

WebSphere Commerce Search FEP8 Step by Step Migration Guide:

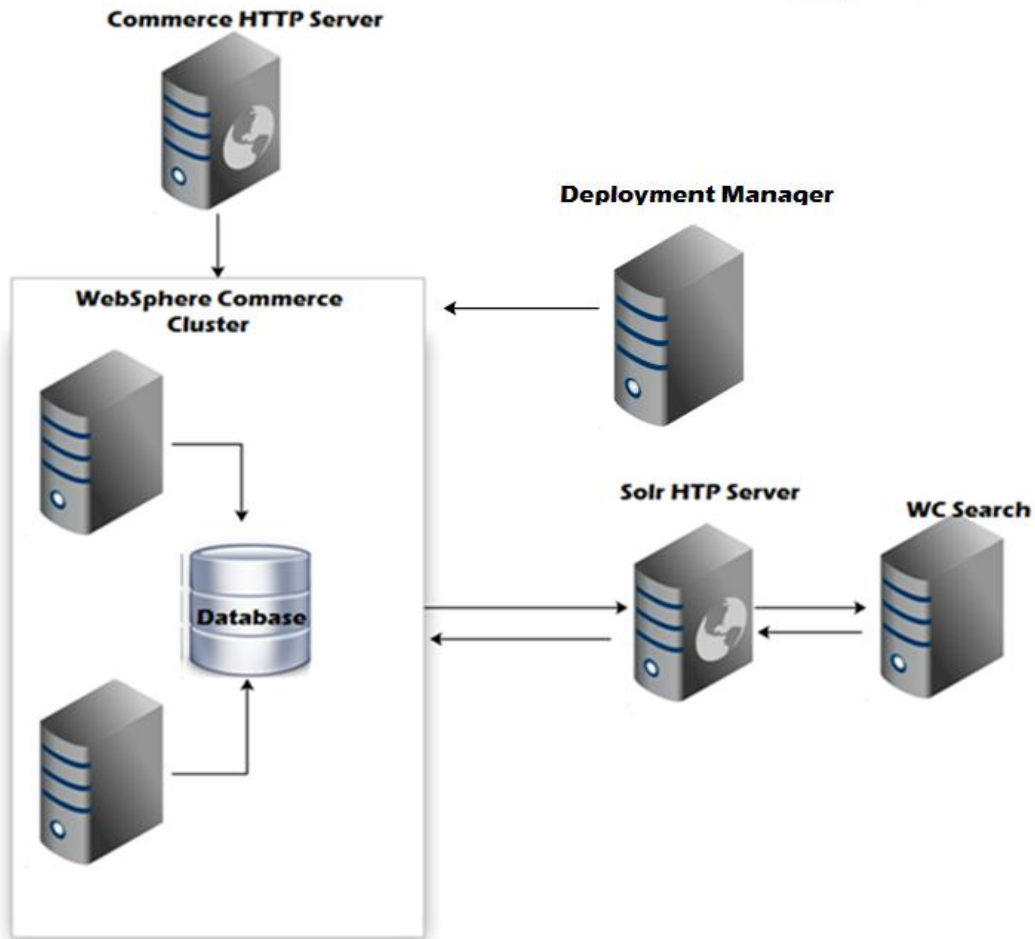
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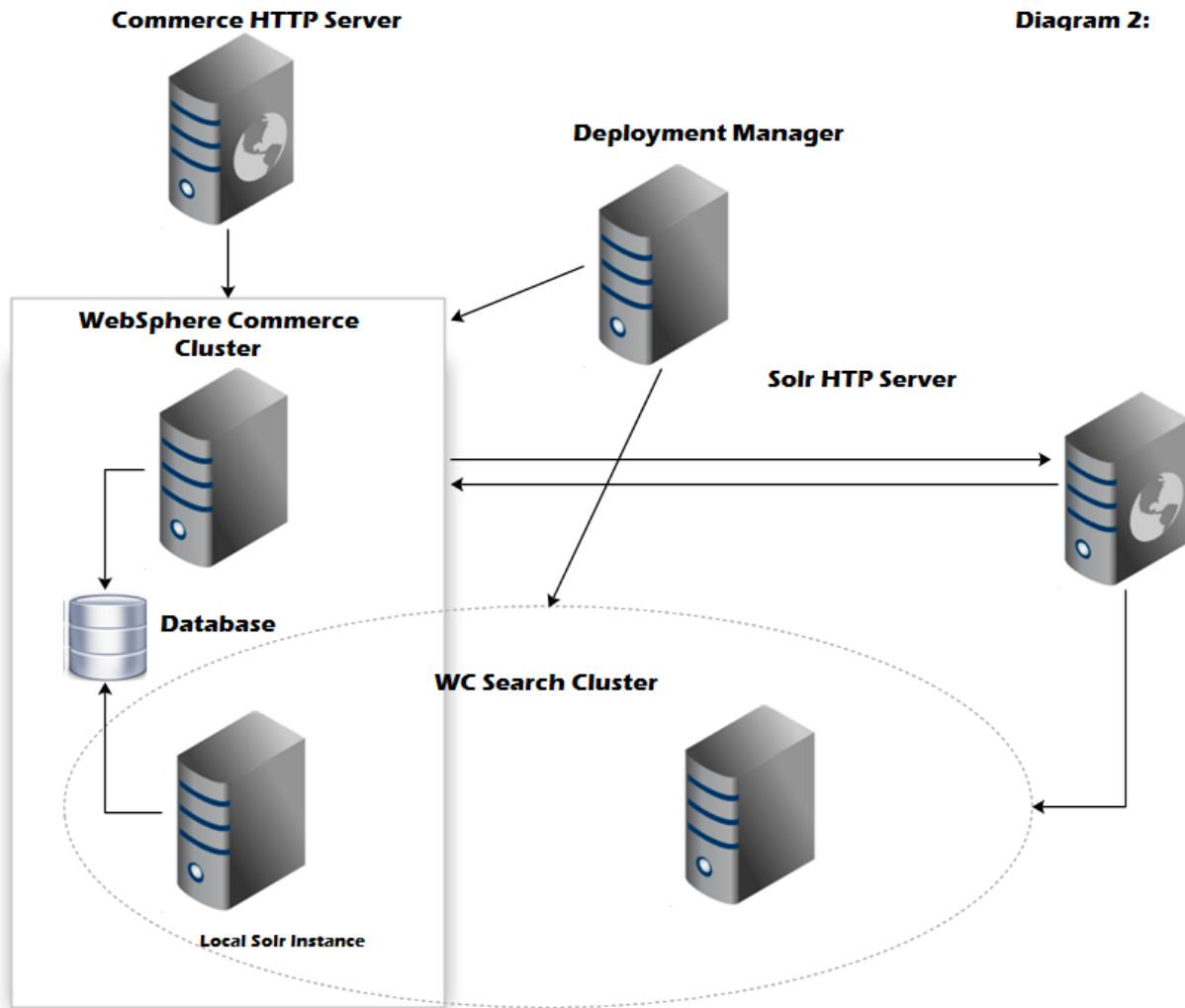
Introduction:

This document provides the steps and best practices for migrating WebSphere Commerce Search to version 7.0.0.9 with Feature Pack 8. It is intended to be used as a resource along with the Knowledge Center when starting the migration process of a typical Commerce and Search environment. Diagram 1 below shows the topology of the environment which is being upgraded. The steps covered here can be used for any Commerce environment configuration.

Diagram 1:



Once the search migration is complete, you will have a slightly different topology. By default, when enabling foundation feature, a local search server instance is created. Therefore, to create a search cluster, the local search instance needs to be federated to a Deployment Manager and used to create new search cluster. The primary reason for this change is to allow for easier maintenance updates. The following image depicts what the topology will look like after completing the migration.

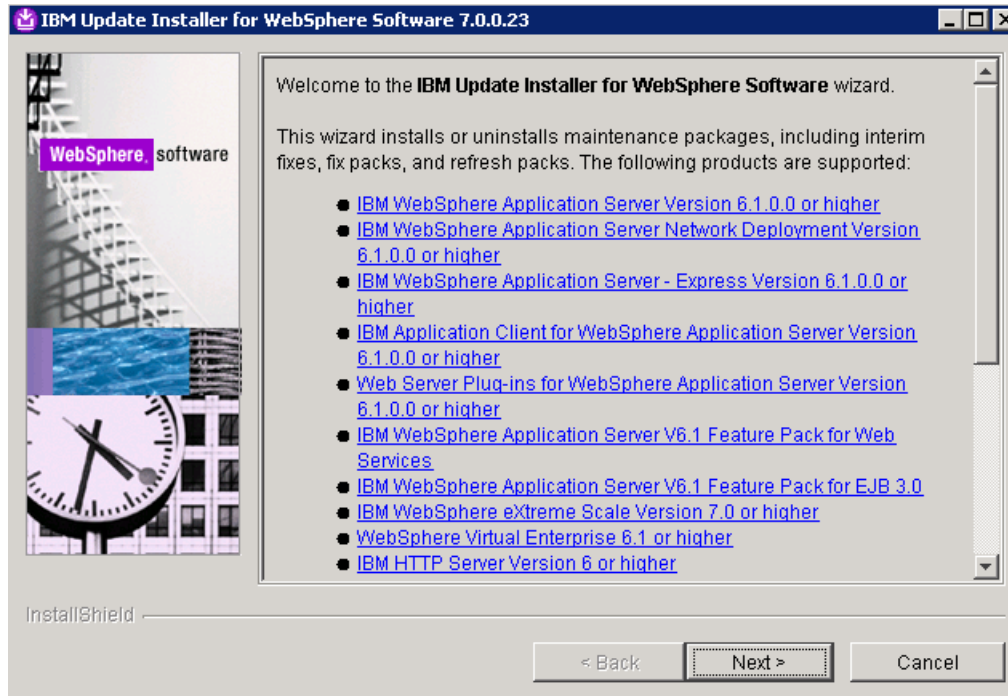


Note: It is recommended that full backups of the environment are taken prior to starting the migration process, in case problems are encountered.

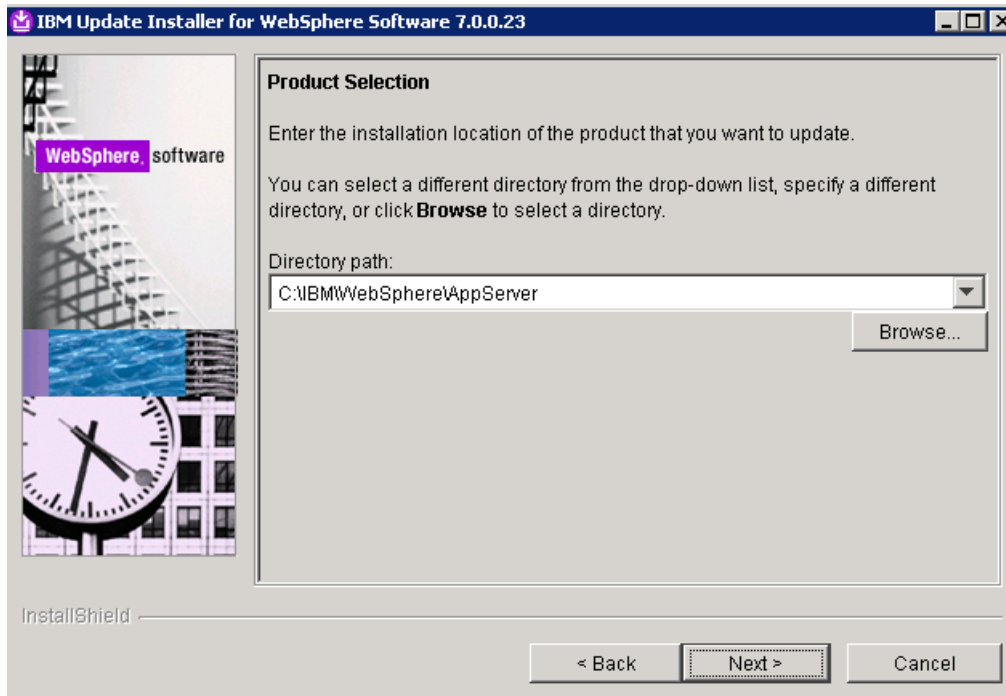
Upgrade WebSphere Application Server:

WebSphere Commerce 7.0.0.9 FEP8 requires at a minimum WebSphere Application Server 7.0.0.29. The environment nodes will need to be upgraded to a later release to fulfill the requirements. Download the latest WebSphere Application Server [fixpacks](#) from fix central.

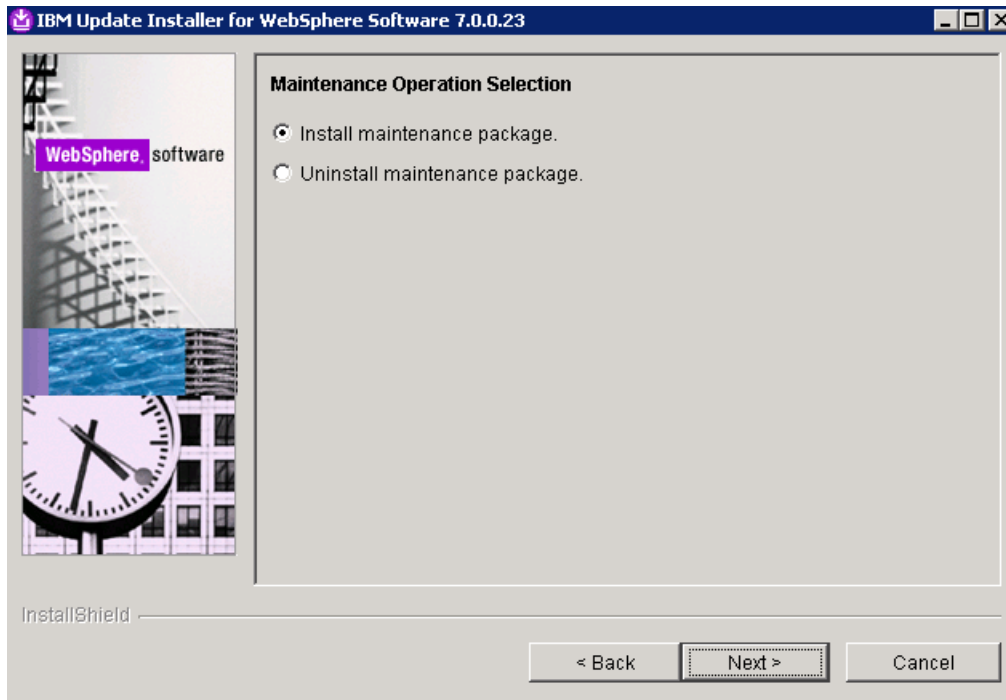
1 – Start the WebSphere Application Server Update Installer.



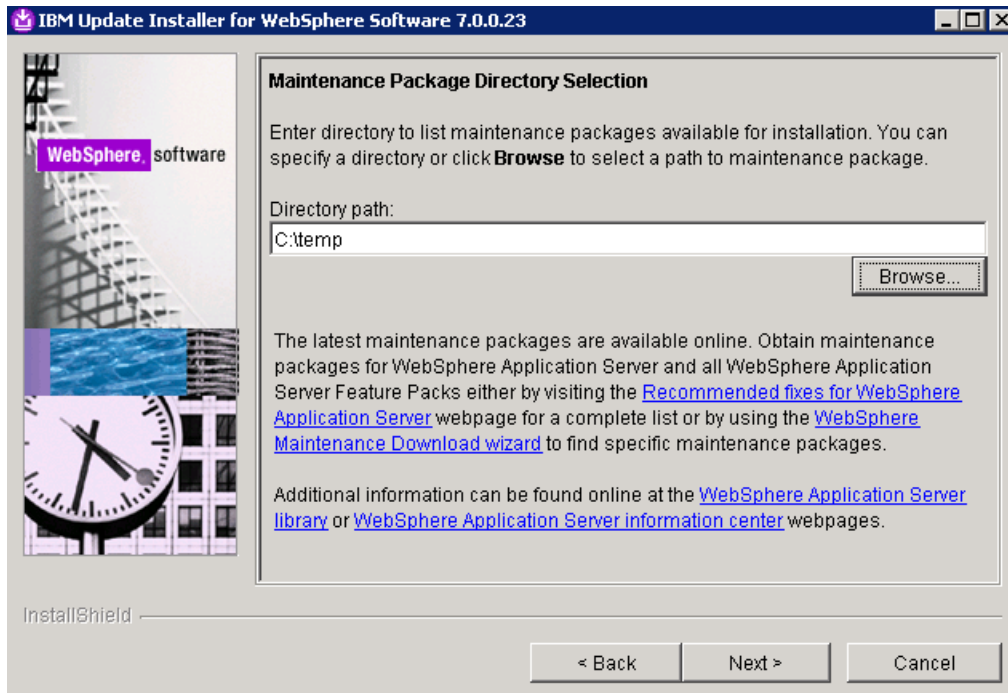
2 – Select **Next**.



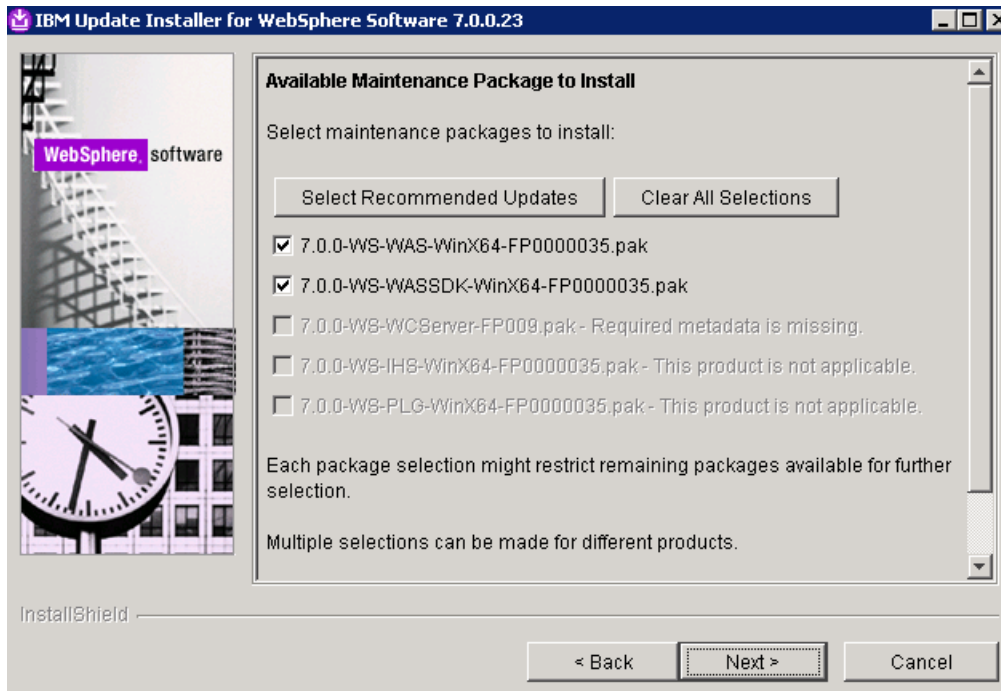
3 – Choose the location where WebSphere Application Server is installed, and then select **Next**.



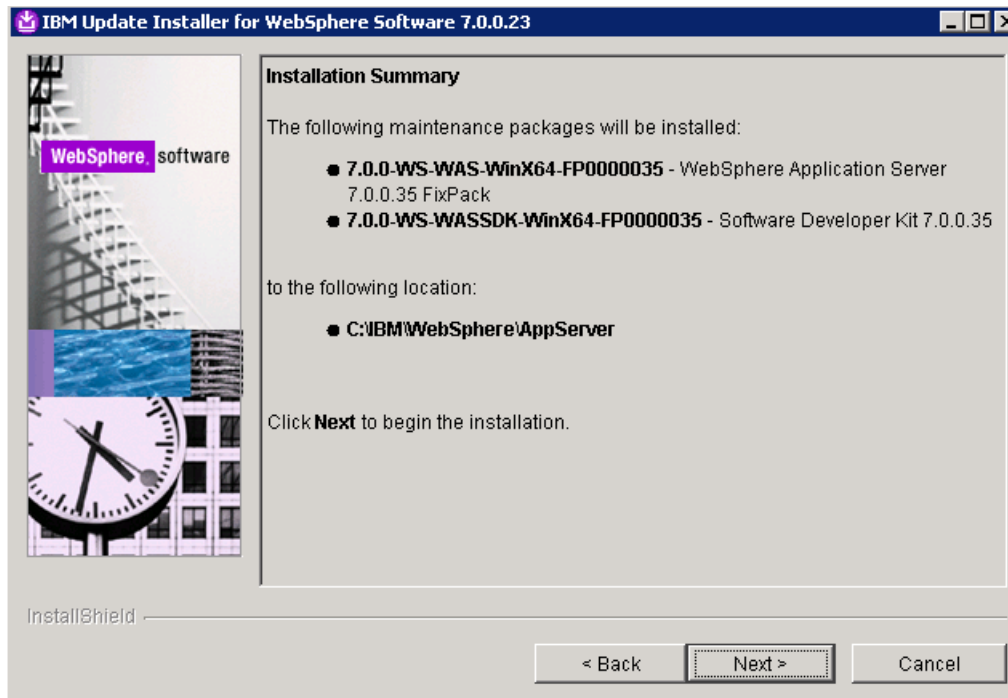
4 – Select **Install maintenance package** and hit **Next**.



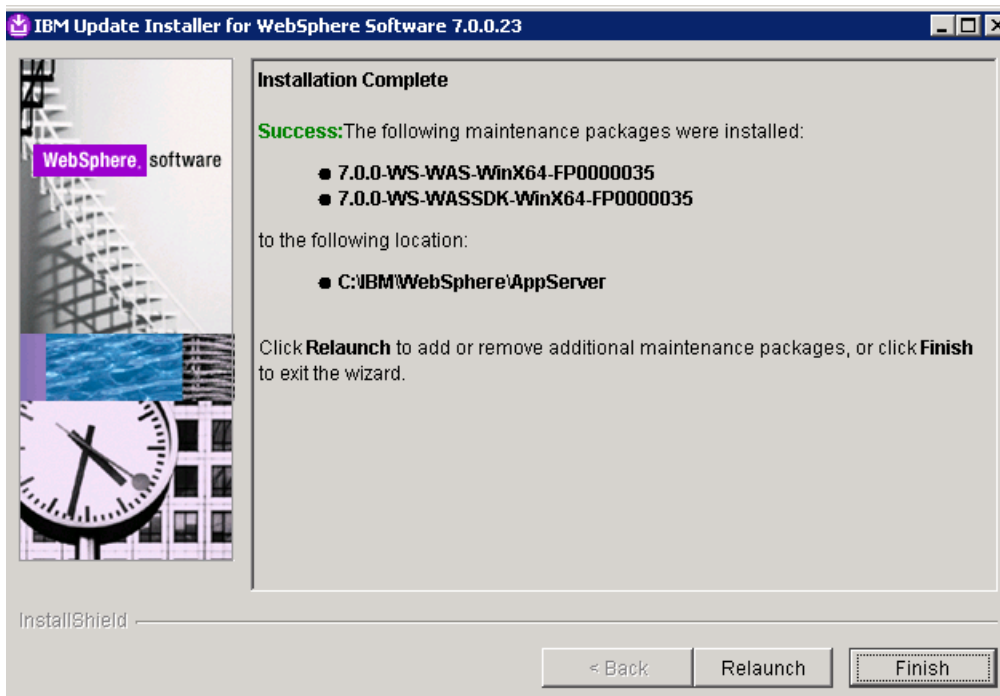
5 – Specify the location of the fixpack downloaded, and then hit **Next**.



6 – Select the packages that will be used to upgrade. In this case, both **WAS FP7.0.0.35** and **SDK 7.0.0.35** will be installed. Once selected, hit **Next**.



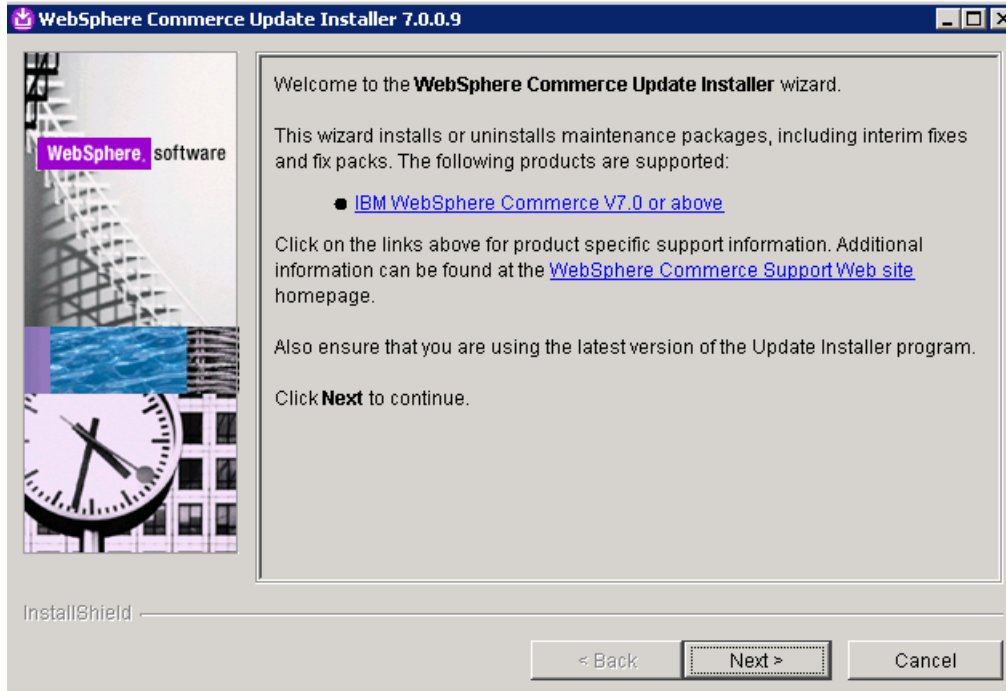
7 – Hit **Next** to begin the installation.



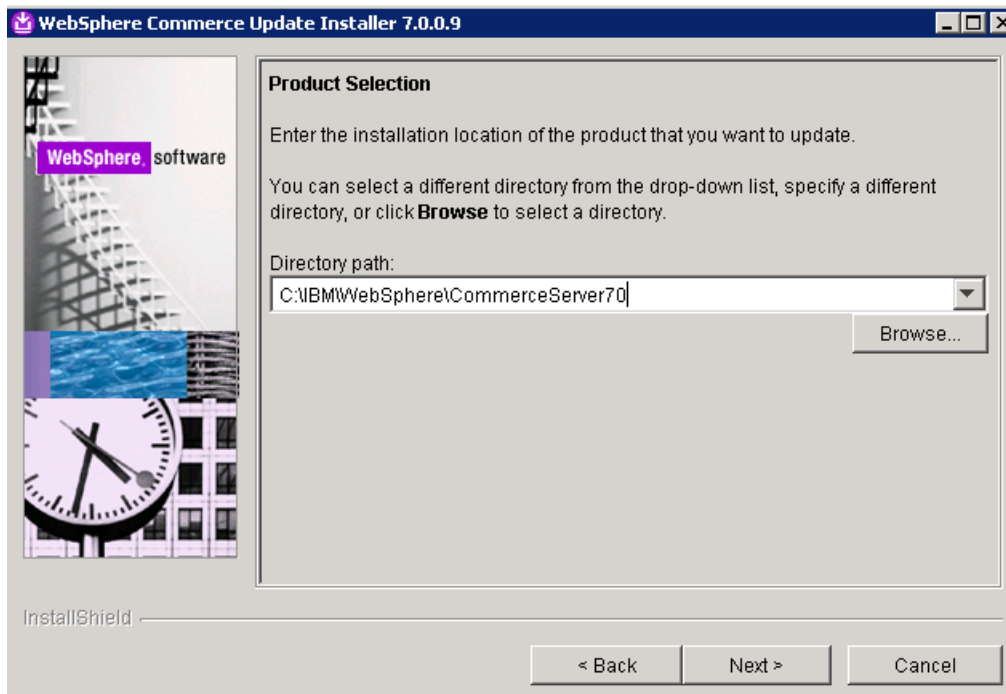
9 – Validate the fixpacks were installed successfully, and then hit **Finish**.

Upgrade WebSphere Commerce Fixpack 9:

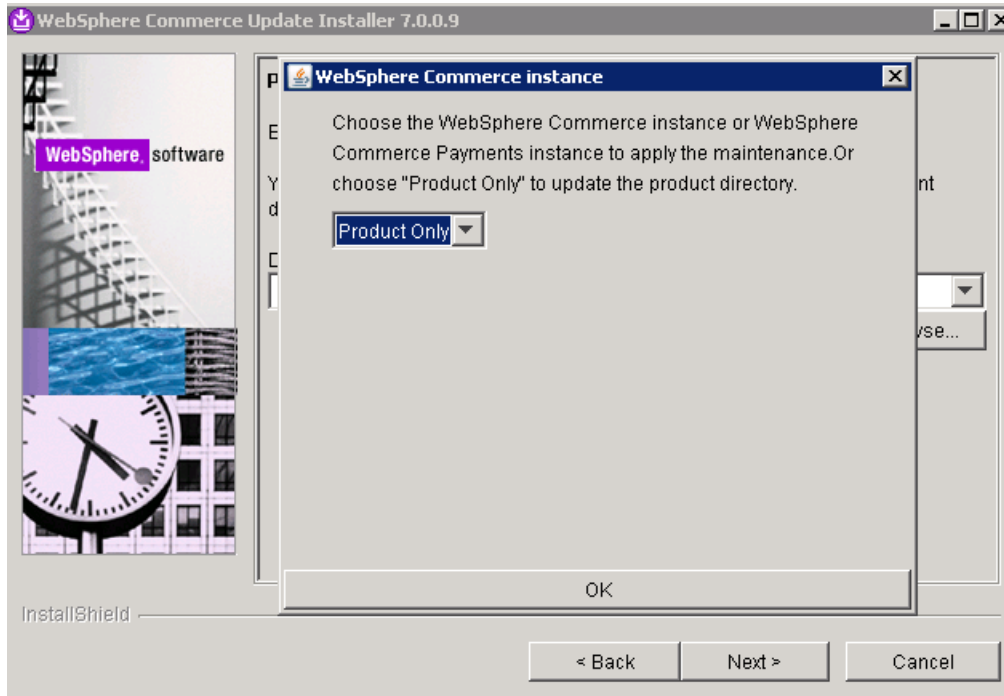
1 – Start the WebSphere Commerce Update Installer



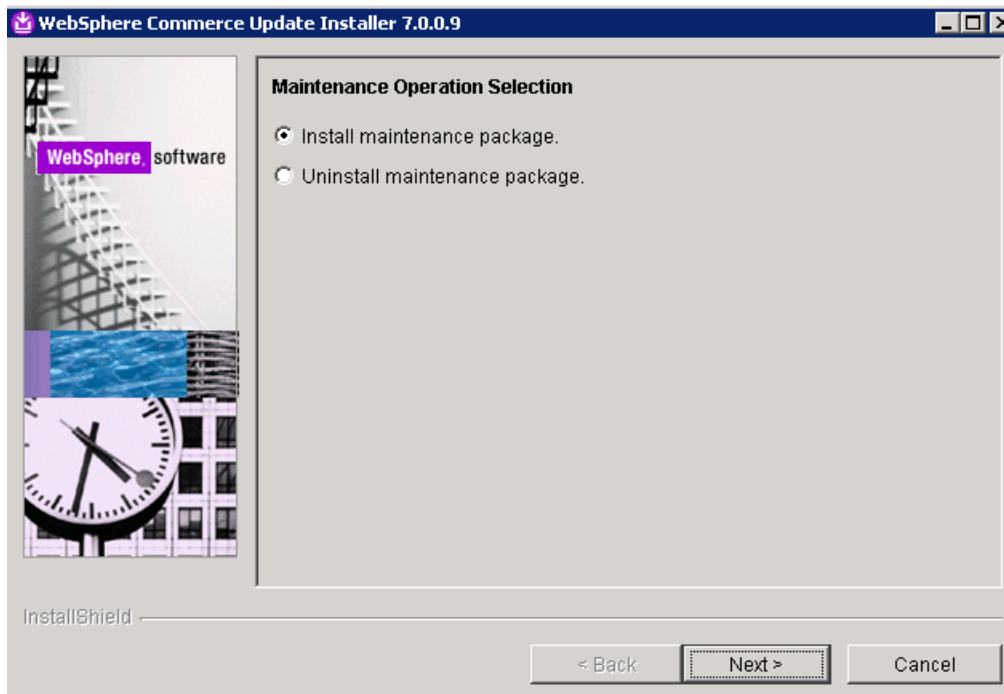
2 – Select Next.



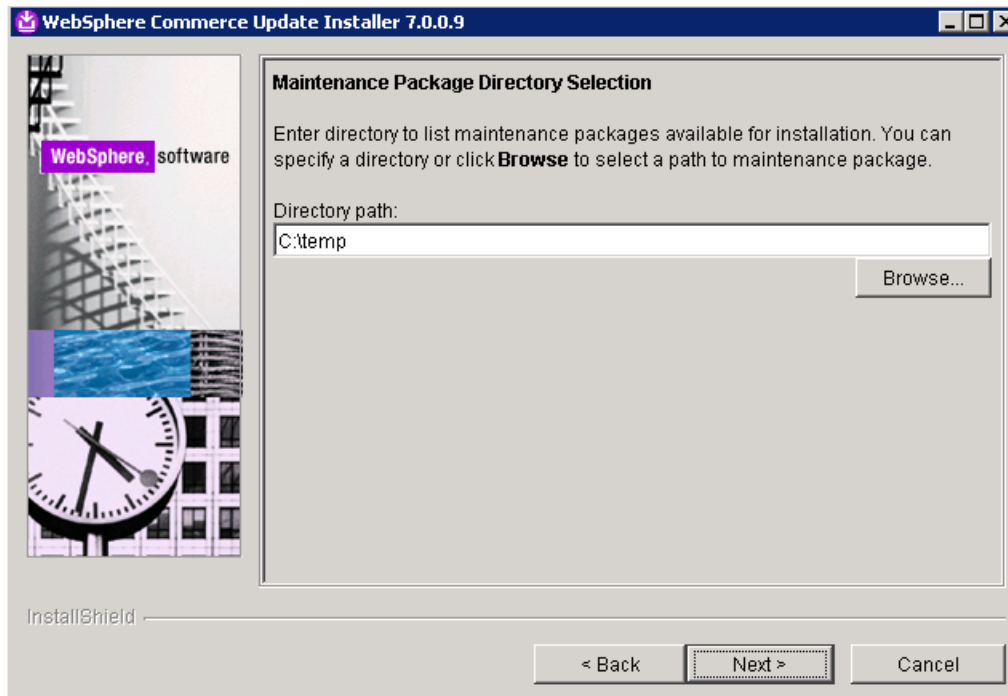
3 – Select the location where Commerce is installed, and hit **Next**.



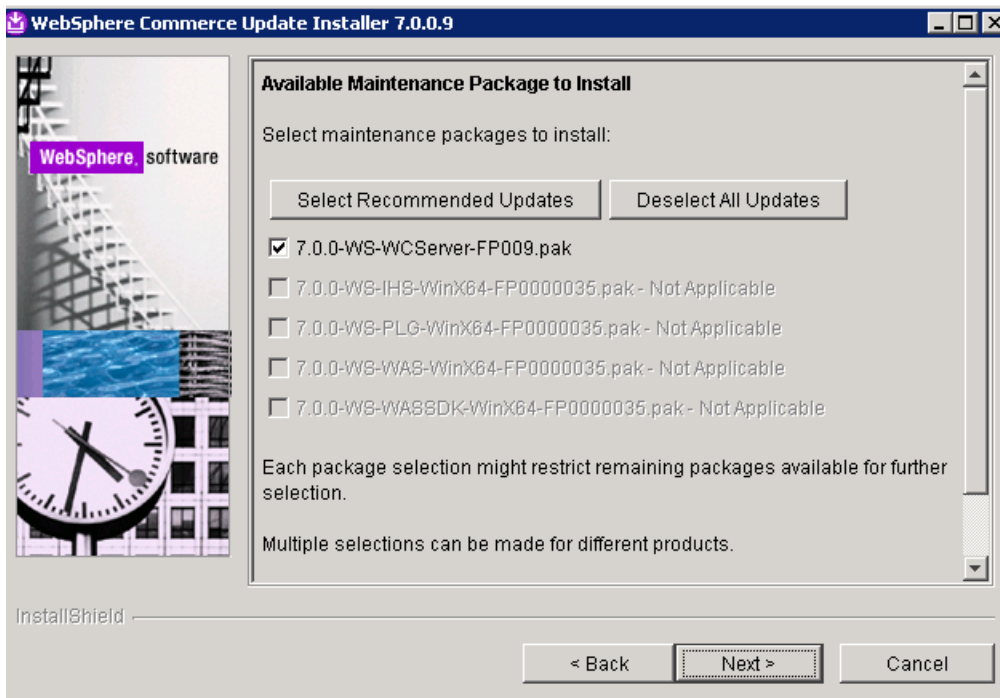
4 – A dialog box opens to choose whether to update product or instance. Select **Product**, and hit **Next**.



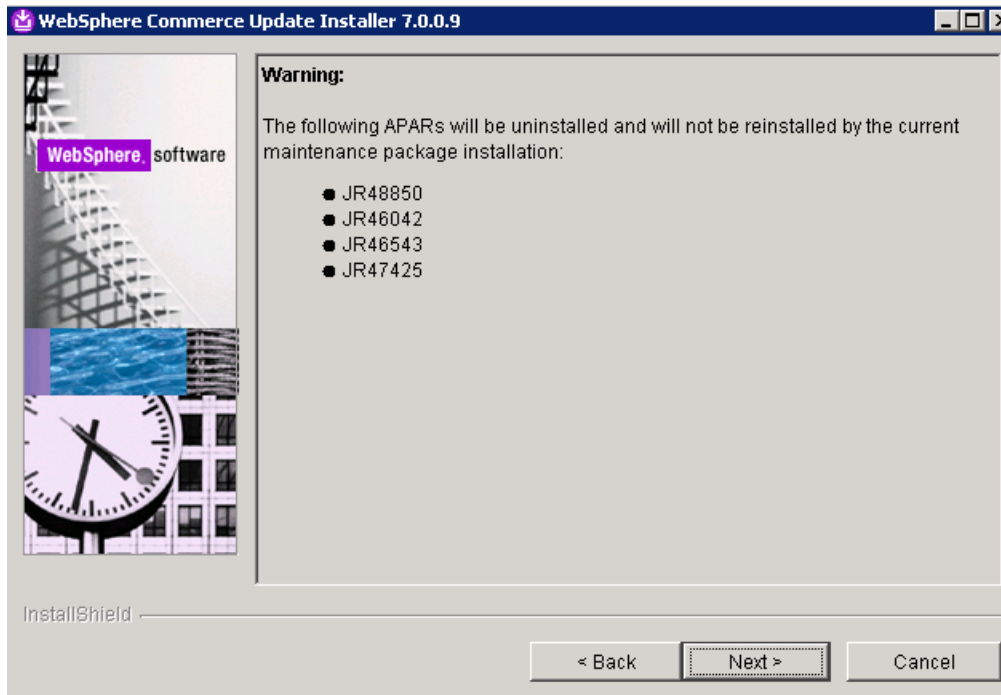
5 – Select **Install maintenance package**, and hit **Next**.



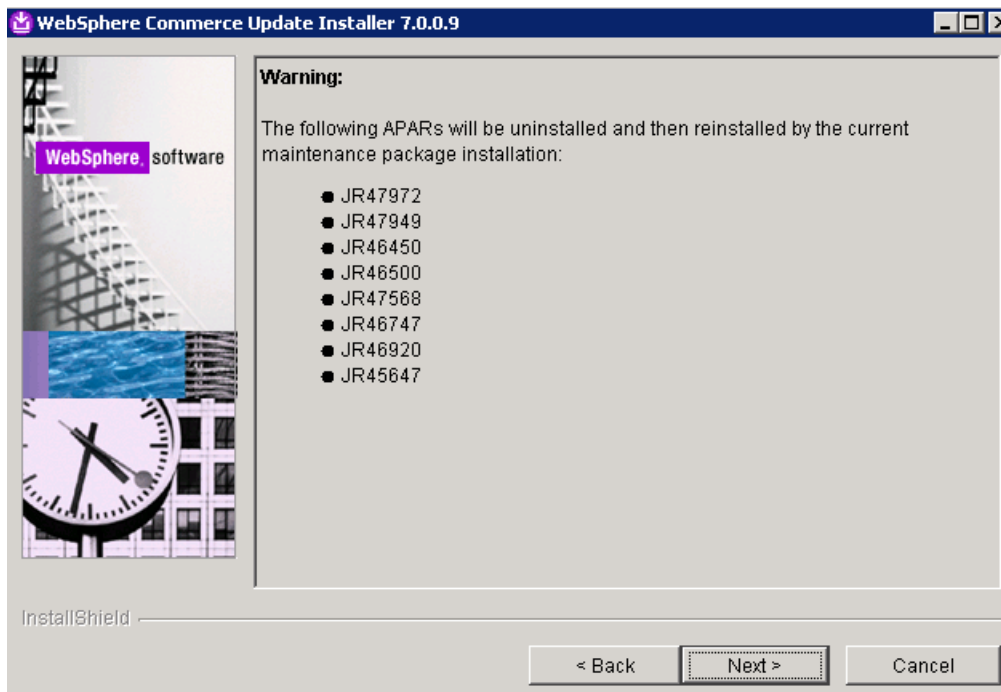
6 – Specify the path where the fixpack files reside, and hit **Next**.



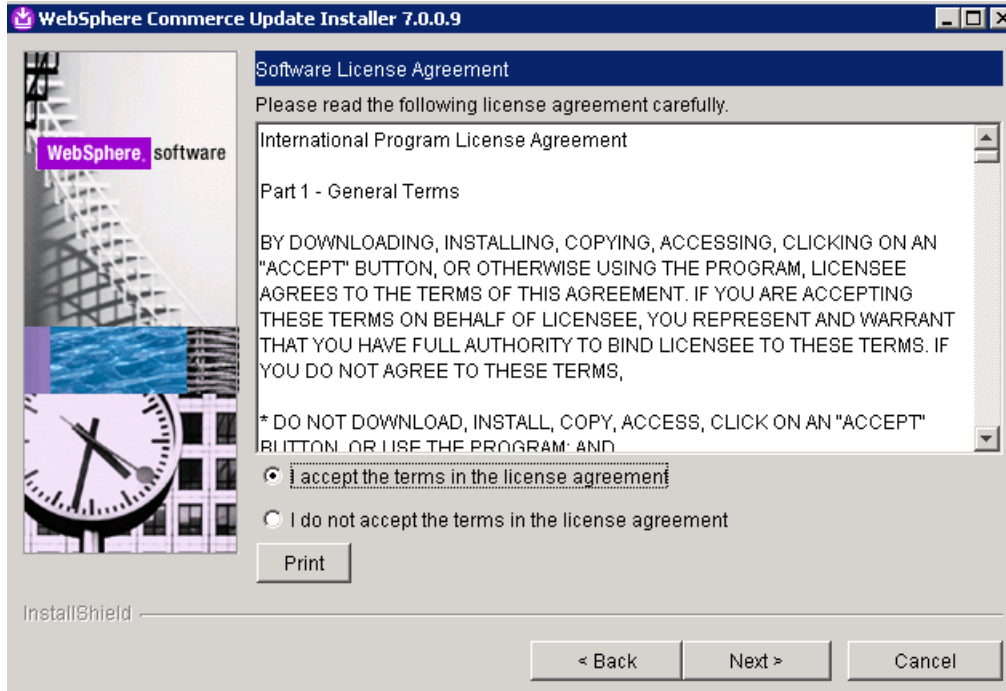
7 – Select fixpack 9 and hit Next.



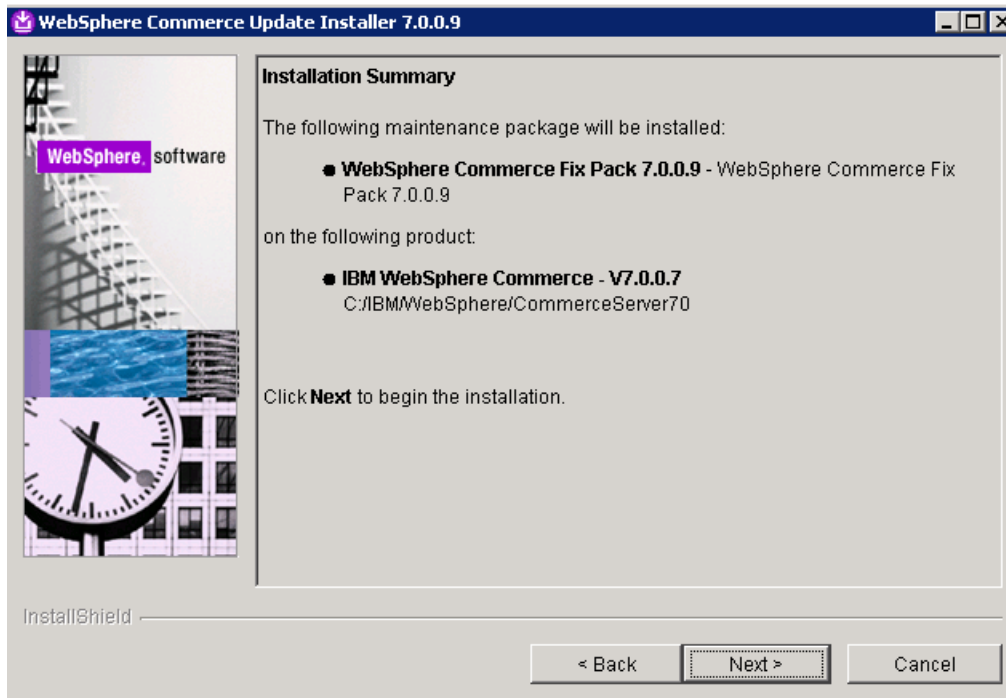
8 – If there are any apars currently installed on the environment, it will show a warning that those apars will be removed. (Note: Use the [Knowledge Center](#) to determine if the current apars are included in the fixpack version being installed.)



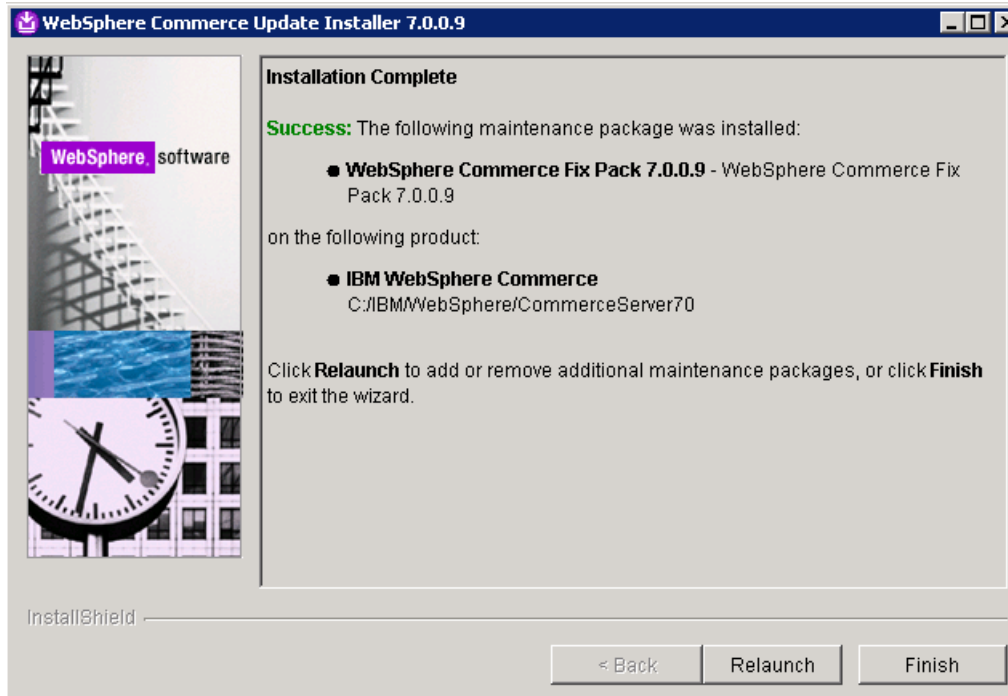
9 – UPDI displays a list of apars that will be uninstalled and reinstalled by the current maintenance installation.



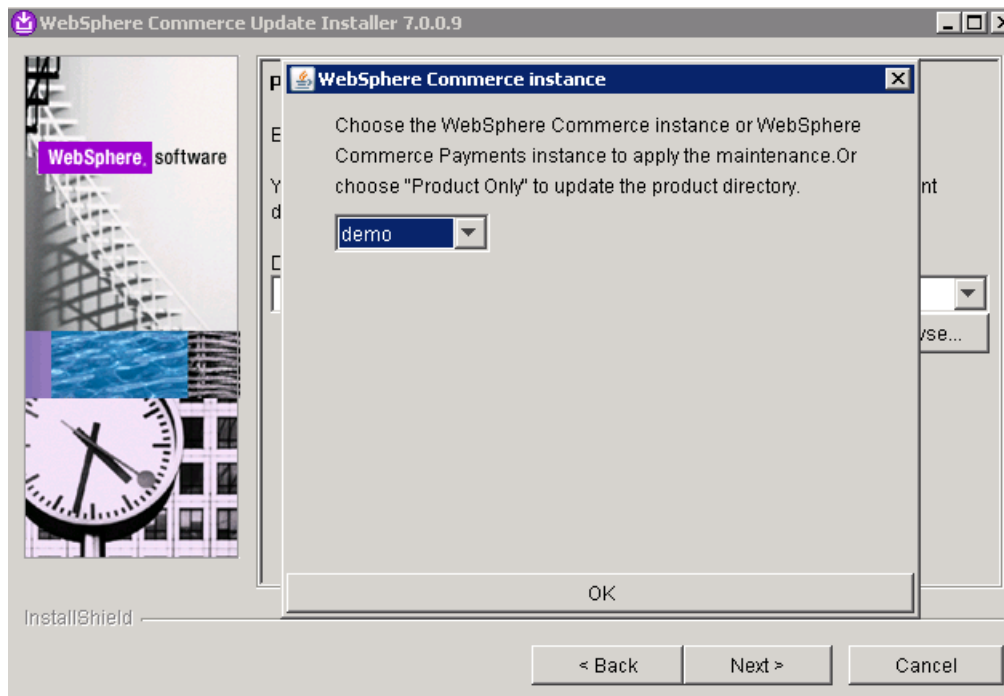
10 – Installer shows the license agreement. Accept, and hit **Next**.



11 – Select **Next** to begin the installation.

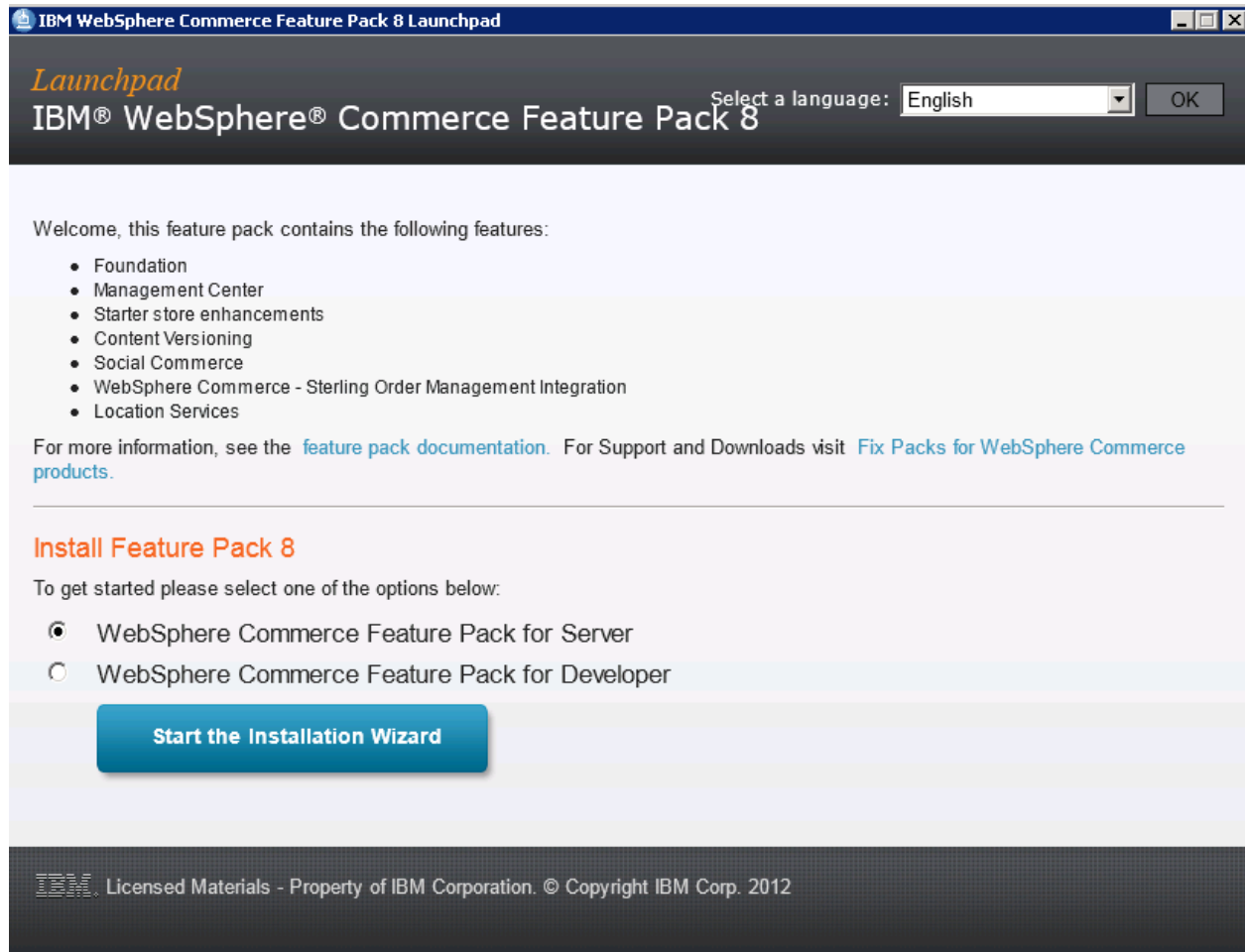


Once the update is complete for the product, you will need to relaunch the update installer to update the instance as well. Ensure that the application server is started along with the nodeagent if this is a clustered environment. Use the same steps as above, but at **step 4**, when it prompts to choose whether to update product or instance, choose your instance name.

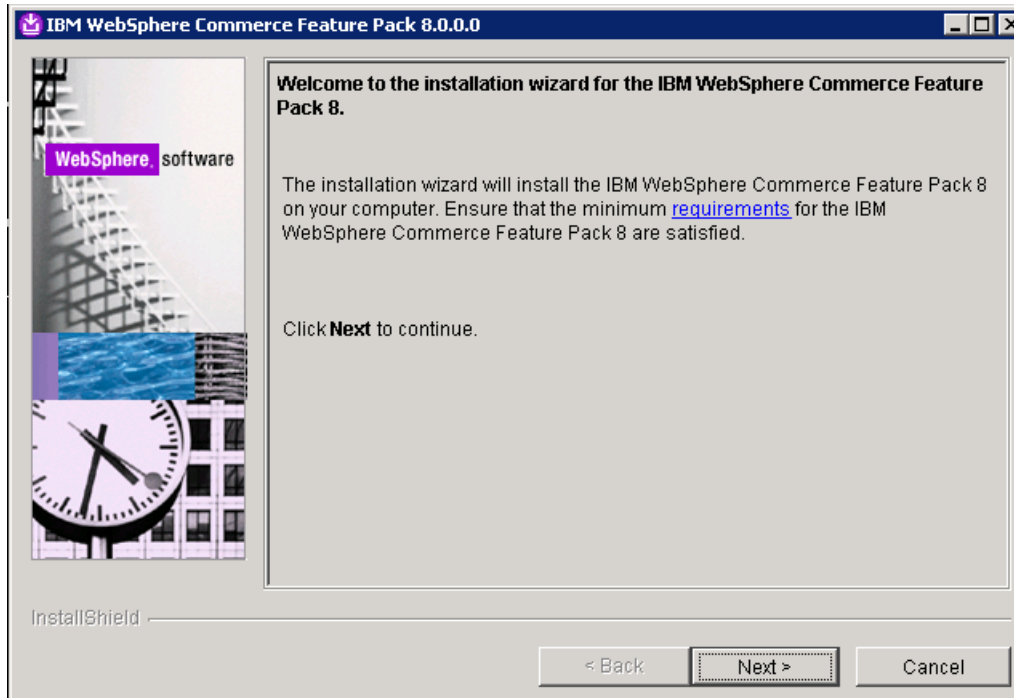


Upgrading to Feature Pack 8:

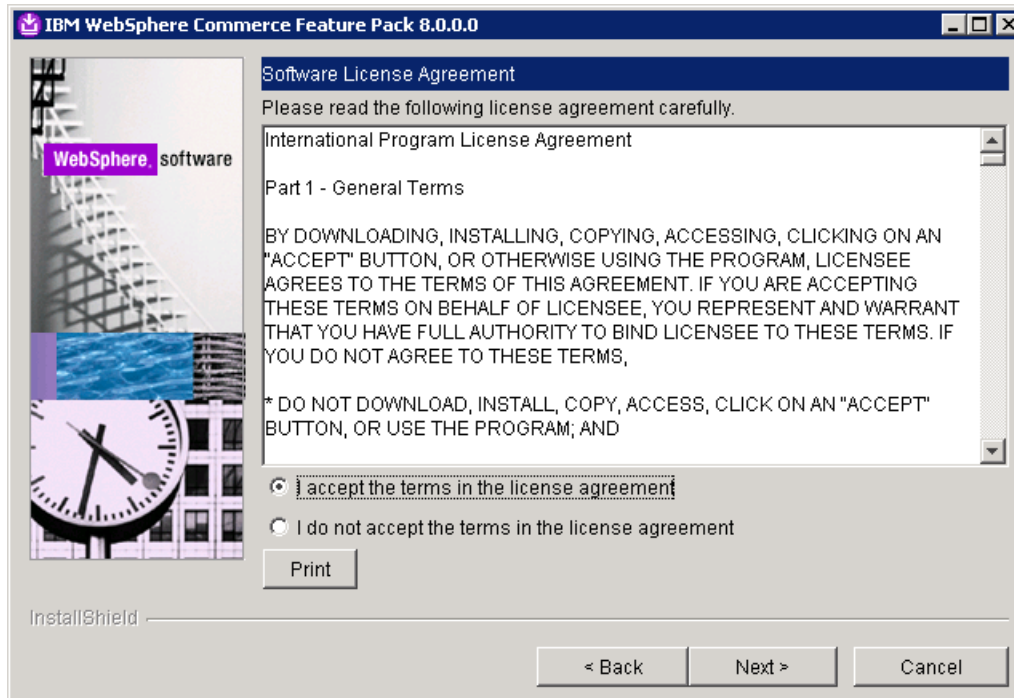
1 – Use the launchpad.exe/sh from the install media to start the installation of Feature Pack 8.



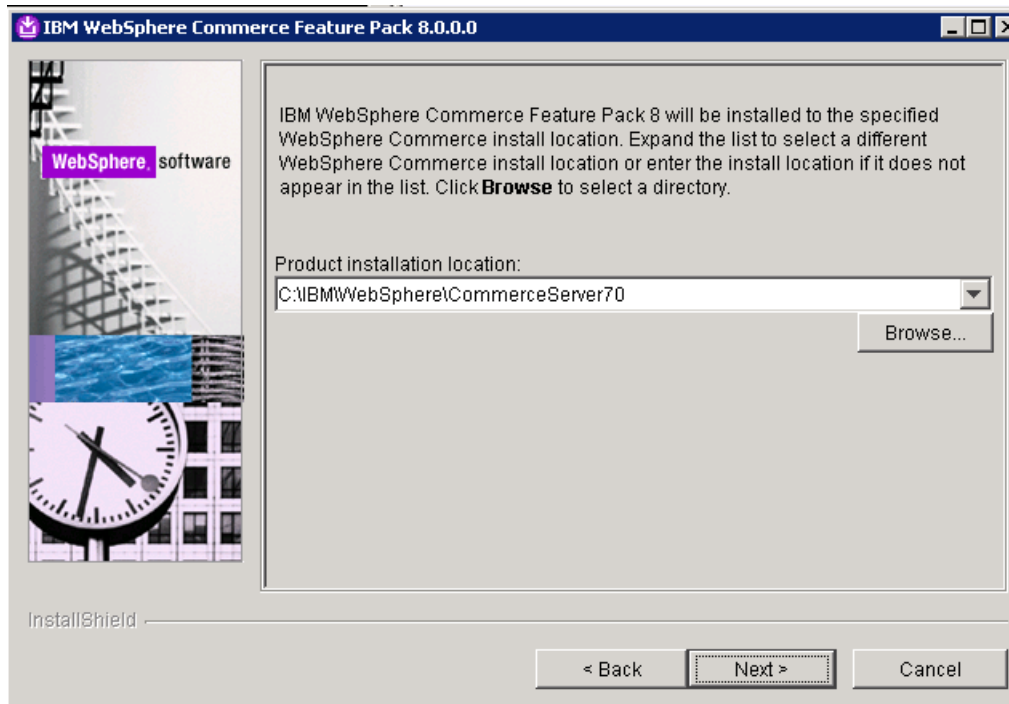
2 – Select the **WebSphere Commerce Feature Pack for Server**, and hit **Start the installation Wizard**.



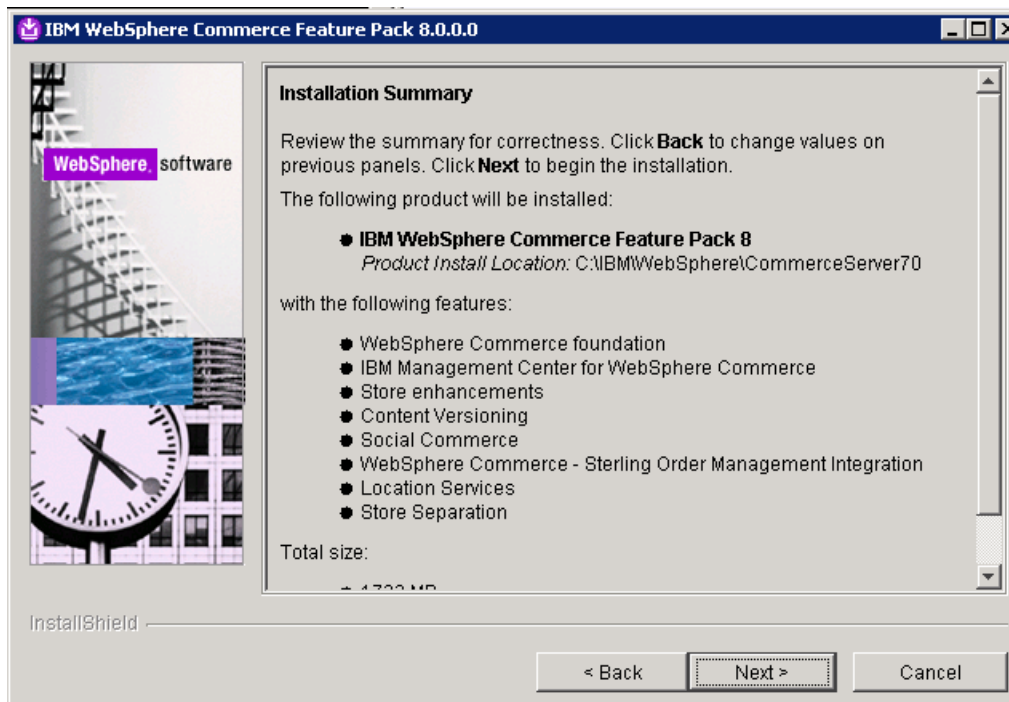
3 –With the feature pack installer is opened, hit **Next**.



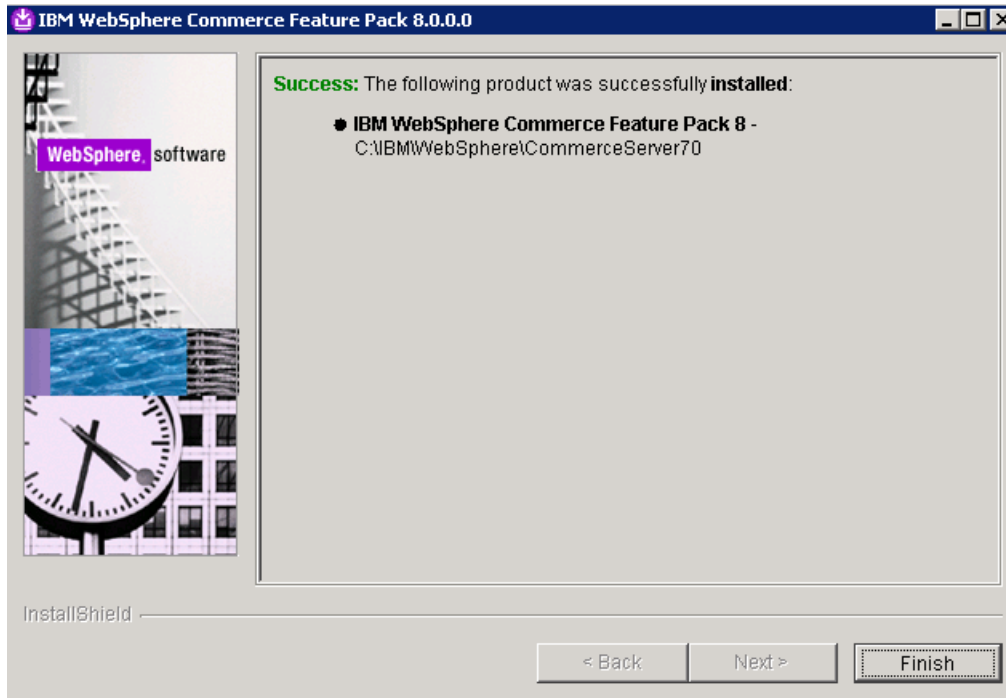
4 – Accept the license agreement, and hit **Next**.



5 – Select the installation path of Commerce, and hit **Next**.



6 – Review the installation summary. Hit **Next**.



7 – Once completed, you will see a success message. Hit **Finish**.

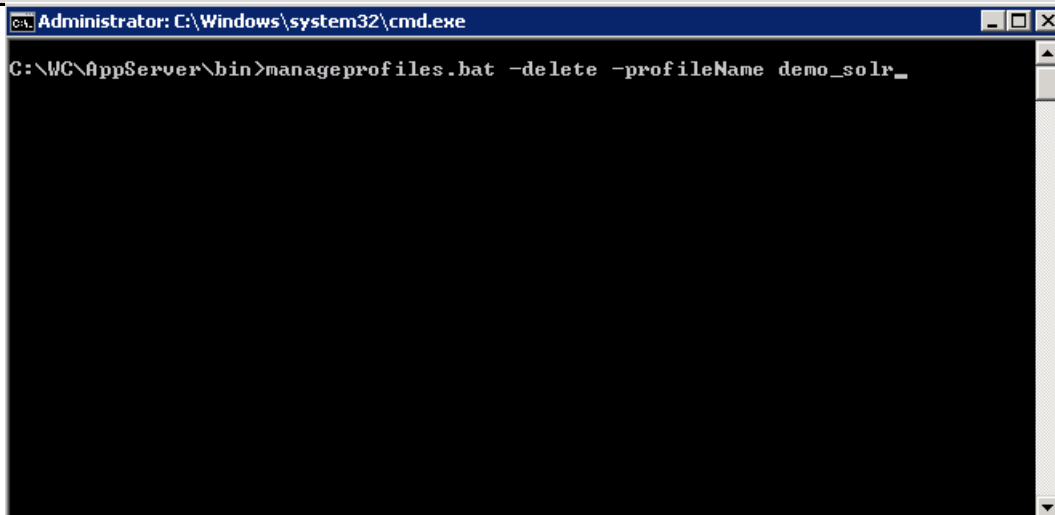
Prepare for Migration:

Now that the Commerce environment has been upgraded to Fixpack 9 with Feature Pack 8, there are additional steps needed to enable features. The enabling of certain features will reconfigure search for FEP8.

The first step in preparing for the migration process is to remove the previous search deployment. It can be a local standalone search server or a remote clustered search server. The same steps apply.

- Remove the previous search server profile using manageprofiles. From the AppServer/bin directory, issue the following command:

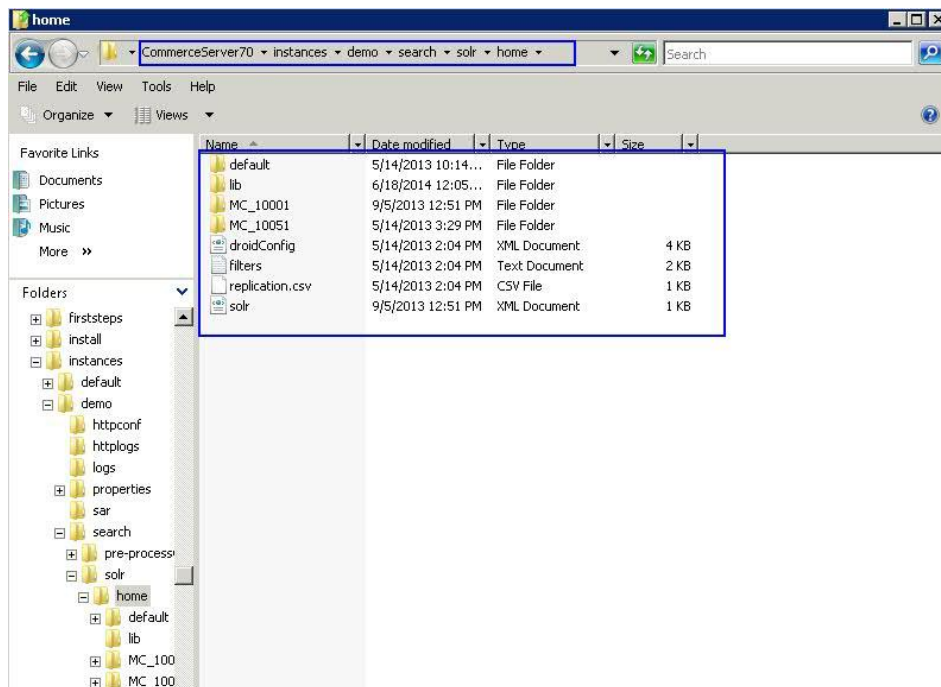
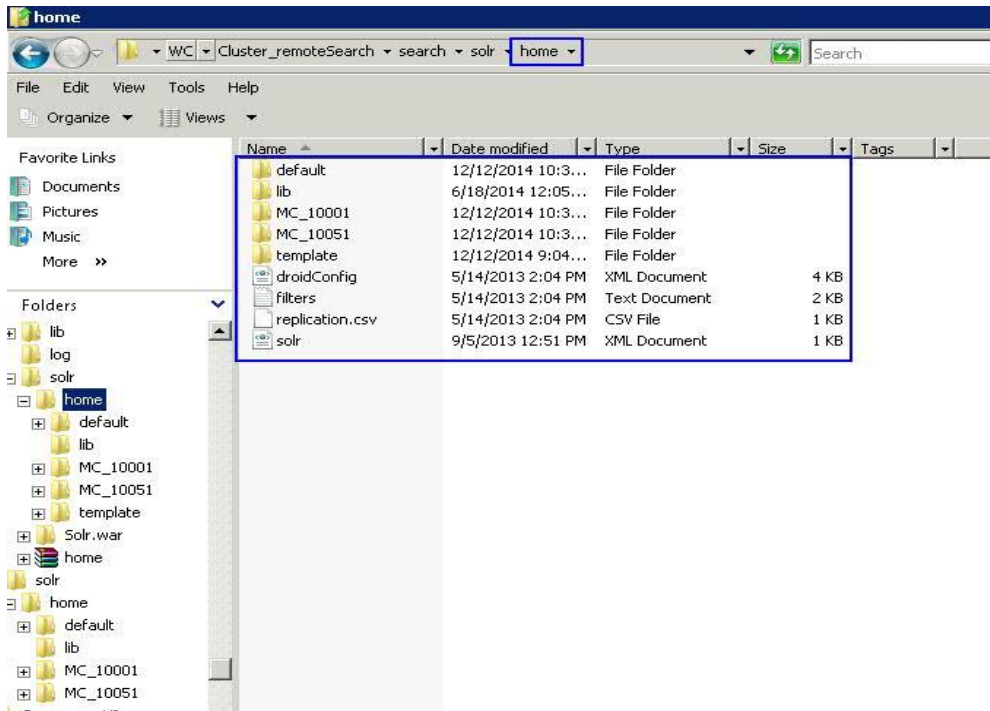
```
Manageprofiles -delete -profileName (previous solrSearch profile)
```



The screenshot shows a Windows command prompt window titled "Administrator: C:\Windows\system32\cmd.exe". The current directory is "C:\WC\AppServer\bin". The command entered is "manageprofiles.bat -delete -profileName demo_solr_". The command prompt is currently empty, indicating the command has been executed.

- Backup and copy the remote search server solrhome directory to the WebSphere Commerce node at the following location:
WC_installdir/instances/(instanceName)/search/solr/homedirectory.

This step is required to convert an advanced search deployment from a previous feature pack to a standard search deployment on the latest feature pack.

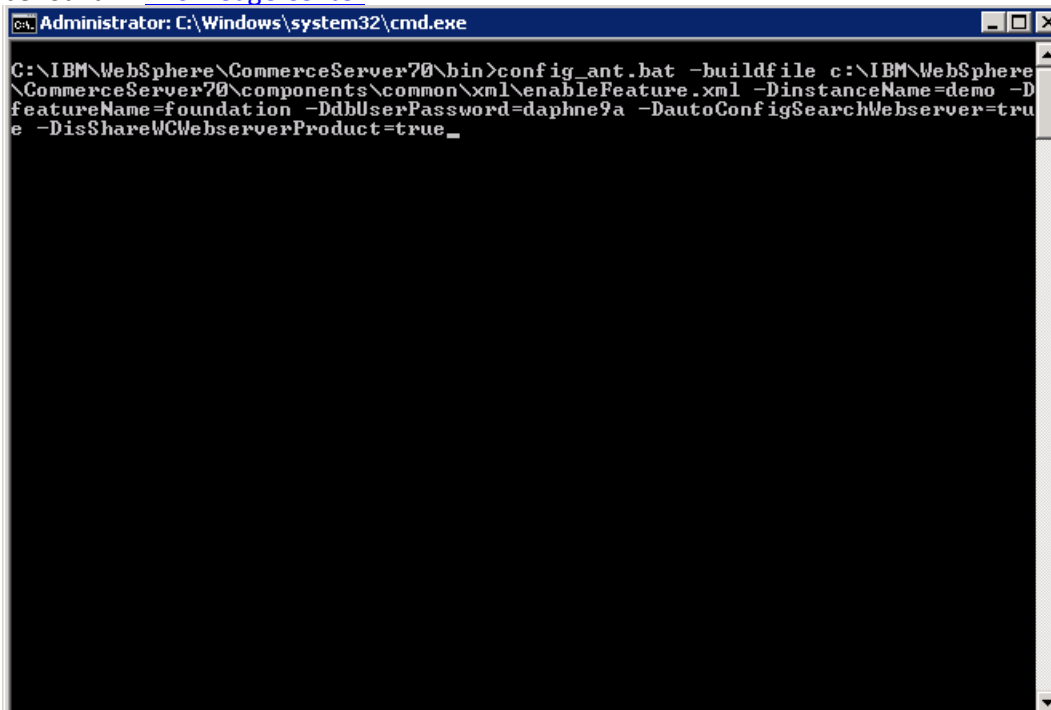


Enable Features:

Run the enablement script for foundation. This will deploy a local instance of the search server. I recommend running the enablement script from the primary Commerce Server.

```
config_ant.bat -buildfile WC_installdir/components/common/xml/enableFeature.xml -  
DinstanceName=(instanceName) -DfeatureName=foundation -DdbUserPassword=db_password [-  
DsolrHome=solrhome] [-DSolrWASAdminUser=solr_wasadminuser -  
DSolrWASAdminPassword=solr_wasadminpassword] -DautoConfigSearchWebserver=true -  
DisShareWCWebserverProduct=true
```

Note: there are additional options that can be used when enabling foundation, specifically for the webserver. The command above indicates that the local search server instance will share the webserver product with Commerce and will auto configure the solrWebserver. More information on options can be found in [Knowledge Center](#).



```
Administrator: C:\Windows\system32\cmd.exe  
C:\IBM\WebSphere\CommerceServer70\bin>config_ant.bat -buildfile c:\IBM\WebSphere  
\CommerceServer70\components\common\xml\enableFeature.xml -DinstanceName=demo -D  
featureName=foundation -DdbUserPassword=daphne9a -DautoConfigSearchWebserver=tru  
e -DisShareWCWebserverProduct=true_
```

```
Administrator: C:\Windows\system32\cmd.exe
[delete] Deleting: C:\IBM\WebSphere\CommerceServer70\components\common\temp\w
cs.massload.refresh_command_registry.xml
currentTimeStamp:
[echo] [ 12/15/2014 05:13:34:346 ]
rolloutUpdate:
restoreSync:
currentTimeStamp:
[echo] [ 12/15/2014 05:13:34:502 ]
FpFepIntegration:
[echoNL] Feature 'foundation' enablement completed successfully.
[echoNL] See the WebSphere Commerce Information Center for any additional man
ual steps required for the enabled feature(s).
currentTimeStamp:
[echo] [ 12/15/2014 05:13:34:596 ]
BUILD SUCCESSFUL
Total time: 371 minutes 36 seconds
C:\IBM\WebSphere\CommerceServer70\bin>
```

Validate that the enablement script completes with a successful message.

Once completed, you need to re-enable the store enhancements. From command line, run the `config_ant` task to enable store enhancements.

```
Config-ant -buildfile (commerce_root\components\common\xml\enableFeature.xml -DinstanceName
(instanceName) -DfeatureName=store-enhancements -DdbUserPassword=password
```

```
Administrator: C:\Windows\system32\cmd.exe
C:\IBM\WebSphere\CommerceServer70\bin>config_ant.bat -buildfile c:\IBM\WebSphere
\CommerceServer70\components\common\xml\enableFeature.xml -DinstanceName=demo -D
featureName=store-enhancements -DdbUserPassword=daphne9a
```

```
Administrator: C:\Windows\system32\cmd.exe
refreshCommandRegistry:
currentTimeStamp:
    [echo] [ 12/15/2014 05:58:07:862 ]
rolloutUpdate:
restoreSync:
currentTimeStamp:
    [echo] [ 12/15/2014 05:58:08:002 ]
FpFepIntegration:
    [echoNL] Feature 'foundation', 'management-center', 'store-enhancements' enable
ment completed successfully.
    [echoNL] See the WebSphere Commerce Information Center for any additional man
ual steps required for the enabled feature(s).
currentTimeStamp:
    [echo] [ 12/15/2014 05:58:08:143 ]
BUILD SUCCESSFUL
Total time: 31 minutes 12 seconds
C:\IBM\WebSphere\CommerceServer70\bin>
```

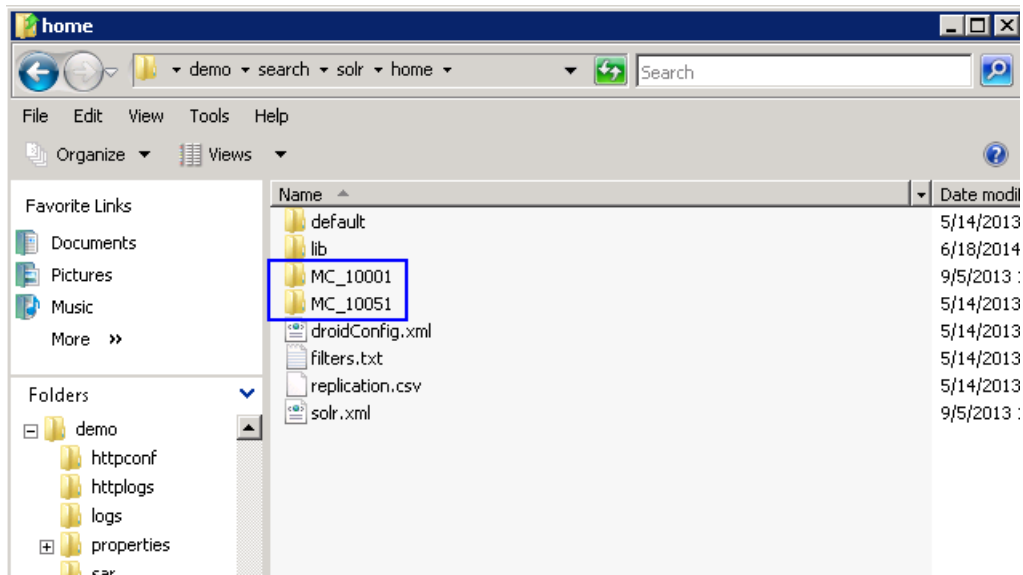
Search Migration Utility:

Once the task completes with a successful message, you will need to run the search migration utility on each of the master catalogs in your environment. This task will setup the indexes based on the previous indexes and configuration that we copied from the remote search server to the solr/home on Commerce server.

Note: Restart the Commerce Server and Solr server prior to running migration utility to ensure all the changes that have been made thus far are picked up. I have seen issues when they have not been restarted, the migrateSolrSearch can encounter errors when trying to export the wc-search.xml from Commerce and importing into the new solr server.

Run the search index setup migration utility for each master catalog:

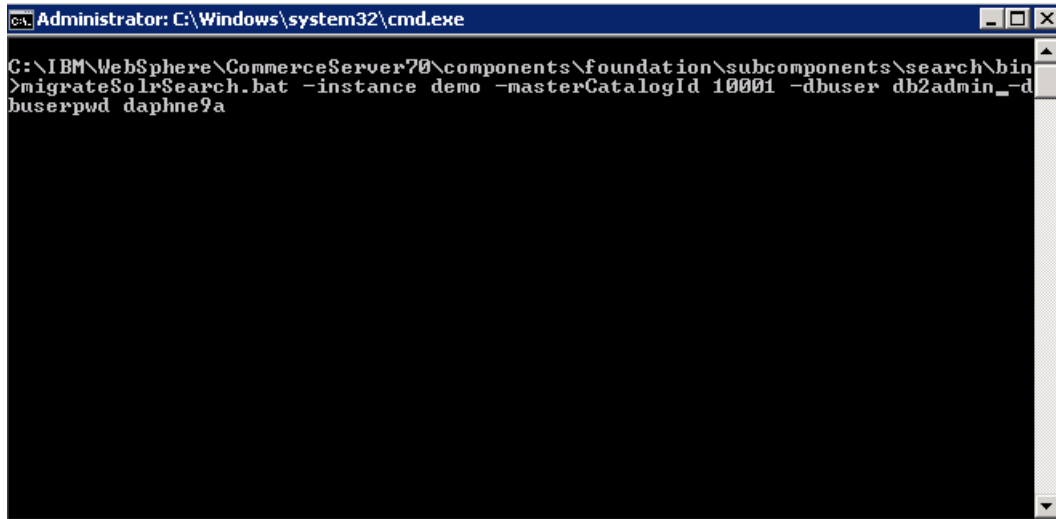
You can navigate to the solr/home directory to validate the master catalogs that you will need to run the migration script against.



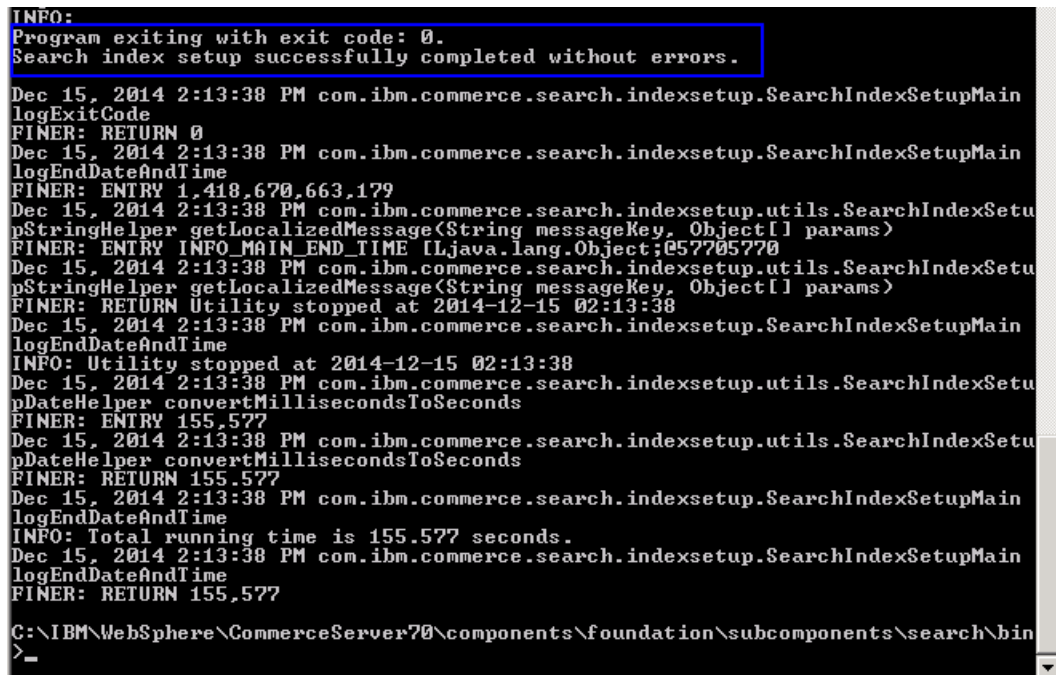
Important: If you have multiple master catalog IDs, for example, 10001 and 10002, you must migrate all of them separately. That is, if you migrate only 10001, but do not migrate 10002, Solr configuration errors occur when you build the search index.

- Navigate to the following directory:
- WC_installdir/components/foundation/subcomponents/search/bin
- Run the search index setup migration utility

```
migrateSolrSearch -instance (instanceName) -masterCatalogId masterCatalogId -dbuser (db_admin) -dbuserpwd (dbadmin_password)
```



```
Administrator: C:\Windows\system32\cmd.exe
C:\IBM\WebSphere\CommerceServer70\components\foundation\subcomponents\search\bin
>migrateSolrSearch.bat -instance demo -masterCatalogId 10001 -dbuser db2admin_-d
buserpwd daphne9a
```



```
INFO:
Program exiting with exit code: 0.
Search index setup successfully completed without errors.

Dec 15, 2014 2:13:38 PM com.ibm.commerce.search.indexsetup.SearchIndexSetupMain
logExitCode
FINER: RETURN 0
Dec 15, 2014 2:13:38 PM com.ibm.commerce.search.indexsetup.SearchIndexSetupMain
logEndDateAndTime
FINER: ENTRY 1.418.670.663.179
Dec 15, 2014 2:13:38 PM com.ibm.commerce.search.indexsetup.utils.SearchIndexSetu
pStringHelper getLocalizedMessage(String messageKey, Object[] params)
FINER: ENTRY INFO_MAIN_END_TIME [Ljava.lang.Object;@57705770
Dec 15, 2014 2:13:38 PM com.ibm.commerce.search.indexsetup.utils.SearchIndexSetu
pStringHelper getLocalizedMessage(String messageKey, Object[] params)
FINER: RETURN Utility stopped at 2014-12-15 02:13:38
Dec 15, 2014 2:13:38 PM com.ibm.commerce.search.indexsetup.SearchIndexSetupMain
logEndDateAndTime
INFO: Utility stopped at 2014-12-15 02:13:38
Dec 15, 2014 2:13:38 PM com.ibm.commerce.search.indexsetup.utils.SearchIndexSetu
pDateHelper convertMillisecondsToSeconds
FINER: ENTRY 155.577
Dec 15, 2014 2:13:38 PM com.ibm.commerce.search.indexsetup.utils.SearchIndexSetu
pDateHelper convertMillisecondsToSeconds
FINER: RETURN 155.577
Dec 15, 2014 2:13:38 PM com.ibm.commerce.search.indexsetup.SearchIndexSetupMain
logEndDateAndTime
INFO: Total running time is 155.577 seconds.
Dec 15, 2014 2:13:38 PM com.ibm.commerce.search.indexsetup.SearchIndexSetupMain
logEndDateAndTime
FINER: RETURN 155.577

C:\IBM\WebSphere\CommerceServer70\components\foundation\subcomponents\search\bin
>_
```

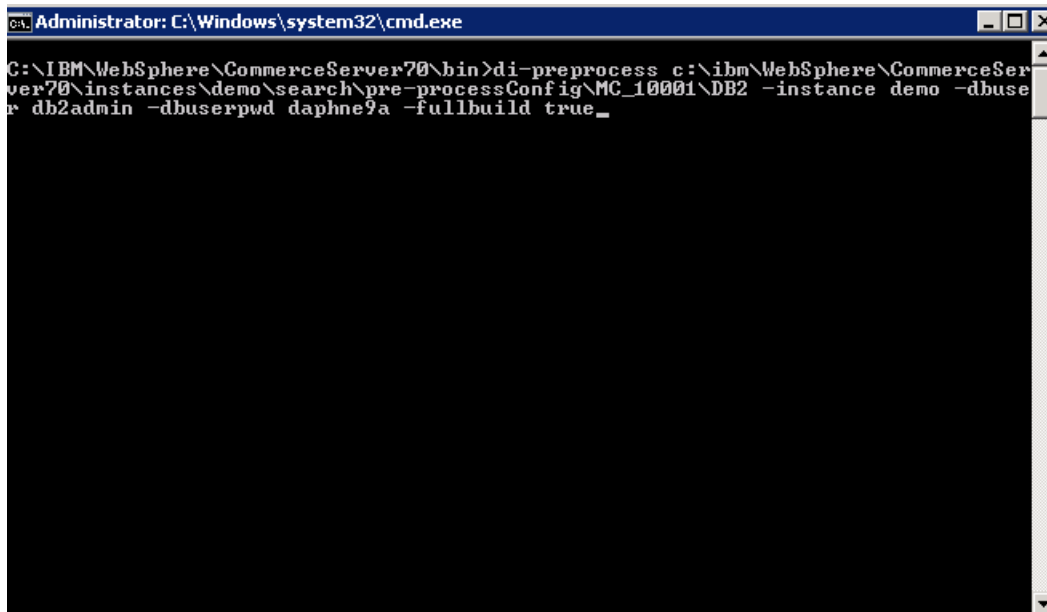
Ensure that the utility runs successfully by reviewing the log file to see the results of the migration. The log file location is specified in the migrate-solr-search-logging.properties file.

Preprocessing and Build index data:

- **Preprocess:**
- Because additional parameters are required in Feature Pack 7 or later, you must perform these tasks when a previous version of WebSphere Commerce search was enabled from an earlier Feature Pack version.
- Run the preprocess task to prepare your WebSphere Commerce data for indexing. The preprocess utility extracts and flattens WebSphere Commerce data, and then outputs the data into a set of temporary tables inside the WebSphere Commerce database. The data in the temporary tables is from the base schema.

```
di-preprocess.bat full-path -instance (instanceName) -dbuser db_admin -dbuserpwd db_admin_pwd -fullbuild true
```

- Additional preprocess parameters can be found in [the Knowledge Center](#).



```
Administrator: C:\Windows\system32\cmd.exe
C:\IBM\WebSphere\CommerceServer70\bin>di-preprocess c:\ibm\WebSphere\CommerceServer70\instances\demo\search\pre-processConfig\MC_10001\DB2 -instance demo -dbuser db2admin -dbuserpwd daphne9a -fullbuild true_
```

```
Administrator: C:\Windows\system32\cmd.exe
INFO:
The program exiting with exit code: 0.
Data import pre-processing completed successfully with no errors.
Dec 15, 2014 2:37:46 PM com.ibm.commerce.foundation.dataimport.preprocess.DataIm
portPreProcessorMain logExitCode
FINER: RETURN
Dec 15, 2014 2:37:46 PM com.ibm.commerce.foundation.dataimport.preprocess.DataIm
portPreProcessorMain logEndDateAndTime
FINER: ENTRY 1.418.672.014.407
Dec 15, 2014 2:37:46 PM com.ibm.commerce.foundation.dataimport.util.DataImportHe
lper getLocalizedMessage(String, Object[])
FINER: ENTRY INFO_DI_PREPROCESSING_END_TIME [Ljava.lang.Object;@85d085d
Dec 15, 2014 2:37:46 PM com.ibm.commerce.foundation.dataimport.util.DataImportHe
lper getLocalizedMessage(String, Object[])
FINER: RETURN Data import pre-processing ended:
Dec 15, 2014 2:37:46 PM com.ibm.commerce.foundation.dataimport.preprocess.DataIm
portPreProcessorMain logEndDateAndTime
INFO: Data import pre-processing ended:Mon Dec 15 14:37:46 EST 2014
Dec 15, 2014 2:37:46 PM com.ibm.commerce.foundation.dataimport.util.DataImportHe
lper convertMillisecondsToSeconds
FINER: ENTRY 251.913
Dec 15, 2014 2:37:46 PM com.ibm.commerce.foundation.dataimport.util.DataImportHe
lper convertMillisecondsToSeconds
FINER: RETURN 251.913
Dec 15, 2014 2:37:46 PM com.ibm.commerce.foundation.dataimport.preprocess.DataIm
portPreProcessorMain logEndDateAndTime
INFO: Data import pre-processing completed in 251.913 seconds.
Dec 15, 2014 2:37:46 PM com.ibm.commerce.foundation.dataimport.preprocess.DataIm
portPreProcessorMain logEndDateAndTime
FINER: RETURN 251.913
```

Important: You must run preprocess on both the CatalogEntry index and the CatalogGroup index. That is, ensure that the full-path parameter includes the CatalogEntry index.

- Include CatalogEntry index in the full-path parameter processes the configuration files for both CatalogEntry and CatalogGroup by default. The directory which contains the configuration files for CatalogGroup is one level below the directory for CatalogEntry.
- Restart the WebSphere Commerce search server
- **BuildIndex:**
- The build index utility updates the information in the Master Index by using the Data Import Handler (DIH) service to build the index.
- Build index task must be run on each master catalog using the following command:

```
di-buildindex.bat -instance (instanceName) -masterCatalogId (masterCatalogId) -dbuser
db_admin -dbuserpwd db_admin_pwd -fullbuild true
```

- Additional build index parameters can be found in [Knowledge Center](#).

```
Administrator: C:\Windows\system32\cmd.exe
C:\IBM\WebSphere\CommerceServer70\bin>di-buildindex.bat -instance demo -masterCatalogId 10001 -dbuser db2admin -dbuserpwd daphne9a -fullbuild true_
```

```
Select Administrator: C:\Windows\system32\cmd.exe
ed 0 documents., Committed=2014-12-15 20:40:25, Total Documents Processed=6, Time taken=0:0:2.484>>.
Dec 15, 2014 8:40:43 PM com.ibm.commerce.foundation.dataimport.process.DataImportProcessorMain fullDataImport
INFO:
Dec 15, 2014 8:40:46 PM com.ibm.commerce.foundation.dataimport.process.DataImportProcessorMain logExitCode
INFO:
-----
Dec 15, 2014 8:40:46 PM com.ibm.commerce.foundation.dataimport.process.DataImportProcessorMain logExitCode<int>
INFO:
The program exiting with exit code: 0.
Data import process completed successfully with no errors.
Dec 15, 2014 8:40:46 PM com.ibm.commerce.foundation.dataimport.process.DataImportProcessorMain logExitCode
INFO:
-----
Dec 15, 2014 8:40:46 PM com.ibm.commerce.foundation.dataimport.process.DataImportProcessorMain logEndDateAndTime
INFO: Data import process ended:Mon Dec 15 20:40:46 EST 2014
Dec 15, 2014 8:40:46 PM com.ibm.commerce.foundation.dataimport.process.DataImportProcessorMain logEndDateAndTime
INFO: Data import process completed in 48.547 seconds.
Build index runs successful.
```

- **Important:** You must build the CatalogEntry index when indexing WebSphere Commerce search. That is, at a minimum, the CatalogEntry index must be rebuilt when migrating WebSphere Commerce search. Ensure that the indextype parameter includes the CatalogEntry index. If you do not use the indextype parameter, both the CatalogEntry and CatalogGroup indexes are built by default.
- Note: If the index build fails with multiple languages due to OutOfMemoryError issues, you must increase the search server heap size. For example, increase it to 2 GB. For more information, see [Troubleshooting: Out of memory error from building the search index with multiple languages](#).

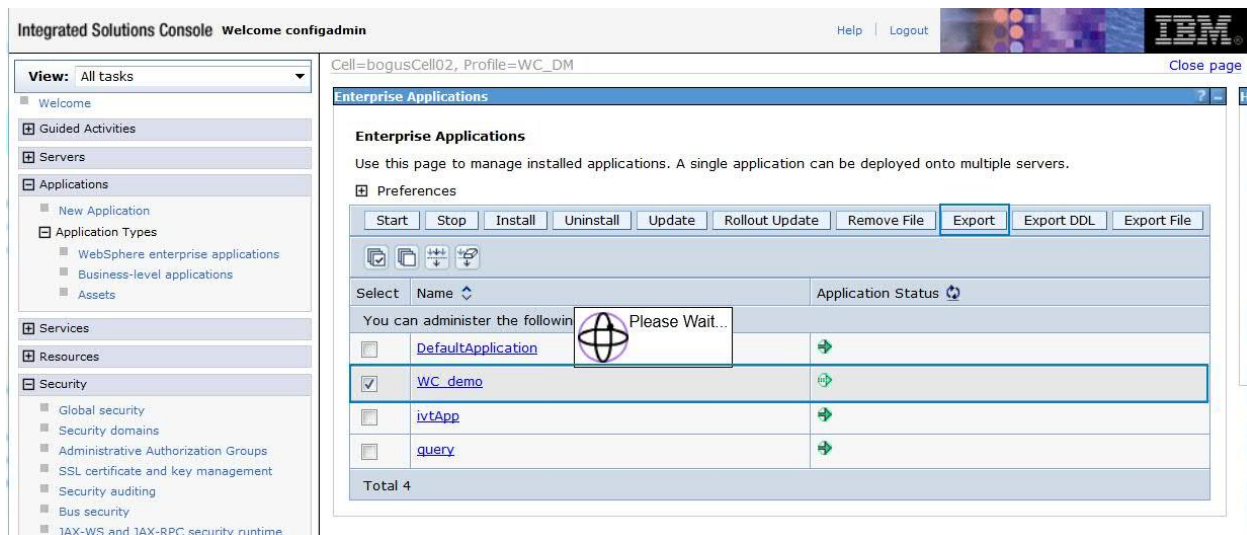
Storefront JSP:

Since I am migrating from FEP6 to FEP8, there are a couple of storefront jsps that need to be update. If migrating from a different version than FEP6, please review [Knowledge Center](#) for any additional steps.

The new REST based searches are only available in the new FEP7/FEP8 stores. To get REST searches working, you will need to use the new wcf:rest tags for searches instead of wcf:getData tags. See the following [documentation](#) in KC for information on using wcf:rest tags.

(**Tip:** Publish one of the new FEP7/FEP8 stores to use as example of using wcf:rest tags)

Export the Commerce ear from the deployment manager. You can export ear via Admin Console or via wsadmin tool. If using Admin Console to export, access the Deployment Manager and navigate to **Applications -> WebSphere Enterprise Applications**. Select the **WC_(instance)** and export the ear to a local file system.



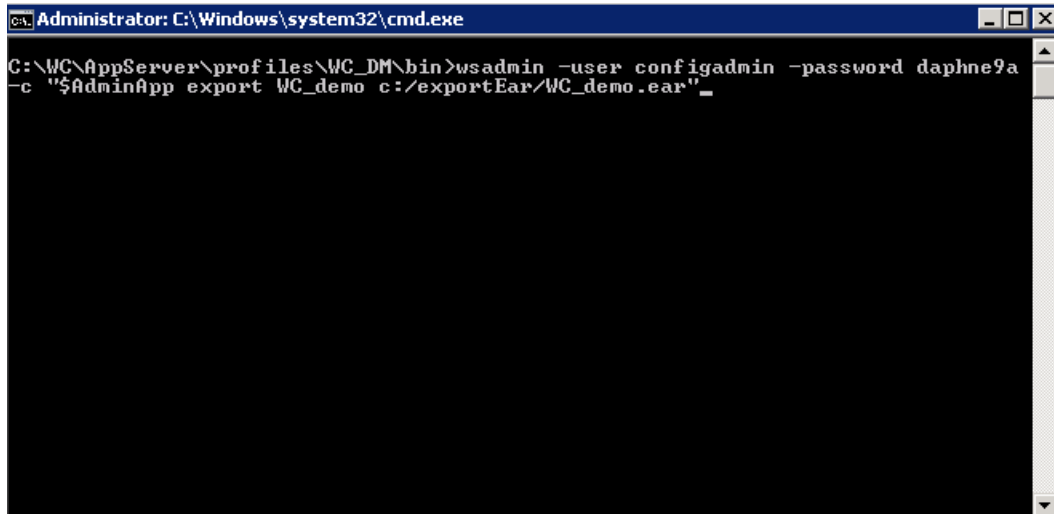
The screenshot shows the Integrated Solutions Console interface. The left sidebar contains a navigation menu with categories like View, Guided Activities, Servers, Applications, Services, Resources, and Security. The main content area is titled 'Enterprise Applications' and includes a toolbar with buttons for Start, Stop, Install, Uninstall, Update, Rollout Update, Remove File, Export, Export DDL, and Export File. Below the toolbar is a table of applications:

Select	Name	Application Status
<input type="checkbox"/>	DefaultApplication	➔
<input checked="" type="checkbox"/>	WC_demo	➔
<input type="checkbox"/>	ivtApp	➔
<input type="checkbox"/>	query	➔
Total 4		

Use the following steps if using wsadmin tool.

- From the Deployment Manager server, issue the following command:

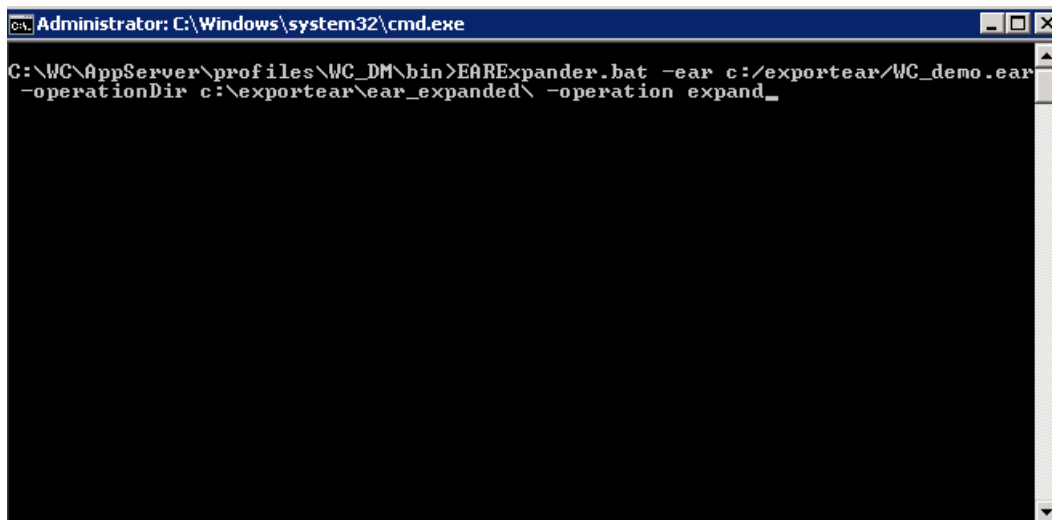
```
Wsadmin -user (WAS_admin_id) -password (WAS_admin_id_password) -c "$AdminApp  
export WC_(instanceName) (directory)/WC_demo.ear"
```



```
Administrator: C:\Windows\system32\cmd.exe  
C:\WC\AppServer\profiles\WC_DM\bin>wsadmin -user configadmin -password daphne9a  
-c "$AdminApp export WC_demo c:/exportEar/WC_demo.ear"
```

- Expand the ear using the following command:

```
EARExpander -ear (dir)/WC_(instanceName).ear -operationDir (expandedDir) -operation expand
```



```
Administrator: C:\Windows\system32\cmd.exe  
C:\WC\AppServer\profiles\WC_DM\bin>EARExpander.bat -ear c:/exportear/WC_demo.ear  
-operationDir c:\exportear\ear_expanded\ -operation expand
```

Make the following changes to the jsp files:

Stores.war/storedir /Layouts/**CategoryNavigationResults.jsp**

Find the following snippet:

```
<c:when test="${!empty WCPParam.searchTerm || !empty WCPParam.manufacturer || !empty WCPParam.facet || !empty WCPParam.metaData}">
```

Replace it with the following snippet:

```
<c:when test="${!empty WCPParam.searchTerm || !empty WCPParam.manufacturer || !empty WCPParam.filterTerm || !empty WCPParam.facet || !empty WCPParam.metaData}">
```

Save your changes and close the file and add it back to the ear.

WC_earDir/Stores.war/storedir /Layouts/**SearchBasedCategoryPage.jsp**

Find the following snippet:

```
<c:when test = "${empty WCPParam.searchTerm && empty WCPParam.manufacturer && empty WCPParam.facet && empty WCPParam.metaData}">
```

Replace it with the following snippet:

```
<c:when test = "${empty WCPParam.searchTerm && empty WCPParam.manufacturer && empty WCPParam.facet && empty WCPParam.filterTerm && empty WCPParam.metaData}">
```

Save your changes and close the file and add it back to the ear.

For the **Madisons starter store and Elite starter store**:

Stores.war/storedir /include/**JSTLEnvironmentSetupExtForSearch.jspf**

Stores.war/storedir /Snippets/Search/**AutoSuggestSerialize.jsp**

For the **Aurora starter store**:

Stores.war/storedir /Widgets/Search/**JSTLEnvironmentSetupExtForSearch.jspf**

Stores.war/storedir /Widgets/Search/**AutoSuggestSerialize.jsp**

Find the following snippet:

```
<%@ page import="org.apache.solr.client.solrj.impl.CommonsHttpSolrServer" %>
```

Replace it with the following snippet:

```
<%@ page import="org.apache.solr.client.solrj.impl.HttpSolrServer" %>
```

Find the following snippet:

```
if(solrServer instanceof CommonsHttpSolrServer ){  
    serverURL = ((CommonsHttpSolrServer )solrServer).getBaseUrl();
```

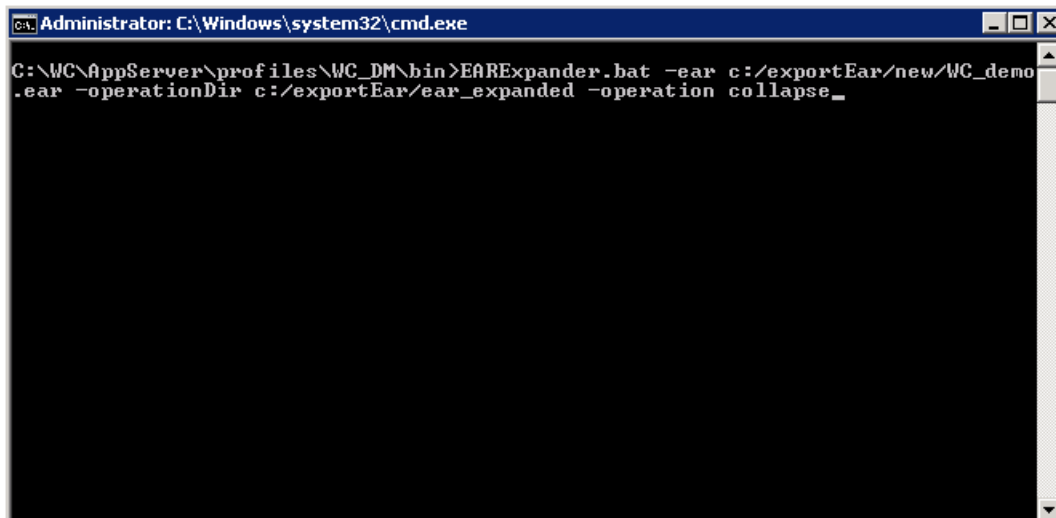
Replace it with the following snippet:

```
if(solrServer instanceof HttpSolrServer){  
    serverURL = ((HttpSolrServer)solrServer).getBaseUrl();
```

Save your changes and close the file and add back to the ear.

Use the expander to collapse the ear for re-deployment. Issue the following command:

```
EARExpander -ear (tempdir)/WC_(instanceName).ear -operationDir (expanded_dir) -operation collapse
```



The screenshot shows a Windows command prompt window titled "Administrator: C:\Windows\system32\cmd.exe". The command entered is: `G:\WC\AppServer\profiles\WC_DM\bin>EARExpander.bat -ear c:/exportEar/new/WC_demo.ear -operationDir c:/exportEar/ear_expanded -operation collapse`. The command prompt is currently empty, indicating the command has been executed.

Use wsadmin utility to redeploy the update ear. Issue the following command:

```
Wsadmin -user (admin) -password (admin password) -c "$AdminApp install (new ear dir)/WC_(instanceName).ear {-update -appname WC_(instanceName) -nodeployejb}"
```



```
Administrator: C:\Windows\system32\cmd.exe
C:\WC\AppServer\profiles\WC_DM\bin>wsadmin -user configadmin -password daphne9a
-c "$AdminApp install c:/exportEar/new/WC_demo.ear <-update -appname WC_demo -no
deploy>}"
```

If using the Admin Console to redeploy, navigate back to **Applications -> WebSphere enterprise Applications** and select the **WC_instance** application. Select **Update** and point to the ear that was just updated.

Integrated Solutions Console Welcome configadmin Help | Logout Cell=bogusCell02, Profile=WC_DM Close page

Enterprise Applications

Use this page to manage installed applications. A single application can be deployed onto multiple servers.

Preferences

Start Stop Install Uninstall **Update** Rollout Update Remove File Export Export DDL Export File

Select	Name	Application Status
<input type="checkbox"/>	DefaultApplication	➔
<input checked="" type="checkbox"/>	WC_demo	➔
<input type="checkbox"/>	iytApp	➔
<input type="checkbox"/>	query	➔

Total 4

Post Migration:

- If you have customized the WebSphere Commerce search preprocessor configuration files:
 - Navigate to the following directory:
WC_installdir/instances/instanceName/search/pre-processConfig
 - Manually compare all the files in the **MC_masterCatalogId.timestamp** directory with the files in the **MC_masterCatalogId** directory.
 - Identify all the changed files, and merge the specific Feature Pack2 changes from the **MC_masterCatalogId.timestamp** directory to the files with the same names in the **MC_masterCatalogId** directory.

- If you have customized the default WebSphere Commerce search Solr configuration files:
 - Navigate to the following directory:
WC_installdir/instances/instanceName/search/solr/home/MC_masterCatalogId/locale/index/type
 - For each core, manually compare the **solrconfig.xml**, **wc-data-config.xml**, and **schema.xml** files in the **conf.timestamp** directory with the files in the **conf** directory.
 - Identify all the changed files, and merge the specific previous Feature Pack changes from the **conf.timestamp** directory to the files with the same names in the **conf** directory.

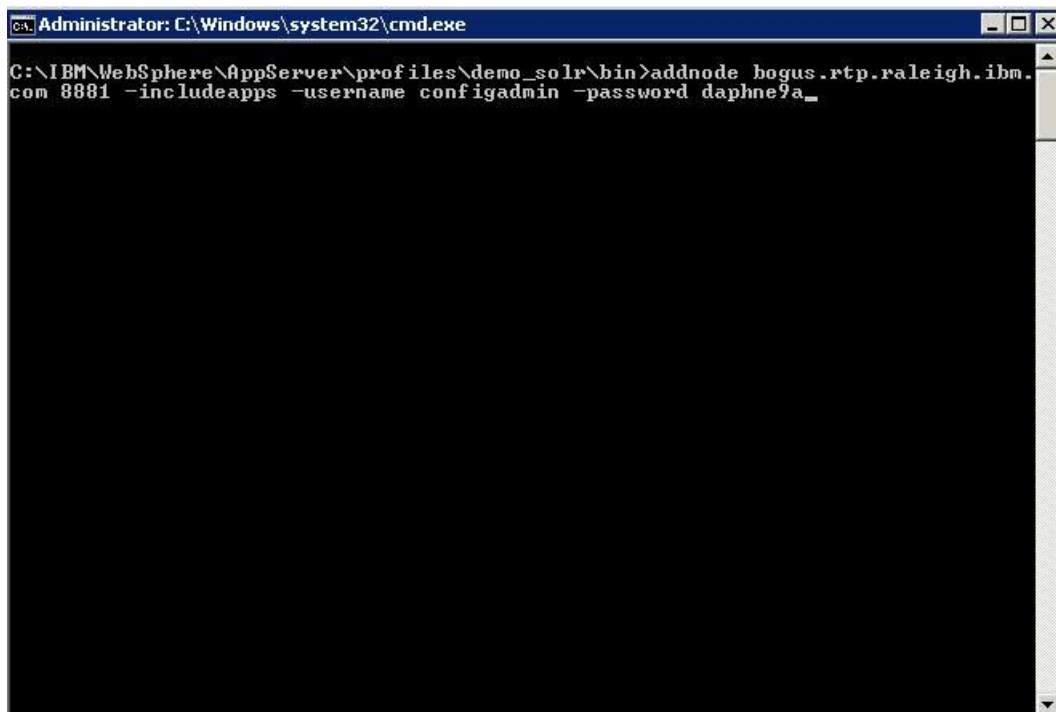
- Set price ranges to index and display in starter stores:
 - Set the Search profiles global defaults property for **SearchProfilesPrice** to mixed mode (2) in the **wc-component.xml** file. For more information, see [Knowledge Center](#)

```
<_config:property name="SearchProfilesPrice" value="2" />
```

Federate Local Search Instance:

Now that the WebSphere Commerce Search server is deployed in the standard configuration, we will need to federate the node to a Deployment Manager so a cluster can be created. On the server where the local search server instance was created, navigate to the profile root of that node – (ie: was_home/profiles/(profileName)/bin) and issue the following command:

```
addNode (DMHostname) soap_port -includeapps -username wasadmin -password was_admin_pass
```



```
Administrator: C:\Windows\system32\cmd.exe
C:\IBM\WebSphere\AppServer\profiles\demo_solr\bin>addnode bogus.rtp.raleigh.ibm.com 8881 -includeapps -username configadmin -password daphne9a_
```

```

Administrator: C:\Windows\system32\cmd.exe
ADMU0120I: ibmasyncrsp on BLA will not be uploaded since it already exists in
the target repository.
ADMU0120I: query on BLA will not be uploaded since it already exists in the
target repository.
ADMU0120I: iutApp on BLA will not be uploaded since it already exists in the
target repository.
ADMU0120I: DefaultApplication on BLA will not be uploaded since it already
exists in the target repository.
ADMU0016I: Synchronizing configuration between node and cell.
ADMU0018I: Launching Node Agent process for node: demo_search_node
ADMU0020I: Reading configuration for Node Agent process: nodeagent
ADMU0022I: Node Agent launched. Waiting for initialization status.
ADMU0030I: Node Agent initialization completed successfully. Process id is:
4280
ADMU0505I: Servers found in configuration:
ADMU0506I: Server name: nodeagent
ADMU0506I: Server name: solrServer
ADMU0506I: Server name: solrWebserver

ADMU0308I: The node demo_search_node and associated applications were
successfully added to the bogusCell02 cell.

ADMU0306I: Note:
ADMU0302I: Any cell-level documents from the standalone bogusCell02
configuration have not been migrated to the new cell.
ADMU0307I: You might want to:
ADMU0303I: Update the configuration on the bogusCell02 Deployment Manager with
values from the old cell-level documents.

ADMU0003I: Node demo_search_node has been successfully federated.
C:\IBM\WebSphere\AppServer\profiles\demo_solr\bin>

```

Validate the task completes successfully. **Tip:** I like to access the Deployment Manager and validate that the node and applications have been federated. Navigate to **Applications -> WebSphere Enterprise Applications**. If the **solrServer** is listed, then it was successfully federated.

Once the federation has completed, the cell level documents need to be created for the search server configuration. This will move the configuration from node to cell level, so additional nodes can use the same configuration at the cell level. To do this, run the **deploySearch.xml**.

Prior to running the ant task, there is a problem found in FEP8 with the **deploySearch.xml**. You will need to install JR52084 to address issue, or you can manually make the following change:

Edit **deploySearch.xml** from

Commerce_root/components/foundation/subcomponents/search/deploy. Look for the following stanza and add the line that is highlighted.

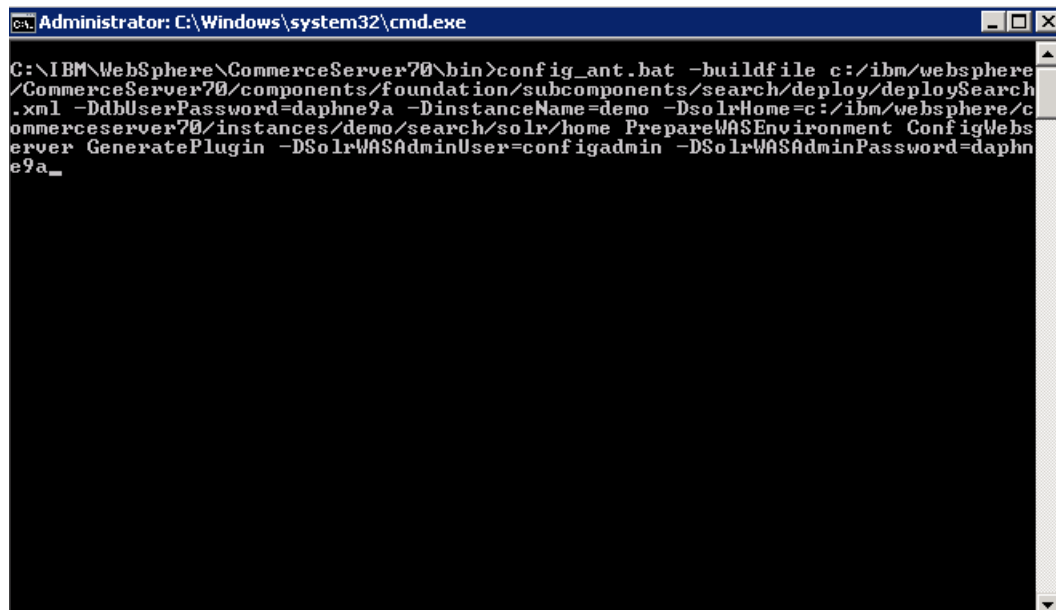
```

<target name="setSearchVariables">
  <taskdef name="if" classname="net.sf.antcontrib.logic.IfTask" />
  <property name="isServerOrToolkit" value="server" />
  <property environment="env"/>
  <property name="WASInstallDir.raw" value="${env.WAS_HOME}"/>
  <pathconvert targetos="unix" property="WASInstallDir">
    <path>
      <pathelement location="${WASInstallDir.raw}" />
    </path>
  </pathconvert>

```

Issue the following command from Commerce\bin directory:

```
Config_ant -buildfile
commerce_root/components/foundation/subcomponents/search/deploy/deploySearch.xml -
DdbUserPassword=(db admin password) -DsolrHome=(location of solr home) PrepareWASEnvironment
ConfigWebserver GeneratePlugin -DSolrWASAdminUser=(was admin user) -
DSolrWASAdminPassword=(was admin user password)
```



```
Administrator: C:\Windows\system32\cmd.exe
C:\IBM\WebSphere\CommerceServer70\bin>config_ant.bat -buildfile c:/ibm/websphere
/CommerceServer70/components/foundation/subcomponents/search/deploy/deploySearch
.xml -DdbUserPassword=daphne9a -DinstanceName=demo -DsolrHome=c:/ibm/websphere/c
ommerceserver70/instances/demo/search/solr/home PrepareWASEnvironment ConfigWebs
erver GeneratePlugin -DSolrWASAdminUser=configadmin -DSolrWASAdminPassword=daphn
e9a_
```

```
C:\Windows\system32\cmd.exe
[wsadmin] Target mapping is updated for the application Search_demo.
[wsadmin]
[wsadmin] Processing the application WC_demo.
[wsadmin]
[wsadmin] Processing the application ivtApp.
[wsadmin]
[wsadmin] Processing the application query.
[wsadmin]
[wsadmin] Start saving the configuration.
[wsadmin]
[wsadmin] Configuration save is complete.

setSearchVariables:
Overriding previous definition of reference to classpath

_setLocalWebServerProperties:

_setWebServerProperties:

GeneratePlugin:
[wsadmin] profileName=demo_solr registry=C:\IBM\WEBSPH~1\APPSER~1\properties\p
rofileRegistry.xml
[wsadmin] profileHome=C:\IBM\WebSphere\AppServer\profiles\demo_solr
[wsadmin] WASX72091: Connected to process "dmgr" on node bogusCellManager02 us
ing SOAP connector; The type of process is: DeploymentManager

BUILD SUCCESSFUL
Total time: 1 minute 8 seconds
C:\IBM\WebSphere\CommerceServer70\bin>
```

Validate that the task completes successfully.

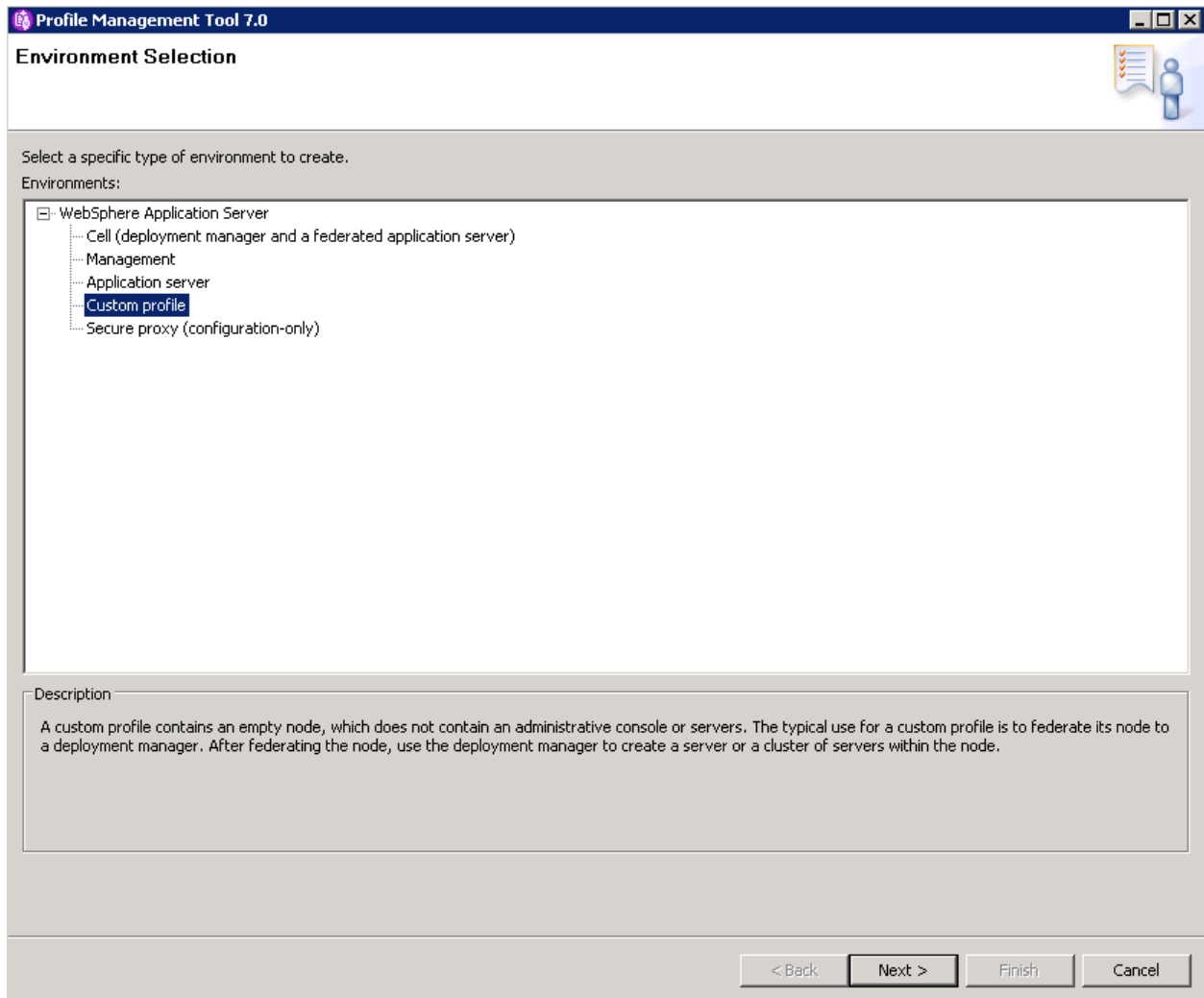
- Restart the Deployment Manager and the WebSphere Commerce search server and node agent.
- Regenerate the Web server plug-in for your Web server:
 1. Log on the WebSphere Application Server Network Deployment Administration Console server.
 2. Expand **Servers > Server Types > Web servers**.
 3. Select **webserver1** and click **Generate Plug-in** to generate the **plugin-cfg.xml** file for the web server.
 4. Select **solrWebserver1** and click **Generate Plug-in** to generate the **plugin-cfg.xml** file for the search web server.
- Copy the updated **plugin-cfg.xml** file to the location defined in httpd.conf of webserver
- Restart the webserver to pick up the updated plugin.

At this point, you can start the Commerce Servers and the Search Server to validate that you can access store without any issues.

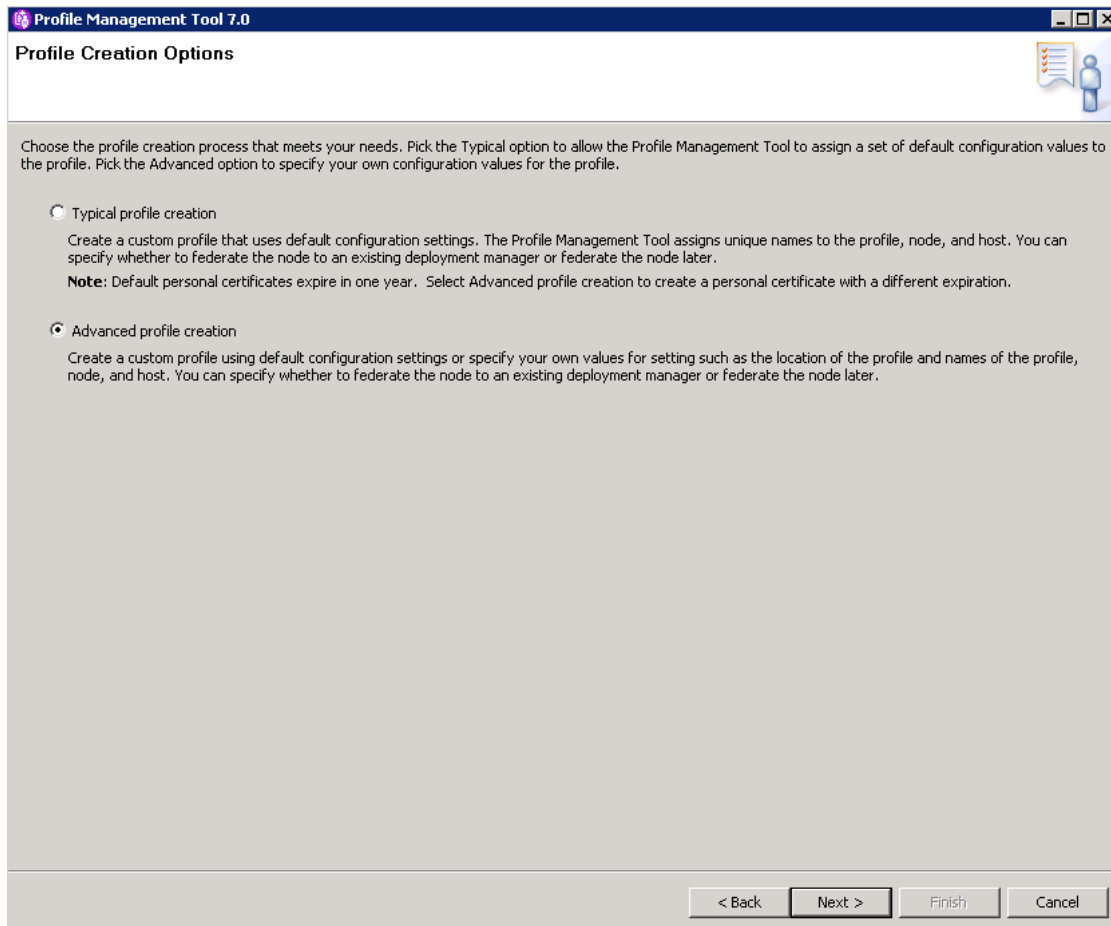
Create Additional Search Servers:

Since we will be creating a search cluster, we will need to create a new profile on remote server that can be federated to the Deployment Manager.

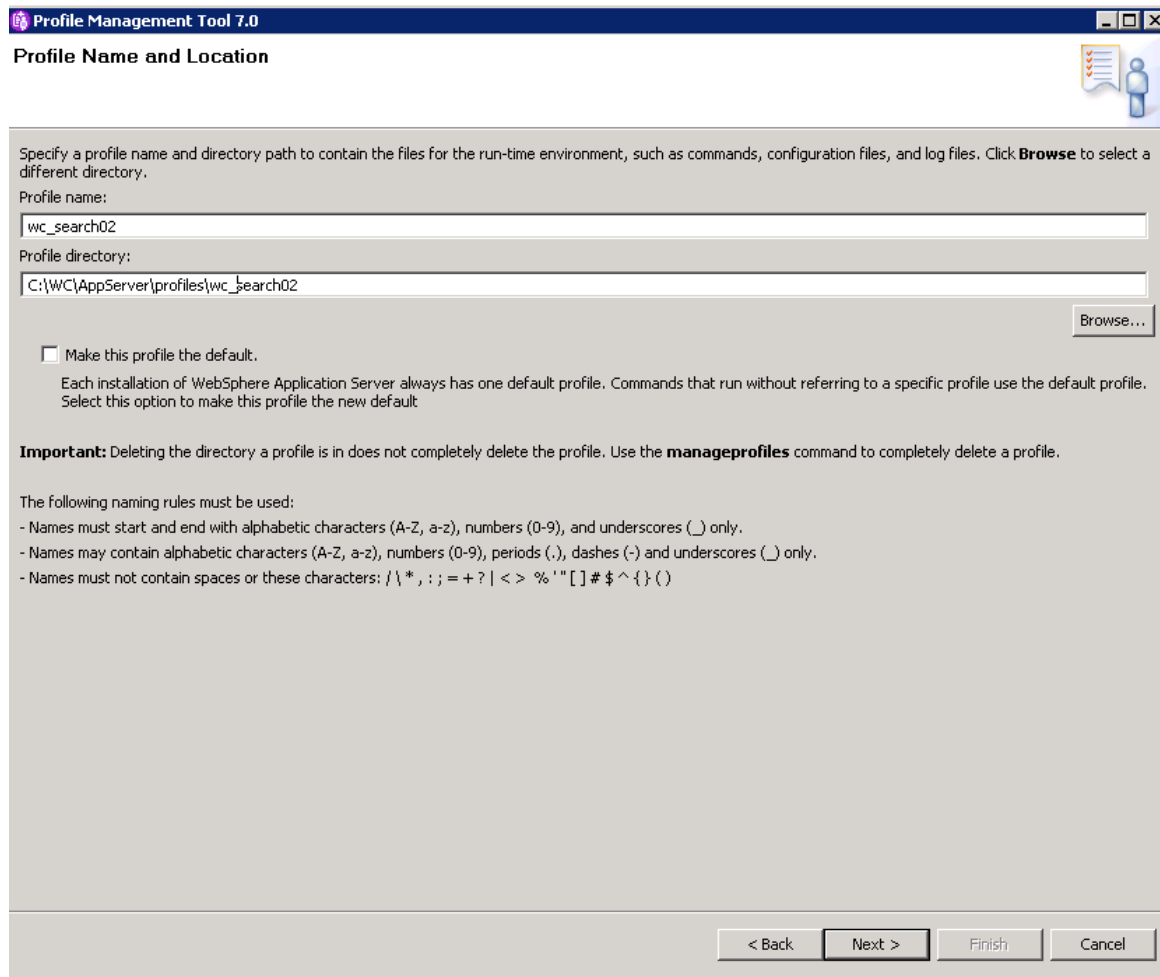
- Use the profile manager in WebSphere to create new profile.
- Start profile manager by **running pmt.bat/sh** from **was_root/bin/ProfileManagement/**
- Select **create new profile**.



For type, use either **Application Server** or **Custom profile**. Hit **Next**.



Select **Advanced profile creation** and hit **Next**.



Enter profile name and the location of the profile directory, and hit **Next**.

Profile Management Tool 7.0

Node and Host Names

Specify a node name and a host name for this profile.

Node name:

Host name:

Node name: A node name is used for administration. If the node is federated, the name must be unique within the cell.
Host name: A host name is the domain name system (DNS) name (short or long) or the IP address of this computer.

The following naming rules must be used:

- Names must start and end with alphabetic characters (A-Z, a-z), numbers (0-9), and underscores (_) only.
- Names may contain alphabetic characters (A-Z, a-z), numbers (0-9), periods (.), dashes (-) and underscores (_) only.
- Names must not contain spaces or these characters: / \ * , ; = + ? | < > % ' " [] # \$ ^ { } ()

See the information center for profile naming and migration considerations.
[View the online information center](#)

< Back Next > Finish Cancel

Specify the node name and hostname and hit **Next**.

Profile Management Tool 7.0

Federation

Specify the host name or IP address and the SOAP port number for an existing deployment manager. Federation can occur only if the deployment manager is running.

Deployment manager host name or IP address:

Deployment manager SOAP port number (Default: 8879):

Deployment manager authentication
Provide a user name and password that can be authenticated, if administrative security is enabled on the deployment manager.

User name:

Password:

Federate this node later.

You must federate this node later using the **addNode** command if the deployment manager:

- is not running
- has the SOAP connector disabled

< Back Next > Finish Cancel

You can either Federate node during profile creation or afterwards. I prefer to federate the profile after it is created. If federating during creation, update the fields with information for the **Deployment Manager** and hit **Next**.

Profile Management Tool 7.0

Security Certificate (Part 1)

Choose whether to create a default personal certificate and root signing certificate, or import them from keystores. To create new certificates, proceed to Part 2 and provide the certificate information. To import existing certificates from keystores, locate the certificates then proceed to Part 2 and verify the certificate information.

Create a new default personal certificate.
 Import an existing default personal certificate.

Default personal certificate

Path:

Password:

Keystore type:

Keystore alias:

Create a new root signing certificate.
 Import an existing root signing certificate.

Root signing certificate

Path:

Password:

Keystore type:

Keystore alias:

< Back **Next >** Finish Cancel

Determine whether you want to create a new certificate or use an existing one. Hit **Next**.

Profile Management Tool 7.0

Security Certificate (Part 2)

Modify the certificate information to create new certificates during profile creation. If you are importing existing certificates from keystores, use the information to verify whether the selected certificates contain the appropriate information. If the selected certificates do not, click **Back** to import different certificates.

Default personal certificate (a personal certificate for this profile, public and private key):

Issued to distinguished name:

Issued by distinguished name:

Expiration period in years:

Root signing certificate (personal certificate for signing other certificates, public and private key):

Expiration period in years:

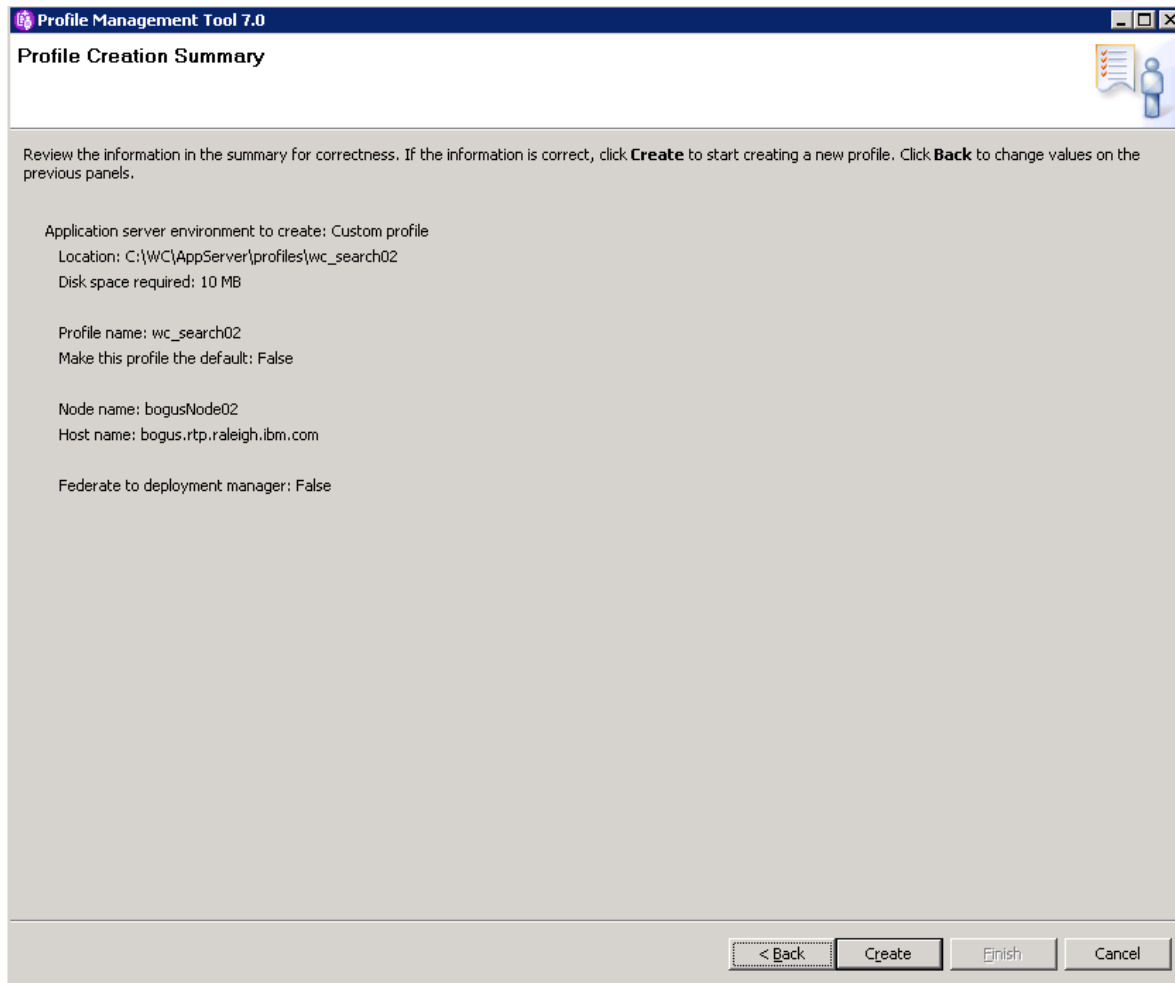
Default keystore password:

Confirm the default keystore password:

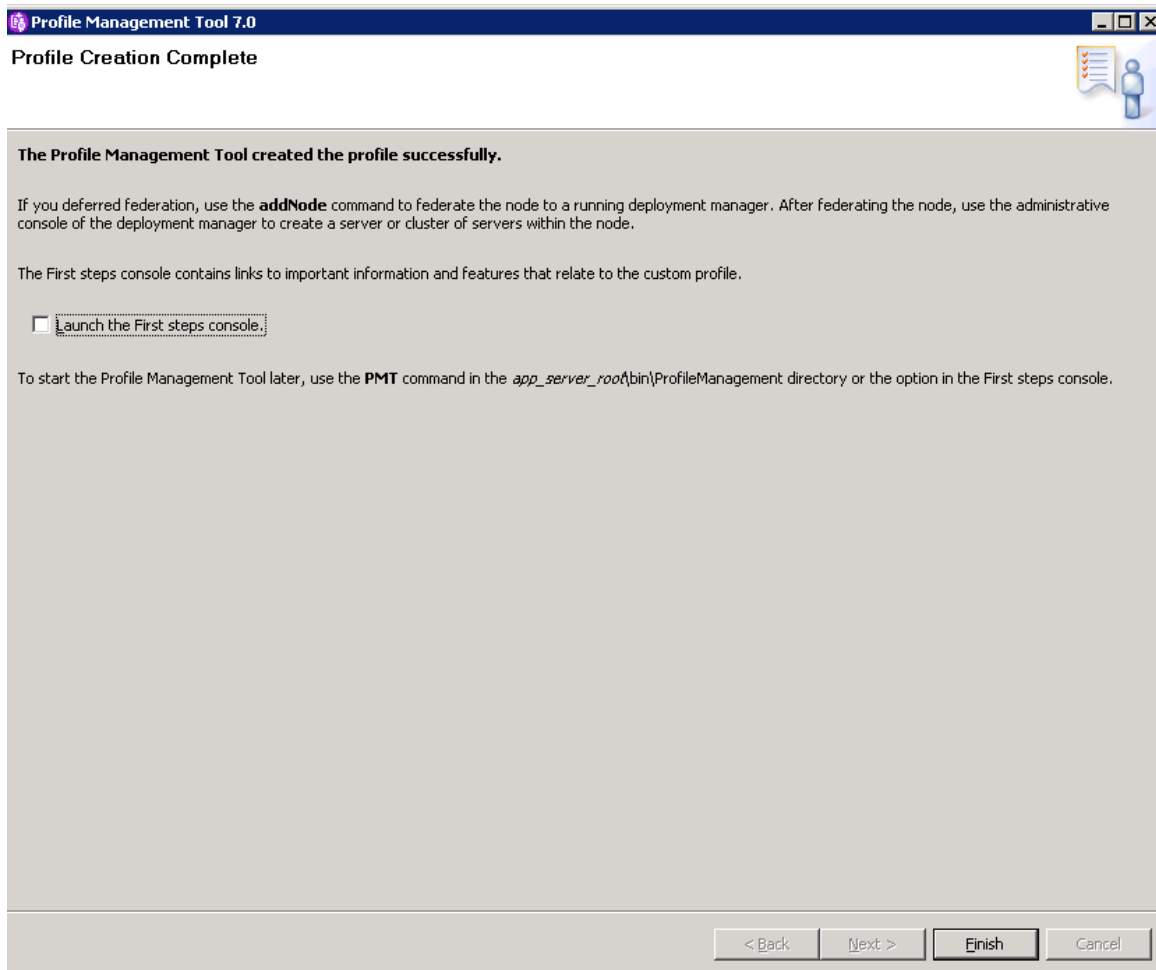
Note: The default value for the keystore is well documented in the Information Center and should be changed to protect the security of the keystore files and SSL configuration.

< Back Next > Finish Cancel

Validate the information is correct, and you can enter a password for the keystore. Hit **Next**.



Confirm the settings are correct and hit **Create**.



Once completed, you can navigate to the profile directory to validate that it was created.

The next step is federate this node to the deployment Manager. This can be done by issuing the following command from the profile bin directory:

```
addNode (deployment manager hostname) soap port --username (admin user) --password (admin pass)
```

Notice: No applications exist in profile at this point, therefore `--includeapps` option is not specified. Once the node is added to the cluster, the search application will be synchronized to this node.


```
Administrator: C:\Windows\system32\cmd.exe
C:\MC\AppServer\profiles\wc_search02\bin>addNode.bat bogus.rtp.raleigh.ibm.com 8881 -username configadmin -password daphne9a_
```

```
Administrator: C:\Windows\system32\cmd.exe
ADMU0506I: Server name: nodeagent
ADMU0300I: The node bogusNode02 was successfully added to the bogusCell02 cell.
ADMU0306I: Note:
ADMU0302I: Any cell-level documents from the standalone bogusCell02
configuration have not been migrated to the new cell.
ADMU0307I: You might want to:
ADMU0303I: Update the configuration on the bogusCell02 Deployment Manager with
values from the old cell-level documents.
ADMU0306I: Note:
ADMU0304I: Because -includeapps was not specified, applications installed on
the standalone node were not installed on the new cell.
ADMU0307I: You might want to:
ADMU0305I: Install applications onto the bogusCell02 cell using wsadmin
$AdminApp or the Administrative Console.
ADMU0003I: Node bogusNode02 has been successfully federated.
C:\MC\AppServer\profiles\wc_search02\bin>
```

Confirm the node federation completes successfully. Access the Deployment Manager and check under **Administrations -> Nodes** that it exist.

Create Search Cluster:

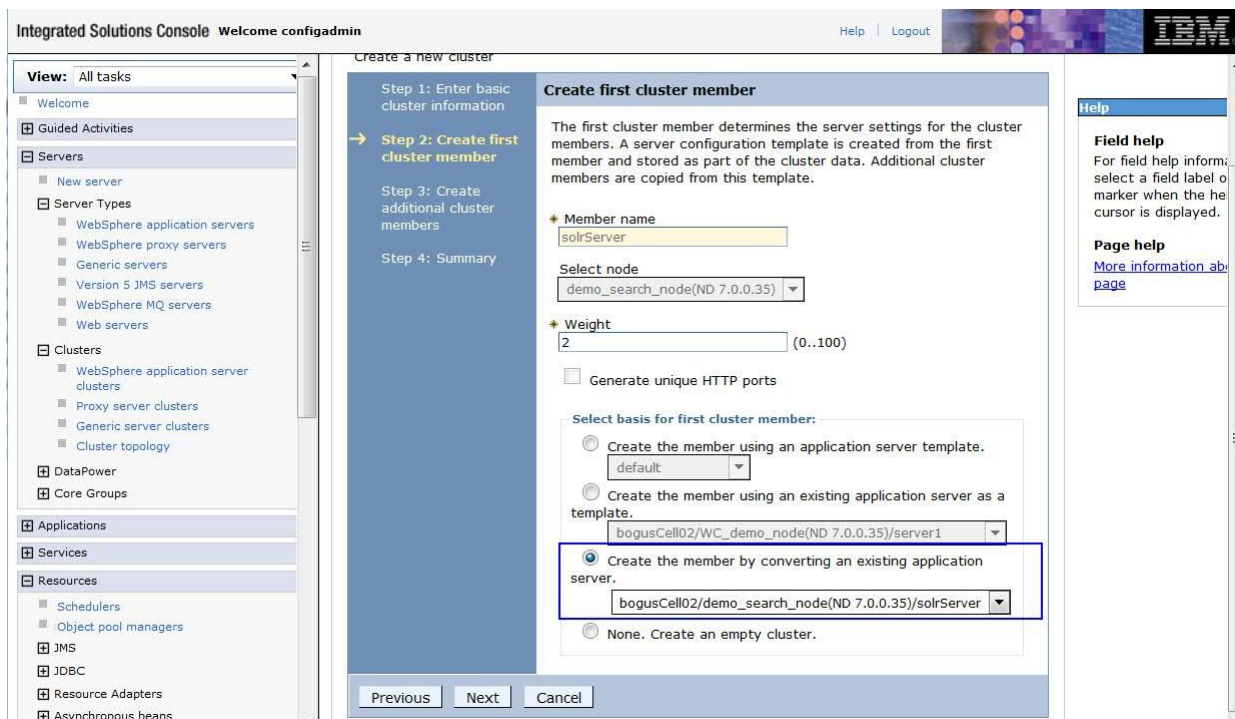
Currently, there are 2 nodes federated to the Deployment Manager: local search node and remote search node. Create a cluster with these two nodes. Access the Deployment Manager administration console and navigate to **Servers -> Clusters -> WebSphere Application Server Clusters**.

The screenshot shows the Integrated Solutions Console interface. The left-hand navigation pane is expanded to 'Clusters' > 'WebSphere application server clusters'. The main content area displays the 'WebSphere application server clusters' page. It includes a 'Preferences' section with a 'Maximum rows' field set to 20 and a 'Show items at the following authorization group level' dropdown set to 'All Roles'. Below this is a table with columns for 'Select', 'Name', and 'Status'. The table contains one entry: 'WC Cluster'. At the bottom of the table, it says 'Total 1'. On the right side, there is a 'Help' panel with 'Field help' and 'Page help' sections.


Select **New** to create new cluster.

The screenshot shows the 'Create a new cluster' wizard in the Integrated Solutions Console. The wizard is titled 'Create a new cluster' and is currently on 'Step 1: Enter basic cluster information'. The 'Cluster name' field is filled with 'WC_Search_Cluster'. There are two checkboxes: 'Prefer local. Specifies whether enterprise bean requests will be routed to the node on which the client resides when possible.' (checked) and 'Configure HTTP session memory-to-memory replication' (unchecked). The wizard has 'Next' and 'Cancel' buttons at the bottom. The left-hand navigation pane is expanded to 'Clusters' > 'WebSphere application server clusters'. The main content area also shows the 'Create a new cluster' wizard. On the right side, there is a 'Help' panel with 'Field help' and 'Page help' sections.

Provide Name of the new cluster and hit **Next**.



Use the option: **Create the member by converting an existing application server**, and point to the local search server node that was federated (this is required, since it has the search application). Hit **Next**.

Integrated Solutions Console Welcome configadmin Help | Logout 

View: All tasks

- Welcome
- Guided Activities
- Servers
 - New server
 - Server Types
 - WebSphere application servers
 - WebSphere proxy servers
 - Generic servers
 - Version 5 JMS servers
 - WebSphere MQ servers
 - Web servers
 - Clusters
 - WebSphere application server clusters
 - Proxy server clusters
 - Generic server clusters
 - Cluster topology
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 - Object pool managers
 - JMS
 - JDBC
 - Resource Adapters
 - Asynchronous beans
 - Cache instances
 - Object cache instances
 - Servlet cache instances
 - Mail
 - URL
 - Resource Environment

Create a new cluster

Create a new cluster

Step 1: Enter basic cluster information

Step 2: Create first cluster member

→ Step 3: Create additional cluster members

Step 4: Summary

Create additional cluster members

Enter information about this new cluster member, and click Add Member to add this cluster member to the member list. A server configuration template is created from the first member, and stored as part of the cluster data. Additional cluster members are copied from this template.

Member name

Select node

Weight (0..100)

Generate unique HTTP ports

Use the Edit function to edit the properties of a cluster member that is already included in this list. Use the Delete function to remove a cluster member from this list. You are not allowed to edit or remove the first cluster member or an already existing cluster member.

Select	Member name	Nodes	Version	Weight
<input type="checkbox"/>	solrServer	demo_search_node	ND 7.0.0.35	2
<input type="checkbox"/>	solrServer2	bogusNode02	ND 7.0.0.35	2
Total 2				

Help

Field help
For field help information, select a field label or list marker when the help cursor is displayed.

Page help
[More information about this page](#)

Create additional cluster members. Provide name of the new member and select the remote node that was just federated(which does not have applications) and **Add Member**. Validate that it is added to the list of cluster members, and then hit **Next**.

Integrated Solutions Console Welcome configadmin Help | Logout

Cell=bogusCell02, Profile=WC_DM Close page

View: All tasks

- Welcome
- Guided Activities
- Servers
 - New server
 - Server Types
 - WebSphere application servers
 - WebSphere proxy servers
 - Generic servers
 - Version 5 JMS servers
 - WebSphere MQ servers
 - Web servers
 - Clusters
 - WebSphere application server clusters
 - Proxy server clusters
 - Generic server clusters
 - Cluster topology
 - DataPower
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- Services
- Resources
 - Schedulers
 - Object pool managers
 - JMS
 - JDBC
 - Resource Adapters
 - Asynchronous beans
 - Cache instances
 - Object cache instances
 - Servlet cache instances
 - Mail
 - URL
 - Resource Environment

Create a new cluster

Step 1: Enter basic cluster information

Step 2: Create first cluster member

Step 3: Create additional cluster members

→ Step 4: Summary

Summary

Summary of actions:

Options	Values
Cluster Name	WC_Search_Cluster
Core Group	DefaultCoreGroup
Node group	DefaultNodeGroup
Prefer local	true
Configure HTTP session memory-to-memory replication	false
Server name	solrServer
Node	demo_search_node(ND 7.0.0.35)
Weight	2
Clone Template	bogusCell02/demo_search_node(ND 7.0.0.35)/solrServer
Clone Basis	Create the member by converting an existing application server.
Generate unique HTTP ports	false
Server name	solrServer2
Node	bogusNode02(ND 7.0.0.35)
Weight	2
Clone Template	Version 7 member template
Generate unique HTTP ports	true

Previous Finish Cancel

Field help
For field help information, select a field label or list marker when the help cursor is displayed.

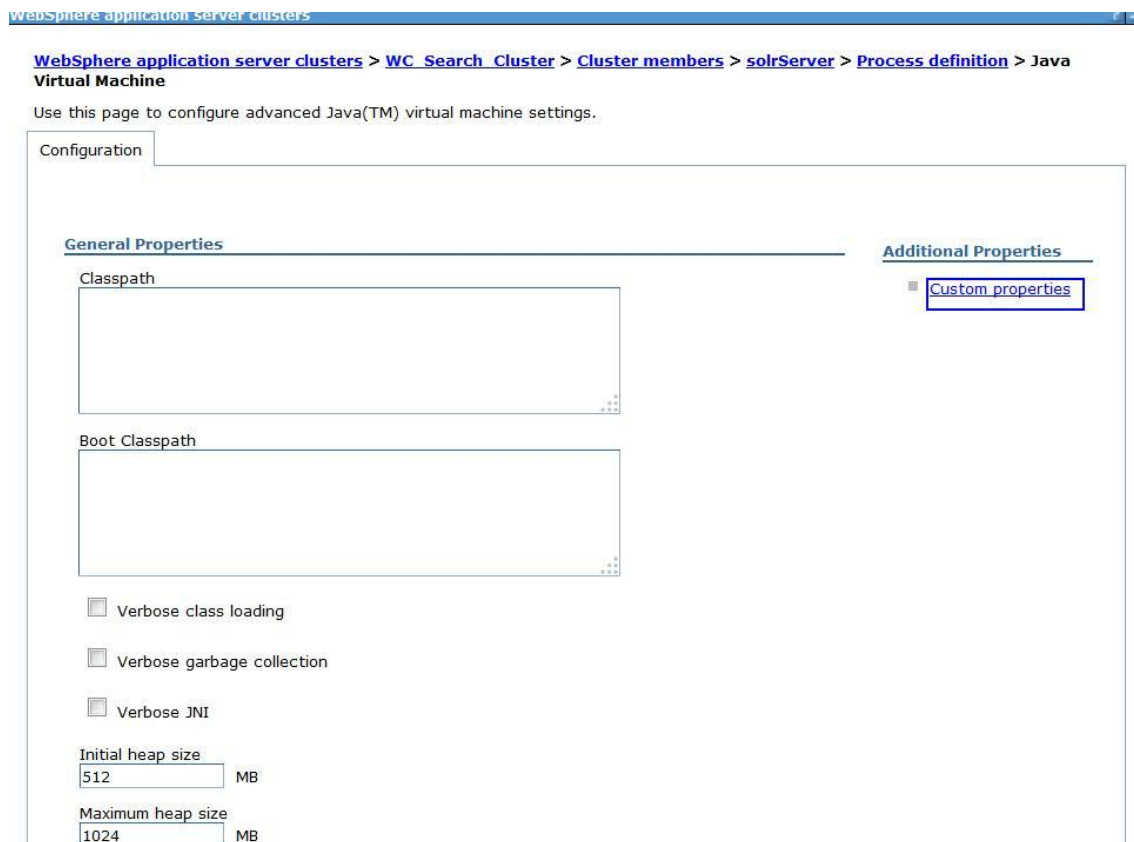
Page help
[More information about this page](#)

Validate the settings are correct and hit **Finish**.

Additional Steps after Cluster creation:

Once the cluster has been created, there are few additional steps that are needed to ensure it will function as expected.

- Copy the *solrhome* directory from your master machine to all the search nodes. This ensures that the master and subordinate machines all contain the search index data, and that they work together as a cluster.
- Update the *solr.solr.home* value for each node in Cluster.
 1. Access Deployment Manager admin console.
 2. Navigate to **Servers > Server Types > Application servers**.
 3. Select **solrWebserver > Process definition > Java Virtual Machine > Custom properties**.



4. Update the value of *solr.solr.home* to the correct value. For example, `/opt/WebSphere/CommerceServer70/instances/demo/search/solr/home`.

Application servers

[Application servers](#) > [solrServer](#) > [Process definition](#) > [Java Virtual Machine](#) > **Custom properties**

Use this page to specify an arbitrary name and value pair. The value that is specified for the name and value pair is a string that can set internal system configuration properties.

⊞ Preferences

New Delete

⊞ ⊞ ⊞ ⊞

Select	Name	Value	Description
You can administer the following resources:			
<input type="checkbox"/>	com.ibm.security.jgss.debug	off	
<input type="checkbox"/>	com.ibm.security.krb5.Krb5Debug	off	
<input type="checkbox"/>	solr.allow.unsafe.resourceloading	true	
<input type="checkbox"/>	solr.solr.home	c:/ibm/websphere /commerceserver70/instances /demo/search/solr/home	

Total 4

5. Also, create a new custom property if it does not already exist. Create property:

Solr.allow.unsafe.resourceloading = true

- Navigate to **Applications** -> **WebSphere enterprise Applications** and select **search_(instance)**. Then manage modules. Validate that the modules are correctly pointing to the solrWebserver and the search cluster.
- Regenerate plugin and propagate to your webserver. Restart webserver to pickup new plugin.
- Perform a Full Synchronize on the search nodes via Deployment Manager admin console.
- Restart the WebSphere Commerce Cluster and the WebSphere Commerce Search Cluster

Use the following [Knowledge Center](#) to reconfigure the WebSphere Commerce Search replication.

Optional:

After you federate and cluster the WebSphere Commerce search server in the advanced configuration, you can optionally remove the primary search server (local instance) from the cluster.

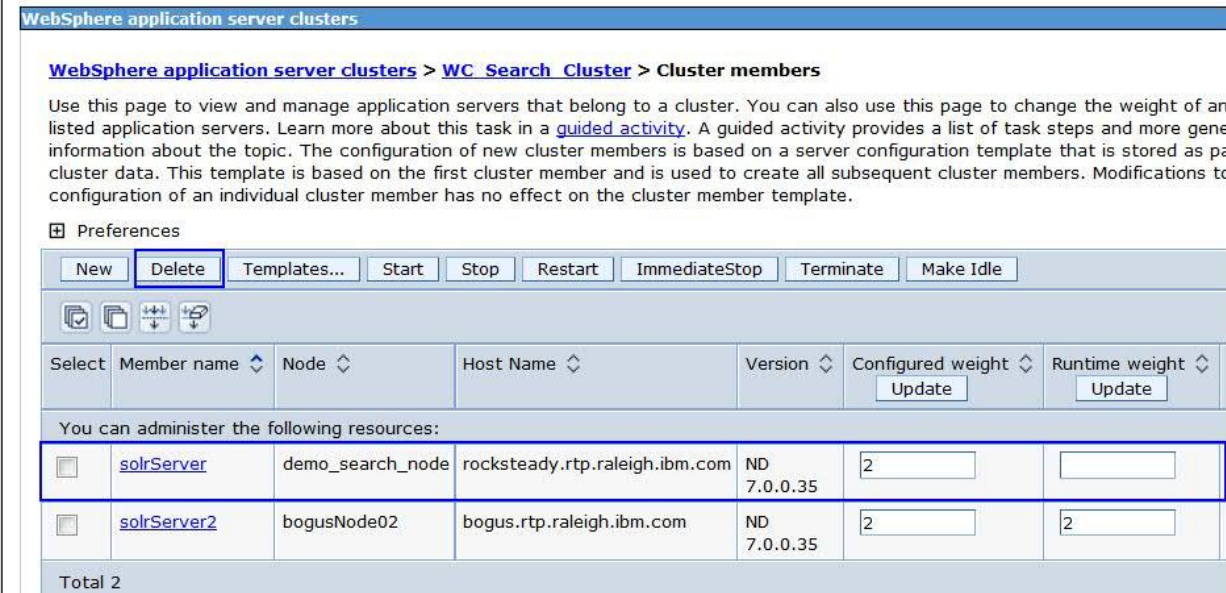
CAUTION:

This approach is not recommended for your WebSphere Commerce search advanced configuration in compatibility mode. Perform this task to remove the primary search server from the cluster only if you have a specific business need or requirement to do so.

Instead, it is recommended that you keep the primary search server in the cluster, and then shut it down. When it is shut down, the node agent still exists, and the cluster is partially started. The DMGR is then able to perform maintenance as needed.

Removing the primary (local) search server from cluster:

- Access the Deployment Manager admin console and navigate to **Servers -> Clusters -> WebSphere application server clusters**. Select the Search Cluster that was just created.
- Select cluster members and select the local instance (solrServer). Check and then hit **delete**.
- Save the changes to the master configuration and perform a re-synch on all nodes.



WebSphere application server clusters

[WebSphere application server clusters](#) > [WC Search Cluster](#) > Cluster members

Use this page to view and manage application servers that belong to a cluster. You can also use this page to change the weight of an listed application servers. Learn more about this task in a [guided activity](#). A guided activity provides a list of task steps and more general information about the topic. The configuration of new cluster members is based on a server configuration template that is stored as part of cluster data. This template is based on the first cluster member and is used to create all subsequent cluster members. Modifications to configuration of an individual cluster member has no effect on the cluster member template.

Preferences

New Delete Templates... Start Stop Restart ImmediateStop Terminate Make Idle

Select	Member name	Node	Host Name	Version	Configured weight	Runtime weight
<input type="checkbox"/>	solrServer	demo_search_node	rocksteady.rtp.raleigh.ibm.com	ND 7.0.0.35	2	
<input type="checkbox"/>	solrServer2	bogusNode02	bogus.rtp.raleigh.ibm.com	ND 7.0.0.35	2	2

Total 2

Conclusion:

The goal of this document was to provide a real working example of migrating Commerce Search to Feature Pack 8. It can be used as a resource along side the Knowledge Center when beginning the migration process. Once the steps above have been completed, you should now have a working Feature Pack 8 Search server. If you encounter any issues during the steps above, please review the Knowledge Center and or available technotes for solutions. If at any time that you get stuck, please open a pmr with the Commerce Support team.