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InfoSphere Information Server

Relocating Information Server 9.1 xmeta and xmetasr repositories with a stand-alone WebSphere Application Server

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This presentation describes the different databases and repositories included with Information Server version 9.1 and how to relocate xmeta and xmetasr to another database server. This presentation discusses the relocation when using stand-alone WebSphere®. If your configuration is using a WebSphere cluster, see the IBM Education Assistant module on relocating using a WebSphere cluster.

Objectives

- The databases and repositories that Information Server 9.1 includes
- The repositories and databases that you need to relocate
- Backing up xmeta, IS, and key files
- Updating xmeta and xmetasr
  - Update Information Services Framework (ISF) configuration
  - Update WebSphere Application Server configuration

The objectives of this presentation are to describe the databases and repositories that Information Server version 9.1 includes, how to check what you need to relocate, what you need to back up, and how to update xmeta and xmetasr including the Information Services Framework configuration, referred to as the ISF configuration. This presentation also describes what changes you need to make to WebSphere.

Information Server databases and repositories (1 of 2)

Repository or database	Description	Default database and schema
Active InfoSphere® Information Server metadata repository	Stores the metadata about external data sources that InfoSphere Information Server components govern, manage, and analyze. Normally referred to as the metadata repository.	Database: XMETA Schema: XMETA Database must be the same database that you used for the staging metadata repository.
InfoSphere Information Server staging metadata repository	Stores metadata that you imported from external data sources so that you can examine it before you move it to the active metadata repository.	Database: XMETA Schema: XMETASR Database must be the same database that you used for the active metadata repository.
InfoSphere Information Analyzer analysis database	Stores results of information analysis by InfoSphere Information Analyzer.	Database: IADB Schema: IAUSER Database cannot be the same database that you used for the active or staging metadata repository.
InfoSphere DataStage® and QualityStage operations database Repository.tool=DataStage	Stores monitoring data that the InfoSphere DataStage and QualityStage Operations Console display.	Database: XMETA Schema: User-defined repository user name, typically DSODB Database can be the same or different as the database that you used for the metadata repository.

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You might need to change the configuration of databases and repositories that you used to run InfoSphere Information Server or its components. You might need to make this change for various reasons: a change in the physical computer that hosts the repository, a change in host name or port number of the computer that hosts the repository, a change to the high-availability configuration, or a password change.

You might deploy some repositories as separate schemas within the same database. This deployment is always the case with the active metadata repository and the staging metadata repository. You can also create other repositories as schemas in this same database or you can create them in a separate database. Such a separate database can also hold multiple repositories. This slide and the following slide list and describe all of the databases and repositories that IBM ships with Information Server.

Information Server databases and repositories (2 of 2)

Repository or database	Description	Default database and schema
IBM InfoSphere QualityStage Standardization Rules Designer database Repository.tool=StandardizationRulesDesigner	Stores a copy of revisions to InfoSphere QualityStage rule sets that you made in the IBM InfoSphere QualityStage Standardization Rules Designer.	Database: XMETA Schema: User-defined repository user name, typically SRDUSER Database can be the same or different as the database that you used for the metadata repository.
IBM InfoSphere Data Quality Console exceptions database Repostiory.tool=DataQualityConsole	Stores exceptions that InfoSphere Information Server products and components generate.	Database: XMETA Schema: User-defined repository user name, typically ESDB Database can be the same or different as the database that you used for the metadata repository.
InfoSphere QualityStage Match Designer database	Stores the results of match test passes by InfoSphere QualityStage Match Designer, a component of InfoSphere QualityStage. This repository is an ODBC data source that you used as a staging area before you check in match designs to the active metadata repository.	User-defined database name and schema name. No default, but typically MDDB. Database cannot be the same database that you used for the metadata repository.

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Use the table displayed on this slide to decide which databases or repositories that you need to relocate. When moving xmeta, it is important to check which of these databases you registered with the xmeta repository. You need to relocate any database that you registered with xmeta as well. The InfoSphere Information Analyzer Analysis Database, or IADB, and the QualityStage Match Designer Database, referred to as MDDB cannot be in the same database, so this presentation does not discuss them. Refer to separate IBM Education Assistant modules on relocating these databases.

Listing repositories and databases

- List Repositories/Databases
  - UNIX/Linux
    cd <is_installPath>/ASBServer/bin
    ./RepositoryAdmin.sh -listRepositories
  - Windows
    cd <is_installPath>\ASBServer\bin
    .\RepositoryAdmin –listRepositories
- Example:
  $ ./RepositoryAdmin.sh –listRepositories
  dsodb
  QSSRDDB

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The next step is to run the RepositoryAdmin tool to list out all of the installed repositories. Use the appropriate command that is displayed on this slide for your operating system.

Check repository location

- Check repository location
  ./RepositoryAdmin.sh -displayRepository -rn dsodb
  DatabasePlatform.databaseType=DB2
  DatabasePlatform.version=10.1
  DatabaseServer.host=ipsvm00079.swg.usma.ibm.com
  DatabaseServer.port=50000
  Database.name=xmeta
  Database.alias=null
  Database.location=/opt/IS91/IBM/InformationServer/Repos/dsodb
  Repository.name=dsodb
  Repository.description=DSODB
  Repository.tool=DataStage
  Repository.context=
  Repository.schema=dsodb
  RepositoryConnection.name=dsodb
  RepositoryConnection.userName=dsodb
  RepositoryConnection.password={iisenc}N2RHakj6gLz7fCJ2yknhIg==
  RepositoryConnection.connectionURL=jdbc:db2://ipsvm00079.swg.usma.ibm.com:50000/dsodb
  RepositoryConnection.managedDataSourceName=Tablespace.name=DSODBSPACE

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Next, check each of the repositories that are listed in the last step to see which database they are in. You need to relocate all databases in xmeta so it is important to make note of these databases to ensure that you complete all necessary repository relocations. Use the RepositoryAdmin command that is displayed on this slide to obtain the value of Database.name. The –rn argument takes a repository name and is case-sensitive. Be sure to enter the name exactly as shown in the previous step.

If the Database.name value is equal to xmeta, then you need to move the repository. It is possible that there might not be any additional databases in xmeta. If you changed the repository names from the defaults at installation time and it is unclear which repository you are working with based on the repository name, check the field that is called Repository.tool and match the name to the proper repository seen on the chart on slides 3 and 4.

Back up and restore

- Backup
  - Backup databases, repositories, Information Server, and WebSphere
  - Back up 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**
- Restore
  - Restore databases or repositories to new target system

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Before you make any changes to the databases or repositories, Information Server, or WebSphere, it is good practice to take a complete backup of all 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 you changed during this process to make it easier to revert if necessary. Make copies of the files that this slide lists. Ensure that you do not leave the backup of ojb-conf.jar in the IBM Information Server or WebSphere folder hierarchy. Back up the databases and repositories that you are relocating on the source system and restore to the target system using the backup and restore tools that are provided with the database. Back up the affected files before changing them in this procedure.

Updating xmeta and xmetasrSR

- Xmeta - Active InfoSphere Information Server metadata repository
- Xmetasr - InfoSphere Information Server staging metadata repository
- Same database but different schema names
- Must move together

The first topics that this presentation discusses are the metadata repository database, commonly known as xmeta, and the metadata staging repository, commonly known as xmetasr. These two repositories are in the same database but in their own schemas; you must move them together.

Updates to ISF and WebSphere configuration (1 of 4)

- Stop WebSphere Application Server
- 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

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

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

Updates to ISF and WebSphere configuration (2 of 4)

- 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
- Edit repository_database.xml
    Linux or UNIX: vi repository_database.xml
    Windows: write repository_database.xml
- File contains multiple dbalias entires
    - Update all dbalias hostname and port number attributes

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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 displayed on this slide. This command extracts ojb-conf.jar and places the contents in your temp directory.

Next, 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 that is displayed on the next slide to correctly update this field. Edit every dbalias attribute in the file with the new host name and port number, and save the file.

Updates to ISF and WebSphere configuration (3 of 4)

DB2	dbalias="//host:port/dbname" Example: dbalias="//db2host:50000/xmeta"
DB2 cluster or HADR database system	dbalias="//*host:port/dbname*;clientRerouteAlternateServerName=*alternate_host*;clientRerouteAlternatePortNumber=*alternate_host_port*;queryCloseImplicit=2;"
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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This slide displays the dbalias values and examples for DB2, Oracle, and SQL Server. If you are using SQL Server named instances, note that the format is sqlserverHostname\named_instance.

Updates to ISF and WebSphere configuration (4 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

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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 that you are still in your temp directory. This slide includes example commands. Be sure that your paths are correct for your installation. You must remember to put the "space dot" at the end of the jar command.

After you complete this step, delete the temp directory.

Copy ojb-conf.jar to WebSphere

- UNIX or Linux
  cd <is_installPath>/ASBServer/apps/lib
  cp ojb-conf.jar <*was_install_dir*>/AppServer/profiles/*profile_name*/informationServer/apps/lib

- Windows
  cd <is_installPath>\ASBServer\apps\lib
  copy ojb-conf.jar <*was_install_dir*>\AppServer\profiles*profile_name*\informationServer\apps\lib

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Next, copy the new ojb-conf.jar file to the WebSphere installation using the appropriate command displayed on this slide for your operating system.

Test changes

- Run PropertyAdmin from ASBServer
    - **UNIX or Linux:**
      bin/PropertyAdmin.sh –d
    - **Windows:**
      bin\PropertyAdmin.bat -d

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Next, check that the new ojb-conf.jar is correct. To complete this task, run the PropertyAdmin command in ASBServer. You need to be sure that this command returns successfully. If it does not, go back and check the changes that you made to ojb-conf.jar before continuing.

Updates to ISF configuration

- Edit database.properties

  - **Linux or UNIX:**
    vi <IS_HOME>/ASBServer/bin/sql/database.properties

  - **Windows:**
    write C:\<IS_HOME>\ASBServer\bin\sql\database.properties

- Find and update URL parameter

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

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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.

Test changes

- Test changes to database.properties
  - UNIX or Linux
    <IS_HOME>/ASBServer/bin/AppServerAdmin.sh –w –time 0
  - Windows
    <IS_HOME>\ASBServer\bin\AppServerAdmin.bat –w –time 0

Next, test the changes to the database.properties file. Run the AppServerAdmin command that is displayed on this slide that is appropriate for your operating system. The command just needs to return successfully. If it errors, go back and verify the changes that are made to the database.properties file.

Restart the application server

- Restart WebSphere Application Server

Next, restart the WebSphere Application Server.

Update Version.xml

- Update <IS_HOME>/Version.xml on Information Server 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

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Next, update the values in the Version.xml file. This file contains the installation records that the installation program uses. Keeping the file current avoids problems with future installations. The Version.xml file is in the IBM InfoSphere Information Server installation directory on the same server as the ojb-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 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 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
  - Log in to primary node
  - Run command:
    - db2 update alternate server for database database using hostname standby_IP port port
    - The standby_IP can be an IPv4 address or an IPv6 address
      Example IPv4
      db2 update alternate server for database xmeta using hostname 192.0.2.7 port 60000
      Example IPv6
      db2 update alternate server for database xmeta using hostname ::ffff:192.0.2.7 port 60000
      Example using standby hostname. Valid for IPv4 and IPv6
      db2 update alternate server for database xmeta using hostname db2_standby_server port 60000

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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 displays the format of the update alternate server command along with examples 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 7)

- Log in to WebSphere Application Server administrative console

- Update all data sources that are highlighted in yellow

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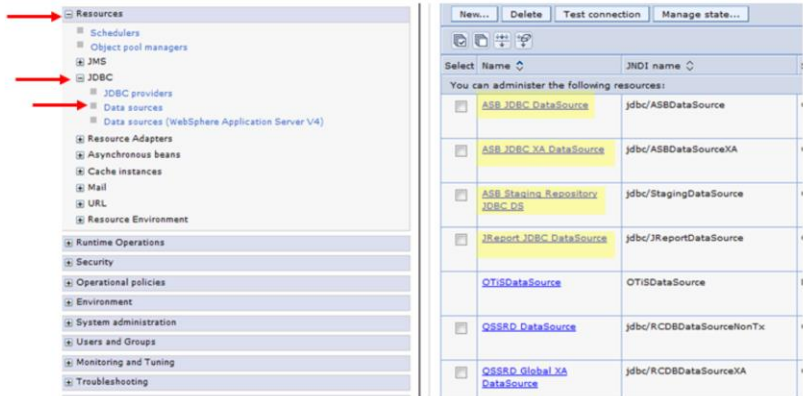
Log in to the WebSphere Application Server administrative console. Click the Resources tab on the left side and then click JDBC and then Data sources underneath. You need to complete the changes that are described in the next few slides on all of the data sources that are highlighted in yellow on this 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 7)

- Modify connection properties – DB2

Common and required data source properties

Name	Value
♦ Driver type	4 ▾
♦ Database name	xmeta
♦ Server name	mydbserver.newco.com
♦ Port number	50000

| Apply | OK | Reset | Cancel |

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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 7)

- Specifying the alternate address and port for a DB2 clustered database and DB2 HADR
  - From the data source properties page that you are editing
    - Click Connection Pool Properties under Additional Properties
    - Click Connection pool custom properties under additional properties
    - Update
   - clientRerouteAlternateServerName
      - clientRerouteAlternatePort

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If you are using a DB2 cluster or HADR for xmeta, you need to update the alternate address and port. On the data source page that is seen in the previous slide, click the Connection pool properties under Additional Properties on the upper right side of the screen. Next, click Connection poll custom properties under Additional Properties. Update the clientRerouteAlternateServerName and clientRerouteAlternatePort properties and click Apply.

Update WebSphere Application Server configuration (4 of 7)

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.

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 (6 of 7)

- Modify connection properties – SQL Server

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 SQL Server named instances, be sure that 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 (7 of 7)

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.

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

Test connection

- Test connection

- Restart WebSphere Application Server

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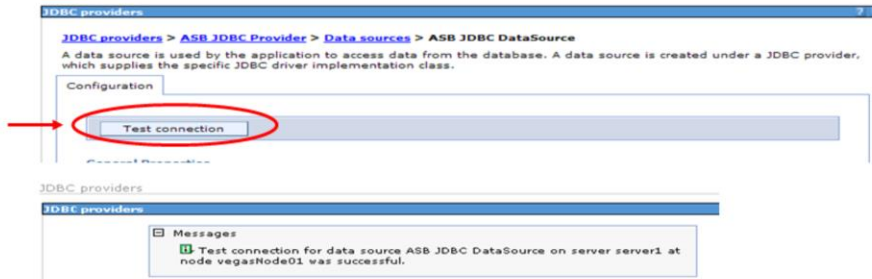
After you save the changes, test your new connection by clicking the Test connection button at the top of the Data Sources page where you made the server changes. If the connection is successful, you see a message at the top of the screen indicating success. If it is unsuccessful, go back and check the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

Once the test completes successfully, go back and modify the remaining data sources in the same manor. After you make, save, and successfully test all the changes, restart the WebSphere Application Server.

Relocating more repositories

- Follow IBM Education Assistant modules for more repository and database relocation

If there are more repositories or databases that you need to relocate, see the IBM Education Assistant module for each repository or database.

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