Oracle® Fusion Middleware

Installing Oracle Virtual Assembly Builder

12*c* (12.1.2)

E29482-03

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Documentation for installers and system administrators that describes how to install and configure Oracle Virtual Assembly Builder.

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Oracle Fusion Middleware Installing Oracle Virtual Assembly Builder, 12*c* (12.1.2)

E29482-03

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Preface

This book details the requirements and steps needed to install Oracle Virtual Assembly Builder. This Preface includes the following topics:

- Audience
- Documentation Accessibility
- Related Documents
- Conventions

Audience

The intended audience is users who will install Oracle Virtual Assembly Builder for their organization.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at
http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit
http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit
http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

Related Documents

For more information, see the following documents in the documentation set:

- *Using Oracle Virtual Assembly Builder*
- *Developing Applications and Introspection Plug-ins for Oracle Virtual Assembly Builder*
- *Release Notes for Oracle Virtual Assembly Builder*

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Installation Overview

This chapter provides an overview of installing Oracle Virtual Assembly Builder. This chapter includes the following sections:

- Section 1.1, "Oracle Virtual Assembly Builder Installation Roadmap"
- Section 1.2, "Security Precautions"
- Section 1.3, "Preferred Topology"
- Section 1.4, "Environment Considerations"
- Section 1.5, "Certification and System Requirements"

1.1 Oracle Virtual Assembly Builder Installation Roadmap

The steps you need to take to install Oracle Virtual Assembly Builder are described in Table 1–1.

Table 1–1   Tasks in the Oracle Virtual Assembly Builder Installation Procedure

Tasks	Details and Documentation
Prepare your system environment for installation.	Ensure that your system environment meets the general installation requirements for Oracle Virtual Assembly Builder.
	See the following sections:
	- Section 1.2, "Security Precautions"
	- Section 1.3, "Preferred Topology"
	- Section 1.4, "Environment Considerations"
	- Section 1.5, "Certification and System Requirements"
Ensure that reference systems are set up.	To create appliances using Oracle Virtual Assembly Builder Introspection functionality, you must have appropriate reference systems set up. Refer to product specific documentation for those system requirements and set up.
Install and configure your deployment environment.	An Oracle VM environment must be installed and configured to deploy your assemblies. See Oracle VM (`http://www.oracle.com/technetwork/server-storage/vm`) for more information.

Table 1–1 (Cont.) Tasks in the Oracle Virtual Assembly Builder Installation Procedure

Tasks	Details and Documentation
Install an Application Server.	Oracle Virtual Assembly Builder Deployer requires Oracle WebLogic Server to be installed in an Oracle Home. Installing Oracle WebLogic Server creates the Oracle Home and WebLogic home directories, which are required for an Oracle Virtual Assembly Builder Deployer installation. For more information, see "Oracle Home and WebLogic Home Directories" in *Oracle Fusion Middleware Installation Planning Guide*. Also see the following sections in *Oracle Fusion Middleware Installation Guide for Oracle WebLogic Server*: ■ "Product Distribution" for instructions on how to download the latest version. ■ "Running the Installation Program in Graphical Mode" for installation instructions.
Install Oracle Virtual Assembly Builder.	Use this installer to install Oracle Virtual Assembly Builder Studio and Deployer and configure a Studio instance. This creates the following directories: ■ Oracle Virtual Assembly Builder home inside the Oracle home. ■ Oracle Virtual Assembly Builder Studio Instance home. You will be asked for the location of Studio instance home directory, which can be located anywhere on your system. See Chapter 3, "Installing Oracle Virtual Assembly Builder" for installation instructions.
Create and configure your Oracle WebLogic Server Domain for the Oracle Virtual Assembly Builder Deployer.	Use the Oracle Fusion Middleware Configuration Wizard to create your WebLogic domain and configure Oracle Virtual Assembly Builder Deployer. You will be asked for the location of the Domain home directory, which is where the Administration Server resides. This directory can be located anywhere on your system. See Chapter 4, "Configuring Oracle Virtual Assembly Builder Deployer" for instructions on starting the Configuration Wizard and creating your WebLogic Domain, performing manual configuration, and configuring security.
Start the servers.	Start the Administration Server. See "Starting and Stopping Servers" in *Oracle® Fusion Middleware Managing Server Startup and Shutdown for Oracle WebLogic Server* for instructions on how to start the Administration Server.

1.1.1 Installation and Configuration Options

The Oracle Virtual Assembly Builder Deployer component runs inside Oracle WebLogic Server. The CLI and the Studio graphical user interface interact with the Oracle Virtual Assembly Builder Deployer through a Web service exposed in Oracle WebLogic Server. You must configure Oracle WebLogic Server as part of the installation and configuration process.

You can select one of the following installation options:

1.1.1.1 Studio-only Installation

This option installs only Oracle Virtual Assembly Builder Studio. It contains the capabilities to create appliances and assemblies, create appliance templates and assembly archives and creating deployment plans.

Oracle WebLogic Server should be pre-installed under an Oracle Home.

Oracle Virtual Assembly Builder Deployer gets installed in a new Oracle Home under the same Oracle Home where you have Oracle WebLogic Server installed.

This option exposes abctl command line and Studio graphical user interfaces.

1.1.1.2 Deployer-only Installation

This option installs only Oracle Virtual Assembly Builder Deployer. It contains the capabilities to configure deployment targets, upload assembly archives to Deployer, create assembly instances, deploy/undeploy/start/stop assembly instances and scale appliance instances.

Oracle WebLogic Server should be pre-installed under an Oracle Home.

Oracle Virtual Assembly Builder Deployer gets installed in a new Oracle Home under the same Oracle Home where you have Oracle WebLogic Server installed.

This option exposes abctl command line and Web Services interfaces.

1.1.1.3 Studio and Deployer Installation (Default Installation Option)

The default installation option installs both Oracle Virtual Assembly Builder Studio and Deployer. It contains the capabilities described for Oracle Virtual Assembly Builder Studio and Oracle Virtual Assembly Builder Deployer install options.

Oracle WebLogic Server should be pre-installed under an Oracle Home.

Both Oracle Virtual Assembly Builder Studio and Deployer get installed in a new Oracle Home under the same Oracle Home where you have Oracle WebLogic Server installed.

This option exposes abctl command line, Studio graphical user interface and Web Services interfaces.

1.2 Security Precautions

Read this section before proceeding. It contains vital security information and precautions. Failure to read and understand these items may cause security vulnerabilities.

- The user who installs should be a trusted user, and a member of a trusted OS group.

- The template creation process does a security check to see that the Operating System (OS) user attempting to create the template is the same OS user who owns the Oracle Virtual Assembly Builder bin directory. Having the OS user who installs the product be the same OS user who creates templates ensures that the security check will succeed.

- Oracle WebLogic Server must be installed in a secure configuration prior to deploying the Oracle Virtual Assembly Builder Deployer to it.

1.3 Preferred Topology

Oracle Virtual Assembly Builder uses the Oracle VM product set as the virtualization infrastructure.

Oracle Virtual Assembly Builder and Oracle VM Manager are network and storage-intensive products. The Oracle VM servers, the Oracle VM Manager and Oracle Virtual Assembly Builder communicate over the network during the course of introspection, registration and deployment of VMs.

The setup should have the following characteristics:

- Oracle VM server pools machine with at least 16GB of total physical memory, gigabit networking facility, high capacity and high speed storage space for various tests and configuration, and acceptable processing power. The best performance

will come from server-class machines with fast processors, memory and a high performance storage subsystem.

- Oracle VM Manager machine which is hosted on another machine. This machine will run OEL x86_64 Linux and must be connected to the Oracle VM server pool by a Gigabit network switch.

- Reference systems (products you plan to introspect) may also be installed on this machine to help speed up introspection and file set capture. Oracle Virtual Assembly Builder also supports remote introspection, so reference systems do not have to be co-located with Oracle Virtual Assembly Builder. Due to the large size of various Oracle Virtual Assembly Builder artifacts that will be created for your components you should make sure to have plenty of disk space on this machine.

- If you going to use static IP addresses for your appliances of an assembly for deployment, you should have one static IP address per appliance instance.

1.4 Environment Considerations

Before using Oracle Virtual Assembly Builder, ensure that your environment meets the following prerequisites. These items are not required for installation, but are necessary environmental components for the use of Oracle Virtual Assembly Builder.

1.4.1 Unzip Utility on Reference Systems

Oracle Virtual Assembly Builder requires that the Unzip utility be present on reference systems in order for remote introspection to work properly.

1.4.2 SSH Port Forwarding Must be Enabled

Oracle Virtual Assembly Builder requires that SSH port forwarding be enabled on reference systems in order for remote operations (such as introspection and packaging) to work properly.

1.4.3 NFS Server Configuration Requirements

Oracle Virtual Assembly Builder needs to run certain executables as root. By default, root permissions do not propagate across NFS. Thus, an Oracle Virtual Assembly Builder installation accessed via an NFS share will not be fully functional. As an alternative, you can install OVAB locally, or update your NFS configuration to propagate root access, such as by adding the `no_root_squash` option when mounting the NFS share.

1.4.4 Port Requirements for Oracle VM Manager

Open the default port 9678 on the Oracle Virtual Assembly Builder host to allow communication between Oracle Virtual Assembly Builder and the Oracle VM Manager host and all Oracle VM Server hosts in the same resource pool. Otherwise, template registration may fail.

If port 9678 is not available in the Oracle Virtual Assembly Builder host, configure another port as the phonehome port during the template registration.

1.4.5 Bash Command on Reference System

Oracle Virtual Assembly Builder requires that the `/bin/bash` command be present on reference systems for remote introspection to work properly.

1.4.6 Mkdir Utility on Reference Systems

Oracle Virtual Assembly Builder requires that the `/bin/mkdir` command be present on reference systems for remote introspection to work properly.

1.5 Certification and System Requirements

Ensure your environment meets all requirements before starting the installation.

1.5.1 Certification

The certification document details supported installation types, platforms, operating systems, databases, and JDKs. See *Oracle Virtual Assembly Builder* in Oracle Fusion Middleware 12c at
http://www.oracle.com/technetwork/middleware/fusion-middleware/documentation/fmw-1212certmatrix-1970069.xls.

1.5.2 System Requirements

Please ensure you meet the following requirements.

1.5.2.1 Operating Systems

The following operating systems are supported:

- Oracle Enterprise Linux 5 (UL6+) (32-bit or 64 bit (default) supported)

- Red Hat Enterprise Linux 5 (UL6+) (32-bit. 64 bit supported in 32-bit mode)

You can verify your operating system version using the commands listed here.

- Oracle Enterprise Linux:

  ```
  # cat /etc/enterprise-release
  ```

- Red Hat Enterprise Linux:

  ```
  # cat /etc/redhat-release
  ```

1.5.2.2 Java Development Kit

Oracle Virtual Assembly Builder Studio requires a minimum java version 1.7.0_15. You must install the JDK before installing Oracle Virtual Assembly Builder.

1.5.2.3 Oracle Open-OVF

If Oracle Virtual Assembly Builder is installed on Oracle Enterprise Linux 5, download and install Oracle Open-OVF package from the OVM 3.0 channels of a yum repository. For information on setting up a yum repository see
http://www.oracle.com/technetwork/topics/linux/yum-repository-setup-085606.html

See also the following whitepaper on the Unbreakable Linux Network, a comprehensive resource for Oracle Linux and Oracle VM support subscribers, offering access to Linux software patches, updates and fixes, along with information on yum program and support policies:
http://www.oracle.com/us/technologies/027615.pdf

> **Note:** For information on obtaining Open-OVF for Oracle Enterprise Linux 6, see *Release Bulletin for Oracle Virtual Assembly Builder*.

1.5.2.4 Template Creation

To allow template creation to work, the following programs must be present:

- /sbin/fdisk
- /sbin/losetup
- /sbin/kpartx
- /sbin/blkid
- /sbin/e2label
- /sbin/mkfs.ext3

For creating templates with LVM-based OS images, the following programs must be present:

- /sbin/vgchange
- /usr/sbin/pvs

1.5.2.5 System Base Images

The supported Guest OS is an Oracle Enterprise Linux Base Image.

> **Note:** You have a choice of downloading an Oracle provided *sample* Oracle Enterprise Linux Base Image, or creating your own. The sample image is available on Oracle Technology Network: http://www.oracle.com/technology/products/ovab
>
> Ensure that the base image architecture matches your component software. That is, use a 32-bit base image if your component software is 32-bit; 64-bit base image for 64-bit component software.

To create the appropriate Base Image(s):

- Oracle Enterprise Linux Base Image, see: http://www.oracle.com/technetwork/server-storage/vm/overview/templates-101937.htmlThe information on this, and referenced pages, will provide the information you need to create your own System Base Image.

  When specifying a base image, the image must meet the following requirements:

  - Oracle Enterprise Linux 5.x or later
  - The system base image file name must be System.img
  - The base image must have the user *oracle*. One way to add a user to the base image is to boot the base image, log on to it as root, and call /usr/sbin/useradd oracle. The user *oracle* must belong to the primary group *oinstall* and to the (non-primary) group *oracle*.
  - At least 300MB of free space for /tmp, typically on a partition. (depending on the type of product your are creating appliance for and deploying, you may need more free space. Refer to appropriate product install guide for the specific free space requirement).

- At least 500MB of swap space partition

- To configure SSH for remote introspection of VMs created with the base image, make sure that the `/etc/ssh/sshd_config file` has the line `AllowTcpForwarding yes`.

- If a product that is introspected contains files encoded with a specific character encoding, ensure that the system base image you use to create templates for the resulting appliance(s) contains the needed character encodings.

- You must have installed the following kernal modules:
  - ovmapi_5.5.ko (32 bit)
  - ovmapi_5.3_64bit.ko (64 bit)

- You must have installed the following packages (RPMs):
  - glibc
  - nc
  - libovmapi-3
  - ovmd-3
  - ovm-template-config-3
  - ovm-template-config-authentication-3
  - ovm-template-config-datetime-3
  - ovm-template-config-firewall-3
  - ovm-template-config-network-3
  - ovm-template-config-selinux-3
  - ovm-template-config-ssh-3
  - ovm-template-config-system-3
  - ovm-template-config-user-3
  - xenstoreprovider-3

- You are recommended to have installed the following packages (RPMs):
  - nfs-utils
  - kernel-uek-2.6.32
  - kernel-uek-devel-2.6.32
  - kernel-uek-firmware-2.6.32
  - kmod-ovmapi-uek-1.0.0

- For FMW components, the following shell parameters must be set:
  * soft=4096
  * hard=4096

- Ensure that the vmapi module is appropriate for the kernel version. You can test the vmapi on a running system:
  * `/assemblybuilder/etc/vmapi get +` # shows all properties obtained from vmapi

* `/assemblybuilder/etc/vmapi set key=value` # sets a property in the vmapi list

* `/assemblybuilder/etc/vmapi get key` # shows the value associated with key, if any

■ For Oracle database, the following shell parameters must be set

* nproc-soft=2047

* nproc=hard=16384

* nofile-soft=1024

* nofile-hard=65536

* maxproc(ulimit -p)=16384

■ For Oracle database, the following kernel parameters must be set:

* Semaphore Limits

```
semmni=128 # max number of arrays; default is 128
semmsl=250 # max semaphores per array. default is 250
semmns=32000 # max semaphores system wide; default is 32000
semopm=100 # max ops per semop call; default is 32
```

* Shared Memory Limits

```
shmmni=4096 # max number of segments; default is 4096
shmmax=0.5GB # max seg size (kbytes); default is 4194303, which is 3GB
shmall=2097152 # max total shared memory (kbytes); default is
1073741824
```

* File Descriptors

```
file-max=6815744 # system wide file descriptors; default is 204573;
aio-max-nr=Maximum:1048576 # default is 65536;
ip_local_port_range=9000 65500 # default is 32768 61000;
rmem_default=262144 # default is 109568;
rmem_max=4194304 # default is 131071;
wmem_default=262144 # default is 105968
wmem_max=1048576 # default is 131071
```

■ Additional database requirements:

* Add the following line in the `/etc/pam.d/login` file:

```
session required pam_limits.so
```

■ The Oracle Forms and Reports plug-in requires the open-motif RPM.

1.5.2.5.1 Base Image Requirements for RAC Database Application In a RAC environment, you additionally configure a *grid* user (which is a user created to own the Oracle grid infrastructure binaries), and configure the home directory for the grid user. To introspect a typical RAC environment, you must add the *grid* user to the base image for the RAC database appliance.

2

Installing Prerequisites

This chapter describes procedures for downloading and installing software prerequisites for Oracle Virtual Assembly Builder. This chapter includes the following sections:

- Section 2.1, "Downloading the Java Development Kit (JDK)"
- Section 2.2, "Downloading Application Development Framework (ADF)"
- Section 2.3, "Downloading Oracle Virtual Assembly Builder"
- Section 2.4, "Completing the Installation of Prerequisites"

2.1 Downloading the Java Development Kit (JDK)

Oracle Virtual Assembly Builder Studio requires a minimum Java version 1.7.0_15.

To download the JDK:

1. Access the Java SE download page on Oracle Technology Network at
   `http://www.oracle.com/technetwork/java/javase/downloads/index.html`.

2. Select the latest version of the JDK, and select **Download**.

3. Read and accept the license agreement.

4. Click the download link for your operating system.

5. Launch the installer and follow the wizard instruction to install the JDK.

2.2 Downloading Application Development Framework (ADF)

Oracle Virtual Assembly Builder requires Application Development Framework (ADF). ADF contains Oracle WebLogic Server.

1. Access the ADF download page on Oracle Technology Network at
   `http://www.oracle.com/technetwork/developer-tools/adf/downloads/index.html`.

2. Select the **Application Development Runtime** 12.1.2.0.

   This selection downloads a file named `ofm_wls_jrf_generic_12.1.2.0.0_disk1_1of1.zip`.

3. Click **Download File**.

2.3 Downloading Oracle Virtual Assembly Builder

To download Oracle Virtual Assembly Builder and sample base images:

1. Access the Oracle Virtual Assembly Builder download page on Oracle Technology Network at
   `http://www.oracle.com/technetwork/middleware/ovab/downloads/index.html`.

2. Read and accept the license agreement.

3. Download Oracle Virtual Assembly Builder 12c (12.1.2.0.0) for Linux x86 (Generic).

   This selection downloads a file named `ofm_ovab_generic_12.1.2.0.0_disk1_1of1.zip`.

4. Download an appropriate sample base image. Match the OEL version of the VM to the base image.

2.4 Completing the Installation of Prerequisites

To complete the installation of prequisites, install the software you have downloaded in the following order.

1. Install Open-OVF.

   Set up yum to point to Oracle's public yum repository to download the ova dependencies.

   1. Download the file
      `http://public-yum.oracle.com/repo/OracleVM/OVM3/latest/x86_64/open-ovf-1.1-1.0.47.el5.noarch.rpm`, and place it under `/etc/yum.repos.d/`.

   2. Edit `/etc/yum.repos.d/public-yum-el5.repo`. Find the entry for [el5_u5_base] and change the attribute "enabled" from 0 to 1.

      This change enables downloads from this particular repository, which is appropriate for OEL 5.

   3. Install the required python module and all its dependencies.

      For 32-bit operating systems:

      ```
      sudo yum install libvirt-python.i386
      ```

      For 64-bit operating systems:

      ```
      yum install libvirt-python.x86_64
      ```

2. Install the ova command itself.

   1. Download `open-ovf-<some_version>.el5.noarch.rpm`.

   2. Install it using the command:

      ```
      sudo rpm -ivh </path/to/downloaded.rpm>
      ```

   3. Verify the installation by running the command `run /usr/bin/ova` and verifying that it prints a usage message.

3. Install the JDK.

4. Install Application Development Framework.

Once complete, you are ready to install Oracle Virtual Assembly builder into an Oracle Home where you installed ADF. See Chapter 3, "Installing Oracle Virtual Assembly Builder".

3

Installing Oracle Virtual Assembly Builder

The following sections describe how to do a complete installation of Oracle Virtual Assembly Builder.

3.1 Understanding the Installation Environment

Oracle Virtual Assembly Builder must be installed into an existing Oracle Home, where Application Development Framework (ADF) is installed. Note this Oracle Home, and specify it when installing Oracle Virtual Assembly Builder. See *Installing and Configuring the Oracle Fusion Middleware Infrastructure* for more information.

3.2 Configuring Secure Communications to Oracle VM Manager

To allow Oracle Virtual Assembly Builder to communicate securely with Oracle VM Manager, you must configure the Java Secure Socket Extension (JSSE) WebLogic SSL implementation. As of WebLogic Server version 12.1.1, JSSE is the only SSL implementation that is supported.

For information on configuring JSSE in previous versions of WebLogic Server, see "Using the JSSE-Based SSL Implementation" in Securing Oracle WebLogic Server.

3.3 Installing Oracle Virtual Assembly Builder

Follow these steps to install and configure Oracle Virtual Assembly Builder.

> **Note:** These installation instructions are limited to installing Oracle Virtual Assembly Builder on Oracle Enterprise Linux 5 (UL3+). You can adapt them for your local environment.

- Section 3.3.1, "Install and Configure"

- Section 3.3.3, "Silent Installation"

To start installation, launch the installer by calling `java -jar ovab_121200.jar`. The required Java version is 1.7.

3.3.1 Install and Configure

You can install Oracle Virtual Assembly Builder software in an Oracle Home, and optionally configure an Oracle Virtual Assembly Builder instance Home with various details provided. To install and configure Oracle Virtual Assembly Builder, start the installer, then follow these steps:

1. Specify Inventory Directory. This page allows you to specify a directory for installer files. This is called the *inventory directory*. Within the inventory directory, the installer automatically sets up subdirectories for each product to contain inventory data and will consume typically 150 Kilobytes per product.

   Enter the full path of the inventory directory.

   You can specify an Operating System group that has write permissions to the above directory.

   When you are ready to continue, click **OK**. A dialog appears warning you that you perform certain actions with root privileges before the installation can continue.

   If you have root privileges, use another window to execute the script createCentralInventory.sh from the inventory directory you specified. When finished, click **OK**.

   If you do not have root privileges, and want to continue the installation, check the **Continue installation with local inventory** box and click **OK**.

2. Welcome. This page introduces the installation. The flow of installation appears in the left panel, and control buttons appear along the bottom.

Figure 3–1   Welcome page
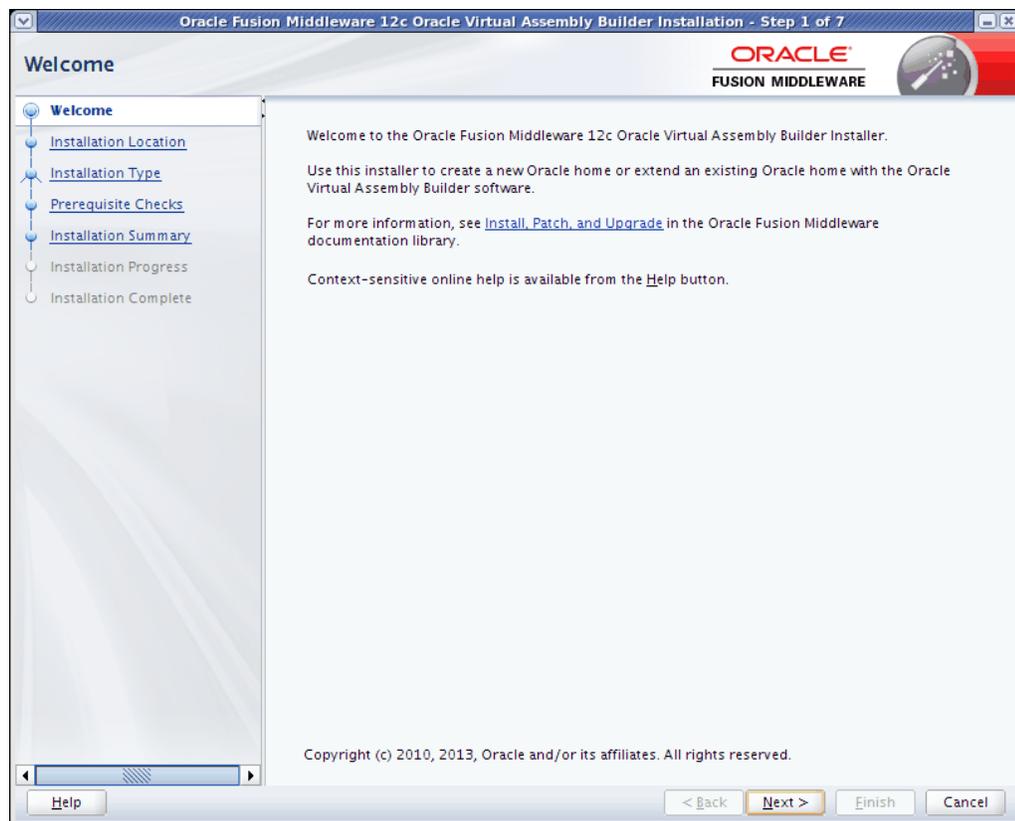
Installation Welcome page

****

When you are ready to begin installation, click **Next**. The *Installation Location* page appears.

> **Note:** Help is available on all of the pages. Use it to learn about what you can do in that page, field descriptions, possible values, and other information.

Figure 3–2   Installation Location page
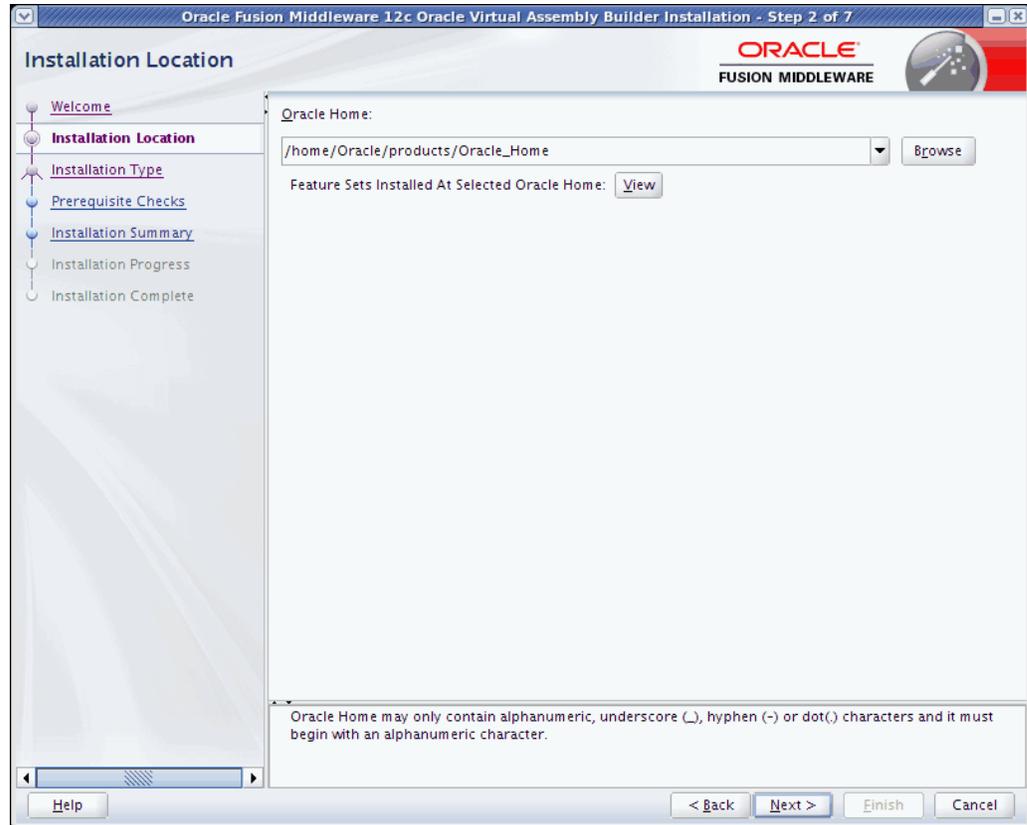
Installation Location page

****

3. **Installation Location.** Specify the Oracle Home directory.

    Select the existing Oracle Home location where you installed Application Development Framework (ADF). The installer checks to verify that the selected Oracle Home is valid.

    Click **View** to view the installed feature sets for an Oracle Home.

    Click **Next**. The *Installation Type* page appears.

Figure 3–3 Installation Type page
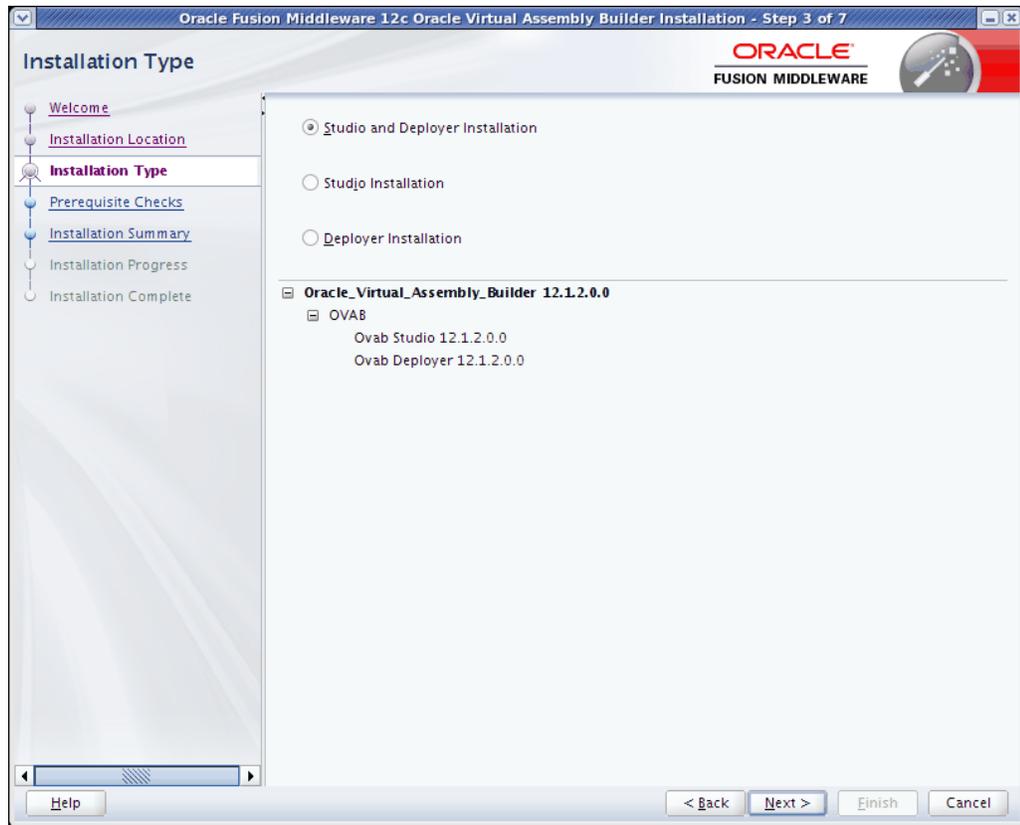
Installation Type page

****

4. **Installation Type.** Select the installation type as follows:

    ■   *Studio and Deployer installation*: install both Oracle Virtual Assembly Builder Studio and Oracle Virtual Assembly Builder Deployer.

    ■   *Studio installation*: install only Oracle Virtual Assembly Builder Studio, which provides you the ability to create appliances and assemblies, create appliance templates and assembly archives and create deployment plans.

    ■   *Deployer installation*: install only Oracle Virtual Assembly Builder Deployer, which provides the ability to configure deployment targets, upload assembly archives to Deployer, create assembly instances, deploy/undeploy/start/stop assembly instances and scale appliance instances.

    Click **Next**. The *Prerequisite Check* page appears showing the progress of the checks, and listing any deficiencies.

Figure 3–4   Prerequisite Checks page
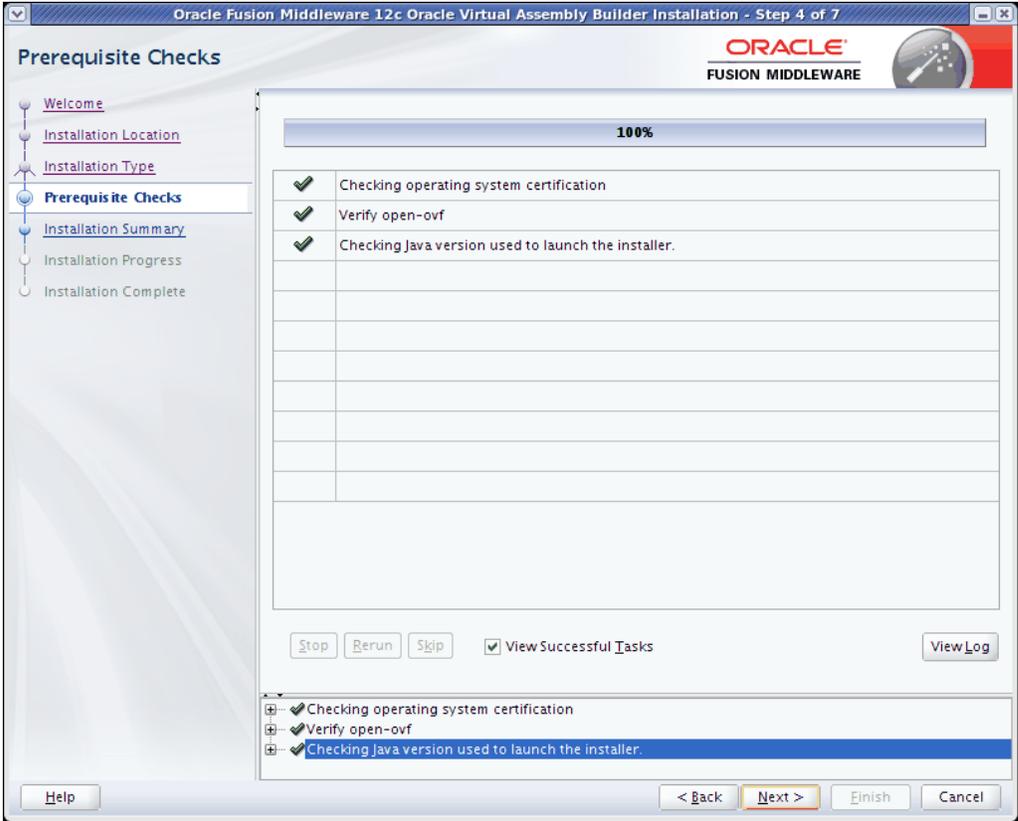
Prerequisiste Checks page

****

5.   **Prerequisite Checks.** Checks begin automatically. Progress notes inform you about what is being checked, and what the outcome of the check is. You can abort, retry, or continue checks using the buttons on the page. For example, if a physical memory check fails, you can go and correct the problem, then click **Retry** to direct the installer to recheck the item.

     Click **Next** when the prerequisite checks are complete. The *Installation Summary* page appears.

Figure 3–5   Installation Summary page

Installation Summary page

****

6.   **Installation Summary.** The Installation Summary page lists the components and locations for install.You can save the response file by clicking **Save**.

    If you want to change any of your installation or configuration choices, you can select the item from the left pane, make the changes, then return to the *Summary* page.

    Click **Install** to start the installation process.

7.   Depending on your selections, an *Installation Progress* page appears with relevant information.

Figure 3–6   Installation Progress page
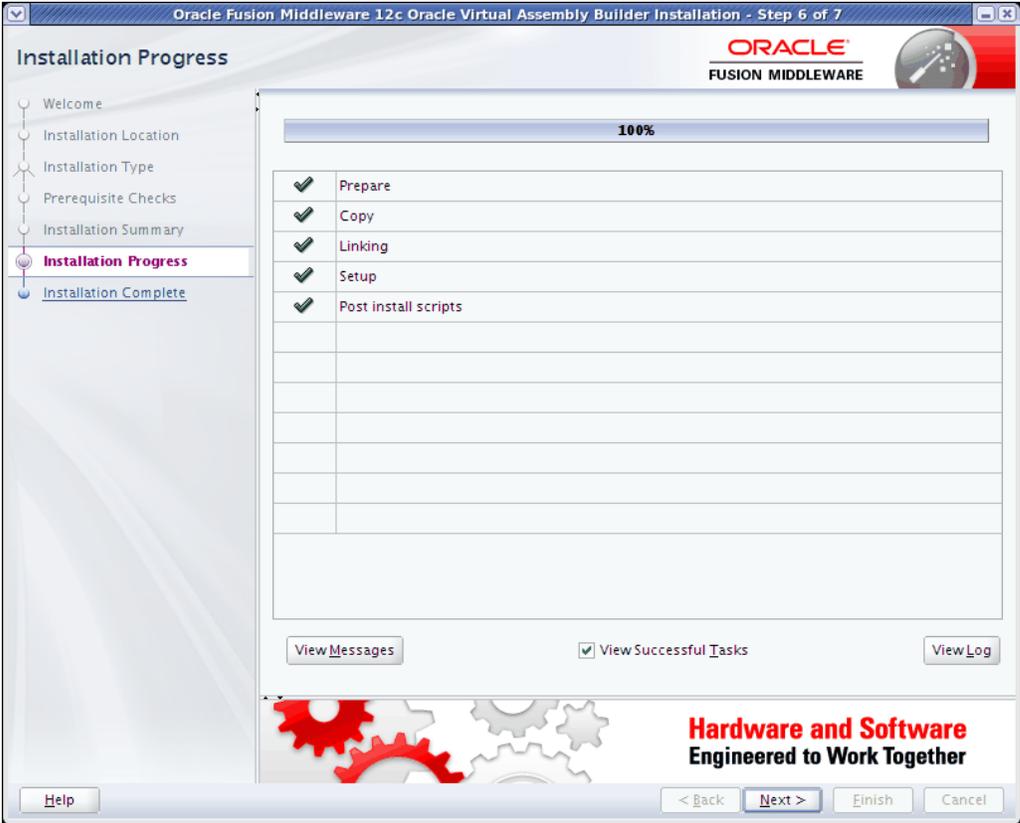
Installation Progress page

****

8. When installation is complete, the *Installation Complete* page appears.

Installing Oracle Virtual Assembly Builder

Figure 3–7   Installation Complete page
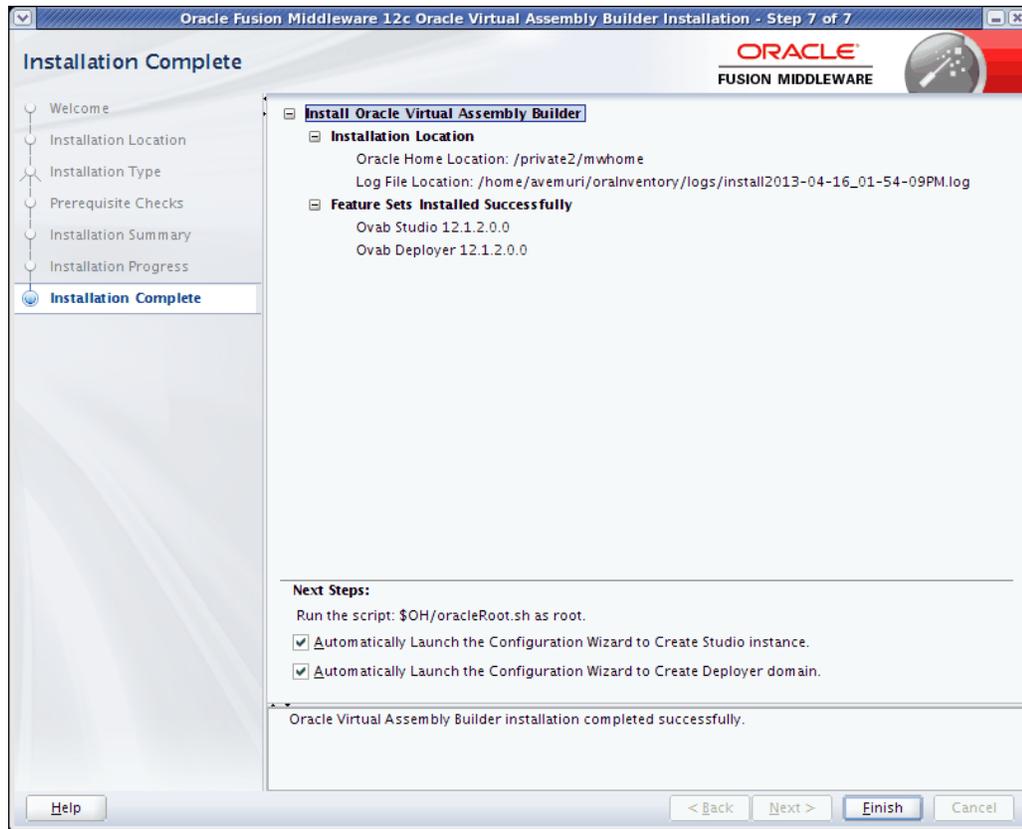
[Installation Complete page](#)

****

9. Run the script `$OH/oracleRoot.sh` as root.

10. If you installed Oracle Virtual Assembly Builder Studio, check **Automatically Launch the Configuration Wizard to Create Studio instance**, and configure the Studio instance using the procedures in Section 3.3.2, "Configure Oracle Virtual Assembly Builder Studio Instance".

11. If you installed Oracle Virtual Assembly Builder Deployer, check **Automatically Launch the Configuration Wizard to Create Deployer domain**, and configure the Deployer using the procedures in Chapter 4, "Configuring Oracle Virtual Assembly Builder Deployer".

12. Click **Finish**.

3.3.2 Configure Oracle Virtual Assembly Builder Studio Instance

The configuration wizard launches automatically after you select the *Automatically Launch the Configuration Wizard to Create Studio instance* option upon completing the Oracle Virtual Assembly Builder installation.

The *Welcome* page appears.

3-8   Installing Oracle Virtual Assembly Builder

Figure 3–8   Welcome page
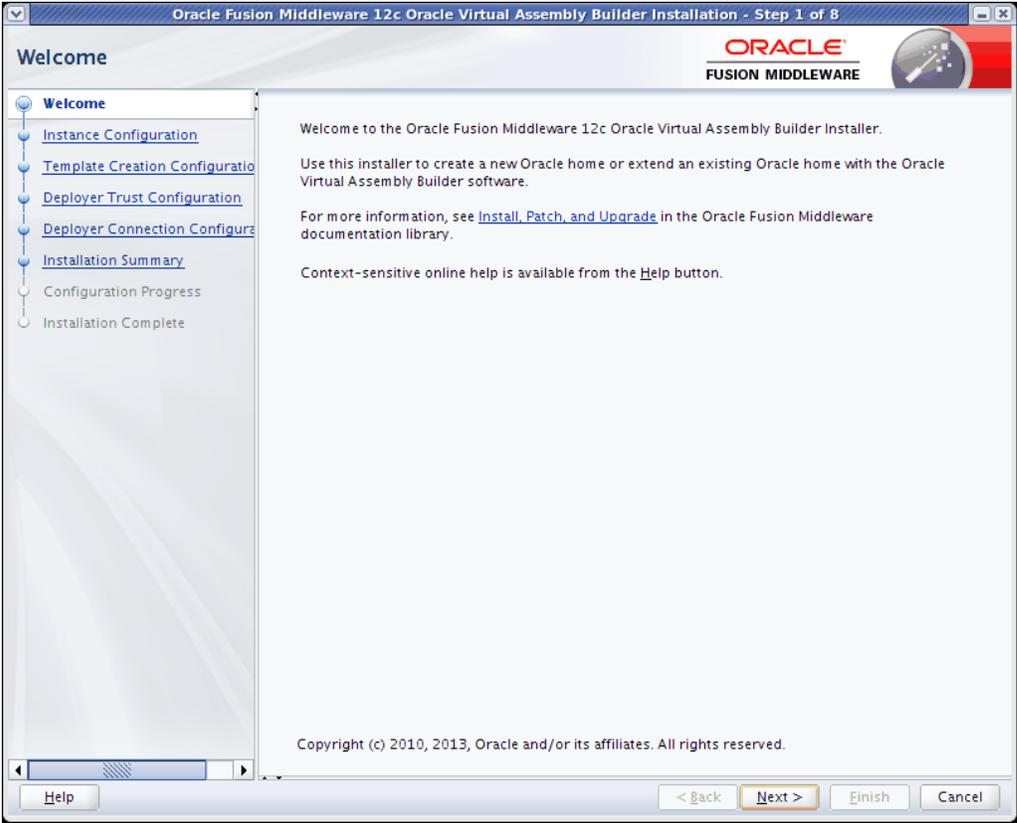
Welcome page

****

1.   **Welcome**. This page introduces the installation. The flow of installation appears in the left panel, and control buttons appear along the bottom.

     When you are ready to begin the instance configuration, click **Next**. The *Instance Configuration* page appears.

Figure 3–9   Instance Configuration page
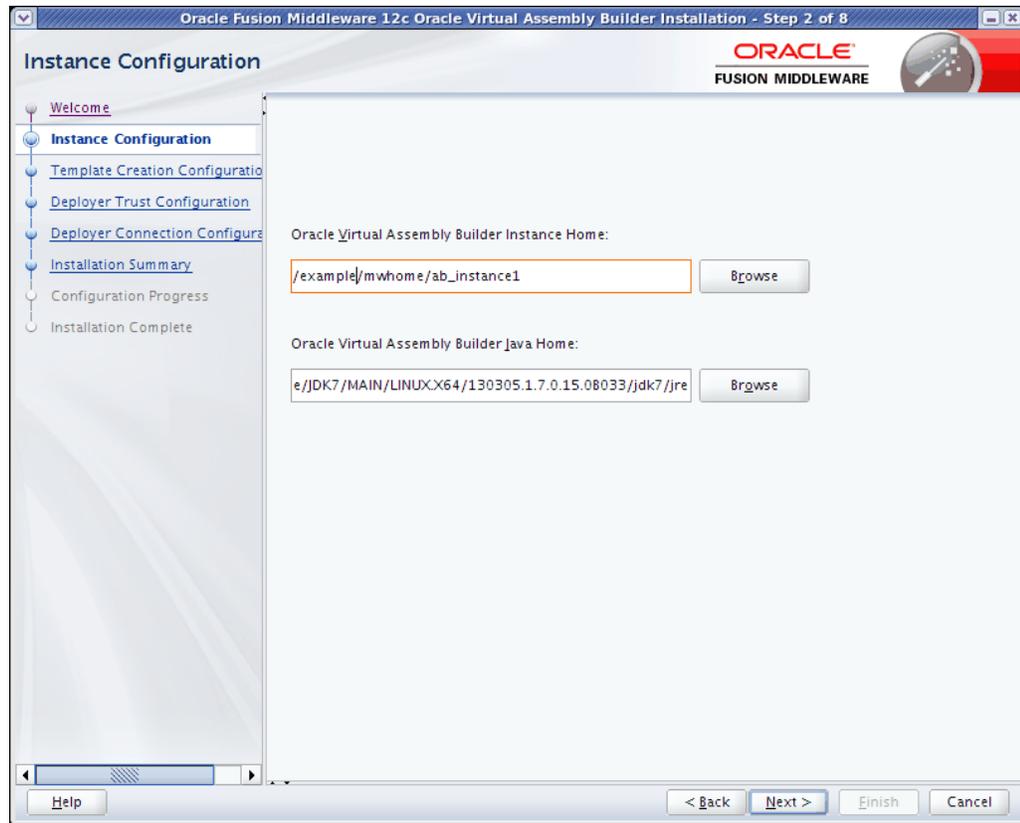
Installation Configuration page

****

2. **Instance Configuration.** Enter, or choose, the *Oracle Virtual Assembly Builder Instance Home*, and the *Oracle Virtual Assembly Builder Java Home*.

    Oracle Virtual Assembly Builder Instance Home: The home of an Oracle Virtual Assembly Builder instance.

    Oracle Virtual Assembly Builder Java Home: The Java Home for Oracle Virtual Assembly Builder.

    > **Note:**   If you start installation without an explicit JRE location, the JAVA_HOME location will default to $ORACLE_HOME/jdk. You can change to another JDK location.

    Click **Next**. The *Template Creation Configuration* page appears.

Figure 3–10   Template Creation Configuration page
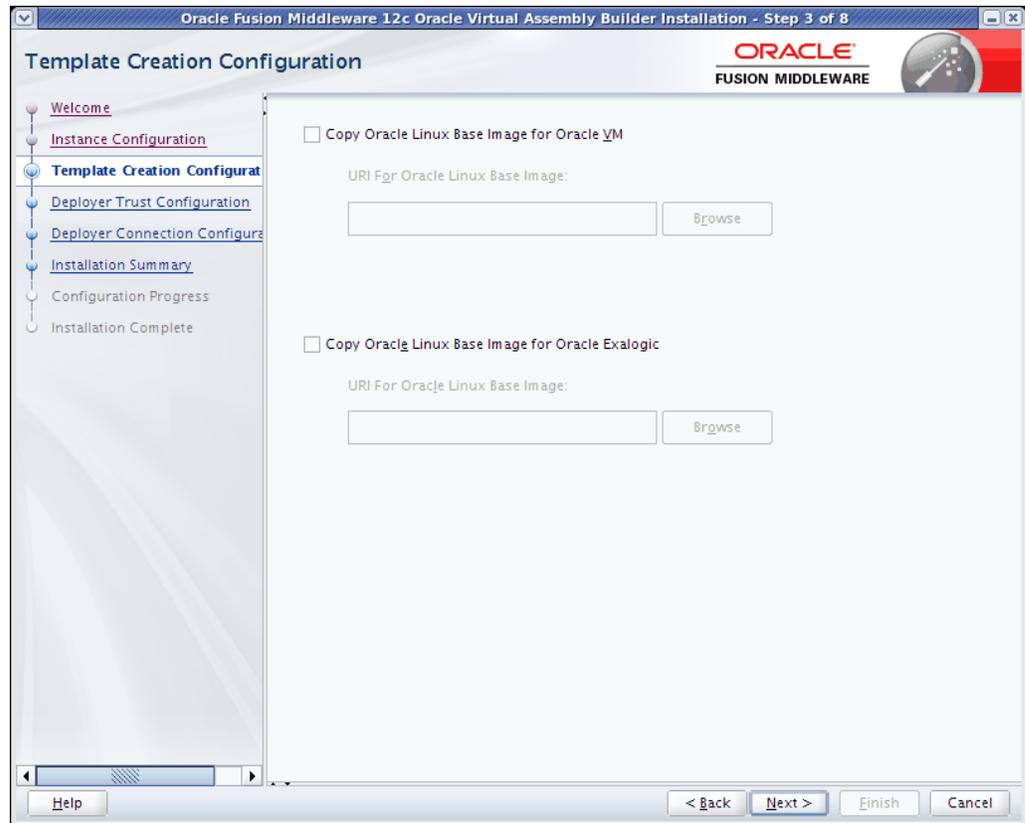
Template Creation Configuration page

****

3. **Template Creation Configuration.** This page enables you to define base images that you will use to create new appliances. On this page, you provide the URI for the *Oracle Enterprise Linux Base Image* for Oracle VM.

> **Note:**   When you choose to configure the OEL base image, Oracle Installer copies a user-provided OEL base image in $AB_INSTANCE/templates/baseImage/OVM/OEL directory. This base image will be available as the default base image for this OVAB instance.
>
> If you want to have base images shared across all Oracle Virtual Assembly Builder instances, do not select to configure the OEL base image here and do this after install completes:
>
> - Create following directories inside $ORACLE_HOME directory:
>
> $ORACLE_HOME/templates/baseImage/OVM/OEL
>
> - Copy OEL base image files (System.img and vm.cfg) into $ORACLE_HOME/templates/baseImag/OVM/OEL directory

> **Note:** Base images are stored in either $AB_INSTANCE, or in
> $ORACLE_HOME. Here is the order of precedence for base image
> detection:
>
> - location specified by `-baseImage` flag
>
> - $AB_INSTANCE/templates/baseImage/OVM/OEL
>
> - $ORACLE_HOME/templates/baseImage/OVM/OEL

Configure Oracle Enterprise Linux Base Image: If selected, provide the URI for the
OEL Base Image for Oracle VM.

After entering (or selecting) the locations, click **Next**. The *Deployer Trust
Configuration* page appears.

Figure 3–11   Deployer Trust Configuration page
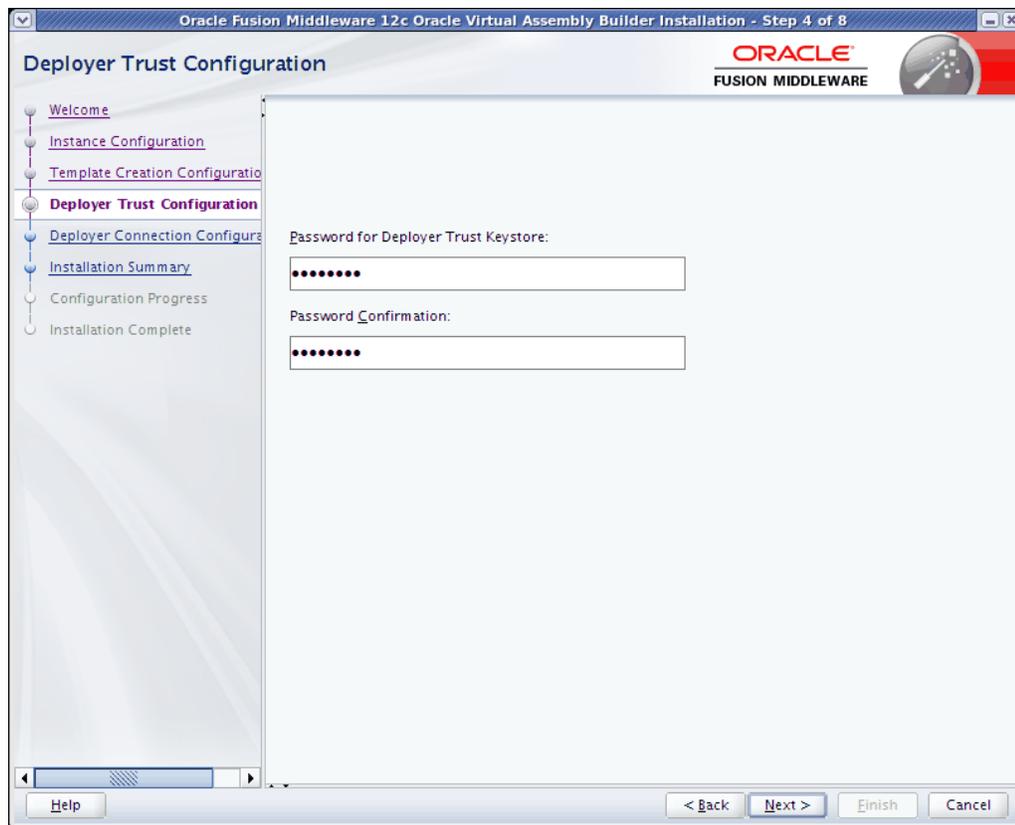
Deployer Trust Configuration page

****

4. **Deployer Trust Configuration.** Oracle Virtual Assembly Builder Studio uses the
   keystore as a client when connecting to Oracle Virtual Assembly Builder Deployer
   over HTTPS. This keystore will be populated with the Oracle Virtual Assembly
   Builder Deployer's WebLogic certificate when you configure an Oracle Virtual
   Assembly Builder Deployer connection.

   The password protects the keystore from tampering.

   Enter, and confirm, the password for the *Deployer Trust Keystore*.

Click **Next**. The *Deployer Connection Configuration* page appears.

Figure 3–12 Deployer Connection Configuration page
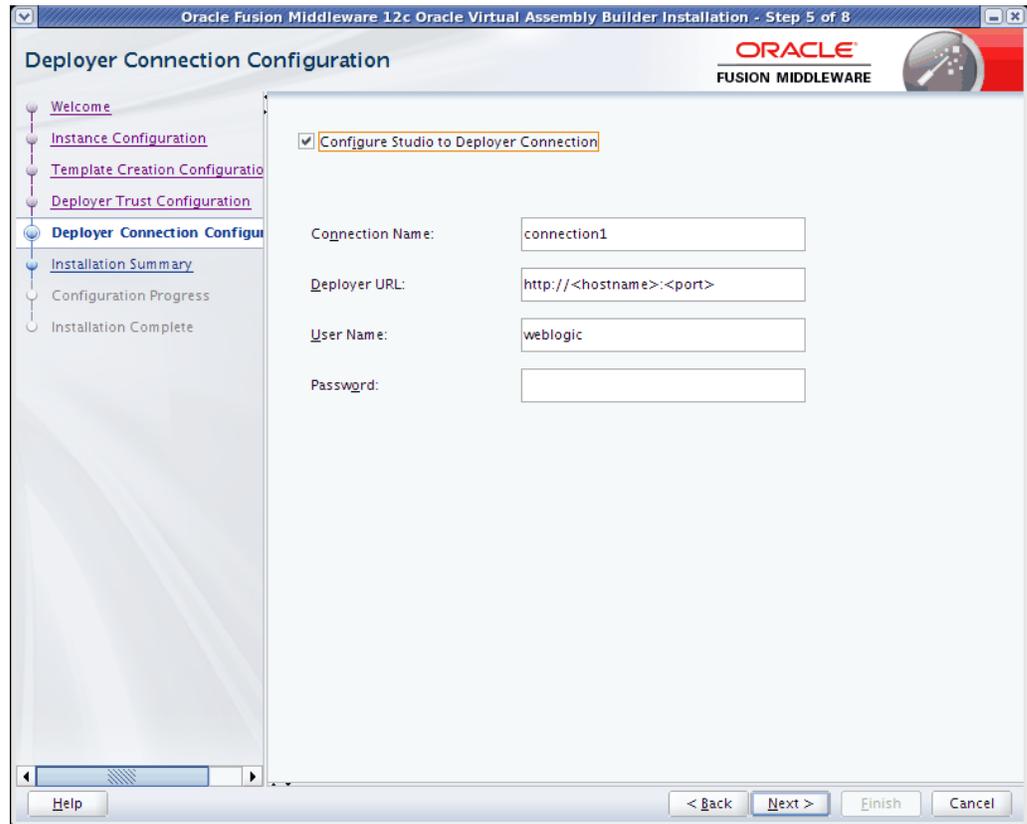
This graphic displays the Deployer Connection Configuration page, which is described in the surrounding text.

****

5. **Deployer Connection Configuration.** You can configure a connection to Oracle Virtual Assembly Builder Deployer. If you have not already configured the Oracle Virtual Assembly Builder Deployer using the procedures in the next chapter, *Configuring Oracle Virtual Assembly Builder Deployer*, you must specify an existing Deployer.

   To configure the connection, check **Configure Studio to Deployer Connection** and enter the connection information:

   ■   Connection Name: name of the Deployer connection.

   ■   Deployer URL: URL of the Deployer Web service.

   ■   User Name: username to use to authenticate with the Deployer Web service.

   ■   Password: password to use to authenticate with the Deployer Web service.

   Click **Next**.

   If you configured a connection, the connection is tested. If you see a connection failure, check that the Oracle Middleware Administration Server is up, and hostname, username, and password are correctly configured.

   The *Installation Summary* page appears.

6. **Installation Summary.** The Installation Summary page lists the components and locations for install.You can save the response file by clicking **Save**.

If you want to change any of your installation or configuration choices, you can select the item from the left pane, make the changes, then return to the *Summary* page.

Click **Next**. The *Configuration Progress* page appears.

Figure 3–13   Configuration Progress page
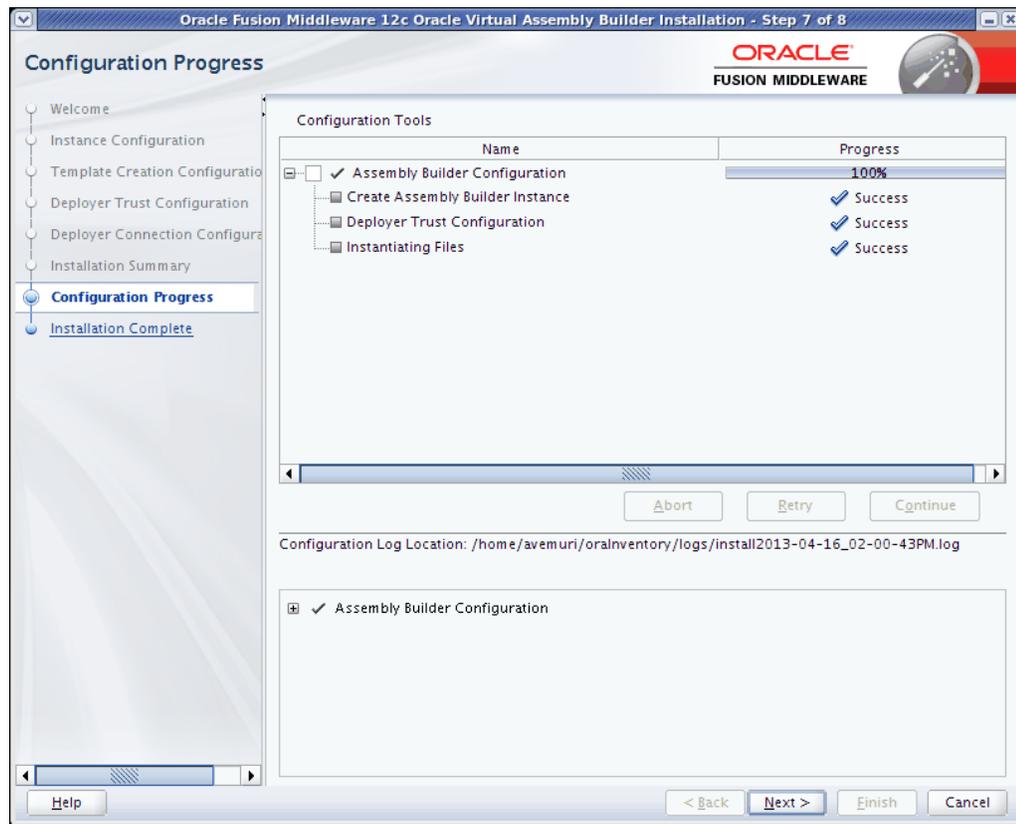
Configuration Progress page

****

7. **Configuration Progress.** This page shows the progress of the instance configuration.

Figure 3–14   Installation Complete page
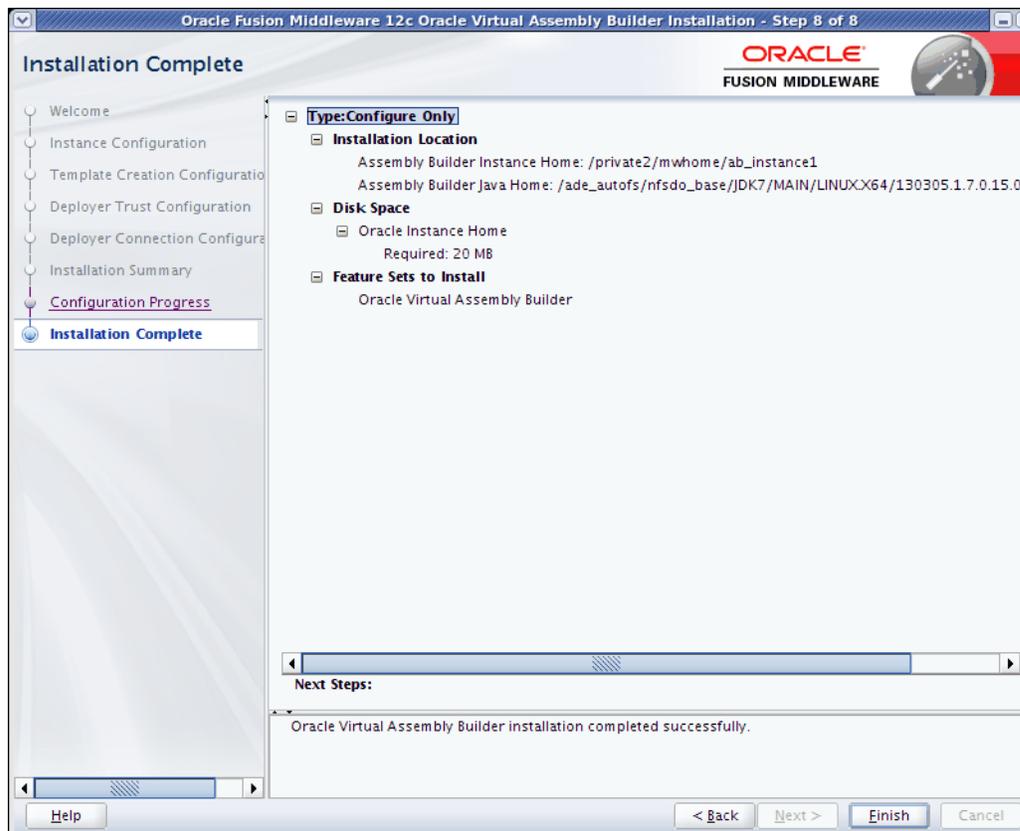
Installation Complete page

****

Click **Next**. The *Configuration Complete* page appears. You have completed configuring the Oracle Virtual Assembly Builder Studio instance.

3.3.3 Silent Installation

Silent installation is supported with a set of response files covering all user inputs.

Silent Installation is launched by executing

```
java -jar ovab_121200.jar -silent -force -responseFile <absolute path to response
file>
```

3.4 Deinstalling

To deinstall Oracle Virtual Assembly Builder, execute this command:

```
$ORACLE_HOME/oui/bin/deinstall.sh
```

When you execute `deinstall.sh,` the deinstallation process starts, and the *Distribution to Deinstall* page appears.

Figure 3–15   Distribution to Deinstall page
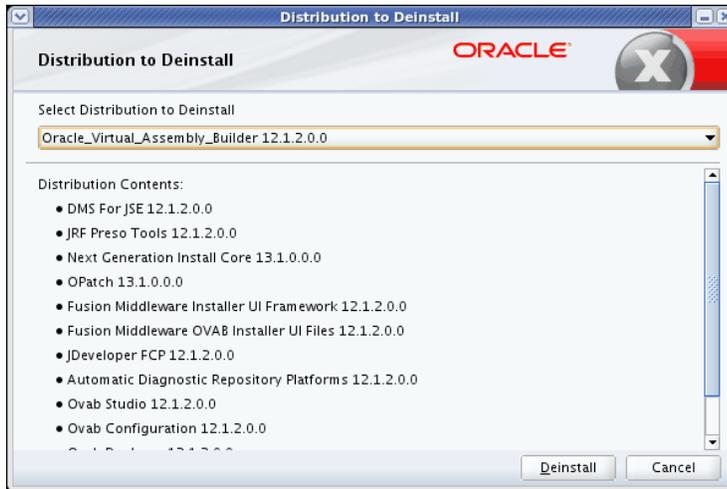
Distribution to Deinstall page

****

1. Select Oracle_Virtual_Assembly_Builder 12.1.2.0.0 and click **Deinstall**. This action launches the Oracle Fusion Middleware deinstallation wizard and the *Welcome* page appears.

Figure 3–16   Welcome page
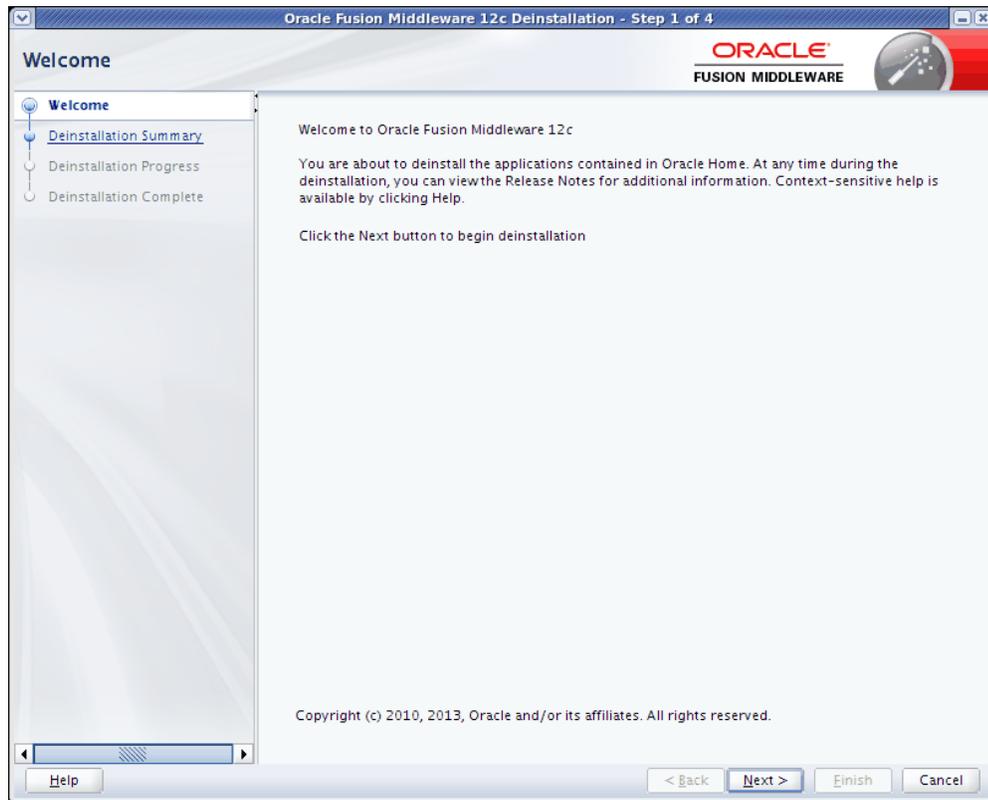
Welcome page

****

2. Click **Next**. The *Deinstallation Summary* page appears.

Figure 3–17   Deinstallation Summary page
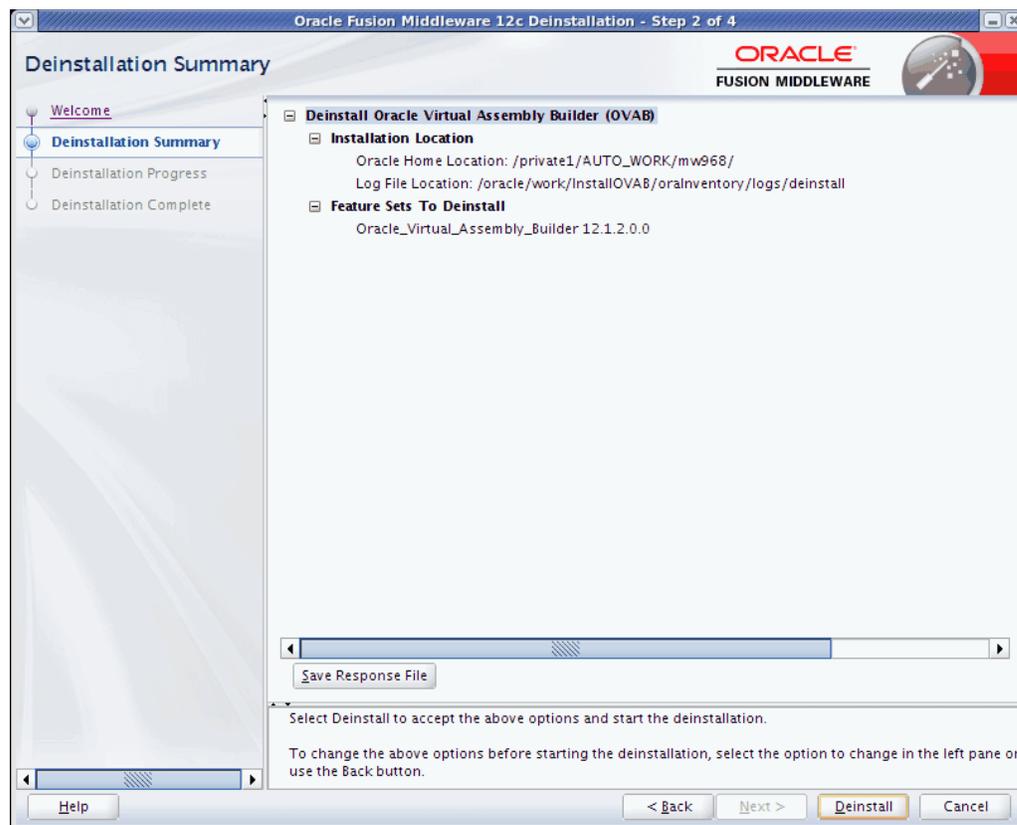
Deinstallation Summary page

****

3. Click **Deinstall**. The *Deinstallation Progress* page appears. The deinstallation progress is marked by a percentage bar.

Figure 3–18 Deinstallation Progress page

Deinstallation Progress page

****

4. When the deinstallation progress is complete (marked by 100% progress, and a check mark for the 'Deinstall' task), click **Finish**. If you receive errors, click **View Log** to see a detailed log of the deinstallation.

The *Deinstallation Complete* page appears.

Figure 3–19 Deinstallation Complete
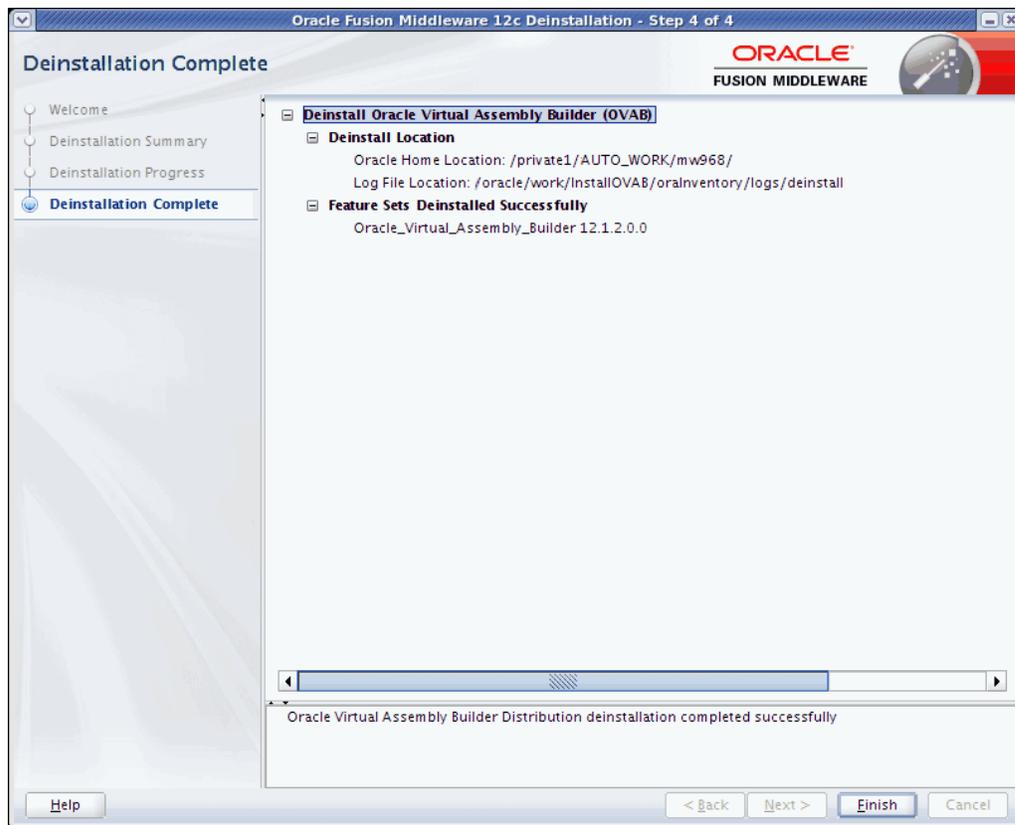
Deinstallation Complete page

****

5. The *Deinstallation Complete* page lists the feature sets that you have successfully deinstalled. Click **Finish**.

4

Configuring Oracle Virtual Assembly Builder Deployer

This chapter describes how to run the Oracle WebLogic Server configuration wizard to create a new domain using the Oracle Virtual Assembly Builder Deployer domain extension template. This will create a new Oracle WebLogic Server domain and deploy the Oracle Virtual Assembly Builder Deployer Web application.

This chapter contains the following sections:

- Section 4.1, "Expanded or Compact Domain Templates"
- Section 4.2, "Setting Unique Coherence Settings Per Deployer"
- Section 4.3, "Starting the Oracle Fusion Middleware Configuration Wizard"
- Section 4.4, "Creating a New Domain with Deployer"
- Section 4.5, "Create the ovab-config.properties File"
- Section 4.6, "Configuring Security for the Deployer"

4.1 Expanded or Compact Domain Templates

An expanded domain is the only recommended production configuration. You can create an expanded domain as described in this chapter, using the Oracle WebLogic Server configuration wizard.

To configure a compact domain template for non-production purposes, you can manually deploy the Deployer application to the Admin Server. No managed servers or a database are required. To create a compact domain, see Chapter 5, "Creating a Compact Domain".

4.1.1 Expanded Domain Template

The following are prerequisites for using the expanded domain template.

4.1.1.1 Deployment to a Managed Server

When deploying with the expanded domain template, the default deployment consists of one Admin Server and an Oracle WLS cluster of managed server(s). The Deployer application is deployed to all the Managed Server(s).

You must create at least one managed server, or a cluster of managed servers.

4.1.1.2 Repository Creation Utility

To use the expanded domain template, you must a database with Repository Creation Utility pre-configured is a prerequisite. For more information on using Repository Creation Utility to create schemas, see *Creating Schemas with the Repository Creation Utility*.

4.2 Setting Unique Coherence Settings Per Deployer

When two Deployers are started in the same subnet, set unique Coherence settings for each, to prevent the Deployers from communicating to each other through Coherence. In `setDomainEnv.sh` or `setStartupEnv.sh`, set a unique multicast address and port for `-Dtangosol.coherence.clusteraddress` and `-Dtangosol.coherence.clusterport`.

4.3 Starting the Oracle Fusion Middleware Configuration Wizard

The Configuration Wizard is launched automatically when you select the "Automatically Launch the Configuration Wizard to Create Deployer domain" option upon completing the Oracle Virtual Assembly Builder installation.

The Configuration Wizard is located in the `common/bin` directory in your WebLogic Server Oracle home.

```
cd ORACLE_HOME/common/bin
./config.sh
```

To create a new WebLogic domain, follow the instructions in Section 4.4, "Creating a New Domain with Deployer".

4.4 Creating a New Domain with Deployer

After you have started the Configuration Wizard (Section 4.3, "Starting the Oracle Fusion Middleware Configuration Wizard"), create a domain configured with Oracle Virtual Assembly Builder Deployer.

Select to create a new expanded domain. To create a domain configured with Oracle Virtual Assembly Builder Deployer, select the following on the Templates selection screen:

- **Oracle Virtual Assembly Builder Deployer - 12.1.2.0 [ovab]**

- Oracle JRF - 12.1.2.0 [oracle_common]

- WebLogic Coherence Cluster Extension - 12.1.2.0 [wlserver]
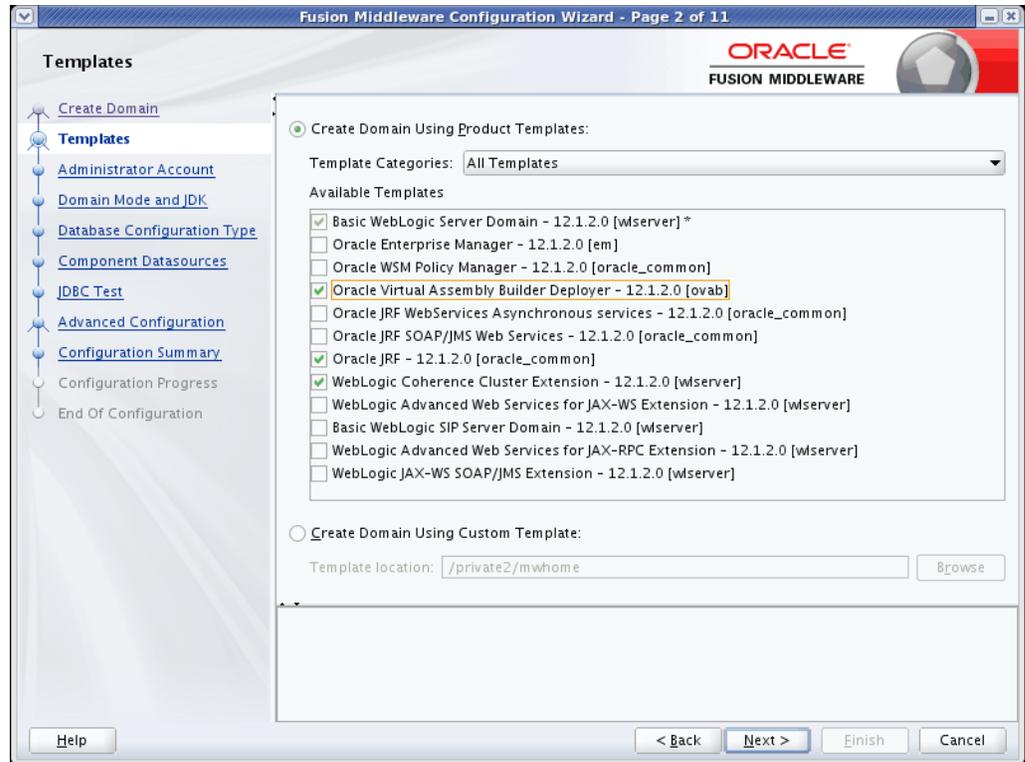
This graphic displays the Templates page, which is described in the surrounding text.

****

For more information about this screen, see "Templates" in *Oracle Fusion Middleware Creating Domains Using the Configuration Wizard*.

Enter the Oracle WebLogic administrator user name and password. The password must be at least 8 characters and contain at least one number or special character. Click **Next**.
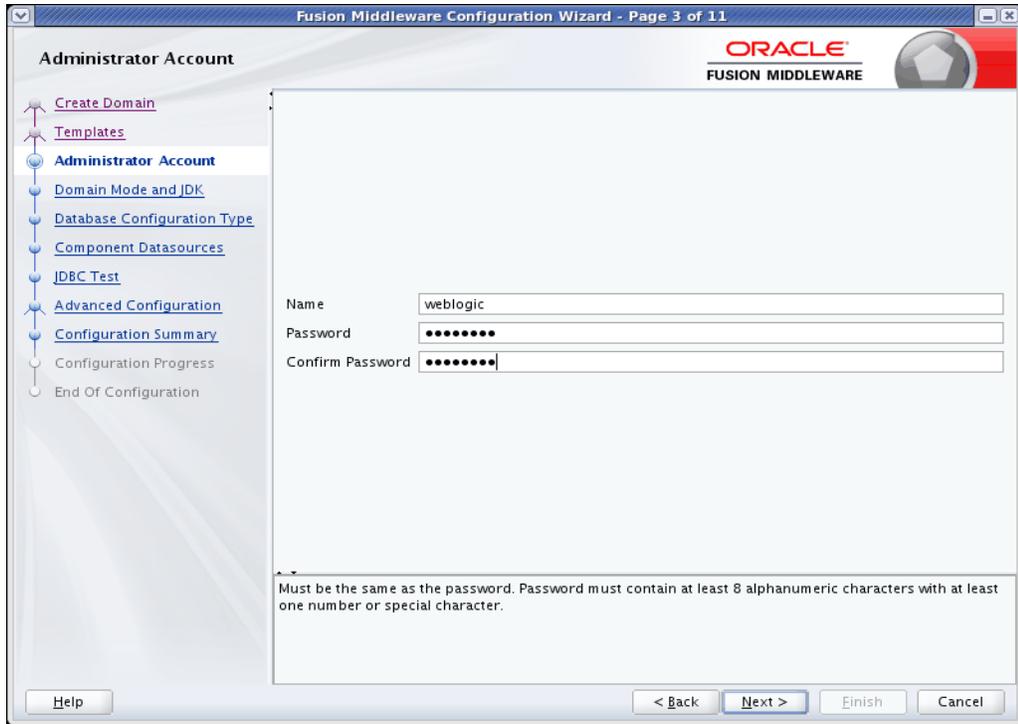
This graphic displays the Administrator Account page, which is described in the surrounding text.

****

Enter the domain mode and JDK, and click **Next**.
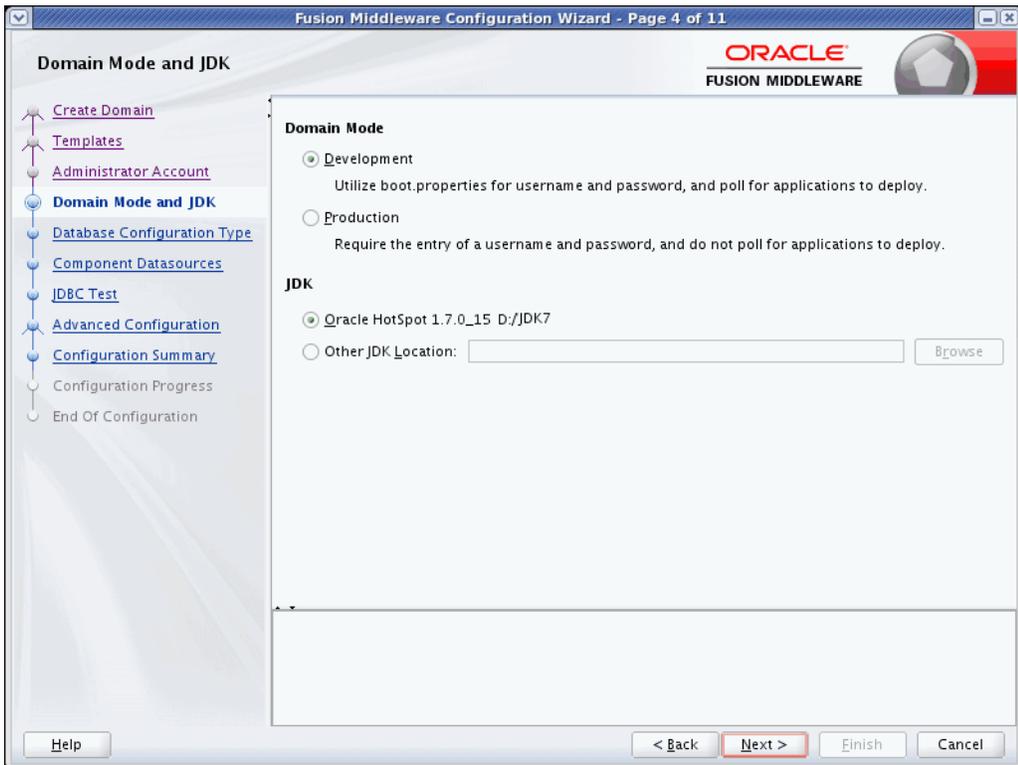
This graphic displays the Domain Mode and JDK page, which is described in the surrounding text.

****

Select the database configuration options. Enter the database connection details using the Repository Creation Utility service table schema credentials, or perform a manual configuration. For more information on using Repository Creation Utility to create schemas, see *Creating Schemas with the Repository Creation Utility*. Click **Next**.
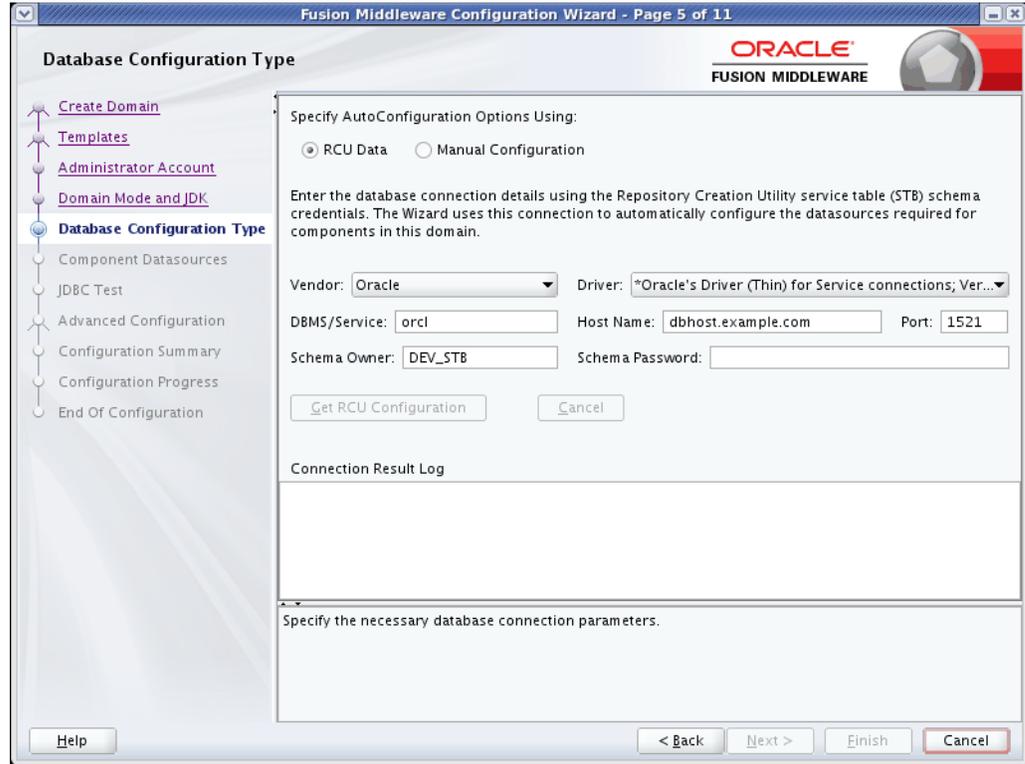
This graphic displays the Database Configuration Type page, which is described in the surrounding text.

****

Update the JDBC component schema as required. Click **Next.**
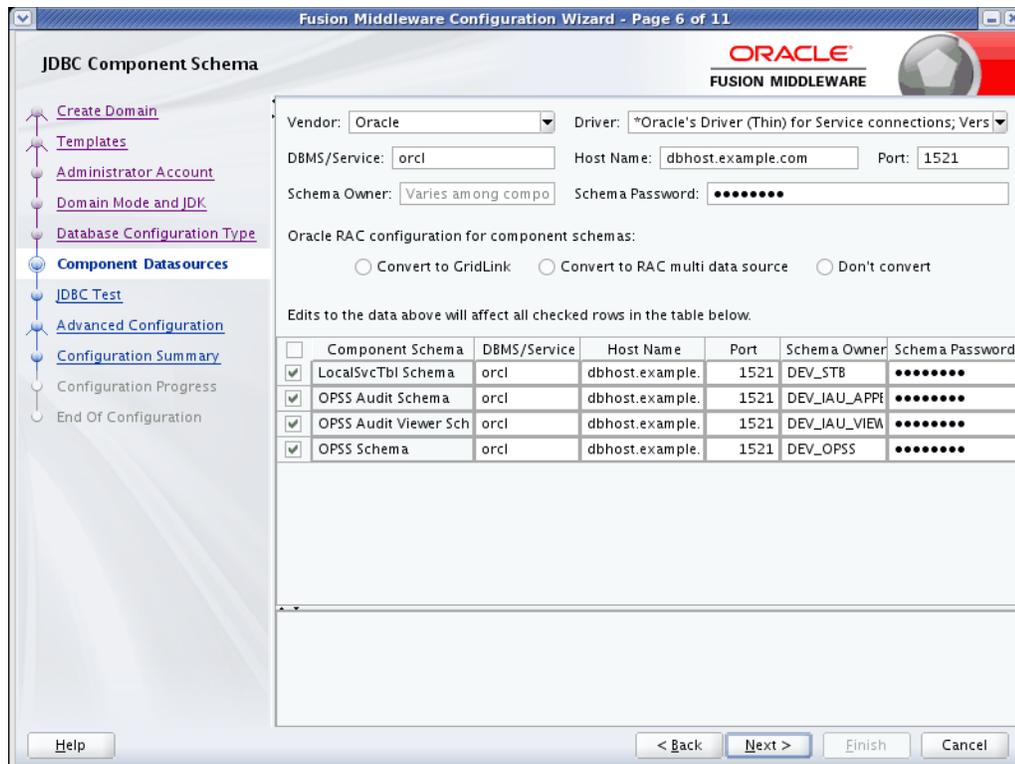
This graphic displays the JDBC Component Schema page, which is described in the surrounding text.

****

Click Test Selected Connections and verify that the JDBC test completes successfully for all components. Click **Next.**
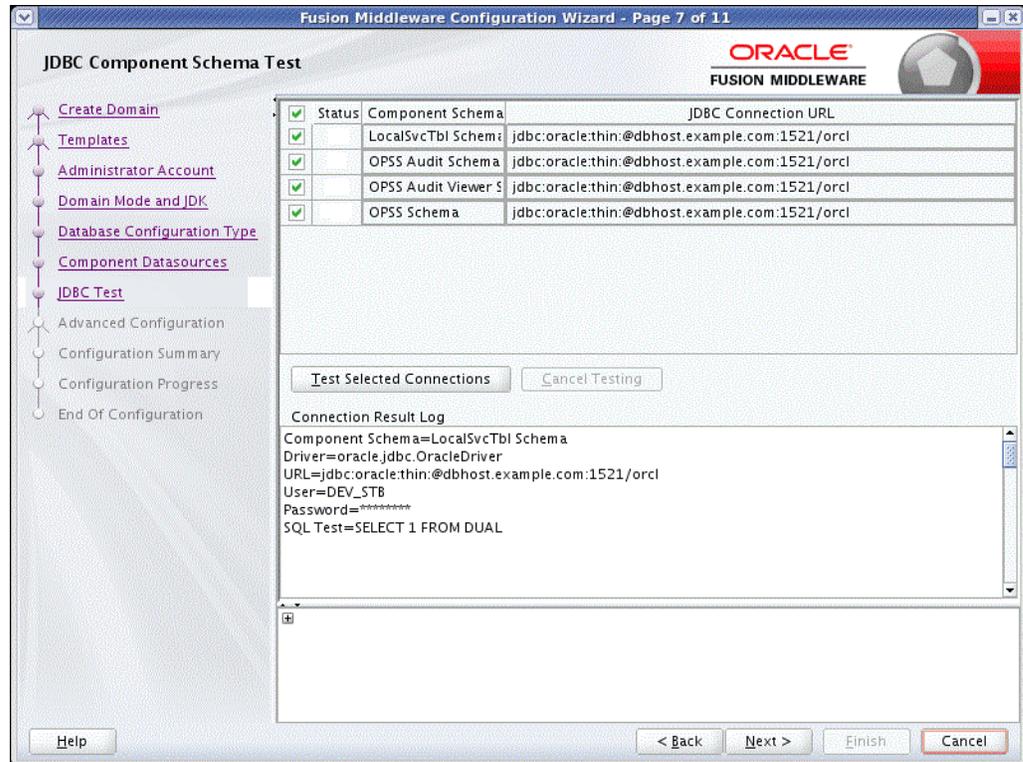
This graphic displays the JDBC Component Schema Test page, which is described in the surrounding text.

****

Optionally select configuration items that you wish to customize. Click **Next**.
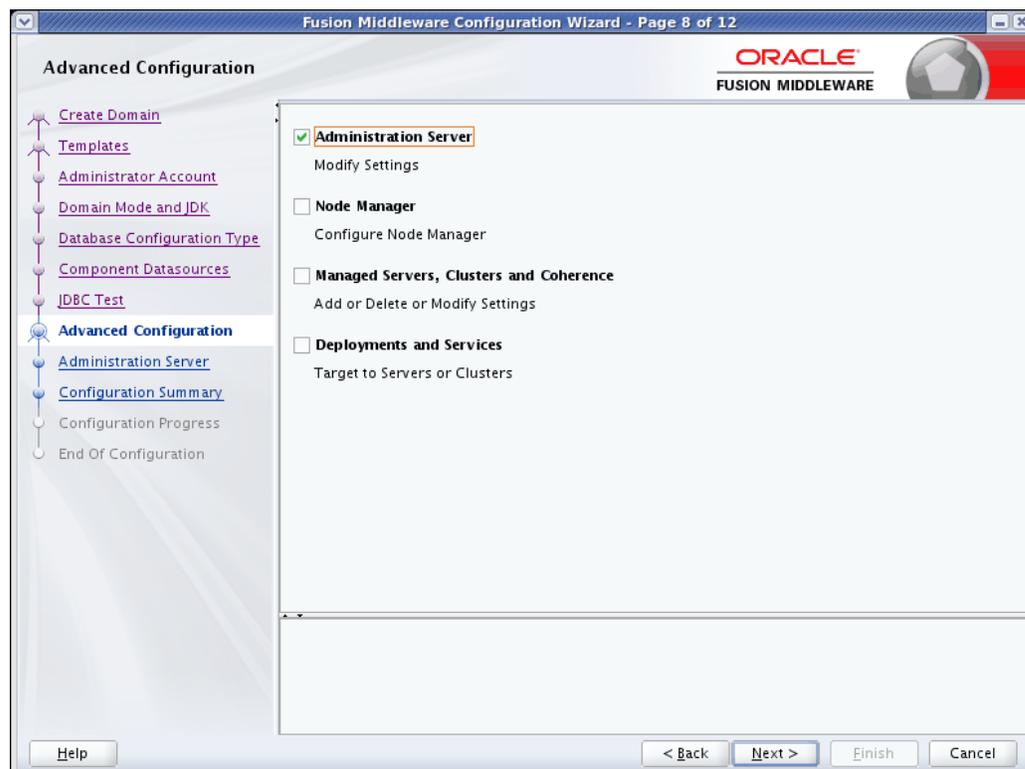
This graphic displays the Advanced Configuration page, which is described in the surrounding text.

****

Configure the settings for the Administration Server.

For security purposes, you are recommended to select the **Enable SSL** check box to enable the SSL listen port. By default, SSL is disabled for all new servers. In **SSL Listen Port**, enter a valid value to be used for secure requests (through protocols such as HTTPS and T3S). The default value is 7002. If you leave this field blank, the default value is used. The valid listen port range is from 1 to 65535.

For more information, see "Configuring SSL" in *Administering Security for Oracle WebLogic Server*.

Click **Next**.
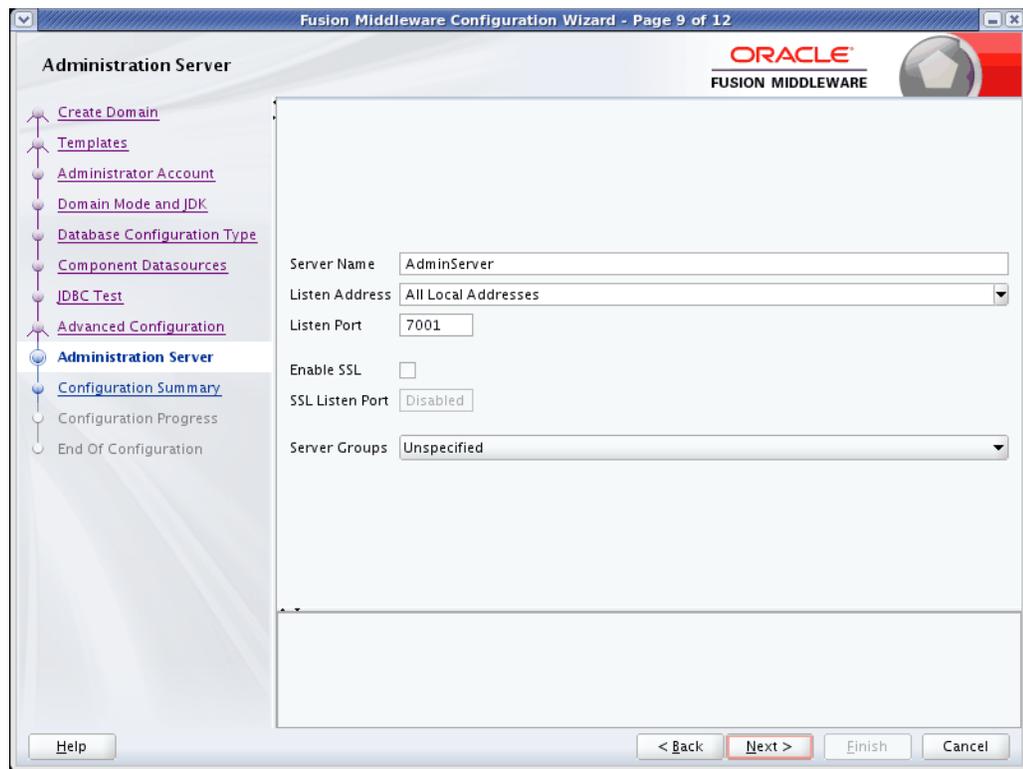
This graphic displays the Administration Server page, which is described in the surrounding text.

****

View the configuration summary. Click **Create** to accept the options and start creating a new domain. To change the configuration, go back to the relevant page using the navigation pane, or by using the Back button.
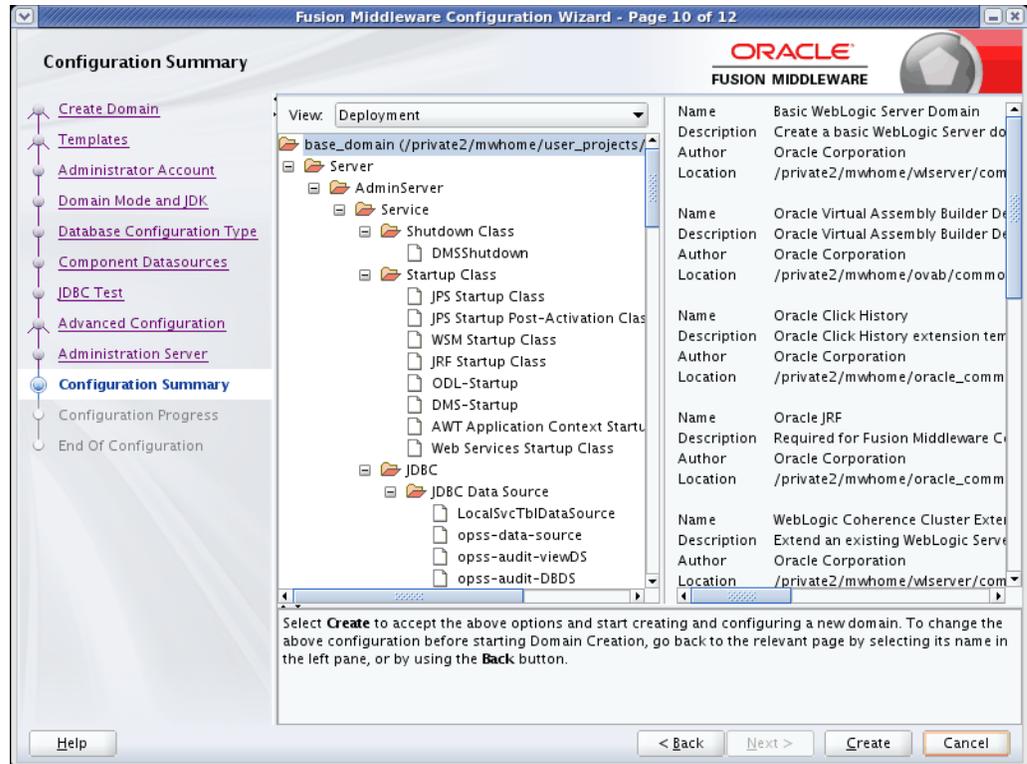
This graphic displays the Configuration Summary page, which is described in the surrounding text.

****

The domain is created, and the domain location and Administration Server URL are displayed. The Administration Server is created.

4.5 Create the ovab-config.properties File

Before starting up the domain, create the following properties file for each managed server:

1. Create the following directory under your deployer domain home:

   ```
   config/fmwconfig/servers/ovab_server1/mbeans
   ```

2. In the newly created dirctory create a file called `ovab-config.properties` with these contents:

   ```
   ovab.directory=<expanded domain root>/ab_instance
   ```

   ```
   ovab.webserver.url=http\://<deployer domain host>\:<managed server listen port>
   ```

Example 4–1   Sample ovab-config.properties file

```
ovab.directory=/scratch/pawan/view_storage/test/user_projects/domains/expanded_
domain/ab_instance
ovab.webserver.url=http://example.com:10001
```

4.6 Configuring Security for the Deployer

Oracle Virtual Assembly Builder defines security roles and groups. The product installer sets up the necessary roles and groups for the embedded LDAP case. After the domain creation is complete you must create users and add them to the 'CloudAdmins' and 'ApplicationAdmins' groups through the Oracle WebLogic Server console. These are the users that should be specified when creating connections to the Deployer. All users added to the CloudAdmins group must also be added to the ApplicationAdmins group.

See *Using Oracle Virtual Assembly Builder* for information on understanding and enabling the security model employed by Oracle Virtual Assembly Builder Deployer.

To configure an external LDAP server, create roles and groups, and add users to the CloudAdmins and ApplicationAdmins groups:

1. Use the procedures in *Oracle® Fusion Middleware Securing Oracle WebLogic Server* to configure Oracle WebLogic Server for external LDAP.

2. Groups for "CloudAdmins" and "ApplicationAdmins" are automatically created during installation. See *Using Oracle Virtual Assembly Builder*.

3. Add the users defined in the LDAP server to these groups.

4. Place the groups into the security roles using the role expression `Grp(GroupName|GroupName|GroupName)`.

5. Perform the procedures in *Using Oracle Virtual Assembly Builder* to define the connection to the Oracle VM backend endpoints, to provide credentials if required, and to add deployment targets in the backend.

5

Creating a Compact Domain

This chapter describes how to create a new compact domain. This will create a new Oracle WebLogic Server domain and deploy the Oracle Virtual Assembly Builder Deployer Web application to an Admin Server.

This chapter contains the following sections:

- Section 5.1, "Introduction"
- Section 5.2, "Running the WLST Script"

5.1 Introduction

A compact domain is not recommended for production purposes, and is not an officially supported configuration. You cannot create a compact domain through the Oracle WebLogic Server configuration wizard, but must instead create the compact domain manually. The Deployer is targeted to the Admin Server; no managed servers or a database are required.

5.2 Running the WLST Script

To run the script to create a compact domain:

1. Copy the following script to the host where you installed WLS: create_ovab_ deployer_domain.py.

```python
#!/usr/bin/python

import os, sys

domainMode = 'Compact'
deployerDomainName = 'base_domain'
deployerDomain = '/<path>/user_projects/domains/base_domain'
deployerTemplateJar =
'/<path>/ovab/common/templates/wls/oracle.ovab.deployer.template_12.1.2.jar'
wlsTemplateJar = '/<path>/wlserver/common/templates/wls/wls.jar'
jrfTemplateJar = '/<path>/wlserver/common/templates/wls/wls_jrf.jar'

hostName = 'example.com'
listenPort = 6868
sslListenPort = 6969

readTemplate(wlsTemplateJar, domainMode)

# configure Admin Server
cd('/Security/base_domain/User/weblogic')
```

```
              cmo.setPassword('welcome1')
              cd('/Server/AdminServer')
              cmo.setName('AdminServer')
              cmo.setStuckThreadMaxTime(1800)
              cmo.setListenPort(listenPort)
              cmo.setListenAddress(hostName)
              create('AdminServer','SSL')
              cd('SSL/AdminServer')
              cmo.setEnabled(true)
              cmo.setListenPort(sslListenPort)
              cmo.setHostnameVerificationIgnored(true)
              cmo.setHostnameVerifier(None)
              cmo.setTwoWaySSLEnabled(false)

              writeDomain(deployerDomain)
              closeTemplate()
              dumpStack()

              readDomain(deployerDomain)
              addTemplate(jrfTemplateJar)
              addTemplate(deployerTemplateJar)

              cd('/SecurityConfiguration/' + deployerDomainName)
              cmo.setUseKSSForDemo(false)

              updateDomain()
              closeDomain()
              dumpStack()
              exit()
```

2. Edit the script and replace the paths, hostname and port numbers with values appropriate to your environment.

3. Run the script using WLST:

   ```
   <mw home>/oracle_common/common/bin/wlst.sh create_ovab_
   deployer_domain.py
   ```

6

Upgrading Oracle Virtual Assembly Builder

This chapter describes covers the upgrade process for Oracle Virtual Assembly Builder Studio and Deployer instances from release 11g PS5 (11.1.1.6.0) to 12c (12.1.2/12.1.3). Both upgrade processes do not use the standard Oracle upgrade framework but do follow the guidelines and procedures that the framework employs. This chapter contains the following sections:

- Section 6.1, "Oracle Virtual Assembly Builder Studio Upgrade"
- Section 6.2, "Oracle Virtual Assembly Builder Deployer Upgrade"

6.1 Oracle Virtual Assembly Builder Studio Upgrade

An upgrade of a Studio instance is performed in place, that is, the instance is converted from a PS5 instance to a 12c instance. The original ORACLE_HOME associated with the PS5 instance is left alone and effectively orphaned as the PS5 instance no longer refers to the PS5 ORACLE_HOME.

The upgrade process creates a backup of every file that is modified or moved before any files are touched. The backup files are used to rollback the upgrade in case of any errors during the procedure. Upon a successful upgrade these files are deleted.

Performing an upgrade on an instance that is already at the 12c version is a no-operation, and nothing is done.

6.1.1 Upgrade Process

The upgrade process includes the following steps:

- Install a new 12c ORACLE_HOME (no need to create an instance)
- Run upgrade process on the PS5 instance.
- Upon successful upgrade of PS5 instance the instance will now be a 12c version.
- Archive or delete the PS5 ORACLE_HOME.

6.1.2 Performing the Upgrade

To perform the upgrade:

1. Install the 12c ORACLE_HOME in $12c_ORACLE_HOME.
2. Enter the command `cd $12c_ORACLE_HOME/bin`.
3. Enter the command `./upgradeInstance.sh <location of PS5 instance>`.

6.1.3 What is Changed during Upgrade

The following items are changed during the upgrade:

- Scripts in PS5_INSTANCE/bin (abstudio.sh & abctl).

- Introspector plugins are installed into instance.

- OVAs in PS5_INSTANCE/archives are unpacked, upgraded and repacked.

- Catalog is upgraded with new schema version.

- FCP metadata for GUI are copied into the instance.

6.1.4 Options on upgrade Command

The following options are available on the `upgrade` command:

`./upgradeInstance.sh <location of PS5 instance> -canUpgrade`. This will determine if the instance location can be upgraded.

6.2 Oracle Virtual Assembly Builder Deployer Upgrade

An upgrade of a Deployer instance is performed out of place, that is, the PS5 instance is copied into a 12c location and then upgraded. The original PS5 instance and ORACLE_HOME is left untouched.

Note that the OVM pool the PS5 Deployer is connected to must be upgraded to or replaced with a 12c compatible pool.

6.2.1 Upgrade Process

The upgrade process includes the following steps:

- Install a new compact 12c domain.

- Copy the repository and state from the PS5 domain to the 12c domain.

- Run the upgrade process on the 12c domain.

- Start the admin server.

6.2.2 Performing the Upgrade

The upgrade defines these important locations:

- `OVAB_12c_DOMAIN` - location of new 12c domain

- `OVAB_PS5_DOMAIN` - location of old PS5 domain

- `OVAB_PS5_INSTANCE` - location of PS5 instance under the domain. Typically, `$OVAB_PS5_DOMAIN/ab_instance`.

To perform the upgrade:

1. Install a new 12c Deployer compact domain using a WLST script at the location $OVAB_12c_DOMAIN. See Chapter 5, "Creating a Compact Domain".

2. Run the following commands to copy the PS5 state to the 12c area.

   1. `cd $OVAB_12c_DOMAIN/ab_instance`.

   2. `cp -r $OVAB_PS5_INSTANCE/repository`.

   3. `cp -r $OVAB_PS5_INSTANCE/state`.

    4. `cp -r $OVAB_PS5_INSTANCE/config.`

3. Run these steps to upgrade the PS5 state:

    1. Set (or export) JAVA_HOME environment variable to a valid Java 1.6 home.

    2. Set (or export) ORACLE_HOME environment variable to $OVAB_12c_DOMAIN

    3. Enter the command `cd $ORACLE_HOME/bin`.

    4. Enter the command `./upgradeDeployer.sh -instanceDirPath $OVAB_PS5_INSTANCE`.

   The upgrade prompts you for a new OVM url and version. For example:

      "Please input new ovm.url: `<URL of OVM>`"

      "Please input new ovm.vmmversion: `<new version, 3.2>`"

4. Start the admin server.

5. Add the "ovabAdmin" user through the WLS admin console and then assign the user to the groups "CloudAdmins" and "ApplicationAdmins".
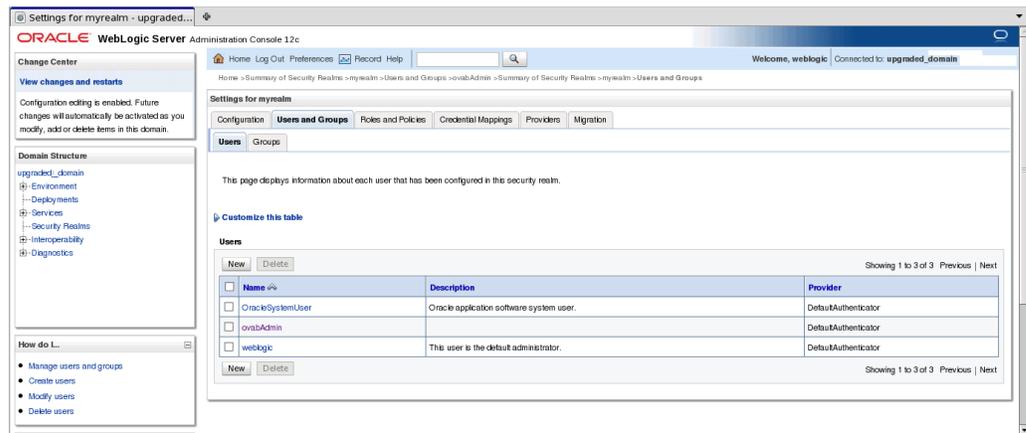
This graphic shows creating the ovabAdmin user, which is described in the surrounding text.

****
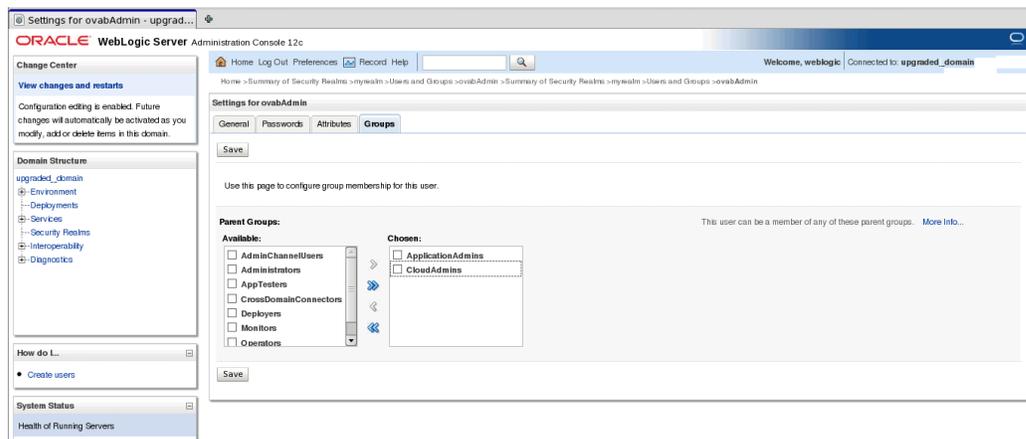
This graphic shows assigning the ovabAdmin to groups, which is described in the surrounding text.

****

6. Run the following commands as sanity tests from a 12c Studio install:

- `./abctl describeTargets`

- `./abctl describeTargetUsers`

- `./abctl describeRegistrations`

- `./abctl describeAssemblyArchives`

- `./abctl describeAssemblyInstances`

- `./abctl describeApplianceInstance`

6.2.3 What is Changed during Upgrade

The following items are changed during the upgrade:

- ProcessPlan

- InstanceTags

- Target cache

- Member caches

6.2.4 Options on upgrade Command

The following options are available on the `upgrade` command:

`sh ./upgradeDeployer.sh -help`. Prints out usage