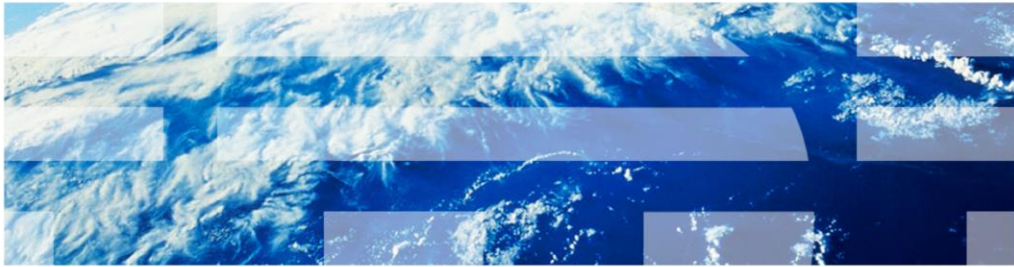


# InfoSphere Information Server

Relocating the XMeta repository for Information Server version 8.5 and 8.7 using a WebSphere cluster



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This presentation describes the steps needed to move the XMeta repository from one database server to another for Information Server version 8.5 and 8.7 using a WebSphere® cluster. If your Information Server installation does not use a WebSphere cluster, see the IBM Education Assistant module for non-clustered WebSphere.

## Objectives

- Backing up XMeta, IS, and key files
- Update Information Services Framework (ISF) configuration
- Update WebSphere Application Server configuration

The objectives of this presentation are to describe what needs to be backed up and how to update the Information Services Framework configuration, referred to as the ISF configuration. This presentation also describes what changes need to be made to the WebSphere cluster.

## Backup and restore

- Backup
  - Backup XMeta, Information Server, and WebSphere
  - Backup all files being changed
    - InformationServer/ASBServer/bin/sql/database.properties
    - InformationServer/ASBServer/apps/lib/ojb-conf.jar
  - Do not leave copy of ojb-conf.jar in Information Server or WebSphere folder hierarchy
  - Backup XMeta database
- Restore
  - Restore XMeta to new target system

Before you make any changes to XMeta, Information Server, or WebSphere, it is good practice to take a complete backup of all three installations. It is safest to do a cold backup of the WebSphere Application Server by stopping WebSphere before you do the backup. It is also good practice to make a copy of all the files that are changed during this process to make it easier to revert back if necessary. The files that are key to make copies of are displayed on this slide. Ensure the backup of ojb-conf.jar is not left in the IBM Information Server or WebSphere folder hierarchy. Backup the XMeta database on the source system and restore to the target system using the backup and restore tools provided with the database. Backup the affected files before changing them in this procedure.

## Updates to ISF and WebSphere configuration (1 of 3)

- Stop WebSphere Application Cluster members
- Create temporary empty directory on your Domain Server and make it current working directory
  - **Windows®:**  
mkdir c:\tmp\isftmp  
cd \tmp\isftmp
  - **Linux® or UNIX®:**  
mkdir /tmp/isftmp  
cd /tmp/isftmp
- Extract ojb-conf.jar into temp directory
  - **Linux or UNIX:**  
/opt/IBM/WebSphere/AppServer/java/bin/jar xf /opt/IBM/InformationServer/ASBServer/apps/lib/ojb-conf.jar
  - **Windows:**  
C:\IBM\WebSphere\AppServer\java\bin\jar xf c:\IBM\InformationServer\ASBServer\apps\lib\ojb-conf.jar

The next step is to update the ISF configuration. To do this, first you will need to stop the WebSphere Application Cluster members.

After stopping the WebSphere Application cluster members, create a temporary directory on your domain server and set it as your current working directory.

While in your newly created temp directory, extract the ojb-conf.jar file using the jar utility of a JDK, for example, the JDK in WebSphere.

There are example commands on this slide. This command will extract ojb-conf.jar and place the contents in your temp directory.

## Update ISF and WebSphere Configuration (2 of 3)

- Edit repository\_database.xml
  - Linux or UNIX:** vi repository\_database.xml
  - Windows:** write repository\_database.xml
- File contains multiple dbalias entires
  - Update all dbalias attributes

DB2	dbalias="//host:port/dbname" Example: dbalias="//db2host:50000/xmeta"
Oracle	dbalias="oracle://host:port;SID=dbname" Example: dbalias="oracle://oracleHost:1521;SID=xmeta"
Oracle RAC	dbalias="oracle://host:port;ServiceName=SID;AlternateServers=(host:port, host:port,host:port, ...)"  Example: dbalias="oracle://rac1:1521;serviceName=orcl;alternateServers=(rac1:1521,rac2:1521,rac3:1521)"
MS SQLServer	dbalias="sqlserver://host:port;DatabaseName=dbname" Example: dbalias="sqlserver://sqlHost:1433;DatabaseName=xmeta"
MS SQLServer using Named Instance	dbalias="sqlserver://host\named_instance:port;DatabaseName=dbname" Example: dbalias="sqlserver://sqlHost\my_instance:1433;DatabaseName=xmeta"

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The next step is to edit the repository\_database.xml file that is in your temp directory. Use the vi command for Linux and UNIX or open the file in Wordpad by using the write command if on Windows. Search for all of the dbalias attributes. Use the table displayed on this slide to correctly update this field. Edit every dbalias attribute in the file with the new host, port and dbname value, and save the file.

If you are using Sql Server named instances, note that the format is sqlserverHostname\named\_instance.

## Updates to ISF configuration (3 of 3)

- Rejar ojb-conf.jar
  - **UNIX or Linux**  
/opt/IBM/WebSphere/AppServer/java/bin/jar cf /opt/IBM/InformationServer/ASBServer/apps/lib/ojb-conf.jar .
  - **Windows**  
C:\IBM\WebSphere\AppServer\java\bin\jar cf c:\IBM\InformationServer\ASBServer\apps\lib\ojb-conf.jar .
- Remove temp directory

After updating the dbalias attribute, you can now re-jar ojb-conf.jar with the updated repository\_database.xml file using the jar utility of a JDK. For example, the JDK in WebSphere. Be sure you are still in your temp directory. This slide includes example commands. Be sure your paths are correct for your installation. You must remember to put the “space dot” at the end of the jar command.

After this step is completed, you need to delete the temp directory.

## Updates to ISF configuration

- Edit database.properties

**Linux or UNIX:**

`vi /opt/IBM/InformationServer/ASBServer/bin/sql/database.properties`

**Windows:**

write `C:\IBM\InformationServer\ASBServer\bin\sql\database.properties`

- Find and update URL parameter

DB2	<code>url=jdbc:db2://NewServer.com:50008/XMeta</code>
Oracle	<code>url=jdbc:ibm:oracle://host:port;SID=SID</code>
Oracle RAC	<code>url=jdbc:ibm:oracle://host:port;serviceName=service;alternateServer=(host:port, host:port, host:port, ...)</code>
SQL Server	<code>url=jdbc:ibm:sqlserver://host:port;DatabaseName=dbname</code>
SQL Server - Named Instance	<code>url=jdbc:ibm:sqlserver://host\instance_name:port;DatabaseName=dbname</code>

The next step is to edit the database.properties file in the InformationServer/ASBServer/bin/sql directory. Find and update the URL parameter to reflect the new repository server name and port. After updating, save the file.

## Remove the ASBServer/profile directory

- Navigate to <IS\_HOME>/ASBServer  
cd <IS\_HOME>/ASBServer
- If profile/informationServer directory exists under ASBServer, remove it
- **UNIX or Linux:**  
rm -r profile/informationServer
- **Windows:**  
rd /q/s profile\informationServer

The next step is to remove the InformationServer/ASBServer/profile/informationServer directory. Navigate to your InformationServer home directory and then change directories to the ASBServer subdirectory.

Check to see if the profile/informationServer directory exists. If it does exist, remove the directory using one of the commands on this slide.



## Propagate changes to WebSphere

- Run AppServerAdmin command
  - Linux or UNIX:**  
`/opt/IBM/InformationServer/ASBServer/bin/AppServerAdmin.sh -db -user <xmetaUser>`  
`-password <xmetaPassword>`
  - Windows:**  
`C:\opt\IBM\InformationServer\ASBServer\bin\AppServerAdmin.bat -db -user <xmetaUser>`  
`-password <xmetaPassword>`
- **“AppServerAdmin -db” at 8.5 will also run the File Propagator Tool**
  - Be sure to have 1.5GB+ free space in /tmp (AIX/Linux), /var/tmp (Solaris, HPUX) or %TEMP% (Windows)
  - AppServerAdmin will take much longer to run than in previous versions
- Test Changes
  - **UNIX or Linux:**  
`ASBServer/bin/PropertyAdmin.sh -d`
  - **Windows:**  
`ASBServer\bin\PropertyAdmin.bat -d`

At version 8.5, the changes to ojb-conf.jar also need to be propagated to WebSphere. The AppServerAdmin -db command will run the FilePropagator tool so the command will take longer to complete than in previous versions of Information Server and requires at least 1.5GB of free space in temp.

Run the AppServerAdmin command as shown in the example in this slide. If your XMeta password has changed, this step will also reset it to the new password.

Once AppServerAdmin completes, it is best to check that the new ojb-conf.jar is correct. To do this, run the PropertyAdmin command in ASBServer/bin. You just need to be sure that this command returns successfully. If it does not, go back and check the changes you made to ojb-conf.jar before continuing.

Once AppServerAdmin is complete, you will need to synchronize the nodes.

## Synchronize nodes (1 of 2)

- Manually run WebSphere node synchronization
  - WebSphere administrative console
    - System Administration => Nodes => Synchronize
  - If unable to login to the administrative console
    - Restart WebSphere Deployment Manager

The screenshot shows the WebSphere administrative console interface. On the left, the 'System administration' menu is expanded, with 'Nodes' selected. The main content area shows the 'Nodes' page, which includes a 'Synchronize' button circled in red. Below the button is a table of nodes:

Select	Name	Host Name	Version	Discovery Protocol	Status
	<a href="#">cheeversCellManager01</a>	cheevers.svg.usma.ibm.com	ND 7.0.0.11	TCP	+
<input type="checkbox"/>	<a href="#">cheeversNode01</a>	cheevers.svg.usma.ibm.com	ND 7.0.0.11	TCP	+
Total 2					

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Next, you will need to manually run WebSphere node synchronization. This can be done through the WebSphere administrative console. From the administrative console, click System Administration, Nodes, and click the Synchronize button.

In some cases, you may not be able to login to the WebSphere administrative console after making the changes in the previous slides. If this is the case, restart the WebSphere Deployment manager. This allows you to get back into the WebSphere Administrative Console.

## Synchronize nodes (2 of 2)

- If node agent is not running on a particular node
  - Manually run WebSphere node synchronization
    - WebSphere administrative console
    - If node agents are not running
      - **UNIX or Linux:**  
`<was_profile_dir>/bin/syncNode.sh <dmgr_host> <dmgr_port>`
      - **Windows:**  
`<was_profile_dir>\bin\syncNode.bat <dmgr_host> <dmgr_port>`

If there is a node or nodes in the cluster where the node agent is not running, you will not be able to do the synchronization by way of the WebSphere Administrative console. In this case, you can do the synchronization by running the syncNode command shown in this slide on the node profile which needs to be synchronized. dmgr\_host is the name of the host running the Deployment Manager and dmgr\_port is the port the Deployment manager is running on. The default value for dmgr\_port is 8879.

## Update Version.xml

- Update <IS\_HOME>/Version.xml on InformationServer server
- Open Version.xml in text editor
  - locate following XML element

```
<PersistedVariable encrypted="false" name="xmeta.db.hostname" persistent="true"
readonly="false" value="myserver"/>
```

- Modify “*value*” attribute with new xmeta server name
- SQLServer with named instances required format:  
value="myserver\named\_instance"
- Locate next XML element

```
<PersistedVariable encrypted="false" name="xmeta.db.port" persistent="true"
readonly="false" value="50000"/>
```

- Modify “*value*” attribute with new port number

Next, update the values in the Version.xml file. This file contains the installation records that are used by the installation program. Keeping the file current avoids problems with future installations. The Version.xml file is located in the IBM InfoSphere™ Information Server installation directory on the same server as the obj-conf.jar file.

Open the Version.xml file in a text editor and locate the PersistedVariable XML element that has the name attribute equal to xmeta.db.hostname. You will need to modify the value attribute to contain the correct XMeta server name. Note that if you are using SQL Server with named instances, you will need to use the format of servername\named\_instance for the XMeta server name.

Next you need to locate the PersistedVariable XML element that has the name attribute equal to xmeta.db.port. Modify the value for port if your port number has changed. Save your changes.

## DB2 clustered or HADR configurations ONLY

- Update automatic client reroute with new host name and port information
  - Login to primary node
  - Run command:
    - `db2 update alternate server for database database using hostname standby_IP port port`

Example:

```
db2 update alternate server for database XMeta using hostname 192.0.2.7 port
60000
```

In an IBM InfoSphere Information Server installation with a clustered DB2 database system setup, you must update the automatic client reroute with the new host name and port information. This slide shows the format of the update alternate server command along with an example of the command. If you are not using Information Server with a clustered DB2 database, skip this step.

## Update WebSphere Application Server configuration (1 of 6)

- Login to WebSphere Application Server administrative console
- 8.7 - Change all four data sources highlighted in yellow
- 8.5 – ASB Staging Repository JDBC DS is **NOT** in 8.5

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Login to the WebSphere Application Server administrative console. Click the Resources tab on the left side and then click JDBC and then Data sources underneath. This will display four data sources in version 8.5 and five data sources in 8.7. In addition to the four in 8.5, 8.7 also includes the ASB Staging Repository JDBC data source. The changes described in the next few slides will need to be done on all of the data sources highlighted in yellow on this slide. To start, click the first data source, ASB JDBC DataSource. If you do not see the data sources as displayed on this slide, go to the Scope section, click the drop down and select All scopes. All of the data sources should now appear in the box.

## Update WebSphere Application Server configuration (2 of 6)

- Modify connection properties – DB2

Common and required data source properties

Name	Value
* Driver type	4
* Database name	xmeta
* Server name	orr.swg.usma.ibm.com
* Port number	50000

Apply OK Reset Cancel

For XMeta on DB2, scroll to the bottom of the screen for the data source and modify the connection properties as required. Click Apply.

## Update WebSphere Application Server configuration (3 of 6)

- Modify connection properties – Oracle

Configuration

Test connection

General Properties

Additional Properties

- Connection pool
- WebSphere Application Server data source properties
- Custom properties

Related Items

- JMS - J2C authentication data

Use this data source in container managed persistence (CMP)

Select	Name	Value	Description	Required
<input type="checkbox"/>	serverName	dbdev2		false
<input type="checkbox"/>	portNumber	1521		false
<input type="checkbox"/>	databaseName	entoland		false
<input type="checkbox"/>	webSphereDefaultIsolationLevel	2		false
<input type="checkbox"/>	enable2Phase	false		false
<input type="checkbox"/>	SID	entoland		false

For XMeta on Oracle, on the Configuration tab, click Custom Properties on the right side under the Additional Properties heading. Once in Custom Properties, click the settings that have changed and set them to the appropriate values. Click Apply.



## Update WebSphere Application Server configuration (4 of 6)

- Modify connection properties – Oracle RAC

**JDBC providers**

JDBC providers > ASB JDBC Provider > Data sources > ASB JDBC DataSource

Use this page to edit the settings of a datasource that is associated with your selected JDBC provider. The datasource object supplies your application with connections for accessing the database.

Configuration

Test connection

**General Properties**

- Scope: cells:orfnode01:Cell:nodes:orfnode01:servers:server1
- Provider: ASB JDBC Provider
- Name: ASB JDBC DataSource
- JNDI name: jdbc/ASBDataSource
- Use this data source in container managed persistence (CMP)

**Additional Properties**

- Connection pool attributes
- WebSphere Application Server data source properties
- Custom properties

**Related Items**

- JAS - J2C authentication data

Select	Name	Value	Description	Required
<input type="checkbox"/>	serverName	rac1		false
<input type="checkbox"/>	portNumber	1521		false
<input type="checkbox"/>	webSphereDefaultIsolationLevel	2		false
<input type="checkbox"/>	enable2Phase	false		false
<input type="checkbox"/>	serviceName	orcl		false
<input type="checkbox"/>	alternateServers	(rac1:1521,rac2:1521,rac3:1521)		false

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This slide displays an example of an Oracle RAC configuration. Click the values that have changed and set the values appropriately.

## Update WebSphere Application Server configuration (5 of 6)

- Modify connection properties – SQL Server

**JDBC providers**

JDBC providers > ASB JDBC Provider > Data sources > ASB JDBC DataSource

Use this page to edit the settings of a datasource that is associated with your selected JDBC provider. The datasource object supplies your application with connections for accessing the database.

Configuration

Test connection

**General Properties**

- Scope: cells:omnode01:Cell:nodes:omnode01:servers:server1
- Provider: ASB JDBC Provider
- Name: ASB JDBC DataSource
- JNDI name: jdbc/ASBDataSource
- Use this data source in container managed persistence (CMP)

**Additional Properties**

- Connection pool size
- WebSphere Application Server data source properties
- Custom properties

**Related Items**

- JAS - J2C authentication data

Select	Name	Value	Description	Required
You can administer the following resources:				
<input type="checkbox"/>	serverName	IBM-KPOWERS\SQLEXPRESS		false
<input type="checkbox"/>	portNumber	1433		false
<input type="checkbox"/>	databaseName	xmeta		false
<input type="checkbox"/>	webSphereDefaultIsolationLevel	2		false
<input type="checkbox"/>	enable2Phase	false		false
Total 5				

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This slide displays an example on SQL Server. Click the settings that have changed and set them to the appropriate values. If you are using SQLServer named instances, be sure your server name is in the format of servername\instancename as displayed in the example on this slide. Click Apply.

## Update WebSphere Application Server configuration (6 of 6)

JDBC providers

JDBC providers

Messages

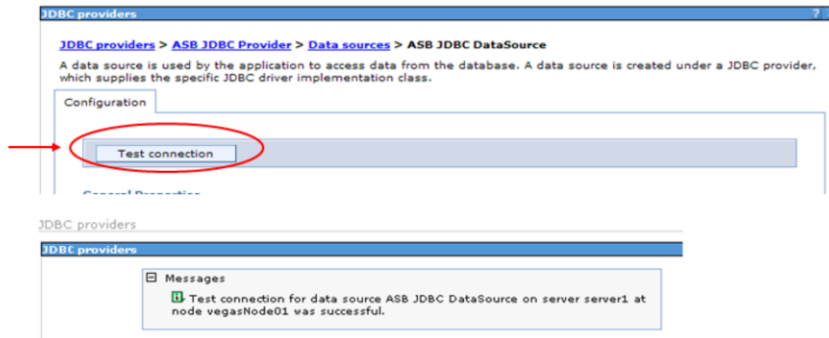
⚠ Changes have been made to your local configuration. Click [Save](#) to apply changes to the master configuration.

ℹ The server may need to be restarted for these changes to take effect.

In the Messages box at the top of the page, click Save to save to the master configuration.

## Test connection

- Test connection



- Restart

- WebSphere Cluster Members
- WebSphere Node Agents
- WebSphere Deployment Manager

Once the changes have been saved, test your new connection by clicking the Test connection button at the top of the Data Sources page where you made the server changes. If the connection is successful, you will see a message at the top of the screen indicating success. If it is unsuccessful, go back and check the modified data source settings.

Once the test completes successfully, go back and modify the remaining data sources in the same manor. After all changes have been made, saved, and successfully tested, restart the WebSphere cluster members, the WebSphere node agents, and then lastly, the WebSphere Deployment Manager.

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