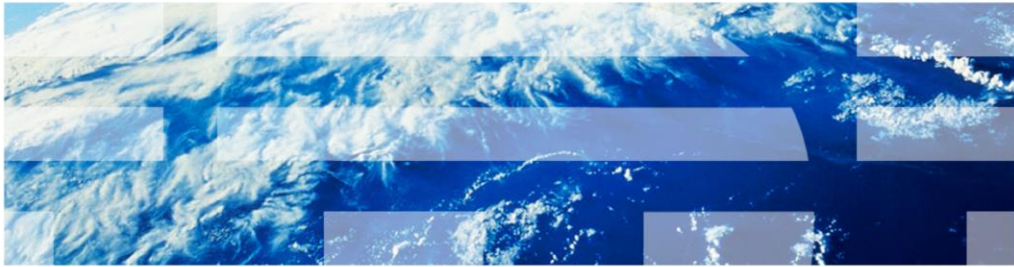


Information Server DataStage

Changing the Information Server 8.5 and 8.7 metadata repository to use Oracle RAC with a WebSphere cluster



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This presentation will discuss how to change the Information Server Metadata repository to use Oracle RAC for Information Server 8.5 and 8.7 using a WebSphere® cluster.

Objectives

- Back up all files being changed
- Update Information Services Framework (ISF) configuration
- Update WebSphere Application Server configuration

The objectives of this presentation are to identify and backup the files that are modified, update the Information Server Framework configuration, and update the WebSphere Application Server configuration.

Backup

- 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 file copy of ojb-conf.jar in Information Server or WebSphere folder hierarchy

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.

Updates to ISF and WebSphere configuration (1 of 4)

- Stop WebSphere Application Cluster members
- Create temporary empty directory on 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 Information Server Framework configuration. To do this, stop the WebSphere Application Cluster members first. 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. Example commands are displayed on this slide. This command will extract ojb-conf.jar and place the contents in your temp directory.

Updates to ISF configuration (2 of 4)

- Edit repository_database.xml
 - Linux or UNIX:**
vi repository_database.xml
 - Windows:**
write repository_database.xml
- File contains multiple dbalias entries
 - Update all dbalias attributes
- Edit dbalias attribute
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)"
```

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. Edit every dbalias attribute with the right host, port and dbname value. Save the file.

Updates to ISF configuration (3 of 4)

- 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, 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. Use the example command shown on this slide to re-jar the file. Be sure to edit the command to use the appropriate paths for your installation.

You must remember to put the “space dot” at the end of the jar command. After this step is completed, delete the temp directory.

Updates to ISF configuration (4 of 4)

- 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
url=jdbc\:ibm\:oracle\://host\:port;serviceName=service;alternateServer=(host\:port,
host\:port, host\:port, ...)

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 ASBServer/profile directory

- Navigate to <IS_HOME>/ASBServer
cd <IS_HOME>/ASBServer
- If profile/informationServer directory exists under ASBServer, remove it
 - **Linux or UNIX:**
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 displayed 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" will run 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
 - **Linux or UNIX:**
`ASBServer/bin/PropertyAdmin.sh -d`
 - **Windows:**
`ASBServer\bin\PropertyAdmin.bat -d`

Starting 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 1.5 gigabytes of free space in your temp directory.

Run the AppServerAdmin command as displayed in the example on 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 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 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 resources:

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

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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 described in the previous slides. If this is the case, restart the WebSphere Deployment manager. This should allow you to get back into the WebSphere administrative console.

Synchronize nodes (2 of 2)

- If node agent not running on particular node
 - Manually run WebSphere node synchronization
 - WebSphere administrative console
 - If node agents are not running
 - **Linux or UNIX:**
`<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 are not 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 displayed on this slide. Run the syncNode command 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 WebSphere Application Server configuration (1 of 3)

- 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

Data sources

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. 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.

Scope: =All scopes

Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, [see the scope settings help](#).

All scopes

Preferences

New Delete Test connection Manage state...

| Select | Name | JNDI name | Scope | Provider | Description | Category |
|--------------------------|--------------------------------|------------------------|---------------------------------------|--------------------------------------|--|----------|
| <input type="checkbox"/> | ASB JDBC DataSource | jdbc/ASBDataSource | Node=ipsaix00035Node01.Server=server1 | ASB JDBC Provider | Data source template | |
| <input type="checkbox"/> | ASB JDBC XA DataSource | jdbc/ASBDataSourceXA | Node=ipsaix00035Node01.Server=server1 | ASB XA JDBC Provider | Data source template | |
| <input type="checkbox"/> | ASB Staging Repository JDBC DS | jdbc/StagingDataSource | Node=ipsaix00035Node01.Server=server1 | ASB Staging Repository JDBC Provider | Data source template | |
| <input type="checkbox"/> | Default DataSource | DefaultDataSource | Node=ipsaix00035Node01.Server=server1 | Derby JDBC Provider | Datasource for the WebSphere Default Application | |
| <input type="checkbox"/> | JReport JDBC DataSource | jdbc/JReportDataSource | Node=ipsaix00035Node01.Server=server1 | ASB JDBC Provider | Data source template | |

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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 shown 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 configuration (2 of 3)

- Modify connection properties
 - Remove properties
 - databaseName
 - SID
 - Add properties (names are case sensitive)
 - serviceName value <service name>
 - alternateServers value (host1:1521,host2:1521,host3:1521)

IBM WebSphere Administration Console - ASB JDBC DataSource Configuration

Configuration

Test connection

General Properties

Additional Properties

- ConnectionPoolSize
- WebSphereApplicationServerDataSourceName
- Custom Properties

Related Items

- JMS - JCC AuthenticationData

Use this data source in container managed persistence (CMP)

| Select | Name | Value | Description | Required |
|--------------------------|--------------------------------|---------------------------------|-------------|----------|
| <input type="checkbox"/> | serviceName | 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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Under additional properties, click Custom properties. Click the values that have changed and set the values appropriately. Remove the properties databaseName and SID. Add both serviceName and alternateServers in the connection properties. Set the serviceName value to the service name for Oracle RAC and the alternativeServers value to the host:port. Add multiple servers using a comma.

Update WebSphere configuration (3 of 3)

- Return to data sources page
- Repeat procedure for remaining data sources
- Test connections

The screenshot shows the 'Data sources' configuration page in the WebSphere Administration Console. A message box at the top indicates a successful test connection for the 'ASS JDBC DataSource'. The 'Test connection' button in the 'Preferences' section is highlighted with a red circle. Below this, a table lists the configured data sources:

| Select | Name | JNDI name | Scope | Provider | Description | Category |
|-------------------------------------|--------------------------------|------------------------|--------------------------------------|--------------------------------------|--|----------|
| <input checked="" type="checkbox"/> | ASS JDBC DataSource | jdbc/ASSDataSource | Node=ipaix00033node01.Server=server1 | ASS JDBC Provider | Data source template | |
| <input type="checkbox"/> | ASS JDBC IA DataSource | jdbc/ASSDataSourceIA | Node=ipaix00033node01.Server=server1 | ASS IA JDBC Provider | Data source template | |
| <input type="checkbox"/> | ASS Staging Repository JDBC DS | jdbc/StagingDataSource | Node=ipaix00033node01.Server=server1 | ASS Staging Repository JDBC Provider | Data source template | |
| <input type="checkbox"/> | Default DataSource | DefaultDataSource | Node=ipaix00033node01.Server=server1 | Derby JDBC Provider | DataSource for the WebSphere Default Application | |
| <input type="checkbox"/> | Report JDBC DataSource | jdbc/ReportDataSource | Node=ipaix00033node01.Server=server1 | ASS JDBC Provider | Data source template | |

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Return to the Data sources page, click the data source that you modified, and click **Test Connection**. Once the test completes successfully, go back and modify the remaining data sources in the same manor. Repeat the procedure on slides twelve through fourteen for the remaining data sources.

Restart WebSphere

- Restart
 - WebSphere cluster members
 - WebSphere node agents
 - WebSphere deployment manager

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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