Step-by-Step guide to setup an IBM WebSphere Portal and IBM Web Content Manager V8.5 Cluster From Zero to Hero (Part 1.)

Summary

Abstract

This guide want to explain how install, configure, and building an IBM WebSphere Portal v8.5 cluster using:

IBM WebSphere Application Server
Red Hat Enterprise Linux 6.0 update 3
DB2 10.5
Active Directory 2012 R2 mixed mode
IBM HTTP Server 8.0

Windows/Unix Differences

This guide was written using Linux as the base operating system, however the steps/concepts listed in this guide are independent of operating system.

The only significant difference is that for Windows, you must use the batch file commands instead of the UNIX shell commands listed in this guide.

For example:

UNIX: ./startServer.sh WebSphere_Portal
Windows: startServer.bat WebSphere_Portal

Or

UNIX: ./ConfigEngine.sh cluster-node-config-cluster-setup
Windows: ConfigEngine.bat cluster-node-config-cluster-setup

Hostnames Used in this Guide

To avoid confusion with my own hostnames, I've replaced each instance of the hostnames of my servers with a sample value that corresponds to the server it belongs to so that it may be easier to understand which server I'm referring to in my examples.
I use the following values:

Primary Node :	first.ondemand.com
Secondary Node:	second.ondemand.com
DMGR:	dmgr.ondemand.com
Database Server:	dbstore.ondemand.com
LDAP Server:	ldap.ondemand.com
IBM HTTP Server:	portal.ondemand.com

Cluster Concepts

Server - A Java Virtual Machine (JVM) that manages user applications (such as WebSphere Portal and Web Content Management).

Node - A logical grouping of one or more application servers. A node does not necessarily mean a single physical server.

Cell - A logical grouping of one more nodes.

Cluster - A logical grouping of one or more servers across one or more nodes. The servers are managed together and participate in workload management. Servers in a cluster share resources, such as applications. Multiple clusters can exist in a single cell, but a single cluster cannot exist across multiple cells.

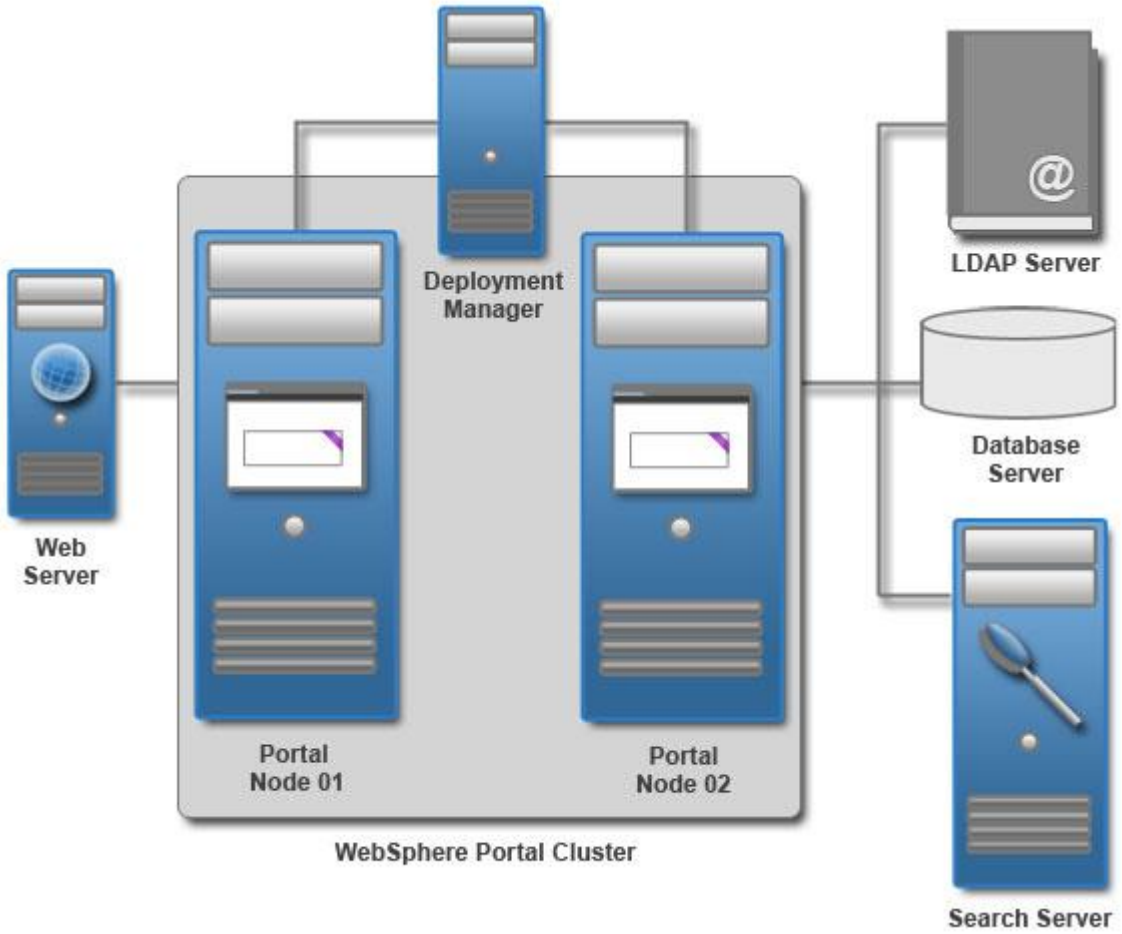


Figure 1 – WebSphere Portal cluster with two nodes, each with three cluster members.

Main Guide

Install IBM WebSphere Portal v8 on the Primary node

In this section, you will install the IBM Installation Manager and WebSphere Portal on the server you intend to use as your primary portal server.
Before installing WebSphere Portal, please ensure you review the Planning documentation:

In this guide, the installation was completed as the 'root' user using installation images on a network drive. At the end we can change all access right to permit start with a specific user.

NOTE: There are different ways for you to get WebSphere® Portal and Web Content Manager Version 8.5 software. You can find what following me….

Pre check

Verify have more then 5GB on temporary directory /tmp

Open terminal and verify if your system is reachable using fully qualified hostname

```
[root@serv01 /]# ping first.ondemand.com
```

In the same terminal, execute

```
[root@serv01 /]# ping localhost
```

To verify the “localhost” network settings are configured properly on your machine.

Linux/UNIX environments only.
If in your environment do not use IPV6 verify that is disable in each machine.

In the same terminal, execute

```
[root@serv01 /]# cat /etc/sysconfig/network
```

And verify if your NETWORKING_IPV6 is set to “no”

Ensure have sufficient file open limit, is set to 10240 or higher.

ulimit -n 10240

Web Content Manager only: Complete the following steps to remove any file size limits: Use the ulimit -f command to set the maximum size of files that can be created.

Following library is needed during installation process, if you do not configure X environment verify you can use export display to use each wizard, in this guide I use this method to execute installation.

gtk2-2.18.9-6.el6.x86_64.rpm
glib2-2.22.5-6.el6.x86_64.rpm
libXtst-1.0.99.2-3.el6.x86_64.rpm

compat-libstdc++-33-3.2.3-69.el6.x86_64.rpm
openmotif22-2.2.3-19.el6.x86_64.rpm
pam-1.1.1-10.el6.x86_64.rpm
libXp-1.0.0-15.1.el6.x86_64.rpm
libXmu-1.0.5-1.el6.x86_64.rpm
kernel-headers-2.6.18-238.19.1.el5.x86_64.rpm
compat-glibc-headers-2.3.4-2.26.x86_64.rpm
compat-glibc-2.3.4-2.26.x86_64.rpm
libgtk-x11-2.0.so.0
libgtk-x11-2.0.so.0
libcanberra-gtk-module.so
glibc-2.12-1.47.el6.i686.rpm
compat-libstdc++-33-3.2.3-69.el6.x86_64.rpm
compat-libstdc++-33-3.2.3-69.el6.i686.rpm
yum search -1.0.0-15.1.el6.i686.rpm
libXp-1.0.0-15.1.el6.x86_64.rpm
openmotif-2.3.3-4.el6.i686.rpm
xterm
xkeyboard-config
tigervnc-server-1.0.90-0.17.20110314svn4359.el6.x86_64.rpm
xorg-x11-twm-1.0.3-5.1.el6.x86_64.rpm
xorg-x11-font*

Installing the digital experience software

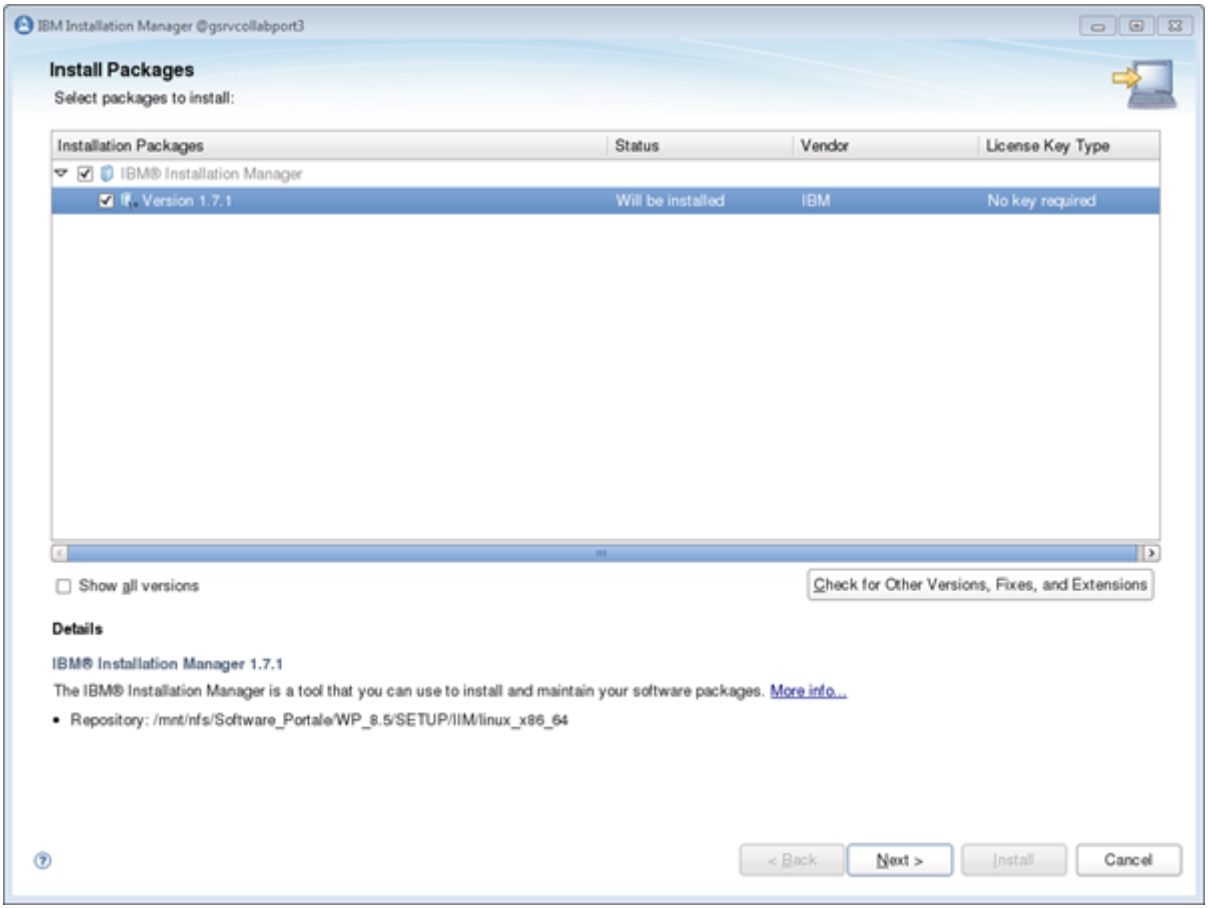
Install IBM Installation manager:

From shared disc where you have already expand all packages needed to execute installation, move where you have expand WSP_Server_8.5_Setup.zip and find following path

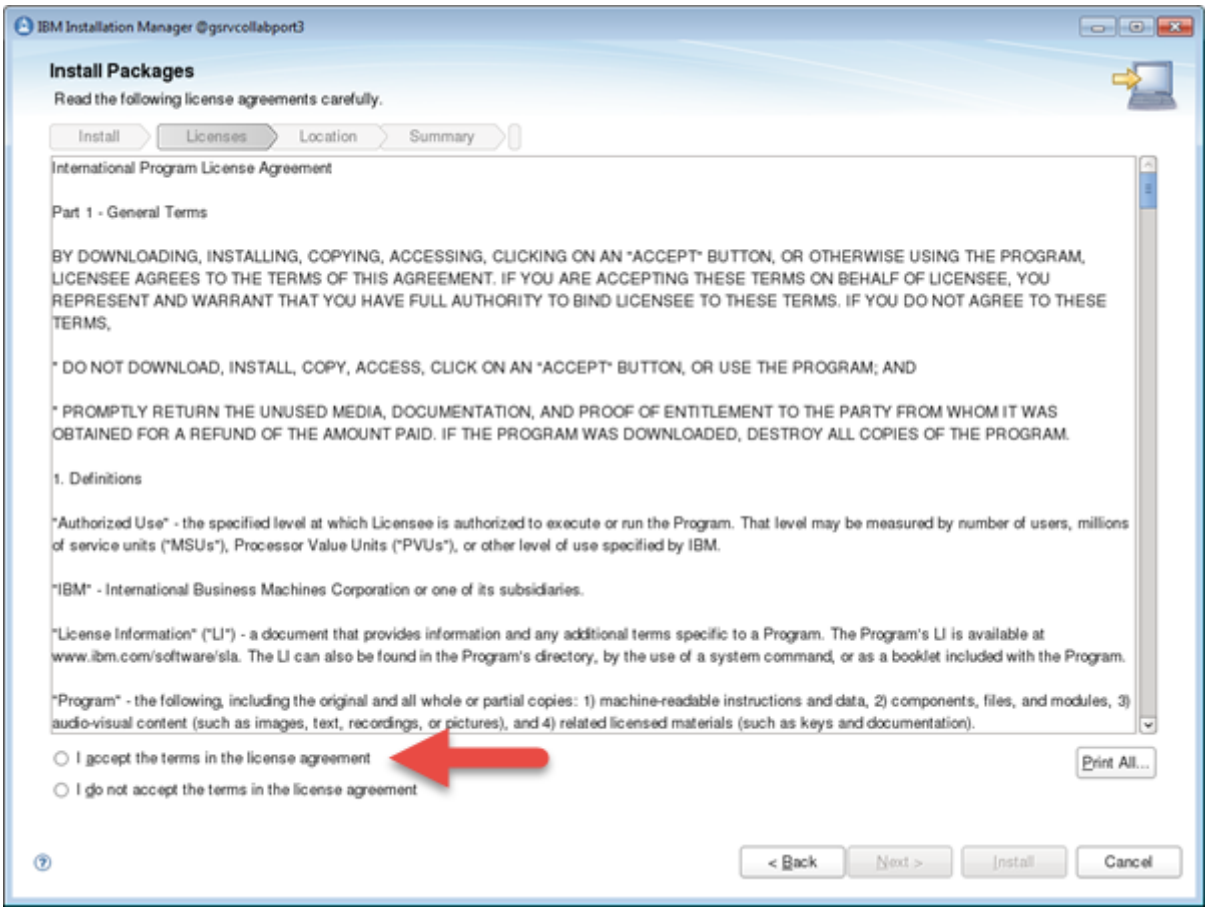
<expandHome>/SETUP/IIM/Linnux_x86_64

and run ./install

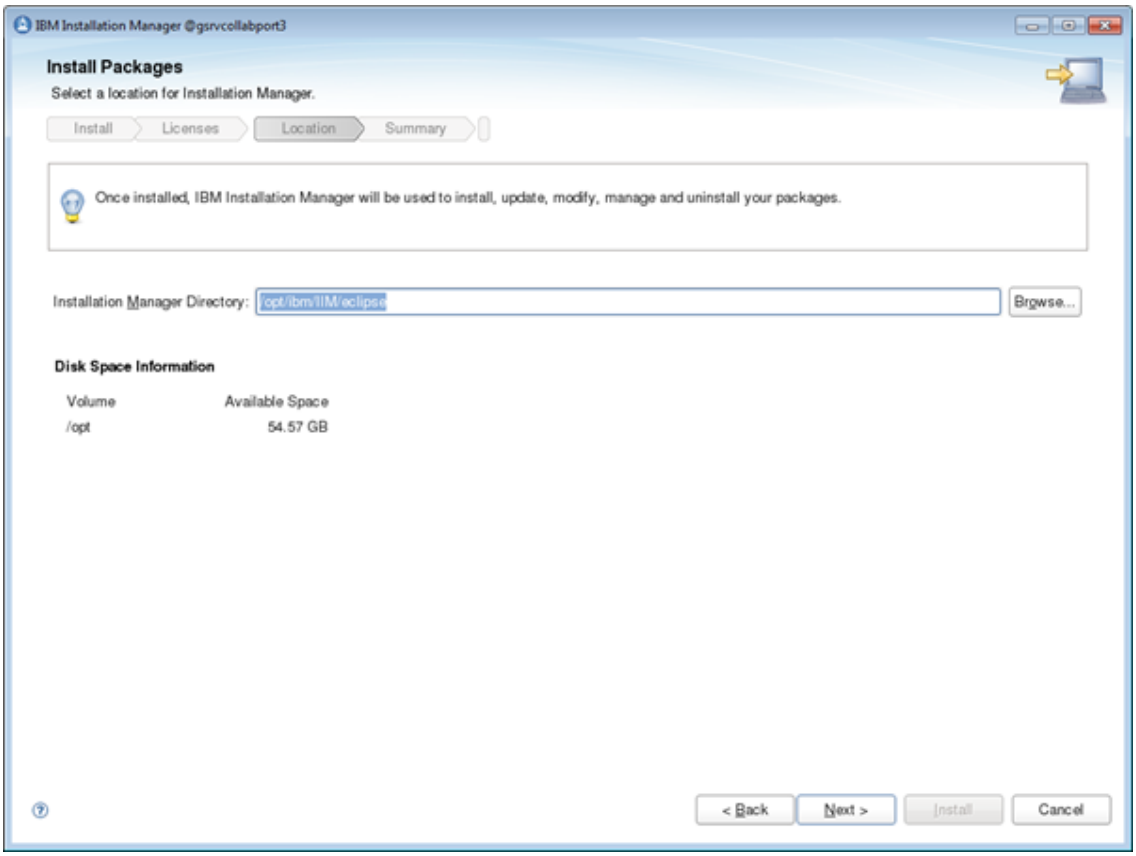
following screen appear to you:



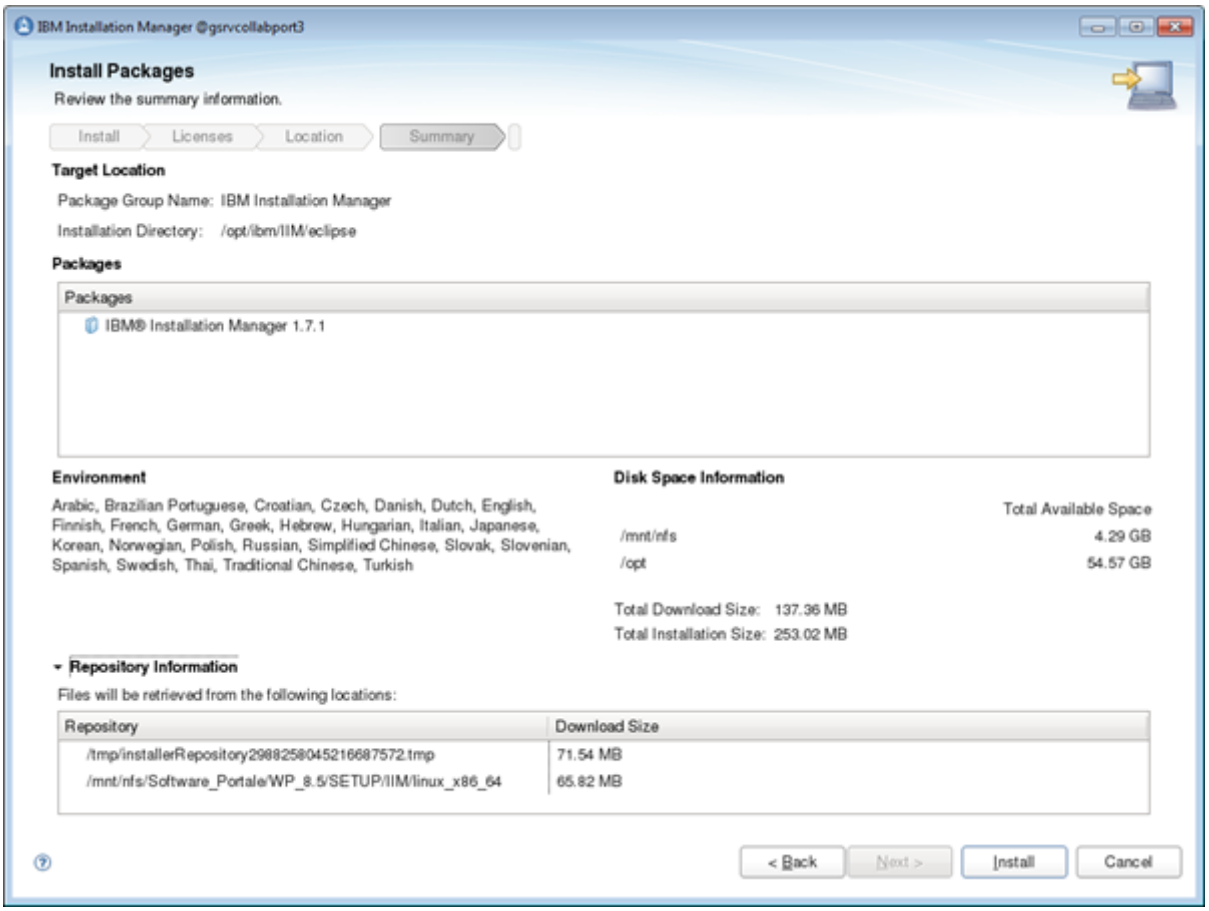
Click next.



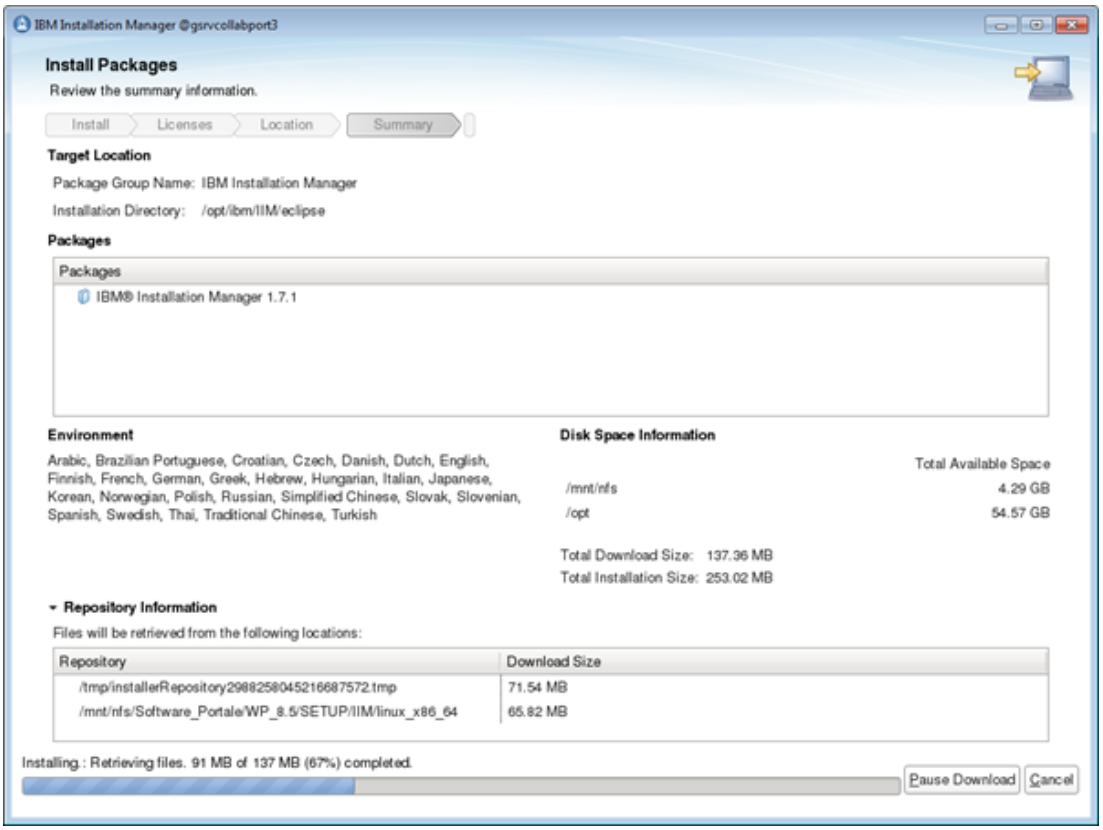
Accept license and click next



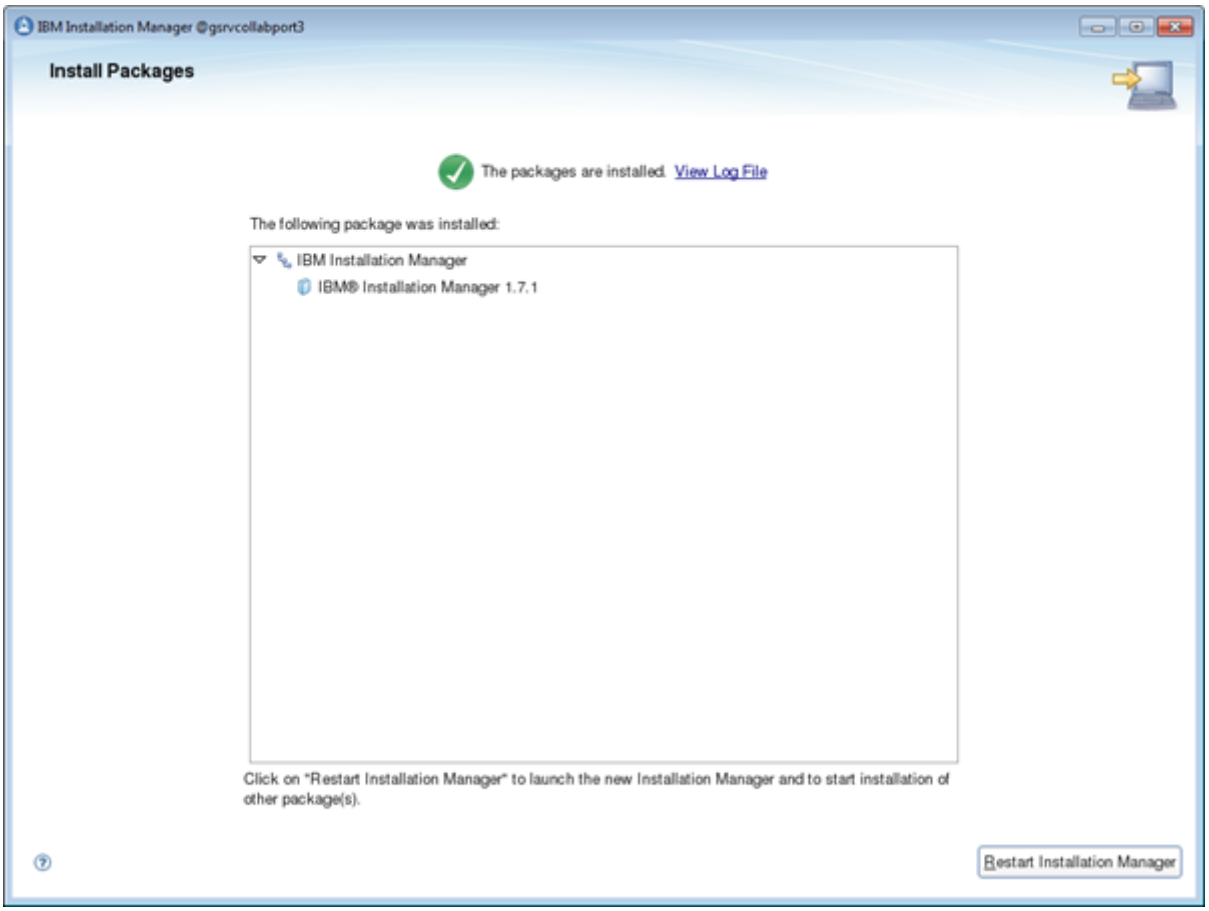
Choose installation path, in my case /opt/ibm/IIM/eclipse, and next



If all summarize information is ok, click install



Waiting to install

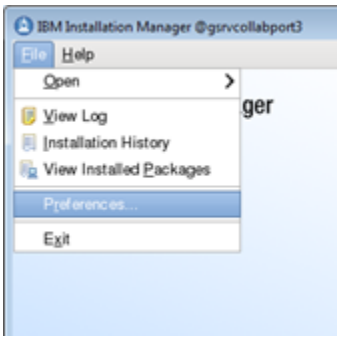


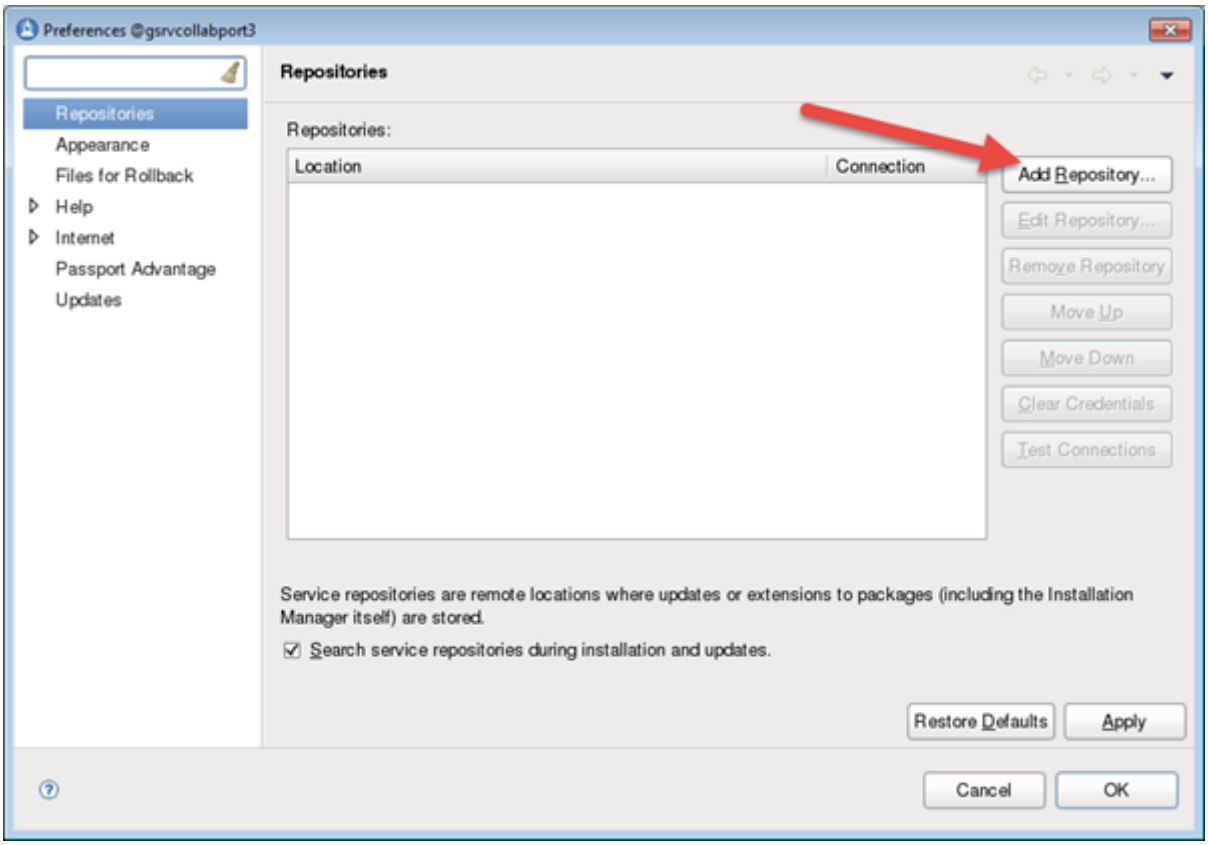
If Success you can click Restart Installation Manager, otherwise correct error and re-try.

Install WebSphere Portal

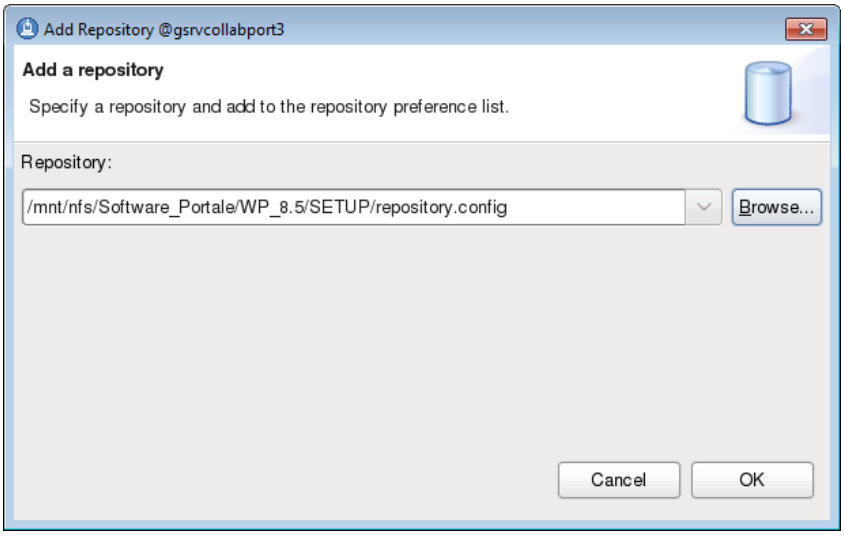
Now you are ready to install Digital Experience Software (WebSphere Portal)

In installation manager menu select File / Preferencese…

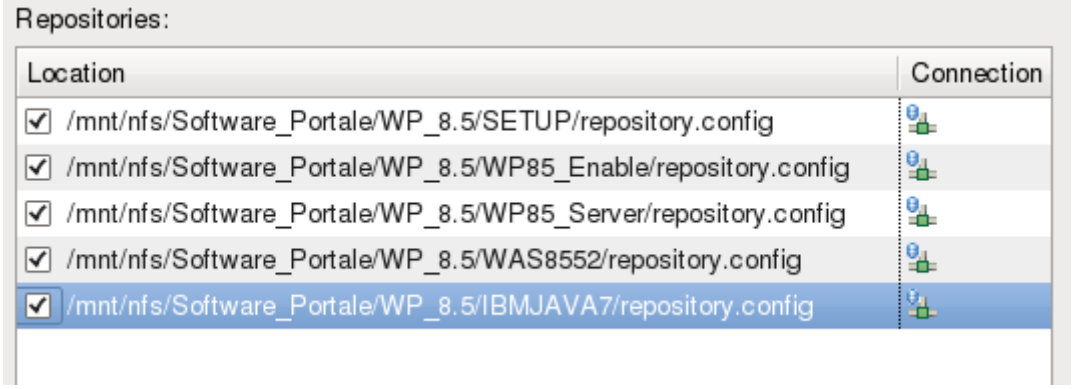


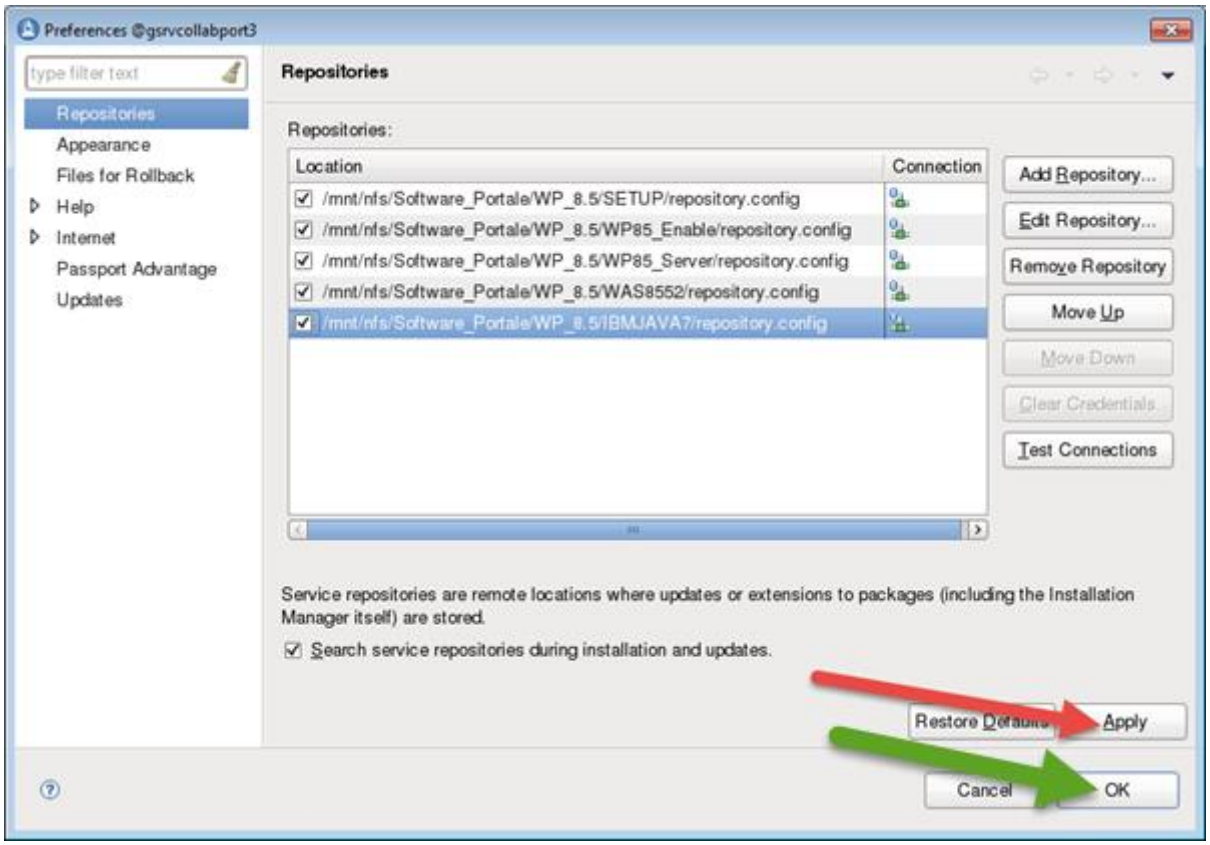


Add repository used during installation

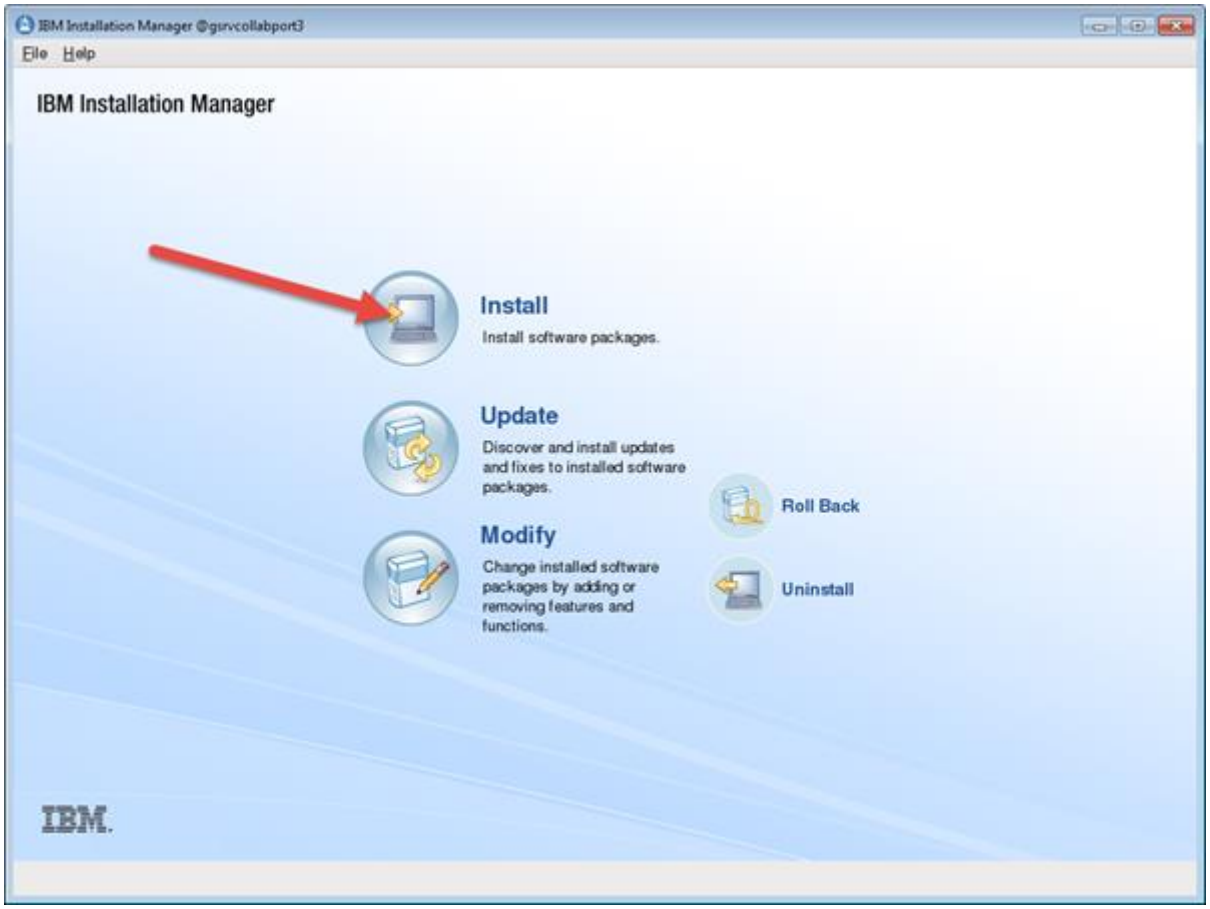


You must choose following repository

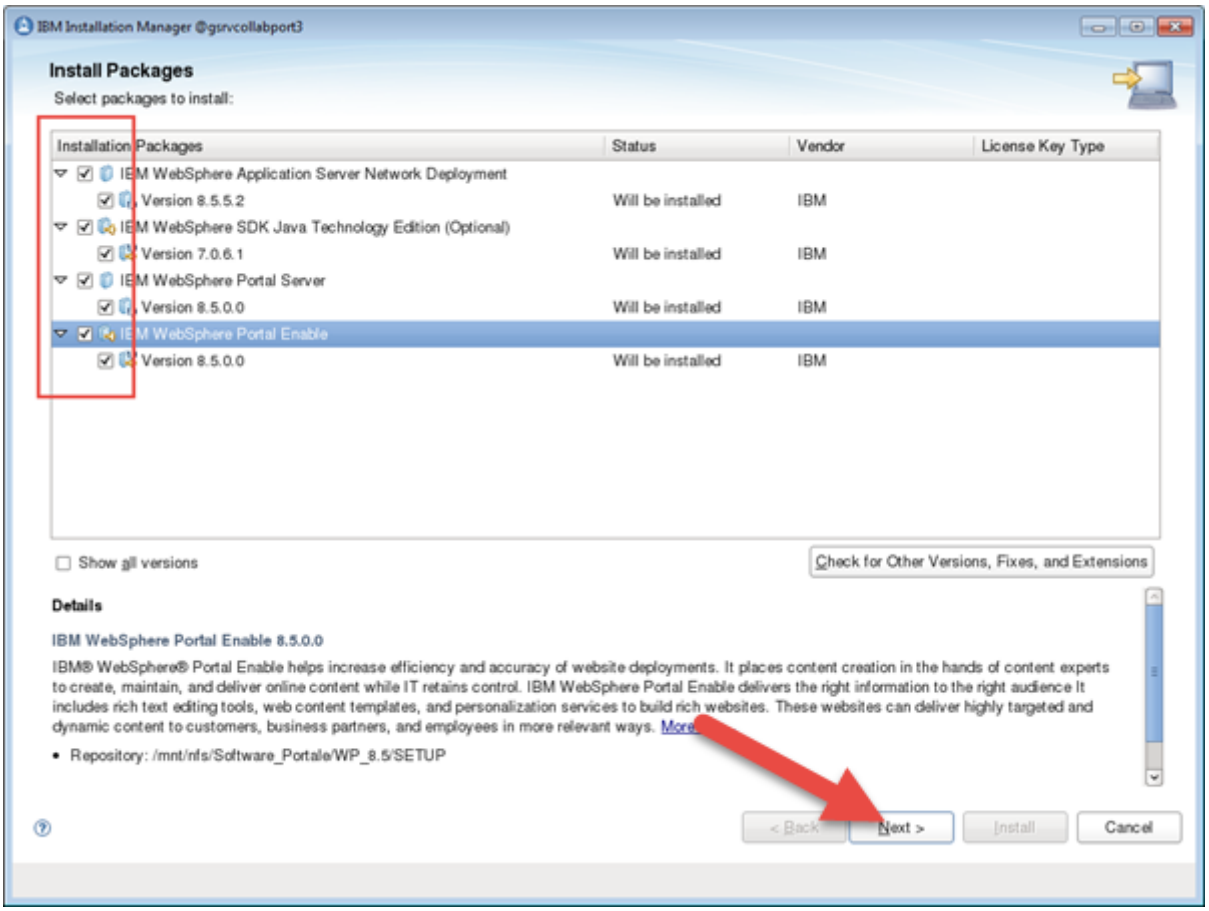




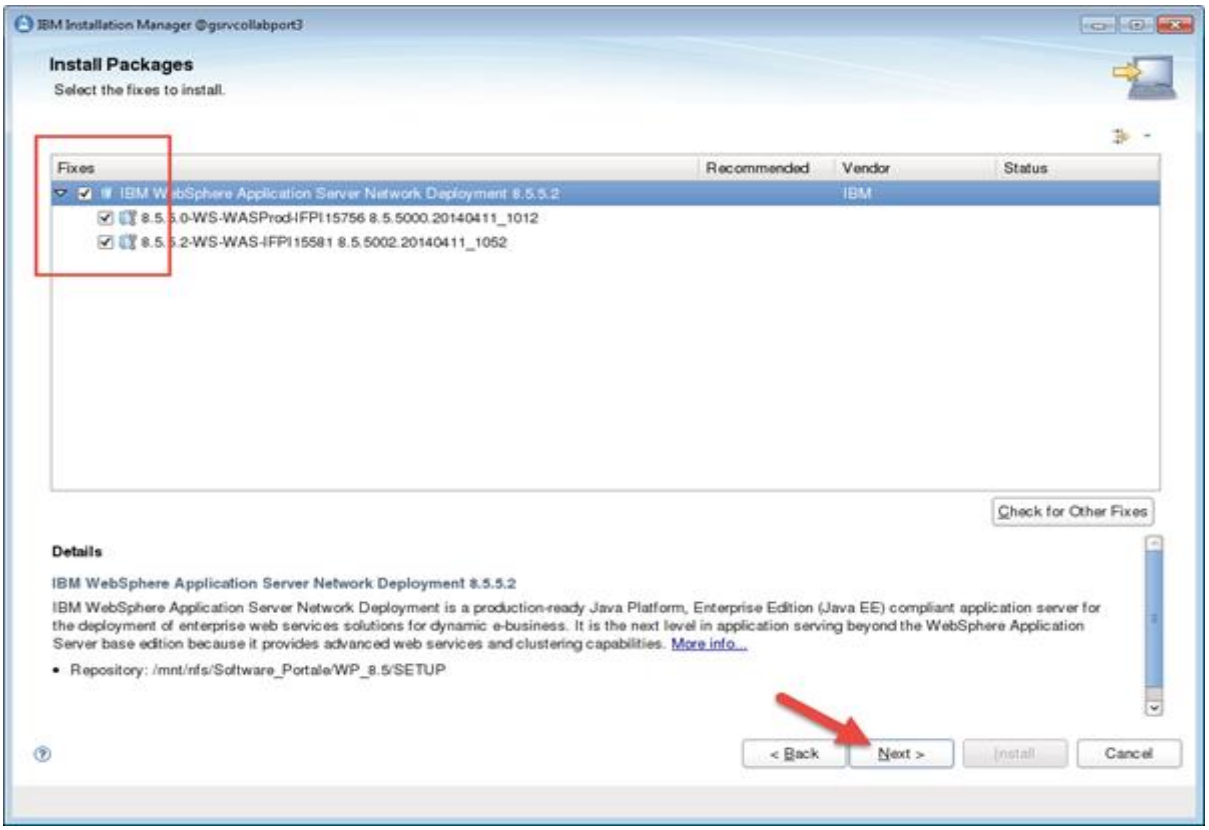
Click Apply and OK



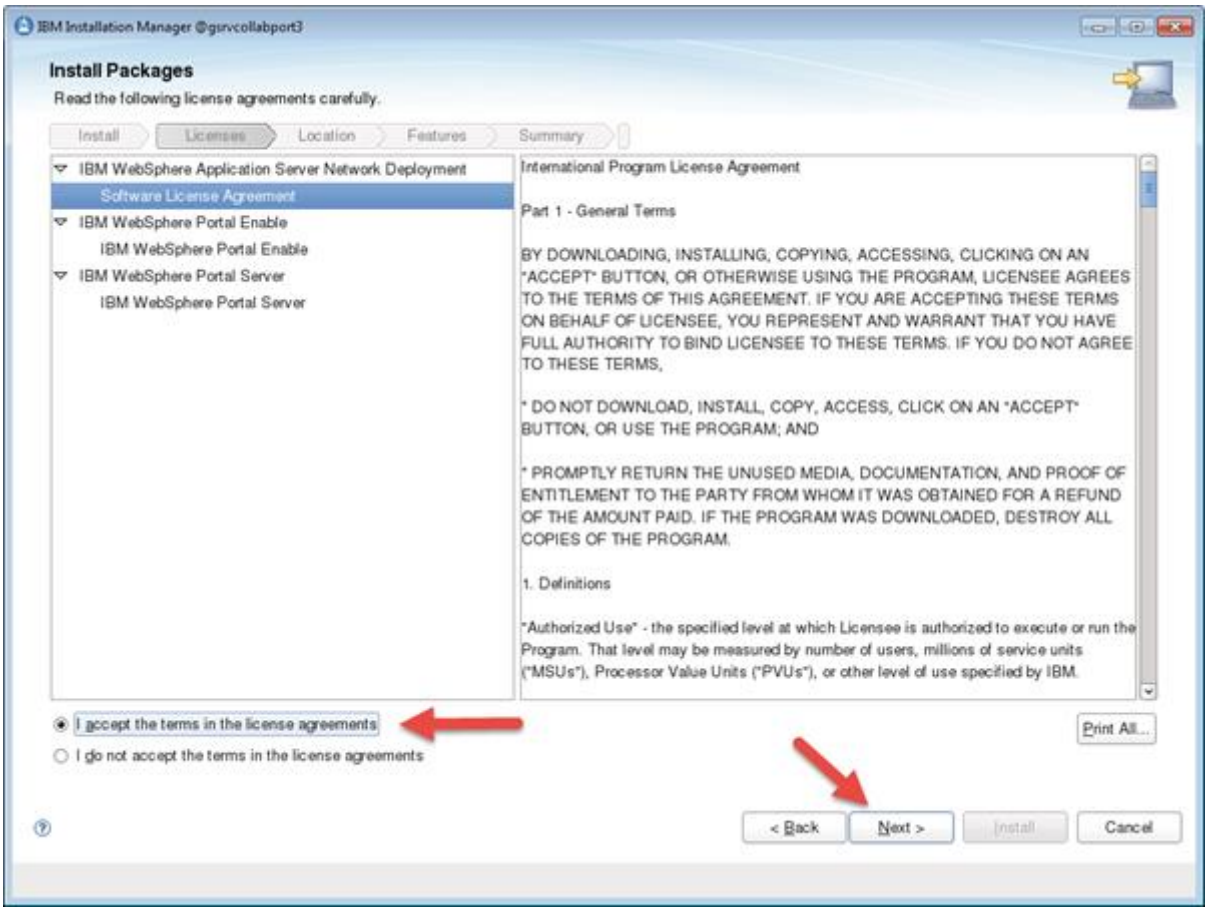
Now click Install



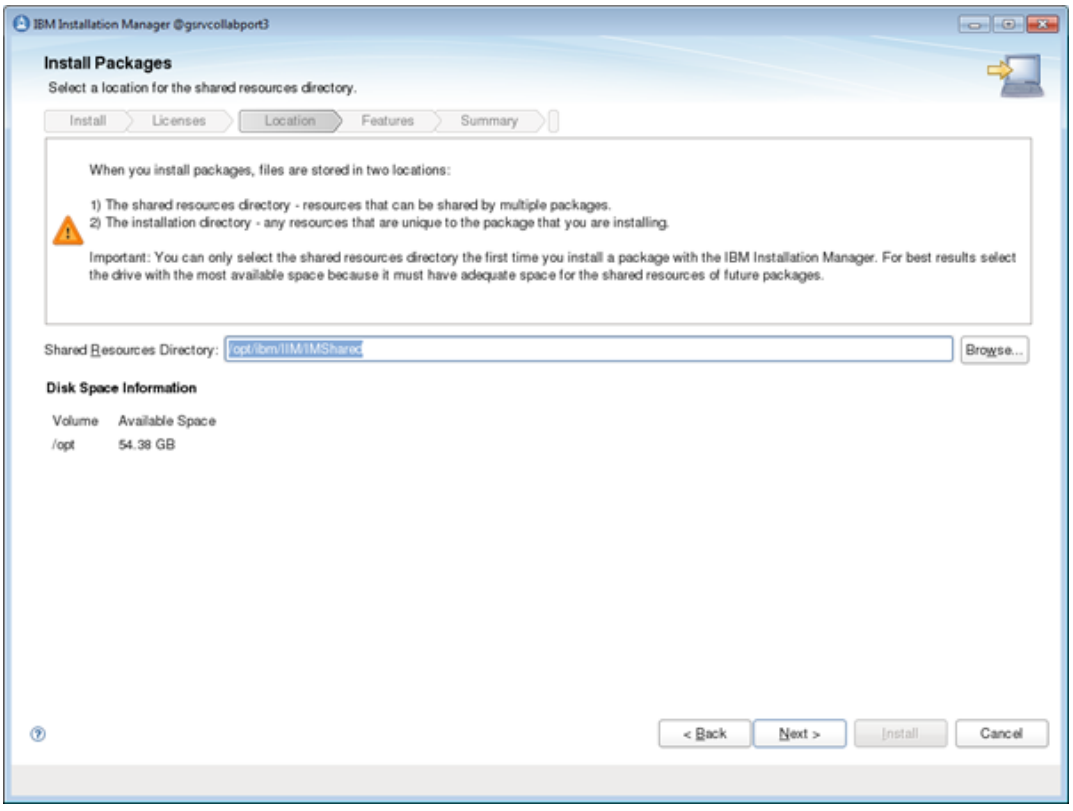
Select all Packages and Next



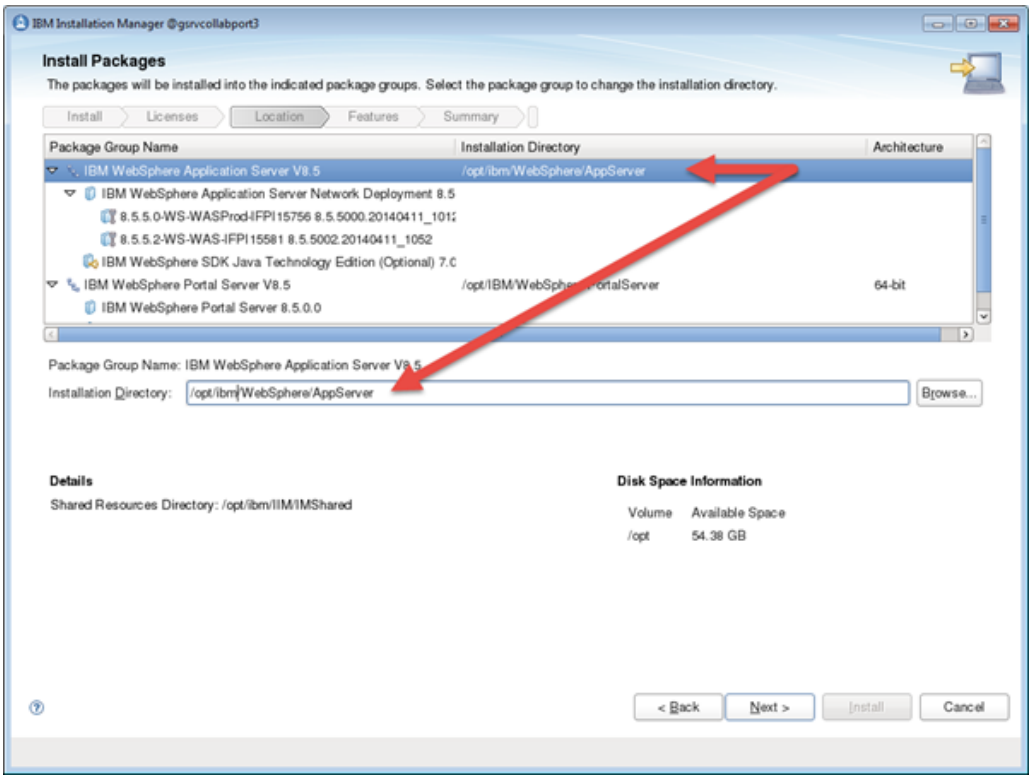
Select all Packages and Next



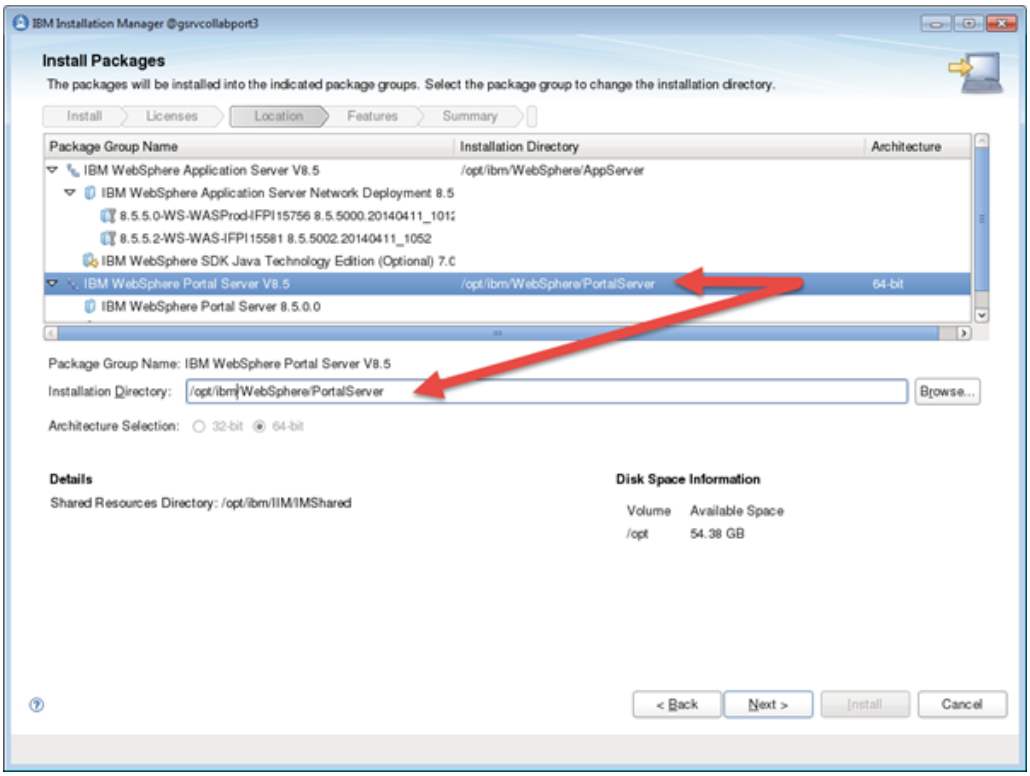
Accept license and Next



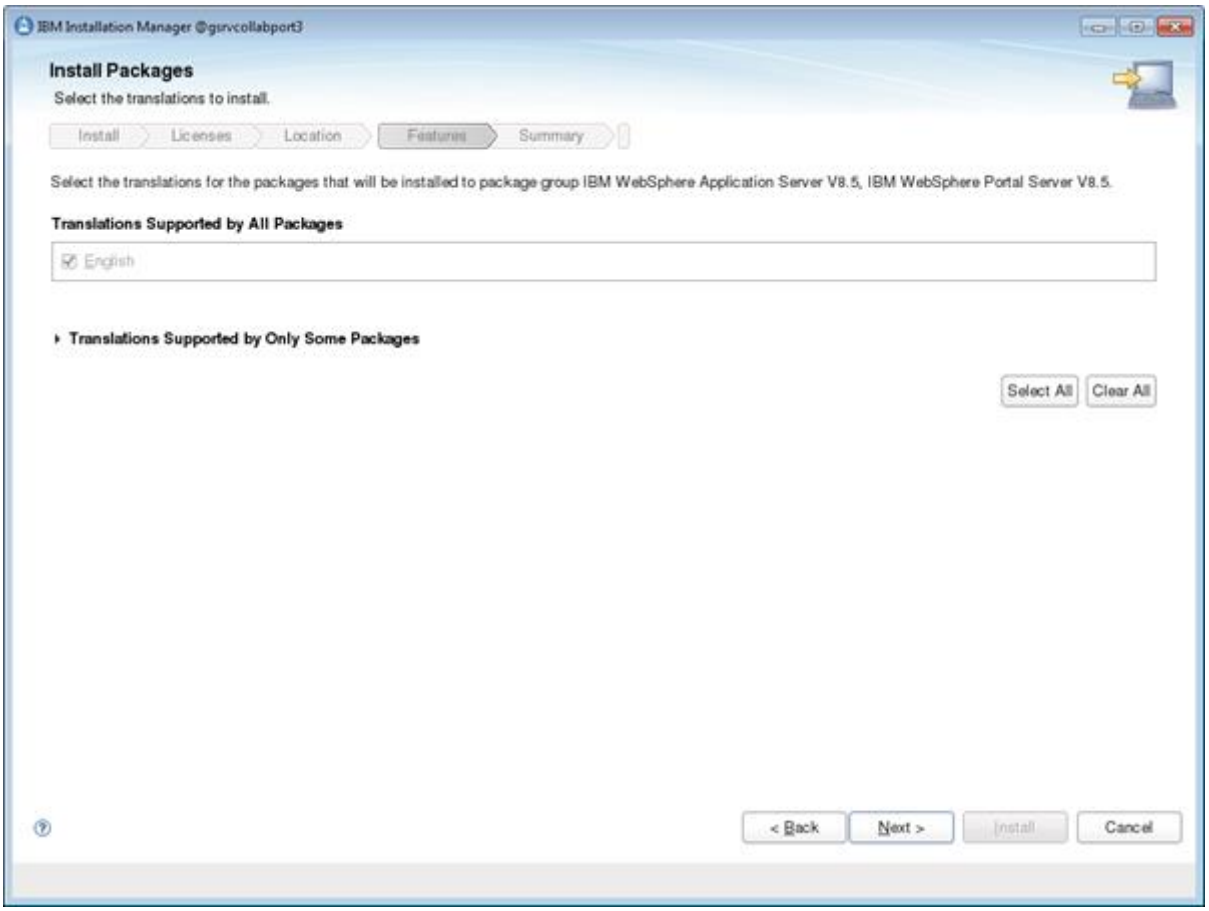
Choose your IMShared directory, in my case /opt/ibm/IIM/IMShared and Next



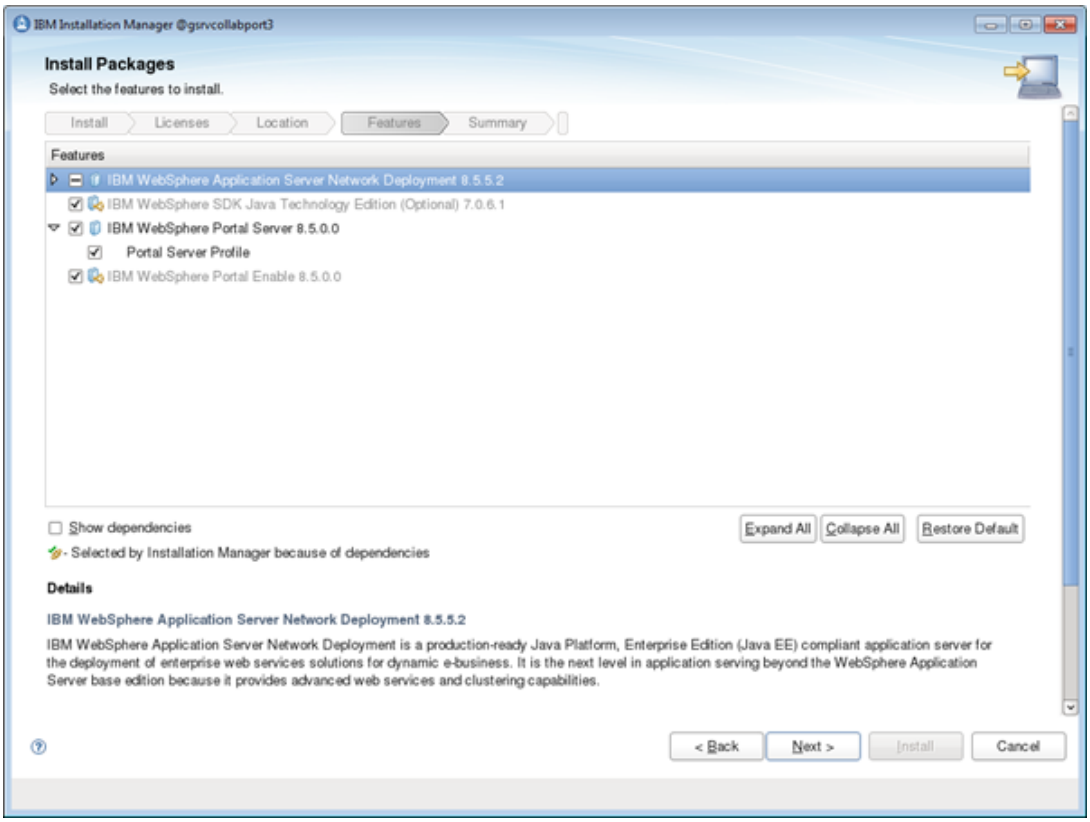
Choose your WebSphere Application Server install path, in my case /opt/ibm/WebSphere/AppServer



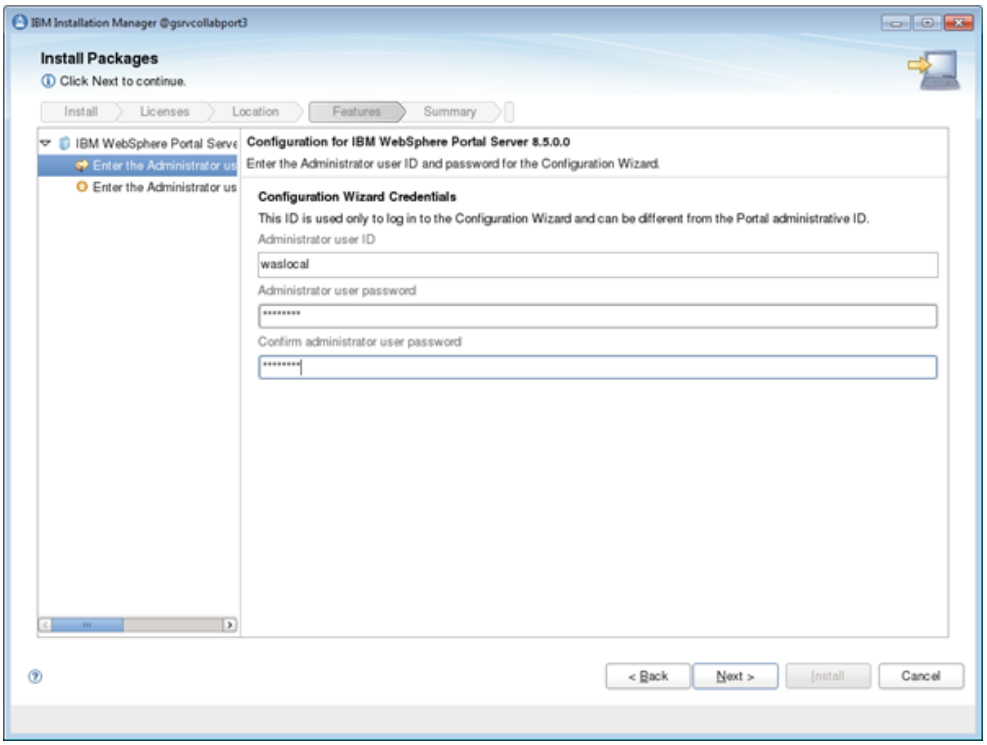
Choose your WebSphere Portal Server install path, in my case /opt/ibm/WebSphere/PortalServer and Next



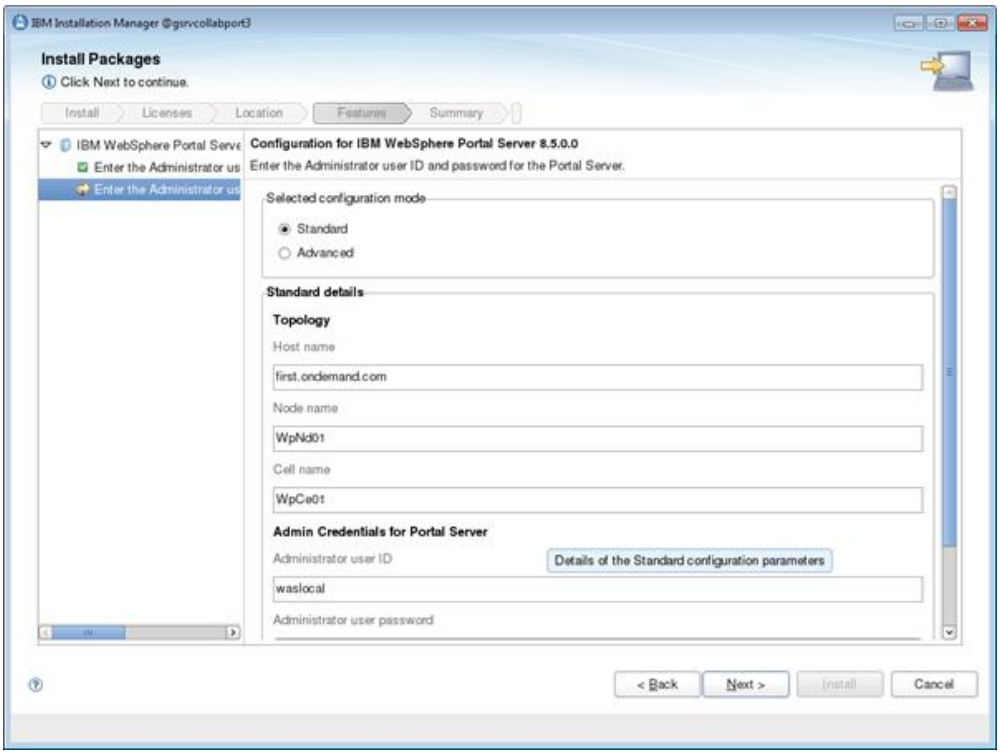
If needed choose your language, otherwise Next



If summarize data is ok, Next



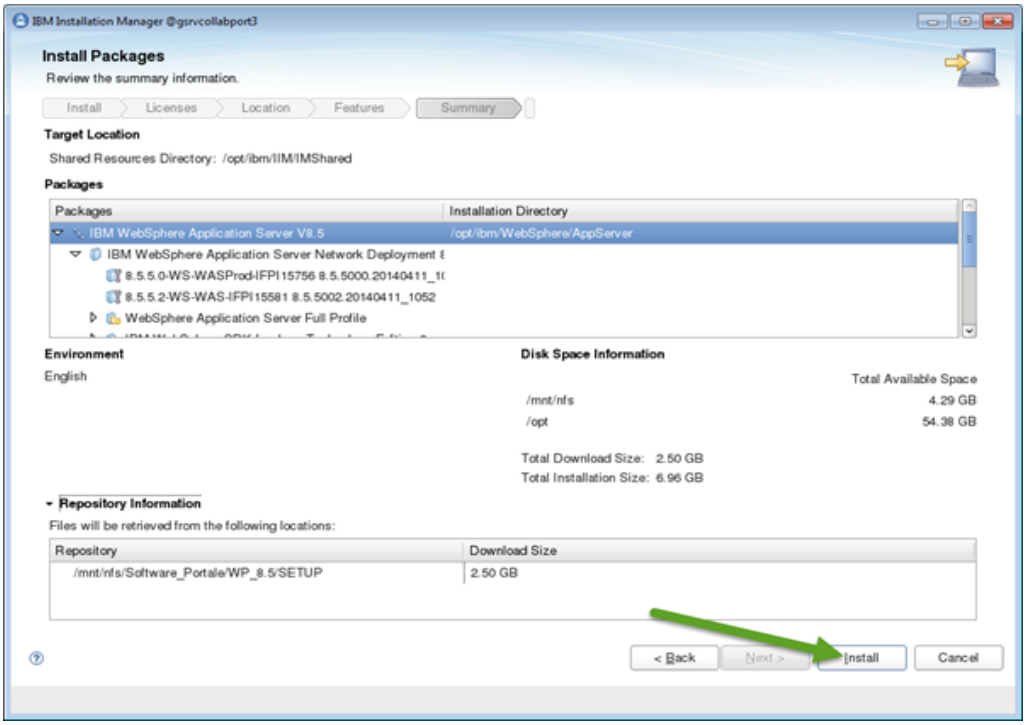
Choose your WebSphere Administrator credential, this credential will be stored in Internal Repository and MUST be unique when you add your LDAP configuration, in my case I use waslocal / passw0rd



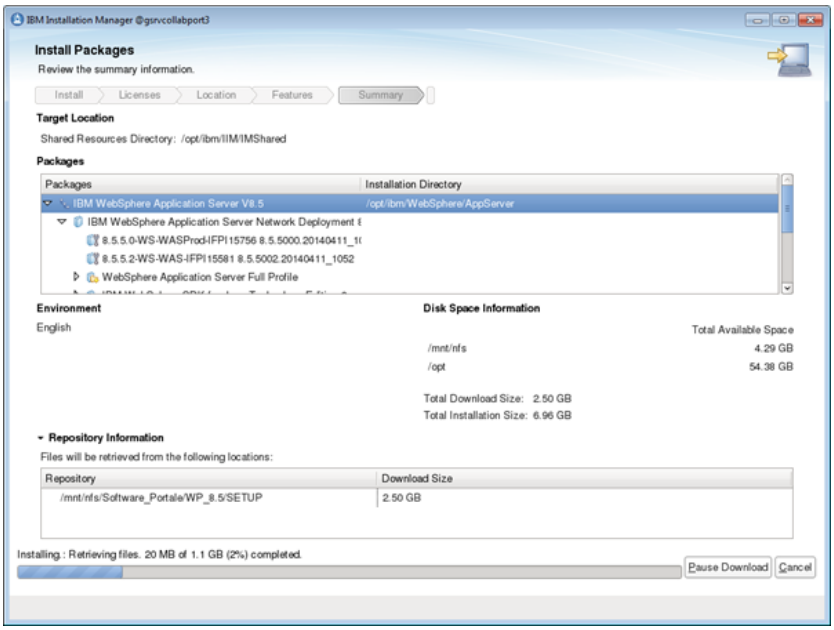
Set Hostname, this name will be solved during your digit. Set Node name and Cell Name,
In my case I choose as Node name : WpNd01 and for Cell name WpCe01, this cell name will be updated when node will be federated to DMGR.

Choose your WebSphere Portal Administrator credential, this credential will be stored in Internal Repository and MUST be unique when you add your LDAP configuration, to simplify your work I can suggestion to use same user you choose as WebSphere Administartor,
in my case I use
Waslocal / passw0rd

Optional: If you select the Advanced Configuration radio button at the top of this screen (not shown), you can also set the Context Root, Default Home, Personalized Home, starting Port range, Profile Name, and Profile Path. For this guide, these were all left as the defaults but you are welcome to configure these as you see fit.

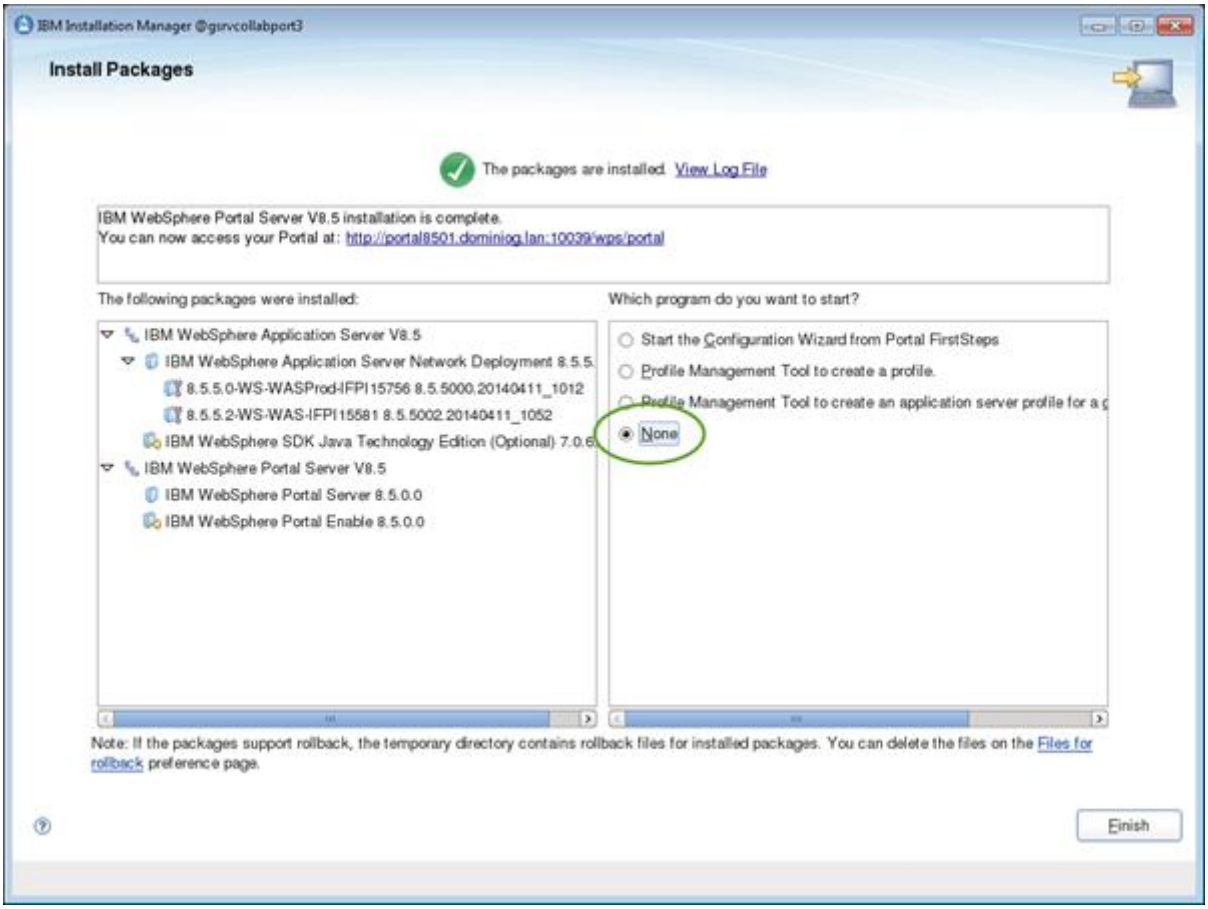


If all summarize data is OK, you can click Install



And wait to complete

if all activities are successful you will get the following screen, it will take enough time, if you see the bar stops do not worry to be patient.



Now choose “None”, and Finish

Configuration WebSphere Portal

Now begin configuring WebSphere Portal with the Configuration Wizard, during this activities we configure Portal to use, DataBase Server and LDAP Server.

Start the configuration wizard to set up your clustered environment. First, transfer your database. Then, create the deployment manager and create a cluster node. Then, enable your federated LDAP user registry. Finally, create your additional cluster nodes.

In my case, I choose to prepare Databse Server manually before Configure Portal.

Prepare Database Server

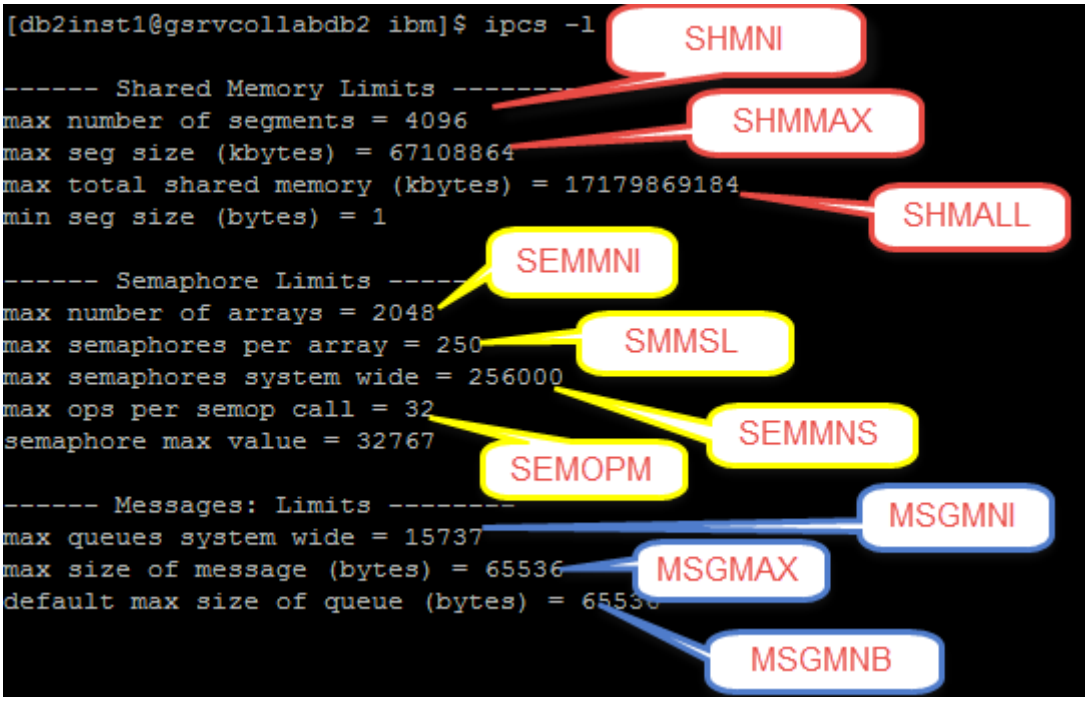
Install DB2 on dedicated server.
To install DB2 you can doing following step

Connect to server as administrator user

Linux/UNIX environments only
Verify kernel parameter

To update kernel parameters on Red Hat, editing the /etc/sysctl.conf file. If this file does not exist, create it.

1. Run the ipcs -l command to list the current kernel parameter settings.



To calculate appropriate value following next table

Table 1. Kernel Parameter

IPC kernel parameter	Enforced minimum setting
kernel.shmmni (SHMMNI)	256 * *<size of RAM in GB>*
kernel.shmmax (SHMMAX)	*<size of RAM in bytes>*
kernel.shmall (SHMALL)	2 * *<size of RAM in the default system page size>*
kernel.sem (SEMMSL)	250
kernel.sem (SEMMNS)	256 000
kernel.sem (SEMOPM)	32
kernel.sem (SEMMNI)	256 * *<size of RAM in GB>*
kernel.msgmni (MSGMNI)	1 024 * *<size of RAM in GB>*
kernel.msgmax (MSGMAX)	65 536
kernel.msgmnb (MSGMNB)	65 536

Run sysctl with -p parameter to load in sysctl settings from the default file /etc/sysctl.conf

Creating group and user IDs for a DB2 database installation, The user and group names used in the following instructions are documented in the following table. You can specify your own user and group names if they adhere to system naming rules and DB2® naming rules.

Table 2. Default users and groups		
User	**Example user name**	**Example group name**
Instance owner	db2inst1	db2iadm1
Fenced user	db2fenc1	db2fsdm1
DB2 administration server user	dasusr1	dasadm1

- The instance owner home directory is where the DB2 instance will be created.
- The fenced user is used to run user defined functions (UDFs) and stored procedures outside of the address space used by the DB2 database.
- The user ID for the *DB2 administration server user* is used to run the DB2 administration server on your system.

Create group:

```
groupadd -g 999 db2iadm1
groupadd -g 998 db2fsdm1
groupadd -g 997 dasadm1
```

Create sser:

```
useradd -u 1004 -g db2iadm1 -m -d /opt/data/db2inst1 db2inst1
useradd -u 1003 -g db2fsdm1 -m -d /home/db2fenc1 db2fenc1
useradd -u 1002 -g dasadm1 -m -d /home/dasusr1 dasusr1
```

only for user “db2inst1” in my case I choose as him home root /opt/data instead the /home, because in this mode when I create the Instance all db will be create in /opt/data directory where I want have all data.
Set password:

```
passwd db2inst1
passwd db2fenc1
passwd dasusr1
```

Install DB2

to Install DB2 move where have unpack the packages and execute :

```
./db2_install –b /opt/ibm/DB2/V10.5 –L en –f NOSTAMP –l /tmp/db2Install.log –t
/tmp/db2trace.log
```

Where **–b** home where DB2 will be install, **-L** <preferred language>

Now after we installed DB2 we must configure it to working correctly.

Create Instance

```
/opt/ibm/DB2/V10.5/instance/db2icrt –a server –p 50001 –u db2fenc1 db2inst1
```

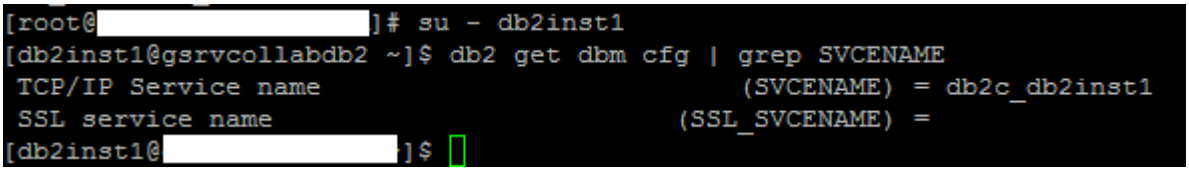
Configure Instance communication

Verify if your service is defined, other way you can define adding following line to /etc/services

```
db2c_db2inst1   50001/tcp    #DB2 Service
```

Verify if your instance is connected to TCP port, to execute this activities you must impersonate db2inst1 user

```
su – db2inst1

db2 get dbm cfg | grep SVCENAME
```



If your SVCENAME do not equal your services name you can update it, using following command

```
Db2 update dbm cfg using SVCENAME db2c_db2inst1
```

And setting DB2COMM to use TCPIP

```
Db2set DB2COMM=TCPIP
```

Now you must restart DB2

```
db2stop
db2start
```

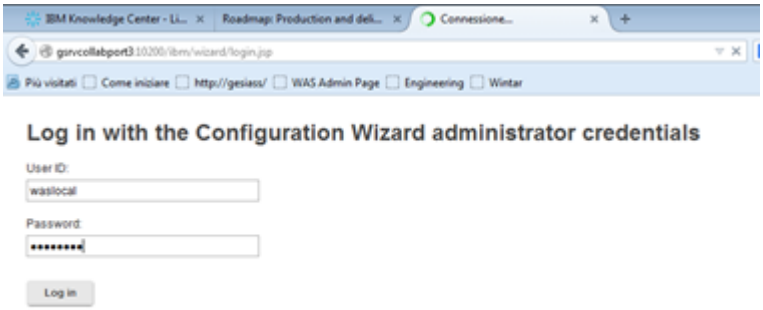
copy Jdbc drivers from Database server to Portal Server, in my case I put them into /opt/ibm/jdbc you must copy following file:

db2jcc4.jar and db2icc_license_cu.jar from <db2 home>/java.

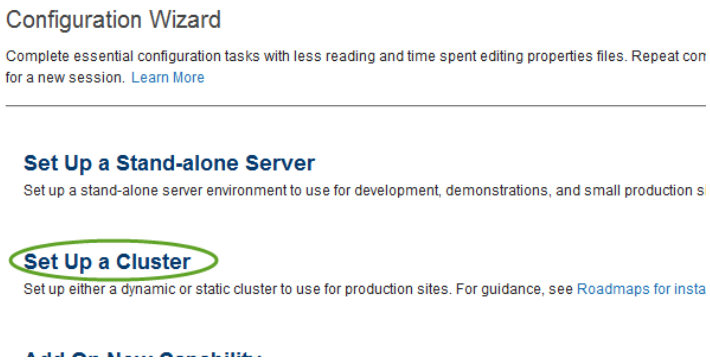
Transfer Database

Now we can move all installing data from Apache Derby to DB2 using Configuration Wizard.

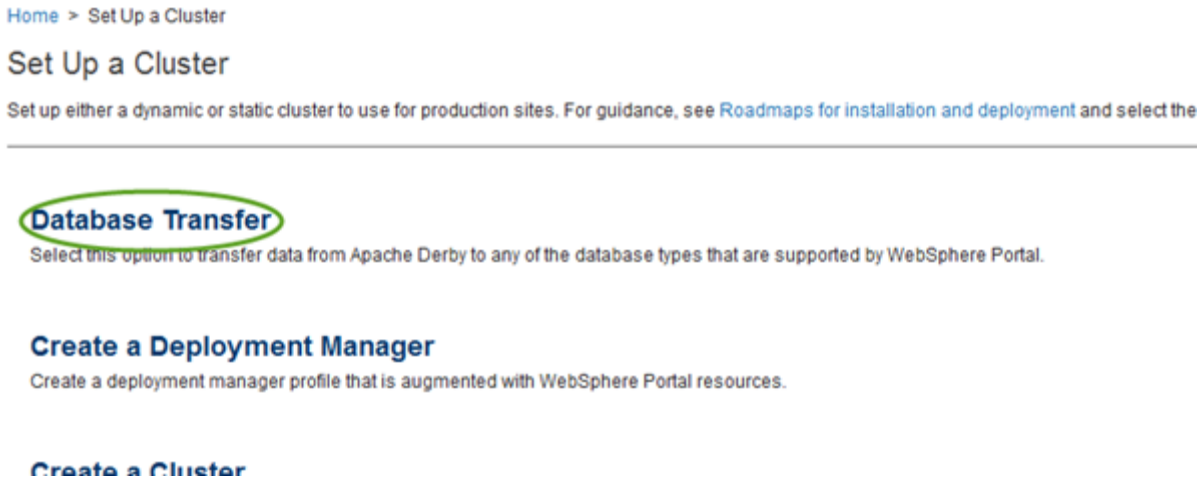
Connect to http://localhost:10200/ibm/wizard



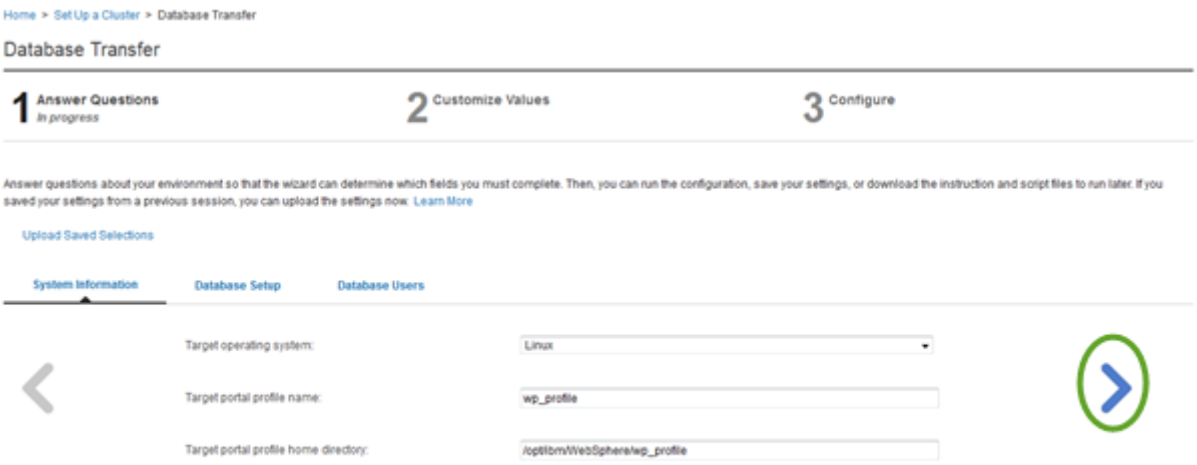
Authenticate using waslocal



Choose Set Up a Cluster



And Database Transfer

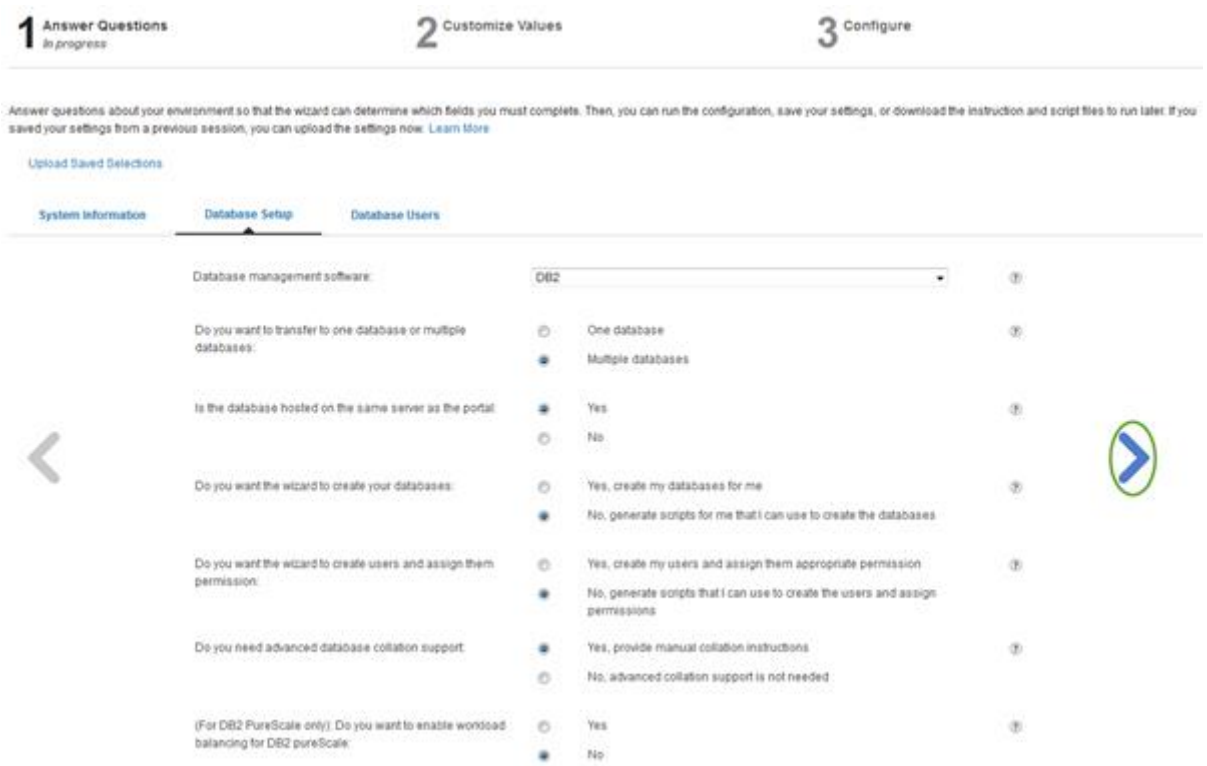


Identificate your environment

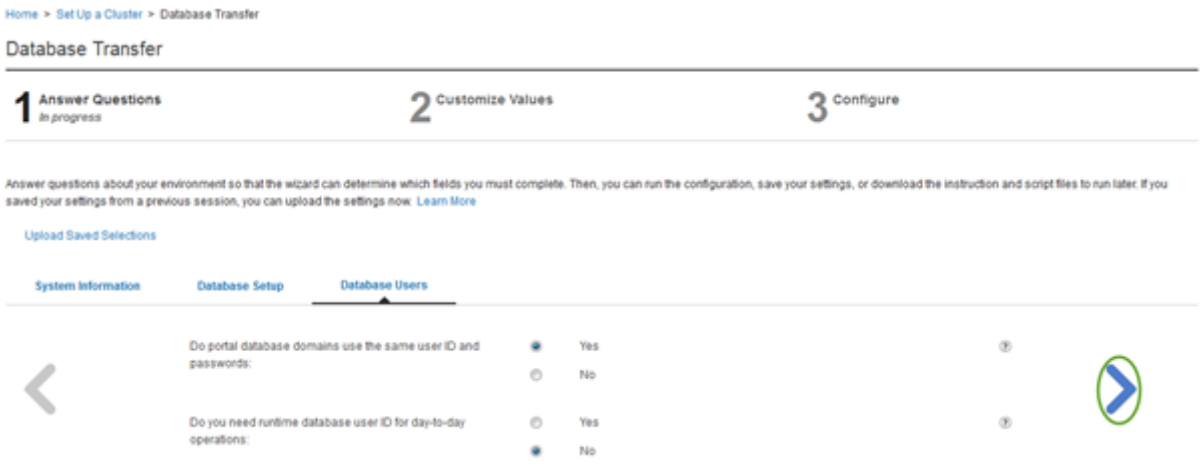
In my case

Target os: Linux
Target portal profile name : wp_profile
Target portal profile name : /opt/ibm/WebSphere/wp_profile

And click on right arrow (in green circle) to Next

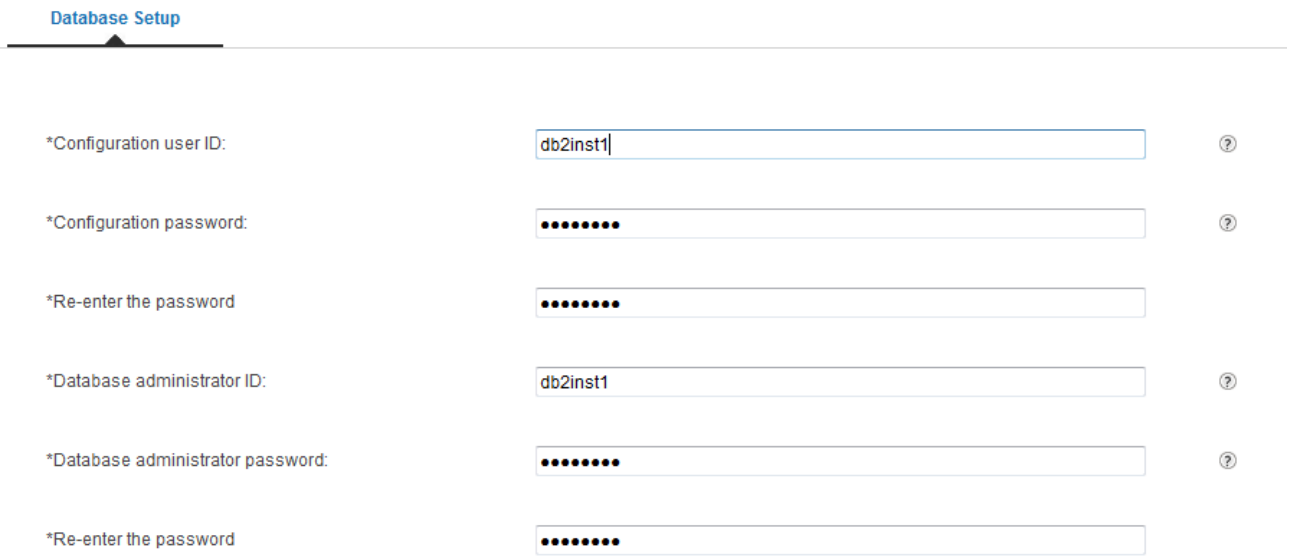


Choose your RDBMS, in my case DB2
Choose Multiple Database
Choose Database Hosted on same server
Choose Yes, create my database for me
Choose No, generate scripts……
Choose Yes, provide manual collation….
Choose No,
And Next



Choose Yes portal domain database use same user ID
Choose No, you need runtime….
And next

Insert your WebSphere Administrator : waslocal
Insert him password
Insert your installation directory, in my case /opt/ibm/WebSphere/PortalServer
And Next



Insert your DB2 Adminstrator User, in my case “db2inst1”

Now you must map all data source configuration parameter.

For each data source and db you must define jdbc url to connect my assumption is use alias name to reference Database Server, dbstore.ondemand.com

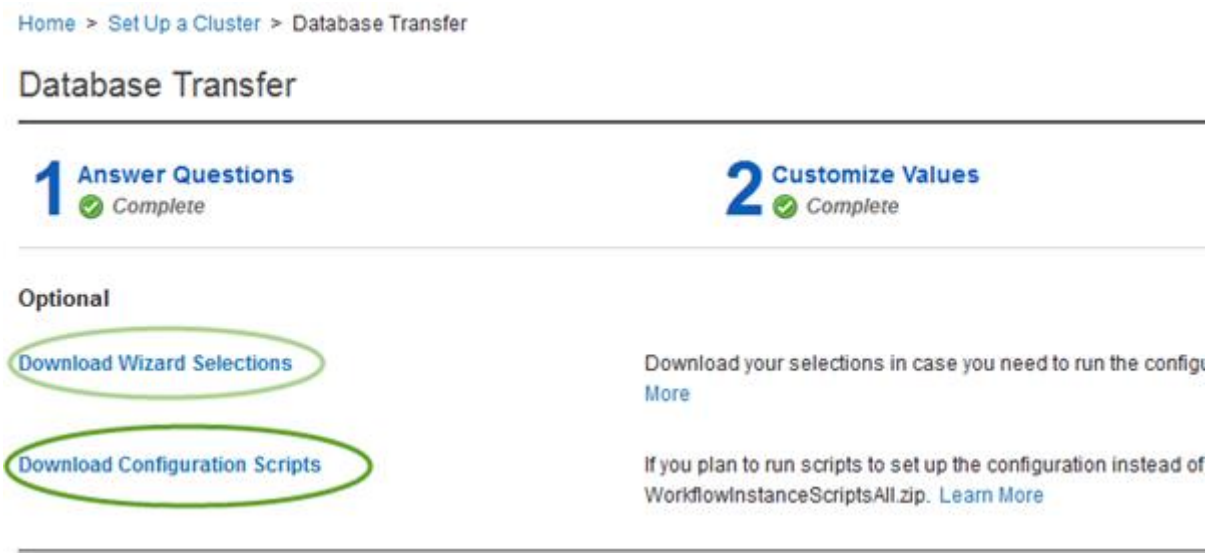
The url will be formed, following this schema

jdbc:db2://<dbserver Alias>:<port>/<dbname>:returnAlias=0;

For sample in my case

jdbc:db2://dbstore.ondemand.com:50001/WPREL:retrunAlias=0;

Define where you copy JDBC drivers on Portal Machine,
And your temporary directory.
And Next



Choose Download Configuration Scripts

Copy WorckflowInstanceScriptAll.zip into Portal Server and expand it in temporary directory
In my case I expand it in /opt/ibm/script/work

```
[root@              ] script]# unzip ./WorkflowInstanceScriptsAll.zip -d ./work/
Archive:  ./WorkflowInstanceScriptsAll.zip
  inflating: ./work/TransferDatabase.wfi
  inflating: ./work/wfi-instance.xsl
   creating: ./work/scripts/
  inflating: ./work/scripts/BackupPropertyFiles.sh
  inflating: ./work/scripts/ValidateDatabase.sh
  inflating: ./work/scripts/SetupDB2Database.sql
  inflating: ./work/scripts/ConfigureDb2ForLargeFileHandling.sh
  inflating: ./work/scripts/StopPortalServer.sh
  inflating: ./work/scripts/DatabaseTransfer.sh
  inflating: ./work/scripts/CreateDB2Database
  inflating: ./work/scripts/StartPortalServer.sh
  inflating: ./work/scripts/scripts.lst
   creating: ./work/properties/
  inflating: ./work/properties/StopPortalServer.properties
  inflating: ./work/properties/properties.lst
  inflating: ./work/properties/DatabaseTransfer.properties
  inflating: ./work/properties/StartPortalServer.properties
  inflating: ./work/properties/BackupPropertyFiles.properties
  inflating: ./work/properties/ValidateDatabase.properties
  inflating: ./work/properties/ConfigureDb2ForLargeFileHandling.properties
  inflating: ./work/TransferDatabase.html
```

And grant all permission to it and him son….

```
chmod -R 777 ./work
```

move to ./work/script
and execute ./ValidateDatabase.sh if ok (Build successful) execute ./DatabaseTransfer.sh

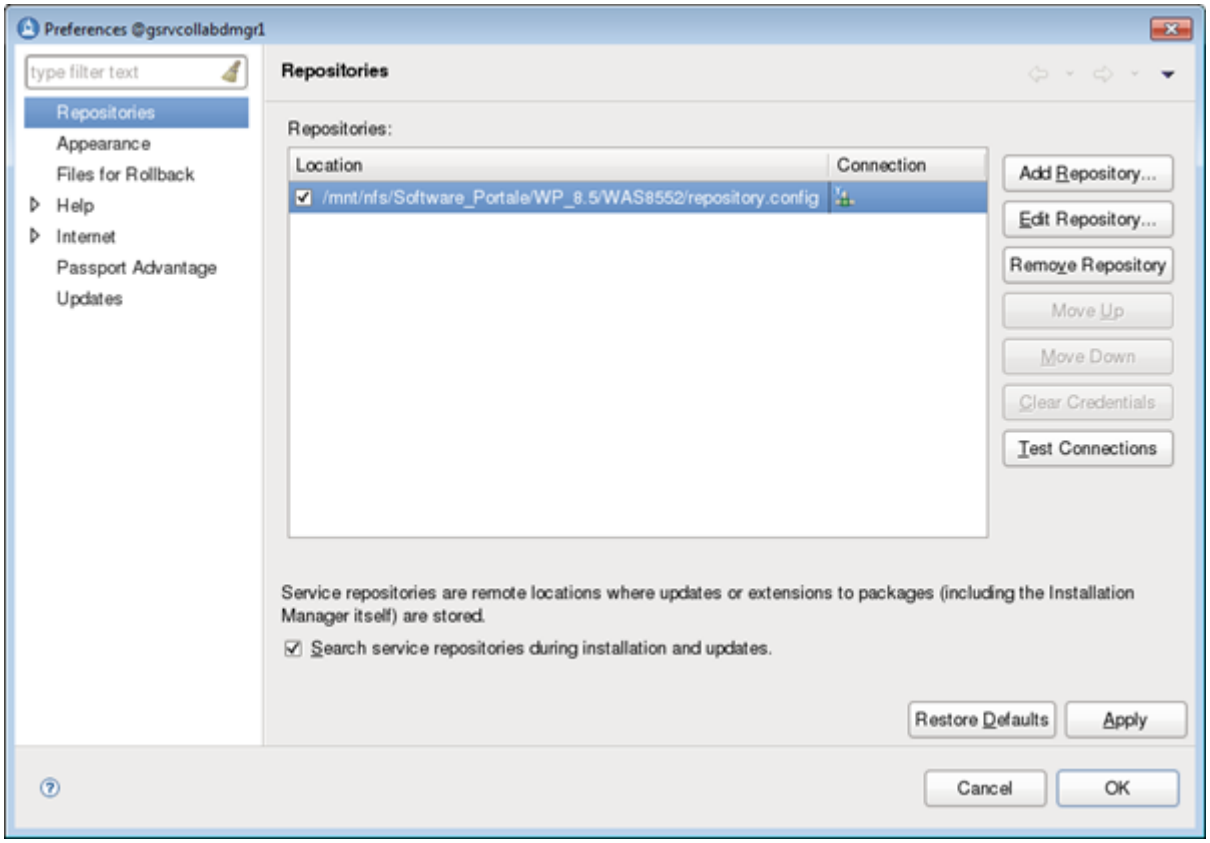
Restart your Portal Server.

Install & Configure Deploy Manager

Install DMGR

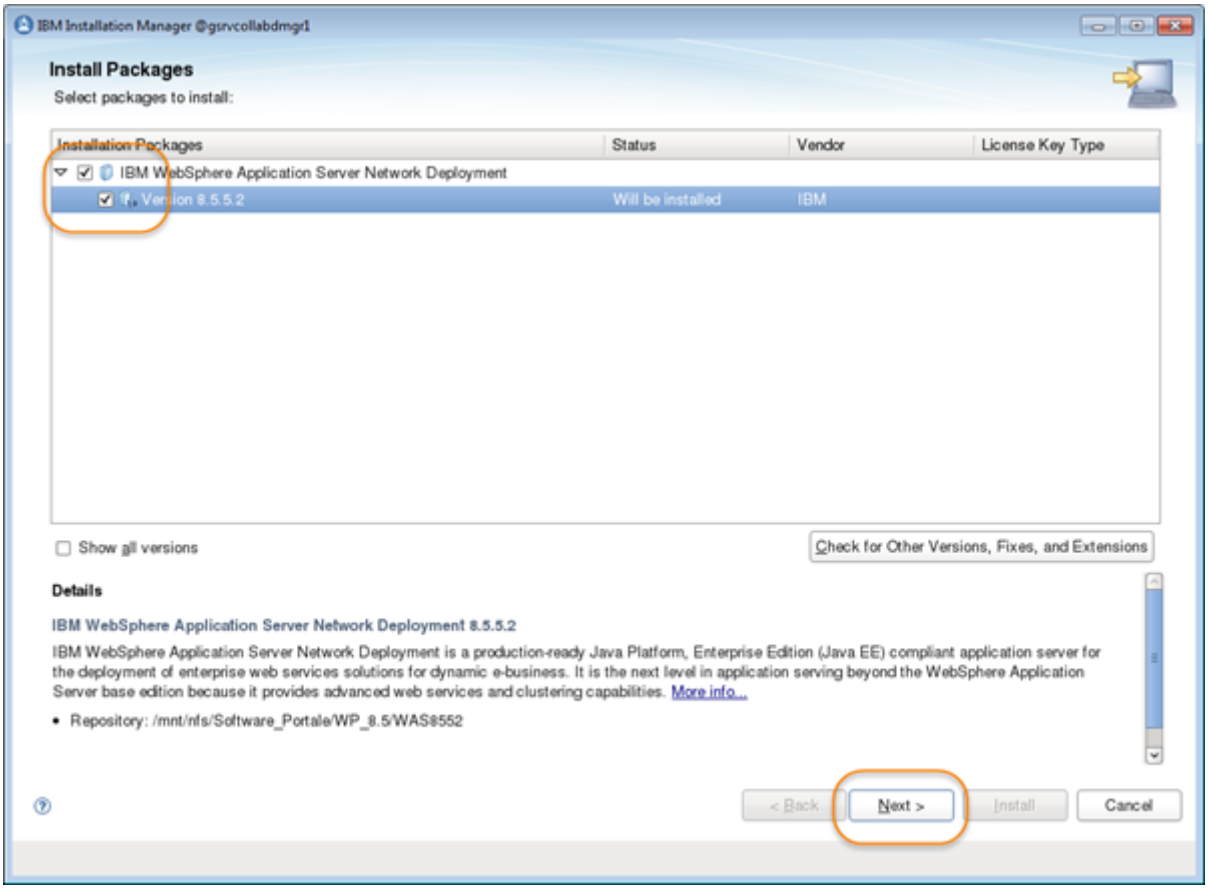
Move to DMGR machine, and install IBM Installation manager

Restart IBM Installation Manger and add repository to install WebSphere Application Server as DMGR

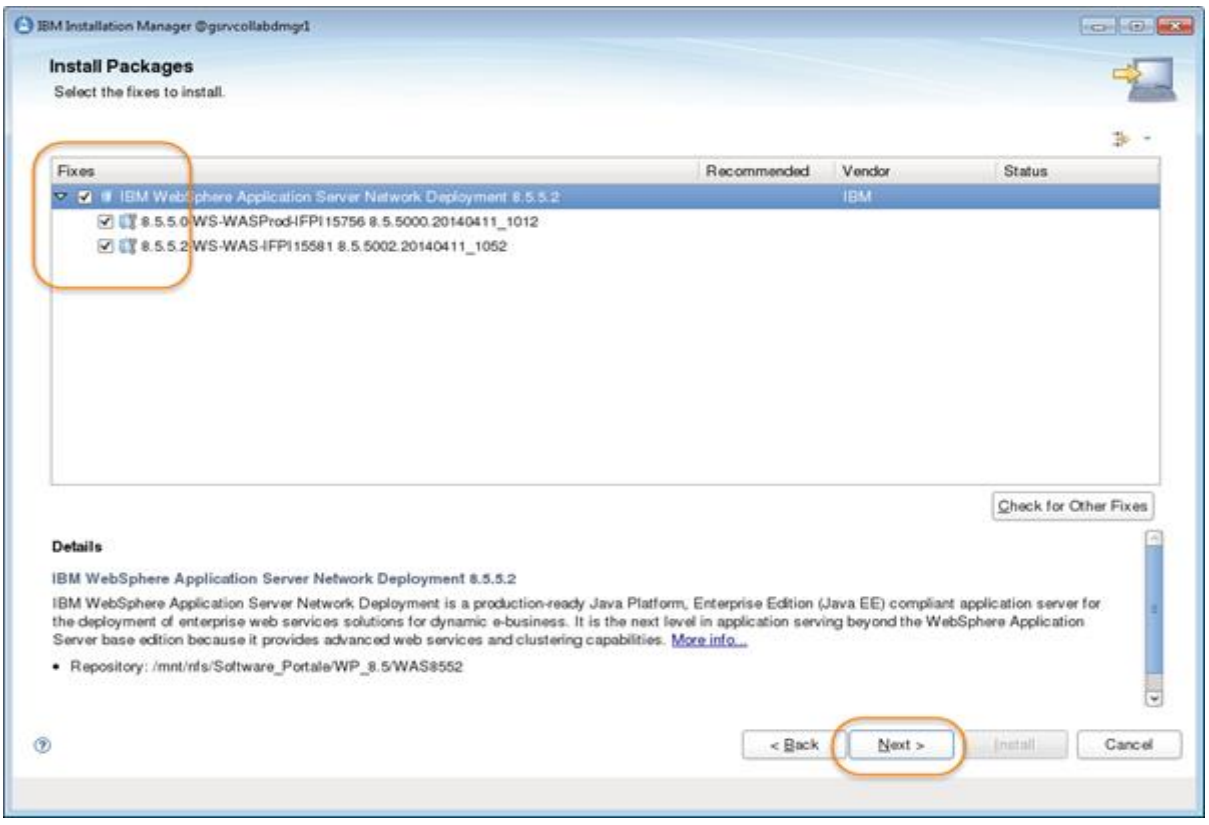


OK

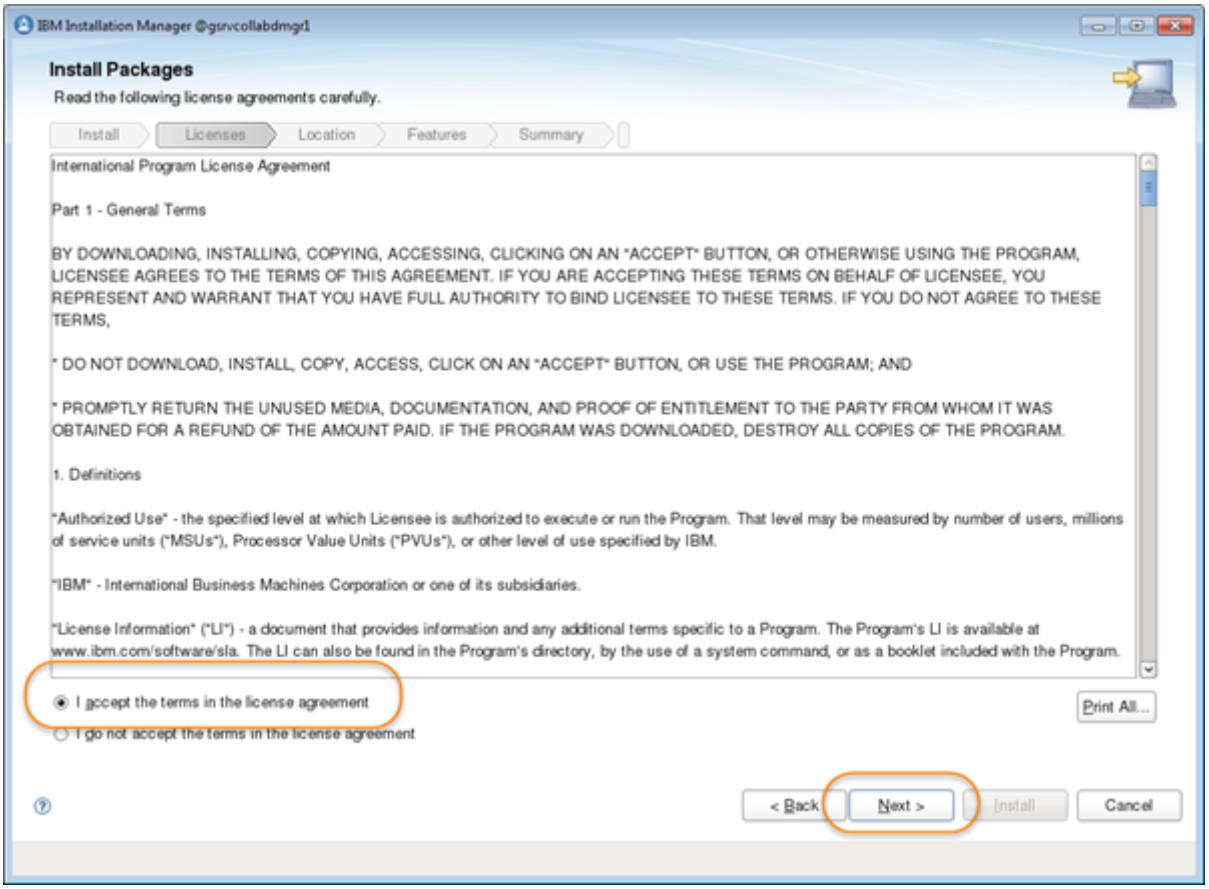
and Install



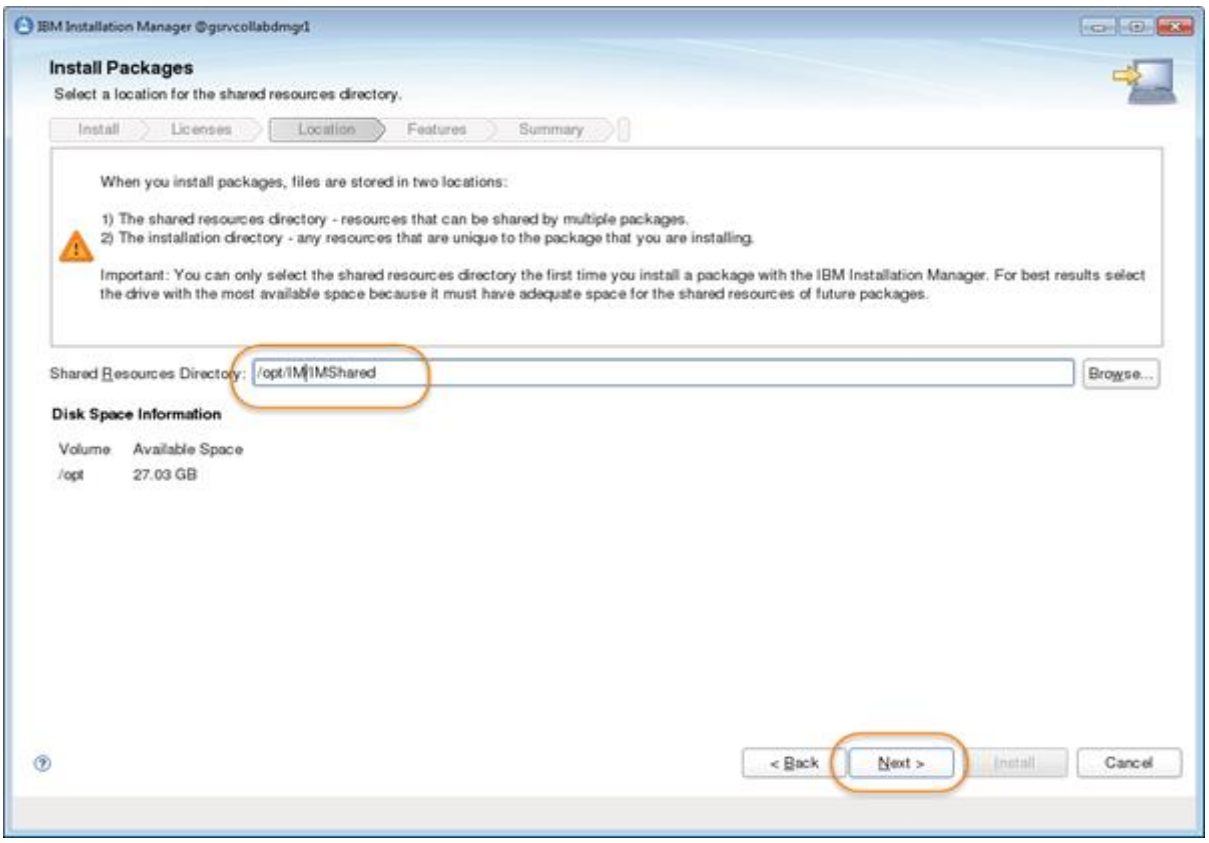
Select Packages and Next



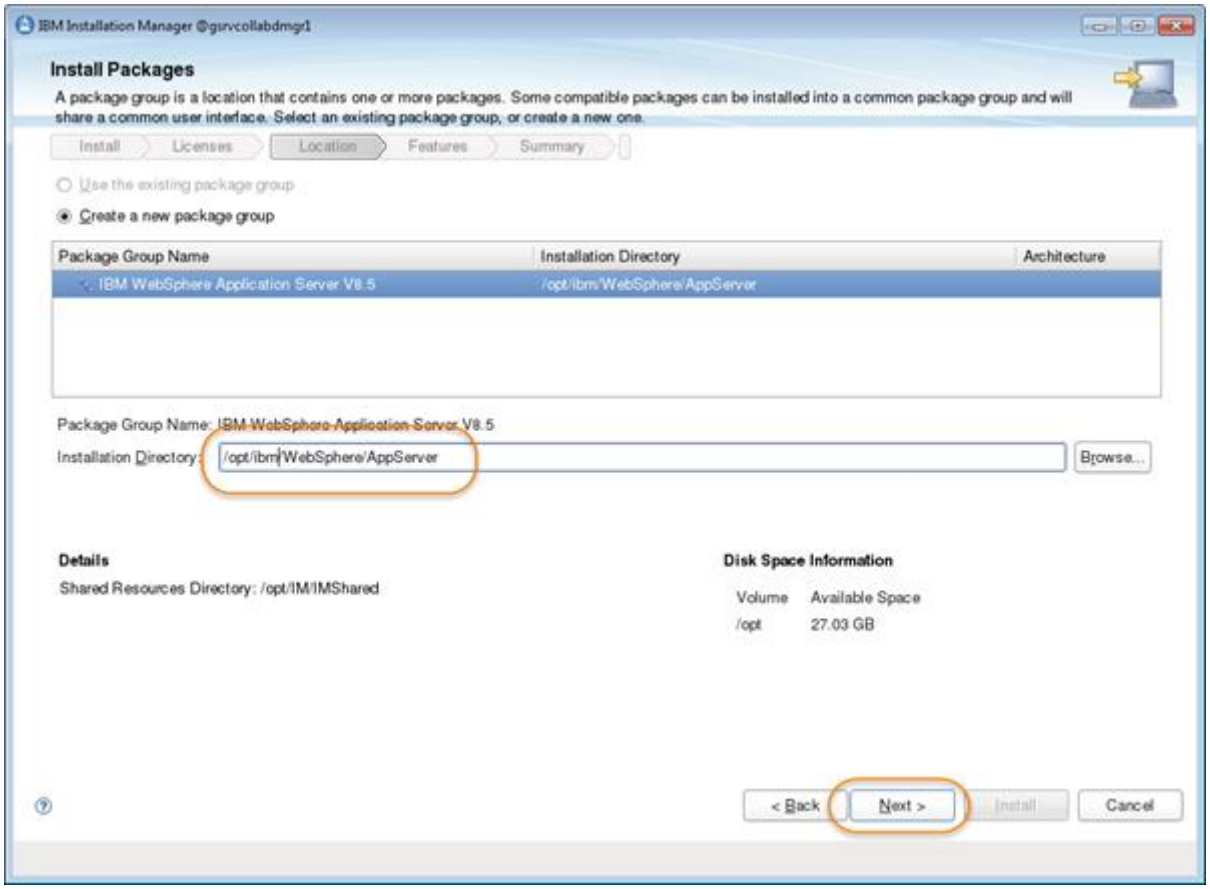
Select fix and Next



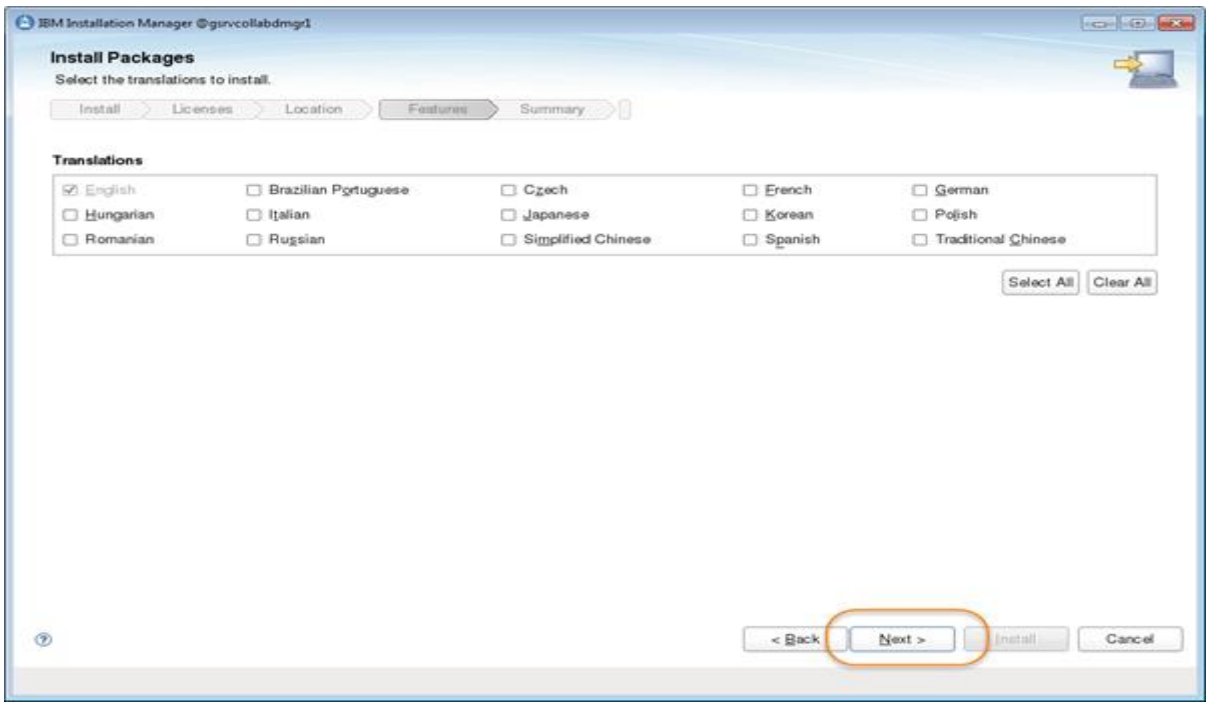
Accept License and Next



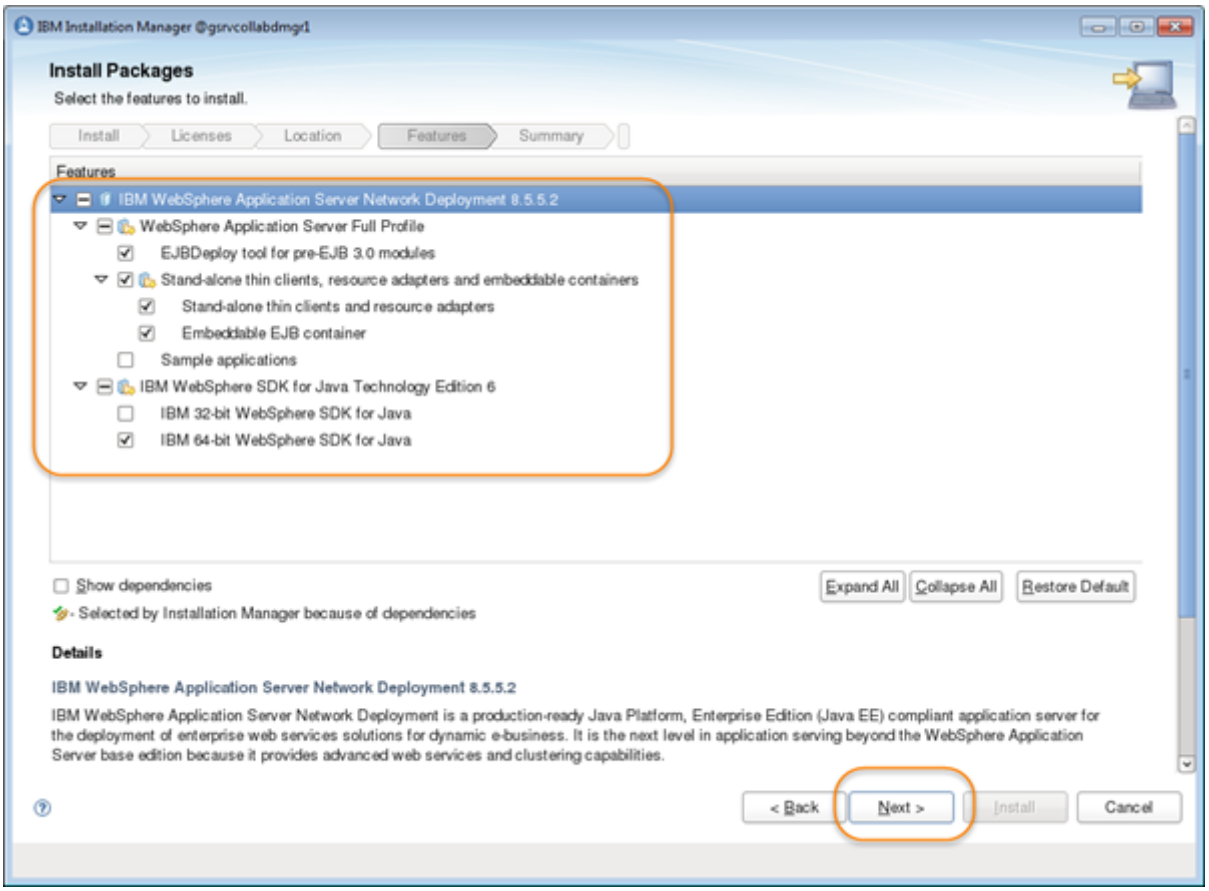
Choose IMShared Path, in my case /opt/IM/IMShared



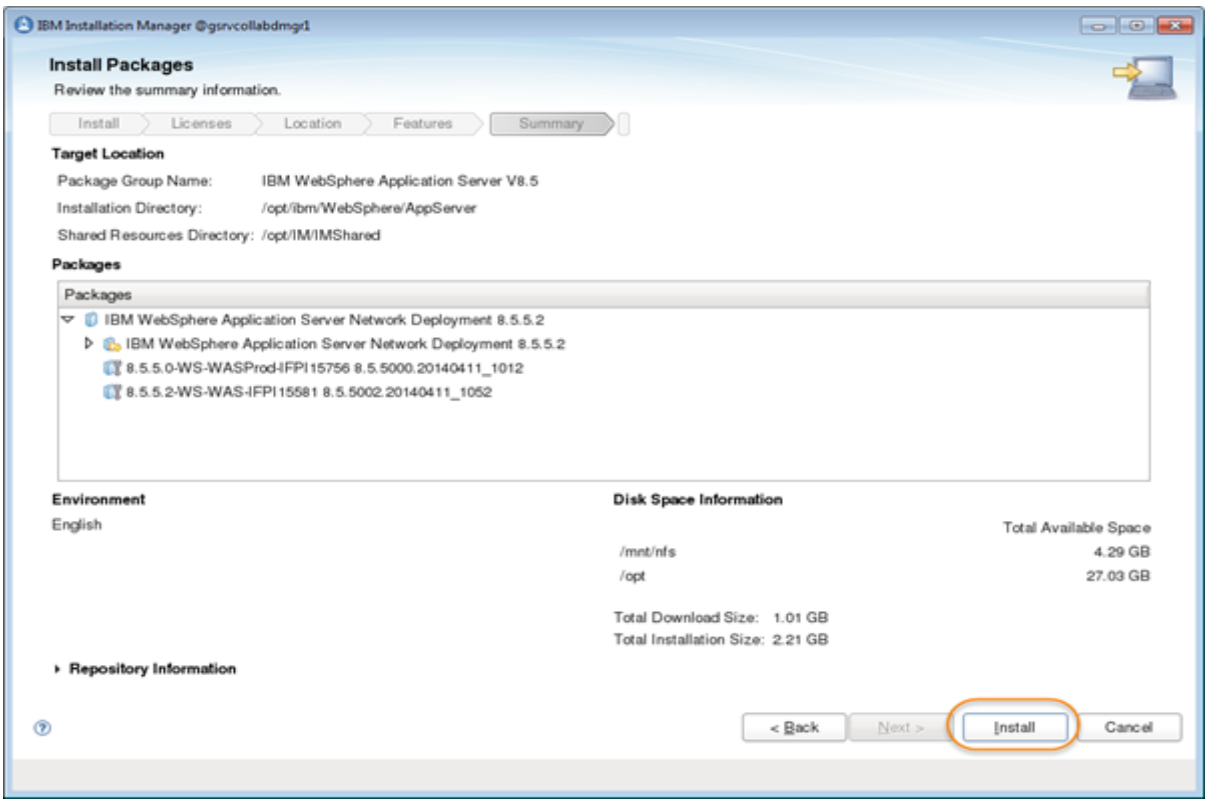
Chose installation Path, in my case /opt/ibm/WebSphere/AppServer and Next



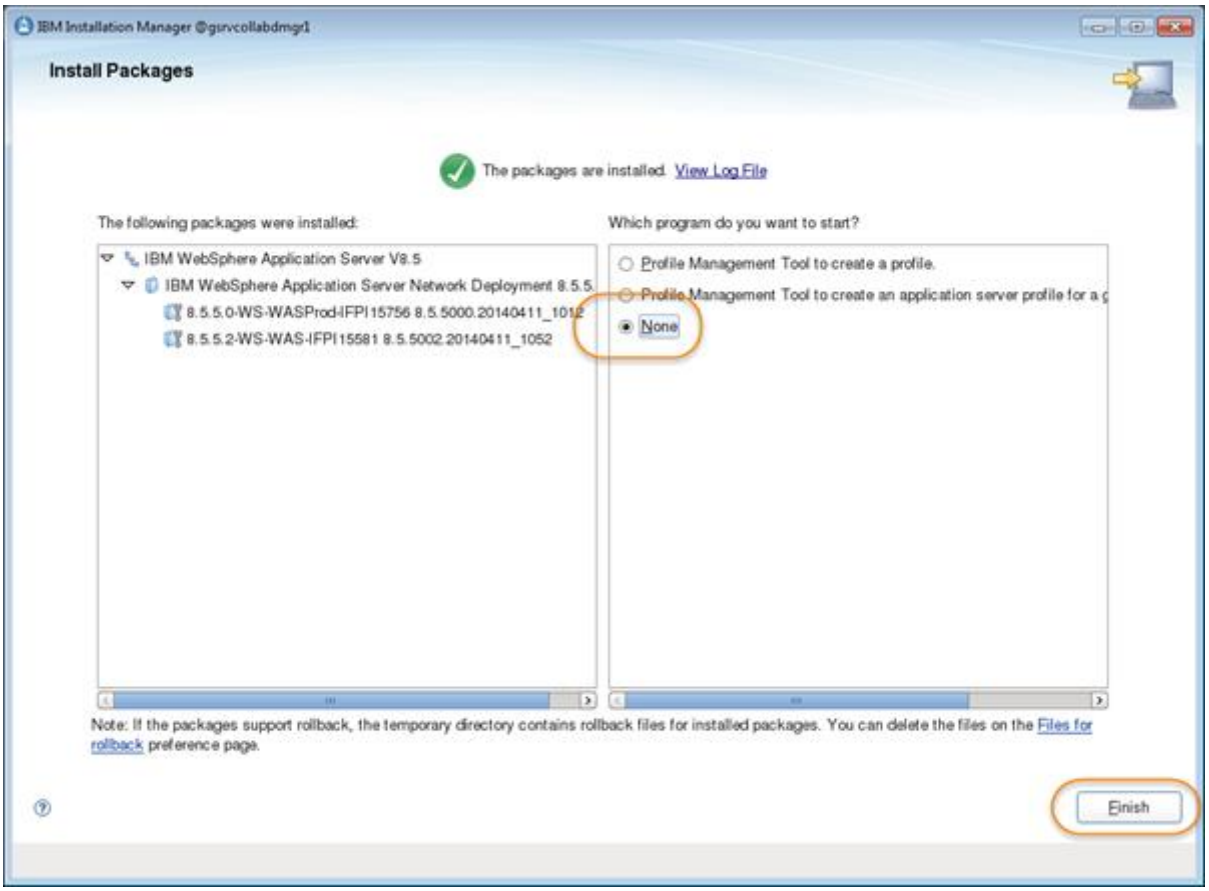
Next



Verify summarize data is correct and Next



Install, and wait to end task



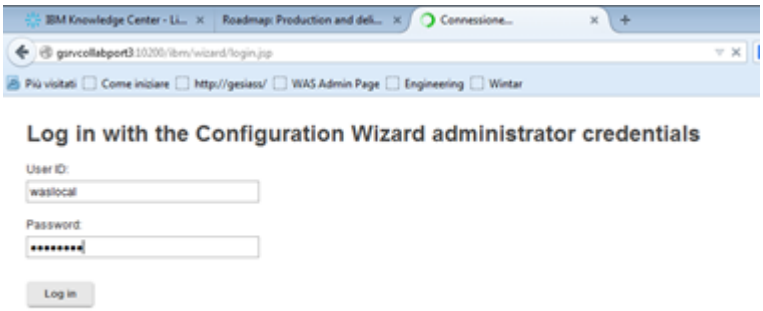
Chose “None” and Finish

Configure DMGR

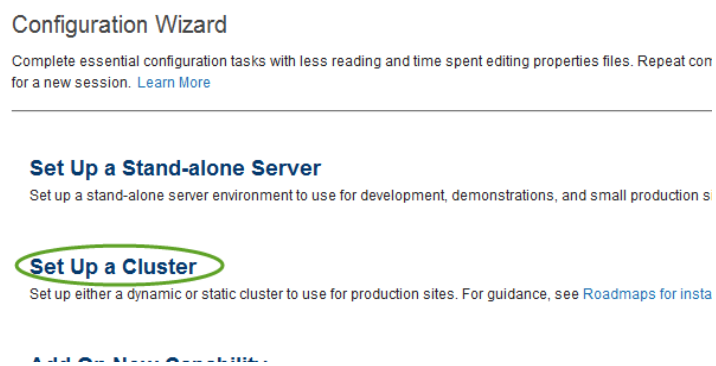
We have install a WebSphere Application Server, and now we must configure it to become a DMGR.

Open Configuration Wizards

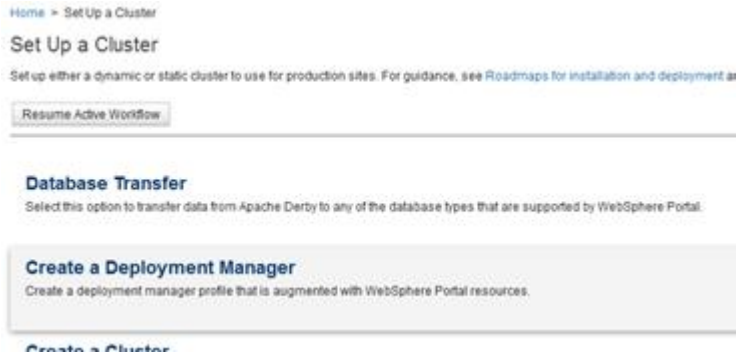
Connect to http://localhost:10200/ibm/wizard



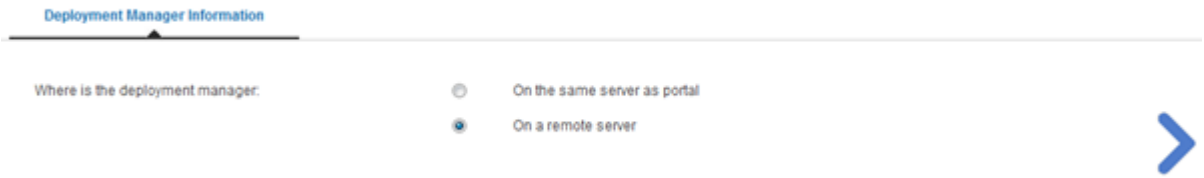
Authenticate using waslocal



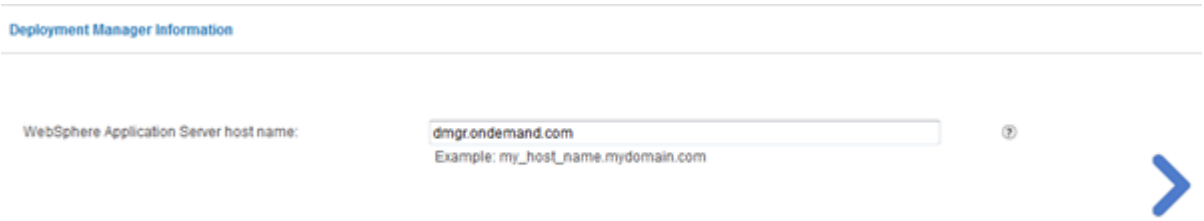
Choose Set Up a Cluster



And choose “Create a Deploy Manager”

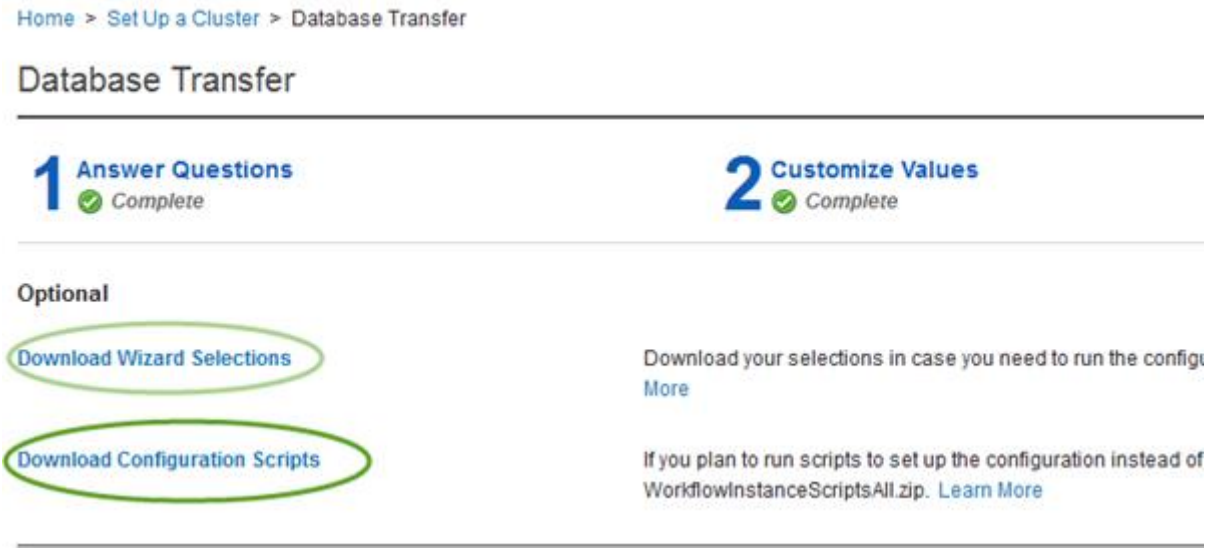


Chose “on Remote server” and Next (blue arrow on right)



Insert HostName, in my case dmgr.ondemand.com and Next

Insert appropriate data and password and Next



Choose Download Configuration Scripts

Copy WorckflowInstanceScriptAll.zip into Portal Server and expand it in temporary directory
In my case I expand it in /opt/ibm/script/work

```
[root@                    ]# unzip ./WF.zip
Archive:  ./WF.zip
  inflating: wfi-instance.xsl
   creating: scripts/
  inflating: scripts/AugmentRemoteDeploymentManagerProfile
  inflating: scripts/scripts.lst
  inflating: scripts/CreateRemoteDeploymentManagerProfile
   creating: properties/
  inflating: CreateDeploymentManagerProfileWithPortal.wfi
  inflating: CreateDeploymentManagerProfileWithPortal.html
```

And grant all permission to it and him son….

```
chmod -R 777 ./work
```

move to ./work/script

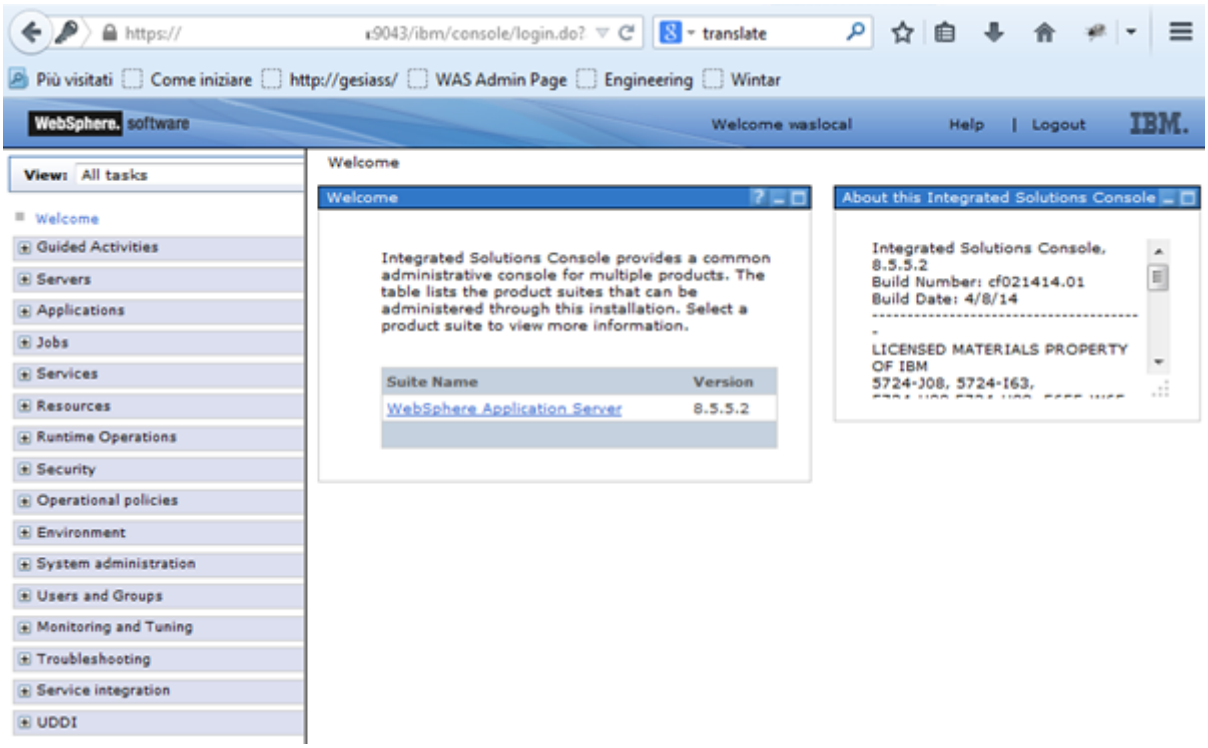
rename all script in .sh

and run `./CreateRemoteDeploymentManagerProfile.sh`
and wait until profile will be created for you.

```
[root@ scripts]# ./CreateRemoteDeploymentManagerProfile.sh
INSTCONFSUCCESS: Success: Profile dmgr01 now exists. Please consult /opt/ibm/WebSphere/AppServer/profiles
/dmgr01/logs/AboutThisProfile.txt for more information about this profile.
```

Start DMGR to verify if you have a working

Move to profile/bin and run `./startManager.sh`



Now exit and stop deployment manager and collect files from the primary node, and copy them to the remote deployment manager:

An archive or compressed file is placed in the `<WP Home>/filesForDmgr` directory during installation. The file is called filesForDmgr.zip. Copy thefilesForDmgr.zip file to the remote deployment manager server.

```
[root@                    AppServer]# scp root@                    :/opt/ibm/WebSphere/PortalServ
er/filesForDmgr/filesForDmgr.zip ./
The authenticity of host '                    (172.17.0.193)' can't be established.
RSA key fingerprint is 3c:f2:c9:8e:01:11:c5:14:0c:e2:0c:61:06:08:b3:fb.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '                    ,172.17.0.193' (RSA) to the list of known hos
ts.
root@                    's password:
filesForDmgr.zip                                      100%  954KB 954.1KB/s   00:00
[root@gsrvcollabdmgr1 AppServer]#
```

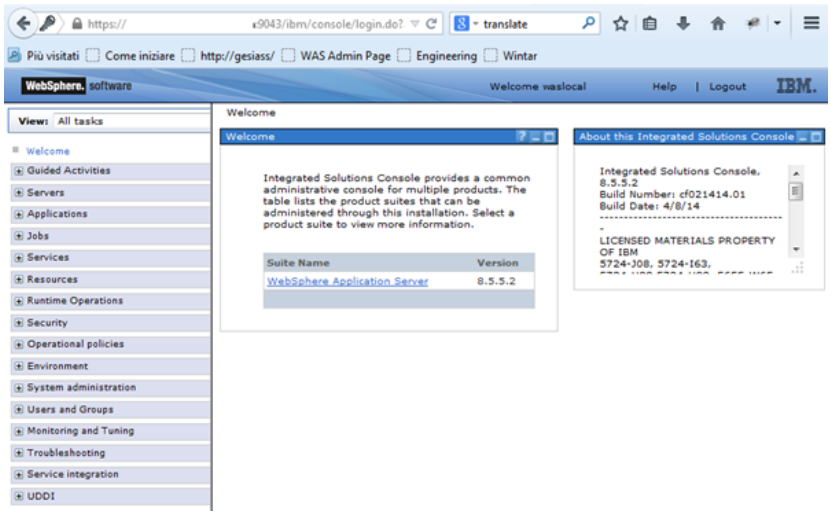
Expand the filesForDmgr.zip file into the installation root directory of the deployment manager. For example, in the `<WAS Home>` directory.

`Unzip ./filesForDmgr.zip`

```
[root@                    AppServer]# unzip ./filesForDmgr.zip
Archive:  ./filesForDmgr.zip
   creating: bin/ProfileManagement/plugins/
   creating: bin/ProfileManagement/plugins/com.ibm.wp.dmgr.pmt_7.0.5/
   creating: profileTemplates/management.portal.augment/
   creating: profileTemplates/management.portal.augment/actions/
   creating: profileTemplates/management.portal.augment/documents/
   creating: profileTemplates/management.portal.augment/documents/PortalServer/
   creating: profileTemplates/management.portal.augment/documents/config/
   creating: profileTemplates/management.portal.augment/documents/config/.repository/
   creating: profileTemplates/management.portal.augment/documents/config/cells/
   creating: profileTemplates/management.portal.augment/documents/config/cells/BaseApplicationServerCell/
   creating: profileTemplates/management.portal.augment/documents/config/cells/BaseApplicationServerCell/nodes/
   creating: profileTemplates/management.portal.augment/documents/config/cells/BaseApplicationServerCell/nodes/DefaultNode/
   creating: profileTemplates/management.portal.augment/documents/config/templates/
   creating: profileTemplates/management.portal.augment/documents/config/templates/servertypes/
   creating: profileTemplates/management.portal.augment/documents/config/templates/servertypes/APPLICATION_SERVER/
   creating: profileTemplates/management.portal.augment/documents/config/templates/servertypes/APPLICATION_SERVER/servers/
   creating: profileTemplates/management.portal.augment/documents/config/templates/servertypes/APPLICATION_SERVER/servers/PortalServerTemplate/
   creating: profileTemplates/management.portal.augment/documents/properties/
   creating: profileTemplates/management.portal.augment/lib/
   creating: profiles/Dmgr01/
   creating: profiles/Dmgr01/config/
   creating: profiles/Dmgr01/config/.repository/
  inflating: bin/ProfileManagement/plugins/com.ibm.wp.dmgr.pmt_7.0.5/plugin.xml
  inflating: lib/wkplc.comp.registry.jar
  inflating: lib/wp.base.jar
  inflating: lib/wp.wire.jar
  inflating: plugins/com.ibm.patch.was.plugin.jar
  inflating: plugins/com.ibm.wp.was.plugin.jar
  inflating: profileTemplates/management.portal.augment/actionRegistry.xml
  inflating: profileTemplates/management.portal.augment/actions/fixupPortalConfigOnDmgr.ant
  inflating: profileTemplates/management.portal.augment/actions/unzipPortalConfigToDmgr.ant
  inflating: profileTemplates/management.portal.augment/documents/config/.repository/metadata_wkplc.xml
  inflating: profileTemplates/management.portal.augment/documents/config/templates/servertypes/APPLICATION_SERVER/serverindex-delta.xml
  inflating: profileTemplates/management.portal.augment/documents/config/templates/servertypes/APPLICATION_SERVER/template-metadata-delta.xml
  inflating: profileTemplates/management.portal.augment/documents/properties/cachespec.xml
  inflating: profileTemplates/management.portal.augment/documents/properties/server.policy
  inflating: profileTemplates/management.portal.augment/lib/wp.profile.resources.jar
  inflating: profileTemplates/management.portal.augment/templateMetadata.xml
  inflating: profiles/Dmgr01/config/.repository/metadata_wkplc.xml
```

If the deployment manager profile was not created in the default `<WAS Home>/profiles/Dmgr01` directory, then the metadata_wkplc.xml file, which is in the `<WAS Home>/profiles/Dmgr01/config/.repository` directory in the compressed file, must be copied into the config/.repository subdirectory under the deployment manager profile directory.

Start the deployment manager, and to verify if you have a working.



Exit and stop DMGR.

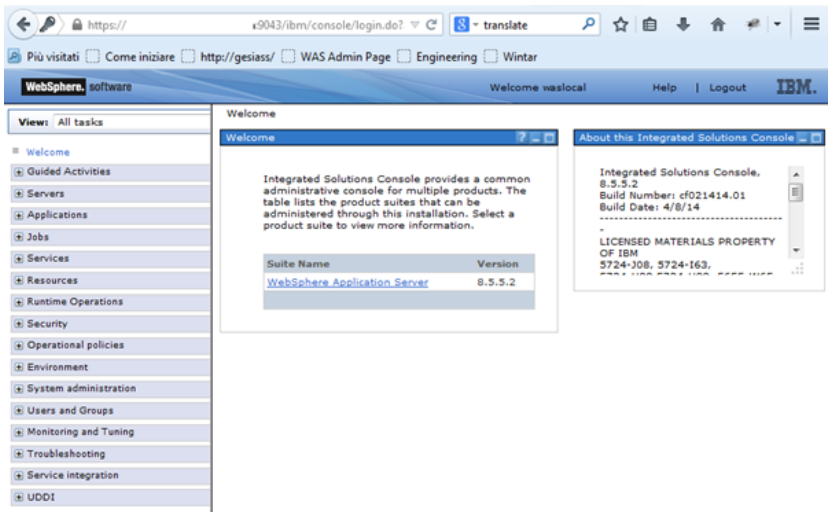
Now we must augment the deployment manager with WebSphere Portal files.

To doing it move on DMGR machine where you unzip Script and execute

```
./AugmentRemoteDeploymentManagerProfile.sh
```

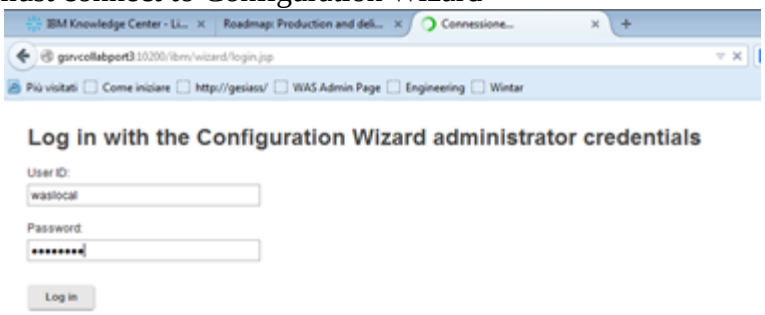
```
[root@                    scripts]# ./AugmentRemoteDeploymentManagerProfile.sh
ADMU0116I: Tool information is being logged in file
           /opt/ibm/WebSphere/AppServer/profiles/dmgr01/logs/dmgr/startServer.log
ADMU0128I: Starting tool with the dmgr01 profile
ADMU3100I: Reading configuration for server: dmgr
ADMU3200I: Server launched. Waiting for initialization status.
ADMU3000I: Server dmgr open for e-business; process id is 7706
INSTCONFSUCCESS: Profile augmentation succeeded.
ADMU0116I: Tool information is being logged in file
           /opt/ibm/WebSphere/AppServer/profiles/dmgr01/logs/dmgr/stopServer.log
ADMU0128I: Starting tool with the dmgr01 profile
ADMU3100I: Reading configuration for server: dmgr
ADMU3201I: Server stop request issued. Waiting for stop status.
ADMU4000I: Server dmgr stop completed.

ADMU0116I: Tool information is being logged in file
           /opt/ibm/WebSphere/AppServer/profiles/dmgr01/logs/dmgr/startServer.log
ADMU0128I: Starting tool with the dmgr01 profile
ADMU3100I: Reading configuration for server: dmgr
ADMU3200I: Server launched. Waiting for initialization status.
ADMU3000I: Server dmgr open for e-business; process id is 8186
```

Wait until task complete and verify if you have a working

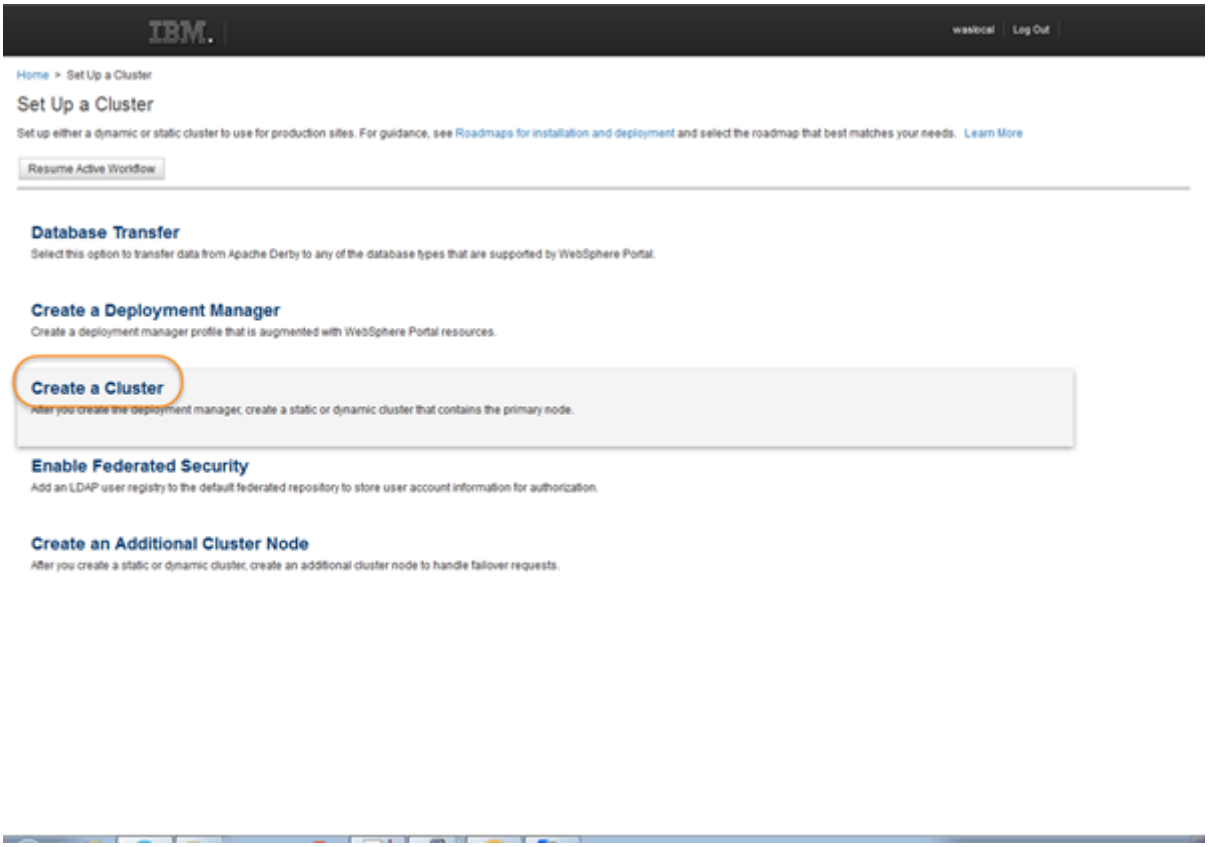


Create Cluster

Now we can create a Cluster, to doing it, you must connect to Configuration Wizard
Connect to
http://localhost:10200/ibm/wizard



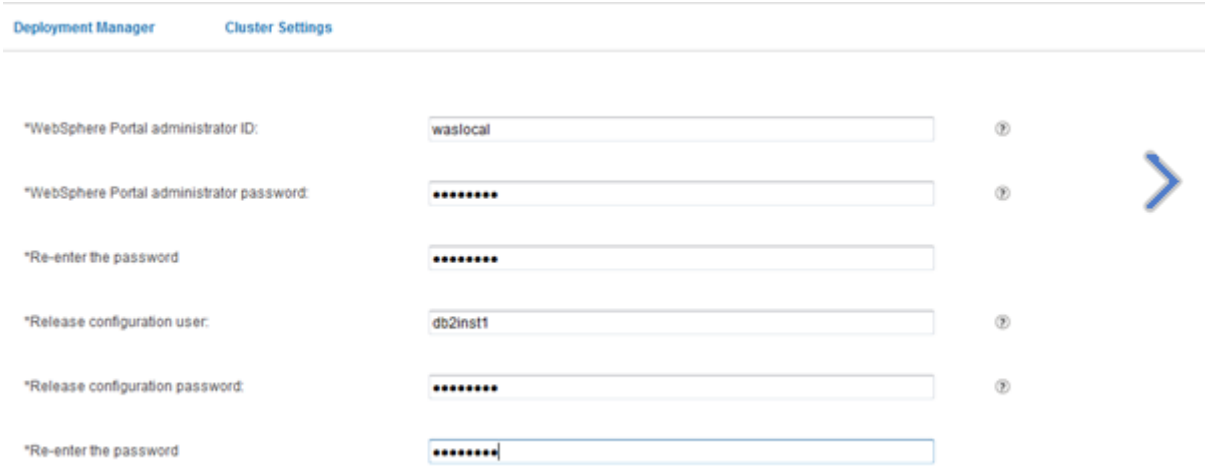
Authenticate using waslocal



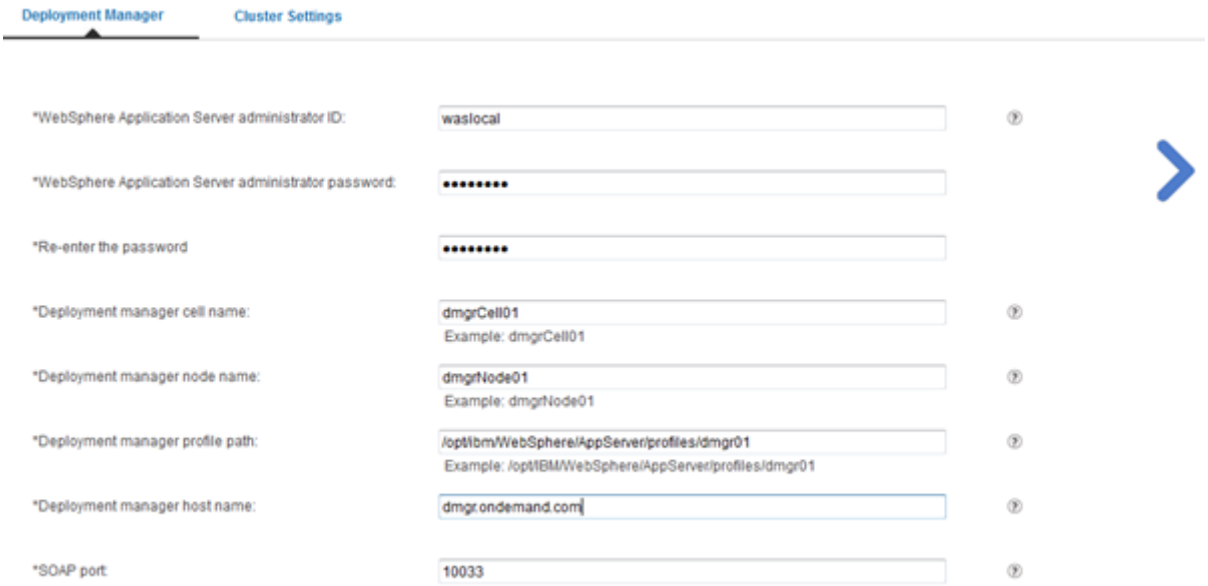
Now use the Create a Cluster option to create a static or dynamic cluster.

Choose On remote server

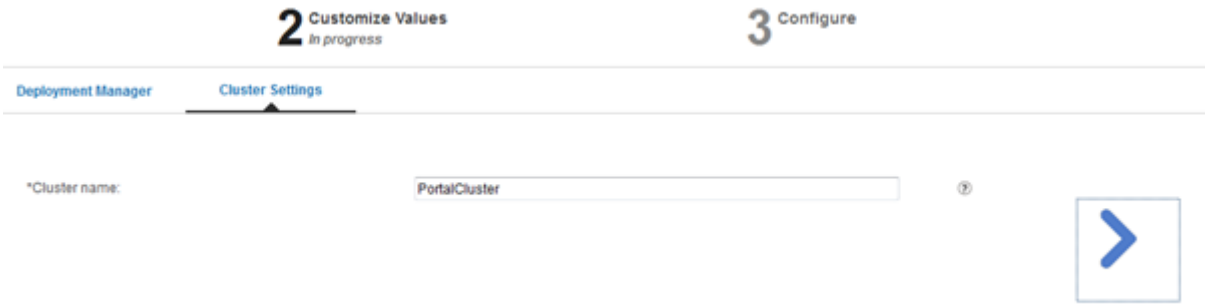
And Static Cluster, you can choose Dynamic Cluster only if you have WebSphere Virtual Enterprise.
And Next



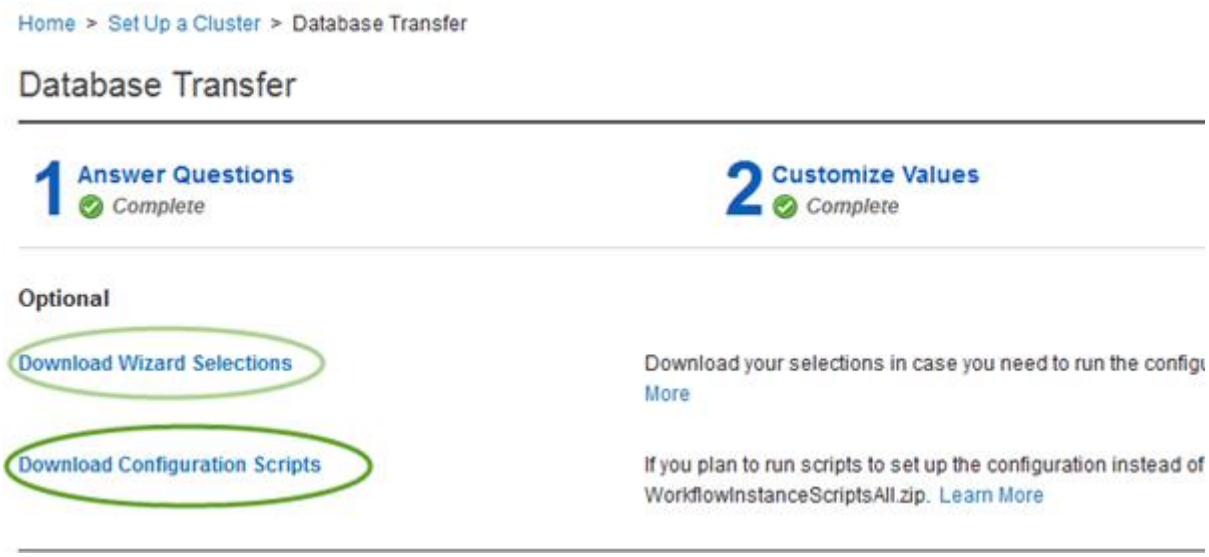
Define your Administrator user, see the Release configuration user is user have grant on DB ! And Next



Define your WAS Administrator on DMGR, and other parameter for your DMGR, (soap port probably is 8879) and Next



Choose Cluster Name, default value is PortalCluster. And Next



Choose Download Configuration Scripts

Copy WorckflowInstanceScriptAll.zip into Portal Server and expand it in temporary directory
In my case I expand it in /opt/ibm/script/work2

```
[root@                    ]# unzip ./WF.zip
Archive:  ./WF.zip
  inflating: wfi-instance.xsl
   creating: scripts/
  inflating: scripts/AugmentRemoteDeploymentManagerProfile
  inflating: scripts/scripts.lst
  inflating: scripts/CreateRemoteDeploymentManagerProfile
   creating: properties/
  inflating: CreateDeploymentManagerProfileWithPortal.wfi
  inflating: CreateDeploymentManagerProfileWithPortal.html
```

And grant all permission to it and him son….

```
chmod -R 777 ./work
```

Federate the node.

!!!!! ATTENTION: Verify the deployment manager and each portal node to be in the cluster, verify that the system clocks are within 5 minutes of each other, or the **addNode** command fails.
Before you run next task , verify if your DMGR and WebSphere Portal is running, and verify if your wkplc.properties and wkplc_dbdomain.propertis have all password set.

This node then becomes a managed node in the deployment manager cell.
Run

```
./FederateNode.sh
```

And wait until task completed.

```
[(internal) propogate-properties-delete-task] Deleting: /opt/ibm/WebSphere/wp_profile/Conf
5347tmp
Successfully copied properties to /opt/ibm/WebSphere/wp_profile/ConfigEngine/properties/wk
Storing WasSoapPort=8879
Storing WasRemoteHostName=portaldmgr.dominiog.lan
Storing WasUserid=waslocal
Storing PrimaryNode=true
[(internal) propogate-properties-copy-task] Copying 1 file to /opt/ibm/WebSphere/wp_profil
[(internal) propogate-properties-delete-task] Deleting: /opt/ibm/WebSphere/wp_profile/Conf
0524tmp
Successfully copied properties to /opt/ibm/WebSphere/wp_profile/ConfigEngine/properties/wk
BUILD SUCCESSFUL
isIseries currently set to: null

update-registry-sync-property:
Mon Jun 09 17:50:53 CEST 2014
     [echo] updated RegistrySynchronized in file wkplc.properties with value: true
```

Modify resources in the node's profile configuration to work in a clustered environment.

`./post-federation`

And wait until task completed.

```
Storing PortalAdminId=waslocal
Storing ClusterName=PortalCluster
Storing PrimaryNode=true
[(internal) propogate-properties-copy-task] Copying 1 file to /opt/ibm/WebSphere/wp_profile/ConfigEngine/
[(internal) propogate-properties-delete-task] Deleting: /opt/ibm/WebSphere/wp_profile/ConfigEngine/proper
1726tmp
Successfully copied properties to /opt/ibm/WebSphere/wp_profile/ConfigEngine/properties/wkplc.properties
BUILD SUCCESSFUL
isIseries currently set to: null

update-registry-sync-property:
Mon Jun 09 19:10:57 CEST 2014
     [echo] updated RegistrySynchronized in file wkplc.properties with value: true
```

Now You have created a single node cluster.

One quick way to test your cluster is to log in and explore the site.

Next, configure Security using your LDAP server.

Will be describe in next article

Author:

Andrea Fontana
IBM Champion for WebSphere on 2012,2013, and 2014
IBMCHAMPION
DevloperWorks Contributor Author
IBM developerWorks Contributing Author

can be contact ed at : a.fontana@net2action.com