

External Driver Configuration for Process Integration 7.0



Applies to:

This article will apply to XI3.0 and PI 7.0. If it needs to talk to the other database, we'll need to deploy the drivers in PI.

Summary

A Business Scenario with communication to a database or a messaging system using XI-3.0/PI 7 Adapter Framework requires additional drivers to be installed on the J2ee engine. The external drivers provided as Java archives (jars) by the corresponding Vendor of the Database or Messaging Systems are required for the JDBC and JMS Adapters.

You have to deploy these drivers to make them usable for the adapters in the SAP J2EE Server. For this purpose, the Adapter Engine installation provides the archive `aii_af_jmsproviderlib.sda`, to which you have to add the required driver files. If PI does not have an external JDBC driver, you can not use JDBC adapters to connect to external DB servers.

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Author Bio

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Overview

The following steps are a summary of the step by step configuration described in this document.

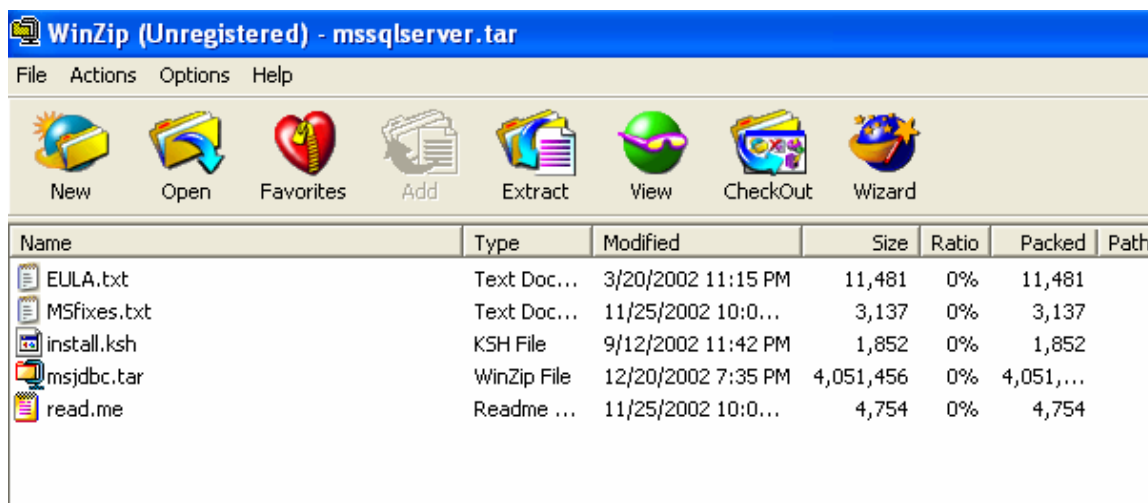
1. Download the required JDBC driver from DB manufacturer's side. Note that the Driver version shall be considered, you can get the DB version first, and then determine which JDBC driver version you shall user.
2. Download the "How to Install and Configure external drivers fro JDBC&JMS" from how-to page of SAP. One important SDM tool is packed in the guide.
3. Using this tool, add your JDBC driver files (they should be JAR files) to file aii_af_jmsprovider.sda.
4. Start SDM (in windows, using Remote under program folder of SDM directory), and deploy the changed aii_af_jmsprovider.sda. The program will automatically restart your J2EE server, when done, the JDBC driver will be available.

Prerequisites: Download the Jar files for Oracle and SQL

For Downloading the JAR files for SQL. Go to this below link:

<http://www.microsoft.com/downloads/details.aspx?FamilyID=4F8F2F01-1ED7-4C4D-8F7B-3D47969E66AE&displaylang=en>

Download **mssqlserver.tar** on the bottom of the page. If you unzip it, under it will be like the below screen shot.



Then Unzip the tar msjdbc.tar files you will find msbase.jar, mssqlserver.jar and msutility.jar .

00000115.abt	ABT File	11/25/2002 10:4...	1,070	0%	1,070	books\INDEX\assi..
00000116.abt	ABT File	11/25/2002 10:4...	1,070	0%	1,070	books\INDEX\assi..
00000022.wld	WLD File	11/25/2002 10:4...	144,384	0%	144,384	books\INDEX\assi..
00000023.wld	WLD File	11/25/2002 10:4...	144,384	0%	144,384	books\INDEX\assi..
msjdbceref.pdf	Adobe A...	11/25/2002 10:4...	821,239	0%	821,239	books\Msjdbceref\
books.pdf	Adobe A...	11/25/2002 10:4...	14,820	0%	14,820	books\
Index.pdx	Acrobat ...	11/25/2002 10:4...	987	0%	987	books\
msbase.jar	Executa...	12/20/2002 7:34 PM	301,290	0%	301,290	lib\
mssqlserver.jar	Executa...	12/20/2002 7:34 PM	69,118	0%	69,118	lib\
msutil.jar	Executa...	12/20/2002 7:34 PM	64,039	0%	64,039	lib\
read.me	Readme ...	11/25/2002 10:0...	4,754	0%	4,754	

Then copy the three jar files and add into the **aai_af_jmsproviderlib.zip** file.

Same thing for downloading the Oracle file: follow the below link:

http://www.oracle.com/technology/software/tech/java/sqlj_jdbc/index.html

Download the classes.12 zip.

Installation Steps

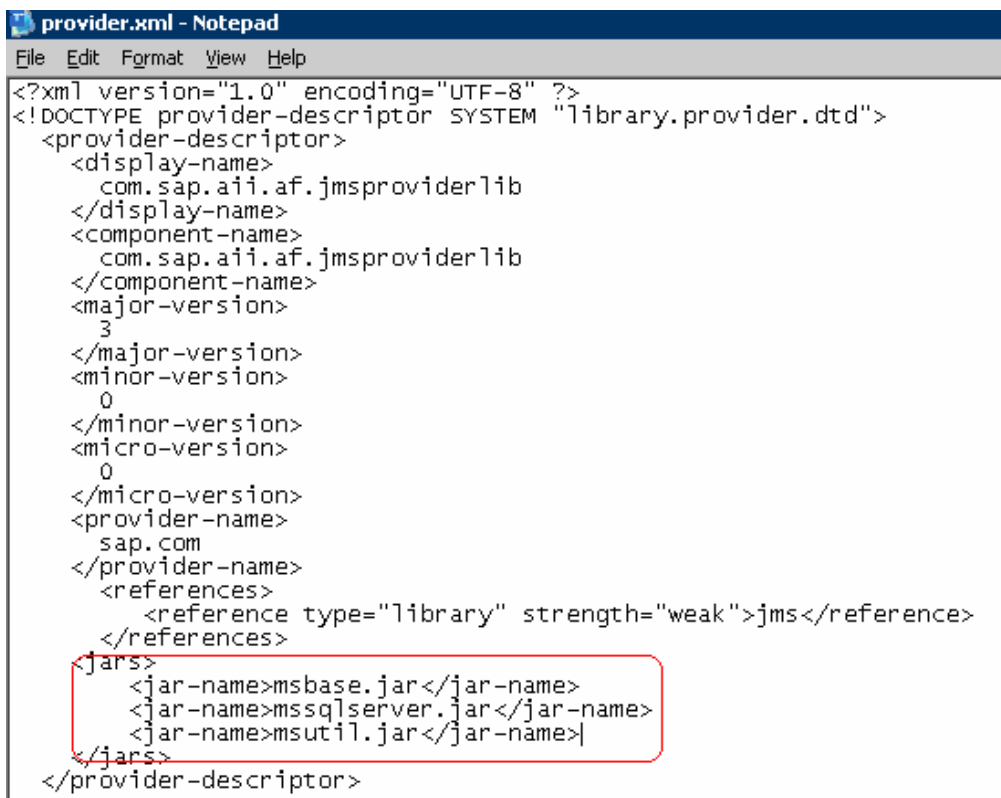
Edit the provider.xml File

Zipping the downloaded jar files with this file aii_af_jmsproviderlib.sda

- Copy the file aii_af_jmsproviderlib.sda from the path:
D:\usr\sap\SID\VEB\BMS00\SDM\root\origin\sap.com\com.sap.aii.af.jmsproviderlib
to some other local drive.

Note: This SDA file named aii_af_jmsproviderlib.sda which is shipped as an empty stub with your XI installation.

- Unzip the file **aii_af_jmsproviderlib.sda**. After unzipping the archive there are 2 folders created under the provided directory 1. META-INF and 2. Server. In that server folder there will be a provider.xml file
- Edit that file by mentioning the jar file, which I did below.

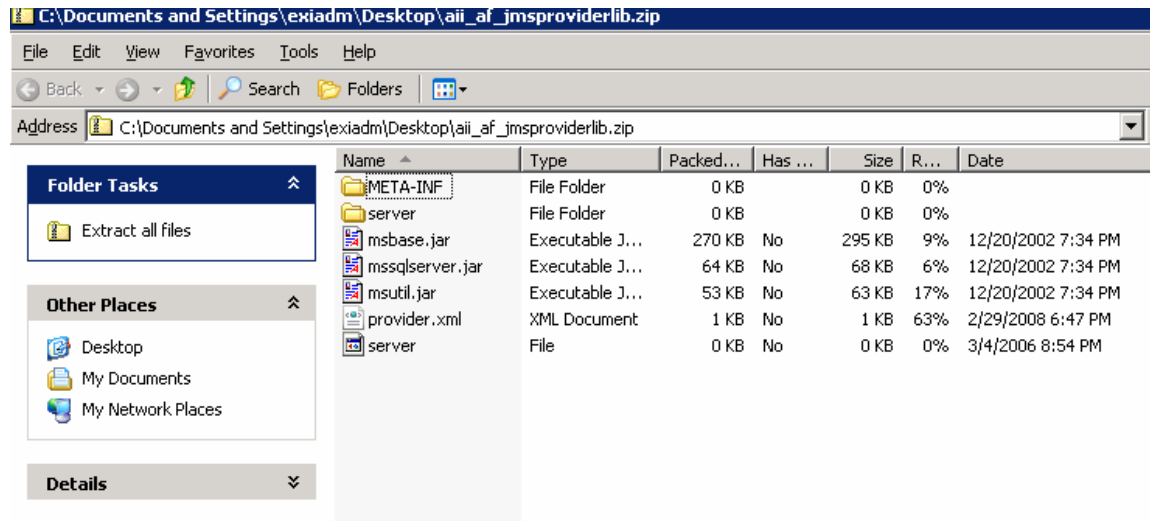


```

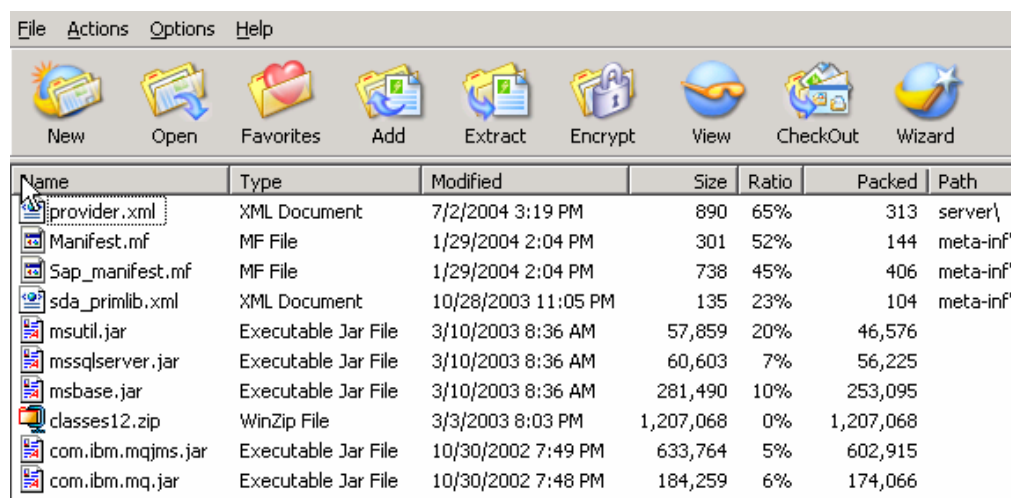
provider.xml - Notepad
File Edit Format View Help
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE provider-descriptor SYSTEM "library.provider.dtd">
<provider-descriptor>
  <display-name>
    com.sap.aii.af.jmsproviderlib
  </display-name>
  <component-name>
    com.sap.aii.af.jmsproviderlib
  </component-name>
  <major-version>
    3
  </major-version>
  <minor-version>
    0
  </minor-version>
  <micro-version>
    0
  </micro-version>
  <provider-name>
    sap.com
  </provider-name>
  <references>
    <reference type="library" strength="weak">jms</reference>
  </references>
  <jars>
    <jar-name>msbase.jar</jar-name>
    <jar-name>mssqlserver.jar</jar-name>
    <jar-name>msutil.jar</jar-name>
  </jars>
</provider-descriptor>

```

After mentioning the JAR files in the provider.xml then you need to zip the file. At last the file has to look like this.



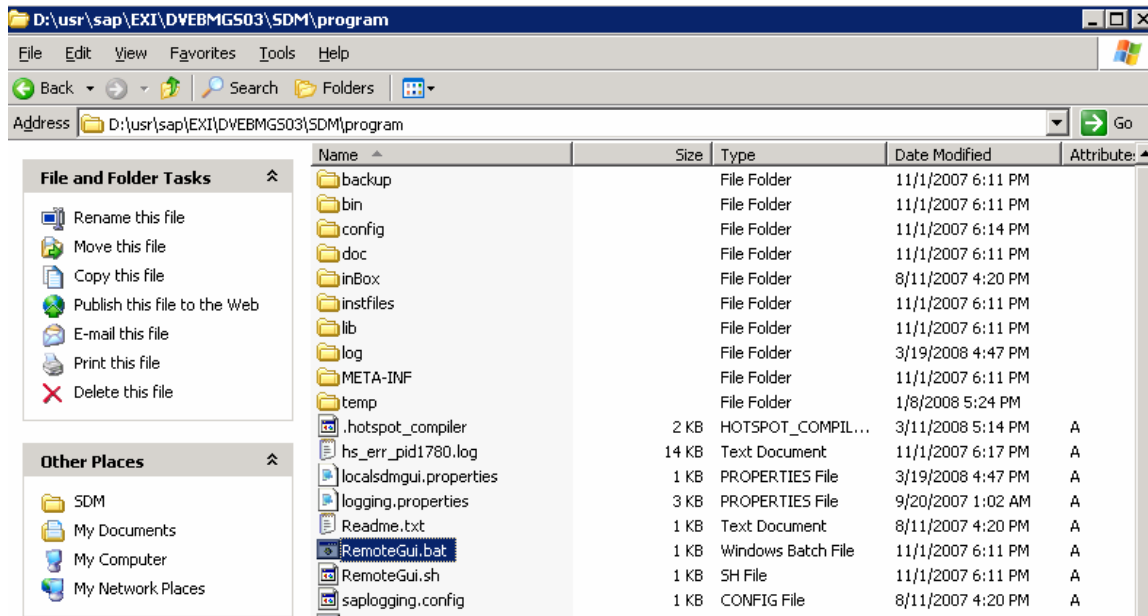
Note: In my case it's for only SQL if you are doing for oracle and IBM then see the below picture.



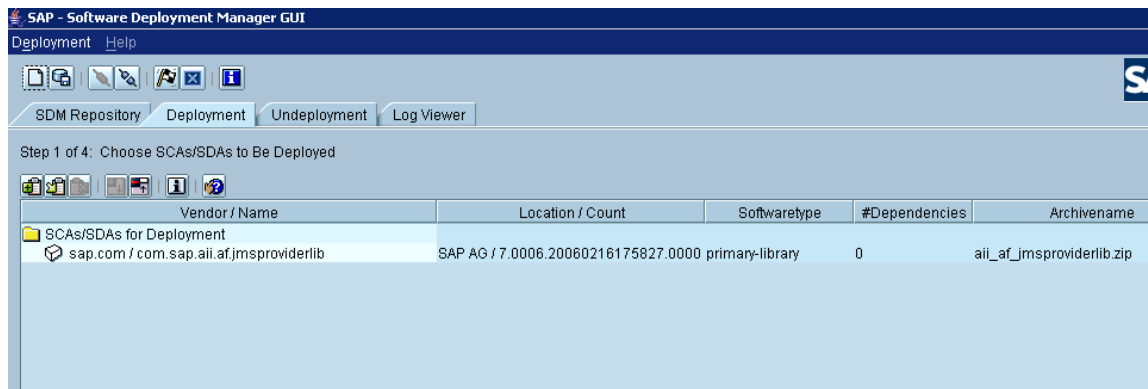
Deploy in SDM

Now deploy the file: aii_af_jmsproviderlib.zip on the j2ee engine using SDM

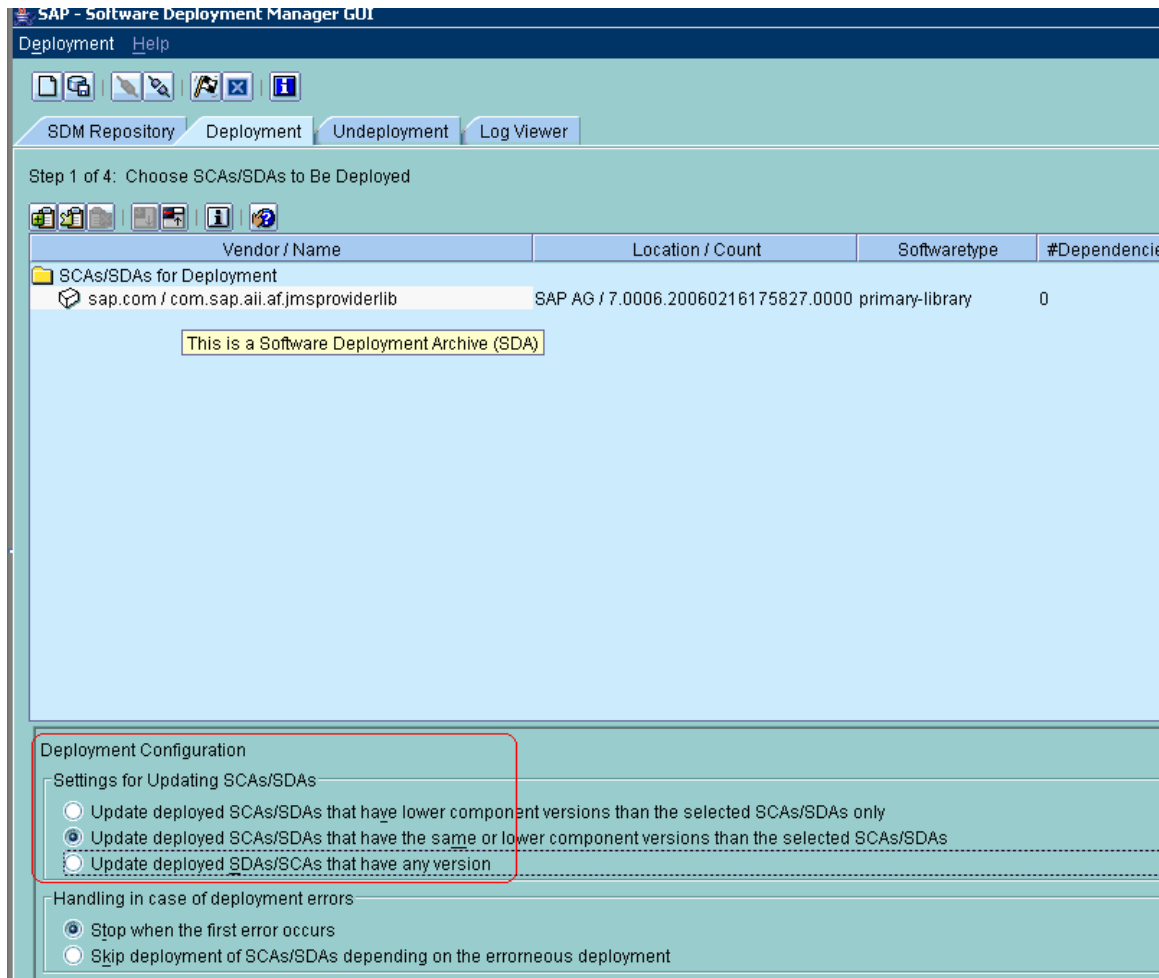
Start the SDM GUI and Login with SDM user



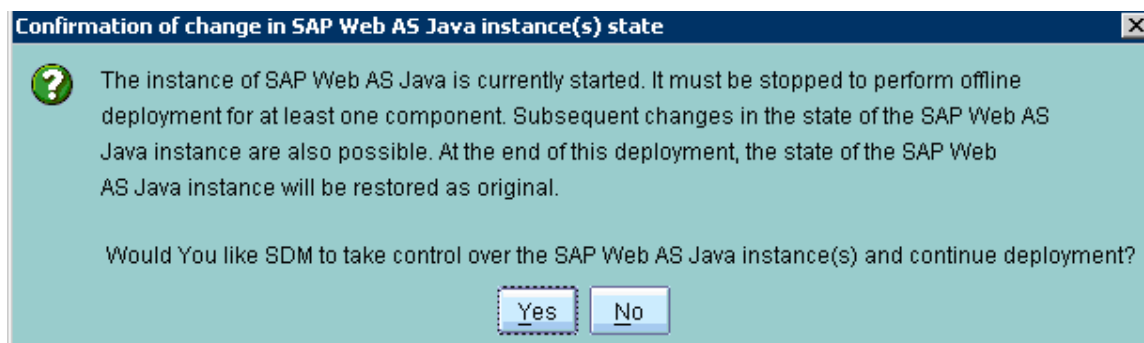
Then choose deployment tab and choose the import icon from that choose the zip file which we altered.



Then before pressing the next button choose the action which is mentioned below or else it will throw an error by mentioning (i.e.) in the same version. This action is mandatory before proceeding further.



After pressing the next button it will start the process for deployment before proceeding it will show the warning message as the system will restart due to some offline activities.



Due to this java instance will get stopped you can monitor the instance status in MMC

The screenshot shows the SAP Systems MMC interface. On the left, a tree view displays the system hierarchy: SAP Systems > EC6 > hexsap > hexsap 4 > hexsap 5 > Process List. Below this, other components like Current Status, Open Alerts, Syslog, Queue Status, ABAP Work Processes, J2EE Processes, and ICM are visible. The right pane shows a table of process details for the selected instance.

SDM	5144	SDM Server	Yes	Running	Switched off
dispatcher	0	J2EE Disp...	No	0 Stopped	Disabled
server0	5136	J2EE Server	Yes	Stopping	Disabled

Then after changing in to the offline mode it will show this status message in SDM

The screenshot shows the SAP Software Deployment Manager GUI. The window title is "SAP - Software Deployment Manager GUI". The main area displays a confirmation message for a deployment action. The message text is as follows:

```

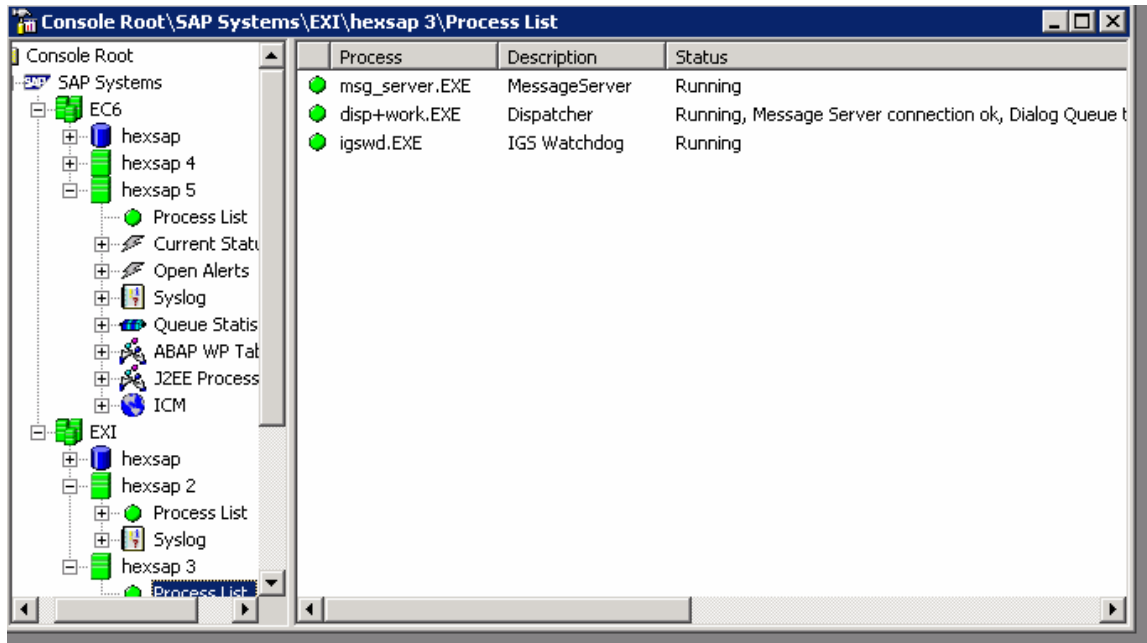
Deployment started Wed Mar 19 16:57:16 IST 2008

Starting Deployment of com.sap.aif.jmsproviderlib
The SDM will now stop SAP Web AS Java cluster instance(s) processes in order to perform offline deployment. After that the deployment will proceed.
It could take some time, so please be patient.
Finished successfully: development component 'com.sap.aif.jmsproviderlib?sap.com?SAP AG?77.0006.20060216175827.0000?*'
Deployment of com.sap.aif.jmsproviderlib finished successfully (Duration 60667 ms)

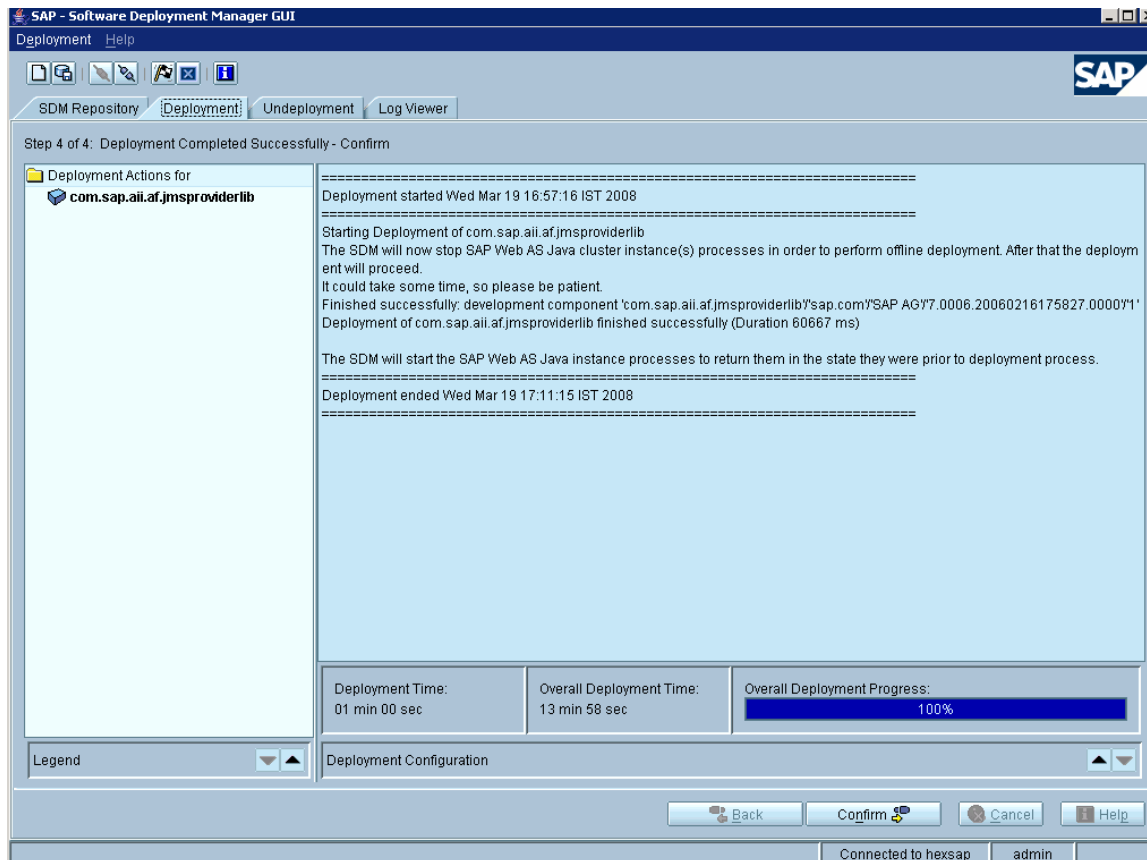
The SDM will start the SAP Web AS Java instance processes to return them in the state they were prior to deployment process.

```

Once the server is up you can check the instance status in MMC it will show the green status.



It will ask for the confirmation for the deployment.



Verification in Visual Administrator

For verification check the files in Visual administrator→JDBC Connector→system driver→com.sap.aii.af.jmsprovider.lib

The screenshot displays the Visual Administrator interface with three main panes:

- Global Configuration:** A list of system services. 'JDBC Connector' is highlighted in blue.
- Runtime:** A tree view under 'DataSources and JDBC Drivers'. 'Drivers' is expanded to show 'SYSTEM_DRIVER'.
- Additional Info:** A list of 'Deployed Libraries'. The entry 'com.sap.aii.af.jmsprovider.lib' is expanded to show its sub-components: 'msutil.jar', 'mssqlserver.jar', and 'msbase.jar'.

By doing this you can check the deployed jdbc connector in your server.

Appendix

Useful Sap notes:

Note 831162 - FAQ: XI 3.0 / PI 7.0 / PI 7.1 JDBC Adapter

Note 941317: Known problems and incompatibilities with certain JDBC drivers are also documented in

Important Note from SDN

Oracle JDBC Driver (classes12.zip / classes12.jar) Deadlocks

Unfortunately, I frequently notice hanging database connections. A thread dump taken according to the instructions in note 710154 shows one or more blocking JDBC Sender/Receiver threads and optionally that the JVM has detected a deadlock.

The Oracle classes12.zip / classes12.jar driver is compatible with JDK 1.2 and 1.3 only, but not with JDK 1.4. Upgrade to a current version of the driver (ojdbc14.jar). For details, refer to note 941317.

Make sure that you remove classes12.zip / classes12.jar from aii_af_jmsproviderlib.sda prior to adding the new driver as per the instructions in the answer to question #1 above as you will get a class name collision otherwise (all JARs from aii_af_jmsproviderlib.sda are loaded into the same class loader and the driver class name of both driver versions is the same).

Before deploying the updated driver, ensure that the new version is still compatible with your Oracle database server release. For details, refer to the release notes provided by Oracle.

References

www.help.sap.com

www.sdn.sap.com

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