Add nodes to a DE
This section is for adding new nodes to an existing PC or PS.

1) Create a BPM 8.5.5 custom profile on the new machine.
2) addNode.sh to the Cell that is getting the new node.
3) Go to: Servers -> Deployment Environments -> <DEname> -> Deployment Topology
4) Select the new node from the drop down
5) Click Add
6) Set the number of servers per cluster you want.
7) Click OK
8) Click Save
9) Restart environment.
Manual Adjustments for large LDAP search results set

Edit wimconfig.xml
The ACME LDAP is returning more than 4500 entries and it is causing an exception.

1. edit wimconfig.xml
2. change maxSearchResults="4500" TO maxSearchResults="/00000"

We need to change this file on aix1awas25x, aix1awas26x and aix1awas27x:
   /opt/IBM/WebSphere/AppServer/BPM/v8.5/profiles/prof_aix1awas25x_DM_BPMPC_01x/config/cells/BPMP C_DMCell01x/wim/config/wimconfig.xml
   /opt/IBM/WebSphere/AppServer/BPM/v8.5/profiles/prof_aix1awas25x_Node_BPMPC_01x/config/cells/BPMP C_DMCell01x/wim/config/wimconfig.xml

   /opt/IBM/WebSphere/AppServer/BPM/v8.5/profiles/prof_aix1awas26x_DM_BPMPS_01x/config/cells/BPMP S_DMCell01x/wim/config/wimconfig.xml
   /opt/IBM/WebSphere/AppServer/BPM/v8.5/profiles/prof_aix1awas26x_Node_BPMPS_01x/config/cells/BPMP S_DMCell01x/wim/config/wimconfig.xml

   /opt/IBM/WebSphere/AppServer/BPM/v8.5/profiles/prof_aix1awas27x_DM_BPMPC_01x/config/cells/BPMP C_DMCell01x/wim/config/wimconfig.xml
   /opt/IBM/WebSphere/AppServer/BPM/v8.5/profiles/prof_aix1awas27x_Node_BPMPC_01x/config/cells/BPMP C_DMCell01x/wim/config/wimconfig.xml

3. restart PC and PS environment
4. Check the logs.

Add custom property to BPMPSDB Data source

The BPM Process Server data source is throwing an exception because the cursor is not closed after a transaction commit.

1. Logon to the BPM 8.5.5 PS admin console
   http://aix1awas26x:9060/ibm/console
2. Go to: Resources -> JDBC -> Data Sources
3. Click on BPM Process Server data source – at the PS_AppCluster01x cluster level.
4. On the Right Hand Side click on: Custom properties
5. Click New and added these values to these fields:
   Name: allowNextOnExhaustedResultSet
   Value: 2
   Description:
Determine whether ResultSet are closed or kept open when committing a transaction. 1 (HOLD_CURSORS_OVER_COMMIT), 2 (CLOSE_CURSORS_AT_COMMIT).

6. Click OK
7. Click Save
8. Restart PS_AppCluster01x members.

Appendix A: Change Passwords on the file repository IDs
The Deployment Environment(DE) Admin ID file based password change on either PC or PS is a multi-step process.

For PC or PS DE Admin ID
1) Run the JACL:
   cd <BPM_INSTALL_root>/profiles/*Dmgr*/bin
   ./wsadmin.sh -conntype NONE
   Cut and Paste these commands with your info:
   $AdminTask changeFileRegistryAccountPassword {-userId <DEadmin_ID> -password <DEadmin_new_password>}
   $AdminConfig save

2) Go in to Auth Aliases and update with new password the DE admin you’re working on.
3) Re-start BPM environment

Update PS with new PC DE admin password:
1) Go To: Servers -> Deployment Environments -> <DEname> -> Additional Properties -> Process Server Settings
2) Change password
3) Click OK
4) Click Save
5) Go in to Auth Aliases and update the PC DE admin ID with the new password.
6) Click OK
7) Click Save
8) Re-start PS

Add User on the file repository
Run the JACL:
   cd <BPM_INSTALL_root>/profiles/*Dmgr*/bin
   ./wsadmin.sh -conntype NONE
   Cut and Paste these commands with your info:
   $AdminTask addFileRegistryAccount {-userId <ID> -password <new_password>}
   $AdminConfig save
Appendix B: BPM 8.5.5 beyond the POC

1. To move beyond a POC an application has to be designed, built and an inventory of features has to be done.
2. Estimated work load has to be established.
3. The inventory from step 1 and the estimated work load from step 2 need to be run through IBM Techline. IBM Techline will provide an initial sizing of the environment that will be needed to meet the estimated work load.
4. Monitoring will need to be setup on the Databases and file systems to assure that there is enough space available at all times.
5. Memory can be monitored by OS system tools like top, topas ... etc.
6. If the estimated work load changes then resource like file system space, CPU and RAM will need to be re-evaluated.