

Information Server DataStage

Changing the Information Server 8.0 and 8.1
metadata repository to use Oracle RAC



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This presentation will discuss how to change the Information Server 8.0 and 8.1 Metadata repository to use Oracle RAC.

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 all files being changed
- Do not leave copy of files in Information Server folder hierarchy

All releases:

- /IBM/InformationServer/ASBServer/bin/sql/database.properties

Information Server 8.0.1 only:

- /IBM/InformationServer/ASBServer/apps/sql/obj/obj-conf.jar
- /IBM/InformationServer/ASBServer/apps/sql/obj/obj-conf-pojo.jar
- IBM/InformationServer/ASBServer/etc/package.compiler.properties

Information Server 8.1 only:

- IBM/InformationServer/ASBServer/apps/lib/obj-conf.jar

It is 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. On your services tier, locate the files displayed on this slide.

This slide will list out the appropriate files and their respective locations on Versions 8.0.1 and 8.1. It is important that you do not leave a copy of these files in the Information Server folder hierarchy.

Update ojb-conf.jar (1 of 3)

- Stop WebSphere Application Server

```
cd /opt/IBM/WebSphere/AppServer/bin
./stopServer.sh server1 -username <user> -password <password>
```

- Create temporary empty directory and make it default working directory

```
mkdir /tmp/isftmp
cd /tmp/isftmp
```

Information Server 8.0.1 only

- Unjar ojb-conf.jar into temp directory
<WAS_Install_Dir>/AppServer/java/bin/jar xf <IS_Install_Dir>/ASBServer/apps/sql/ojb/ojb-conf.jar

Information Server 8.1 only

- Unjar ojb-conf.jar into temp directory
<WAS_Install_Dir>/AppServer/java/bin/jar xf <IS_Install_Dir>/ASBServer/apps/lib/ojb-conf.jar

The next step is to update the Information Services Framework, referred to as ISF, configuration. To do this, first you will need to stop WebSphere.

cd into the Websphere/AppServer/bin directory and run the stopServer command as displayed on this slide where <user> is your wasadmin username and <password> is your wasadmin password.

After stopping the WebSphere Application Server, create a temporary directory and set it as your current working directory by running:

mkdir /tmp/isftmp and then cd /tmp/isftmp.

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.

Use the command displayed on this slide that is appropriate for your installation to extract the ojb-conf.jar file into your temp directory.

Update ojb-conf.jar (2 of 3)

- Edit repository_database.xml

Linux or UNIX:

vi repository_database.xml

Windows:

Notepad repository_database.xml

Attributes for Oracle RAC database systems

Example: 3 node Oracle RAC:

Host	rac1	rac2	rac3
SID	orcl1	orcl2	orcl3
ServiceName	orcl		

Required attribute format:

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 Notepad if on Windows. Search for the dbalias attribute. Use the table displayed on this slide to correctly update this field. Edit the dbalias attribute with the right host and port value and save the file.

Update ojb-conf.jar (3 of 3)

- **Information Server 8.0.1 only**
 - Rejar ojb-conf.jar with updated information
`<WAS_Install_Dir>/AppServer/java/bin/jar cf <IS_Install_Dir>/ASBServer/apps/sql/ojb/ojb-conf.jar .`
- **Information Server 8.1 only**
 - Rejar ojb-conf.jar with updated information
`<WAS_Install_Dir>/AppServer/java/bin/jar cf <IS_Install_Dir>/ASBServer/apps/lib/ojb-conf.jar .`
- **Information Server 8.0.1**
 - Clear temporary directory
- **Information Server 8.1**
 - Remove the temp directory

After updating the dbalias attribute, rejar 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 command displayed on this slide to rejar the ojb-conf.jar file. Be sure to use the command that is appropriate for your installation. It is important to note that you need to put the “space dot” at the end of the jar command. After this step is complete, clear the temp directory if you are on 8.0.1. If you are on any other release, delete the temp directory.

Update obj-conf-pojo.jar – Information Server 8.0.1 ONLY

- Information Server 8.0.1 **ONLY**
 - Repeat changes to dbalias for file:
 <IS_Install_Dir>/ASBServer/apps/sql/ojb-conf-pojo.jar
- cd /tmp/isftmp (should be empty)
- Unjar ojb-conf-pojo.jar into temp directory
 <WAS_Install_Dir>/AppServer/java/bin/jar xf <IS_Install_Dir>/ASBServer/apps/sql/ojb-conf-pojo.jar
- Edit repository_database.xml
 - Follow steps on slides four through six
- Rejar ojb-conf-pojo.jar
 <WAS_Install_Dir>/AppServer/java/bin/jar cf /IBM/InformationServer/ASBServer/apps/sql/ojb-conf-pojo.jar .
- Remove temp directory

Information Server 8.0.1 only, also requires the same modifications to dbalias in repository_databases.xml for file ojb-conf-pojo.jar. This file is located in the same directory as ojb-conf.jar. Follow the same steps that were performed in slides four through six on ojb-conf.jar to obj-conf-pojo.jar. Once these steps are complete, remove the temp directory.

Edit database.properties file

- Edit database.properties
- **Linux or UNIX:**
- `vi /opt/IBM/InformationServer/ASBServer/bin/sql/database.properties`
- **Windows:**
- `notepad C:\IBM\InformationServer\ASBServer\bin\sql\database.properties`
- Update the URL parameter
`url=jdbc\:ibm\:oracle\://host\:port;serviceName=service;alternateServer\=(host\:port, host\:port, host\:port, ...)`
- Example:
`url=jdbc\:ibm\:oracle\://rac1\:1521;serviceName\=orcl;alternateServers\=(rac1\:1521,rac2\:1521,rac3\:1521)`
- Restart WebSphere

Edit the database.properties file in the InformationServer/ASBServer/bin/sql directory. Update the URL parameter to reflect the repository server names and ports. After updating, save the file and restart WebSphere.

Update WebSphere configuration (1 of 5)

The screenshot displays the WebSphere Administrative console interface. On the left, a navigation tree is visible with 'Resources' and 'JDBC Providers' selected. The main window shows the 'JDBC providers' configuration page. A message box at the top states: 'Changes have been made to your local configuration. Click Save to apply changes to the master configuration. The server may need to be restarted for these changes to take effect.' Below this, the 'JDBC providers' section is active, showing a scope of 'Cell=ibc-02Node01Cell, Node=ibc-02Node01, Server=server1'. The 'Server: server1' radio button is selected. An 'Apply' button is present. The 'Preferences' section contains a table of providers:

Select	Name	Description
<input type="checkbox"/>	ASB JDBC Provider	
<input type="checkbox"/>	ASB_XA JDBC Provider	
<input type="checkbox"/>	Cloudscape JDBC Provider	Cloudscape 51 embedded JDBC2-compliant Provider
<input type="checkbox"/>	Cloudscape JDBC Provider (XA)	Built-in Cloudscape JDBC Provider (XA)
<input type="checkbox"/>	Samples Cloudscape JDBC Provider (XA)	Built-in Cloudscape JDBC Provider (XA)

Total 5

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The next five slides are for the WebSphere Application Server 6.0 configuration. WebSphere Application Server 6.0 is bundled with Information Server Versions 8.0.1 and 8.1.

Open the WebSphere Administrative console. On the left, click Resources and then JDBC Providers. Ensure that Server: server1 is set to the active provider. The connection properties for both the ASB JDBC Provider and ASB JDBC XA Provider need to be updated. Begin by clicking on the ASB JDBC Provider data source.

Update WebSphere configuration (2 of 5)

The screenshot shows the IBM WebSphere configuration console. On the left is a navigation tree with categories like Welcome, Servers, Applications, Resources, Security, Environment, System administration, Monitoring and Tuning, Troubleshooting, Service integration, and UDDI. The main content area is titled 'JDBC providers' and shows the configuration for an 'ASB JDBC Provider'. A message box at the top indicates that changes have been made to the local configuration and that the server may need to be restarted. Below this, the 'Configuration' section is visible, with 'General Properties' and 'Additional Properties' tabs. The 'Additional Properties' tab is active, showing a tree view where 'Data sources' is selected and circled in red. The 'Data sources' entry is further expanded to show 'Data sources (Version 4)'. The 'Scope' field contains the path 'cells:ibc-02Node01:Cell:nodes:ibc-02Node01:servers:server1' and the 'Name' field contains 'ASB JDBC Provider'.

Under Additional Properties, click Data sources.

Update WebSphere configuration (3 of 5)

- Welcome
- Guided Activities
- Servers
- Applications
- Resources
 - JMS Providers
 - JDBC Providers
 - Resource Adapters
 - Asynchronous beans
 - Schedulers
 - Cache instances
 - Object pool managers
 - Mail Providers
 - URL Providers
 - Resource Environment Providers
- Security
 - Global security
 - SSL
- Environment
- System administration
- Monitoring and Tuning
- Troubleshooting
- Service integration
- UDDI

JDBC providers

JDBC providers

Messages

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

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

JDBC providers > ASB JDBC Provider > Data sources

A data source is used by the application to access data from the database. A data source is created under a JDBC provider, which supplies the specific JDBC driver implementation class.

Preferences

New Delete Test connection Manage state...

Select	Name	JNDI name	Description	Category
<input type="checkbox"/>	ASB JDBC DataSource	jdbc/ASBDataSource	Data source template	
<input type="checkbox"/>	JReport JDBC DataSource	jdbc/JReportDataSource	Data source template	
Total 2				

One at a time, open the ASB JDBC data source and the JReport JDBC data source.

Update WebSphere configuration (4 of 5)

- 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)

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

A data source is used by the application to access data from the database. A data source is created under a JDBC provider which supplies the specific JDBC driver implementation class.

Configuration

Test connection

General Properties

Additional Properties

Scope: beta-fijiNode01:Cell:nodes-fijiNode01:servers:server1

Name: ASB JDBC DataSource

JNDI name: jdbc/ASBDataSource

Use this Data Source in container managed persistence (CMP)

Custom properties

Select	Name	Value	Description	Required
You can administer the following resources:				
<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 host:port. Add multiple servers using a comma.

Update WebSphere configuration (5 of 5)

- Test connection
- Repeat procedure for the JReport JDBC data source
- Return to JDBC Provider page (See slide 9)
 - Repeat procedure for the ASB JDBC XA data source
- Restart WebSphere

The screenshot shows the WebSphere Administration Console interface. On the left is a navigation tree with categories like Welcome, Guided Activities, Servers, Applications, Resources, Security, Environment, System administration, Monitoring and Tuning, Troubleshooting, Service integration, and UDDI. The 'Resources' section is expanded to show 'JMS Providers', 'JDBC Providers', 'Resource Adapters', 'Asynchronous beans', 'Schedulers', 'Cache instances', 'Object pool managers', 'Mail Providers', 'URL Providers', and 'Resource Environment Providers'. A red arrow points from the 'JDBC Providers' link in the tree to the main content area.

The main content area is titled 'JDBC providers' and shows a message box: 'Test connection for data source ASB JDBC DataSource on server server1 at node lbc-02Node01 was successful.' Below this, the breadcrumb path is 'JDBC providers > ASB JDBC Provider > Data sources'. A paragraph explains that a data source is used by the application to access data from the database. Below the text are buttons for 'New', 'Delete', 'Test connection' (circled in red), and 'Manage state...'. A table lists the data sources:

Select	Name	JNDI name	Description	Category
<input checked="" type="checkbox"/>	ASB JDBC DataSource	jdbc/ASBDataSource	Data source template	
<input type="checkbox"/>	JReport JDBC DataSource	jdbc/JReportDataSource	Data source template	

Total 2

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Return to the Data sources page, click the data source that you modified, and click **Test Connection**. Repeat this procedure on the **Jreport JDBC** data source.

Return to the JDBC providers page and repeat this procedure for **ASB JDBC XA Provider**. See slide nine if you are not sure where this is located. For this JDBC Provider, you will only see one data source, **ASB JDBC XA DataSource**.

If all the test connections succeed, restart WebSphere for the changes to take effect.

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