

PERFICIENT



# Command Line Install and Config For IBM BPM 8.5

---

**Command line Install and Configure of BPM v8.5**

**Technical Architect: Chuck Misuraca**

# Change History

Table 1: Document Change History

Document Revision & Date	Editor	Summary of Change
First Draft 1.0 10/01/13	Chuck Misuraca	Initial version

## Table of Contents

Change History .....	2
IBM BPMv8.5 - Linux requirements: .....	4
IBM DB2 - Linux requirements: .....	5
Preparing Linux systems for DB2 installation .....	5
IBM BPMv8.5 - Product Install: .....	8
pre-requisites: .....	8
IBM BPMv8.5 - Product Config: .....	9
pre-requisites: .....	9
testing: .....	10
IBM BPMv8.5 - DBA instructions: .....	11
Create the following DB2 databases using this script:.....	11
Appendix A: BPMconfig property file modifications .....	13
pre-requisites: .....	13
DB2 Single Cluster Property file for Process Center .....	13
Changes the values that are BOLD if needed:.....	13
#To add a cluster member. Vertical Clone - optional .....	22
#To add a node and cluster member. Horizontal Clone - optional.....	22
DB2 Three Cluster Property file for Process Center.....	24
Changes the values that are BOLD if needed:.....	24
DB2 Single Cluster Property file for Process Server .....	36
Changes the values that are BOLD if needed:.....	36
#To add the Databases change the values that are in RED. - CUSTOMER Specific.....	45
#To add a cluster member. Vertical Clone - optional .....	50
#To add a node and cluster member. Horizontal Clone - optional.....	51
DB2 Three Cluster Property file for Process Server .....	52
Changes the values that are BOLD if needed:.....	52
#To add the Databases change the values that are in RED. - CUSTOMER Specific.....	64
Appendix B: Addition LDAP Groups needed for BPM access.....	70
Appendix C: DB2 Setup Instructions .....	72
DB2 Install Section .....	72
DB2 Configuration Section .....	72

Appendix D: LDAP Setup Instructions - This process needs to be updated with CUSTOMER specific steps.	74
pre-requisites:	74
Register an LDAP user directory with WebSphere Application Server	74
Grant access to LDAP users and groups	84
Configure the SSL connection to the LDAP server	85
Import the LDAP server certificate	86
Switch to an SSL connection to the LDAP server	90

## IBM BPMv8.5 - Linux requirements:

- BPM - Minimum 4 GB available disk space for installation. For installer execution, approximately 600 MB of space is required in the /tmp directory
- Minimum 4 GB RAM per CPU for WPS and a Minimum of 8 GB RAM per CPU for DB2. These are just starter numbers.
- **Description:** Linux offers a number of tunable TCP parameters whose default values might be sufficient for WebSphere Application Server. It might be necessary to tune these parameters in some exceptional cases. For example, you might reduce the number of sockets in specific states such as TIME\_WAIT, modify the TCP keepalive operation, or modify other functions.
- **How to view or set:** Consult the detailed information available under "man tcp" under your Linux distribution.
- **RedHat Advanced Server 2.1 kernel update**
  - **Description:** Kernel updates for RedHat Advanced Server 2.1 implemented changes that affect WebSphere Application Server performance, especially memory-to-memory HTTP session replication.
  - **How to view or set:**
    1. Issue the **uname -a** command
    2. If you are running any kernel prior to 2.4.9-e.23, upgrade at least to the RedHat Advanced Server 2.1 kernel, but preferably to the latest supported.
  - **Default value:** 2.4.9-e.3
  - **Recommended value:** 2.4.9-e.23
- **Linux file descriptors (ulimit)**
  - **Description:** Specifies the number of open files that are supported. The default setting is typically sufficient for most applications. If the value set for this parameter is too low, a file open error, memory allocation failure, or connection establishment error might be displayed.
  - **How to view or set:** Check the UNIX reference pages on the **ulimit** command for the syntax of different shells. To set the **ulimit** command to 8000 for the KornShell shell (ksh), issue the **ulimit -n 8192** command. Use the **ulimit -a** command to display the current values for all limitations on system resources.
  - **Default value:** For SUSE Linux Enterprise Server 9 (SLES 9), the default is 1024.
  - **Recommended value:** 8192
  - Increase the allowable stack size, number of open files, and number of processes by adding the following lines to the end of the /etc/security/limits.conf file or changing the values if the lines already exist:
    1. # - stack - max stack size (KB)
    2. \* soft stack 32768

```

3. * hard stack 32768
4. # - nofile - max number of open files
5. * soft nofile 65536
6. * hard nofile 65536
7. # - nproc - max number of processes
8. * soft nproc 16384
9. * hard nproc 16384

```

- **Connection backlog**
  - **Description:** Change the following parameters when a high rate of incoming connection requests result in connection failures:
  - `echo 3000 > /proc/sys/net/core/netdev_max_backlog`
  - `echo 3000 > /proc/sys/net/core/somaxconn`
- **TCP\_KEEPALIVE\_INTERVAL**
  - **Description:** Determines the wait time between isAlive interval probes.
  - **How to view or set:** Issue the following command to set the value:  
`echo 15 > /proc/sys/net/ipv4/tcp_keepalive_intvl`
  - **Default value:** 75 seconds
  - **Recommended value:** 15 seconds
- **TCP\_KEEPALIVE\_PROBES**
  - **Description:** Determines the number of probes before timing out.
  - **How to view or set:** Issue the following command to set the value:  
`echo 5 > /proc/sys/net/ipv4/tcp_keepalive_probes`
  - **Default value:** 9 seconds
  - **Recommended value:** 5 seconds
- Set the umask value to 022 using the following command:
  - `umask 022`

## IBM DB2 - Linux requirements:

### Preparing Linux systems for DB2 installation

This document assumes that a separate DB2 server will be used for WPS.

Table 1. Enforced minimum settings for Linux interprocess communication kernel parameters

IPC kernel parameter	Enforced minimum setting
kernel.shmmni (SHMMNI)	256 * <size of RAM in GB>
kernel.shmmax (SHMMAX)	<size of RAM in bytes> <sup>1</sup>
kernel.shmall (SHMALL)	2 * <size of RAM in the default system page size> <sup>2</sup>
kernel.sem (SEMMNI)	256 * <size of RAM in GB>
kernel.sem (SEMMSL)	250

Table 1. Enforced minimum settings for Linux interprocess communication kernel parameters

IPC kernel parameter	Enforced minimum setting
kernel.sem (SEMMNS)	256 000
kernel.sem (SEMOPM)	32
kernel.msgmni (MSGMNI)	1 024 * <size of RAM in GB>
kernel.msgmax (MSGMAX)	65 536
kernel.msgmnb (MSGMNB)	65 536 <sup>3</sup>
<ol style="list-style-type: none"> <li>On 32-bit Linux operating systems, the enforced minimum setting for SHMMAX is limited to 4 294 967 295 bytes.</li> <li>SHMALL limits the total amount of virtual shared memory that can be allocated on a system. Each DB2 data server efficiently manages the amount of system memory it consumes, also known as committed memory. The DB2 data server allocates more virtual memory than it commits to support memory preallocation and dynamic memory management. Memory preallocation benefits performance. Dynamic memory management is the process of growing and shrinking real memory usage within separate virtual shared memory areas. To support memory preallocation and dynamic memory management effectively, data servers frequently have to allocate more virtual shared memory on a system than the amount of physical RAM. The kernel requires this value as a number of pages.</li> <li>Load performance might benefit from a larger message queue size limit, specified in bytes by MSGMNB. You can view message queue usage by running the <code>ipcs -q</code> command. If the message queues are at capacity, or reaching capacity, during load operations, consider increasing the number of bytes the message queue size limit.</li> </ol>	

- Ensure that you have administrative (root) privileges. As a root user, you must also ensure that all kernel requirements are met before the DB2 Express installation begins. You can locate the current values by parsing the output of the `ipcs -l` command. To change the values, add the following lines, in the following order, to the `/etc/sysctl.conf` file. This example is for a computer with 16GB of RAM:

```

2. kernel.shmmni=4096
3. kernel.shmmax=17179869184
4. kernel.shmall=8388608
5. #kernel.sem=<SEMMSL><SEMMNS><SEMOPM><SEMMNI>
6. kernel.sem=250 256000 32 4096
7. kernel.msgmni=16384
8. kernel.msgmax=65536
   kernel.msgmnb=65536

```

- Run the following command to load the settings from the `/etc/sysctl.conf` file:  

```
sysctl -p
```

For additional information, see [Kernel parameter requirement for Linux](#) in the DB2 information center.

10. Increase the allowable stack size, number of open files, and number of processes by adding the following lines to the end of the `/etc/security/limits.conf` file or changing the values if the lines already exist:

```
11. # - stack - max stack size (KB)
12. * soft stack 32768
13. * hard stack 32768
14. # - nofile - max number of open files
15. * soft nofile 65536
16. * hard nofile 65536
17. # - nproc - max number of processes
18. * soft nproc 16384
    * hard nproc 16384
```

Save and close the file, and log off and log in again. You can check the current maximum number of open files by using `ulimit -n`. The `ulimit` requirement is dynamically calculated at installation time and might need to be larger based on the options you select. For more information about this setting, run `man limits.conf` or see the topic [Preparing the operating system for product installation](#) in the WebSphere Application Server information center.

19. If you have previously installed and uninstalled DB2, ensure that the previous database entries in the `/etc/services` file have been deleted. For example, if the previous entry `DB2_instance-name_suffix 50000/tcp` still exists, the new installation will use the next available port, 50001, which might not work with your configuration. For more information, see [Verifying port range availability](#) in the DB2 information center.
20. Reboot the system.  
For [Addition DB2 10.1 Linux information](#).

## IBM BPMv8.5 - Product Install:

This section is for installing IBM BPM v8.5 using the IBM Installation Manager response files that are shipped with the product.

### pre-requisites:

- WebSphere Install Directory name
  - root password
- 1) untar BPMv85 install media. Media file names are: BPM\_Adv\_V85\_Linux\_x86\_1\_of\_3.tar.gz, BPM\_Adv\_V85\_Linux\_x86\_2\_of\_3.tar.gz and BPM\_Adv\_V85\_Linux\_x86\_3\_of\_3.tar.gz
  - 2) put all 3 untar'ed disk images into BPM\_Adv\_V85\_Linux\_x86\_2\_of\_3\_Folder
  - 3) make copy of response **bpmAdv\_linux\_response\_root\_64bit.xml**  
Note: bpmAdv\_linux\_response\_root\_64bit.xml is located in directory:  
<BPMv8.5\_Install\_image\_extract\_directory>/responsefiles/BPM/  
Example name: Dev\_bpmAdv\_linux\_response\_root\_64bit.xml
  - 4) edit response file copy.
  - 5) Change install paths names to the match directory naming standards for your IT Shop.
  - 6) save response file.
  - 7) set permissions 755 on response file
  - 8) run command:  
./IM64/installc -acceptLicense input  
./responsefiles/BPM/My\_bpmAdv\_linux\_response\_root\_64bit.xml -log ./silent\_install.log



## IBM BPMv8.5 - Product Config:

This section is for configuring IBM BPM v8.5 using the BPMconfig utility that ships with the product. The directory names in this section maybe different, depending on what values you put into the install response file used in the prior section.

### pre-requisites:

- Deployment Environment name. Example: DEPCINT or DEPSINT
  - Process center Admin ID and Password. Example: ID = DEPCINTadmin PW = DEPCINTadmin OR ID = DEPSINTadmin PW = DEPSINTadmin - these should be in LDAP
  - WAS Cell Admin ID and Password. Example: ID = admin PW = admin - these should be in LDAP
  - Node names - for Dmgr and all nodes
  - Hostnames. If more than one machines in the cell. This will be relevant for QA and PROD.
  - Install Path that was selected in the install response file.
  - profile names. Dmgr and node(s).
  - Initial Starting Port for each node - follow IT standards.
  - Optional - Cluster name(s)
  - Optional - Cluster Member name(s)
  - DB2 instance ID and Password
  - Database names for CELLDB, CMNDB, BPMDB, and PDWDB. IF DIFFERENT!
  - For Process Server there will be an additional 4 database BPEDB, MEDB, BSPCDB and ECMDB
1. Put a **copy** of the properties file **into** the **<WAS\_HOME>/bin** directory. **Property files** are **located in <WAS\_HOME>/BPM/samples/config/advanced**  
**NOTE:** For this example, we are using "Advanced-PC-SingleCluster-DB2.properties". **BUT you can use this process on any PC or PS DB2 property file.**
  2. **CD to <WAS\_HOME>/bin**
  3. Edit the properties file. **The changes needed are listed in [Appendix A](#).**
  4. Run command:  
./BPMConfig.sh -create -de Advanced-PC-SingleCluster-DB2.properties
  5. Once this is finished: tar up the dbscripts directory under the Dmgr profile.
  6. Give the dbscripts tar file to the DB2 DBA to run on the DB2 server for that specific environment.
  7. **Once the DBA is done:**
  8. Start the Deployment Environment(DE).  
Example of one way to start the DE:  
./BPMConfig.sh -start Advanced-PC-SingleCluster-DB2.properties  
For more [BPMConfig features](#)
  9. **cd <WAS\_HOME>/profiles/<Dmgr Profile Name>/bin**
  10. **Run:**  
./bootstrapProcessServerData.sh -clusterName SingleCluster  
#OR for 3 cluster ENVIRONMENT  
./bootstrapProcessServerData.sh -clusterName AppTarget

11. Restart the Deployment Environment(DE).

Example of one way to restart the DE:

```
./BPMConfig.sh -stop Advanced-PC-SingleCluster-DB2.properties
```

```
./BPMConfig.sh -start Advanced-PC-SingleCluster-DB2.properties
```

## testing:

12. 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:**

http://test.cmm.com:9080/ProcessCenter/login.jsp

http://test.cmm.com:9080/ProcessPortal/login.jsp

http://test.cmm.com:9080/ProcessAdmin/login.jsp

http://test.cmm.com:9080/PerformanceAdmin/login.jsp

13. For Process Server - Test by using these URLs:

**EXAMPLE:**

http://test.cmm.com:9080/bpc

http://test.cmm.com:9080/BusinessSpace

http://test.cmm.com:9080/PerformanceAdmin/login.jsp

http://test.cmm.com:9080/ProcessAdmin/login.jsp

http://test.cmm.com:9080/ProcessPortal/login.jsp

## IBM BPMv8.5 - DBA instructions:

This section is for configuring DB2 with the scripts that were produced from the BPMConfig command.

### Create the following DB2 databases using this script:

It is assumed that the customer is committed to separate database on the WPS TEST, QA and PROD environments.

Separate database will allow for better sizing and tuning. **For a Process Center Environment there will be 4 databases. For a Process Server Environment there will be 8 databases.**

- BPMDB for the Process database
- PDWDB for the Performance Data Warehouse database
- CMNDB for Deployment Environment Common database.
- CELLDDB for the Cell Common database
- MEDB for Message Engine. - Process Server Only
- BPEDB for BPEL Engine - Process Server Only
- BSPCDB for Business Space - Process Server Only
- ECMDB for Embedded ECM - Process Server Only

1. un-tar the dbscripts tar file.
2. su - db2 instance owner id. Example: db2inst1
3. cd dbscripts/<cell\_name>/DB2/CELLDB
4. run ./createDatabase.sh

**NOTE: View this file before running it to make sure it meets the IT Standards in place.**

5. connect to CELLDDB
6. run: db2 -tvf ./createSchema\_Advanced.sql
7. run: db2 connect reset
8. cd dbscripts/<DE\_Name>/DB2/BPMDB
9. run ./createDatabase.sh

**NOTE: View this file before running it to make sure it meets the IT Standards in place.**

10. connect to BPMDB
11. run: db2 -tvf ./createSchema\_Advanced.sql  
run: db2 -tdGO -vf ./createProcedure\_Advanced.sql
12. run: db2 connect reset
13. cd dbscripts/<DE\_Name>/DB2/CMNDB
14. run ./createDatabase.sh

**NOTE: View this file before running it to make sure it meets the IT Standards in place.**

15. connect to CMNDB
16. run: db2 -tvf ./createSchema\_Advanced.sql
17. run: db2 connect reset
18. cd dbscripts/<DE\_Name>/DB2/PDWDB
19. run ./createDatabase.sh

**NOTE: View this file before running it to make sure it meets the IT Standards in place.**

20. connect to PDWDB
21. run: db2 -tvf ./createSchema\_Advanced.sql

22. run: db2 connect reset

\*\*\*\*\* IF this a Process Server Environment Continue, else STOP right here. \*\*\*\*\*

23. cd dbscripts/<DE\_Name>/DB2/ECMDB

24. run ./ createDatabase.sh

**NOTE: View this file before running it to make sure it meets the IT Standards in place.**

25. connect to ECMDB

26. run: db2 -tvf ./createSchema\_Advanced.sql

27. run: db2 connect reset

28. cd dbscripts/<DE\_Name>/DB2/BSPCDB

29. run ./ createDatabase.sh

**NOTE: View this file before running it to make sure it meets the IT Standards in place.**

30. connect to BSPCDB

31. run: db2 -tvf ./createSchema\_Advanced.sql

32. run: db2 connect reset

33. cd dbscripts/<DE\_Name>/DB2/BPEDB

34. run ./ createDatabase.sh

**NOTE: View this file before running it to make sure it meets the IT Standards in place.**

35. connect to BPEDB

36. run: db2 -tvf ./createSchema\_Advanced.sql

37. run: db2 connect reset

38. cd dbscripts/<DE\_Name>/DB2/MEDB

39. run ./ createDatabase.sh

**NOTE: View this file before running it to make sure it meets the IT Standards in place.**

40. connect to MEDB

41. run: db2 -tvf ./createSchema\_Messaging.sql

42. run: db2 connect reset

## Appendix A: BPMconfig property file modifications

***This section is designed so the reader can copy a complete BPMConfig property file and pasted it into a text file. The text file then can be modified to have the customers values and naming standards.***

### pre-requisites:

- Deployment Environment name. Example: DEPCINT or DEPSINT
- Process center Admin ID and Password. Example: ID = DEPCINTadmin PW = DEPCINTadmin OR ID = DEPSINTadmin PW = DEPSINTadmin - these should be in LDAP
- WAS Cell Admin ID and Password. Example: ID = admin PW = admin - these should be in LDAP
- Node names - for Dmgr and all nodes
- Hostnames. If more than one machines in the cell. This will be relevant for QA and PROD.
- Install Path that was selected in the install response file.
- profile names. Dmgr and node(s).
- Initial Starting Port for each node - follow IT standards.
- Optional - Cluster name(s)
- Optional - Cluster Member name(s)
- DB2 instance ID and Password
- Database names for CELLDB, CMNDB, BPMDB, and PDWDB. IF DIFFERENT!
- For Process Server there will be an additional 4 database BPEDB, MEDB, BSPCDB and ECMDB

## DB2 Single Cluster Property file for Process Center

Changes the values that are **BOLD** if needed:

#####

# Deployment environment basic properties. #

#####

**bpm.de.name=DEPC**

# Options: true, false If this is set false, database tables are created during deployment environment creation when BPMConfig is run with the create de action . If set to true, the tables need to **be created manually.**

#bpm.de.deferSchemaCreation=false

**bpm.de.deferSchemaCreation=true**

# Type of product configuration: Express, Standard, Advanced or AdvancedOnly

bpm.de.type=Advanced

# Type of deployment environment: Process Center or Process Server

bpm.de.environment=Process Center

#####

# Deployment environment administrator authentication alias. #

#####

bpm.de.authenticationAlias.1.name=DeAdminAlias

**bpm.de.authenticationAlias.1.user=DEPCadmin**

**bpm.de.authenticationAlias.1.password=DEPCadmin**

#####

# Database user authentication alias #

#####

bpm.de.authenticationAlias.2.name=BPM\_DB\_ALIAS

**bpm.de.authenticationAlias.2.user=db2inst1**

**bpm.de.authenticationAlias.2.password=ibmroot**

#####

# Deployment Environment Administrator role and authentication alias association #

#####

# bpm.de.roleMapping.DeAdmin.name

bpm.de.roleMapping.1.name=DeAdmin

bpm.de.roleMapping.1.alias=DeAdminAlias

#####

# Cell properties #

#####

**bpm.cell.name=PCCell1**

#####

# Cell (WAS) administration authentication alias #

#####

bpm.cell.authenticationAlias.1.name=CellAdminAlias

**bpm.cell.authenticationAlias.1.user=admin**

**bpm.cell.authenticationAlias.1.password=admin**

#####

# Cell role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.cell.roleMapping.1.name=CellAdmin

bpm.cell.roleMapping.1.alias=CellAdminAlias

# Database at the cell level. This is valid for Advanced and AdvancedOnly DE types.

bpm.cell.db=CellOnlyDb

#####

# Deployment manager properties #

#####

# Name of the deployment manager node.

**bpm.dmgr.nodeName=Dmgr**

# Deployment manager hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.dmgr.hostname=localhost**

# The installation location of the BPM product.

**bpm.dmgr.installPath=/opt/ibm/WebSphere/BPM/v8.5**

# Deployment manager profile name.

**bpm.dmgr.profileName=DmgrProfile**

# To overwrite the default port assignments, specify the starting port number for generating and assigning all ports for the deployment manager profile.

**bpm.dmgr.initialPortAssignment=**

# Deployment manager soap port. Update this property after creating the deployment manager profile. It is used to connect to the deployment manager when creating remote nodes.

**bpm.dmgr.soapPort=8879**

**bpm.de.cluster.1.name=SingleCluster**

# Cluster capabilities: Application, Support, Messaging. If this is a single cluster environment, specify all three:Application, Support and Messaging.

**bpm.de.cluster.1.capabilities=Application,Messaging,Support**

# Messaging cluster used by this cluster.

**bpm.de.cluster.1.usesMessagingCluster=**

# Support Cluster used by this cluster.

**bpm.de.cluster.1.usesSupportCluster=**

# List of databases that are used on this cluster. The values are based on the keys specified below for database sections.

**bpm.de.cluster.1.db=ProcessServerDb,SharedDb,PerformanceDb**

#####

# Properties for each node #

#####

**bpm.de.node.1.name=Node1**

# If the hostname is the same as deployment manager, this node will be created on the same computer. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.node.1.hostname=localhost**

**bpm.de.node.1.installPath=/opt/ibm/WebSphere/BPM/v8.5**

**bpm.de.node.1.profileName=Node1Profile**

**bpm.de.node.1.initialPortAssignment=**



#####

# Cluster member properties. #

#####

bpm.de.node.1.clusterMember.1.name=SingleClusterMember1

# The proportion of requests that are sent to this cluster member

bpm.de.node.1.clusterMember.1.weight=2

bpm.de.node.1.clusterMember.1.initialPortAssignment=

bpm.de.node.1.clusterMember.1.cluster=SingleCluster

#####

# Database properties #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.1.name=SharedDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.1.dbCapabilities=Messaging,BusinessSpace,CommonDB,BPC

# Database name.

**bpm.de.db.1.databaseName=CMNDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.1.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.1.hostname=localhost**

**bpm.de.db.1.portNumber=50000**

bpm.de.db.1.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.1.roleMapping.1.name=DbUser

bpm.de.db.1.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.1.roleMapping.2.name=DbUserXAR

bpm.de.db.1.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.1.schema=db2inst1**

#####

# Database properties #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.2.name=ProcessServerDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.2.dbCapabilities=ProcessServer,EmbeddedECM

# Database name.

**bpm.de.db.2.databaseName=BPMDDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.2.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.2.hostname=localhost**

**bpm.de.db.2.portNumber=50000**

bpm.de.db.2.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.2.roleMapping.1.name=DbUser

bpm.de.db.2.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.2.roleMapping.2.name=DbUserXAR

bpm.de.db.2.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.2.schema=db2inst1**

#####

# Database properties #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.3.name=PerformanceDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.3.dbCapabilities=PDW

# Database name.

**bpm.de.db.3.databaseName=PDWDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.3.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.3.hostname=localhost**

**bpm.de.db.3.portNumber=50000**

bpm.de.db.3.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.3.roleMapping.1.name=DbUser

bpm.de.db.3.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.3.roleMapping.2.name=DbUserXAR

bpm.de.db.3.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.3.schema=db2inst1**

#####

# Database properties #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.4.name=CellOnlyDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.4.dbCapabilities=CellScopedDB

# Database name.

**bpm.de.db.4.databaseName=CELLDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.4.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.4.hostname=localhost**

**bpm.de.db.4.portNumber=50000**

bpm.de.db.4.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.4.roleMapping.1.name=DbUser

bpm.de.db.4.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

```
bpm.de.db.4.roleMapping.2.name=DbUserXAR
bpm.de.db.4.roleMapping.2.alias=BPM_DB_ALIAS
bpm.de.db.4.schema=db2inst1
```

#### **#To add a cluster member. Vertical Clone - optional**

```
#####
```

```
# Cluster member properties. #
```

```
#####
```

```
bpm.de.node.1.clusterMember.2.name=SingleClusterMember2
```

```
# The proportion of requests that are sent to this cluster member
```

```
bpm.de.node.1.clusterMember.2.weight=2
```

```
bpm.de.node.1.clusterMember.2.initialPortAssignment=
```

```
bpm.de.node.1.clusterMember.2.cluster=SingleCluster
```

#### **#To add a node and cluster member. Horizontal Clone - optional**

```
#####
```

```
# Properties for each node #
```

```
#####
```

```
bpm.de.node.2.name=Node2
```

```
# If the hostname is the same as deployment manager, this node will be created on the same computer.
Do not use localhost for environments that are spread across multiple machines.
```

```
bpm.de.node.2.hostname=localhost
```

```
bpm.de.node.2.installPath=/opt/ibm/WebSphere/BPM/v8.5
```

```
bpm.de.node.2.profileName=Node2Profile
```

```
bpm.de.node.2.initialPortAssignment=
```

```
#####
```

```
# Cluster member properties. #
```

#####

**bpm.de.node.2.clusterMember.2.name=SingleClusterMember2**

# The proportion of requests that are sent to this cluster member

**bpm.de.node.2.clusterMember.2.weight=2**

**bpm.de.node.2.clusterMember.2.initialPortAssignment=**

**bpm.de.node.2.clusterMember.2.cluster=SingleCluster**

## DB2 Three Cluster Property file for Process Center

Changes the values that are **BOLD** if needed:

#####

# Deployment environment basic properties. #

#####

**bpm.de.name=De1**

# Options: true, false If this is set false, database tables are created during deployment environment creation when BPMConfig is run with the create de action . If set to true, the tables need to be created manually.

#bpm.de.deferSchemaCreation=false

**bpm.de.deferSchemaCreation=true**

# Type of product configuration: Express, Standard, Advanced or AdvancedOnly

bpm.de.type=Advanced

# Type of deployment environment: Process Center or Process Server

bpm.de.environment=Process Center

#####

# Deployment environment administrator authentication alias. #

#####

bpm.de.authenticationAlias.1.name=DeAdminAlias

**bpm.de.authenticationAlias.1.user=**

**bpm.de.authenticationAlias.1.password=**

#####

# Database user authentication alias #

#####

bpm.de.authenticationAlias.2.name=BPM\_DB\_ALIAS



**bpm.de.authenticationAlias.2.user=**

**bpm.de.authenticationAlias.2.password=**

#####

# Deployment Environment Administrator role and authentication alias association #

#####

# bpm.de.roleMapping.DeAdmin.name

bpm.de.roleMapping.1.name=DeAdmin

bpm.de.roleMapping.1.alias=DeAdminAlias

#####

# Cell properties #

#####

**bpm.cell.name=PCCell1**

#####

# Cell (WAS) administration authentication alias #

#####

bpm.cell.authenticationAlias.1.name=CellAdminAlias

**bpm.cell.authenticationAlias.1.user=**

**bpm.cell.authenticationAlias.1.password=**

#####

# Cell role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.cell.roleMapping.1.name=CellAdmin

bpm.cell.roleMapping.1.alias=CellAdminAlias

# Database at the cell level. This is valid for Advanced and AdvancedOnly DE types.

bpm.cell.db=CellOnlyDb

#####

# Deployment manager properties #

#####

# Name of the deployment manager node.

**bpm.dmgr.nodeName=Dmgr**

# Deployment manager hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.dmgr.hostname=localhost**

# The installation location of the BPM product.

**bpm.dmgr.installPath=C:/IBM/bpm85**

# Deployment manager profile name.

**bpm.dmgr.profileName=DmgrProfile**

# To overwrite the default port assignments, specify the starting port number for generating and assigning all ports for the deployment manager profile.

**bpm.dmgr.initialPortAssignment=**

# Deployment manager soap port. Update this property after creating the deployment manager profile. It is used to connect to the deployment manager when creating remote nodes.

**#CHANGE SOAP PORT IF an bpm.dmgr.initialPortAssignment= IS USE.**

**bpm.dmgr.soapPort=8879**

**bpm.de.cluster.1.name=AppCluster**

# Cluster capabilities: Application, Support, Messaging. If this is a single cluster environment, specify all three:Application, Support and Messaging.

bpm.de.cluster.1.capabilities=Application

# Messaging cluster used by this cluster.

bpm.de.cluster.1.usesMessagingCluster=MECluster

# Support Cluster used by this cluster.

bpm.de.cluster.1.usesSupportCluster=SupCluster

# List of databases that are used on this cluster. The values are based on the keys specified below for database sections.

bpm.de.cluster.1.db=ProcessServerDb,SharedDb

### **bpm.de.cluster.2.name=MECluster**

# Cluster capabilities: Application, Support, Messaging. If this is a single cluster environment, specify all three:Application, Support and Messaging.

bpm.de.cluster.2.capabilities=Messaging

# Messaging cluster used by this cluster.

bpm.de.cluster.2.usesMessagingCluster=

# Support Cluster used by this cluster.

bpm.de.cluster.2.usesSupportCluster=

# List of databases that are used on this cluster. The values are based on the keys specified below for database sections.

bpm.de.cluster.2.db=SharedDb

### **bpm.de.cluster.3.name=SupCluster**

# Cluster capabilities: Application, Support, Messaging. If this is a single cluster environment, specify all three:Application, Support and Messaging.

bpm.de.cluster.3.capabilities=Support

# Messaging cluster used by this cluster.

bpm.de.cluster.3.usesMessagingCluster=MECluster

# Support Cluster used by this cluster.

bpm.de.cluster.3.usesSupportCluster=

# List of databases that are used on this cluster. The values are based on the keys specified below for database sections.

bpm.de.cluster.3.db=PerformanceDb

#####

# Properties for each node #

#####

**bpm.de.node.1.name=Node1**

# If the hostname is the same as deployment manager, this node will be created on the same computer.  
Do not use localhost for environments that are spread across multiple machines.

**bpm.de.node.1.hostname=localhost**

**bpm.de.node.1.installPath=C:/IBM/bpm85**

**bpm.de.node.1.profileName=Node1Profile**

**bpm.de.node.1.initialPortAssignment=**

#####

# Cluster member properties. #

#####

**bpm.de.node.1.clusterMember.1.name=AppClusterMember1**

# The proportion of requests that are sent to this cluster member

**bpm.de.node.1.clusterMember.1.weight=2**

**bpm.de.node.1.clusterMember.1.initialPortAssignment=**

**# CHANGE the CLUSTER NAME IF YOU CHANGE THE NAME ABOVE**

**bpm.de.node.1.clusterMember.1.cluster=AppCluster**

#####

# Cluster member properties. #

#####

**bpm.de.node.1.clusterMember.2.name=MEClusterMember1**

# The proportion of requests that are sent to this cluster member

**bpm.de.node.1.clusterMember.2.weight=2**

**bpm.de.node.1.clusterMember.2.initialPortAssignment=**

**# CHANGE the CLUSTER NAME IF YOU CHANGE THE NAME ABOVE**

**bpm.de.node.1.clusterMember.2.cluster=MECluster**

#####

# Cluster member properties. #

#####

**bpm.de.node.1.clusterMember.3.name=SupClusterMember1**

# The proportion of requests that are sent to this cluster member

bpm.de.node.1.clusterMember.3.weight=2

**bpm.de.node.1.clusterMember.3.initialPortAssignment=**

**# CHANGE the CLUSTER NAME IF YOU CHANGE THE NAME ABOVE**

**bpm.de.node.1.clusterMember.3.cluster=SupCluster**

#####

# Properties for each node #

#####

**bpm.de.node.2.name=Node2**

# If the hostname is the same as deployment manager, this node will be created on the same computer.  
Do not use localhost for environments that are spread across multiple machines.

**bpm.de.node.2.hostname=localhost**

**bpm.de.node.2.installPath=C:/IBM/bpm85**

**bpm.de.node.2.profileName=Node2Profile**

**bpm.de.node.2.initialPortAssignment=**

#####

# Cluster member properties. #

#####

**bpm.de.node.2.clusterMember.1.name=AppClusterMember2**

# The proportion of requests that are sent to this cluster member

bpm.de.node.2.clusterMember.1.weight=2

**bpm.de.node.2.clusterMember.1.initialPortAssignment=**

**# CHANGE the CLUSTER NAME IF YOU CHANGE THE NAME ABOVE**

**bpm.de.node.2.clusterMember.1.cluster=AppCluster**

#####

# Cluster member properties. #

#####

**bpm.de.node.2.clusterMember.2.name=MEClusterMember2**

# The proportion of requests that are sent to this cluster member

bpm.de.node.2.clusterMember.2.weight=2

**bpm.de.node.2.clusterMember.2.initialPortAssignment=**

**# CHANGE the CLUSTER NAME IF YOU CHANGE THE NAME ABOVE**

**bpm.de.node.2.clusterMember.2.cluster=MECluster**

#####

# Cluster member properties. #

#####

**bpm.de.node.2.clusterMember.3.name=SupClusterMember2**

# The proportion of requests that are sent to this cluster member

bpm.de.node.2.clusterMember.3.weight=2

**bpm.de.node.2.clusterMember.3.initialPortAssignment=**

**# CHANGE the CLUSTER NAME IF YOU CHANGE THE NAME ABOVE**

**bpm.de.node.2.clusterMember.3.cluster=SupCluster**

#####

# Database properties #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.1.name=SharedDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.1.dbCapabilities=Messaging,BusinessSpace,CommonDB,BPC

# Database name.

**bpm.de.db.1.databaseName=CMNDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.1.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.1.hostname=localhost**

**bpm.de.db.1.portNumber=50000**

bpm.de.db.1.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.1.roleMapping.1.name=DbUser

bpm.de.db.1.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.1.roleMapping.2.name=DbUserXAR

bpm.de.db.1.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.1.schema=db2admin**

#####

# Database properties #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.2.name=ProcessServerDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.2.dbCapabilities=ProcessServer,EmbeddedECM

# Database name.

**bpm.de.db.2.databaseName=BPMDDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.2.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.2.hostname=localhost**

**bpm.de.db.2.portNumber=50000**

bpm.de.db.2.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.2.roleMapping.1.name=DbUser

bpm.de.db.2.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #



#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.2.roleMapping.2.name=DbUserXAR

bpm.de.db.2.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.2.schema=db2admin**

#####

# Database properties #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.3.name=PerformanceDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.3.dbCapabilities=PDW

# Database name.

**bpm.de.db.3.databaseName=PDWDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.3.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.3.hostname=localhost**

**bpm.de.db.3.portNumber=50000**

bpm.de.db.3.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.3.roleMapping.1.name=DbUser

bpm.de.db.3.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.3.roleMapping.2.name=DbUserXAR

bpm.de.db.3.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.3.schema=db2admin**

#####

# Database properties #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.4.name=CellOnlyDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.4.dbCapabilities=CellScopedDB

# Database name.

**bpm.de.db.4.databaseName=CELLDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.4.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.4.hostname=localhost**

**bpm.de.db.4.portNumber=50000**

bpm.de.db.4.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.4.roleMapping.1.name=DbUser

bpm.de.db.4.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.4.roleMapping.2.name=DbUserXAR

bpm.de.db.4.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.4.schema=db2admin**

## DB2 Single Cluster Property file for Process Server

Changes the values that are BOLD if needed:

#####

# Deployment environment basic properties. #

#####

**bpm.de.name=De1**

# Options: true, false If this is set false, database tables are created during deployment environment creation when BPMConfig is run with the create de action . If set to true, the tables need to be created manually.

#bpm.de.deferSchemaCreation=false

**bpm.de.deferSchemaCreation=true**

# Type of product configuration: Express, Standard, Advanced or AdvancedOnly

bpm.de.type=Advanced

# Type of deployment environment: Process Center or Process Server

bpm.de.environment=Process Server

**bpm.de.psServerName=De1ProcessServer**

# The intended purpose for this deployment environment. Options: Test, Staging, Production

**bpm.de.psPurpose=Production**

# Options: true, false. Set to false if the Process Server is online and can be connected to the Process Center

**bpm.de.psOffline=false**

# The transport protocol to access the Process Center specified above. Options: http or https.

**bpm.de.psProcessCenterTransportProtocol=http**

# The host name of the Process Center specified above.

**bpm.de.psProcessCenterHostname=**

# The port number for the Process Center specified above.

**bpm.de.psProcessCenterPort=**

```
#####

# Deployment environment administrator authentication alias. #

#####

bpm.de.authenticationAlias.1.name=DeAdminAlias

bpm.de.authenticationAlias.1.user=

bpm.de.authenticationAlias.1.password=

#####
#####

# Process center authentication alias. This is used by process server to connect to process center. #

#####
#####

bpm.de.authenticationAlias.2.name=ProcessCenterUserAlias

bpm.de.authenticationAlias.2.user=

bpm.de.authenticationAlias.2.password=

#####

# Database user authentication alias #

#####

bpm.de.authenticationAlias.3.name=BPM_DB_ALIAS

bpm.de.authenticationAlias.3.user=

bpm.de.authenticationAlias.3.password=

#####

# Deployment Environment Administrator role and authentication alias association #

#####

# bpm.de.roleMapping.DeAdmin.name

bpm.de.roleMapping.1.name=DeAdmin

bpm.de.roleMapping.1.alias=DeAdminAlias
```

#####  
#####

# Process center user role and authentication alias association. This role is used by process server to connect to process center. #

#####  
#####

# bpm.de.roleMapping.ProcessCenterUser.name

bpm.de.roleMapping.2.name=ProcessCenterUser

bpm.de.roleMapping.2.alias=ProcessCenterUserAlias

#####

# Cell properties #

#####

**bpm.cell.name=PSCell1**

#####

# Cell (WAS) administration authentication alias #

#####

bpm.cell.authenticationAlias.1.name=CellAdminAlias

**bpm.cell.authenticationAlias.1.user=**

**bpm.cell.authenticationAlias.1.password=**

#####

# Cell role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.cell.roleMapping.1.name=CellAdmin

bpm.cell.roleMapping.1.alias=CellAdminAlias

# Database at the cell level. This is valid for Advanced and AdvancedOnly DE types.

bpm.cell.db=CellOnlyDb

#####

# Deployment manager properties #

#####

# Name of the deployment manager node.

**bpm.dmgr.nodeName=Dmgr**

# Deployment manager hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.dmgr.hostname=localhost**

# The installation location of the BPM product.

**bpm.dmgr.installPath=C:/IBM/bpm85**

# Deployment manager profile name.

**bpm.dmgr.profileName=DmgrProfile**

# To overwrite the default port assignments, specify the starting port number for generating and assigning all ports for the deployment manager profile.

**bpm.dmgr.initialPortAssignment=**

# Deployment manager soap port. Update this property after creating the deployment manager profile. It is used to connect to the deployment manager when creating remote nodes.

**bpm.dmgr.soapPort=8879**

**bpm.de.cluster.1.name=SingleCluster**

# Cluster capabilities: Application, Support, Messaging. If this is a single cluster environment, specify all three:Application, Support and Messaging.

bpm.de.cluster.1.capabilities=Application,Messaging,Support

# Messaging cluster used by this cluster.

bpm.de.cluster.1.usesMessagingCluster=

# Support Cluster used by this cluster.

bpm.de.cluster.1.usesSupportCluster=

# List of databases that are used on this cluster. The values are based on the keys specified below for database sections.

**#bpm.de.cluster.1.db=ProcessServerDb,SharedDb,PerformanceDb**

**#this change was made because we added four databases at the bottom. See RED section**

**bpm.de.cluster.1.db=ProcessServerDb,SharedDb,Performance,DbMeOnlyDb,BpcOnlyDb,BspcOnlyDb, EcmOnlyDb**

#####

# Properties for each node #

#####

**bpm.de.node.1.name=Node1**

# If the hostname is the same as deployment manager, this node will be created on the same computer. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.node.1.hostname=localhost**

**bpm.de.node.1.installPath=C:/IBM/bpm85**

**bpm.de.node.1.profileName=Node1Profile**

**bpm.de.node.1.initialPortAssignment=**

#####

# Cluster member properties. #

#####

**bpm.de.node.1.clusterMember.1.name=SingleClusterMember1**

# The proportion of requests that are sent to this cluster member

**bpm.de.node.1.clusterMember.1.weight=2**

**bpm.de.node.1.clusterMember.1.initialPortAssignment=**

**bpm.de.node.1.clusterMember.1.cluster=SingleCluster**

#####

# Database properties #

#####



# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.1.name=SharedDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

#bpm.de.db.1.dbCapabilities=Messaging,BusinessSpace,CommonDB,BPC

**#this change was made because we added Four databases at the bottom. See RED section**

**bpm.de.db.1.dbCapabilities=CommonDB**

# Database name.

**bpm.de.db.1.databaseName=CMNDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.1.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.1.hostname=localhost**

**bpm.de.db.1.portNumber=50000**

bpm.de.db.1.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.1.roleMapping.1.name=DbUser

bpm.de.db.1.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.1.roleMapping.2.name=DbUserXAR

bpm.de.db.1.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.1.schema=db2admin**

#####

# Database properties #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.2.name=ProcessServerDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

#bpm.de.db.2.dbCapabilities=ProcessServer,EmbeddedECM

**#this change was made because we added Four databases at the bottom. See RED section**

bpm.de.db.2.dbCapabilities=ProcessServer

# Database name.

**bpm.de.db.2.databaseName=BPMDDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.2.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.2.hostname=localhost**

**bpm.de.db.2.portNumber=50000**

bpm.de.db.2.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.2.roleMapping.1.name=DbUser

bpm.de.db.2.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.2.roleMapping.2.name=DbUserXAR

bpm.de.db.2.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.2.schema=db2admin**

#####

# Database properties #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.3.name=PerformanceDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.3.dbCapabilities=PDW

# Database name.

**bpm.de.db.3.databaseName=PDWDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.3.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.3.hostname=localhost**

**bpm.de.db.3.portNumber=50000**

bpm.de.db.3.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.3.roleMapping.1.name=DbUser

bpm.de.db.3.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.3.roleMapping.2.name=DbUserXAR

bpm.de.db.3.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.3.schema=db2admin**

#####

# Database properties #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.4.name=CellOnlyDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.4.dbCapabilities=CellScopedDB

# Database name.

**bpm.de.db.4.databaseName=CELLDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.4.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.4.hostname=localhost**

**bpm.de.db.4.portNumber=50000**

bpm.de.db.4.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.4.roleMapping.1.name=DbUser

bpm.de.db.4.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.4.roleMapping.2.name=DbUserXAR

bpm.de.db.4.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.4.schema=db2admin**

**#To add the Databases change the values that are in RED. - CUSTOMER Specific**

#####

**# Database properties : ADD for CUSTOMER #**

#####

**# Keyword to use to refer to this set of database properties. This is not the database name.**

bpm.de.db.5.name=MeOnlyDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.5.dbCapabilities=Messaging

# Database name.

**bpm.de.db.5.databaseName=MEDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.5.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.5.hostname=localhost**

**bpm.de.db.5.portNumber=50000**

bpm.de.db.5.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.5.roleMapping.1.name=DbUser

bpm.de.db.5.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.5.roleMapping.2.name=DbUserXAR

bpm.de.db.5.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.5.schema=db2inst1**

#####

# Database properties : ADD for CUSTOMER #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.6.name=BpcOnlyDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.6.dbCapabilities=BPC

# Database name.

**bpm.de.db.6.databaseName=BPEDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.6.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.6.hostname=localhost**

**bpm.de.db.6.portNumber=50000**

bpm.de.db.6.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.6.roleMapping.1.name=DbUser

bpm.de.db.6.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.6.roleMapping.2.name=DbUserXAR

bpm.de.db.6.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.6.schema=db2inst1**

#####

# Database properties : **ADD for CUSTOMER** #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.7.name=BspcOnlyDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.7.dbCapabilities=BusinessSpace

# Database name.

**bpm.de.db.7.databaseName=BSPCEDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.7.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.7.hostname=localhost**

**bpm.de.db.7.portNumber=50000**

bpm.de.db.7.sqlServerWinAuth=false

#####



# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.7.roleMapping.1.name=DbUser

bpm.de.db.7.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.7.roleMapping.2.name=DbUserXAR

bpm.de.db.7.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.7.schema=db2inst1**

#####

# Database properties : ADD for CUSTOMER #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.8.name=EcmOnlyDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.8.dbCapabilities=EmbeddedECM

# Database name.

**bpm.de.db.8.databaseName=ECMDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.8.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.8.hostname=localhost**

**bpm.de.db.8.portNumber=50000**

bpm.de.db.8.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.8.roleMapping.1.name=DbUser

bpm.de.db.8.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.8.roleMapping.2.name=DbUserXAR

bpm.de.db.8.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.8.schema=db2inst1**

**#To add a cluster member. Vertical Clone - optional**

#####

# Cluster member properties. #

#####

**bpm.de.node.1.clusterMember.2.name=SingleClusterMember2**

# The proportion of requests that are sent to this cluster member

**bpm.de.node.1.clusterMember.2.weight=2**

**bpm.de.node.1.clusterMember.2.initialPortAssignment=**

**bpm.de.node.1.clusterMember.2.cluster=SingleCluster**

**#To add a node and cluster member. Horizontal Clone - optional**

**#####**

**# Properties for each node #**

**#####**

**bpm.de.node.2.name=Node2**

**# If the hostname is the same as deployment manager, this node will be created on the same computer.  
Do not use localhost for environments that are spread across multiple machines.**

**bpm.de.node.2.hostname=localhost**

**bpm.de.node.2.installPath=/opt/ibm/WebSphere/BPM/v8.5**

**bpm.de.node.2.profileName=Node2Profile**

**bpm.de.node.2.initialPortAssignment=**

**#####**

**# Cluster member properties. #**

**#####**

**bpm.de.node.2.clusterMember.2.name=SingleClusterMember2**

**# The proportion of requests that are sent to this cluster member**

**bpm.de.node.2.clusterMember.2.weight=2**

**bpm.de.node.2.clusterMember.2.initialPortAssignment=**

**bpm.de.node.2.clusterMember.2.cluster=SingleCluster**

## DB2 Three Cluster Property file for Process Server

Changes the values that are **BOLD** if needed:

#####

# Deployment environment basic properties. #

#####

**bpm.de.name=De1**

# Options: true, false If this is set false, database tables are created during deployment environment creation when BPMConfig is run with the create de action . If set to true, the tables need to be created manually.

#bpm.de.deferSchemaCreation=false

**bpm.de.deferSchemaCreation=true**

# Type of product configuration: Express, Standard, Advanced or AdvancedOnly

bpm.de.type=Advanced

# Type of deployment environment: Process Center or Process Server

bpm.de.environment=Process Server

**bpm.de.psServerName=De1ProcessServer**

# The intended purpose for this deployment environment. Options: Test, Staging, Production

**bpm.de.psPurpose=Production**

# Options: true, false. Set to false if the Process Server is online and can be connected to the Process Center

**bpm.de.psOffline=false**

# The transport protocol to access the Process Center specified above. Options: http or https.

bpm.de.psProcessCenterTransportProtocol=http

# The host name of the Process Center specified above.

**bpm.de.psProcessCenterHostname=**

# The port number for the Process Center specified above.

**bpm.de.psProcessCenterPort=**

#####

# Deployment environment administrator authentication alias. #

#####

bpm.de.authenticationAlias.1.name=DeAdminAlias

**bpm.de.authenticationAlias.1.user=**

**bpm.de.authenticationAlias.1.password=**

#####

#####

# Process center authentication alias. This is used by process server to connect to process center. #

#####

#####

bpm.de.authenticationAlias.2.name=ProcessCenterUserAlias

**bpm.de.authenticationAlias.2.user=**

**bpm.de.authenticationAlias.2.password=**

#####

# Database user authentication alias #

#####

bpm.de.authenticationAlias.3.name=BPM\_DB\_ALIAS

**bpm.de.authenticationAlias.3.user=**

**bpm.de.authenticationAlias.3.password=**

#####

# Deployment Environment Administrator role and authentication alias association #

#####

# bpm.de.roleMapping.DeAdmin.name

bpm.de.roleMapping.1.name=DeAdmin

bpm.de.roleMapping.1.alias=DeAdminAlias

#####  
#####

# Process center user role and authentication alias association. This role is used by process server to connect to process center. #

#####  
#####

# bpm.de.roleMapping.ProcessCenterUser.name

bpm.de.roleMapping.2.name=ProcessCenterUser

bpm.de.roleMapping.2.alias=ProcessCenterUserAlias

#####

# Cell properties #

#####

**bpm.cell.name=PSCell1**

#####

# Cell (WAS) administration authentication alias #

#####

bpm.cell.authenticationAlias.1.name=CellAdminAlias

**bpm.cell.authenticationAlias.1.user=**

**bpm.cell.authenticationAlias.1.password=**

#####

# Cell role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.cell.roleMapping.1.name=CellAdmin

bpm.cell.roleMapping.1.alias=CellAdminAlias

# Database at the cell level. This is valid for Advanced and AdvancedOnly DE types.

bpm.cell.db=CellOnlyDb

#####

# Deployment manager properties #

#####

# Name of the deployment manager node.

**bpm.dmgr.nodeName=Dmgr**

# Deployment manager hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.dmgr.hostname=localhost**

# The installation location of the BPM product.

**bpm.dmgr.installPath=C:/IBM/bpm85**

# Deployment manager profile name.

**bpm.dmgr.profileName=DmgrProfile**

# To overwrite the default port assignments, specify the starting port number for generating and assigning all ports for the deployment manager profile.

**bpm.dmgr.initialPortAssignment=**

# Deployment manager soap port. Update this property after creating the deployment manager profile. It is used to connect to the deployment manager when creating remote nodes.

**#CHANGE SOAP PORT IF an bpm.dmgr.initialPortAssignment= IS USE.**

**bpm.dmgr.soapPort=8879**

**bpm.de.cluster.1.name=AppCluster**

# Cluster capabilities: Application, Support, Messaging. If this is a single cluster environment, specify all three:Application, Support and Messaging.

bpm.de.cluster.1.capabilities=Application

# Messaging cluster used by this cluster.

bpm.de.cluster.1.usesMessagingCluster=MECluster

# Support Cluster used by this cluster.

bpm.de.cluster.1.usesSupportCluster=SupCluster

# List of databases that are used on this cluster. The values are based on the keys specified below for database sections.

#bpm.de.cluster.1.db=ProcessServerDb,SharedDb

**#We are change this because the 4 databases listed in the RED section.**

**bpm.de.cluster.1.db=ProcessServerDb,SharedDb,BpcOnlyDb,BspcOnlyDb,EcmOnlyDb**

**bpm.de.cluster.2.name=MECluster**

# Cluster capabilities: Application, Support, Messaging. If this is a single cluster environment, specify all three:Application, Support and Messaging.

bpm.de.cluster.2.capabilities=Messaging

# Messaging cluster used by this cluster.

bpm.de.cluster.2.usesMessagingCluster=

# Support Cluster used by this cluster.

bpm.de.cluster.2.usesSupportCluster=

# List of databases that are used on this cluster. The values are based on the keys specified below for database sections.

#bpm.de.cluster.2.db=SharedDb

**#We are change this because the 2 databases listed in the RED section.**

**bpm.de.cluster.2.db=MeOnlyDb**

**bpm.de.cluster.3.name=SupCluster**

# Cluster capabilities: Application, Support, Messaging. If this is a single cluster environment, specify all three:Application, Support and Messaging.

bpm.de.cluster.3.capabilities=Support

# Messaging cluster used by this cluster.

bpm.de.cluster.3.usesMessagingCluster=MECluster

# Support Cluster used by this cluster.



bpm.de.cluster.3.supportCluster=

# List of databases that are used on this cluster. The values are based on the keys specified below for database sections.

bpm.de.cluster.3.db=PerformanceDb

#####

# Properties for each node #

#####

**bpm.de.node.1.name=Node1**

# If the hostname is the same as deployment manager, this node will be created on the same computer. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.node.1.hostname=localhost**

**bpm.de.node.1.installPath=C:/IBM/bpm85**

**bpm.de.node.1.profileName=Node1Profile**

**bpm.de.node.1.initialPortAssignment=**

#####

# Cluster member properties. #

#####

**bpm.de.node.1.clusterMember.1.name=AppClusterMember1**

# The proportion of requests that are sent to this cluster member

bpm.de.node.1.clusterMember.1.weight=2

**bpm.de.node.1.clusterMember.1.initialPortAssignment=**

**bpm.de.node.1.clusterMember.1.cluster=AppCluster**

#####

# Cluster member properties. #

#####

**bpm.de.node.1.clusterMember.2.name=MEClusterMember1**

# The proportion of requests that are sent to this cluster member

bpm.de.node.1.clusterMember.2.weight=2

**bpm.de.node.1.clusterMember.2.initialPortAssignment=**

**bpm.de.node.1.clusterMember.2.cluster=MECluster**

#####

# Cluster member properties. #

#####

**bpm.de.node.1.clusterMember.3.name=SupClusterMember1**

# The proportion of requests that are sent to this cluster member

bpm.de.node.1.clusterMember.3.weight=2

**bpm.de.node.1.clusterMember.3.initialPortAssignment=**

**bpm.de.node.1.clusterMember.3.cluster=SupCluster**

#####

# Properties for each node #

#####

**bpm.de.node.2.name=Node2**

# If the hostname is the same as deployment manager, this node will be created on the same computer.  
Do not use localhost for environments that are spread across multiple machines.

**bpm.de.node.2.hostname=localhost**

**bpm.de.node.2.installPath=C:/IBM/bpm85**

**bpm.de.node.2.profileName=Node2Profile**

**bpm.de.node.2.initialPortAssignment=**

#####

# Cluster member properties. #

#####

**bpm.de.node.2.clusterMember.1.name=AppClusterMember2**

# The proportion of requests that are sent to this cluster member

bpm.de.node.2.clusterMember.1.weight=2

**bpm.de.node.2.clusterMember.1.initialPortAssignment=**

**bpm.de.node.2.clusterMember.1.cluster=AppCluster**

#####

# Cluster member properties. #

#####

**bpm.de.node.2.clusterMember.2.name=MEClusterMember2**

# The proportion of requests that are sent to this cluster member

bpm.de.node.2.clusterMember.2.weight=2

**bpm.de.node.2.clusterMember.2.initialPortAssignment=**

**bpm.de.node.2.clusterMember.2.cluster=MECluster**

#####

# Cluster member properties. #

#####

**bpm.de.node.2.clusterMember.3.name=SupClusterMember2**

# The proportion of requests that are sent to this cluster member

bpm.de.node.2.clusterMember.3.weight=2

**bpm.de.node.2.clusterMember.3.initialPortAssignment=**

**bpm.de.node.2.clusterMember.3.cluster=SupCluster**

#####

# Database properties #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.1.name=SharedDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

#bpm.de.db.1.dbCapabilities=Messaging,BusinessSpace,CommonDB,BPC

**#We are change this to add the 4 databases listed in the RED section.**

**bpm.de.db.1.dbCapabilities=CommonDB**

# Database name.

**bpm.de.db.1.databaseName=CMNDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.1.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.1.hostname=localhost**

**bpm.de.db.1.portNumber=50000**

bpm.de.db.1.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.1.roleMapping.1.name=DbUser

bpm.de.db.1.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.1.roleMapping.2.name=DbUserXAR

bpm.de.db.1.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.1.schema=db2admin**

#####

# Database properties #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.2.name=ProcessServerDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

#bpm.de.db.2.dbCapabilities=ProcessServer,EmbeddedECM

**#We are change this because the 4 databases listed in the RED section.**

**bpm.de.db.2.dbCapabilities=ProcessServer**

# Database name.

**bpm.de.db.2.databaseName=BPMDDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.2.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.2.hostname=localhost**

**bpm.de.db.2.portNumber=50000**

bpm.de.db.2.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.2.roleMapping.1.name=DbUser

bpm.de.db.2.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.2.roleMapping.2.name=DbUserXAR

bpm.de.db.2.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.2.schema=db2admin**

#####

# Database properties #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.3.name=PerformanceDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.3.dbCapabilities=PDW

# Database name.

**bpm.de.db.3.databaseName=PDWDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.3.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.3.hostname=localhost**

**bpm.de.db.3.portNumber=50000**

bpm.de.db.3.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.3.roleMapping.1.name=DbUser

bpm.de.db.3.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.3.roleMapping.2.name=DbUserXAR

bpm.de.db.3.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.3.schema=db2admin**

#####

# Database properties #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.4.name=CellOnlyDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.4.dbCapabilities=CellScopedDB

# Database name.

**bpm.de.db.4.databaseName=CELLDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.4.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.4.hostname=localhost**

**bpm.de.db.4.portNumber=50000**

bpm.de.db.4.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.4.roleMapping.1.name=DbUser

bpm.de.db.4.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.4.roleMapping.2.name=DbUserXAR

bpm.de.db.4.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.4.schema=db2admin**

**#To add the Databases change the values that are in RED. - CUSTOMER Specific**

#####

# Database properties : ADD for CUSTOMER #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.5.name=MeOnlyDb



# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.5.dbCapabilities=Messaging

# Database name.

**bpm.de.db.5.databaseName=MEDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.5.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.5.hostname=localhost**

**bpm.de.db.5.portNumber=50000**

bpm.de.db.5.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.5.roleMapping.1.name=DbUser

bpm.de.db.5.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.5.roleMapping.2.name=DbUserXAR

bpm.de.db.5.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.5.schema=db2inst1**

#####

# Database properties : ADD for CUSTOMER #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.6.name=BpcOnlyDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.6.dbCapabilities=BPC

# Database name.

**bpm.de.db.6.databaseName=BPEDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.6.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.6.hostname=localhost**

**bpm.de.db.6.portNumber=50000**

bpm.de.db.6.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.6.roleMapping.1.name=DbUser

bpm.de.db.6.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.6.roleMapping.2.name=DbUserXAR

bpm.de.db.6.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.6.schema=db2inst1**

#####

# Database properties : **ADD** for **CUSTOMER** #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.7.name=BspcOnlyDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.7.dbCapabilities=BusinessSpace

# Database name.

**bpm.de.db.7.databaseName=BSPCEDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.7.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.7.hostname=localhost**

**bpm.de.db.7.portNumber=50000**

bpm.de.db.7.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.7.roleMapping.1.name=DbUser

bpm.de.db.7.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.7.roleMapping.2.name=DbUserXAR

bpm.de.db.7.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.7.schema=db2inst1**

#####

# Database properties : **ADD for CUSTOMER** #

#####

# Keyword to use to refer to this set of database properties. This is not the database name.

bpm.de.db.8.name=EcmOnlyDb

# List of components that are configured on this database. For Advanced configurations the options are: Messaging, BusinessSpace, CommonDB, BPC and CellScopedDB. For Standard and Express configurations, the options are: Messaging, BusinessSpace, ProcessServer, EmbeddedECM and PDW.

bpm.de.db.8.dbCapabilities=EmbeddedECM

# Database name.

**bpm.de.db.8.databaseName=ECMDB**

# Database type. Options: DB2, DB2zOS, Oracle or SQLServer

bpm.de.db.8.type=DB2

# Database hostname. Do not use localhost for environments that are spread across multiple machines.

**bpm.de.db.8.hostname=localhost**

**bpm.de.db.8.portNumber=50000**

bpm.de.db.8.sqlServerWinAuth=false

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.8.roleMapping.1.name=DbUser

bpm.de.db.8.roleMapping.1.alias=BPM\_DB\_ALIAS

#####

# Database role and authentication alias association #

#####

# Role mapping names are pre-defined. Do not modify this value. Specify the user name in the authentication alias corresponding to this role.

bpm.de.db.8.roleMapping.2.name=DbUserXAR

bpm.de.db.8.roleMapping.2.alias=BPM\_DB\_ALIAS

**bpm.de.db.8.schema=db2inst1**

## Appendix B: Addition LDAP Groups needed for BPM access

These groups need to be added and populated in LDAP to get granular access to: Process Administration, Process Center, Process Portal and Process Performance. Without these groups all users end up being administrators, which is too much access.

Default group	Description
tw_admins	Members of this group have full access to all interfaces, assets, servers, and security. Note: You can rename this group, but there must always be an administrator group defined. Administration of IBM BPM is not possible without this group.
tw_allusers	This group is the default lane assignment for non-system lanes when creating business process definitions (BPDs) in Process Designer in the Process Designer. The dashboards that you create in Process Designer are available to this group by default.
tw_allusers_managers	This group contains the team of managers for the tw_allusers group. In the Team Performance dashboard in Process Portal, members of this group can see dashboard for the All Users team and the sample teams that are delivered with the product. By default, the tw_allusers_managers group includes the tw_admins group.
tw_authors	Members of this group have access to the Designer and other interfaces in the Process Designer, including the Process Center console. From the Process Center console, members of this group can create process applications and toolkits and control access to projects. Access to other process applications and toolkits (projects) and the assets they contain is controlled by Process Center repository administrators.
Debug	You can use this account to restrict access to service debugging in the Inspector in the Process Designer.
tw_eventmanager	Members of this group have full access to historical information about Event Manager processing.
tw_managers	Members of this group can see the Team Performance dashboard in Process Portal. To see dashboards for individual teams, the group member must also be a

Default group	Description
	<p>member of a managers team that is defined in Process Designer.</p> <p>By default, the tw_managers group includes the tw_allusers group.</p>
tw_portal_admins	<p>Because of functionality changes in IBM BPM V8, members of this group no longer have any special access rights.</p>
tw_process_owners	<p>Members of this group can see the Process Performance dashboard. By default, this group is also assigned to the ACTION_CHANGE_CRITICAL_PATH Process Portal policy, which allows members to view and change the projected path of a process instance.</p> <p>By default, the tw_process_owners group includes the tw_admins group.</p>

For more Groups and Roles [INFO](#).

## Appendix C: DB2 Setup Instructions

### DB2 Install Section

1. Copy DB2 install Media to the directory you want to work from.
2. Unzip the DB2 install Media
3. Cd into <DB2\_Inst\_media\_DIR>/wuser
4. Run as root the following command:  
./db2\_install
5. Enter the DB2 Install Directory when prompted.
6. Then press enter.
7. Wait for it to fail. Then go to the next section of this procedure.

### DB2 Configuration Section

In this section the Group, ID, Password, Port, database name and db2 install directory values will change with the environment. It would be best to work out these values before you start this procedure.

1. Run the following commands as root  
groupadd -g 999 bpmiadm1  
groupadd -g 998 bpmfencadm  
groupadd -g 997 bpmdasadm  
  
useradd -u 1004 -g bpmiadm1 -m -d /home/ db2inst1 db2inst1  
useradd -u 1003 -g bpmfencadm -m -d /home/db2fenc1 db2fenc1  
useradd -u 1002 -g bpmdasadm -m -d /home/dasusr1 dasusr1
2. Change the password for db2inst1.  
Run the following commands as root  
passwd db2inst1
3. Enter the password when prompted
4. CD to <DB2\_Install\_DIR>/instances  
Example:  
/opt/ibm/db2/dev/V9.7/instances
5. Run the following commands as root  
./dascrt -u dasusr1  
./db2icrt -a server -u db2fenc1 db2inst1
6. CD to <DB2\_Install\_DIR>/cfg
7. Run the following commands as root  
./db2ln



8. Edit /etc/services
9. Add the following line to the bottom. **51000 should be your port value.**  
db2c\_db2inst1 51000/tcp # DB2 connection service port
10. Save the file.
11. chown -R db2inst1: bpmiadm1 /<mount point for DB2 instance>
12. How su to the db2 instance ID.  
Example:  
su - db2inst1
13. Run the db2 instance profile.  
Example: ./sqllib/db2profile
14. Run the following commands as the DB2 instance ID  
db2 update database manager configuration using svcname <your Svc Port>  
db2stop  
db2start # this command takes a long time so be patient.

db2 get database manager configuration # this is a test

```
db2set DB2COMM=tcpip
db2set DB2_MMAP_WRITE=OFF
db2set DB2_MMAP_READ=OFF
db2set DB2_PINNED_BP=
db2set DB2MEMMAXFREE=
db2set DB2_ENABLE_BUFPD=
db2set DB2_USE_ALTERNATE_PAGE_CLEANING=ON
db2set DB2_EVALUNCOMMITTED=ON
db2set DB2_SKIPDELETED=ON
db2set DB2_SKIPINSERTED=ON
db2set DB2_SELECTIVITY=ALL
db2set DB2LOCK_TO_RB=STATEMENT
db2set DB2_NUM_CKPW_DAEMONS=0
```

```
db2stop
db2start # this command takes a long time so be patient.
```

db2 get database manager configuration ----- This is a test command

```
-- create directories
mkdir -p /<mount point for DB2 instance>/syscatspace
mkdir -p /<mount point for DB2 instance>/tempspace/tempspace1
mkdir -p /<mount point for DB2 instance>/userspace1
```

netstat -an | grep LISTEN # this is a test, you see your port listening

## Appendix D: LDAP Setup Instructions - This process needs to be updated with CUSTOMER specific steps.

### pre-requisites:

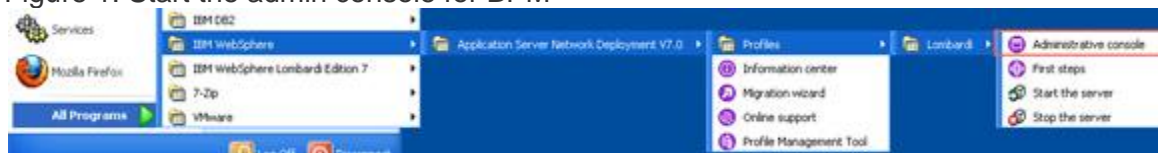
- LDAP hostname
- LDAP Port Number
- LDAP Bind ID and Password
- LDAP Certs
- repository type
- Base entry for realm
- LDAP entity types.
- 

## Register an LDAP user directory with WebSphere Application Server

**Note:** Make sure no duplicate users exist between the BPM internal security provider and the security provider that you're about to add. If duplicate users exist, you will get exceptions when you run IBM BPM components.

1. Start the WebSphere administrative console for BPM from the Start menu, as shown in Figure 1.

Figure 1. Start the admin console for BPM



2. Log on as **tw\_user**. The default password for the tw\_user account is **tw\_user**.
3. Select to **Security > Global security**, as shown in Figures 2 and 3.

Figure 2. V7: Global security

**Global security**

Use this panel to configure administration and the default application security administrative functions and is used as a default security policy for user applications.

[Security Configuration Wizard](#) [Security Configuration Report](#)

**Administrative security**

☒ Enable administrative security

- [Administrative user roles](#)
- [Administrative group roles](#)
- [Administrative authentication](#)

**Application security**

☒ Enable application security

**Java 2 security**

☐ Use Java 2 security to restrict application access to local resources

- ☐ Warn if applications are granted custom permissions
- ☐ Restrict access to resource authentication data

**User account repository**

Current realm definition  
Federated repositories

Available realm definitions  
Federated repositories [Configure...](#) [Set as current](#)

[Apply](#) [Reset](#)

Figure 3. V8: Global security

The screenshot displays the 'Global security' configuration interface. On the left, a navigation pane lists various system components, with 'Global security' selected and highlighted by a red rectangle. The main panel, titled 'Global security', provides instructions and configuration options. It includes buttons for 'Security Configuration Wizard' and 'Security Configuration Report'. The 'Administrative security' section has a checked 'Enable administrative security' option and links to 'Administrative user roles', 'Administrative group roles', and 'Administrative authentication'. The 'Application security' section has a checked 'Enable application security' option. The 'Java 2 security' section has an unchecked 'Use Java 2 security to restrict application access to local resources' option, with sub-options for 'Warn if applications are granted custom permissions' (checked) and 'Restrict access to resource authentication data' (unchecked). The 'User account repository' section is highlighted with a red box and contains a 'Realm name' field (default: 'defaultWIMFileBasedRealm'), a 'Current realm definition' field (default: 'Federated repositories'), and an 'Available realm definitions' section. This section includes a dropdown menu currently showing 'Federated repositories', a 'Configure...' button, and a 'Set as current' button. At the bottom of the main panel are 'Apply' and 'Reset' buttons.

4. Under **User account repository**, click the **Configure** next to **Federated repositories**, which is already set as the default for BPM.
5. Under **Related items**, click **Manage repositories**, as shown in Figure 4.

Figure 4. Manage repositories

Global security

Global security > Federated repositories

By federating repositories, identities stored in multiple repositories can be managed in a single, virtual realm. The realm can consist of identities in the file-based repository that is built into the system, in one or more external repositories, or in both the built-in repository and one or more external repositories.

General Properties

\* Realm name  
defaultWIMFileBasedRealm

\* Primary administrative user name  
tw\_user

Server user identity

☒ Automatically generated server identity

☐ Server identity that is stored in the repository

Server user ID or administrative user on a Version 6.0.x node  
tw\_user

Password  
\*\*\*\*\*

☒ Ignore case for authorization

Repositories in the realm:

Add Base entry to Realm ... Use built-in repository Remove

Select	Base Entry	Repository Identifier	Repository Type
You can administer the following resources:			
<input type="checkbox"/>	o=twinternal	urbtvinternal	Custom

Additional Properties

Property extension repository

Entry mapping repository

Supported entity types

Related Items

Manage repositories

Trusted authentication realms - inbound

- Click **Add** in V7 or **Add** and choose the LDAP repository in WAS 8.5, and enter parameters for the LDAP provider that you want to add, as shown in Figure 5 and 6.

Figure 5. V7: Add repository

Global security > Federated repositories > Manage repositories

Repositories that are configured in the system are listed in the following table. You can add or delete external repositories.

Preferences

Add Delete

Select Repository Identifier Repository Type

You can administer the following resources:

Select	Repository Identifier	Repository Type
<input type="checkbox"/>	InternalFileRepository	File
<input type="checkbox"/>	<a href="#">urbtwinternal</a>	Custom:null

Total 2

Figure 6. V8.5: Select and add repository

Global security > Federated repositories > Manage repositories

Repositories that are configured in the system are listed in the following table. You can add or delete external repositories.

Preferences

Add ▾ Delete

LDAP repository  
Custom repository  
File repository

Select Repository Identifier Repository Type

You can administer the following resources:

Select	Repository Identifier	Repository Type
<input type="checkbox"/>	<a href="#">InternalFileRepository</a>	File
<input type="checkbox"/>	<a href="#">urbtwinternal</a>	Custom

Total 2

For example, to add the IBM BluePages server, you would use the values shown in Figure 7.

Figure 7. Example repository values

The screenshot shows the 'Global security' configuration page for 'IBM BluePages'. The breadcrumb trail is 'Global security > Federated repositories > Manage repositories > IBM BluePages'. A description states: 'Specifies the configuration for secure access to a Lightweight Directory Access Protocol (LDAP) repository with optional failover servers.'

**General Properties**

\* Repository identifier: IBM BluePages

**LDAP server**

\* Directory type: IBM Tivoli Directory Server

\* Primary host name: bluepages.ibm.com Port: 636

Failover server used when primary is not available:

Select	Failover Host Name	Port
<input type="checkbox"/>	None	

Buttons: Delete, Add

Support referrals to other LDAP servers: ignore

**Security**

Bind distinguished name: [text box]

Bind password: [text box]

Login properties: mail

LDAP attribute for Kerberos principal name: krbPrincipalName

Certificate mapping: EXACT\_DN

Certificate filter: [text box]

☒ Require SSL communications

☒ Centrally managed

[Manage endpoint security configurations](#)

7. Click **OK** and then click **Save**.
8. Go back to the Federated repositories page (step 5) and click **Add Base entry to Realm**, as shown in Figure 8

Figure 8. Add base entry to realm

Global security
?

Global security > Federated repositories

By federating repositories, identities stored in multiple repositories can be managed in a single, virtual realm. The realm can consist of identities in the file-based repository that is built into the system, in one or more external repositories, or in both the built-in repository and one or more external repositories.

General Properties

+ Realm name  
defaultWIMFileBasedRealm

+ Primary administrative user name  
tw\_user

Server user identity

☒ Automatically generated server identity

☐ Server identity that is stored in the repository  
Server user ID or administrative user on a Version 6.0.x node  
tw\_user  
Password  
\*\*\*\*\*

☒ Ignore case for authorization

Repositories in the realm:

Add Base entry to Realm...
Use built-in repository
Remove

Select	Base Entry	Repository Identifier	Repository Type
You can administer the following resources:			
<input type="checkbox"/>	o=twinternal	urbtwinternal	Custom

Additional Properties
Related Items

Property extension repository
Entry mapping repository
Supported entity types

Manage repositories
Trusted authentication realms - inbound

Apply
OK
Reset
Cancel

- Provide values for the LDAP server, as shown in the example in Figure 9, then click **OK** and then **Save**.



Figure 9. LDAP server values

Global security > Federated repositories > Repository reference

Specifies a set of identity entries in a repository that are referenced by a base entry into the directory information tree. If multiple repositories are included in the same realm, it might be necessary to define an additional distinguished name that uniquely identifies this set of entries within the realm.

General Properties

\* Repository  
IBM BluePages Add Repository...

\* Distinguished name of a base entry that uniquely identifies this set of entries in the realm  
o=ibm.com

Distinguished name of a base entry in this repository  
o=ibm.com

Apply OK Reset Cancel

10. Go back to the repository page. Under **Additional Properties**, click **LDAP entity types**, as shown in Figure 10.

Figure 10. LDAP server configuration

**Global security**

[Global security](#) > [Federated repositories](#) > [Manage repositories](#) > **IBM BluePages**

Specifies the configuration for secure access to a Lightweight Directory Access Protocol (LDAP) repository with optional failover servers.

**General Properties**

✦ Repository identifier  
IBM BluePages

**LDAP server**

✦ Directory type  
IBM Tivoli Directory Server

✦ Primary host name  
bluepages.ibm.com

Port  
389

Failover server used when primary is not available:

Delete

Select	Failover Host Name	Port
	None	

Add

Support referrals to other LDAP servers  
ignore

**Security**

Bind distinguished name

Bind password

Login properties  
uid

LDAP attribute for Kerberos principal name  
krbPrincipalName

Certificate mapping  
EXACT\_DN

Certificate filter

☐ Require SSL communications

☒ Centrally managed

▮ [Manage endpoint security configurations](#)

☐ Use specific SSL alias

NodeDefaultSSLSettings ▮ [SSL configurations](#)

**Additional Properties**

- ▮ Performance
- ▮ **LDAP entity types**
- ▮ Group attribute definition

11. Then select **Group**, as shown in Figure 11.

Figure 11. LDAP server configuration (continued)

The screenshot shows the 'Global security' console with the breadcrumb path: [Global security](#) > [Federated repositories](#) > [Manage repositories](#) > [IBM BluePages](#) > **LDAP entity types**. Below the breadcrumb is a description: 'Use this page to list entity types that are supported by the member repositories or to select an entity type to view or change its configuration properties.' There is a 'Preferences' icon. Below that is a table with two columns: 'Entity Type' and 'Object Classes'. The table lists three entity types: 'Group', 'OrgContainer', and 'PersonAccount'. The 'Group' row is highlighted with a red box. The 'Object Classes' for 'Group' is 'groupOfNames'. The 'OrgContainer' row has object classes 'organization; organizationalUnit; domain; container'. The 'PersonAccount' row has object classes 'inetOrgPerson'. At the bottom of the table, it says 'Total 3'.

Entity Type	Object Classes
Group	groupOfNames
OrgContainer	organization; organizationalUnit; domain; container
PersonAccount	inetOrgPerson
Total 3	

12. Specify the object classes and search bases, as shown in Figure 12.

Figure 12. Group entity type settings

The screenshot shows the 'Global security' console with the breadcrumb path: [Global security](#) > [Federated repositories](#) > [Manage repositories](#) > [IBM BluePages](#) > [LDAP entity types](#) > **Group**. Below the breadcrumb is a description: 'Use this page to manage the entity type that is supported by the LDAP repository.' There is a 'General Properties' section. Below that is a form with the following fields: 'Entity type' (set to 'Group'), 'Object classes' (set to 'groupOfUniqueNames'), 'Search bases' (set to 'ou=memberList,ou=ibmgroups,o=ibm.com'), and 'Search filter' (empty). The 'Object classes' and 'Search bases' fields are highlighted with a red box. At the bottom of the form are buttons: 'Apply', 'OK', 'Reset', and 'Cancel'.

Entity type: Group

Object classes: groupOfUniqueNames

Search bases: ou=memberList,ou=ibmgroups,o=ibm.com

Search filter:

Buttons: Apply, OK, Reset, Cancel

13. Click **OK** and then click **Save**.

14. Still under **LDAP entity types**, click **OrgContainer**, and specify the object classes and search bases, as shown in Figure 13.

Figure 13. OrgContainer entity type settings

Global security > Federated repositories > Manage repositories > IBM BluePages > LDAP entity types > OrgContainer

Use this page to manage the entity type that is supported by the LDAP repository.

General Properties

Entity type  
OrgContainer

Object classes  
ibmOrganization

Search bases  
ou=memberList,ou=ibmgroups,o=ibm.com

Search filter

Apply OK Reset Cancel

15. Click **OK** and then click **Save**.

16. Still under **LDAP entity types**, click **PersonAccount** and specify the object classes and search bases, as shown in Figure 14.

Figure 14. PersonAccount entity type settings

Global security > Federated repositories > Manage repositories > IBM BluePages > LDAP entity types > PersonAccount

Use this page to manage the entity type that is supported by the LDAP repository.

General Properties

Entity type  
PersonAccount

Object classes  
ibmPerson

Search bases  
ou=bluepages,o=ibm.com

Search filter

Apply OK Reset Cancel

17. Click **OK** and then click **Save**.

18. Shut down and then restart all WebSphere Application Server servers.

## Grant access to LDAP users and groups

Once you've configured the LDAP directory and the internal IBM BPM security provider, the users and groups from both providers are available for selection in IBM BPM. An LDAP user or group can be added to a default group in the exact same way as if the user or group being added exists in the BPM internal user registry, using the following steps:

1. Select **User Management** in the IBM BPM Process Admin console.
2. In the **Add User and Groups** dialog, enter the name of an LDAP user or group, such as the AIM\_BPM\_SWAT group, or shiliy@ca.ibm.com for an individual user that exists in the BluePages directory.

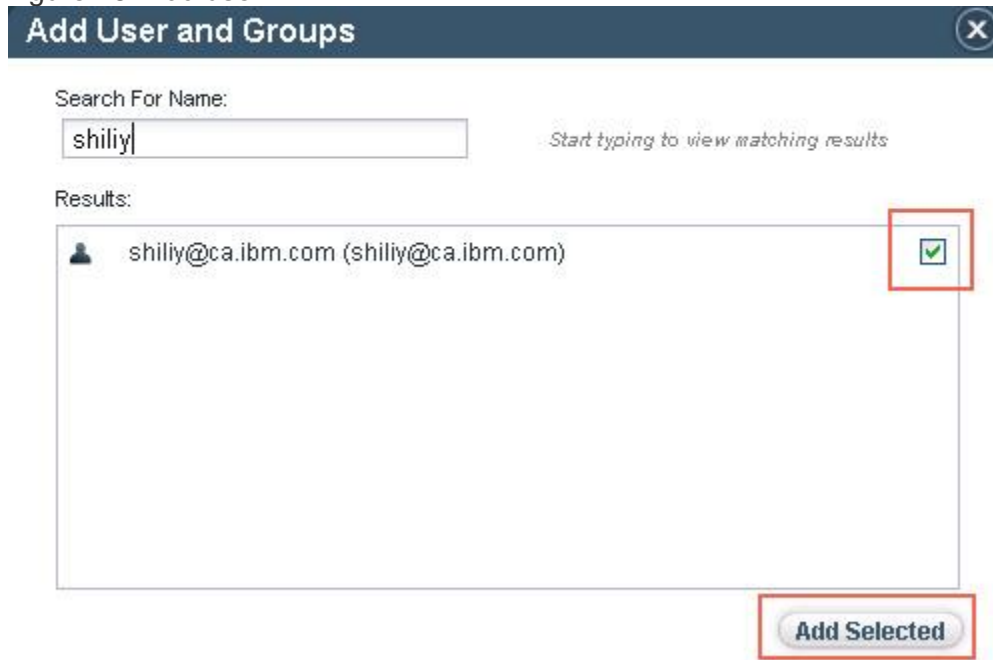
3. Once the search results are returned, select the users or groups to add and click **Add Selected**, as shown in Figure 15 and 16.

Figure 15. Add group



The screenshot shows a dialog box titled "Add User and Groups" with a close button (X) in the top right corner. Below the title bar, there is a "Search For Name:" label followed by a text input field containing "AIM\_BPM\_S". To the right of the input field is a hint text: "Start typing to view matching results". Below this is a "Results:" label. Under the results, there is a single entry: a group icon (three people) followed by the text "AIM\_BPM\_SWAT". To the right of this entry is a small square checkbox with a green checkmark inside, which is highlighted by a red rectangular box.

Figure 16. Add user



The screenshot shows a dialog box titled "Add User and Groups" with a close button (X) in the top right corner. Below the title bar, there is a "Search For Name:" label followed by a text input field containing "shiliy". To the right of the input field is a hint text: "Start typing to view matching results". Below this is a "Results:" label. Under the results, there is a single entry: a user icon (person) followed by the text "shiliy@ca.ibm.com (shiliy@ca.ibm.com)". To the right of this entry is a small square checkbox with a green checkmark inside, which is highlighted by a red rectangular box. At the bottom right of the dialog, there is a button labeled "Add Selected", which is also highlighted by a red rectangular box.

[Back to top](#)

## Configure the SSL connection to the LDAP server

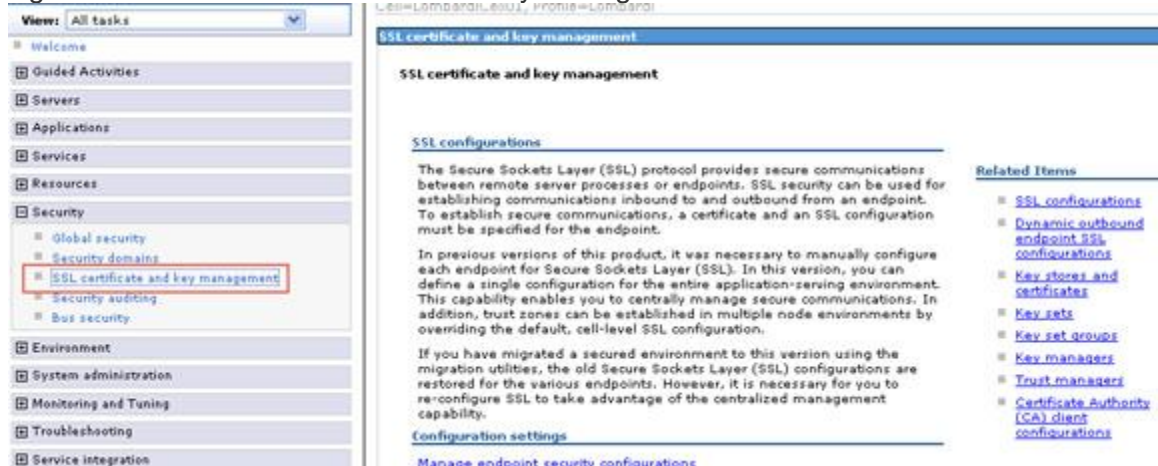
The application server embedded in IBM BPM provides several methods to secure communication between a server and a client, including support for SSL. The two main steps to enable SSL with an LDAP server are to add the digital certificate of the LDAP server to the trusted key store, and to switch to the secure port for encrypted data exchange.

## Import the LDAP server certificate

To import the LDAP certificate, do the following:

1. Log on to the WebSphere administrative console as `tw_user` with a password of `tw_user`.
2. Select **Security > SSL certificate and key management**, as shown in Figure 17.

Figure 17. Select SSL certificate and key management



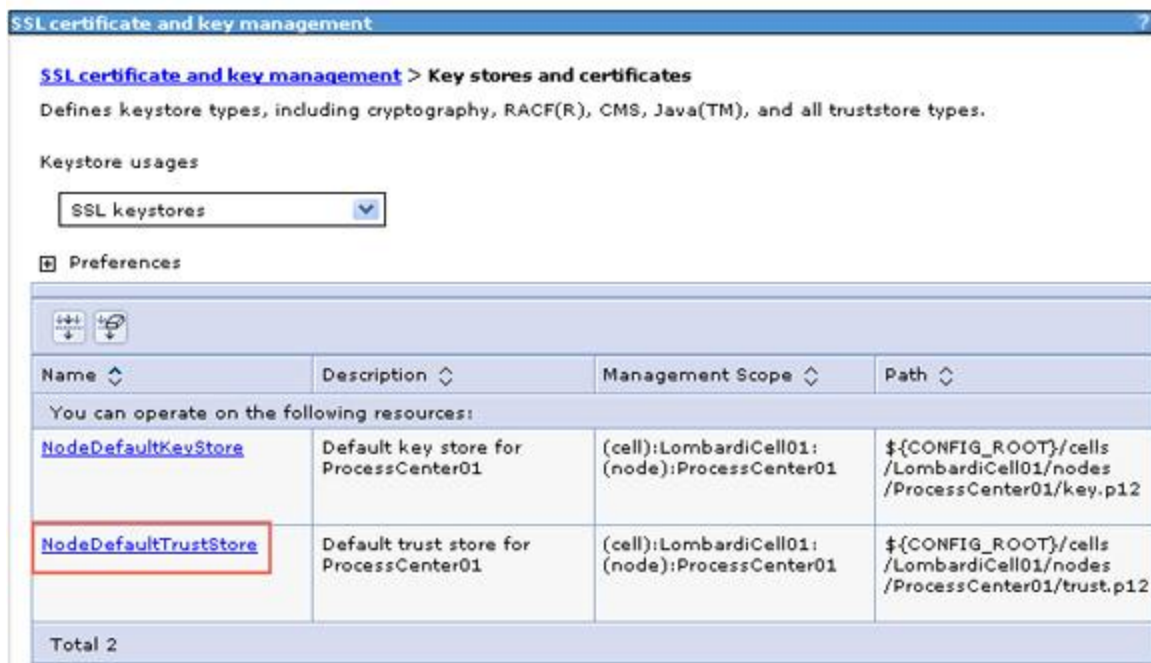
3. Click **Key stores and certificates**, as shown in Figure 18.

Figure 18. Click key stores and certificates



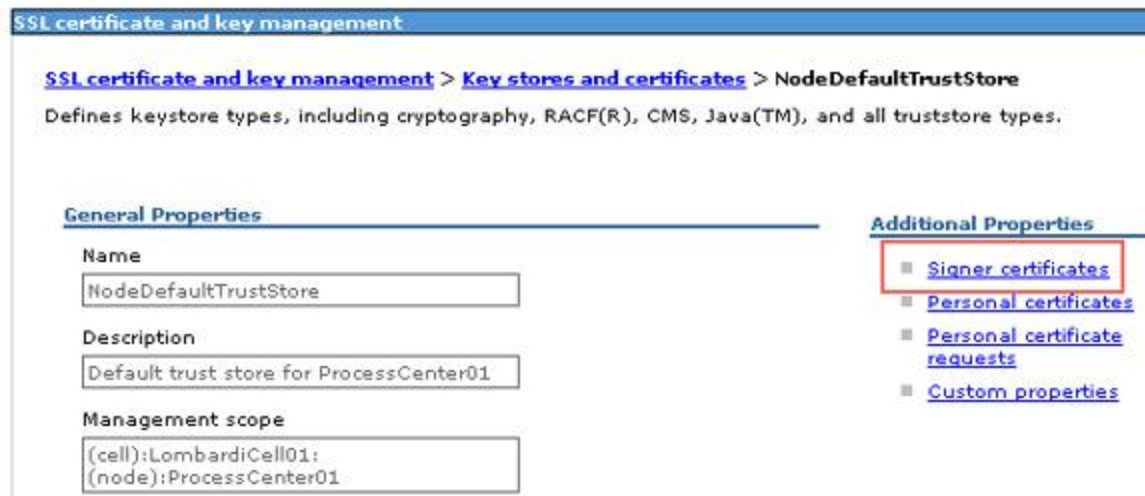
4. Click **NodeDefaultTrustStore**, as shown in Figure 19.

Figure 19. Click NodeDefaultTrustStore



- Click **Signer Certificates**, as shown in Figure 20.

Figure 20. Click Signer Certificates

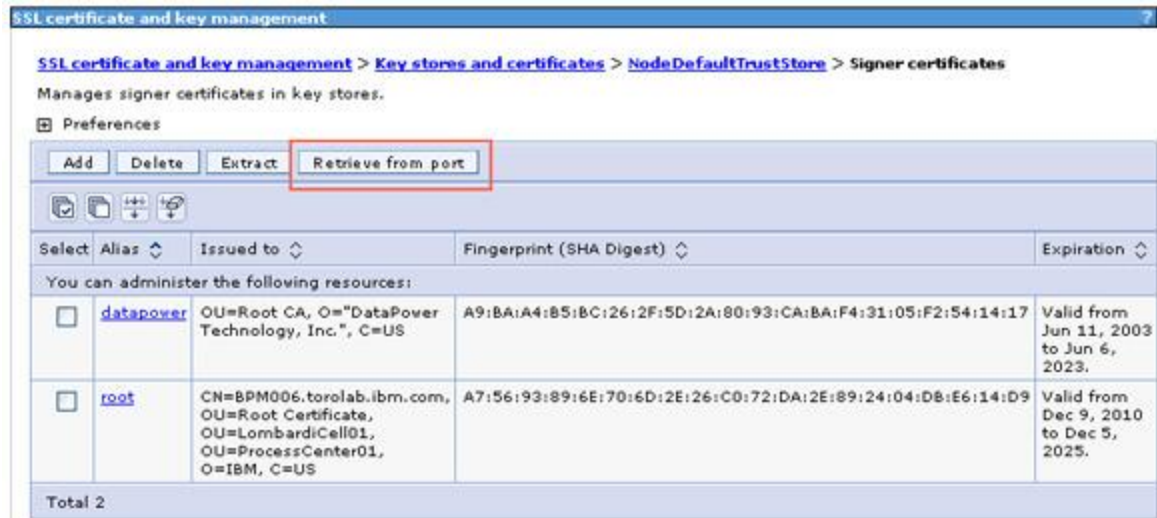


- Click **Retrieve from port**, as shown in Figure 21.

**Note:** As described in APAR PM37795 (fix available in WebSphere Application Server V7.0.0.17), the **Retrieve from Port** action only gets the server certificate, not the signing certificate, which causes a problem when it expires, which is within a year for the default self-signed certificate that is used and shown in the example. Please apply the APAR before using it.

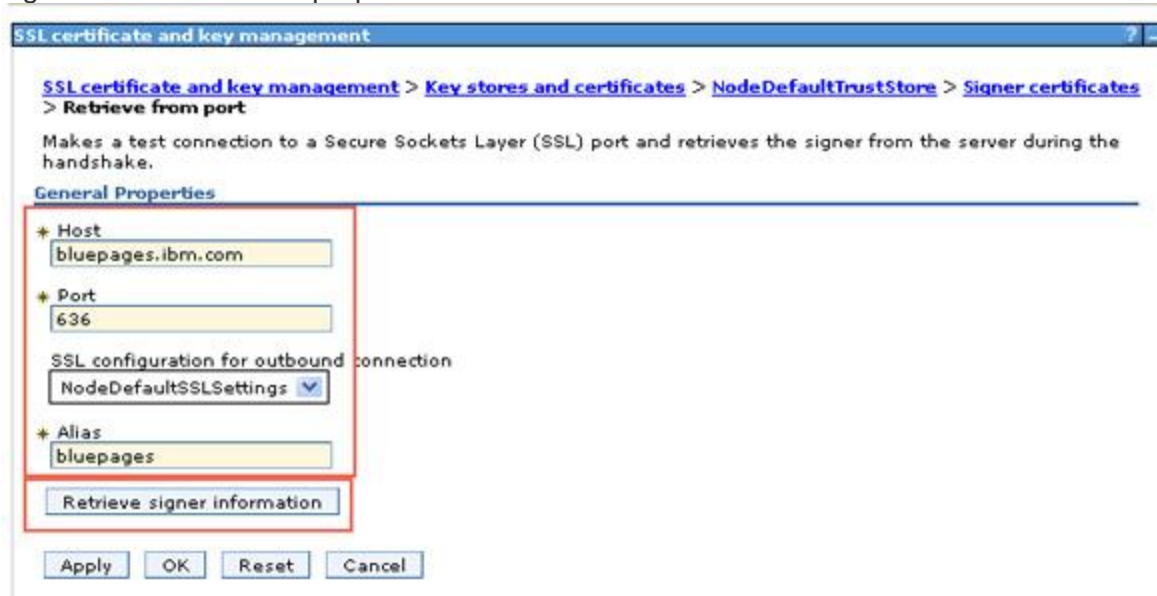


Figure 21. Retrieve from port



7. Type in the information for your LDAP server on the **General Properties** page, and click **Retrieve Signer Information**. For example, the information for the the IBM BluePages server is:
  - **Host:** bluepages.ibm.com
  - **Port:** 636, this is the default for SSL secure port for LDAP servers
  - **Alias:** bluepages

Figure 22. LDAP server properties



8. After the details of the signer certificate are retrieved and populated, as shown in Figure 23, click **OK** and then **Save**.



Figure 23. Signer certificate information

[SSL certificate and key management](#) > [Key stores and certificates](#) > [NodeDefaultTrustStore](#) > [Signer certificates](#)  
> **Retrieve from port**

Makes a test connection to a Secure Sockets Layer (SSL) port and retrieves the signer from the server during the handshake.

**General Properties**

\* Host  
bluepages.ibm.com

\* Port  
636

SSL configuration for outbound connection  
NodeDefaultSSLSettings

\* Alias  
bluepages

Retrieve signer information

**Retrieved signer information**

Serial number  
88612721817578266021845737175324076201

Issued to  
CN=bluepages.ibm.com, OU=Terms of use at  
www.verisign.com/rpa (c)05, OU=Terms of use at  
www.verisign.com/rpa (c)05, O=International Business  
Machines, L=Boulder, ST=Colorado, C=US

Issued by  
CN=VeriSign Class 3 Secure Server CA, OU=Terms of use at  
https://www.verisign.com/rpa (c)05, OU=VeriSign Trust Network,  
O="VeriSign, Inc.", C=US

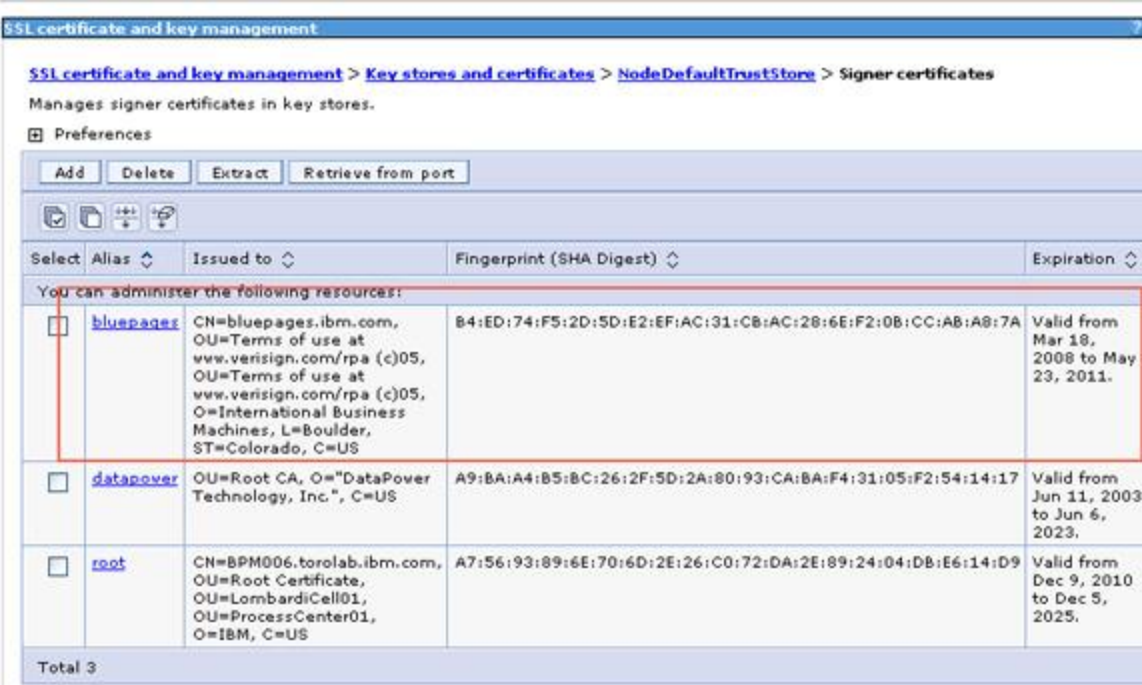
Fingerprint (SHA digest)  
B4:ED:74:F5:2D:5D:E2:EF:AC:31:CB:AC:28:6E:F2:0B:CC:AB:A8:7A

Validity period  
May 23, 2011

Apply OK Reset Cancel

9. Now the LDAP server certificate is successfully added to the trusted store, and listed, as shown in Figure 24.

Figure 24. Server certificate added to trusted store



## Switch to an SSL connection to the LDAP server

It's quite straightforward to switch to use SSL once the certificate is added to the store.

1. Complete steps 1-6 in [Register an LDAP user directory with WebSphere Application Server](#).
2. Instead of the non-security port of 389, enter the security / SSL port of the LDAP server (the default is **636**) and check **Require SSL Communications**, as shown in Figure 25.

Figure 25. Check Require SSL Communications

The screenshot shows the 'Global security' console with the breadcrumb path: **Global security > Federated repositories > Manage repositories > IBM BluePages**. Below the breadcrumb, a description states: 'Specifies the configuration for secure access to a Lightweight Directory Access Protocol (LDAP) repository with optional failover servers.'

The 'General Properties' section includes a 'Repository identifier' field with the value 'IBM BluePages'.

The 'LDAP server' section contains the following fields and controls:

- Directory type:** A dropdown menu set to 'IBM Tivoli Directory Server'.
- Primary host name:** A text field with 'bluepages.ibm.com'.
- Port:** A text field with '636', which is highlighted with a red box.
- Failover server used when primary is not available:** A section with a 'Delete' button, a table with columns 'Select', 'Failover Host Name', and 'Port', and an 'Add' button.
- Support referrals to other LDAP servers:** A dropdown menu set to 'ignore'.

The 'Security' section contains the following fields and controls:

- Bind distinguished name:** A text field.
- Bind password:** A text field.
- Login properties:** A text field with the value 'mail'.
- LDAP attribute for Kerberos principal name:** A text field with the value 'krbPrincipalName'.
- Certificate mapping:** A dropdown menu set to 'EXACT\_DN'.
- Certificate filter:** A text field.
- Require SSL communications:** A checkbox that is checked and highlighted with a red box.
- Centrally managed:** A radio button that is selected.
- Manage endpoint security configurations:** A link.

3. Click **OK** and then **Save**.
  4. Shut down and restart all IBM BPM servers.
- Users can access and work with IBM BPM as usual once the servers are restarted. The data is now exchanged securely over the SSL connection behind the scene, and there is no difference in the user experience.