

# MetaSolv Solution™ 6.0.15

## Setup Guide XML API Option

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## About this guide

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This guide contains the procedures and information you need to install and initially configure MetaSolv Solution and its utility programs.

This guide includes some information on third-party software products used by MetaSolv Solution. However, this information is limited to information needed to install and perform initial configuration tasks. If you need additional information on a third-party software application, consult the documentation provided by the product's manufacturer.

## Audience

This guide is for individuals responsible for installing or maintaining MetaSolv Solution and ensuring the software is operating as required. This guide assumes the installer has an Oracle DBA and BEA administrator background, with a working knowledge of Windows 2000 and Java J2EE.

## Additional information and help

To get additional information or help for MetaSolv Solution, refer to the following resources:

- ◆ Oracle E-Delivery—Provides access to product software and documentation.
  - Visit the E-Delivery Web site at <http://edelivery.oracle.com>.
  - Software and product documentation are contained in the Oracle Communications MetaSolv Solution 6.0 Media Pack.
  - Developer documentation is contained in the Oracle Communications MetaSolv Solution Developer Documentation Pack. Access to developer documentation requires a password.
- ◆ Oracle MetaLink—Provides access to software patches and a searchable Knowledge Base.
  - Visit the MetaLink Web site at <https://metalink.oracle.com/>, and log on using your User Name and Password.
  - Click the Patches & Updates tab to search for patches (efixes).
  - Click the Knowledge tab to search for technical bulletins, fixed issues, and additional product information. To narrow your search, click the Communication Apps link under Product Categories on the left side of the page.

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## Oracle Support

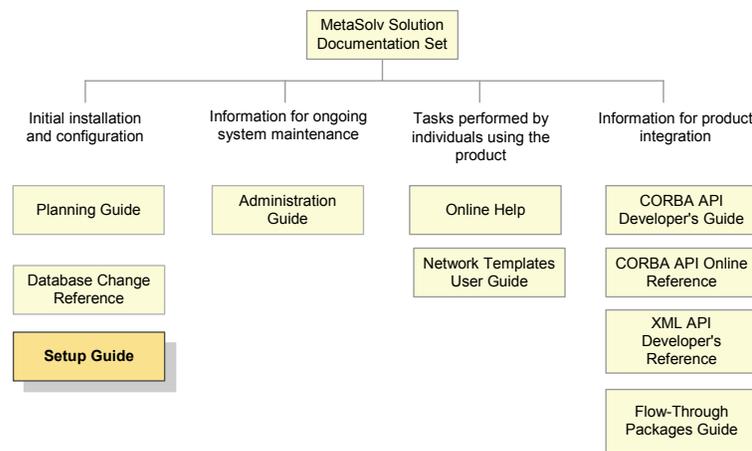
The preferred method of reporting service requests (SRs) is through MetaLink. MetaLink is available 24 hours a day, 7 days a week.

Although it is Oracle's preference that you use MetaLink to log SRs electronically, you can also contact Support by telephone. If you choose to contact Support by phone, a support engineer will gather all the information regarding your technical issue into a new SR. After the SR is assigned to a technical engineer, that person will contact you.

For urgent, Severity 1 technical issues, you can either use MetaLink or you can call Support. Oracle Support can be reached locally in each country. To find the contact information for your country, go to <http://www.oracle.com/support/contact.html>.

## MetaSolv Solution documentation set

This guide is one book in a set of documents that helps you understand and use MetaSolv Solution. Figure 1 shows the complete documentation set.



**Figure 1: MetaSolv Solution documentation set**

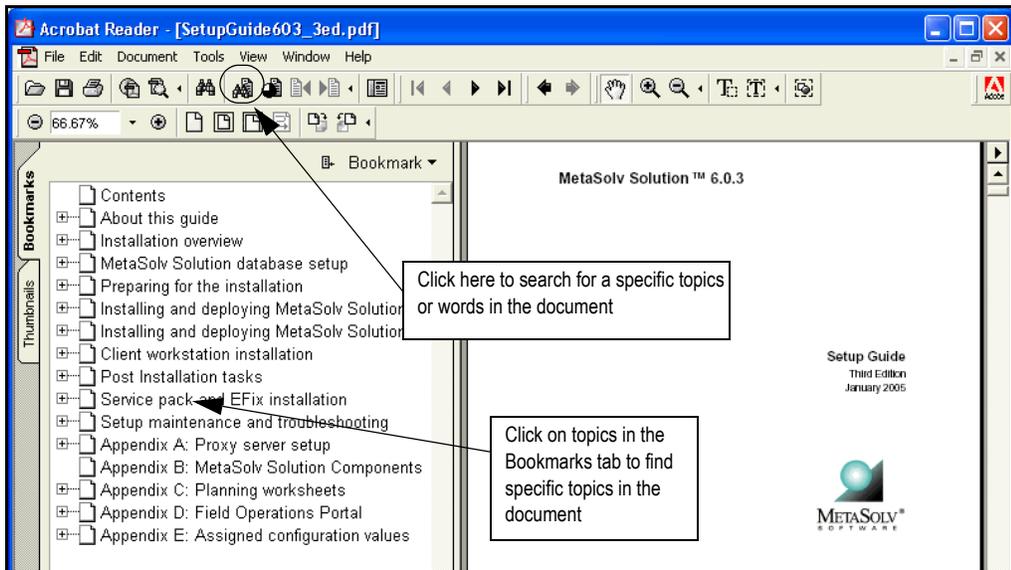
MetaSolv Solution books are delivered in Portable Document Format (PDF). You can view a book online using Adobe Acrobat Reader.

### To view a document

Locate the document on the Oracle E-Delivery or Oracle MetaLink Web site and do one of the following:

- ◆ Right-click the PDF file and select **Open** from the pop-up menu.
- ◆ Double-click the PDF file.

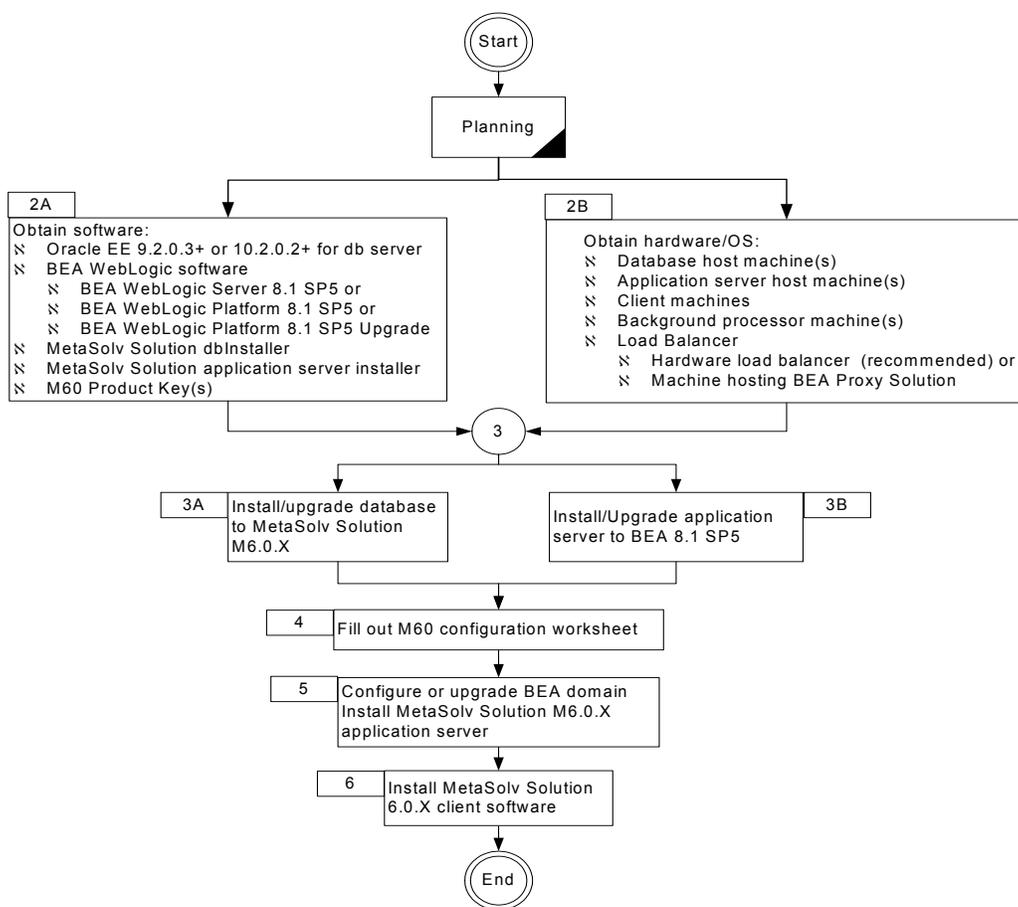
This action starts Acrobat Reader and opens the PDF document you indicated. The following figure shows how a document appears in Acrobat Reader.





# Installation overview

This chapter provides a high-level overview of the steps needed to perform a MetaSolv Solution 6.0.15 installation. The chapters that follow provide full information on each step. The following figure shows the high-level installation process.



**Figure 2: Overview of the MetaSolv Solution installation process**

Step 5 in the figure shows that the installation and deployment of the MetaSolv Solution 6.0.15 application server begins after the installation of BEA WebLogic Server on the host server machine. The Oracle client is not required for versions 6.0.5 or higher. Once the BEA

domain is configured, the MetaSolv Solution installation program identifies the configuration and sets the appropriate parameters for the installation. Values are pulled from BEA and Oracle to provide configuration information for MetaSolv Solution. This minimizes the amount of information you must research and enter into the installation program.

## If you are a new customer

MetaSolv Solution 6.0.2 (June 2004) was the GA release for the 6.0.x software stream. The current release is a service pack that requires the following installation tasks:

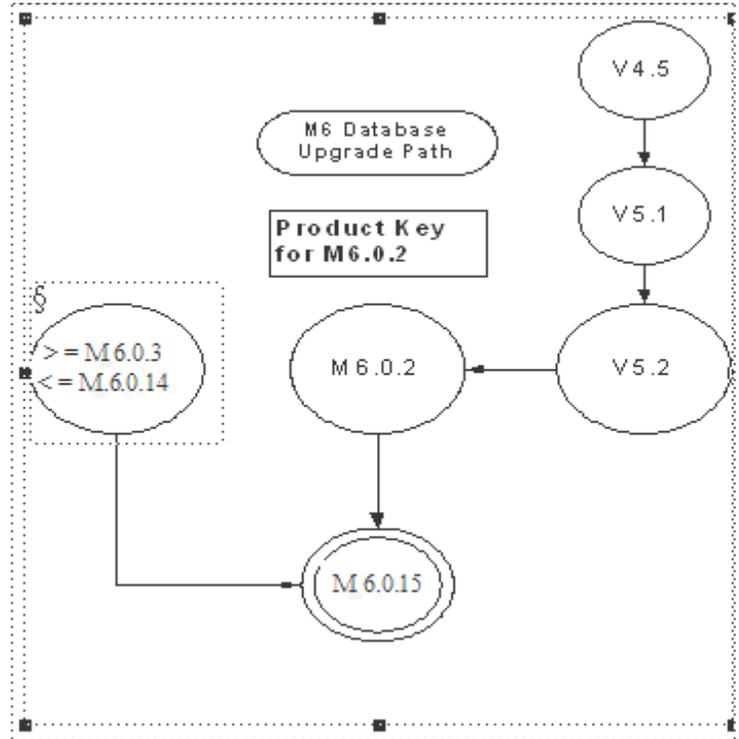
- ◆ **Database**—Install the 6.0.2 database and apply the latest service pack. See [Chapter 2, “Setting up the 6.0.2 database”](#) and [Chapter 5, “Upgrading MetaSolv Solution”](#) for complete information.
- ◆ **Application server**—Install the 6.0.15 service pack.
- ◆ **Client workstation**— See [Chapter 6, “Installing the client workstation”](#) for information on installing individual workstations.

## If you are an existing customer

The upgrade path for the MetaSolv Solution database differs from the path for the application server. This section explains the upgrade path for each component.

## Database upgrade path

The following figure shows the upgrade path for the MetaSolv Solution database if you are on a pre-6.0 version.



**Figure 3: MetaSolv Solution database upgrade path**

If your database is at the 4.x level, you must upgrade to the 5.1 version, then the 5.2 version, then to the 6.0.2 version. Once you have 6.0.2 installed, you must apply the 6.0.15 database service pack.

## Application server upgrade path

MetaSolv Solution 6.0.15 runs on BEA WebLogic 8.1 SP5. The following diagram describes the relationship between MetaSolv Solution releases and third-party application server releases.

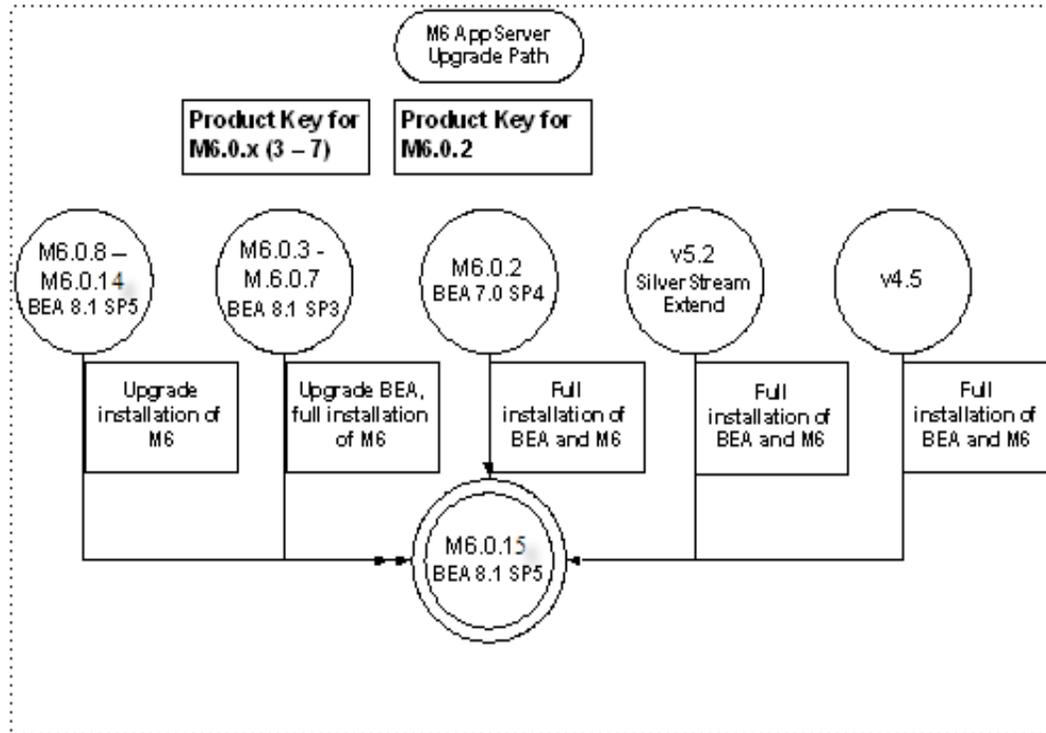


Figure 4: MetaSolv Solution application server releases

The following table describes the upgrade path from various releases to later target releases.

**Table 1: Application Server Upgrade Path**

Current Release	Path to v.5.x	Path to M6.0.2	Path to M6.0.3 - M6.0.7	Path to M6.0.8- M6.0.14	Path to M6.0.15
v5.x	E	F	F	F	F
M6.0.2	N/A	E	F	F	F
M6.0.3-M6.0.7	N/A	N/A	E	U/F	U/F
M6.0.8-M6.0.14	N/A	N/A	N/A	E	U
M6.0.15	N/A	N/A	N/A	N/A	E

**F: Full installation of BEA and M6** Download the appropriate BEA service pack for the target release from the Oracle E-Delivery Web site. Create a brand new BEA domain and choose the Full installation option in the MetaSolv application server installer.

**U/F: Upgrade BEA/Full M6 installation** Download the appropriate BEA service pack for the target release from the Oracle E-Delivery Web site. Upgrade the existing BEA domain and choose the Full installation option in the MetaSolv application server installer.

**U: Upgrade M6** Choose the Upgrade option in the MetaSolv application server installer to install a more recent M6 service pack.

**E: Patch installation** Choose the Upgrade option in the MetaSolv application server installer to install a patch for your current release.

**N/A: Not applicable** Not a valid upgrade path.

## Related software dependencies

If you are an existing customer on a pre-6.0 version installing MetaSolv Solution 6.0.15, uninstall the following applications if you currently have them installed:

- ◆ MetaSolv Solution application server software
- ◆ MetaSolv Solution client software
- ◆ Utilities or other separate MetaSolv Solution software options

ASR and LSR require the following actions:

- ◆ If you use ASR or LSR, you must reinstall them after the new version of MetaSolv Solution is installed.
- ◆ If you currently have open LSOG 4 or 5 orders, these will be *view only* in MetaSolv Solution 6.0.15. To avoid this problem, you can close any open orders or you can upgrade the orders to LSOG 6 before installing MetaSolv Solution.

Changes were made to both ASR and LSR to support the product key removal from M6.0.14. Because of this, only specific builds of ASR and LSR will work from M6.0.14 onwards. They are as follows:

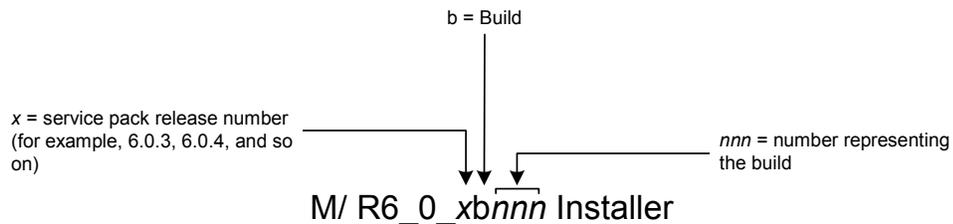
- ◆ ASR 33.1 b26 or higher
- ◆ ASR 34.0 b44 or higher
- ◆ ASR 35.0 b15 or higher
- ◆ ASR 36.0 b29 or higher
- ◆ LSR 6.11 b99 or higher
- ◆ LSR 9.3 b30 or higher
- ◆ LSR 10.0 b45 or higher

## Downloading the installation files

Before you begin the installation, navigate to the Oracle E-Delivery Web site and download the MetaSolv Solution files for the platform you are using.

### Identifying the installation files you need

This section explains which installation files you need to download from the Oracle E-Delivery Web site. Generic file names are used to identify the files in this section. The following file naming format is used on the Oracle E-Delivery Web site.



### Where to download the files

Download the application server installation files to the following location:

- ◆ Application server/client files—These files are included in the same installer. Download the appropriate platform (Windows, Sun Solaris, or HP) directly to the application server machine you intend to install on. The client files are downloaded and installed from the application server machine.

## Data migration

If you are moving to 6.0.15 from a pre-6.0 release, it might be necessary for you to perform a data migration. The Broadband Module available before 6.0 has been discontinued, and customers who use the Broadband Module must migrate data to use MetaSolv’s network templates, which replace the broadband functionality. Two tools are available to assist with the migration effort:

- ◆ Pre-Migration Analysis Tool (PMAT)—This tool can be run against your pre-6.0 database to determine the number of circuits that must be converted. This tool is located on the Oracle E-Delivery Web site.
- ◆ Next-Generation Migration Tool—This tool automates the process of migrating network elements, a required step for migrating circuits, and converting broadband circuits. This tool is part of MetaSolv Solution Utilities.

The *MetaSolv Solution 6.0 Migration Guide* can be found on the Oracle E-Delivery Web site.

## Basic installation steps

Each of the steps shown here for installing MetaSolv Solution contains additional tasks and information that you must know to proceed with the installation. The chapters in this book discuss each basic step.

### 1. Plan the installation by completing the following tasks:

- a. Plan for the hardware and software you will need to implement MetaSolv Solution.

See the *MetaSolv Solution Planning Guide* for information on minimum technical requirements.

- b. Complete the preinstallation checklist in this chapter.

The checklist contains planning tasks that should be done before you begin the installation process.

### 2. Obtain the appropriate hardware and software.

### 3. Prepare the database and application server environments by completing the following tasks:

- a. Apply the service pack to the database.

To complete this step, you must run the appropriate MetaSolv Solution database scripts. If you do not currently have the 6.0.2 database installed, see [Chapter 2, “Setting up the 6.0.2 database”](#) for information on getting your database to the 6.0.2 release level so that you can apply the current service pack.

- b. Install third-party software on machines that will host the application server.

To complete this step, you must perform one of the following steps:

- Install BEA WebLogic Platform 8.1 SP5 on each machine hosting MetaSolv Solution. You can install your system in different configurations, but each machine must have BEA WebLogic software installed.
- Install BEA WebLogic Platform 8.1 SP5 Upgrade on each machine hosting MetaSolv Solution if you choose upgrade path from M603/M603+ to M6011.

### 4. Complete the worksheets that define properties for the installation machines.

Worksheets are included for each installation configuration type that MetaSolv Solution provides. The worksheets let you identify, in advance, information that is needed during the installation.

**5. Install and deploy MetaSolv Solution 6.0.15 on the BEA application servers by completing the following tasks:**

- a. Create the WebLogic domain and define the administration server and its clustered servers, or the single server.

When you create the domain and define the server(s) that belong to the domain, the BEA software creates the necessary files on the servers you indicate.

- b. Install and deploy MetaSolv Solution 6.0.15.

To complete this step, you must:

- ◆ Run the installer to copy MetaSolv Solution files to every machine that will host a MetaSolv Solution application server(s).

In the situation where the administration server is on a separate machine, it is not necessary to load MetaSolv Solution on that machine.

- ◆ Deploy MetaSolv Solution from the single server or administration server to the managed servers.

Note: If you are installing MetaSolv Solution with the XML API option, you must complete additional configuration steps.

**6. Install on the client workstation.**

You must perform an initial client installation to perform post-installation tasks that require the use of the client.

To complete this step, you must:

- a. Install the client on a workstation.

You can use a program called the Zero Admin Client (ZAC) to install or you can install manually. Instructions are provided for both methods.

- b. Install utilities or other separate MetaSolv Solution components.

Most software components can be installed using ZAC or a manual method.

**7. Complete post installation tasks.**

Tasks include:

- ◆ Loading graphics to the database from a utility program.
- ◆ Running a client utility to determine the health of the database.
- ◆ Customizing the application with your company logo (optional).
- ◆ Setting up user authentication.

## Preinstallation checklist

The following list indicates the information you need to research and understand before you start the installation process for MetaSolv Solution and the third-party software it requires. As you identify names, IP addresses, and so on, keep a written record of the information. You will need it during the system installation.

- Consult the *MetaSolv Solution Planning Guide* for the proper equipment and software for the application server, database server, and client machines.
- Back up any customized reports and stored procedure exits. See the chapter entitled "Customizing the application" in the *MetaSolv Solution Administration Guide* for details.
- Identify the following:
  - Application server machines, names, and IP addresses.
  - Database server machine, name, IP address, database SID name, and database listening port (default = 1521).See "[Appendix C: Planning worksheets](#)" for help identifying and completing this information for the installation type you select.
- Do a DNS and reverse DNS lookup for each application server machine from a user workstation.
  - DNS lookup: From a user workstation, use the **nslookup** command for the application server machine DNS name.  
For example: **nslookup serversun1**
  - Reverse DNS lookup: From a user workstation, use the **nslookup** command for the application server machine IP address.  
For example: **nslookup 192.168.1.225**

If the name or IP address is not found, contact your system administrator.

- Test network connectivity between the following machines:
  - Application server machine to the database server machine  
Log on to the application server machine and ping the database server machine using either the DNS name or the IP address. Do this for each application server machine.
  - Database server machine to the application server machine  
Log on to the database server machine and ping the application server machine using either the DNS name or the IP address. Do this for each application server machine.

- ❑ If your firewall does network address translation (NAT) and MetaSolv Solution end users reside outside the firewall, define an external DNS name for the BEA WebLogic Server. Contact your network/transport and system administrator groups to verify and define the external DNS, if necessary.

#### To add an external DNS name

1. Log on to the BEA Administration Server Console and select the following links in the left pane: *Your\_domain\_name*>Servers>*Your\_server\_name*>Configuration.
2. On the left pane General tab, click the **Advanced** link.

The following pane appears.

### Advanced Options

This pane allows you to set additional configuration options for this server.

  **WebLogic Plug-In Enabled**  
Specifies whether this server uses the proprietary WL-Proxy-Client-IP header. (This is needed only when proxies are configured.)

**Startup Mode:** RUNNING ▼  
The state in which this server should be started. If you select STANDBY, you must also enable the domain-wide mode under the WebLogic Server domain's Configuration > General tab.

 **Prepend to classpath:**   
The options to prepend to the Java compiler classpath when compiling Java code.

 **Append to classpath:**   
The options to append to the Java compiler classpath when compiling Java code.

 **Extra RMI Compiler Options:**   
The options passed to the RMIC compiler.

 **Extra EJB Compiler Options:**   
The options passed to the EJB compiler.

 **External Listen Address:**

The external IP address or DNS name for this server. This address will be sent with HTTP session cookies and lists to HTTP proxies. It will also be used by external application clients to enable the propagation of RMI traffic across address translating (NAT) firewalls.

Type the external listen address here



3. Type the address into the **External Listen Address** field and click **Accept**.

- ❑ If you are using an external load balancer, the following conditions must be met:
  - *Server affinity*: Sticky Session must be enabled.
  - *BEA requirements for hardware load balancer*: [http://edocs.bea.com/wls/docs81/cluster/load\\_balancing.html#1026240](http://edocs.bea.com/wls/docs81/cluster/load_balancing.html#1026240)
- ❑ Choose the installation configuration you plan to use for the application server(s):
  - Single server  
You can have multiple single server instances.
  - Clustered servers  
This configuration provides failover benefits.
    - ❑ Download the MetaSolv Solution 6.0.15 files from the Oracle E-Delivery Web site.
- ❑ If cluster is configured, create a DNS entry including all clustered managed servers' listening IP addresses in the same cluster. This DNS entry will be used as "Cluster Address" for the cluster during domain configuration in production environment.

## Changes to the Gateway.ini file for LSR and ASR

The following versions of LSR or ASR require manual changes to the Gateway.ini file if you are running MetaSolv Solution 6.0.5 or a higher version:

- ◆ ASR30 GA or higher
- ◆ ASR31 GA or higher
- ◆ LSR6.8 or higher

The Session section of the 6.0.5 Gateway.ini file is shown in the following text.

```
[Session]
User=app_api
Password=mss6api
```

Open the Gateway.ini file on the application server and insert the lines shown in bolded text with the appropriate values for your database and TNSNames location.

```
[Session]
DatabaseName=<your_database_name>
User=app_api
Password=mss6api
JDBCDriver=oracle
OracleThinTNSNamesLocation=<your_TNSNames_location>
```

Example:

```
[Session]
DatabaseName=mslvappserver
User=app_api
Password=mss6api
```

```
JDBCDriver=oracle  
OracleThinTNSNamesLocation=C:\Oracle\Ora9i\network\admin\tnsnames.ora
```

**Note:** Make these changes before deploying ASR/LSR or starting the application server.

## **If you are installing on a UNIX platform**

The following list contains special tasks required for graphics on a UNIX machine:

- ◆ To execute the installation using a graphical user interface:
  - ◆ On a workstation, start Hummingbird Exceed or another X-Windows emulator.
  - ◆ On the UNIX machine, set the DISPLAY environment variable to send the graphical display to the workstation.  
`$DISPLAY=mymachinename:0.0;export DISPLAY`
- ◆ Enable xhost for application servers that run on a UNIX machine.

To enable the lookup of graphic settings on the application server, you must enable xhost on the machine. Execute "xhost +" on the application server machine while logged on as "root".



## Setting up the 6.0.2 database

---

This guide assumes that you already have Oracle 9.2.0.3 or higher, or Oracle 10.2.0.2 or higher, installed on the database server. Consult Oracle documentation for questions on how to install Oracle.

### What's in this chapter

This chapter explains how to install a new database or bring your existing database to the 6.0.2 GA level. Specifically, the chapter covers how to:

- ◆ Extract the database scripts.
- ◆ Create tablespaces (new customers only).
- ◆ Run the upgrade or installation scripts to make specific changes to bring the database structure to the MetaSolv Solution 6.0.2 level.
- ◆ Drop the app\_data tablespace (upgrading customers only).

Some sections apply to new customers who have never installed a MetaSolv Solution database before, and some apply to existing customers who have previously installed the database but need to bring the database up to the current level.

### Getting your database to the 6.0.2 GA level

The MetaSolv Solution 6.0.2 files provide customers coming from the 5.2.x release stream with everything needed to get the database to the MetaSolv Solution 6.0.2 GA level.

## Database space requirements

The database installation requires approximately 2.4 GB of free space. This default size is based on a production database supporting 100,000 circuits. The specific space requirements are shown in the following table.

**Note:** For Oracle 10.2.0.2 or higher, SYSAUX tablespace needs to be created with a minimum space of 200m. Therefore, the total space requirement for Oracle 10.2.0.2 or higher would be 2.6 GB.

**Table 2: Space requirements for installation files**

File Name	Size
DATA	1325 MB
INDEXES	700 MB
SYSTEM	200 MB
TEMP	100 MB
RBS	60 MB
<b>Total Size</b>	<b>2.4 GB</b>

## Prerequisites

- ◆ Make sure you have Oracle 9.2.0.3 or higher, or Oracle 10.2.0.2 or higher, installed on the database server machine. Work with Oracle technical support to determine the recommended patch level for your intended platform/version combination.
- ◆ Make sure the following initialization parameters are set for databases running Oracle 9.2.0.3 or higher, or Oracle 10.2.0.2 or higher. Note that the OPTIMIZER\_FEATURES\_ENABLE parameter is set to 9.2.0 for both Oracle 9.2.0 and for Oracle 10.2.0.2.

```
_b_tree_bitmap_plans = false
O7_DICTIONARY_ACCESSIBILITY=TRUE
OPTIMIZER_FEATURES_ENABLE=9.2.0
optimizer_mode=CHOOSE
```

This parameter must be set or the install scripts will not complete

- ◆ Check the Oracle MetaLink Web site (<https://metalink.oracle.com>) Knowledge tab for technical bulletins that pertain to the 6.0.2 release.

## Extracting the MetaSolv Solution database scripts

The MetaSolv Solution database scripts reside in the zip file `MSS.R6_0_2.b79_DBInstall.Win32.zip`. You can extract the contents of this zip file to the directory of your choice. This zip file contains database scripts used to set up a new M6.0.2 database.

### To extract the MetaSolv Solution database scripts to the database server machine

1. Locate and select the file.
2. Right-click on the file and select **Open With>WinZip Executable**.
3. From the main menu bar, select **Actions>Select All**.
4. From the main menu bar, select **Actions>Extract**, or simply click the **Extract** icon.
5. Browse to the directory to which you want to extract the database scripts. MetaSolv recommends extracting the scripts to a directory on your database server.

## Creating tablespaces (new customers only)

You must create tablespaces if you are a new customer setting up your database for the first time.

The `a_tblspc.sql` file located in the directory where you installed the database scripts creates tablespaces. You must **modify** the file and run it to create tablespaces. Make sure you have write privileges for the file and modify the following information:

- ◆ Path to the datafile
- ◆ Tablespace size



All tablespace sizes must be equal to or greater than the space requirements listed in [Table 2](#) on page 16.

The following UNIX example shows the line you must modify.

```
REM * Create a table space for DATA.
create tablespace DATA datafile
  '/u01/oradata/SID/xxxxdata.dbf' size 1325M
  default storage
  (
    initial 327680
    next 81920
    minextents 1
    maxextents 120
    pctincrease 0
  )
  online;
```

### To run a `_tblspc.sql`

1. Log on to the database server as a user with database administrator privileges and start SQL\*Plus.

User ID: *system*

Password: *manager*

Host String: *Database name of the Oracle instance*

2. Run `a_tblspc.sql`.

## Running the installation scripts (new customers only)

Each script writes an audit log to a subdirectory called Audits. The Audits subdirectory is located in the same directory as the database installation scripts.

### Prerequisites

Before running the installation scripts:

- ◆ The script file `_instmss.sql` is for new installations only. You must have database administrator privileges to complete this procedure.

#### To begin the installation

1. In SQL\*Plus, run `_instmss.sql` and complete the following information:
  - a. Type the operating system for the SQL\*Plus client (the machine you are running the scripts from) and press ENTER.  
This value is either UNIX or Windows. Windows is the default.
  - b. Type the full directory path for the SQL script files and press ENTER.  
The path must include the trailing virgule (/ for UNIX or \ for Windows), and you must be able to write to the directory. If you enter an invalid path or a protected directory, SQL\*Plus exits.
  - c. Type the database name and press ENTER.
  - d. Type each of the following passwords and press ENTER after each one:  
**ASAP, EBOND, EDI, JOB, and SYS**

If a password fails, SQL\*Plus exits. If this happens, review *a\_getpas.log* for errors.

This step initiates the installation process. When the installation is complete, you receive an “Install Complete” message.

If this message does not appear, the installation process was not successful and must be restarted beginning with Step 1. Prior to restarting, back up the Audits directory. If you restart the installation process, ORA- messages appear for every item that failed.

2. Search the files in the Audits directory for **ORA-**.
3. When the installation is complete, run the **mdl\_cur.sql** script.

This process can take up to 30 minutes to complete. The *mdl\_cur.sql* spools a report in the Audits directory called *mdl\_cur.txt*. The report verifies the database structure by identifying missing tables or columns, extra tables or columns, and differences with column data types as compared to the database. If no ORA- messages are found and the *mdl\_cur.txt* file is clean, the installation completed successfully.

4. Run the **mdl\_cmp.sql** script.

This script spools a report in the Audits subdirectory called *mdl\_cmp.txt*. The report indicates extra or missing indexes, primary keys, foreign keys, and sequences. This script gives the option to fix problems or only report the differences. When you run the script, you can compare the differences for individual sections or for all sections. The default is to compare all sections.

For any missing information in *mdl\_cmp.txt*, such as like missing objects, run the *mdl\_cmp.sql* file again in fix mode. Then run it again in report mode to verify that any problems were fixed.

5. Apply the MetaSolv Solution 6.0.3 service pack or a later version.

You can download the service pack and its release notes from the Oracle E-Delivery Web site. Complete instructions for installing the service pack are contained in Chapter 8 of this guide.

## Running the upgrade scripts (existing customers only)

This section explains how to upgrade an existing MetaSolv Solution 5.2 database to a MetaSolv Solution 6.0.2 database. If your current database is earlier than the 5.2 version, you must upgrade to 5.2 before you can upgrade to 6.0.2. See the *Upgrade Process Matrix* for MetaSolv Solution 5.2. You can find this document on the Oracle E-Delivery Web site under the 5.2 release documents.

### Prerequisites

Before upgrading the database, complete the following tasks:

- ◆ Back up the existing MetaSolv Solution database.
- ◆ Empty the job queue for the Background Processor.  
Use Job Queue Manager to verify that the job queue is empty. MetaSolv recommends that no other jobs run in the background during the upgrade.
- ◆ Confirm that the user IDs ASAP, EBOND, EDI, JOB, and SYS exist on the instance, and that ASAP has DBA-level authority.
- ◆ Perform a test run of the upgrade process on a copy of the production database.
- ◆ Update your MetaSolv database statistics to ensure the upgrade conversions perform as tested. Refer to your Oracle documentation for more information on the Analyze command.
- ◆ Notify Global Customer Care and determine whether you need to install any other patches before upgrading.

### Running the upgrade scripts

#### To upgrade the database

1. Log on to the database server as ASAP.  
Password: *ASAP's password*  
Host String: *Name of your 5.2 database*
2. Run the SQL scripts in the **precheck** folder. (optional)  
These scripts generate information on the data to be converted during the upgrade.
3. Run the **mdl\_pri.sql** script.
  - a. Type the operating system (either UNIX or Windows) for the SQL\*Plus client.
  - b. Type the full directory path for the SQL script files followed by a trailing virgule (/ or \).

The path must include the correct virgule to generate audit files:

/ for UNIX

\ for Windows

You must also be able to write to the directory. SQL\*Plus exits if you enter an invalid path. The path length is limited by SQL\*Plus and the operating system.

This script spools the *mdl\_pri.txt* report to the Audits subdirectory, located in the SQL upgrade directory. The *mdl\_pri.txt* report lists differences between your v5.2 database and the v5.2 data model. This report verifies the database structure by identifying missing tables or columns, extra tables or columns, and differences with column data types. Some differences listed will be commented if added in a MetaSolv Solution service pack. If you have any differences listed that are not commented, call Global Customer Care before you proceed.



Production fix SQL for v5.2 has been rolled forward in the *ddl\_pre.sql* file. If you are interested in commenting this information out, contact Global Customer Care to help you through this process.

4. Run the **\_upgmss.sql** script.
  - a. Type the operating system (either UNIX or Windows) for the SQL\*Plus client.
  - b. Type the full directory path for the SQL script files followed by a trailing virgule.

The path must include the correct virgule to generate audit files:

/ for UNIX

\ for Windows

You must also be able to write to the directory. SQL\*Plus exits if you enter an invalid path. The path length is limited by SQL\*Plus and the operating system.

- c. If this is your first time to run the upgrade script, select upgrade mode 1 and press ENTER.



If your upgrade fails before you reach the message MAIN UPGRADE IS ABOUT TO BEGIN, fix the problem and rerun the upgrade in mode 1. If your upgrade fails after the main upgrade has started, fix the problem and rerun the upgrade in mode 3.

Upgrade modes:

- **Setup and run immediately**—Upgrade mode 1 is the default setting and sets up the required framework of upgrade related tables, procedures, and data. Any framework-related objects from a previous upgrade, including the audit tables, are dropped and re-created. The upgrade continues immediately after setup.
- **Setup upgrade framework only**—Upgrade mode 2 only sets up required upgrade framework objects; the upgrade does not continue after setup. This mode allows you to make custom changes to the upgrade process. For example, you might have a weekly scheduled job that performs the Oracle Analyze Statistics command. If

so, you can set the override option for the *Omega-Analyze Statistics* process that does the same thing.

- ♦ **Already setup, just run it**—Use upgrade mode 3 after you run the first or second upgrade mode, and when any of the following apply:
  - ♦ You are ready to continue with the upgrade.
  - ♦ The upgrade exited SQL\*Plus during part of the DDL upgrade.
  - ♦ There were conversion errors.

After correcting any problems, use upgrade mode 3 to restart the upgrade without losing any override options.

- d. Type the database name and press ENTER.

This step does not occur in upgrade mode 3.

- e. Type the passwords for ASAP, EBOND, JOB, EDI, and SYS.

All passwords are verified; if a password fails, SQL\*Plus exits.

This step does not occur in upgrade mode 3.

- f. Choose one of the following storage options:

- ♦ If you want the tables that are dropped and recreated to be recreated with their current storage parameters, set the storage option to 2. The upgrade takes into account the tablespace in which the tables are currently stored.
- ♦ If you choose not to use the tables' current storage parameters, select storage option 1. The tables are recreated using the default values in the *ddlasap.sql* file.

The screen scrolls data as the upgrade script sets up the required framework of upgrade related tables, procedures, and data. The message "MAIN UPGRADE IS ABOUT TO BEGIN" displays in SQL\*Plus, indicating the main upgrade process is in progress.



If for some reason, you must restart the upgrade after you reach this point, use upgrade mode 3.

The *\_upgmss.sql* script is the master script for the upgrade process and calls the main process group scripts. Before the upgrade process begins, an on-screen report appears, indicating the database is in restricted mode access and listing any users already connected. Only the DBA should be connected during the upgrade process. If other users are connected, you can start another SQL\*Plus session to remove the user connections and return to this session to continue with the upgrade process.

If SQL\*Plus exits, search the files in the Audits subdirectory for the string "ORA-". If you find any ORA messages, contact MetaSolv Global Customer Care and e-mail the *ddlerrs.txt* log in the Audits subdirectory.

If the upgrade is successful, the following message appears:

```
Upgrade Process Finished.  
  
Please review the \audits\upgchk.txt report.  
The report will show processes that passed and/or failed.  
The \audits\*.log files should also be searched for 'ora-'  
messages which will require further review by the DBA.  
  
Don't forget to run the mdl_cur.sql script to produce an mdl_cur.txt  
report file to verify table structures.
```

If the upgrade is not successful, the following message appears:

```
***** Upgrade PROBLEMS *****  
  
Please review the \audits\upgchk.txt report.  
The report will show processes that passed and/or failed.  
The \audits\*.log files should also be searched for 'ora-'  
messages which will require further review by the DBA.  
  
After addressing any issues, restart the upgrade  
and use OPTION MODE 3.
```

5. Review the *upgchk.txt* log in your Audits subdirectory to determine any processes that failed, then review the specific audit report to determine what caused the process to fail.

Perform this task even if the upgrade was successful. The *upgchk.txt* log contains several views that provide information on the upgrade:

- ◆ **Process Hierarchy**—Lists the upgrade hierarchy table, which enforces parent/child relationships. The upgrade framework uses this table when determining if parent or child processes performed successfully. The **process\_nbr** field contains the unique identifier *ID* for the process that is referenced within the audit tables.
- ◆ **Processes USER Marked as "OVERRIDE"**—Lists processes that were overridden. If *upg\_ovex.sql* is used to set the override option for any processes, the audits indicate that these processes passed even though they did not execute.
- ◆ **Grouping Type Processes That Passed**—Lists the major process groups within the upgrade that passed. If a group of processes has a controlling parent process, that parent process is listed along with duration statistics.

If the filename *\_upgmss.sql* does not appear in this list, the upgrade did not complete successfully.

- ◆ **Non-Grouping Type Processes That Passed**—Lists the processes within the upgrade that passed. The filename of each successful process is listed, along with duration statistics.
- ◆ **Processes That Did Not Complete**—If the *\_upgmss.sql* filename was not present in the list of grouping processes that passed, this view lists all processes that ran and failed, or that did not run. Typically, when a process fails, there are other processes that depend on its success and which do not run. Because of this, this view can list multiple processes that did not run because an earlier process failed.

If this view contains any processes, look at the *Suspect Processes That Did Not Complete* view.

- ◆ **Suspect Processes That Did Not Complete and May Have Cascaded the Other Processes to Fail**—Lists likely suspect processes. Use this view in conjunction with the *Processes That Did Not Complete* view to locate the processes that failed. This view is only a starting point and might not be completely accurate because of the complexity of the process dependencies in the upgrade framework.

If this view contains any processes, contact MetaSolv Global Customer Care and e-mail the *upgchk.txt* log and all audits in the *Suspect Processes that Did Not Complete* view.

- ◆ **Before/After Record Counts for Processes**—Lists any tables along with record counts affected during conversions. The view groups the information by process name, listing each table affected by that process, along with the before and after record counts.

6. Search the files in the Audits subdirectory for ORA messages using the string "ORA-".

The Audits subdirectory is located in the SQL upgrade directory. The following ORA messages are noncritical because they do not cause upgrade failure.

- ◆ **Name is already used by an existing object**—This occurs when you try to assign a name that has already been assigned to a new object. These messages are written to *master\_p.log*.
- ◆ **Cannot drop constraint - nonexistent constraint**—This occurs when you try to drop a constraint that does not exist or has already been dropped. These messages are written to *ddlcmp.log*.
- ◆ **Table or view does not exist**—This occurs when you try to drop a table or view that does not exist or has already been dropped. This message can be important in other contexts and can appear in any log file in the Audits subdirectory.
- ◆ **Such a referential constraint already exists in the table**—This occurs when you try to add a foreign key constraint that already exists. The message can appear in any log file in the Audits subdirectory.
- ◆ **Integrity constraint violated - child record found**—This occurs when base data that is in use is not deleted. These messages show up in the *static\_r.log*.
- ◆ **Success with compilation error**—This occurs when there is an error compiling an object. These messages are written to *o\_recmpl.log*.

If you find ORA messages that are not on the list, contact MetaSolv Global Customer Care.

7. Run the **mdl\_cur.sql** script.

The *mdl\_cur.sql* script pools the *mdl\_cur.txt* report to the Audits subdirectory. This view verifies the database structure by identifying missing tables or columns, extra tables or columns, and differences with column datatypes as compared to the 6.0.2 data model.

8. Run the **mdl\_cmp.sql** script.

This script spools a report that indicates extra or missing indexes, primary keys, foreign keys, and sequences. This script gives the option to fix problems or only report the differences. When you run the script, you can compare the differences for individual sections or for all sections. The default is to compare all sections. For any missing information in *mdl\_cmp.txt*, such as missing objects, run the *mdl\_cmp.sql* script again in fix mode. Then run it again in report mode to verify that any problems were fixed.

9. Run the SQL scripts in the **postcheck** folder. (optional)

These scripts generate information on the data that was converted during the upgrade.

10. Exit SQL\*Plus.

11. Apply the MetaSolv Solution 6.0.3 service pack or a later version.

You can download the service pack and its release notes from the Oracle E-Delivery Web site. Complete instructions for installing the service pack are contained in Chapter 8 of this guide.

You can review the following files for additional errors:

- ◆ *o\_cfg rpt.txt*—Consists of objects currently being stored with storage settings below minimum standards or indicates if the index is not on the Indexes tablespace.  
  
This report is generated in the Audits subdirectory by the *o\_config.sql* script and contains a list of tables and indexes having more than 100 extents allocated to them. These items are good candidates to be rebuilt (if indexes).
- ◆ *o\_cfggen.sql*—Consists of a series of SQL statements that contain a list of stored objects with storage settings below minimum standards, or indicates if the index is not on the indexes tablespace. SQL code is used to correct the storage settings.
- ◆ *o\_glocon.log*—Consists of a list of records in the *foreign key exceptions* section, where at least one constraint could not be enabled. All data issues must be corrected before you can enable the constraint. Run the *mdl\_excp.sql* script to view a list of records containing constraint problems. Also, run the *mdl\_cmp.sql* script to enable the foreign keys. If there are no records listed in this report, all constraints were enabled.



If you do not find any ORA-messages in any of the audit files, the upgrade completed successfully.

## Dropping the appdata tablespace

If you are moving from a prior version of MetaSolv Solution (pre-6.0) to MetaSolv Solution 6.0.2, you might have the appdata tablespace present in your database. If so, you must delete it. It was present in MetaSolv Solution 5.2 and was deleted in the 6.0.2 version.

### To drop the tablespace

1. Start SQL\*Plus.
2. Type the following command at the prompt and press ENTER.  
**drop tablespace appdata including contents;**
3. Delete the data file from the operating system.

## XML API database considerations

If you are installing the XML API option with MetaSolv Solution, you have additional steps that you must complete for the database. See [“Running reports”](#) on page 199 for more information.

## Post database installation tasks

You must complete the following tasks to ensure that the database operates properly:

- ◆ Load a set of graphics to the database
- ◆ Check the database using a MetaSolv Solution utility called DB Health.

You cannot complete these tasks until the appropriate files are installed on the client workstation. See [Chapter 7, “Post installation tasks”](#) for information on these tasks.

## Preparing for the application server installation

This chapter explains the tasks that must be completed before you start the installation of the MetaSolv Solution application server(s).

### What's in this chapter

This chapter explains:

- ◆ Third-party software information
- ◆ How the MetaSolv Solution installation program works
- ◆ The MetaSolv Solution directory structure
- ◆ Using worksheets to plan your installation
- ◆ Prerequisites for installing MetaSolv Solution

### About third-party software installation

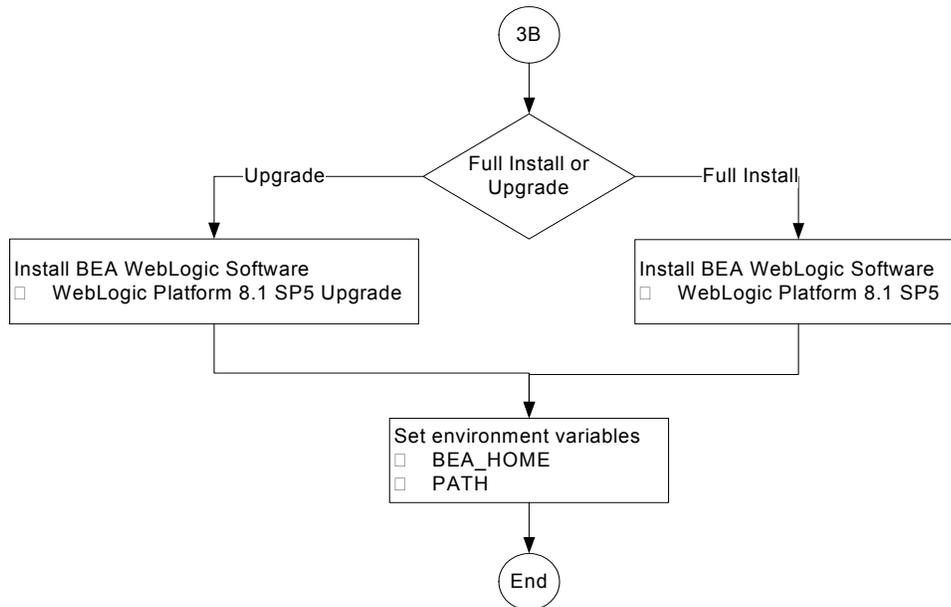
MetaSolv Solution requires Oracle database software and BEA WebLogic application server software as third-party software applications. This document does not explain how to install the software for either of these products, but it does provide basic information on how to set up and configure both products for use with MetaSolv Solution. The previous chapter described how to install or upgrade your Oracle database. The following table shows where to find information for configuring BEA WebLogic for MetaSolv Solution.

**Table 3: Third-party software information**

If you are setting up:	Find information on how to do it here:
An application server for use with MetaSolv Solution and XMLAPIs	In this guide: <a href="#">Chapter 4, “Installing and deploying MetaSolv Solution with the XML API option”</a>

## Third-party software installation on a MetaSolv Solution host machine

The following figure shows the steps involved in installing Oracle and BEA WebLogic software on a machine that will host MetaSolv Solution. The figure describes Step 3b in [Figure 2](#) on page 1.



**Figure 5: Installing third-party software on an application server machine**

## About the BEA WebLogic installation

This document does not explain how to install BEA WebLogic software, but it does provide basic information on how to set up and configure a WebLogic domain for MetaSolv Solution.

Please see BEA supported configurations before you purchase hardware and OS: [http://edocs.bea.com/platform/suppconfigs/configs81/81\\_over/overview.html](http://edocs.bea.com/platform/suppconfigs/configs81/81_over/overview.html)

## Where to find BEA documentation

You can find BEA documentation in the following locations:

- ◆ If you purchased BEA software as part of MetaSolv Solution, you can find the documentation on the Oracle E-Delivery Web site.
- ◆ If you purchased BEA software separately from MetaSolv Solution, you can find installation information on the Web at [bea.com](http://bea.com).

## Installing the correct BEA WebLogic product

You can install MetaSolv Solution with or without XML APIs. Both installations are performed by the MetaSolv Solution installation program, and each requires a different BEA WebLogic product and a different configuration. The following list describes the requirements for each installation type:

- ◆ MetaSolv Solution with the XML API option—This installation requires BEA WebLogic Platform 8.1 SP5. See [Chapter 4, “Installing and deploying MetaSolv Solution with the XML API option”](#) for more information on this installation.

## Installation notes

- ◆ If you are installing on a UNIX platform, you can run an X-Windows emulator like Hummingbird Exceed. The installer defaults to console mode if no X-Windows connection is made.
- ◆ Install BEA WebLogic Server or WebLogic Platform on every machine that will be either the WebLogic administration server, a clustered server, or a single server hosting the MetaSolv Solution application.

## Setting the BEA\_HOME environment variable

Once you have installed WebLogic Server or WebLogic Platform on a machine, add the environment variable for BEA\_HOME that points to the BEA installation directory.

For example: BEA\_HOME=/METASOLV\_HOME/boa (UNIX)

BEA\_HOME=c:\METASOLV\_HOME\boa (Windows)

Setting the environment variables BEA\_HOME and PATH for Windows and UNIX before the installation and configuration of MetaSolv Solution is optional. However, it is a good practice to follow and MetaSolv recommends that you set these variables before you start the installation process.

## If you are using the IBM AIX operating system

MetaSolv Solution 6.0.15 is certified to run on AIX 5.2 and 5.3. BEA includes Java SDK 1.4.2 for Windows, HP, and Sun operating systems. Java SDK 1.4.2 for AIX is not provided by BEA. If you have an AIX operating system, you must download the AIX SDK from the IBM Web site and install it in the following location:

/usr/java14

For information on the AIX JDK, see the following Web site:

<http://www.ibm.com/us/>

On the IBM home page, click the **Developers** link under the **Resources** for section, and on the page that appears, expand the **Java Technology** link in the left pane and click **Downloads & products**.



If you are using the IBM AIX operating system, there is a known JAXP incompatibility issue between the IBM SDK and BEA WebLogic. In the MetaSolv Solution application, this issue presents itself as an error that appears where the left pane navigation bar is expected. The error states "Error 500 - Internal Server Error". The solution requires the addition of missing configuration parameters to overcome the JAXP incompatibility between IBM SDK 1.4.2, which is JAXP 1.2 compliant, and BEA WebLogic Server which is JAXP 1.1 compliant. Details regarding these configuration parameters can be found on BEA's Web site at: [http://e-docs.bea.com/platform/supponfigs/configs81/aix53\\_powerpc/81sp5.html](http://e-docs.bea.com/platform/supponfigs/configs81/aix53_powerpc/81sp5.html).

## About jBroker

Starting with M6.0.3, jBroker is installed automatically during the MetaSolv Solution installation. Do **not** install jBroker manually.

## How the installation program works

You must download the installation program from the Oracle E-Delivery Web site, then copy or FTP the installation program into a temporary directory on each machine on which you intend to install MetaSolv Solution.

Three options are available in the installation program:

- ◆ **Full installation**—Select this option for new installations.
- ◆ **Upgrade installation**—Select this option for service packs and emergency fixes.
- ◆ **Deploy application**—Select this option to deploy the MetaSolv Solution application to WebLogic Server instances and/or clusters. In the case of clustered servers, you must run the installation program on the administration server machine to deploy to the cluster.

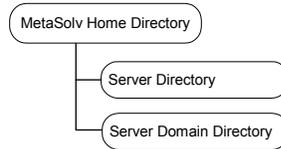
The installation program is delivered in a jar file. You only have to run the installation program on each physical machine once per BEA domain, regardless of the number of WebLogic server instances running on the machine. The following actions are automated by the installation program:

- ◆ **Parameter configuration**—Default parameters are entered for logging, threads, JDBC pool creation and sizing, reload, JMS/Bridge, memory GC, and SSL.
- ◆ **Deployment**—You can deploy to both clustered and nonclustered configurations from the installation program.

The program validates the database connection and creates custom scripts for starting jBroker ORB and WebLogic Server.

## Directory structure

MetaSolv Solution requires each server directory and its WebLogic domain directory to be placed in the METASOLV\_HOME directory. This directory is a location on the server under which all MetaSolv Solution software versions will be installed. The following figure shows the structure.



The following table shows an example of a typical MetaSolv Solution directory structure.

/oracle	Oracle home directory			
/opt2/xmlapi	MetaSolv Solution home directory			
	bea	BEA_HOME directory (BEA_HOME=/opt2/xmlapi/bea) Note: Placing the BEA directory here is optional but recommended.		
	mslv01	Server home directory		
		jbrokerORB	jBROKER installed directory (JBROKER_HOME=/opt2/xmlapi/mslv01/ jbrokerORB40/ bin/solaris)	
		appserver	Directory for application directories and files	
			bin	logviewer.sh
			logs	logs for: app, XML files, and mslv01.mss.log
			cab	ZAC files for the workstation client
			classes	Jar files
			config	Directory for *.ini, zac_config.xml, and loggingconfig.xml
			deploy	cluster-nur.ear and nur.ear
			gateway	Gateway.ini
			help	Help index files
			ior	CORBA ior files for API servers
	portal	Portlet files for desktop		
	m6domain	BEA domain directory for server mslv01		
	*images	Contains custom company logo image		

\* For 6.0.5 and higher, the *images* directory location is: /opt2/METASOLV\_HOME/DOMAIN/logo/images.

In the example shown in the table, the following structure exists:

- ◆ MetaSolv home directory—/opt2/xmlapi.
- ◆ Server directory—mslv01. The directory is located in /opt2/xmlapi/.
- ◆ Server domain directory—m6domain. The directory is located in /opt2/xmlapi/.

## Using worksheets to plan your installation

Before you begin to install MetaSolv Solution, it is prudent to plan the installation on paper. This is important if you have a number of machines on which to install. In this case, the assignment of names, port numbers, and other information is critical so that contention issues do not arise when you try to run the system for the first time.

The BEA domain that you plan to create dictates how you install MetaSolv Solution and what information you need to know beforehand. Sample worksheets are provided in Appendix C to help you plan out the information required at installation time. The worksheets indicate the information you need to create the BEA domain and provide examples of the expected values. Included are worksheets for:

- ◆ Common installation information
- ◆ Single server environment information
- ◆ Clustered server environment information

## Prerequisites for installing MetaSolv Solution 6.0.15

- ◆ Upgrade to the MetaSolv Solution 6.0.15 database.
- ◆ Install the appropriate BEA WebLogic software for the environment you need for MetaSolv Solution.
- ◆ Resolve the DNS name of the database host machine. This means you must be able to ping the database server. If you cannot, add the IP address and host machine's name to the /etc/hosts file.
- ◆ Make sure the database users APP\_MSLV and APP\_API exist. If they do not exist, ask your database administrator to create them before you proceed. These users should have been created during the database installation.
- ◆ Read the section entitled "[Preinstallation checklist](#)" on page 10.
- ◆ Make sure the user executing the installation program has write permissions in the MetaSolv home directory and BEA home directory of the machine on which the installation is performed.

- ◆ (Optional) Verify that the BEA\_HOME environment variable have been set. The following text shows an example entry for these variables in .profile for a ksh (UNIX) user.

```
#####  
# M608 Environment variables  
#####  
BEA_HOME=/opt2/xmlapi/bea; export BEA_HOME  
#####
```

- ◆ Verify that the PATH environment variable is set with the jdk directory defined as the first entry. See the following example:

```
PATH=$BEA_HOME/jdk142_08/bin:$PATH; export PATH
```

Run the command **java -version** to verify that you have the correct version of the Java SDK in the PATH.

- ◆ Download the MetaSolv 6.0.15 files from the Oracle E-Delivery Web site to an application server machine. Download the following files for the your platform: BEA files and M/R6\_0\_xbnnn Installer.
- ◆ Make sure the person installing has read, write and execute permission on the application server installation directory (MSLV\_HOME directory), and /tmp directory. If you are using UNIX, use the **chmod** command to change permissions if this is necessary.
- ◆ If you are a UNIX user using an X-Windows emulator, set the DISPLAY environment variable to send the graphical display to your workstation by typing **DISPLAY=mymachinename:0.0;export DISPLAY** and pressing ENTER.

## Installing and deploying MetaSolv Solution with the XML API option

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This chapter explains how to set up the MetaSolv Solution application server for both single server and clustered server installations. The chapter covers the BEA WebLogic configuration and the installation and deployment of MetaSolv Solution.

 The procedures and screenshots in this chapter reference an M6.0.8 installation. Substitute M6.0.15 in the appropriate places for your M6.0.15 installation.

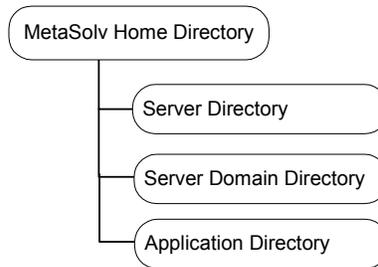
### If you are setting up for development or test

Note the following issues if you are installing MetaSolv Solution in a development or test environment:

- ◆ To use BEA Workshop with BEA WebLogic Integration Server, you must configure your domain in Development Mode. See [Step 19](#) on page 55.
- ◆ Multiple WebLogic Integration domains cannot use the same database schema. There is a workaround if you must use this setup. See [“Multiple WebLogic Integration domains pointing to the same database”](#) on page 189.
- ◆ Special steps are required to copy a production database to a WebLogic Integration development or test environment. See [“Copying a production database to a WLI development or test environment”](#) on page 192.

## Directory structure

MetaSolv Solution requires each server directory and its WebLogic domain directory to be placed in the METASOLV\_HOME directory. This directory is a location on the server under which all MetaSolv Solution software versions will be installed. The following figure shows the structure required.



In the example shown in the table, the following structure exists:

- ◆ MetaSolv home directory /opt2/xmlSingle/single
- ◆ Server directory /opt2/xmlSingle/single/mslv01
- ◆ Server domain directory /opt2/xmlSingle/single/m6domain
- ◆ Application directory /opt2/xmlSingle/single/application

The following table shows an example of a typical MetaSolv Solution with XML API option directory structure.

/opt2/xmlSingle/single	MetaSolv Solution home directory			
	bea	BEA_HOME directory (BEA_HOME=/opt2/xmlSingle/single/bea) Note: Placing the BEA directory here is optional but recommended.		
	mslv01	Server home directory		
		jbrokerORB	jBROKER installed directory (JBROKER_HOME= /opt2/xmlSingle/single/mslv01/jbrokerORB40/ bin/ solaris)	
		appserver	Directory for application directories and files	
			bin	logviewer.sh
			logs	Application log files, mslv01.mss.log, and 3 XML log files
			cab	ZAC files for the workstation client
			classes	Jar files
			config	Directory for *.ini, zac_config.xml, and loggingconfig.xml
			deploy	cluster-nur.ear and nur.ear
			gateway	Gateway.ini
			help	Help index files
			ior	CORBA ior files for API servers
		portal	Portlet files for desktop	
	m6domain	BEA domain directory for server mslv01		
		*images	Contains custom company logo image	
	application	Directory for the application files for server mslv01. BEA Workshop stores B2B and other applications in this directory.		

\*For 6.0.5 and higher, the *images* directory location is: METASOLV\_HOME/DOMAIN/logo/images.

## MetaSolv Solution Schemas

To access the XML API schema definitions:

1. Install MetaSolv Solution.
2. Navigate to the `<MSLV_HOME>/<SERVER_NAME>/appserver/classes` directory.
3. Locate the `mss_xml_api_schemas.jar` file.
4. Extract the contents of the `mss_xml_api_schemas.jar` file to a directory of your choice.
5. From the directory you chose in the previous step, open the schema files (those with an `.xsd` extension) in which you are interested.

## Single server installation

A single server installation is one in which a single BEA WebLogic server instance hosts the MetaSolv Solution application server process.

This section describes how to:

- ◆ Create a BEA domain for a single server
- ◆ Install the MetaSolv Solution application server software
- ◆ Deploy MetaSolv Solution to the single server

The following figure shows the basic steps for installing MetaSolv Solution on a single server. The figure is an expansion of Step 5 of the basic installation process shown in [Figure 2](#) on page 1. If you plan to install multiple BEA WebLogic Integration domains pointing to the same database, “[Multiple WebLogic Integration domains pointing to the same database](#)” on page 189.

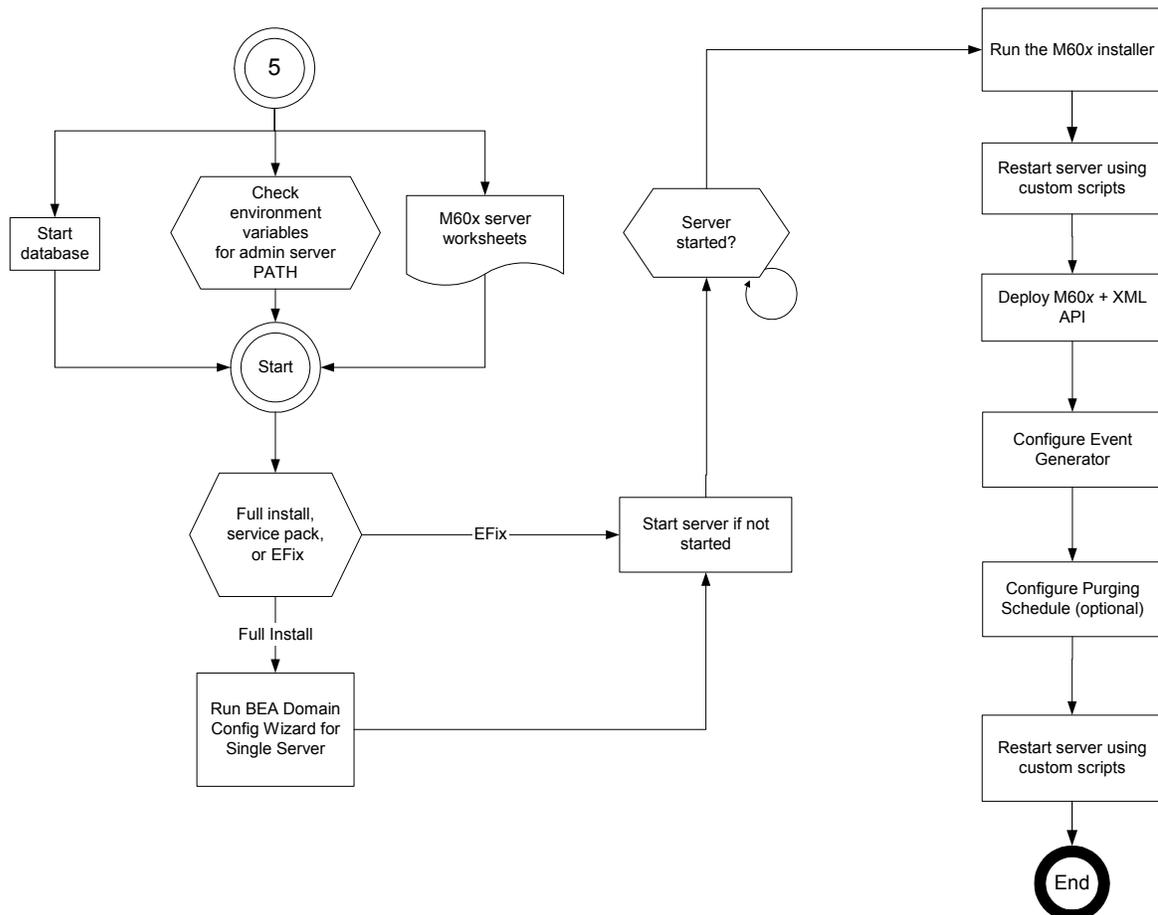


Figure 6: Single server installation

## Before you start

- ◆ Print and complete the following planning worksheets:
  - Application server common installation worksheet—[page 466](#)
  - Single server installation worksheet—[page 468](#)

Some steps in the procedures for the BEA domain configuration and in the MetaSolv Solution installation refer to the worksheet. Each value that you are asked to enter has a worksheet reference number.
- ◆ Review “[Prerequisites for installing MetaSolv Solution 6.0.15](#)” on page 33 and make sure all tasks listed there that apply to your installation are completed.

## Creating a single server WebLogic domain

### To create a single server domain

1. Start the BEA Configuration Wizard.

For UNIX platforms, this program (config.sh) is located in the following directory:  
BEA\_HOME/weblogic81/common/bin.

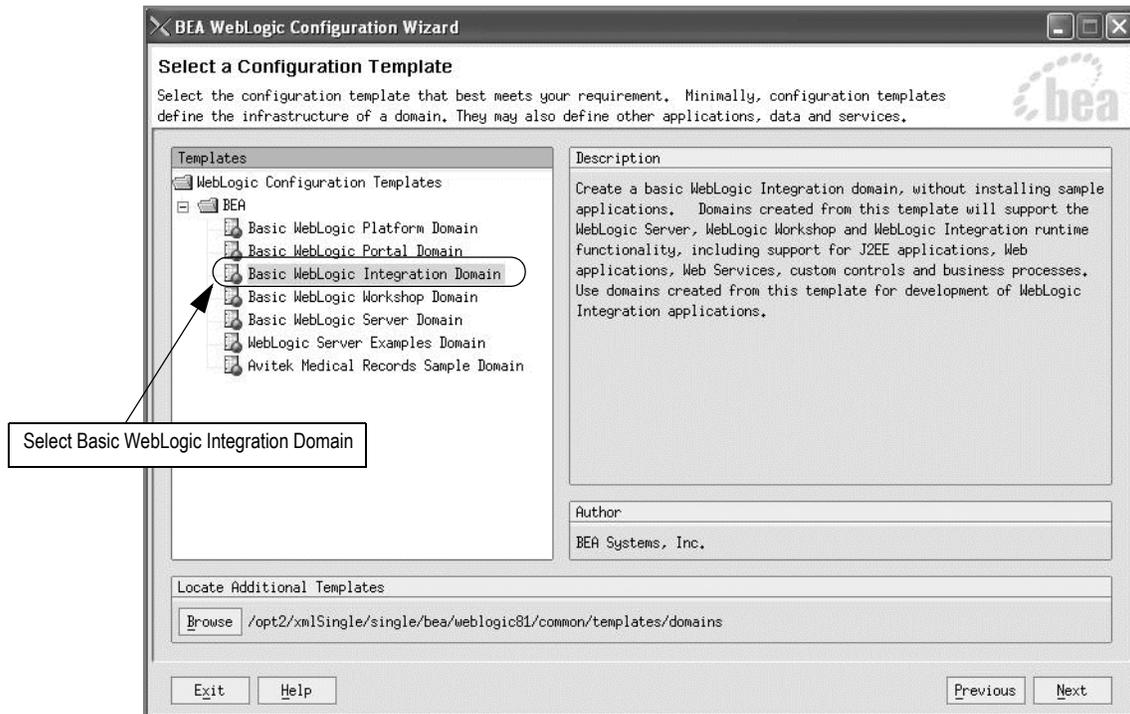
For Windows platforms, this program (config.cmd) is located in the following directory:  
BEA\_HOME\weblogic81\common\bin.

When you start the program, the following window appears.



2. Select **Create a new WebLogic configuration** and click **Next**.

The Select a Configuration Template window appears.



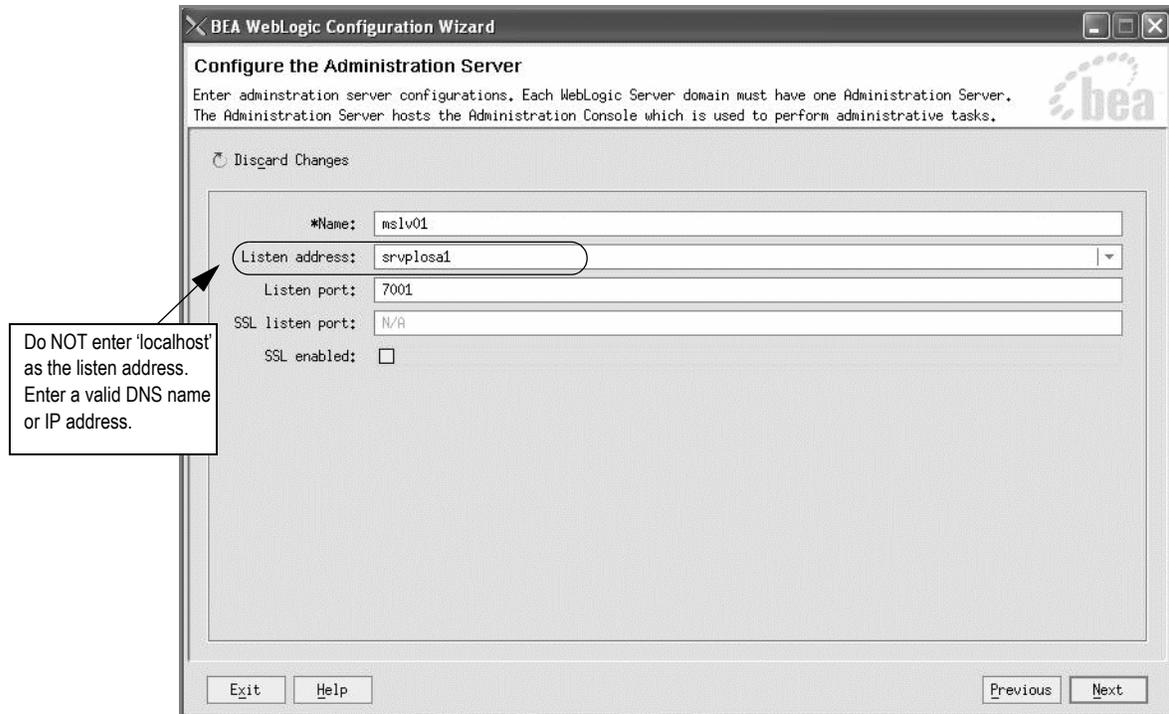
3. Select **Basic WebLogic Integration Domain** and click **Next**.

The following window appears.



4. Select **Custom** and click **Next**.

The Configure the Administration Server window appears.



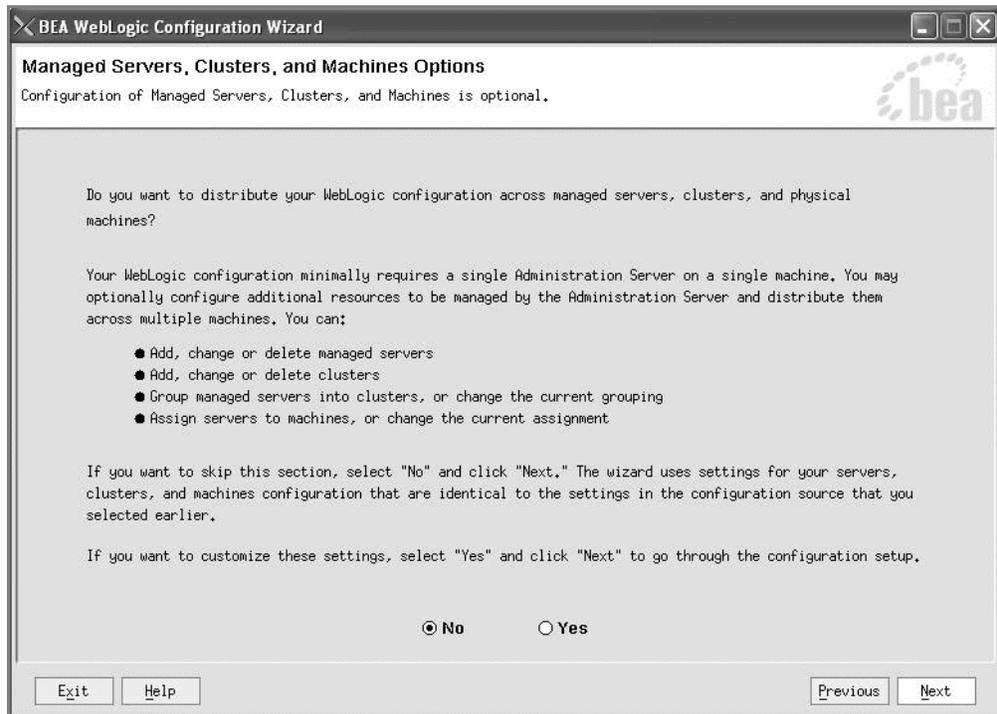
5. Type the information for your administration server in the appropriate fields and click **Next**.

In the **Listen address** field, enter a valid DNS name or IP address.

Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
Name	XSingle-0150	<i>mslv01</i>
Listen address	XSingle-0160	<i>srvplosa1</i>
Listen port	XSingle-0170	<i>7001</i>

When you click Next, the Managed Servers, Clusters, and Machines Options window appears.



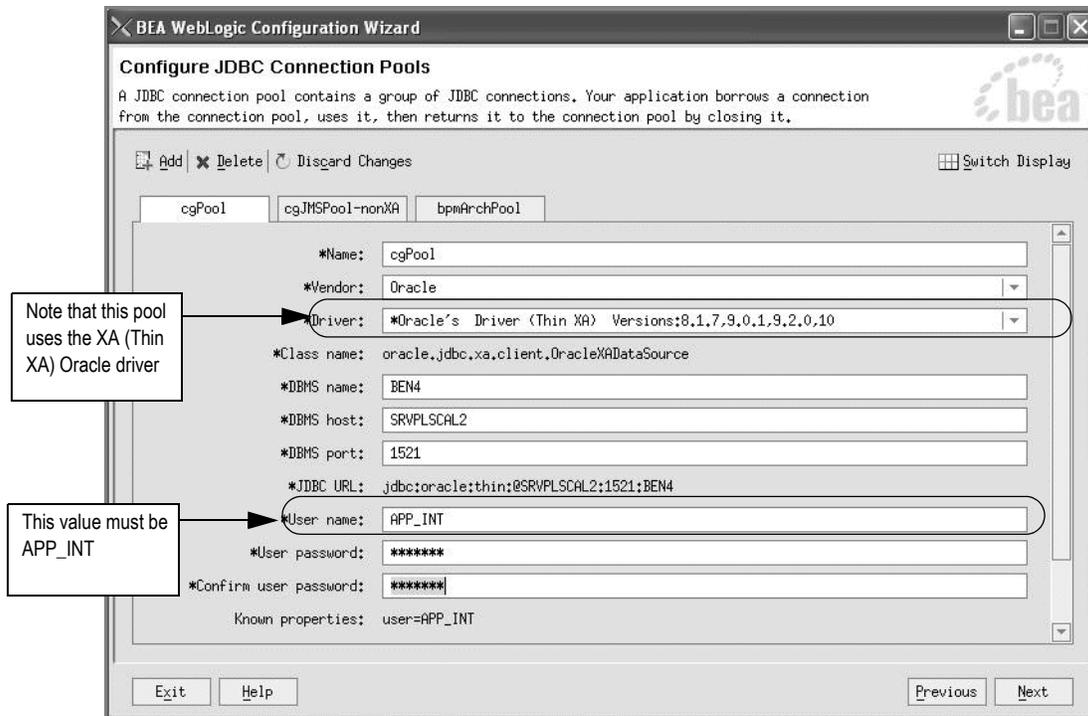
6. Select **No** and click **Next**.

The Database (JDBC) Options window appears.



7. Select **Yes** and click **Next**.

The Configure JDBC Connection Pools window appears.

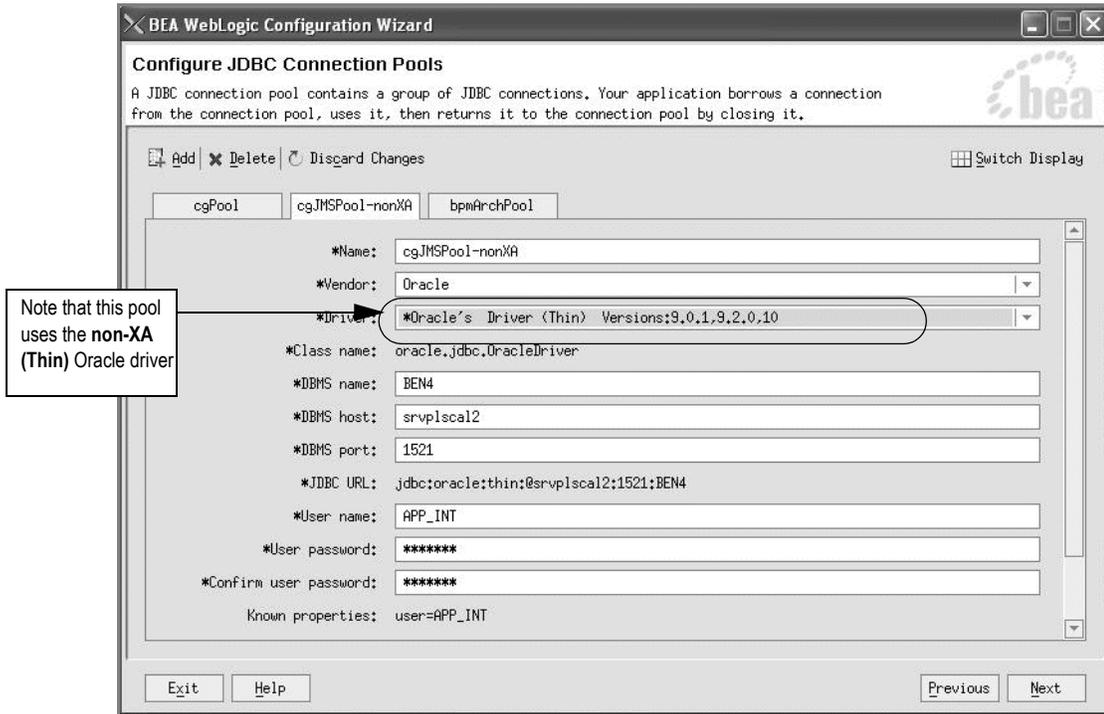


8. On the cgPool tab, enter values in the following fields:
  - ◆ **Vendor**—Oracle is the supported database. Select Oracle from the drop-down list (Do not select the default value Pointbase).
  - ◆ **Driver**—Select the driver **Oracle's Driver (Thin XA)** from the drop-down list. Note that this is an XA driver.
  - ◆ **DBMS name**—Oracle system ID (SID).
  - ◆ **DBMS host**—Name of your database server.
  - ◆ **User name**—APP\_INT
  - ◆ **User password (and Confirm user password)** - Oracle user password for the value required here.

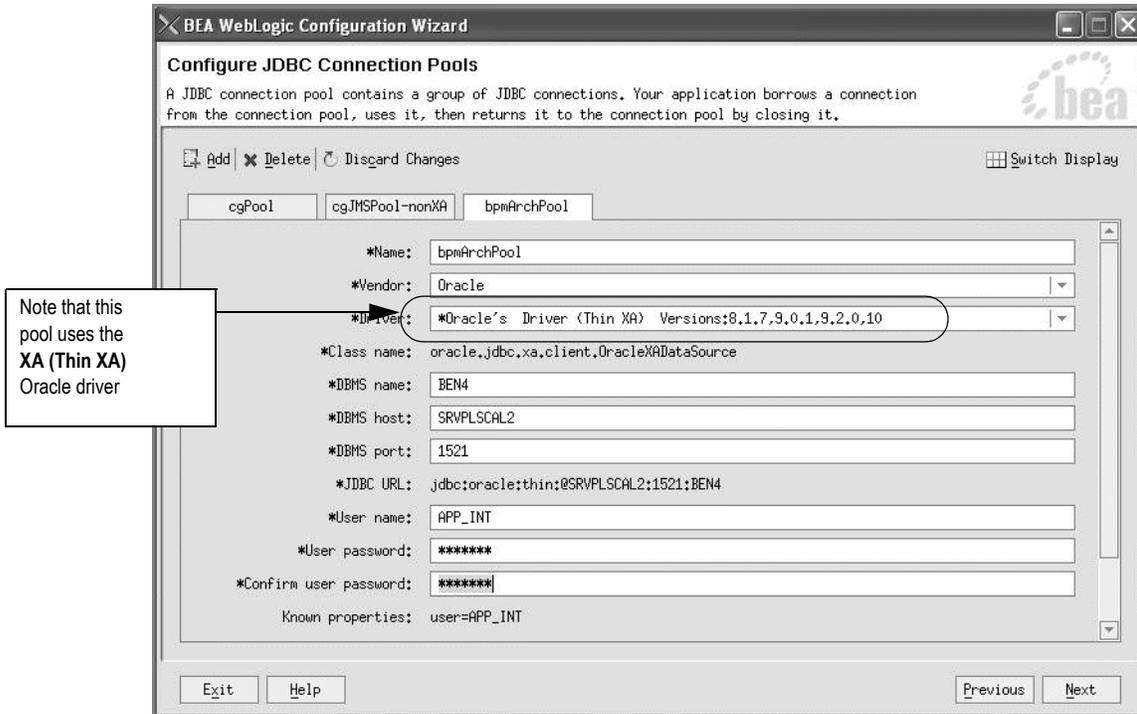
Other fields on this tab already contain values defaulted from your existing configuration. You can make any additional changes required.

9. Select the cgJMSPool-nonXA and bpmArchPool tabs and enter the information shown on the following figures for each tab.

Note that the cgJMSPool-nonXA uses the non-XA driver and the bpmArchPool uses the XA driver.



Note that the bpmArchPool uses the XA driver.

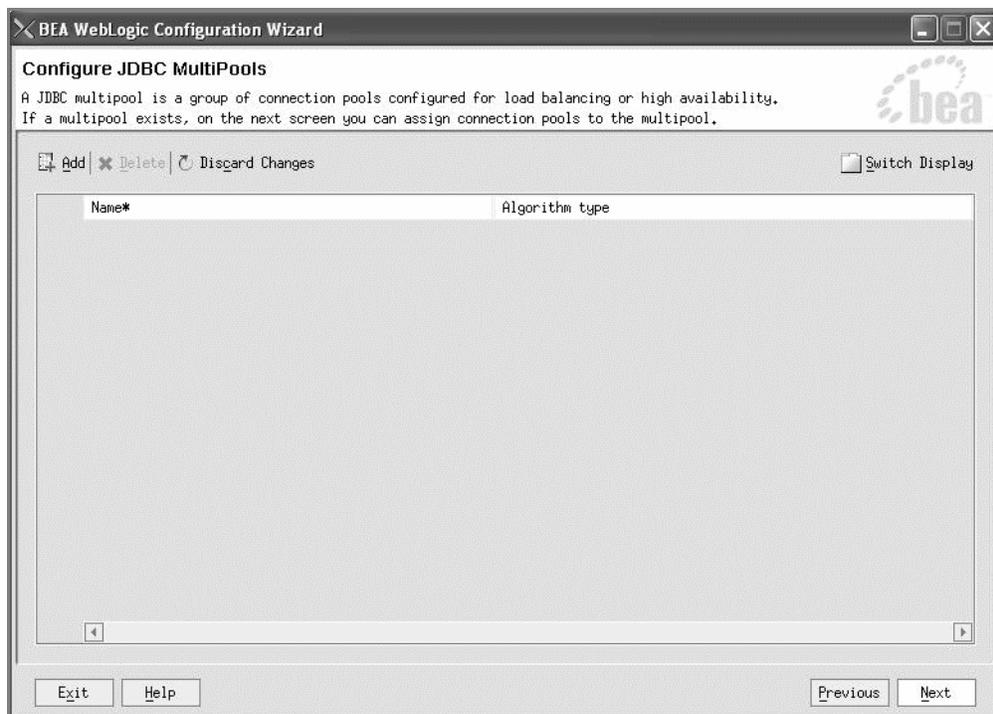


Worksheet reference numbers and example values:

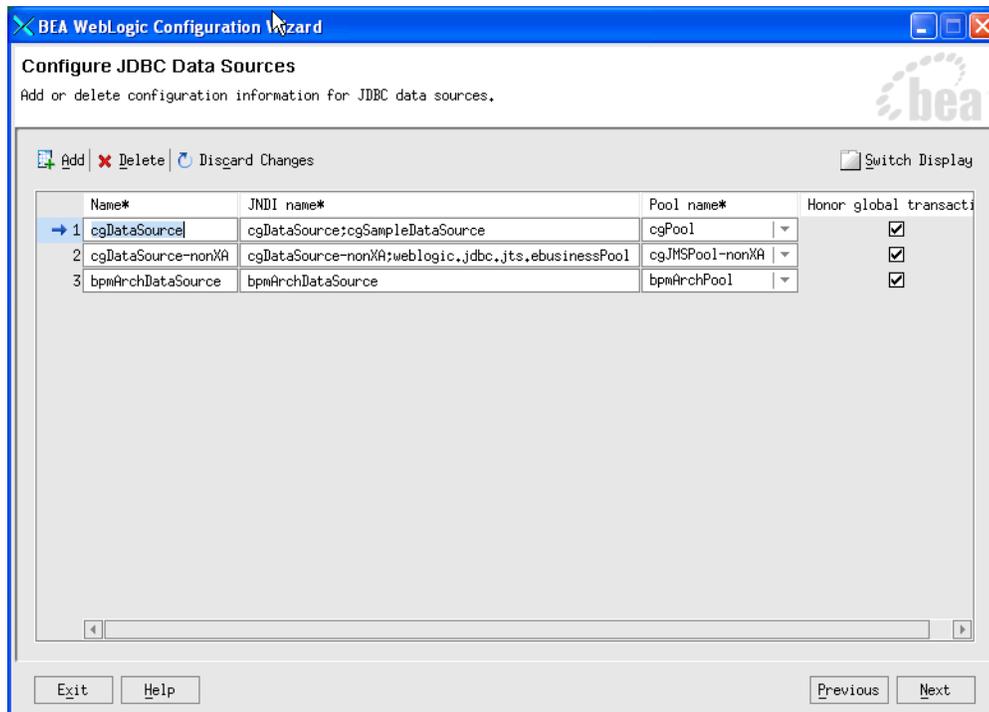
Field name	Worksheet reference number	Example value
Oracle Server Name	XCOMM-0130	<i>srvplscal2</i>
Oracle Port	XCOMM-0140	<i>1521</i>
Oracle Service Name	XCOMM-0150	<i>BEN4</i>
XML API integration user id	XCOMM-0057	<i>APP_INT</i>
XML API integration password	XCOMM-0059	<i>mss6int</i>

For multiple WebLogic Integration domains pointing to the same database, use different XML API integration user IDs and corresponding passwords. See [“Multiple WebLogic Integration domains pointing to the same database”](#) on page 189.

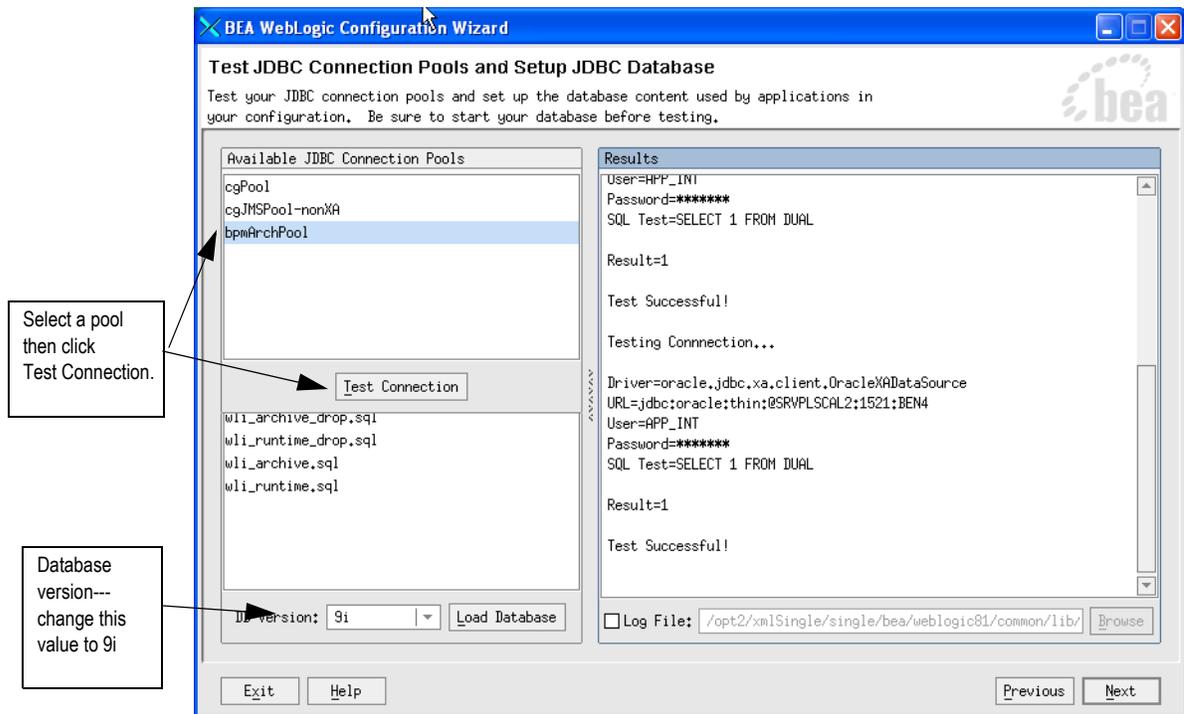
10. When you click Next, the Configure JDBC MultiPools window appears. Click **Next**.



The Configure JDBC Data Sources window appears.



- Click **Next**. The Test JDBC Connection Pools and Setup JDBC Database window appears.



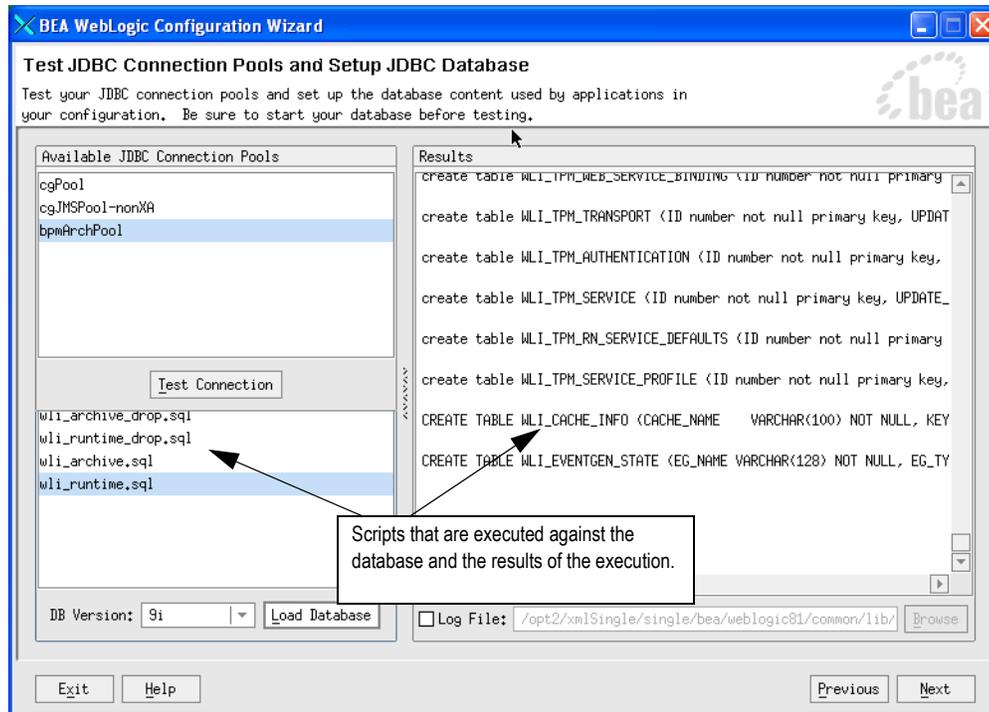
- Select (highlight) the first pool in the Available JDBC Connection Pools list, then click **Test Connection**.

The results of the test appear in the right pane of the window. If the test does not succeed, click **Previous** to return to the first Configure JDBC Connection Pools window and make sure the user name and password you entered are correct.

- Repeat the test for the remaining pools in the Available JDBC Connection Pools list.
- In the **DB Version** field, click the down arrow and select **9i** from the list that appears, and click **Load Database**.

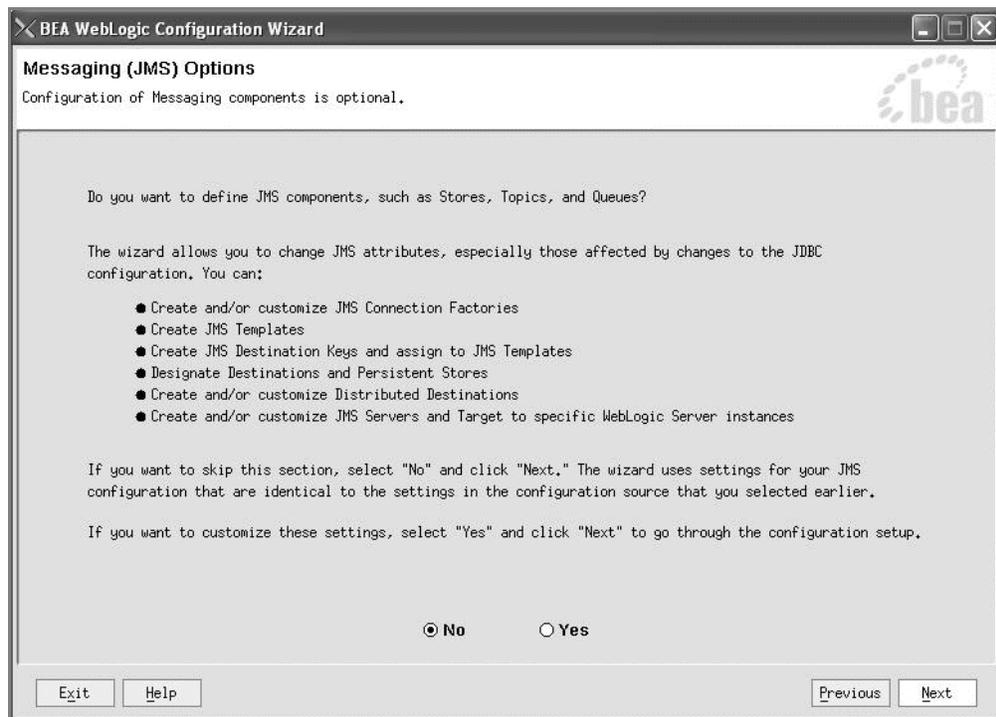
This step needs to be done once for the database per XML API integration use id (XCOMM-0057)

The following example window illustrates the Load Database progress results as the wizard works through the four SQL scripts listed in the Available SQL Files and Database Loading Options section.



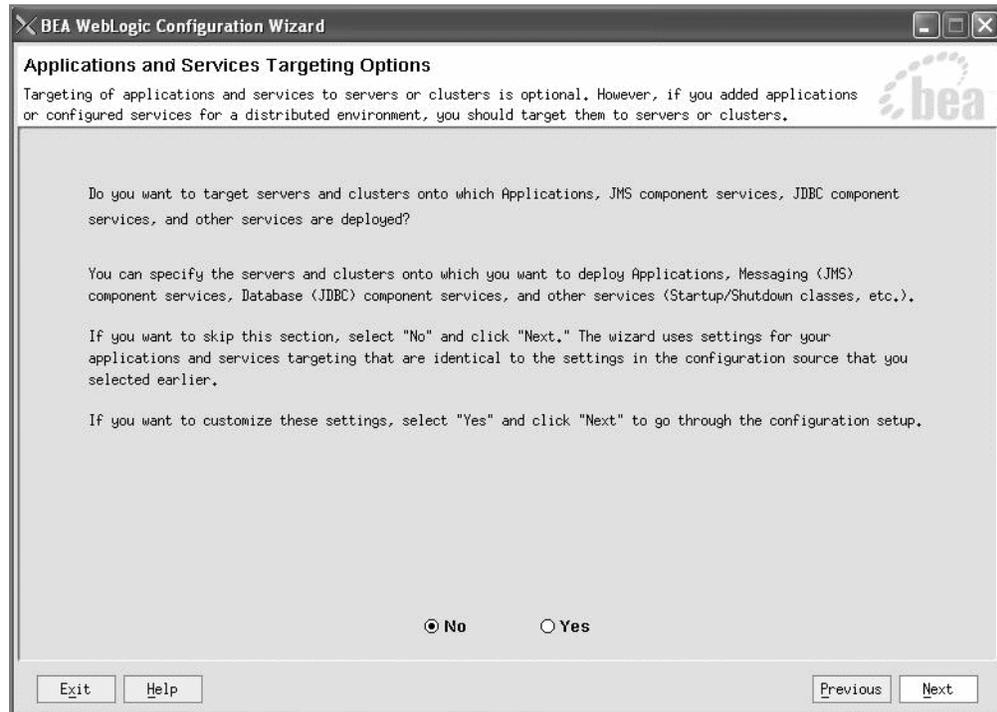
15. Click **Next** when the Load Database activities are complete.

The Messaging (JMS) Options window appears.



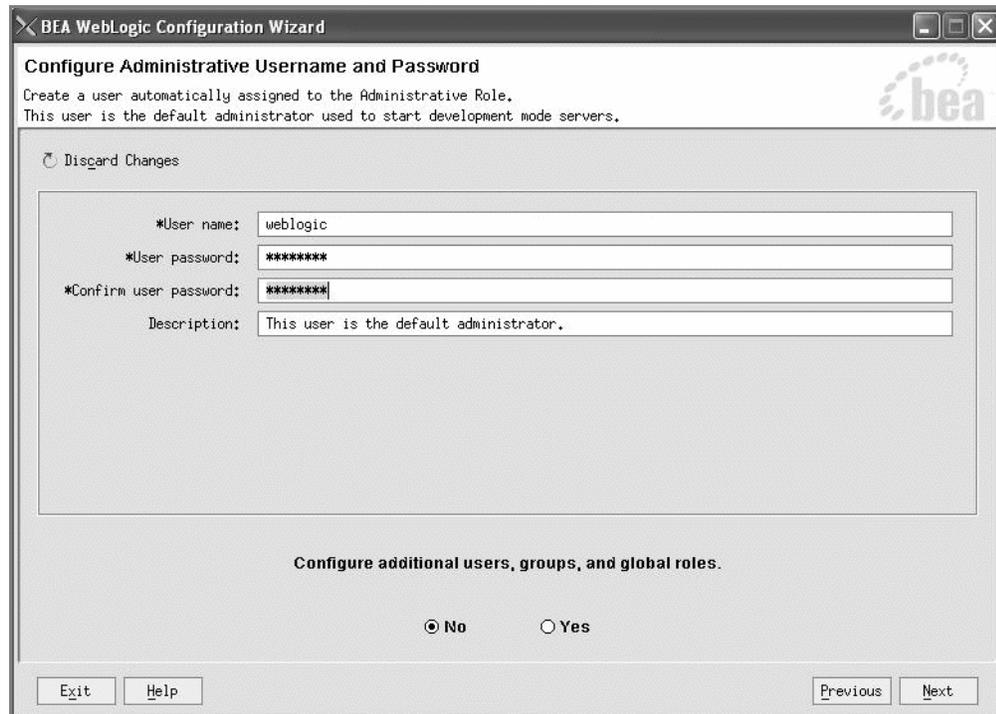
16. Select **No** and click **Next**.

When you click Next, the Applications and Services Targeting Options window appears.



17. Select **No** and click **Next**.

When you click Next, the Configure Administrative Username and Password window appears.



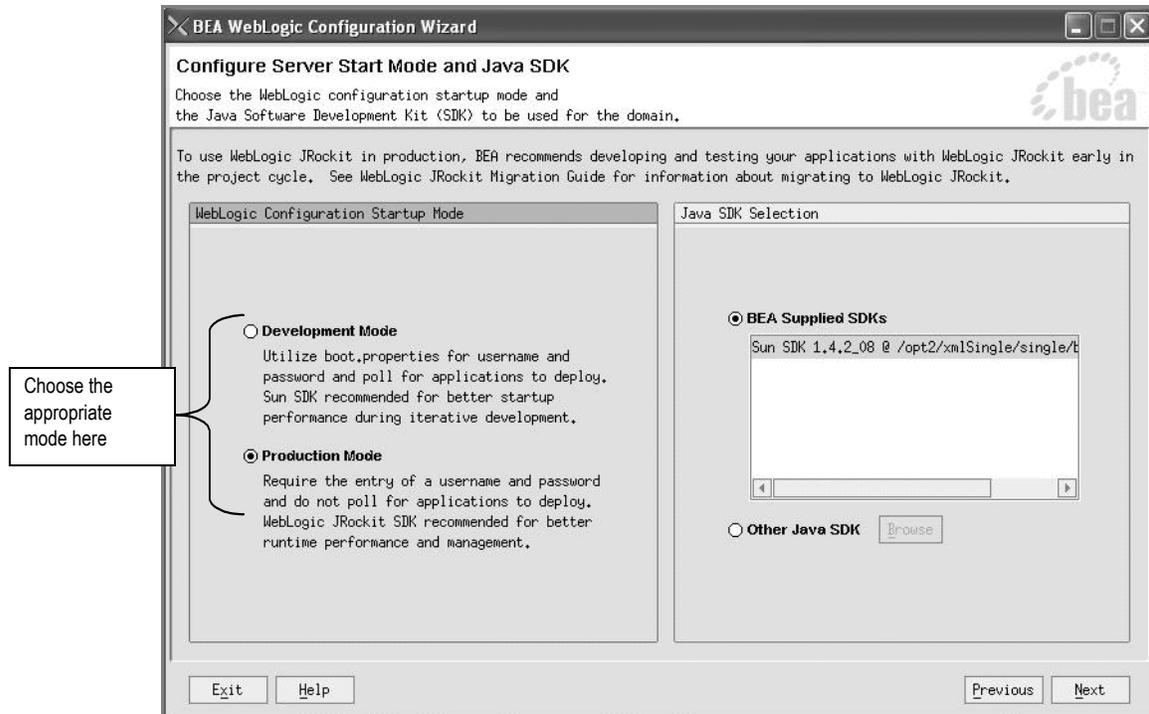
18. Type a user name and password and verify the password by retyping, then select the **No** option for configuring additional users, and click **Next**.

Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
User name	XCOMM-0020	<i>weblogic</i>
User password	XCOMM-0030	<i>metasolv</i>

Note the user name and password. You will need them to log on to the administration console.

When you click Next, the Configure Server Start Mode and Java SDK window appears.

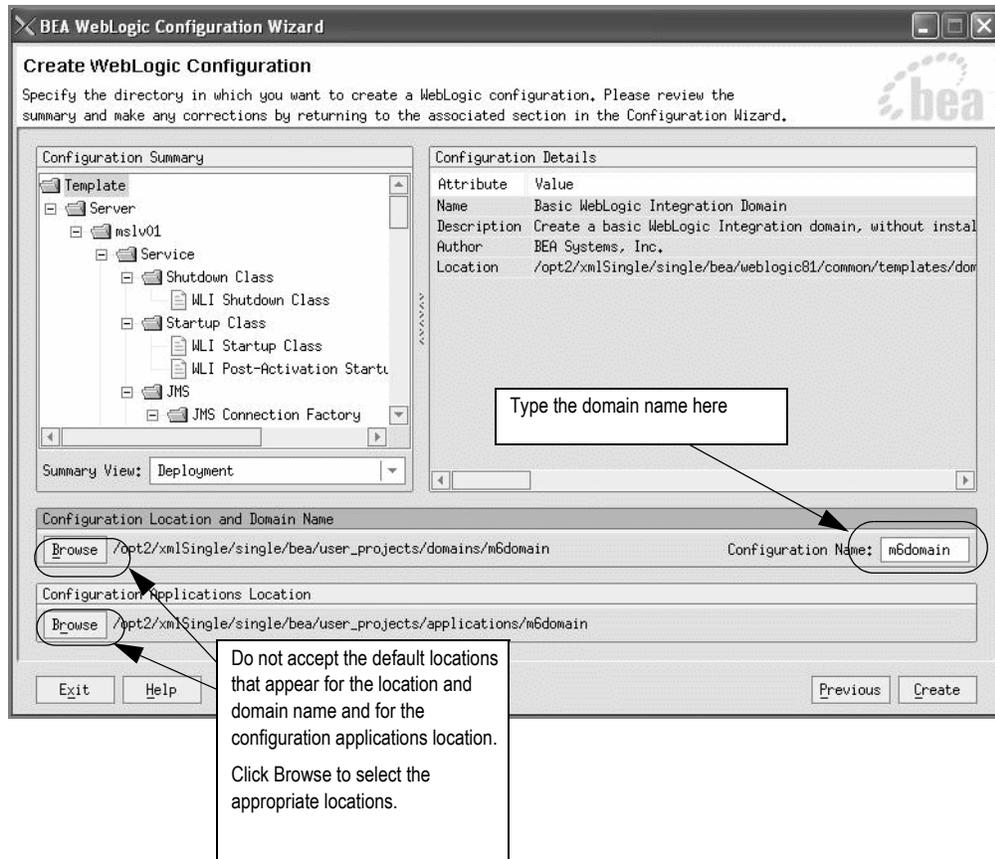


19. Select **Production Mode** if you are installing for company operations or select **Development Mode** if you are installing to do integration development or testing with MetaSolv Solution.
20. On the right pane, select **BEA Supplied SDKs** and select the Sun SDK in the list window, and click **Next**.

The Sun SDK option is supported for both UNIX and Windows platforms.

-  If you are using the IBM AIX operating system, select the **Other Java SDK** option and browse for the location of the IBM Java SDK. See [“If you are using the IBM AIX operating system”](#) on page 30.

The Create WebLogic Configuration window appears.



21. Type a domain configuration name in the **Configuration Name** field.

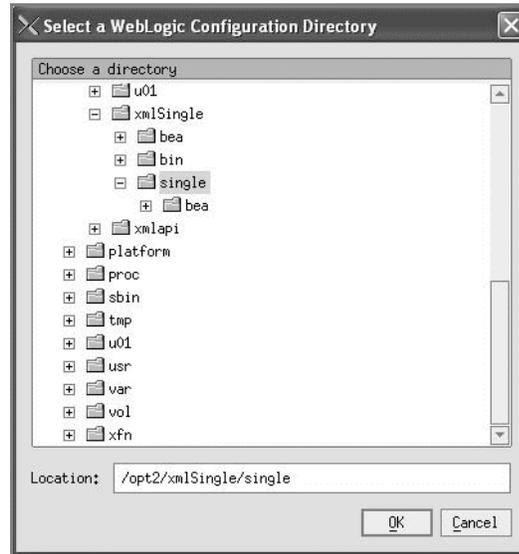
MetaSolv recommends *m6domain*.

Worksheet reference number and example value:

Field name	Worksheet reference number	Example value
Configuration Name	XCOMM-0010	<i>m6domain</i>

22. Click the **Browse** button in the Configuration Location and Domain Name group box to select the location where the domain configuration is to be created.

The following selection window appears.

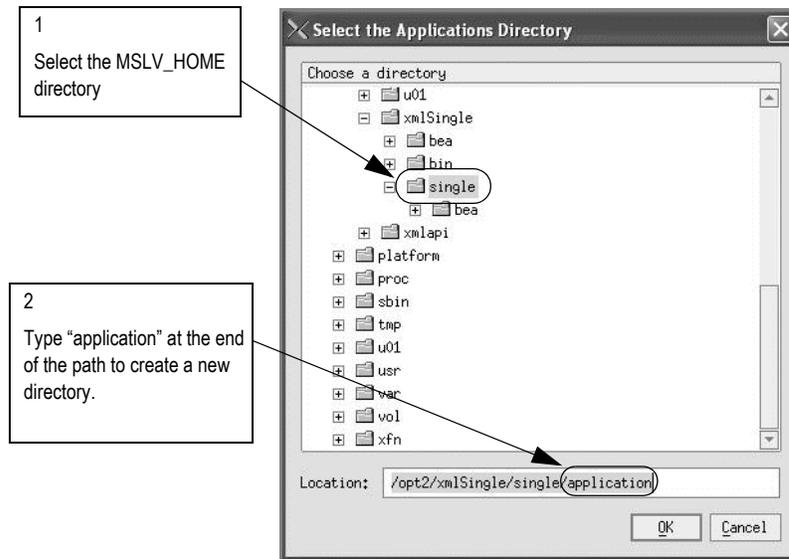


23. Select the METASOLV\_HOME directory where the domain is to be created and click **OK**.

Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
Configuration Location and Domain Name	XCOMM-0090	<i>/opt2/xmlSingle/single</i>
	XCOMM-0010	<i>m6domain</i>

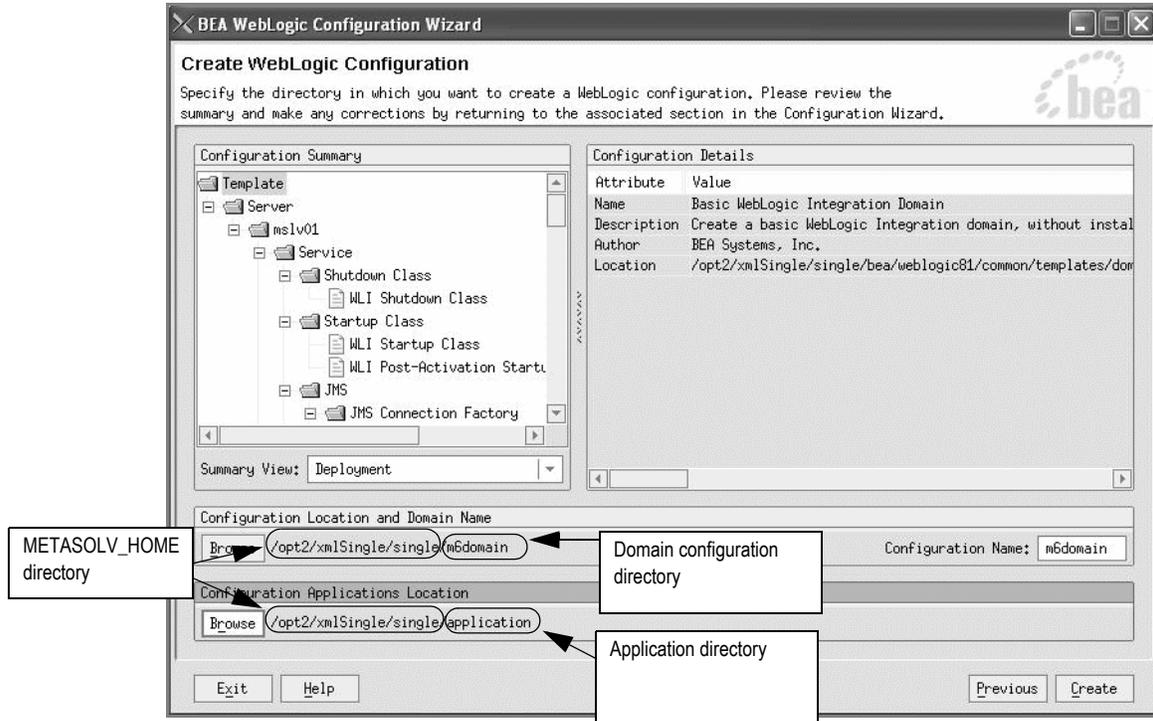
24. Click the **Browse** button in the Configuration Applications Location group box.  
The following window appears.



25. Select the METASOLV\_HOME directory where the application directory is to be created, type **application** at the end of the path in the **Location** field, and click **OK**.

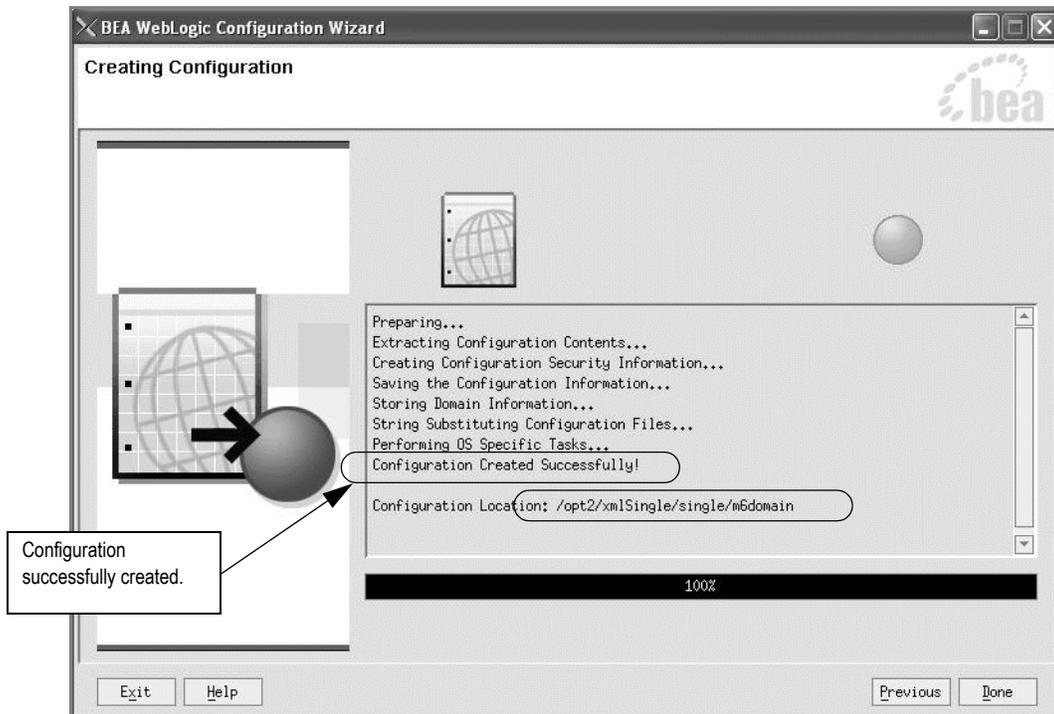
A message window appears asking if you want to create the directory. Click **OK** to create the directory.

The following figure shows the Create WebLogic Configuration window with the location for the configuration directory and the application directory defined.



26. Click **Create**.

The following window appears indicating progress during the creation of the domain.



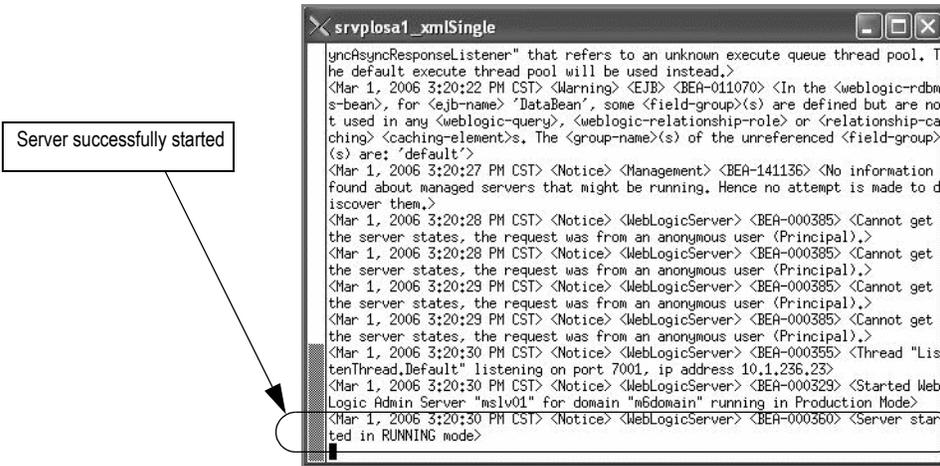
27. Click **Done** when the configuration creation is complete.
28. To verify the domain setup, start the server by completing the following steps:
  - a. Execute **startWebLogic.sh** (UNIX) or **startWebLogic.cmd** (Windows) in the domain directory.

The domain directory is the name you specified during configuration.

For example: */opt2/xmlSingle/single/m6domain*
  - b. Type your administrator user name and password, when prompted, to start the server. (Skip this step if you are installing in Development mode.)

The server takes a few moments to start. You will see information scroll on the screen. When the server has successfully started, you will see the words "RUNNING mode" at the prompt.

The following figure shows how the prompt appears when the server is running.



## Installing and deploying MetaSolv Solution

### Prerequisites

- ◆ The instructions for creating the domain configuration included starting the server after the configuration was complete. Leave the server running until you are instructed to shut it down.
- ◆ Ensure that the PATH variable has the BEA\_HOME/jdk142\_08/bin prepended to it. This allows the use of the BEA JDK version.

### To install and deploy MetaSolv Solution

1. From the directory where you stored MetaSolv Solution files downloaded from the Oracle E-Delivery Web site, type one of the following commands and press ENTER:

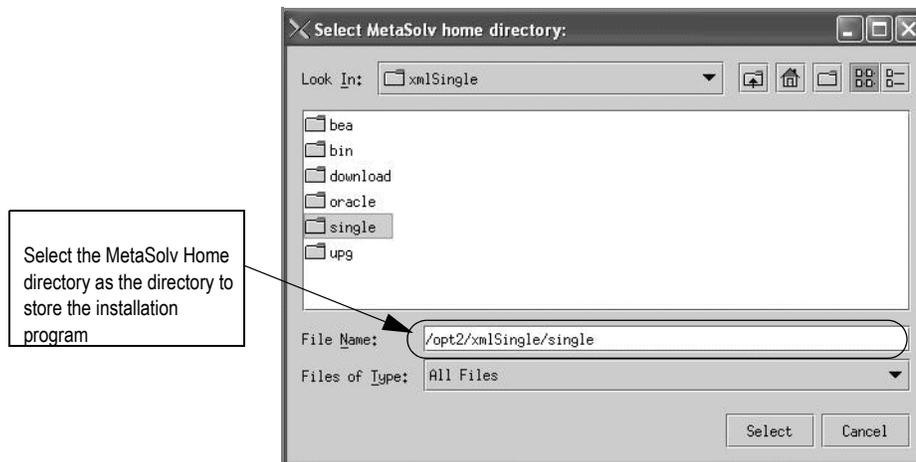
**java -jar <release#/build#>\_AppServerInstaller.jar**

For example: java -jar MSS\_R6\_0\_8\_b57\_XML-API-Installer.jar



If the file name has brackets and a number embedded (for example, MSS[1].R6\_0\_8b57\_XML-API-Installer.jar), change the file name to eliminate the brackets and their contents. Brackets cause a Java error when you attempt to unjar the contents of the download file.

The following window appears.



2. From the **Look In** drop-down list, click the down arrow and select a directory in which the installation program files can be stored and used during the installation process, then click **Select**.

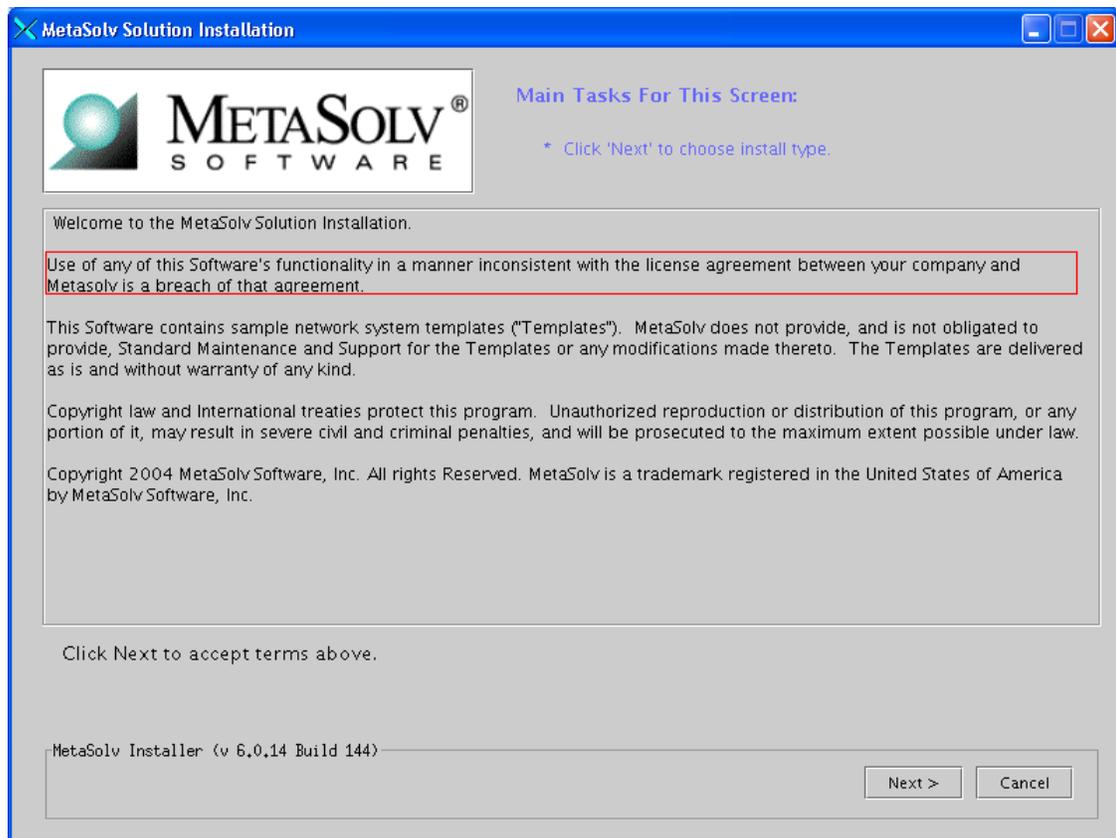
A directory named *installer* is automatically created in the selected directory. MetaSolv recommends choosing your METASOLV\_HOME directory for this task.

The installation program auto-launches the installation process by invoking `setup.sh` in the `METASOLV_HOME/installer` directory.

Worksheet reference numbers and example values:

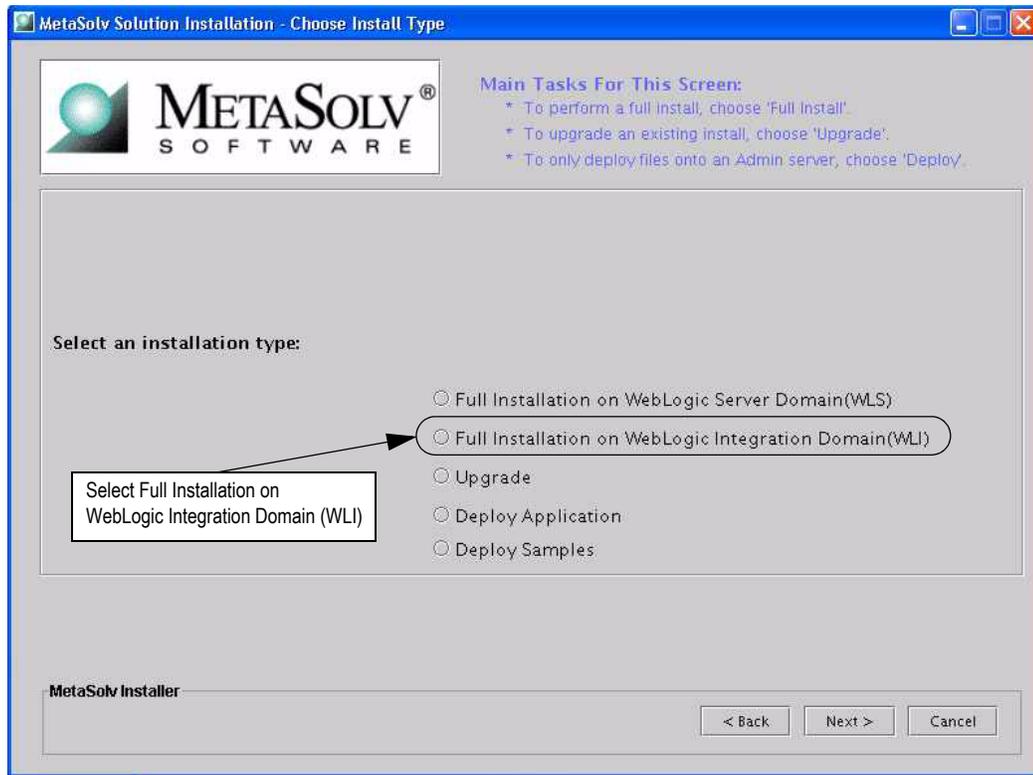
Field name	Worksheet reference number	Example value
File Name (METASOLV_HOME)	XSingle-0090	<code>/opt2/xmlSingle/single</code>

The following window appears.



3. Click **Next**.

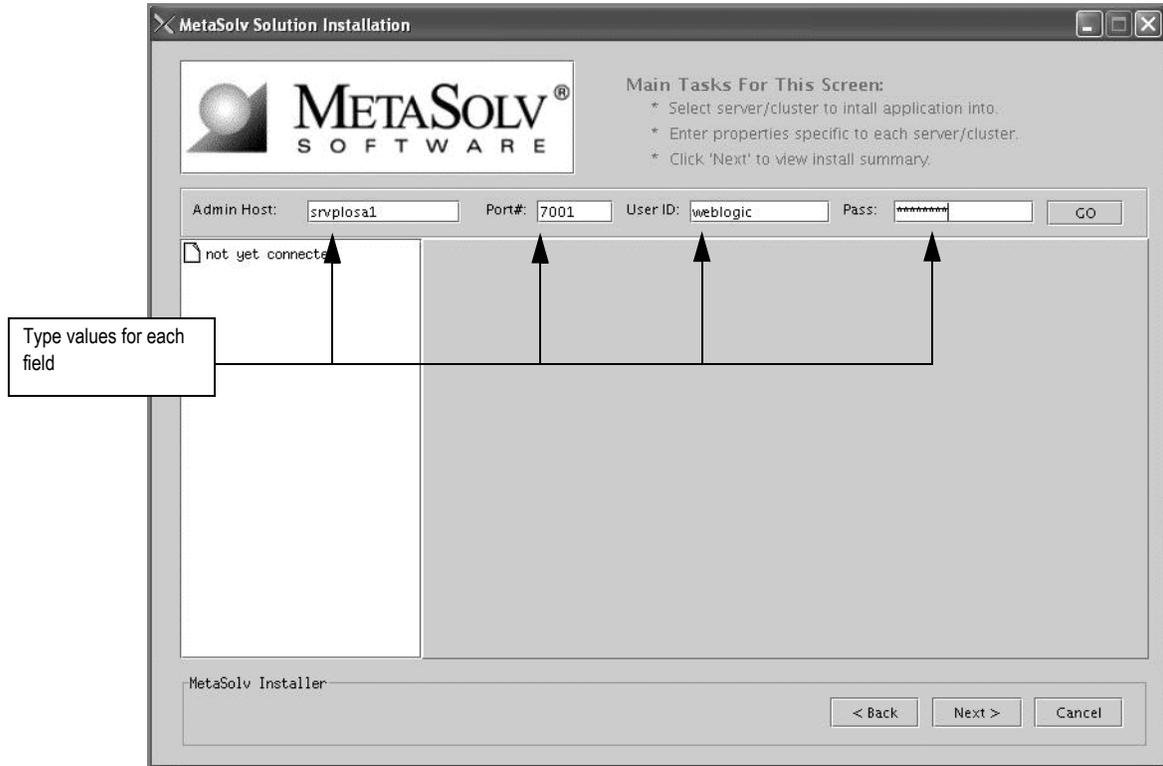
The following window appears.



4. Select **Full Installation on WebLogic Integration Domain (WLI)** and click **Next**.

 Selecting **Full Installation on WebLogic Integration Domain (WLI)** installs MetaSolv Solution with the XML APIs. Selecting **Full Installation on WebLogic Server Domain (WLS)** installs MetaSolv Solution without the XML APIs. If you do not plan to use the XML APIs, do not use this Setup Guide. Instead, refer to the *Setup Guide (non-XML API Option)*.

The following window appears.

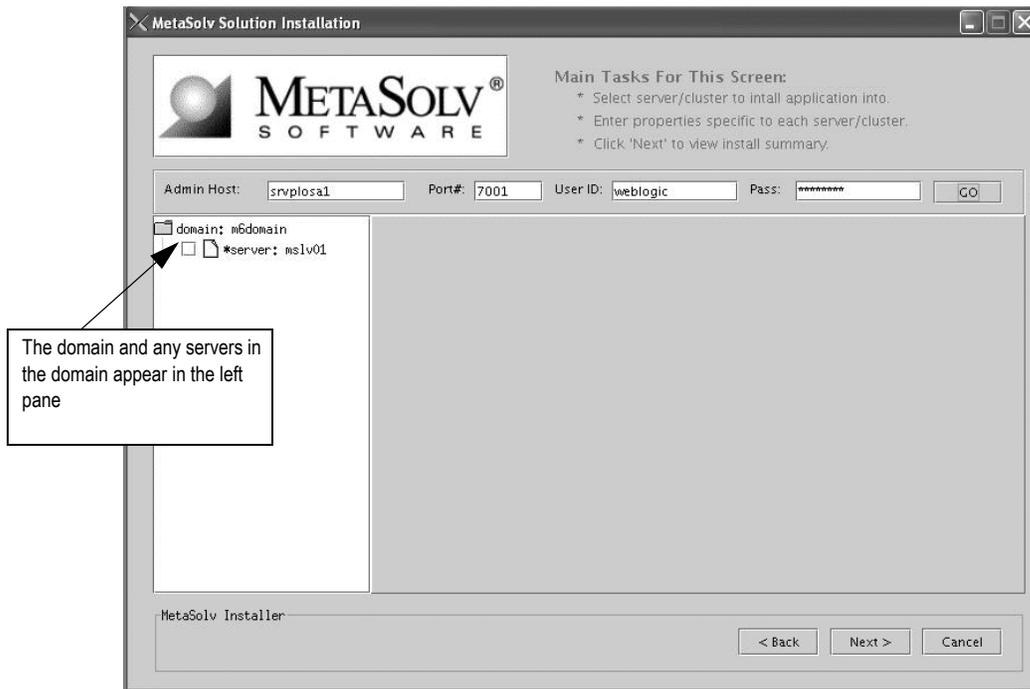


5. Type the values for the following fields: **Admin Host**, **Port#**, **User ID**, and **Pass**, and click **Go**.

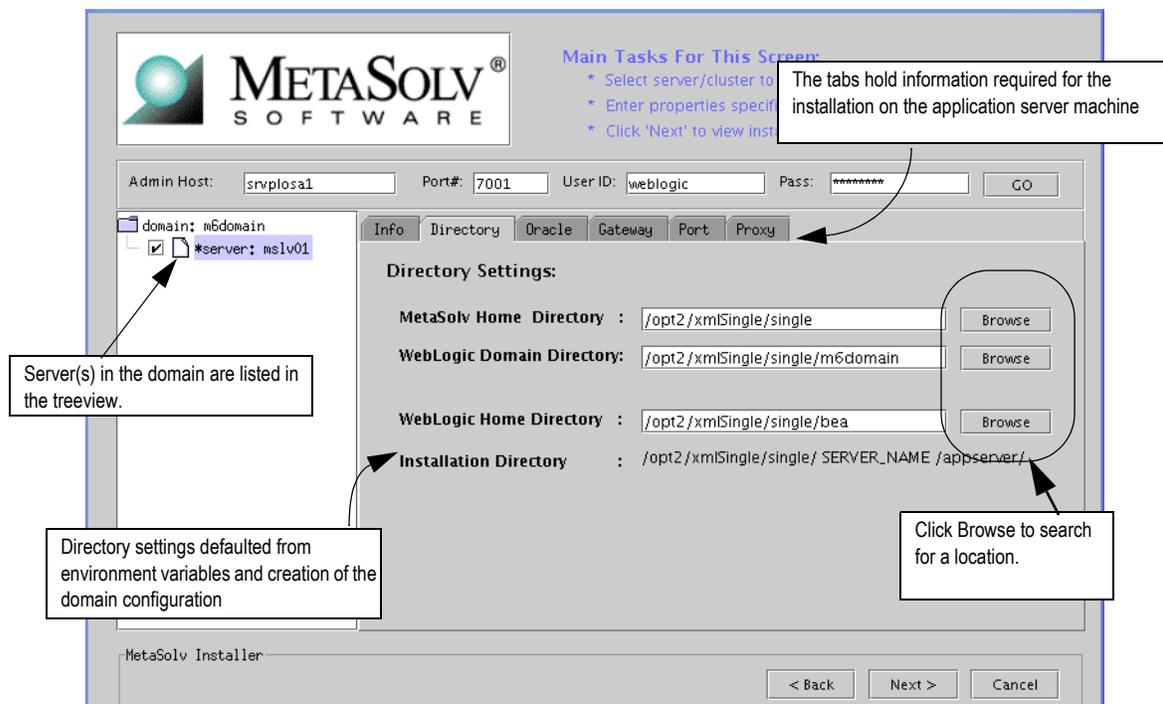
Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
Admin Host	XSingle-0160	<i>srvplosa1</i>
Port#	XSingle-0170	<i>7001</i>
User ID	XCOMM-0020	<i>weblogic</i>
Pass	XCOMM-0030	<i>metasolv</i>

When you click **Go**, the installation program queries the Admin Host machine and returns with values you entered during the configuration of the BEA WebLogic domain. The following figure shows the window updated.



6. Select the server in the left pane.



Tabs appear in the right pane for information to be entered for the server.

The following list shows how icons are used in the treeview.

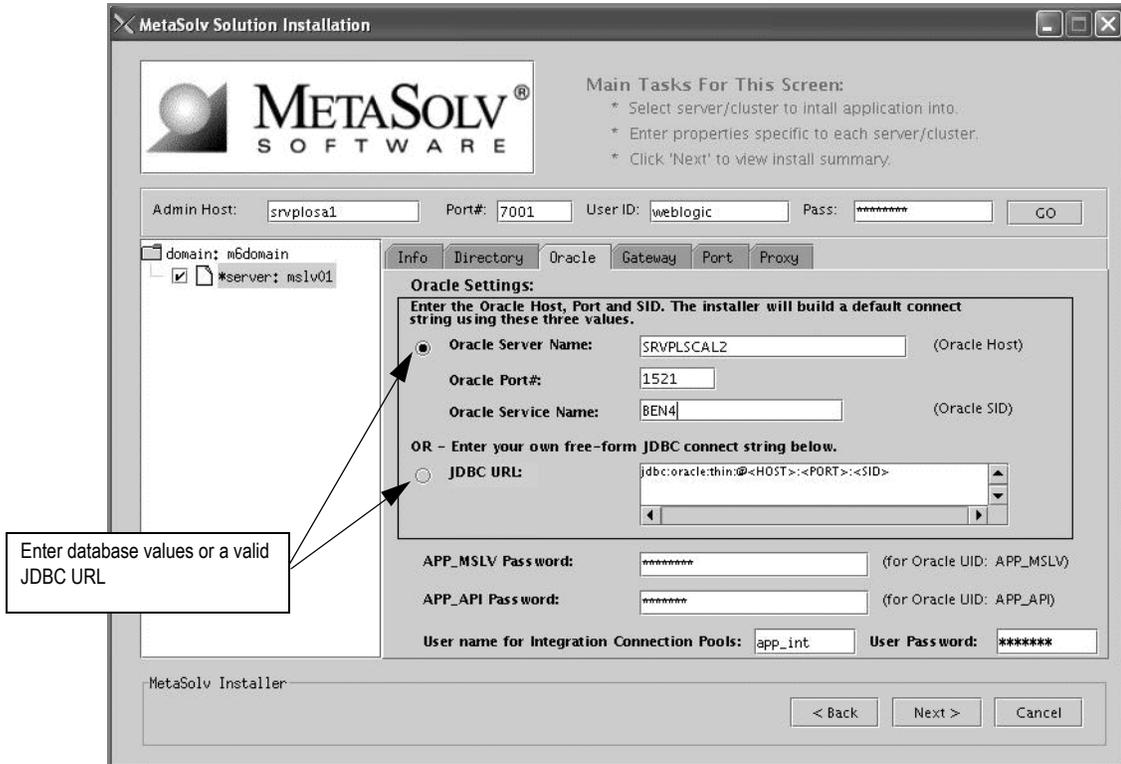
-  The folder icon indicates that the item selected is a higher level (a domain or a cluster within a domain) and that other items (such as servers) are subordinate to the item indicated by the folder.
-  The page icon indicates that the item selected has no servers or other items that are subordinate to it.
- \* An asterisk means that a server is a candidate for installation of MetaSolv Solution. Only servers associated with the machine on which the installation is occurring are eligible.
- A check box means you have selected the server for the installation of MetaSolv Solution 6.0.8 during the installation process.

7. In the treeview on the left, select the check box next to the single server on which you want MetaSolv Solution installed.
8. Complete the domain information by selecting and completing the following tabs:
  - a. Select the Directory tab (shown in the preceding figure) and type the path and name of the MetaSolv home directory and the WebLogic domain directory, or click **Browse** to search for the directories.

Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
MetaSolv Home Directory	XCOMM-0090	<i>/opt2/xmlSingle/single</i>
WebLogic Domain Directory	XCOMM-0110	<i>m6domain</i>

- b. Select the Oracle tab, check the values that appear in the fields, and make any needed changes.



Enter database values or a valid JDBC URL

Example of a JDBC URL string: jdbc:oracle:thin:@mydbserver:1521:DB01

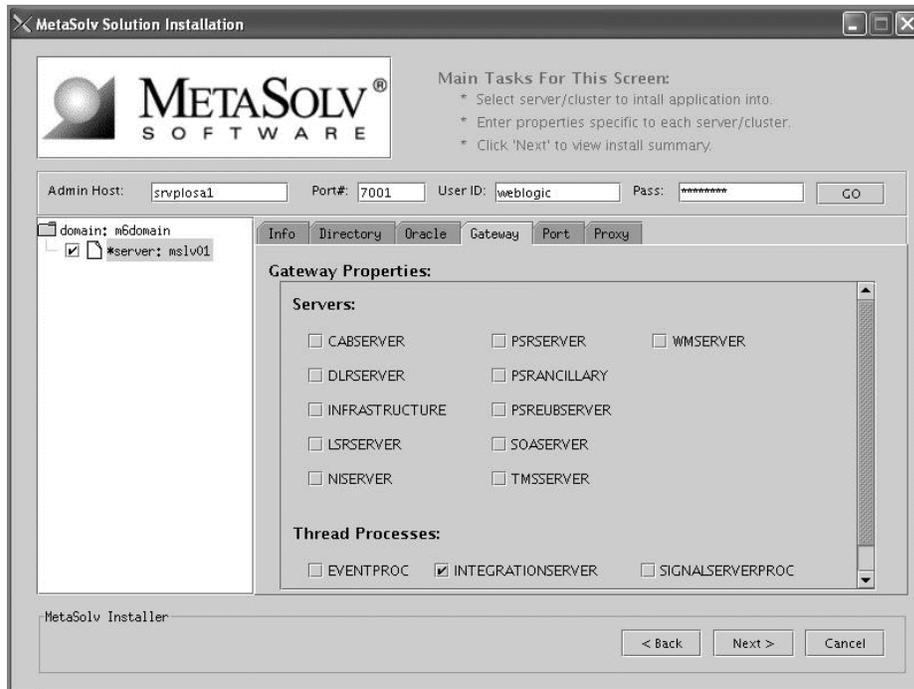
Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
Oracle Server Name	XCOMM-0130	<i>srvplscal2</i>
Oracle Port	XCOMM-0140	<i>1521</i>
Oracle Service Name	XCOMM- 0150	<i>BEN4</i>
APP_MSLV Password	XCOMM-0040	<i>mss6mslv</i> (default)

APP_API Password	XCOMM-0050	<i>mss6api</i> (default)
XML API integration user id	XCOMM-0057	<i>APP_INT</i>
XML API integration password	XCOMM-0059	<i>mss6int</i>

For multiple WebLogic Integration domains pointing to the same database, use different XML API integration user IDs and corresponding passwords. See Multiple WebLogic Integration domains pointing to the same database on 189.

- c. Select the Gateway tab. Check the default selections for event servers that are to be activated, and make any necessary changes. Note that INTEGRATIONSERVER must be checked.

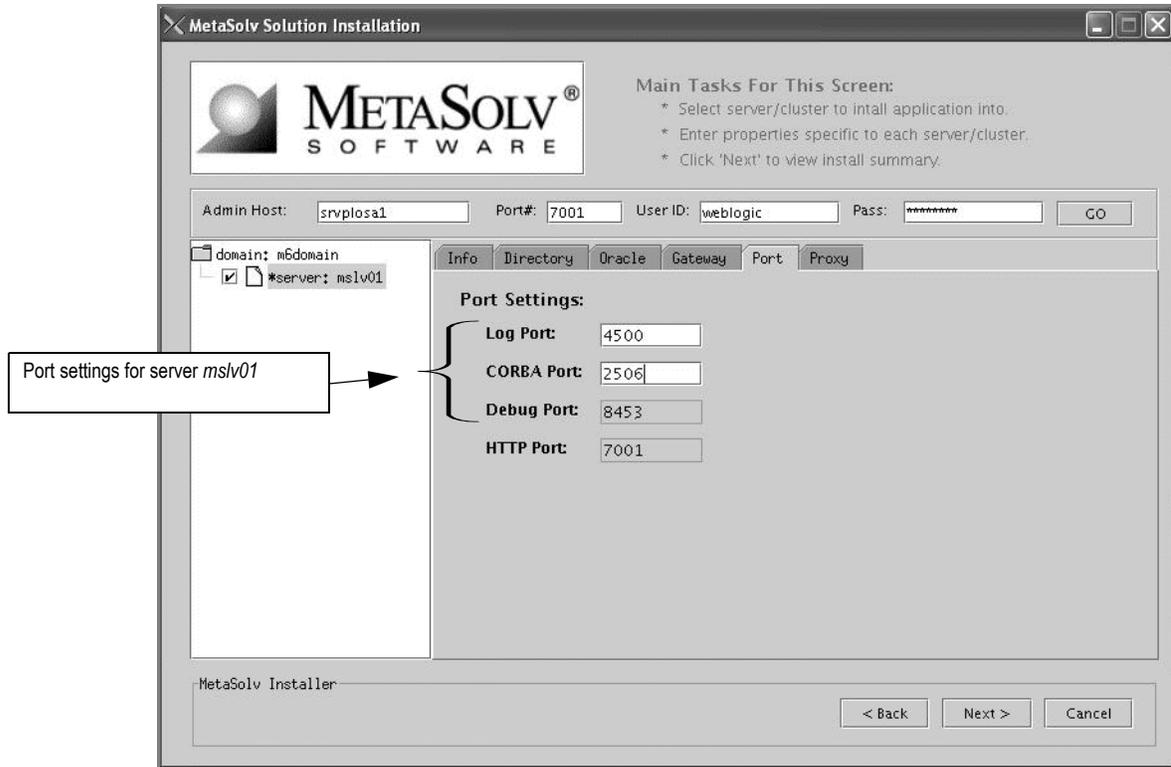


If you are unsure, leave the default settings. You can manually edit these settings through the gateway.ini file. The check boxes that appear on the tab are for APIs. When you select a check box, modifications are made to the gateway.ini file used to configure MetaSolv Solution APIs. For more information on the gateway.ini, see the *MetaSolv Solution Administration Guide*.

- d. Select the Port tab and type values in the **Log Port**, **CORBA Port**, and **Debug Port** fields.

By default, the installation program finds available ports and assigns the correct values.

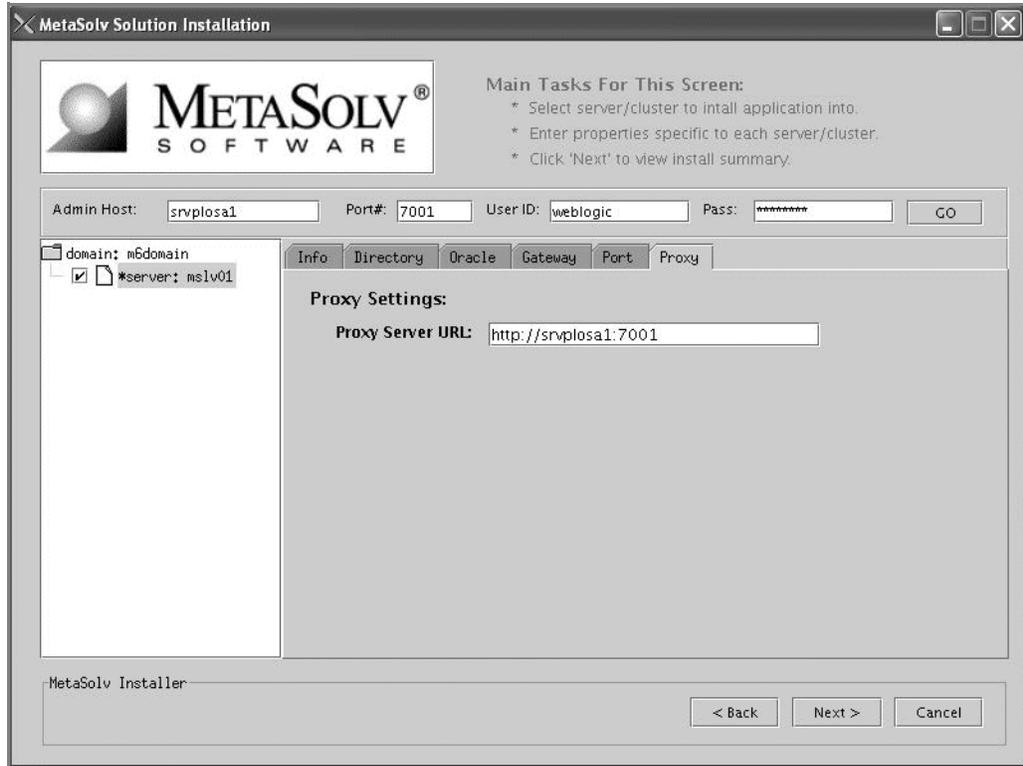
The following figure shows the example values entered from the single server installation worksheet.



Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
Log Port	XSingle-0190	4500
CORBA Port	XSingle-0200	2506
Debug Port	XSingle-0205	8453

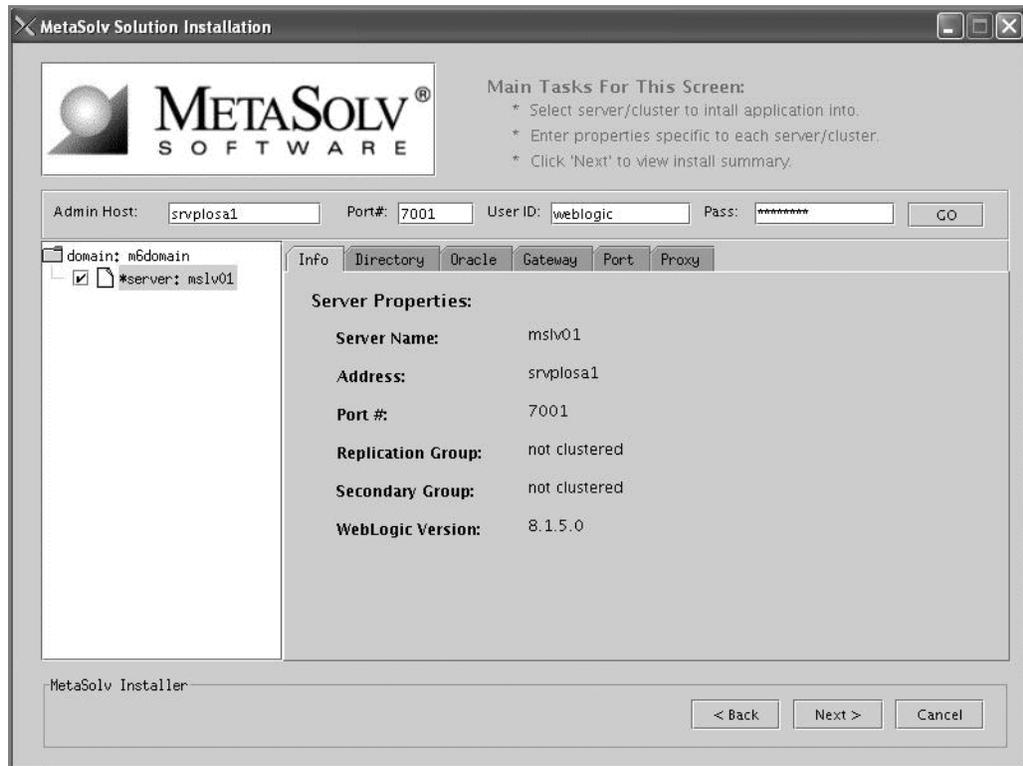
- e. Select the Proxy tab if you use a proxy server or an external load balancer and provide the URL of the proxy server.



Worksheet reference numbers and example values:

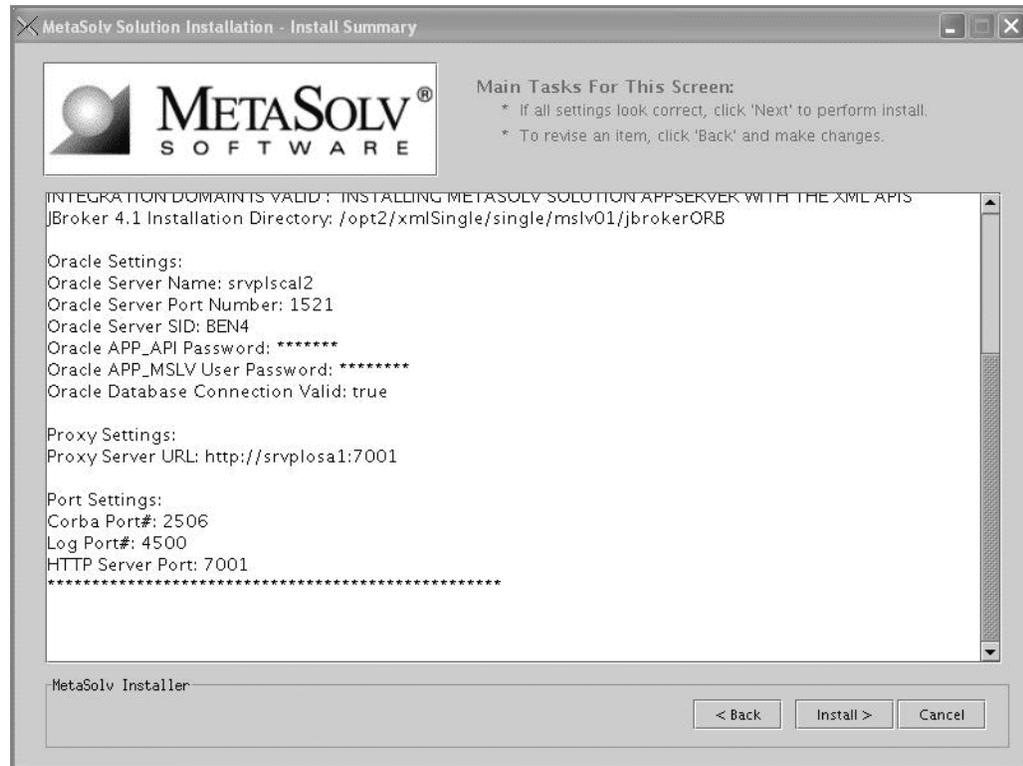
Field name	Worksheet reference number	Example value
Load Balancer Virtual IP & Port/ Proxy Server URL	XSingle-0210	<i>http://srvplosa1:7001</i>

- f. Select the Info tab to see a summary of the selected server's properties.



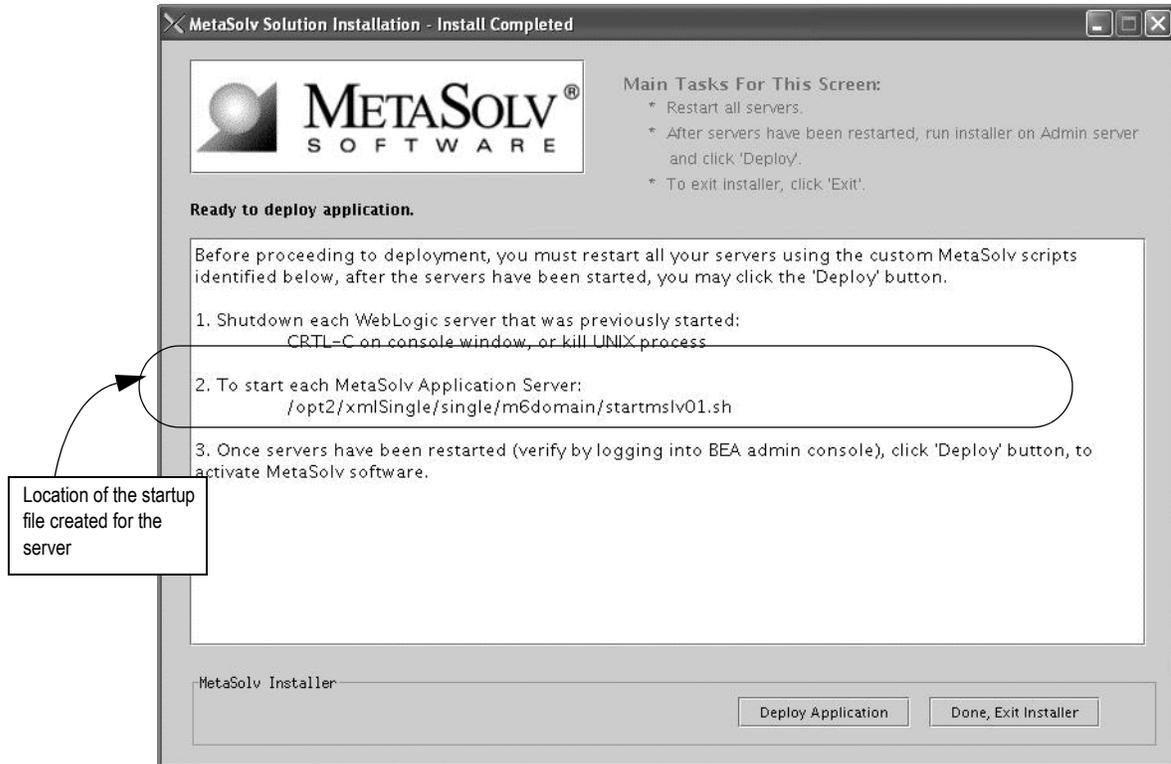
9. When all tabs have correct information for the single server, click **Next**.

The installation summary appears.



10. After checking the information in the summary for accuracy, click **Install**.

The installation program installs the appropriate MetaSolv Solution files to the server. When the files are installed the following window appears.



11. \*\*\* Do not exit the installation program \*\*\* Note the location of the startup file for the application server, then minimize the installation program window.
12. Shut down the server and restart it using the MetaSolv custom script installed by the installation program and listed on the window.

To start the server, navigate to the m6domain directory. At the command prompt, enter the command:

**startmslv01.sh**

To shut down the server, navigate to the m6domain directory. At the command prompt, enter the command:

**stopmslv01.sh**

If you are in Development mode, you should also start the Debug Proxy server using the following command:

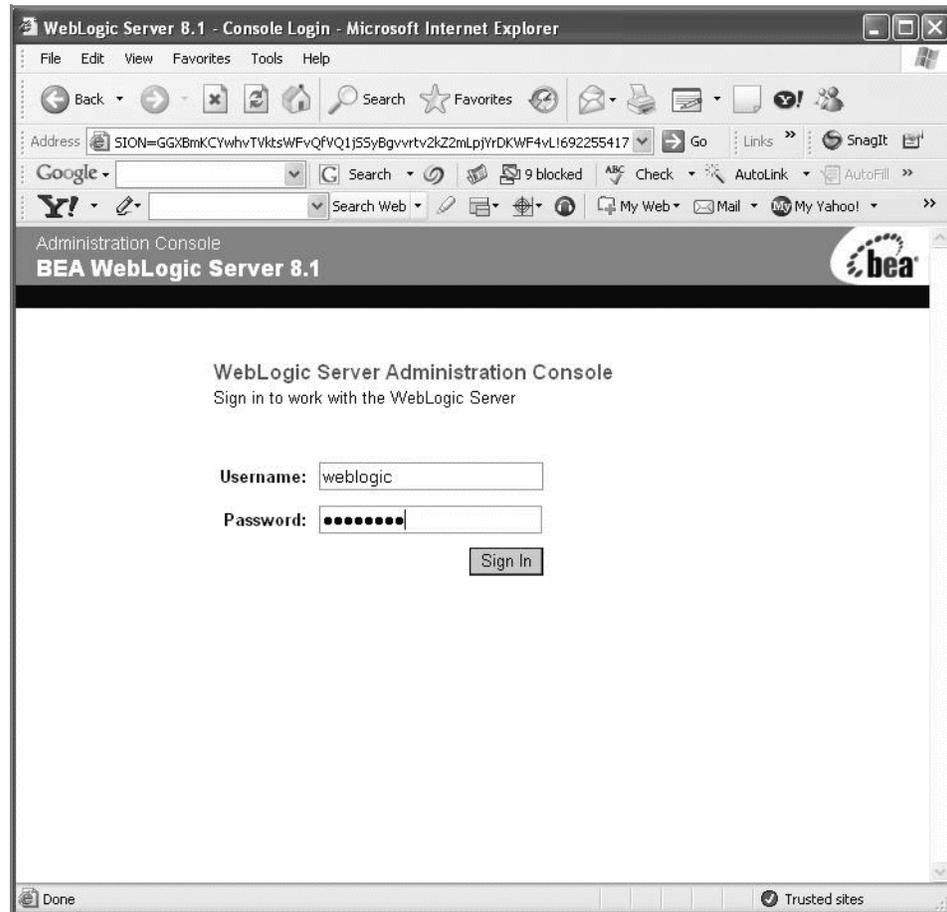
Windows: **startDebugProxy.cmd**

UNIX: **startDebugProxy.sh**

13. Start the WebLogic Server Administration Console by typing the following information into the **Address** field of Internet Explorer:

**http://<host\_admin:port number>/console**

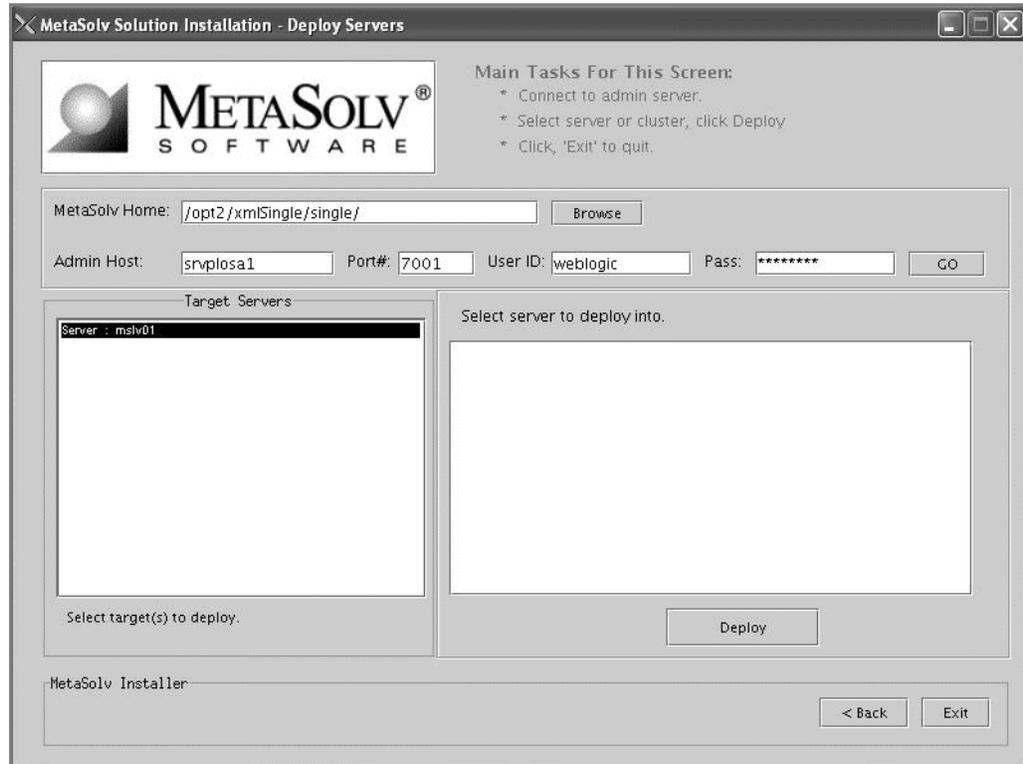
The following figure shows the logon screen for the example used in this procedure.



You can monitor the deployment from the console. To check the servers, click **Servers** in the left pane of the Console, and the right pane will show the status of all servers.

14. After the startup command has been executed and the application server has been started, maximize the installation program window and click **Deploy Application**.

The following window appears listing the server or servers you can select for deployment.

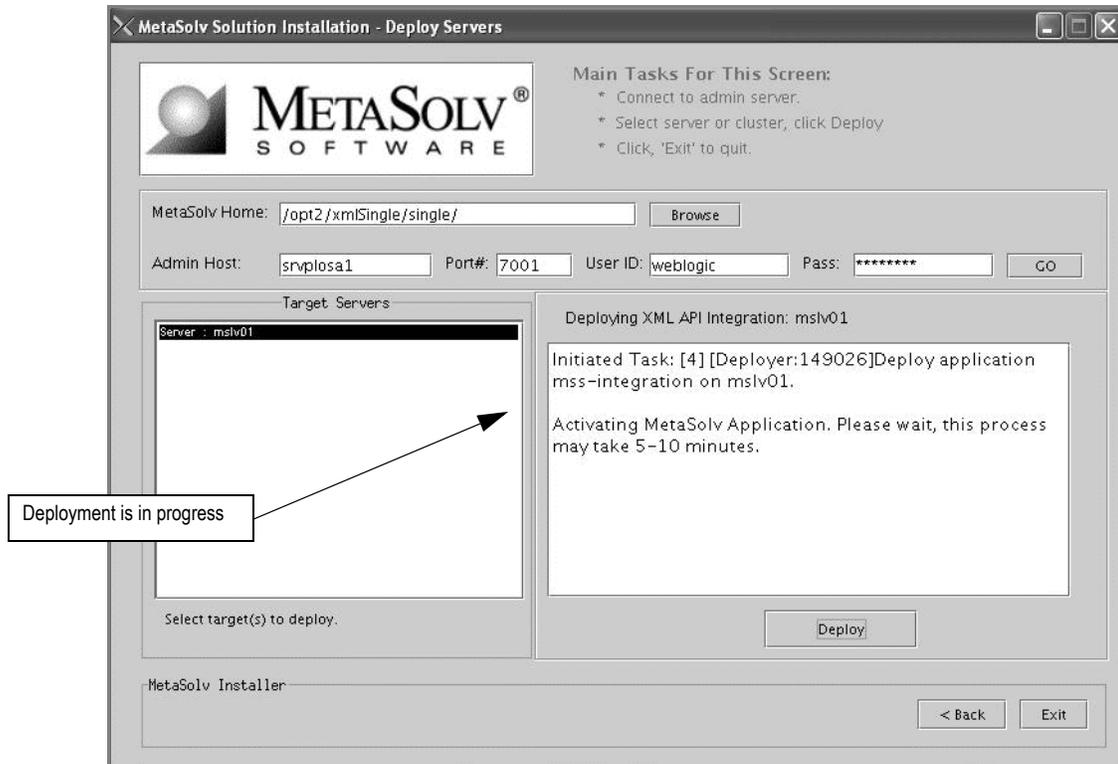


This process can take a few moments. If the server is not started, a status appears on the window indicating the installation program is waiting for the server to be in running mode. When the server is in running mode, you can begin the deployment.

15. Select a server in the Target Servers list box, and click **Deploy**.

The deployment process begins. You can follow the progress of the deployment by viewing the text that appears in the right pane of the installation window.

The following figure shows how the text appears.



When the deployment is complete, the following window appears.



16. Click **OK**, then click **Exit** to exit the installation program.

The following window appears.



17. Click **OK** to exit.



If you encounter the following error in the <serverName>.mss.log file after you start a server, refer to the Technical Bulletin titled *Prodfixsql Error: Failure to grant table creation privileges for APP\_MSLV* for information on how to resolve this error. To locate this bulletin, click the Knowledge tab on the Oracle MetaLink Web site (<https://metalink.oracle.com>).

```
<Alert> <JMS> <BEA-040205> <JMSServer "plugging_auto_1". An error
occurred while trying to do a SQL SELECT on table
"pluginStore_auto_1JMSState". Check privileges on this table. You
may need to specify [schema.[catalog.]] in your configured
prefix.>
```

```
<Alert> <JMS> <BEA-040052> <JMSServer "plugging_auto_1" store
failed to open java.io.IOException: JMS JDBC store, connection
pool = <MSLVNoneTxPool>, prefix = <pluginStore_auto_1>: flush
failed
```

```
java.sql.SQLException: ORA-00942: table or view does not exist
```

## Deploying Samples

### Prerequisites

- ◆ The instructions for creating the domain configuration included starting the server after the configuration was complete. Leave the server running until you are instructed to shut it down.
- ◆ Ensure that the PATH variable has the BEA\_HOME/jdk142\_08/bin prepended to it. This allows the use of the BEA JDK version.

### To install and deploy MetaSolv Samples

1. From the directory where you stored MetaSolv Solution files downloaded from the Oracle E-Delivery Web site, type one of the following commands and press ENTER:

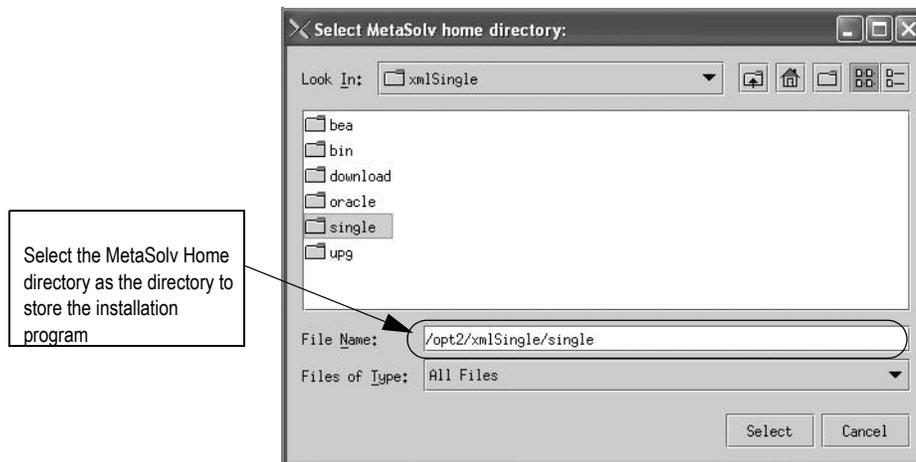
**java -jar <release#/build#>\_AppServerInstaller.jar**

For example: java -jar MSS\_R6\_0\_8\_b57\_XML-API-Installer.jar



If the file name has brackets and a number embedded (for example, MSS[1].R6\_0\_8b57\_XML-API-Installer.jar), change the file name to eliminate the brackets and their contents. Brackets cause a Java error when you attempt to unjar the contents of the download file.

The following window appears.



2. From the **Look In** drop-down list, click the down arrow and select a directory in which the installation program files can be stored and used during the installation process, then click **Select**.

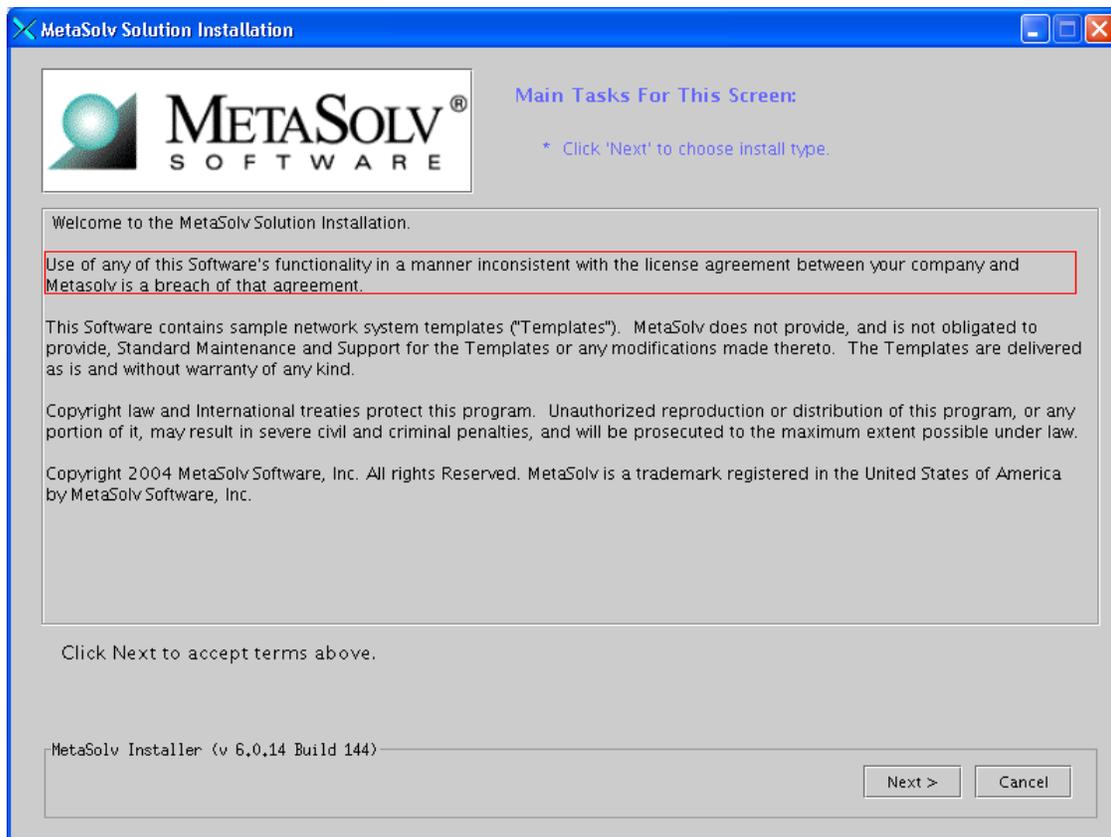
A directory named *installer* is automatically created in the selected directory. MetaSolv recommends choosing your METASOLV\_HOME directory for this task.

The installation program auto-launches the installation process by invoking `setup.sh` in the `METASOLV_HOME/installer` directory.

Worksheet reference numbers and example values:

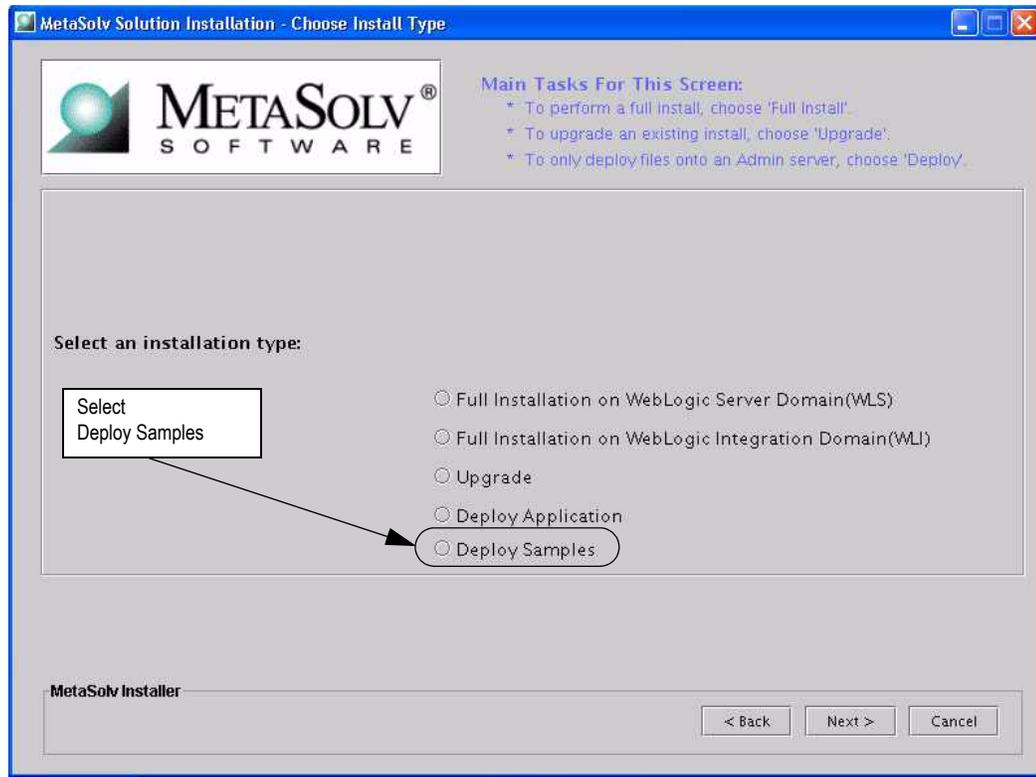
Field name	Worksheet reference number	Example value
File Name (METASOLV_HOME)	XSingle-0090	<code>/opt2/xmlSingle/single</code>

The following window appears.



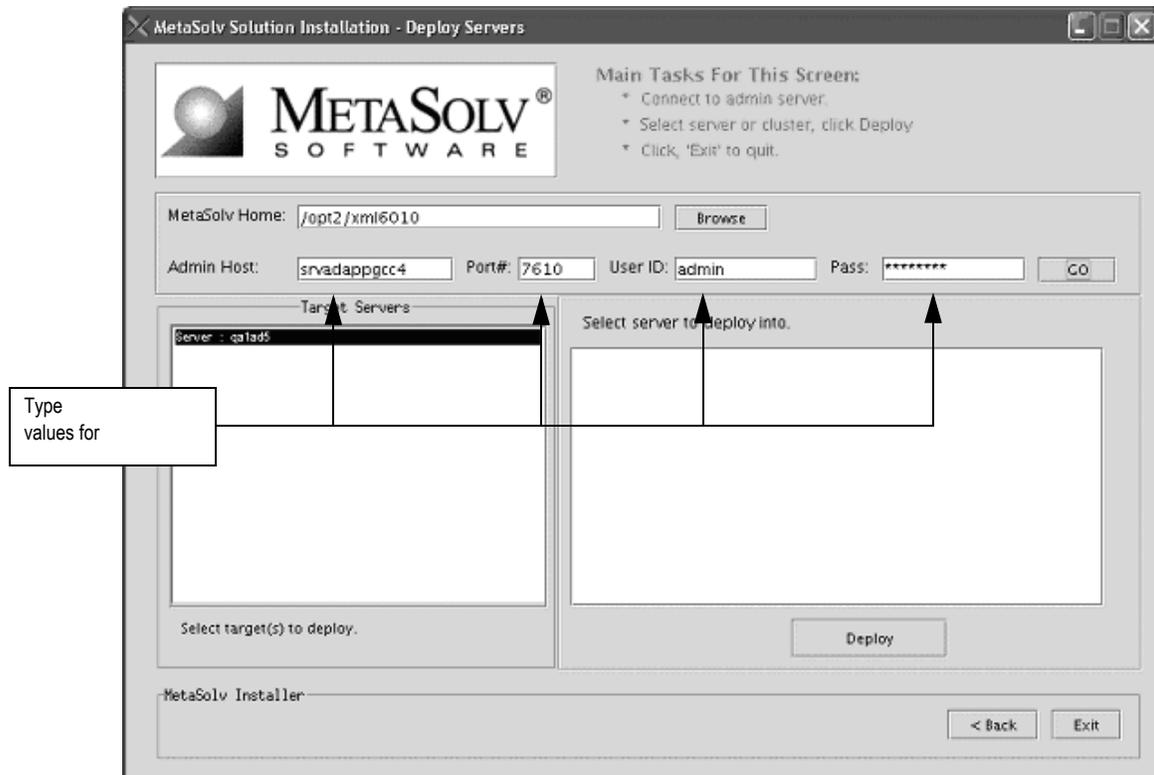
3. Click **Next**.

The following window appears.



4. Select **Deploy Samples** and click **Next**.

The following window appears.



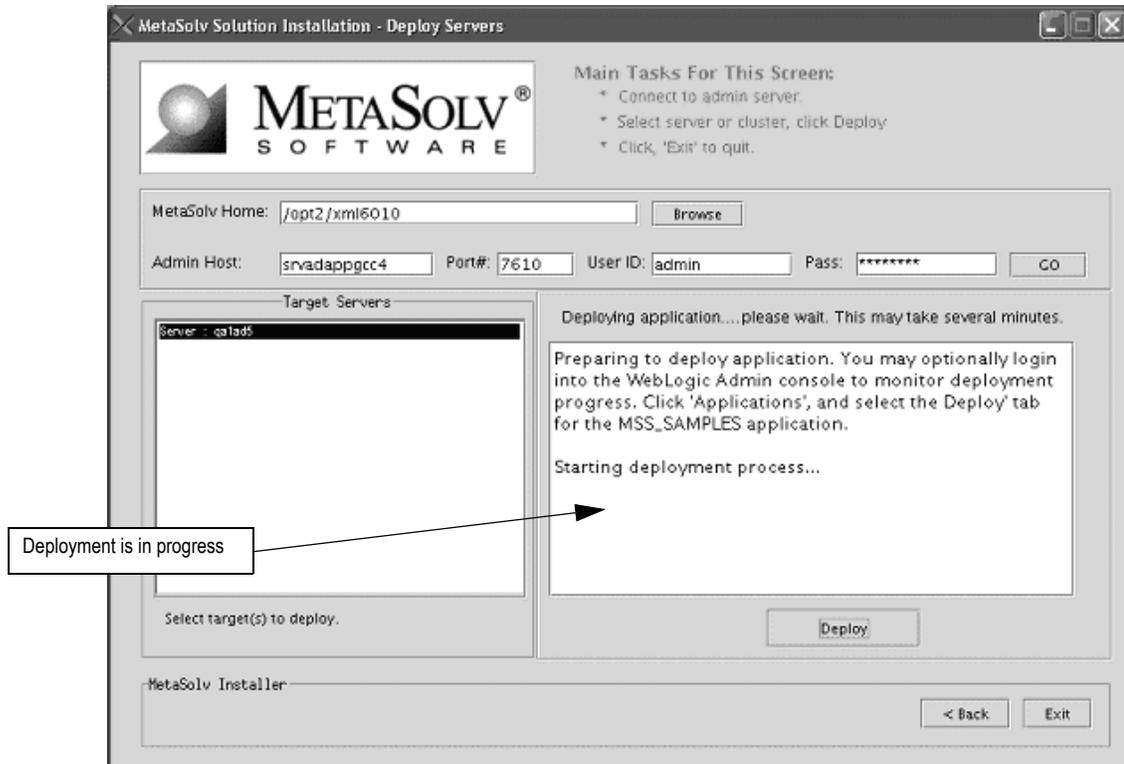
5. Type the values for the following fields: **Admin Host**, **Port#**, **User ID**, and **Pass**, and click **Go**. (This screen shot does not reflect the worksheet values.)

Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
Admin Host	XSingle-0160	<i>srvplosal</i>
Port#	XSingle-0170	<i>7001</i>
User ID	XCOMM-0020	<i>weblogic</i>
Pass	XCOMM-0030	<i>metasolv</i>

When you click **Go**, the samples deployment process begins. The following figure shows the window updated.

The following figure shows the text that appears, indicating the deployment has started..



When the deployment is complete, the following window appears.



6. Click **OK**, then click **Exit** to exit the installation program.

The following window appears.



7. Click **OK** to exit.

## Configuring WebLogic Integration

This section describes how to set the following configuration parameters in WebLogic Integration:

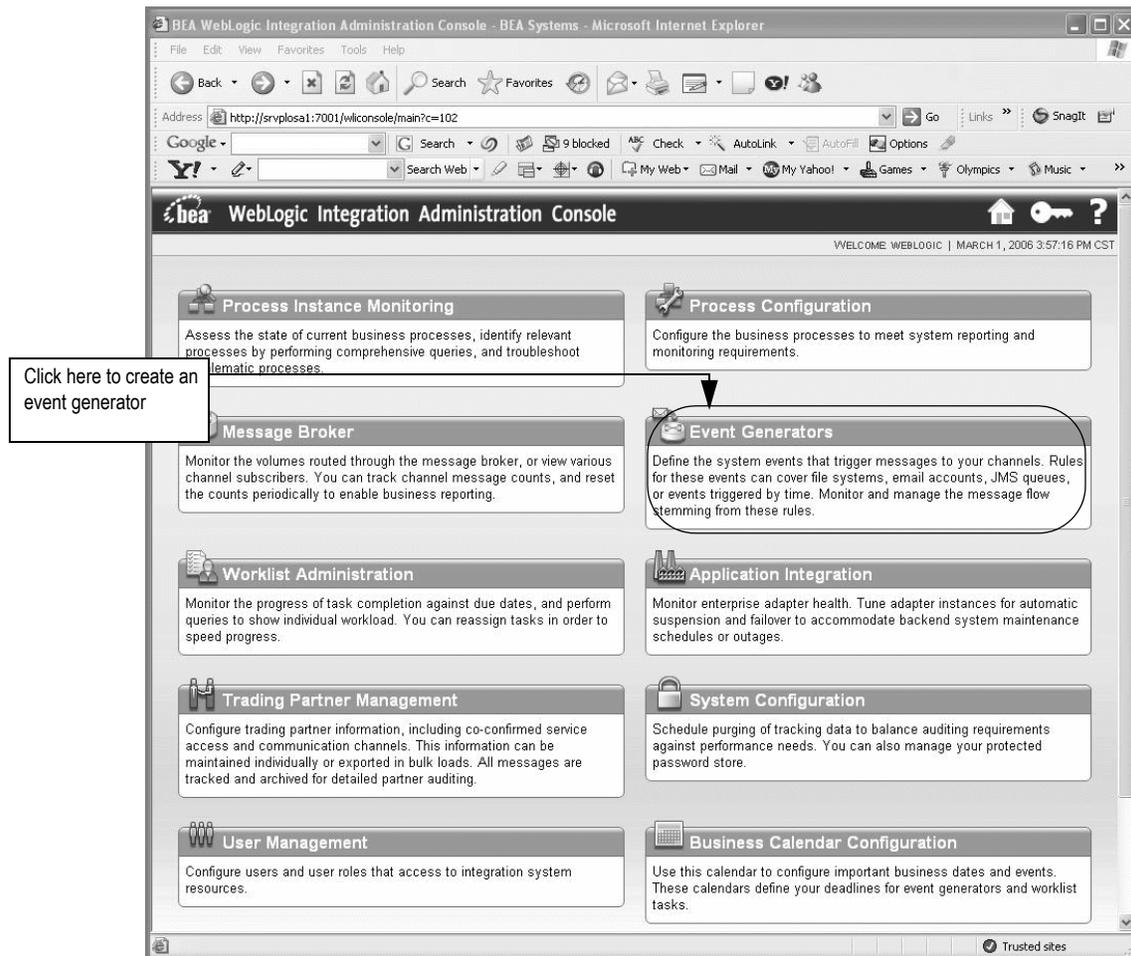
- ◆ Event generation
- ◆ Tracking data management

### Logging on to the WebLogic Integration Administration Console

Start the WebLogic Integration Administration Console by typing the following information into the Address field of the Internet Explorer:

`http://<host_admin:port number>/wliconsole`

The following figure shows the initial console window that appears.

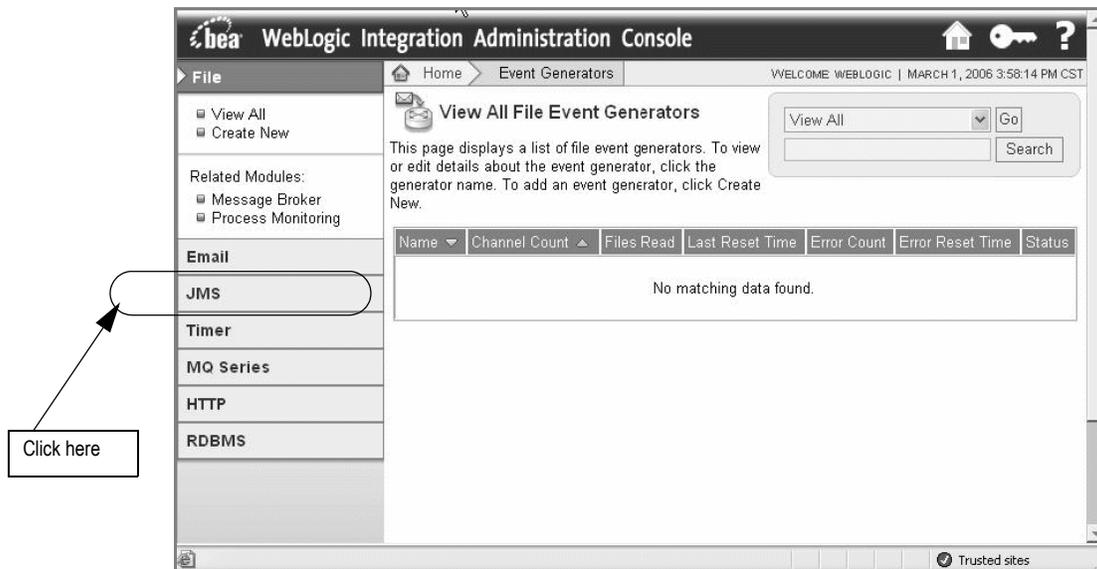


## Setting up an event generator

### To create an event generator

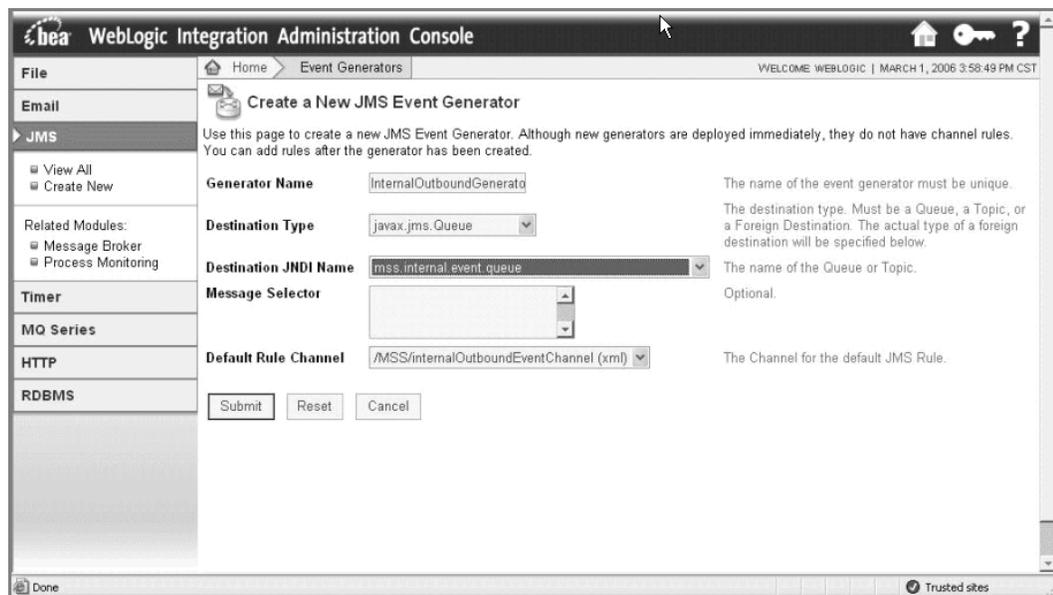
1. On the WebLogic Integration Administration Console window, click **Event Generators**.

The following window appears.



2. On the left panel, click **JMS**; then on the expanded view under JMS, click **Create New**.

The following information appears in the right pane.



3. Enter the following values on the Create a New JMS Event Generator window:

**Generator Name:** InternalOutboundGenerator

**Destination Type:** javax.jms.Queue

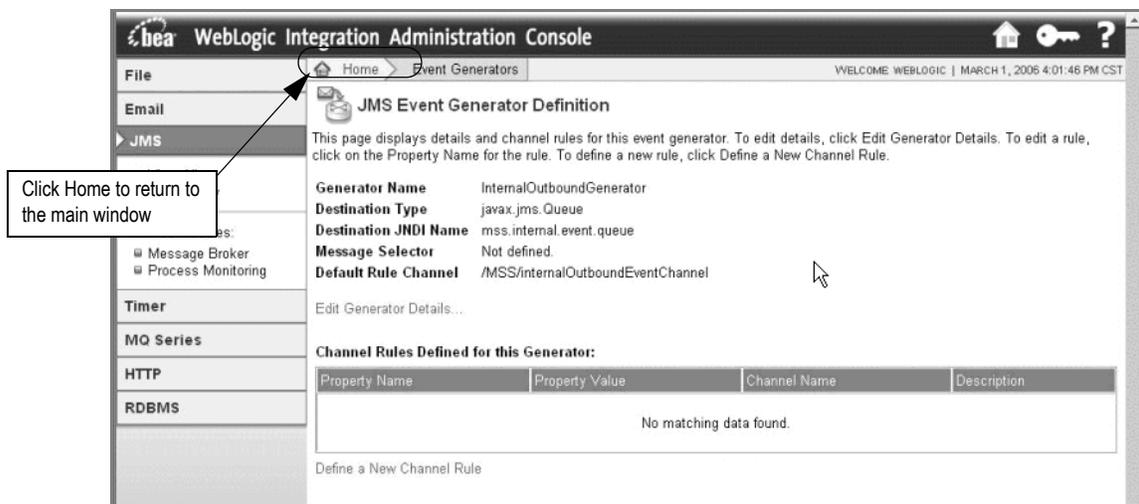
**Destination JNDI Name:** mss.internal.event.queue

**Message Selector:** Leave this field blank.

**Default Rule Channel:** /MSS/internalOutboundEventChannel (xml)

4. Click **Submit**.

The following figure shows the summary that appears when the event generator is created.



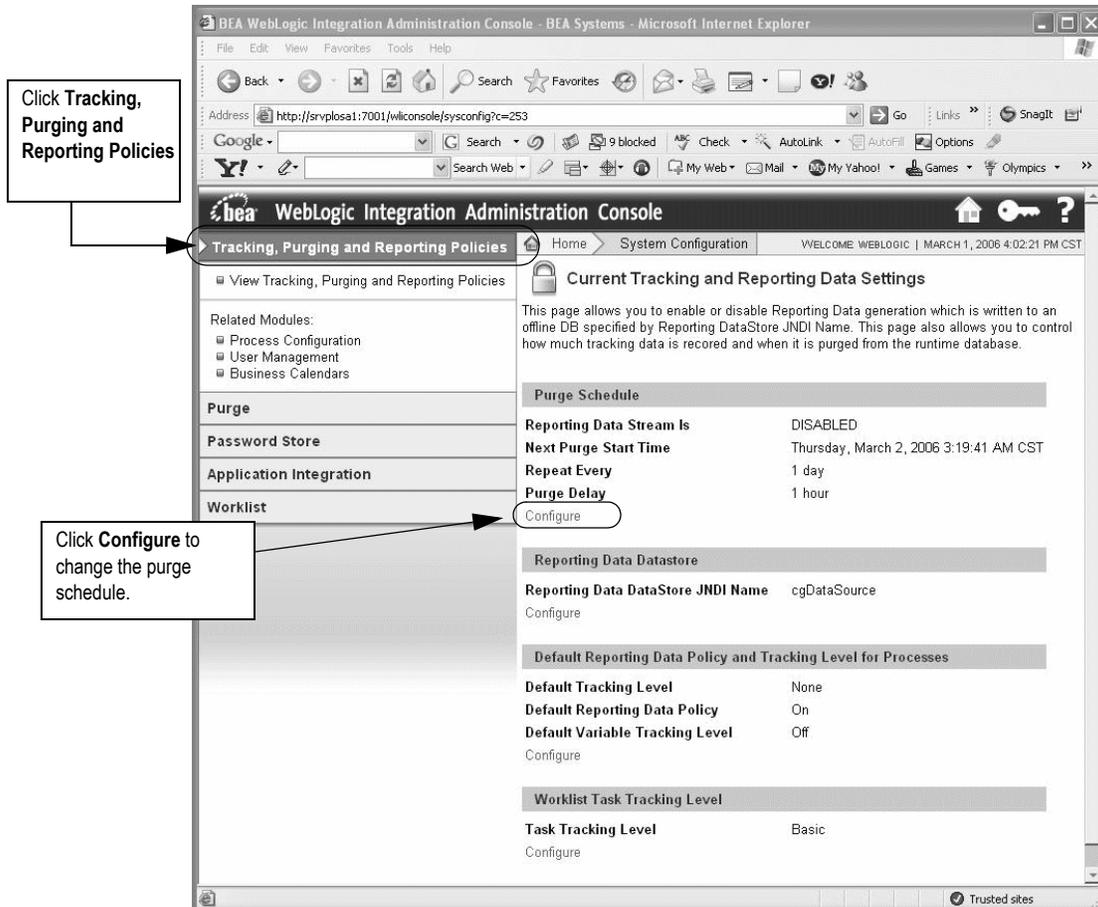
To return to the main WebLogic Integration Administration Console window, click **Home** in the breadcrumbs listed at the top of the pane. See the previous figure for information on the **Home** link to click.

## Setting parameters for purging data (optional)

### To set up purge parameters (optional)

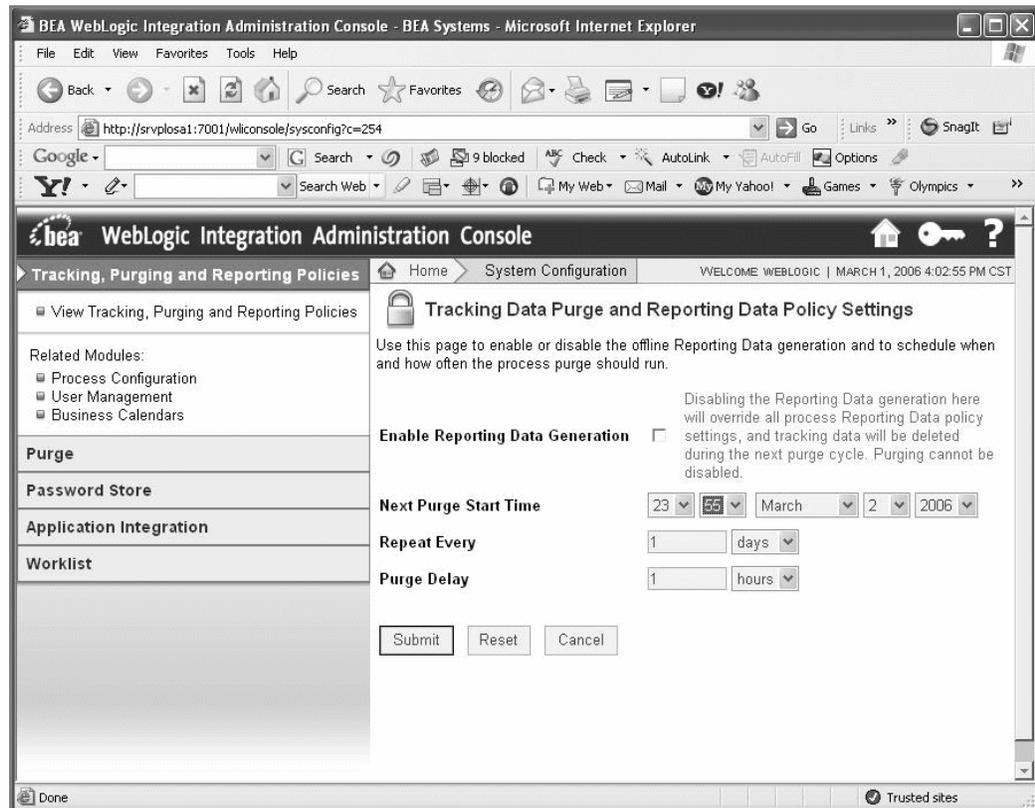
1. On the WebLogic Integration Administration Console window click **System Configuration**.

The following window appears.



2. On the left panel, click **View Tracking, Purging and Reporting Policies**, then click **Configure** in the Purge Schedule section that appears in the right pane.

The following information appears in the right pane.



3. Set the purging policy by completing the following fields on the window:

**Next Purge Start Time:** The start time for the first (or next purge).

**Repeat Every:** Select a unit of time you want to measure by in the drop-down box (days, for example), and write a number to indicate the length of time between purges in the text box.

**Purge Delay:** Select the unit of time and type a number in the text box to indicate how long a purge can be delayed.

4. Click **Submit**.

The change is processed and the right pane returns to Current Tracking and Reporting Data Settings.

The screenshot shows the BEA WebLogic Integration Administration Console in a Microsoft Internet Explorer browser window. The address bar shows the URL: `http://srvplosa1:7001/wlconsole/sysconfig?c=253`. The page title is "WebLogic Integration Administration Console". The main content area is titled "Current Tracking and Reporting Data Settings".

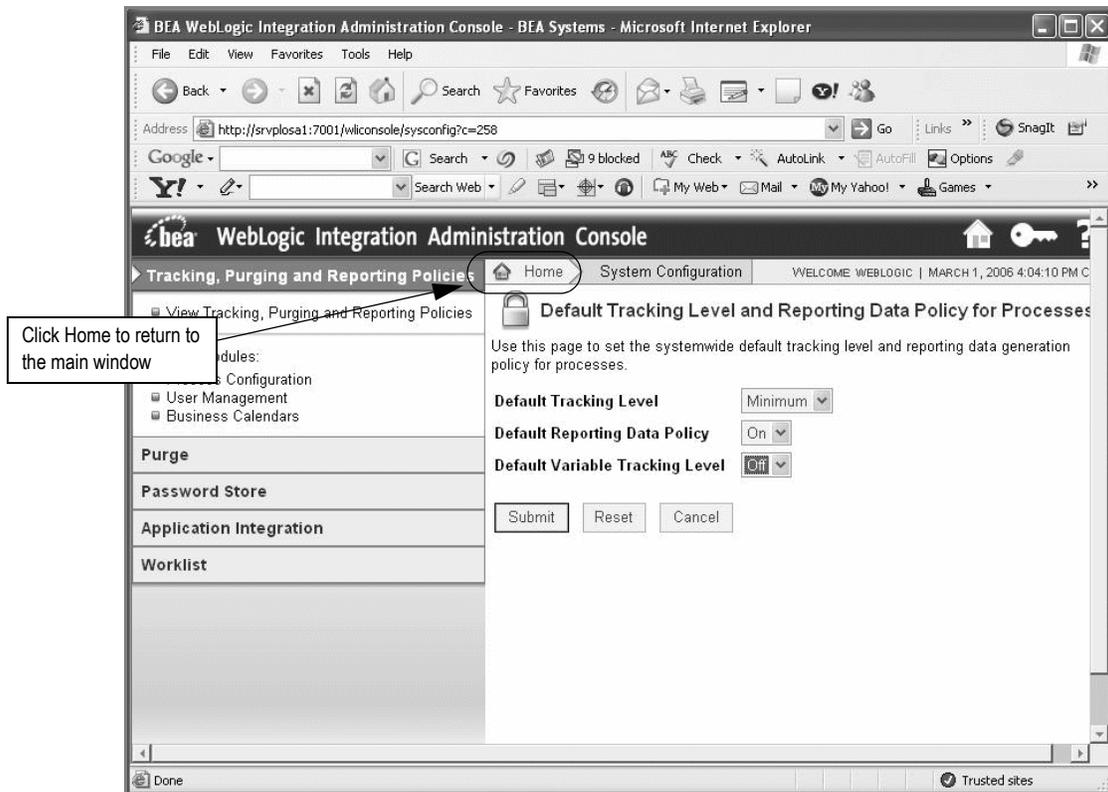
The page contains several sections with configuration details:

- Purge Schedule:**
  - Reporting Data Stream Is: DISABLED
  - Next Purge Start Time: Thursday, March 2, 2006 3:19:41 AM CST
  - Repeat Every: 1 day
  - Purge Delay: 1 hour
- Reporting Data Datastore:**
  - Reporting Data DataStore JNDI Name: cgDataSource
- Default Reporting Data Policy and Tracking Level for Processes:**
  - Default Tracking Level: None
  - Default Reporting Data Policy: On
  - Default Variable Tracking Level: Off
- Worklist Task Tracking Level:**
  - Task Tracking Level: Basic

A callout box with the text "Click Configure to change reporting and tracking settings." has an arrow pointing to the "Configure" link located under the "Default Reporting Data Policy and Tracking Level for Processes" section.

5. Click **Configure** in the Default Reporting Data Policy and Tracking Level for Processes section.

The following window appears.



6. In the right pane, select *Minimum* in the **Default Tracking Level** field and *On* in the **Default Reporting Data Policy** field, then click **Submit**.

The changes are processed and the Current Tracking and Reporting Data Settings reappear showing the changes. To return to the main WebLogic Integration Administration Console window, click **Home** in the breadcrumbs listed at the top of the pane. See the previous figure for information on the **Home** link to click.

## Verifying the installation

Verification is done from the WebLogic Server Administration Console.

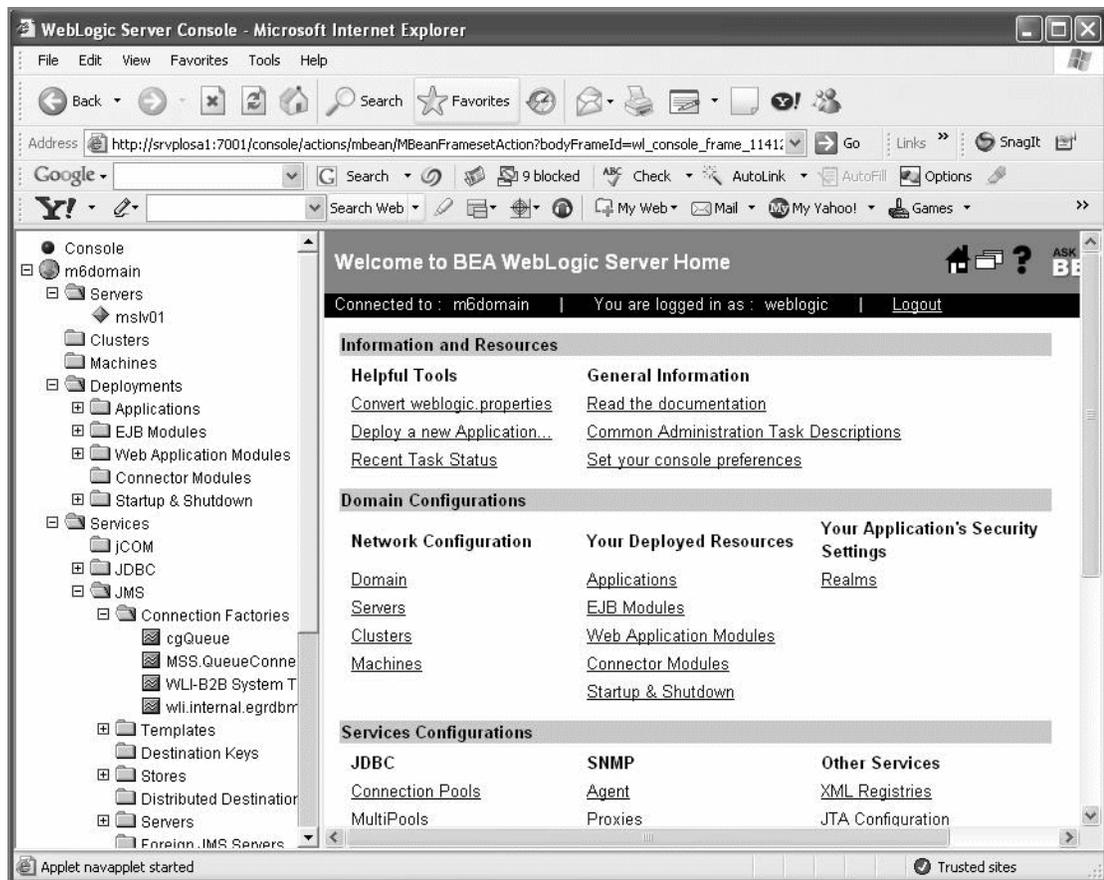
### To verify the installation

1. Start the WebLogic Server Administration Console by typing the following information into the Address field of Internet Explorer:

`http://<host_admin:port number>/console`

2. Log on to the console using your user name and password.

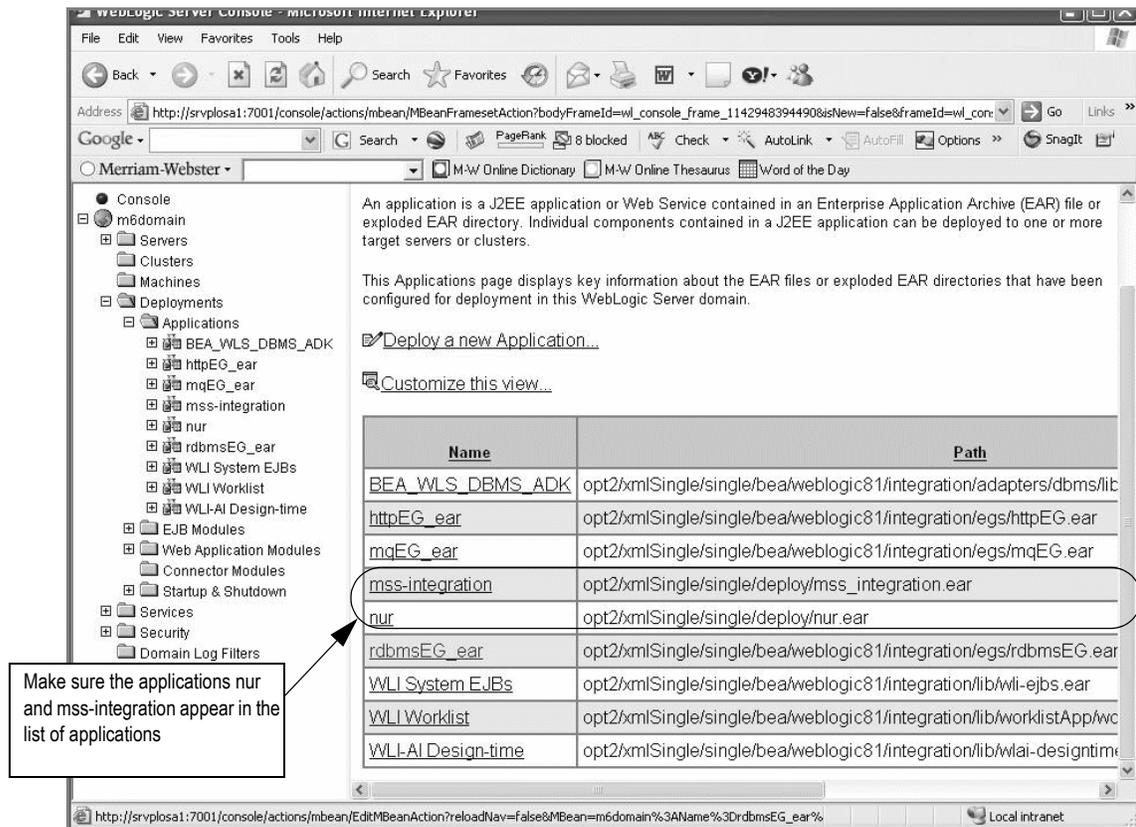
The following window appears.



3. In the left pane, select **DOMAIN\_NAME>Deployments>Applications**.

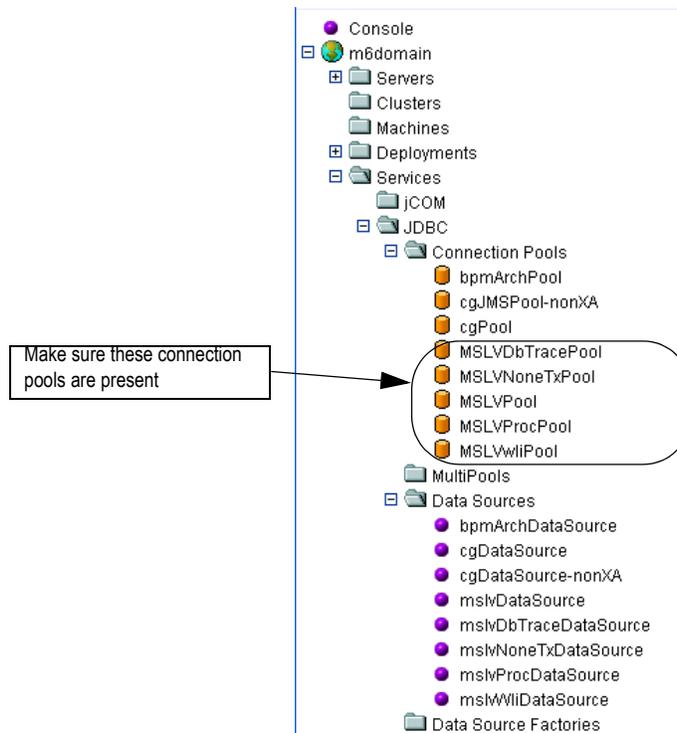
In the example shown in the preceding figure, you would select **m6domain>Deployments>Applications**.

The following pane appears on the right.



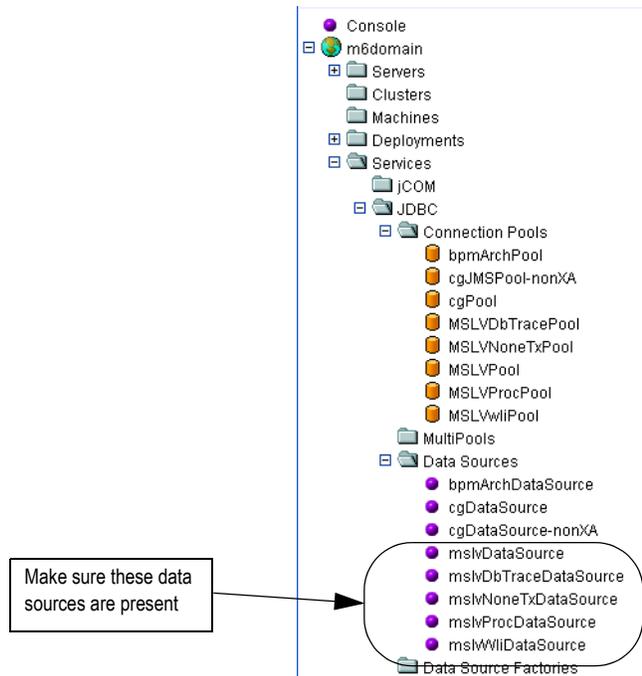
4. Make sure the applications **nur** and **mss-integration** are listed in the list of applications.
5. Select **DOMAIN\_NAME>Services>JDBC>Connection Pools** in the left pane.

The following pane appears on the right.



6. Verify that the following connection pools are included in the list of connection pools: MSLVPool, MSLVDbTracePool, MSLVNoneTXPool, MSLVProcPool, and MSLVwliPool.
7. In the left pane, select **DOMAIN\_NAME>Services>JDBC>Data Sources**.

The following pane appears on the right.



8. Make sure the following data sources exist: mslvDataSource, mslvDbTraceDataSource, mslvNoneTXDataSource, mslvProcDataSource, and mslvWliDataSource.
9. In the left pane, select **DOMAIN\_NAME>Services>JMS>Connection Factories**.

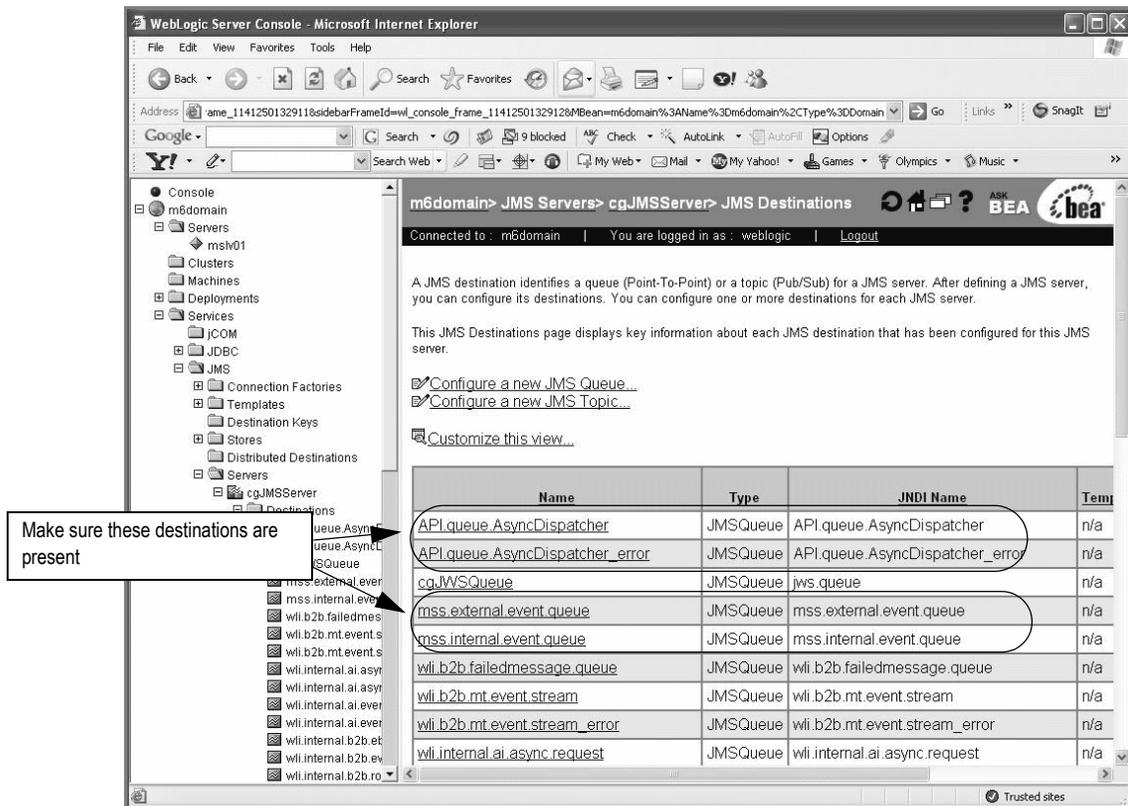
The following pane appears on the right.

The screenshot shows the WebLogic Server Console in Microsoft Internet Explorer. The left pane displays a tree view of the console structure, with 'JMS' selected under 'Services'. The right pane shows the 'm6domain> JMS Connection Factories' page. The page includes a header with 'Connected to: m6domain' and 'You are logged in as: weblogic'. Below the header, there is a table listing the configured JMS connection factories. A callout box with the text 'Make sure this JMS connection factory is present' points to the 'MSS.QueueConnectionFactory' entry in the table.

Name	JNDI Name	Client ID	D P
cgQueue	weblogic.jms.QueueConnectionFactory	n/a	4
MSS.QueueConnectionFactory	MSS.QueueConnectionFactory	n/a	4
WLI-B2B System Topic Factory	com.bea.wli.b2b.server.TopicConnectionFactory	n/a	4
wli.internal.egrdbms.XAQueueConnectionFactory	wli.internal.egrdbms.XAQueueConnectionFactory	n/a	4

10. Make sure the JMS connection factory `MSS.QueueConnectionFactory` is present in the list of connection factories.
11. In the left pane, select **DOMAIN\_NAME>Services>JMS>Servers>cgJMSServer>Destinations**.

The following pane appears on the right.



12. Make sure the following destinations are listed:

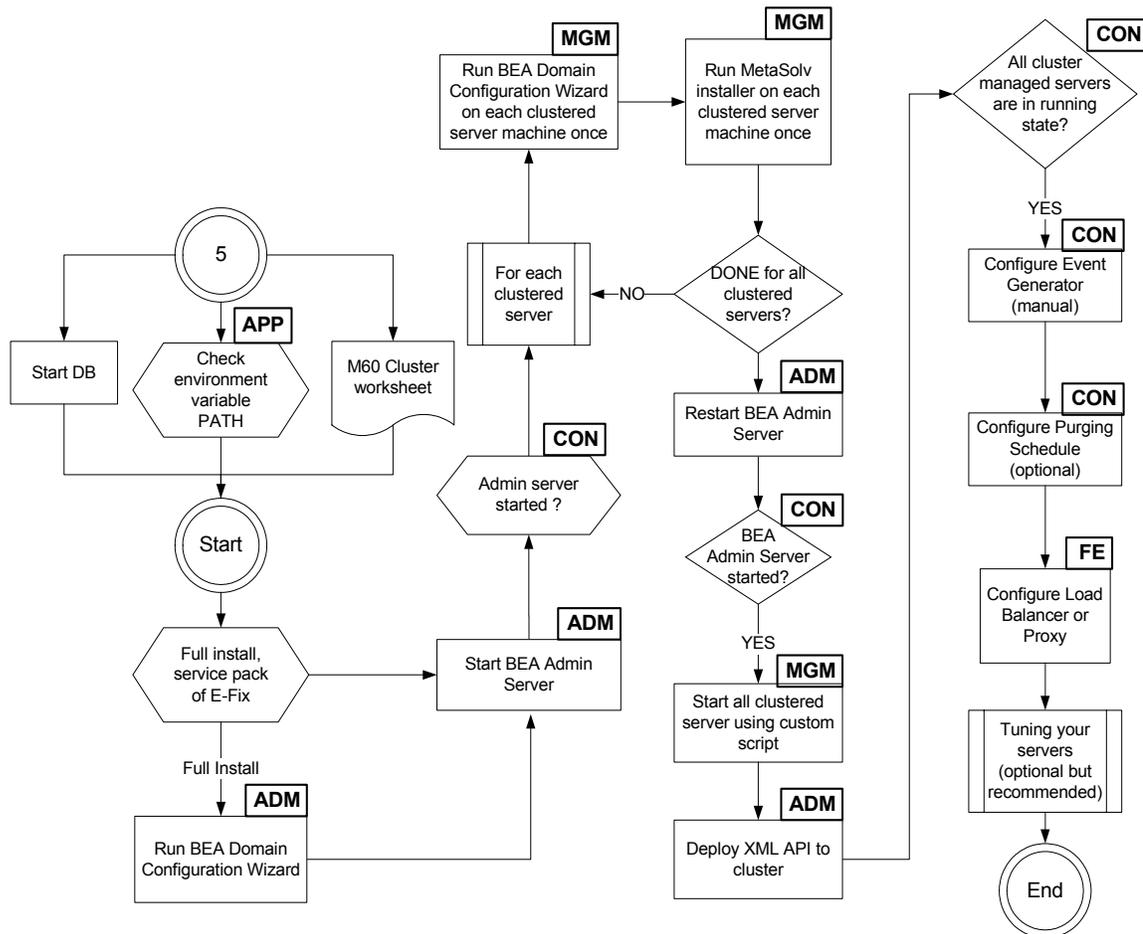
- API.queue.AsyncDispatcher
- API.queue.AsyncDispatcher\_error
- mss.internal.event.queue
- mss.external.event.queue

13. For BEA server tuning, refer to “Appendix F: Tuning servers for performance”.

## Clustered server installation

A clustered server installation (also called an administration server with clustered managed servers installation) is one in which one or more WebLogic server instances are managed by a separate administration server. In this arrangement, clustering the managed servers in WebLogic allows the servers to work together as one unit, rather than several independent processing units. This is the configuration MetaSolv recommends because it provides protection in the event a server fails.

The following figure shows the detailed process for installing a clustered server configuration.



The following acronyms indicate the machine used in a step in the installation and deployment process:

**ADM**—BEA administration server machine

**APP**—All application server machines

**CON**—BEA administration console

**MGM**—All clustered server machines

**FE**—Front end host machine, such as load balancer or proxy.

**Figure 7: Clustered server installation**

The preceding figure shows the basic steps for installing MetaSolv Solution in an admin/clustered server configuration. The figure is an expansion of Step 5 of the basic installation process shown in [Figure 2](#) on page 1.

This section describes how to:

- ◆ Create a BEA domain for clustered servers
- ◆ Install the MetaSolv Solution application server software
- ◆ Deploy MetaSolv Solution to the clustered servers

## Installation scenario

The following figure shows the example configuration that will be used in the installation scenario. This installation includes two clustered managed servers (mslv04 and mslv06), an administration server, and a BEA Proxy server used for load balancing. To see complete information on the data for the scenario, refer to the worksheet examples.

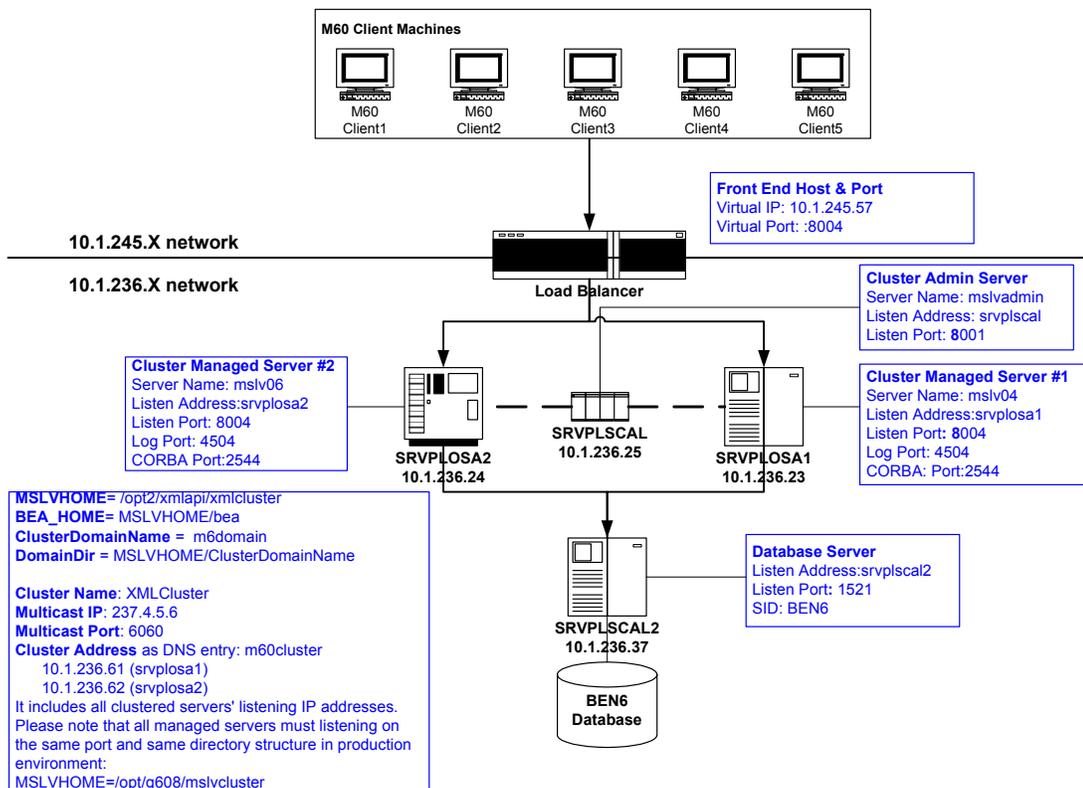


Figure 8: Example cluster used in the installation scenario

## Before you start

- ◆ Print and complete the following planning worksheets:
  - Application server common installation worksheet—[page 466](#)
  - Admin server installation worksheet—[page 469](#)
  - Cluster server general installation worksheet—[page 470](#)
  - Clustered managed server installation worksheet—[page 471](#)

Complete a worksheet for each managed server in the cluster. In the example used for the installation scenario, two worksheets must be filled out, one for mslv04 and the other for mslv06.

- BEA proxy server installation worksheet—[page 472](#). See Appendix A for a complete description of the proxy server installation. BEA proxy solution is not recommended since it can't support 150 concurrent user sessions.

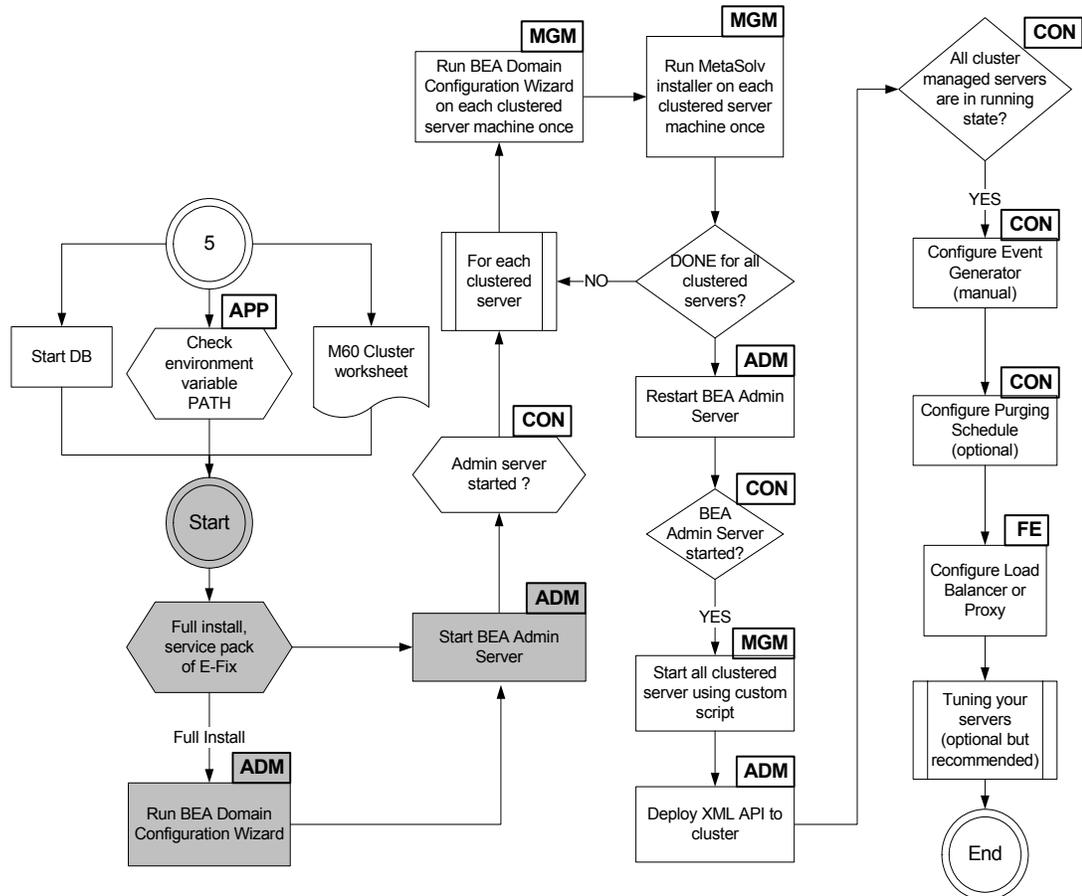
Some steps in the procedures for the BEA domain configuration and the MetaSolv Solution installation refer to the worksheet. Each value that you are asked to enter has a worksheet reference number.

- ◆ Review “[Prerequisites for installing MetaSolv Solution 6.0.15](#)” on page 33 and make sure all tasks listed that apply to your installation are completed.
- ◆ You may need assistance from your system administrator or network engineering team to perform the following tasks:
  - Set up a DNS entry to include all clustered servers' listening IP addresses for “Cluster Address” during cluster domain configuration in production environment.
  - In production environment, all clustered servers must listen on the same port. If there are multiple clustered servers running on the same machine in the same cluster, the machine must have multiple Network Interface Cards (NICs).
  - Set up a load balancer
  - Acquire the multicast IP address and port for the cluster
  - Define/verify a range of ports for each machine hosting cluster-managed servers and administration servers.
- ◆ See “[Appendix E: Load balancer configuration example](#)” if you are using a load balancer in your cluster configuration.

## Creating the BEA domain

Clustered servers are managed by an administration server. MetaSolv recommends running the BEA WebLogic Configuration Wizard on the administration server machine to create the domain.

This procedure completes the highlighted steps shown in the following figure.



The following acronyms indicate the machine used in a step in the installation and deployment process:

**ADM**—BEA administration server machine

**APP**—All application server machines

**CON**—BEA administration console

**MGM**—All clustered server machines

**FE**—Front end host machine, such as load balancer or proxy.

**Figure 9: Configuring the domain for an administration server**

**To create the domain on the administration server machine**

1. Start the BEA Configuration Wizard.

For UNIX platforms, this program (config.sh) is located in the following directory:  
BEA\_HOME/weblogic81/common/bin.

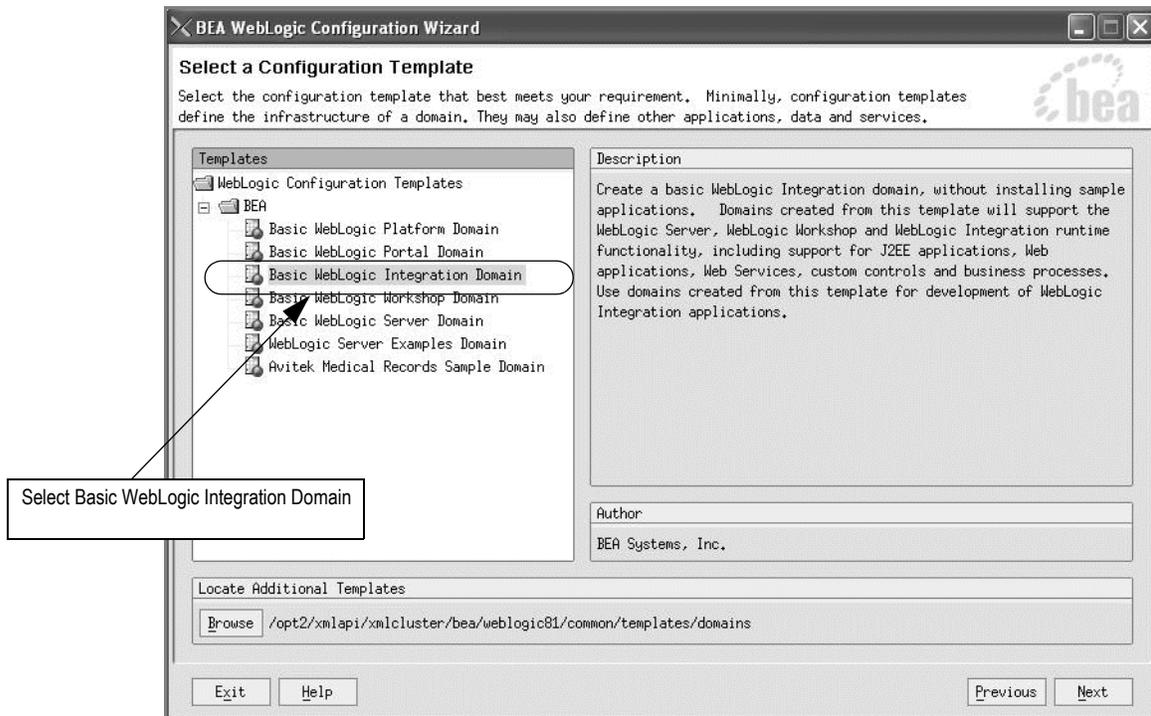
For Windows platforms, this program (config.cmd) is located in the following directory:  
BEA\_HOME\weblogic81\common\bin.

When you start the program, the following window appears.



2. Select **Create a new WebLogic configuration** and click **Next**.

The Select a Configuration Template window appears.



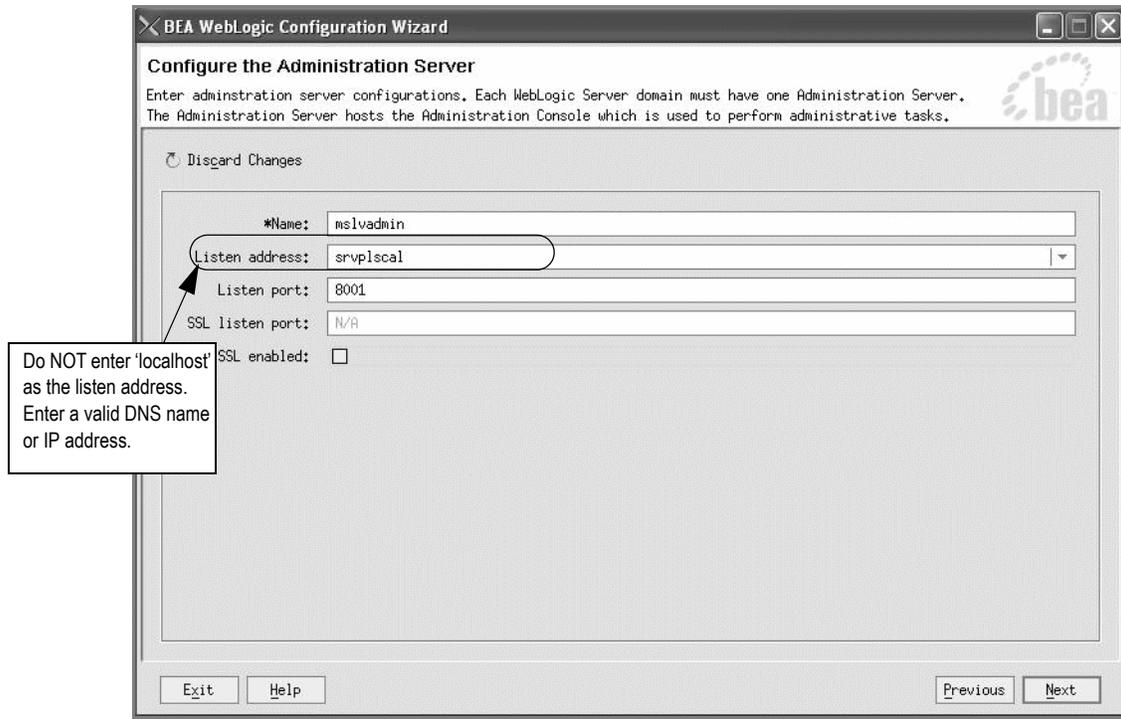
3. Select **Basic WebLogic Integration Domain** and click **Next**.

The following window appears.



4. Select **Custom** and click **Next**.

The Configure the Administration Server window appears.



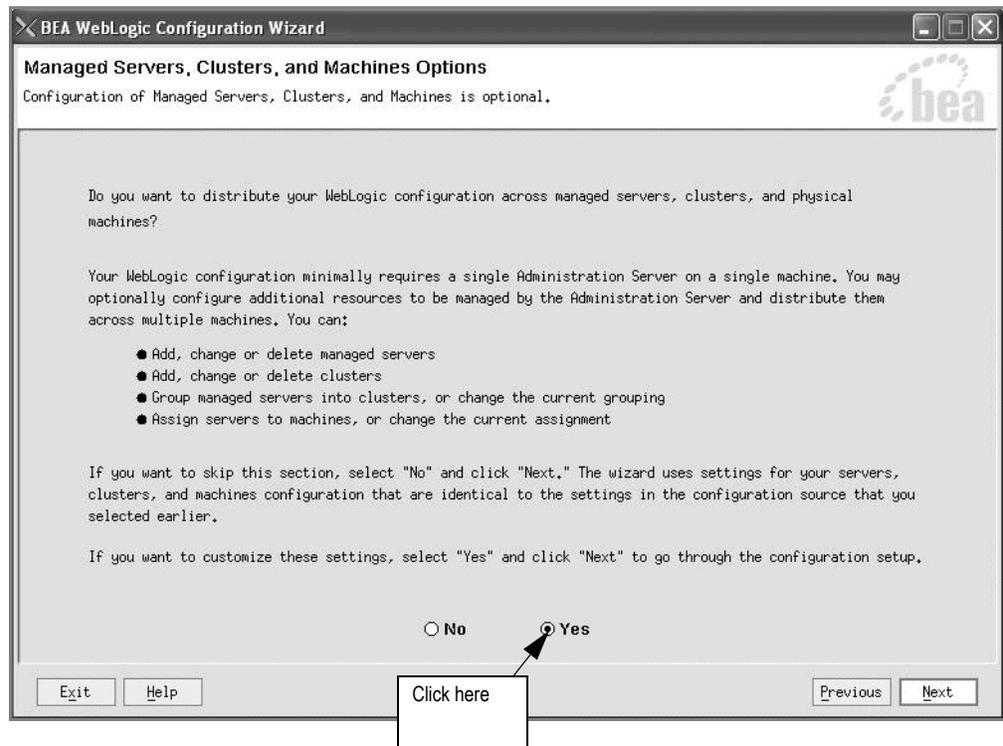
5. Type the information for your administration server in the appropriate fields and click **Next**.

In the **Listen address** field, enter a valid DNS name or IP address.

Worksheet reference numbers and example values:

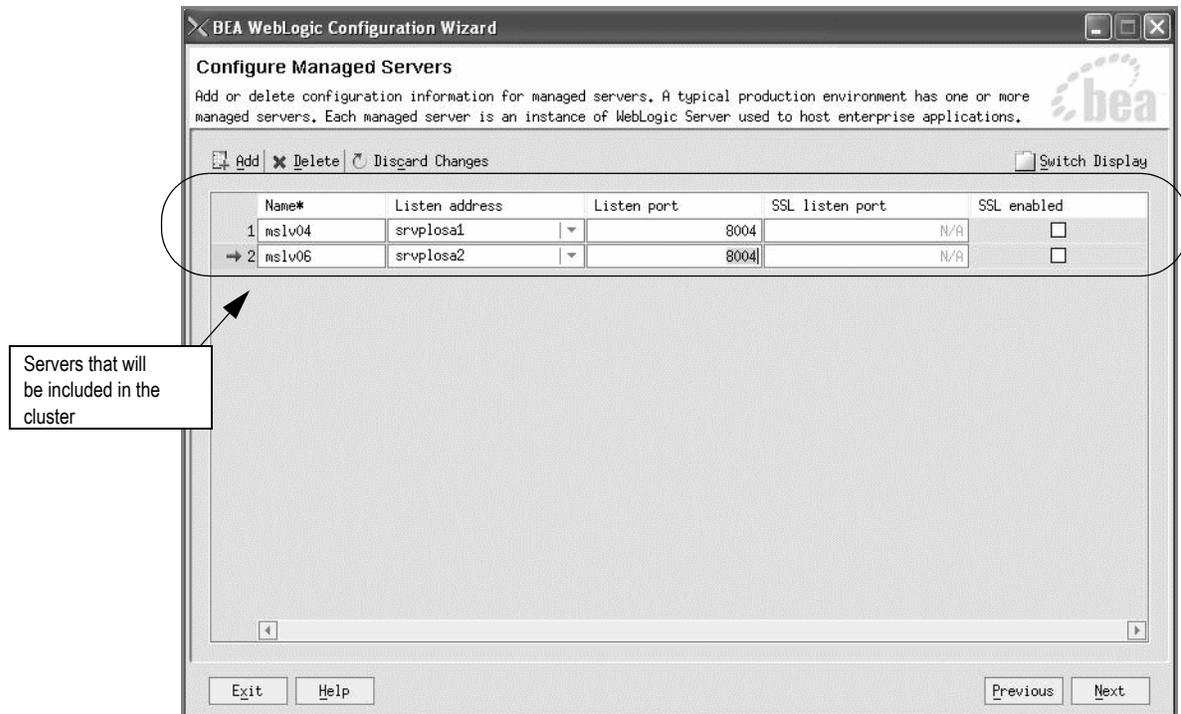
Field name	Worksheet reference number	Example value
Name	XAdmin-240	<i>mslvadmin</i>
Listen address	XAdmin-250	<i>srvplscal</i>
Listen port	XAdmin-260	<i>8001</i>

When you click Next, the Managed Servers, Clusters, and Machines Options window appears.



6. Select **Yes** and click **Next**.

The Configure Managed Servers window appears.



7. Click **Add**, then type the name of a server in the row that appears.

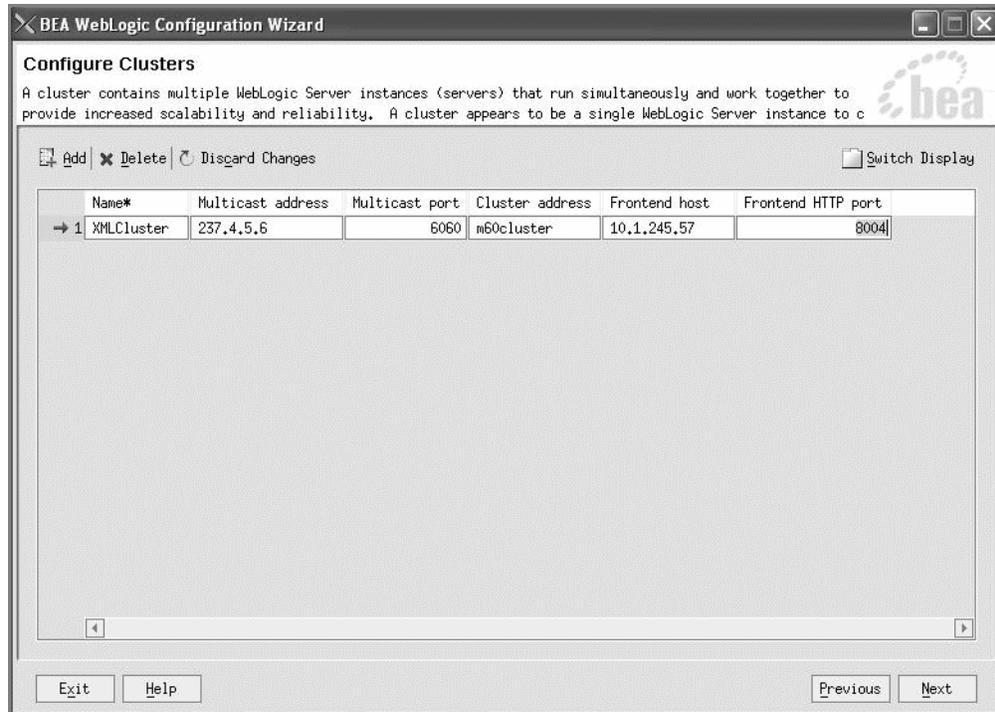
Select a listen address by clicking the arrow and selecting a name from the list that appears, then type the listen port number into the appropriate field.

Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
Name	XClusterMS-0520	<i>mslv04, mslv06</i>
Listen address	XClusterMS-0550	<i>srvplosa1, srvplosa2</i>
Listen Port	XClusterMS-0570	<i>8004, 8004</i>

8. Repeat Step 7 for each server that is to be included in the cluster, then click **Next**.

The Configure Clusters window appears. This window allows you to name the cluster and provide information about it.



- Click **Add**, then type the following information in the appropriate fields on the row that appears, and click **Next**.

**Name**—Provide a name for the cluster.

**Multicast address**—The valid range for this address is from 224.0.0.0 to 239.255.255.255. This is a Class D address.

**Multicast port**—The valid range for this port number is from 1 to 65535.

**Cluster address**—In a production environment, create a DNS entry (for example, *M60cluster*) to include the clustered-managed-server IP addresses. For example, 10.1.236.23 (*srvplosa1*), 10.1.236.24 (*srvplosa2*). This means that all clustered servers in production environment listen on the same port. For multiple clustered servers in the same cluster running on the same physical machine, the machine must have multiple Network Interface Cards (NICs) in the production environment.

In a test or development environment, use the host machine name and the port address for each server in the cluster. Separate the items in a list with a comma. For example: *srvplosa1:8004, srvplosa2:8004*.

**HTTP Frontend host**—The name of the host to which all redirected URLs are sent.

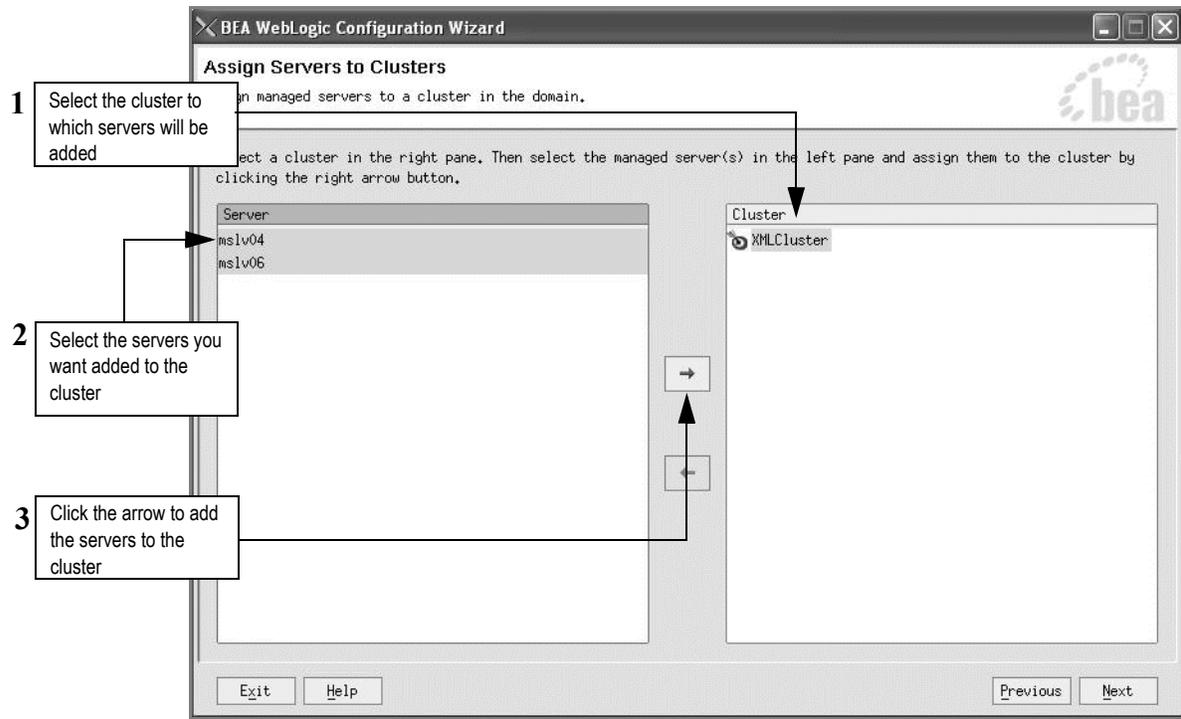
**Frontend HTTP port**—The name of the HTTP port to which all redirected URLs are sent.

HTTP frontend host and port is the entry point for all client requests to the cluster. In this example, a hardware load balancer is used. A virtual IP address and port is created for the frontend host and port.

Worksheet reference numbers and example values:

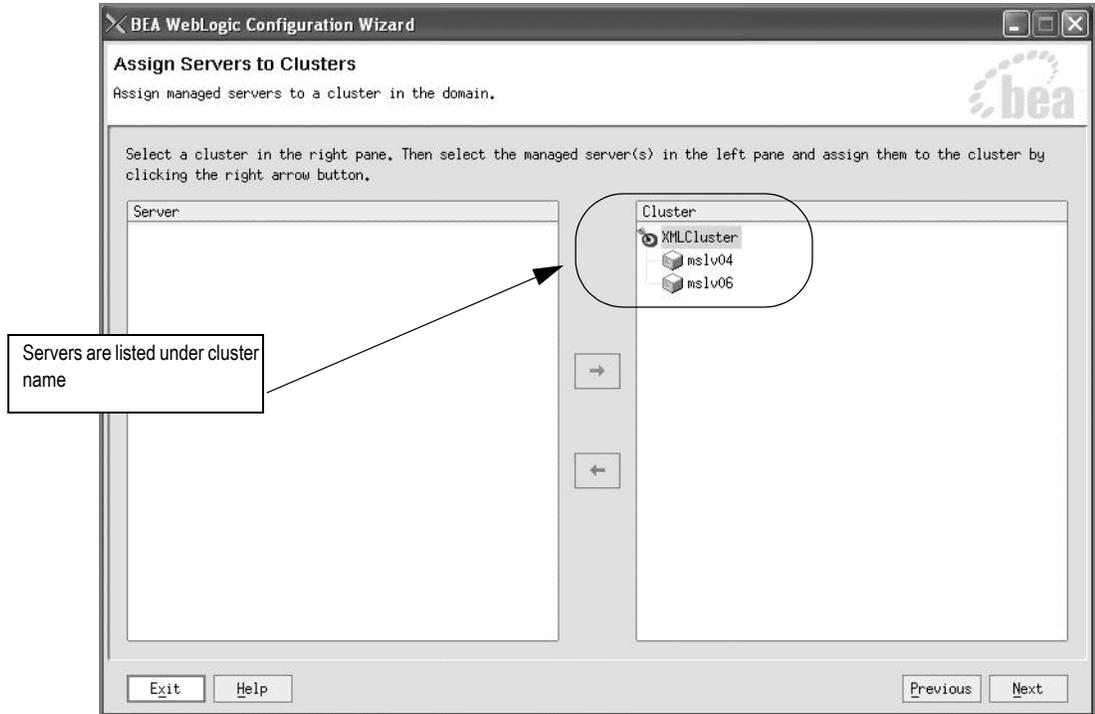
<b>Field name</b>	<b>Worksheet reference number</b>	<b>Example value</b>
Name	XClusterMS-0410	<i>XMLCluster</i>
Multicast address	XClusterMS-0430	<i>237.4.5.6</i>
Multicast port	XClusterMS-0440	<i>6060</i>
Cluster address	XClusterMS-0420	<i>Use DNS entry in production environment: m60cluster  In test/development environment: srvplosa1:8004, srvplosa2:8004</i>
HTTP Frontend host	XLB-0100	<i>10.1.245.57</i>
Frontend HTTP port	XLB-0200	<i>8004</i>

When you click Next, the Assign Servers to Clusters window appears.



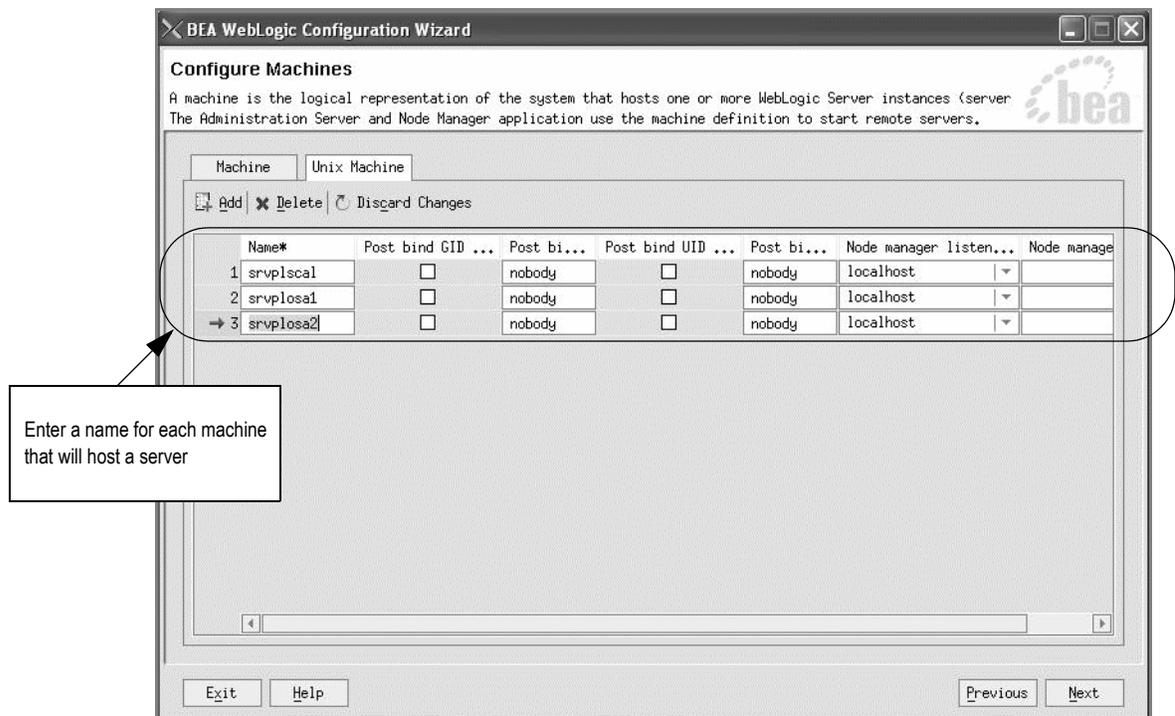
10. Select the cluster to which servers are being added in the right pane, then select the servers in the left pane to add to the cluster and click the right arrow button.

The servers are added to the cluster. The following figure shows how the clustered servers appear in the right pane.



11. Click **Next**.

The Configure Machines window appears.



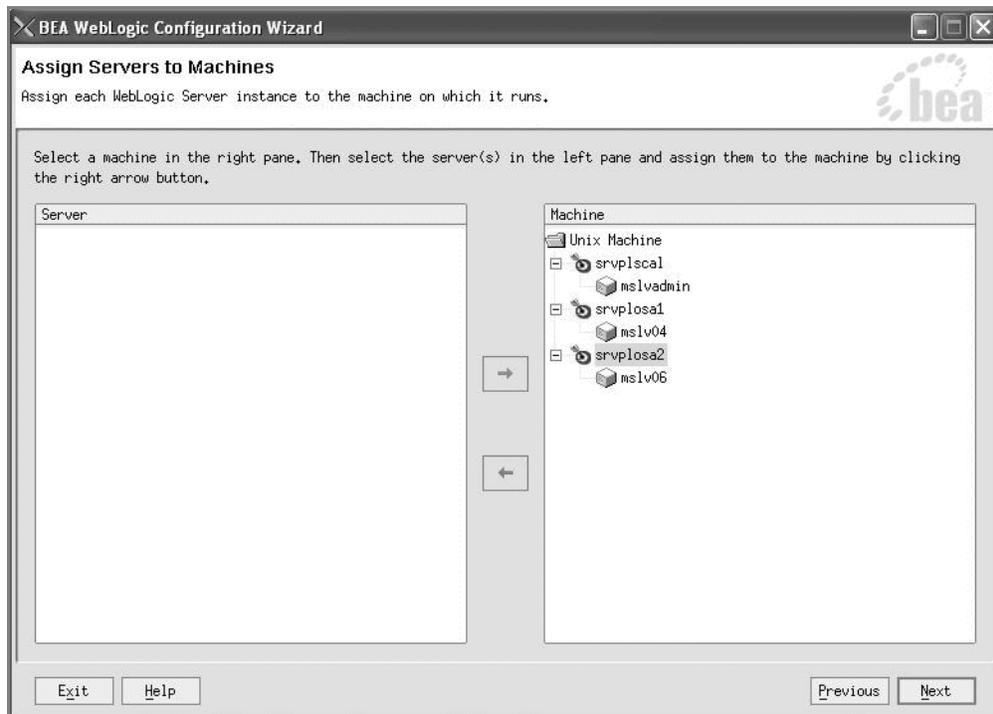
12. Select the **Unix Machine** tab if you are creating a cluster for a UNIX environment, **or** select **Machine** if you are creating a Windows cluster.
13. Click **Add** and type the machine name of a computer that will host one or more servers in the cluster in the **Name** field of the row that appears.

Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
Name (admin host machine)	XAdmin-0250	<i>srvp1scal</i>
Name (clustered server host machine)	XClusterMS-0550	<i>srvplosa1, srvplosa2</i>

14. Repeat the previous step until all machine names for the domain are added, including the machine name for the administration server, then click **Next**.

The Assign Servers to Machines window appears.

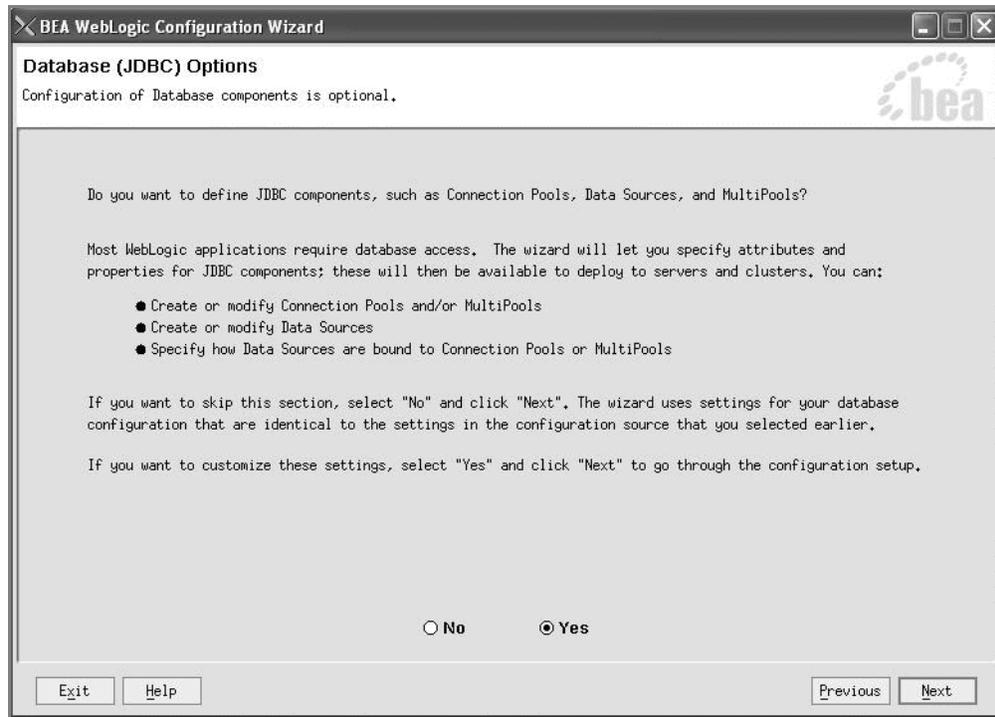


15. Select the machine to which a server is being assigned in the right pane, then select the server you want to assign in the left pane and click the right arrow button.

The previous figure shows how the Assign Servers to Machines window appears when all assignments have been made. The administration server and both clustered servers have been assigned to machines.

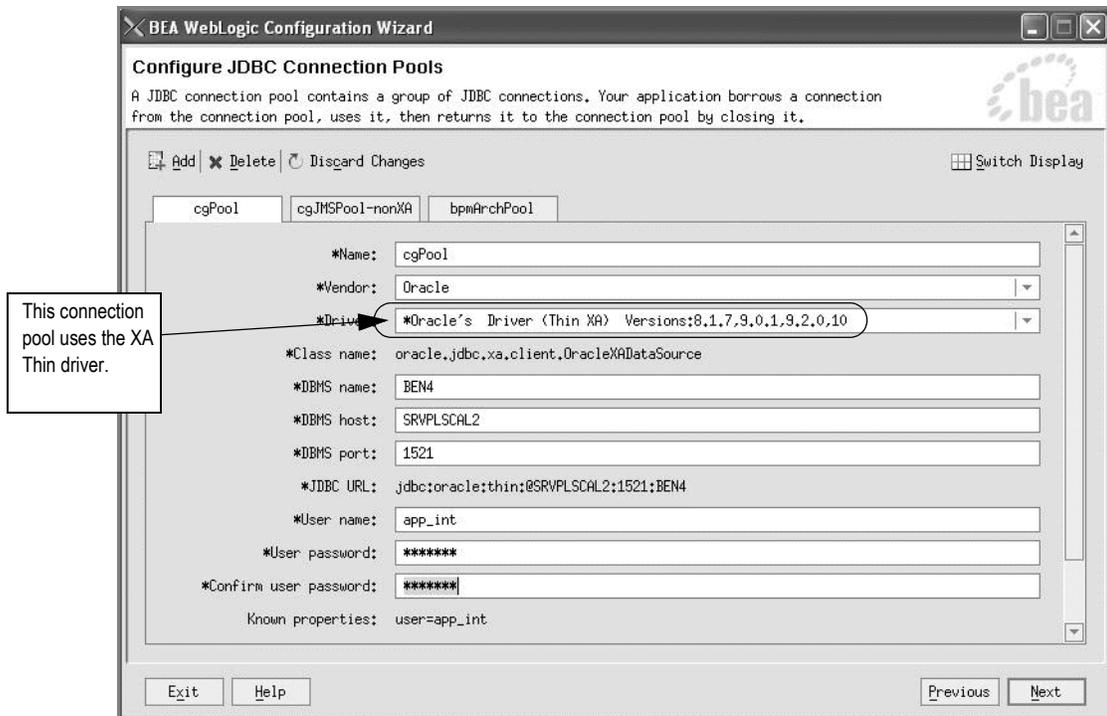
16. When all servers have been assigned to a machine, click **Next**.

The Database (JDBC) Options window appears.



17. Select **Yes** and click **Next**.

The Configure JDBC Connection Pools window appears.



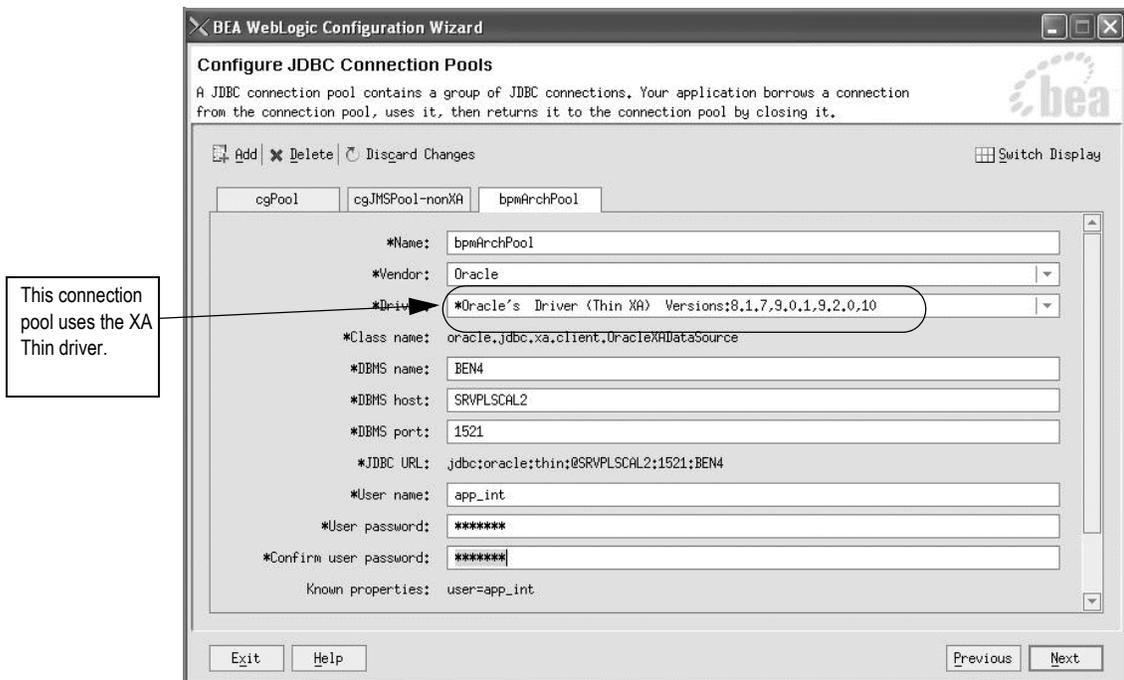
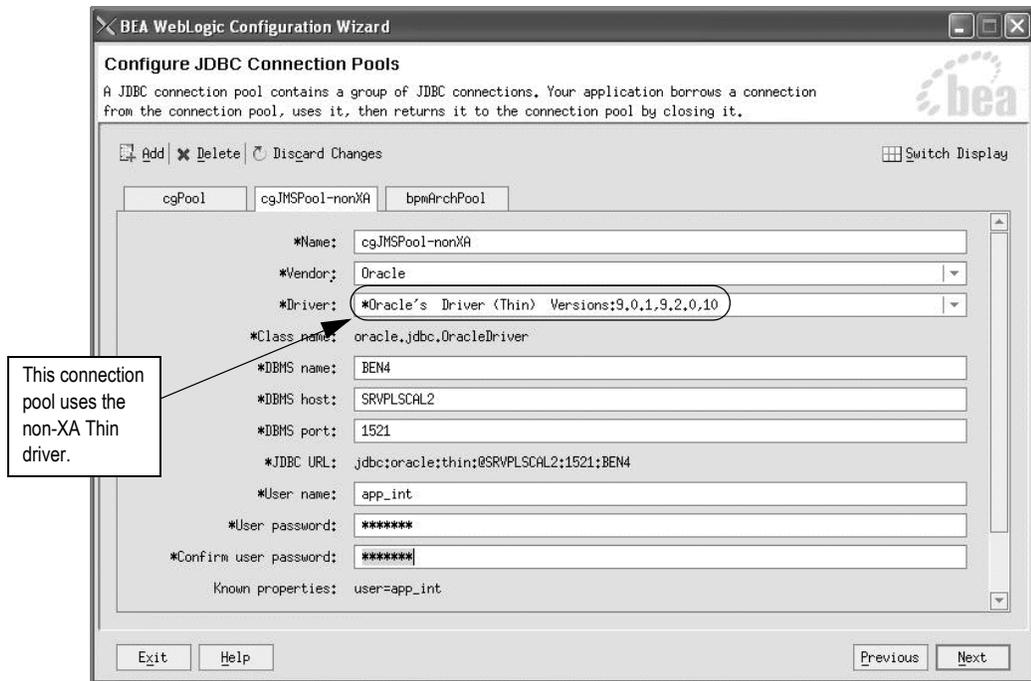
18. On the cgPool tab, enter values in the following fields:

- ◆ **Vendor**—Oracle is the supported database. Select Oracle from the drop-down list (Do not select the default value Pointbase).
- ◆ **Driver**—Select the driver **Oracle's Driver (Thin XA)** from the drop-down list. Note that this is a XA driver.
- ◆ **DBMS name**—Oracle system ID (SID).
- ◆ **DBMS host**—Name of your database server.
- ◆ **User name**—APP\_INT
- ◆ **User password (and Confirm user password)**—Oracle user password for the value required here.

Other fields on this tab already contain values defaulted from your existing configuration. You can make any additional changes required.

19. Select the cgJMSPool-nonXA and bpmArchPool tabs and enter the information shown on the following figures for each tab.

Note that the cgJMSPool-nonXA uses the non-XA driver and the bpmArchPool uses the XA driver.

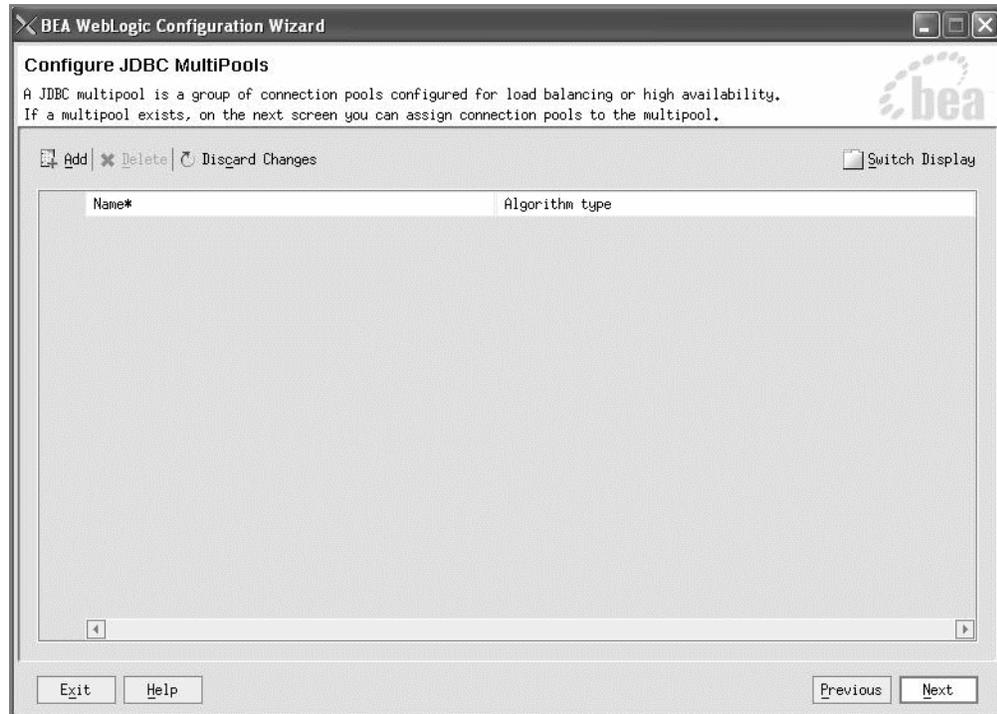


Worksheet reference numbers and example values

<b>Field name</b>	<b>Worksheet reference number</b>	<b>Example value</b>
Oracle Server Name	XCOMM-0130	<i>srvplscal2</i>
Oracle Port	XCOMM-0140	<i>1521</i>
Oracle Service Name	XCOMM- 0150	<i>BEN4</i>
APP_MSLV Password	XCOMM-0040	<i>mss6mslv</i> (default)
APP_API Password	XCOMM-0050	<i>mss6api</i> (default)
XML API integration user id	XCOMM-0057	<i>APP_INT</i>
XML API integration password	XCOMM-0059	<i>mss6int</i>

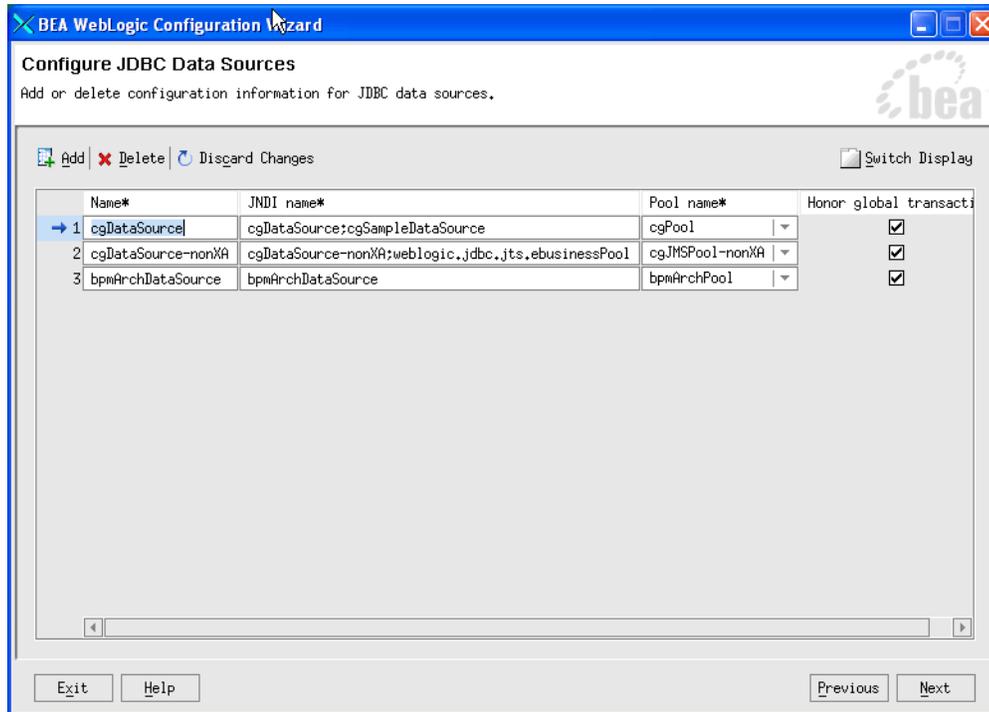
For multiple WebLogic Integration domains pointing to the same database, use different XML API integration user IDs and corresponding passwords. Refer to Multiple WebLogic Integration domains pointing to the same database on 189.

When you click Next, the following Configure JDBC MultiPools window appears.

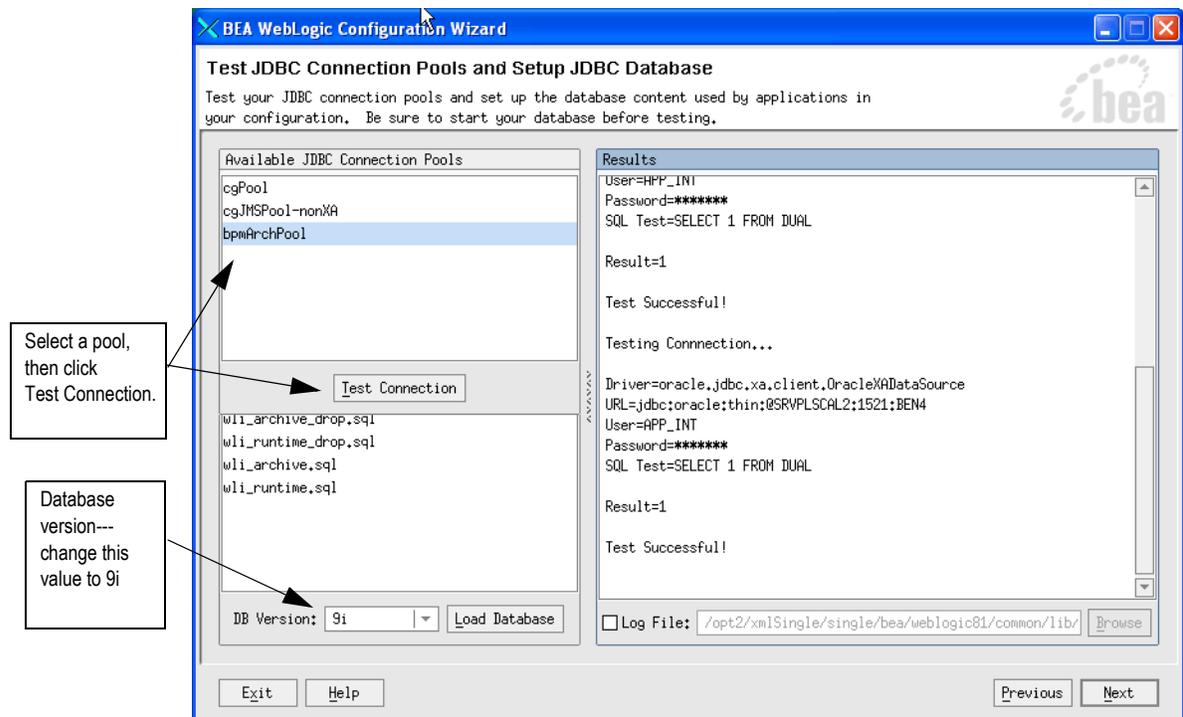


20. Click **Next**.

The Configure JDBC Data Sources window appears. Click **Next**.



The Test JDBC Connection Pools and Setup JDBC Database window appears.



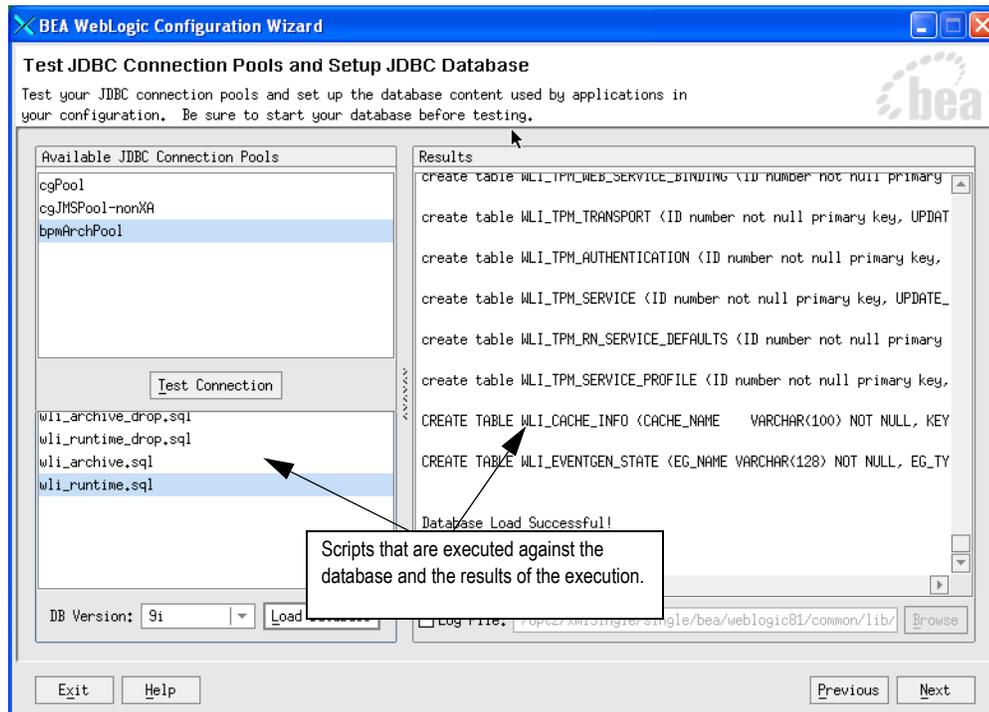
21. Select (highlight) the first pool in the Available JDBC Connection Pools list, then click **Test Connection**.

The results of the test appear in the right pane of the window. If the test does not succeed, click **Previous** to return to the first Configure JDBC Connection Pools window and make sure the user name and password you entered are correct.

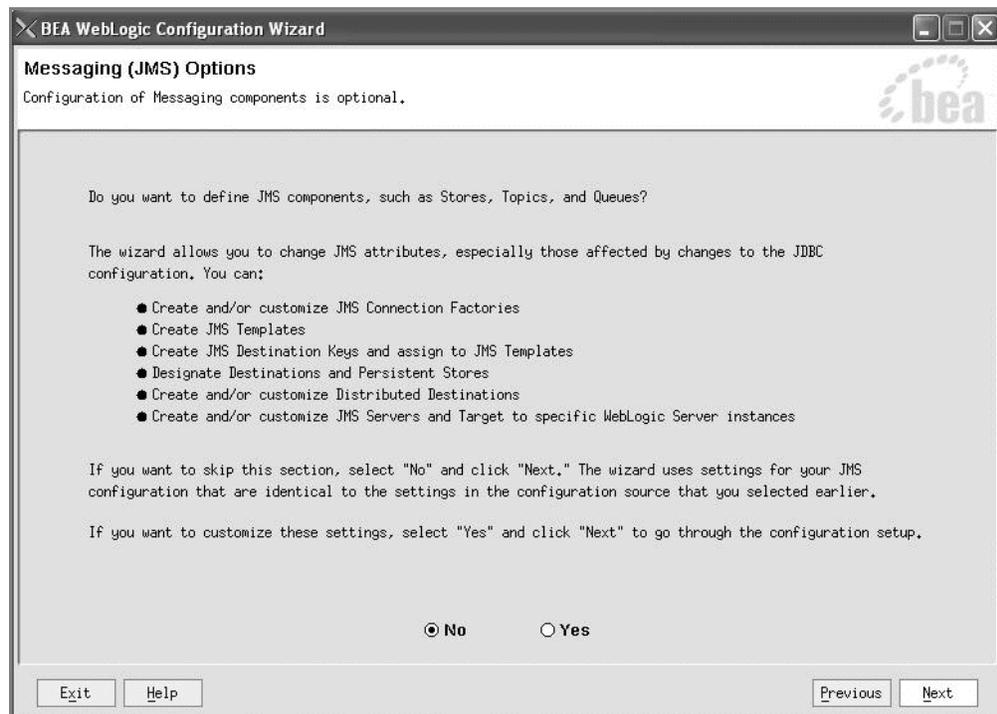
22. Repeat the test for the remaining pools in the Available JDBC Connection Pools list.
23. In the **DB Version** field, click the down arrow and select **9i** from the list that appears, and click **Load Database**.

This step only needs to be done once for the database per XML API integration user id (XCOMM-0057).

The following example window illustrates the Load Database progress results as the wizard works through the four SQL scripts listed in the Available SQL Files and Database Loading Options section.

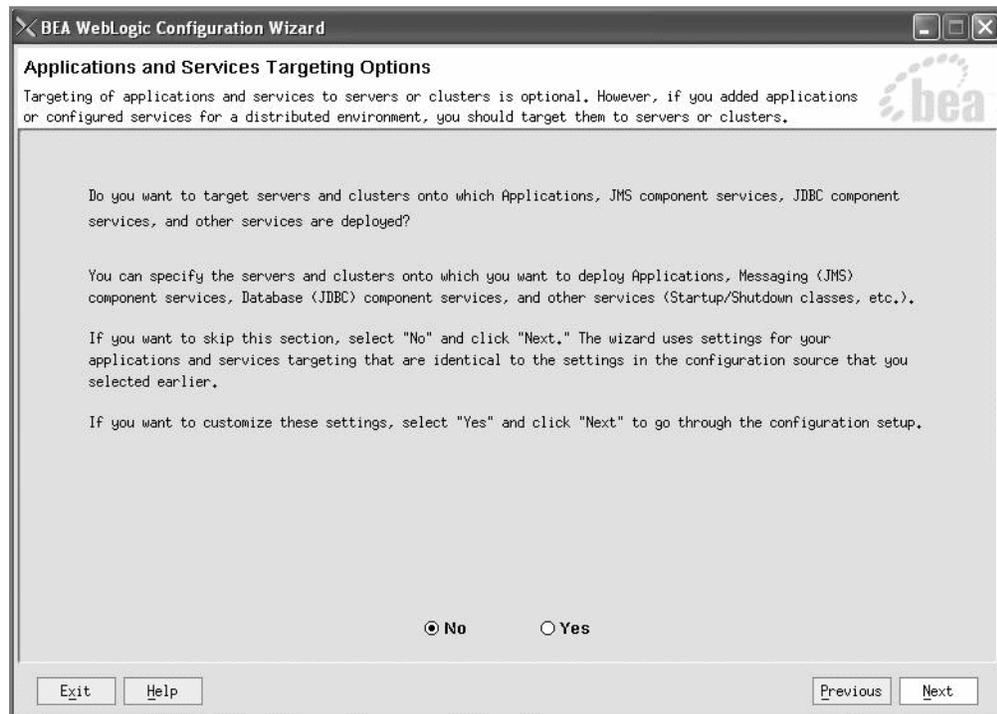


24. Click **Next** when the Load Database activities are complete.  
The Messaging (JMS) Options window appears.



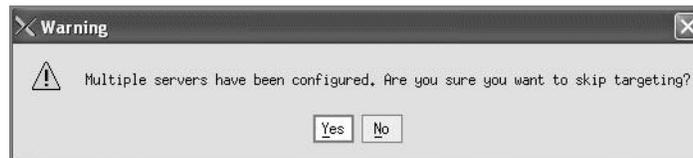
25. Select **No** and click **Next**.

When you click Next, the Applications and Services Targeting Options window appears.



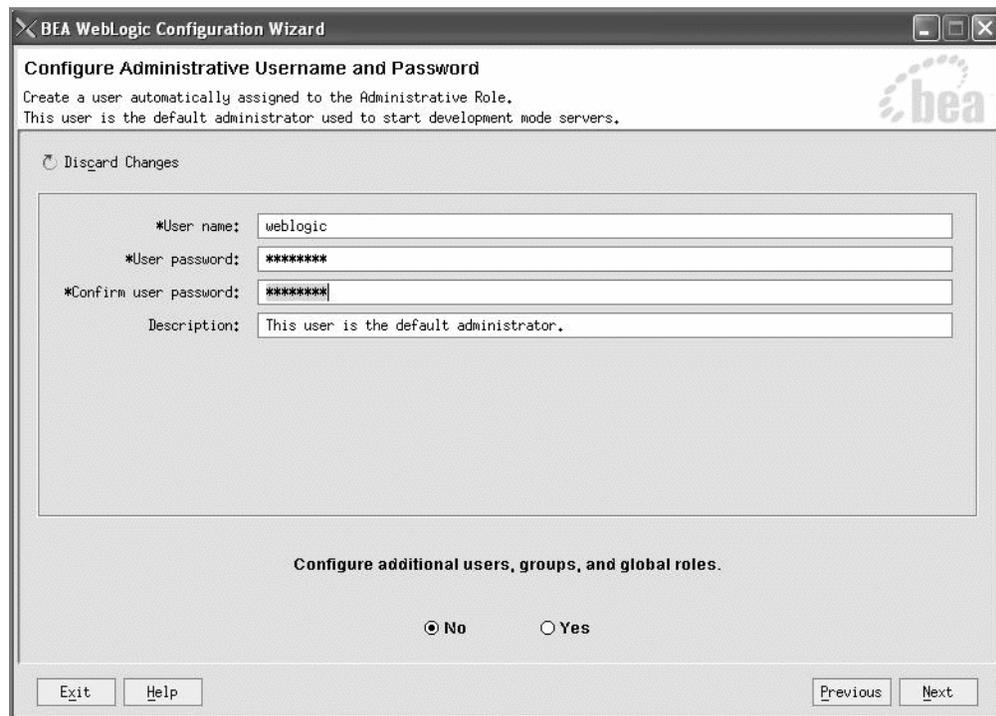
26. Select **No** and click **Next**.

The following warning appears.



27. Click **Yes** to skip targeting.

When you click Next, the Configure Administrative Username and Password window appears.



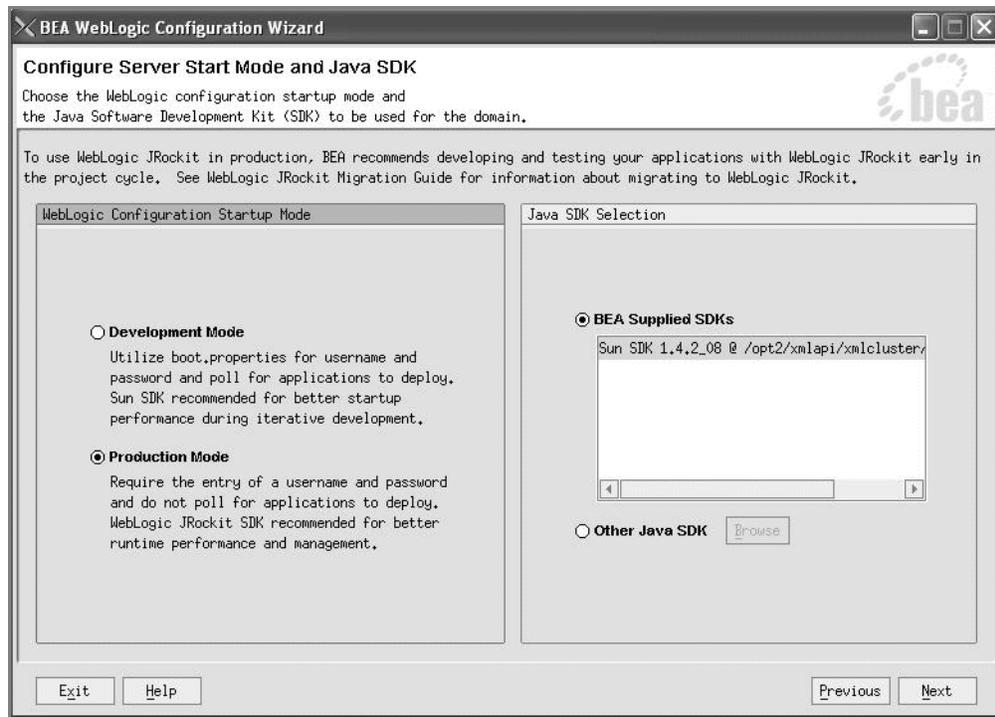
28. Type a user name and password and verify the password by retyping, then select the **No** option for configuring additional users, and click **Next**.

Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
User name	XCOMM-0020	<i>weblogic</i>
User password	XCOMM-0030	<i>metasolv</i>

Note the user name and password. You will need them to log on to the administration console.

When you click Next, the Configure Server Start Mode and Java SDK window appears.



29. Select **Production Mode** in the left pane.

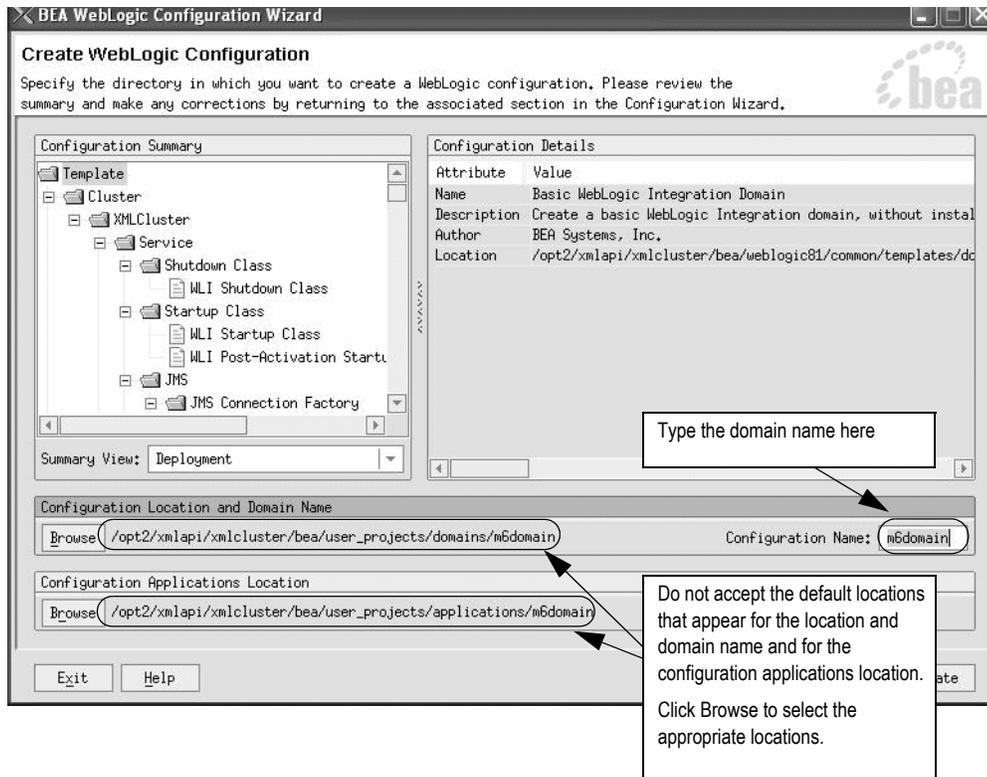
Development Mode is not supported for the XML API option cluster installation.

30. On the right pane, select **BEA Supplied SDKs** and select the Sun SDK in the list window, and click **Next**.

The Sun SDK option is supported for both UNIX and Windows platforms.

 If you are using the IBM AIX operating system, select the **Other Java SDK** option and browse for the location of the IBM Java SDK. See [“If you are using the IBM AIX operating system”](#) on page 30.

The Create WebLogic Configuration window appears.



31. Type a domain configuration name in the **Configuration Name** field.

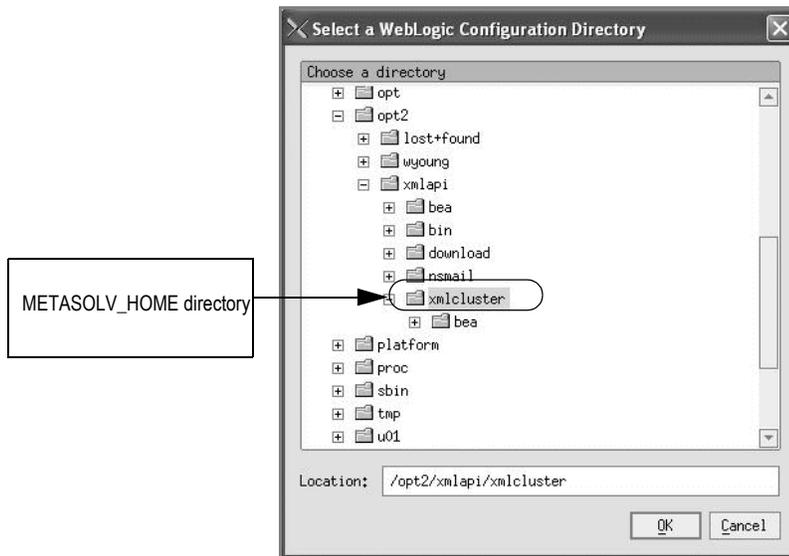
MetaSolv recommends *m6domain*.

Worksheet reference number and example value:

Field name	Worksheet reference number	Example value
Configuration Name	XCOMM-0010	<i>m6domain</i>

32. Click the **Browse** button in the Configuration Location and Domain Name group box to select the location where the domain configuration is to be created.

The following selection window appears.



Select the METASOLV\_HOME directory where the domain is to be created and click **OK**.

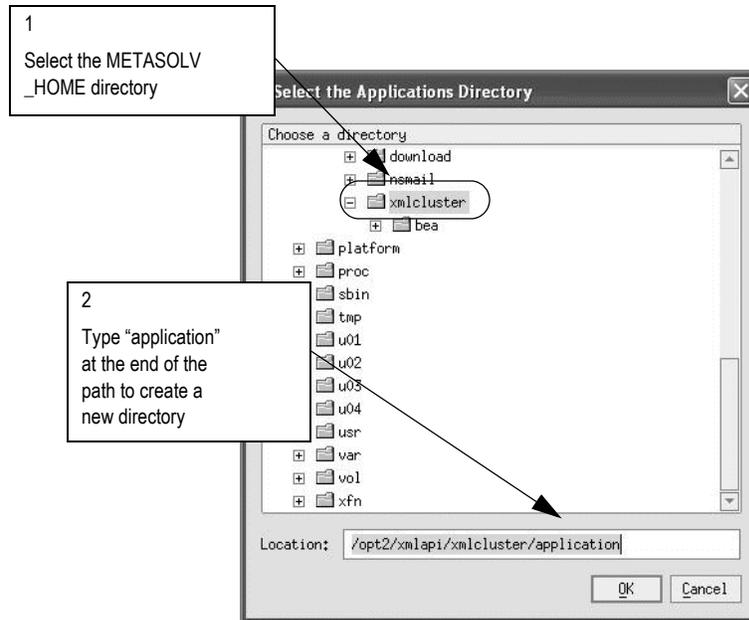
Worksheet reference number and example value:

Field name	Worksheet reference number	Example value
Location	XCOMM-0090	/opt2/xmlapi/xmlcluster

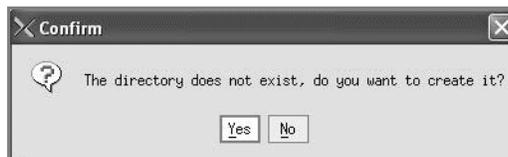
The new directory name and path appears by the Browse button on the Create WebLogic Configuration window.

33. Create an *applications* directory by clicking the **Browse** button in the Configuration Applications Location group box.

The following window appears.

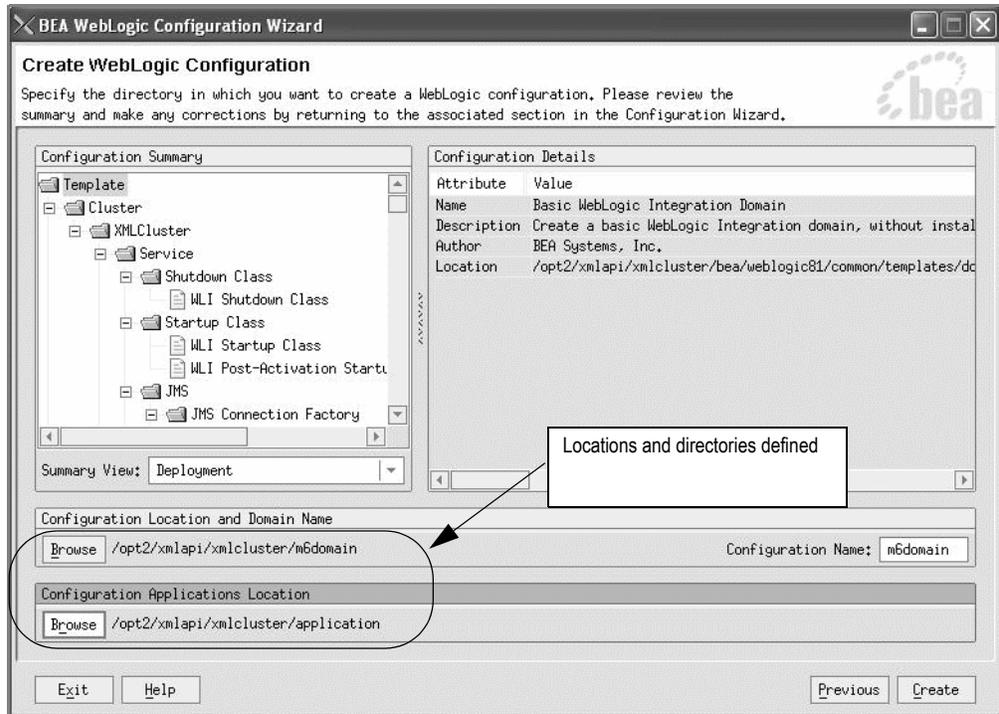


34. Select the METASOLV\_HOME directory where the application directory is to be created, type **application** at the end of the path in the **Location** field, and click **OK**.



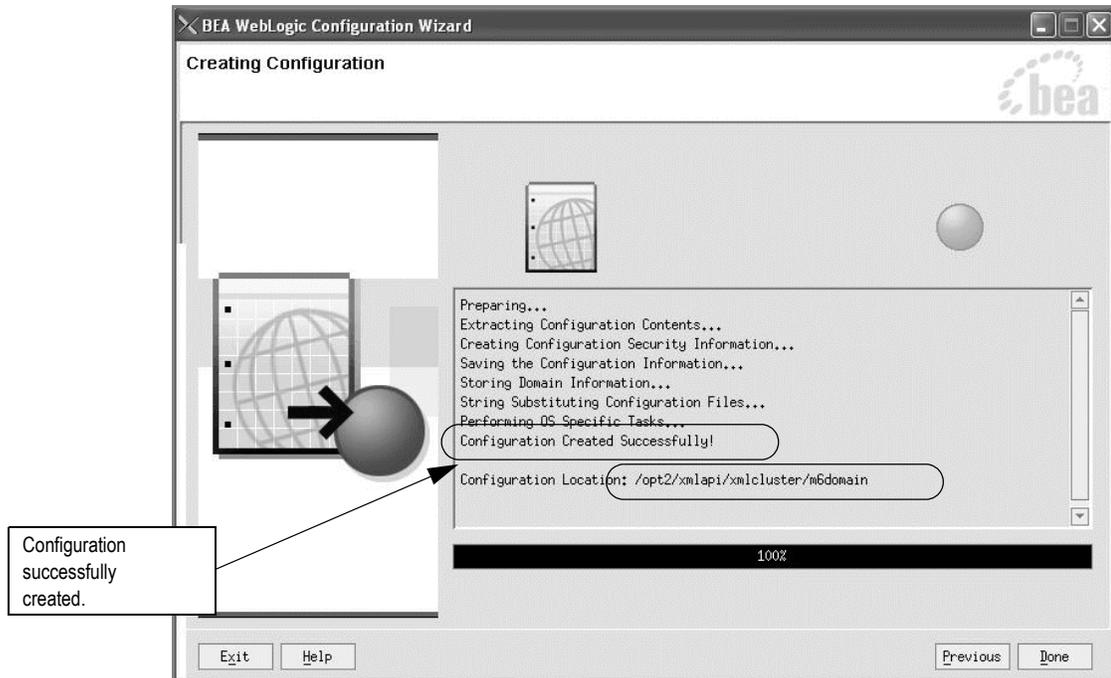
A message window appears asking if you want to create the directory. Click **Yes** to create the directory.

The following figure shows the Create WebLogic Configuration window with the directories defined for configuration location and applications.



35. Click **Create** to create the domain.

The following window appears indicating progress during the creation of the domain.



36. Click **Done** when the configuration creation is complete.
37. To verify the domain setup, start the administration server by completing the following steps:
  - a. Execute **startWebLogic.sh** (UNIX) or **startWebLogic.cmd** (Windows) in the domain directory.

The domain directory is the name you specified during configuration.

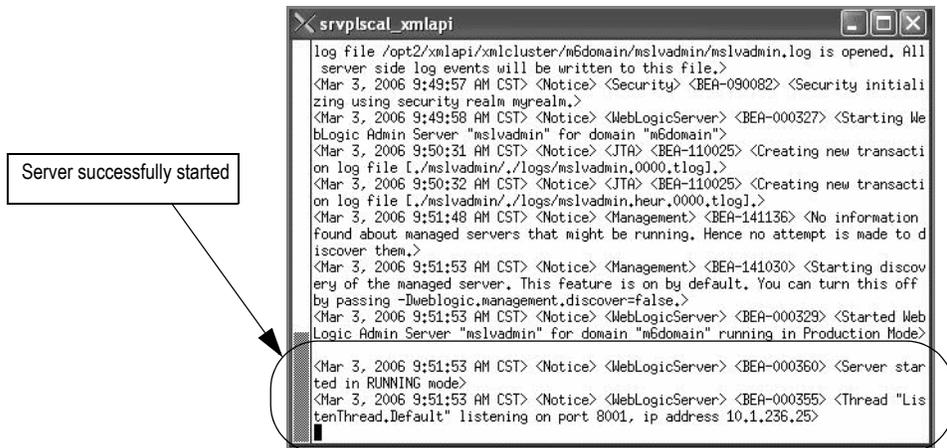
```

srvplscal_xmlapi
srvplscal:/opt2/xmlapi/xmlcluster/m6domain> ls
DefaultAuthenticatorInit.ldift  startManagedWebLogic.sh*
DefaultAuthorizerInit.ldift    startManagedWebLogic_readme.txt
DefaultRoleMapperInit.ldift    startPointBaseConsole.sh*
SerializedSystemIni.dat        startWebLogic.sh*
URLs.dat                       stopManagedWebLogic.sh*
_cfgwiz_donotdelete/          stopWebLogic.sh*
config.xml                     webappCompile.sh*
domain-info.xml               webapp_build.xml
fileRealm.properties          wla1/
jws-config.properties        wli-config.properties
logs/                          wliconfig/
pointbase.ini                 workshop$1.wal
rmfilestore/                  workshop.dbn
script/                        workshop.properties
setDomainEnv.sh*
srvplscal:/opt2/xmlapi/xmlcluster/m6domain> startWebLogic.sh
    
```

For example: `/opt2/xmlapi/xmlcluster/m6domain`

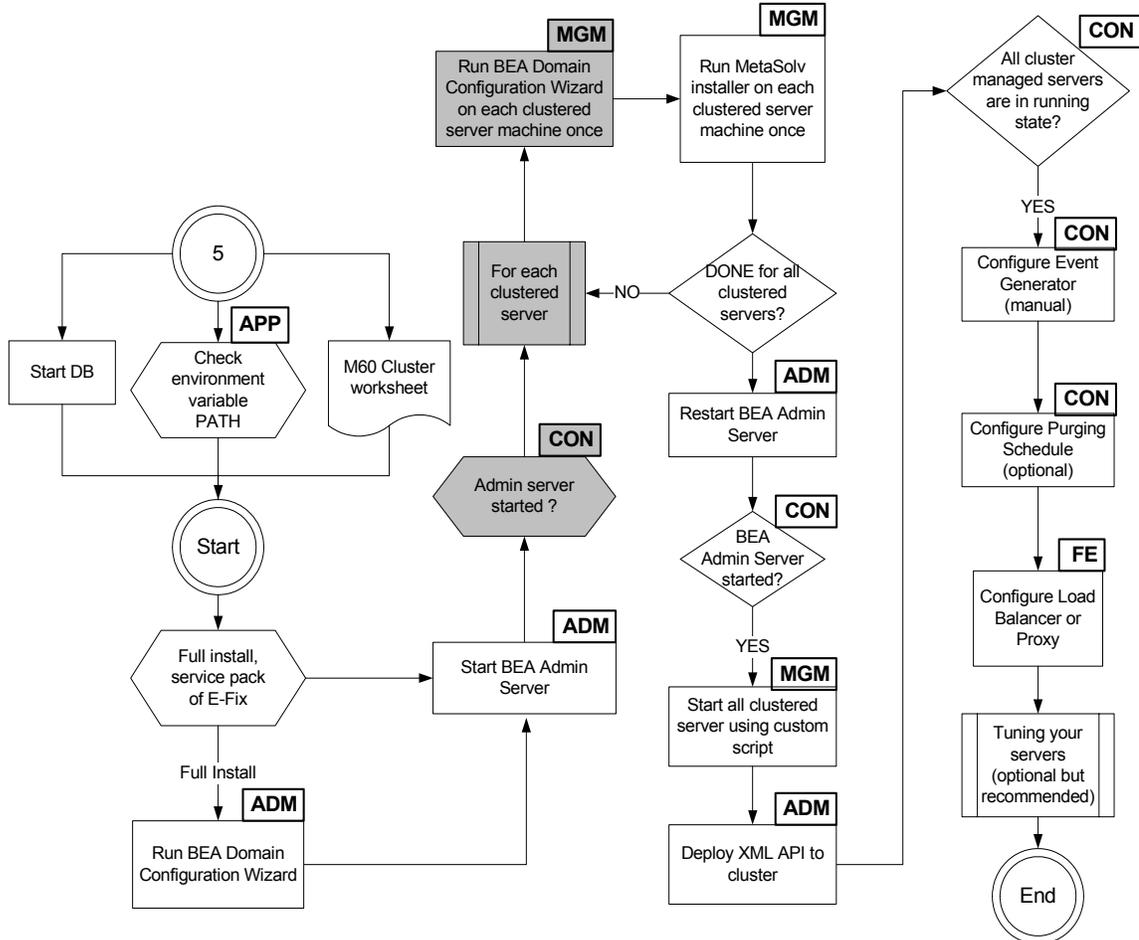
- b. Type your administrator user name and password, when prompted, to start the server. The server takes a few moments to start. You will see information scroll on the screen. When the server has successfully started, you will see the words "RUNNING mode" at the prompt.

The following figure shows how the prompt appears when the administration server is running.



## Configuring clustered servers

This section explains the highlighted steps in the figure below.



The following acronyms indicate the machine used in a step in the installation and deployment process:

**ADM**—BEA administration server machine

**APP**—All application server machines

**CON**—BEA administration console

**MGM**—All clustered server machines

**FE**—Front end host machine, such as load balancer or proxy.

**Figure 10: Configuring individual clustered servers**

### To configure a clustered server for the BEA WebLogic domain

1. On a machine hosting a clustered server(s), start the BEA Configuration Wizard.

For UNIX platforms, this program (config.sh) is located in the following directory:  
BEA\_HOME/weblogic81/common/bin.

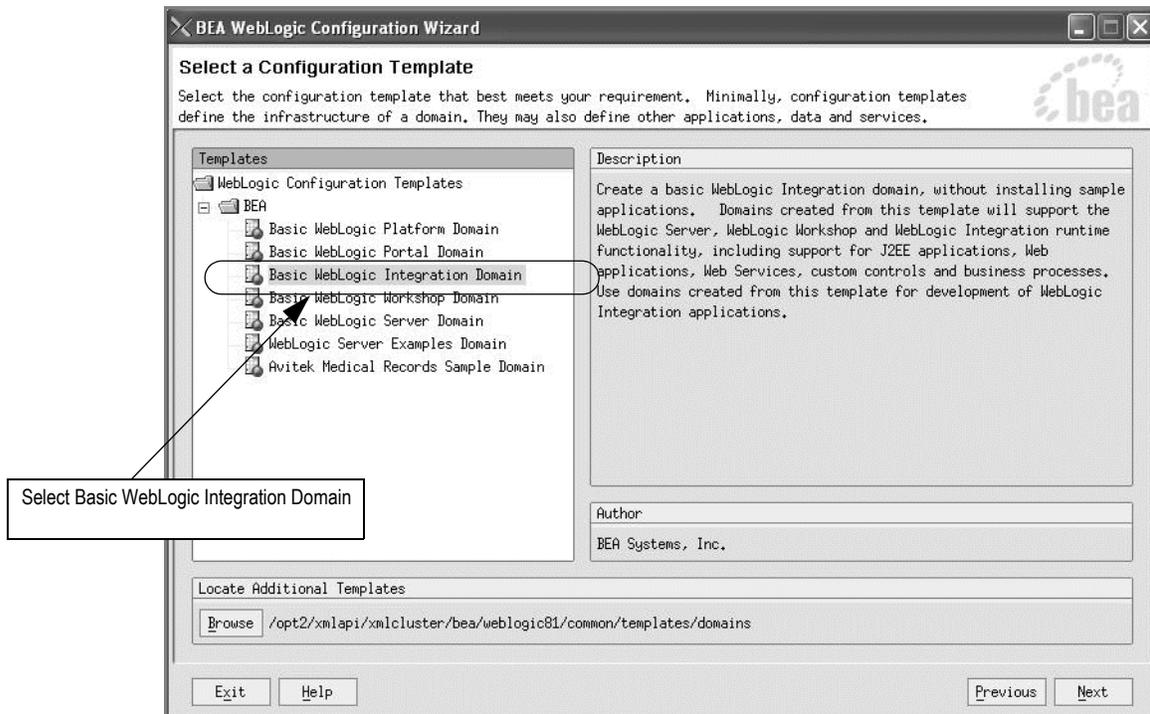
For Windows platforms, this program (config.cmd) is located in the following directory:  
BEA\_HOME\weblogic81\common\bin.

When you start the program, the following window appears.

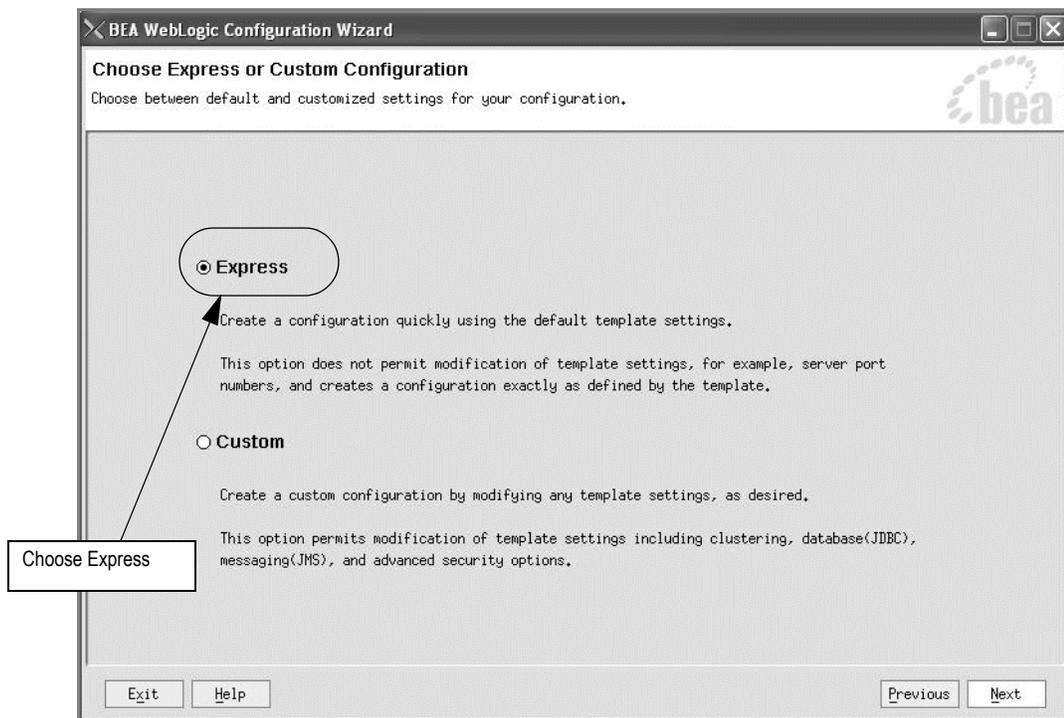


2. Select **Create a new WebLogic configuration** and click **Next**.

The Select a Configuration Template window appears.



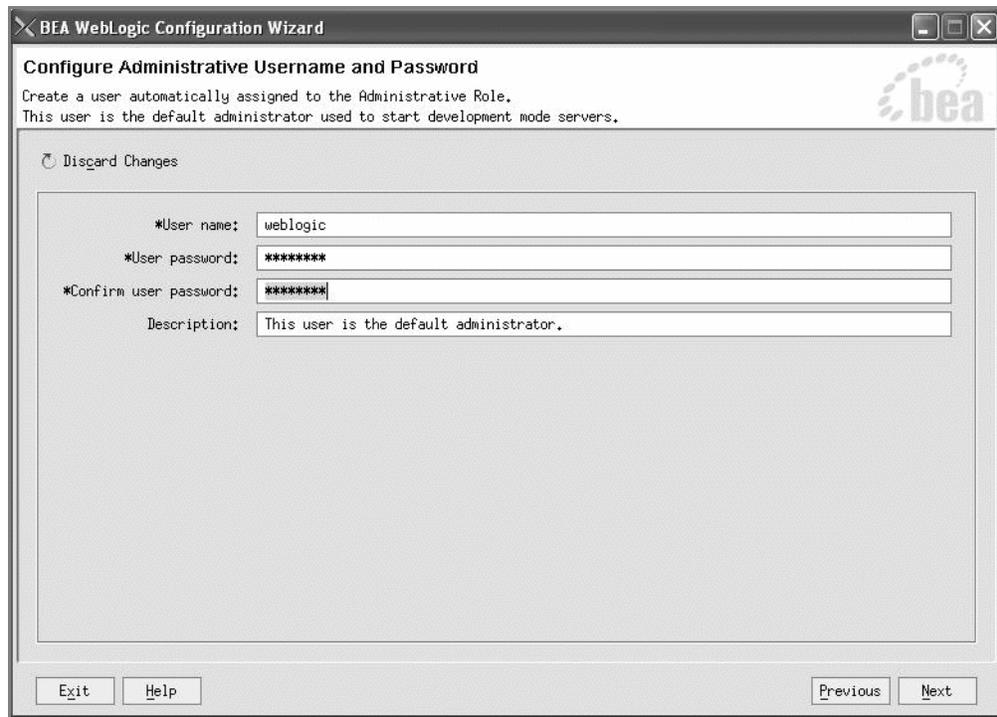
3. Select **Basic WebLogic Integration Domain** and click **Next**.



4. Select **Express** and click **Next**.

When you click Next, the Configure Administrative Username and Password window appears.

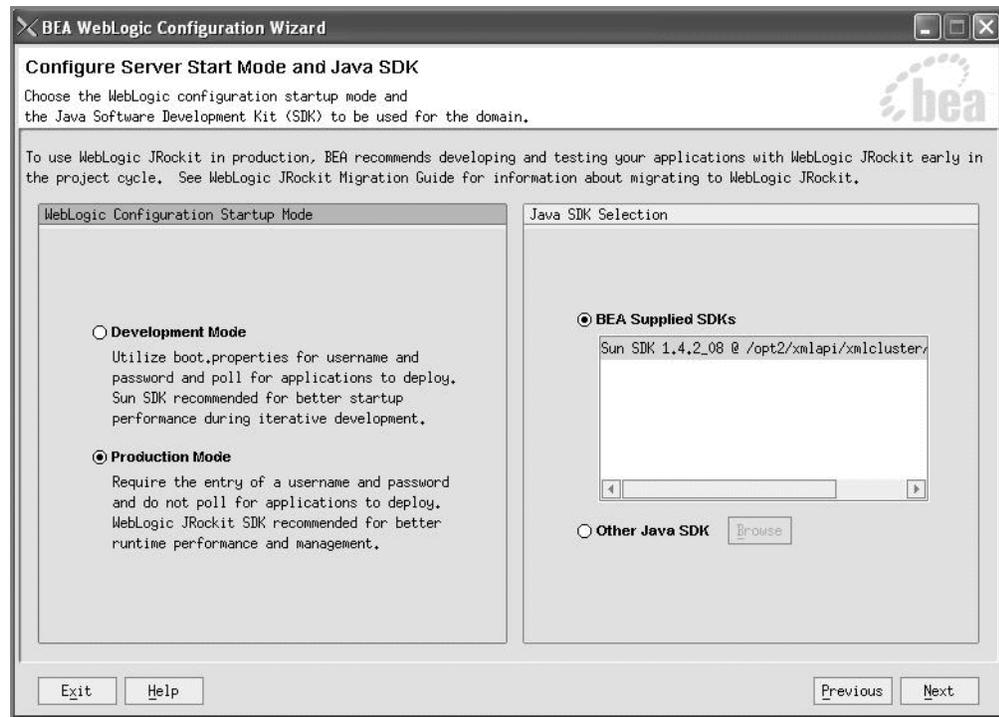
The Configure Administrative Username and Password window appears.



5. Type a user name and password and verify the password by retyping, then click **Next**.  
Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
User name	XCOMM-0020	<i>weblogic</i>
User password	XCOMM-0030	<i>metasolv</i>

When you click Next, the Configure Server Start Mode and Java SDK window appears.

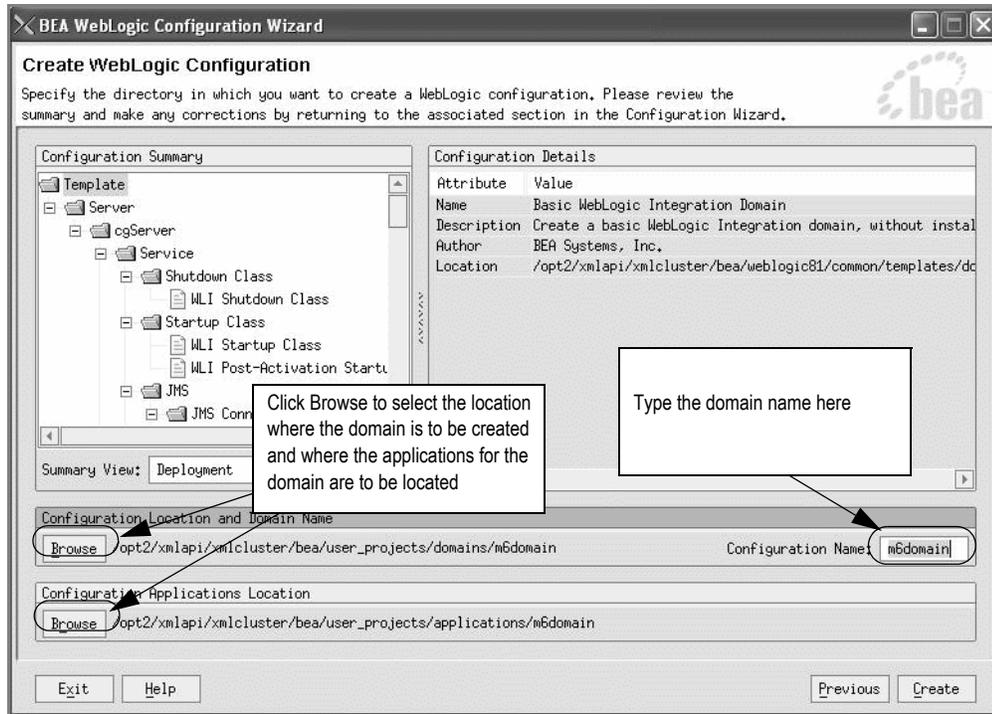


6. Select **Production Mode** in the left pane, then in the right pane, select the **BEA Supplied SDKs** option and the Sun SDK in the list window, and click **Next**.

Development mode is not supported for clustering when you use the XML API option.

-  If you are using the IBM AIX operating system, select the **Other Java SDK** option and browse for the location of the IBM Java SDK. See [“If you are using the IBM AIX operating system”](#) on page 30.

The Create WebLogic Configuration window appears.



7. Type a domain configuration name in the **Configuration Name** field.

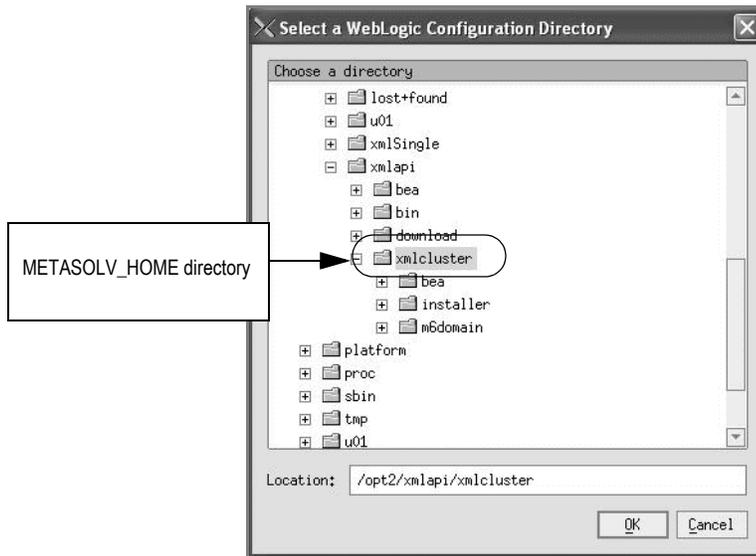
MetaSolv recommends *m6domain*.

Worksheet reference number and example value:

Field name	Worksheet reference number	Example value
Configuration Name	XCOMM-0010	<i>m6domain</i>

8. Click the **Browse** button in the Configuration Location and Domain Name group box to select the location where the domain configuration is to be created.

The following selection window appears.



9. Select the METASOLV\_HOME directory where the domain is to be created and click **OK**.

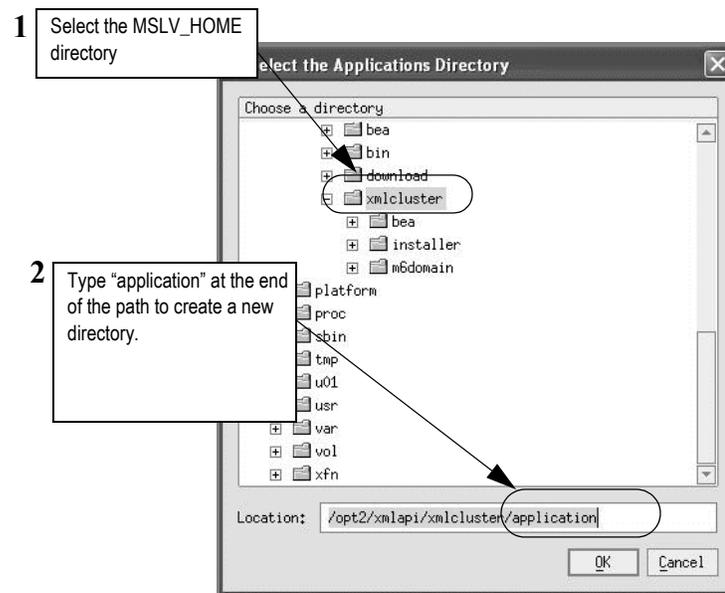
Worksheet reference number and example value:

Field name	Worksheet reference number	Example value
Location	XCOMM-0090	<i>/opt2/xmlapi/xmlcluster</i>

The new directory name and path appears by the Browse button on the Create WebLogic Configuration window.

10. Create an *application* directory by clicking the **Browse** button in the Configuration Applications Location group box.

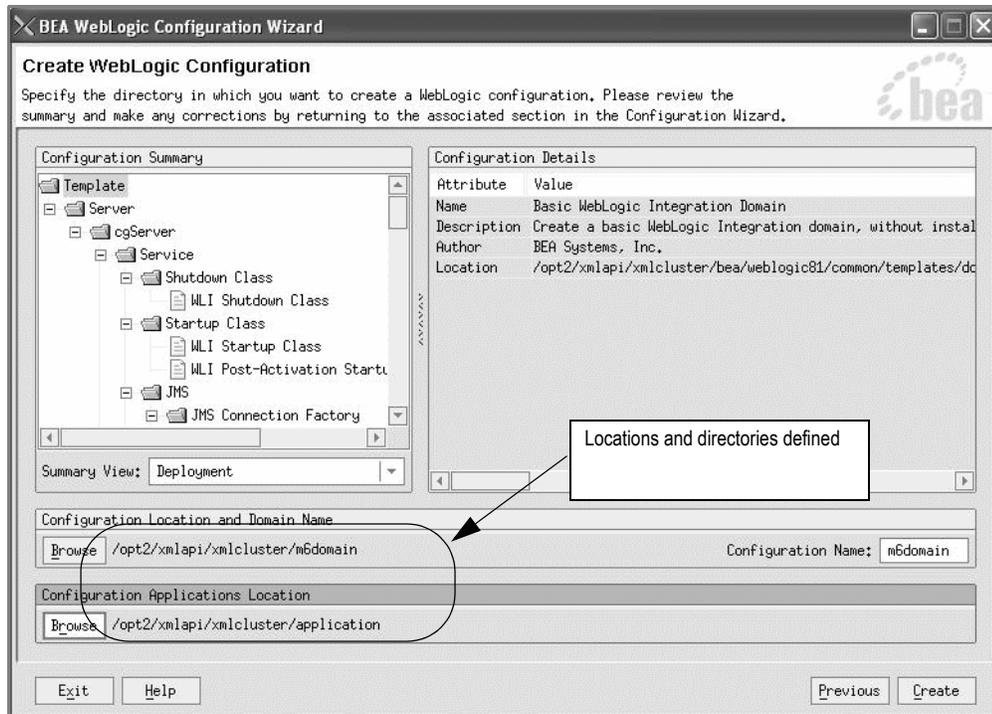
The following window appears.



11. Select the METASOLV\_HOME directory where the application directory is to be created, type **application** at the end of the path in the **Location** field, and click **OK**.

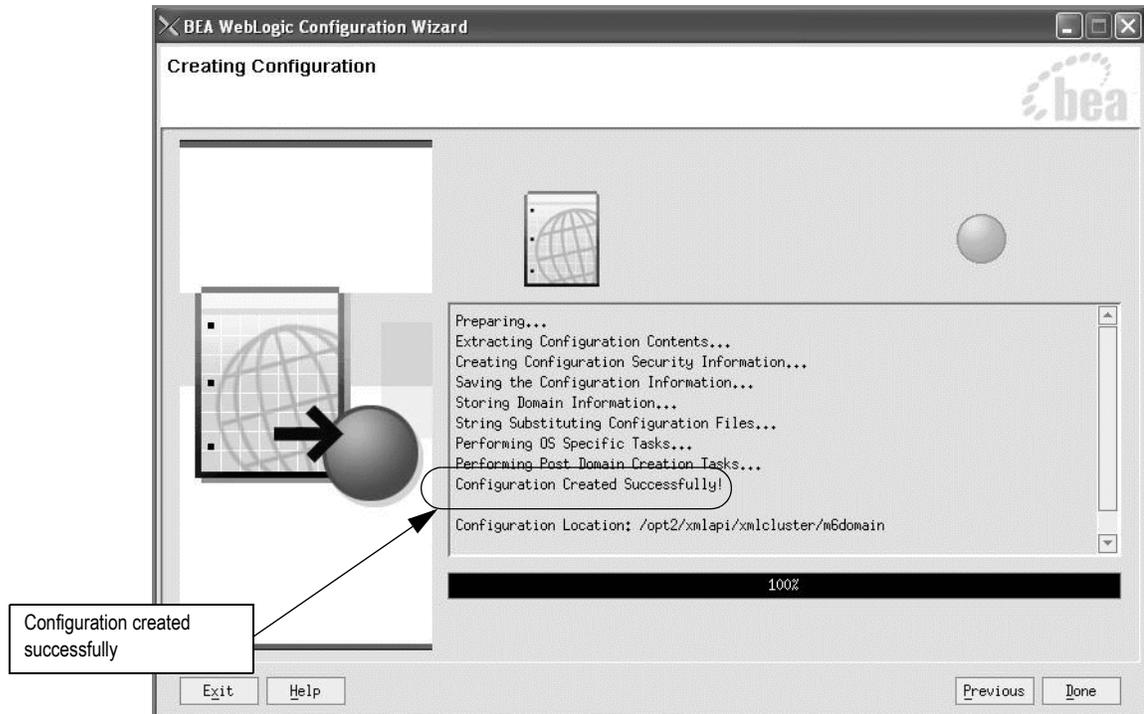
A message window appears asking if you want to create the directory. Click **OK** to create the directory.

The following figure shows the Create WebLogic Configuration window with the directories defined for configuration location and applications.



12. Click **Create** to create the domain.

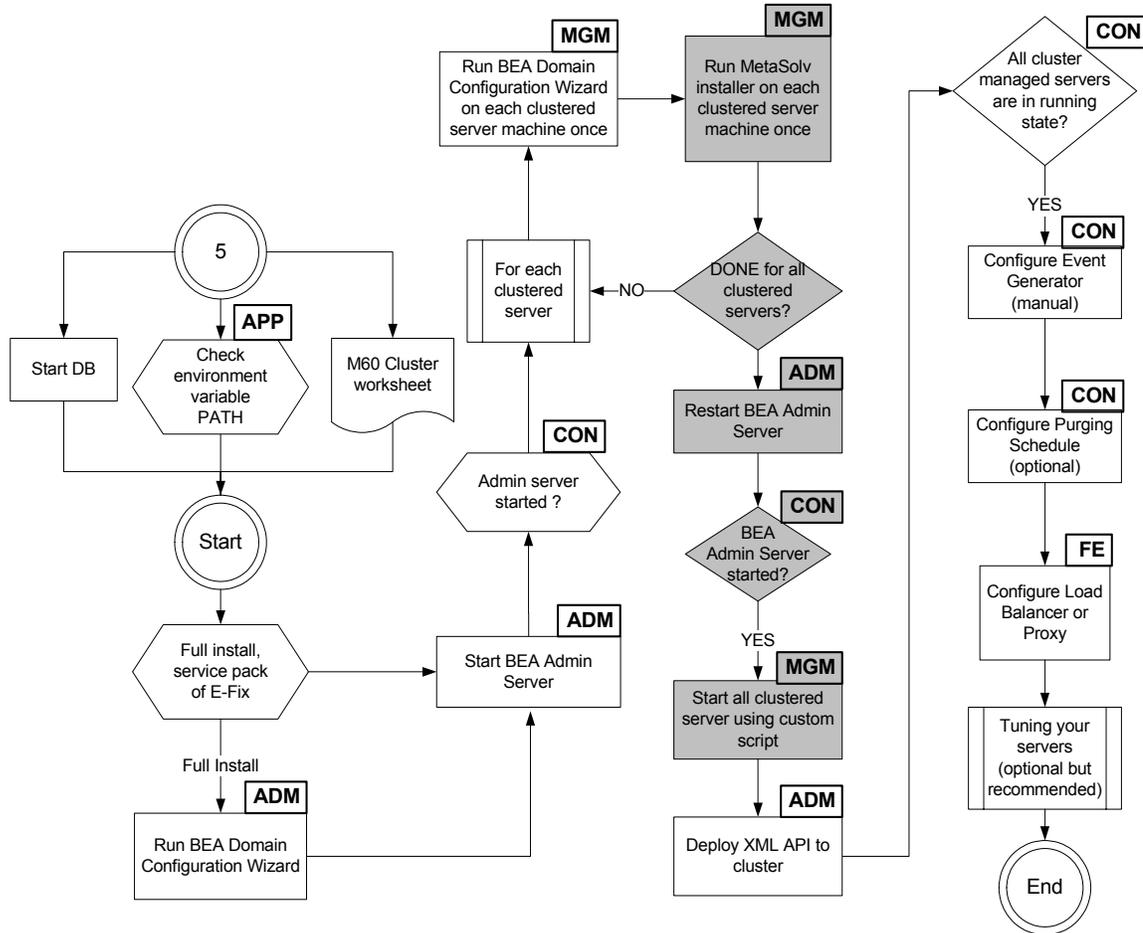
The following window appears indicating progress during the creation of the domain.



13. Click **Done** when the configuration creation is complete.
14. Repeat this procedure for each machine that will host a clustered server.

## Installing MetaSolv Solution on clustered servers

This procedure completes the highlighted steps shown in the following figure.



The following acronyms indicate the machine used in a step in the installation and deployment process:

**APP:** All application server machines    **CON:** BEA admin console  
**ADM:** BEA admin server machine        **MGM:** All clustered server machines  
**FE:** Front end host machine, such as load balancer or proxy

**Figure 11: Installing MetaSolv Solution**

You must run the installation program and install MetaSolv Solution on each machine that will host a clustered server or servers. MetaSolv Solution only has to be installed once on a machine regardless of the number of clustered servers in the same cluster that the machine hosts.

**To install MetaSolv Solution**

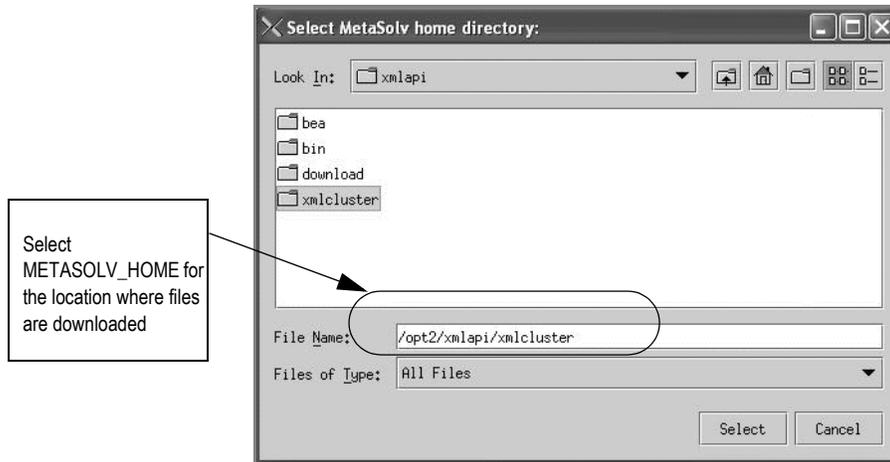
1. From the directory where you stored MetaSolv Solution files downloaded from the Oracle E-Delivery Web site, type one of the following commands and press ENTER:

**java -jar <release#/build#>\_AppServerInstaller.jar**

For example: java -jar MSS\_R6\_0\_8\_b59\_XML-API-Installer.jar

 If the file name has brackets and a number embedded (for example, MSS[1].R6\_0\_8\_b59\_XML-API-Installer.jar), change the file name to eliminate the brackets and their contents. Brackets cause a Java error when you attempt to unjar the contents of the download file.

The following window appears.



2. From the **Look In** drop-down list, click the down arrow and select a directory in which the installation program files can be stored and used during the installation process, then click **Select**.

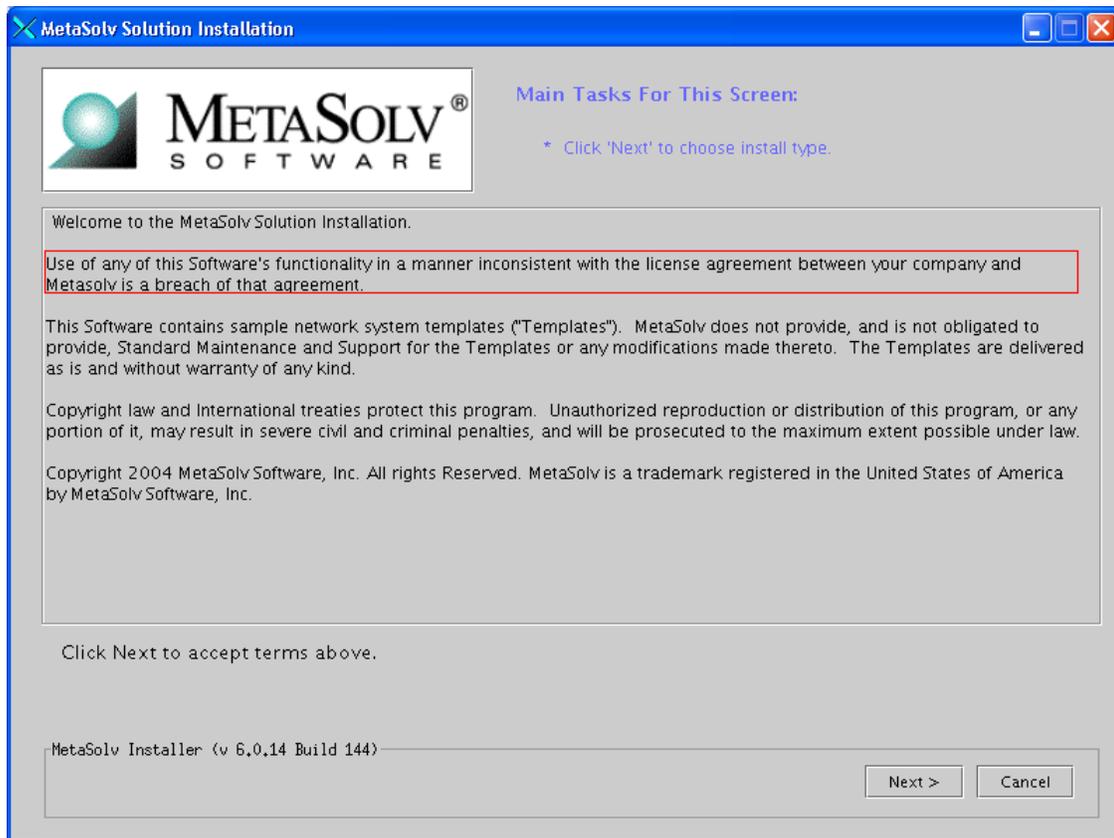
A directory named *installer* is automatically created in the selected directory. MetaSolv recommends choosing your METASOLV\_HOME directory for this task.

The installation program auto-launches the installation process by invoking setup.sh in the METASOLV\_HOME/installer directory.

Worksheet reference numbers and example values:

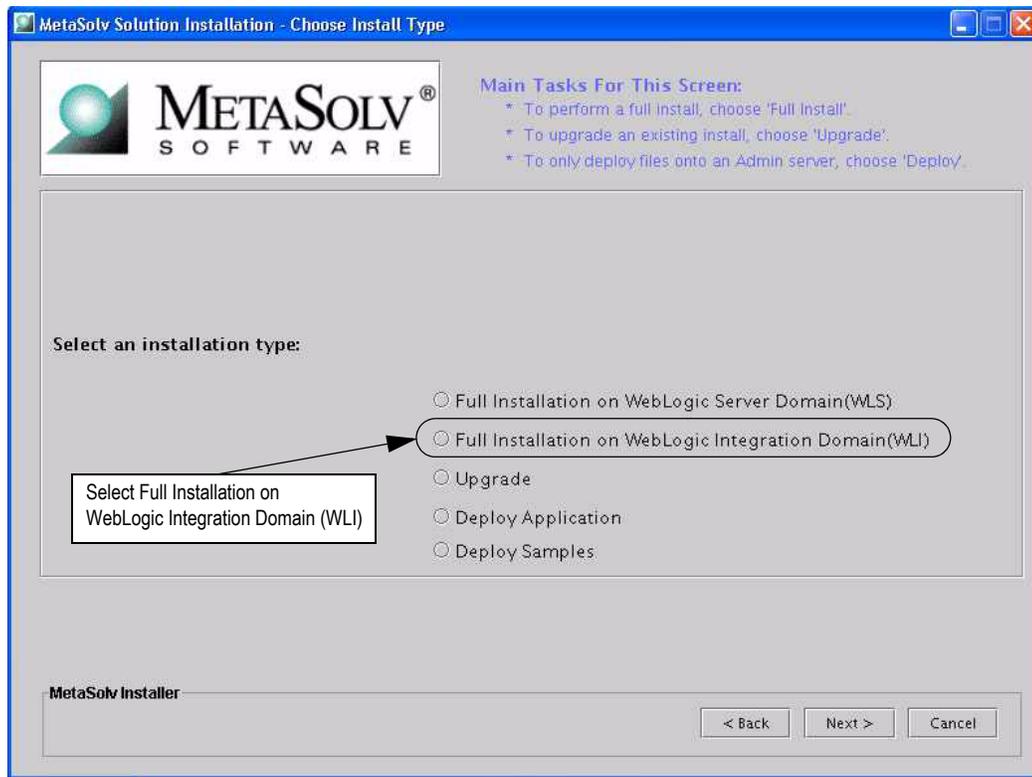
Field name	Worksheet reference number	Example value
File Name (METASOLV_HOME)	XCOMM-0090	/opt2/xmlapi/xmlcluster

The following window appears.



3. Click **Next**.

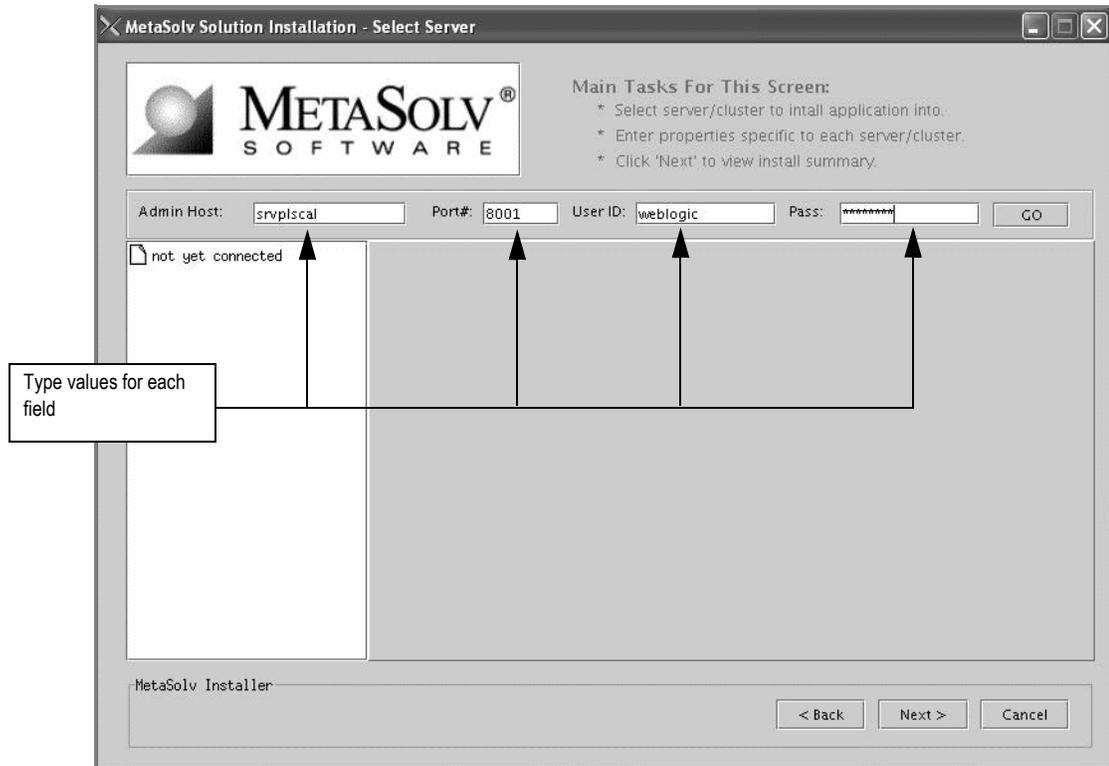
The following window appears.



4. Select **Full Installation on WebLogic Integration (WLI)** and click **Next**.

 Selecting **Full Installation on WebLogic Integration Domain (WLI)** installs MetaSolv Solution with the XML APIs. Selecting **Full Installation on WebLogic Server Domain (WLS)** installs MetaSolv Solution without the XML APIs. If you do not plan to use the XML APIs, do not use this Setup Guide. Instead, refer to the *Setup Guide (non-XML API Option)*.

The following window appears.

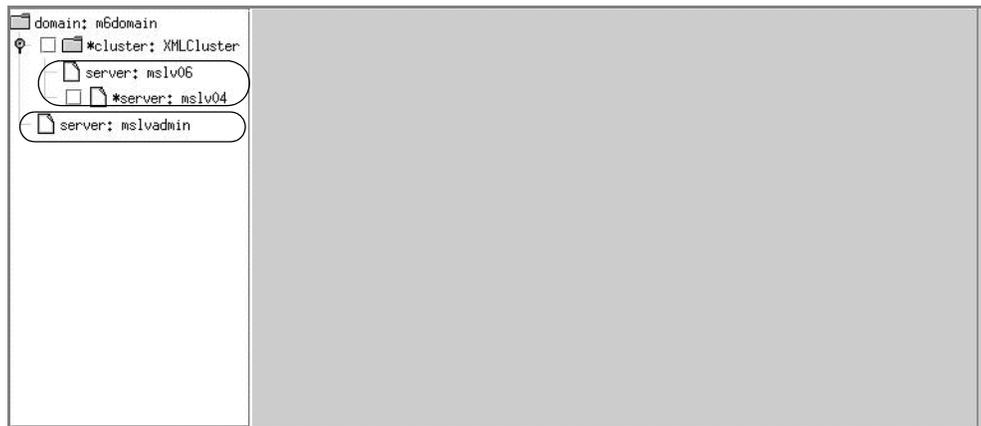


5. Type the values for the following fields: **Admin Host**, **Port#**, **User ID**, and **Pass**, and click **Go**.

Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
Admin Host	XAdmin-0250	<i>srvplscal</i>
Port#	XAdmin-0260	<i>8001</i>
User ID	XCOMM-0020	<i>weblogic</i>
Pass	XCOMM-0030	<i>metasolv</i>

When you click **Go**, the installation program queries the Admin Host machine and returns with values you entered during the configuration of the BEA WebLogic domain. The left pane of the installation window shows the domain and servers associated with the admin host name that you entered.



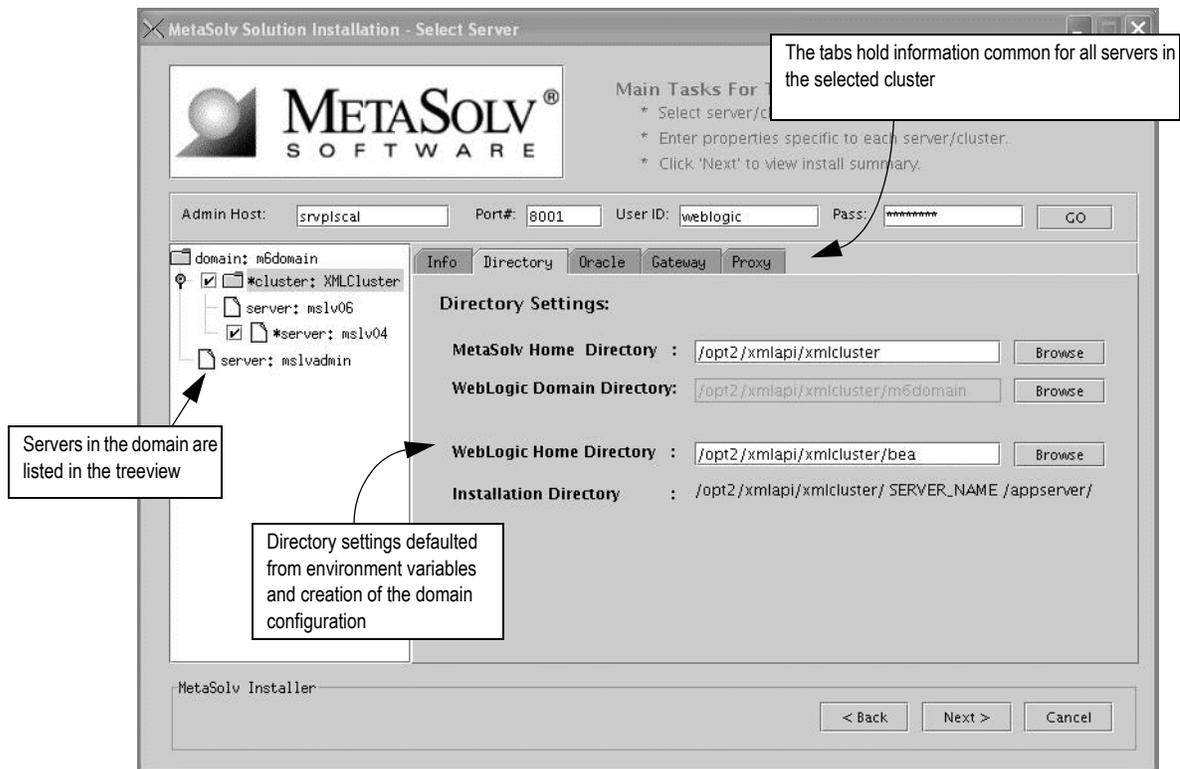
The treeview in the left pane represents the domain and its servers. The domain *m6domain* is at the highest level in the structure. The treeview shows the cluster *M60Cluster* and the servers that are subordinate to it (*mslv06*, *mslv04*) and the administration server *mslvadmin*.

6. In the treeview on the left, select the check box next to the server on which you want MetaSolv Solution installed.

Only servers associated with the current machine can be selected. Note in the figure above, both *mslv06* and *mslv04* can be selected. Both servers are running on the current machine (*srvplosa1*).

Do not install the MetaSolv Solution application onto the administration server.

When you select a server in the left pane, tabs appear on the right pane. The tabs allow you to set values that apply to all servers that belong to a selected cluster.



The tabs in the right pane hold values for the cluster.

The following list shows how icons are used in the treeview.

-  The folder icon indicates that the item selected is a higher level (a domain or a cluster within a domain) and that other items (such as servers) are subordinate to the item indicated by the folder.
-  The page icon indicates that the item selected has no servers or other items that are subordinate to it.
- \*** An asterisk means that a server is a candidate for installation of MetaSolv Solution. Only servers associated with the machine on which the installation is occurring are eligible.
- A check box means you have selected the server for the installation of MetaSolv Solution during the installation process.

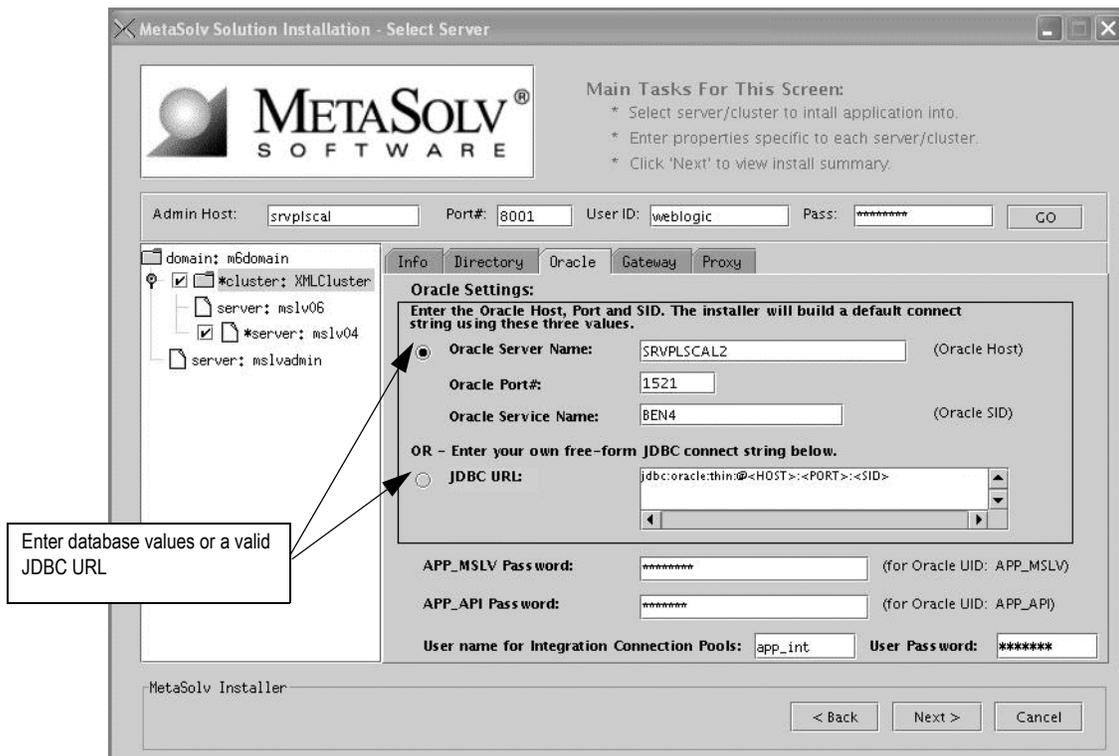
7. Complete information for the installation by selecting and completing the following tabs:

- a. Select the Directory tab and type the path and name of the MetaSolv home directory and the WebLogic domain directory, or click **Browse** to search for the directories.

Worksheet reference numbers and example values:

Field name	Worksheet ref. no.	Example value
MetaSolv Home	XCOMM-0090	/opt2/xmlapi/xmlcluster
WebLogic Domain Directory	XCOMM-0110	/opt2/xmlapi/xmlcluster/m6domain

- b. Select the Oracle tab, check the values that appear in the fields, and make any needed changes.



This window allows you to enter individual values for the database host, port, and SID or a valid JDBC URL string. Example of a JDBC URL string:

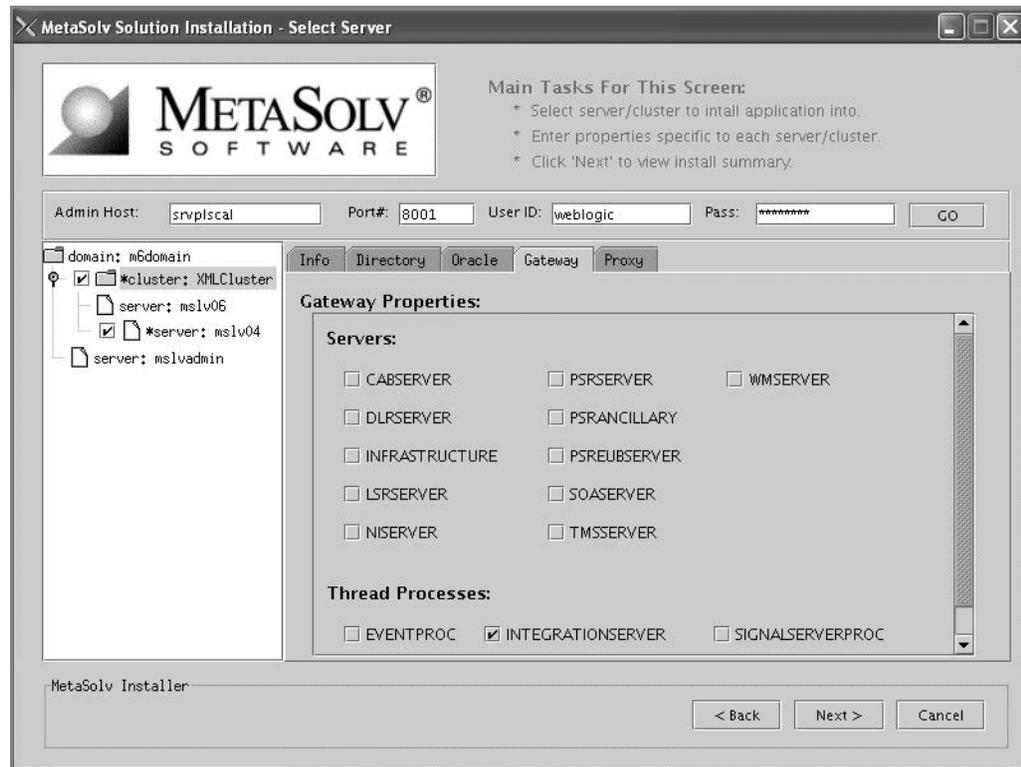
jdbc:oracle:thin:@mydbserver:1521:DB01

Worksheet reference numbers and example values:

<b>Field name</b>	<b>Worksheet reference number</b>	<b>Example value</b>
APP_MSLV Password	XCOMM-0040	<i>mss6mslv</i> (default)
APP_API Password	XCOMM-0050	<i>mss6api</i> (default)
Oracle Server Name	XCOMM-0130	<i>srvplscal2</i>
Oracle Port	XCOMM-140	<i>1521</i>
Oracle Service Name	XCOMM-150	<i>BEN4</i>
XML API integration user id	XCOMM-0057	<i>APP_INT</i>
XML API integration password	XCOMM-0059	<i>mss6int</i>

For multiple WebLogic Integration domains pointing to the same database, use different XML API integration user IDs and corresponding passwords. Refer to Multiple WebLogic Integration domains pointing to the same database on 189.

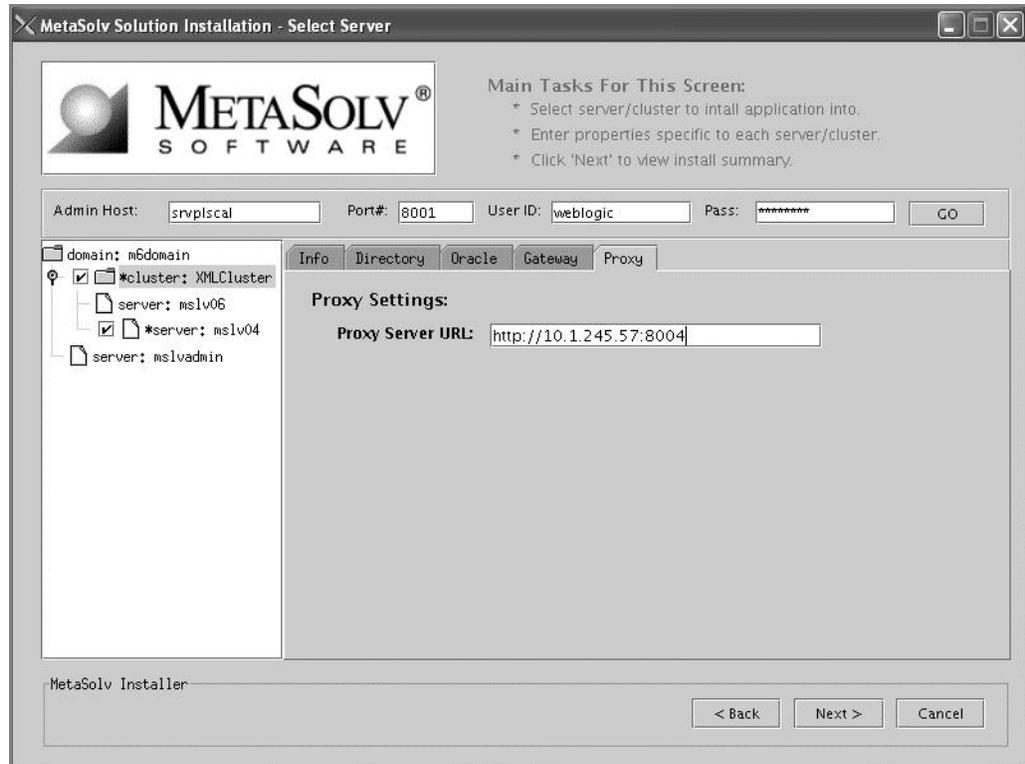
- c. Select the Gateway tab, check the default selections for event servers that are to be activated, and make any necessary changes. Note that INTEGRATIONSERVER must be checked.



If you are unsure, leave the default settings. You can manually edit these settings through the gateway.ini file. The check boxes that appear on the tab are for APIs. When you select a check box, modifications are made to the gateway.ini file used to configure MetaSolv Solution APIs. For more information on the gateway.ini, see the *MetaSolv Solution Administration Guide*.

- d. Select the Proxy tab and provide the URL of the proxy server or external load balancer.

This field is required for a clustered configuration.

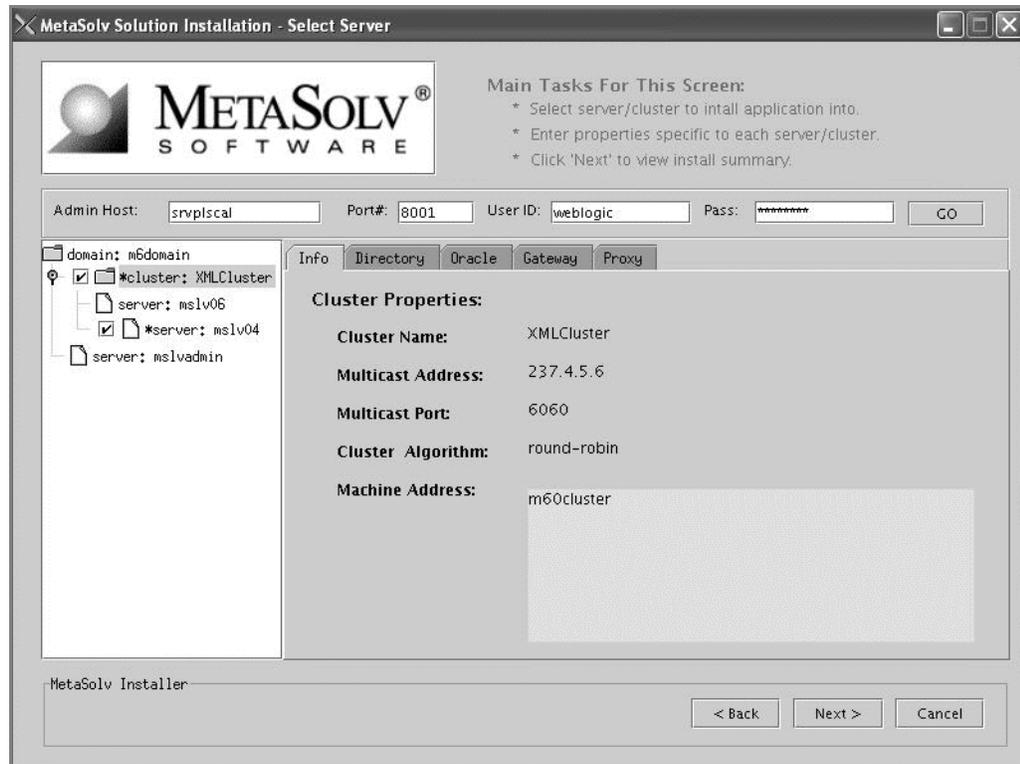


Worksheet reference numbers and example values:

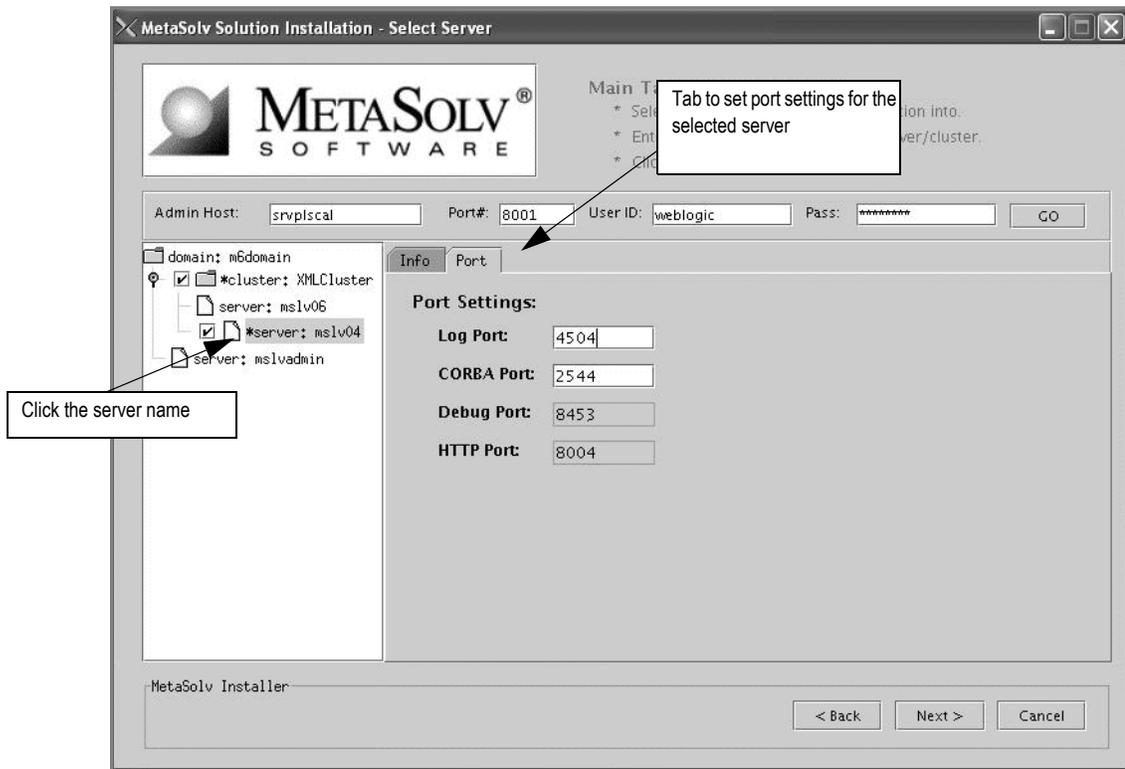
Field name	Worksheet reference number	Example value
Load Balancer virtual IP address and port / Proxy Server URL	XClusterMS-0450	<i>http://10.1.245.57:8004</i>

See “[Appendix A: Proxy server setup](#)” for complete information on setting up a BEA proxy server.

- e. Select the Info tab to see a summary of the cluster properties.



8. Define port settings for each individual server on the current machine by completing the following tasks:
- In the left pane, click on name of a server that is to be hosted on the current machine. A new set of tabs appear in the right pane. The following figure shows how to select a server for port settings.



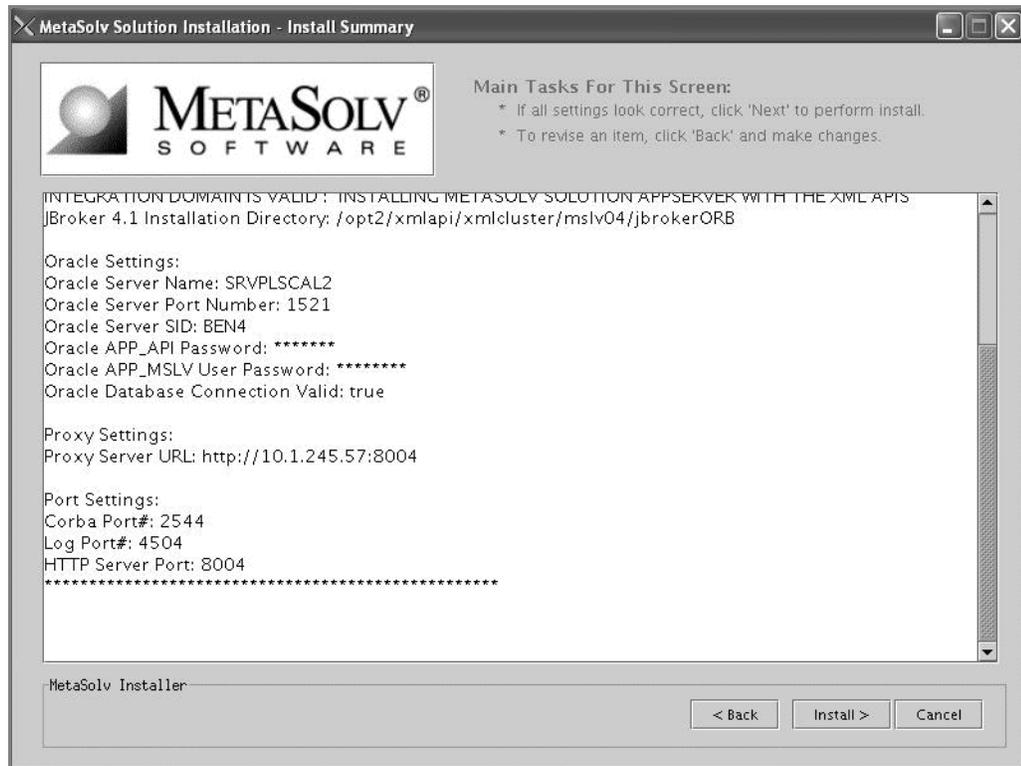
- b. Select the Port tab and type values in the **Log Port**, **CORBA Port** fields.  
By default, the installation program finds available ports and assigns the correct values.

Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
Log Port	XClusterMS-0590	4504
CORBA Port	XClusterMS-0600	2544

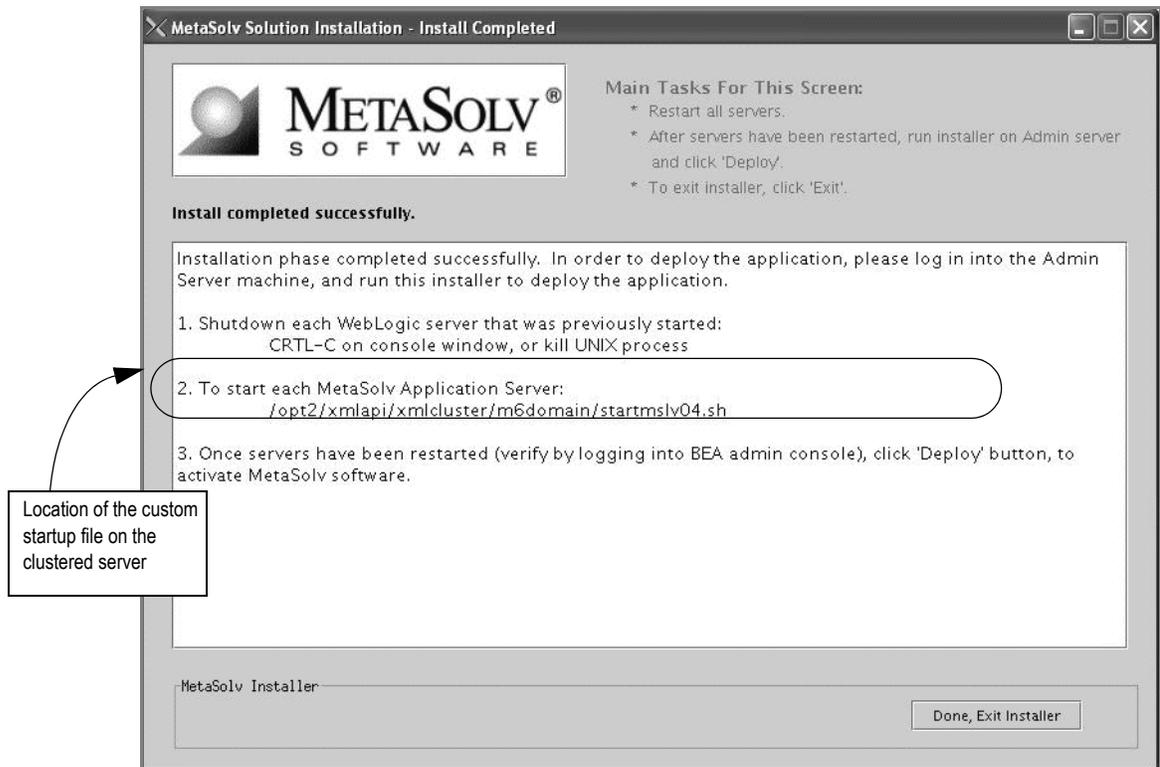
- c. Select the Info tab to see a summary of the selected server's properties.  
d. Repeat Step 8 and its substeps for all servers hosted on the current machine.  
9. Click **Next**.

The installation summary appears.



10. Check the summary for accuracy, then click **Install**.

The installation program installs the appropriate MetaSolv Solution files to the machine. When the files are installed, the following window appears.

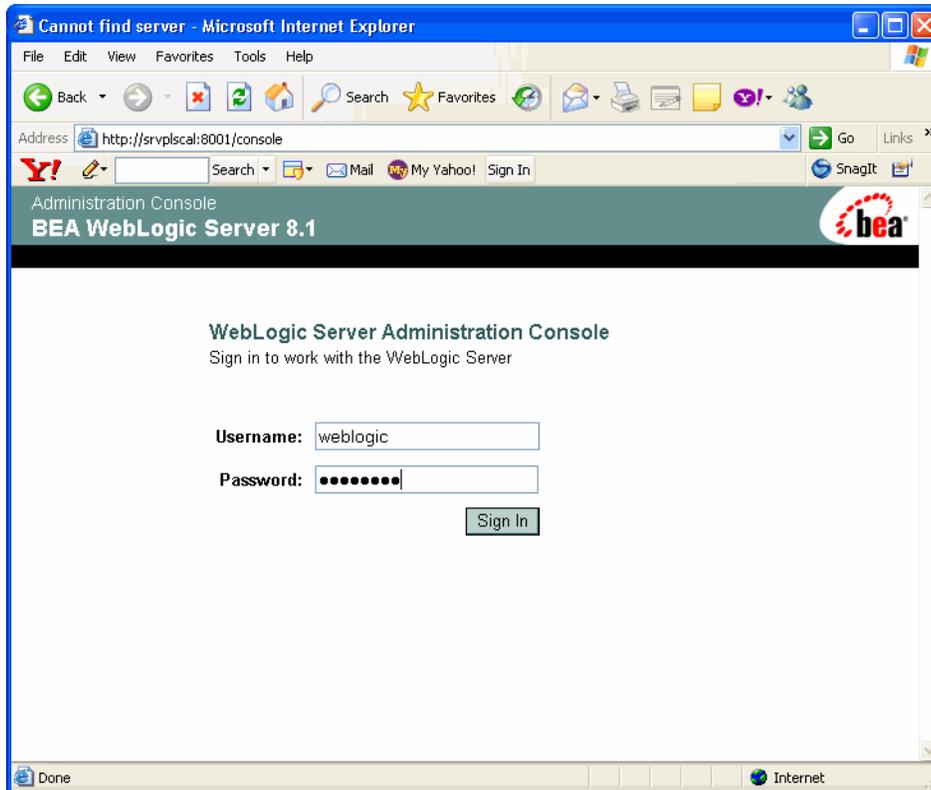


11. Note the location of the custom startup file for the application server, then click **Done, Exit Installer**.

12. Repeat steps 1-11 for each machine that will host a clustered server.

For example, in the installation scenario presented with this procedure, steps 1-11 must be repeated for the second machine (*srvplosa2*) that will host the clustered server *mslv06*.

- Restart the administration server at admin server machine.

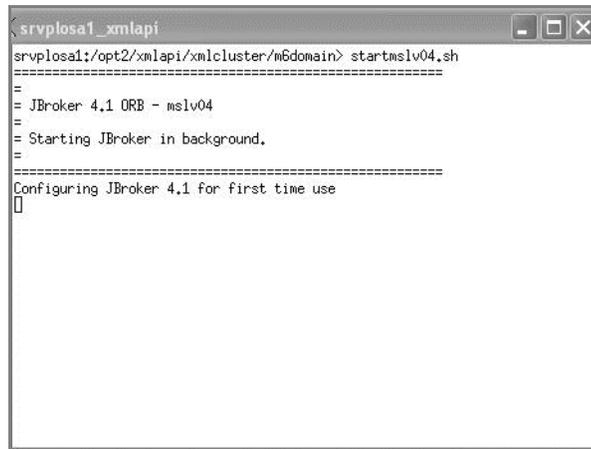


- Start the managed server or servers you just installed from the locations indicated in the installation windows using the custom startup file.

In the example shown in the previous figure, you would start *mslv04* by navigating to the the location */opt2/xmlapi/xmlcluster/m6domain* and typing the following command:

```
startmslv04.sh
```

The following figure shows *mslv04* in the process of starting up.



```
srvplosa1_xmlapi
srvplosa1:/opt2/xmlapi/xmlcluster/m6domain> startmslv04.sh
=====
= JBroker 4.1 ORB - mslv04
=
= Starting JBroker in background.
=
=====
Configuring JBroker 4.1 for first time use
[]
```

Then from the same location on the next machine, you would start the second server *mslv06* by typing:

**startmslv06.sh**

15. Leave the server(s) running and complete this entire procedure for any additional machines in the cluster that will host a MetaSolv Solution server.

- Log onto the WebLogic Console and make sure the managed server(s) are running. To check the servers, click **Servers** in the left pane of the Console, and the right pane will show the status of all servers.

**m6domain> Servers**

Connected to : m6domain | You are logged in as : weblogic | [Logout](#)

A server is an instance of WebLogic Server that runs in its own Java Virtual Machine (JVM) and has its own configuration. Each WebLogic Server domain must have one server that acts as the Administration Server. In a typical production environment, the Administration Server is where the Administration Console is run and used to perform administrative tasks. By default, the Administration Server is called `myserver`. A typical production environment may also have one or more Managed Servers, which are instances of WebLogic Server used to host enterprise applications.

This Servers page displays key information about each server that has been configured in the current WebLogic Server domain.

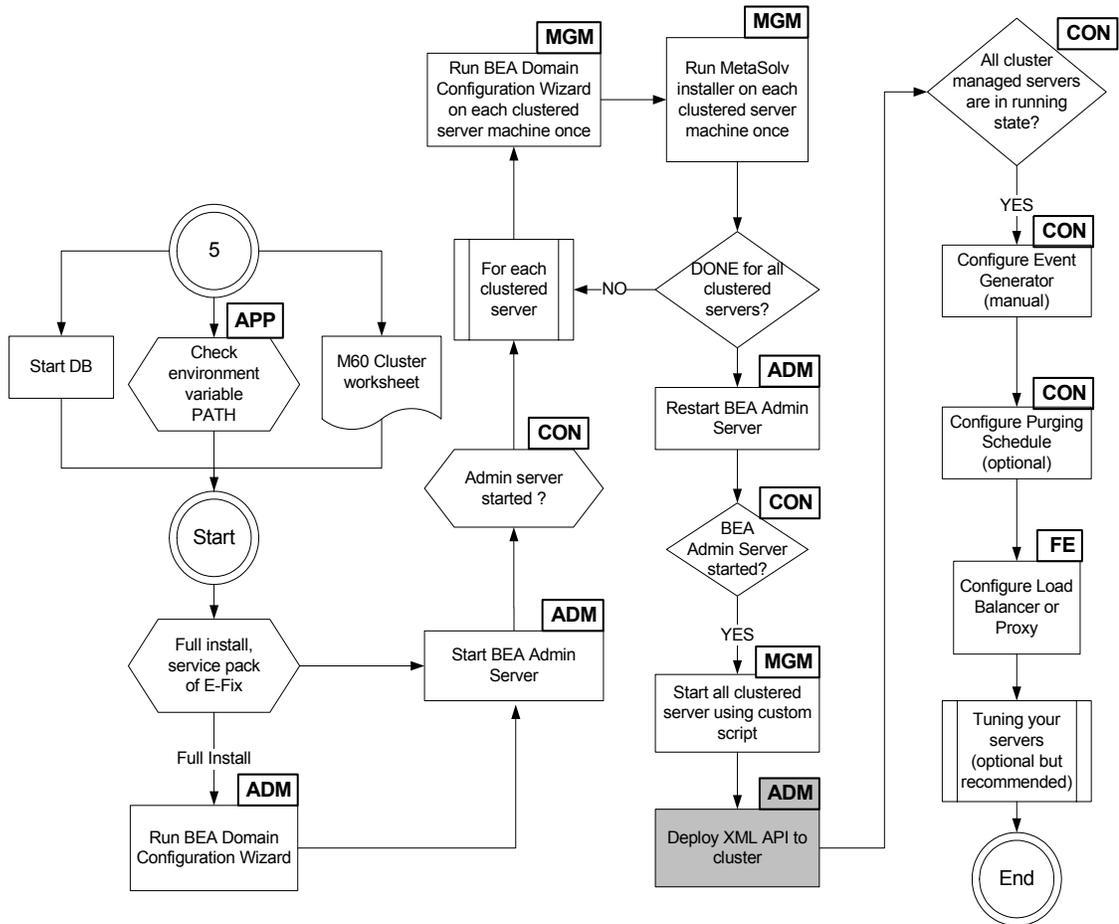
[Configure a new Server...](#)

[Customize this view...](#)

Name	Listen Port	Listen Port Enabled	State	
<a href="#">mslv04</a>	8004	true	RUNNING	
<a href="#">mslv06</a>	8004	true	RUNNING	
<a href="#">mslvadmin</a>	8001	true	RUNNING	

## Deploying MetaSolv Solution on admin server machine

To activate MetaSolv Solution software on the application server, you must perform a deployment. You deploy MetaSolv Solution to the cluster from the administration server using the MetaSolv Solution installation program. This procedure completes the highlighted step shown in the following figure.



The following acronyms indicate the machine used in a step in the installation and deployment process:

**ADM**—BEA administration server machine

**APP**—All application server machines

**CON**—BEA administration console

**MGM**—All clustered server machines

**FE**—Front end host machine, such as load balancer or proxy.

**Figure 12: Deploying MetaSolv Solution**

## To deploy MetaSolv Solution

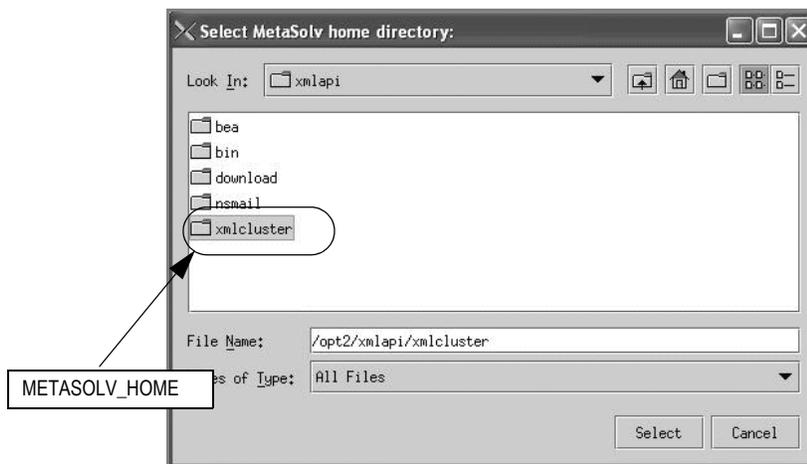
1. Start the installation program on the administration server.
2. From the directory where you stored MetaSolv Solution files downloaded from the Oracle E-Delivery Web site, type one of the following commands and press ENTER:

**java -jar <release#/build#>\_AppServerInstaller.jar** (For releases 6.0.5 and higher)

For example: `java -jar MSS_R6_0_8_b59_XML-API-Installer.jar`

 If the file name has brackets and a number embedded (for example, MSS[1].R6\_0\_8\_b159\_XML-API-AppServerInstaller.jar), change the file name to eliminate the brackets and their contents. Brackets cause a Java error when you attempt to unjar the contents of the download file.

The following window appears.

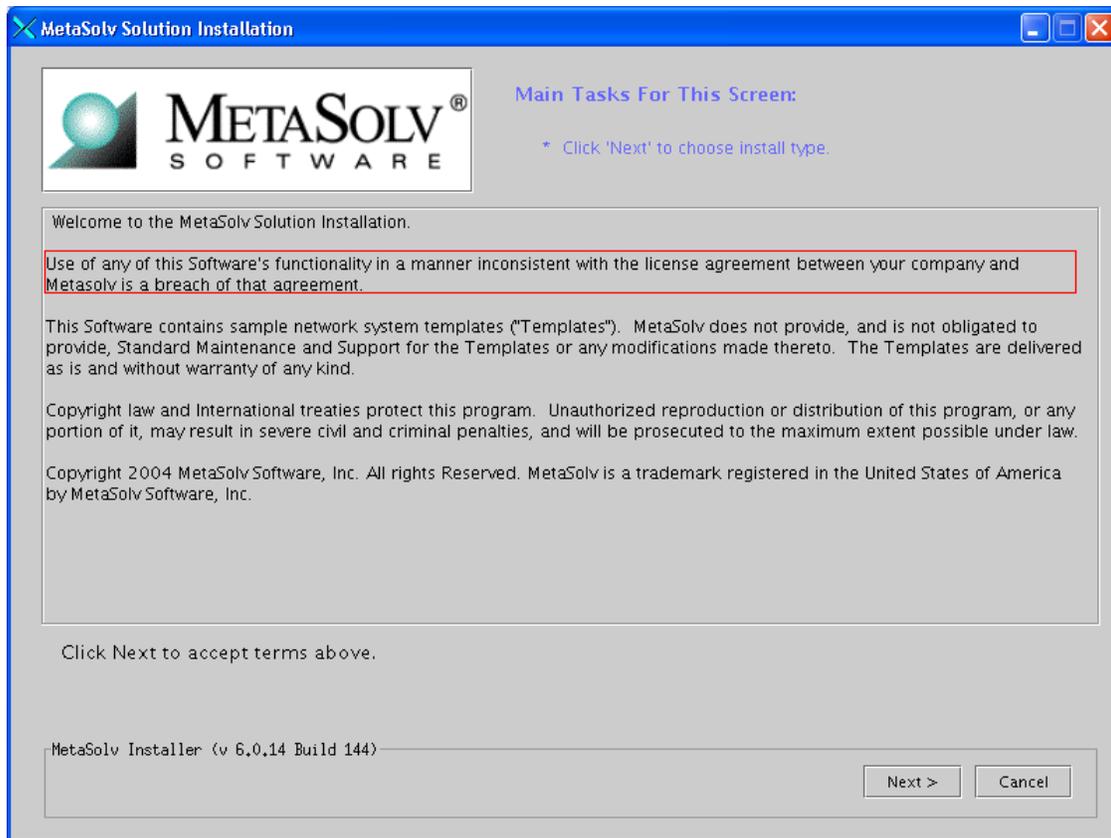


3. From the **Look In** drop-down list, click the down arrow and select a directory in which the installation program files can be stored and used during the installation process, then click **Select**.

A directory named *installer* is automatically created in the selected directory. MetaSolv recommends choosing your METASOLV\_HOME directory for this task.

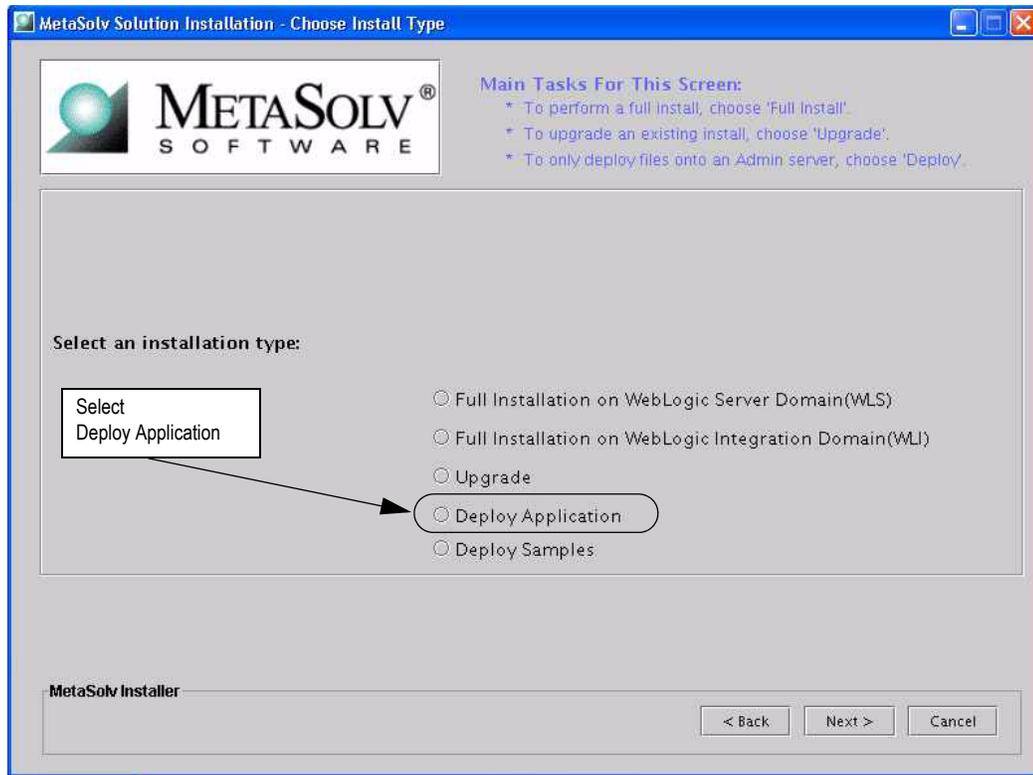
The installation program auto-launches the installation process by invoking `setup.sh` in the METASOLV\_HOME/installer directory.

The following window appears.



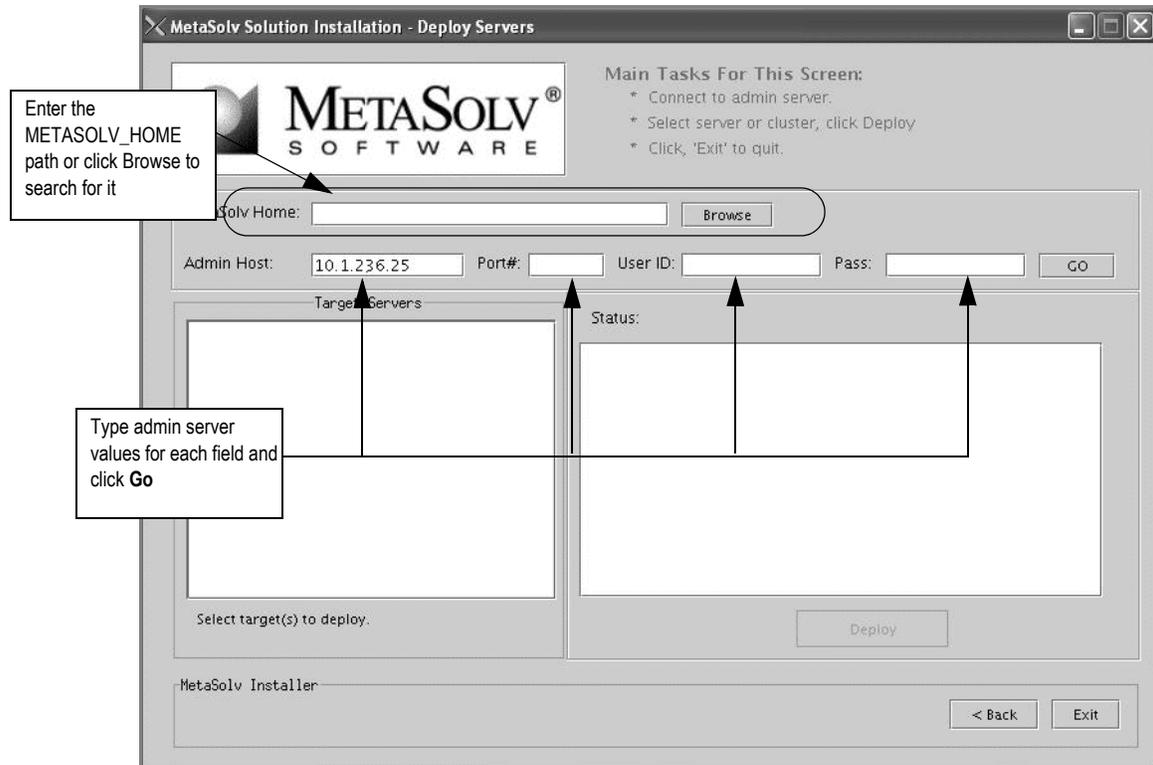
4. Click **Next**.

The following window appears.



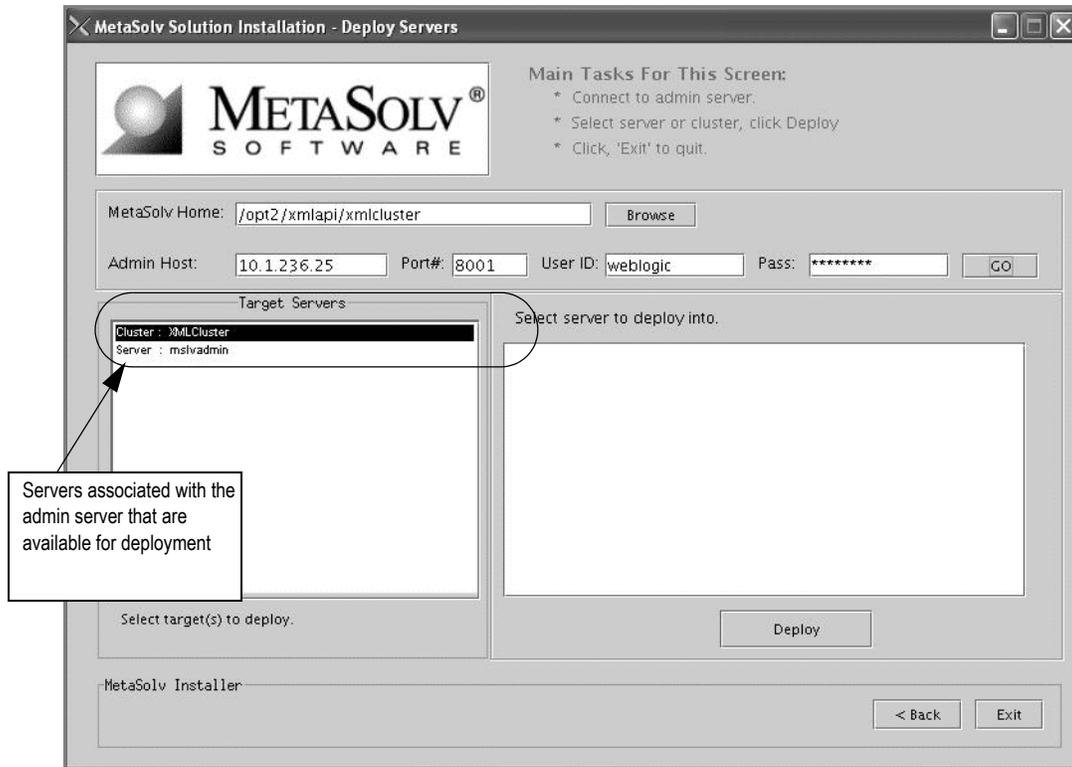
5. Select **Deploy Application** and click **Next**.

The following window appears.



6. Enter the path for the METASOLV\_HOME directory or click **Browse** and search for the directory.
7. Type administration server values in the fields shown in the previous figure and click **Go**.

Servers available for deployment appear in the Target Servers list box.

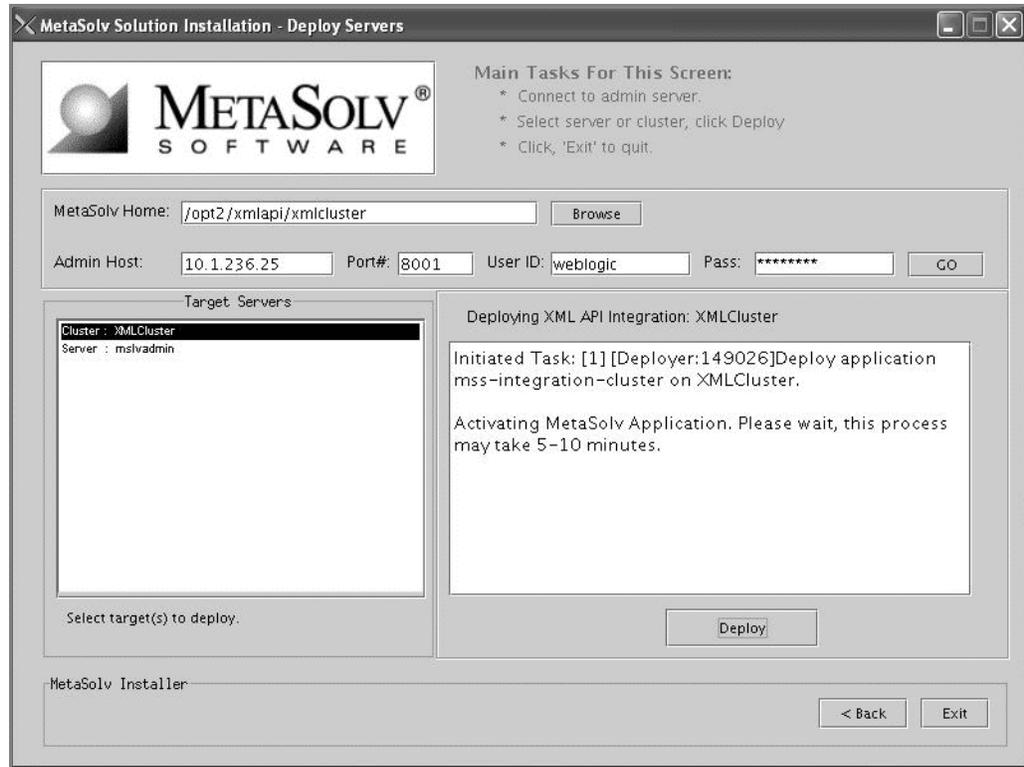


8. Highlight the cluster and click **Deploy**.

Deployment begins. MetaSolv Solution is deployed to each server in the cluster.

Do not deploy to the administration server. In the scenario shown in the previous figure, only the cluster was deployed to, not *mslvadmin*, the administration server.

The deployment process can take a few minutes. The right pane of the window indicates the status of the deployment.



When the deployment is complete, the following window appears.



9. Click **OK** to close the window.
10. If you have additional servers to deploy, select the servers and continue the deployment, or if deployment is complete, click **Exit**.

The following window appears asking if you want to exit the installation program.



11. Click **OK** to exit the installation program.



If you encounter the following error in the <serverName>.mss.log file after you start a server, refer to the Technical Bulletin titled *Prodfixsql Error: Failure to grant table creation privileges for APP\_MSLV* for information on how to resolve this error. To locate this bulletin, click the Knowledge tab on the Oracle MetaLink Web site (<https://metalink.oracle.com>).

```
<Alert> <JMS> <BEA-040205> <JMSServer "plugging_auto_1". An error
occurred while trying to do a SQL SELECT on table
"pluginStore_auto_1JMSState". Check privileges on this table. You
may need to specify [schema.[catalog.]] in your configured
prefix.>
```

```
<Alert> <JMS> <BEA-040052> <JMSServer "plugging_auto_1" store
failed to open java.io.IOException: JMS JDBC store, connection
pool = <MSLVNoneTxPool>, prefix = <pluginStore_auto_1>: flush
failed
```

```
java.sql.SQLException: ORA-00942: table or view does not exist
```

12. When all clustered servers have been deployed, shut down all servers, and restart them from the locations given using the start command listed on the window.

Remember to start the administration server first, then to bring up your remaining servers using the commands listed in the window. For example, using the example servers used in the procedures, the first server to be started would be mslvadmin, then mslv06 and mslv04.

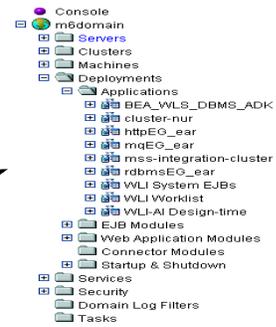
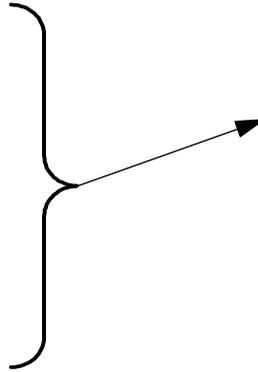
To shut down the admin, manage, and proxy servers, use the stop server scripts in the m6domain directory. For example, stopmslv01.sh, stopmslv02.cmd, and stopProxyAndAdmin.cmd.

13. Verify the deployment by starting the WebLogic Server Administration Console and selecting DOMAIN\_NAME>Deployments>Applications in the left pane.

The following figure shows the applications you should see deployed by the installation program for MetaSolv Solution.

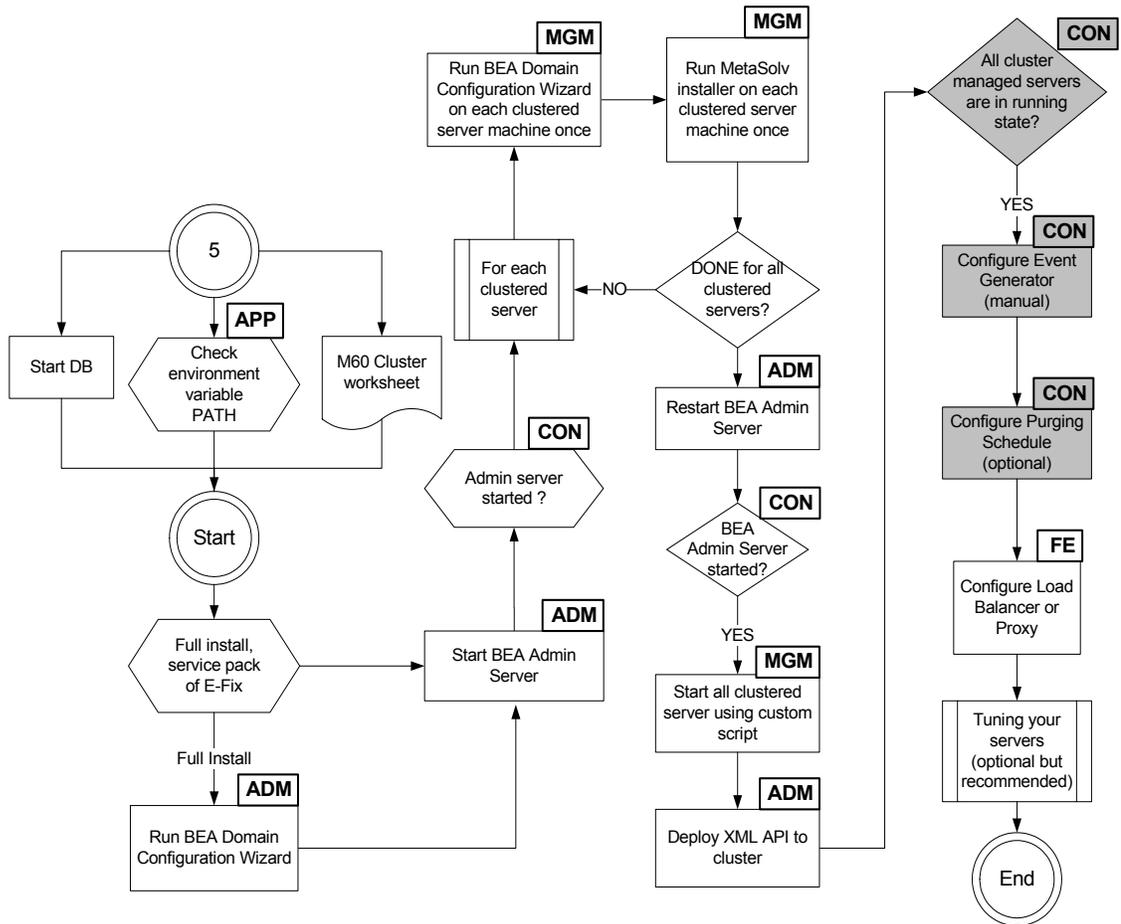
Deployed applications:

- BEA\_WLS\_DBMS\_ADK
- cluster-nur
- httpEG\_ear
- mgEG\_ear
- mss-integration-cluster
- rdbmsEG\_ear
- WLI System EJBs
- WLI Worklist



## Configuring WebLogic Integration

This section describes how to set configuration parameters in WebLogic Integration. The following figure shows the procedures described in this section.



The following acronyms indicate the machine used in a step in the installation and deployment process:

- ADM**—BEA administration server machine
- APP**—All application server machines
- CON**—BEA administration console
- MGM**—All clustered server machines
- FE**—Front end host machine, such as load balancer or proxy.

**Figure 13: Configuring WebLogic Integration**

WebLogic Integration has a separate console that allows configuration to be done. Do not confuse this console with the WebLogic Server Administrative Console that allows you to do WebLogic domain maintenance.

The configuration that will be set in the WebLogic Integration Administration Console includes:

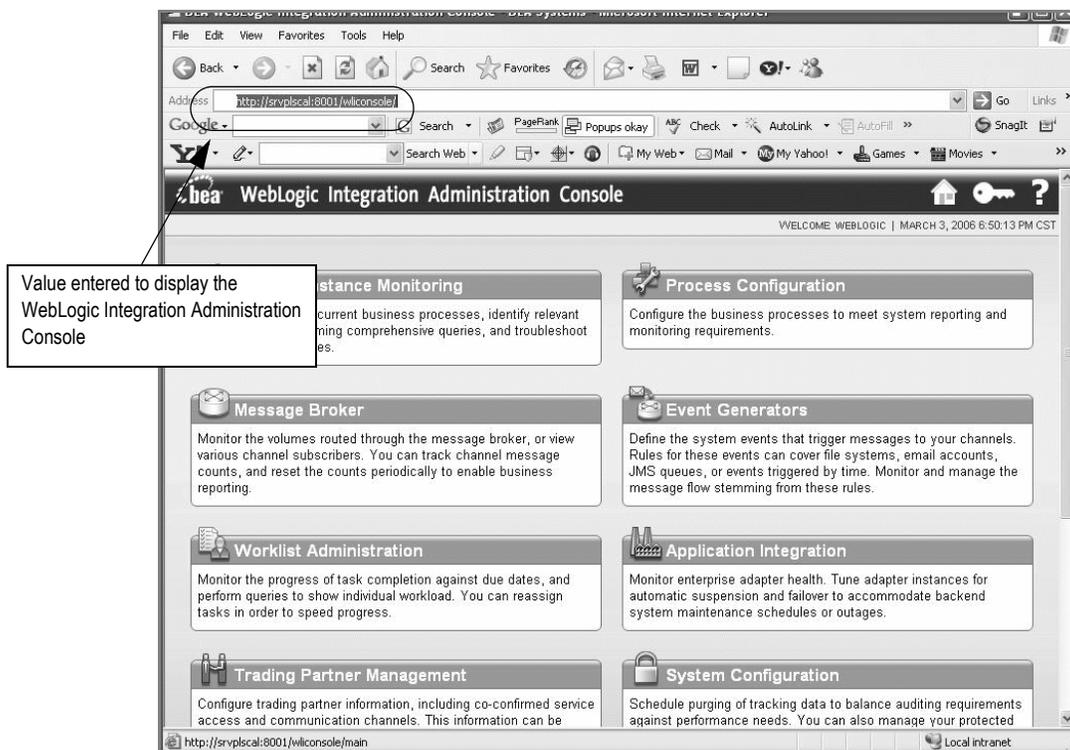
- ◆ Event generation
- ◆ Tracking data management

## Logging on to the WebLogic Integration Administration Console

Start the WebLogic Integration Administration Console by typing the following information into the **Address** field of the Internet Explorer and pressing ENTER:

`http://<host_admin:port number>/wliconsole`

The following figure shows the initial Console window that appears.

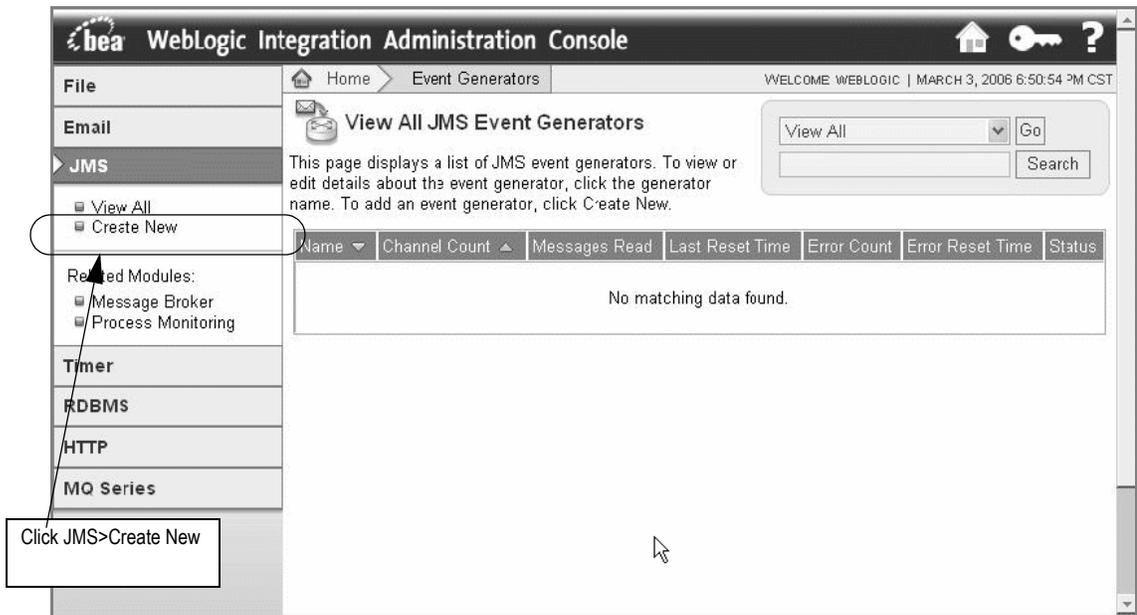


## Setting up a JMS event generator

### To create an event generator

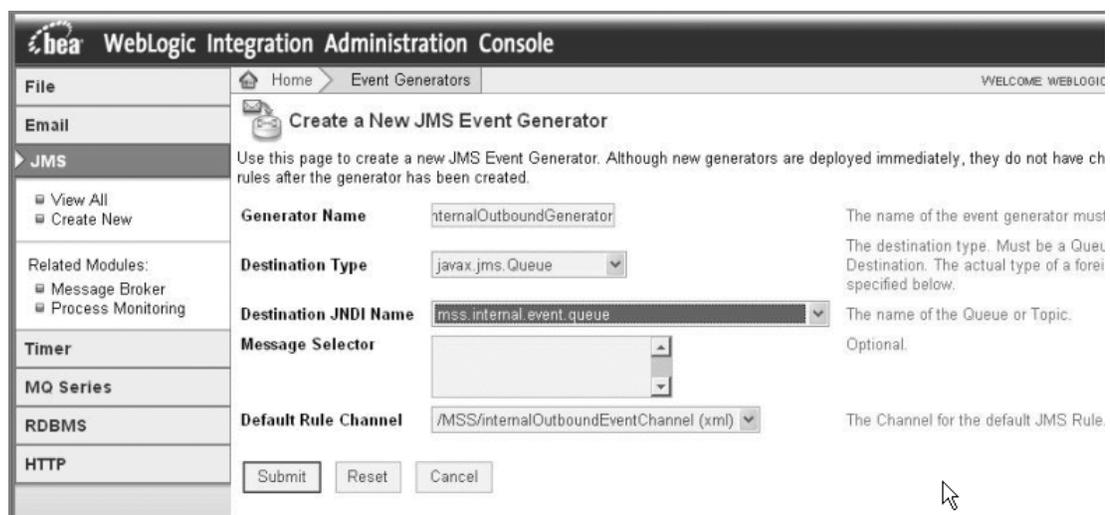
1. On the WebLogic Integration Administration Console window, click **Event Generators**.

The following window appears.



2. On the left panel, click **JMS**; then, on the expanded view under JMS, click **Create New**.

The following information appears in the right panel.



3. Enter the following values on the Create a New JMS Event Generator window:

**Generator Name:** InternalOutboundGenerator

**Destination Type:** javax.jms.Queue

**Destination JNDI Name:** mss.internal.event.queue

**Message Selector:** Leave this field blank.

**Default Rule Channel:** /MSS/internalOutboundEventChannel (xml)

4. Click **Submit**.

The following summary appears.

The screenshot shows the WebLogic Integration Administration Console interface. The main content area is titled "JMS Event Generator Definition" and contains the following information:

- Generator Name:** InternalOutboundGenerator
- Destination Type:** javax.jms.Queue
- Destination JNDI Name:** mss.internal.event.queue
- Message Selector:** Not defined.
- Default Rule Channel:** /MSS/internalOutboundEventChannel

Below this information, there is a section titled "Channel Rules Defined for this Generator:" which contains an empty table with the following headers: "Property Name", "Property Value", and "Channel Name". The table body contains the text "No matching data found." At the bottom of the page, there is a link that says "Define a New Channel Rule".

To return to the main WebLogic Integration Administration Console window, click **Home** in the breadcrumbs listed at the top of the pane. See the previous figure for information on the **Home** link to click.

## Setting parameters for purging data (optional)

### To set up purge parameters (optional)

1. On the WebLogic Integration Administration Console window, click **System Configuration**.

The following window appears.

The screenshot shows the WebLogic Integration Administration Console interface. The left sidebar is titled 'Tracking, Purging and Reporting Policies' and includes a 'Purge' section. The main content area is titled 'Current Tracking and Reporting Data Settings' and contains the following configuration details:

Purge Schedule	
Reporting Data Stream Is	DISABLED
Next Purge Start Time	Saturday, March 4, 2006 10:26:32 PM CST
Repeat Every	1 day
Purge Delay	1 hour
Configure	

Reporting Data Datastore	
Reporting Data DataStore JNDI Name	cgDataSource
Configure	

Default Reporting Data Policy and Tracking Level for Processes	
Default Tracking Level	None
Default Reporting Data Policy	On
Default Variable Tracking Level	Off
Configure	

A callout box with the text 'Click Configure to change the purge schedule.' has an arrow pointing to the 'Configure' link under the 'Purge Schedule' section.

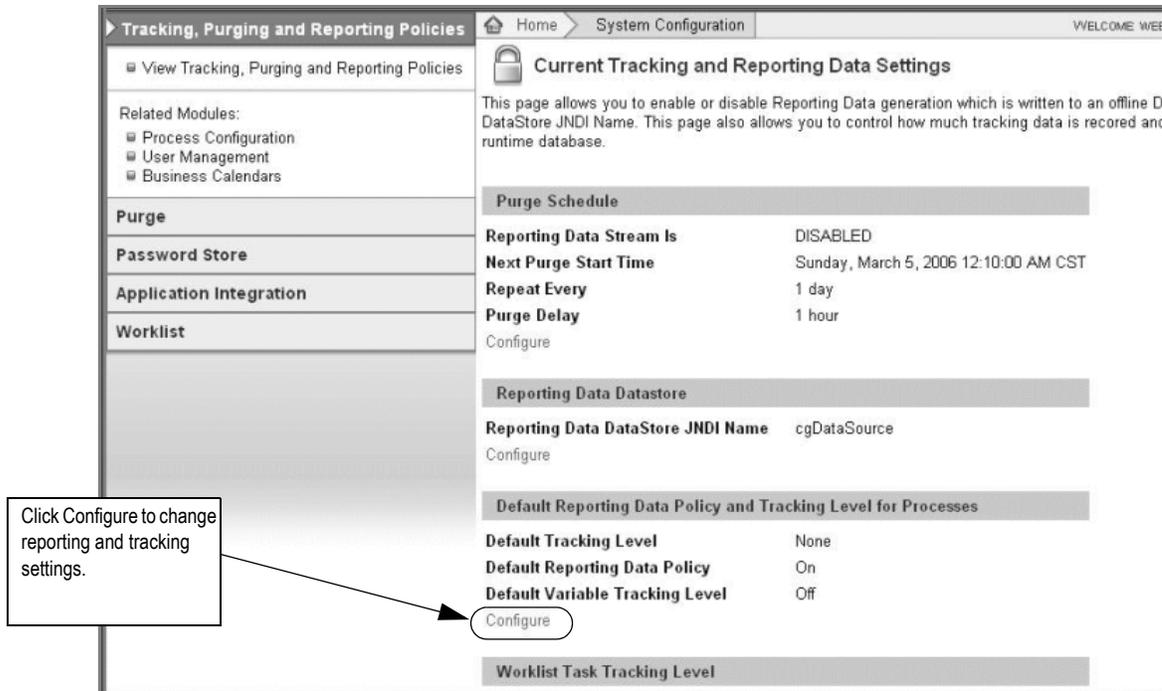
2. On the left panel, click **Tracking, Purging and Reporting Policies**, then click **Configure** in the Purge Schedule section that appears in the right pane.

The following information appears in the right pane.

The screenshot shows the 'WebLogic Integration Administration Console' interface. The main title is 'WebLogic Integration Administration Console'. The navigation bar includes 'Home' and 'System Configuration'. The current page is 'Tracking Data Purge and Reporting Data Policy Settings'. The left sidebar contains a tree view with 'Tracking, Purging and Reporting Policies' expanded, showing sub-items like 'View Tracking, Purging and Reporting Policies', 'Related Modules' (Process Configuration, User Management, Business Calendars), 'Purge', 'Password Store', 'Application Integration', and 'Worklist'. The main content area has a lock icon and the title 'Tracking Data Purge and Reporting Data Policy Settings'. Below the title is a description: 'Use this page to enable or disable the offline Reporting Data generation and to schedule when and how it should run.' There is a checkbox for 'Enable Reporting Data Generation' which is currently unchecked. A note states: 'Disabling the Reporting Data generation here will override policy settings, and tracking data will be deleted during the purge; tracking data cannot be disabled.' Below this are three fields: 'Next Purge Start Time' (00:10, March 4, 2006), 'Repeat Every' (1 days), and 'Purge Delay' (1 hours). At the bottom are 'Submit', 'Reset', and 'Cancel' buttons.

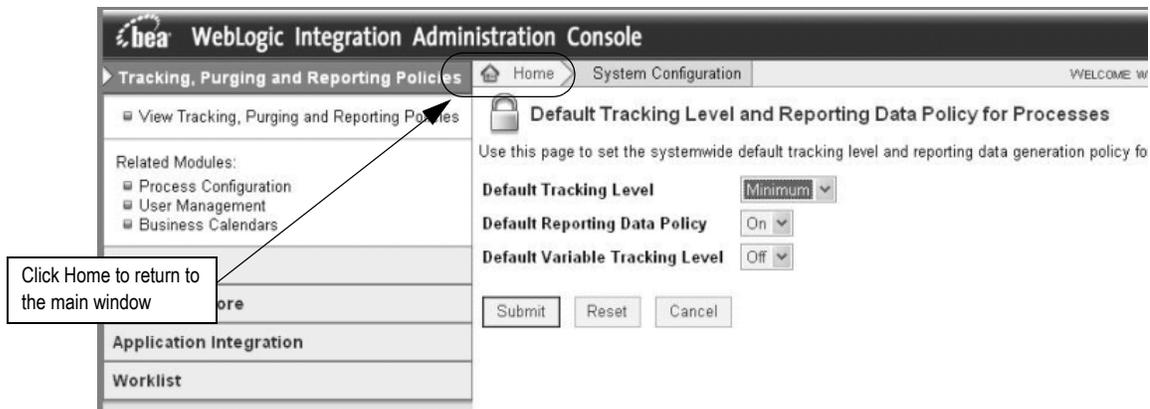
3. Set the purging policy by completing the following fields on the window:
  - Next Purge Start Time:** The start time for the first (or next purge).
  - Repeat Every:** Select a unit of time you want to measure by in the drop-down box (days, for example), and type a number to indicate the length of time between purges in the text box.
  - Purge Delay:** Select the unit of time and type a number in the text box to indicate how long a purge can be delayed.
4. Click **Submit**.

The change is processed and the right pane returns to Current Tracking and Reporting Data Settings.



5. Click **Configure** in the Default Reporting Data Policy and Tracking Level for Processes section.

The following window appears.



6. In the right pane, select *Minimum* in the **Default Tracking Level** field and click **Submit**.  
The changes are processed and the Current Tracking and Reporting Data Settings reappear showing the changes. To return to the main WebLogic Integration Administration Console window, click **Home** in the breadcrumbs listed at the top of the pane. See the previous figure for information on the **Home** link to click.

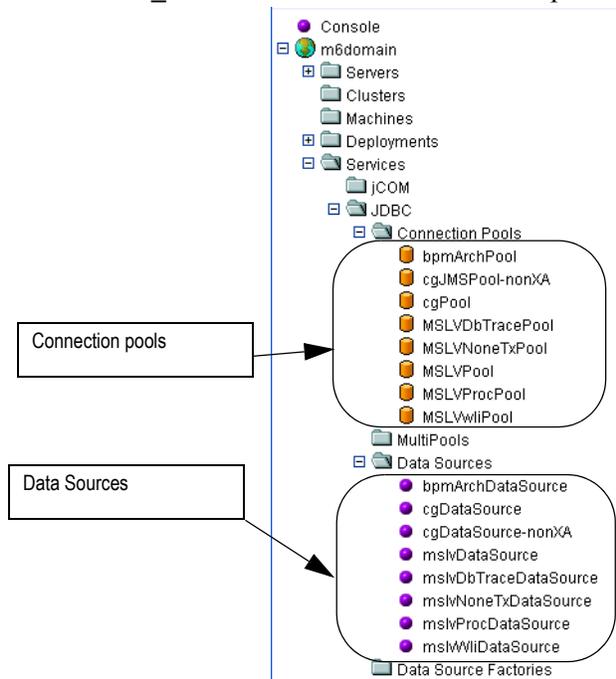
## Verifying the configuration and installation

### To verify the configuration

1. Start the WebLogic Server Administration Console by typing the following information into the Address field of Internet Explorer and pressing ENTER:  
`http://<host_admin:port number>/console`
2. Type your user name and password, then click **Sign in**.
3. Compare the values shown on the following screens to your installation screens to make sure you have configured WebLogic correctly for your installation.

## JDBC connection pools and data sources

Select **DOMAIN\_NAME>Services>JDBC** and expand the items under JDBC.



### Connection pools:

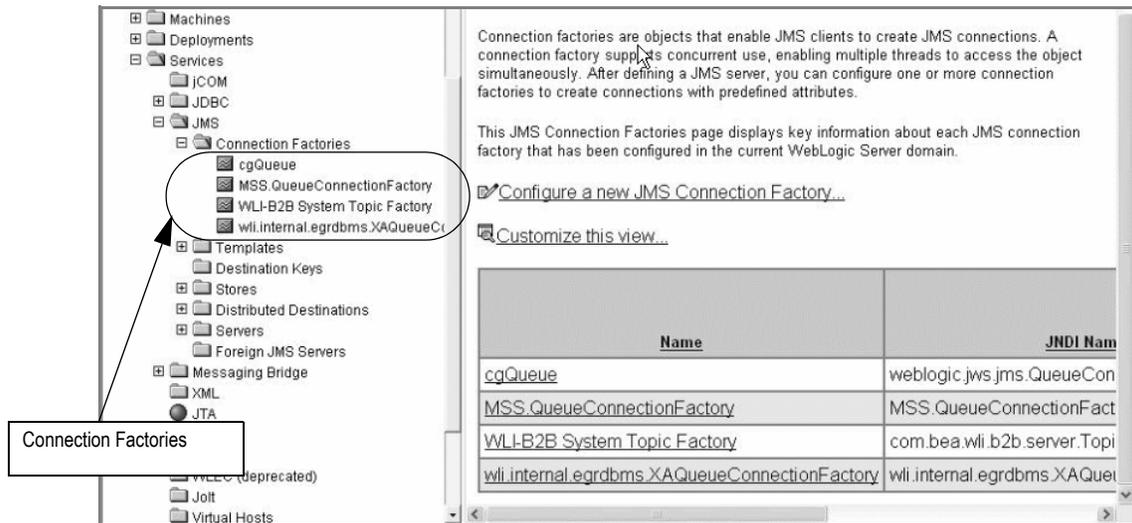
- ◆ bpmArchPool
- ◆ cgJMSPool-nonXA
- ◆ cgPool
- ◆ MSLVDbTracePool
- ◆ MSLVNoneTxPool
- ◆ MSLVPool
- ◆ MSLVProcPool
- ◆ MSLVwliPool

**Data sources:**

- ◆ bpmArchDataSource
- ◆ cgDataSource
- ◆ cgDataSource-nonXA
- ◆ mslvDataSource
- ◆ mslvDbTraceDataSource
- ◆ mslvNoneTxDataSource
- ◆ mslvProcDataSource
- ◆ mslvWliDataSource

**JMS connection factories**

Select **DOMAIN\_NAME>Services>JMS>Connection Factories**.

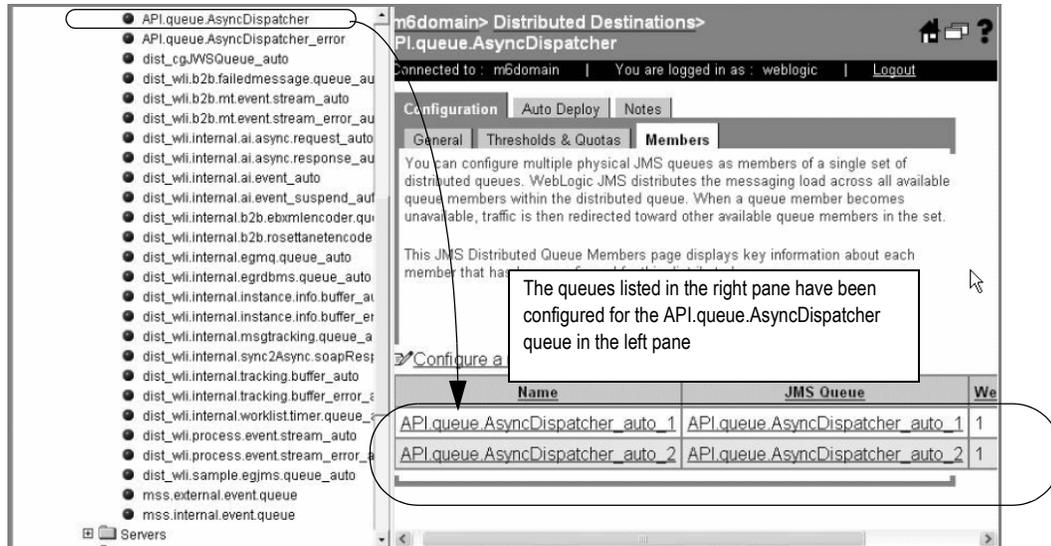


**Connection Factories:**

- ◆ cgQueue
- ◆ MSS.QueueConnectionFactory
- ◆ WLI-B2B System Topic Factory
- ◆ wli.internal.egrdbms.XAQueueConnectionFactory



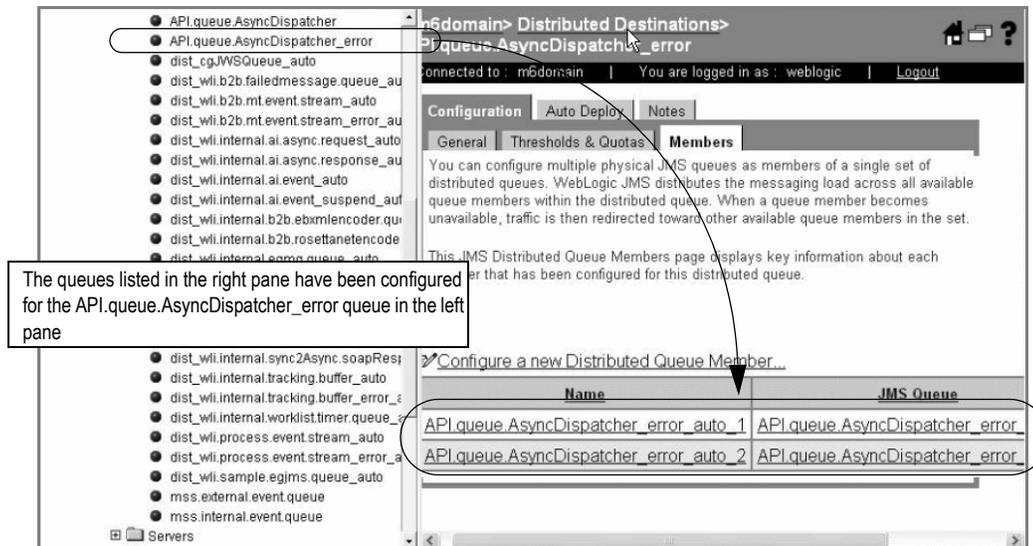
## API.queue.AsyncDispatcher



Two queues were created for the API.queue.AsyncDispatcher because the example domain used in the installation procedure has two clustered servers. The queue created for each server is used for load balancing.

The following figures show the remaining queues in the Distributed Destinations list that have sets of queues created by the installation program.

### API.queue.AsyncDispatcher\_error



If the queues are not present in the right pane, you can create them by doing the following:

1. Select the Auto Deploy tab.
2. Select **All managed Servers in Cluster**.
3. Click **Deploy**.

*mss.external.event.queue*

The queues listed in the right pane have been configured for *mss.external.event.queue* in the left pane

Name	JMS Queue	Weight
<a href="#">mss_external_event_queue_auto_1</a>	<a href="#">mss_external_event_queue_auto_1</a>	1
<a href="#">mss_external_event_queue_auto_2</a>	<a href="#">mss_external_event_queue_auto_2</a>	1

*mss.internal.event.queue*

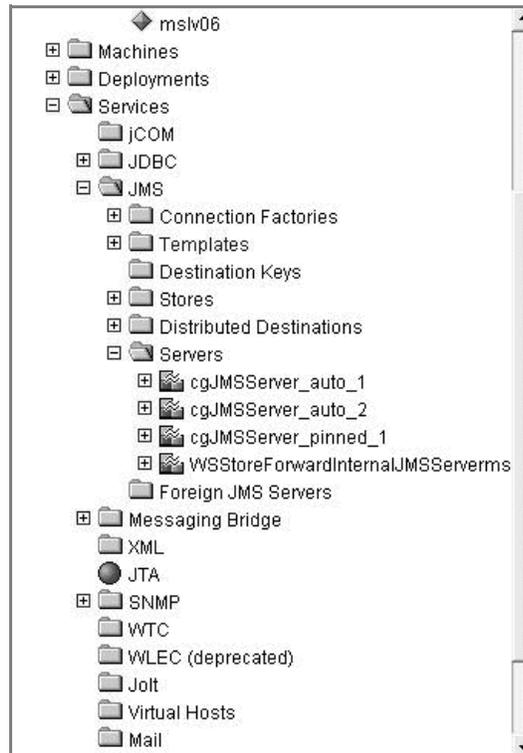
The queues listed in the right pane have been configured for *mss.internal.event.queue* in the left pane

Name	JMS Queue	Weight
<a href="#">mss_internal_event_queue_auto_1</a>	<a href="#">mss_internal_event_queue_auto_1</a>	1
<a href="#">mss_internal_event_queue_auto_2</a>	<a href="#">mss_internal_event_queue_auto_2</a>	1

## JMS Servers

Select **DOMAIN\_NAME>Services>JMS>Servers**

The installation program creates queues under each JMS server. The following figure shows JMS servers for the installation example.



The following figure shows the destinations configured for cgJMSServer\_auto\_1.

The screenshot displays the configuration for the JMS server `cgJMSServer_auto_1`. The left pane shows a tree view of destinations, with a callout box highlighting the first three items: `API.queue.AsyncDispatcher_auto_1`, `API.queue.AsyncDispatcher_error_auto_1`, and `cg.JWSQueue_auto_1`. The right pane shows a table titled "Customize this view..." listing the details for these destinations.

Name	
<code>API.queue.AsyncDispatcher_auto_1</code>	JM
<code>API.queue.AsyncDispatcher_error_auto_1</code>	JM
<code>cg.JWSQueue_auto_1</code>	JM
<code>mss.external.event.queue_auto_1</code>	JM
<code>mss.internal.event.queue_auto_1</code>	JM
<code>wli.b2b.failedmessage.queue_auto_1</code>	JM
<code>wli.b2b.mt.event.stream_auto_1</code>	JM
<code>wli.b2b.mt.event.stream_error_auto_1</code>	JM
<code>wli.internal.ai.async.request_auto_1</code>	JM
<code>wli.internal.ai.async.response_auto_1</code>	JM
<code>wli.internal.ai.event_auto_1</code>	JM
<code>wli.internal.ai.event_suspend_auto_1</code>	JM
<code>wli.internal.b2b.ebxmlencoder.queue_auto_1</code>	JM
<code>wli.internal.b2b.rosettanetencoder.queue_auto_1</code>	JM
<code>wli.internal.egfile.queue</code>	
<code>wli.internal.egmail.queue</code>	
<code>wli.internal.egmq.queue_auto_1</code>	
<code>wli.internal.egrdbms.queue_auto_1</code>	
<code>wli.internal.egtimer.queue</code>	
<code>wli.internal.instance.info.buffer_auto_1</code>	
<code>wli.internal.instance.info.buffer_error_auto_1</code>	
<code>wli.internal.msgtracking.queue_auto_1</code>	
<code>wli.internal.scheduling.queue</code>	
<code>wli.internal.scheduling.queue_error</code>	

## Configuration parameters for the XML API option

This section contains configuration tasks that you must complete after installation is complete.

### Gateway events

In addition to the configuration required to make the XML APIs functional at installation, MetaSolv Solution must be configured to receive data and return data.

The Integration server continuously checks the MetaSolv Solution database for events that are ready to be sent to an external application. The Integration server also monitors the external application for updates to the status of a gateway event. When an external application sends a status update, the Integration server records the new status in the MetaSolv Solution database.

The following sections describe how to set up gateway events for communication between MetaSolv Solution and an external application.

### Creating a gateway event

#### Basic steps for creating a gateway event in the MetaSolv Solution interface

1. Create a new gateway event.

For example *xxx\_mip\_order\_event*. This is done on the Gateway window in MetaSolv Solution. MetaSolv Solution creates a gatewayEvent and assigns an eventID.

2. Query for the eventID associated with the gateway event, using the following SQL:

```
select
    gateway_event_id, gateway_event_nm
from
    asap.gateway_event ge
where
    gateway_event_nm like = <XMLAPIGatewayName>
```

In this case *XMLAPIGatewayName* is the name associated with the event.

3. Make the following entries in the integration.xml file located at METASOLV\_HOME/appserver to configure the event:

```
<handler enabled="true">
    <event-id><YourGatewayEventId></event-id>
    <class>com.mslv.integration.handlers.DefaultEventHandler</class>
    <destination>api</destination>
</handler>
```

*YourGatewayEventID* is the gateway eventID generated in the previous step.

- Restart the MetaSolv Solution application server.

## Outbound events

All outbound events are published to a JMS queue, *mss.external.event.queue*, using the JMS Factory *MSS.QueueConnectionFactory*. The following list indicates how outbound events can be subscribed to:

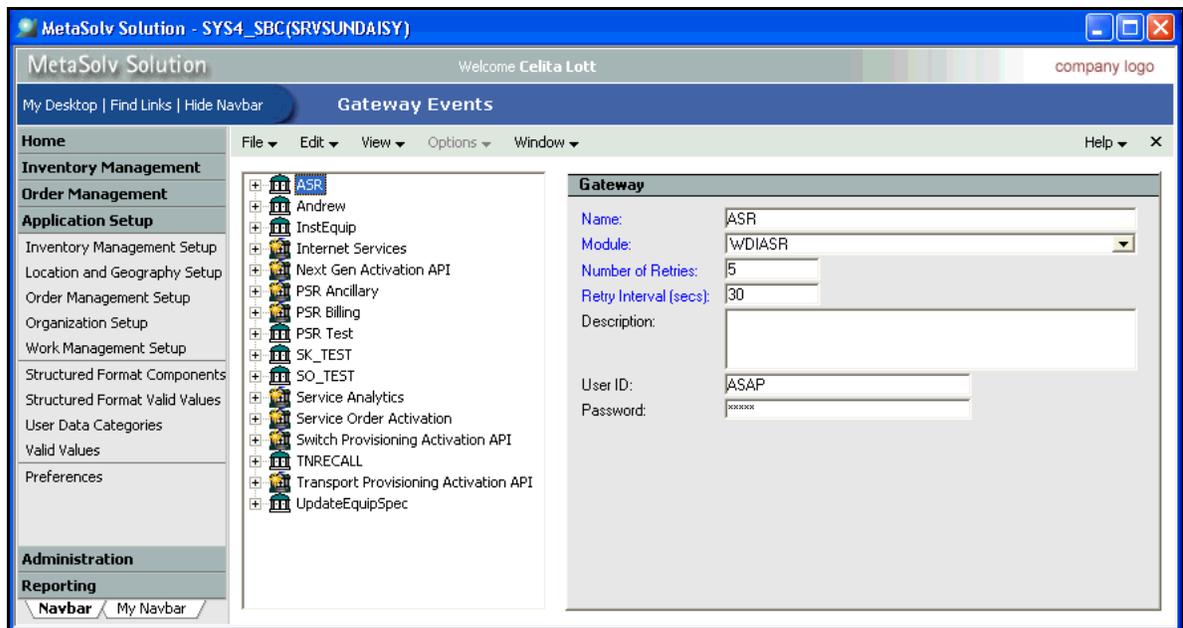
- ◆ Clients (both third-party systems not on BEA 8.1 and BEA clients) can subscribe to the JMS queue externally and receive all events.
- ◆ Products using WebLogic Workshop can subscribe to the queue through a channel and use event-name-based filtering to trigger appropriate workflows.

The sample files provided with the XML APIs contain an outbound event that demonstrates how to accomplish this task. The event is contained in the following file: *OutboundStateEventTest.jpdl*. See the *XML API Developer's Reference* for more information about the sample files.

## Locating Help information on gateway events

- Open the Gateway Events window in MetaSolv Solution.

To do this, click **Application Setup>Work Management Setup** on the navigation bar.



- Press **F1** for Help.

The Help window that appears is for the Gateway window. You will find a number of links on this window that explain gateways and how to create them.

## Multiple single server instances on the same machine

Complete the following steps for each single server being set up on a machine.

-  Create each single server under a different logon user ID.

### To set up one single server instance on a machine

1. Create a METASOLV\_HOME directory for the single server.
2. Install BEA WebLogic under the METASOLV\_HOME directory.
3. Follow the steps in this guide for the WebLogic configuration of single servers.

See “[Creating a single server WebLogic domain](#)” on page 40 for more information.

Note that you only need to perform the Load Database action one time per database, regardless of the number of servers on the machine.

4. After configuration, start the WebLogic Server Administration Console and change *cgJMSStore Prefix Name*.

This value should be unique for each server. You can find this field at the following location in the console:

**DOMAIN\_NAME>Services>JMS>Stores>cgJMSStore>Configuration tab**

5. Restart the server.

## Multiple WebLogic Integration domains pointing to the same database

Multiple WebLogic Integration domains cannot use the same database schema. WebLogic Integration system tables represent part of a single domain’s internal state. This assumption is embedded in the WebLogic Integration operations and management algorithms. Because there is no way to distinguish the two sets of data, results are unpredictable.

There is a workaround solution. You must modify the *mssint.sql* file for each standalone server domain or clustered server domain.

### On the database server

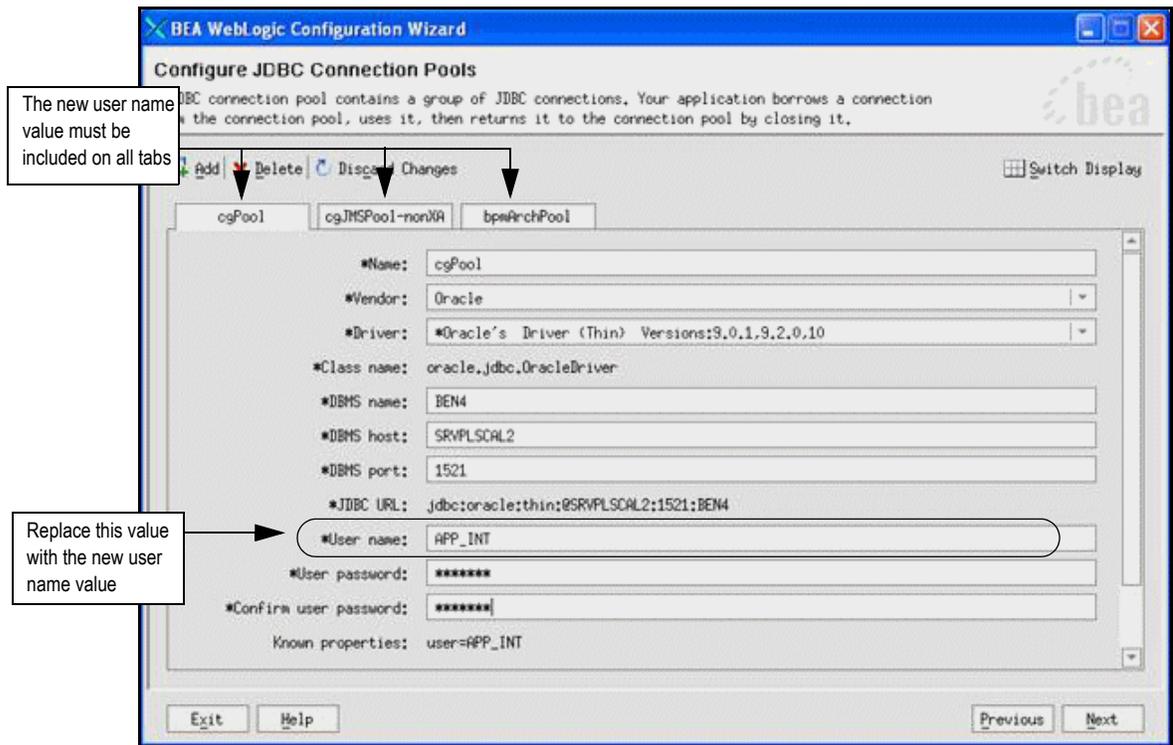
1. Locate the *mssint.sql* file in the directory where you downloaded the database installation files and complete the following actions:
  - a. Change all occurrences of the tablespace INTDATA (both upper and lower case occurrences) to indicate the target standalone server domain or clustered server domain.  
For example, MSLV01DATA or CLUSTER01DATA.
  - b. Change the data file location.  
A DBA should decide where the data file will reside, based on disk space. The minimal requirement is 1.5 GB.
  - c. Change all occurrences of the user name APP\_INT to be specific for the standalone server domain or clustered server domain.  
For example, MSLV\_INT or CLST\_INT.  
Note that MetaSolv Solution only supports user IDs of 8 characters or less.
2. Log on to the database server as ASAP and run the *mssint.sql* file.
3. Repeat this procedure for each WebLogic Integration domain that will point to the database.

### On each standalone server or clustered server

Run the BEA WebLogic configuration wizard on each standalone server or clustered server. See one of the following procedures on configuring a domain:

- ◆ [“Creating a single server WebLogic domain”](#) on page 40
- ◆ [“Creating the BEA domain”](#) on page 102

In the BEA WebLogic Configuration Wizard, make sure that the new value for APP\_INT created in the previous procedure is entered on all tabs on the Configure JDBC Connection Pools window. The following figure shows where to enter the value on the window.



## Copying a production database to a WLI development or test environment

### To copy the production database to a WebLogic Integration development or test environment

1. Copy the production database to the new database server host machine.
2. Drop the APP\_INT user in the new database, including all contents associated with the user.
3. Download the database installation files from the Oracle E-Delivery Web site and locate the *mssint.sql* file in the directory where you downloaded.
4. Edit *mssint.sql* and change all occurrences of the user name APP\_INT to be specific for the new development or test domain.

For example, MSLV\_INT or CLST\_INT.

Note that MetaSolv Solution only supports user IDs of 8 characters or less.

5. Log on to the database server as ASAP and run the *mssint.sql* file.
6. Recreate the necessary WebLogic Integration (WLI) tables by completing the following actions:
  - a. In the BEA\_Home directory (for example, /opt2/bea), navigate to the Oracle directory using the **cd** command.

For example: **cd /opt2/bea/weblogic81/integration/dbscripts/oracle**

- b. Type **sqlplus app\_int/mss6@<yourSIDname>** and press ENTER.

If you have multiple standalone server or clustered server domains that must point to the development/test database, repeat this procedure for each user that you identify. The *mssint.sql* file must be modified for each user name. See [“Multiple WebLogic Integration domains pointing to the same database”](#) on page 189 for more information.

- c. Run the following SQL files:
  - ♦ wli\_runtime.sql
  - ♦ wli\_archive.sql
- d. Create table(s) for asynchronous workflow(s).

In *wlw-manifest.xml*, look for the <conversation-state-table> tag. For more information on this subject, see the topic “How do I: Deploy a Weblogic Workshop Application to a Production Server” in the BEA documentation available at <http://edocs.bea.com/workshop/docs81>. Use the search feature to locate the topic.

- e. Type **commit** and press ENTER.
- f. Type **quit** and press ENTER.

- g. Restart the application server(s).

## Web service character set

If you are using Web Services with extended character codes, the Web service character set must be specified in the startup properties. Use the following directives.

- ◆ Add a directive in the WebLogic Server domain environment configuration file to force the proper encoding for Web services. For example:

### setDomainEnv.cmd (Windows)

```
@REM Added to force webservices to use utf-8 encoding
set EXTRA_JAVA_PROPERTIES=%EXTRA_JAVA_PROPERTIES% -
Dweblogic.webservice.i18n.charset=utf-8
```

### setDomainEnv.sh (UNIX)

```
# To force webservices to use UTF-8 encoding
EXTRA_JAVA_PROPERTIES=${EXTRA_JAVA_PROPERTIES} -
Dweblogic.webservice.i18n.charset=utf-8
export EXTRA_JAVA_PROPERTIES
```

- ◆ Add a directive in the WebLogic Server domain startup file to force the proper encoding for Web services. For example:

### startWebLogic.cmd (Windows)

```
@REM Added to force webservices to use utf-8 encoding
set SAVE_JAVA_OPTIONS=%SAVE_JAVA_OPTIONS% -
Iweblogic.webservice.i18n.charset=utf-8
```

### startWebLogic.sh (UNIX)

```
# To force webservices to use UTF-8 encoding
SAVE_JAVA_OPTIONS="${SAVE_JAVA_OPTIONS} -
Dweblogic.webservice.i18n.charset=utf-8"
export SAVE_JAVA_OPTIONS
```



Adding this property causes a warning during startup. According to BEA documentation, this warning can safely be ignored.

## Setting memory for WebLogic Workshop

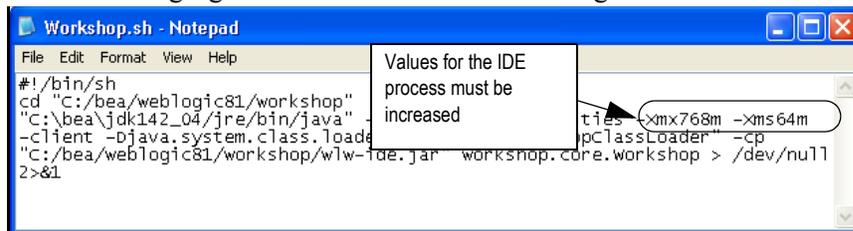
You must increase the memory allotment for the IDE process. The `workshop.sh` file in the `BEA_HOME/weblogic81/workshop` directory contains the memory parameters for the IDE process (`-Xmx` and `-Xms`). The default memory setting is:

```
-Xmx256m -Xms64m
```

Edit the file and change the parameter to the following values:

```
-Xmx768m -Xms64m.
```

The following figure shows the file with the changes made.



## Changes made during installation for XML APIs

The following changes were made to the MetaSolv Solution setup by the installation program for the XML API option:

- ◆ `Cluster.script` was copied to `METASOLV_HOME/domain/script/`.
- ◆ For process archiving and documentation store cleanup for high availability, MDB targets were set to cluster by commenting out the following two lines in `cluster.script`:

```
/*
unassign application "WLI System EJBs.WLI Admin: from target
'%Cluster%';
assign application "WLI System EJBs.WLI Admin: to target
'%AManagedServer%';
*/
```

- ◆ To change message logging from *info* to *error*, `workshopLogCfg.xml` was copied to `BEA_HOME/weblogic81/common/lib`.
- ◆ There is no JMS thread disabling. BEA internal applications use this thread. If this option is disabled, WebLogic Integration Server will not start.
- ◆ The **Enable Default JMS Connection Factories** was turned on.

## Upgrading MetaSolv Solution

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This chapter explains how to apply a service pack or patch to MetaSolv Solution. The topics in the chapter cover downloading and installing a service pack or patch to the following MetaSolv Solution components:

- ◆ Database
- ◆ Application server



The procedures and screenshots in this chapter reference an M6.0.8 installation. Substitute M6.0.15 in the appropriate places for your M6.0.15 installation.

### Application Server Upgrade Process

Due to M6 configuration changes from service pack to service pack, the high-level application server upgrade process is described below:

- ◆ Un-deploy custom developed JPDs.
- ◆ Un-deploy M6-related applications.
- ◆ Modify JDBC connections and datasources using BEA console.
- ◆ Upgrade domain to BEA WebLogic Platform 8.1 SP5.
- ◆ Install M6 application.
- ◆ Install/Deploy M6 related applications.
- ◆ Re-compile custom developed JPDs with jdk142\_08.
- ◆ Deploy custom developed JPDs.
- ◆ Update/Restore configuration files.

### Downloading service pack or patch software

Software for MetaSolv Solution can be downloaded from the Oracle E-Delivery Web site. For information on downloading product software, see [“Downloading the installation files”](#) on page 7.

Download the files for the appropriate platform and service pack or patch you are installing. The following list shows the how the download link for each file appears on the Oracle E-Delivery Web site.

- ◆ **M/ R6\_0\_x bnnn Installer (AppServer)**—Download this file if you are installing or upgrading MetaSolv Solution without the XML API option. This file contains an installation program that installs to application server machines. The files it installs on the application server includes both the application server software and the client software, which is distributed from the application server. You can download an installation program for a Windows, Sun Solaris, or HP operating system.
- ◆ **M/ R6\_0\_x bnnn XML-API Installer (AppServer)**—Download this file if you are installing or upgrading MetaSolv Solution with the XML API option.

## Installing a service pack or patch on the database

Your database must be at the 6.0.2 level or higher to install a 6.0.15 service pack or patch. See [Chapter 2, “Setting up the 6.0.2 database”](#) for steps on how to upgrade to M6.0.2. Then, follow the steps in this chapter to apply a subsequent service pack or patch.

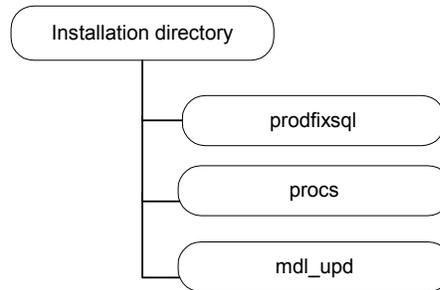
To learn about database changes included in a given release, see the *Database Change Reference*. This document can be downloaded from the Oracle E-Delivery Web site.



Before upgrading your database to M6.0.15, refer to the Technical Bulletin titled *Prodfixsql Performance for M6.0.11* to determine how it affects your upgrade. To locate this bulletin, click the Knowledge tab on the Oracle MetaLink Web site (<https://metalink.oracle.com>).

## Extracting the MetaSolv Solution database scripts

Extracting the contents of the zip file copies SQL scripts, procs, and reports to a directory you choose on a client machine or on the database server. The following directory structure results from the extract, based on the paths specified in the zip file:



**Figure 14: Structure of database upgrade files**

The MetaSolv Solution database scripts reside in the zip file `MSS_R6_0_14_bxx_DBInstall_Win32.zip` (where `xx` is the build number). You can extract the contents of this zip file to the directory of your choice. This zip file contains database scripts used to upgrade an existing M6.0.2 or higher database to M6.0.15.

### To extract the MetaSolv Solution database scripts to the database server machine

1. Locate and select the file.
2. Right-click on the file and select **Open With>WinZip Executable**.
3. From the main menu bar, select **Actions>Select All**.
4. From the main menu bar, select **Actions>Extract**, or simply click the **Extract** icon.
5. Browse to the directory to which you want to extract the database scripts. MetaSolv recommends extracting the scripts to a directory on your database server.

To successfully install a service pack or patch on the database, you must run the two following master SQL files:

- ◆ *prefixSQL\_Master* located in the *prodfixsql* directory
- ◆ *master* located in the *procs* directory.

All 6.0.x service packs carry cumulative changes from previous service packs. That means you only have to run the *prefixSQL\_Master* and *master* SQL files for the service pack you are installing to get all changes since the 6.0.2 GA release.

## Updating the database with SQL scripts

The *prodfixsql* directory has a number of SQL scripts that update your database.

### To apply SQL scripts with audit information

1. Change your **Start in:** directory to the location where you want the audit logs to appear and connect (from that location) to SQL\*Plus using the ASAP user ID.
2. At the SQL> prompt, type:

```
@<driveletter>:<installation directory>\prodfixsql\prefixSQL_Master.sql
```

and press ENTER.

The SQL scripts run against the database and make the appropriate changes for the service pack or patch. When the SQL> prompt reappears, the contents of the *prodfixsql* directory where the SQL files were stored have been applied.



Refer to the Technical Bulletin titled *Prodfixsql Error: Failure to grant table creation privileges for APP\_MSLV*. To locate this bulletin, click the Knowledge tab on the Oracle MetaLink Web site ([https:// metalink.oracle.com](https://metalink.oracle.com)).

3. To verify that the contents of the *prodfixsql* directory have been applied to your database correctly, review the log file for each *prodfixsql* file that was applied.

The log files reside in the *Start in:* directory. Search the files in the directory for **ORA-**.

4. Open the *dm\_rprt.txt* file and look for processes that have passed, failed, or not executed.

If you find processes that failed or did not execute, contact Global Customer Care.

## Updating stored procedures

Use SQL\*Plus to apply the contents of the *Metasolv\MetaSolvSolution\procs* directory to the database. These steps update the stored procedures for your database.

### To update stored procedures

1. Set the current directory to *<drive letter>:<installation directory>\procs*
2. Connect to SQL\*Plus using the ASAP user ID.

3. At the SQL> prompt, type:

**spool master.log** <press Enter>

**@master** <press Enter>

The stored procedures have been applied when the **SQL>** prompt reappears.

Finally, type:

**spool off** <press Enter>

4. From a client machine, run the DBHealth utility by completing the following actions:
- Navigate to the MetaSolv home directory (or, if you stored MetaSolv Solution Utilities in another directory, navigate to that directory) and double-click `tbs_util.exe`.  
This action starts MetaSolv Solution Utilities. This program was provided when you installed the latest release.
  - When the logon window appears, log on as *ASAP*.
  - In MetaSolv Solution Utilities, click **DBHealth** on the toolbar, then select the Compile Invalid Objects tab and click **Execute**.  
This action recompiles any invalid procedures. If invalid procedures remain, click **Execute** again.
  - Select any of the tabs in the following list that have a value greater than zero and click the **Execute** button.
    - ♦ Grant Privileges
    - ♦ Create Public Synonyms
    - ♦ Enable Disabled Objects
 It is not necessary to recompile the Analyze Statistics tab at this time.
  - Exit DBHealth.

## Running reports

The `mdl_upd` directory contains SQL files that include any modifications to the database structure in a service pack. To apply these updates to the reports, copy the contents of this directory into either the `inst_60` or `upg_60` directory. After applying the files in the `prodfixsql` directory, you can validate the database structure by running the `mdl_upd_cur.sql` and/or `mdl_upd_cmp.sql`. These processes provide the reports `mdl_upd_cur.txt` and `mdl_upd_cmp.txt` identical to the `mdl_cur.sql` and `mdl_cmp.sql`. For more information on the reports, see the *MetaSolv Solution Administration Guide*.



This task is not required. If you choose not to apply updates to the reports before you run them, extra database objects can appear in the reports.

## Upgrading the application server

Download BEA 8.1 SP5 Platform Upgrade and installation program (AppServerInstaller) for the appropriate platform (Windows, Solaris, AIX, or HP) from Oracle E-Delivery Web site. The installation program (AppServerInstaller) for the application server portion of MetaSolv Solution is the same for both service packs and patch installations.

The following figure shows the upgrade path for different releases on the MetaSolv Solution 6.0.x stream that run on different third-party software products and releases. The shaded areas indicate what is covered in this chapter, which is how to upgrade to BEA 8.1 SP5 and MetaSolv Solution 6.0.15.

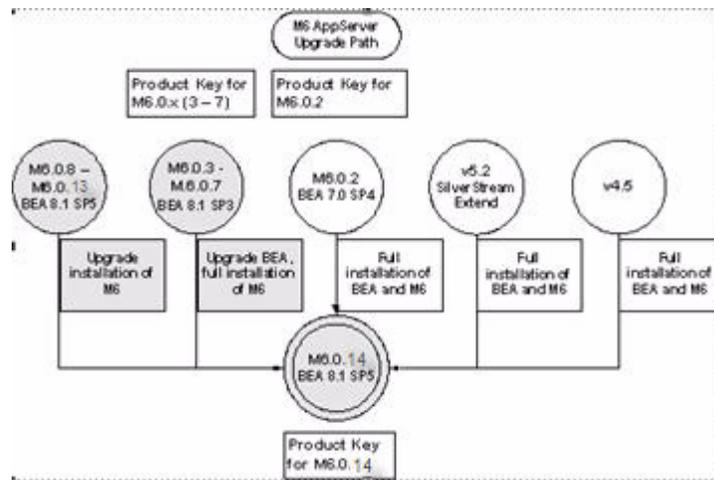


Figure 15: Installation path for 6.0.15

## Installation options for the application server

MetaSolv recommends the following for the application server installation of the M6.0.15 service pack and future patches:

- ◆ **M6.0.3 - M6.0.7 upgrade to M6.0.15**—Select the MetaSolv Solution 6.0.15 *Full Installation* option in the application installer. Significant changes were made in the WebLogic Server configuration for these service packs, and using the full installation guarantees that all changes are installed on your machine.
- ◆ **M6.0.8 - M6.0.14 upgrade to M6.0.15**—Select the MetaSolv Solution 6.0.15 *Upgrade* option in the application installer. Review the Release Notes and manually apply any required configuration changes.
- ◆ **Patches**—Select the MetaSolv Solution 6.0.15 *Upgrade* option when you install a patch release. Review the ReadMe and manually apply any required configuration changes.

The following files are not updated if you select the *Upgrade* option:

- ◆ Application server start up files:
  - ◆ startMSLVmanaged.sh or startMSLVmanaged.cmd
  - ◆ startMSLVsingle.sh or startMSLVsingle.cmd
  - ◆ start<servername>.sh or start<servername>.cmd
- ◆ Gateway configuration files
  - ◆ gateway.ini
  - ◆ integration.xml
- ◆ Application server configuration files
  - ◆ jmaster.ini
  - ◆ lerg.ini
  - ◆ loggingconfig.xml
  - ◆ npasplit.ini
  - ◆ tbs.ini
  - ◆ tbs\_util.ini
  - ◆ zac\_config\_jobmgr
- ◆ WebLogic Server configuration parameters
- ◆ jBroker configuration parameters

## MetaSolv Solution Schemas

To access the XML API schema definitions:

1. Install MetaSolv Solution.
2. Navigate to the `<MSLV_HOME>/<SERVER_NAME>/appserver/classes` directory.
3. Locate the `mss_xml_api_schemas.jar` file.
4. Extract the contents of the `mss_xml_api_schemas.jar` file to a directory of your choice.
5. From the directory you chose in the previous step, open the schema files (those with an `.xsd` extension) in which you are interested.

## Single server upgrade basic steps

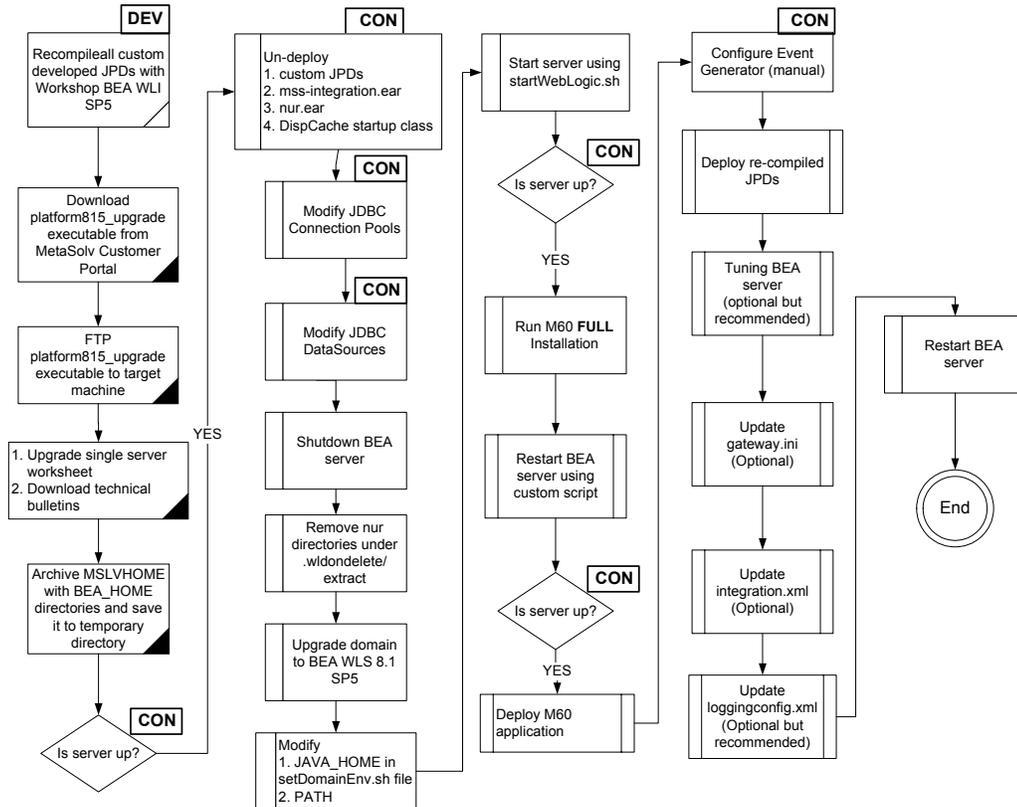
1. Prepare for the upgrade. This includes downloading files and collecting information.
2. Upgrade to BEA 8.1 SP5.
3. Install MetaSolv Solution 6.0.15.
4. Deploy MetaSolv Solution 6.0.15.
5. Complete post-upgrade tasks.
  - a. Tune the server (optional).
  - b. Make changes to the configuration files (optional).

The following sections describe each of these steps. Because the process of upgrading to M6.0.15 differs based on the release you currently have installed, refer to one of the following sections:

- ◆ [“Single server upgrade from M6.0.3 - M6.0.7 to M6.0.15”](#) on page 203
- ◆ [“Single server upgrade from M6.0.8 - M6.0.14 to M6.0.15”](#) on page 257

## Single server upgrade from M6.0.3 - M6.0.7 to M6.0.15

Follow the procedures in this section if you currently have M6.0.3, M6.0.4, M6.0.5, M6.0.6, or M6.0.7 installed and you are upgrading to M6.0.15.



The following acronyms indicate the machine used in a step in the installation and deployment process:

- APP:** All application server machines
- CON:** BEA admin console
- ADM:** BEA admin server machine
- MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

**Figure 16: Single server installation process**

### Archive the M6 directory

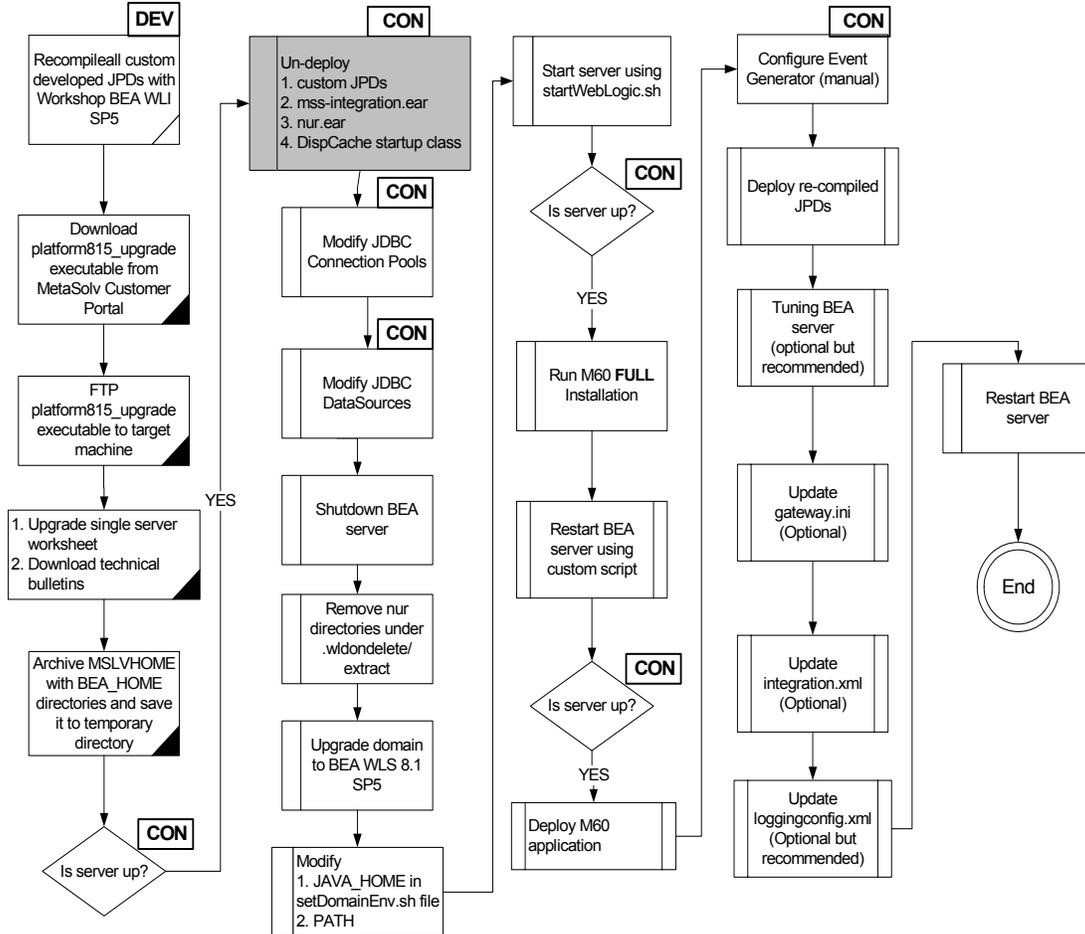
1. Archive the current M6 XML API application by tarring up the MSLVHOME and BEA\_HOME directories.



```
srvplosa1_xmlSingle
Sun Microsystems Inc. SunOS 5.9 Generic May 2002
srvplosa1:/home/xmlSingle> cd /opt2
srvplosa1:/opt2> ls
bharti/      download/   lost+found/ u01/        xmlSingle/  xmlapi/
srvplosa1:/opt2> cd xmlSingle
srvplosa1:/opt2/xmlSingle> ls
bea/        bin/        download/   oracle/     single/     upg/
srvplosa1:/opt2/xmlSingle> jar cvf single.jar single
```

### Delete M6 related applications

This procedure completes the highlighted step shown in the following figure:



The following acronyms indicate the machine used in a step in the installation and deployment process:

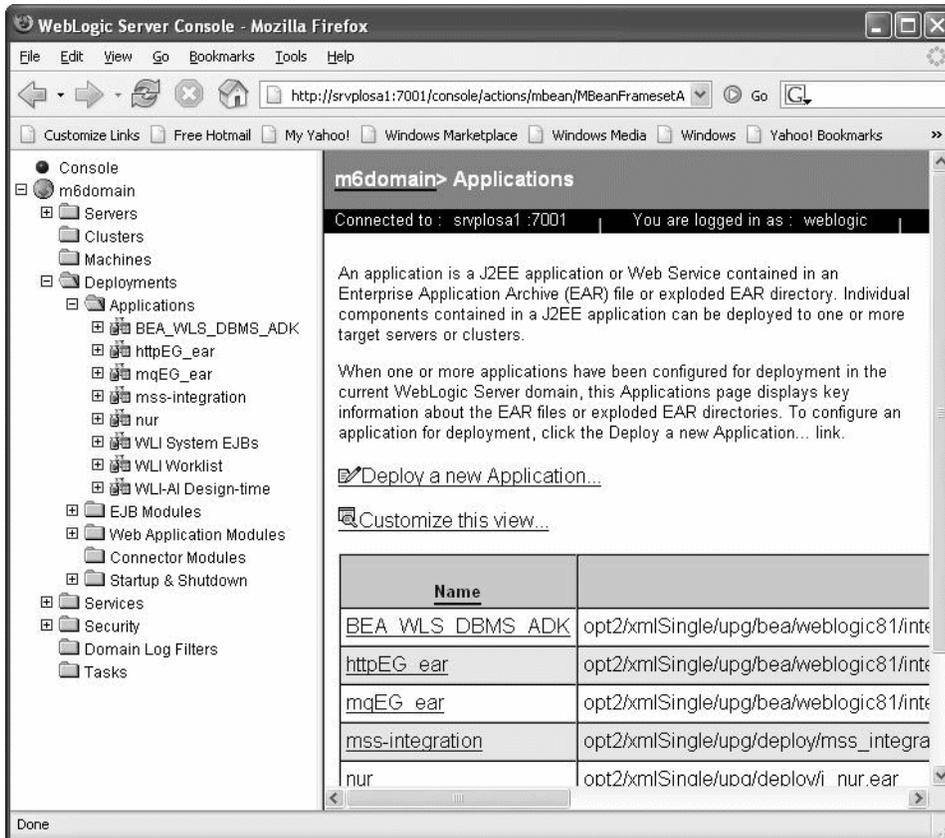
- APP:** All application server machines    **CON:** BEA admin console
- ADM:** BEA admin server machine    **MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

#### 2. Remove the following applications from the domain:

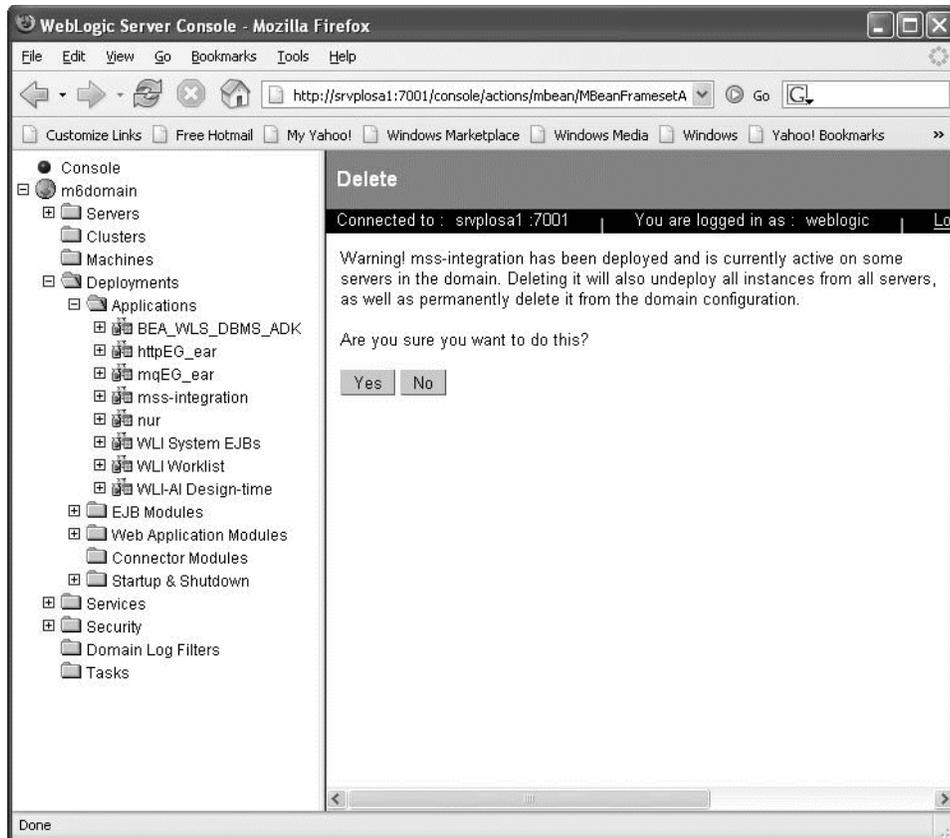
- LSR/ASR if applicable
- XML API
- NUR

In the example, the XML API and NUR applications will be removed from the domain.

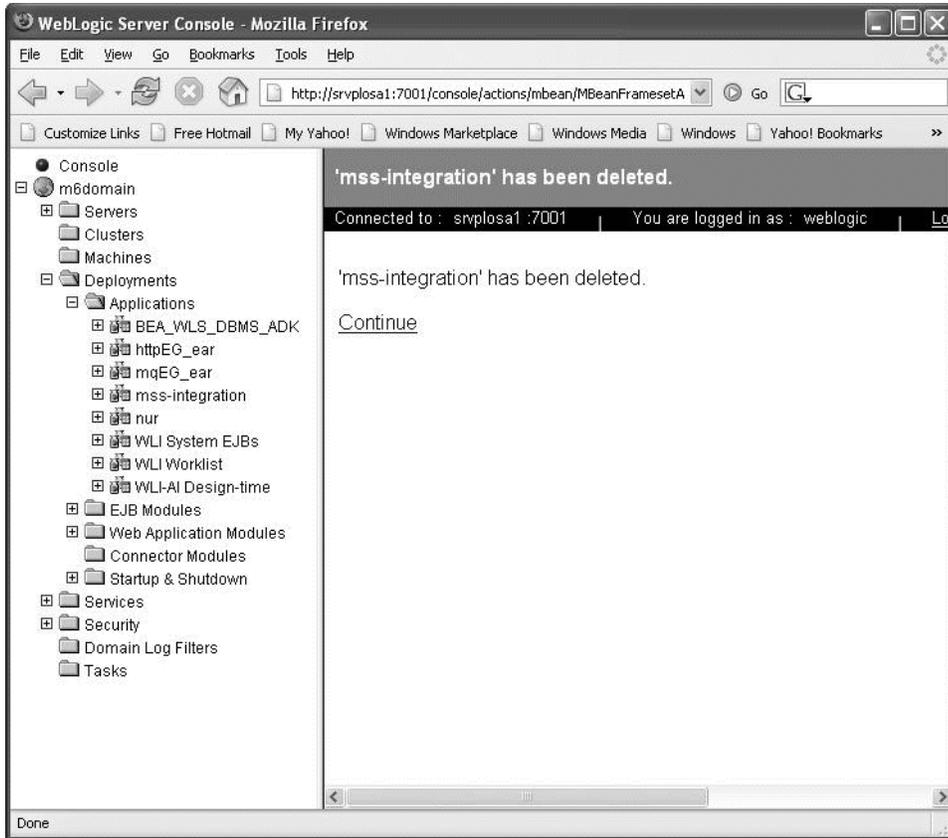
3. Go to the BEA console and navigate to **Deployments>Applications**.



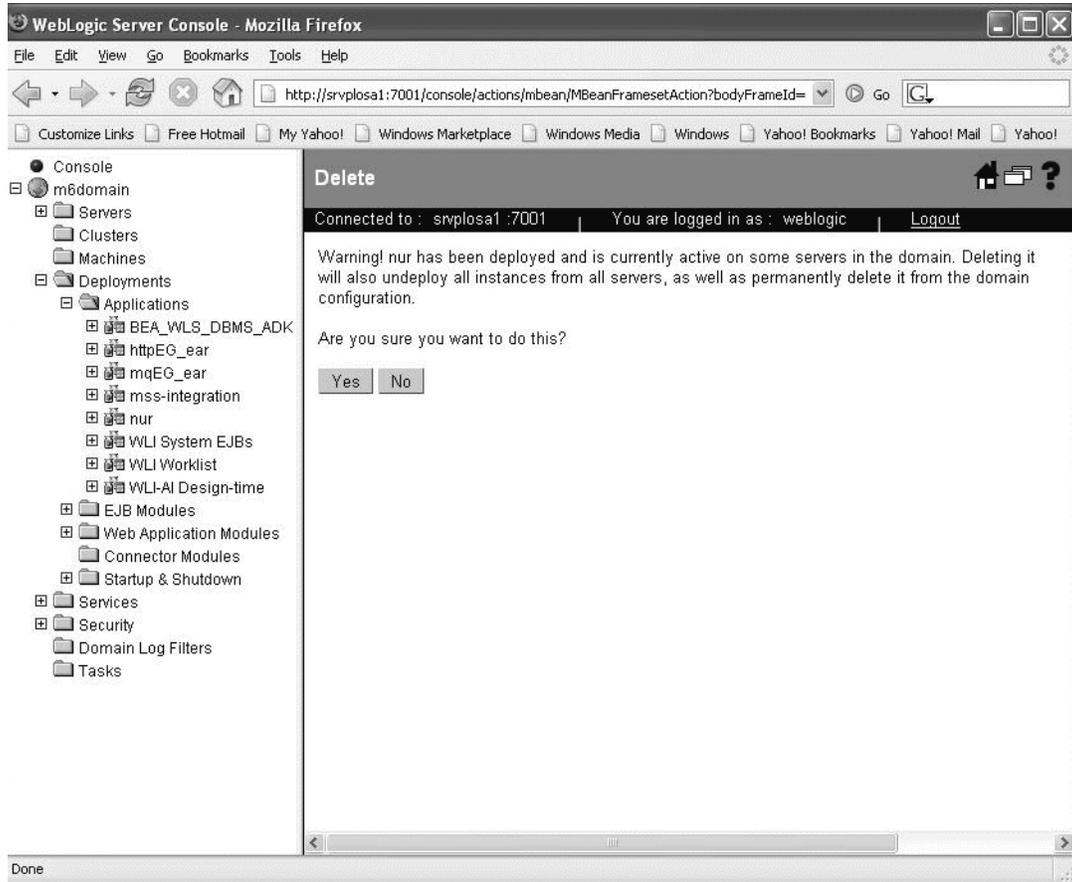
4. Delete the M6 mss-integration application. Select the mss-integration on the left panel, right-click, and select **Delete**. The following screen appears. Click **Yes**.



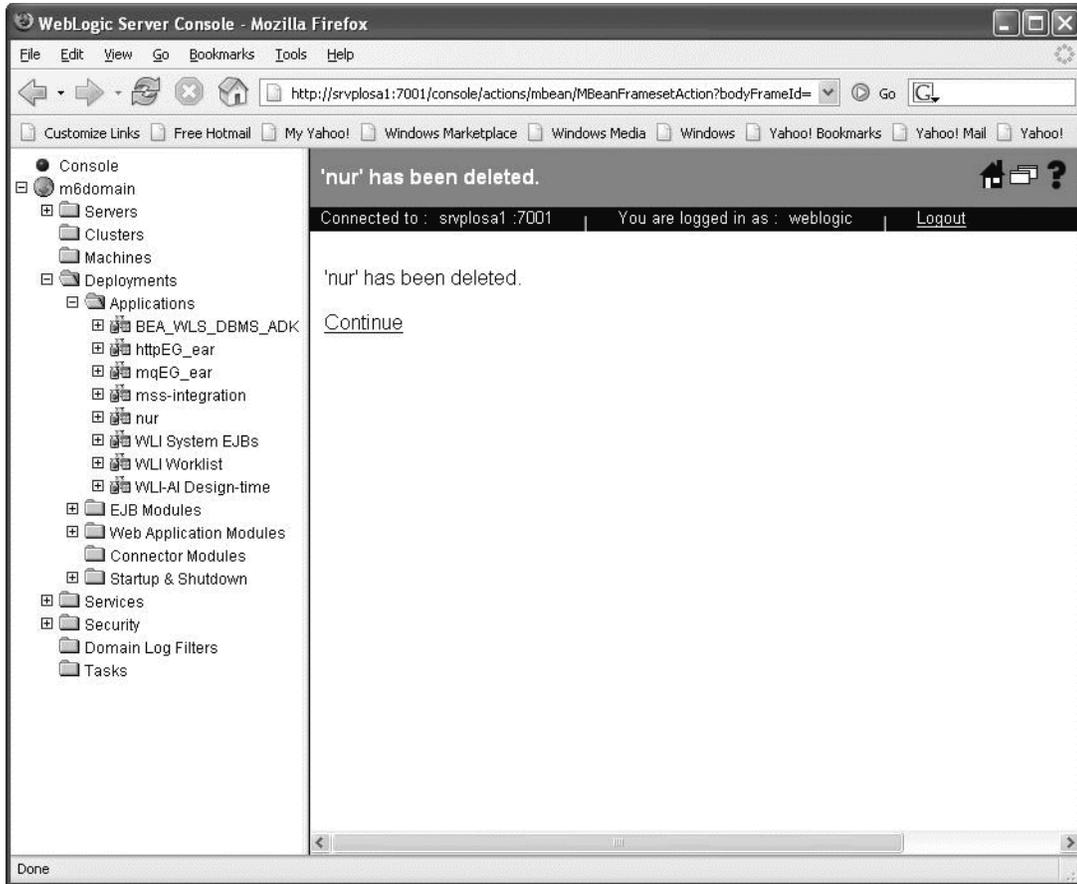
5. Click **Continue** to remove the mss-integration from the current BEA domain. If you don't click **Continue**, the application remains in the domain.



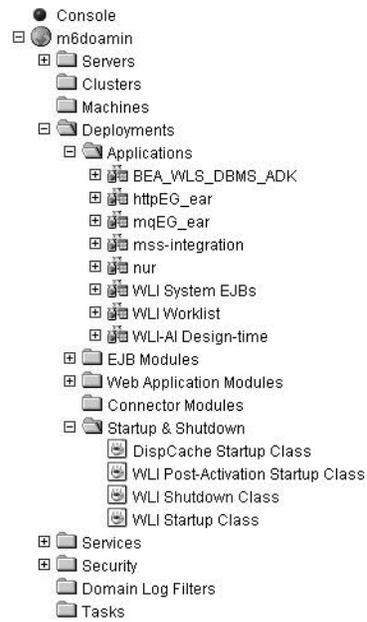
6. Delete the M6 nur application. Select the nur on the left panel, right-click, and select **Delete**. The following screen appears. Click **Yes**.



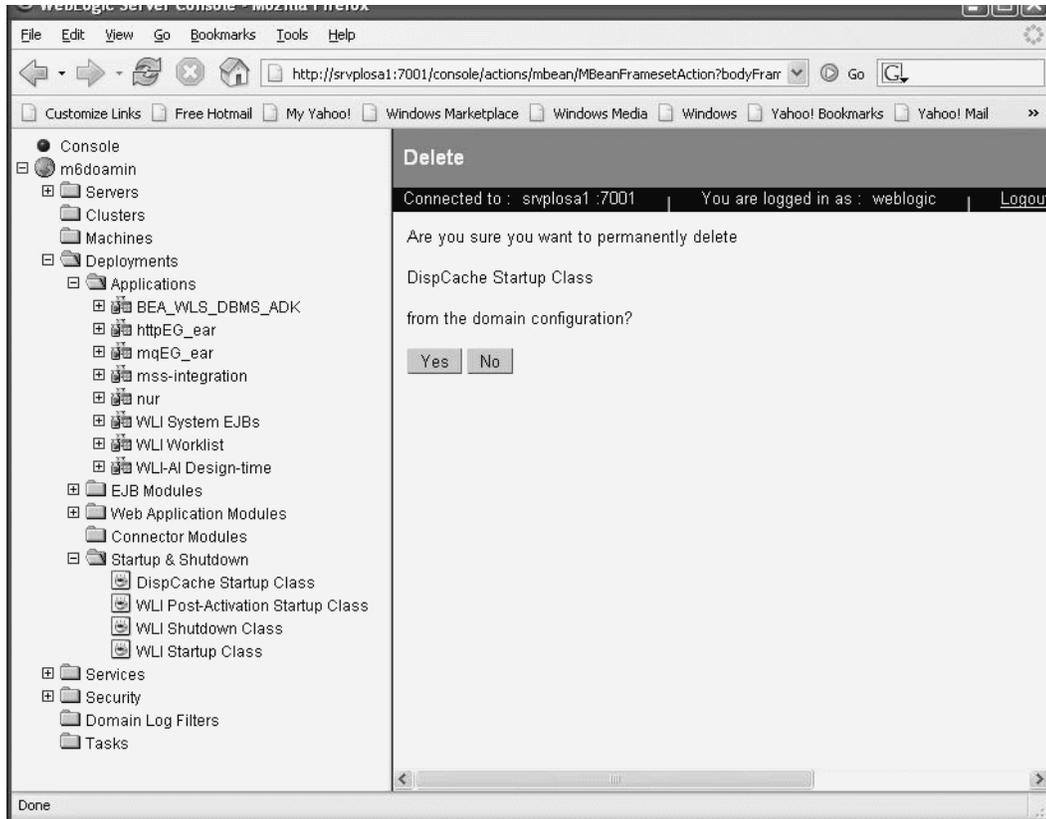
7. Click **Continue** to remove the nur application from the current BEA domain. If you don't click **Continue**, the application remains in the domain.



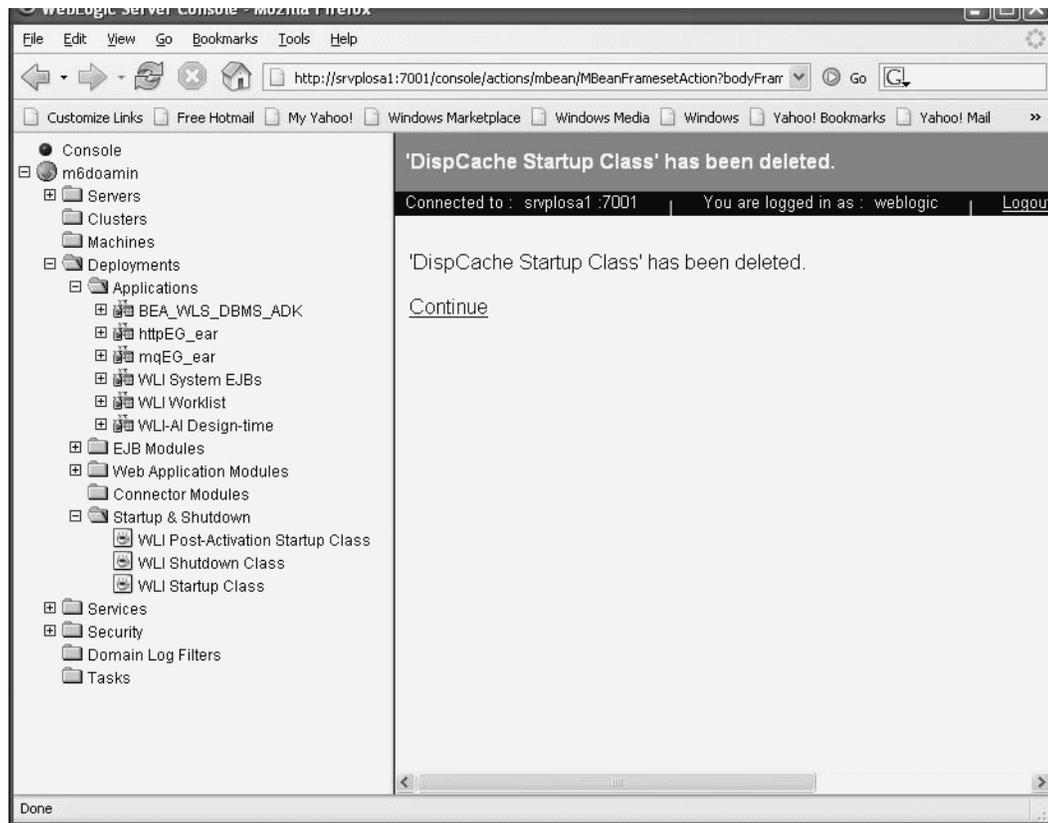
8. Navigate to **Deployments>Startup & Shutdown**.



9. If DispCache Startup Class appears in the list, right-click DispCache Startup Class and select **Delete**. The following screen appears. Click **Yes**.

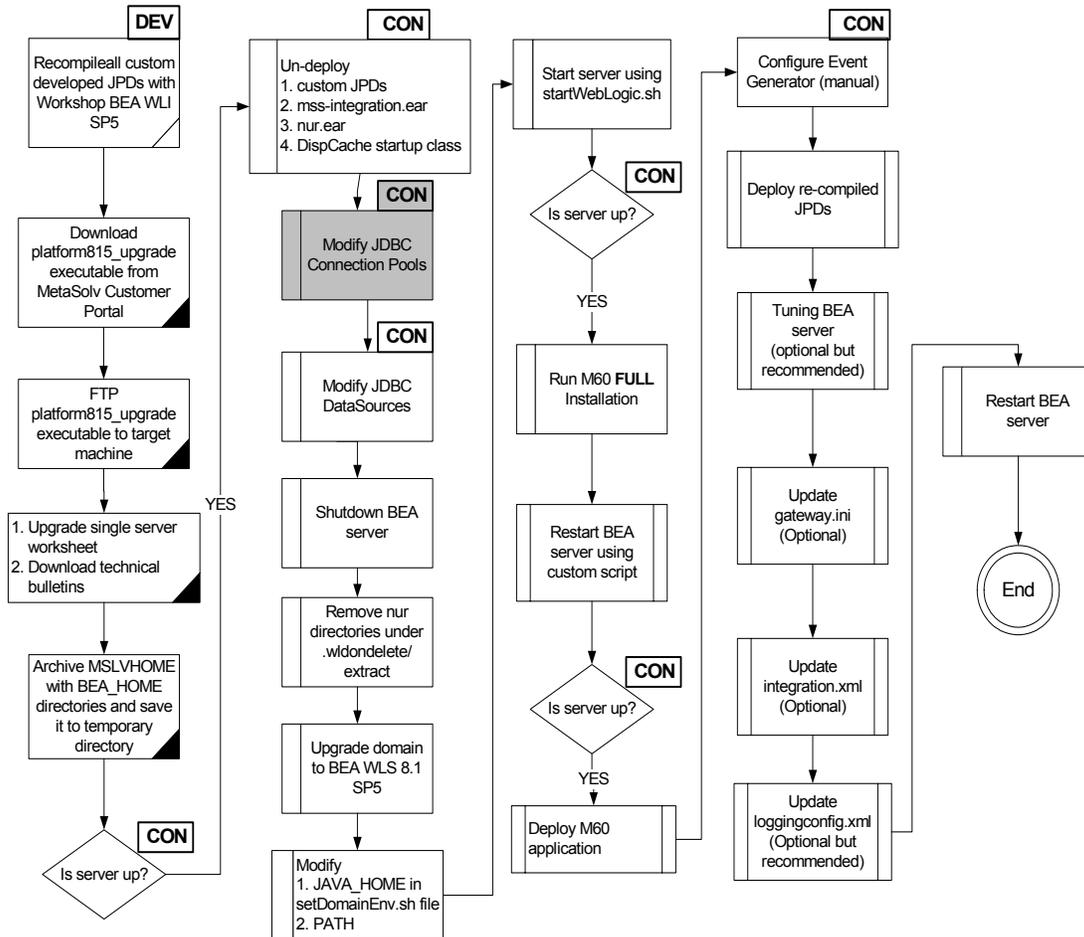


10. Click **Continue** to delete DispCache Startup Class from the current domain.



### Modify JDBC connection pools

This procedure completes the highlighted step shown in the following figure:



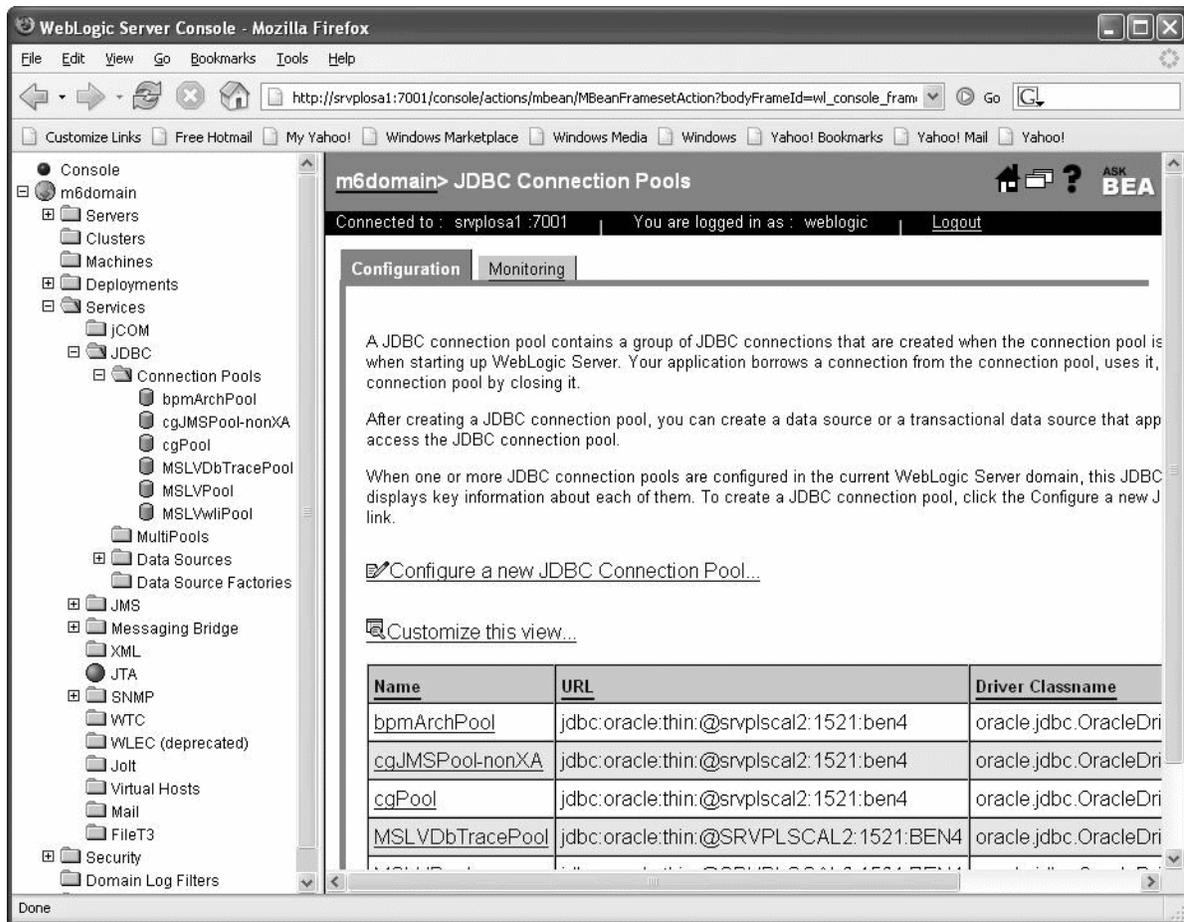
The following acronyms indicate the machine used in a step in the installation and deployment process:

- APP:** All application server machines
- CON:** BEA admin console
- ADM:** BEA admin server machine
- MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

By accessing the BEA console, the following JDBC connection pools will be changed to use Oracle Thin XA driver: **oracle.jdbc.xa.client.OracleXADataSource**.

- ◆ bpmArchPool
- ◆ cgPool
- ◆ MSLVwliPool

11. On the BEA console, navigate to **JDBC Connection Pools**.



12. Change bpmArchPool to use the Oracle Thin XA driver. The following figure shows current driver information.

The screenshot displays the Oracle WebLogic Administration Console interface. The breadcrumb path is `m6domain > JDBC Connection Pools > bpmArchPool`. The user is logged in as `weblogic`. The console shows the configuration for the `bpmArchPool` JDBC connection pool under the `General` tab. The configuration details are as follows:

- Name:** bpmArchPool
- URL:** jdbc:oracle:thin:@svplscal2:1521:
- Driver Classname:** oracle.jdbc.OracleDriver
- Properties:** user=app\_int
- Password:** (masked)

The console also includes navigation tabs for Configuration, Target and Deploy, Monitoring, Control, Testing, and Notes. The `General` tab is currently selected, and the `Connections` sub-tab is active.

- Change the Oracle driver for bpmArchPool to use:  
**oracle.jdbc.xa.client.OracleXADataSource.**

The screenshot shows the Oracle WebLogic Administration Console interface. At the top, the breadcrumb navigation is 'm6domain > JDBC Connection Pools > bpmArchPool'. The user is logged in as 'weblogic'. The main content area is titled 'Configuration' and has tabs for 'General', 'Connections', 'Monitoring', 'Control', 'Testing', and 'Notes'. The 'General' tab is selected, and the 'Connections' sub-tab is active. The page content includes:

- Name:** bpmArchPool (The name of this JDBC connection pool.)
- URL:** jdbc:oracle:thin:@srvplscal2:1521: (The URL of the database to connect to. The format of the URL varies by JDBC driver.)
- Driver Classname:** jdbc.xa.client.OracleXADataSource (The full package name of JDBC driver class used to create the physical database connections in the connection pool. (Note that this driver class must be in the classpath of any server to which it is deployed.))
- Properties:** user=app\_int (The list of properties passed to the JDBC driver that are used to create physical database connections. For example: server=dbserver1. List each property=value pair on a separate line.)
- Password:** (A masked password field)

14. Change the Oracle driver for cgPool to use: **oracle.jdbc.xa.client.OracleXADataSource**

The screenshot shows the Oracle WebLogic Administration Console interface. The breadcrumb navigation is **m6domain > JDBC Connection Pools > cgPool**. The user is logged in as **weblogic**. The console has several tabs: **Configuration**, **Target and Deploy**, **Monitoring**, **Control**, **Testing**, and **Notes**. Under the **Configuration** tab, there are sub-tabs for **General** and **Connections**. The **General** sub-tab is active, displaying the following configuration details for the **cgPool** JDBC connection pool:

- Name:** cgPool
- URL:** jdbc:oracle:thin:@srvplscal2:1521:
- Driver Classname:** oracle.jdbc.xa.client.OracleXADataSource
- Properties:** user=app\_int
- Password:** (masked)

The **Driver Classname** field is the key element being updated in this step.

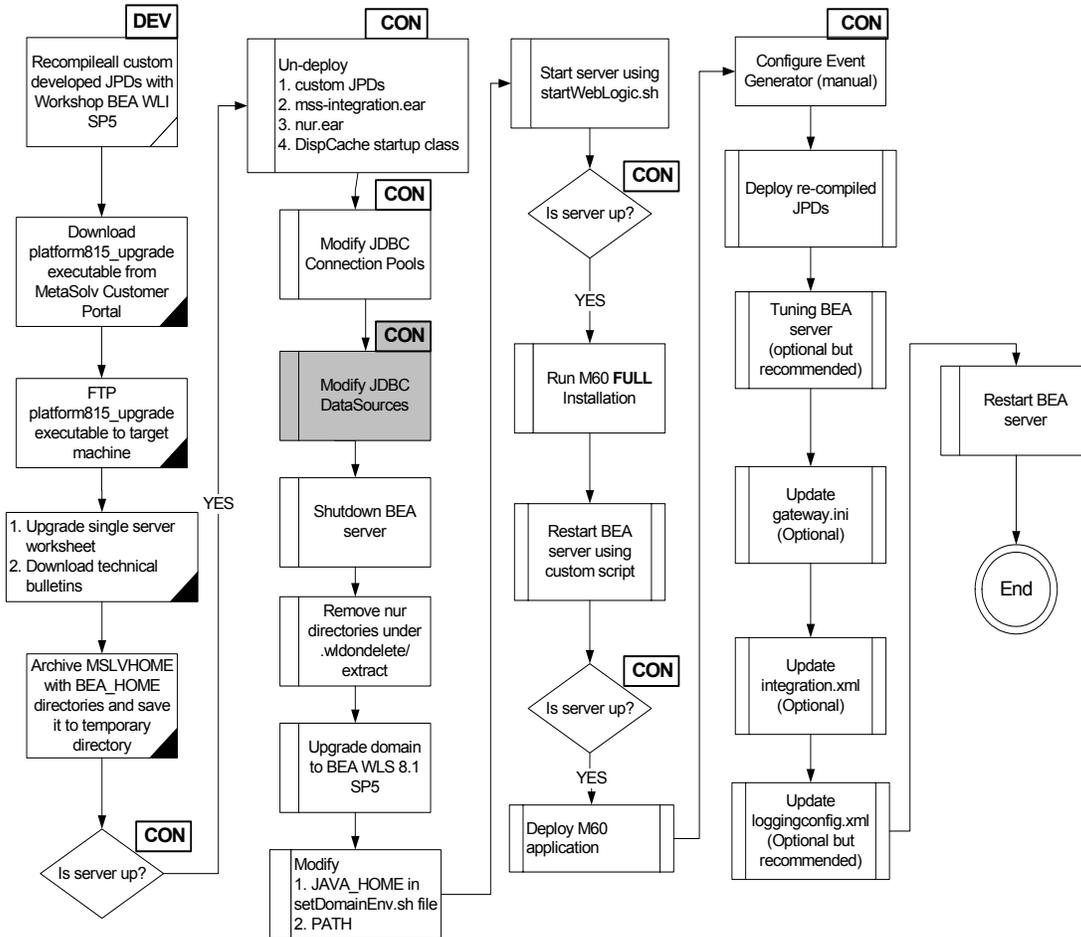
- Change the Oracle driver for MSLVwliPool to use:  
**oracle.jdbc.xa.client.OracleXADataSource.**

The screenshot shows the Oracle WebLogic Administration Console interface. At the top, the breadcrumb navigation reads "m6domain > JDBC Connection Pools > MSLVwliPool". Below this, there is a status bar indicating the user is logged in as "weblogic" and a "Logout" link. The main navigation tabs include "Configuration", "Target and Deploy", "Monitoring", "Control", "Testing", and "Notes". The "Configuration" tab is active, and the "Connections" sub-tab is selected. The page content is titled "General" and contains the following configuration details for the MSLVwliPool:

- Name:** MSLVwliPool. Description: The name of this JDBC connection pool.
- URL:** jdbc:oracle:thin:@SRVPLSCAL2:1. Description: The URL of the database to connect to. The format of the URL varies by JDBC driver.
- Driver Classname:** oracle.jdbc.xa.client.OracleXADataSource. Description: The full package name of JDBC driver class used to create the physical database connections in the connection pool. (Note that this driver class must be in the classpath of any server to which it is deployed.)
- Properties:** user=app\_int. Description: The list of properties passed to the JDBC driver that are used to create physical database connections. For example: server=dbserver1. List each property=value pair on a separate line.
- Password:** [Redacted]

### Modify JDBC data sources

This procedure completes the highlighted step shown in the following figure:



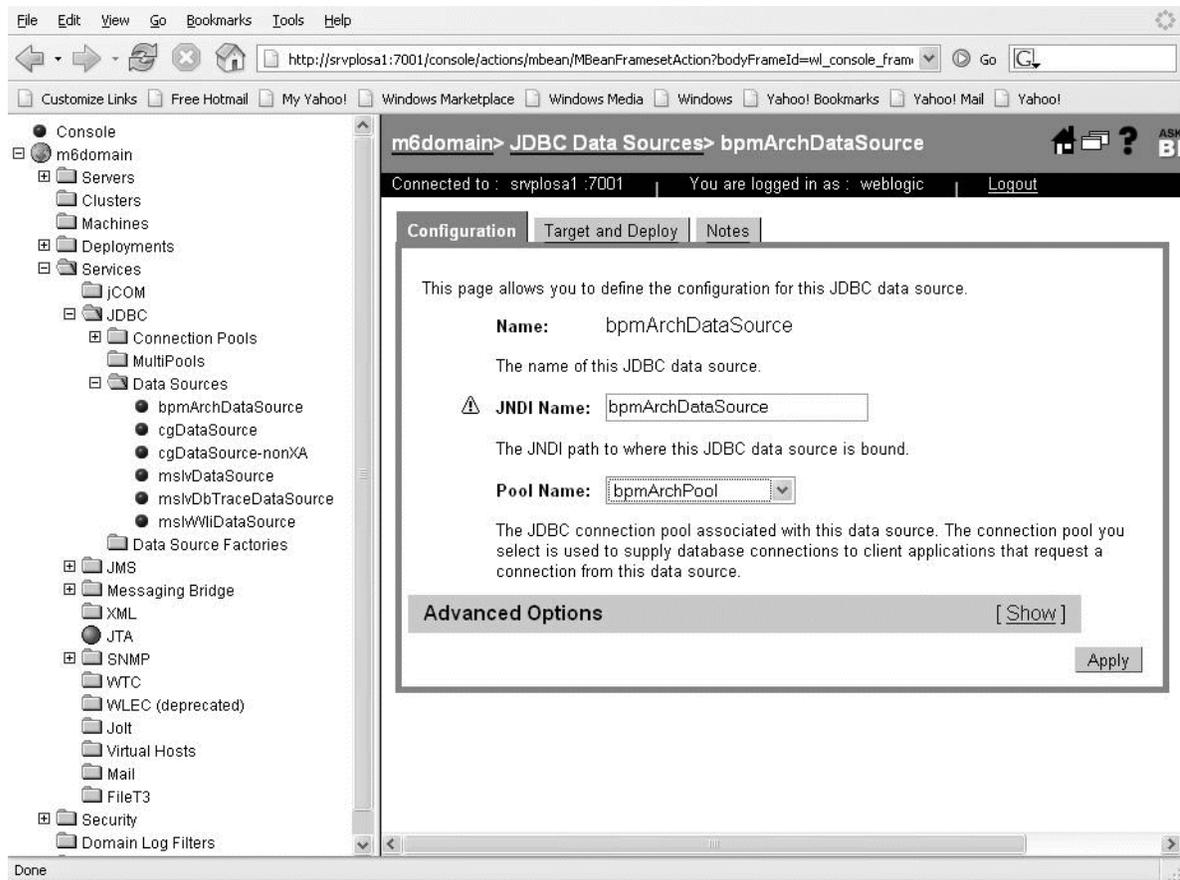
The following acronyms indicate the machine used in a step in the installation and deployment process:

- APP:** All application server machines
- CON:** BEA admin console
- ADM:** BEA admin server machine
- MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

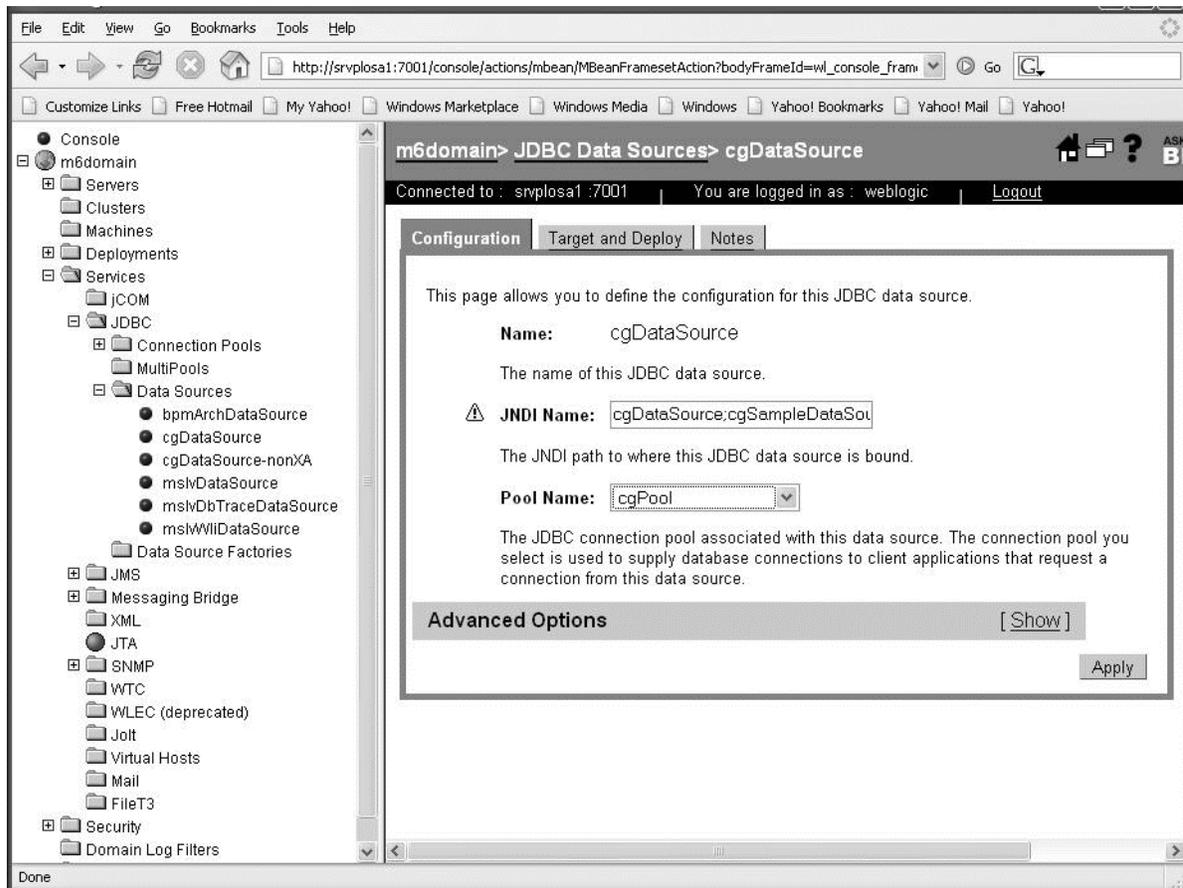
By accessing BEA console, the following data sources will be modified:

- ◆ bpmArchDataSource: Use bpmArchPool
- ◆ cgDataSource: Use cgPool
- ◆ cgDataSource-nonXA: Use cgJMSPool-nonXA

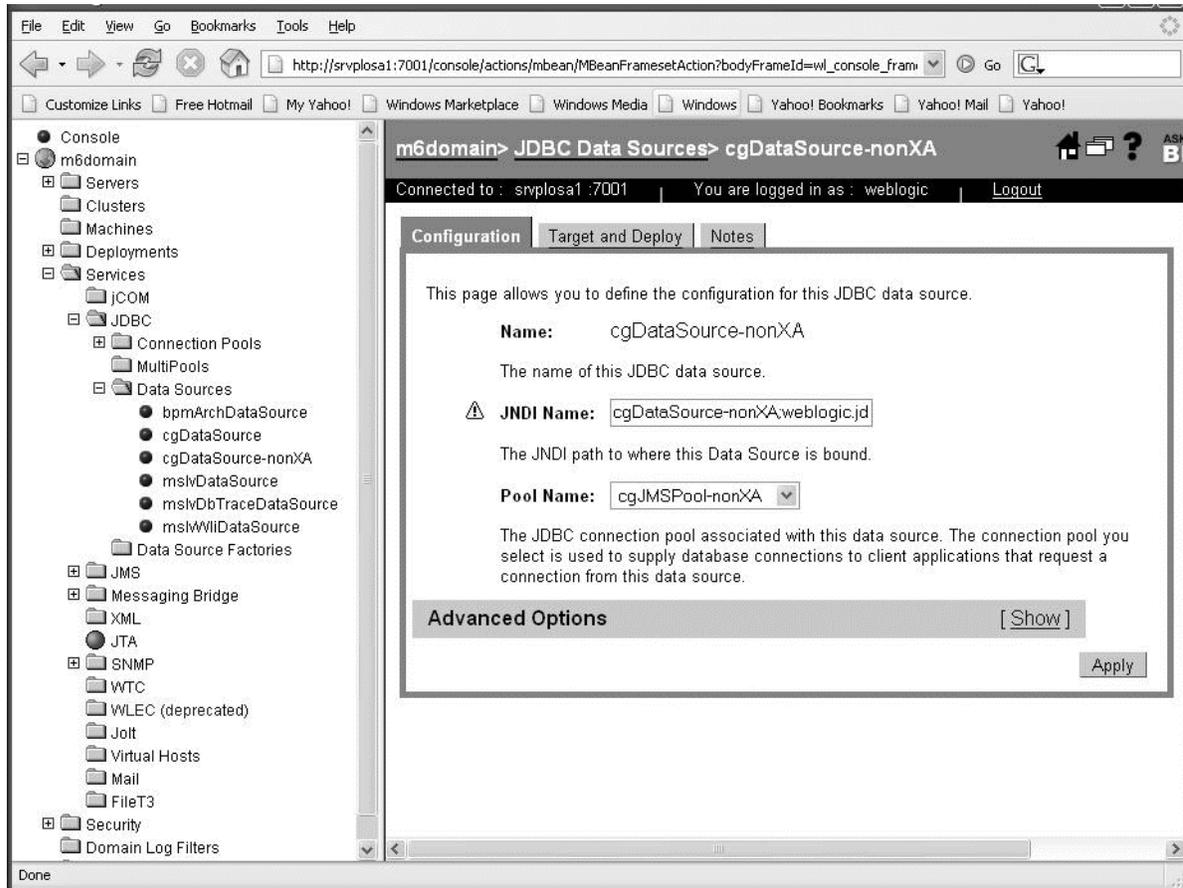
16. Change bpmArchDataSource to use the bpmArchPool connection pool.



17. Change cgDataSource to use the **cgPool** connection pool.

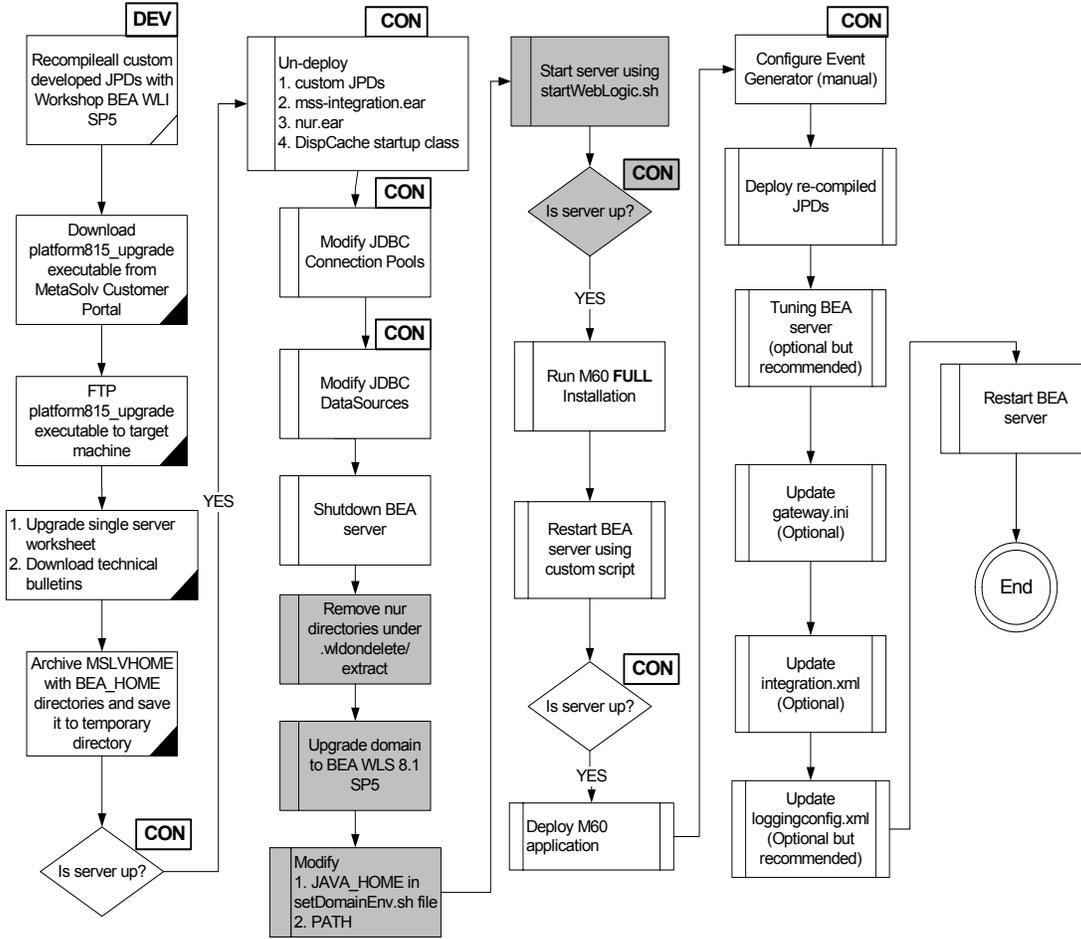


18. Change cgDataSource-nonXA to use the cgJMSPool-nonXA connection pool.



### Remove deployment staging directories and upgrade BEA domain

This procedure completes the highlighted steps shown in the following figure:



The following acronyms indicate the machine used in a step in the installation and deployment process:

- APP:** All application server machines
- CON:** BEA admin console
- ADM:** BEA admin server machine
- MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

19. Remove the M6 deployment staging directories. Go to MSLVHOME/your\_domain/your\_server\_name/.wlnotdelete/extract directory. Remove the nur and mss-integration directories. See the following figure for example directory names.

```

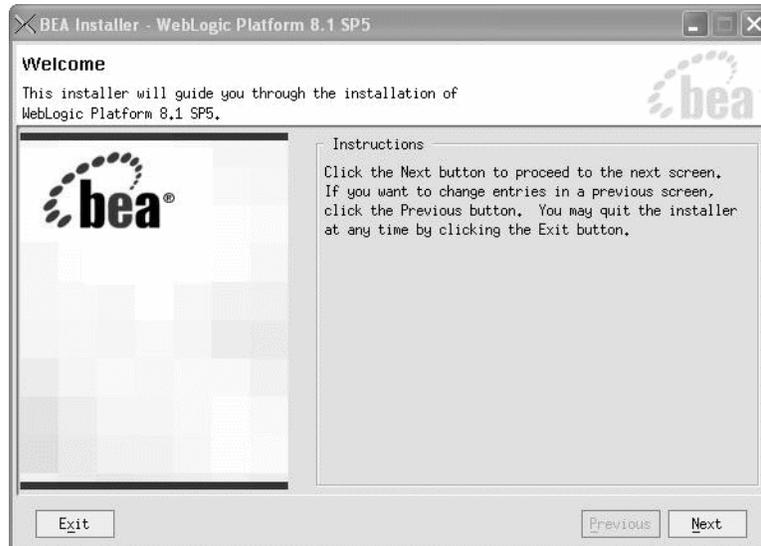
srvplosa1_xmlSingle
srvplosa1:/opt2/xmlSingle/upg/m6domain/mslv01/.wlnotdelete/extract> ls
mslv01_B2BDefaultWebAppApplication_B2BDefaultWebApp/      mslv01_httpEG_ear_httpEG/
mslv01_BEA_WLS_DBMS_ADK_BEA_WLS_DBMS_ADK_Web/             mslv01_wqEG_ear/
mslv01_WLI Console_wlconsole/                              mslv01_wqEG_ear_xegWebApp/
mslv01_WLI System EJBs_WLI-B2B HTTP Transport/           mslv01_mss-integration/
mslv01_WLI Worklist/                                       mslv01_nur/
mslv01_WLI Worklist_worklist/                              mslv01_uddi_uddi/
mslv01_WLI-AI Design-time_ulai/                           mslv01_uddiexplorer_uddiexplorer/
mslv01_console_console/                                    mslv01_wl_management_internal1_wl_management_internal1/
mslv01_httpEG_ear/                                         mslv01_wl_management_internal2_wl_management_internal2/
srvplosa1:/opt2/xmlSingle/upg/m6domain/mslv01/.wlnotdelete/extract> rm -rf mslv01_nur mslv01_mss-integration
    
```

20. Upgrade the domain to BEA 8.1 SP5 by running the platform815\_upgrade\_os.<extension> executable. Ensure the environment variable DISPLAY is set to your desktop.

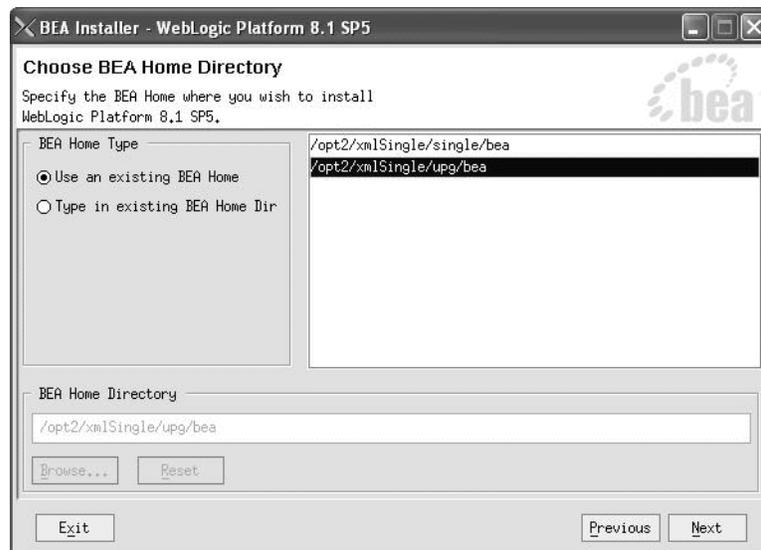
```

srvplosa1_xmlSingle
srvplosa1:/opt2/xmlSingle/download> ls
MSS_R6_0_3_b188_XML-API-Installer.jar      platform813_solaris32.bin*
MSS_R6_0_8_b68_AppServerInstaller.jar     platform815_upgrade_solaris32.bin*
installerLog.log
srvplosa1:/opt2/xmlSingle/download> echo $DISPLAY
10.1.235.133:0.0
srvplosa1:/opt2/xmlSingle/download> which java
/opt2/xmlSingle/upg/bea/jdk142_04/jre/bin/java
srvplosa1:/opt2/xmlSingle/download> ./platform815_upgrade_solaris32.bin
    
```

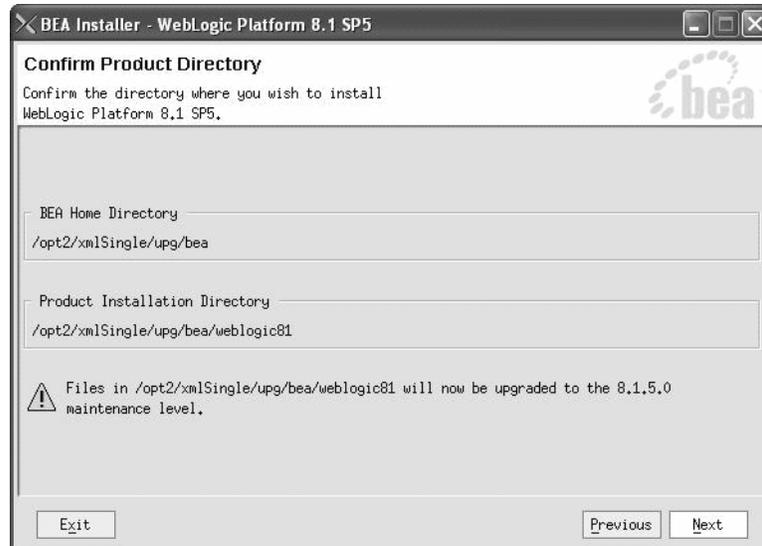
21. The BEA 8.1. SP5 Upgrade Welcome window appears. Click **Next**.



22. The Choose BEA Home Directory window appears. Select **Use an existing BEA Home**. Then select the correct BEA Home directory to upgrade. In this example, MSLVHOME=/opt2/xmlSingle/upg and BEA\_HOME=MSLVHOME/bean.



23. The Confirm Product Directory window appears. Click **Next**. It will take from 30 minutes to 2 hours to complete this upgrade depending on your host machine system resources.



24. Update the PATH environment variable to point to the new JDK142\_08.

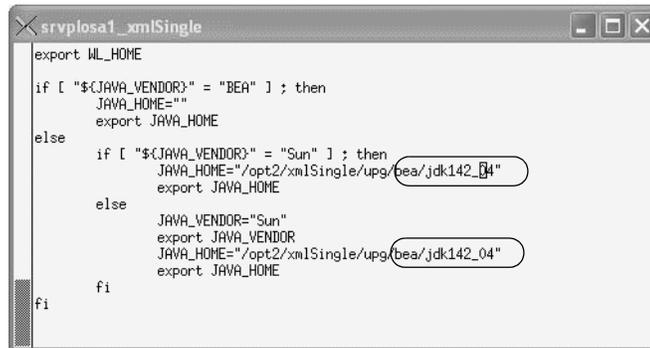
```
srvplosa1:/opt2/xmlSingle/upg> export JAVA_HOME=/opt2/xmlSingle/upg/bea/jdk142_08
srvplosa1:/opt2/xmlSingle/upg> export PATH=$JAVA_HOME/jre/bin:$PATH
srvplosa1:/opt2/xmlSingle/upg> which java
/opt2/xmlSingle/upg/bea/jdk142_08/jre/bin/java
srvplosa1:/opt2/xmlSingle/upg>
```

25. Update the setDomainEnv.sh file under the domain directory. In this example, MSLVHOME=/opt2/xmlSingle/upg. The domain directory: MSLVHOME/m6domain.



```
srvplosa1_xmlSingle
srvplosa1:/opt2/xmlSingle/upg/m6domain> vi setDomainEnv.sh
```

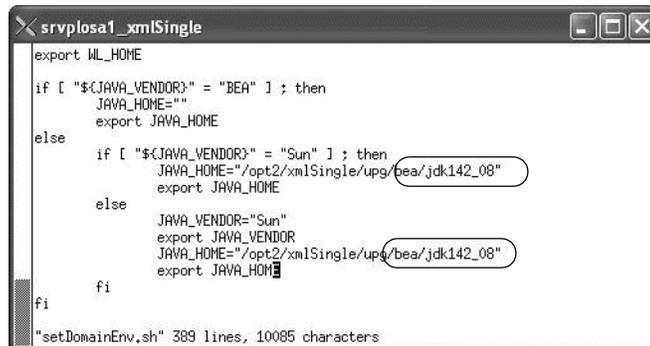
26. Search the JAVA\_HOME as displayed below.



```
srvplosa1_xmlSingle
export WL_HOME

if [ "${JAVA_VENDOR}" = "BEA" ] ; then
  JAVA_HOME=""
  export JAVA_HOME
else
  if [ "${JAVA_VENDOR}" = "Sun" ] ; then
    JAVA_HOME="/opt2/xmlSingle/upg/bea/jdk142_04"
    export JAVA_HOME
  else
    JAVA_VENDOR="Sun"
    export JAVA_VENDOR
    JAVA_HOME="/opt2/xmlSingle/upg/bea/jdk142_04"
    export JAVA_HOME
  fi
fi
```

27. Change the jdk142\_04 to jdk142\_08.



```
srvplosa1_xmlSingle
export WL_HOME

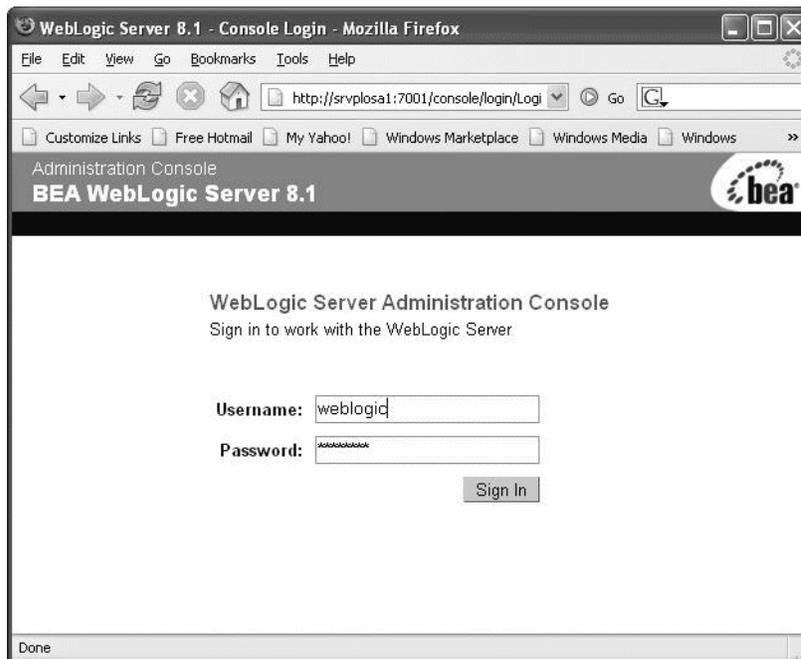
if [ "${JAVA_VENDOR}" = "BEA" ] ; then
  JAVA_HOME=""
  export JAVA_HOME
else
  if [ "${JAVA_VENDOR}" = "Sun" ] ; then
    JAVA_HOME="/opt2/xmlSingle/upg/bea/jdk142_08"
    export JAVA_HOME
  else
    JAVA_VENDOR="Sun"
    export JAVA_VENDOR
    JAVA_HOME="/opt2/xmlSingle/upg/bea/jdk142_08"
    export JAVA_HOME
  fi
fi

"setDomainEnv.sh" 389 lines, 10085 characters
```

28. Start the server using the BEA startup script: startWebLogic.sh. Provide the correct user ID and password to start the WebLogic server.

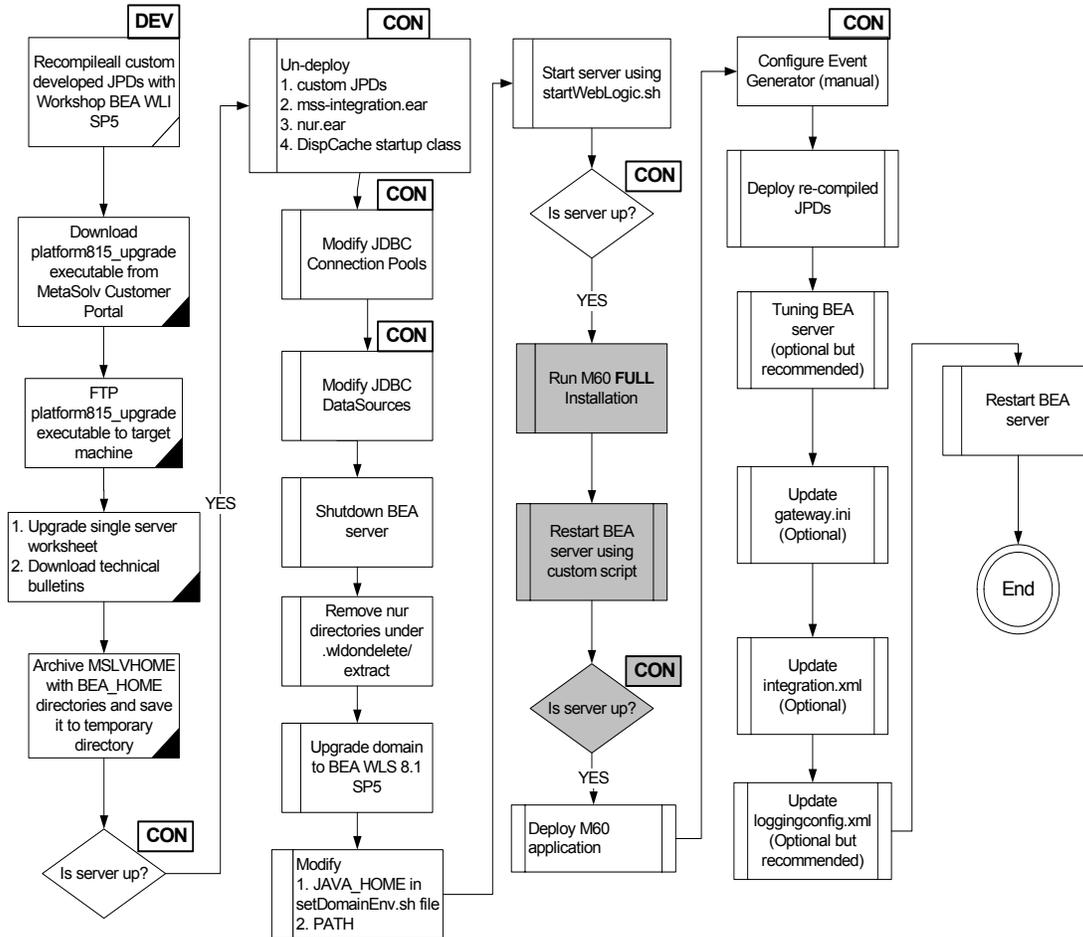


29. Access the BEA console to confirm that the BEA server is running.



### Install M6 on the target server

This procedure completes the highlighted steps shown in the following figure:



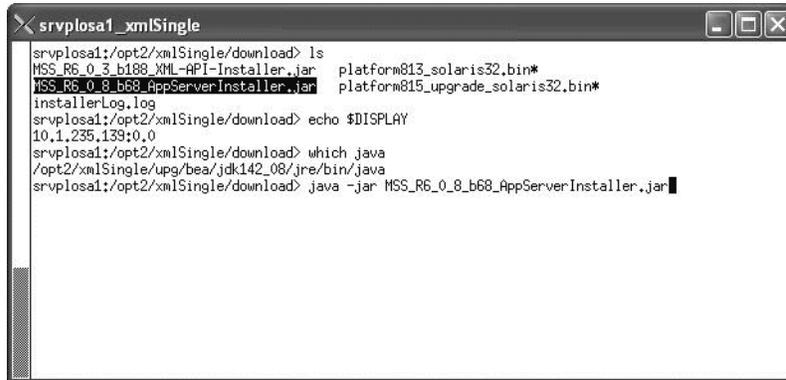
The following acronyms indicate the machine used in a step in the installation and deployment process:

- APP:** All application server machines
- CON:** BEA admin console
- ADM:** BEA admin server machine
- MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

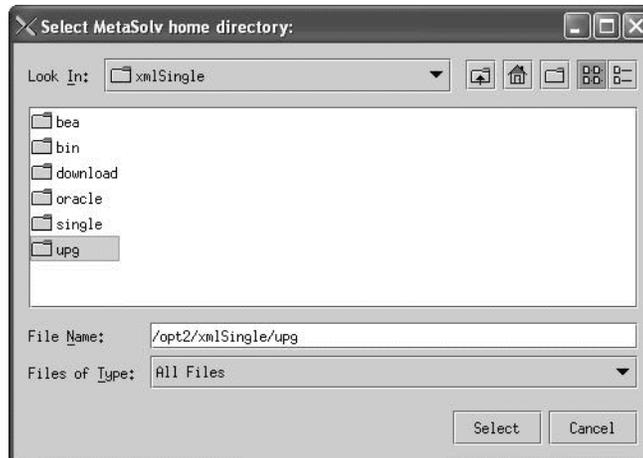
30. From the directory where you stored the MetaSolv Solution files downloaded from the Oracle E-Delivery Web site, type the following commands and press Enter to launch the M6 installer:

`java -jar<release#/build#>_AppServerInstaller.jar`

For example: `java -jar MSS_R6_0_8_b68_AppServerInstaller.jar`

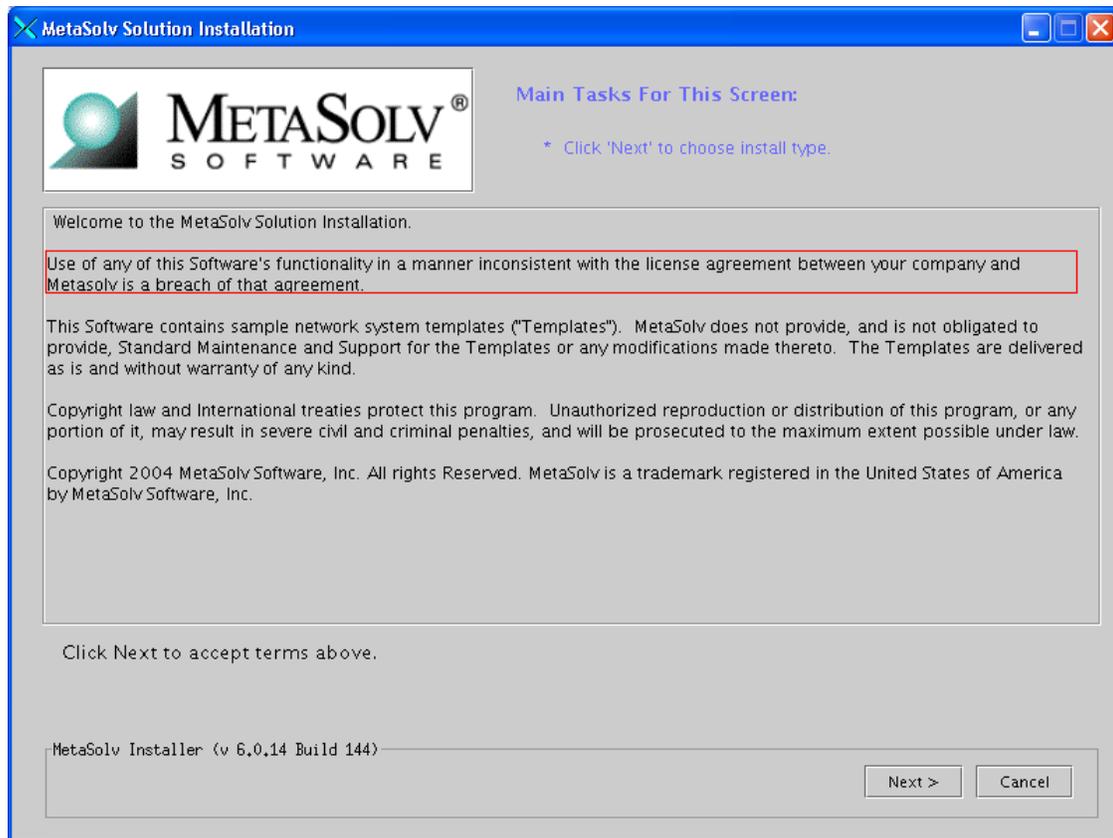


The following window appears. From the Look In drop-down list, click the arrow and select a directory in which installation files can be stored and used during the installation process, then click Select. In this example, the MSLVHOME directory is chosen.



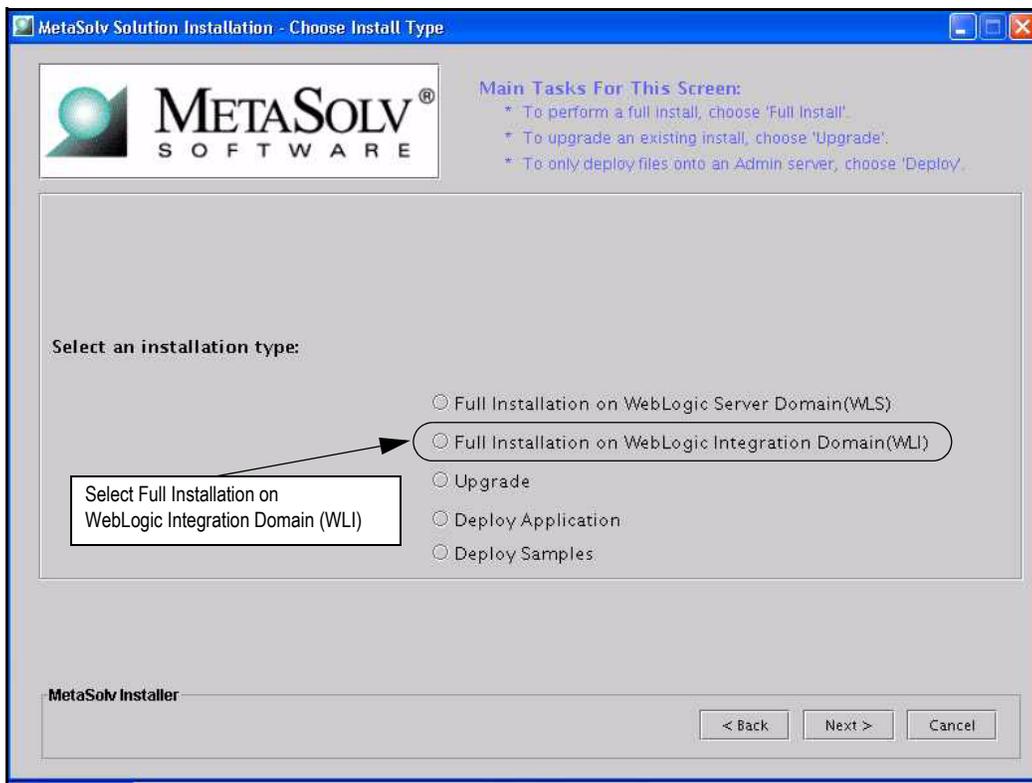
Field name	Worksheet reference number	Example value
File Name (METASOLV_HOME)	XSingle-0090	/opt2/xmlSingle/upg

The following window appears.



31. Click **Next**.

The following window appears:

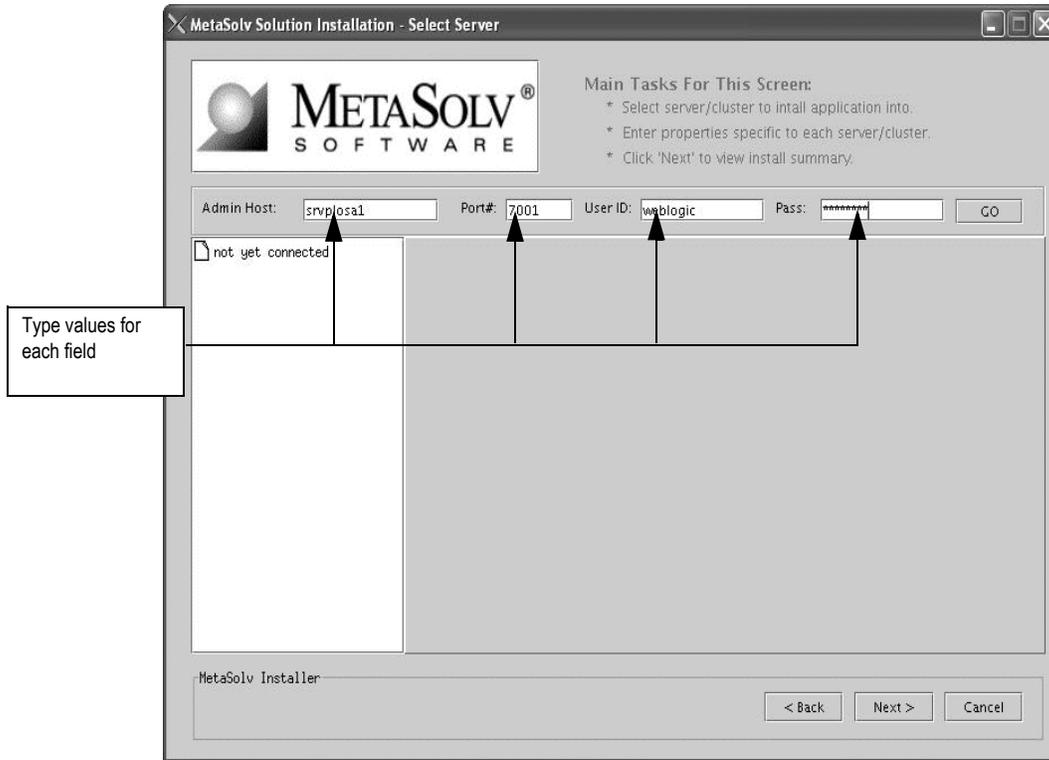


32. **Select Full Installation on WebLogic Integration Domain (WLI)** and click **Next**.

 Selecting **Full Installation on WebLogic Integration Domain (WLI)** installs MetaSolv Solution with the XML APIs. Selecting **Full Installation on WebLogic Server Domain (WLS)** installs MetaSolv Solution without the XML APIs. If you do not plan to use the XML APIs, do not use this Setup Guide. Instead, refer to the *Setup Guide (non-XML API Option)*.

33.

The following window appears:



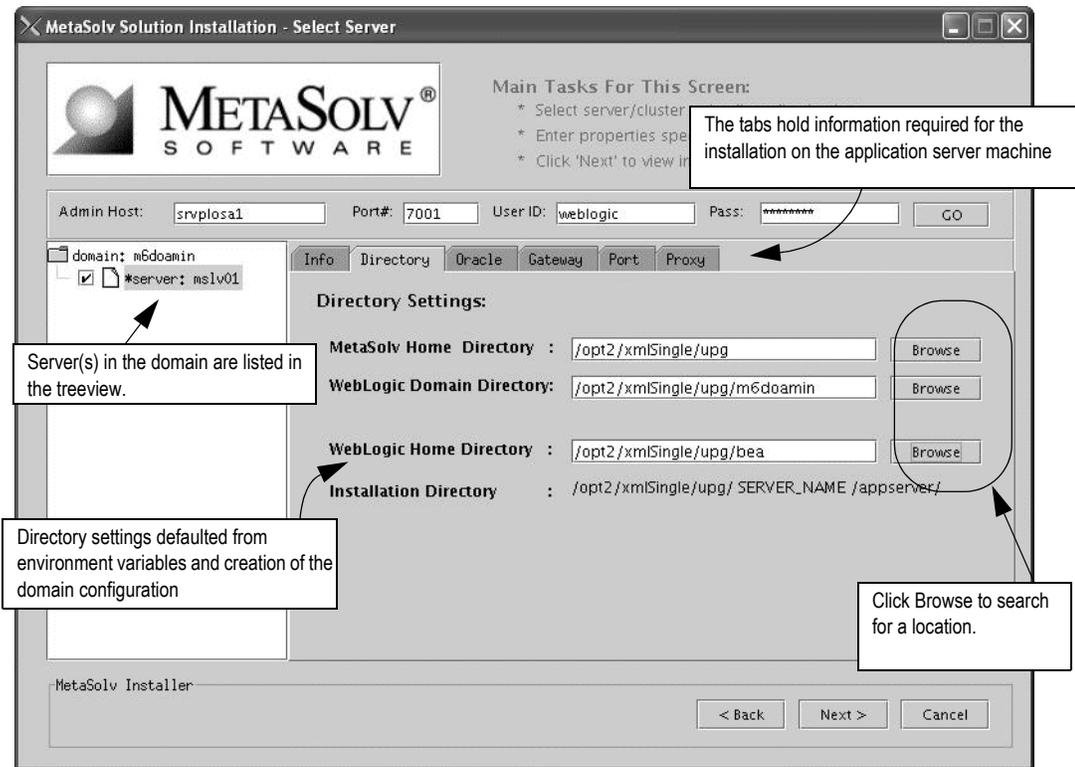
34. Enter the single server listening address, port, user ID and password information. Then click the GO button.

Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
Admin Host	XSingle-0160	<i>srvplosa1</i>
Port#	XSingle-0170	<i>7001</i>
User ID	XCOMM-0020	<i>weblogic</i>
Pass	XCOMM-0030	<i>metasolv</i>

When you click **Go**, the installation program queries the Admin Host machine and returns with values you entered during the configuration of the BEA WebLogic domain. The following figure shows the window updated.

35. Select a server in the left panel.



Tabs appear in the right pane for information to be entered for the server.

The following list shows how icons are used in the treeview.

-  The folder icon indicates that the item selected is a higher level (a domain or a cluster within a domain) and that other items (such as servers) are subordinate to the item indicated by the folder.
-  The page icon indicates that the item selected has no servers or other items that are subordinate to it.
- \* An asterisk means that a server is a candidate for installation of MetaSolv Solution. Only servers associated with the machine on which the installation is occurring are eligible.
- A check box means you have selected the server for the installation of MetaSolv Solution 6.0.8 during the installation process.

In the treeview on the left, select the check box next to the single server on which you want MetaSolv Solution installed.

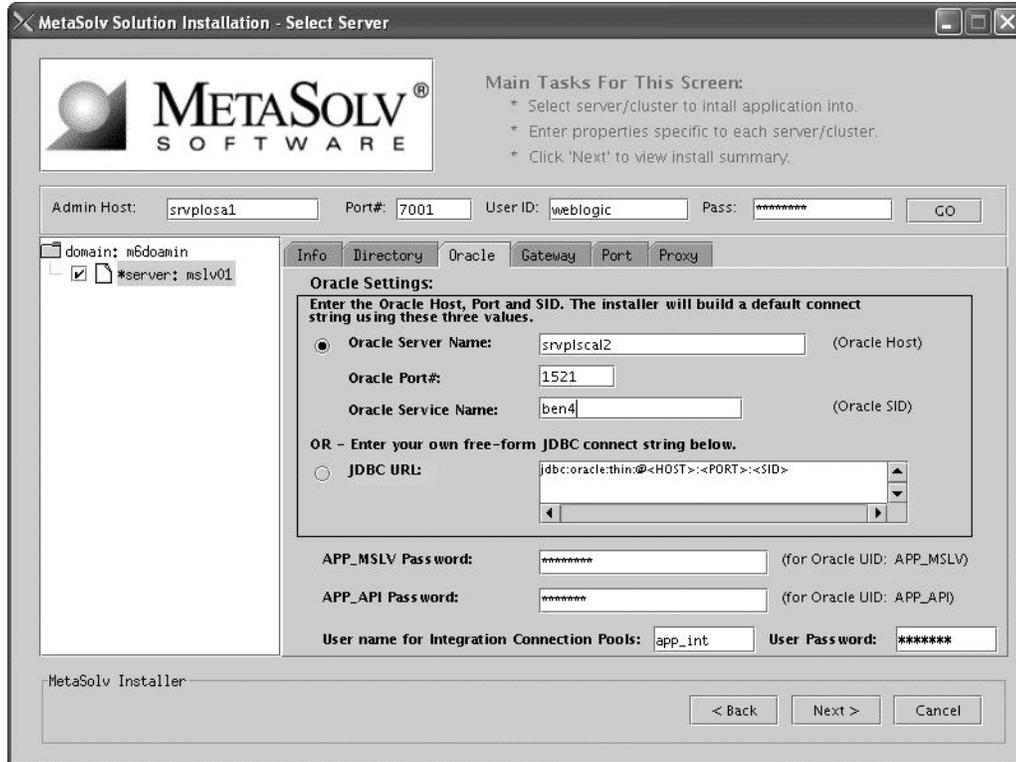
Complete the domain information by selecting and completing the following tabs:

- a. Select the Directory tab (shown in the preceding figure) and type the path and name of the MetaSolv home directory and the WebLogic domain directory, or click **Browse** to search for the directories.

Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
MetaSolv Home Directory	XCOMM-0090	<i>/opt2/xmlSingle/upg</i>
WebLogic Domain Directory	XCOMM-0110	<i>m6domain</i>

- b. Select the Oracle tab, check the values that appear in the fields, and make any needed changes. Example of a JDBC URL string: jdbc:oracle:thin:@mydbserver:1521:DB01

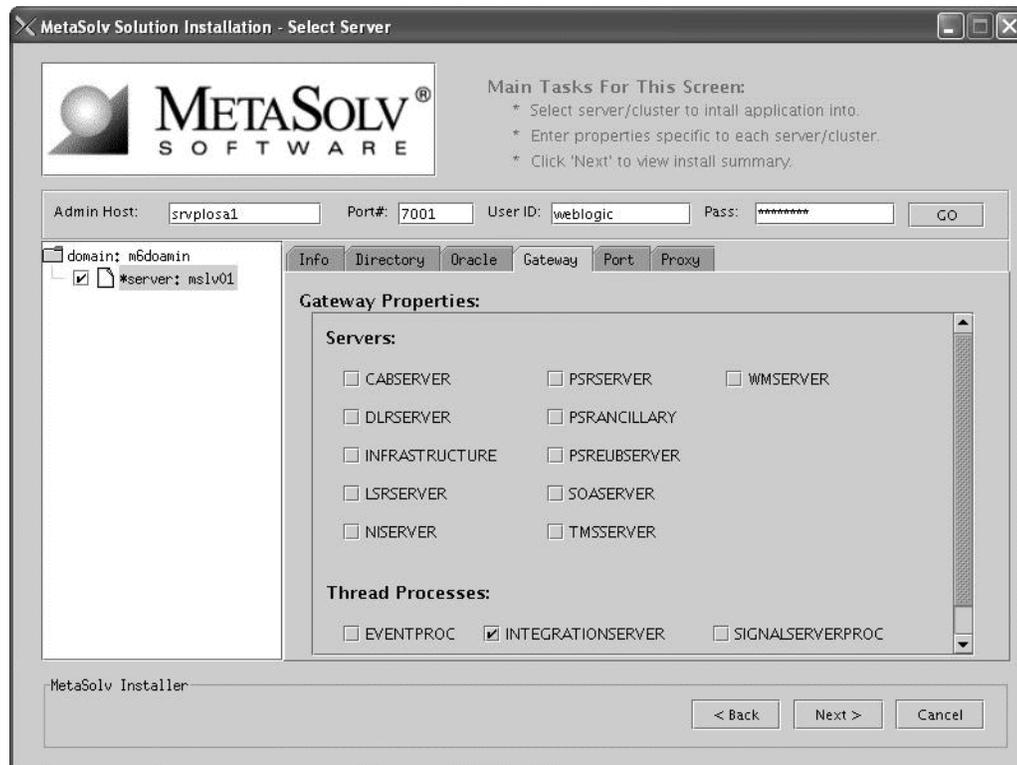


Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
Oracle Server Name	XCOMM-0130	<i>srvplscal2</i>
Oracle Port	XCOMM-0140	<i>1521</i>
Oracle Service Name	XCOMM- 0150	<i>BEN4</i>
APP_MSLV Password	XCOMM-0040	<i>mss6mslv</i> (default)
APP_API Password	XCOMM-0050	<i>mss6api</i> (default)
XML API integration user id	XCOMM-0057	<i>APP_INT</i>
XML API integration password	XCOMM-0059	<i>mss6int</i>

For multiple WebLogic Integration domains pointing to the same database, use different XML API integration user IDs and corresponding passwords. See “[Multiple WebLogic Integration domains pointing to the same database](#)” on page 189

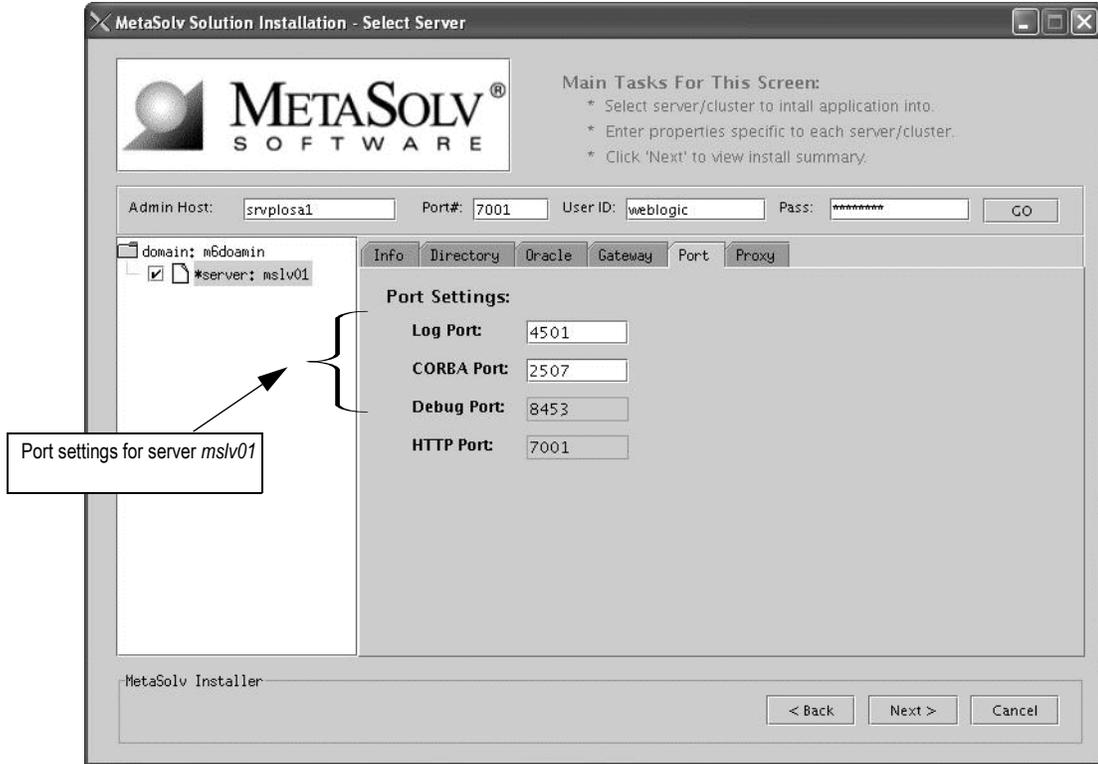
- c. Select the Gateway tab, check the default selections for event servers that are to be activated, and make any necessary changes.



If you are unsure, leave the default settings. You can manually edit these settings through the gateway.ini file. The check boxes that appear on the tab are for APIs. When you select a check box, modifications are made to the gateway.ini file used to configure MetaSolv Solution APIs. For more information on the gateway.ini, see the *MetaSolv Solution Administration Guide*.

- d. Select the Port tab and type values in the **Log Port**, **CORBA Port**, and **Debug Port** fields.

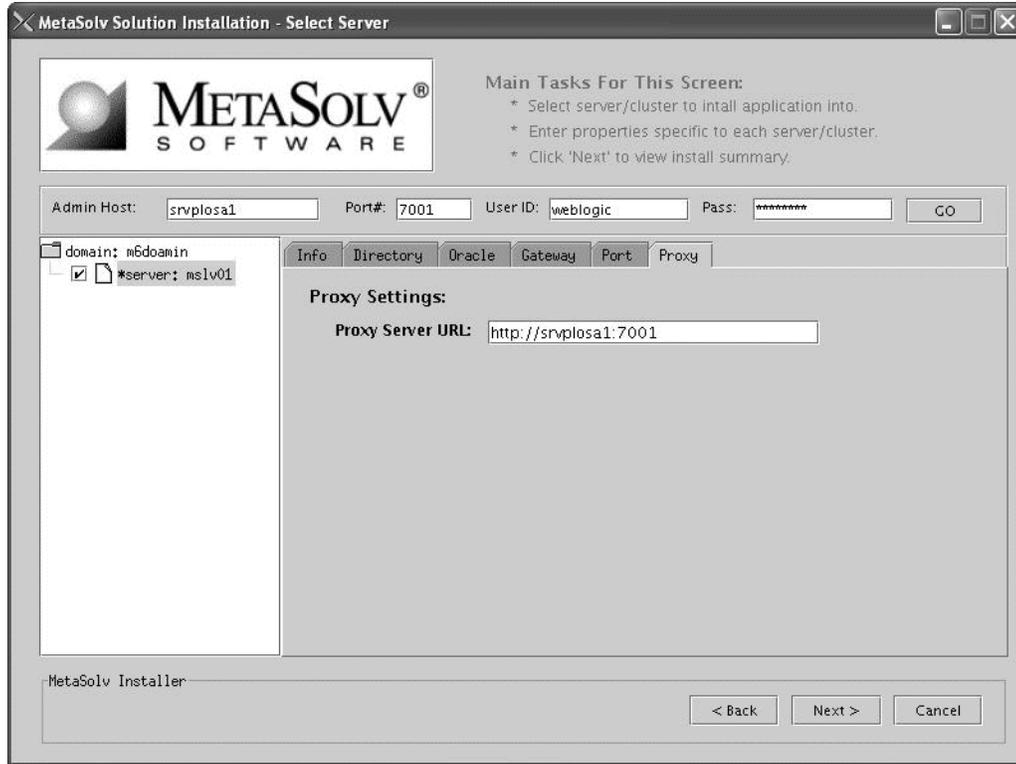
By default, the installation program finds available ports and assigns the correct values.



Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
Log Port	XSingle-0190	4501
CORBA Port	XSingle-0200	2507
Debug Port	XSingle-0205	8453

Select the Proxy tab if you use a proxy server or an external load balancer and provide the URL of the proxy server.

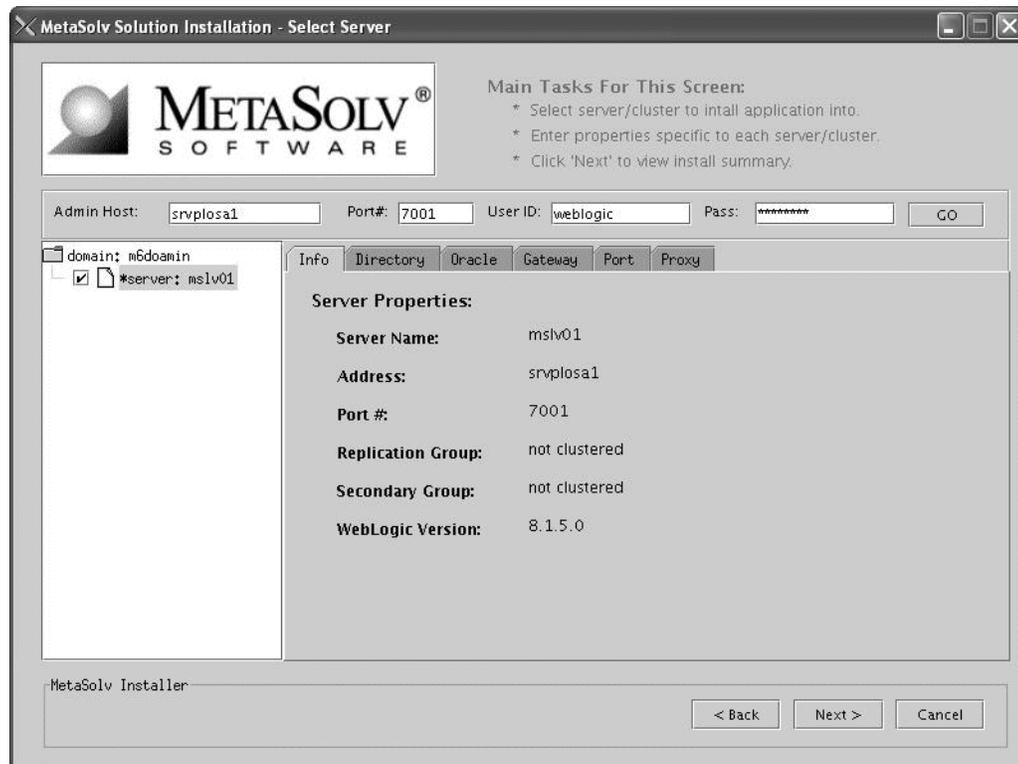


Worksheet reference numbers and example values:

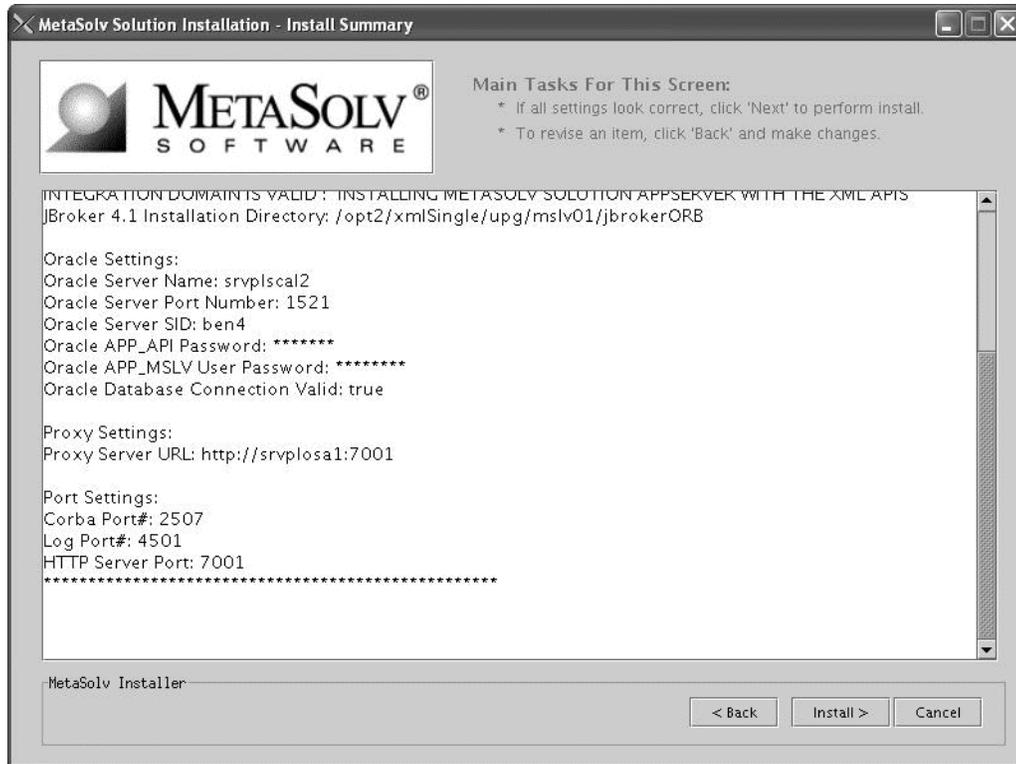
Field name	Worksheet reference number	Example value
Load Balancer/Proxy Server URL	XSingle-0210	<i>http://srvplosa1:7001</i>

- e. Select the Info tab to see a summary of the selected server's properties.

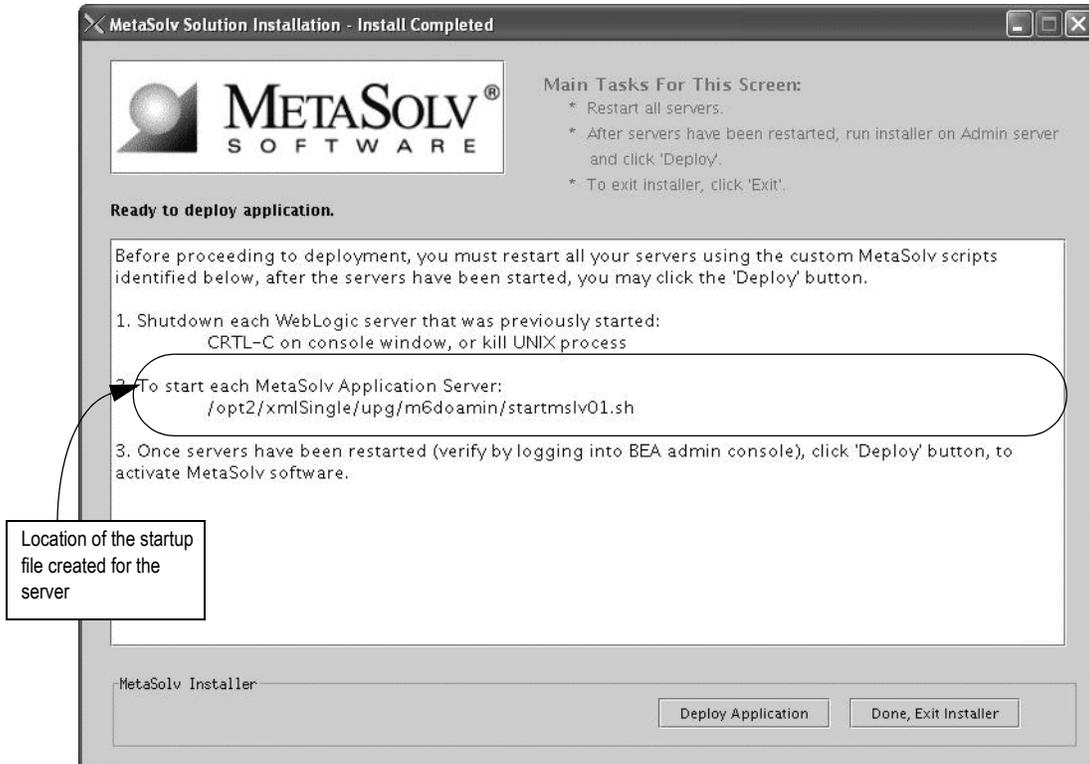
When all tabs have correct information for the single server, click Next.



36. The installation summary appears. After reviewing the information in the summary for accuracy, click "Install".



37. The installation program installs the appropriate MetaSolv Solution files to the server. When the files are installed the following window appears.



- a. Note the location of the startup file for the application server, then minimize the installation program window (do not exit the installation program).

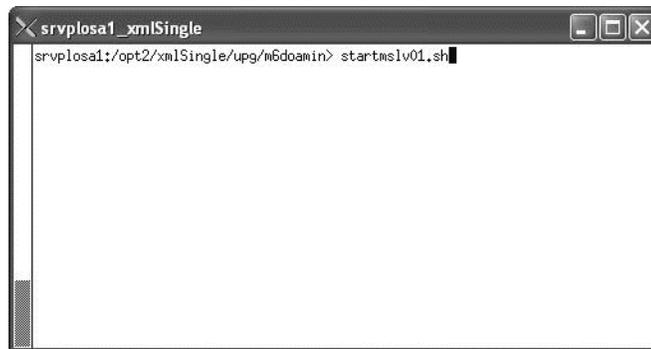
- b. Shut down the server, debug proxy and restart them from the location given by the installation program using the start command listed on the window.

To start the server, navigate to the m6domain directory. At the command prompt, enter the command:

**startmslv01.sh**

To shut down the server, navigate to the m6domain directory. At the command prompt, enter the command:

**stopmslv01.sh**



If you are in Development mode, you should also start the Debug Proxy server using the following command:

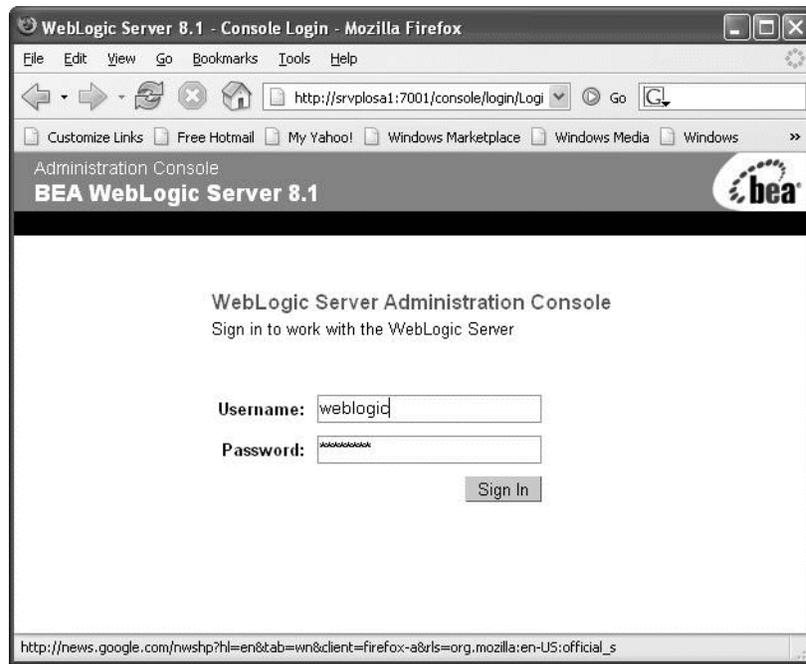
Windows: **startDebugProxy.cmd**

UNIX: **startDebugProxy.sh**

- c. Start the WebLogic Server Administration Console by typing the following information into the **Address** field of Internet Explorer:

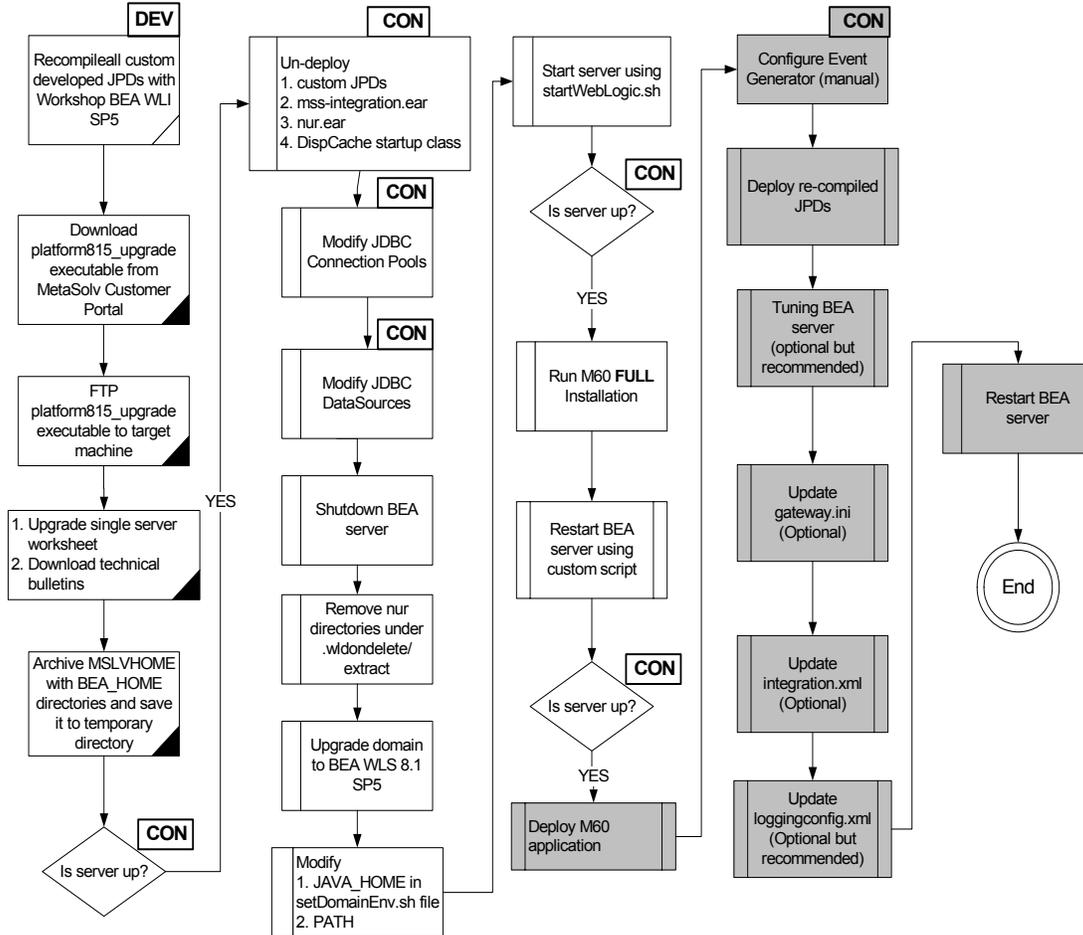
`http://<host_admin:port number>/console`

The following figure shows the logon screen for the example used in this procedure.



### Deploy the M6 application to the target server and tuning

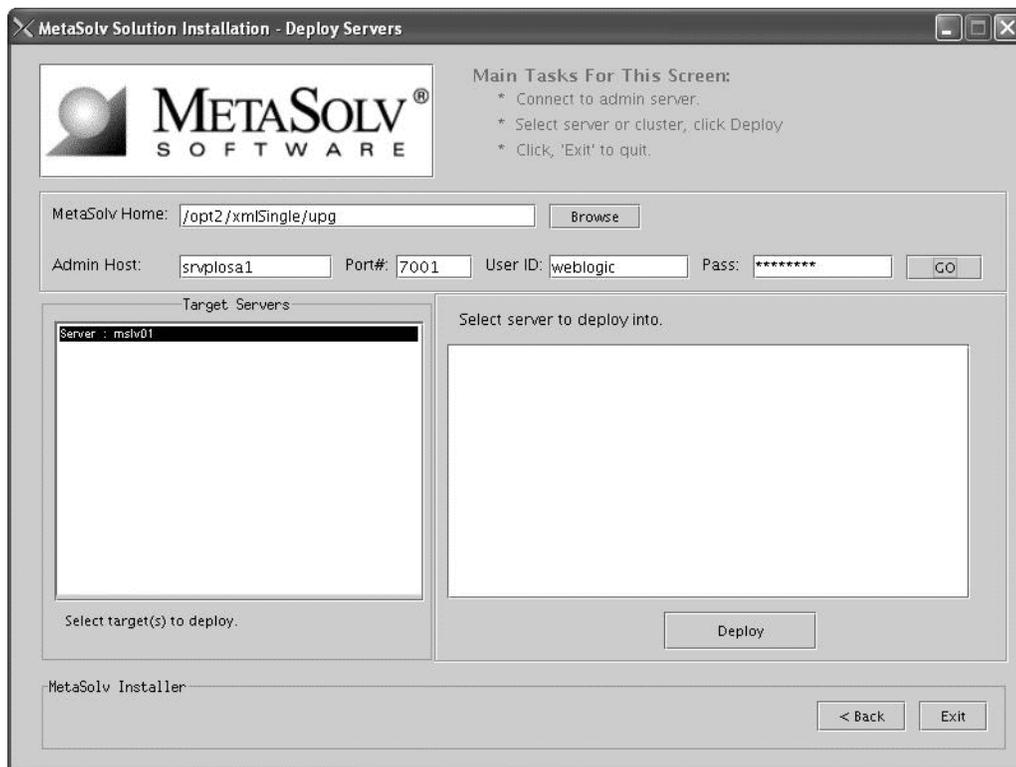
This procedure completes the highlighted steps shown in the following figure:



The following acronyms indicate the machine used in a step in the installation and deployment process:

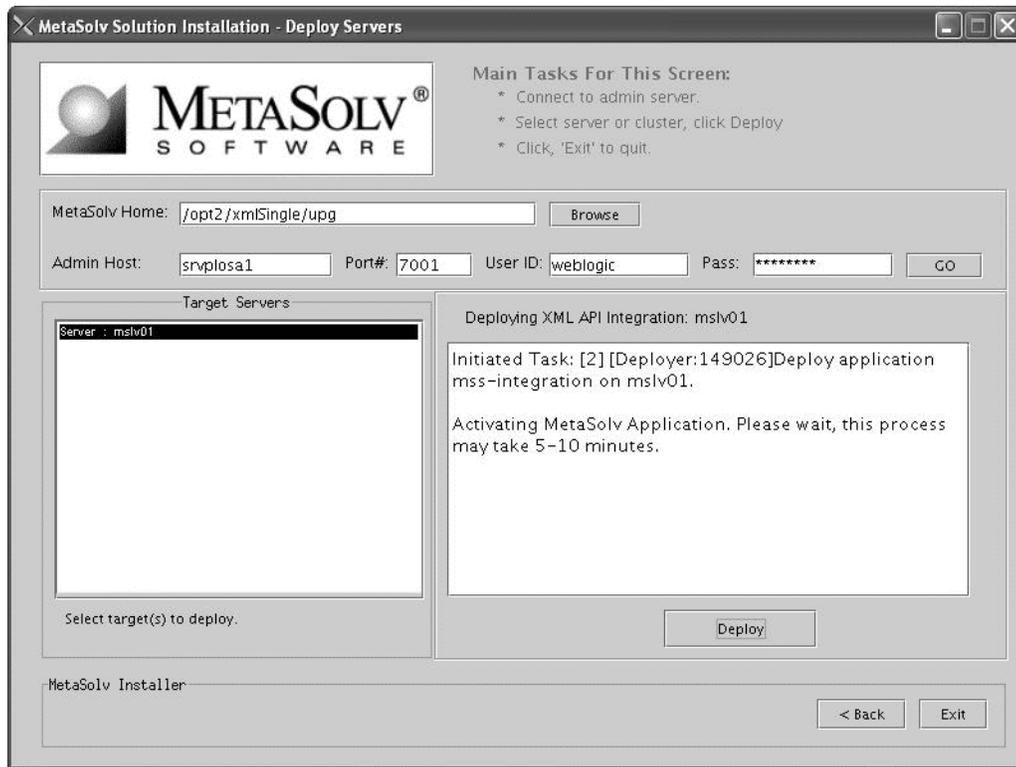
- APP:** All application server machines    **CON:** BEA admin console
- ADM:** BEA admin server machine    **MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

38. After the startup command has been executed and the application server has been started, maximize the installation program window and click **Deploy Application**. The following window appears listing the server or servers you can select for deployment.



This process can take a few moments. If the server is not started, a status appears on the window indicating the installation program is waiting for the server to be in running mode. When the server is in running mode, you can begin the deployment.

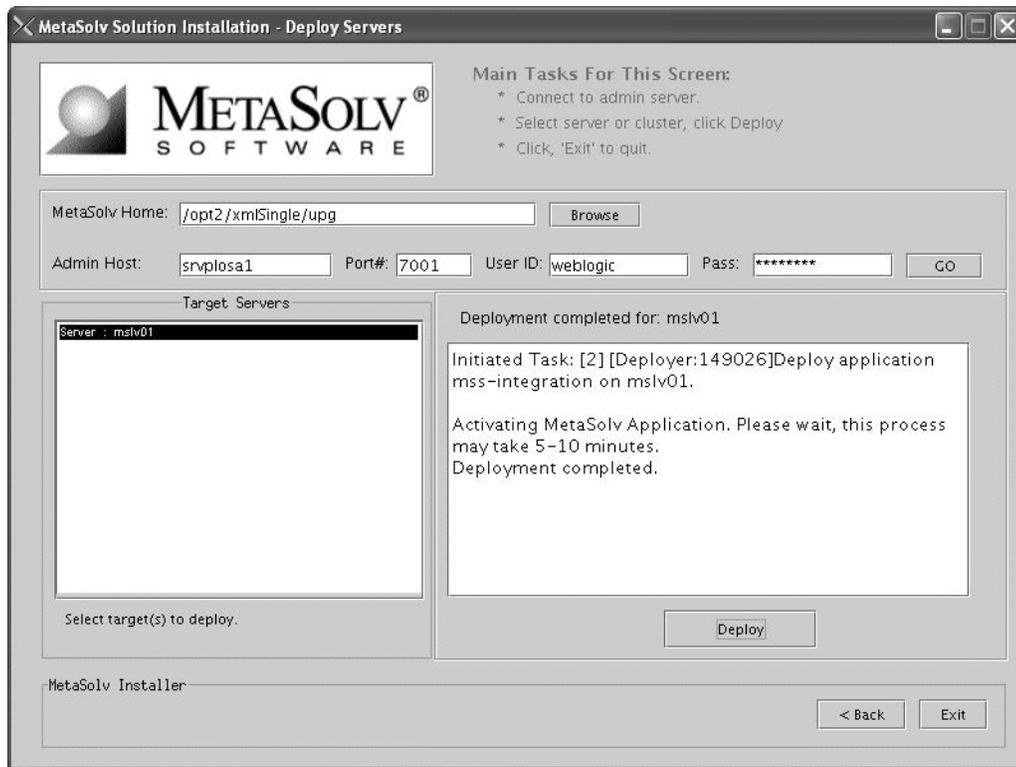
39. Select a server in the Target Servers list box, and click **Deploy**. The deployment process begins. You can follow the progress of the deployment by viewing the text that appears in the right pane of the installation window.



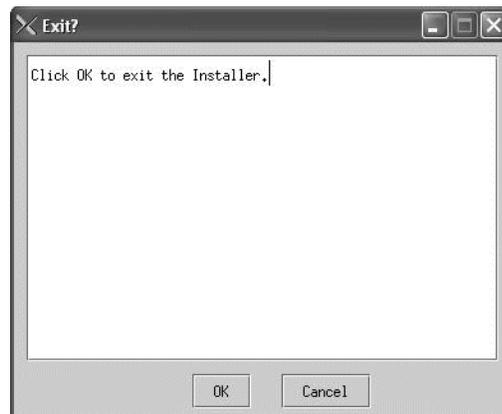
When deployment is done, the following window appears. Click OK.



40. Click Exit.



41. Click OK to exit the M6 installer.





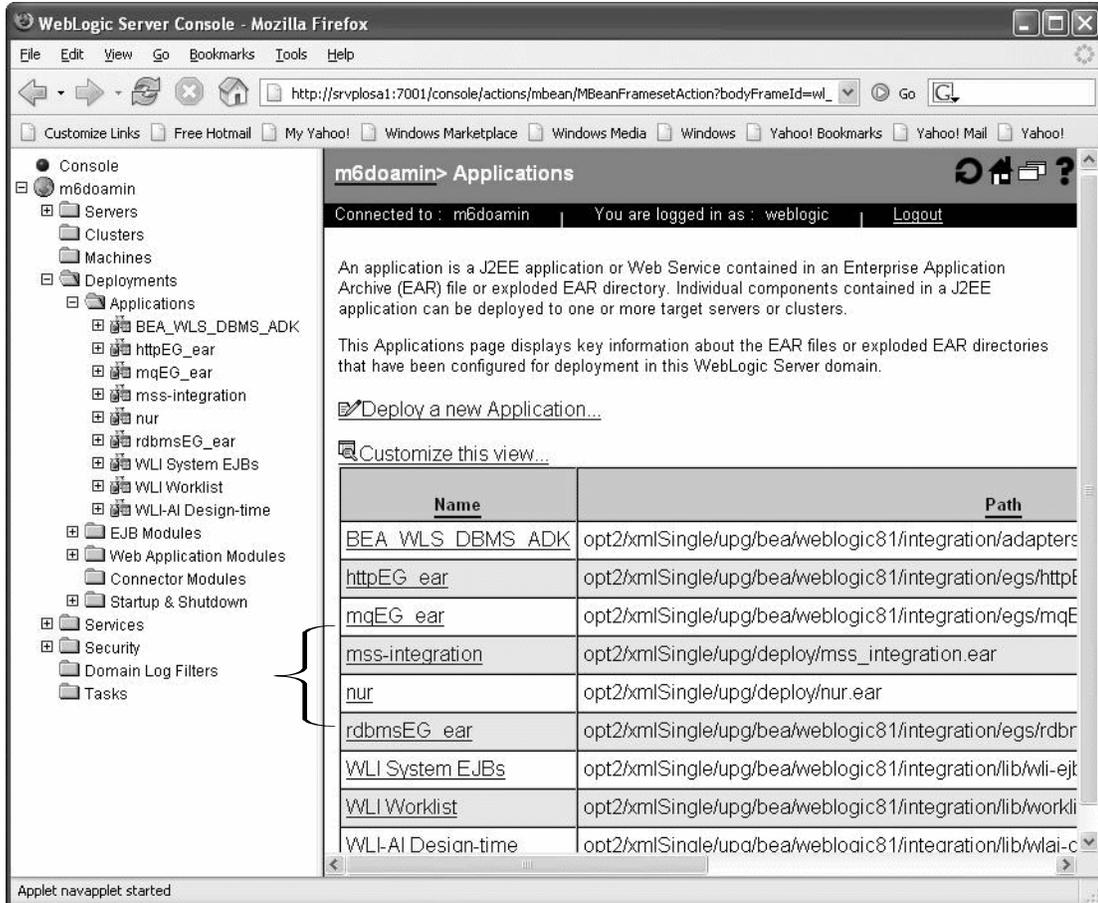
If you encounter the following error in the <serverName>.mss.log file after you start a server, refer to the Technical Bulletin titled *Prodfixsql Error: Failure to grant table creation privileges for APP\_MSLV* for information on how to resolve this error. To locate this bulletin, click the Knowledge tab on the Oracle MetaLink Web site (<https://metalink.oracle.com>).

```
<Alert> <JMS> <BEA-040205> <JMSServer "plugging_auto_1". An error
occurred while trying to do a SQL SELECT on table
"pluginStore_auto_1JMSState". Check privileges on this table. You
may need to specify [schema.[catalog.]] in your configured
prefix.>
```

```
<Alert> <JMS> <BEA-040052> <JMSServer "plugging_auto_1" store
failed to open java.io.IOException: JMS JDBC store, connection
pool = <MSLVNoneTxPool>, prefix = <pluginStore_auto_1>: flush
failed
```

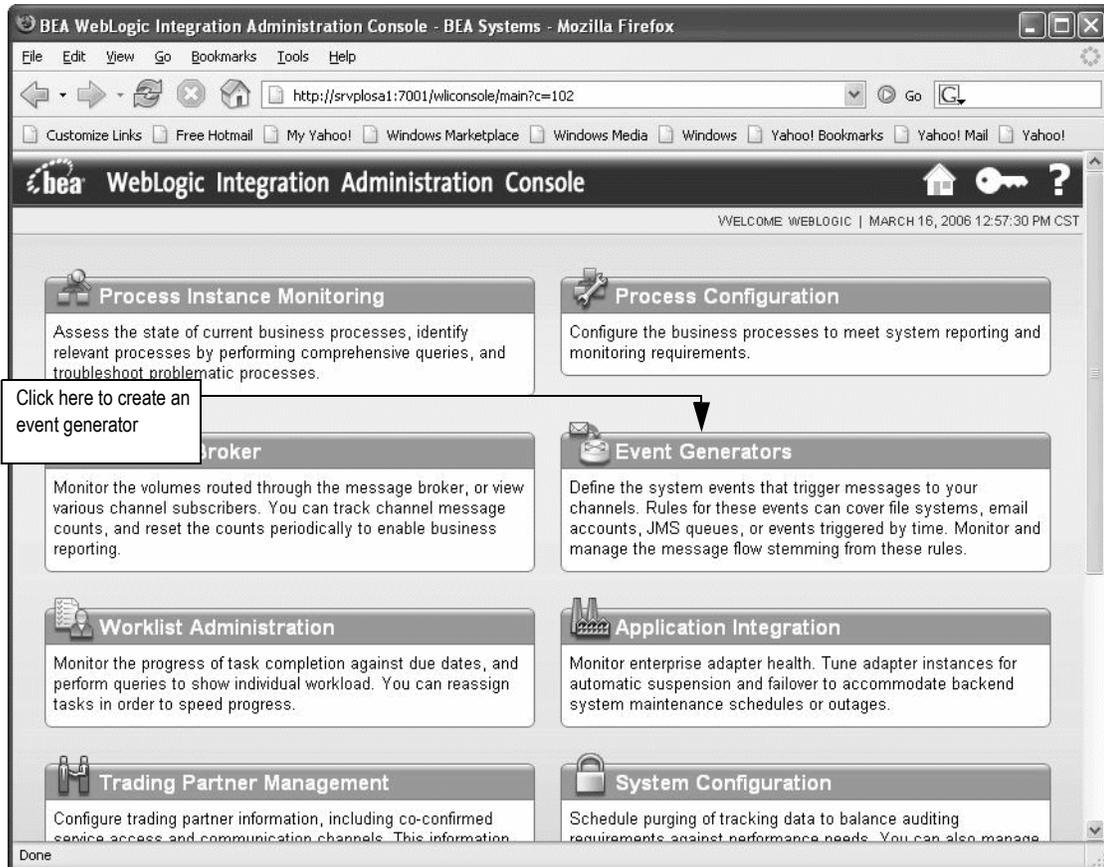
```
java.sql.SQLException: ORA-00942: table or view does not exist
```

42. Verify the M6 deployment by navigating to Applications under Deployments. You should see nur and mss-integration applications listed.

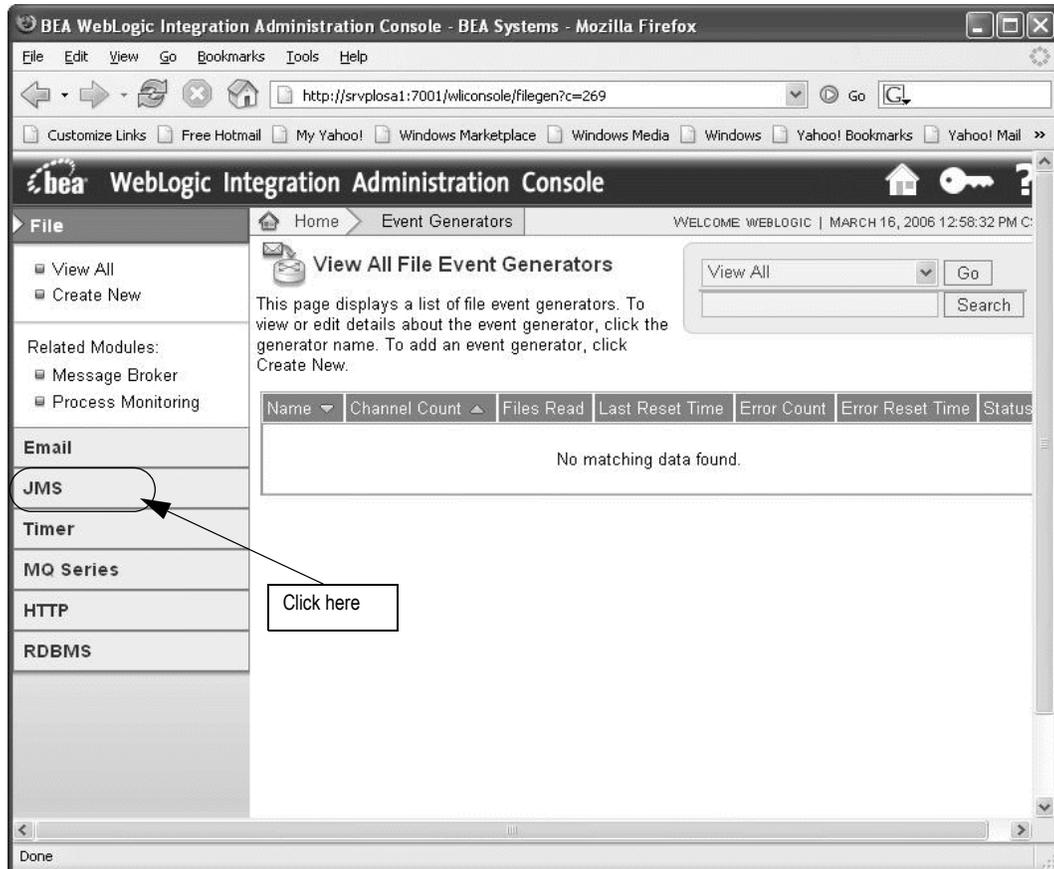


43. Configure JMS Event Generator.
  - a. Access the WebLogic Integration Administration Console through the following URL: `http://<host_admin.port number>/wliconsole`.

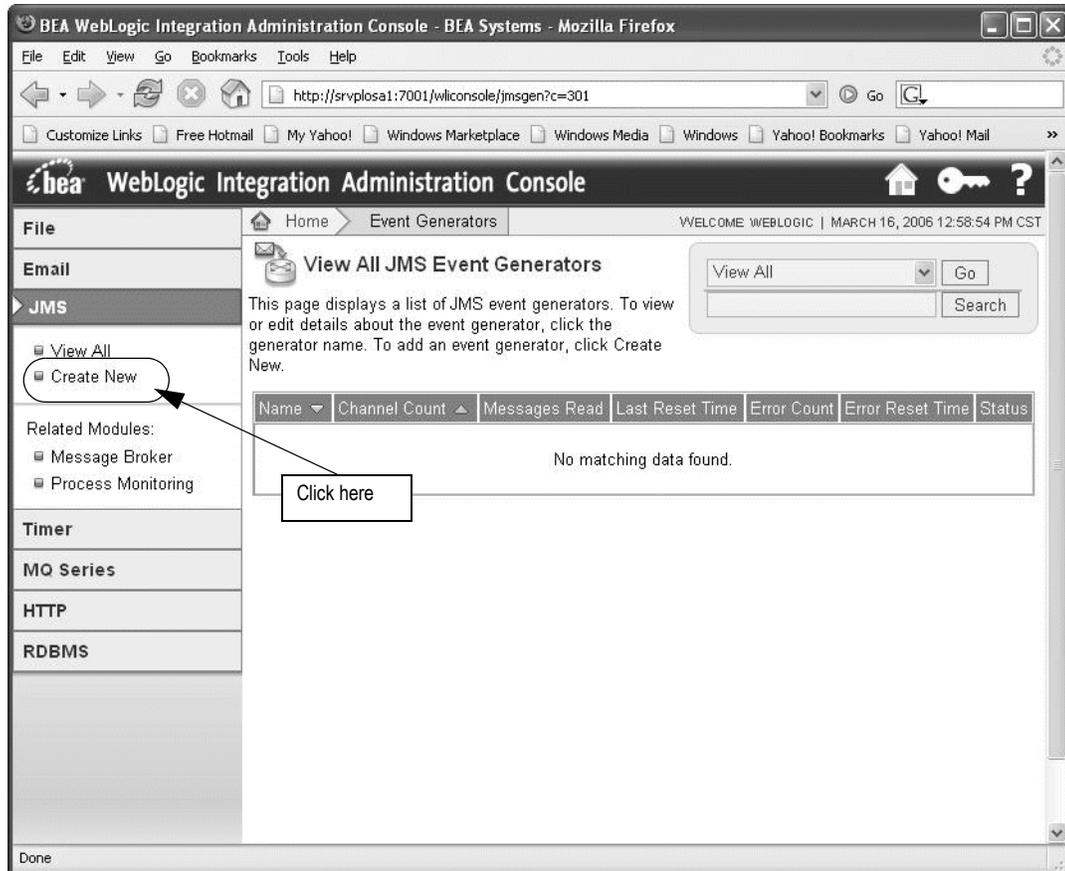
The following figure shows the initial console window that appears.



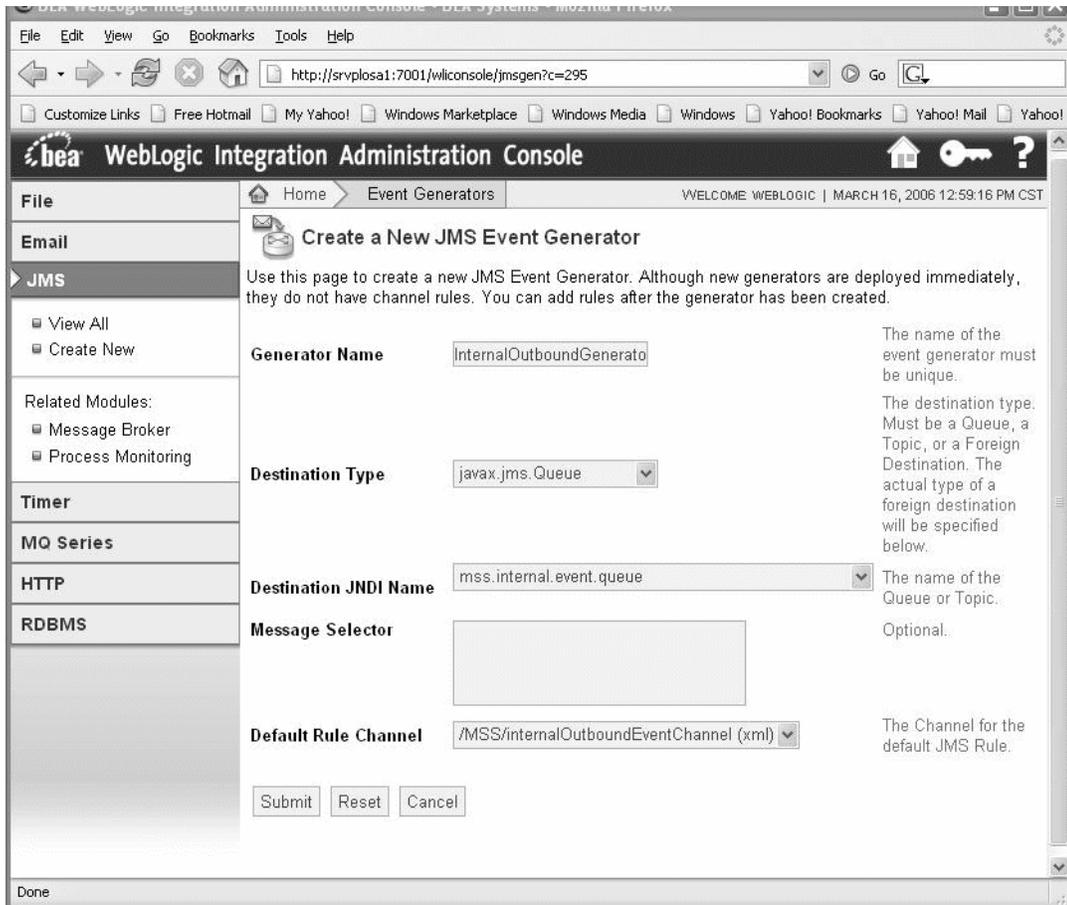
b. Click a JMS Event Generator.



- c. On the left panel, click **JMS**; then on the expanded view under JMS, click **Create New**.



d. The following information appears in the right panel



- ◆ Enter the following values on the Create a New JMS Event Generator window:

**Generator Name:** InternalOutboundGenerator

**Destination Type:** javax.jms.Queue

**Destination JNDI Name:** mss.internal.event.queue

**Message Selector:** Leave this field blank.

**Default Rule Channel:** /MSS/internalOutboundEventChannel (xml)

- ◆ Click **Submit**.

The following figure shows the summary that appears when the event generator is created.



To return to the main WebLogic Integration Administration Console window, click **Home** in the breadcrumbs listed at the top of the pane. See the previous figure for information on the **Home** link to click.

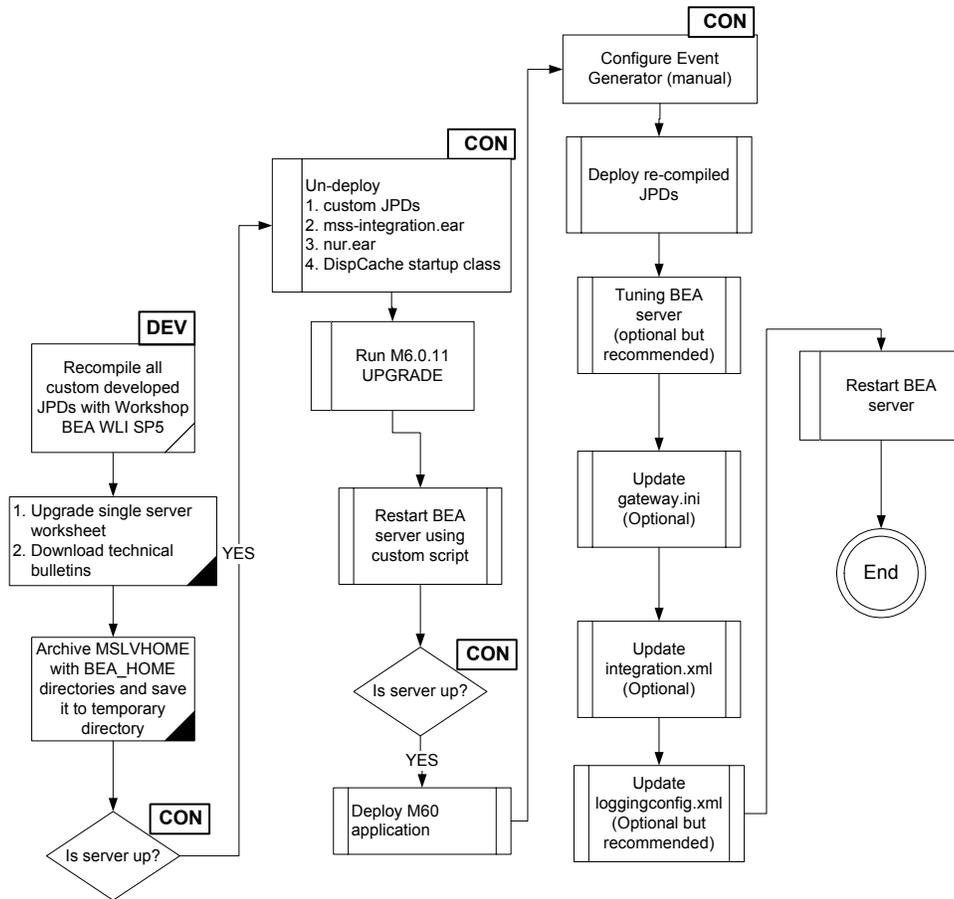
For BEA server tuning, see “[Appendix F: Tuning servers for performance](#)”.

For updating configuration files, see “[Appendix G: Configuration Files](#)”.

## Single server upgrade from M6.0.8 - M6.0.14 to M6.0.15

Follow the procedures in this section if you currently have M6.0.8, M6.0.10, or M6.0.11 installed and you are upgrading to M6.0.15.

-  Before upgrading your application server to M6.0.15, refer to the Technical Bulletin titled *M6 JMS Configuration* to determine how it affects your installation. Failure to do so results in the server failing to start after installing the application. To locate this bulletin, click the Knowledge tab on the Oracle MetaLink Web site (<https://metalink.oracle.com>).
  
-  You will need to manually modify the loggingconfig.xml file and integration.xml file or you will receive an error on your appserver console. Additionally, if using Custom Extensions, you will need to manually modify the gateway.ini file. Detailed information regarding the changes to these files is located in “[Appendix G: Configuration Files](#)” on page 479. For information on Custom Extensions, refer to the Custom Extensions Developer’s Reference.



The following acronyms indicate the machine used in a step in the installation and deployment process:

**APP:** All application server machines    **CON:** BEA admin console  
**ADM:** BEA admin server machine    **MGM:** All clustered server machines  
**DEV:** Development environment  
**FE:** Front end host machine, such as load balancer or proxy

Figure 17: Single server installation process

### Archive the M6 directory

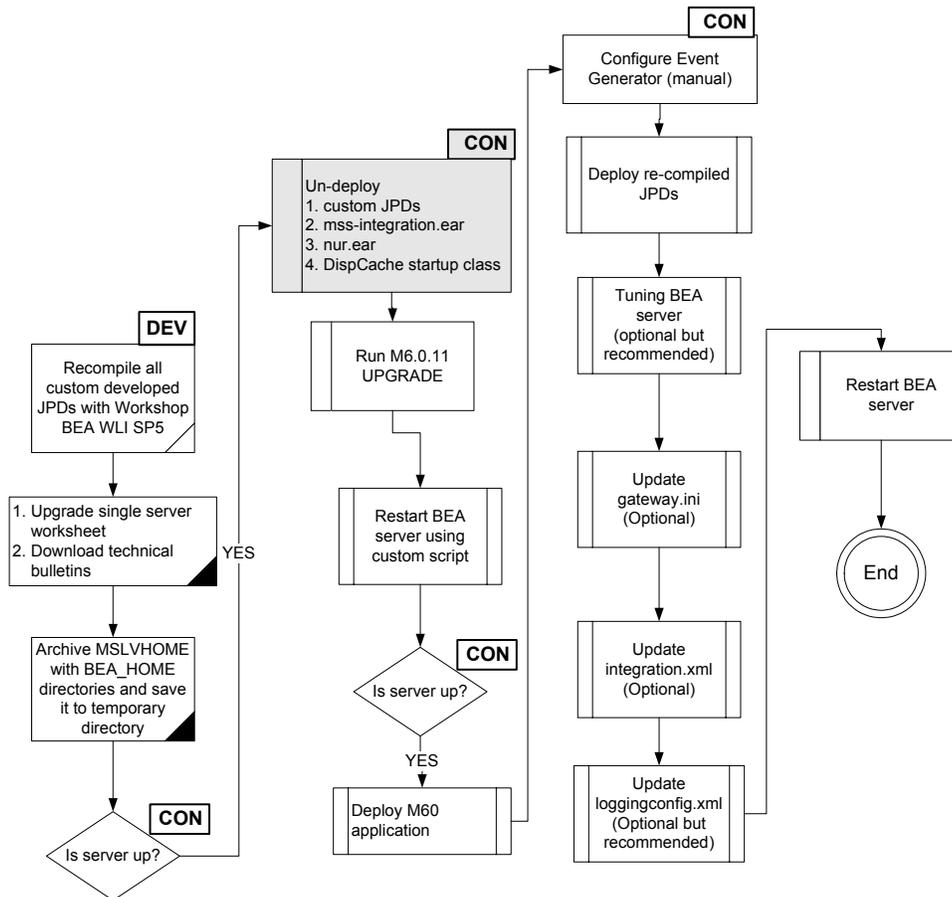
1. Archive the current M6 XML API application by tarring up the MSLVHOME and BEA\_HOME directories.



```
srvplosa1_xmlSingle
Sun Microsystems Inc. SunOS 5.9 Generic May 2002
srvplosa1:/home/xmlSingle> cd /opt2
srvplosa1:/opt2> ls
bharti/      download/   lost+found/ u01/        xmlSingle/  xmlapi/
srvplosa1:/opt2> cd xmlSingle
srvplosa1:/opt2/xmlSingle> ls
bea/        bin/        download/   oracle/     single/     upg/
srvplosa1:/opt2/xmlSingle> jar cvf single.jar single
```

### Delete M6 related applications

This procedure completes the highlighted step shown in the following figure:



The following acronyms indicate the machine used in a step in the installation and deployment process:

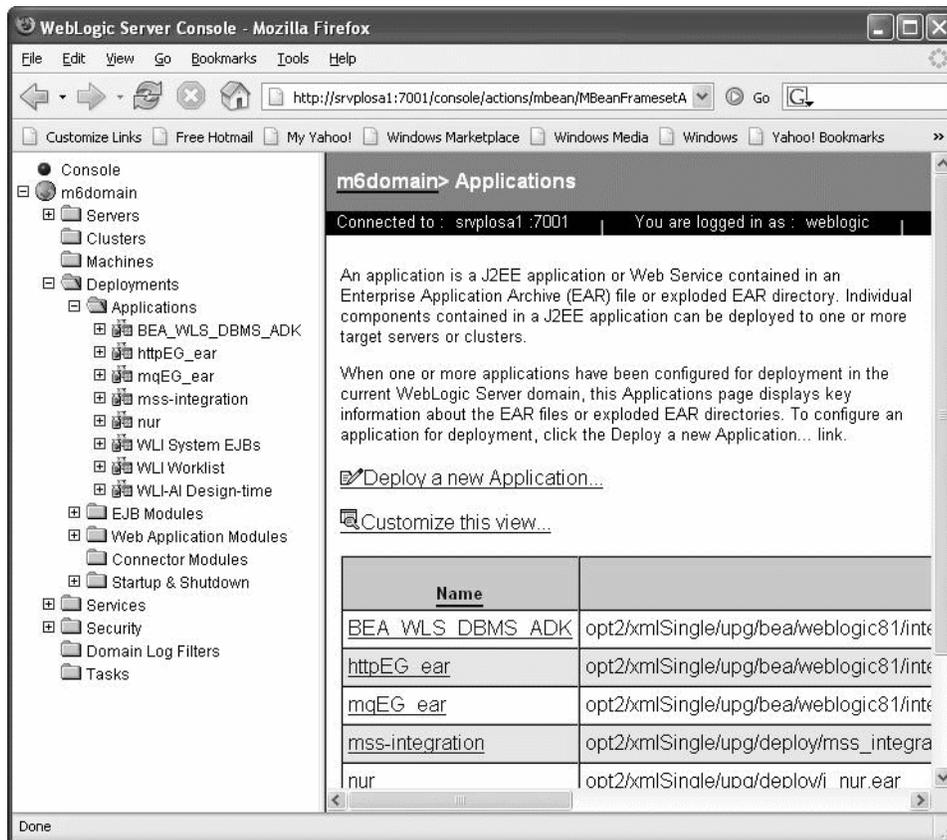
- APP**: All application server machines    **CON**: BEA admin console
- ADM**: BEA admin server machine    **MGM**: All clustered server machines
- DEV**: Development environment
- FE**: Front end host machine, such as load balancer or proxy

2. Remove the following applications from the domain:

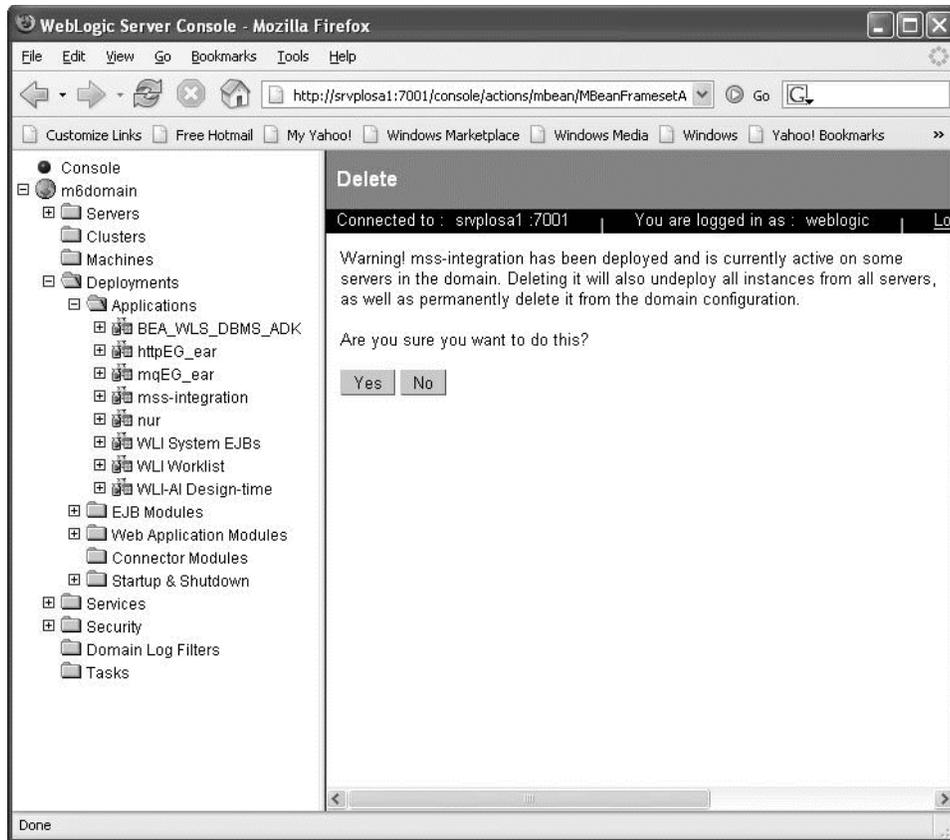
- LSR/ASR if applicable
- XML API
- NUR

In the example, the XML API and NUR applications will be removed from the domain.

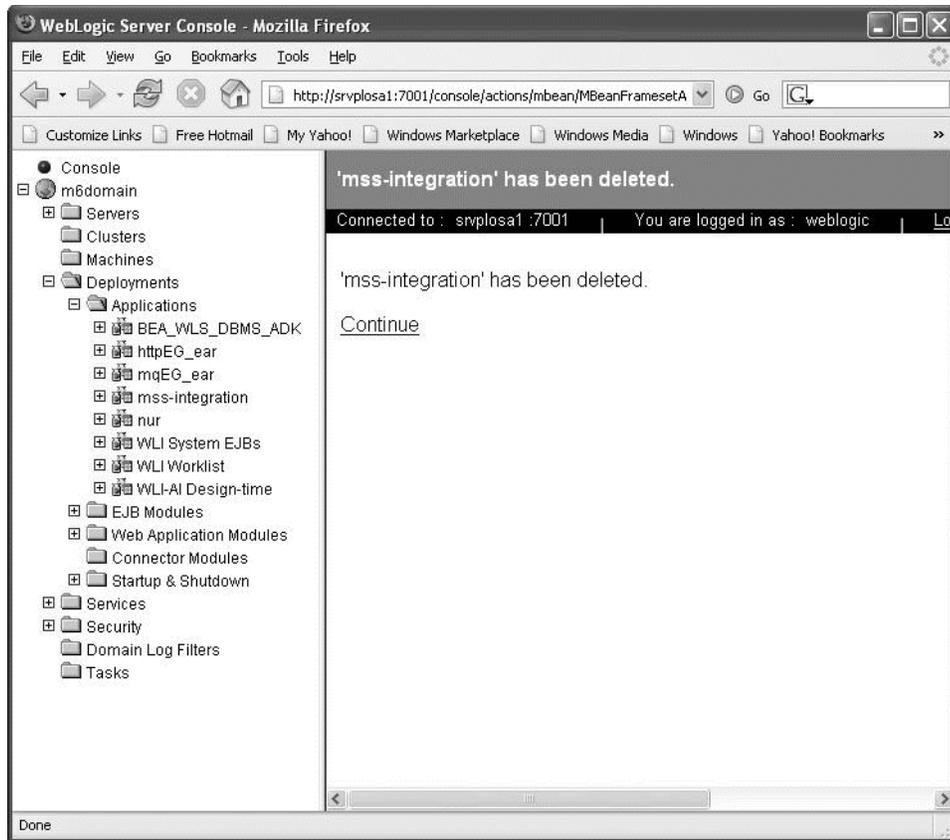
3. Go to the BEA console and navigate to Deployments -> Applications.



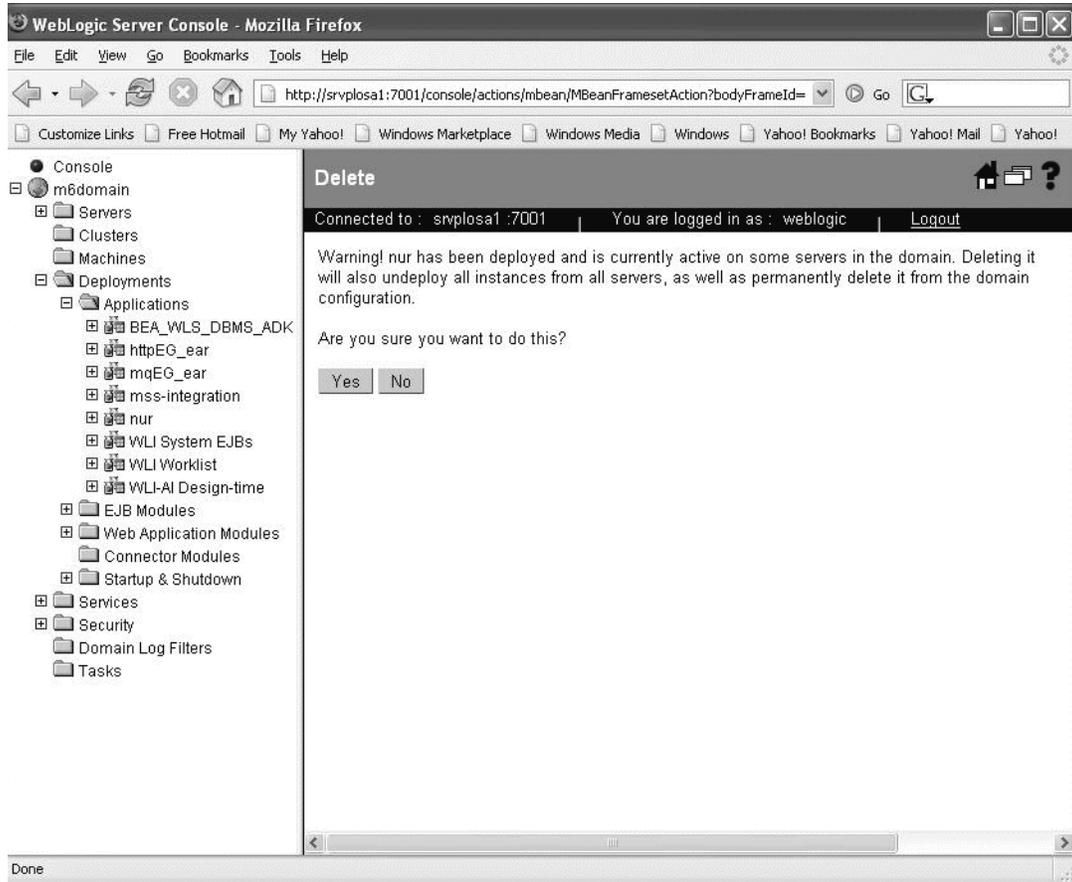
4. Delete the M6 mss-integration application. Select the mss-integration on the left panel, right-click, and select Delete. The following screen appears. Click Yes.



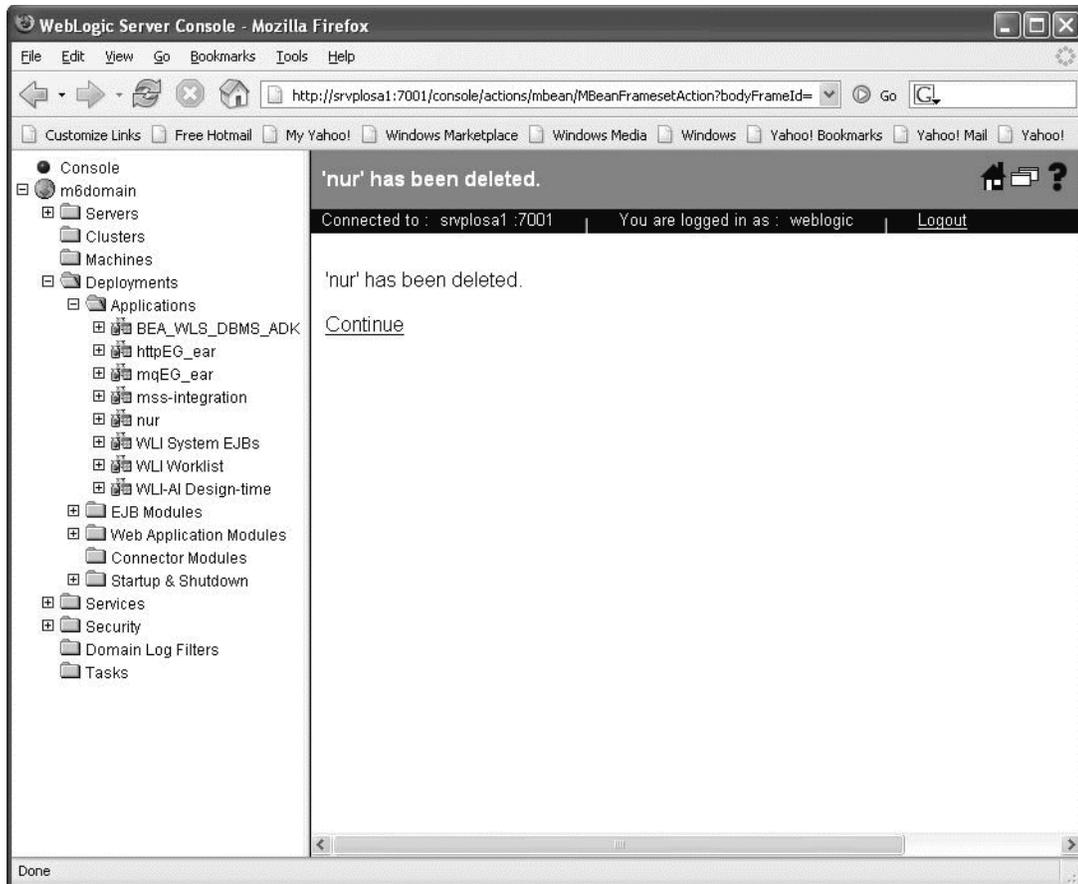
5. Click Continue to remove the mss-integration from the current BEA domain. If you don't click Continue, the application remains in the domain.



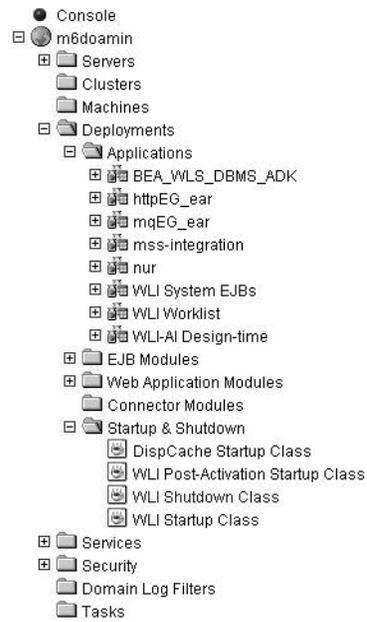
6. Delete the M6 nur application. Select the nur on the left panel, right-click, and select Delete. The following screen appears. Click Yes.



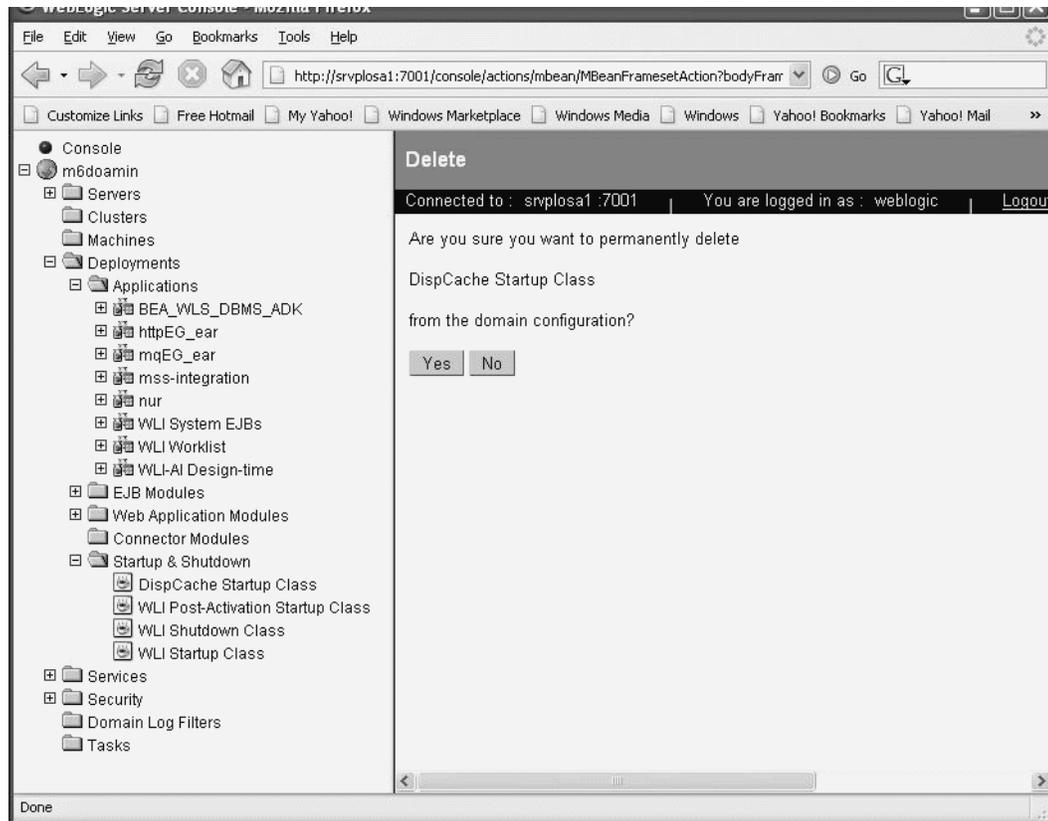
7. Click Continue to remove the nur application from the current BEA domain. If you don't click Continue, the application remains in the domain.



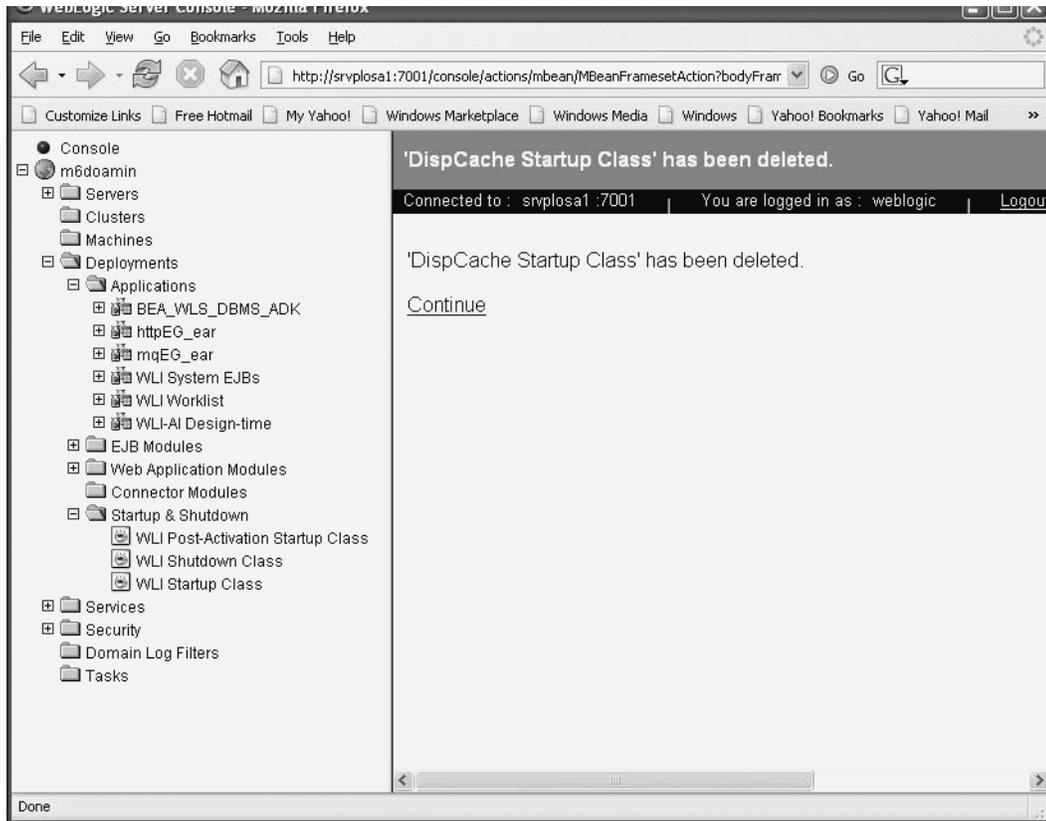
8. Navigate to Startup & Shutdown under Deployments.



9. If DispCache Startup Class appears in the list, right-click DispCache Startup Class and select Delete. The following screen appears. Click Yes.

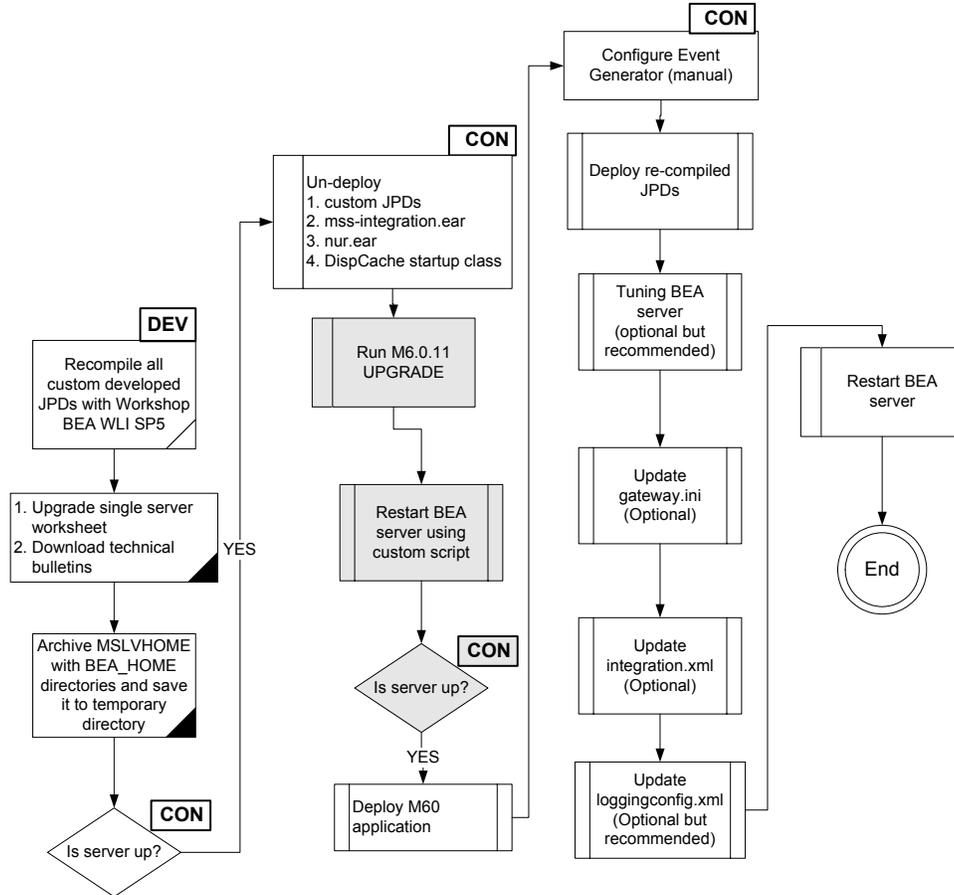


10. Click Continue to delete DispCache Startup Class from the current domain.



### Install M6 on the target server

This procedure completes the highlighted steps shown in the following figure:



**APP:** All application server machines    **CON:** BEA admin console  
**ADM:** BEA admin server machine    **MGM:** All clustered server machines  
**DEV:** Development environment  
**FE:** Front end host machine, such as load balancer or proxy

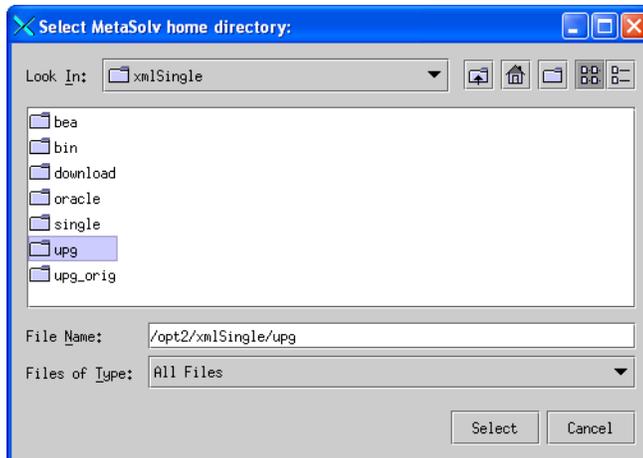
- From the directory where you stored the MetaSolv Solution files downloaded from the Oracle E-Delivery Web site, type the following commands and press Enter to launch the M6 installer:

```
java -jar<release#/build#>_AppServerInstaller.jar
```

For example: `java -jar MSS_R6_0_8_b68_AppServerInstaller.jar`

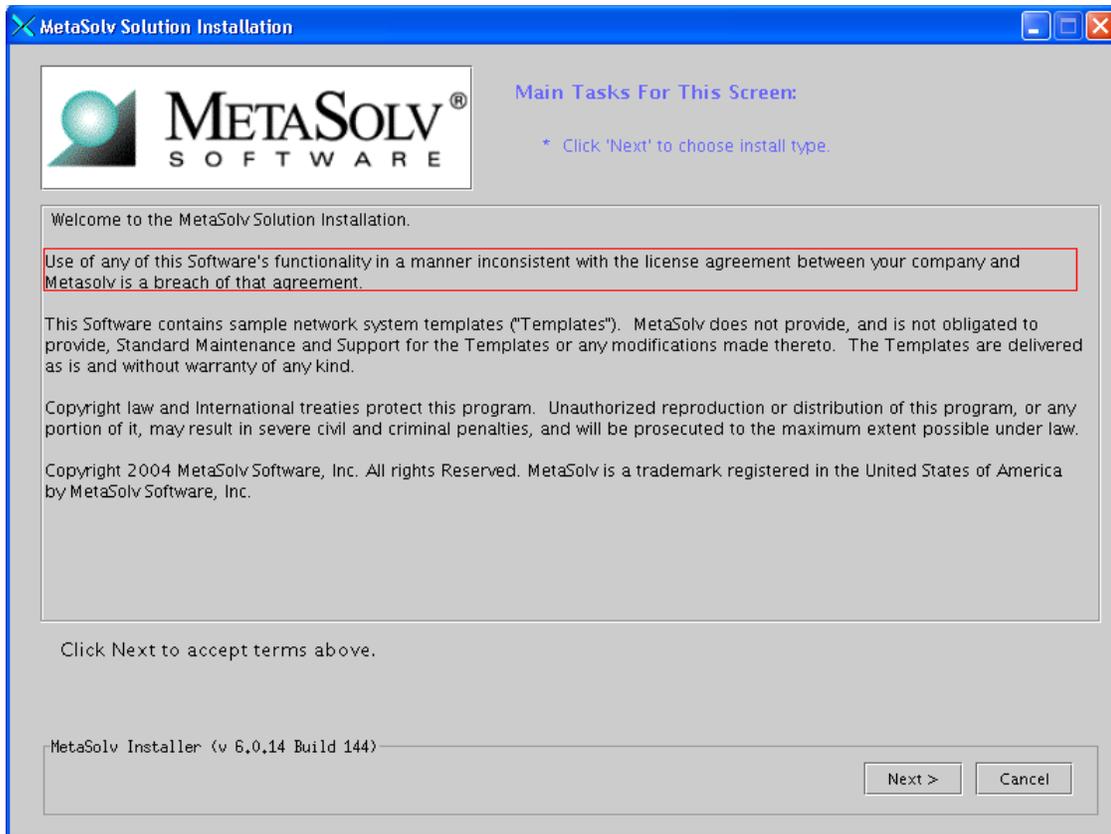


The following window appears. From the Look In drop-down list, click the arrow and select a directory in which installation files can be stored and used during the installation process, then click Select. In this example, the MSLVHOME directory is chosen.



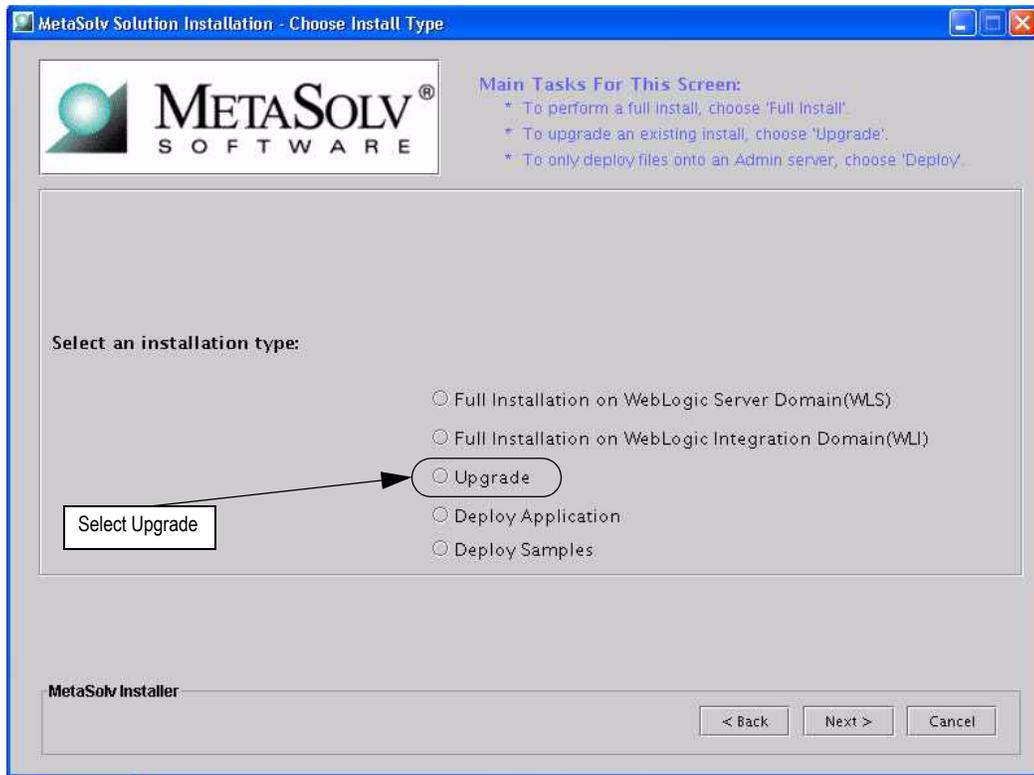
Field name	Worksheet reference number	Example value
File Name (METASOLV_HOME)	XSingle-0090	/opt2/xmlSingle/upg

The following window appears.

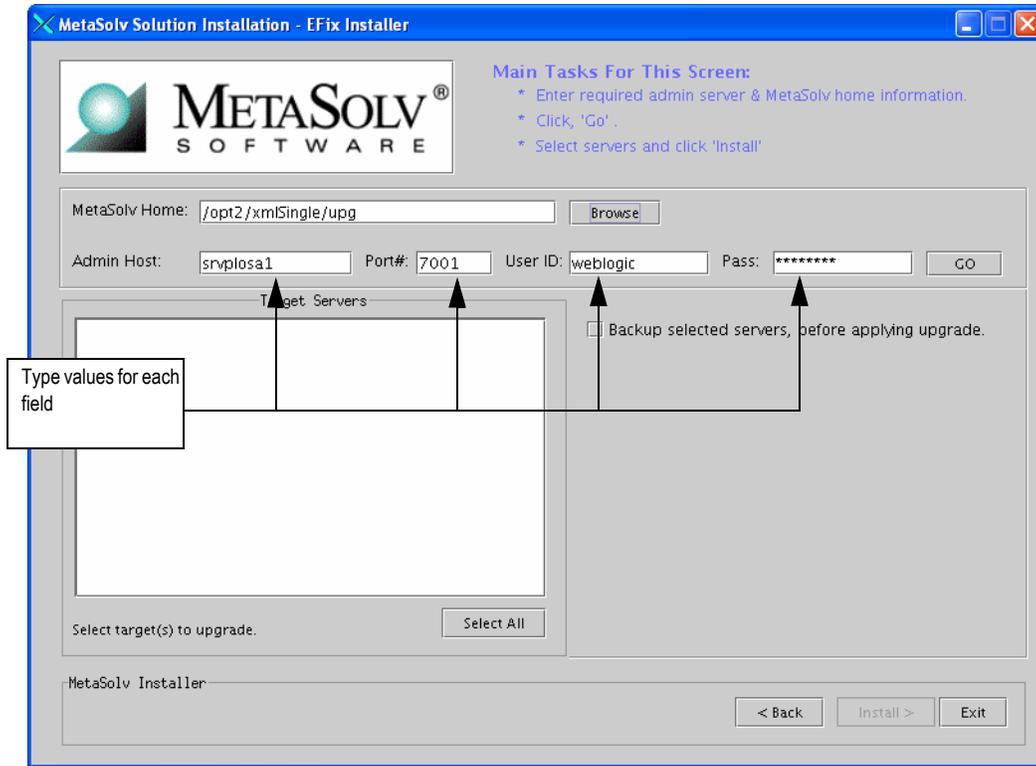


12. Click **Next**.

13. Select **Upgrade** and click **Next**.



- Enter the single server listening address, port, user ID and password information. Then click the GO button.

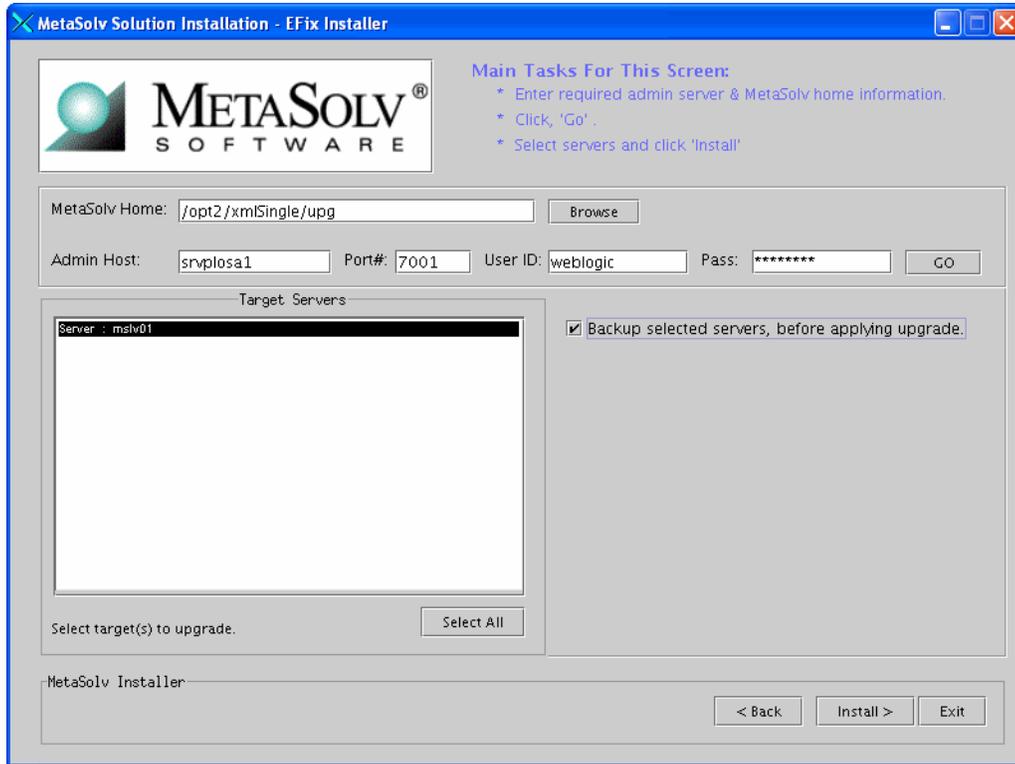


Worksheet reference numbers and example values:

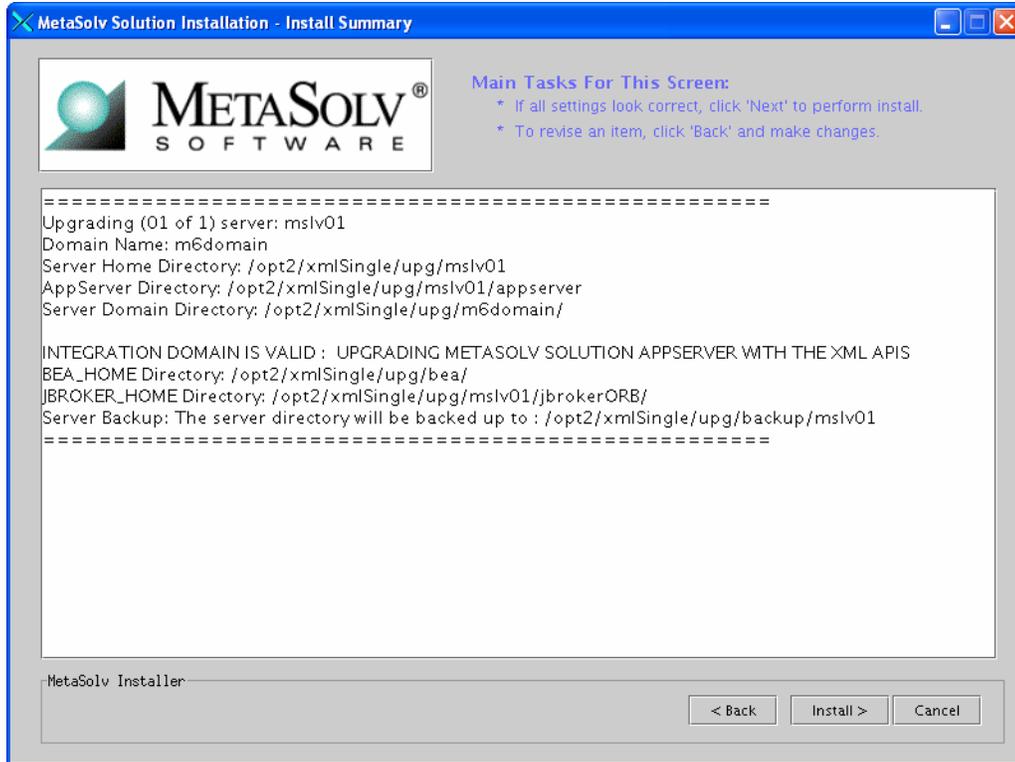
Field name	Worksheet reference number	Example value
Admin Host	XSingle-0160	<i>srvplosa1</i>
Port#	XSingle-0170	<i>7001</i>
User ID	XCOMM-0020	<i>weblogic</i>
Pass	XCOMM-0030	<i>metasolv</i>

When you click **Go**, the installation program queries the Admin Host machine and returns with values you entered during the configuration of the BEA WebLogic domain. The following figure shows the window updated.

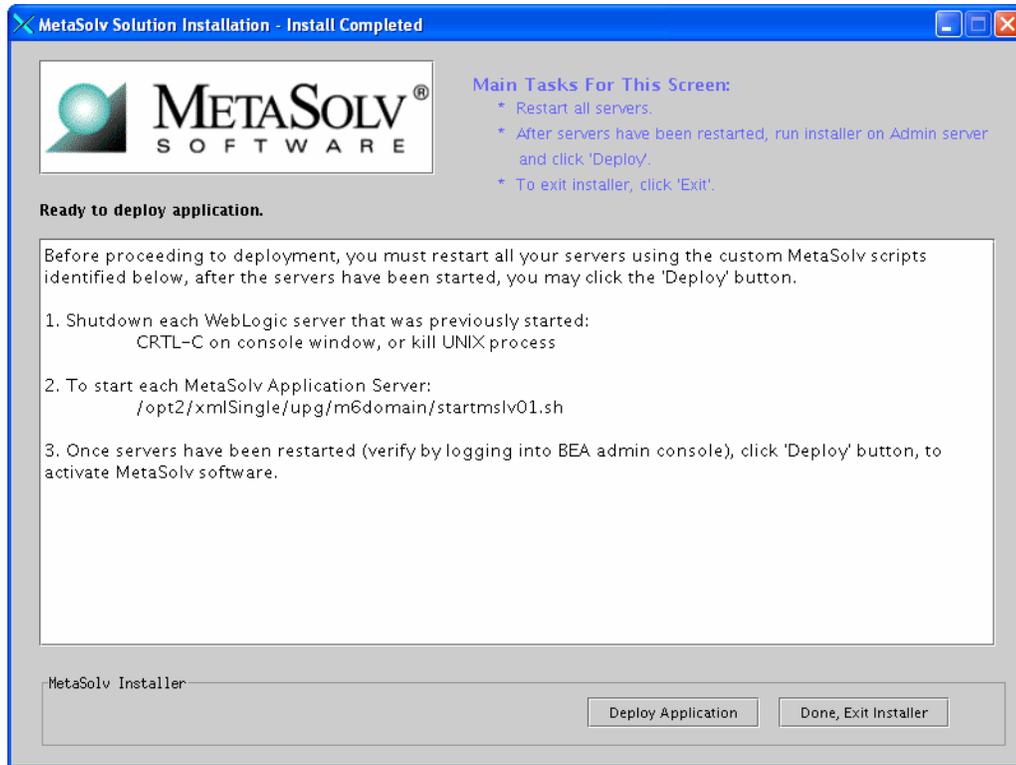
15. The following window appears. Choose a server on the left pane.
16. Check the Backup selected servers checkbox.



17. The installation summary appears. After reviewing the information in the summary for accuracy, click "Install"..



When the installation is complete, the following window appears.



18. The installation program installs the appropriate MetaSolv Solution files to the server. When the files are installed the following window appears.
  - a. Note the location of the startup file for the application server, then minimize the installation program window (do not exit the installation program).

- b. Shut down the server, debug proxy and restart them from the location given by the installation program using the start command listed on the window.

To start the server, navigate to the m6domain directory. At the command prompt, enter the command:

**startmslv01.sh**

To shut down the server, navigate to the m6domain directory. At the command prompt, enter the command:

**stopmslv01.sh**



If you are in Development mode, you should also start the Debug Proxy server using the following command:

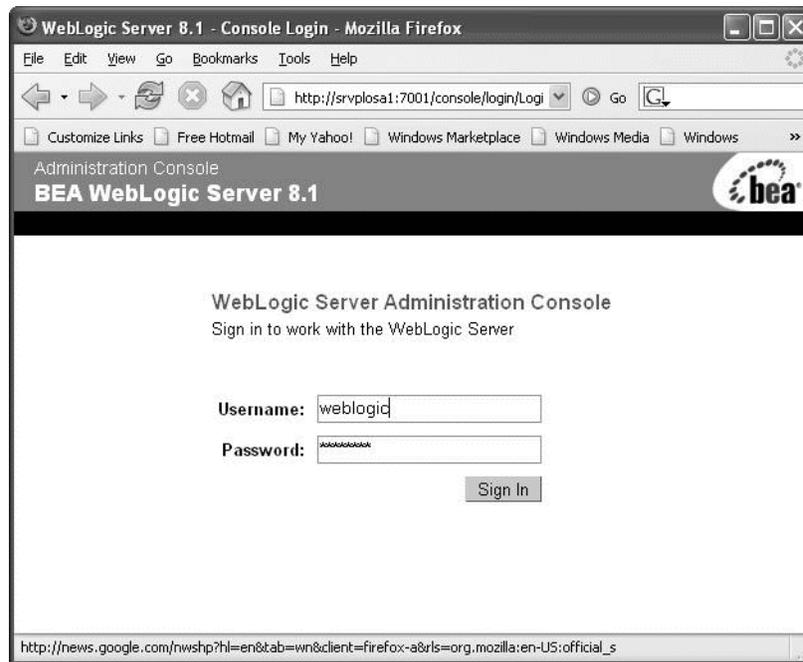
Windows: **startDebugProxy.cmd**

UNIX: **startDebugProxy.sh**

- c. Start the WebLogic Server Administration Console by typing the following information into the **Address** field of Internet Explorer:

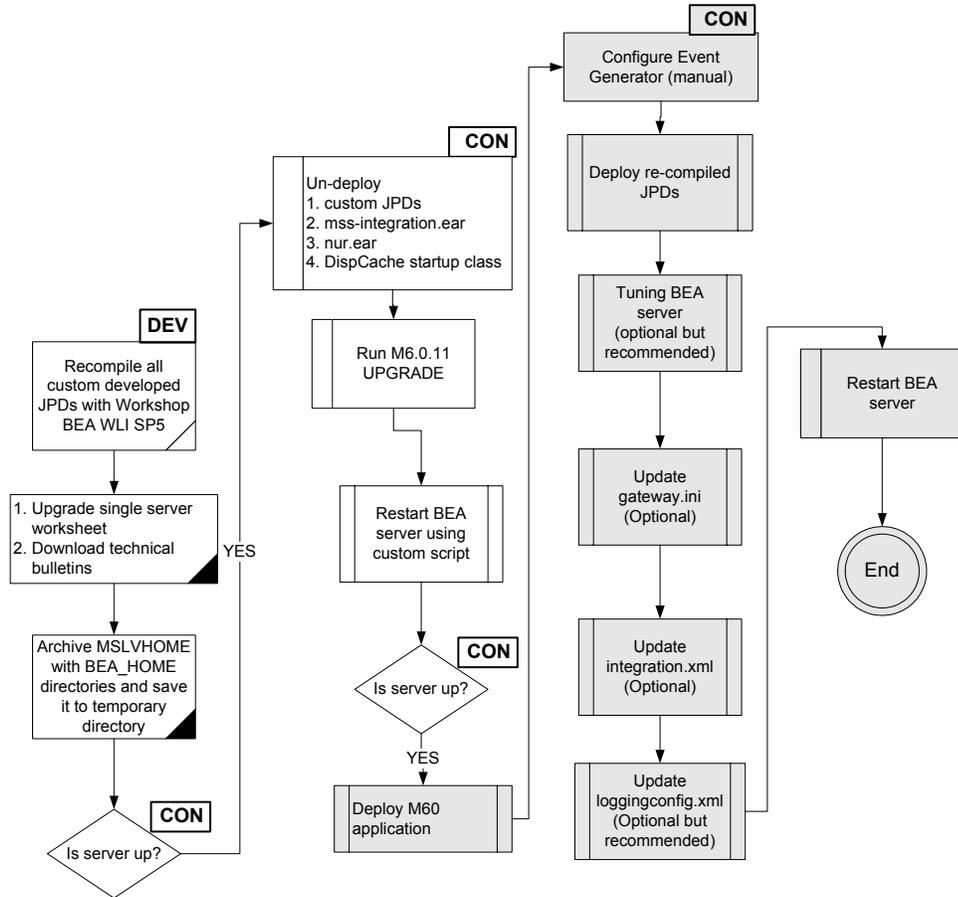
`http://<host_admin:port number>/console`

The following figure shows the logon screen for the example used in this procedure.



### Deploy the M6 application to the target server and tuning

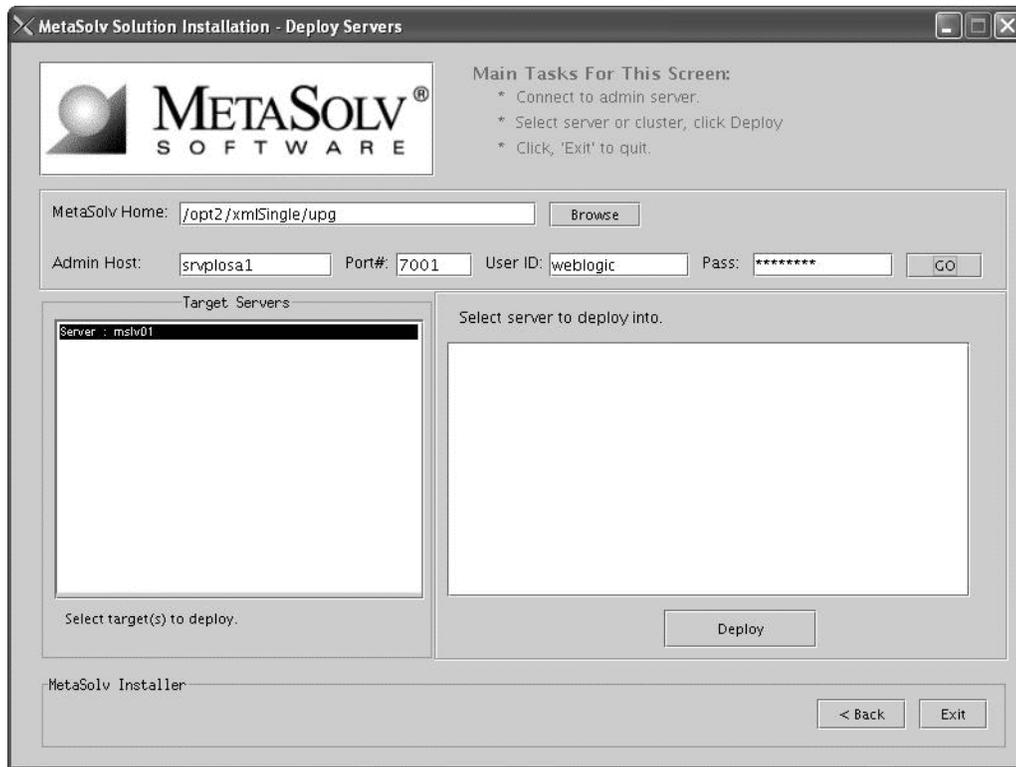
This procedure completes the highlighted steps shown in the following figure:



The following acronyms indicate the machine used in a step in the installation and deployment process:

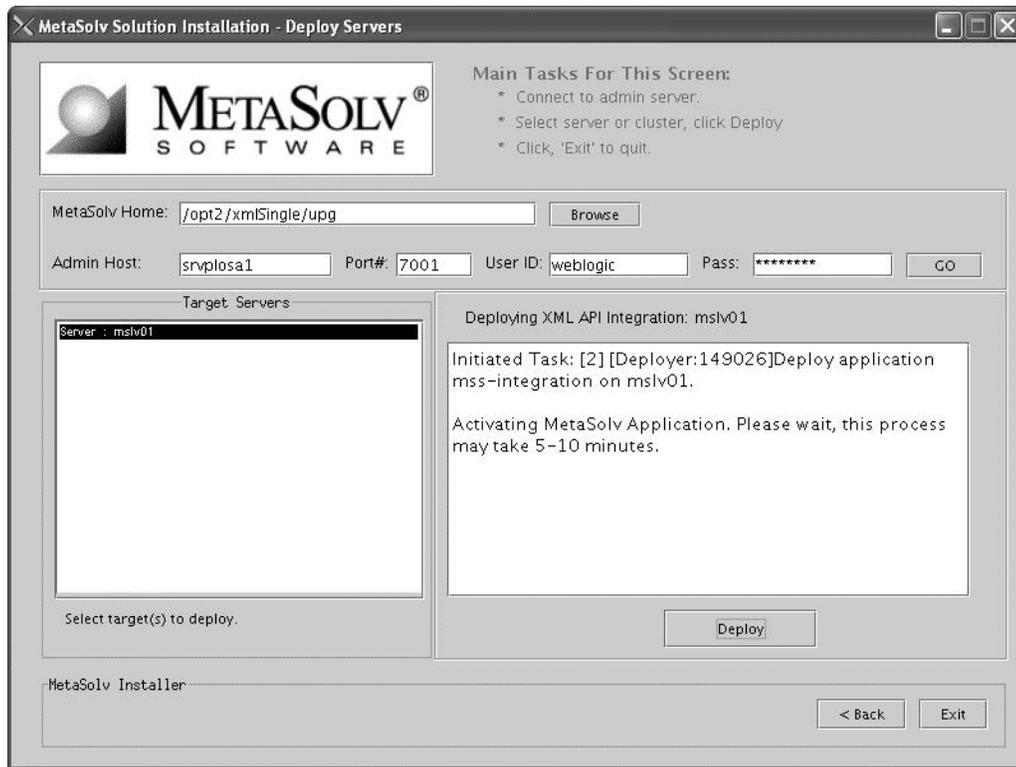
- APP:** All application server machines    **CON:** BEA admin console
- ADM:** BEA admin server machine    **MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

19. After the startup command has been executed and the application server has been started, maximize the installation program window and click **Deploy Application**. The following window appears listing the server or servers you can select for deployment.



This process can take a few moments. If the server is not started, a status appears on the window indicating the installation program is waiting for the server to be in running mode. When the server is in running mode, you can begin the deployment.

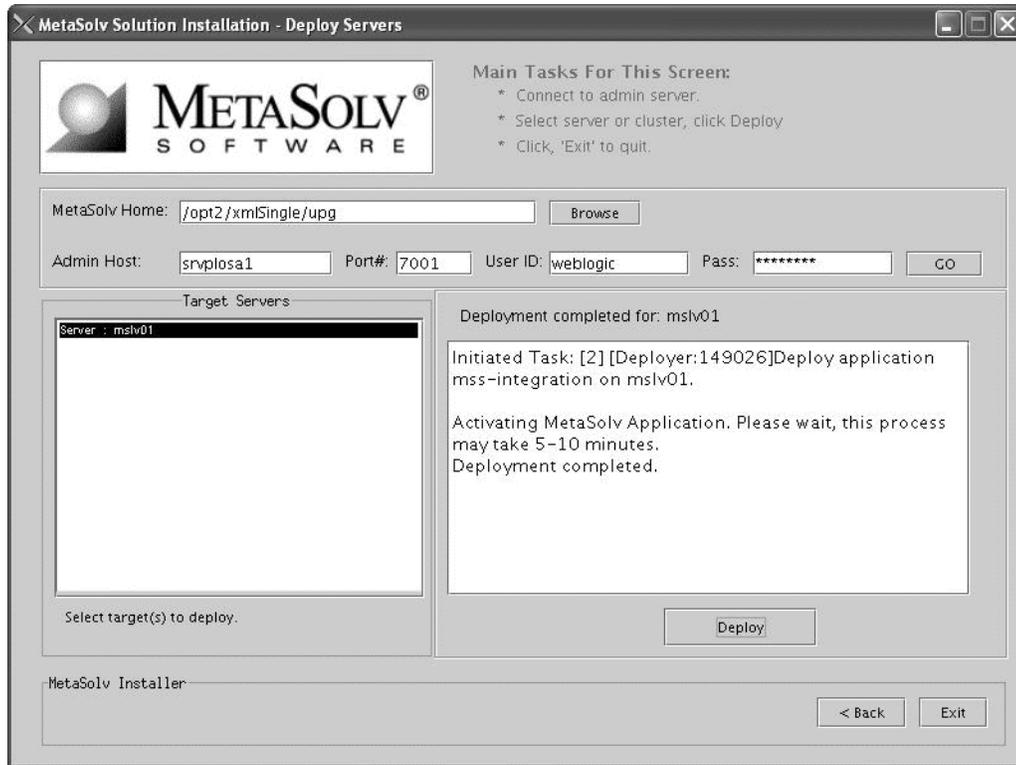
20. Select a server in the Target Servers list box, and click **Deploy**. The deployment process begins. You can follow the progress of the deployment by viewing the text that appears in the right pane of the installation window.



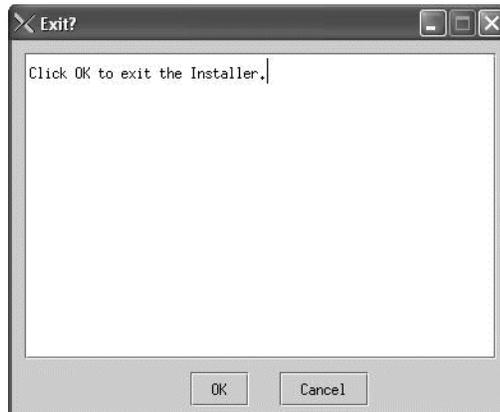
When deployment is done, the following window appears. Click OK.



21. Click Exit.



22. Click OK to exit the M6 installer.





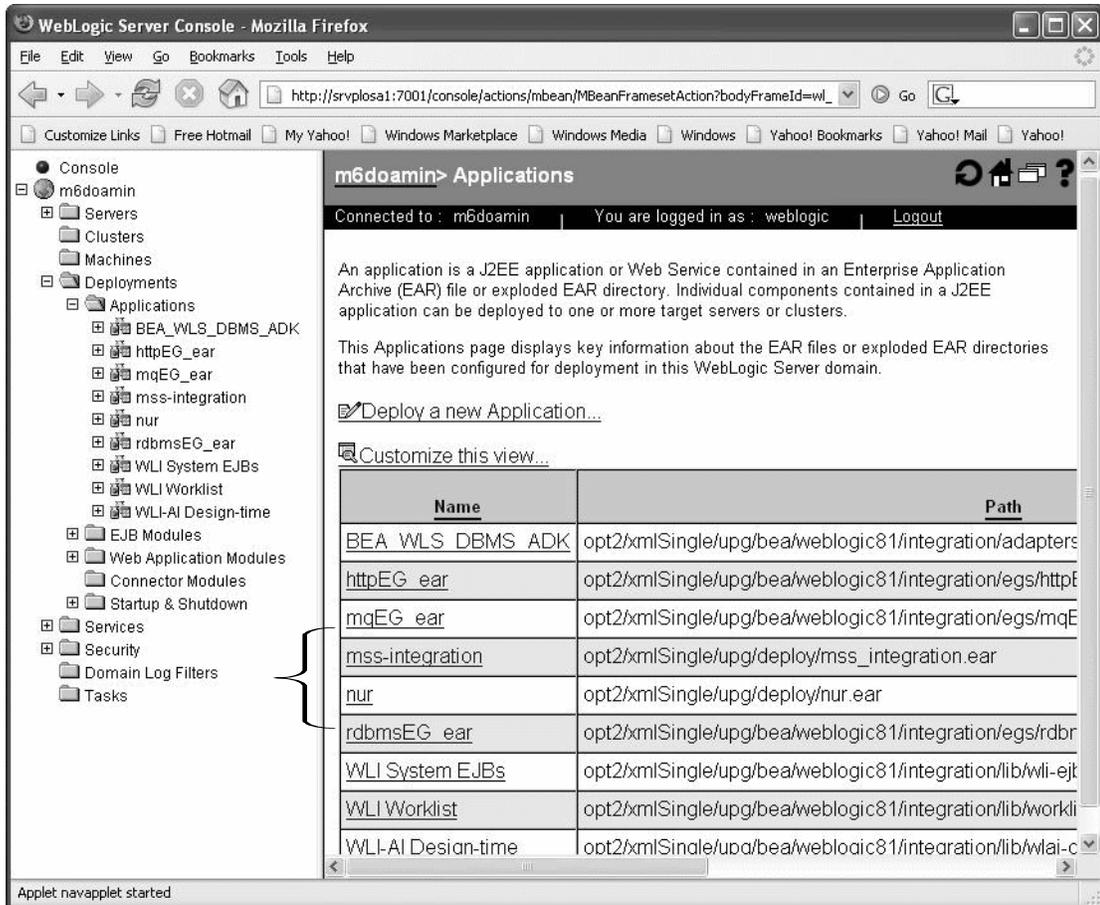
If you encounter the following error in the <serverName>.mss.log file after you start a server, refer to the Technical Bulletin titled *Prodfixsql Error: Failure to grant table creation privileges for APP\_MSLV* for information on how to resolve this error. To locate this bulletin, click the Knowledge tab on the Oracle MetaLink Web site (<https://metalink.oracle.com>).

```
<Alert> <JMS> <BEA-040205> <JMSServer "plugging_auto_1". An error
occurred while trying to do a SQL SELECT on table
"pluginStore_auto_1JMSState". Check privileges on this table. You
may need to specify [schema.[catalog.]] in your configured
prefix.>
```

```
<Alert> <JMS> <BEA-040052> <JMSServer "plugging_auto_1" store
failed to open java.io.IOException: JMS JDBC store, connection
pool = <MSLVNoneTxPool>, prefix = <pluginStore_auto_1>: flush
failed
```

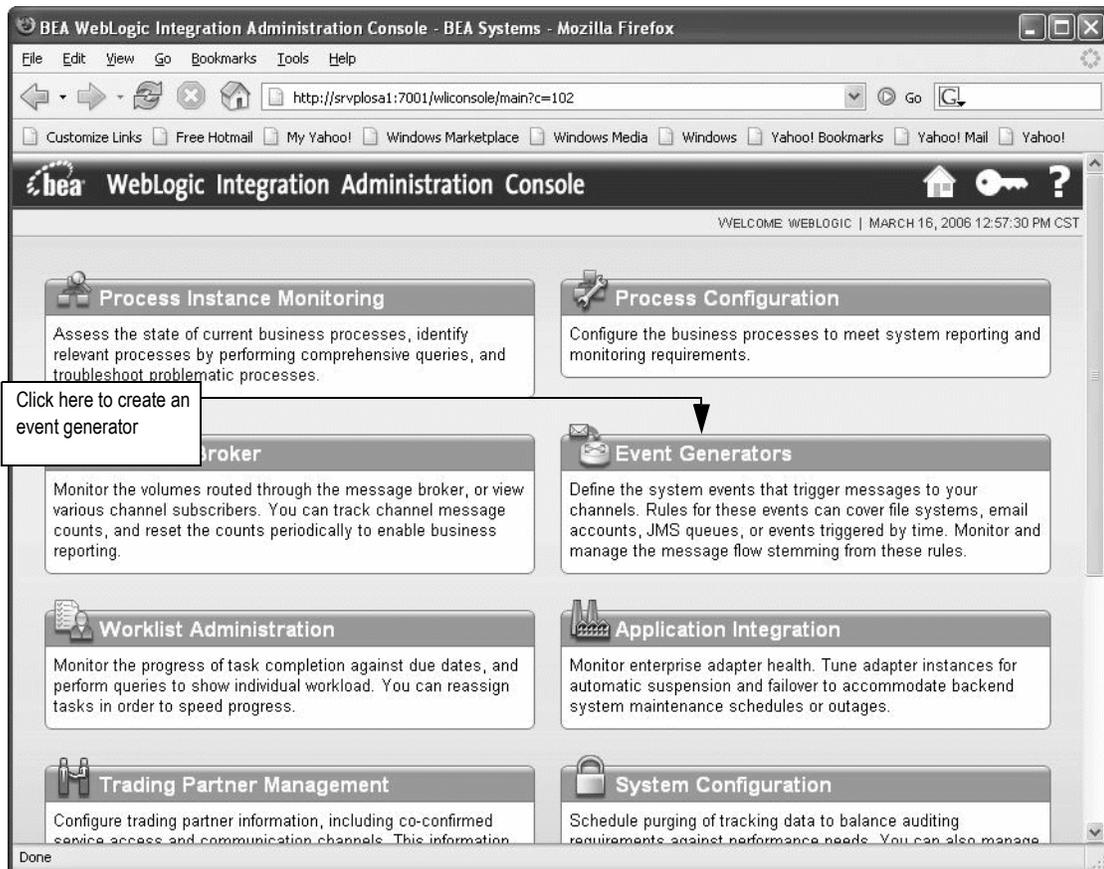
```
java.sql.SQLException: ORA-00942: table or view does not exist
```

23. Verify the M6 deployment by navigating to Applications under Deployments. You should see nur and mss-integration applications listed.

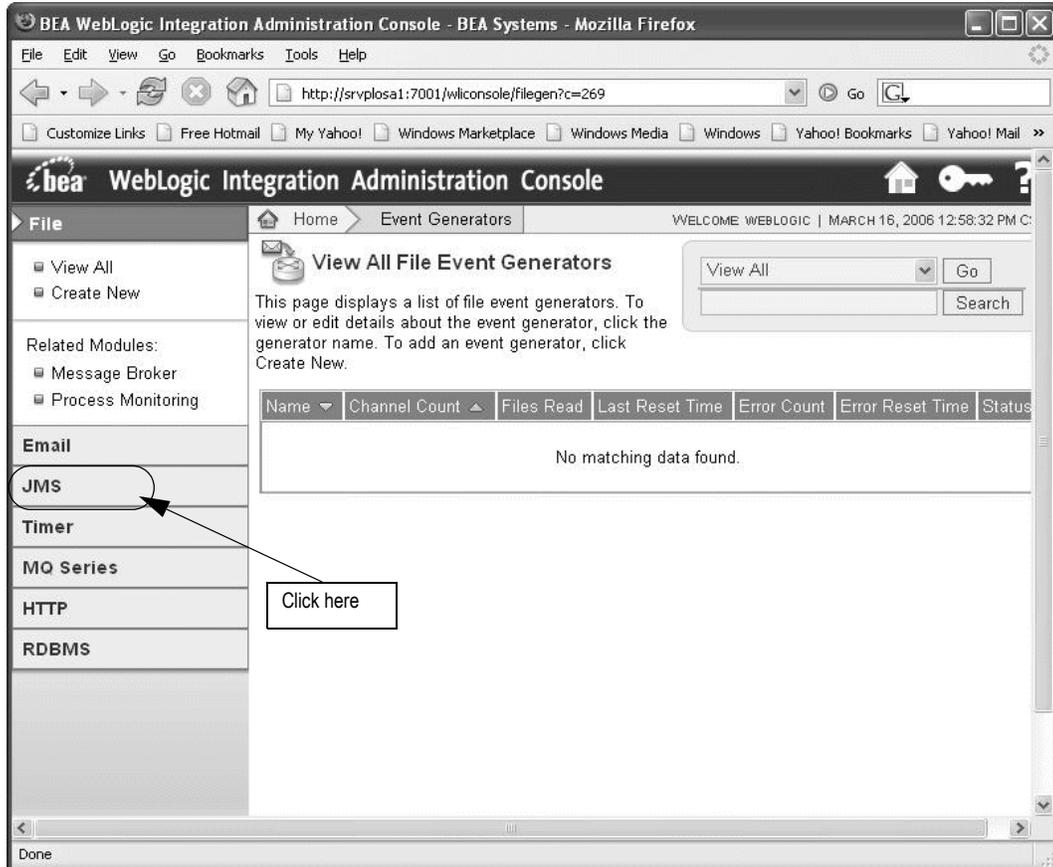


24. Configure JMS Event Generator.
  - a. Access the WebLogic Integration Administration Console through the following URL: `http://<host_admin:port number>/wliconsole`.

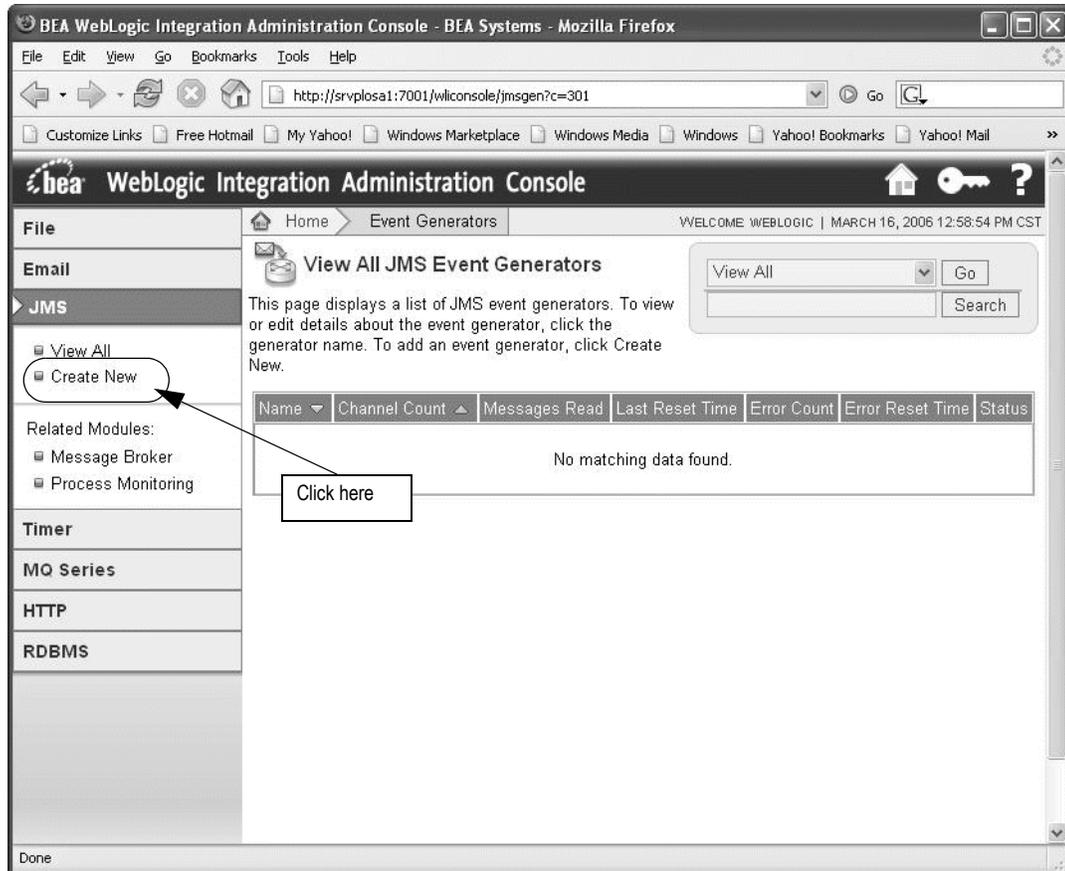
The following figure shows the initial console window that appears.



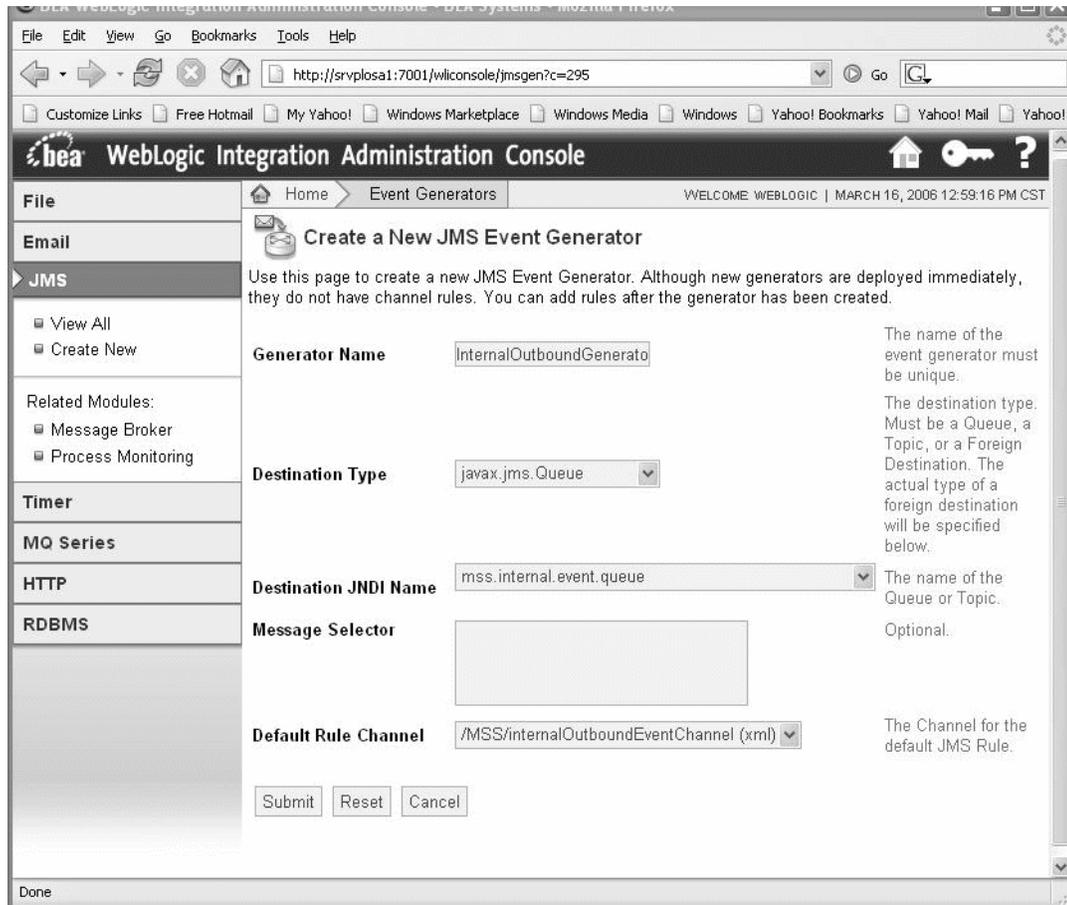
b. Click a JMS Event Generator.



- c. On the left panel, click **JMS**; then on the expanded view under JMS, click **Create New**.



d. The following information appears in the right panel



- ◆ Enter the following values on the Create a New JMS Event Generator window:

**Generator Name:** InternalOutboundGenerator

**Destination Type:** javax.jms.Queue

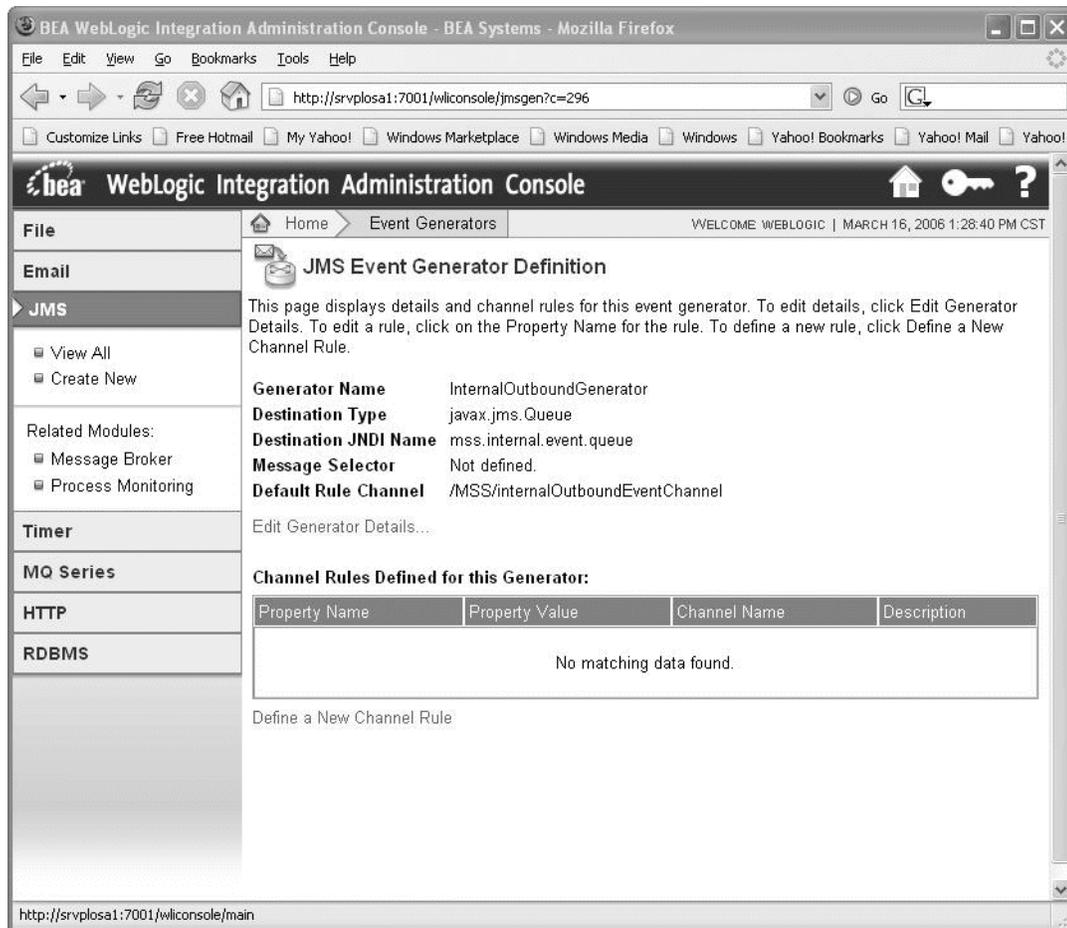
**Destination JNDI Name:** mss.internal.event.queue

**Message Selector:** Leave this field blank.

**Default Rule Channel:** /MSS/internalOutboundEventChannel (xml)

- ◆ Click **Submit**.

The following figure shows the summary that appears when the event generator is created.



To return to the main WebLogic Integration Administration Console window, click **Home** in the breadcrumbs listed at the top of the pane. See the previous figure for information on the **Home** link to click.

For BEA server tuning, see “[Appendix F: Tuning servers for performance](#)”.

For updating configuration files, see “[Appendix G: Configuration Files](#)”.

## Clustered server upgrade basic steps

### Before you start

Collect the existing cluster environment using [“Appendix C: Planning worksheets”](#).

### High-level upgrade process

- ◆ Un-deploy custom developed JPDs.
- ◆ Un-deploy M6 related applications.
- ◆ Modify JDBC connections and datasources using BEA console.
- ◆ Upgrade domain to BEA WebLogic Platform 8.1 SP5.
- ◆ Install and deploy MetaSolv Solution 6.0.15.
- ◆ Install and deploy M6 related applications.
- ◆ Re-compile custom developed JPDs with jdk142\_08.
- ◆ Deploy custom developed JPDs.
- ◆ Update/Restore configuration files.

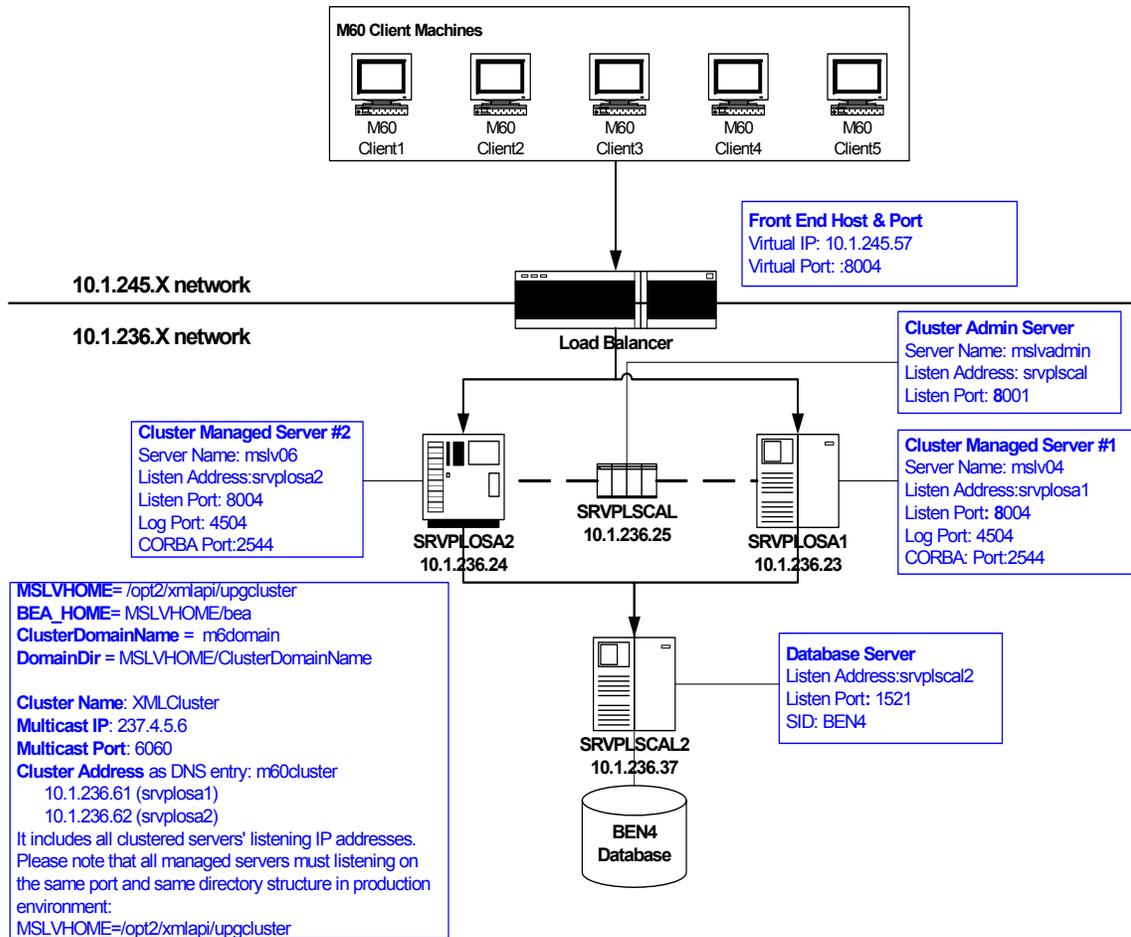
The following sections describe each of these steps. Because the process of upgrading to M6.0.15 differs based on the release you currently have installed, refer to one of the following sections:

- ◆ [“Clustered server upgrade from M6.0.3 - M6.0.7 to M6.0.15”](#) on page 291
- ◆ [“Clustered server upgrade from M6.0.8 - M6.0.14 to M6.0.15”](#) on page 352

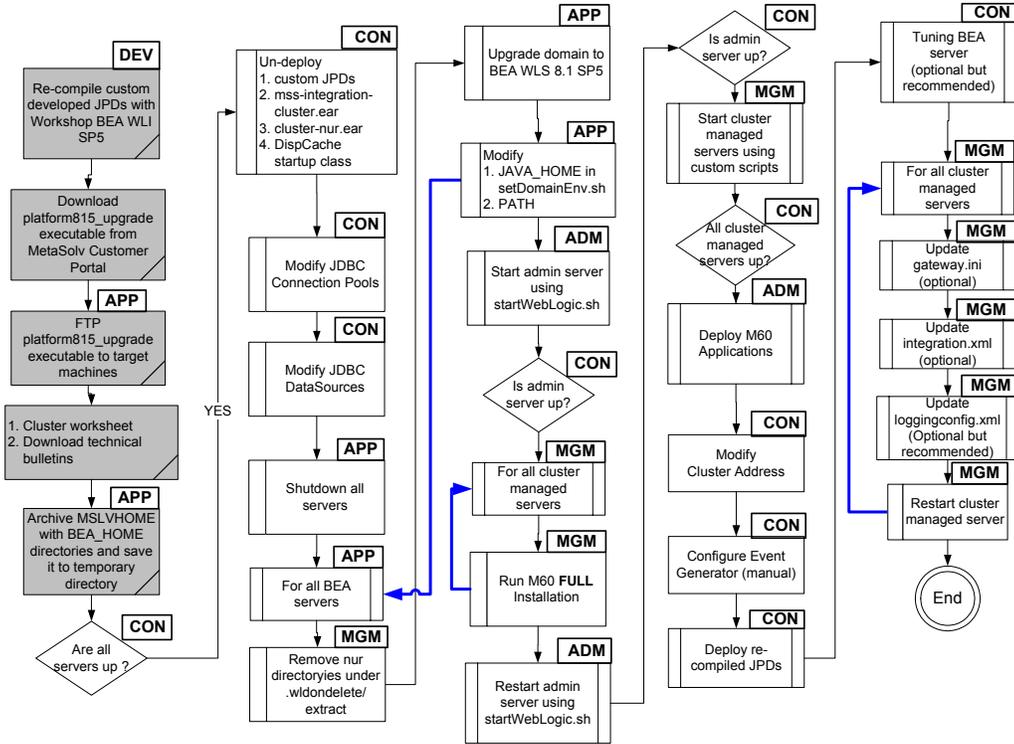
## Clustered server upgrade from M6.0.3 - M6.0.7 to M6.0.15

Follow the procedures in this section if you currently have M6.0.3, M6.0.4, M6.0.5, M6.0.6, or M6.0.7 installed and you are upgrading to M6.0.15.

The following figure shows the example configuration that will be used in the upgrade scenario.



The highlighted steps shown in the following figure describe the process to prepare for an upgrade.



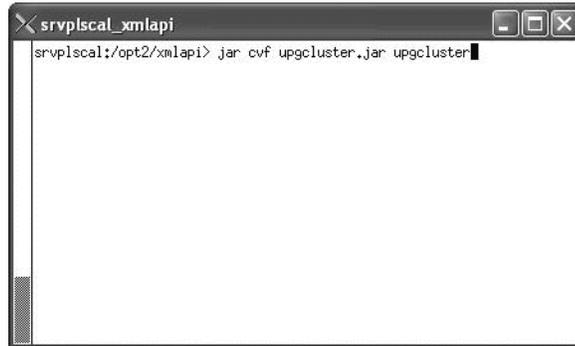
The following acronyms indicate the machine used in a step in the installation and deployment process:

- APP:** All application server machines
- CON:** BEA admin console
- ADM:** BEA admin server machine
- MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

Figure 18: Upgrading a clustered configuration

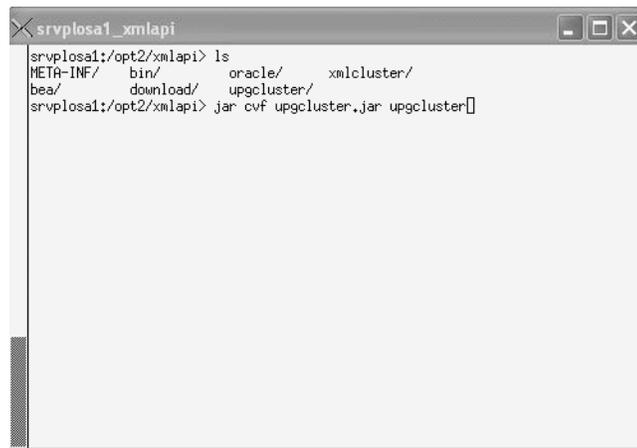
### Archive the current M6 domain and application

1. Archive the M6 environment on the admin server machine. In this example, MSLVHOME=/opt2/xmlapi/upgcluster. Archive the BEA\_HOME directory if it is not under the MSLVHOME directory.



```
srvplscal_xmlapi
srvplscal:/opt2/xmlapi> jar cvf upgcluster.jar upgcluster
```

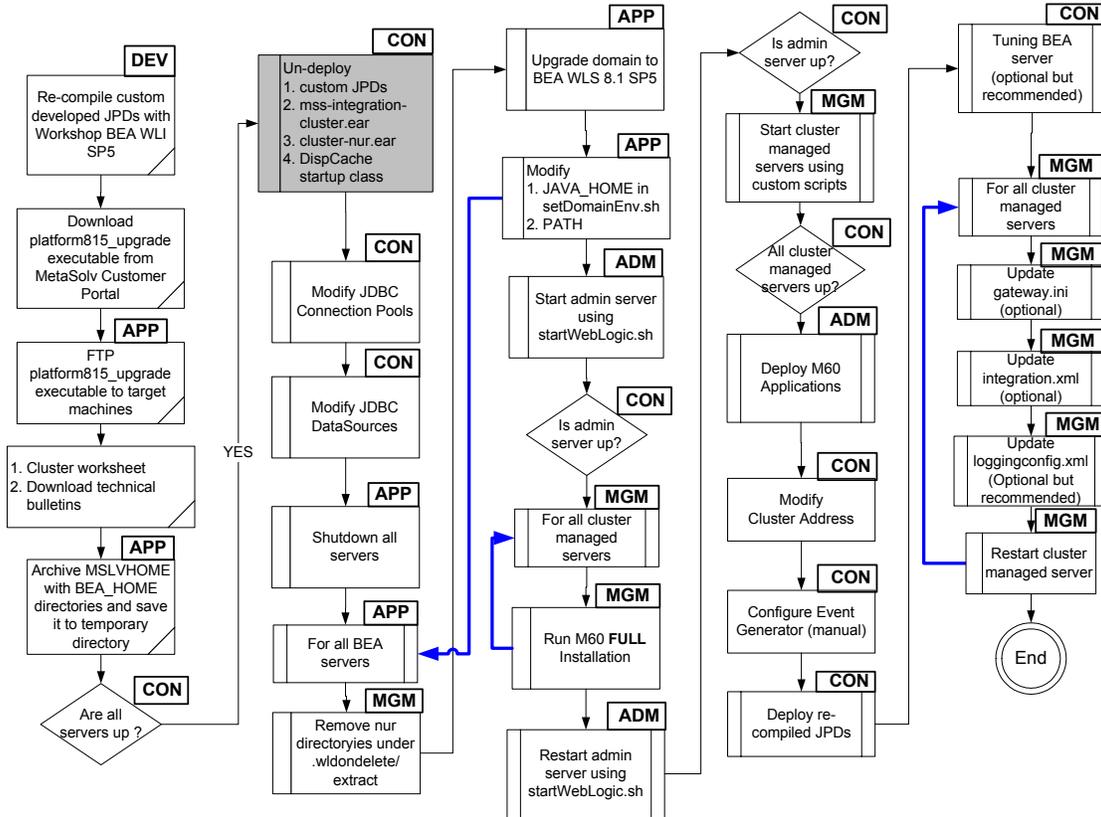
2. Archive the M6 environment on all clustered server machines. This concludes the archiving for the current environment. The example shows archiving one of the clustered servers, mslv04 on srvplosa1.



```
srvplosa1_xmlapi
srvplosa1:/opt2/xmlapi> ls
META-INF/  bin/      oracle/   xmlcluster/
bea/       download/ upgcluster/
srvplosa1:/opt2/xmlapi> jar cvf upgcluster.jar upgcluster
```

### Delete existing applications

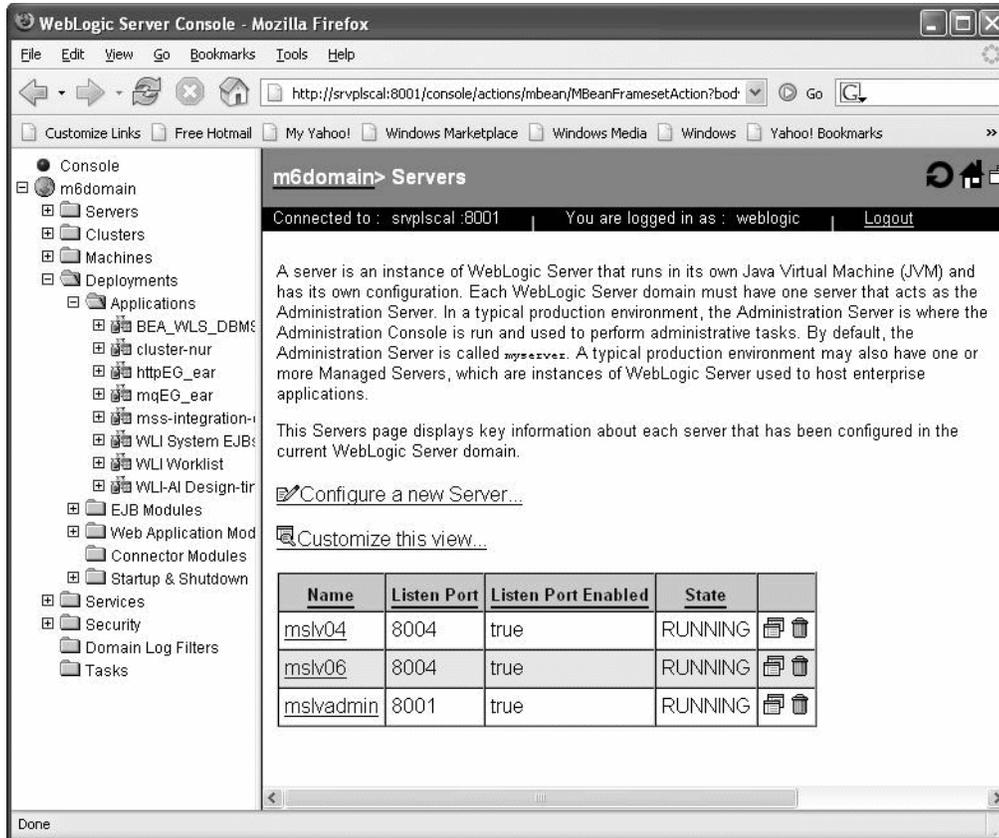
This procedure completes the highlighted steps shown in the following figure:



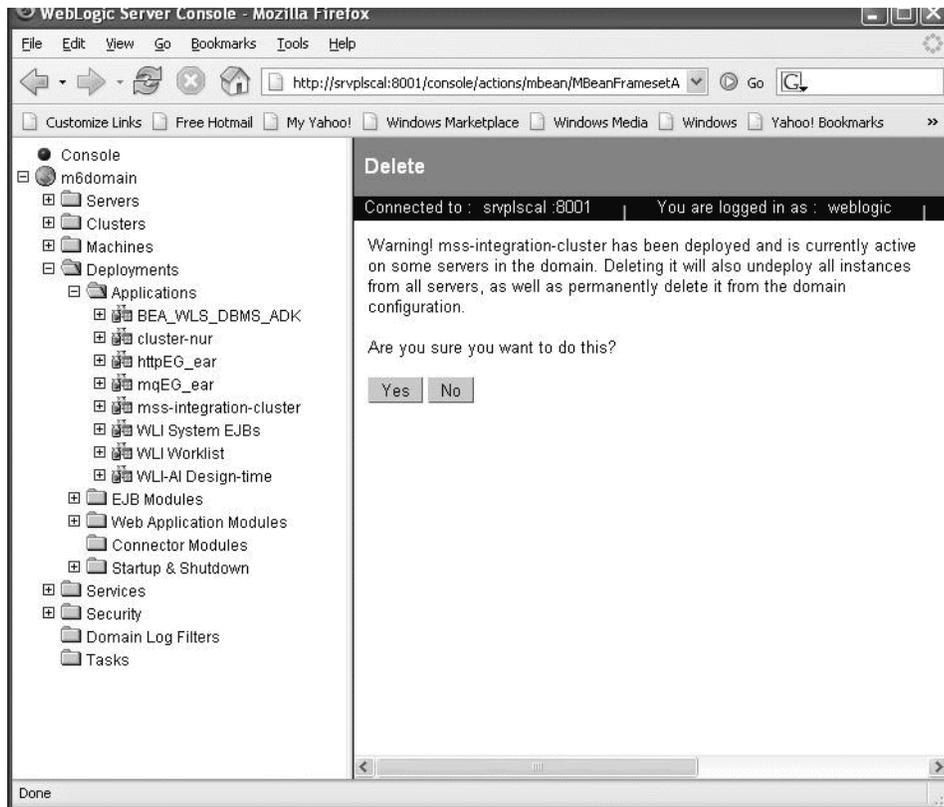
The following acronyms indicate the machine used in a step in the installation and deployment process:

- APP:** All application server machines
- CON:** BEA admin console
- ADM:** BEA admin server machine
- MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

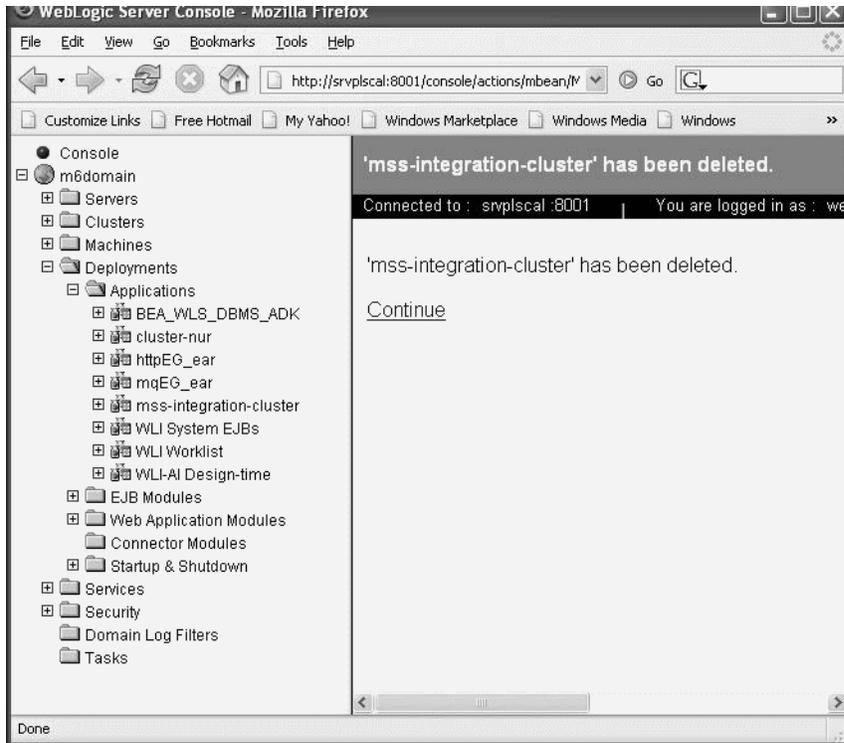
3. Access the BEA console and ensure all clustered servers are in running state by navigating to Domain -> Servers.



4. Delete the mss-integration-cluster application by navigating to Deployments -> Applications. Right-click the mss-integration-cluster application and select Delete. The following window appears. Click Yes.

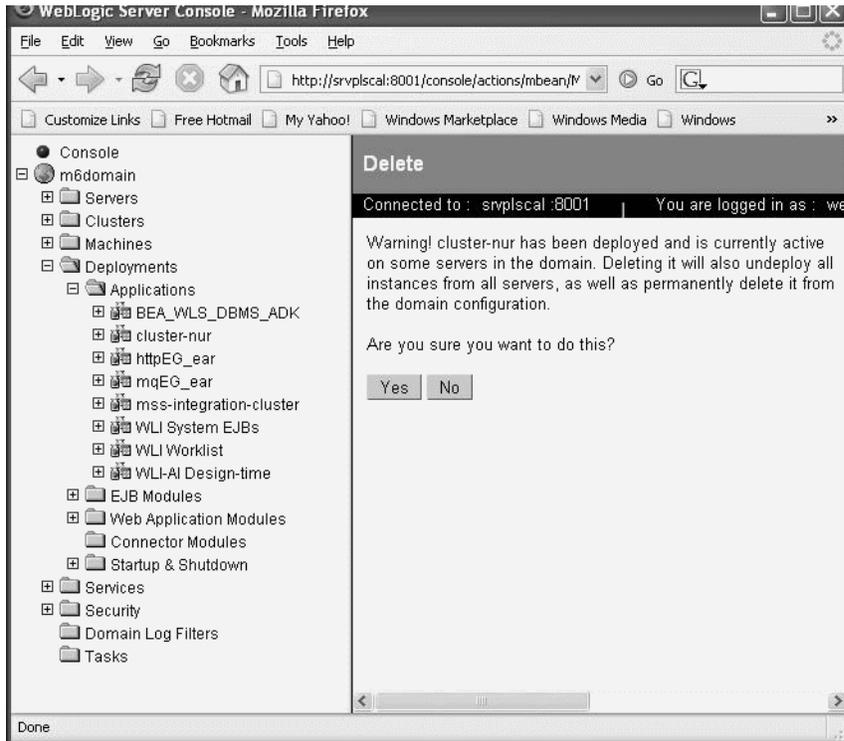


5. Click Continue to remove the mss-integration-cluster from the domain configuration. If this step is not completed, the application is not removed from the domain.

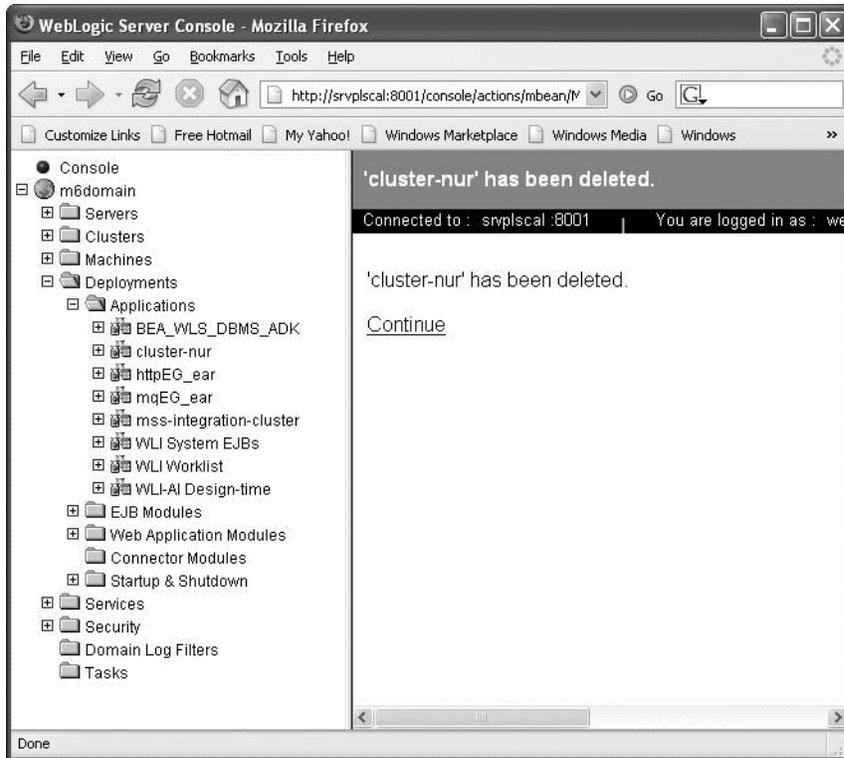


6. Delete the cluster-nur application by navigating to Deployments -> Applications. Right-click the cluster-nur application and select Delete. The following window appears. Click Yes.

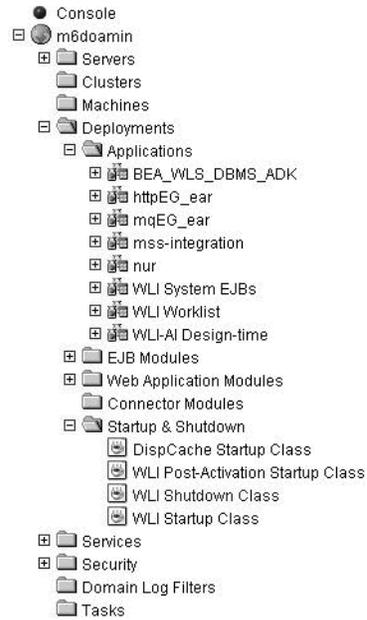
If the LSR or ASR application was deployed on the cluster, remove it before deleting the cluster-nur application by following the same steps.



7. Click Continue to remove the cluster-nur from the domain configuration. If this step is not completed, the application is not removed from the domain

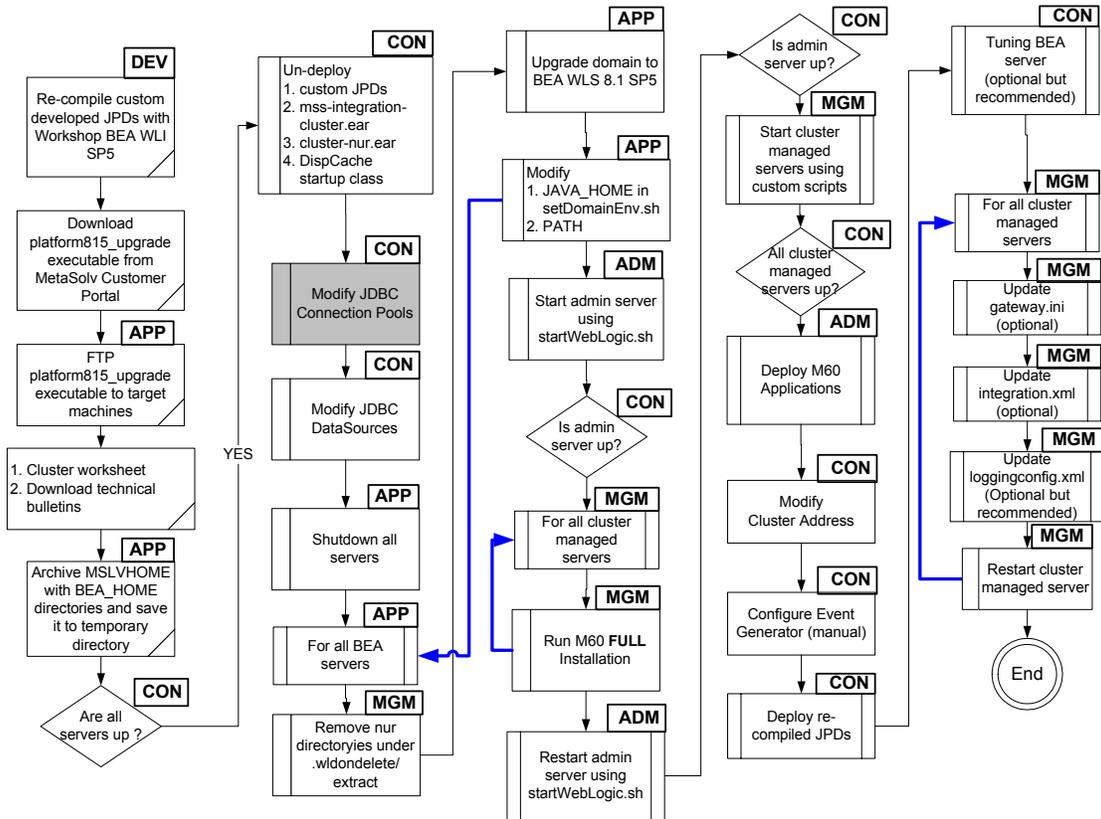


8. Navigate to Deployments -> Startup & Shutdown. If DispCache Startup class is present, remove it.



### Modify the Oracle driver for JDBC connection pools

This procedure completes the highlighted step shown in the following figure:



The following acronyms indicate the machine used in a step in the installation and deployment process:  
**APP:** All application server machines    **CON:** BEA admin console  
**ADM:** BEA admin server machine    **MGM:** All clustered server machines  
**DEV:** Development environment  
**FE:** Front end host machine, such as load balancer or proxy

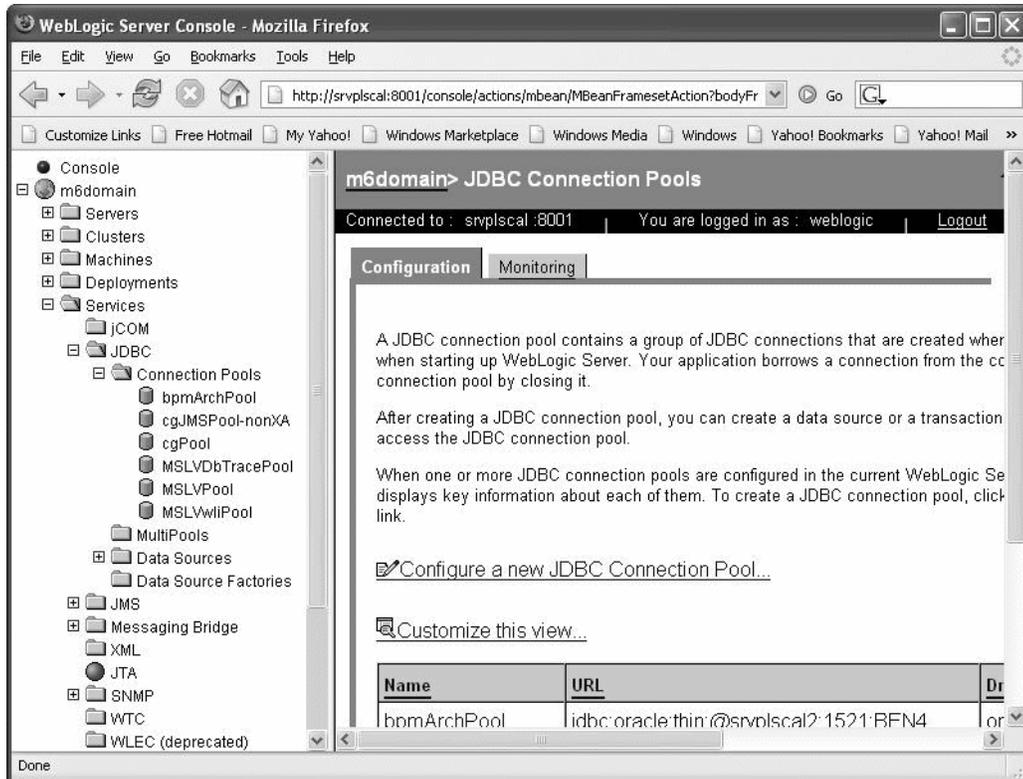
The Oracle driver for the following JDBC connection pools will be changed.

- ◆ bpmArchPool
- ◆ cgPool
- ◆ MSLVwliPool

The new Oracle driver will be used for the above pools is:

**oracle.jdbc.xa.client.OracleXADataSource**

- From the BEA console, navigate to JDBC connection pools from Domain -> Services -> JDBC -> Connection Pools. The following window appears.



- Change the bpmArchPool Oracle driver. Click the bpmArchPool -> Configuration tab -> General subtab. Change the Driver Classname to **oracle.jdbc.xa.client.OracleXADataSource**

m6domain> JDBC Connection Pools> bpmArchPool

Connected to : srvplscal :8001 | You are logged in as : weblogic | Logout

Configuration | Target and Deploy | Monitoring | Control | Testing | Notes

General | Connections

This page allows you to define the general configuration of this JDBC connection pool.

**Name:** bpmArchPool  
The name of this JDBC connection pool.

**URL:** jdbc:oracle:thin:@srvplscal2:1521:  
The URL of the database to connect to. The format of the URL varies by JDBC driver.

**Driver Classname:** oracle.jdbc.xa.client.OracleXADataSource  
The full package name of JDBC driver class used to create the physical database connections in the connection pool. (Note that this driver class must be in the classpath of any server to which it is deployed.)

**Properties:** user=app\_int  
The list of properties passed to the JDBC driver that are used to create physical database connections. For example: server=dbserver1. List each property=value pair on a separate line.

**Password:**   
**Confirm Password:**   
The database account password used in the physical database connection.

**Open String Password:**   
**Confirm Open String Password:**   
The password for the XA open string. (If set, this value overrides a password in an open string in Properties.)

Apply

11. Change the cgPool Oracle driver. Click the bpmArchPool -> Configuration tab -> General subtab. Change the Driver Classname to **oracle.jdbc.xa.client.OracleXADataSource**

m6domain> JDBC Connection Pools> cgPool

Connected to : srvplscal :8001 | You are logged in as : weblogic | Logout

Configuration | Target and Deploy | Monitoring | Control | Testing | Notes

General | Connections

This page allows you to define the general configuration of this JDBC connection pool.

**Name:** cgPool  
The name of this JDBC connection pool.

**URL:** jdbc:oracle:thin:@SRVPLSCAL2:1  
The URL of the database to connect to. The format of the URL varies by JDBC driver.

**Driver Classname:** oracle.jdbc.xa.client.OracleXADataSource  
The full package name of JDBC driver class used to create the physical database connections in the connection pool. (Note that this driver class must be in the classpath of any server to which it is deployed.)

**Properties:** user=app\_int  
The list of properties passed to the JDBC driver that are used to create physical database connections. For example: server=dbserver1. List each property=value pair on a separate line.

**Password:** [masked]  
**Confirm Password:** [masked]  
The database account password used in the physical database connection.

**Open String Password:** [empty]  
**Confirm Open String Password:** [empty]  
The password for the XA open string. (If set, this value overrides a password in an open string in Properties.)

Apply

- Change the MSLVwliPool Oracle driver. Click the bpmArchPool -> Configuration tab -> General subtab. Change the Driver Classname to **oracle.jdbc.xa.client.OracleXADataSource**

m6domain> JDBC Connection Pools> MSLVwliPool

Connected to : srvplscal :8001 | You are logged in as : weblogic | Logout

Configuration | Target and Deploy | Monitoring | Control | Testing | Notes

General | Connections

This page allows you to define the general configuration of this JDBC connection pool.

**Name:** MSLVwliPool  
The name of this JDBC connection pool.

**URL:** jdbc:oracle:thin:@srvplscal2:1521:  
The URL of the database to connect to. The format of the URL varies by JDBC driver.

**Driver Classname:** oracle.jdbc.xa.client.OracleXADataSource  
The full package name of JDBC driver class used to create the physical database connections in the connection pool. (Note that this driver class must be in the classpath of any server to which it is deployed.)

**Properties:** user=app\_int  
The list of properties passed to the JDBC driver that are used to create physical database connections. For example: server=dbserver1. List each property=value pair on a separate line.

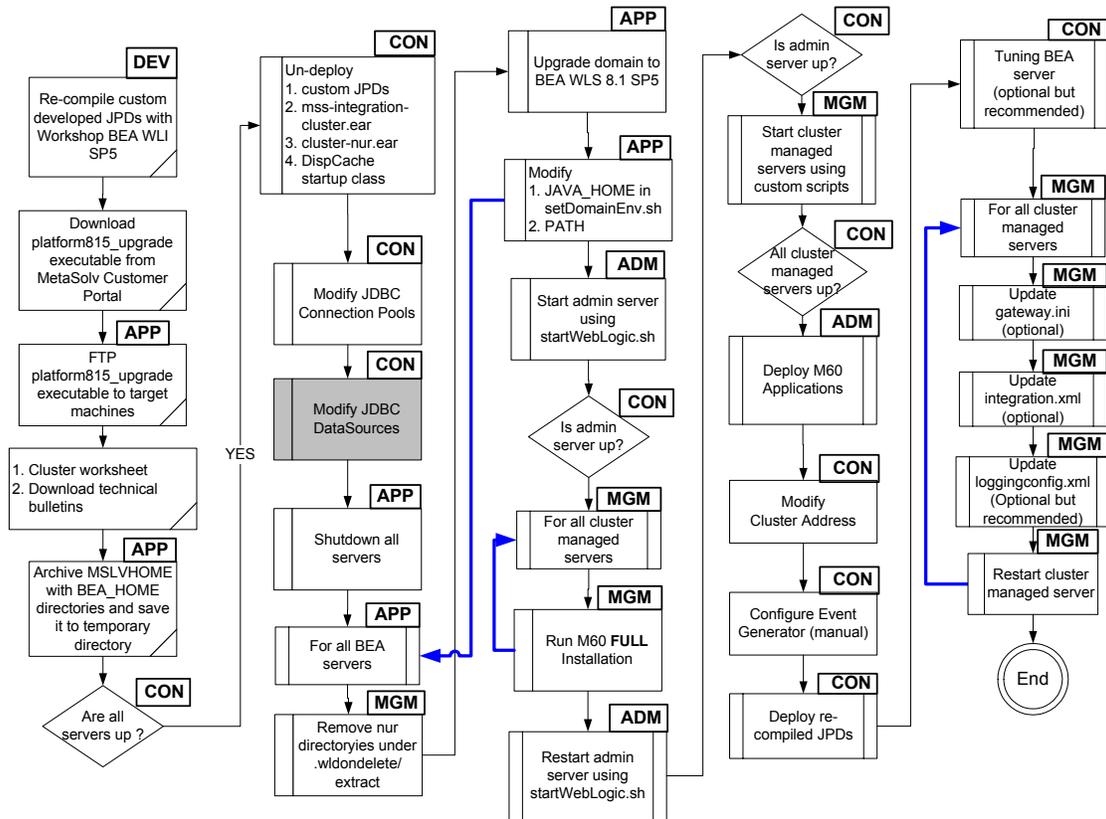
**Password:**   
**Confirm Password:**   
The database account password used in the physical database connection.

**Open String Password:**   
**Confirm Open String Password:**   
The password for the XA open string. (If set, this value overrides a password in an open string in Properties.)

Apply

### Modify pool names for JDBC datasources

This procedure completes the highlighted step shown in the following figure:



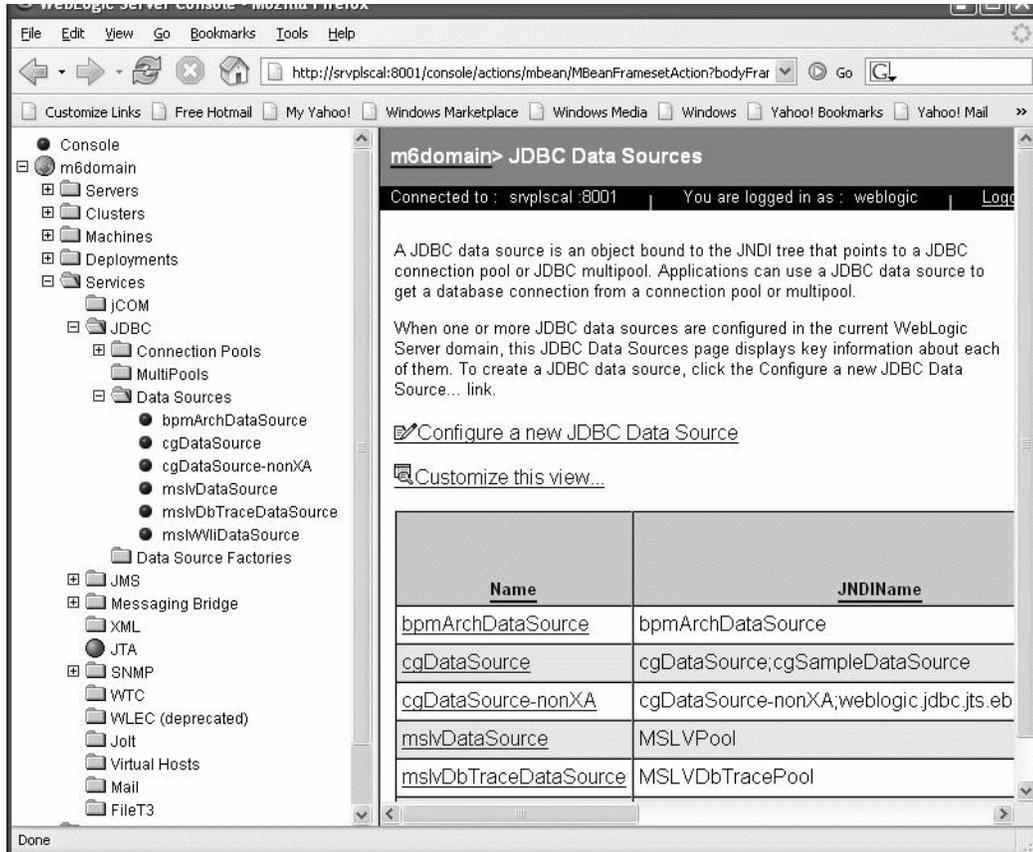
The following acronyms indicate the machine used in a step in the installation and deployment process:

- APP:** All application server machines
- CON:** BEA admin console
- ADM:** BEA admin server machine
- MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

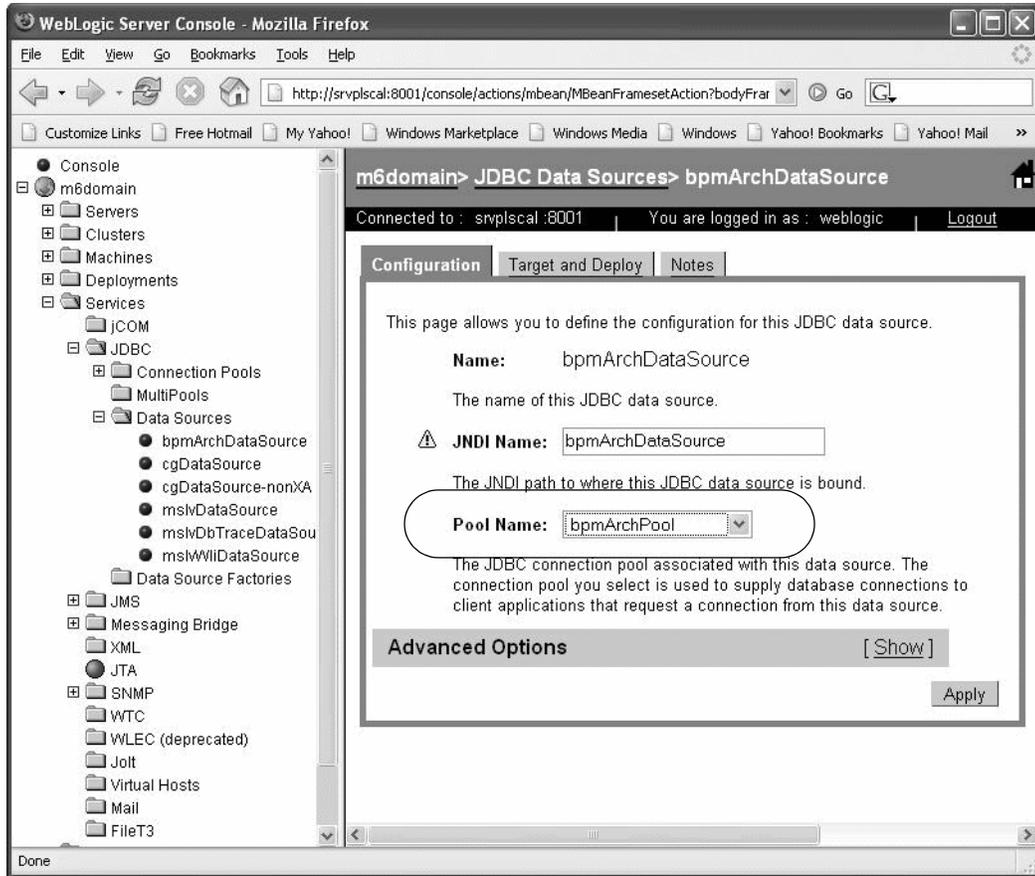
The pool name for the following JDBC datasources will be changed.

- ◆ bpmArchDataSource: Use bpmArchPool as Pool Name
- ◆ cgPoolDataSource: Use cgPool as Pool Name
- ◆ cgDataSource-nonXA: Use cgJMSPool-nonXA as Pool Name

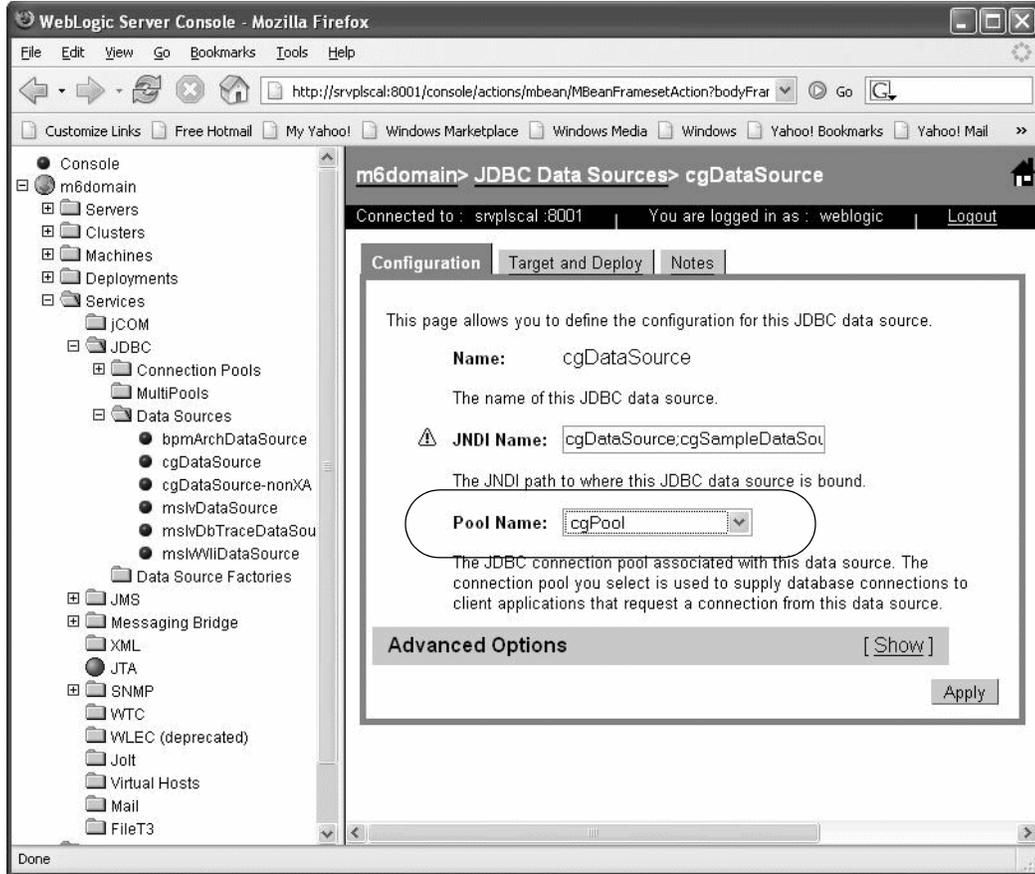
13. From the BEA console, navigate to JDBC Data Sources from Domain -> Services -> JDBC -> Data Sources. The following window appears.



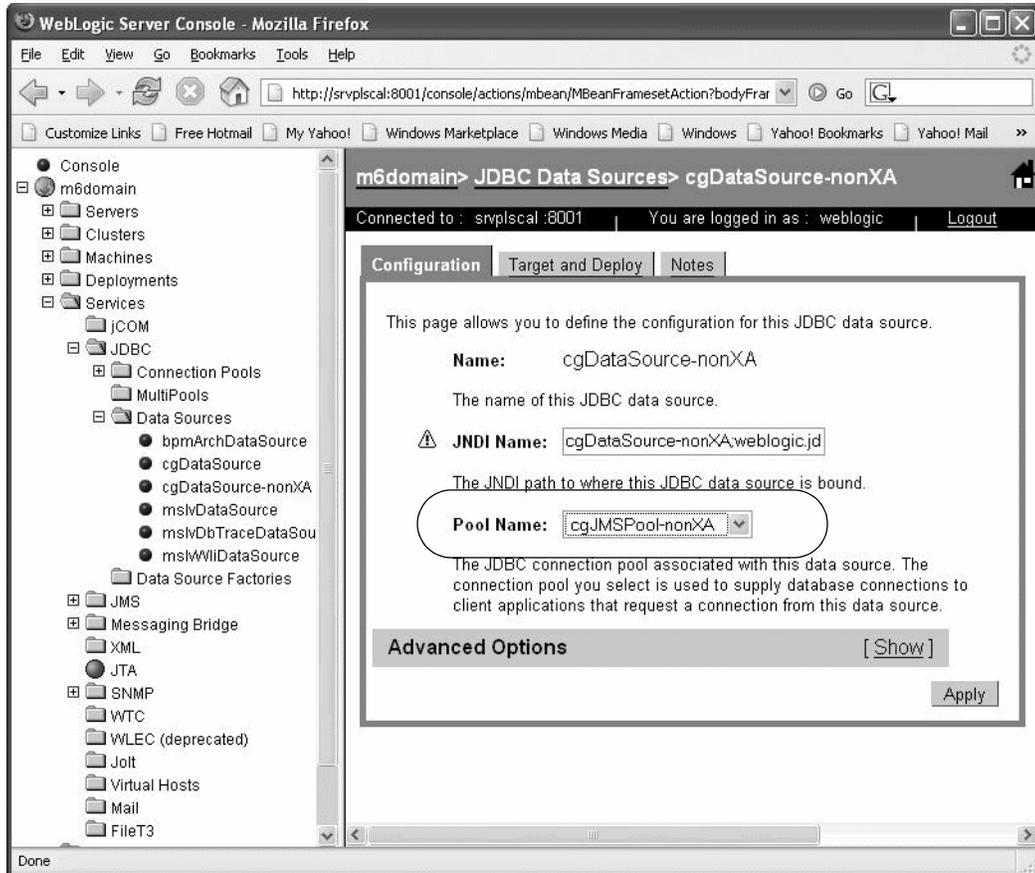
14. Change the bpmArchDataSource Pool Name. Click the bpmArchDataSource -> Configuration tab. From the drop-down list, choose bpmArchPool.



15. Change the cgDataSource Pool Name. Click the cgDataSource -> Configuration tab. From the drop-down list, choose cgPool

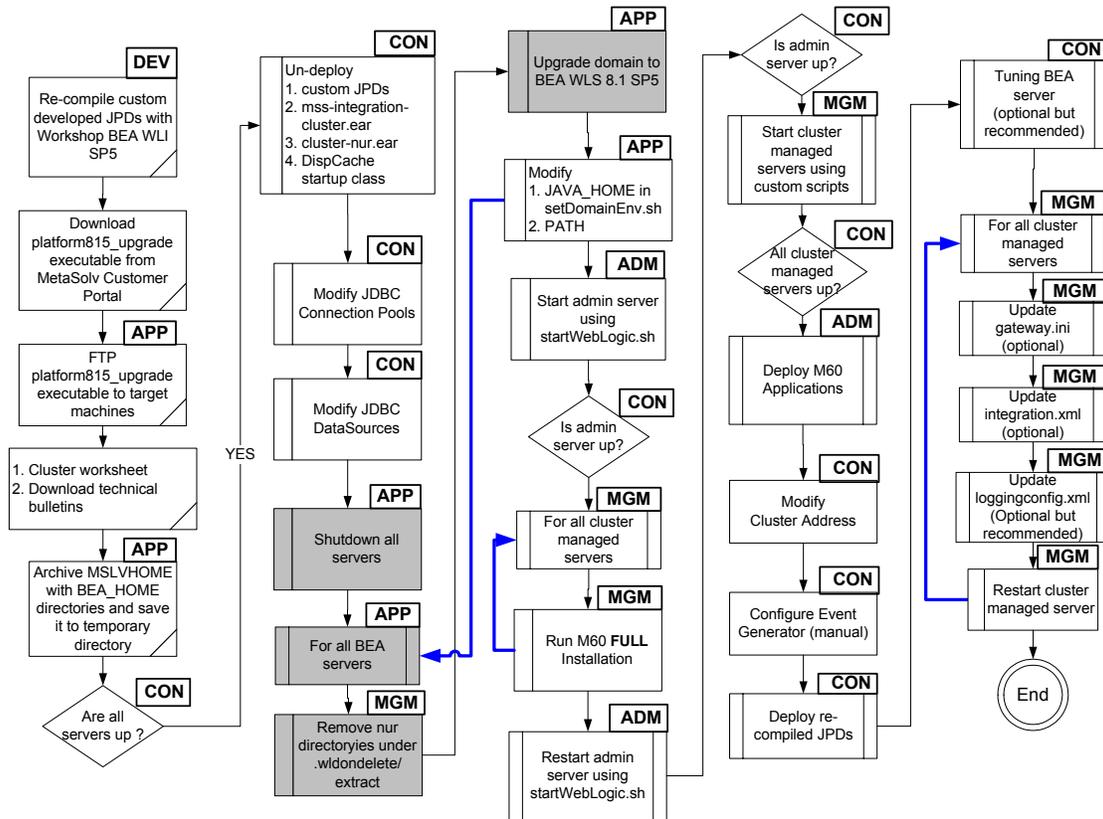


16. Change the cgDataSource-nonXA Pool Name. Click the cgDataSource-nonXA -> Configuration tab. From the drop-down list, choose cgJMSPool-nonXA.



### Shutdown all servers, cleanup directories and upgrade domain

This procedure completes the highlighted steps shown in the following figure:

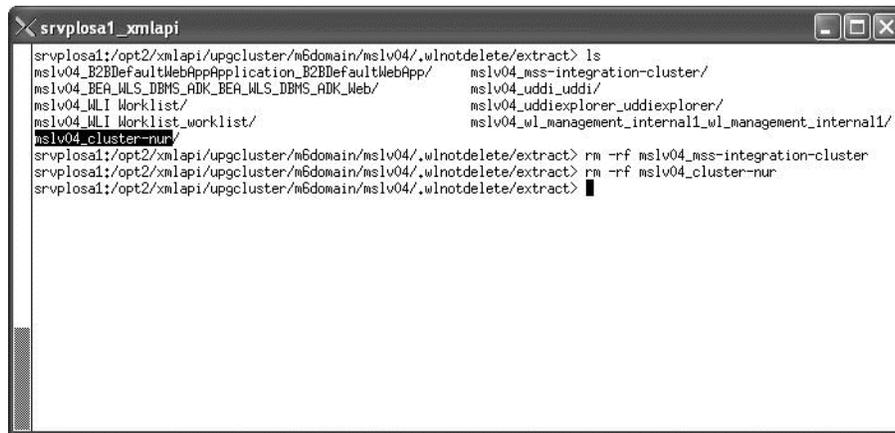


The following acronyms indicate the machine used in a step in the installation and deployment process:

- APP:** All application server machines
- CON:** BEA admin console
- ADM:** BEA admin server machine
- MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

Shut down all clustered servers and the admin server.

17. For each clustered server, remove the deployment staging directory: MSLVHOME/  
your\_domain/clusteredserver/.wlnotdelete/extract directory. Remove the  
clusteredserver\_cluster-nur and the clusteredserver\_mss-integration-cluster directories.



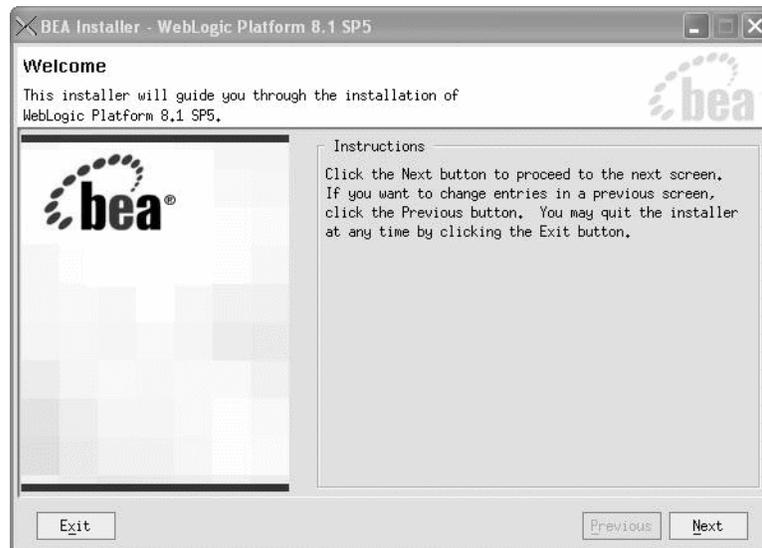
```
srvplosa1_xmlapi
srvplosa1:/opt2/xmlapi/upgcluster/m6domain/mslv04/.wlnotdelete/extract> ls
mslv04_B2BDefaultWebApplication_B2BDefaultWebApp/      mslv04_mss-integration-cluster/
mslv04_BEA_WLS_DBMS_ADK_BEA_WLS_DBMS_ADK_Web/         mslv04_uddi_uddi/
mslv04_WLI Worklist/                                   mslv04_uddiexplorer_uddiexplorer/
mslv04_WLI Worklist_worklist/                         mslv04_wl_management_internal1_wl_management_internal1/
mslv04_cluster-nur/
srvplosa1:/opt2/xmlapi/upgcluster/m6domain/mslv04/.wlnotdelete/extract> rm -rf mslv04_mss-integration-cluster
srvplosa1:/opt2/xmlapi/upgcluster/m6domain/mslv04/.wlnotdelete/extract> rm -rf mslv04_cluster-nur
srvplosa1:/opt2/xmlapi/upgcluster/m6domain/mslv04/.wlnotdelete/extract>
```

18. Upgrade the domain to BEA 8.1 SP5 for all servers starting with the admin server. Run **platform815\_upgrade\_os.ext**. For the Solaris platform, run **platform815\_upgrade\_solaris32.bin** on the admin server first.

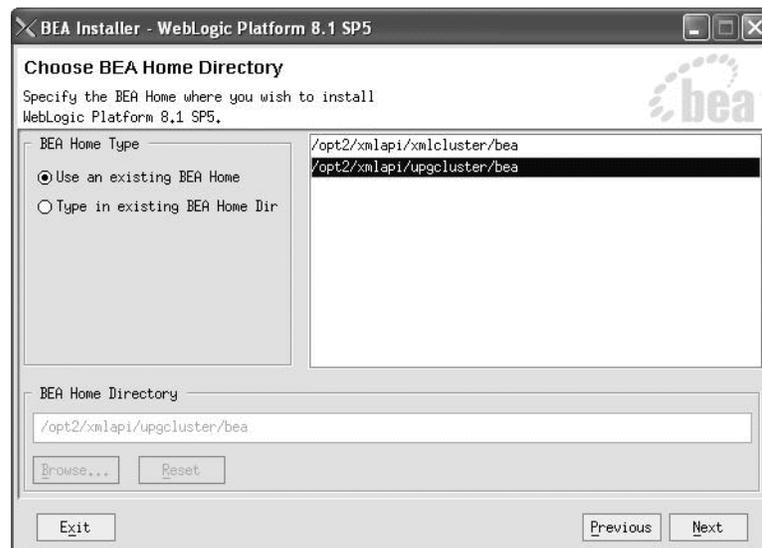


```
srvplscal_xmlapi
srvplscal:/opt2/xmlapi/download> ls
6.x_P1Dkey.txt      MSS_R6_0_8_b68_AppServerInstaller.jar
MSS_R6_0_3_b188_XML-API-Installer.jar  platform815_upgrade_solaris32.bin*
srvplscal:/opt2/xmlapi/download> ./platform815_upgrade_solaris32.bin[]
```

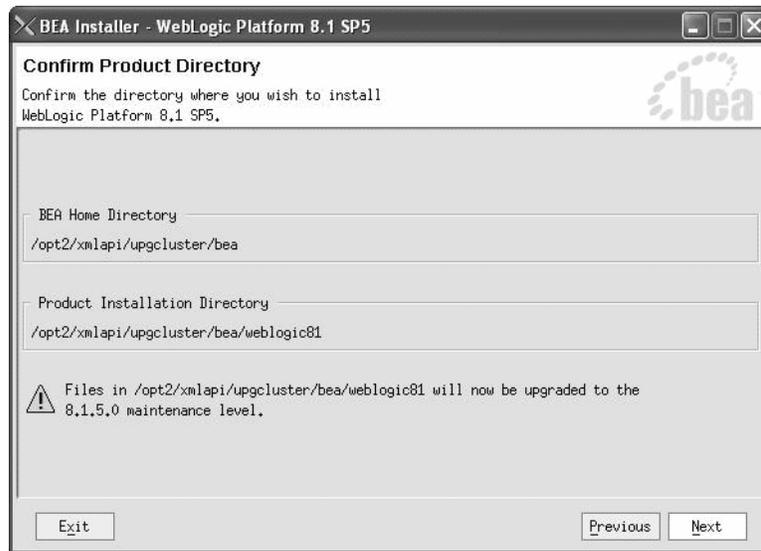
19. The upgrade Welcome window appears. Click Next.



20. Select the correct domain for upgrade. Then, click Next.



21. The Confirm Product Directory window appears. Ensure it is the correct BEA directory to upgrade and click Next. This process may take 30 minutes to 2 hours depending on your machine resource usage.

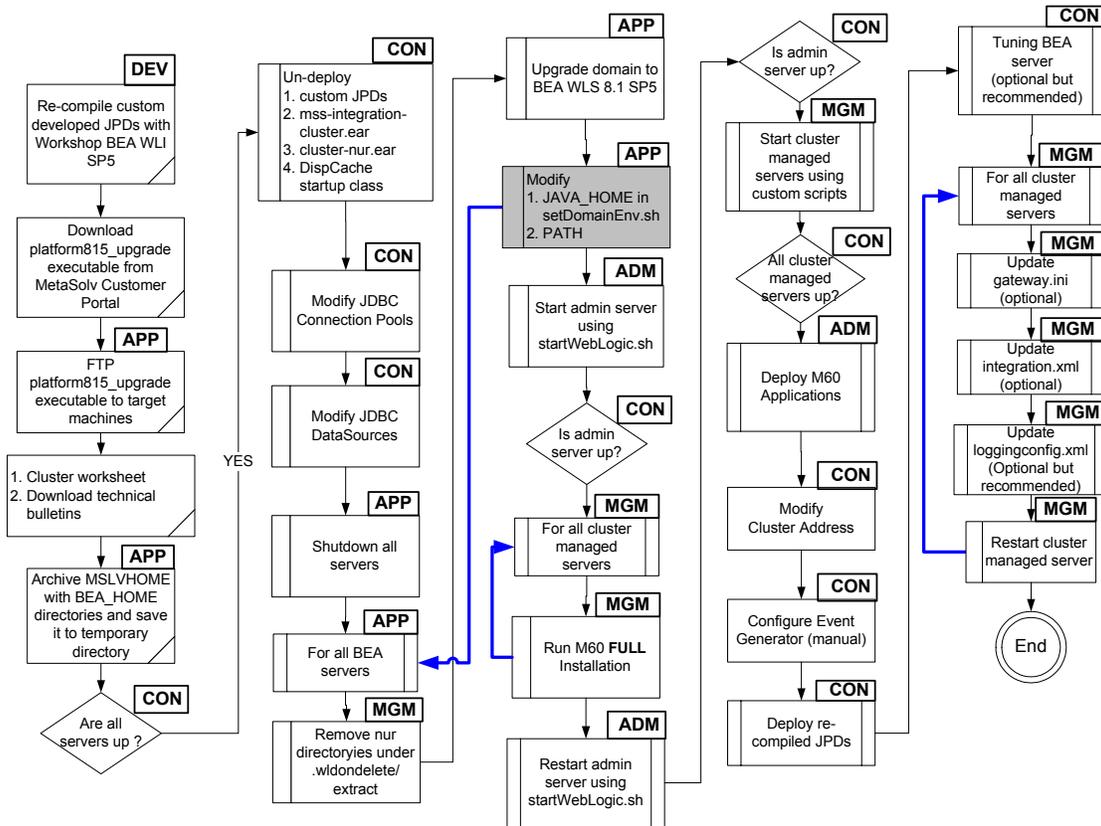


22. When the upgrade process is completed, the following window appears. Click Done.



### Update the JDK version in setDomainEnv.sh/cmd file and path

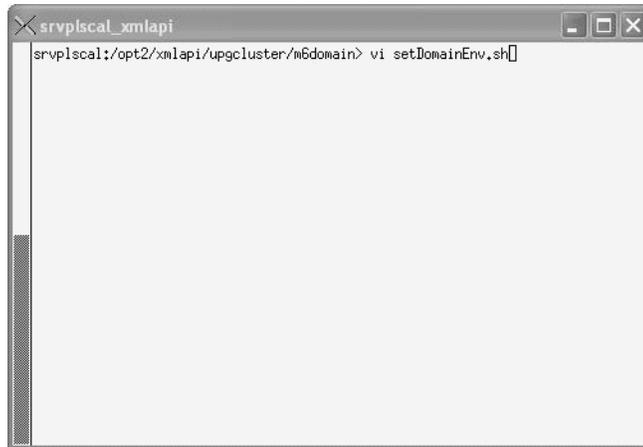
This procedure completes the highlighted steps shown in the following figure:



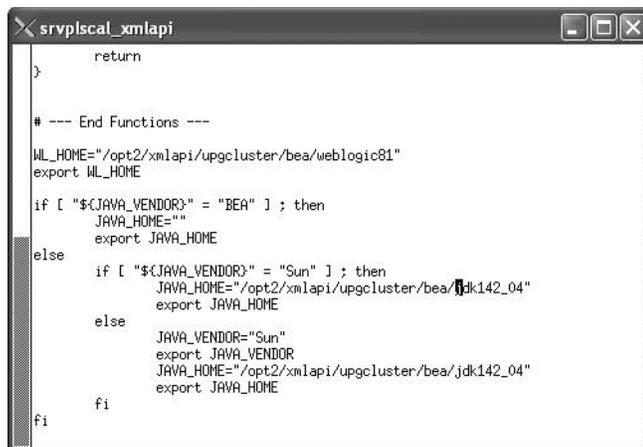
The following acronyms indicate the machine used in a step in the installation and deployment process:

- APP:** All application server machines
- CON:** BEA admin console
- ADM:** BEA admin server machine
- MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

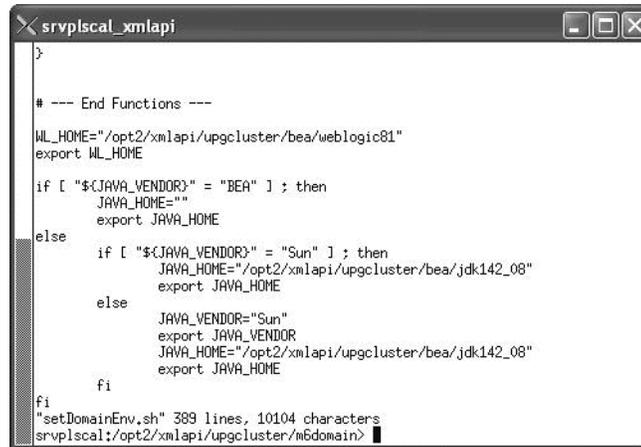
23. Go to MSLVHOME/your\_domain directory and edit the setDomainEnv.sh/cmd file.



24. Search JAVA\_HOME. The current JDK version is 142\_04 as displayed below.



25. Change the JDK to 142\_08 for both JAVA\_HOME and save the changes.



```

>
# --- End Functions ---
WL_HOME="/opt2/xmlapi/upgcluster/bea/weblogic81"
export WL_HOME
if [ "${JAVA_VENDOR}" = "BEA" ]; then
    JAVA_HOME=""
    export JAVA_HOME
else
    if [ "${JAVA_VENDOR}" = "Sun" ]; then
        JAVA_HOME="/opt2/xmlapi/upgcluster/bea/jdk142_08"
        export JAVA_HOME
    else
        JAVA_VENDOR="Sun"
        export JAVA_VENDOR
        JAVA_HOME="/opt2/xmlapi/upgcluster/bea/jdk142_08"
        export JAVA_HOME
    fi
fi
"setDomainEnv.sh" 389 lines, 10104 characters
srvplscal:/opt2/xmlapi/upgcluster/w6domain>

```

26. Set PATH to point to the jdk142\_08.



```

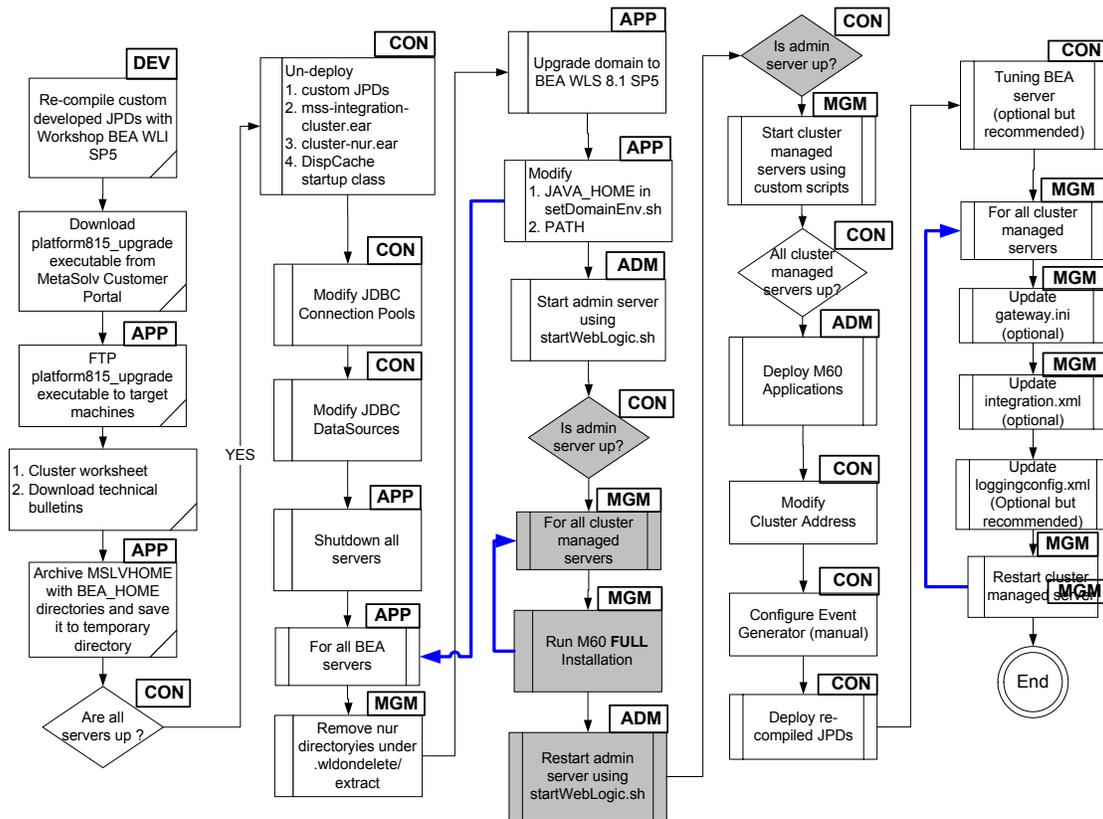
srvplscal:/opt2/xmlapi> export PATH=/opt2/xmlapi/upgcluster/bea/jdk142_08/jre/bin:$PATH
srvplscal:/opt2/xmlapi> which java
/opt2/xmlapi/upgcluster/bea/jdk142_08/jre/bin/java
srvplscal:/opt2/xmlapi>

```

27. Repeat Steps 17 -26 for each server on its corresponding machine. If multiple clustered servers are running on the same physical machine, you only need to perform Steps 18 - Step 26 one time assuming that the BEA\_HOME directory is shared by all clustered servers on this machine.

**Start the admin server and run the M6 Installer on each clustered server machine**

This procedure completes the highlighted steps shown in the following figure:



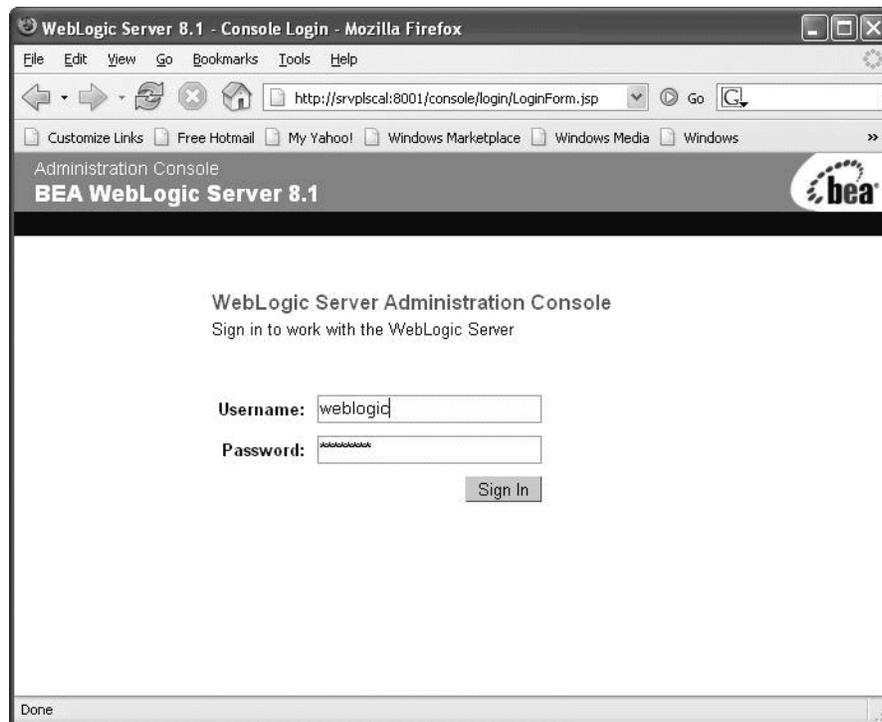
The following acronyms indicate the machine used in a step in the installation and deployment process:

- APP:** All application server machines
- CON:** BEA admin console
- ADM:** BEA admin server machine
- MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

28. Start the admin server using the startWebLogic.sh/cmd file on the admin server machine under the MSLVHOME/your\_domain directory.

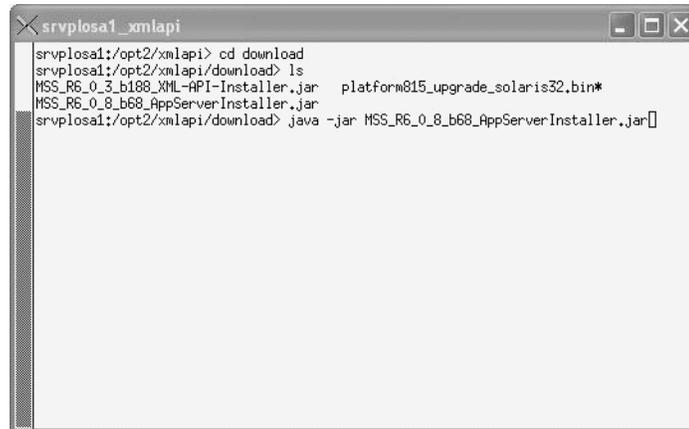


Check to see if the admin server is running by accessing the BEA console: <http://<admin server listening address>:port number>/console>.



29. For each clustered server machine, run the M6 installer using the following command:  
`java -jar <releases#build#>_AppServerInstaller.jar`

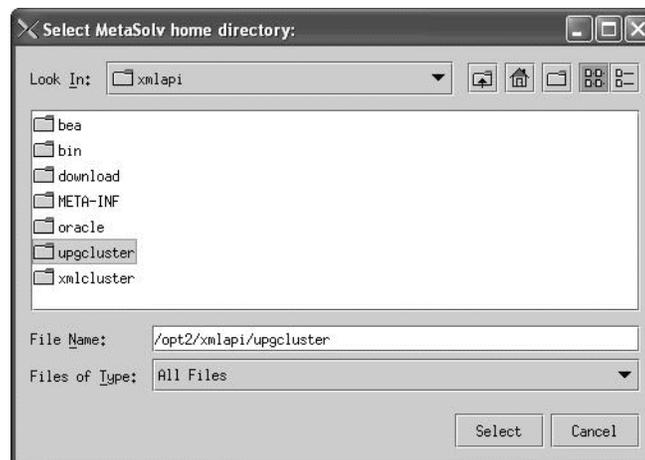
In this example: `java -jar MSS_R6_0_8_b68_AppServerInstaller.jar`



30. From the Look In drop-down list, click the down arrow and select a directory in which the installation program files can be stored and used during the installation process, then click **Select**.

A directory named *installer* is automatically created in the selected directory. MetaSolv recommends choosing your METASOLV\_HOME directory for this task.

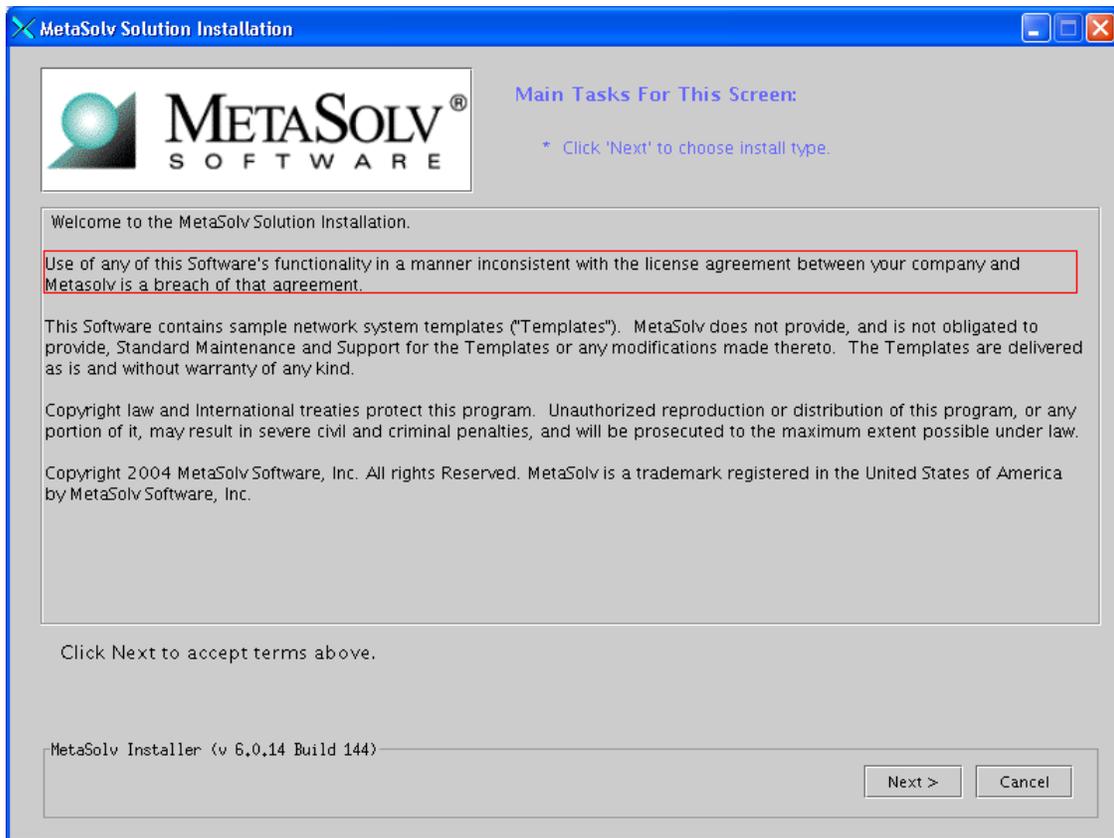
The installation program auto-launches the installation process by invoking `setup.sh` in the METASOLV\_HOME/installer directory.



Worksheet reference numbers and example values:

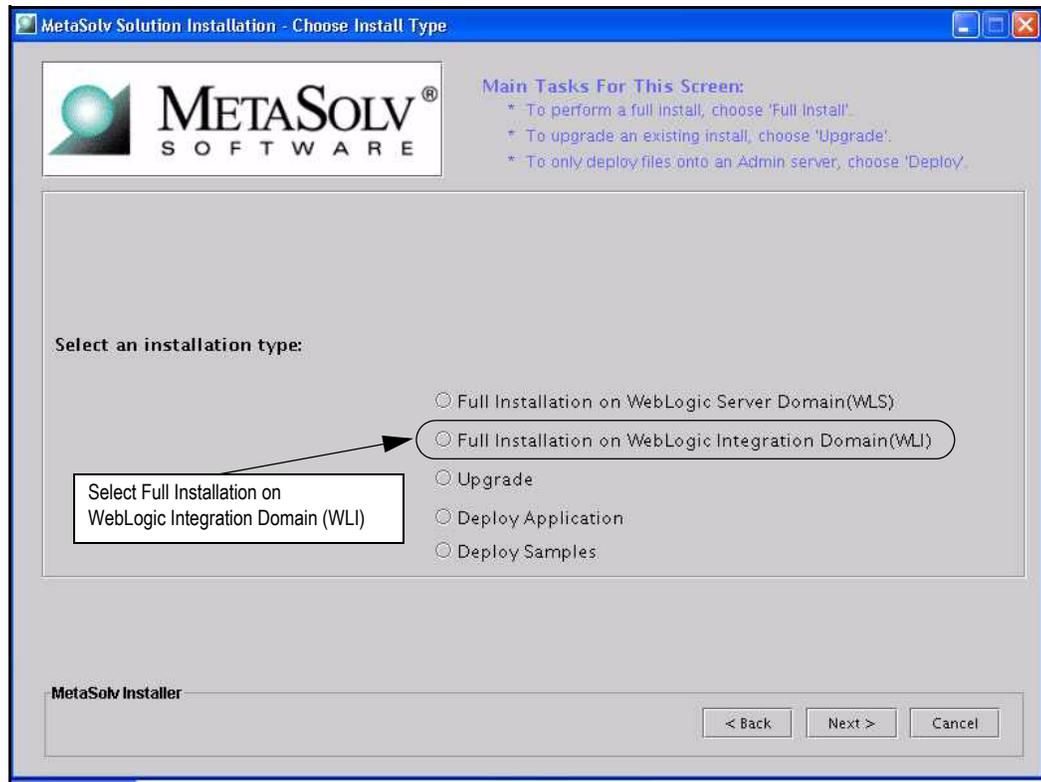
Field name	Worksheet reference number	Example value
File Name (METASOLV_HOME)	XCOMM-0090	/opt2/xmlapi/upgcluster

The following window appears.



31. Click **Next**.

32. Select **Full Installation on WebLogic Integration Domain (WLI)** and click **Next**.



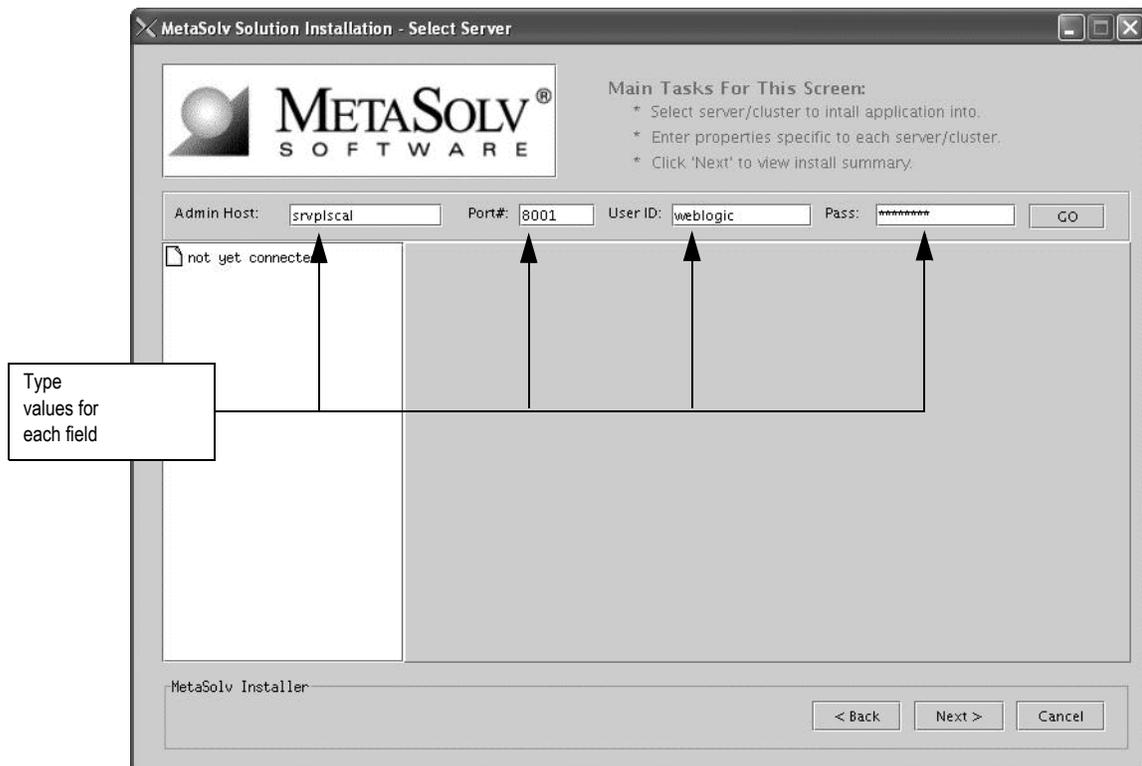
 Selecting **Full Installation on WebLogic Integration Domain (WLI)** installs MetaSolv Solution with the XML APIs. Selecting **Full Installation on WebLogic Server Domain (WLS)** installs MetaSolv Solution without the XML APIs. If you do not plan to use the XML APIs, do not use this Setup Guide. Instead, refer to the *Setup Guide (non-XML API Option)*.

33. Type the values for the following fields: **Admin Host**, **Port#**, **User ID**, and **Pass**, and click **Go**.

When you click **Go**, the installation program queries the Admin Host machine and returns with values you entered during the configuration of the BEA WebLogic domain.

Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
Admin Host	XAdmin-0250	<i>srvplscal</i>
Port#	XAdmin-0260	<i>8001</i>
User ID	XCOMM-0020	<i>weblogic</i>
Pass	XCOMM-0030	<i>metasolv</i>



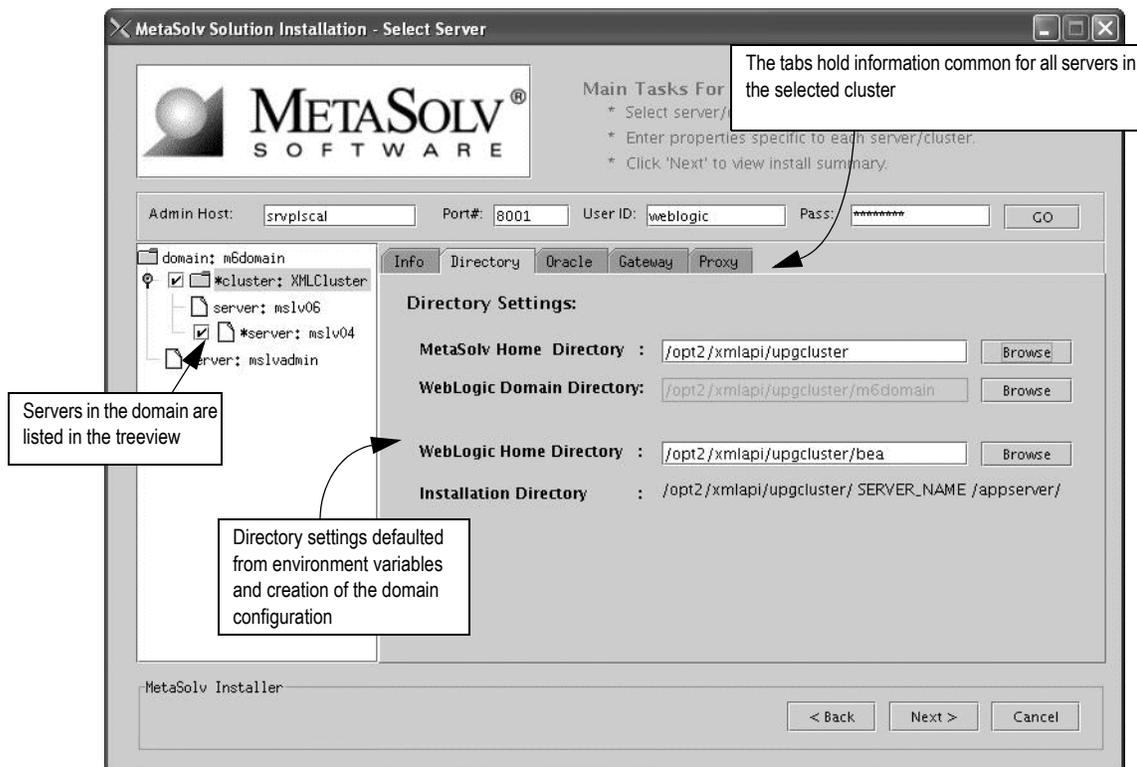
34. The treeview in the left pane represents the domain and its servers. The domain *m6domain* is at the highest level in the structure. The treeview shows the cluster *M60Cluster* and the

servers that are subordinate to it (*mslv06*, *mslv04*) and the administration server *mslvadmin*. In the treeview on the left, select the check box next to the server on which you want MetaSolv Solution installed.

Only servers associated with the current machine can be selected. Note in the figure below, both *mslv06* and *mslv04* can be selected. Both servers are running on the current machine (*srvplosa1*).

Do not install the MetaSolv Solution application onto the administration server.

When you select a server in the left pane, tabs appear on the right pane. The tabs allow you to set values that apply to all servers that belong to a selected cluster.



Select the Directory tab and type the path and name of the MetaSolv home directory and the WebLogic domain directory, or click **Browse** to search for the directories.

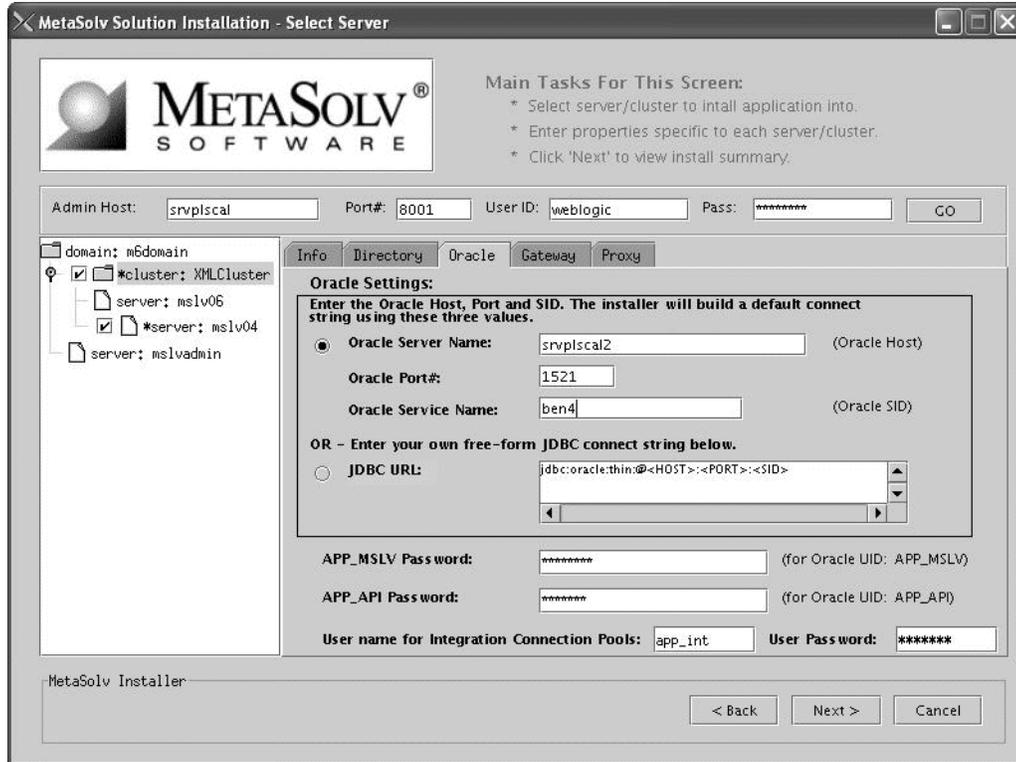
Worksheet reference numbers and example values:

Field name	Worksheet ref. no.	Example value
MetaSolv Home	XCOMM-0090	/opt2/xmlapi/upgcluster
WebLogic Domain Directory	XCOMM-0110	/opt2/xmlapi/upgcluster/m6domain

The following list shows how icons are used in the treeview.

-  The folder icon indicates that the item selected is a higher level (a domain or a cluster within a domain) and that other items (such as servers) are subordinate to the item indicated by the folder.
-  The page icon indicates that the item selected has no servers or other items that are subordinate to it.
- \* An asterisk means that a server is a candidate for installation of MetaSolv Solution. Only servers associated with the machine on which the installation is occurring are eligible.
- A check box means you have selected the server for the installation of MetaSolv Solution 6.0.8 during the installation process.

35. Select the Oracle tab, check the values that appear in the fields, and make any needed changes:

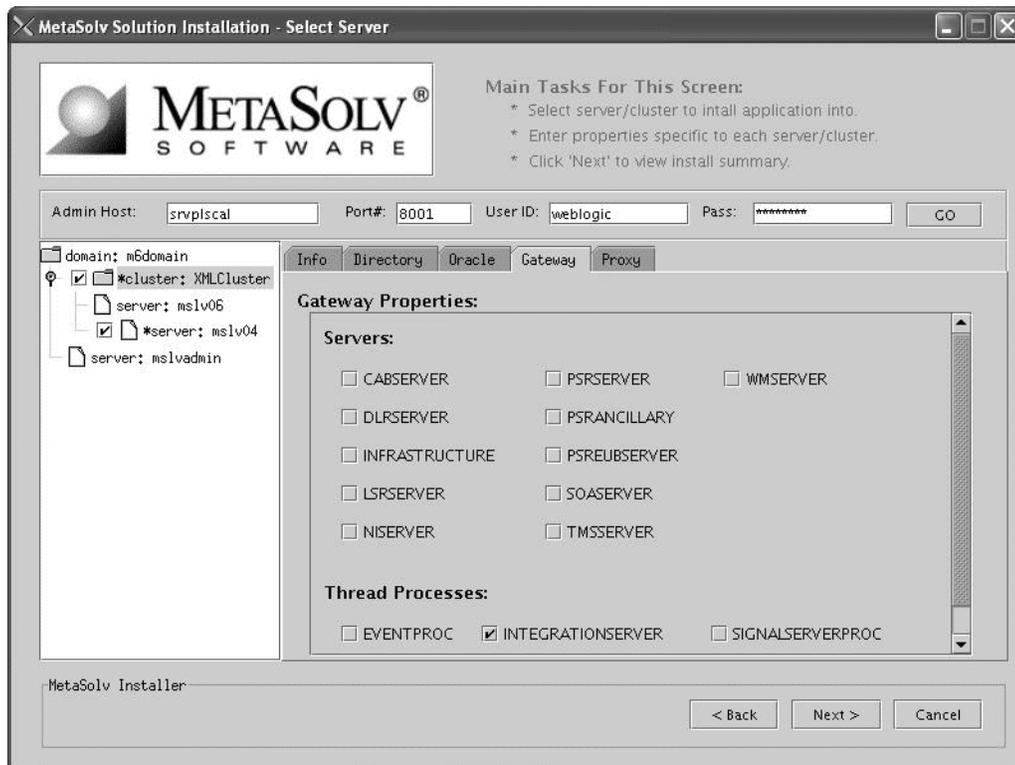


Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
APP_MSLV Password	XCOMM-0040	<i>mss6mslv</i> (default)
APP_API Password	XCOMM-0050	<i>mss6api</i> (default)
Oracle Server Name	XCOMM-0130	<i>srvplscal2</i>
Oracle Port	XCOMM-0140	<i>1521</i>
Oracle Service Name	XCOMM-0150	<i>BEN4</i>
XML API integration user id	XCOMM-0057	<i>APP_INT</i>
XML API integration password	XCOMM-0059	<i>mss6int</i>

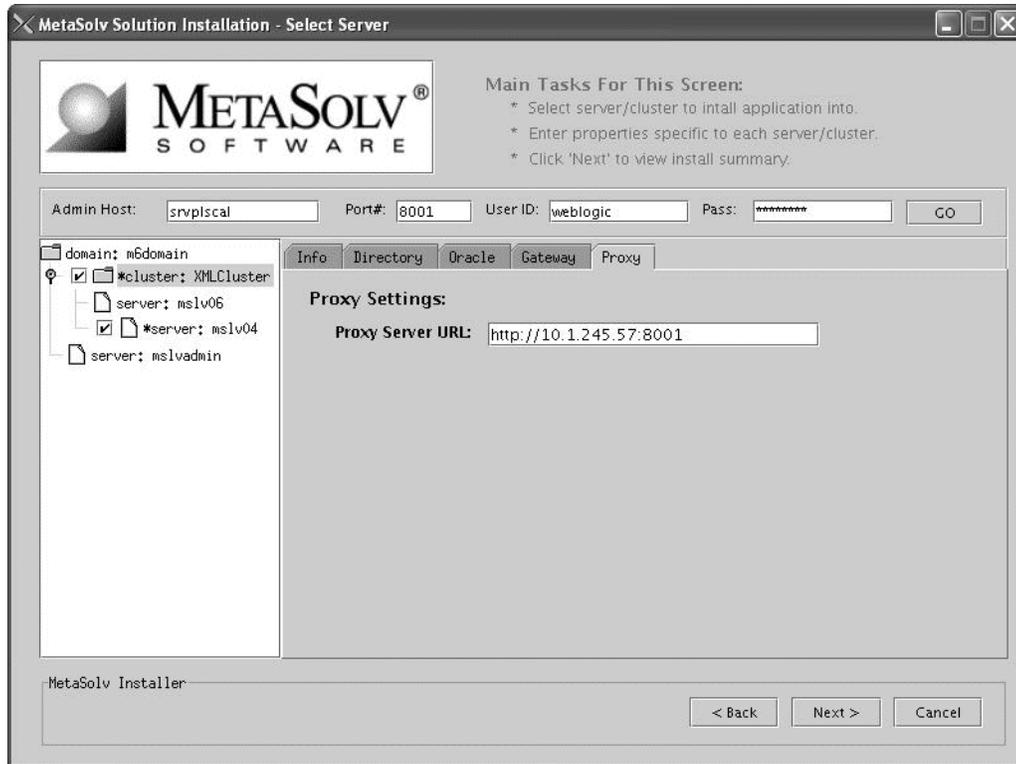
For multiple WebLogic Integration domains pointing to the same database, use the original XML API integration user ID and corresponding password. See “[Multiple WebLogic Integration domains pointing to the same database](#)” on page 189.

36. Select the Gateway tab, check the default selections for event servers that are to be activated, and make any necessary changes. If you are unsure, leave the default settings.



You can manually edit these settings through the gateway.ini file. The check boxes that appear on the tab are for APIs. When you select a check box, modifications are made to the gateway.ini file used to configure MetaSolv Solution APIs. For more information on the gateway.ini, see the *MetaSolv Solution Administration Guide*.

- e. Select the Proxy tab and provide the URL of the proxy server or external load balancer. This field is required for a clustered configuration.

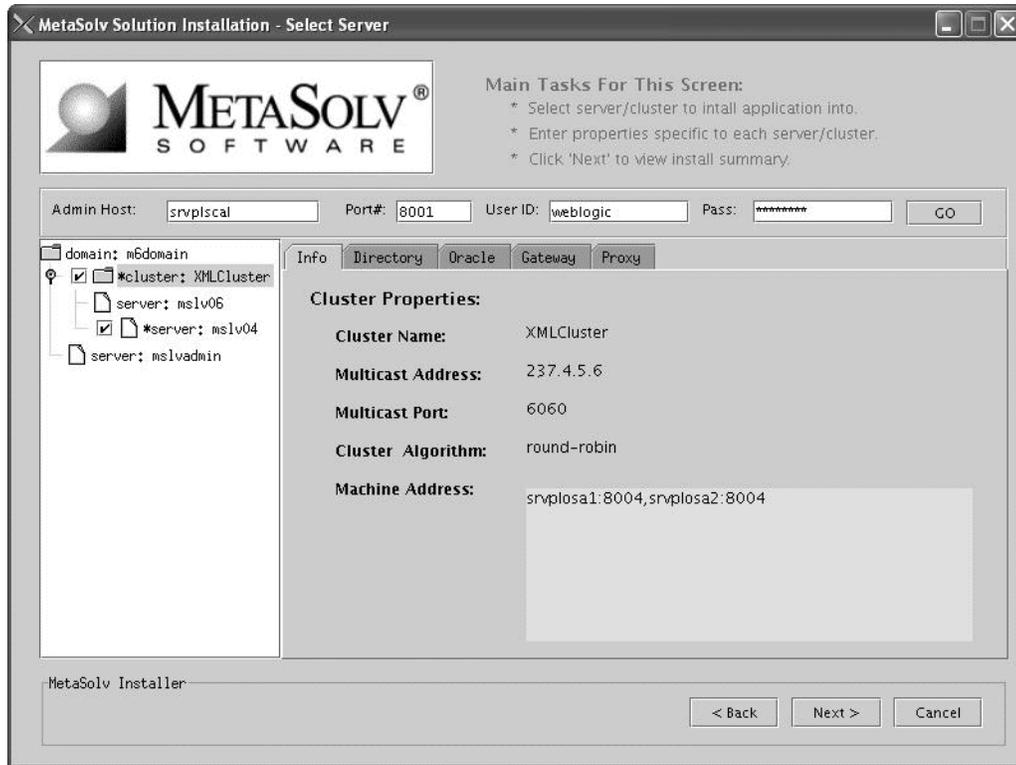


Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
Proxy Server URL	XClusterMS-0450	<i>http://10.1.245.57:8001</i>

See “[Appendix A: Proxy server setup](#)” for complete information on setting up a BEA proxy server.

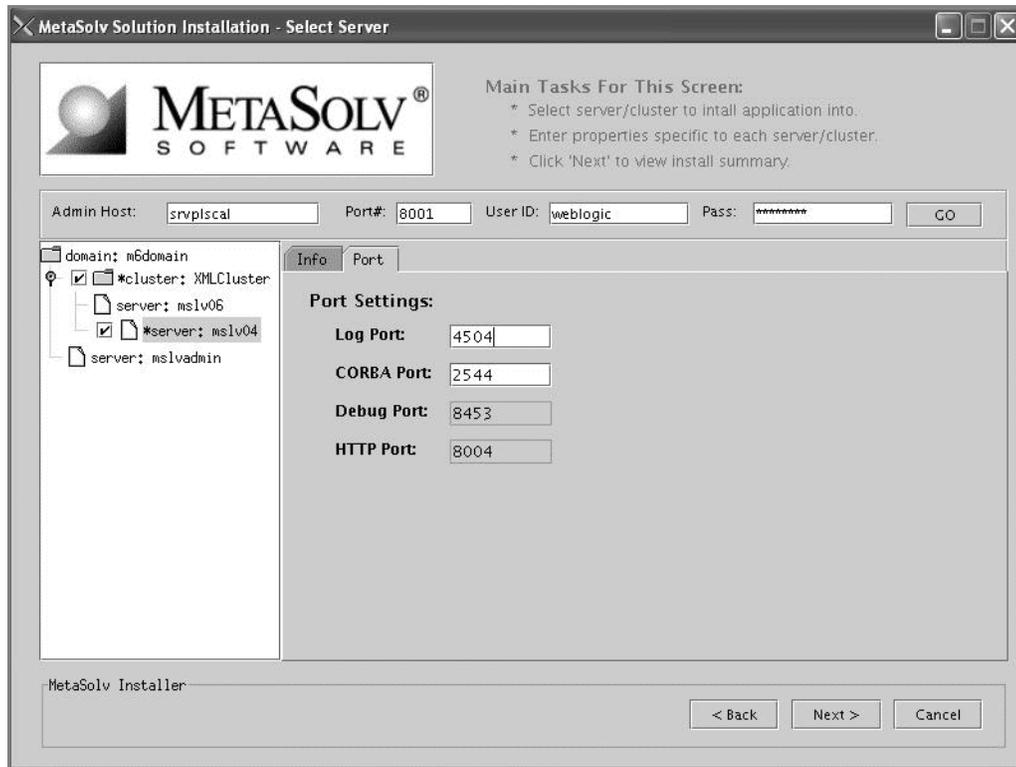
37. Select the Info tab to see a summary of the cluster properties.



38. Define port settings for each individual server on the current machine by completing the following tasks:

- a. In the left pane, click on name of a server that is to be hosted on the current machine. A new set of tabs appear in the right pane.

The following figure shows how to select a server for port settings



- b. Select the Port tab and type values in the **Log Port**, **CORBA Port** fields.

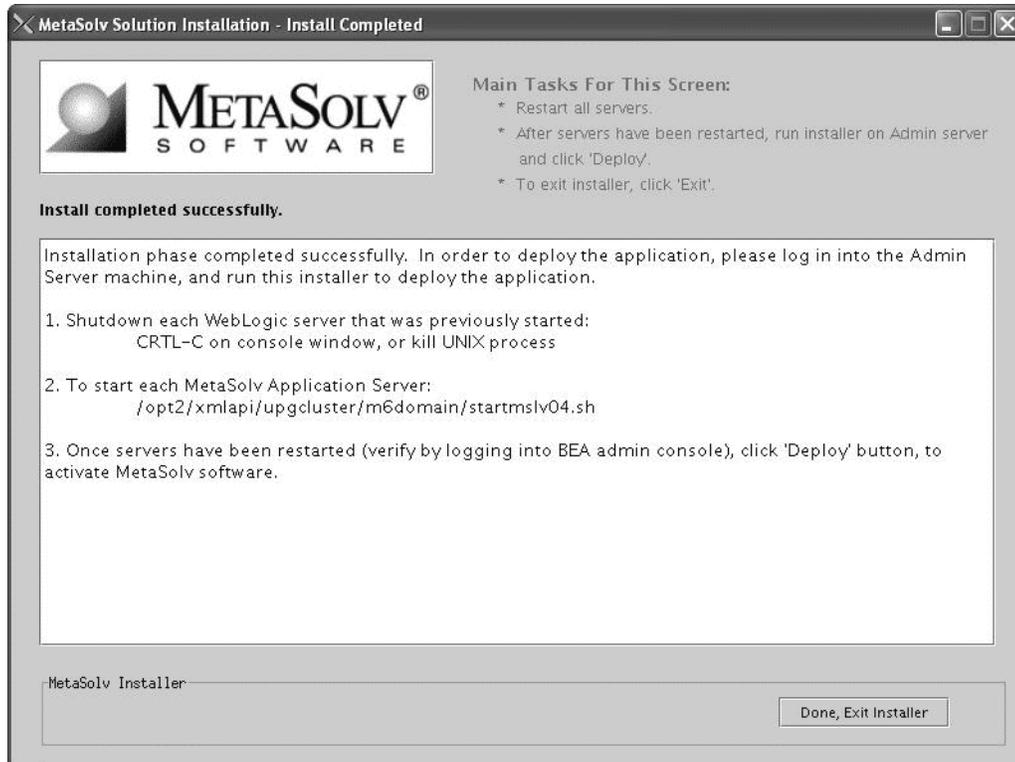
By default, the installation program finds available ports and assigns the correct values.

Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
Log Port	XClusterMS-0590	4504
CORBA Port	XClusterMS-0600	2544

- c. Select the Info tab to see a summary of the selected server's properties.  
 d. Click Next.

39. When the M6 installer finishes, the following window appears. Click Done, followed by Exit Installer.



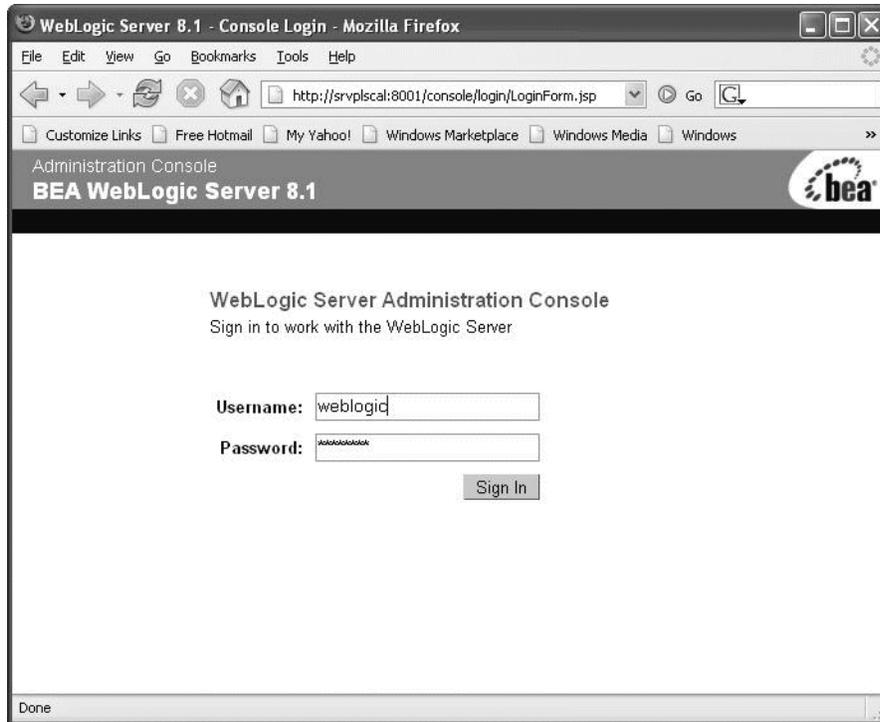
40. Repeat Steps 29 - Step 39 for all clustered server machines.

***Restart the admin server***

41. Restart the admin server on the admin server machine.

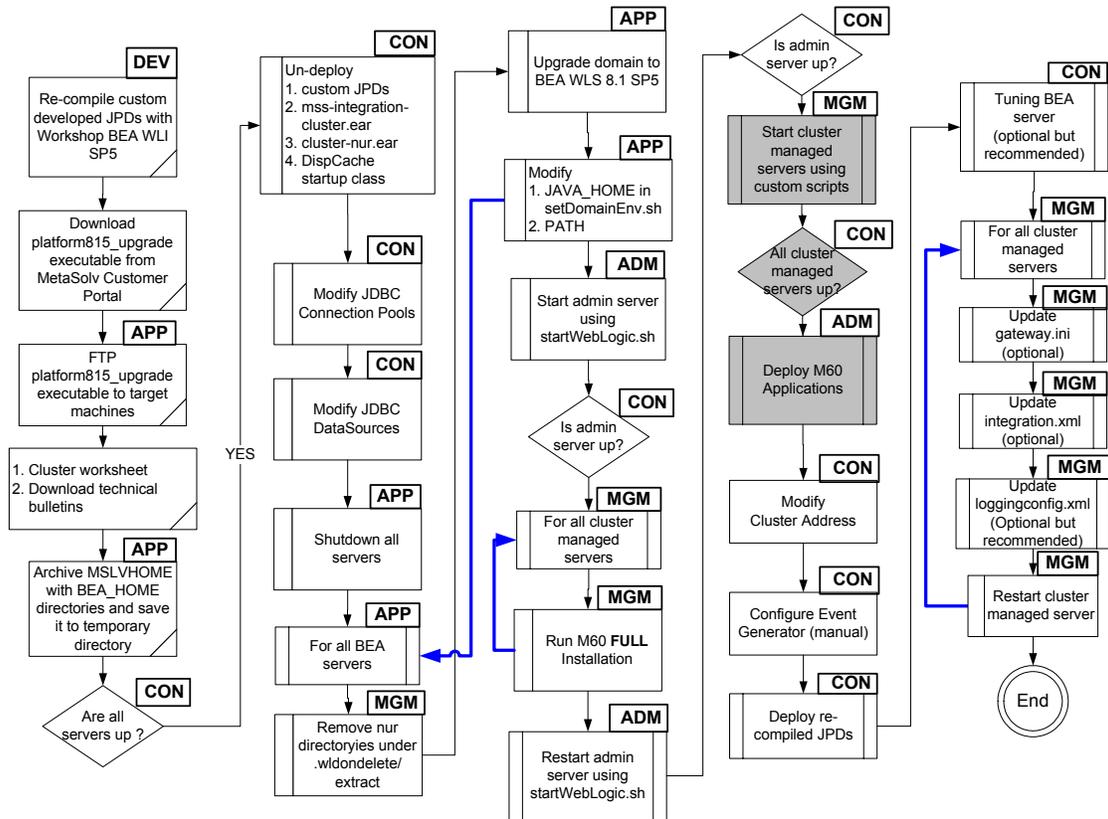


42. Check to see if the admin server is running by accessing the BEA console: `http://<admin server listening address>:port number>/console`.



### Start all clustered servers using the M6 custom startup scripts and deploy M6

This procedure completes the highlighted steps shown in the following figures:



The following acronyms indicate the machine used in a step in the installation and deployment process:

- APP:** All application server machines
- CON:** BEA admin console
- ADM:** BEA admin server machine
- MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

43. Start all clustered servers on the clustered machines using custom startup scripts. In this example, go to `MSLVHOME/your_domain` directory to start the `mslv04` clustered server on `srvplosa1` by `startmslv04.sh` and start `mslv06` on `srvplosa2` by `startmslv06.sh`.

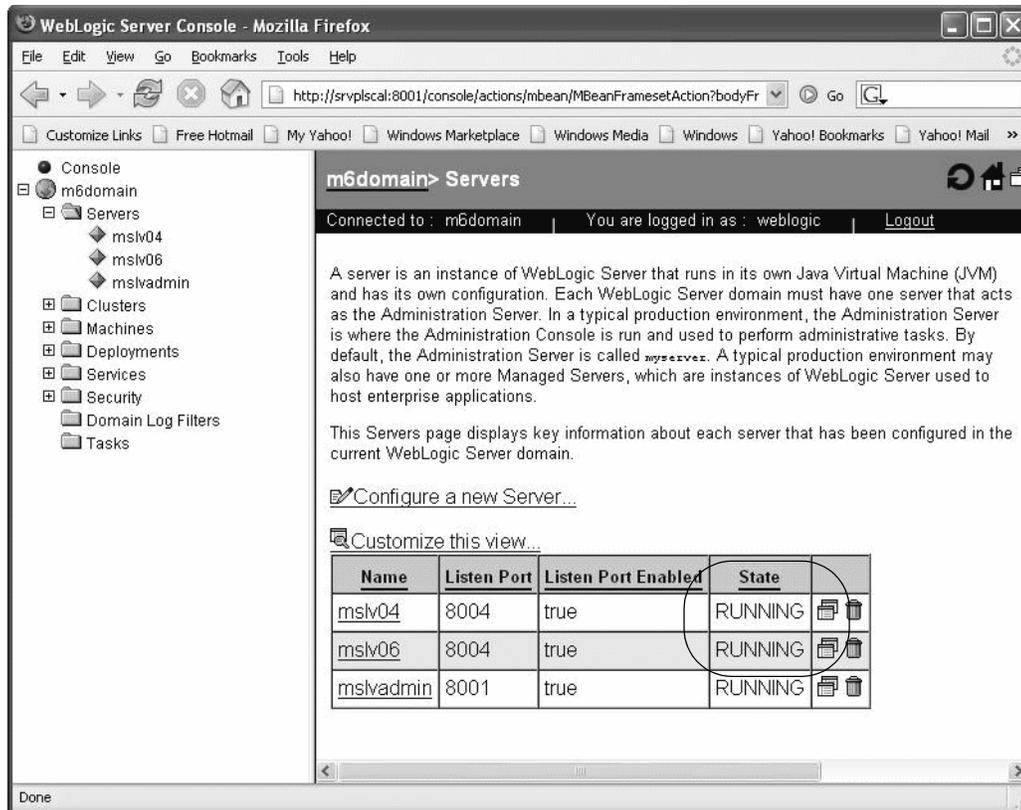


```
srvplosa1_xmlapi
srvplosa1:/opt2/xmlapi/upgcluster/m6domain> startmslv04.sh
```



```
srvplosa2_xmlapi
srvplosa2:/opt2/xmlapi/upgcluster/m6domain> startmslv06.sh
```

44. Ensure all clustered servers are in running state by accessing the BEA console at the admin server listening address and port. Navigate to Servers.



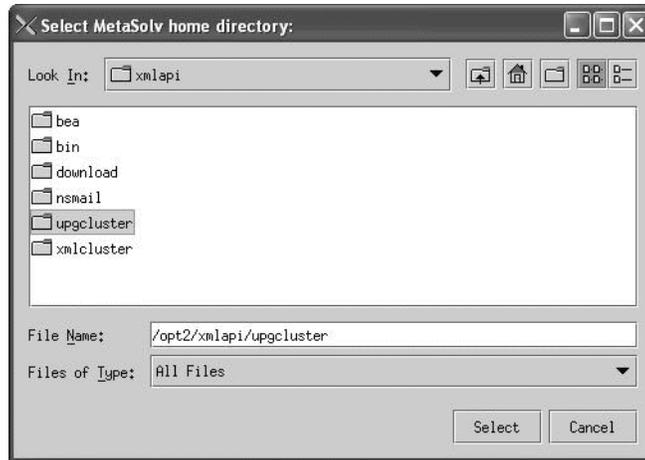
### Deploy the M6 application to the cluster

45. Use the admin server machine to deploy the M6 application to the cluster by invoking the M6 installer as shown below.

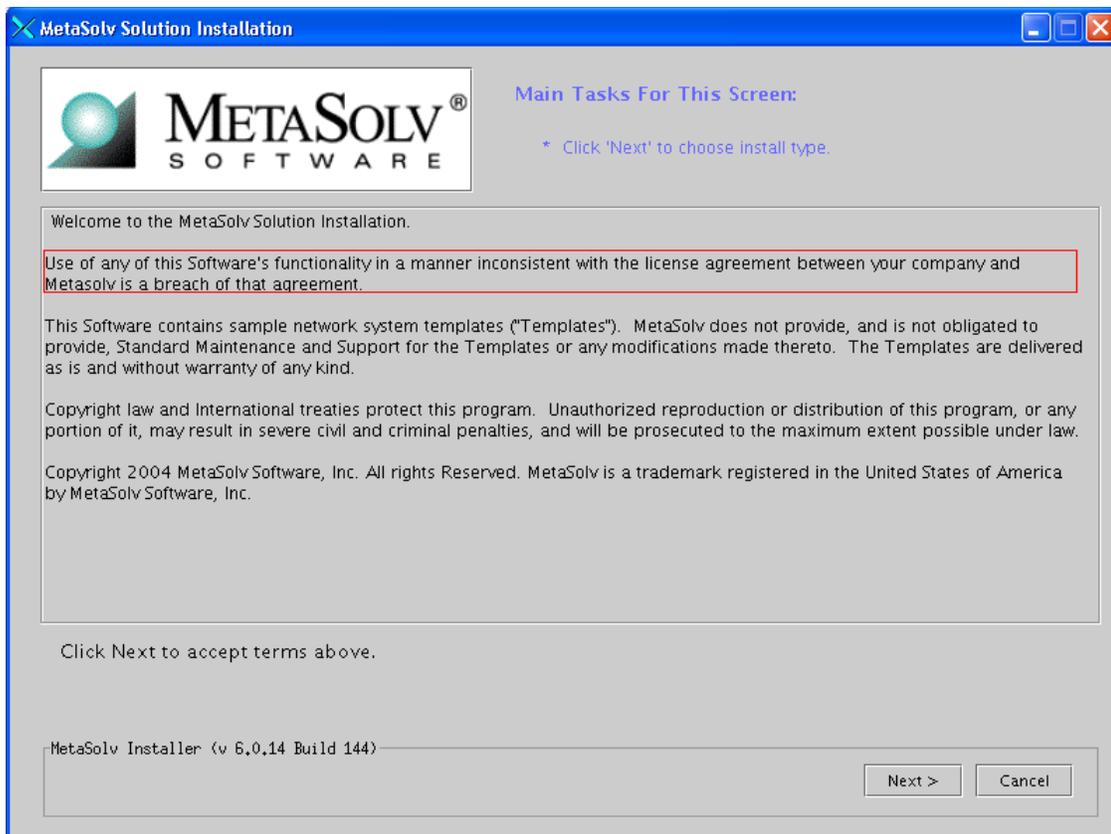
```

srvplscal_xmlapi
srvplscal:/opt2/xmlapi/download> which java
/opt2/xmlapi/upgcluster/bean/jdk142_08/jre/bin/java
srvplscal:/opt2/xmlapi/download> echo $DISPLAY
10.1.235.139:0.0
srvplscal:/opt2/xmlapi/download> ls
6_x_PIDkey.txt          MSS_R6_0_8_b68_AppServerInstaller.jar
MSS_R6_0_3_b188_XML-API-Installer.jar  platform815_upgrade_solaris32.bin*
srvplscal:/opt2/xmlapi/download> java -jar MSS_R6_0_8_b68_AppServerInstaller.jar
    
```

46. Choose a staging directory for M6 installer files and click Select. Use MSLVHOME for the staging directory.

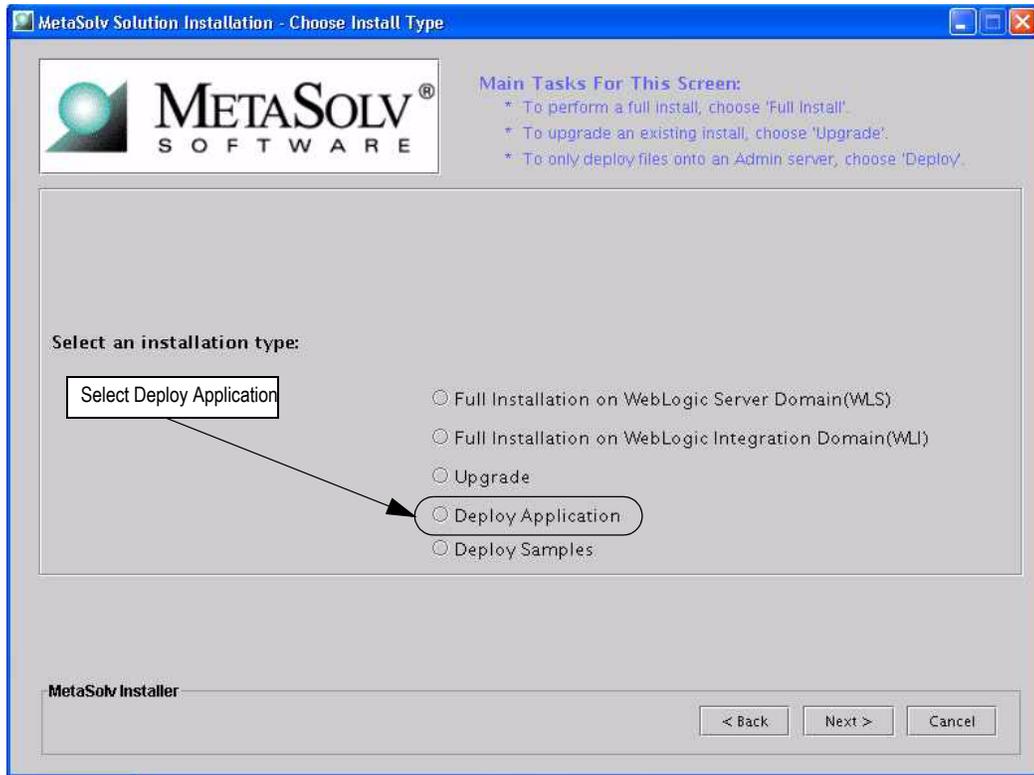


The following window appears.

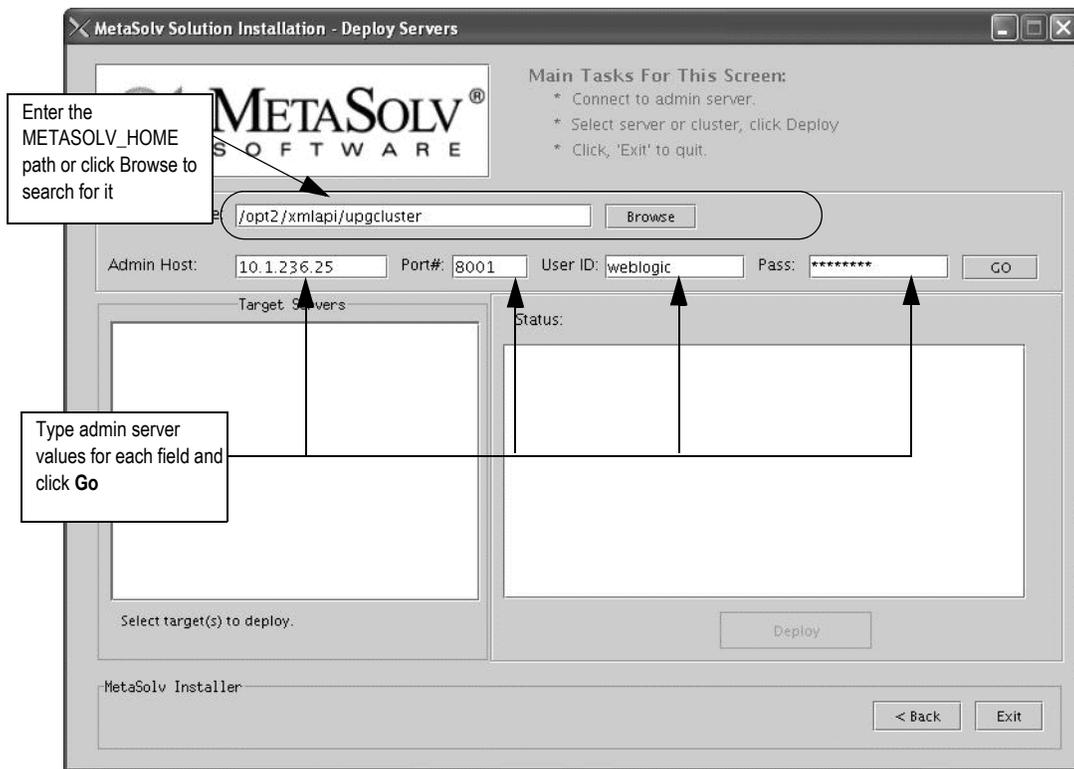


47. Click **Next**.

48. Choose **Deploy Application** and click **Next**.



49. Enter the path for the METASOLV\_HOME directory or click **Browse** and search for the directory. Type administration server values in the fields shown in the previous figure and click **Go**.

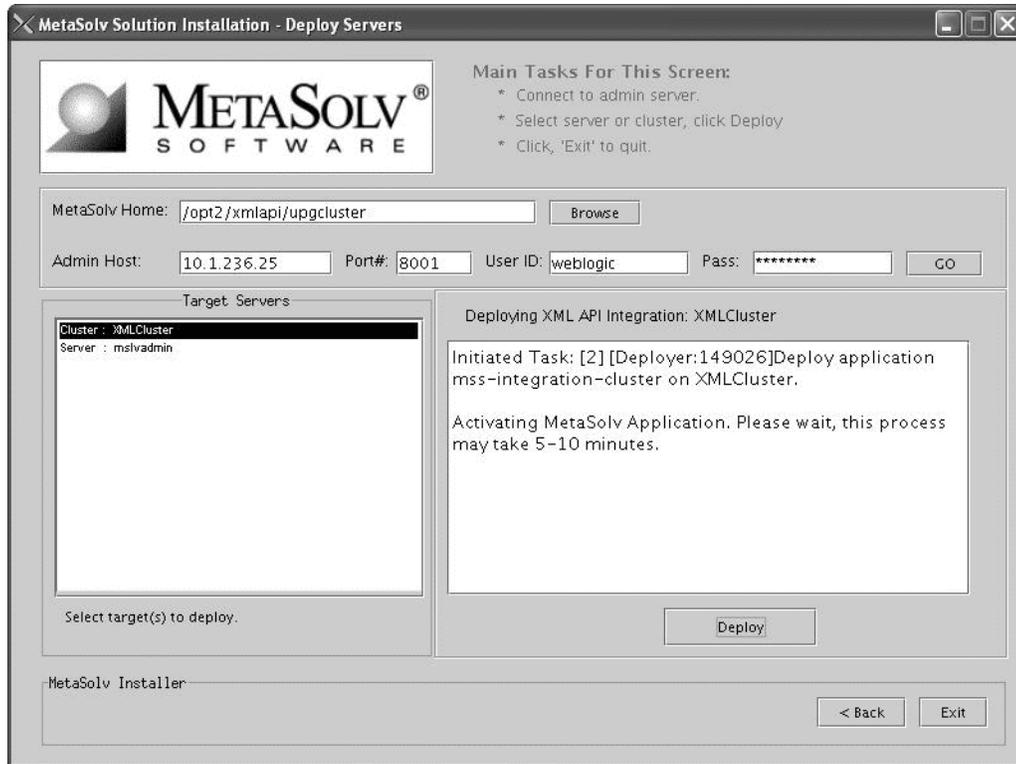


50. Highlight the cluster and click **Deploy**. Deployment begins. MetaSolv Solution is deployed to each server in the cluster.

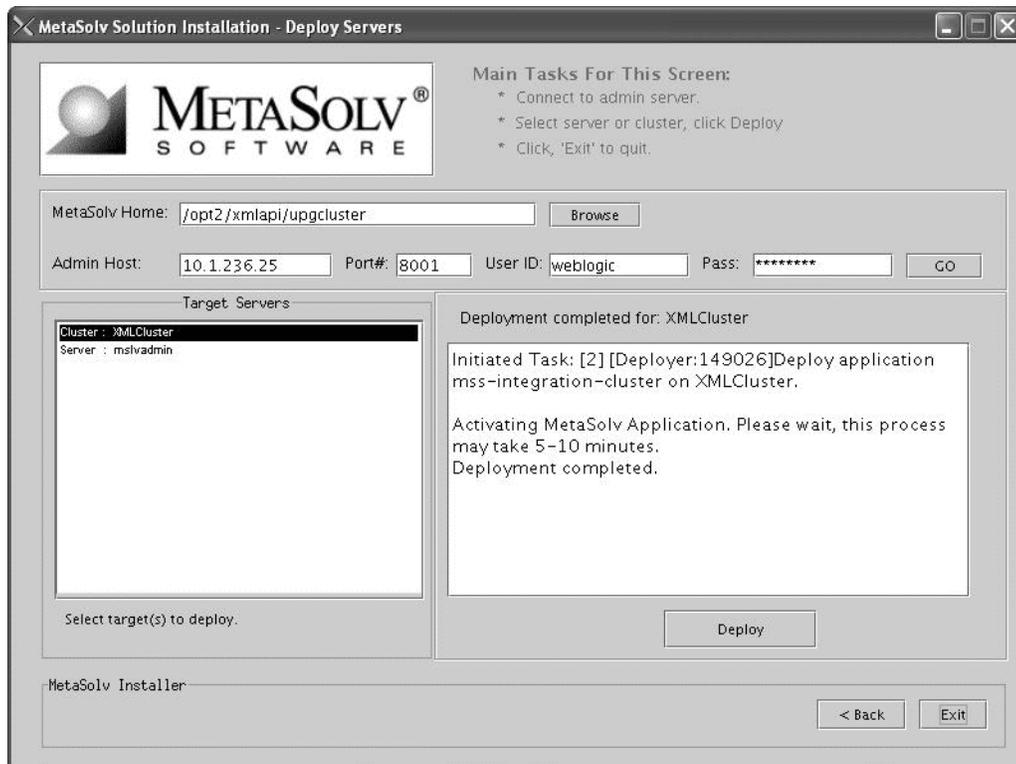
Do not deploy to the administration server. In the scenario shown in the previous figure, only the cluster was deployed to, not *mslvadmin*, the administration server.



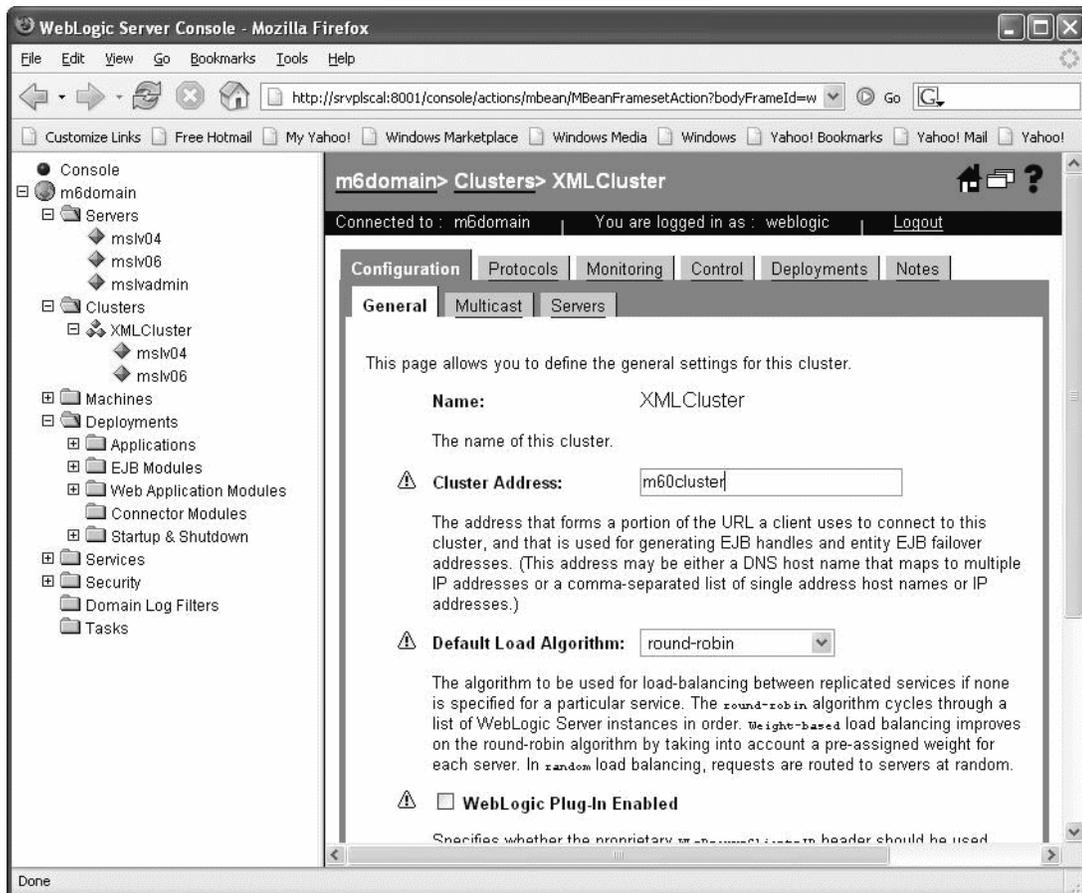
The deployment process can take a few minutes. The right pane of the window indicates the status of the deployment.



51. When the deployment is complete, the following window will be displayed. Click "Exit".









If you encounter the following error in the <serverName>.mss.log file after you start a server, refer to the Technical Bulletin titled *Prodfixsql Error: Failure to grant table creation privileges for APP\_MSLV* for information on how to resolve this error. To locate this bulletin, click the Knowledge tab on the Oracle MetaLink Web site (<https://metalink.oracle.com>).

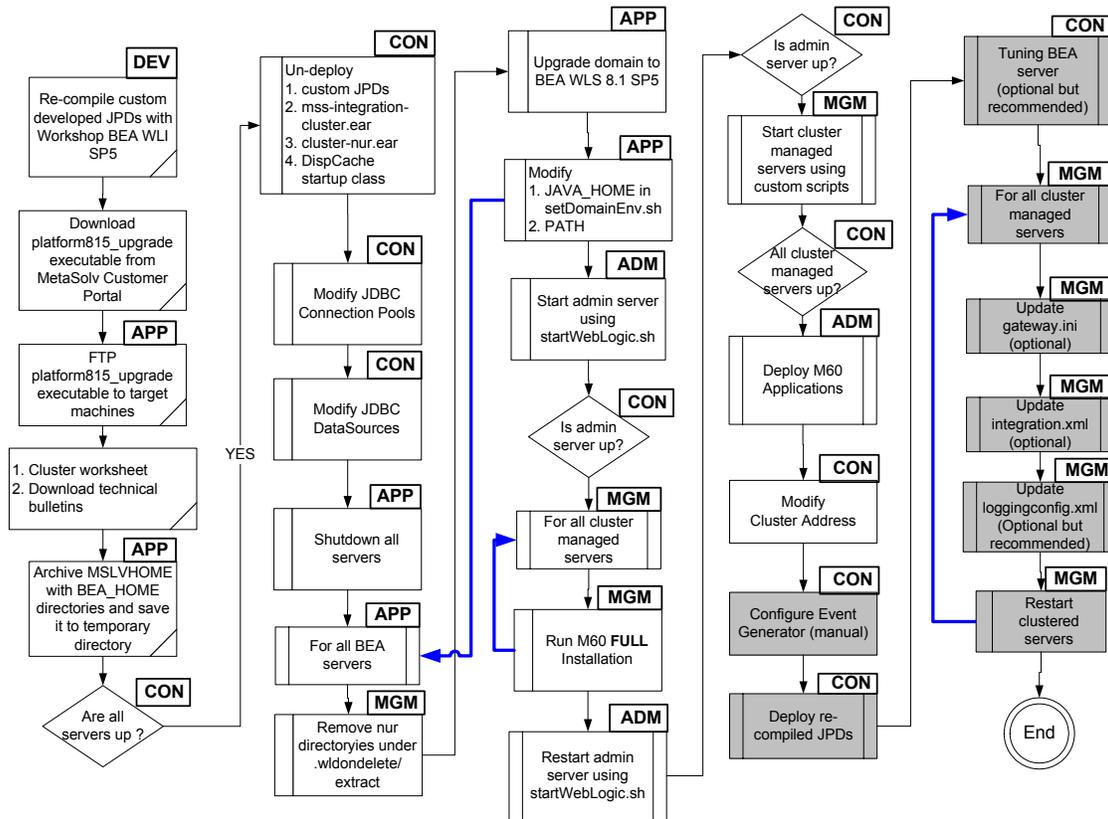
```
<Alert> <JMS> <BEA-040205> <JMSServer "plugging_auto_1". An error
occurred while trying to do a SQL SELECT on table
"pluginStore_auto_1JMSState". Check privileges on this table. You
may need to specify [schema.[catalog.]] in your configured
prefix.>
```

```
<Alert> <JMS> <BEA-040052> <JMSServer "plugging_auto_1" store
failed to open java.io.IOException: JMS JDBC store, connection
pool = <MSLVNoneTxPool>, prefix = <pluginStore_auto_1>: flush
failed
```

```
java.sql.SQLException: ORA-00942: table or view does not exist
```

### Create JMS event generator and tuning

This procedure completes the highlighted steps shown in the following figure:



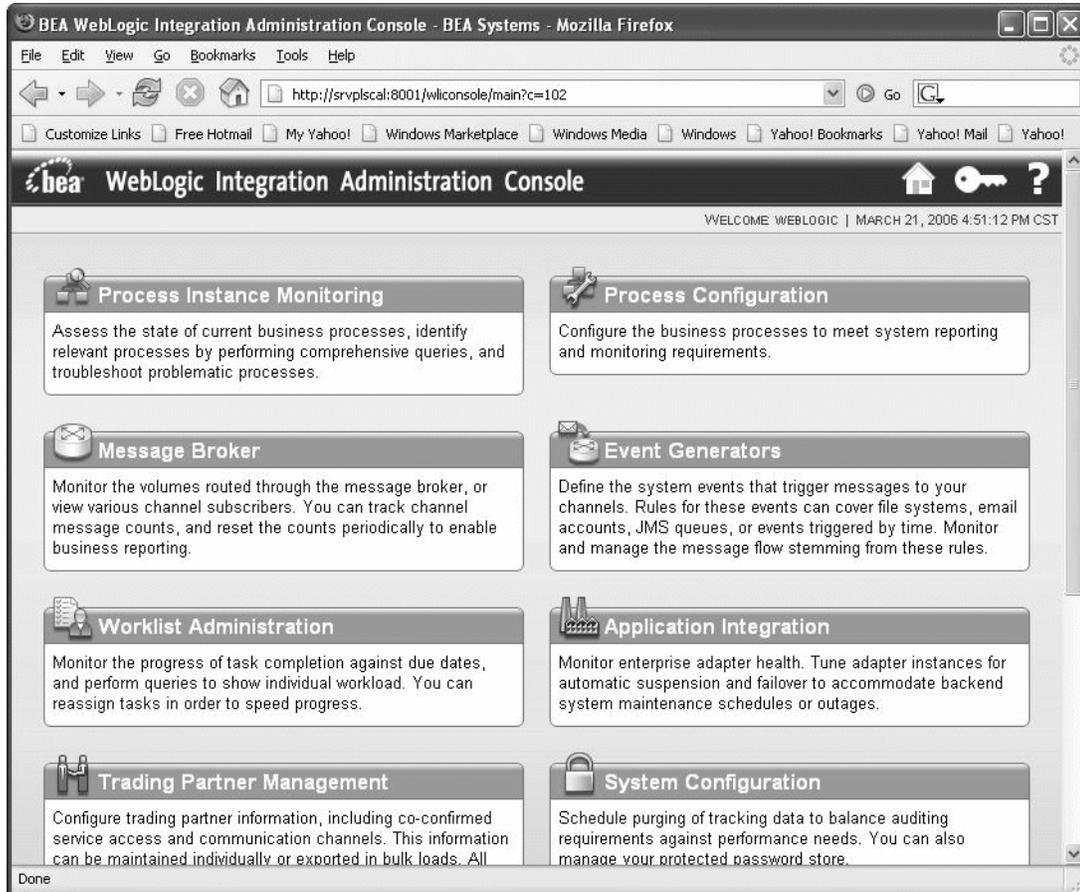
The following acronyms indicate the machine used in a step in the installation and deployment process:

- APP:** All application server machines
- CON:** BEA admin console
- ADM:** BEA admin server machine
- MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

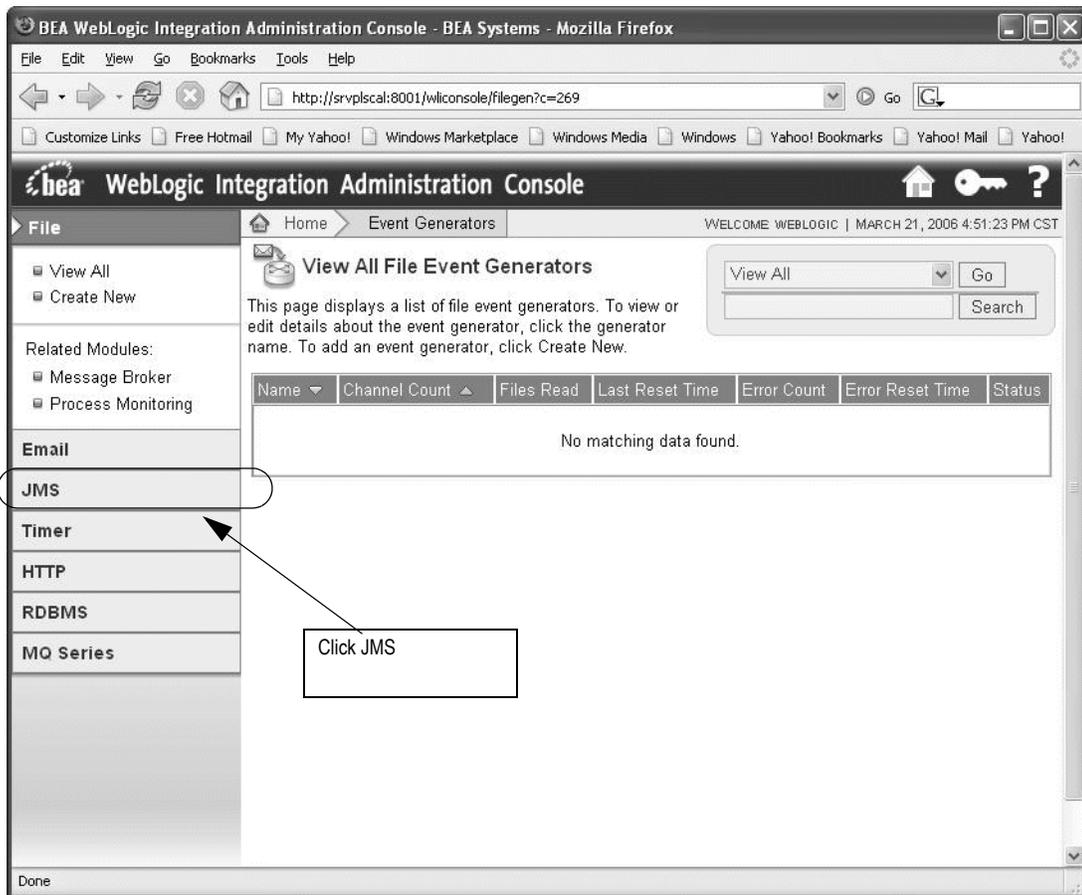
53. Start the WebLogic Integration Administration Console by typing the following information into the **Address** field of the Internet Explorer and pressing ENTER:

[http://<host\\_admin:port number>/wliconsole](http://<host_admin:port number>/wliconsole).

On the WebLogic Integration Administration Console window, click **Event Generators**. The following window appears.



54. On the left panel, click **JMS**.



55. On the expanded view under JMS, click **Create New**.

The screenshot shows the WebLogic Integration Administration Console interface. The top navigation bar includes the BEA logo, the title 'WebLogic Integration Administration Console', and a home icon. Below the navigation bar, the breadcrumb trail shows 'Home > Event Generators'. The main content area is titled 'View All JMS Event Generators' and contains a search box with a 'View All' dropdown and a 'Go' button. Below the search box, there is a table header with columns: 'Name', 'Channel Count', 'Messages Read', 'Last Reset Time', 'Error Count', 'Error Reset Time', and 'Status'. The table body is empty, displaying 'No matching data found.' In the left sidebar, the 'JMS' section is expanded, and the 'Create New' link is highlighted with a red circle. A callout box with the text 'Click Create New' and an arrow points to this link. Other sidebar options include 'View All', 'Message Broker', and 'Process Monitoring' under 'Related Modules', and 'Timer', 'HTTP', 'RDBMS', and 'MQ Series' below.

56. The following information appears in the right panel.

**WebLogic Integration Administration Console**

Home > Event Generators WELCOME WEBLOGIC | MARCH 21, 2006 4:53:02 PM CST

**Create a New JMS Event Generator**

Use this page to create a new JMS Event Generator. Although new generators are deployed immediately, they do not have channel rules. You can add rules after the generator has been created.

**Generator Name**  The name of the event generator must be unique.

**Destination Type**  The destination type. Must be a Queue, a Topic, or a Foreign Destination. The actual type of a foreign destination will be specified below.

**Destination JNDI Name**  The name of the Queue or Topic.

**Message Selector**  Optional.

**Default Rule Channel**  The Channel for the default JMS Rule.

- a. Enter the following values on the Create a New JMS Event Generator window:
  - **Generator Name:** InternalOutboundGenerator
  - **Destination Type:** javax.jms.Queue
  - **Destination JNDI Name:** mss.internal.event.queue
  - **Message Selector:** Leave this field blank.
  - **Default Rule Channel:** /MSS/internalOutboundEventChannel (xml)
- b. Click **Submit**.

57. The following summary appears.

The screenshot displays the WebLogic Integration Administration Console. The main content area is titled "JMS Event Generator Definition". It includes a navigation sidebar on the left with categories like File, Email, JMS, Timer, HTTP, RDBMS, and MQ Series. The JMS section is expanded, showing options for "View All" and "Create New", and "Related Modules" including "Message Broker" and "Process Monitoring".

The main content area contains the following information:

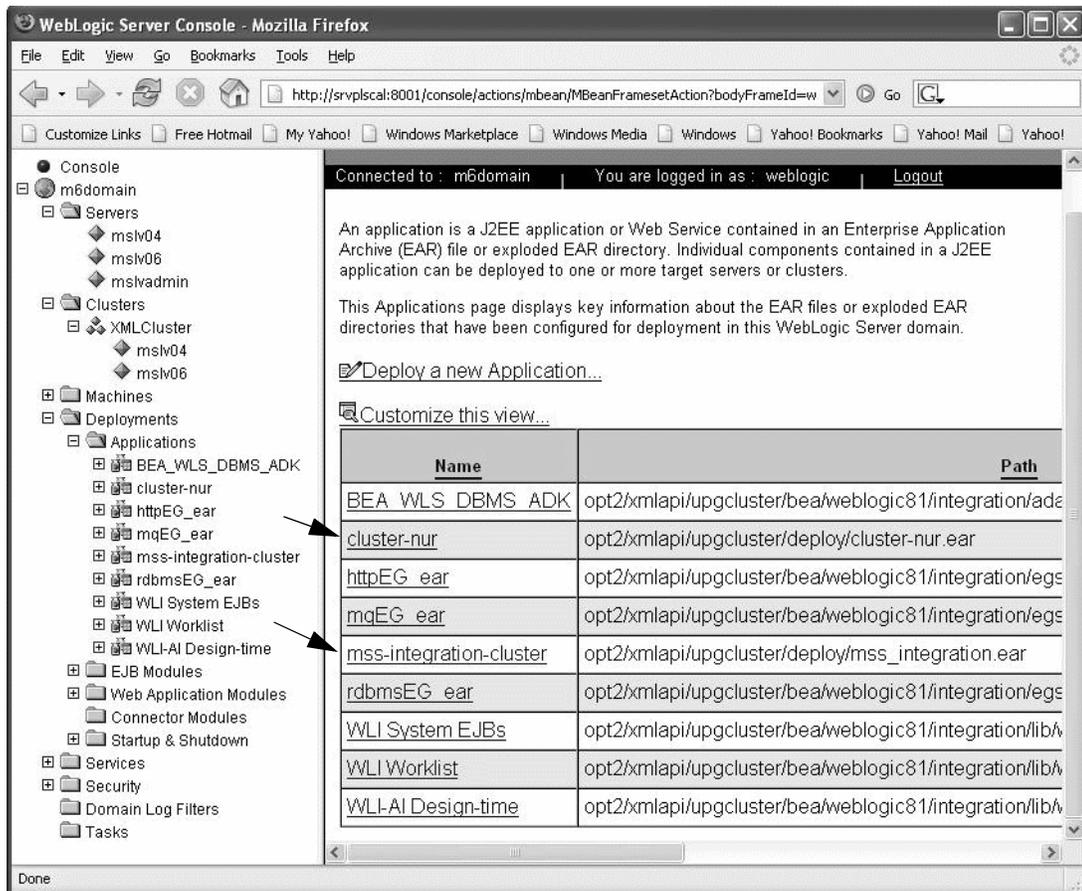
- Generator Name:** InternalOutboundGenerator
- Destination Type:** javax.jms.Queue
- Destination JNDI Name:** mss.internal.event.queue
- Message Selector:** Not defined.
- Default Rule Channel:** /MSS/internalOutboundEventChannel

Below the generator details, there is a section titled "Channel Rules Defined for this Generator:" which contains a table with the following structure:

Property Name	Property Value	Channel Name	Description
No matching data found.			

At the bottom of the page, there is a link labeled "Define a New Channel Rule".

58. Verify the application deployment by accessing the BEA console. Navigate to Deployments -> Applications. Check the right panel to verify that the cluster-nur and mss-integration-cluster exist in the domain.



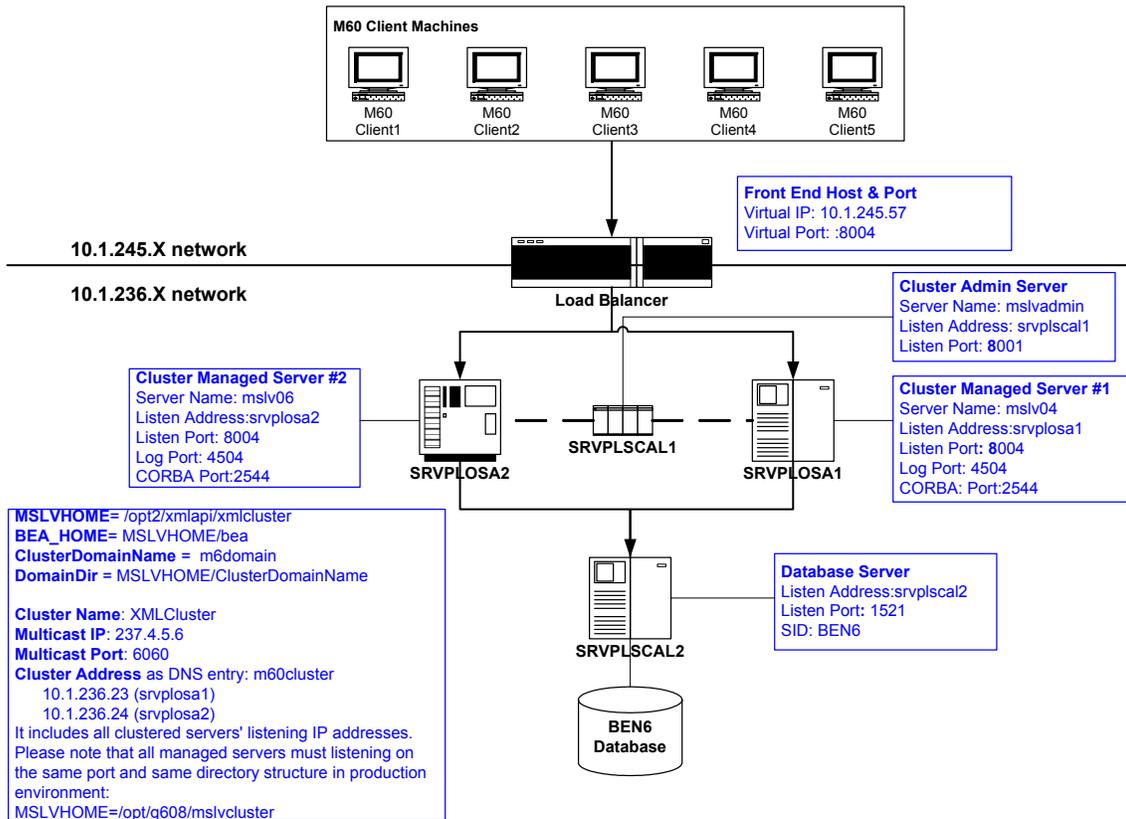
59. See “[Appendix F: Tuning servers for performance](#)” for BEA server tuning.
60. See “[Appendix G: Configuration Files](#)” to modify and restore M6 configuration files.
61. Restart the cluster.
  - a. Restart the admin server on the admin server machine and wait until it is running by checking the admin console.
  - b. Restart all clustered servers.

## Clustered server upgrade from M6.0.8 - M6.0.14 to M6.0.15

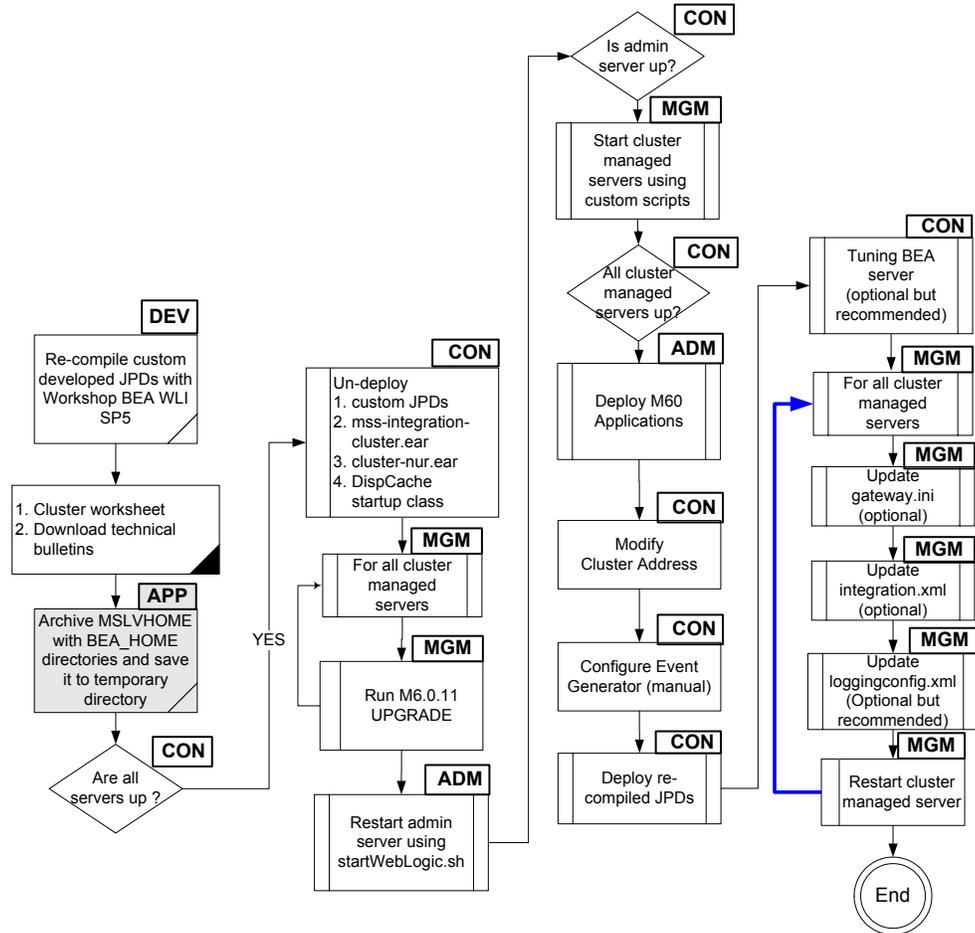
Follow the procedures in this section if you currently have M6.0.8 - M6.0.11 installed and you are upgrading to M6.0.15.

-  Before upgrading your application server to M6.0.15, refer to the Technical Bulletin titled *M6 JMS Configuration* to determine how it affects your installation. Failure to do so results in the server failing to start after installing the application. To locate this bulletin, click the Knowledge tab on the Oracle MetaLink Web site (<https://metalink.oracle.com>).
  
-  You will need to manually modify the loggingconfig.xml file and integration.xml file or you will receive an error on your appserver console. Additionally, if using Custom Extensions, you will need to manually modify the gateway.ini file. Detailed information regarding the changes to these files is located in “[Appendix G: Configuration Files](#)” on page 479. For information on Custom Extensions, refer to the Custom Extensions Developer’s Reference.

The following figure shows the example configuration that will be used in the upgrade scenario.



The highlighted step shown in the following figure describes the process to prepare for an upgrade.



The following acronyms indicate the machine used in a step in the installation and deployment process:  
**APP:** All application server machines    **CON:** BEA admin console  
**ADM:** BEA admin server machine    **MGM:** All clustered server machines  
**DEV:** Development environment  
**FE:** Front end host machine, such as load balancer or proxy

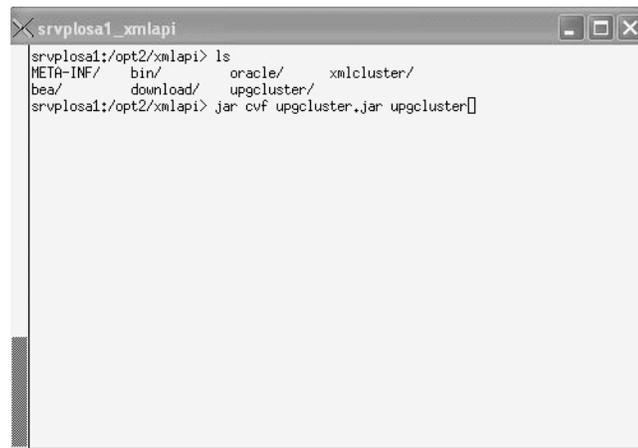
Figure 19: Upgrading a clustered configuration

### Archive the current M6 domain and application

1. Archive the M6 environment on the admin server machine. In this example, MSLVHOME=/opt2/xmlapi/upgcluster. Archive the BEA\_HOME directory if it is not under the MSLVHOME directory.

```
srvplscal1:/opt2/xmlapi> jar cvf upgcluster.jar upgcluster
```

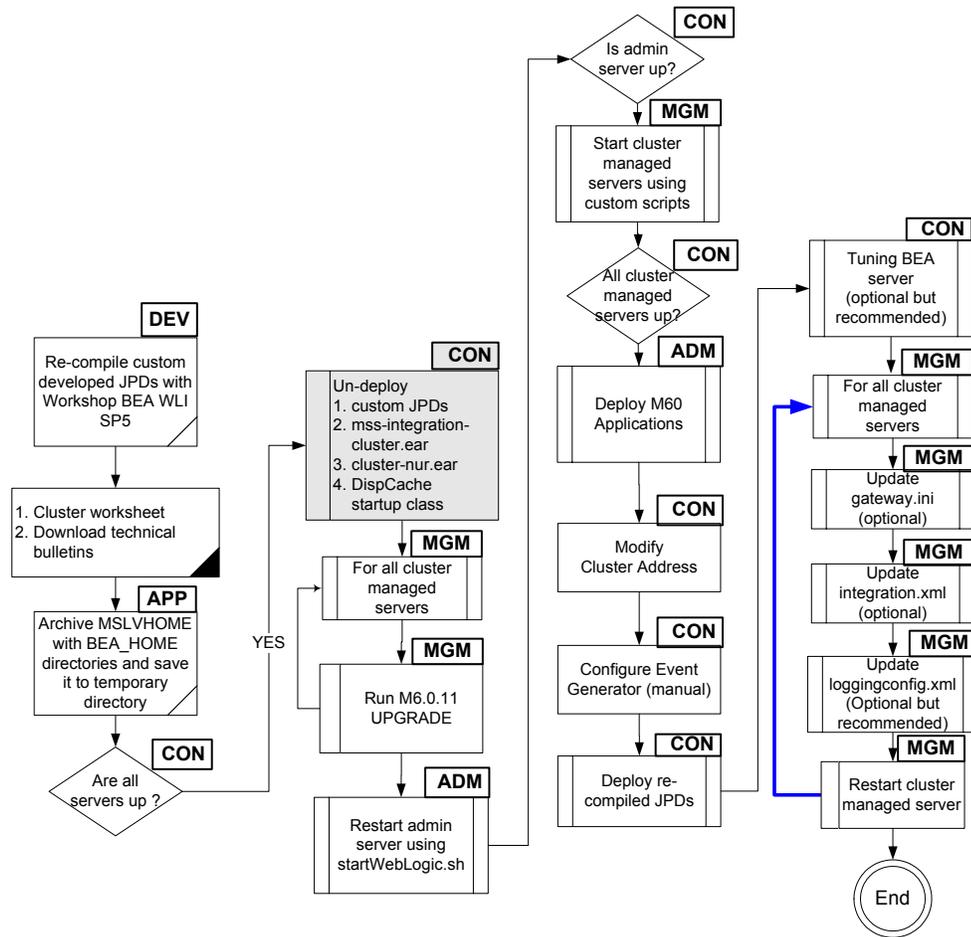
2. Archive the M6 environment on all clustered server machines. This concludes the archiving for the current environment. The example shows archiving one of the clustered servers, mslv04 on srvplosa1.



```
srvplosa1_xmlapi
srvplosa1:/opt2/xmlapi> ls
META-INF/  bin/      oracle/   xmlcluster/
bea/       download/ upgcluster/
srvplosa1:/opt2/xmlapi> jar cvf upgcluster.jar upgcluster
```

### Delete existing applications

This procedure completes the highlighted step shown in the following figure:



The following acronyms indicate the machine used in a step in the installation and deployment process:

- APP:** All application server machines
- CON:** BEA admin console
- ADM:** BEA admin server machine
- MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

3. Access the BEA console and ensure all clustered servers are in running state by navigating to Domain -> Servers.



A server is an instance of WebLogic Server that runs in its own Java Virtual Machine (JVM) and has its own configuration. Each WebLogic Server domain must have one server that acts as the Administrator Server. In a typical production environment, the Administration Server is where the Administration Console is run and used to perform administrative tasks. By default, the Administration Server is called `mysrvr1`. A typical production environment may also have one or more Managed Servers, which are instances of WebLogic Server used to host enterprise applications.

This Servers page displays key information about each server that has been configured in the current WebLogic Server domain.

 [Configure a new Server...](#)

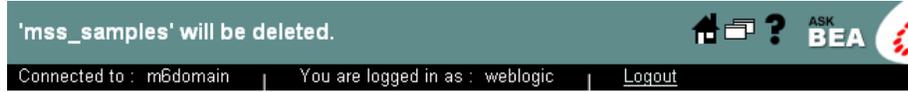
 [Customize this view...](#)

<u>Name</u>	<u>Listen Port</u>	<u>Listen Port Enabled</u>	<u>State</u>	
<a href="#">msslv04</a>	8004	true	RUNNING	 
<a href="#">msslv06</a>	8004	true	RUNNING	 
<a href="#">msslvadmin</a>	8001	true	RUNNING	 

4. Delete the mss\_samples application by navigating to Deployments -> Applications. Right-click the mss\_samples application and select Delete. The following window appears. Click Yes.



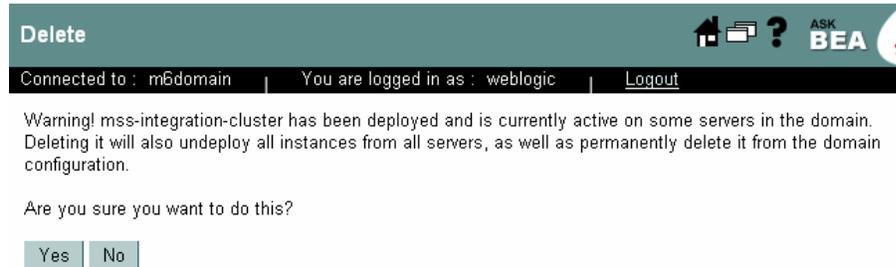
5. Click Continue. If you do not click Continue, the application is not removed from the domain.



'mss\_samples' will be deleted.

[Continue](#)

6. Delete the mss-integration-cluster application by navigating to Deployments -> Applications. Right-click the mss-integration-cluster application and select Delete. The following window appears. Click Yes.



7. Click Continue to remove the mss-integration-cluster from the domain configuration. If this step is not completed, the application is not removed from the domain.

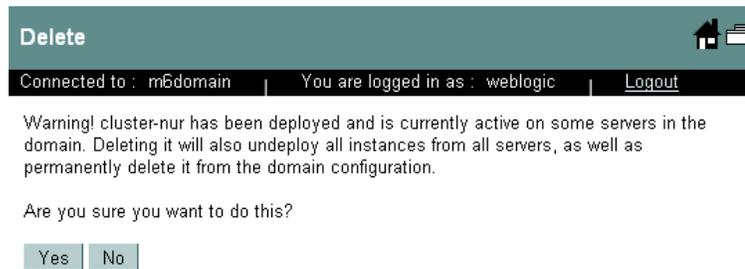


'mss\_integration' will be deleted.

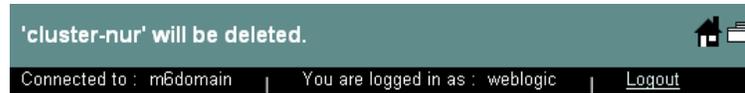
[Continue](#)

8. Delete the cluster-nur application by navigating to Deployments -> Applications. Right-click the cluster-nur application and select Delete. The following window appears. Click Yes.

If the LSR or ASR application was deployed on the cluster, remove it before deleting the cluster-nur application by following the same steps.



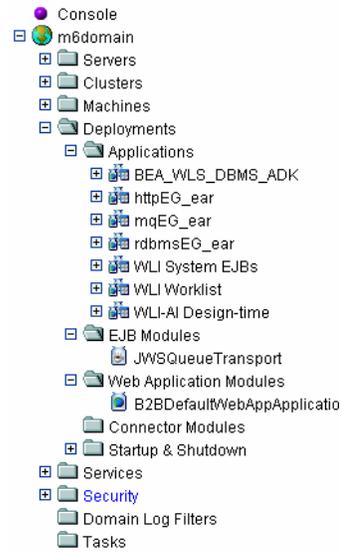
9. Click Continue to remove the cluster-nur from the domain configuration. If this step is not completed, the application is not removed from the domain



'cluster-nur' will be deleted.

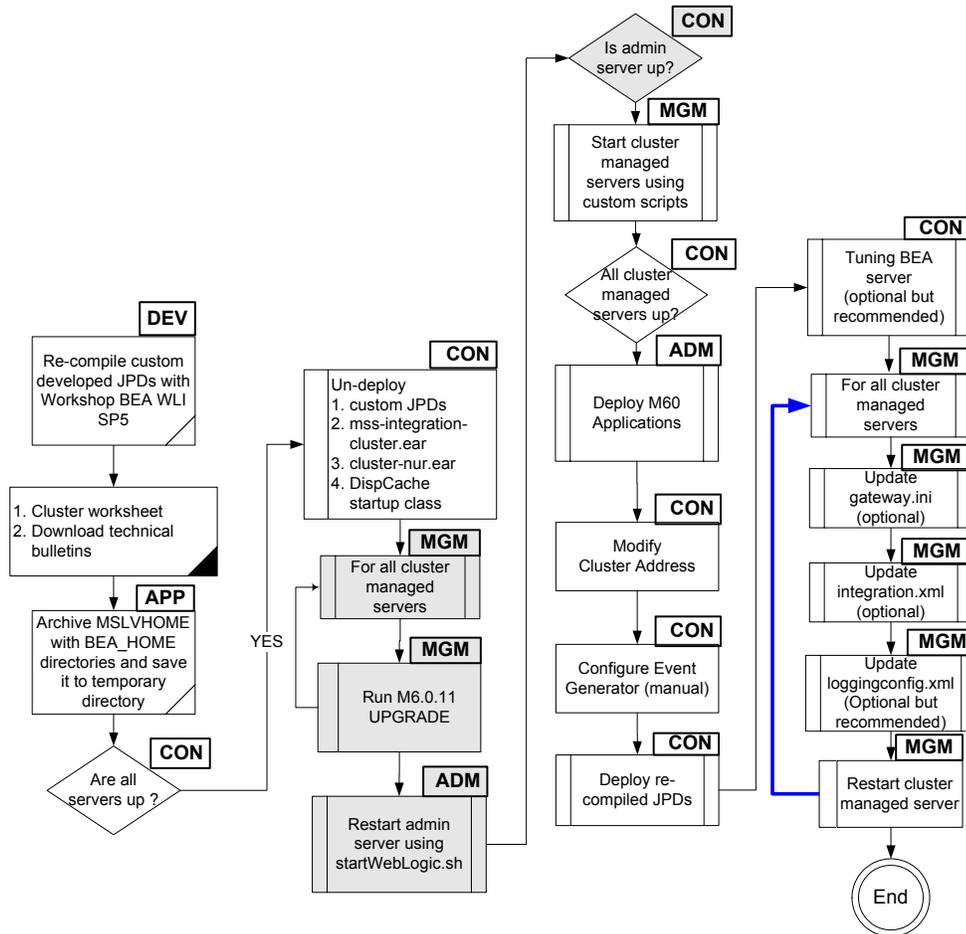
[Continue](#)

10. Navigate to Deployments -> Startup & Shutdown. If DispCache Startup class is present, remove it.



### Run the M6 Installer on each clustered server machine

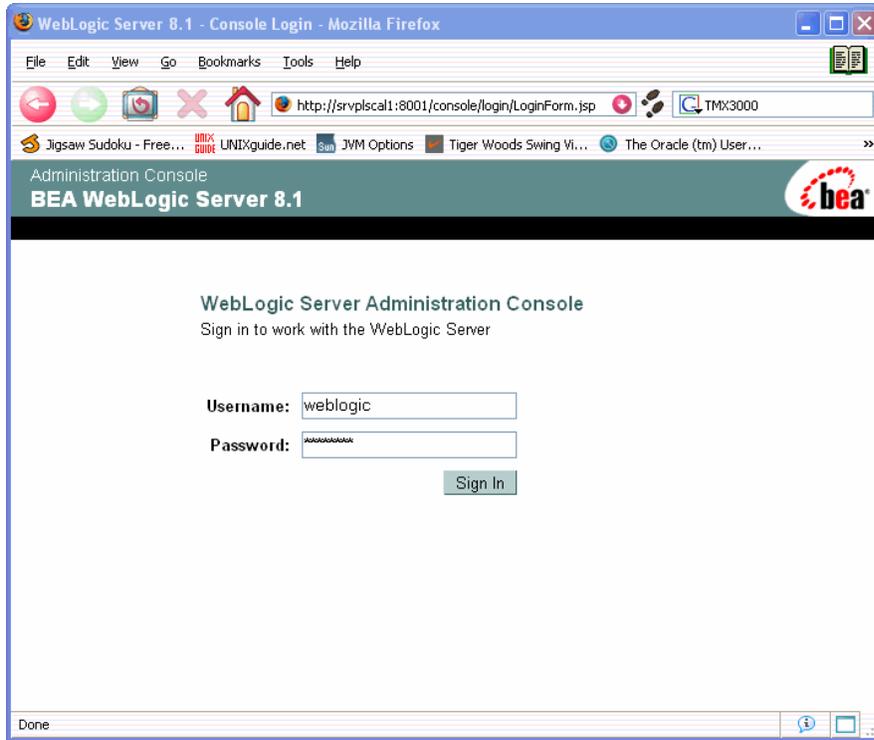
This procedure completes the highlighted steps shown in the following figure:



The following acronyms indicate the machine used in a step in the installation and deployment process:

- APP:** All application server machines
- CON:** BEA admin console
- ADM:** BEA admin server machine
- MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

Check to see if the admin server is running by accessing the BEA console: `http://<admin server listening address>:port number>/console`.



11. For each clustered server machine, run the M6 installer using the following command:

```
java -jar <releases#build#>_AppServerInstaller.jar
```

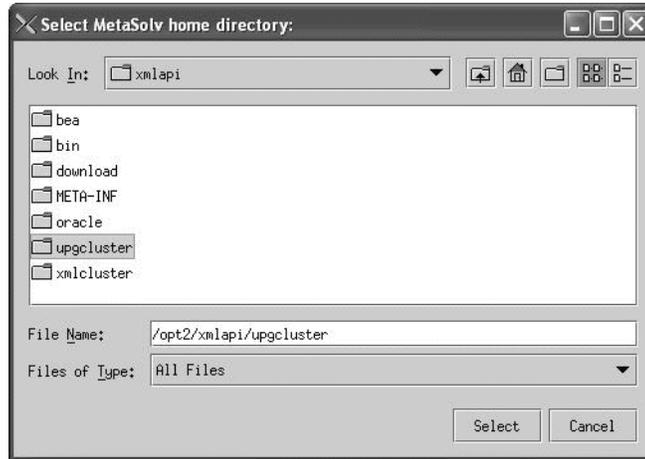
In this example: `java -jar MSS_R6_0_11_b159_AppServerInstaller.jar`



12. From the Look In drop-down list, click the down arrow and select a directory in which the installation program files can be stored and used during the installation process, then click **Select**.

A directory named *installer* is automatically created in the selected directory. MetaSolv recommends choosing your METASOLV\_HOME directory for this task.

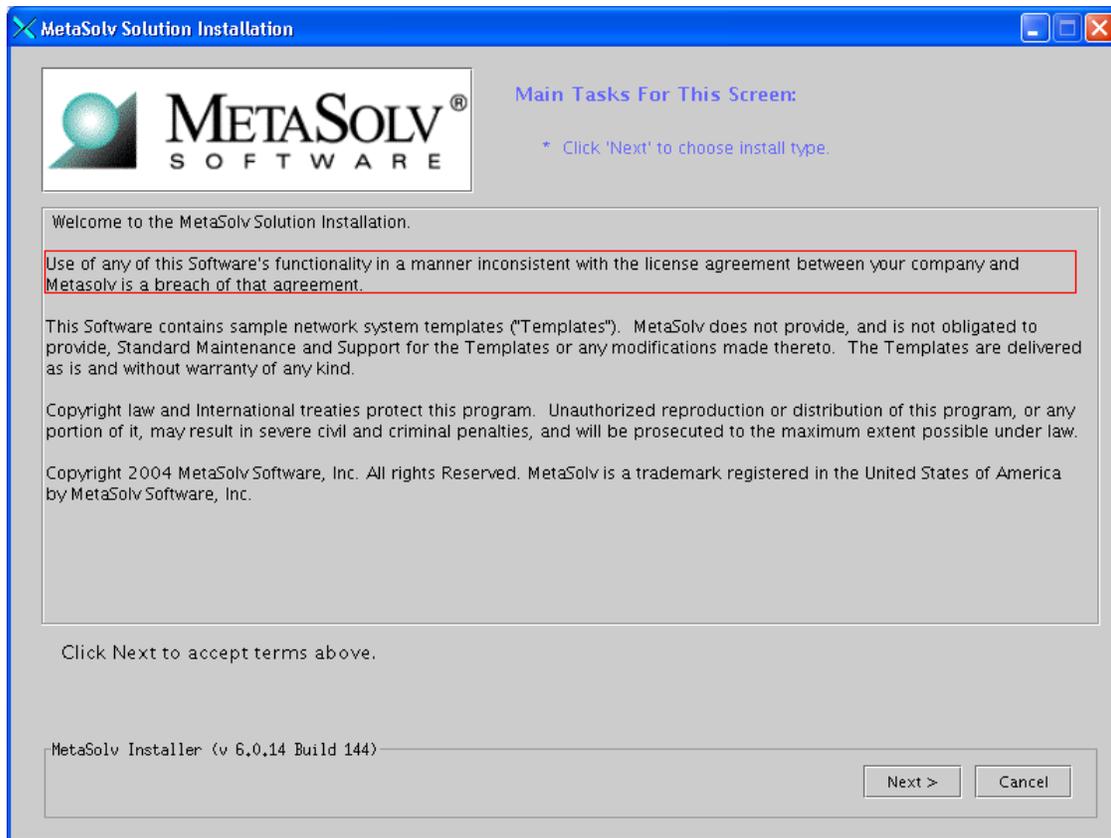
The installation program auto-launches the installation process by invoking setup.sh in the METASOLV\_HOME/installer directory.



Worksheet reference numbers and example values:

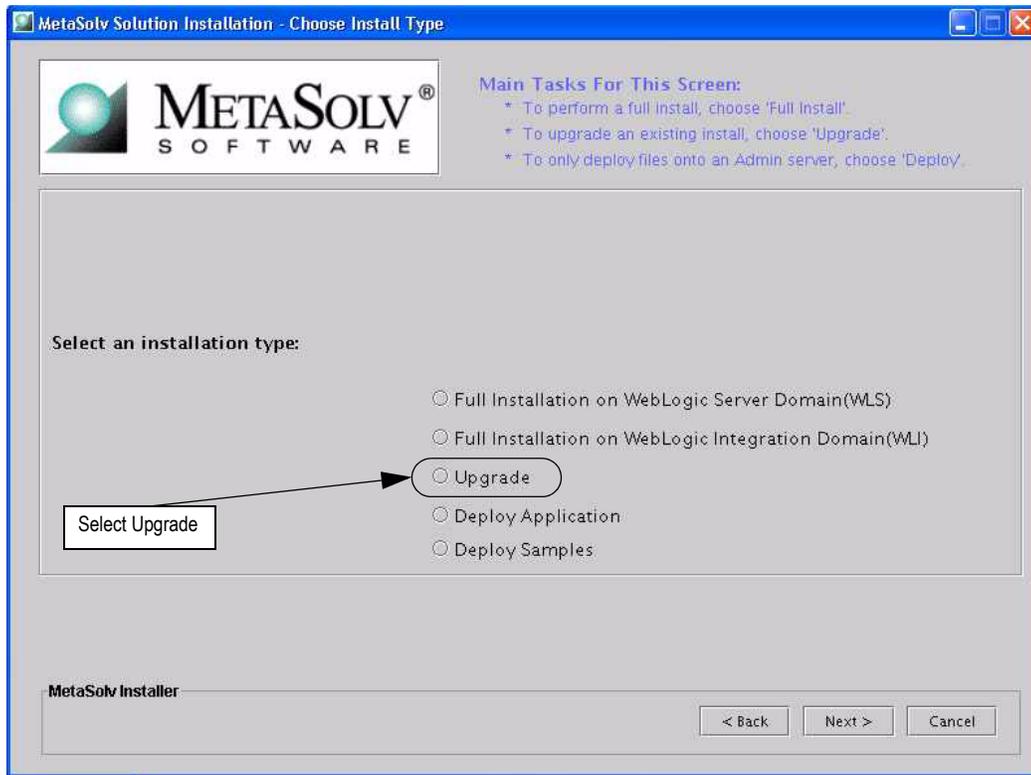
Field name	Worksheet reference number	Example value
File Name (METASOLV_HOME)	XCOMM-0090	/opt2/xmlapi/upgcluster

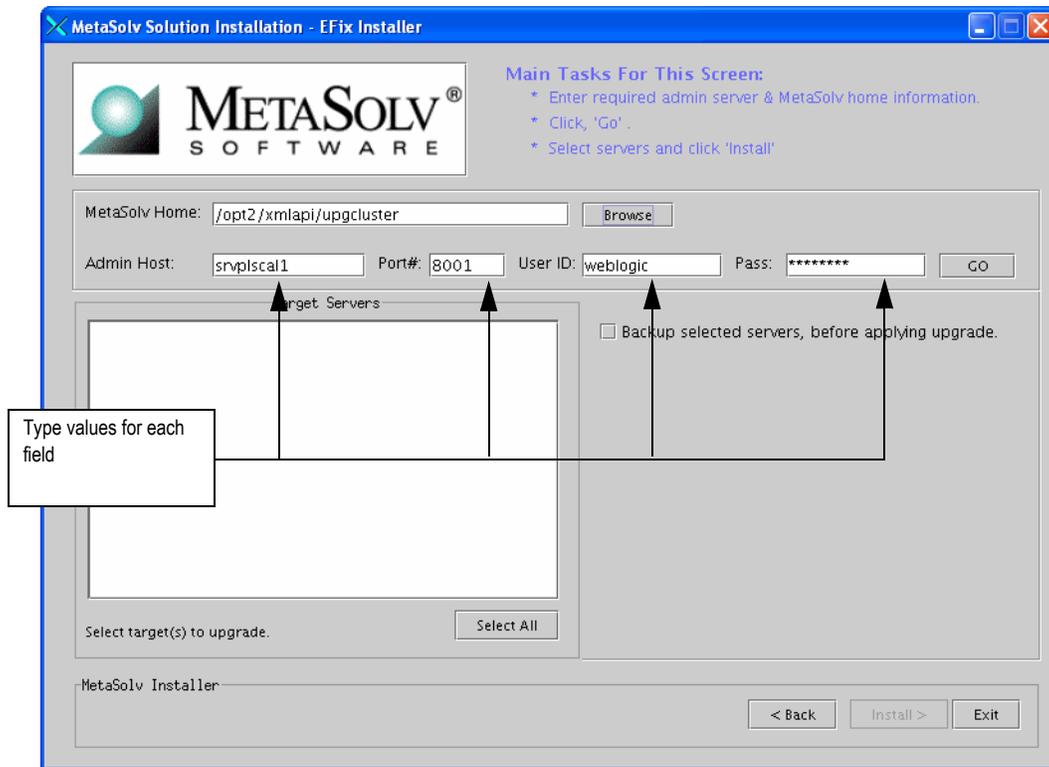
The following window appears.



13. Click **Next**.

14. Select **Upgrade** and click **Next**.





15. Type the values for the following fields: **Admin Host**, **Port#**, **User ID**, and **Pass**, and click **Go**.

When you click **Go**, the installation program queries the Admin Host machine and returns with values you entered during the configuration of the BEA WebLogic domain.

Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
Admin Host	XAdmin-0250	<i>srvplscal</i>
Port#	XAdmin-0260	<i>8001</i>
User ID	XCOMM-0020	<i>weblogic</i>
Pass	XCOMM-0030	<i>metasolv</i>

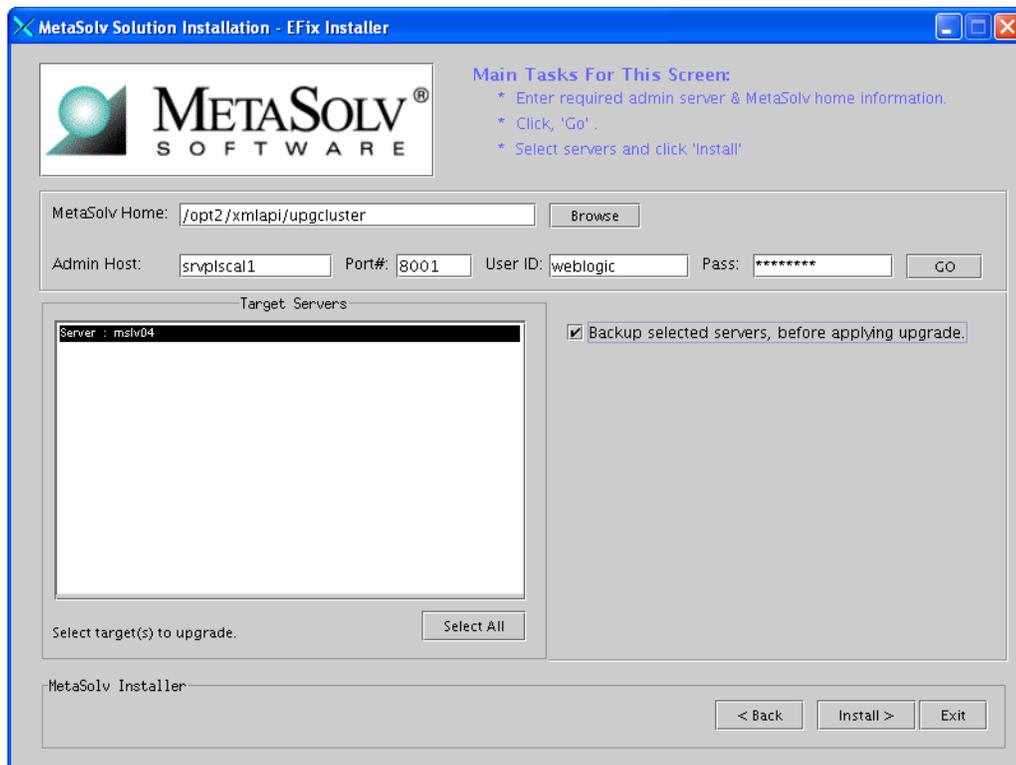
The treeview in the left pane represents the domain and its servers. The domain *m6domain* is at the highest level in the structure. The treeview shows the cluster *M60Cluster* and the servers that are subordinate to it (*mslv06*, *mslv04*) and the administration server *mslvadmin*.

16. In the treeview on the left, select the check box next to the server on which you want MetaSolv Solution installed.

Only servers associated with the current machine can be selected. Note in the figure below, both *mslv06* and *mslv04* can be selected. Both servers are running on the current machine (*srvplosa1*).

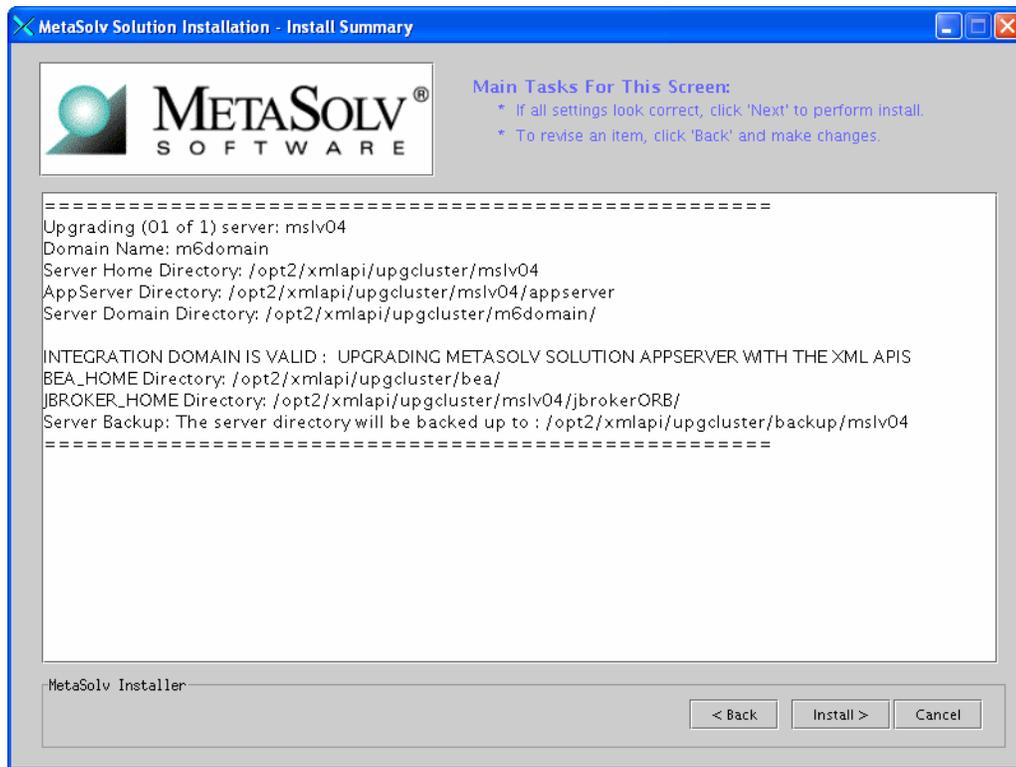
Do not install the MetaSolv Solution application onto the administration server.

When you select a server in the left pane, tabs appear on the right pane. The tabs allow you to set values that apply to all servers that belong to a selected cluster.

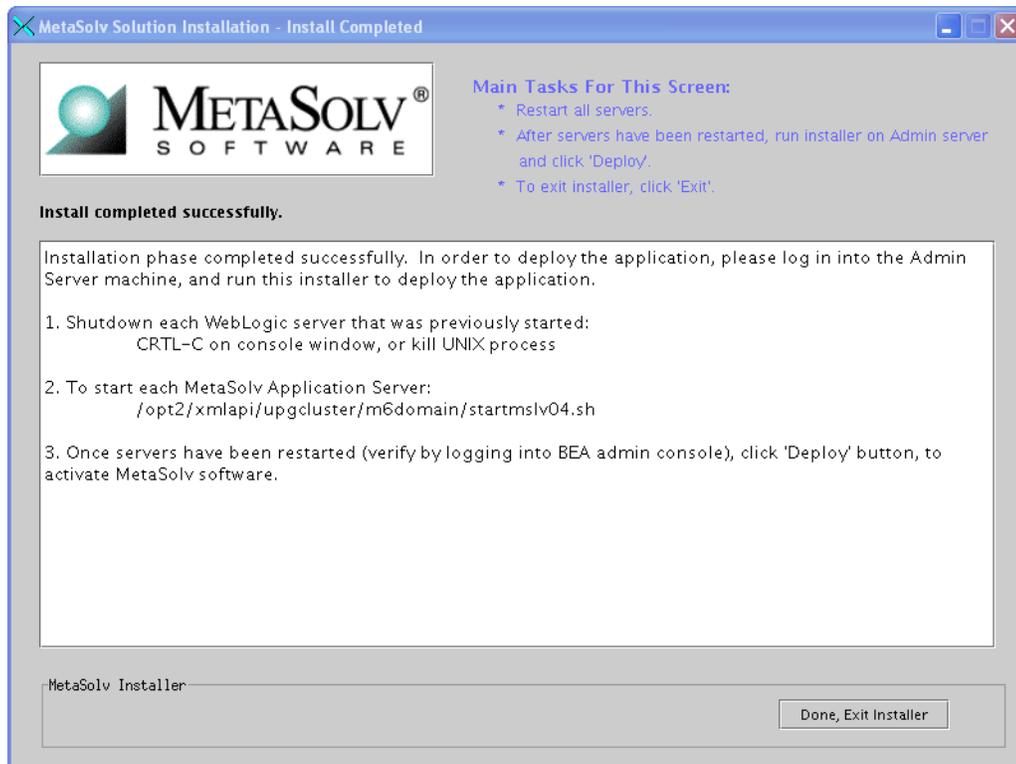


17. Click Install.

The following window appears.



18. Click Install. When the installation is complete, the following window appears.



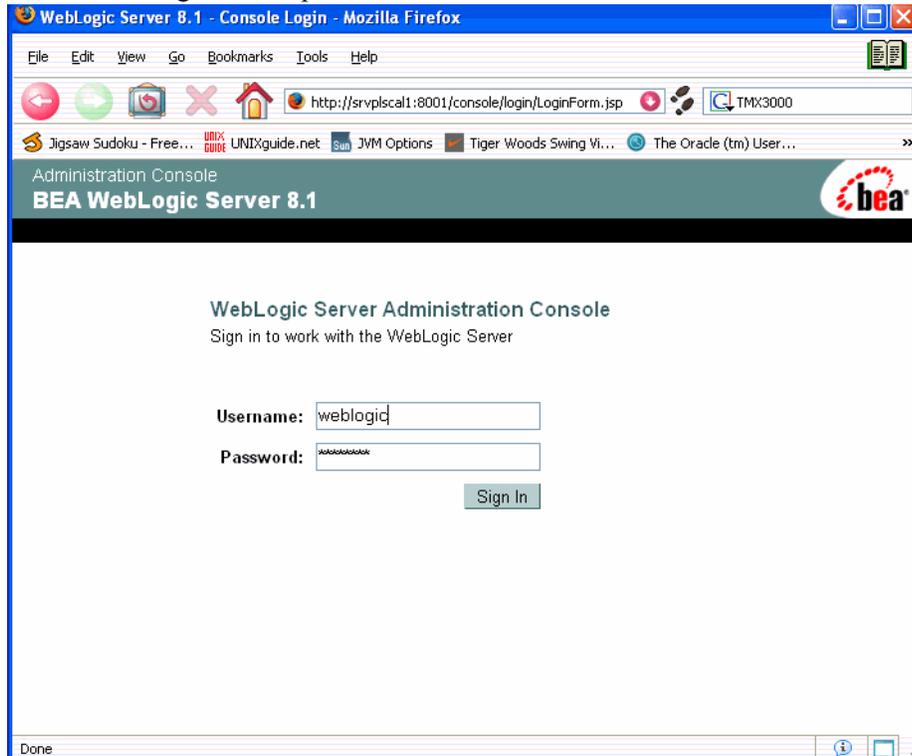
19. Repeat Steps 11 - 18 for all clustered server machines.

### Restart the admin server

20. Restart the admin server on the admin server machine.

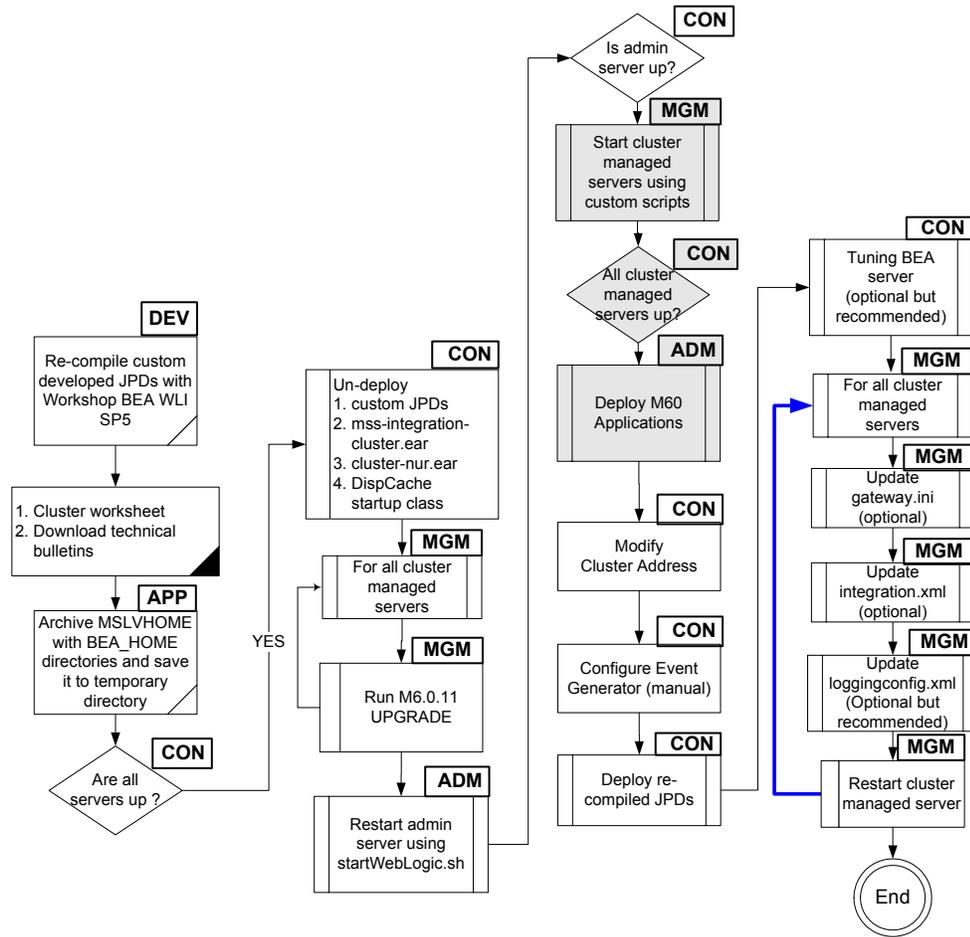
```
srvplscal1:/opt2/xmlapi/upgcluster/w6domain> startWebLogic.sh
```

21. Check to see if the admin server is running by accessing the BEA console: `http://<admin server listening address: port number>/console`.



### Start all clustered servers using the M6 custom startup scripts and deploy M6

This procedure completes the highlighted steps shown in the following figures:



The following acronyms indicate the machine used in a step in the installation and deployment process:

- APP:** All application server machines
- CON:** BEA admin console
- ADM:** BEA admin server machine
- MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

22. Start all clustered servers on the clustered machines using custom startup scripts. In this example, go to `MSLVHOME/your_domain` directory to start the `mslv04` clustered server on `srvplosa1` by `startmslv04.sh` and start `mslv06` on `srvplosa2` by `startmslv06.sh`.



```
srvplosa1_xmlapi
srvplosa1:/opt2/xmlapi/upgcluster/m6domain> startmslv04.sh
```



```
srvplosa2_xmlapi
srvplosa2:/opt2/xmlapi/upgcluster/m6domain> startmslv06.sh
```

23. Ensure all clustered servers are in running state by accessing the BEA console at the admin server listening address and port. Navigate to Servers.

m6domain> Servers
🔄

Connected to : m6domain | You are logged in as : weblogic | [Logout](#)

A server is an instance of WebLogic Server that runs in its own Java Virtual Machine (JVM) and has its own configuration. Each WebLogic Server domain must have one server that acts as the Administration Server. In a typical production environment, the Administration Server is where the Administration Console is run and used to perform administrative tasks. By default, the Administration Server is called `myserver`. A typical production environment may also have one or more Managed Servers, which are instances of WebLogic Server used to host enterprise applications.

This Servers page displays key information about each server that has been configured in the current WebLogic Server domain.

[📝 Configure a new Server...](#)

[🔍 Customize this view...](#)

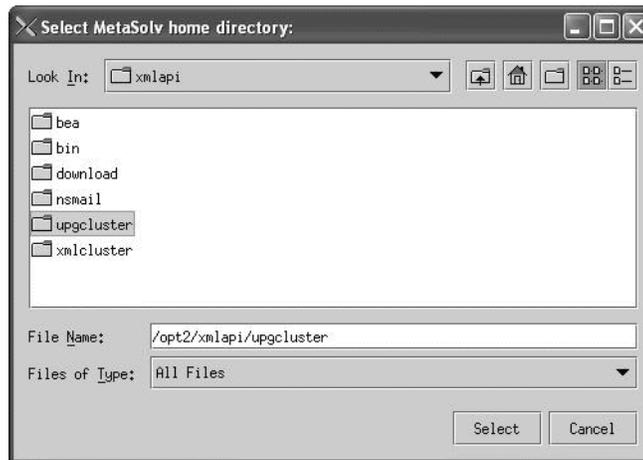
Name	Listen Port	Listen Port Enabled	State	
<a href="#">mslv04</a>	8004	true	RUNNING	📄 🗑️
<a href="#">mslv06</a>	8004	true	RUNNING	📄 🗑️
<a href="#">mslvadmin</a>	8001	true	RUNNING	📄 🗑️

### Deploy the M6 application to the cluster

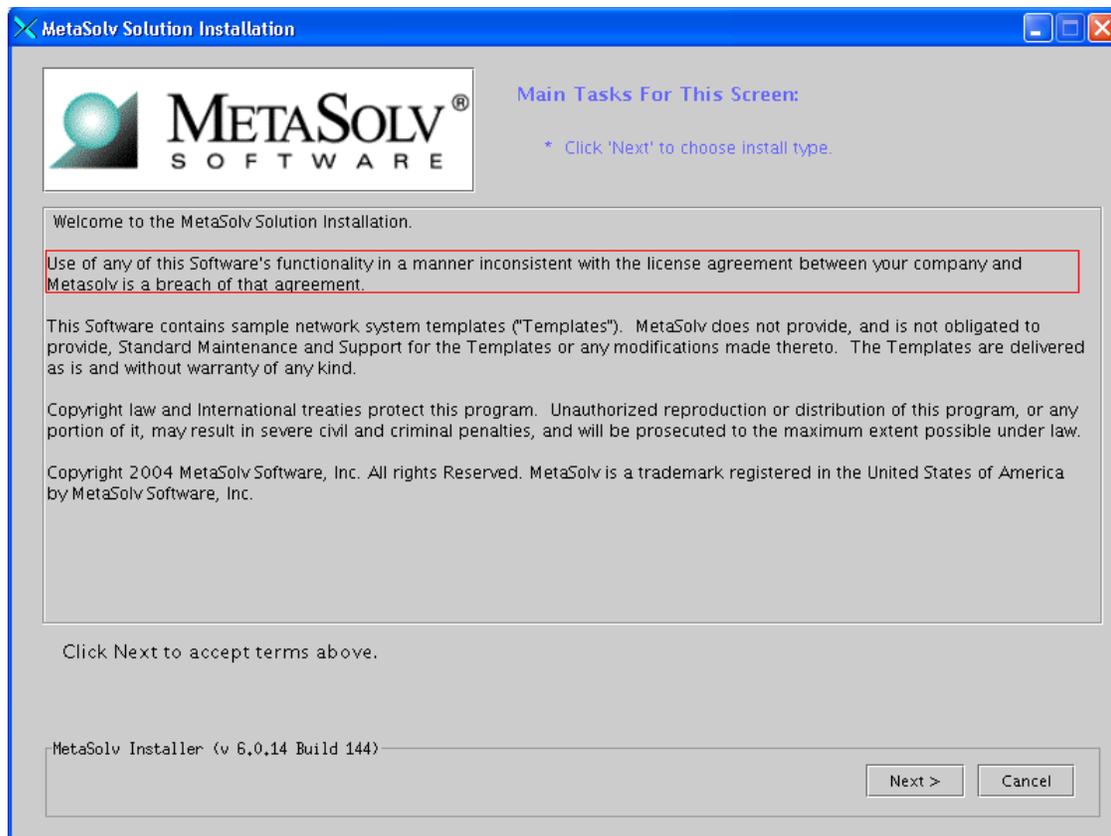
24. Use the admin server machine to deploy the M6 application to the cluster by invoking the M6 installer as shown below.



25. Choose a staging directory for M6 installer files and click Select. Use MSLVHOME for the staging directory.

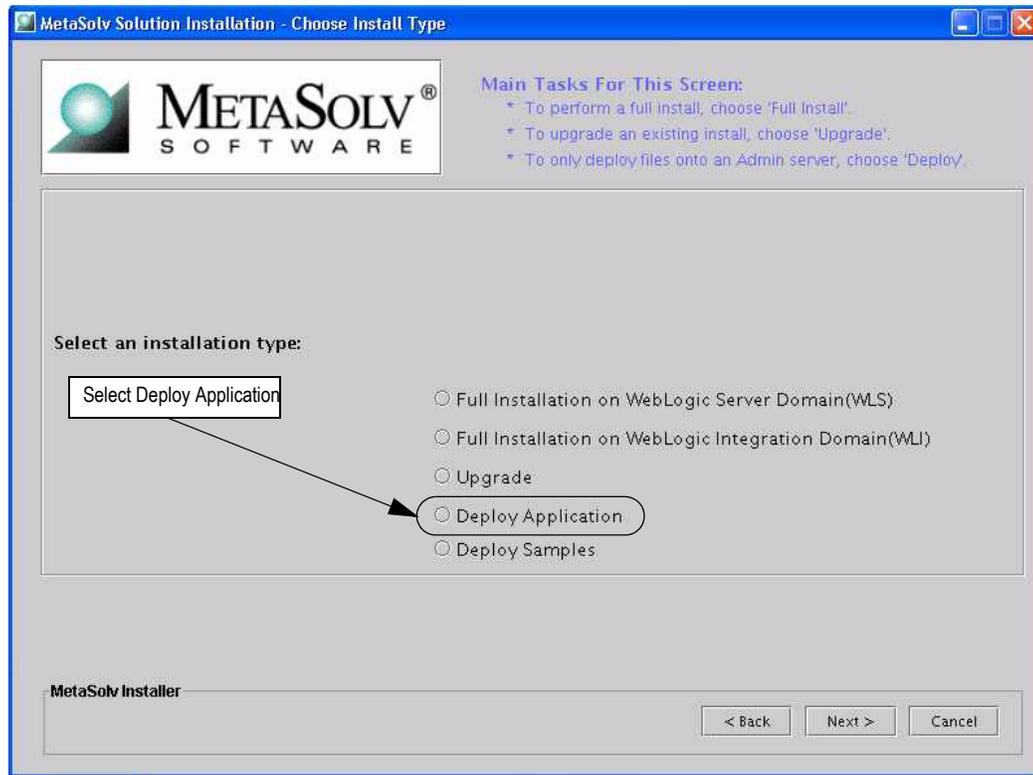


The following window appears.

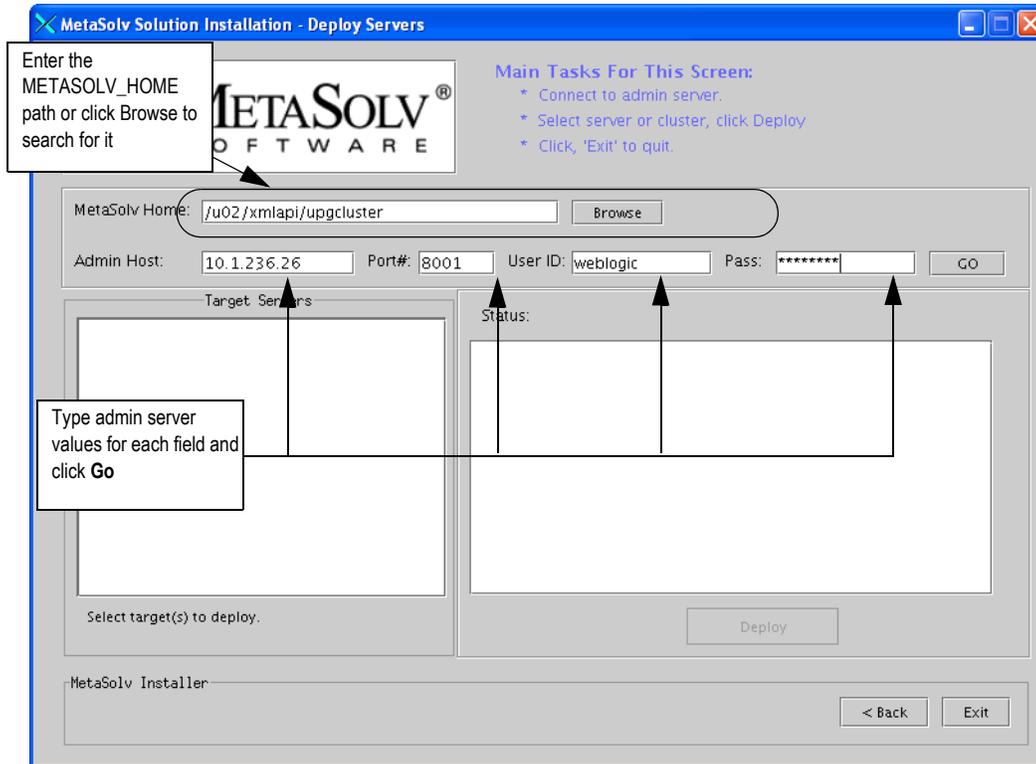


26. Click **Next**.

27. Select **Deploy Application** and click **Next**.



28. Enter the path for the METASOLV\_HOME directory or click **Browse** and search for the directory. Type administration server values in the fields shown in the previous figure and click **Go**.

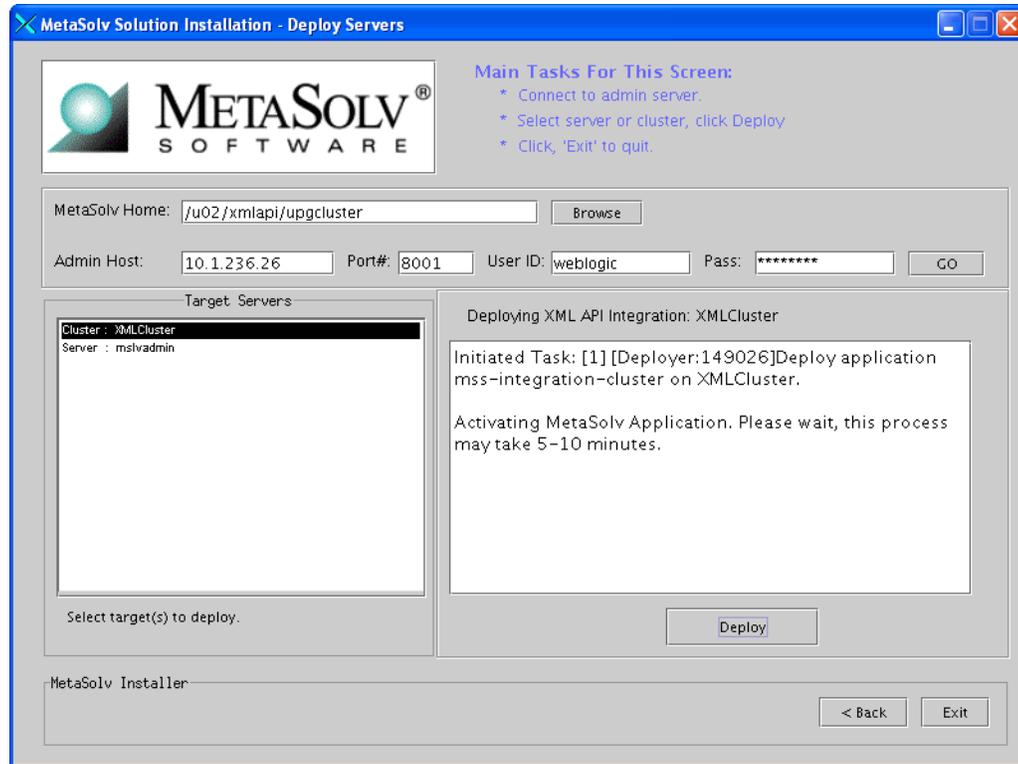


29. Highlight the cluster and click **Deploy**. Deployment begins. MetaSolv Solution is deployed to each server in the cluster.

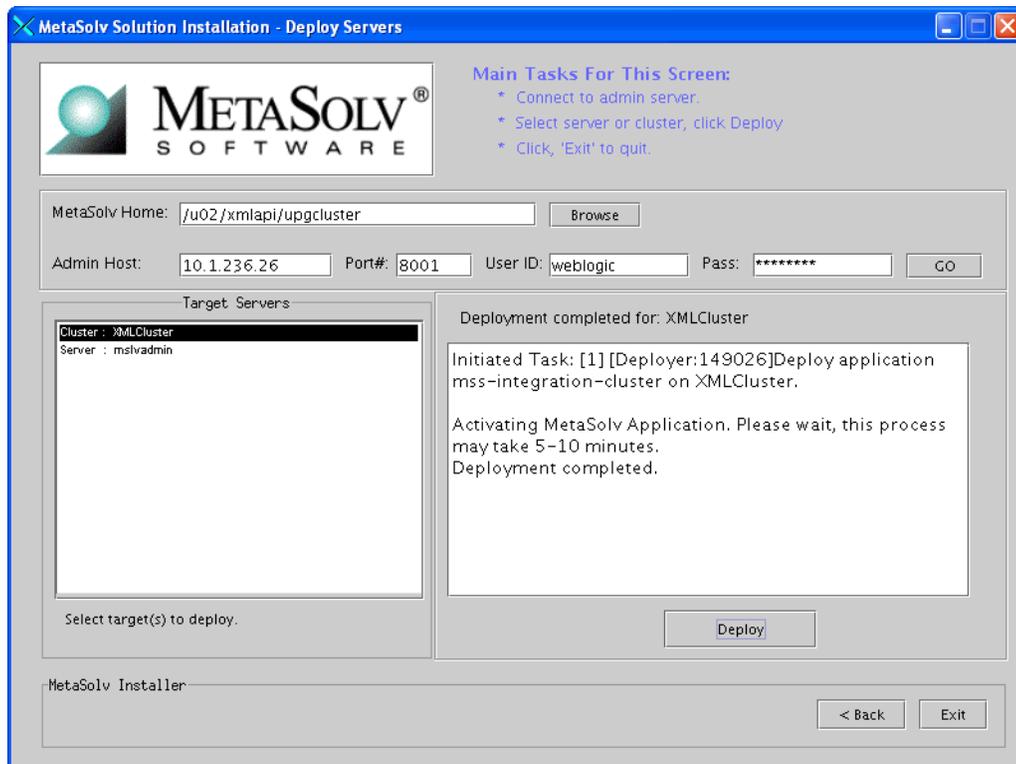
Do not deploy to the administration server. In the scenario shown in the previous figure, only the cluster was deployed to, not *mslvadmin*, the administration server.



The deployment process can take a few minutes. The right pane of the window indicates the status of the deployment.



30. When the deployment is complete, the following window will be displayed. Click "Exit".



 If you encounter the following error in the <serverName>.mss.log file after you start a server, refer to the Technical Bulletin titled *Prodfixsql Error: Failure to grant table creation privileges for APP\_MSLV* for information on how to resolve this error. To locate this bulletin, click the Knowledge tab on the Oracle MetaLink Web site (<https://metalink.oracle.com>).

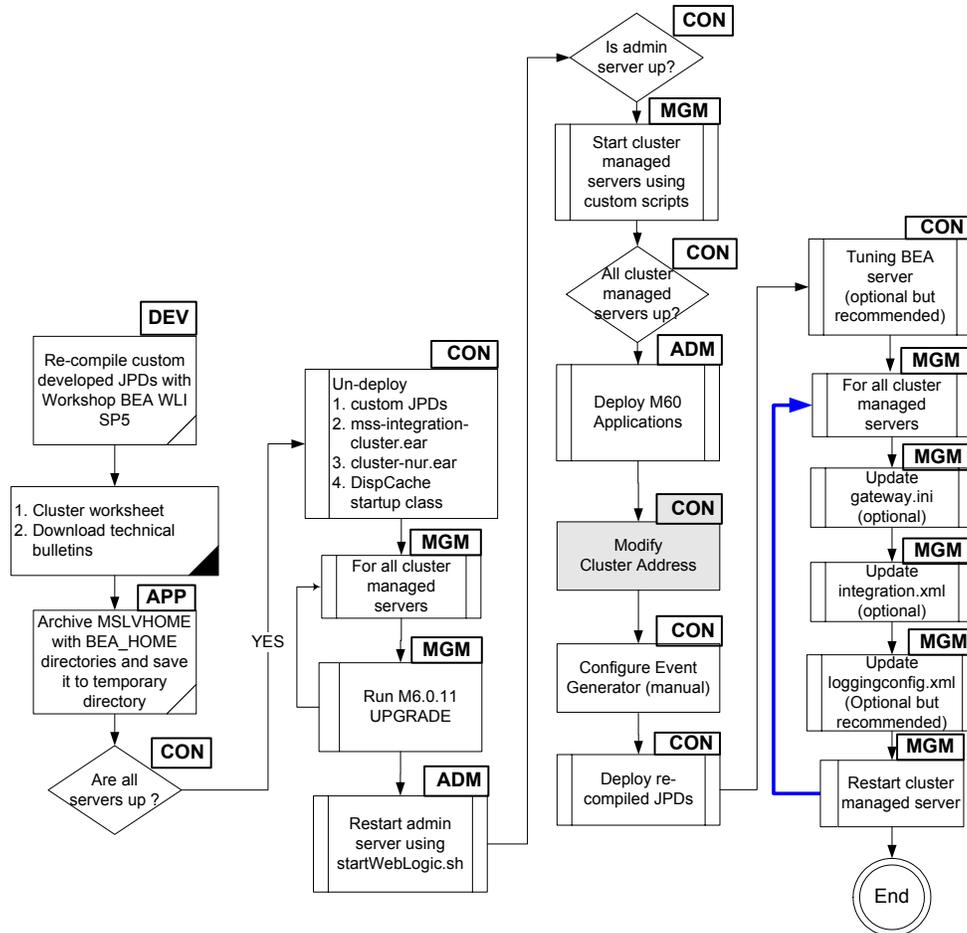
```
<Alert> <JMS> <BEA-040205> <JMSServer "plugging_auto_1". An error
occurred while trying to do a SQL SELECT on table
"pluginStore_auto_1JMSState". Check privileges on this table. You
may need to specify [schema.[catalog.]] in your configured
prefix.>
```

```
<Alert> <JMS> <BEA-040052> <JMSServer "plugging_auto_1" store
failed to open java.io.IOException: JMS JDBC store, connection
pool = <MSLVNoneTxPool>, prefix = <pluginStore_auto_1>: flush
failed
```

```
java.sql.SQLException: ORA-00942: table or view does not exist
```

### Modify "Cluster Address" in production environment

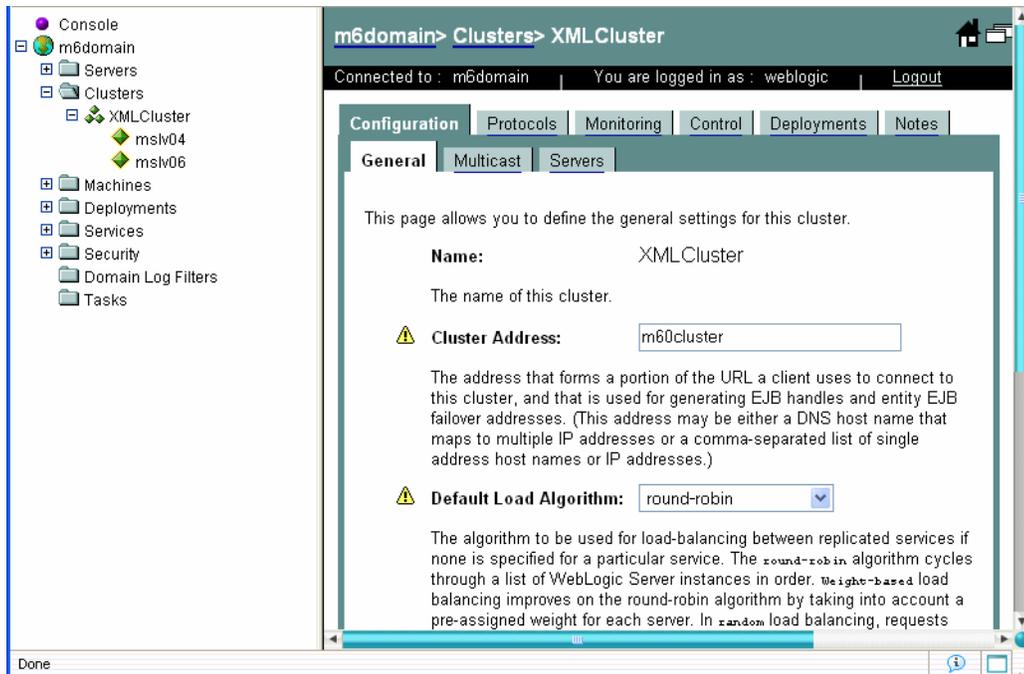
This procedure completes the highlighted step shown in the following figure:



The following acronyms indicate the machine used in a step in the installation and deployment process:

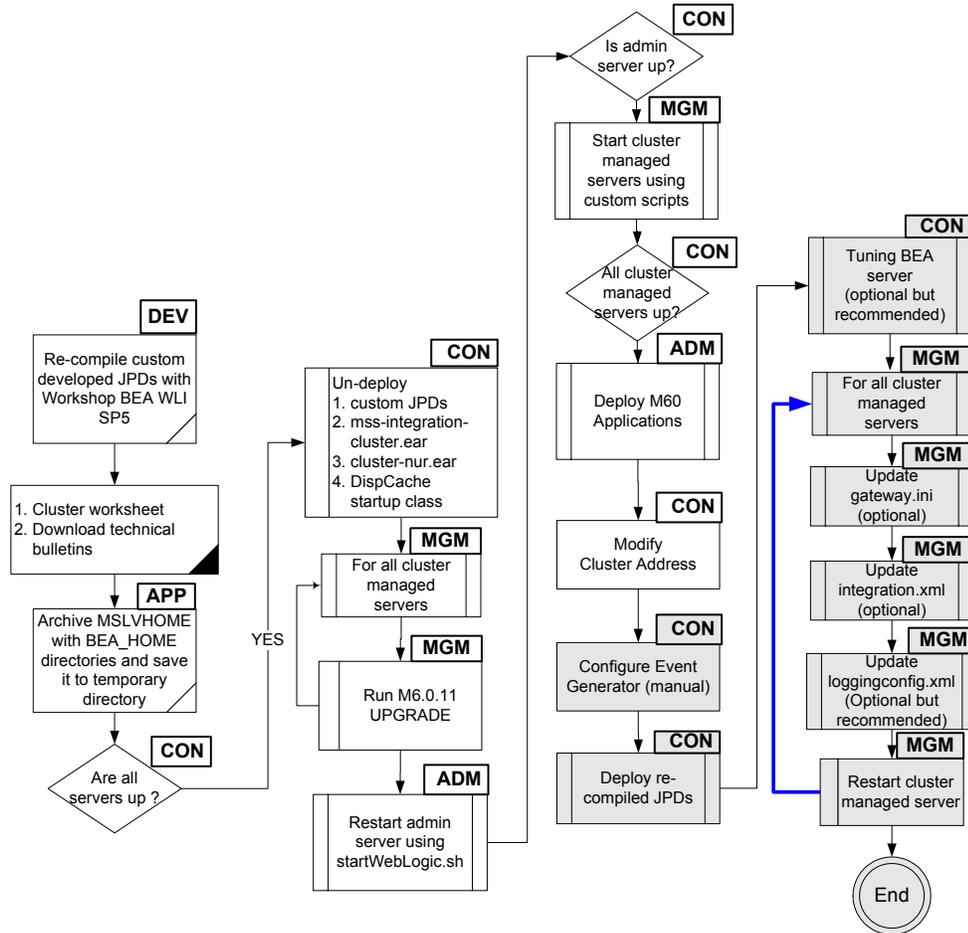
- APP:** All application server machines
- CON:** BEA admin console
- ADM:** BEA admin server machine
- MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

31. Go to the BEA console. Navigate to Clusters under the domain. Click the Configuration tab followed by the General tab. Change the "Cluster Address" to a DNS entry containing all clustered servers' listening IP addresses. All clustered servers in the production environment should listen on the same port. If not, navigate to Servers, select each clustered server, click the Configuration tab followed by the General tab, and change the "Listen Port". Modify the [JNDI] URL in the gateway.ini file for each clustered server.



### Create JMS event generator and tuning

This procedure completes the highlighted steps shown in the following figure:



The following acronyms indicate the machine used in a step in the installation and deployment process:

- APP:** All application server machines
- CON:** BEA admin console
- ADM:** BEA admin server machine
- MGM:** All clustered server machines
- DEV:** Development environment
- FE:** Front end host machine, such as load balancer or proxy

32. Start the WebLogic Integration Administration Console by typing the following information into the **Address** field of the Internet Explorer and pressing ENTER:

`http://<host_admin:port number>/wliconsole.`

On the WebLogic Integration Administration Console window, click **Event Generators**. The following window appears.



33. On the left panel, click **JMS**.

The screenshot shows the WebLogic Integration Administration Console interface. The browser address bar displays `http://srvplscal1:8001/wliconsole/filegen?c=269`. The console title is "WebLogic Integration Administration Console" with a "WELCOME WEBLOGIC" message and the date "SEPTEMBER 28, 2006 2:09:48 PM CDT". The left sidebar contains a navigation menu with the following items: File, Email, **JMS** (circled in red), Timer, HTTP, RDBMS, and MQ Series. The main content area is titled "View All File Event Generators" and contains a table with columns: Name, Channel Count, Files Read, Last Reset Time, Error Count, Error Reset Time, and Status. The table is currently empty, displaying "No matching data found." A callout box with the text "Click JMS" and an arrow points to the JMS menu item in the sidebar.

34. On the expanded view under JMS, click **Create New**.

The screenshot displays the WebLogic Integration Administration Console interface. The top navigation bar includes the BEA logo, the title "WebLogic Integration Administration Console", and utility icons for home, key, and help. Below the navigation bar, the breadcrumb trail shows "Home" > "Event Generators". The main content area is titled "View All JMS Event Generators" and includes a search box with "View All" and "Go" buttons, and a "Search" button. A descriptive paragraph states: "This page displays a list of JMS event generators. To view or edit details about the event generator, click the generator name. To add an event generator, click Create New." Below this text is a table with columns: Name, Channel Count, Messages Read, Last Reset Time, Error Count, Error Reset Time, and Status. The table currently displays "No matching data found." In the left-hand navigation pane, the "JMS" section is expanded, and the "Create New" option is highlighted with a red circle. A red arrow points from a box labeled "Click Create New" to this option. Other navigation options include "View All", "Message Broker", and "Process Monitoring". The bottom of the page shows a sidebar with "Timer", "HTTP", "RDBMS", and "MQ Series" sections.

35. The following information appears in the right panel.

**WebLogic Integration Administration Console**

Home > Event Generators WELCOME WEBLOGIC | MARCH 21, 2006 4:53:02 PM CST

### Create a New JMS Event Generator

Use this page to create a new JMS Event Generator. Although new generators are deployed immediately, they do not have channel rules. You can add rules after the generator has been created.

**Generator Name**  The name of the event generator must be unique.

**Destination Type**  The destination type. Must be a Queue, a Topic, or a Foreign Destination. The actual type of a foreign destination will be specified below.

**Destination JNDI Name**  The name of the Queue or Topic.

**Message Selector**  Optional.

**Default Rule Channel**  The Channel for the default JMS Rule.

- a. Enter the following values on the Create a New JMS Event Generator window:
  - **Generator Name:** InternalOutboundGenerator
  - **Destination Type:** javax.jms.Queue
  - **Destination JNDI Name:** mss.internal.event.queue
  - **Message Selector:** Leave this field blank.
  - **Default Rule Channel:** /MSS/internalOutboundEventChannel (xml)
- b. Click **Submit**.

36. The following summary appears.

The screenshot displays the WebLogic Integration Administration Console interface. The main content area is titled "JMS Event Generator Definition" and provides details for an event generator. The left sidebar contains navigation options for File, Email, JMS, Timer, HTTP, RDBMS, and MQ Series. The JMS section is expanded, showing options to "View All" and "Create New", and a list of "Related Modules" including "Message Broker" and "Process Monitoring".

The main content area includes the following information:

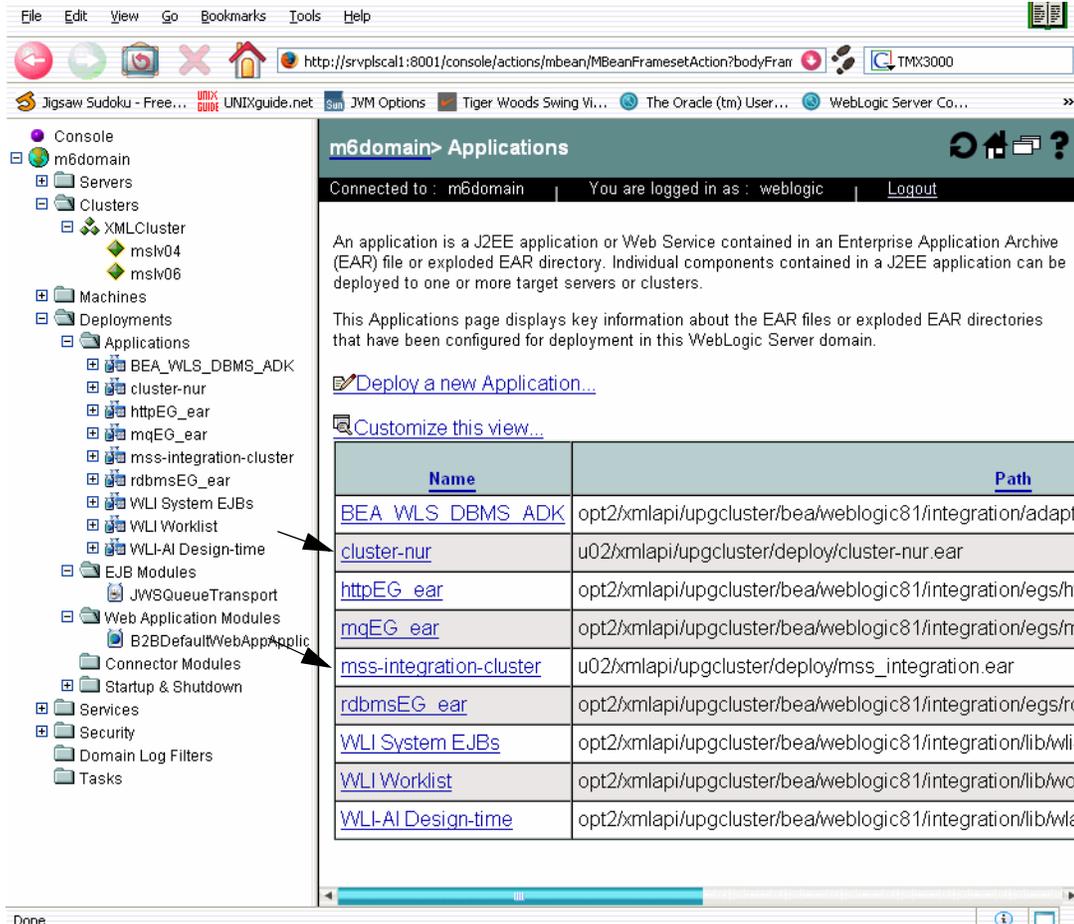
- Generator Name:** InternalOutboundGenerator
- Destination Type:** javax.jms.Queue
- Destination JNDI Name:** mss.internal.event.queue
- Message Selector:** Not defined.
- Default Rule Channel:** /MSS/internalOutboundEventChannel

Below the generator details, there is a section titled "Channel Rules Defined for this Generator:" which contains a table with the following structure:

Property Name	Property Value	Channel Name	Description
No matching data found.			

At the bottom of the page, there is a link to "Define a New Channel Rule".

37. Verify the application deployment by accessing the BEA console. Navigate to Deployments -> Applications. Check the right panel to verify that the cluster-nur and mss-integration-cluster exist in the domain.



38. See [“Appendix F: Tuning servers for performance”](#) for BEA server tuning.
39. See [“Appendix G: Configuration Files”](#) to modify and restore M6 configuration files.
40. Restart the cluster.
- Restart the admin server on the admin server machine and wait until it is running by checking the admin console.
  - Restart all clustered servers.

## Updating client workstations

If you are using ZAC to install and update client workstations, a service pack or patch update to the workstation is automatic. The first time a user logs on to MetaSolv Solution after the service pack or patch has been installed on the application server, the `zac_config_mss.xml` file on the workstation shows a difference with the updated `zac_config_mss.xml` on the application server when the two are compared. This triggers an automatic update and the files stored on the application server for the workstation client are downloaded automatically.

If you are updating client workstations manually, see the information on how to complete this process.

## Installing the client workstation

---

This chapter explains how to install the client application onto your workstation. You need the client installed to complete post installation tasks for the database and application server installations.

This chapter also provides information on distributing the client application to users across a network.

### Installation methods

You can distribute the client application to workstations in the following ways:

- ◆ By using an automated installation utility provided by MetaSolv, the Zero Admin Client (ZAC).
- ◆ By using a third-party software product such as Microsoft SMS.
- ◆ By copying the compressed client CAB files stored on the application server to a location where you can expand them for users to copy to client workstations or use directly.

### Installing using ZAC

ZAC is an automated way to manage client workstation installations and to update existing installations when upgrades or service packs need to be applied. The following list explains how it works and its benefits.

- ◆ **What is it?**

ZAC is a software program that resides on the application server and automatically installs client files to a workstation when a user clicks a specified link. You can configure the client installation and provide links from a browser page to a user for installation.

When a user clicks the link, ZAC installs client files to the user's workstation, registers the appropriate dlls, creates Windows Start menu links, and then automatically starts the application.

- ◆ **How does it work after installation?**

ZAC configuration files for different components are stored on the client workstation and the application server. The configuration files contain version information for the files that get downloaded to the workstation. Each time the user clicks the link to start MetaSolv Solution or another software component such as MetaSolv Solution Utilities, ZAC

performs a comparison of the file versions. If the versions stored in the files are different, the component is updated on the client machine.

◆ **What are the benefits?**

- ◆ Initial installations can be distributed over the network without the IT staff manually installing on each workstation.
- ◆ Updates to the software are downloaded automatically when the user starts ZAC to log on to MetaSolv Solution or a component. The update process requires no user intervention.

◆ **Is it optional?**

Yes, ZAC is optional. You can both install and upgrade the MetaSolv Solution client without using ZAC. See the section entitled “[Installing the client application manually](#)” for more information.

## ZAC configuration files

ZAC configuration files are stored on the application server in the `appserver/config` directory. Configuration files for the following software components are included:

MetaSolv Solution—*ZAC\_config\_mss.xml*

Location and Routing Gateway—*ZAC\_config\_lerg.xml*

MetaSolv Solution Utilities—*ZAC\_config\_utility.xml*

NPA Split Utility—*ZAC\_config\_npasplit.xml*

Background Processor—*ZAC\_config\_jobmgr.xml*

*ZAC\_config\_jobmstr.xml*

The following parameters are included:

- ◆ **package name**—Name of the software files being installed or upgraded if the `installable` parameter is set to *true*.
- ◆ **version**—Version of the package files. The files contained in a package are downloaded to the client machine whenever the package version on the client is different from the package version on the application server.
- ◆ **installable**—Indicator for installing the package on the client. Values are *true* or *false*.
- ◆ **mss\_home**—Location where the application will be installed on the client workstation.

For any packages that you do not want installed on the client workstation, change the `installable` values to *false*.

The following listing shows the `zac_config_mss.xml` file.

```
<zac_config>
  <mss_home>c:\MSS</mss_home>
  <integration_installed>>false</integration_installed>
  <package name="application">
    <version>R6_0_0.b1</version>
    <installable>>true</installable>
  </package>
  <package name="mssini">
    <version>R6_0_0.b1</version>
    <installable>>true</installable>
  </package>
  <package name="pbvm">
    <version>R6_0_0.b1</version>
    <installable>>true</installable>
  </package>
  <package name="mapping">
    <version>R6_0_0.b1</version>
    <installable>>true</installable>
  </package>
</zac_config>
```

## Using ZAC for upgrades and patches

When an application server is upgraded with a service pack or patch, you must manually change the version number stored in ZAC configuration files before you download to the workstation.

### To change the version in a ZAC configuration file

1. On the application server, locate the MetaSolv Solution ZAC configuration file (ZAC\_config\_mss.xml).

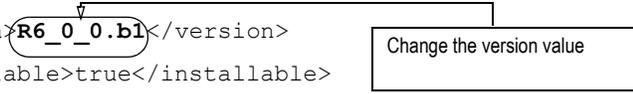
The configuration files are located in the METASOLV\_HOME/SERVER\_NAME/appserver/config directory.

2. Open the file in a text editor and locate the package named *mssini*.

Each configuration file contains a package with an *ini* suffix. You do not have to change the versions for all packages in the file, only the package with an *ini* suffix.

The following text shows the *mssini* package in the file.

```
<package name="mssini">
  <version>R6_0_0.b1</version>
  <installable>true</installable>
</package>
```



3. Change the version value to the current release.

For example

```
<version>R6_0_3.b158</version>
```

4. Save the file.
5. Change the version number in the remaining ZAC configuration files as necessary.

Component	Configuration file name	Package name
Location and Routing Gateway	ZAC_config_lerg.xml	lergini
MetaSolv Solution Utilities	ZAC_config_utility.xml	utilini
NPA Split Utility	ZAC_config_npasplit.xml	npasplitini
Background Processor	ZAC_config_jobmgr.xml	jmasterini
	ZAC_config_jobmstr.xml	

6. Repeat this procedure for all upgraded application servers.

## Setting the ZAC\_config\_mss file for the XML API option

If you are using MetaSolv Solution with the XML API option, you must make a change to the ZAC\_config\_mss.xml file before you run ZAC to download the application files to the workstation. The change ensures that the sample code and other files necessary for setting up a development environment on a workstation get downloaded to the workstation.

The ZAC\_config\_mss.xml file is stored in the following location on the application server:

METASOLV\_HOME/SERVER\_NAME/appserver/config

Open the file in a text editor and change the *integration\_installed* parameter to **true**. See the following figure to identify the parameter in the file.



```

<zac_config> ¶
  <mss_home>c:\MSS</mss_home>¶
  <integration_installed>false</integration_installed>¶
  <package name="application">¶
    <version>R6_0_0.bl</version>¶
    <installable>true</installable>¶
  </package>¶

```

Change this value to true

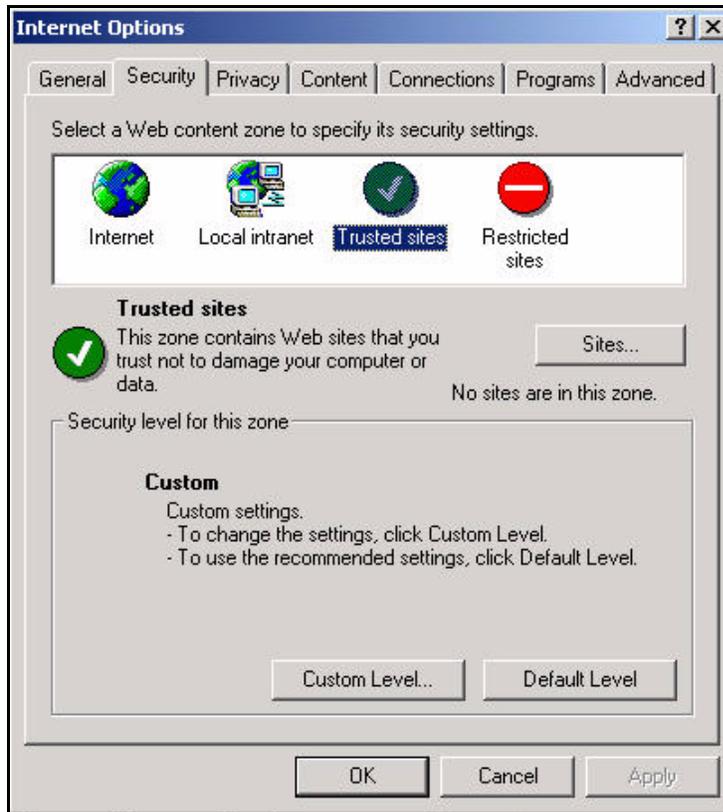
## Selecting trusted sites for ZAC

To ensure that ZAC installs properly, identify the application server, the proxy server, and the external load balancer as trusted sites that can send data to the workstation. This is a Microsoft Internet Explorer setting.

### To select trusted sites

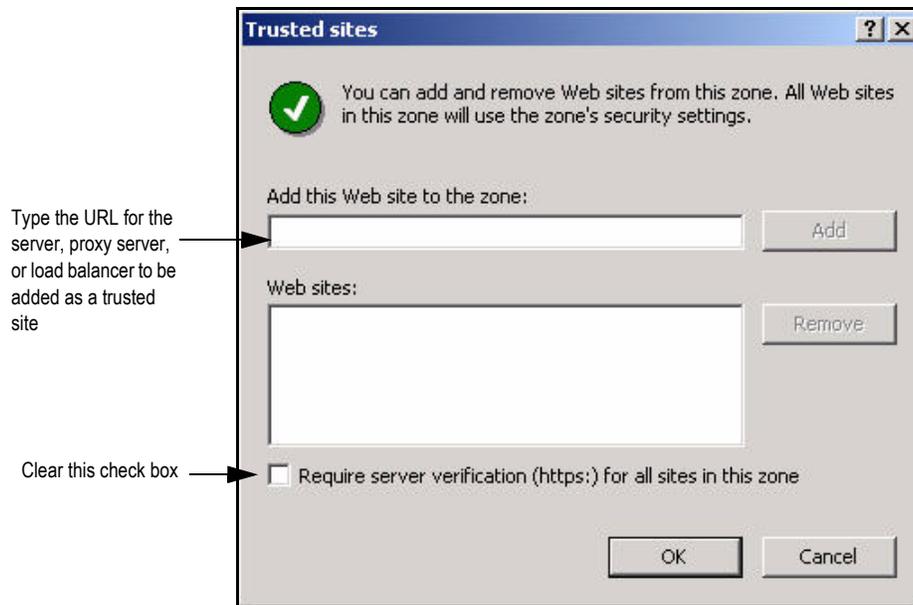
1. Start Microsoft Internet Explorer.
2. On the Tools menu, click **Internet Options**.

The Internet Options window appears.



3. On the Security tab, click the **Trusted sites** icon, then click **Sites**.

The Trusted sites window appears.



4. Clear the check box entitled **Require server verification (https:) for all sites in this zone**.
5. Type the URL for the application server, proxy server, or external load balancer, then click **Add**.
6. Click **OK** to save the trusted site information, then click **OK** to close the Internet Options window.

## Setting browser settings for ZAC

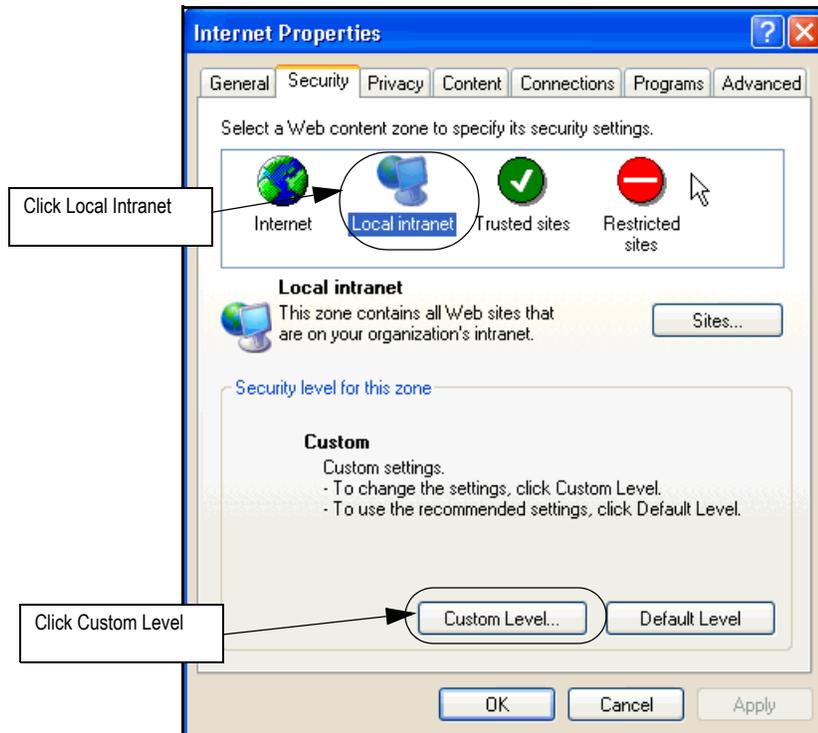
The MetaSolv Solution Zero Admin Client runs on Microsoft Internet Explorer 6.0 SP1. Before running a ZAC installation, you must change Internet Explorer browser settings on the client workstation.

 The settings being modified apply only to your intranet. The changes do not create a risk to your network from outside your firewall.

### To set the workstation browser

1. Start Microsoft Internet Explorer.
2. On the Tools menu, click **Internet Options**.  
The Internet Options window appears.

3. On the Security tab, select the Local Intranet icon.



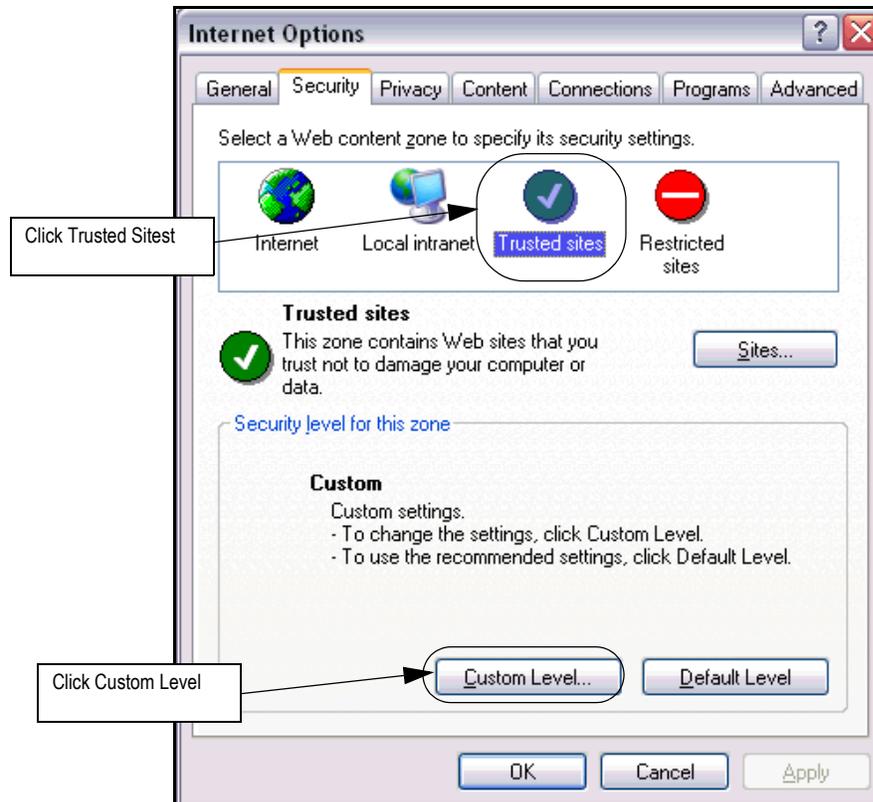
4. Click Custom Level.



5. Under the **ActiveX controls and plug-ins** section, select **Enable** for all options.
6. Under the section entitled **Miscellaneous**, select **Enable** for the setting **Access data sources across domains**.

7. Click **OK** on the Security Settings window, then click **Yes** to change the security settings.
8. Click **OK** to complete the changes.

**Note:** If your client workstation runs on Windows XP SP2, add the server name to Trusted Sites as described in the section “[Selecting trusted sites for ZAC](#)” on page 399. When the server name has been added, return to the Security tab and with **Trusted Sites** selected, click **Custom Level**, then complete the settings shown in the preceding procedure.



## Installing from the ZAC Start page

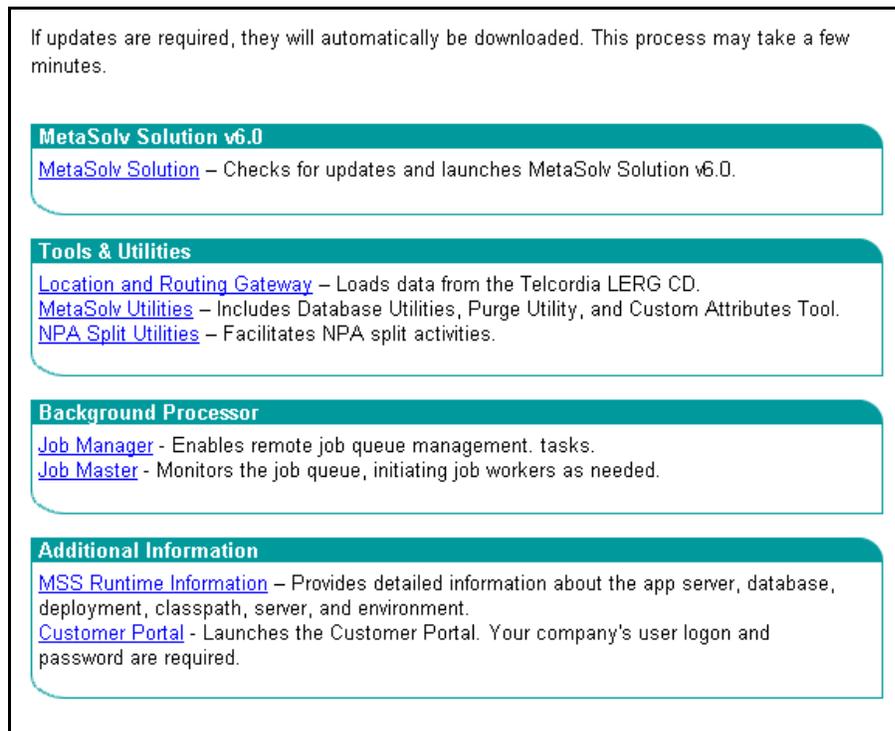
### To run the installation

1. Close all open applications on the workstation and start Microsoft Internet Explorer.
2. Type the URL for the Start page in the **Address** field on the browser page and press ENTER.

The URL must contain the server name and port address of an application server that has an instance of MetaSolv Solution 6.0.15 installed and deployed. The format for the URL is:

`http://<server name:port number>/main/`

The Start page appears. The following figure shows links on the Start page.



3. Click the **MetaSolv Solution** link to start the installation.

## Distributing to users using ZAC

Before you distribute MetaSolv Solution to users, note the following considerations:

- ◆ MetaSolv does not recommend distributing the Start page. Because the Start page contains links to all applications that come with the full MetaSolv Solution installation, it may not be appropriate for all users. The Start page gives a user the ability to install utilities, software options, and administrative tools. It should be considered an administrative tool that provides a system administrator access links to all applications in a single location.
- ◆ You can create a specific ZAC link for users using javascript. When a user clicks the ZAC link, ZAC checks for updates for the application associated with the link and starts the logon screen. The following section explains how to create a link.
- ◆ Because MetaSolv Solution can be started in a number of ways without using ZAC, you must inform users when a service pack or some other change is applied so they can start MetaSolv Solution using ZAC and receive the updates.
- ◆ Choose a time for the installation when network traffic is lighter. Concurrent machine and network activity impacts the time of the download and installation.
- ◆ Instruct users to close all open applications before installing.

## Creating a ZAC link for users

You can create a separate ZAC link for each MetaSolv Solution application listed on the Start page. This is useful if the majority of your users work only with the MetaSolv Solution application. You can create a special link that installs only the files needed for MetaSolv Solution.

### **To create a ZAC link**

1. Create a special HTML page for distributing the ZAC link.
2. Copy javascript from the following listing into the html page where you want to place the links.

To list all of the applications on the page, copy all of the code, otherwise, copy only the function and subsequent link(s) that you need.

You can use the Text Copy tool in Adobe Acrobat Reader as you view this document. Copy the code and fill in your site-specific information.

```
<script language="javascript1.2">
  //MSS application
  function mss() {
    window.open("http://your_server_name:listening_port/main/
zac.html?app=mss", "mss", "width=600, height=350, resizeable=no");

    //for example: the above line could look like this:
    window.open("http://wplwss01:8001/main/zac.html?app=mss", "mss",
"width=600, height=350, resizeable=no");
  }

  //Location and Routing Gateway
  function lerg() {
    window.open("http://your_server_name:listening_port/main/
zac.html?app=lerg", "lerg", "width=600, height=350, resizeable=no");
  }

  //TBS Utilities
  function utility() {
    window.open("http://your_server_name:listening_port/main/
zac.html?app=utility", "utility", "width=600, height=350,
resizeable=no");
  }

  //NPA NXX Split
  function npasplit() {
    window.open("http://your_server_name:listening_port/main/
zac.html?app=npasplit", "npasplit", "width=600, height=350,
resizeable=no");
  }

  //Job Manager
  function jobmgr() {
    window.open("http://your_server_name:listening_port/main/
zac.html?app=jobmgr", "jobmgr", "width=600, height=350,
resizeable=no");
  }

  //Job Master
  function jobmstr() {
    window.open("http://your_server_name:listening_port/main/
zac.html?app=jobmstr", "jobmstr", "width=600, height=350,
resizeable=no");
  }
</script>
<body>
```

```

<!-- This is an example of a link that will call one of the above
functions, the actual text and description is up to you. Create a link
for each application you want to include on this page and make sure
that it references the appropriate function above.-->

<a href="javascript:mss();" >MetaSolv Solution</a> - Launches MetaSolv
Solution v6.0.

</body>

```

### Example

If your users need only the MetaSolv Solution core application on their workstations, the javascript file to create a link for them would look like the following listing.

```

<script language="javascript1.2">
  //MSS application
  function mss() {
    window.open("http://your_server_name:listening_port/main/
zac.html?app=mss", "mss", "width=600, height=350, resizable=no");
    //for example: the above line could look like this:
    window.open("http://wplwss01:8001/main/zac.html?app=mss", "mss",
"width=600, height=350, resizable=no");
  }
</script>

<a href="javascript:mss();" >MetaSolv Solution</a> - Launches MetaSolv
Solution v6.0.

<body>

```

The following figure shows how a page can be altered to contain just the link you specify. In this instance, the code was combined with code for the Start window to produce a similar page with a single link. You can create a separate page with your company information, or you can include the link on an existing intranet page or in other locations accessible to users.



## Registering a dll file

If you are installing a version of MetaSolv Solution that is earlier than the 6.0.4 version, register the file *tbsctrl.ocx*. You can find this file in your METASOLV\_HOME directory (default is C:\MSS) on the client workstation. You must have administrator privileges to register a dll.

## Installing the client application manually

The following procedure explains how to install the core MetaSolv Solution application. It does not include any utility applications.

### To install the client application manually

1. Create a directory in the location where the client installation will be placed.
2. Copy the following files from the listed application server directories to the client installation location.

#### **/appserver/cab**

- ♦ All CAB files
- ♦ *expand\_mss.cmd*

#### **/config**

- ♦ *zac\_config\_mss.xml*
- ♦ *zac\_config\_lerg.xml*
- ♦ *zac\_config\_utility.xml*
- ♦ *zac\_config\_npasplit.xml*
- ♦ *zac\_config\_jobmgr.xml*
- ♦ *zac\_config\_jobmstr.xml*
- ♦ *gateway.ini*
- ♦ *jmaster.ini*
- ♦ *lerg.ini*
- ♦ *npasplit.ini*
- ♦ *tbs.ini*
- ♦ *tbs\_db.ini*
- ♦ *tbs\_util.ini*

**Note:** If you are copying the files using the FTP site, use the following modes for different file types:

- ♦ CAB files—Binary mode
- ♦ CMD, XML, and INI files—ASCII mode

3. Run **expand\_mss.cmd** using the Run option on the Windows Start menu.
4. Register the following dlls on the workstation where the application will be running:

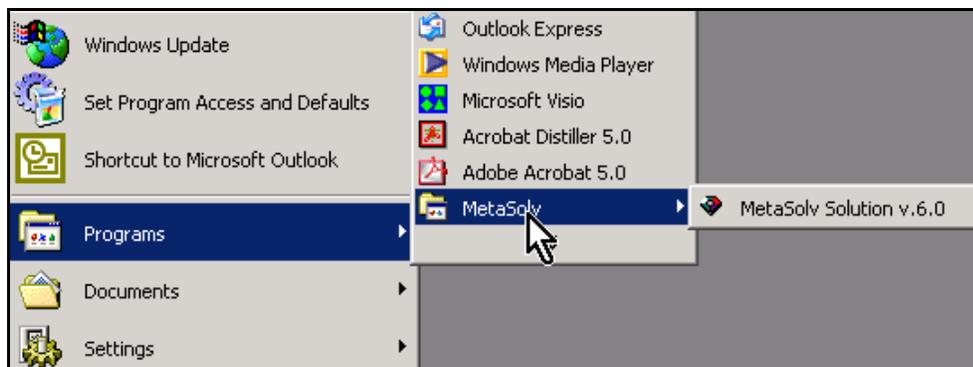
**Note:** You must have administrator privileges on a machine to register dlls.

- aiimage20.dll
- Cad20.dll
- Coverage20.dll
- InfoTable20.dll
- JetTable20.dll
- Mo20.ocx
- MoMrSID.dll
- MoSde302.dll
- MoSde302Table.dll
- OdbcTbl20.dll
- Shape20.dll
- Vpf20.dll
- tbsctrl.ocx
- mpegiscrend.dll—Register this dll last.

## Starting the MetaSolv Solution client

Start the client using one of the following procedures:

- ◆ On the MetaSolv Solution Start page (if you are an administrator), click **MetaSolv Solution**.
- ◆ From the Start menu select **Programs** → **MetaSolv** → **MetaSolv Solution v.6.0**.  
If you installed manually, you must add the menu option to the Start menu in Windows to start MetaSolv Solution this way.



- ◆ Double-click the executable file (tbs.exe) located in the MetaSolv Solution installation directory on the workstation.
- ◆ Launch from a desktop shortcut using a special ZAC link created using javascript. See “[Creating a ZAC link for users](#)” on page 405. You can provide users with the http address for a page that contains customized links to start the initial installation. Users can create a desktop shortcut to start the application after installation. The following example shows how the http address for a customized ZAC page with links might look when distributed to users.

`http://<host server name:port number>/<your HTML page>?app=mss`

## Tools and utilities

This section describes special considerations for MetaSolv Solution tool and utility applications. For information on using these applications, see the *MetaSolv Solution Administration Guide*.

## NPA NXX Split Utilities

Before you can run this application, you must:

- ◆ Modify the INI file
- ◆ Create Oracle tables by applying the latest MetaSolv Solution 6.0.x service pack

The following sections explain how to complete these tasks.

### Modifying the NPASplit.ini file

Before running the utility, you must customize the *NPASplit.ini* file. The file is set up identically to the *TBS\_DB.ini* file in the client installation directory folder, so the logon database name and Oracle SID can be copied from that file.

#### To modify the NPASplit.ini file

1. Locate the file in the client installation directory and open it in a text editor.
2. Change the *Example1* text in the Profiles section to the name the users will pick from the **Database** drop-down box in the initial logon window.

Any changes must match the title of the Profile listed in brackets that appears later in the file (for example: [Profile Example1]). Additional profiles can also be added in the same manner.

3. Change the value in the **ServerName** field to the Oracle SID shortcut in the TNSNames.ora file.

The easiest method of finding this information is in the *TBS\_DB.ini* file (for example: *ServerName=@EXAMPLE1*).

4. Save the NPASplit.ini file with these changes.

## Creating NPA Split Utility Oracle tables

The utility uses Oracle tables that are not found in the MetaSolv Solution database. To ensure that you have the appropriate Oracle tables for the NPA Split Utility, apply the latest MetaSolv Solution service pack. These tables must be created prior to the execution of a split.

## MetaSolv Solution Utilities

If you are installing using ZAC, open the Start page and click the MetaSolv Solution Utilities link. The appropriate files download to your workstation and the logon window appears.

If you are installing manually, copy the appropriate files into the client installation directory for MetaSolv Solution. See [Table 4](#) on page 412 for information on which files are needed for MetaSolv Solution Utilities.

If you want to run the Purge utility from a client workstation, you must install the Oracle 9.2.0.1+ or Oracle 10.2.0.1+ client on the workstation to establish a connection to the database.

## Background Processor

MetaSolv recommends installing this application on a separate machine. This application has two executables. One (Job Manager) is installed on a separate machine to do processing, and the other (Job Master) is installed on a client workstation to view and manage jobs being processed. To install using ZAC, you must install each executable on the machine it is intended to run on. For complete information on the Background Processor, see the *MetaSolv Solution Administration Guide*.

This application requires an Oracle client if you run it on a separate machine from the application server.

See [Table 4](#) on page 412 for information on which files are needed for this application.

## Location and Routing Gateway

If you are installing using ZAC, open the Start page and click the Location and Routing Gateway link. The appropriate files download to your workstation and the log on window appears.

If you are installing manually, copy the appropriate files into the client installation directory for MetaSolv Solution. See [Table 4](#) on page 412 for information on which files are needed for this application.

## Installing a utility to a separate installation directory

MetaSolv recommends installing MetaSolv Solution applications in the same directory on the workstation. ZAC is designed to install applications in this manner. The exception to this rule is the Background Processor, which should be installed in its own directory on a separate machine.

You can install an application in a directory other than the MetaSolv Solution installation directory if you choose. If you use this method, you must make sure the INI file for the application you are copying is in the same installation directory as the application. If you install manually, make sure that you edit the .ini file for the utility you install to point to the appropriate application server. This is done automatically if you install using ZAC, but you must make the changes to the .ini file if you install manually.

The following table lists the CAB, INI, and XML files required for each application.

**Table 4: MetaSolv Solution application files**

Application	CAB file(s) required	INI/XML files required	Install to
MetaSolv Solution core application	app.cab dll.cab pbvm.cab mapping.cab	tbs.ini tbs_db.ini (optional) zac_config_mss.xml	Client installation directory
Job Manager (Background Processor)	jobmgr.cab pbvm.cab dll.cab	jmaster.ini zac_config_jobmgr.xml	Machine dedicated to running this application
Job Master (Background Processor)	app.cab jobmstr.cab pbvm.cab dll.cab	jmaster.ini zac_config_jobmstr.xml	Machine dedicated to running this application
Location and Routing Gateway	lerg.cab pbvm.cab dll.cab	lerg.ini zac_config_lerg.xml	Client installation directory
MetaSolv Solution Utilities	utility.cab pbvm.cab dll.cab	tbs_util.ini zac_config_utility.xml	Client installation directory

**Table 4: MetaSolv Solution application files**

<b>Application</b>	<b>CAB file(s) required</b>	<b>INI/XML files required</b>	<b>Install to</b>
NPA NXX Utility	npasplit.cab pbvm.cab dll.cab	npasplit.ini zac_config_npasplit.xml	Client installation directory





## Post installation tasks

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This chapter explains tasks that you must perform once the database, the application servers, and the first client installation have been completed.

For more information on ongoing administration and maintenance tasks, see the *MetaSolv Solution Administration Guide*.

### Verifying the database

To verify the database, you must have MetaSolv Solution Utilities installed.

#### To verify the database

1. Select **Start>Programs>MetaSolv Solution>Utilities**.
2. On the logon window, enter the user ID (ASAP), ASAP password, and the database name, then click **OK**.
3. Click the **DB Health** button.
4. From the Database Health window, click the **Compile Invalid Objects** tab.

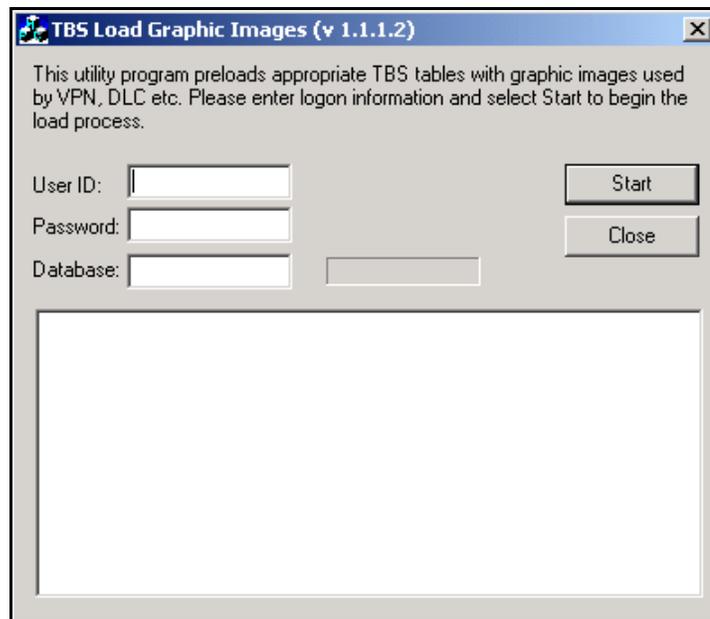
If no invalid objects exist, log on to the MetaSolv software. If you encounter invalid stored procedures, contact MetaSolv Global Customer Care.

## Loading new and updated graphics to the database

A utility named *TBS Load Graphic Images* loads new and updated graphics to the MetaSolv Solution database. You must run this utility one time, from any client workstation that has MetaSolv Solution Utilities installed, to update the database.

### To load graphics to the database

1. Open the MetaSolv Solution directory on a client workstation and double-click **TBSLoadGraphic.exe**.
2. The TBS Load Graphics Image appears minimized on the status bar. Click the icon on the status bar to display the utility. The following window appears.



3. Type your user ID and password.
4. Type the name of the database to which graphics are being loaded.
5. Click **Start**.

Once you run this file, subsequent attempts to run it have no effect on the database.

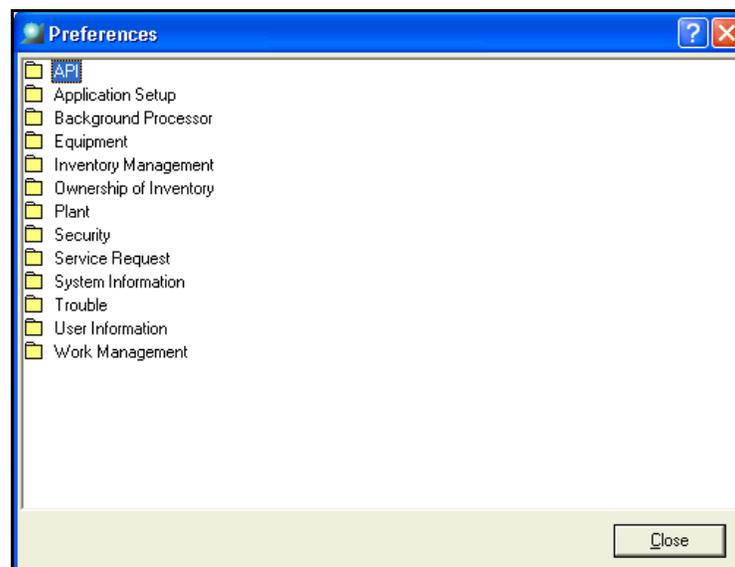
## Loading preferences to the database

To ensure that all preferences have a value in the database after a first time installation, you must open the Preferences window. This causes any preferences that are not currently in the database to be added with the MetaSolv Solution default value.

### To open the Preferences window

1. On the MetaSolv Solution Navigation Bar, click **Application Setup**, then click **Preferences**.

The Preferences window appears.



2. Click **Close**.

Any preferences in this window not already defined in the database are included with default values.

If a preference is added through an upgrade or a patch, you must open the Preferences window, locate the preference, and configure it with the appropriate value for the feature to which it applies.

## Modifying the MetaSolv-provided startup scripts

When you perform a full installation of MetaSolv Solution 6.0.6 or higher, startup scripts are included in the MetaSolv Solution files downloaded to the administration server. The startup scripts are for the following server types:

- ◆ Clustered administration server
  - ◆ startAdminServer.sh (UNIX)
  - ◆ startAdminServer.cmd (Windows)
  - ◆ startAdminServer\_wli.sh (UNIX)
  - ◆ startAdminServer\_wli.cmd (Windows)
- ◆ Software proxy server
  - ◆ startProxyServer.sh (UNIX)
  - ◆ startProxyServer.cmd (Windows)

The files are copied to the following location on the administration server:

`/METASOLV_HOME/DOMAIN_NAME`

### To modify a startup script

1. Locate and open the startup script in a text editor.
2. Change the following variables in the script to match the server environment:  
`SERVER_NAME=[Admin_servername] or [Proxy_servername]`  
`BEA_HOME=[BEA_home]`  
`ADMIN_LOG=[Metasolv_home]`
3. To bypass the startup prompt, provide your username and password in the script.  
`WLS_USER=[userid]`  
`WLS_PW=[password]`
4. Save your changes.

### To start the server using the modified script

1. Navigate to the directory where the startup file is located.
2. At the prompt, type the script name and press ENTER.

For example:

```
./startAdminServer.sh
```

## Setting up to view reports in PDF format

To ensure you can view MetaSolv Solution reports that appear in Adobe Acrobat's PDF format, complete the following actions.

- ◆ Make sure you have Adobe Acrobat Reader 6.0 installed. If you have an older version, uninstall it. Then download Acrobat Reader 6.0 from the Adobe Web site at <http://www.adobe.com> and install it.
- ◆ Make Acrobat Reader 6.0 a helper application to Microsoft Internet Explorer.

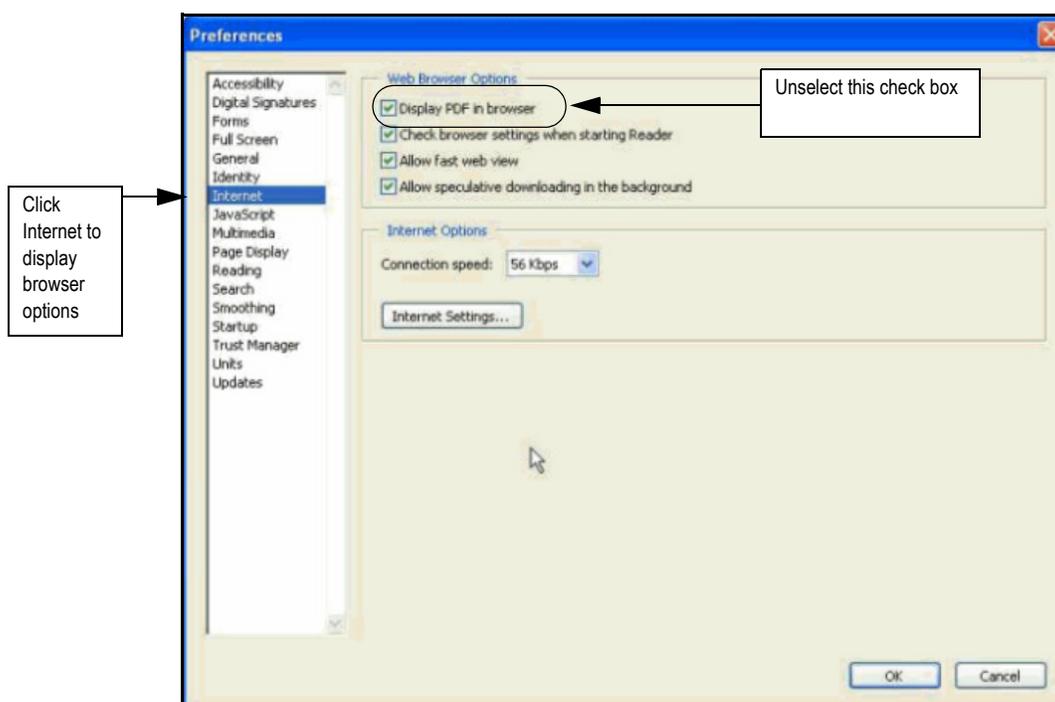
### To make Adobe Acrobat Reader 6.0 a helper application

1. Open Adobe Acrobat Reader 6.0.
2. On the menu bar, select **Edit>Preferences**.

The Preferences window appears.

3. In the selection pane on the left, select **Internet**.

The following figure shows the preferences that appear in the window.



4. Unselect the **Display PDF in Browser** check box.

5. Click **OK**.

-  Make sure that you view the PDF with the zoom option set at 100 percent. Viewing a design report at a size below 100 percent can cause the text and grid lines on the report to touch, reducing readability.

## Enabling equipment visualization

To use the equipment visualization feature delivered with the M6.0.15 release, you must install Adobe Flash Player 9.0 on the Citrix server or client machines, depending on your network configuration. To ensure you can view equipment graphically, complete one of the following actions:

- ◆ Install Flash Player on the Citrix server by downloading it from the Adobe Web site at <http://www.adobe.com/products/flashplayer/> and installing it.
- ◆ Install Flash Player on each client machine that will access the equipment visualization feature by downloading it from the Adobe Web site at <http://www.adobe.com/products/flashplayer/>.
- ◆ If you do not use a Citrix server and did not install Flash Player on a client machine, the system will prompt you to install it the first time you attempt to access a graphical view of your equipment, as shown below. Click Install to proceed with the installation.



## User authentication

User authentication is the process that allows a user to log on and use MetaSolv Solution. For user authentication, MetaSolv Solution uses an external security provider to validate the user ID and password. MetaSolv Solution can support a variety of security providers. MetaSolv Solution system administrators must decide which security provider to use to validate users. The options available include authentication by:

- ◆ Oracle
- ◆ BEA WebLogic Server
- ◆ A third-party software solution

## Oracle authentication

Oracle software provides the default user authentication. Prior to MetaSolv Solution 6.0.2, Oracle was the only security provider used.

When Oracle is used for user authentication, the user ID and password are validated using a standard SQL connect. Oracle performs the lookup to determine if the user ID is valid and returns the result to MetaSolv Solution. If the lookup is successful, the user is allowed to enter the system. If the lookup is not successful, the user receives an error message.

No changes are required to the default installation of MetaSolv Solution or BEA to use Oracle authentication.

## BEA authentication

BEA WebLogic Server provides an internal LDAP server and the ability to connect to other external providers such as Microsoft's Active Directory or another LDAP server. This authentication method has the advantage of being able to provide a common user ID and password for MetaSolv Solution as well as other applications.

The BEA authentication option requires an authentication provider. The default choice is the internal BEA LDAP database. However, BEA also supports Microsoft Active Directory, Open LDAP providers, IPlanet, and Novell. Refer to the BEA security documentation for a description of capabilities for each of these providers. BEA documentation can be found on the Internet at <http://edocs/bea.com/>.

To enable BEA authentication, configuration changes must be made to the base MetaSolv Solution installation. MetaSolv Solution uses the J2EE JAAS authentication standard to connect to BEA WebLogic. The changes that are outlined here enable the Java VM to load the correct classes. After you complete the changes, restart the server for the changes to take effect.

### To enable BEA authentication

1. Locate the JRE Security folder included in the BEA directory.

Default paths:

UNIX—*bea/jdk142\_08/lib/security*

Windows—*bea\jdk142\_08\lib\security*

2. Using any text editor, create a text file called *mss\_jaas.config* in the Security directory.

This file creates a pointer to the class that accesses BEA for security functions. The file needs to have the exact contents defined below and it must appear with the text between the braces on one line.

```
MSS {  
    weblogic.security.auth.login.UsernamePasswordLoginModule required debug=false;  
};
```

3. Edit the *java.security* file to enable the external security call.  
Add the following line to the top of *java.security* in the *jre/lib/security* directory:

```
login.config.url.1=file:${java.home}/lib/security/mss_jaas.config.
```

4. Configure the BEA security realm.

During this step, you must choose the BEA authentication mechanism. You have the choice of several providers distributed with the BEA software, or you can define a custom application and integrate it into the BEA installation. Refer to the BEA documentation for steps on how to accomplish this configuration.

5. Restart the server.

After the restart is completed, the MetaSolv Solution logon will use the BEA security configuration defined in Step 4. There are several considerations for using this type of security:

- ◆ Creating a user is a two-step process.

First, users must be added to the external security system so that authentication can be performed during the logon procedure. Refer to the BEA documentation on how to add users to the system.

Next, users must be added to the MetaSolv Solution security tables. This step enables the permission functionality so that portions of the application, even individual screens, can be secured internally if necessary. See the *MetaSolv Solution Administration Guide* for more information.

- ◆ BEA security system users cannot be created from the MetaSolv Solution security window. This window only creates MetaSolv Solution users; it does not enable user logon.
- ◆ User IDs are limited to eight characters.
- ◆ Passwords are limited to 30 characters.
- ◆ The applications that connect to the database directly and do not use the application server cannot use this authentication method. These applications, which must continue to use the

Oracle authentication method, include the Location and Routing Gateway, MetaSolv Solution Utilities, and the NPA Split Utility.

- ◆ Group functionality is different in MetaSolv Solution and the external provider software, and groups are not kept in sync by the software. This task must be completed manually.

## Third-party authentication

The final alternative for user authentication is to use a third-party authentication software package. This option lets you use an enterprise security package and bypass the BEA WebLogic server for authentication. One reason for bypassing the BEA server is that it does not directly support a security provider and you may not prefer to extend BEA to add an additional security package.

MetaSolv Solution allows this option because it has enabled JAAS. This is the same architecture used to enable BEA authentication. The only requirement to enable a third-party authentication provider is that the provider must have a JAAS logon module (that conforms to the Java 1.3.1 specification), or you must develop one. If the provider has a JAAS logon module, skip to the configuration section.

## Developing a JAAS logon module

This section provides an overview of the steps required to develop a JAAS logon module. It is not a comprehensive guide. You will need to review Sun's information about JAAS that can be accessed from [java.sun.com](http://java.sun.com), and you will have to review your security provider's documentation on how to provide for authentication.

The only class that needs to be developed is a logon module class. This class gets called from MetaSolv Solution on logon. The class must implement the `LoginModule`. Inside the class you develop several methods. The key method is the logon method. This method gets called on each logon. Inside this method you get the userid and password from the callback object, verify the information, and return a success or failure message. The following is a code fragment from the logon method of a sample JAAS logon module. It simply gets the userid and password and compares it to a static string of TESTUSER/TESTPASS. If it matches, it returns true.

```
NameCallback name = new NameCallback("name");
PasswordCallback pwd = new PasswordCallback("Password", false);
Callback[] calls = new Callback[2];
calls[0] = name;
calls[1] = pwd;
try {
    callbackHandler.handle(calls);
} catch (Exception e) {
    System.out.print(e);
}
```

```
    }
    boolean isSuccess = false;
    String userId, password;
    userId = name.getName();
    password = String.valueOf(pwd.getPassword());

    // verify the username/password

    if (userId.equals("TESTUSER"))
        isSuccess = true;
    if (isSuccess &&
        password.equals("TESTPASS"))
    {
        // authentication succeeded!!!
        isSuccess = true;
    } else
        isSuccess = false;

    return isSuccess;
}
```

## Configuring a JAAS logon module

If you are using a third-party JAAS logon module or a logon module you developed, you must configure the application server to use that module.

### To configure

1. Edit the startMSLVServer script file located in the domain directory.

To do this, copy one of the POST\_CLASSPATH lines and add your jar file to the line.

**Note:** This file gets overlayed with each service pack. Therefore, this change needs to be re-applied to the startMSLVServer script after each service pack.

2. Navigate to the BEA install directory and locate the JRE/security directory listed under the BEA directory.

Default paths:

UNIX—*bea/jdk142\_08/jre/lib/security*

Windows—*bea\jdk142\_08\jre\lib\security*

3. Using any text editor, create a text file called *mss\_jaas.config* in the security folder.

This file creates a pointer to the class that accesses the third-party security software. The file needs to have the package name of the third-party security class, and it must appear with the text between the braces on one line. Here is an example:

```
MSS {
    Sample.module.SampleJAASLoginModule required debug=false;
};
```

4. Edit the `java.security` file, located in the `jre/lib/security` folder, using any text editor and add the following line at the beginning of the file:

```
login.config.url.1=file:${java.home}/lib/security/mss_jaas.config.
```

This allows the Java runtime to find `mss_jaas.config`.

5. Configure the third-party security software.

Refer to the security software documentation for steps on how to accomplish this configuration.

6. Restart the server.

After the restart is completed, the MetaSolv Solution logon authentication uses the third-party security software. See the following considerations for using a third-party solution:

- ◆ Creating the user is a two-step process.
  - First, users must be added to the external security system so that authentication can be performed during the logon procedure. Refer to the BEA documentation on how to add users to the system.
  - Next, users must be added to the MetaSolv Solution security tables. This step enables permission functionality so that portions of the application, even individual screens, can be secured internally if necessary. See the *MetaSolv Solution Administration Guide* for more information.
- ◆ Third-party security system users cannot be created from the MetaSolv Solution security window. This window creates only MetaSolv Solution users; it does not enable user logon.
- ◆ User IDs are limited to eight characters.
- ◆ Passwords are limited to 30 characters.
- ◆ The applications that connect to the database directly and do not use the application server cannot use this authentication method. These applications, which must continue to use the Oracle authentication method, include: the Location and Routing Gateway, MetaSolv Solution Utilities, and the NPA Split Utility.
- ◆ Group functionality is different in MetaSolv Solution and the external provider software, and groups are not kept in sync by the software. This task must be completed manually.

## Encrypting network traffic

MetaSolv Solution uses HTTPS to encrypt network traffic between the client and the application server; however, by default, MetaSolv Solution uses HTTP for client-to-server communication. To enable HTTPS for network encryption, you must change the standard installation.

The following steps apply only to applications that use the application server for its services. The applications that connect directly to the database can not use HTTPS.

### To encrypt network traffic

1. Obtain an SSL certificate.

Typically you get this from a provider like Verisign. The provider requires a CSR to be generated from the application server. To generate the CSR, navigate to the URL:

`https://<hostname:sslport>/certificate.`

See the BEA documentation for more information about the certificate application.

2. Configure the application server to enable HTTPS.

Use the management console to complete the configuration. Refer to the BEA documentation and documentation from the certificate provider for details on how to complete this step. After the configuration is complete, restart the server.

3. Test the configuration by navigating to the MetaSolv Solution start page.

The URL for the page is <https://<hostname:sslport>/main>. The page should render without any warning dialog boxes from Internet Explorer. These warnings prevent the application from working with HTTPS.

4. Change the INI file for the application and distribute the changes to each client using ZAC or another distribution method.

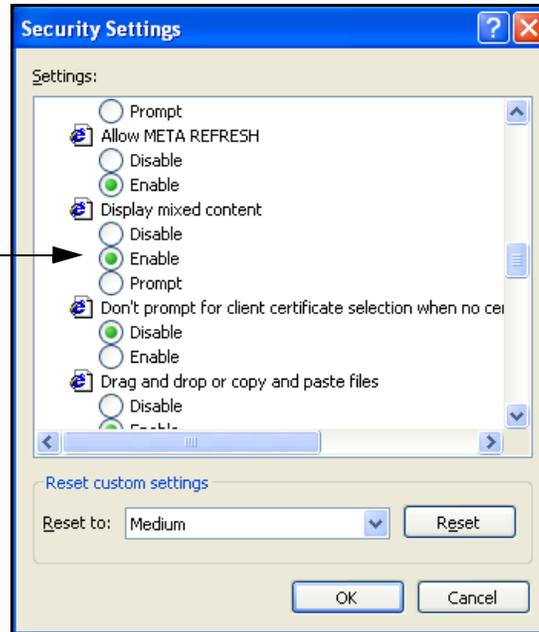
Edit the URL parameter by changing:

- ◆ HTTP to HTTPS
- ◆ The port number to the SSL port number you configured

5. Configure the browser on the client workstation to allow mixed content to be displayed.
  - a. Start Microsoft Internet Explorer.
  - b. On the Tools menu, click **Internet Options**.  
The Internet Options window appears.
  - c. On the Security tab, click **Custom Level**.
  - d. For the **Display mixed content** option, click **Enable**.

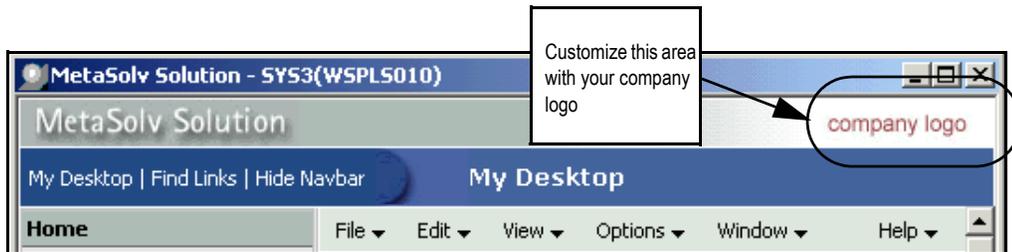
If this option is disabled, the application does not work. If you set the option to **Prompt**, the user will be prompted with each page.

Select this option to enable the client to use HTTPS to communicate with the server



## Adding your company logo to the MetaSolv Solution My Desktop and forms

You can add your company logo to the MetaSolv Solution interface.



The logo has the following requirements:

- ◆ Size: Width = 100 pixels Height = 25 pixels
- ◆ File name: imgCompanyLogo.jpg

### To add your logo to My Desktop

1. Locate a directory named *images* in the METASOLV\_HOME/DOMAIN\_NAME directory.

If you are adding the logo to release 6.0.15, the *images* directory is located in the following directory:

METASOLV\_HOME/DOMAIN\_NAME/logo

2. Copy the company logo file with the required name (imgCompanyLogo.jpg) into the directory.

The image stored in this directory under the file name given appears in the Company Logo field on the My Desktop page and on the Start page for MetaSolv Solution users.

The following option is available if you installed MetaSolv Solution 6.0.15 as a full installation. If you upgraded to 6.0.15 using the upgrade option, rather than a full installation, this option is not available.

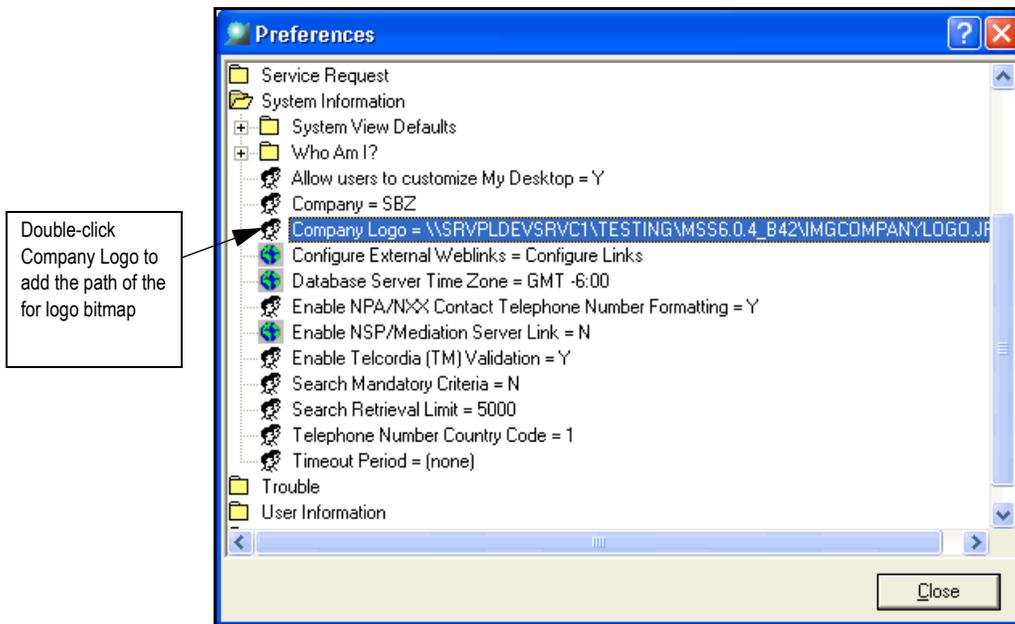
### To add your logo MetaSolv Solution forms

1. On the Navigation Bar, select **Application Setup>Preferences**.

The Preferences window appears.

2. Expand the System Information folder.

The following figure shows the expanded folder.



3. Double-click Company Logo and type the path for the bitmap logo into the **Company Logo** field of the window that appears.  
The default is None. If you leave the default, your company logo does not appear on forms such as orders or DLRs.
4. Click **OK**.
5. Click **Close** to close the Preferences window.

## What to do next to secure MetaSolv Solution

You must implement MetaSolv Solution security for individual users and groups of users. You can secure portions of the user interface to specific users to prevent unintended changes. This is especially useful if users only work in a portion of the application like ordering or connection design. For complete information on setting up security for MetaSolv Solution, see the *MetaSolv Solution Administration Guide*.



## Setup maintenance and troubleshooting

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This chapter contains basic setup maintenance and troubleshooting information. See the *MetaSolv Solution Administration Guide* for full system maintenance information.

### Basic maintenance

#### Starting the MetaSolv Solution system

When starting MetaSolv Solution, you must start components in the following order:

- ◆ Database
- ◆ Application server
- ◆ MetaSolv Solution client (user workstation)

The startup scripts are located in the domain directory. The script name includes the server name. For example, if a server is named *mslv01*, it will have a startup script named *startmslv01.sh* in the domain directory.

To start MetaSolv Solution, run the following scripts located in the domain directory:

- ◆ `startWebLogic.sh` (UNIX) or `startWebLogic.cmd` (Windows)  
Starts the administration server if you are running in a domain that has a separate administration server. Start the administration server before starting the managed server(s).
- ◆ `start<server>.sh` (UNIX) or `start<server>.cmd` (Windows)  
Starts an application server (either managed or single) running MetaSolv Solution.

If you are running an administration server and a managed server on the same machine, after the managed server is started, the administration server can be shut down to release resources that the process would otherwise consume. However, the administration server must be running to allow access to the management console or to perform any administration function.

## Uninstalling MetaSolv Solution

### To uninstall MetaSolv Solution from an application server

1. Start the administration server and log on to the WebLogic Console.
2. To undeploy the application, navigate to **Deployments > Applications > nur** in the left pane, then right-click and select **Delete**.
3. Repeat the previous step for each version of ASR or LSR that is installed.
4. In the console, delete the following items by right-clicking them and selecting **Delete**:
  - Services > JDBC > DataSources > mslvDataSource
  - Services > JDBC > DataSources > mslvDbTraceDataSource
  - Services > JDBC > DataSources > mslvProcDataSource
  - Services > JDBC > Connection Pools > MSLVPool
  - Services > JDBC > Connection Pools > MSLVDbTracePool
  - Services > JDBC > DataSources > MSLVProcPool
5. In the file system on the machine, delete the MetaSolv Solution installation directory.

## Changing an IP address

When an IP address for a server changes, adjustments must be made in the configuration. The following sections indicate how to handle this change.

### Clustered servers

The IP address or DNS name can be used to identify a machine's listen address. MetaSolv recommends using the DNS name.

When the IP address changes on a server's machine, you must change the IP address of any managed servers on the machine in the *running-managed-servers.xml* file. This file is located in the BEA administration server's domain directory. In addition, you must modify the machine's IP address in BEA if it is used as the server listen address, the *gateway.ini*, *tbs.ini*, *tbs\_util.ini*, and any other files that identify the server machine using the IP address.

If you use the DNS name rather than the IP address, the *running-managed-servers.xml* file is the only file that requires updating when a change occurs.

### Single or administration servers

Before the IP address changes, start the server and change the listen address to the new IP address, then implement the IP address change and restart the server.

Change the *startserver.sh* file to show the new address:

```
ADMIN_URL=http://<Admin server IP address:port number>/
```

If you use the DNS name of the server's host machine rather than the IP address, there is no effect when the IP address changes.

## Troubleshooting

### Database issues

#### SQL\*Plus quits during the upgrade

SQL\*Plus may unexpectedly quit while running the upgrade under the following scenarios:

- ◆ The ASAP, EBOND, EDI, JOB, and SYS user IDs do not exist on the instance.
- ◆ You entered an incorrect password.
- ◆ ASAP does not have DBA-level authority.
- ◆ The database is not at the appropriate version level when starting the upgrade.
- ◆ You do not have the standard tablespaces *data* and *indexes*.
- ◆ The full directory path for the SQL script files does not include the trailing slash, you entered an invalid path, or you do not have write access to the directory.

- ◆ The free space checks did not pass (minimum available tablespace free for the largest contiguous space and total free space). Check the output log (*upgenv.log*) for the exit reason, correct the tablespace limitation, and run the *\_upgmss.sql* script again.

### **Restarting a failed upgrade attempt with the incorrect mode**

When failure occurs before the main upgrade sequence has begun (for example, during the interactive upgrade sequence), use your original selection of either upgrade mode 1 or 2. Do not use upgrade mode 3 to restart the upgrade if a failure occurs during the interactive upgrade sequence.

### **Upgrade failure and losing audits**

If upgrade mode 1 was run more than once, all audits are lost and you must start over. You cannot restart the upgrade.

### **Database graphics not displaying correctly**

Check to make sure you have run the *TBSGraphicLoad.exe* located in the same directory as the MetaSolv Solution executable on the client workstation. This executable contains new and updated graphics for the MetaSolv Solution database. It does not need to be run by every user. It only has to run one time on the database for the release.

### **No database log files**

When *\_upgradetbs.sql* runs, you are prompted for the directory path for the script files that are used to do the upgrade. The path must end with a trailing slash. The slash is different for UNIX and Windows:

/ for UNIX

\ for Windows

If the slash is not included, no log files are written.

## Application server issues

### BEA 8.1 SP5 known issues

*Problem:* The following message appears in the Appserver.mss.log file:  
"java.net.SocketException: Error in poll for fd=99, revents=32".

*Solution:* This message can be ignored. The following is the BEA write-up regarding this known issue:

"Sometimes, under heavy load, messages related to BEA-101326 or BEA-101083 were logged in WebLogic Server logs when valid sockets were closed prematurely due to corruption in data structures. However, these exceptions had no impact when the client was a web browser because only idle TCP connections and not active connections were prematurely closed when this problem occurred. A socket is now closed only after the socket times out."



BEA provides a website that documents any known issues as well as any resolutions that were provided in a service pack. To access this information, go to <http://edocs.bea.com/wls/docs81/notes> and click on either of the following links:

- ◆ Known Issues in WebLogic Server 8.1 SP5
- ◆ Resolved Problems for Service Pack 5

### Targeting WebLogic Integration components

It is important to verify the targeting of WLI components in a clustered environment. See the following BEA link for valid targeting in a production WLI environment.

<http://e-docs.bea.com/platform/docs81/deploy/targets.html>

### InvocationTargetException error during installation

*Problem:* The message "InvocationTargetException occurred while setting attribute Parent on MBean" appears several times in the wl-domain.log during installation process.

*Solution:* None. The problem is benign.

### Startup errors

*Problem:* The following errors appear in the log at startup.

```
<Sep 29, 2005 3:24:11 PM CDT> <Error> <IIOP> <BEA-002015> <Using
javax.rmi.CORBA.UtilClass com.sssw.jbroker.rmi.UtilDelegate; The IIOP subsystem
requires a WebLogic Server-compatible UtilClass.>
```

```
<Sep 29, 2005 3:24:11 PM CDT> <Error> <IIOP> <BEA-002016> <Using
javax.rmi.CORBA.PortableRemoteObjectClass
com.sssw.jbroker.rmi.PortableRemoteObjectDelegate, the IIOP subsystem requires a
WebLogic Server-compatible PortableRemoteObjectClass.>
```

*Solution:* These errors do not cause a problem and can be ignored.

## Compiling on UNIX

*Problem:* The following error message may occur when you compile JSP files on a UNIX machine if the file descriptor limit is set too low.

```
Full compiler error(s):
> java.io.IOException: Not enough space
>   at java.lang.UNIXProcess.forkAndExec(Native Method)
>   at java.lang.UNIXProcess.<init>(UNIXProcess.java:52)
>   at java.lang.Runtime.execInternal(Native Method)
>   at java.lang.Runtime.exec(Runtime.java:566)
>   at java.lang.Runtime.exec(Runtime.java:491)
>   at java.lang.Runtime.exec(Runtime.java:457)
>   at weblogic.utils.Executable.exec(Executable.java:227)
>   at weblogic.utils.Executable.exec(Executable.java:156)
>   at weblogic.utils.Executable.exec(Executable.java:142)
```

*Solution:* Raise the file descriptor limit, for example:

```
set rlim_fd_max = 4096
set rlim_fd_cur = 1024
```

## I cannot get ASR or LSR to start.

You must make manual changes to the *gateway.ini* file for certain versions of ASR or LSR. See [“Changes to the Gateway.ini file for LSR and ASR”](#) on page 12.

## Connection pool reset

If the WebLogic application server is disconnected from the database server, either by network problems or database shutdown, the connection pools of the WebLogic server must be reset once the problem is resolved. You can either restart the WebLogic server or use the RuntimeInfo page to reset the connection pool.

## Core dump file generated in domain directory

*Problem:* When the application server is shut down through the administration server console or a shutdown script, a core dump file is generated in the *domain* directory.

*Cause:* This problem is caused by turning on "Use Native IO" (by default) through the WebLogic Server Administration Console. If this option is disabled, no core file is generated. However, MetaSolv Solution needs the Native IO option enabled for performance. This is not a MetaSolv Solution issue but an issue with a third-party vendor.

*Solution:* As a workaround solution, delete the core dump file in the domain directory before you restart the server; otherwise it will grow. When you shutdown the server, wait for the core dump to complete before trying to restart the server.

**Error message during application server startup**

*Problem:* The following error appears in the console log file (*/appserver/logs/mslv01.mss.log*) during normal startup of the application server.

```
log4j:WARN No appenders could be found for logger
(org.apache.struts.util.PropertyMessageResources).
log4j:WARN Please initialize the log4j system properly.
```

*Solution:* None. You can ignore this error message.

**Cluster ear warning messages in log file**

*Problem:* When the installation is for a single server using the MetaSolv Solution XML API option, the deployment of ear files causes warning messages in *\*mss.log* referencing *i-nur* and *cluster\_i-nur*.

*Solution:* None. The *i\_nur* and *cluster-i\_nur* applications were included in previous cycles and then deleted. Now in a new cycle, they are gone, and a warning message results. This message causes no problems.

**JRE update failure**

*Problem:* In a Windows environment, a JRE update failure occurs during installation when multiple servers share the same *BEA\_HOME* directory.

*Cause:* Another server(s) is running and using the files needed for installation.

*Solution:* Shut down the servers and *jobd* processes (*java*) and rerun the installation program on the server where the failure occurred, then restart all servers.

### Server startup error

*Problem:* A server startup error is logged in the domain/server.log file when the mss\_samples.ear application is running.

*Solution:* None. The problem is benign.

The error is shown in the following code sample:

```
####<Jan 6, 2005 8:18:06 AM CST> <Error> <HTTP> <srvplosal> <mslv01> <main> <<WLS  
Kernel>> <> <BEA-101216> <Servlet: "action" failed to preload on startup in Web application: "worklist".  
javax.servlet.ServletException: Provider org.apache.xerces.jaxp.SAXParserFactoryImpl not found  
    at weblogic.servlet.internal.ServletStubImpl.createServlet(ServletStubImpl.java:909)  
    at weblogic.servlet.internal.ServletStubImpl.createInstances(ServletStubImpl.java:873)  
    at weblogic.servlet.internal.ServletStubImpl.prepareServlet(ServletStubImpl.java:812)  
    at weblogic.servlet.internal.WebAppServletContext.preloadServlet(WebAppServletContext.java:3281)  
    at weblogic.servlet.internal.WebAppServletContext.preloadServlets(WebAppServletContext.java:3226)  
    at weblogic.servlet.internal.WebAppServletContext.preloadResources(WebAppServletContext.java:3207)  
    at weblogic.servlet.internal.HttpServer.preloadResources(HttpServer.java:694)  
    at weblogic.servlet.internal.WebService.preloadResources(WebService.java:483)  
    at weblogic.servlet.internal.ServletInitService.resume(ServletInitService.java:30)  
    at weblogic.t3.srvr.SubsystemManager.resume(SubsystemManager.java:131)  
    at weblogic.t3.srvr.T3Srvr.resume(T3Srvr.java:966)  
    at weblogic.t3.srvr.T3Srvr.run(T3Srvr.java:361)  
    at weblogic.Server.main(Server.java:32)
```

### DEBUG Port

*Problem:* The default for this port is the value 8453 and currently it cannot be changed. This occurs only in development mode.

*Solution:* Currently none. The issue is being worked with BEA.

## API issues

### ORB not found

*Problem:* The jBroker ORB is not found by the application server.

*Solution:* Verify that the following files and directories were copied into BEA\_HOME\jdk\*\*\*\lib\ext during installation:

- *classes* directory
- *sparc* directory (x86 directory for Windows NT)
- 3 jbroker\*.jar files

If the files or directories are not found in the ext directory, check to see if there is another jre/bin directory included in the PATH before the BEA jdk directory. If these files and directories are not copied into the correct directory, BEA does not know the ORB exists. This structure is the hook that lets these applications communicate with each other.

## Client issues

**After the ZAC installation, the client application will not start.**

Make sure you have the workstation properly configured for MetaSolv Solution. See the section entitled “[Setting browser settings for ZAC](#)” on page 401.

**Online Help main screen displays, but clicking a link produces an error message.**



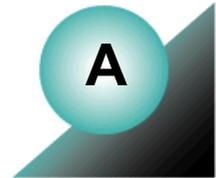
This error can be corrected by installing Microsoft Internet Explorer SP1. For more information, see the "Minimum Technical Requirements" chapter of the *MetaSolv Solution Planning Guide*.

**My Desktop does not show up when an external load balancer is used.**

This is due to a cookie inserted by the external load balancer to achieve server affinity and the third-party software used to implement My Desktop.

To resolve this problem, immediately after every server startup, access the server directly by logging on to MetaSolv Solution through the client application using any valid MetaSolv Solution logon ID. This is to take advantage of BEA network traffic optimization.





## Appendix A: Proxy server setup

In a clustered environment, you typically have multiple servers running on different machines. To transparently connect to one of the servers, a central routing server is required to direct the client to one of the clustered servers. The routing server can be a hardware-based (load balancer) or software-based (proxy server) solution. This appendix describes how to configure and set up the optional BEA-provided proxy server.

The BEA proxy server is not recommended by MetaSolv because it cannot support more than 150 concurrent user sessions.

The following figure shows a proxy server in a clustered environment. The proxy server directs the data traffic between the clustered servers, mslv01 and mslv02.

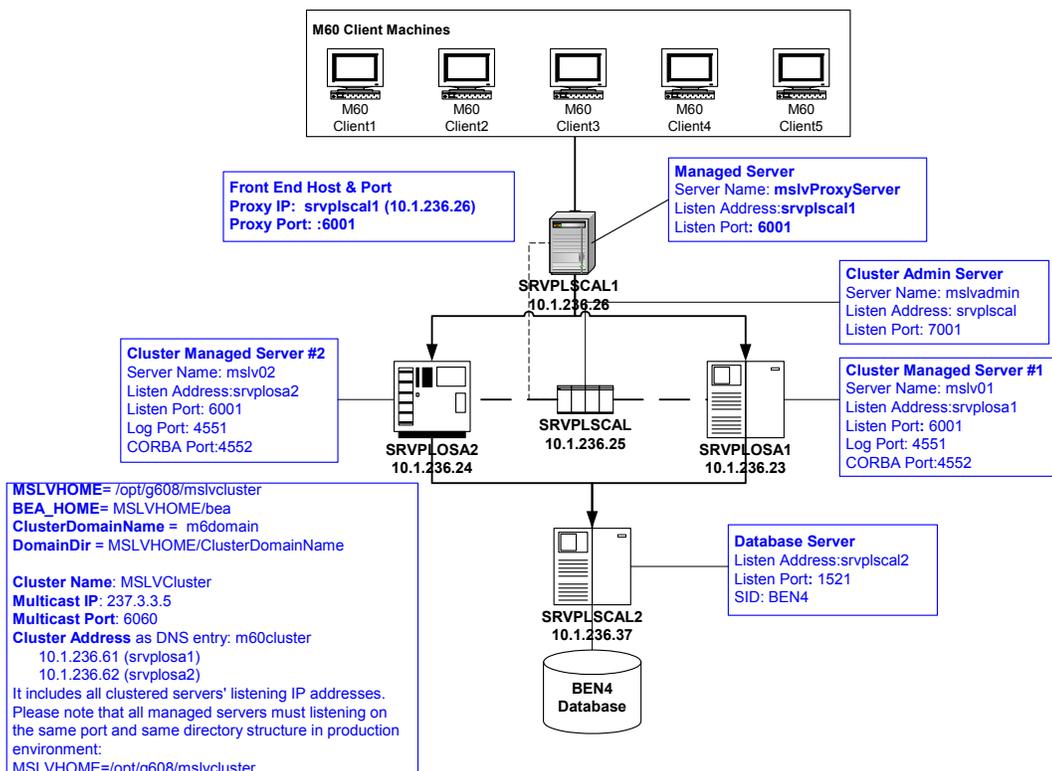


Figure 20: Proxy server

---

## Proxy server files

The following files (*web.xml* and *weblogic.xml*) are necessary for the proxy server setup. Procedures on the following pages explain how to find and modify the files.

### ◆ web.xml

```
<!DOCTYPE web-app PUBLIC "-//Sun Microsystems, Inc.//DTD Web
Application 2.3//EN" "http://java.sun.com/dtd/web-app_2_3.dtd">
<web-app>
<servlet>
  <servlet-name>HttpClusterServlet</servlet-name>
  <servlet-class>
    weblogic.servlet.proxy.HttpClusterServlet
  </servlet-class>
<init-param>
  <param-name>WebLogicCluster</param-name>
  <param-value>
    srvplosa1:6001|srvplosa2:6001
  </param-value>
</init-param>
</servlet>
<servlet-mapping>
  <servlet-name>HttpClusterServlet</servlet-name>
  <url-pattern>/</url-pattern>
</servlet-mapping>
<servlet-mapping>
  <servlet-name>HttpClusterServlet</servlet-name>
  <url-pattern>*.jsp</url-pattern>
</servlet-mapping>
<servlet-mapping>
  <servlet-name>HttpClusterServlet</servlet-name>
  <url-pattern>*.htm</url-pattern>
</servlet-mapping>
<servlet-mapping>
  <servlet-name>HttpClusterServlet</servlet-name>
  <url-pattern>*.html</url-pattern>
</servlet-mapping>
</web-app>
```

◆ **weblogic.xml**

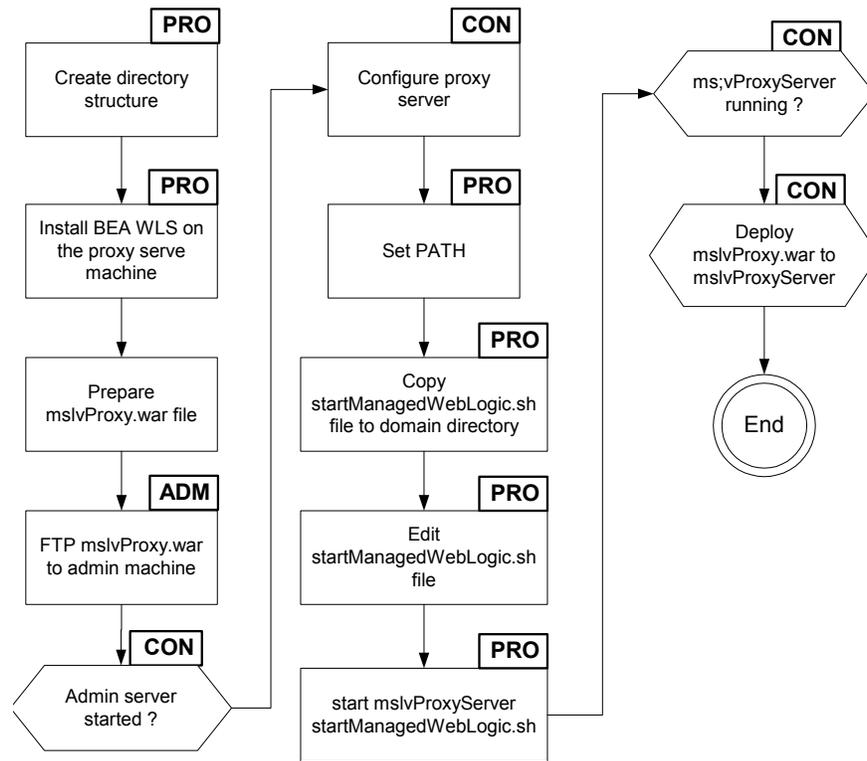
```
<!DOCTYPE weblogic-web-app PUBLIC "-//BEA Systems, Inc.//DTD Web
Application 8.1//EN" "http://www.bea.com/servers/wls810/dtd/
weblogic810-web-jar.dtd">

  <weblogic-web-app>
    <context-root></context-root>
  </weblogic-web-app>
```

**Note:** The XML files detailed here can be downloaded from the Oracle E-Delivery Web site. The files are contained in the Proxy.war file.

# Setting up the proxy server

The following figure shows the procedure for setting up the proxy server.



**ADM:** Administration server machine  
**CON:** BEA admin console    **PRO:** Proxy server machine

**Figure 21: Setting up a proxy server**

## To set up a proxy server

1. Create the directory structure.  
For example: /opt/g608/mslvcluster/m6domain.
2. Locate the BEA license required for the installation of BEA WebLogic Server.

Note: If you are using a MetaSolv-supplied license, locate the following license files on one of the cluster managed servers:

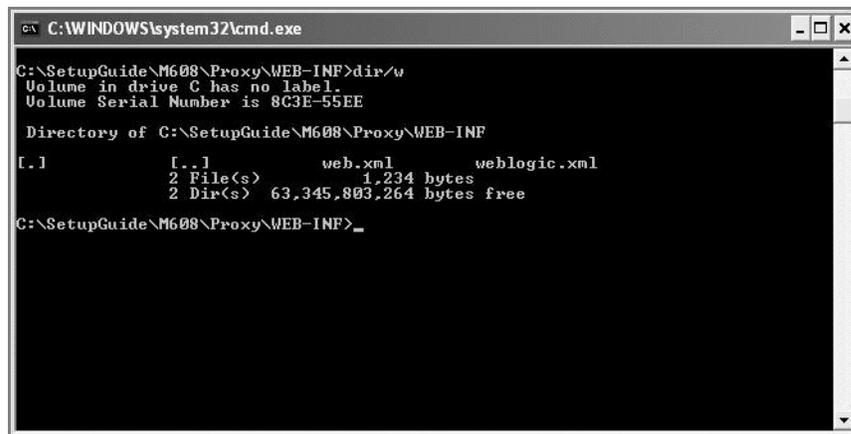
- license.bea in the BEA\_HOME directory
- weblogic.jar in the BEA\_HOME/weblogic81/server/lib

3. Install BEA WebLogic Server on the proxy server machine.

For example: `srvplscall`

4. Prepare the Proxy.war file
  - a. Download the proxy.war file from the Oracle E-Delivery Web site.
  - b. Create a WEB-INF directory under the proxy directory and copy the following files into it:
    - ♦ `web.xml`
    - ♦ `weblogic.xml`

The files are located in the Proxy.war file. The following figure shows the files copied into the newly created WEB-INF directory.



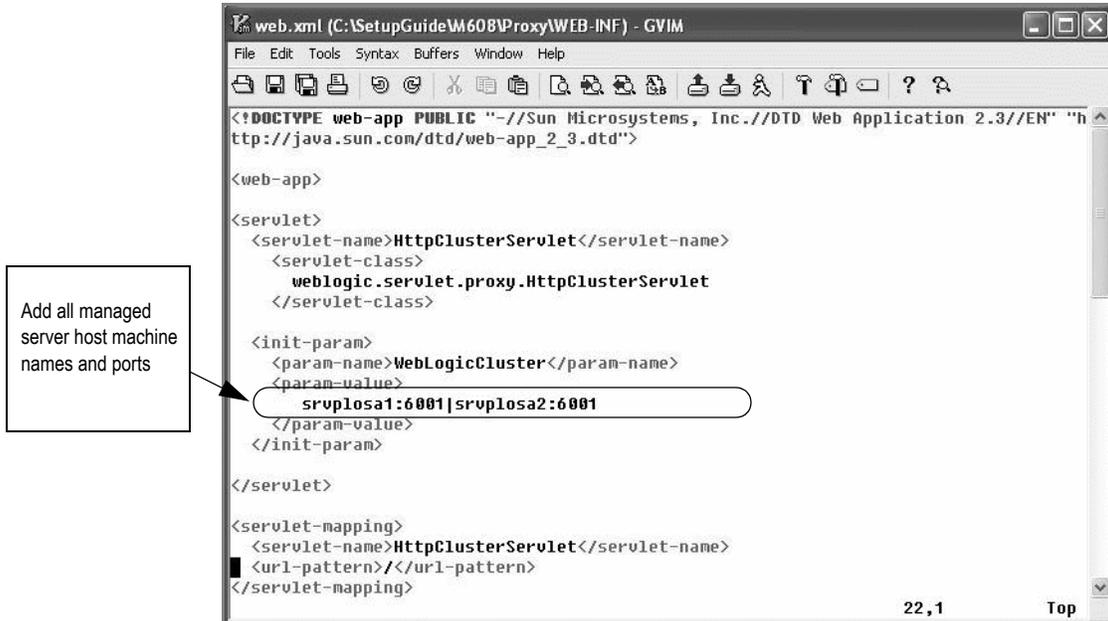
```
C:\WINDOWS\system32\cmd.exe
C:\SetupGuide\M608\Proxy\WEB-INF>dir/w
Volume in drive C has no label.
Volume Serial Number is 8C3E-55EE

Directory of C:\SetupGuide\M608\Proxy\WEB-INF

[.]                [..]                web.xml            weblogic.xml
2 File(s)          1,234 bytes
2 Dir(s)           63,345,803,264 bytes free

C:\SetupGuide\M608\Proxy\WEB-INF>_
```

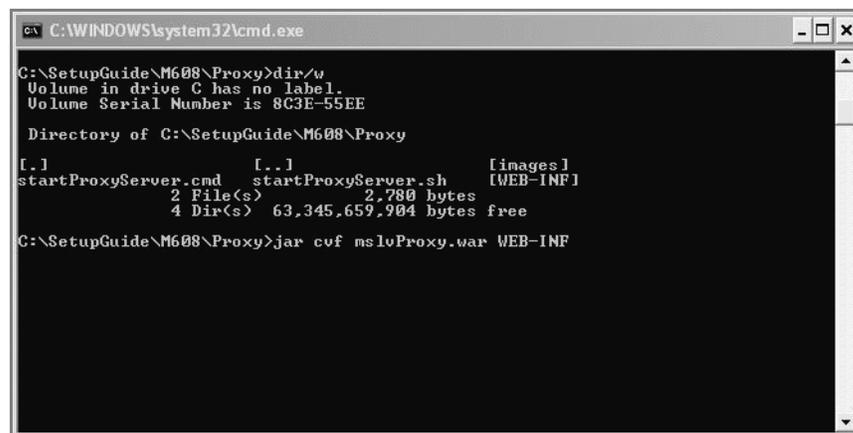
- c. In the *web.xml* file, add all managed server host machine names and ports in the manner shown in the bold text in the following figure



- d. Go to the parent of the WEB-INF directory and type the following command and press ENTER:

```
jar cvf proxy.war WEB-INF
```

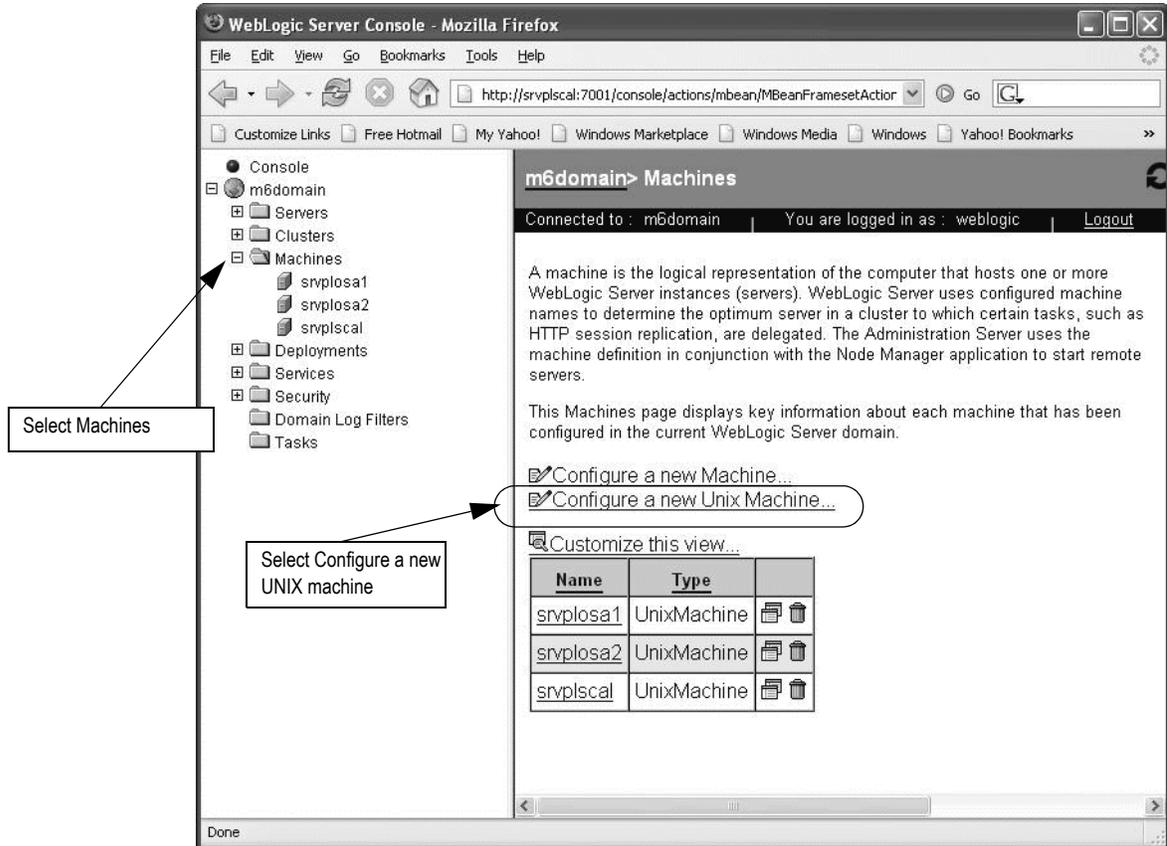
The following figure shows the command typed at the command line.



5. FTP the proxy.war file to the administration server.

6. Start the administration server if it is not running.
7. Create a WebLogic machine for the proxy server by completing the following tasks:
  - a. Log on to the WebLogic Console.
  - b. In the left pane of the WebLogic Console, select **m6domain** → **Machines**.

The following tabs appear in the right pane.



c. Click one of the following links:

- **Configure a new Machine (Windows)**
- **Configure a new Unix Machine (Unix)**

The following information appears in the right pane.

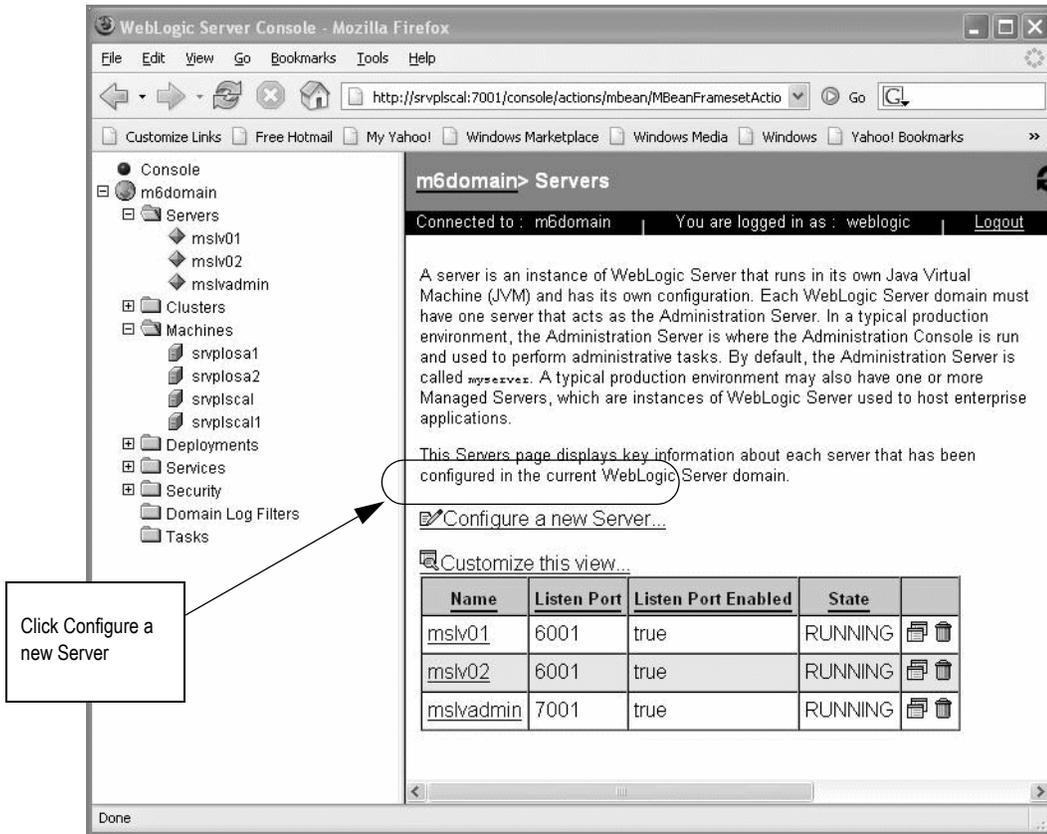
The screenshot shows a web browser window with the address bar displaying "m6domain> Unix Machines> Create a new UnixMachine...". The page is titled "Configuration" and has tabs for "Monitoring" and "Notes". Under "Configuration", there are sub-tabs for "General", "Node Manager", and "Servers". The "General" tab is active, showing a form for defining the general configuration for a Unix machine. The form includes a "Name" field with the value "srvplscal1", a checkbox for "Enable Post-Bind UID" (unchecked), a "Post-Bind UID" field with the value "nobody", a checkbox for "Enable Post-Bind GID" (unchecked), and a "Post-Bind GID" field with the value "nobody". A "Create" button is located at the bottom right of the form.

d. Type the name of the machine that will host the proxy server in the **Name** field and click **Create**.

Worksheet reference number and example value:

Field name	Worksheet reference number	Example value
Name (proxy server host machine)	Proxy-0615	<i>srvplscal1</i>

- To configure the proxy server, in the left pane, select **m6domain**→**Servers**, and then select **Configure a new Server** in the right pane.



Tabs appear in the right pane.

- On the General tab, type the following information into the appropriate fields for the proxy server: **Name**, **Machine**, **Listen Address**, and **Listen Port** and click **Create**.

The screenshot shows the 'Create' page for a new server in the 'm6domain' environment. The 'General' tab is active, and the following fields are filled out:

- Name:** mslvProxyServer
- Machine:** srvplscall
- Cluster:** (none)
- Listen Address:** srvplscall
- Listen Port:** 6001
- Java Compiler:** javac

Other options like 'Listen Port Enabled' and 'SSL Listen Port Enabled' are checked, while 'Client Cert Proxy Enabled' is unchecked.

Worksheet reference numbers and example values:

Field name	Worksheet reference number	Example value
Name	Proxy-0610	<i>mslvProxyServer</i>
Machine	Proxy-0620	<i>srvplscall</i>
Listen Address	Proxy-0620	<i>srvplscall</i>
Listen Port	Proxy-0630	<i>6001</i>

10. Select the Tuning tab and click **Advanced Options** at the bottom of the pane. The following pane appears.

**Advanced Options** [Hide]

This pane allows you to control this server's automatic detection and correction of low memory conditions, socket buffer options, as well as to define the independence of this server when it is used as a Managed server.

**Memory Options**

**Low Memory GC Threshold:** 5

The threshold level (0-99 percent) this server uses for logging low memory conditions and changing the server health state to `WARNING`. By default, the server logs a low memory warning in the log file and changes the server health state to `WARNING` after the average free memory reaches 5 percent of the total free memory measured at the server's last time.

**Low Memory Granularity Level:** 5

The granularity level (0-99 percent) this server uses for logging low memory conditions and changing the server health state to `WARNING`. By default, if the average free memory drops by 5 percent or more over two measured intervals, the server logs a low memory warning in the log file and changes the server health state to `WARNING`.

**Low Memory Sample Size:** 10

The number of times (1 - 10) this server samples free memory during a fixed time period. By default, the server samples free memory 10 times each interval to acquire the average free memory. Using a higher sample size can increase the accuracy of the reading.

**Low Memory Time Interval:** 3600 seconds

The amount of time (in seconds) that defines the interval over which this server determines average free memory values. By default, the server obtains an average free memory value every 3600 seconds. This interval is not used if the JRockit VM is used, as the memory samples are collected immediately after a VM-scheduled garbage collection. Taking memory samples after a garbage collection gives a more accurate average value of the free memory.

**Managed Server Independence**

**Managed Server Independence Enabled**

Specifies whether this Managed Server can be started when the Administration Server is unavailable.

**MSI File Replication Enabled**

Specifies whether the Administration Server replicates its configuration files to this Managed Server.

**Socket Buffer Options**

**Socket Buffer Size As Chunk Size**

Specifies whether the server's Send or Receive BufferSize on the raw socket should be set to `0x0`. This option is useful only on some Operating Systems for improving performance. Should be turned off in most of the cases.

Apply

Check MSI File Replication Enabled

11. Select the **MSI File Replication Enabled** check box and click **Apply**.

- Copy the startManagedWeblogic file to the domain directory.

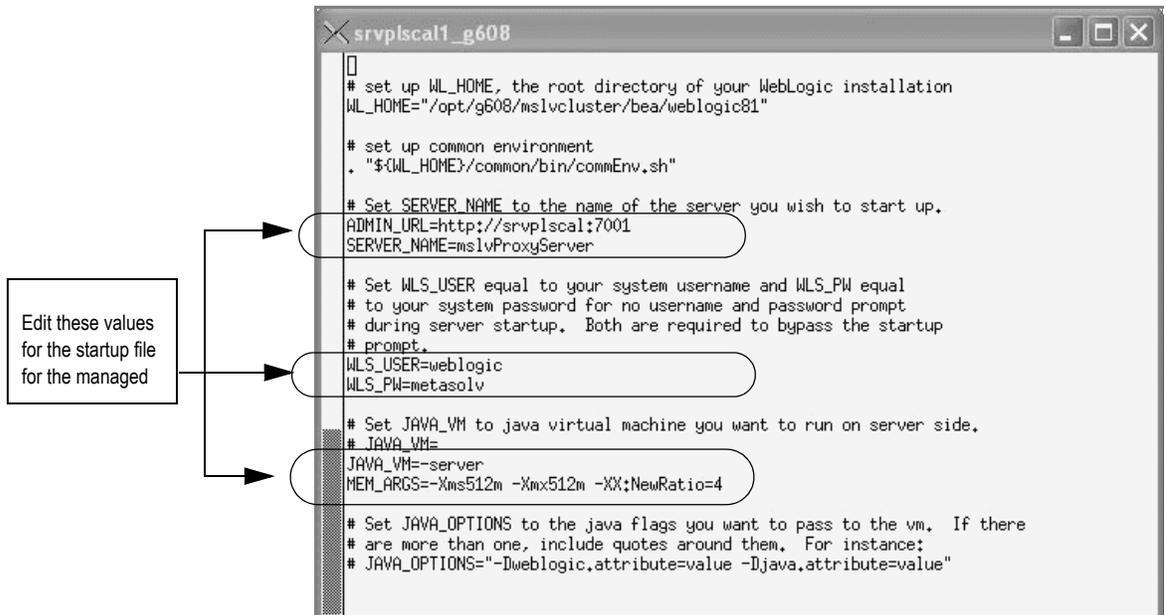


```
srvplscal1_g608
srvplscal1:/opt/g608/mslvcluster/m6domain> cp /opt/g608/mslvcluster/bean/weblogic81/common/bin/startManagedWebLogic.sh .
```

- Edit the startManagedWebLogic file, including new values for the highlighted items in the following figure.

Example values from the proxy worksheet are included in the figure.

```
ADMIN_URL=http://srvplscal:7001
SERVER_NAME=mslvProxyServer
WLS_USER=weblogic
WLS_PW=metasolv
JAVA_VM=-server
MEM_ARGS=-Xms512m -Xmx512m -XX:NewRatio=4
```



Edit these values for the startup file for the managed

```
srvplscal1_g608
# set up WL_HOME, the root directory of your WebLogic installation
WL_HOME="/opt/g608/mslvcluster/bean/weblogic81"

# set up common environment
. "${WL_HOME}/common/bin/commEnv.sh"

# Set SERVER_NAME to the name of the server you wish to start up.
ADMIN_URL=http://srvplscal:7001
SERVER_NAME=mslvProxyServer

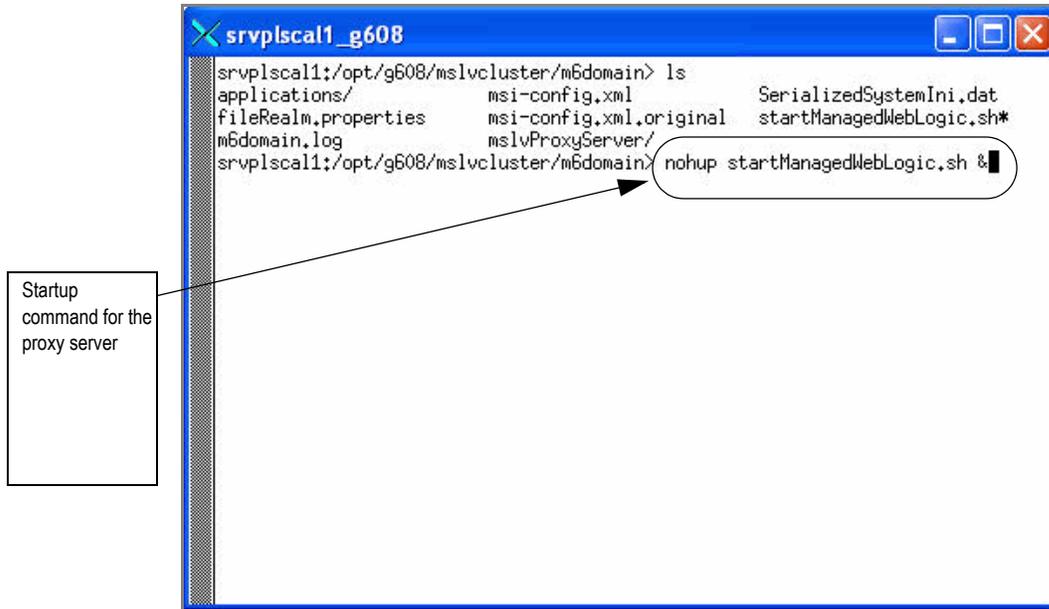
# Set WLS_USER equal to your system username and WLS_PW equal
# to your system password for no username and password prompt
# during server startup. Both are required to bypass the startup
# prompt.
WLS_USER=weblogic
WLS_PW=metasolv

# Set JAVA_VM to java virtual machine you want to run on server side.
# JAVA_VM=
JAVA_VM=-server
MEM_ARGS=-Xms512m -Xmx512m -XX:NewRatio=4

# Set JAVA_OPTIONS to the java flags you want to pass to the vm. If there
# are more than one, include quotes around them. For instance:
# JAVA_OPTIONS="-Dweblogic.attribute=value -Djava.attribute=value"
```

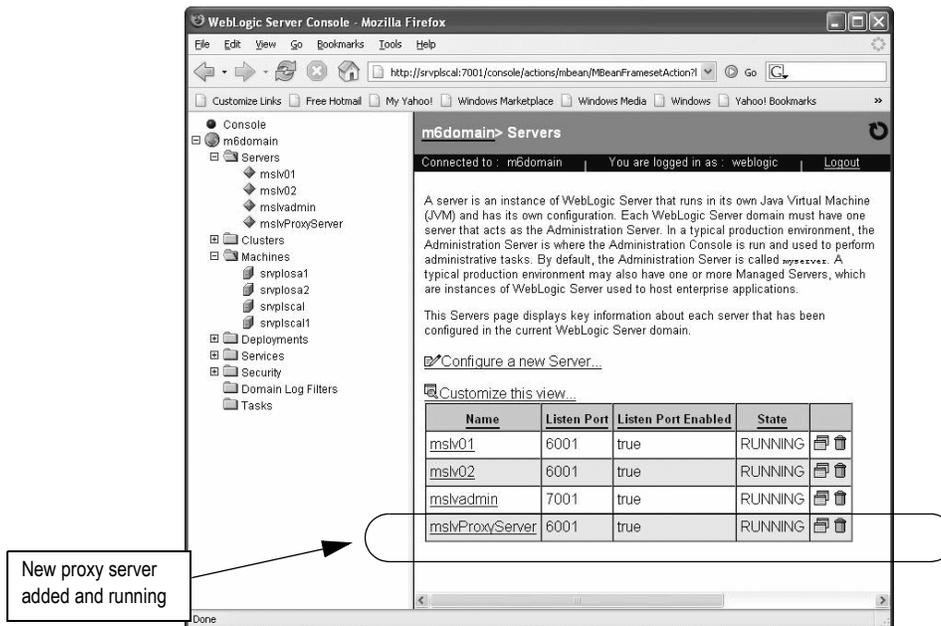
14. Start the proxy server.

The following figure shows the command for starting the proxy server.



15. In the WebLogic Console, click **Servers** in the left pane to see the updated list of servers and to view the state of the server.

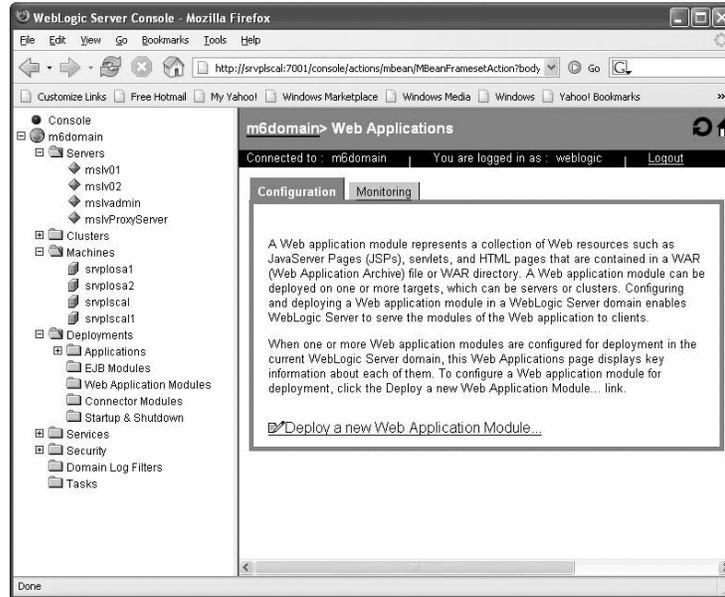
The following figure shows the new *mslvProxyServer* server and its state.



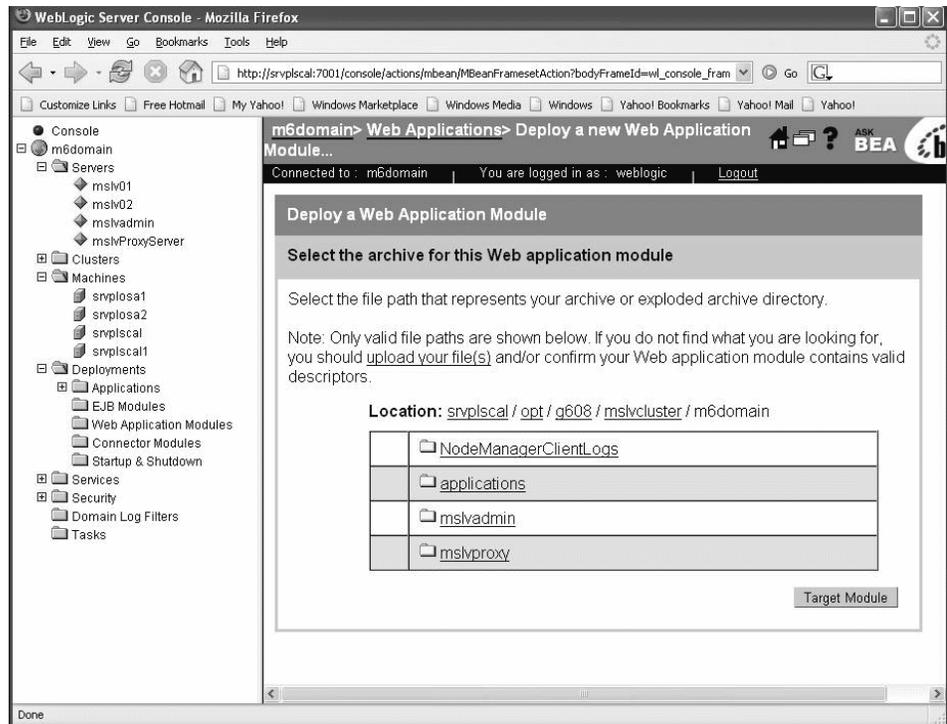
16. Configure the server and deploy the proxy.war file by completing the following tasks

- a. In the left pane, select **m6domain** → **Deployments** → **Web Application Modules**, and in the right pane, select **Deploy a new Web Application Module**.

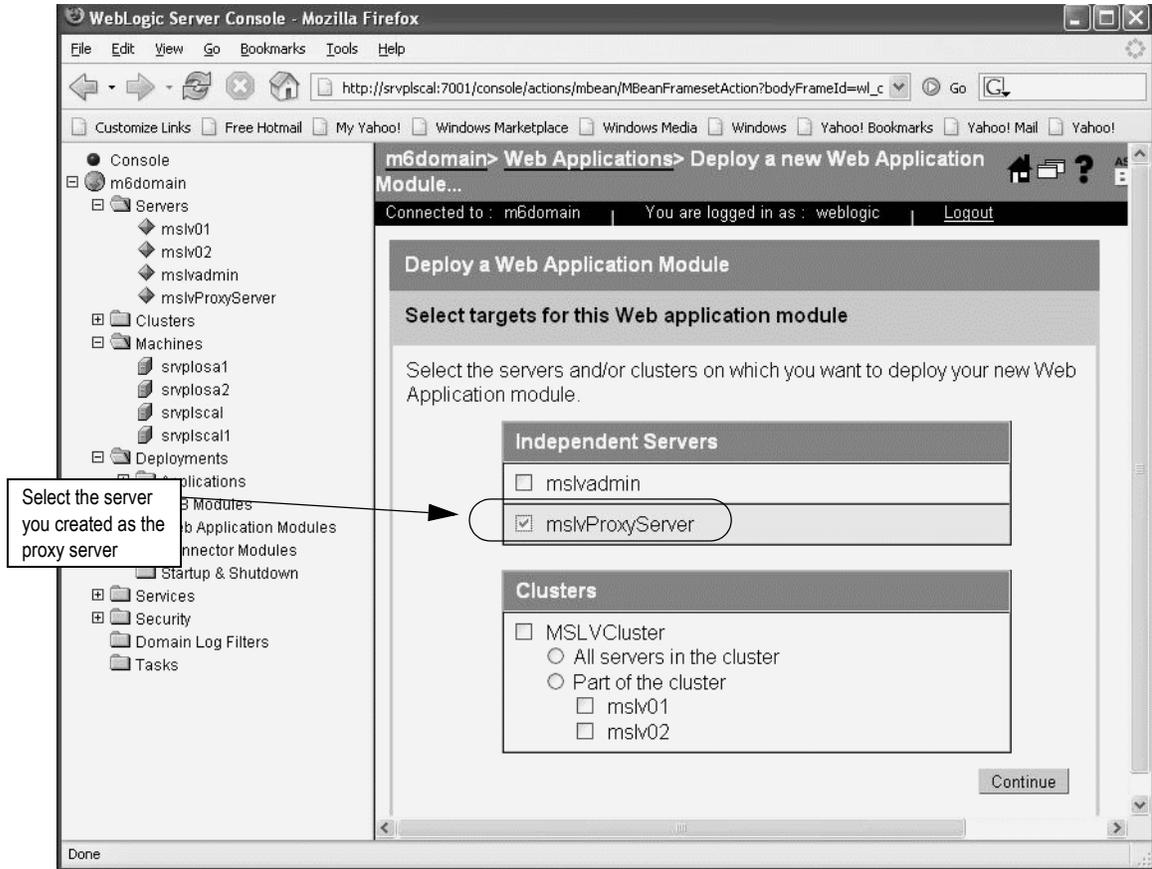
The following right pane appears.



- b. Select the **proxy.war** option and click **Target Module**.



The following pane appears for you to select the server to deploy the proxy.war to.



- c. Select the independent server you intend to use as the proxy server and click **Continue**.

The right pane changes to allow deployment of the proxy.war file.

m6domain> Web Applications> Deploy a new Web Application Module...  
 Connected to : m6domain | You are logged in as : weblogic | Logout

### Deploy a Web Application Module

#### Review your choices and deploy

**Deployment Targets**

Your Web Application module will be deployed to the following locations:

mslvProxy will be deployed to
Servers - mslvProxyServer
Clusters - none

**Source Accessibility**

During runtime, a targeted server must be able to access this Web Application module's files. This access can be accomplished by either copying the Web Application module onto every server, or by defining a single location where the files exist.

How should the source files be made accessible?

**Copy this Web Application module onto every target for me.**

During deployment, the files in this Web Application module will be copied automatically to each of the targeted locations. Note that the files in the Web Application module should still be made available at the original source location.

**I will make the Web Application module accessible from the following location:**

Provide the location from where all targets will access this Web Application module's files. You must ensure the Web Application module's files exist in this location and that each target can reach the location.

**Identity**

Enter a name to be used to identify this Web Application module.

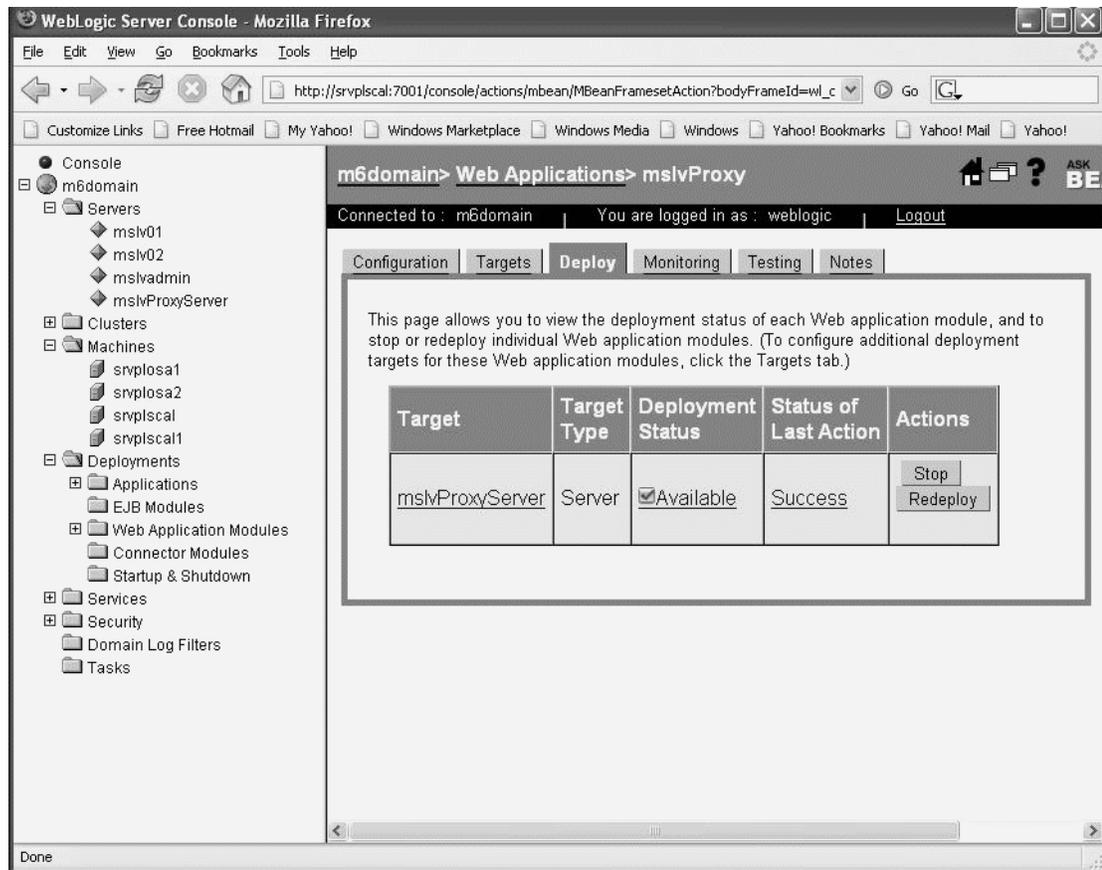
**Name:**

The name of this Web application deployment.

- d. Check the deployment targets to make sure they are correct, select the **Copy this Web Application module onto every target for me** option.

- e. Scroll down the page and type the name for the Web Application module (*proxy*) and click **Deploy**.
- f. To check the status of the deployment, select **m6domain**→**Deployments**→**Web Application Modules**→**proxy** in the left pane, then click the Deploy tab in the right pane.

The following figure indicates that the proxy server is deployed.



## Proxy server thread modification

### To modify proxy server threads

1. Log on to the WebLogic Server console.
2. In the left pane, select *Domain\_name>Servers>Your\_Proxy\_Server\_Name*.
3. In the right pane, select the Configuration tab and the General subtab, then click the **Show** link for Advanced Options.
4. Scroll down to the bottom of the page in the right pane and click **Configure Execute Queues**.
5. On the page that appears, select the Configuration tab, then click **weblogic.kernel.Default queue**.

The following page appears.

<b>Name:</b>	weblogic.kernel.Default
The name of this execute queue.	
<b>Queue Length:</b>	<input type="text" value="256"/>
The maximum number of simultaneous requests that this server can hold in the queue.	
<b>Queue Length Threshold Percent:</b>	<input type="text" value="5"/>
The percentage of the Queue Length size that can be reached before this server indicates an overflow condition for the queue.	
<b>Thread Count:</b>	<input type="text" value="50"/>
The number of threads assigned to this queue.	
<b>Threads Increase:</b>	<input type="text" value="2"/>
The number of threads to be added to the queue when an overflow condition occurs.	
<b>Threads Maximum:</b>	<input type="text" value="200"/>
The maximum number of threads that this queue can have; this value prevents WebLogic Server from creating an overly high thread count in the queue in response to continual overflow conditions.	
<b>Threads Minimum:</b>	<input type="text" value="50"/>
The minimum number of threads that WebLogic Server will maintain in the queue.	
<b>Thread Priority:</b>	<input type="text" value="5"/>
The priority of the threads associated with this queue.	
<input type="button" value="Apply"/>	

6. Make the following changes to the fields on the screen:

Queue Length: 256

Queue Length Threshold Percent: 5

Thread Count: 50

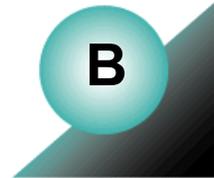
Threads Increase: 2

---

Threads Minimum: 50 (Thread Count = Threads Minimum)

Threads Maximum: 200

7. Click **Apply**.



## Appendix B: MetaSolv Solution components

---

The following table shows which software components are included in the MetaSolv Solution core product, which are separate software options, and which are separate applications included with MetaSolv Solution.

The components you see after installation depends on the software options purchased in addition to the core product.

**Table 5: MetaSolv components included in this release**

Component	Core component, software option, or separate application	Where installed
<b>Trouble Management</b>		
Trouble Management Subsystem	Software option	Client
Notifications	Core	Client
<b>Work Management</b>		
Rules and Behaviors for all areas	Core	Client
Provisioning Plans	Core	Client
Work Queues	Core	Client
<b>Service Requests</b>		
ASR	Software option	Application server
USO	Software option	Client
Product Service Request (PSR)	Software option	Client
Customer Management Module	Software option	Client
Product Catalog Module	Software option	Client

**Table 5: MetaSolv components included in this release**

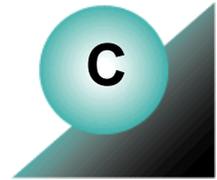
<b>Component</b>	<b>Core component, software option, or separate application</b>	<b>Where installed</b>
Service Request Worksheet Module	Software option	Client
LSR	Software option	Application server
Generate ASR (PSR to ASR mapping)	Software option	Client
Internal Service Request (ISR)	Software option	Client
Engineering Work Order (EWO)	Software option	Client
PSR to LSR mapping	Core	Client
ASR and ISR using templates	Core	Client
<b>Engineering</b>		
Plant Administration Module	Software option	Client
AutoDesign	Software option	Client
Diversity	Software option	Client
Maps/GCD	Core	Client
Equipment	Core	Client
Network Design Canvas	Core	Client
Provisioning Assistant	Core	Client
Path Analysis	Core	Client
Groom Tool	Core	Client
Ownership of inventory	Core	Client
<b>Technology Modules</b>		
Digital Loop Carrier Technology Module	Software option	Client
IP Technology Module	Software option	Client
ATM/Frame Relay Technology Module	Software option	Client

**Table 5: MetaSolv components included in this release**

<b>Component</b>	<b>Core component, software option, or separate application</b>	<b>Where installed</b>
DSL Technology Module	Software option	Client
MPLS Technology Module	Software option	Client
Ethernet Technology Module	Software option	Client
Optical/TDM Technology Module	Software option	Client
SONET Technology Module	Software option	Client
Wireless Technology Module	Software option	Client
<b>OSS Gateways and APIs</b>		
LSR Interconnection API	Software option	Application server
PSR End User Order Entry API	Software option	Application server
End User Billing API	Software option	Application server
Switch Provisioning Activation API	Software option	Application server
Transportation Provisioning Activation API	Software option	Application server
Plant API	Software option	Application server
Inventory and Capacity Management API	Software option	Application server
Trouble Management API	Software option	Application server
Internet Services API	Software option	Application server
Work Management API	Software option	Application server
ASR API	Software option	Application server
<b>Utilities</b>		
Location and Routing Gateway	Software option Separate application	Application server
NPA Split Utility	Software option	Client

**Table 5: MetaSolv components included in this release**

<b>Component</b>	<b>Core component, software option, or separate application</b>	<b>Where installed</b>
Background Processor	Core Separate application	Separate machine
MetaSolv Solution Utilities	Core Separate application	Client
<b>Operational Reports</b>		
Ordering Objects Universe	Software option Separate application	Client
Customer Objects Universe	Software option Separate application	Client
Engineering Objects Universe	Software option Separate application	Client



## Appendix C: Planning worksheets

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This appendix contains worksheets to help you determine the values you need to complete an installation of MetaSolv Solution with the XML API Option

Each worksheet contains columns for the following information:

- ◆ **R/O**—This field indicates whether a value for the item is required or optional.
- ◆ **Reference number**—This is a number used in the installation procedures in [Chapter 4, “Installing and deploying MetaSolv Solution with the XML API option”](#) to identify a value and show where the value is used. When the number is referred to in a procedure, you can look it up on a worksheet to see an example and a definition.
- ◆ **Item name**—This field indicates the item you must identify for your system, for example, a name for the administration server or an HTTP port for a managed server.
- ◆ **Example value in Windows/UNIX**—Examples are provided for all items on the worksheet.
- ◆ **Your value**—This is the installation value you must provide on the worksheet for an item.
- ◆ **Item description**—A description of the item you are being asked to provide an installation value for.

# MetaSolv Solution installation with the XML API option

## *Application server common installation worksheet*

The following worksheet applies to all MetaSolv Solution installations with the XML API option. Complete the values and use the worksheet as you install third-party software and MetaSolv Solution.

**Table 6: Application server common installation worksheet**

R/O	Reference number	Item name	Example value	Your value	Item description
R	XCOMM-0010	Application server domain name	m6domain		BEA domain name
R	XCOMM-0020	Application server username	weblogic		BEA server logon username
R	XCOMM-0030	Application server password	metasolv		BEA server logon password
R	XCOMM-0040	APP_MSLV passwd	mss6mslv		APP_MSLV database password
R	XCOMM-0050	APP_API passwd	mss6api		APP_API database password
R	XCOMM-0055	APP_INT passwd	mss6int		APP_INT database password
R	XCOMM-0057	XML API integration user id	APP_INT		DB user id for WLI
R	XCOMM-0059	XML API integration password	mss6int		DB password for WLI
R	XCOMM-0090	MetaSolv Home directory	WIN: C:\xmlapi\mslvhome  UNIX: /opt2/ xmlSingle/single		Root directory for the MetaSolv Solution application.

**Table 6: Application server common installation worksheet**

R/O	Reference number	Item name	Example value	Your value	Item description
R	XCOMM-0100	BEA_HOME	WIN: C:\xmlapi\bea UNIX: /opt2/xmlSingle/single/bea		Directory where BEA was installed. Must be set as an environment variable.
R	XCOMM-0110	WebLogic Domain Directory	WIN: C:\xmlapi\mslvhome\m6domain UNIX: /opt2/xmlSingle/single		Directory where domain configuration is located
R	XCOMM-0120	PATH	WIN: %BEA_HOME%\jdk142_08\bin;%PATH% UNIX: \$BEA_HOME/jdk142_08/bin:\$PATH		Directory where BEA jre\bin is located. Must be part of the PATH environment variable.
R	XCOMM-0130	Oracle Server Name	srvplscal2		The name of the server where the Oracle database resides
R	XCOMM-0140	Oracle Port	1521		Port used to communicate with the MetaSolv Solution Oracle database.
R	XCOMM-0150	Oracle Service Name	BEN4		

## Single server installation worksheet

Table 7: Single server installation worksheet

R/O	Reference number	Item Name	Example value	Your value	Item description
R	XSingle-0150	Application server name	msslv01		Logical name for a BEA application server instance.
R	XSingle-0160	Application server DNS hostname	srvplosa1		Name of the host machine on which a BEA application server resides.
R	XSingle-0170	Application server HTTP port	7001		Application server HTTP port.
R	XSingle-0190	Application server log port	4500		Used for MetaSolv Solution application server logging purposes. This value must be unique across all application servers running on the same host machine.
R	XSingle-0200	Application server CORBA port	2546		CORBA initialPort. This value must be unique across all application servers running on the same host machine.
R	XSingle-0205	Single server DEBUG_PORT	8453		Single server debug port. This value must be unique for each machine.
O	XSingle-0210	Proxy URL	http://srvplosa1:7001 (default to http://Single-0160/Single-0170)		Proxy/Load balancer URL

**Admin server installation worksheet**

**Table 8: Admin server installation worksheet**

R/O	Reference number	Item Name	Example value	Your value	Item description
R	XAdmin-0240	Admin server name	mssladmin		Logical name for a BEA admin server instance.
R	XAdmin-0250	Admin server DNS hostname	srvplscal		The name of the host machine on which the admin server resides.
R	XAdmin-0260	Admin server HTTP port	8001		Admin server HTTP port. It is unique for each machine.

## Clustered server general installation worksheet

Table 9: Clustered server general installation worksheet

R/O	Reference number	Item Name	Example value	Your value	Item description
R	XCluster-0410	Cluster Name	xmlcluster		Logical name for the BEA cluster.
R	XCluster-0420	Cluster Address	Test/development environment: srvplosa1:8004, srvplosa2:8004 (2-node cluster)  Production environment requires a DNS entry: m60cluster: 10.1.236.23 (srvplosa1), 10.1.236.24 (srvplosa2)		Comma separated list of single address host machine names or IP addresses and ports for each server in this cluster.
R	XCluster-0430	Multicast Address	237.4.5.6		Valid Range: 224.0.0.0 - 239.255.255.255 (Class D address)
R	XCluster-0440	Multicast Port	6060		Valid range: 1 - 65535
R	XCluster-0450	Front End Host	http://10.1.245.57:6001		For a cluster, you must provide this value for a proxy server or a load balancer URL. See XLB-0100 and XLB-0200.

**Clustered server installation worksheet**

**Table 10: Clustered server installation worksheet**

R/O	Reference number	Item Name	Example value	Your value	Item description
R	XClusterMS-0520	Managed server name	(1) mslv04 (2) mslv06		Logical name for the BEA managed server instance.
R	XClusterMS-0550	Cluster managed server listen address	(1) srvplosa1 (2) srvplosa2		The name of the host machine on which the BEA managed server resides.
R	XClusterMS-0570	Cluster managed server listen port	(1) 8004 (2) 8004		Managed server HTTP port. This must be the same for each server in a production environment.
R	XClusterMS-0590	Cluster-managed server log port	(1) 4504 (2) 4504		Used for MetaSolv Solution managed server logging purposes. This value must be unique for each machine.
R	XClusterMS-0600	Cluster server CORBA port	(1) 2544 (2) 2544		CORBA initialPort. This value must be unique for each machine.
R	XClusterMS-0610	Cluster server DEBUG_PORT	(1) 8444 (2) 8444		Managed server debug port. This value must be unique for each machine.

---

## ***BEA proxy server installation worksheet***

**Table 11: BEA proxy server installation worksheet**

<b>R/O</b>	<b>Reference number</b>	<b>Item Name</b>	<b>Example value</b>	<b>Your value</b>	<b>Item description</b>
O	XProxy-0610	Proxy managed server name	M60Proxy		Logical name for the BEA proxy server instance.
O	XProxy-0620	Proxy managed server listen address	srvplscal		The name of the host machine on which the BEA proxy managed server resides.
O	XProxy-0630	Proxy managed server listen port	8004		Proxy managed server HTTP port. This value is unique for each machine machine.

## ***Hardware load balancer installation worksheet***

**Table 12: BEA proxy server installation worksheet**

<b>R/O</b>	<b>Reference number</b>	<b>Item Name</b>	<b>Example value</b>	<b>Your value</b>	<b>Item description</b>
O	XLB-0100	Front end host virtual IP address	10.1.245.57		The virtual IP address for a load balancer machine.
O	LB-0200	Front end HTTP port	8004		The HTTP port used by the load balancer machine.



## Appendix D: Assigned configuration values

---

This appendix contains values that are set automatically during the MetaSolv Solution installation program.

### BEA configuration values

The installation program sets certain BEA configuration values for the domain automatically during the installation process. You can change these values through the BEA administration console, but the values are recommended by MetaSolv. The location in the console are enclosed in parentheses.

- ◆ Disable SSL (Domain>Servers>*servername*>General tab)
- ◆ Memory GC (Domain>Servers>*servername*>Tuning (Advanced button))
  - ◆ memory.GCThreshold=20
  - ◆ memory.GranularityLevel=5
  - ◆ memory.SampleSize=10
  - ◆ memory.TimeInterval=600
- ◆ Execute Thread Setting: This value is based on Min Concurrent Users and Max Capacity. (Domain>Servers>General tab)
- ◆ JDBC Pool Size: This value is based on Min Concurrent Users and Max Capacity. (Domain>Services>JDBC>*poolname*>Connections)
- ◆ JMS Thread Pool Size: 0
- ◆ Bridging: 1 (Domain>Messaging Bridge)
- ◆ Domain Logging (Domain>Logging)
  - ◆ File Count: 10
  - ◆ File Size: 65535
  - ◆ Rotation Type: BySize
  - ◆ Number of Files Limited: Selected
- ◆ Server Logging (Domain>Servers>*servername*>Logging>Server)
  - ◆ File Count: 10 (Domain>Servers>*servername*>Logging>Server)
  - ◆ File Size: 65535 (Domain>Servers>*servername*>Logging>Server)

- 
- Rotation Type: BySize (Domain>Servers>*servername*>Logging>Server)
  - Number of Files Limited: Selected (Domain>Servers>*servername*>Logging>Server)
  - JDBC Logging: Disabled (Domain>Servers>*servername*>Logging>JDBC)
  - Domain Logging: Disabled (Domain>Servers>*servername*>Logging>Domain)
  - Login to Stdout: Disabled (Domain>Servers>*servername*>Logging>Server)
  - ◆ HTTP logging: Disabled (Domain>Servers>*servername*>Logging>HTTP)

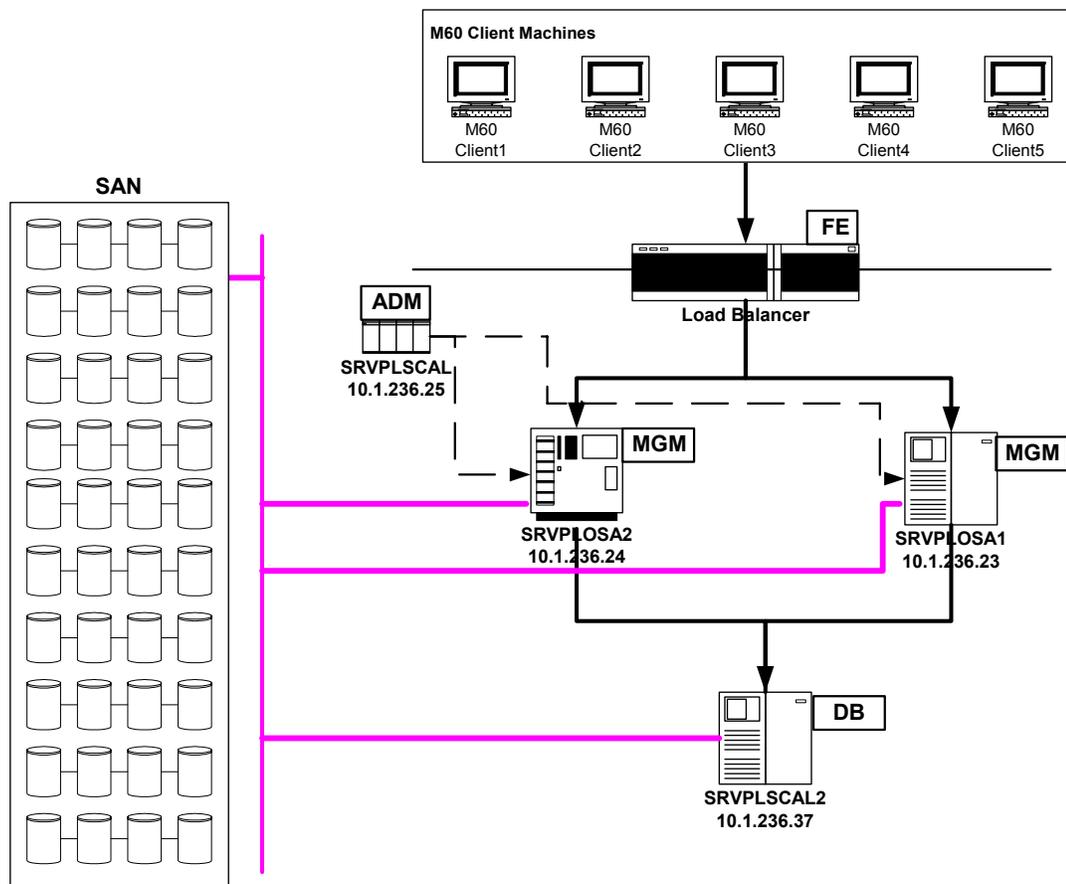
## Logging disabled

The installation program disables some default BEA logging settings to improve performance. The notation below provides the location in the domain treeview in the left pane of the WebLogic administration console.

- ◆ Values for the following have a BEA default setting of ON, but are disabled by the installation program:
  - Domain > Servers > *servername* > Logging tab > General > Log to Stdout
  - Domain > Servers > *servername* > Logging tab > Domain > Log to Domain Logfile
  - Domain > Servers > *servername* > Logging tab > HTTP > Enable Logging
- ◆ Values for the following have a BEA default setting of OFF. These settings remain unchanged.
  - Domain > Servers > *servername* > Logging tab > JDBC > Enable JDBC logging
  - Domain > Servers > *servername* > Logging tab > Debugging > Log Remote Exceptions

## Appendix E: Load balancer configuration example

The following figure shows a configuration that includes a load balancer for the M60 cluster used in the scenario in this document.



**Figure 22: Example of a load balancer used with the M60 cluster**

Contact your network engineering team or other IT support to set up the load balancer. One requirement for the load balancer service is server affinity, also known as Sticky session.

---

See the following BEA link for hardware load balancer requirements:  
[http://edocs.bea.com/wls/docs81/cluster/load\\_balancing.html#1026240](http://edocs.bea.com/wls/docs81/cluster/load_balancing.html#1026240)

**Configuration example for Cisco CSS 11503 for M60 Cluster**

service M6Installer1

```
port 6001
protocol tcp
string srvplosa1
keepalive type http
keepalive maxfailure 2
keepalive retryperiod 2
keepalive uri "/main/buildInfoPage.html"
ip address 10.1.236.23
active
```

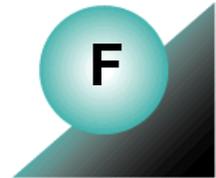
service M6Installer2

```
port 6001
protocol tcp
string srvplosa2
keepalive type http
keepalive maxfailure 2
keepalive retryperiod 2
keepalive uri "/main/buildInfoPage.html"
ip address 10.1.236.24
active
```

Owner test

content m6cluster

```
vip address 10.1.245.57
protocol tcp
port 6001
add service M6Installer1
add service M6Installer2
advanced-balance arrowpoint-cookie
balance leastconn
param-bypass enable
no persistent
active
```



## Appendix F: Tuning servers for performance

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### BEA information on tuning the application server

The configuration information given in this document is for a baseline setup. To achieve optimum performance for individual business needs, load and performance testing in a test environment that represents your true production environment is required. The test environment should mimic how you use your production system, including the transaction mix, number of users, hardware and software infrastructures, database, network usage, and all other relevant factors. Setting up a test environment will allow you to determine the settings that you should have for your production environment for:

- ◆ Connection pool sizing
- ◆ Execute thread sizing
- ◆ Java memory management

For BEA information on setting parameters for execute queues, connection pools, timeouts, and so on, see the following Web site:

<http://e-docs.bea.com/wls/docs81/perform>

If, for some reason, this link does not work, go to the BEA Web site and navigate to the documentation for WebLogic Server 8.1, then search using the keywords "performance and tuning."

### Execute queue thread counts

From the WebLogic Management Console, navigate to the queue using the following path in the left pane: **Server**><*server\_name*>**Configuration**>**General tab**>**Advanced Options**>**Configure Execute Queues**>**weblogic.kernel.default**.

You can also navigate to the queue by right-clicking the server name in the treeview, selecting **View Execute Queues**, and then clicking **weblogic.kernel.default**.

The following values are the recommended MINIMUM values you should use:

Queue Length = 256

Queue Length Threshold Percent: 5

Thread Count: 25

---

Threads Increase: 2

Threads Maximum: 100

Threads Minimum: 25

Thread Priority: 5

Values must be set for each server separately. BEA also recommends that the Thread Maximum doesn't exceed 100. If needed, add another server instance.

## Connection Pool Settings

For the MSLVPool, set the Maximum Capacity = Threads Maximum

From the WebLogic Management Console, **Domain>Services>JDBC->Connection Pools>MSLVPool> Configuration>Connections tab**

## JVM Settings

In the M6 startup script under the MSLVHOME/domain directory, the following settings can be configured:

MEM\_INIT=1024m

MEM\_MAX=1024m

PERMSIZE=128m

MAXPERMSIZE=128m

Set the MEM\_INT value equal to the MEM\_MAX value.

Note that in a Windows environment, JVM cannot take advantage of memory more than 1.2 GB. the value of (MEM\_MAX + MAXPERMSIZE). The memory needs to be in a continuous block.

For other operating systems, the JVM limitation is 4GB in a continuous memory block. In some cases to date, a system had 2GB free memory but the java process was not able to start. This is because the machine was up for some time and due to the memory fragmentation, JVM was not able to obtain a continuous memory block of 2GB. The only way to resolve this is to reboot the server machine. Then, immediately restart the application server.



## Appendix G: Configuration Files

---

 After making changes to any of the configuration files, be sure to restart each server or clustered server. Changes made to these files do not take effect until the server(s) are restarted.

### loggingconfig.xml

#### General Changes

Not all windows in the application allow you to limit the number of rows that are retrieved when performing a query. If you are not able to specify a limit and your query retrieves a large number of rows, the application server may display a `java.lang.OutOfMemory` error or a 500 server error. If this occurs, you must restart the application server. To eliminate this problem, you can edit the query parameters of the *loggingconfig.xml* file, as shown below.

```
<mslv-apps>
  <db-server-trace>
    <param name="SCHINTAL" value="off"/>
  </db-server-trace>
  <jdbc-trace>
    <param name="debug" value="off"/>
    <param name="query-results-row-limit" value="32000"/>
    <param name="too-many-rows-alert-threshold" value="20000"/>
  </jdbc-trace>
</mslv-apps>
```

**query-results-row-limit:** The maximum number of rows allowed to be retrieved by a user.

**too-many-rows-alert-threshold:** When a user retrieves a number of rows greater than or equal to this value, a log message is created in the *appserverlog.xml* file with the SQL.

The application server may run out of memory or crash if you set the **query-results-row-limit** too high. If you set it too low, users must provide precise search criteria to successfully

---

execute a query. As a best practice, users should always be as specific as possible when entering search criteria.

Change the value in the *loggingconfig.xml* file for each server or clustered server.

## Changes specific to upgrading from 6.0.8 - 6.0.11 to 6.0.12 or higher (applies to both single or clustered configuration)



You will need to modify the *loggingconfig.xml* file as shown below, or you will receive the following error on your appserver console:

```
log4j:WARN Could not locate the implementation class -
com.metasolv.common.framework.logging.api.log4jext.snmp.JoeSNMPTrapSender

java.lang.NoClassDefFoundError: org/opennms/protocols/snmp/SnmpTrapHandler
```

The following entries need to be removed from the *loggingconfig.xml* file, located in the *appserver/config* folder.

```
<!-- SNMP Trap Appender-->
<appender name="SNMPTrapApp"
class="com.metasolv.common.framework.logging.api.log4jext.snmp.SNMPTrapAppender">
    <!-- We use JoeSNMP library for sending Traps with this appender -->
    <param name="ImplementationClassName"
value="com.metasolv.common.framework.logging.api.log4jext.snmp.JoeSNMPTrapSender"/>
    <!-- Get all the necessary parameters from this id. see logserver-snmp-info element -->
    <param name="SnmpDestRef" value="default_trapdest"/>
    <!-- Valid values are snmpv1 or snmpv2.
Other values will revert to snmpv2 -->
    <param name="TrapVersion" value="snmpv2"/>
    <!-- Valid values are snmpv1 or snmpv2.
Other values will revert to snmpv2 -->
    <param name="Threshold" value="ALERT"/>
    <layout class="org.apache.log4j.PatternLayout">
        <param name="ConversionPattern" value="%m%n"/>
    </layout>
</appender>
```

---

Also, the two instances of `<appender-ref ref="SNMPTrapApp"/>` shown below needs to be removed from the loggingconfig.xml.

```
<category name="cmm.Framework"
class="com.metasolv.common.framework.logging.api.log4jext.MSLVLogger"
additivity="false">
    <level value ="error"
class="com.metasolv.common.framework.logging.api.log4jext.MSLVLevel"/>
    <appender-ref ref="XMLFileApp"/>
    <appender-ref ref="SNMPTrapApp"/>
</category>

<category name="cmm.Framework.Cache"
class="com.metasolv.common.framework.logging.api.log4jext.MSLVLogger"
additivity="false">
    <level value ="error"
class="com.metasolv.common.framework.logging.api.log4jext.MSLVLevel"/>
    <appender-ref ref="XMLFileApp"/>
    <appender-ref ref="SNMPTrapApp"/>
</category>
```

## integration.xml file

### General Changes

If you use the M6 integration server to integrate with other systems, copy the `<messaging>` section from your original `integration.xml` file and replace the new one with its contents.

```
<messaging run-jms-in-process="false">
    <senders>
        <!-- If you are sending messages using JMS, uncomment this section.
<jms-sender destination="asap">
    <jndi-factory>weblogic.jndi.WLInitialContextFactory</jndi-factory>
    <jms-factory>jms.mac.QueueConnectionFactory</jms-factory>
    <queue>jms.asap.asapQueue</queue>
    <provider-url>t3://[host name]:7001</provider-url>
</jms-sender>
-->
<!-- If you are not using HTTP messaging, comment this section out. -->
```

---

```
<http-sender destination="service-analytics">
  <url>http://[server name]/gatewayServlet</url>
</http-sender>
</senders>
<!-- If you are receiving messages using JMS, uncomment this section.
<receiver>
  <jndi-factory>com.sun.jndi.cosnaming.CNCtxFactory</jndi-factory>
  <jms-factory>queue/connectionFactory</jms-factory>
  <queue>queue/queue0</queue>
  <provider-url>iioploc://localhost:3506</provider-url>
</receiver>
-->
</messaging>
```

After making this change you must restart the application server.

## Changes specific to upgrading from 6.0.8 - 6.0.11 to 6.0.12 or higher (applies to both single or clustered configuration)



The introduction of Custom Extensions in 6.0.12 requires the following changes be made to the integration.xml file, regardless of whether or not you are using Custom Extensions. For further information on Custom Extensions, refer to the Custom Extensions Developer's Reference.

These handlers need to be added under the <handlers> tag within <integrated-modules>. By default, the handlers are disabled. Change as needed.

```
<handler enabled="false">
  <event-id>54</event-id>
  <class>com.mslv.integration.handlers.LateTaskExtensionHandler</class>
  <destination>asap</destination>
</handler>

<handler enabled="false">
  <event-id>55</event-id>
```

---

```
        <class>com.mslv.integration.handlers.PotentialLateTaskExtensionHandler
        </class>
        <destination>asap</destination>
</handler>
```

Also, these entries need to be added before the `</integration>` close tag.

```
<LateTaskExtensionEvent event_name="LateTaskExtensionEvent">
    <maxThreads>1</maxThreads>
    <queueMaxCapacity>100</queueMaxCapacity>
    <dbPollingInterval>5</dbPollingInterval>
</LateTaskExtensionEvent>

<PotentialLateTaskExtensionEvent
event_name="PotentialLateTaskExtensionEvent">
    <maxThreads>1</maxThreads>
    <queueMaxCapacity>100</queueMaxCapacity>
    <dbPollingInterval>5</dbPollingInterval>
</PotentialLateTaskExtensionEvent>
```

## gateway.ini

### General Changes

Refer to “Gateway events” in [Chapter 4, “Installing and deploying MetaSolv Solution with the XML API option”](#).

Compare the new *gateway.ini* file against your original *gateway.ini* file for the following sections:

- ◆ [Servers]: For API servers
- ◆ [ThreadProcs]: For event servers
- ◆ [System]: For URLNamingServicePort
- ◆ [CA]: For Custom attribute refresh interval

---

## Changes specific to using Custom Extensions / M6.0.12 or higher (applies to both single or clustered configuration)



Starting with M6.0.13, a full installation will automatically include this change in the gateway.ini file. Therefore, the following change is *not* required if you are performing a full installation of M6.0.13 or higher. This includes an upgrade to M6.0.13 that is accomplished through a full installation.

This change was introduced with the M6.0.12 Custom Extensions. Therefore, you will need to make this change to the gateway.ini file if you are using Custom Extensions and are:

- ◆ upgrading from M6.0.8 - M6.0.11 to M6.0.12 or higher. This refers to a true upgrade, as opposed to an upgrade that is accomplished through a full installation (which is covered in the next bullet).
- ◆ performing a full installation of M6.0.12. This refers to a new installation, as well as an upgrade to M6.0.12 that is accomplished through a full installation. Note that this does not state "M6.0.12 or higher". That is because if you are performing a full installation of M6.0.13 or higher, this change is automatically handled by the installer.

If using Custom Extensions, add the following line at the end of [Custom] section within the gateway.ini file. If your gateway.ini file does not have the [Custom] section heading, you will need to add that as well. Replace MSLV\_HOME and SERVER\_NAME with the appropriate file system location defined for your configuration. Note that the path is case sensitive and absolute (not relative).

### **For Windows operating systems:**

```
CLASSPATH=<MSLV_HOME>/<SERVER_NAME>/appserver/samples/customExtension;
```

example:

```
CLASSPATH=C:/mslvtest/mslv01/appserver/samples/customExtension;
```

### **For Unix operating systems:**

```
CLASSPATH=<MSLV_HOME>//<SERVER_NAME>//appserver//samples//  
customExtension;
```

example:

```
CLASSPATH=//mslvtest//mslv01//appserver/samples//customExtension;
```