Oracle® Database Appliance
Getting Started Guide

Release 12.2.1.4.0 for Linux x86-64

ORACLE®

Oracle Database Appliance Getting Started Guide, Release 12.2.1.4.0 for Linux x86-64

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Preface

Oracle Database Appliance is an optimized, prebuilt database system that is easy to deploy, operate, and manage. By integrating hardware and software, Oracle Database Appliance eliminates the complexities of nonintegrated, manually assembled solutions. Oracle Database Appliance reduces the installation and software deployment times from weeks or months to just a few hours while preventing configuration and setup errors that often result in suboptimal, hard-to-manage database environments.

- Audience (page vii)
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Audience

This guide is intended for anyone who configures, maintains, or uses Oracle Database Appliance:

- System administrators
- Network administrators
- Database administrators
- Application administrators and users

This book does not include information about Oracle Database architecture, tools, management, or application development that is covered in the main body of Oracle Documentation, unless the information provided is specific to Oracle Database Appliance. Users of Oracle Database Appliance software are expected to have the same skills as users of any other Linux-based Oracle Database installations.

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 that have purchased support 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.

- *Oracle Automatic Storage Management Administrator's Guide*

For more information about Oracle Integrated Lights Out Manager 3.2, see https://docs.oracle.com/cd/E37444_01/.

For more details about other Oracle products that are mentioned in Oracle Database Appliance documentation, see the Oracle Documentation home page at `http://docs.oracle.com`.

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 the text.
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.
# prompt	The pound (#) prompt indicates a command that is run as the root user.

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About Oracle Database Appliance

Oracle Database Appliance enables you to take advantage of Oracle Database in an easy-to-deploy and manage system. The complete package of software, server, storage, and networking saves time and money by simplifying deployment, maintenance, and support of database and application workloads.

- Oracle Database Appliance Software (page 1-1)
  Review this topic to see Oracle software that is installed with or available for download for Oracle Database Appliance.

- Overview of Oracle Database Appliance Deployment (page 1-2)
  Review this overview to understand the order of steps you must complete to deploy Oracle Database Appliance.

1.1 Oracle Database Appliance Software

Review this topic to see Oracle software that is installed with or available for download for Oracle Database Appliance.

Oracle Database Appliance components can include the software listed in the following table.

> **Note:**
>
> Some releases may not contain all the items for one or more components listed in the table.

Table 1-1   Software for Oracle Database Appliance

Component	Component Contents	Component Required On	Installed or Downloaded
Oracle Database Appliance Operating System Image	Oracle Appliance Manager command-line interface Oracle Appliance Manager Configurator (graphical user interface) Oracle Linux Hardware drivers	All deployments	Installed

Table 1-1   (Cont.) Software for Oracle Database Appliance

Component	Component Contents	Component Required On	Installed or Downloaded
Oracle Database Appliance Patch Bundle	Basic input/output system (BIOS)	All deployments	Downloaded
	Hardware drivers and management pack and firmware drivers for various components		
	Oracle Appliance Manager		
	Oracle Linux		
	Oracle VM		
	Java Development Kit (JDK)		
	Oracle Integrated Lights Out Manager (Oracle ILOM)		
	Oracle Database Patch Set Update (PSU)		
	Oracle Database Bundle Patch (BP)		
	Oracle Automated Service Request (ASR)		
	Oracle Grid Infrastructure		
	Oracle Intelligent Platform Management Interface (IPMI)		
	Java Development Kit (JDK)		
Oracle Database Appliance End-User Bundle	Oracle Database clone binaries	Bare Metal deployments	Downloaded
	Oracle Database templates, customized for Oracle Database Appliance deployments		
	Oracle Grid Infrastructure clone binaries		
ODA_BASE template	Oracle Database clone binaries	Virtualized Platform deployments	Downloaded
	Oracle Database templates, customized for Oracle Database Appliance deployments		
	Oracle Grid Infrastructure clone binaries		

Components listed as **Installed** are typically available on Oracle Database Appliance when you receive it, and components listed as **Downloaded** are components that you can download and deploy yourself.

1.2 Overview of Oracle Database Appliance Deployment

Review this overview to understand the order of steps you must complete to deploy Oracle Database Appliance.

1. Prepare for Oracle Database Appliance.

    a. Register your Support Identifier (SI) for Oracle Database Appliance with My Oracle Support to obtain software and support from Oracle.

    b. Plan your configuration options and gather network and related information.

    c. Set up the server site.

    d. Configure network names and addresses on your Domain Name System (DNS) server.

Use the Oracle Appliance Manager Configurator to generate the network names and addresses, or to validate your existing network names and addresses. The standalone Configurator is available for download from Oracle Technology Network. You can create a configuration file on a local machine before delivery of your Oracle Database Appliance.

2. Prepare Oracle Database Appliance for deployment.

   a. Mount Oracle Database Appliance hardware into a rack at the server site.

   b. Connect power and required cables to Oracle Database Appliance.

   c. Create an initial network configuration to load external files.

3. Install and deploy software on Oracle Database Appliance.

   a. Download and copy the Oracle Database Appliance end-user bundle to Oracle Database Appliance.

   b. Run the Oracle Appliance Manager Configurator and select or enter the required information.

      During deployment, you configure a two-node Oracle Grid Infrastructure installation (Oracle Clusterware and Oracle Automatic Storage Management). You also can configure Oracle Database Enterprise Edition, Oracle RAC, or Oracle RAC One Node. After the initial deployment, you can add databases, configure core counts, add instance caging, or add virtual domains.

4. Complete postinstallation tasks.

   a. Download patches to apply after deployment.

   b. Reset default passwords.

Related Topics

• http://www.oracle.com/technetwork/database/database-appliance/downloads/index.html

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Preparing for Oracle Database Appliance Installation and Deployment

Complete these setup tasks before Oracle Database Appliance is delivered.

Tasks:

- Registering Your Support Identifier on My Oracle Support (page 2-1)
  Add your hardware Support Identifier (SI) to your My Oracle Support account profile.
- Planning Oracle Database Appliance Configuration Options (page 2-1)
  Use these topics to help you to make decisions about your Oracle Database Appliance configuration.
- Gathering System Requirement Information (page 2-7)
  Use these checklists to collect information before deploying Oracle Database Appliance.
- Creating an Oracle Appliance Manager Deployment Plan (page 2-11)
  Use the standalone Oracle Database Appliance Configurator to create an offline deployment plan and validate your network settings before the actual deployment.

2.1 Registering Your Support Identifier on My Oracle Support

Add your hardware Support Identifier (SI) to your My Oracle Support account profile.

Your hardware SI is supplied when you purchase Oracle Database Appliance. If you acquire new software licenses, then you must also register your new software SIs. The SI registration process can take up to 24 hours to complete.

> ✎ **Note:**
>
> You cannot obtain support or software from Oracle without registered SIs.

2.2 Planning Oracle Database Appliance Configuration Options

Use these topics to help you to make decisions about your Oracle Database Appliance configuration.

These topics help you to select the correct Oracle Database Appliance and plan for deployment. Record your decisions and the information that you require before you proceed to complete system configuration checklists.

> ⚠ **Caution:**
>
> Do not use Oracle Database Configuration Assistant (DBCA) to create databases on Oracle Database Appliance. Only use Oracle Appliance Manager for database configuration. Deploying Oracle Database instances using Oracle Appliance Manager ensures that these databases are properly configured, optimized, and supported on Oracle Database Appliance.

Topics:

2.2.1 Selecting Oracle Database Appliance Virtualized Platform Options

Review Virtualized Platform options, and requirements for these options, such as shared disks and virtual local area networks.

Before you implement virtual machines, you must decide how and where you want them to run. Based on your requirements, you can select High Availability options, or you can select options to reduce interference between competing virtual machines for CPU and network access. You can also select options to provide more storage space, or enable automatic startup for virtual machines. Some of these options require additional network configuration beyond the configuration required for the Oracle Database Appliance servers.

Oracle Database Appliance by default includes one local repository on each node. The maximum size of that repository depends on your Oracle Database Appliance hardware:

- 350 GB on Oracle Database Appliance X5-2 Virtualized Platform
- 350 GB on Oracle Database Appliance X4-2 Virtualized Platform
- 350 GB on Oracle Database Appliance X3-2 Virtualized Platform
- 250 GB on Oracle Database Appliance Version 1

When you create virtual machines in the default repositories, the virtual machines can run only on the node where they are located. Because they run on only one node, they have no failover capability.

To obtain the most flexible shared machine environment, use a shared repository with Virtual Local Area Networks (VLANs). Shared repositories provide High Availability options, more storage capacity, and reduced local storage use. VLANs help you partition network traffic for your virtual machines.

When you use a shared repository hosted on shared disks, the virtual machines consume space in Oracle Automatic Storage Management (Oracle ASM) disk groups,

DATA and RECO. When you use shared disks, you can convert virtual machines to do the following:

- Start automatically whenever the repository becomes available

- Run on a preferred node

- Start or fail over to the other node, if the preferred node is unavailable

Oracle Database Appliance Virtualized Platform deployments support multiple VLANs on the same network interface card (NIC) port. Each VLAN is essentially an independent logical network that operates with other VLANs over the same physical connection.

Use VLANs to minimize the number of required physical connections and NICs while concurrently separating traffic. Each VLAN is assigned a distinct VLAN identification (ID). The network switch uses VLAN IDs to segregate traffic among the different VLANs operating on the same link. When a VLAN is configured, the VLAN functions exactly like a separate physical connection.

> ✏ **Note:**
>
> You must configure virtual LANs on the physical switches before you use them.

2.2.2 Selecting Database Configuration Options

Select the database templates and configuration options to properly size and configure your initial database.

Review the database configuration options and select the templates for Oracle Real Application Clusters (Oracle RAC), and Oracle RAC One Node databases needed to configure your initial database. This information is relevant to you if you plan to configure an initial database during Bare Metal or Virtualized Platform deployments.

Record your decisions and the information that you require for your database templates before you proceed to complete system configuration checklists.

> ⚠ **Caution:**
>
> Do not use Oracle Database Configuration Assistant (DBCA) to create databases on Oracle Database Appliance. Only use Oracle Appliance Manager for database configuration. Deploying Oracle Database instances using Oracle Appliance Manager ensures that these databases are properly configured, optimized, and supported on Oracle Database Appliance.

Topics:

- Selecting Database Deployment Options for Oracle Database Appliance (page 2-4)
  If you plan to create an initial database during deployment, then use these lists to select an Oracle Database deployment option, and prepare for the deployment.

- Selecting Database Templates for Oracle Database Appliance (page 2-5)
  Oracle Database Appliance software includes preconfigured templates that incorporate Oracle best practices with optimization for different classes of databases.

- Calculating Required Cores (page 2-6)
  After you select templates for your planned Oracle Database, identify your workload type, and determine the total number of CPUs that you require to support the templates.

2.2.2.1 Selecting Database Deployment Options for Oracle Database Appliance

If you plan to create an initial database during deployment, then use these lists to select an Oracle Database deployment option, and prepare for the deployment.

Oracle Appliance Manager installs Oracle Database software on mirrored disks that are internal to Oracle Database Appliance. During the initial deployment with the Oracle Appliance Manager Configurator, you can either create a database or you can defer database creation to a later time.

Options:

- **Enterprise Edition**: Oracle Database 12*c* release 1 Enterprise Edition (no automated failover), with the following characteristics:

  – Single-instance Oracle Database Enterprise Edition home

  – Oracle Database software installation on both nodes

- **Oracle Real Application Clusters (Oracle RAC) One Node**: Oracle RAC One Node 12*c* release 1, with the following characteristics:

  – Oracle RAC One Node has a designated Oracle Database Appliance home node

  – Oracle RAC One Node software is installed on both servers

  – Automated failover is configured

  – Enterprise Edition license is required

  – Oracle RAC One Node license on each server is required

    Exception: If you designate one server as a backup server, then you can use that server without a license, in accordance with the 10-day rule.

- **Oracle RAC**: Oracle Real Application Clusters 12*c* release 1, with the following characteristics:

  – Oracle RAC home

  – Oracle RAC software is installed on both servers

  – Enterprise Edition license is required

  – Oracle RAC license on each server is required (not eligible for the 10-day rule)

> **Note:**
>
> For information about the 10-day rule, see the *Oracle Software Investment Guide* at `http://www.oracle.com/us/corporate/pricing/sig-070616.pdf`.

2.2.2.2 Selecting Database Templates for Oracle Database Appliance

Oracle Database Appliance software includes preconfigured templates that incorporate Oracle best practices with optimization for different classes of databases.

Because of differences in CPU counts, memory size, and other resources available with different Oracle Database Appliance models, some templates are not supported on all models.

Each Oracle Database template has different workload profile and performance characteristics:

- Memory requirements, which are calculated from the System Global Area (SGA), and Program Global Area (PGA) sizes

- Processing requirements, which are calculated from the number of processes

- Logging requirements, which are based on log buffer size, and online redo log size

1. Refer to the guidelines for Oracle Database sizes in Appendix B (Database Sizing for Oracle Database Appliance), in *Oracle Database Appliance Administration and Reference Guide*

2. Use the following table to determine if the template that you want to use is available for your Oracle Database Appliance hardware model:

Table 2-1   Database Template Names and Availability

Template Name	V1	X3-2	X4-2	X5-2
Odb-01s	Available	Available	Available	Available
Odb-01	Available	Available	Available	Available
Odb-02	Available	Available	Available	Available
Odb-04	Available	Available	Available	Available
Odb-06	Available	Available	Available	Available
Odb-12	Available	Available	Available	Available
Odb-16	Not available	Available	Available	Available
Odb-24	Not available	Not available	Available	Available
Odb-32	Not available	Not available	Not available	Available
Odb-36	Not available	Not available	Not available	Available

> **Note:**
>
> Oracle strongly recommends that you use the Oracle Database Appliance templates. These templates implement best practices, and are configured specifically for Oracle Database Appliance.

On Oracle Database Appliance Virtualized Platform, if you only plan to deploy one Oracle Database, then Oracle recommends that you use a template for your ODA_BASE that has the same name as the template that you choose for your Oracle Database.

You do not have to select database templates with the same size category as the ODA_BASE template. For example, you can use a small ODA_BASE template to host two very small databases, and you can use a large ODA_BASE template to host either one large with one small database, or host one medium database with one small and two very small databases.

> **Caution:**
>
> The total requirements for your selected database templates must not exceed the capacity of your ODA_BASE template. You can adjust the size of ODA_BASE after the initial deployment, so can expand ODA_BASE to accommodate more databases in ODA_BASE.

2.2.2.3 Calculating Required Cores

After you select templates for your planned Oracle Database, identify your workload type, and determine the total number of CPUs that you require to support the templates.

Oracle Database Appliance templates are configured and tuned for specific types of Oracle Database workloads:

*   Generic templates
*   Online analytic transaction templates (OLTP)
*   Decision support services templates (DSS)
*   In-Memory database templates

These templates are designed to run on a specific number of cores. Caging ensures that each database workload is restricted to the set of cores allocated by the template, enabling multiple databases to run concurrently with no performance degradation, up to the capacity of Oracle Database Appliance. You can select database template sizes larger than your current needs to provide for planned growth, which you accommodate later by adjusting System Global Area (SGA) and Program Global Area (PGA) sizes, as well as the number of cores.

2.3 Gathering System Requirement Information

Use these checklists to collect information before deploying Oracle Database Appliance.

- List of Information You Need Before Deployment (page 2-7)
  Collect security, storage, and network information required to prepare for deploying Oracle Database Appliance.

- Checklist for System Details (page 2-9)
  Use the checklist to gather system information that you need to obtain for Oracle Database Appliance. Record the values for your system.

- Checklist for Custom Network Address Configuration (page 2-11)
  Use the checklist to identify the IP addresses required for Oracle Database Appliance.

2.3.1 List of Information You Need Before Deployment

Collect security, storage, and network information required to prepare for deploying Oracle Database Appliance.

Review your security requirements for `root` passwords, determine your storage requirements and network administration requirements, and complete any required configuration before your Oracle Database Appliance hardware is delivered.

Security Requirements

- What root password should you use for Oracle Database Appliance? Root passwords should comply with your system security requirements.

- Secure operating systems are an important basis for general system security. Ensure that your operating system deployment is in compliance with common security practices.

Storage Administration Requirements

Storage administration is integrated into Oracle Database Appliance. No additional storage configuration is required.

Oracle Database Appliance X6-2S, X6-2M, and X6-2L use Oracle Automatic Storage Management Cluster File System (Oracle ACFS) or Oracle Automatic Storage Management (Oracle ASM) and include the following:

- Integrated storage for operational files (operating system, Oracle Grid Infrastructure home, Oracle Database homes, tools). Operational files are stored on mirrored internal system disks.

- DATA (user data and database files)

- RECO (database redo logs, archive logs, and recovery manager backups)

- Operational files are stored on mirrored internal system disks.

You can configure for External, Internal, or Custom backup location. Depending on backup location, you can select one of the following configuration options to divide the storage capacity between DATA diskgroup and RECO diskgroup:

- External: Storage capacity is split between 80% for DATA and 20% for RECO.

- Internal: Storage capacity is split between 40% for DATA and 60% for RECO.
- Custom: Storage capacity is configurable from 10% to 90% for DATA and the remainder for RECO.

> **Note:**
>
> Oracle Database Appliance X6-2S and X6-2M ship with two 3.2 TB non-volatile memory express (NVMe) drives for a total of 6.4 TB of NVMe storage. With Oracle Database Appliance X6-2M, you have the option to expand the system to a 4 disk configuration, which doubles the NVMe storage capacity. Oracle Database Appliance X6-2L ships with six 3.2 TB non-volatile memory express (NVMe) drives with the option to add three (3) disks for a total of nine (9) NVMe disks.

Network Administration Requirements

The network administration requirements and recommendations are as follows:

- Determine the type of network interface for your public network and know the details for your generic and public network.
- Oracle recommends that you resolve addresses using Domain Name System (DNS) servers.
- All names must conform to the RFC 952 standard, which permits alphanumeric characters and hyphens ("-"), but does not allow underscores ("_").
- Provide an IP address for the public interface. The following are the public interfaces:
    - Oracle Database Appliance X6-2S: `btbond1` or `sfpbond1`
    - Oracle Database Appliance X6-2M: `btbond1`, `btbond2` and `sfpbond1`
    - Oracle Database Appliance X6-2L: `btbond1`, `btbond2` and `sfpbond1`

Depending on your network setup, you can use one of the following available bonds:

- `btbond` are bonded interface based on onboard NIC 10GBase-T (copper) ports
- `sfpbond` is bonded interface based on the 10GbE SFP+ (fiber) PCIe card

When you use the `configure-first` command during the initial setup, you can choose one of the bonded interfaces for the public network. Use one of the remaining bonded interfaces for management, backup, data guard, or other network. Be prepared to provide a netmask and gateway for each network, as both are required when you configure a network connection for Oracle Database Appliance.

Answer These Questions

Determine the answers to the following questions:

- What is your domain name?

    For example: `example.com`.

- Do you want to use DNS?

(Optional) Ensure that the names and addresses that you provide for network configuration are configured in your Domain Name System (DNS) servers. DNS is optional, but recommended. If you want to use DNS, then obtain your DNS server addresses. The addresses that you provide are configured in the `/etc/hosts` file to provide IP name and address resolution, even if a DNS server is not available.

- Do you have a Network Time Protocol (NTP) service configured for each server, so that the local system time for each server is synchronized?

- Which network interface do you want to use for your public network?

  - 10GBase-T (copper)

  - 10GbE SFP+ (fiber)

- What are the details for your public network? To connect to the system, you require the following information:

  - Host name

    For example: `myhost`

  - IP address

    For example: `192.0.2.18`

  - Netmask for the public network

    For example: `255.255.252.0`

  - Gateway for the public network

    For example: `192.0.2.1`

- Do you want the ability to configure additional networks?

- Do you want to use Oracle Integrated Lights Out Manager (Oracle ILOM) to manage Oracle Database Appliance independent of the operating system?

  (Optional) Collect the following ILOM details from your network administrator:

  - Oracle ILOM host name

    For example: `myilom1`

  - Oracle ILOM IP address

    For example: `10.0.0.3`

  - Netmask for the Oracle ILOM network

    For example: `255.255.255.0`

  - Gateway for the Oracle ILOM network

    For example: `10.0.0.1`

2.3.2 Checklist for System Details

Use the checklist to gather system information that you need to obtain for Oracle Database Appliance. Record the values for your system.

Table 2-2   Checklist for System Configuration Information for Oracle Database Appliance

System Information	Description
Host Name	The name for the Oracle Database Appliance System. The name must conform with the RFC 952 standard, which allows alphanumeric characters and hyphens (-), but does not allow underscores (_). The name should not begin with a numeral or hyphen and should not end in a hyphen. Oracle recommends that you use all lowercase characters for the host name.
Domain Name	Your domain name. For example: `example.com`
Master Password	The password set for the root password of the system, OS users, database users, and pdbadmin. The password is also used to set the database `SYS` and `SYSTEM` passwords. Ensure that the password you provide is in compliance with common security practices.
DNS Server	(Optional) DNS server details.
NTP Server	(Optional) Network Time Protocol (NTP) service details.
Region	The region where you plan to operate the Oracle Database Appliance system.
Timezone	Select the time zone where you plan to operate the Oracle Database Appliance system.
Database Edition	Select an Oracle Database edition, either Enterprise Edition or Standard Edition. You cannot mix editions. The database edition you select determines the database editions that you create in the appliance. To change editions, you must redeploy Oracle Database Appliance.
Backup Location	Determine the backup location setting. The setting determines how the NVMe Disks are partitioned between DATA and RECO. Select External, Internal, or Custom: • **External** reserves 80% of the storage for DATA and 20% for RECO. • **Internal** reserves 40% of the storage for DATA and 60% for RECO. • **Custom** reserves anywhere from 10% to 90% of the storage for DATA, and the remainder is reserved for RECO.
Percentage of Storage Reserved for Data	If you select a Custom backup location, determine the amount of reserves for DATA storage. The percentage must be a whole number between 10 and 90.
Diskgroup Redundancy	If the machine has 4 NVMe, select **normal** redundancy (two way mirror) or **high** redundancy (three way mirror). If the machine has 2 NVMe, redundancy is automatically set to normal and this field does not appear.
Network Information	Obtain network information: • Public network • (Optional) Additional network • (Optional) Oracle Integrated Lights Out Manager (Oracle ILOM) network

Table 2-2   (Cont.) Checklist for System Configuration Information for Oracle Database Appliance

System Information	Description
Initial Database Details (if you want to create one during deployment)	- Database name - Normal or container database - Class (database template) - Database characterset - Database language - Database version - Shape (for example: odb1 or odb2) - Storage (Oracle ASM or Oracle ACFS) - Configure Oracle Enterprise Manager console

2.3.3 Checklist for Custom Network Address Configuration

Use the checklist to identify the IP addresses required for Oracle Database Appliance.

> **Note:**
>
> Oracle does not recommend changing the default Host Private Address. You cannot change the private network after deploying the appliance.

Table 2-3   Default IP Address Requirements for Oracle Database Appliance

Type of IP	IP Address Default Values	Your Values As Applicable
Client Access Network	No default	No default
Additional Network	No default	No default
Oracle Integrated Lights Out Manager (ILOM)	No default	No default
Host Private Addresses	192.168.16.24	Not applicable: the private addresses are defined before deployment and should not be changed

2.4 Creating an Oracle Appliance Manager Deployment Plan

Use the standalone Oracle Database Appliance Configurator to create an offline deployment plan and validate your network settings before the actual deployment.

If you prefer to configure your system at the time you deploy it, you can wait and use the online Configurator that is part of the base Oracle Database Appliance software. If you want to use the Configurator to create a configuration file before your appliance is delivered, then review these topics.

Topics:

- About the Standalone Oracle Database Appliance Configurator (page 2-12)
  Decide if you want to download the standalone Oracle Database Appliance
  Manager Configurator to create a configuration file for Oracle Database Appliance.

- Running the Standalone Oracle Database Appliance Configurator (page 2-12)
  Download and run the standalone Configurator to create a configuration file for
  Oracle Database Appliance.

2.4.1 About the Standalone Oracle Database Appliance Configurator

Decide if you want to download the standalone Oracle Database Appliance Manager
Configurator to create a configuration file for Oracle Database Appliance.

The standalone Oracle Appliance Manager Configurator is a Java-based tool that
enables you to generate your deployment plan, and validate your network settings
before the actual deployment.

If you want to use this tool before deployment, then you must download and run the
Configurator on a local client system. The local client can be a Linux, UNIX, MAC, or
Windows system.

At the end of an offline Configurator session, you can save your deployment plan in a
configuration file. When you are ready to deploy Oracle Database Appliance, copy this
configuration file to the appliance, and run the online Oracle Appliance Manager
Configurator to import and deploy your saved plan. You can also print the file's content
and use the printout as a checklist for setting up your external network configuration.

Before you save your configuration file, Oracle recommends that you test your network
settings. To test the network settings, the client where you run the Configurator must
be connected to same network that you intend to use for Oracle Database Appliance.

2.4.2 Running the Standalone Oracle Database Appliance Configurator

Download and run the standalone Configurator to create a configuration file for Oracle
Database Appliance.

Before running the Oracle Database Appliance Configurator, gather your system
requirement information and complete the checklists.

1. Download the standalone Oracle Appliance Manager Configurator that matches
   your version of Oracle Database Appliance software.

   a. Go to the Oracle Database Appliance Downloads page at `http://`
      `www.oracle.com/technetwork/database/database-appliance/overview/index.html`.

   b. Review the license, then select **Accept License Agreement**.

   c. Click the version of the Oracle Database Appliance Manager Configurator to
      download the zip file to a client.

   d. Extract the files from the zip.

2. Start the Configurator using the command `config.bat` on a Windows client, or the
   command `./config.sh` on a Linux or UNIX client.

   The Oracle Appliance Manager Welcome page appears.

3. Click **Next**.

4. On the Configuration Type page, select the options for configuration type, environment, and hardware model. If you have an existing configuration file that you want to load and edit, then click **Browse** and locate the file on your client.

Oracle recommends in most cases that you select the typical configuration. If you intend to deploy SAP applications, then select **SAP Application**. Choose the

Custom option if you want to configure additional or alternate network interfaces, or if you want to override the default values for one or more of the following:

- Database block size, language, territory, backup file location, or disk redundancy level for the DATA and RECO disk groups

- Oracle Integrated Lights Out Manager (Oracle ILOM) server

- Oracle Auto Service Request (Oracle ASR) configuration

- Oracle Cloud File System mount point and file system size

- Network Time Protocol service server

To see the default values for your version of Oracle Database Appliance software before choosing the **Typical** or **Custom** option, run the Configurator using the **Custom** option.

If you are installing Oracle Database Appliance Virtualized Platform, then select **Virtualized Platform**. Otherwise, leave the default value, **Bare Metal**, as the environment option. Select the hardware model from the drop-down menu. This example is for **ODA-X5-2**.

If you are using InfiniBand as the interconnect between the two Oracle Database Appliance servers, then select the **InfiniBand** check box. This option is only available for Oracle Database Appliance X5-2 systems.

The **Browse** option is not useful during the initial run, because there are no configuration files to load.

In this example, **Typical**, **Bare Metal**, and **ODA-X5-2** are the selected options.

> **Note:**
>
> The **SAP Application** option is only valid with the Bare Metal option.

When you have made your selections, click **Next**.

5. On the System Information page, provide the system name, and select the correct value from the lists for your region and time zone. In the **New Root Password** and **New Root Password (confirm)** fields, enter a new password for the `root` user. This password is encrypted in the configuration file. It is temporarily decrypted to reset the password during deployment. If you have Oracle Database Appliance X5-2 hardware model, you have the option to select the Accelerator Disk Group, select either **REDO** or **Flash**.

6. Click **Next**.

7. On the Network Information page, provide your domain name, DNS server addresses, public and VIP addresses for your two nodes, SCAN name and addresses, and netmask and Gateway addresses.

As you enter data on this page, some fields are automatically filled with values derived from earlier entries. For example, if the address that you provide for the

Node 0 public IP address is 192.0.2.18, then the default node addresses generate as follows:

- Node 0 public IP address: 192.0.2.18

- Node 1 public IP address: 192.0.2.19

- Node 0 virtual IP (VIP) address: 192.0.2.20

- Node 1 virtual IP (VIP) address: 192.0.2.21

- SCAN addresses (two addresses resolving to the SCAN VIP name): 192.0.2.22, 192.0.2.23

See the Checklist for Custom Network Address Configuration for information about requirements for nonstandard public IP addresses.

8. Click **Next**.

9. On the Database Information page, select if you want to create an initial database. If you check the box to create a database, then you can also provide your database details. These details include the database name, which you must enter, and the following options, selected from the available list values:

- **Is Container Database** The default is **false**. If you leave the default value, then the Configurator builds a non-container database

- **Database Type** The default type is **OLTP**. You can also select **DSS**, or select **In-Memory**.

- **Database Class** Select the database class that you want to deploy. Not all options are available for all models of Oracle Database Appliance; the default class is **odb-06**

- **Database Language** The default language is **AMERICAN**

- **Database Deployment** Select one of the following, where **RAC** is the default:
  - Oracle RAC
  - Oracle RAC One Node
  - Oracle Database Enterprise Edition (no Oracle RAC)

- **Data File Size (GB)** If you indicate that you want to build a container database, then provide a database data file size in the final field on this page. (This field does not accept input unless the **Is Container Database selection** is **True**.) If you do not want to create an initial database, then do not select the check box for **Create Initial Database**.

- **Data Files on Flash Storage** Select **true** if you plan to store your entire database in flash storage (400 GB SSDs); otherwise, leave the selection **false**. This option is only available on Oracle Database Appliance X5-2 systems.
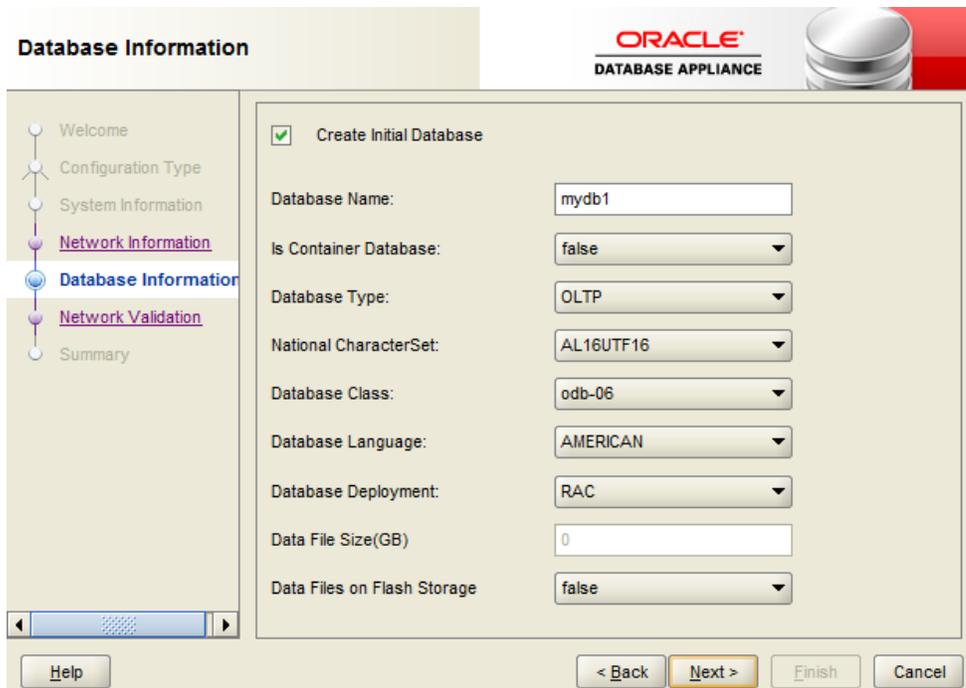
Click **Next**.

10. On the Network Validation page, either validate the network settings and save the validation output in a file, or bypass the validation step by selecting **Skip Network Validations**.
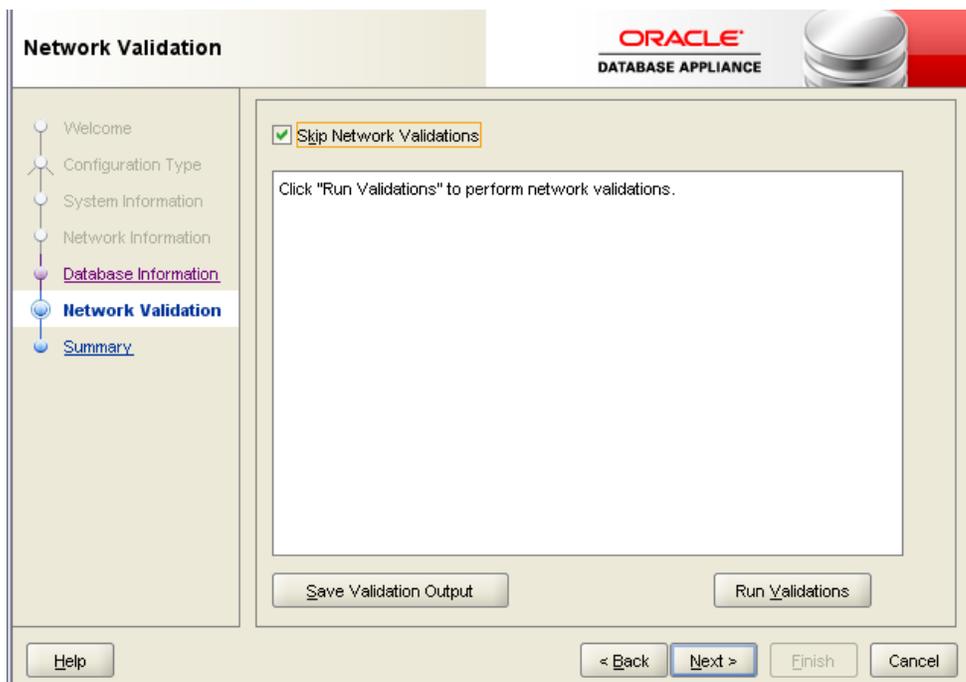
Oracle recommends that you validate your network before you use the configuration file to configure an appliance. However, you must run Oracle

Appliance Manager Configurator on a server attached to the network subnet that is configured for your appliance. If you do not do this, then the validation fails, regardless of whether or not you have completed required configuration.

If the network validation fails, and you want to continue with the configuration, then select **Skip Network Validations**, and then click **Next**. After you review the results, if you are ready to proceed, then click **Next**. If the validation fails, then save the validation output to review these results with your network administrator. To save the configuration information that you have entered and correct the network addresses later, select **Skip Network Validations** and click **Next** to continue to the next page.

11. On the Summary page, review the configuration options that you have selected. Click **Save** to save the configuration file, or click **Back** to modify your selections.

You can print the contents of the configuration file and use the printout to review your configuration entries for deployment planning purposes. You can also load the configuration file later when you run the Configurator again.

If you are running the Configurator on Oracle Database Appliance, and you have completed the preliminary steps to configure your initial network and install the End-User Bundle or deploy ODA_BASE, then you can click **Install** to deploy the configuration. If you are not ready to complete the deployment, then first click **Save**, and then click **Finish**. Note the name and location of the configuration file. You can copy this configuration file to your Oracle Database Appliance for deployment. If you need to make corrections before deployment, then rerun the standalone Oracle Appliance Manager Configurator, load your configuration file, make the changes, and save the file again.

Related Topics

- Gathering System Requirement Information (page 2-7)
  Use these checklists to collect information before deploying Oracle Database Appliance.

- Checklist for Custom Network Address Configuration (page 2-11)
  Use the checklist to identify the IP addresses required for Oracle Database Appliance.

3

Readying Oracle Database Appliance for Deployment

Complete these tasks to prepare to deploy Oracle Database Appliance.

Topics:

- About Interconnect Cabling (page 3-1)
  Interconnect is reserved for Oracle Grid Infrastructure (GI) and Oracle Relational Database Management System (RDBMS).

- Attaching Supplied Cables for Oracle Database Appliance (page 3-2)
  Use these topics to assist you to attach interconnect cables. If you are using Oracle Database Appliance Version 1, then interconnect cabling is already done for you.

- Attaching a Storage Expansion Shelf to Oracle Database Appliance (page 3-7)
  Review these topics to install and cable a storage expansion shelf for Oracle Database Appliance.

- Attaching Peripheral Devices (page 3-11)
  Complete this task if you have direct access to Oracle Database Appliance and you intend to use a locally connected monitor, keyboard and mouse.

- First Startup of Oracle Database Appliance (page 3-12)
  Use this procedure to start up either a newly-installed Oracle Database Appliance, or to start up the appliance after you power it down.

- Configuring Oracle Integrated Lights Out Manager (page 3-15)
  Configure Oracle Integrated Lights Out Manager (Oracle ILOM) to manage Oracle Database Appliance independent of the operating system.

- Attaching Power Cords and Initializing Components (page 3-17)
  Attach power cords for Oracle Database Appliance.

- Configuring an Initial Network Connection (page 3-17)
  Configure a temporary network configuration framework to build your network information during deployment.

- Validating Oracle Appliance Manager Software Version (page 3-19)
  Before deploying Oracle Database Appliance, you should have the current version of the Oracle Appliance Manager software installed.

3.1 About Interconnect Cabling

Interconnect is reserved for Oracle Grid Infrastructure (GI) and Oracle Relational Database Management System (RDBMS).

Oracle GI includes Oracle Clusterware, Oracle Automatic Storage Management (Oracle ASM), and Oracle Restart. Even if you do not use Oracle Real Application Clusters (RAC) , Oracle Database Appliance uses the interconnect for RAC ASM and Oracle GI.

> **✎ Note:**
>
> Do not use interconnect for other applications.

When you power on Oracle Database Appliance for the first time, the system automatically defines your public network interface based on the interconnect. If you use the InfiniBand cards, then the InfiniBand network is used for the interconnect. If you ordered the configuration that contains the 10GbE SFP+ (fiber) cards instead of InfiniBand cards, then the onboard 10GBase-T (Copper) ports are used for the interconnect.

3.2 Attaching Supplied Cables for Oracle Database Appliance

Use these topics to assist you to attach interconnect cables. If you are using Oracle Database Appliance Version 1, then interconnect cabling is already done for you.

These topics assist you to attach cables for Oracle Database Appliance models with a single storage shelf.

Topics:

- Attaching Cables for Oracle Database Appliance X5-2 (page 3-2)
  Use the diagram in this topic to understand how to attach cable connections between ports on Oracle Database Appliance model X5-2 with a single storage shelf:

- Attaching Cables for Oracle Database Appliance Models X4-2 and X3-2 (page 3-4)
  Use the diagram in this topic to understand how to attach cable connections between ports on Oracle Database Appliance model X4-2 or X3-2.

- Cabling Oracle Database Appliance to Connect to Fiber Public Networks (Optional) (page 3-5)
  You can configure X5-2, X4-2, and X3-2 appliances to use fiber connections for the public network.

3.2.1 Attaching Cables for Oracle Database Appliance X5-2

Use the diagram in this topic to understand how to attach cable connections between ports on Oracle Database Appliance model X5-2 with a single storage shelf:

Figure 3-1   Interconnects and Cables for a Single Storage Shelf on Oracle Database Appliance X5-2

Table 3-1   Description of Callouts for Cabling Oracle Database Appliance X5-2 With Single Storage Shelf

Callout Number	Description
1	Green InfiniBand Cable (Oracle Database Appliance X5-2)
	• From: Node 0, PCIe slot 1, PORT2
	• To: Node 1, PCIe slot 1, PORT2
2	Yellow InfiniBand Cable (Oracle Database Appliance X5-2)
	• From: Node 0, PCIe slot 1, PORT1
	• To: Node 1, PCIe slot 1, PORT1
3	Dark blue SAS cable:
	• From: Node 0, PCIe slot 2, SAS0
	• To: Storage shelf, top I/O port 0
4	Light blue SAS cable:
	• From: Node 0, PCIe slot 3, SAS1
	• To: Storage shelf, bottom I/O port 0
5	Dark red SAS cable:
	• From: Node 1, PCIe slot 2, SAS1
	• To: Storage shelf, top I/O port 1
6	Light red SAS cable:
	• From: Node 1, PCIe slot 3, SAS0
	• To: Storage shelf, bottom I/O port 1

> **Note:**
>
> The back panel of each node contains three PCIe generation 3 terminal slots, with two sockets in each slot. The PCIe slots are labeled **X PCIe3**, where **X** is the PCIe slot number.

3.2.2 Attaching Cables for Oracle Database Appliance Models X4-2 and X3-2

Use the diagram in this topic to understand how to attach cable connections between ports on Oracle Database Appliance model X4-2 or X3-2.

The following figure illustrates the cable connections between ports on Oracle Database Appliance model X4-2 and model X3-2 in a single storage shelf.

Figure 3-2   Interconnects and Cables for Single Storage Shelf on Oracle Database Appliance X4-2 and X3-2
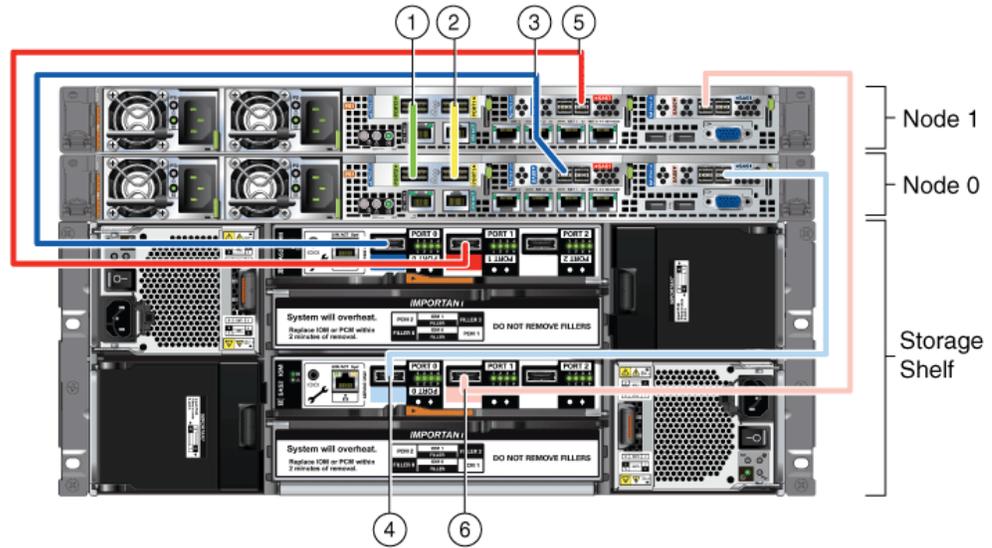

Table 3-2   Description of Callouts for Cabling Oracle Database Appliance X4-2 or X3-2 With Single Storage Shelf

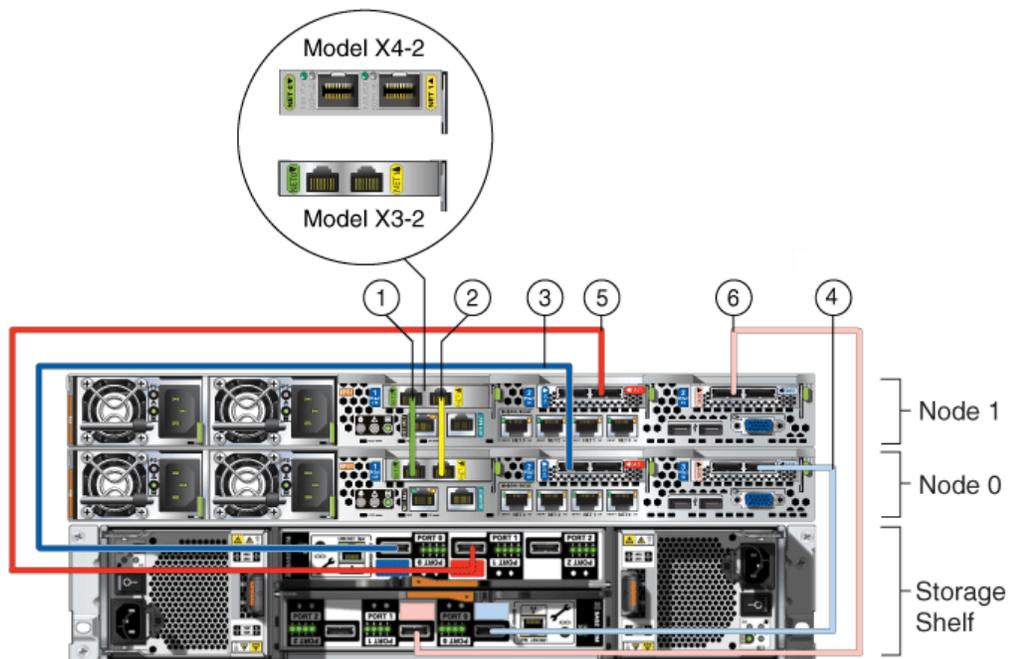| Callout Number	Description
1	Green Cat 6 cable (Oracle Database Appliance X3-2) or green-labelled twinax cable (Oracle Database Appliance X4-2): • From: Node 0, PCIe slot 1, NET0 • To: Node 1, PCIe slot 1, NET0

Table 3-2   (Cont.) Description of Callouts for Cabling Oracle Database Appliance X4-2 or X3-2 With Single Storage Shelf

Callout Number	Description
2	Yellow Cat 6 cable (Oracle Database Appliance X3-2) or yellow-labeled twinax cable (Oracle Database Appliance X4-2) • From: Node 0, PCIe slot 1, NET1 • To: Node 1, PCIe slot 1, NET1
3	Dark blue SAS cable: • From: Node 0, PCIe slot 2, SAS0 • To: Storage shelf, top I/O port 0
4	Light blue SAS cable: • From: Node 0, PCIe slot 3, SAS1 • To: Storage shelf, bottom I/O port 0
5	Dark red SAS cable: • From: Node 1, PCIe slot 2, SAS1 • To: Storage shelf, top I/O port 1
6	Light red SAS cable: • From: Node 1, PCIe slot 3, SAS0 • To: Storage shelf, bottom I/O port 1

> **⚠ Caution:**
>
> Do not attach cables to ethernet ports in the I/O modules labeled "SERVICE ONLY" when cabling the system. These ports are intended for use by service engineers only. You must use Oracle Appliance Manager to manage Oracle Database Appliance storage.

> **✎ Note:**
>
> The back panel of each node contains three PCIe generation 3 terminal slots, with two sockets in each slot. The PCIe slots are labeled *X* **PCIe3**, where *X* is the PCIe slot number.

3.2.3 Cabling Oracle Database Appliance to Connect to Fiber Public Networks (Optional)

You can configure X5-2, X4-2, and X3-2 appliances to use fiber connections for the public network.

For Oracle Database Appliance X4-2 and X5-2 installations, if you want to use fiber connections between Oracle Database Appliance and your public network, then you must cable the interconnect by using the green and yellow copper ports (onboard ports net0 and net1). The green and yellow Category 6 (Cat 6) interconnect cables for these ports ship with the base system.

Oracle Database Appliance X4-2 includes fiber ports as part of the base configuration. However, for Oracle Database Appliance X5-2, if you want to use a fiber port connection, then you must replace the InfiniBand cards with 10 GbE SFP+ (fiber) cards. Fiber ports do not exist in the base configuration for X5-2. You must re-image Oracle Database Appliance X5-2 after you replace the PCIe cards. After you replace the cards, Oracle Database Appliance auto-detects the network configuration changes.

> ⚠️ **Caution:**
>
> If you replace the InfiniBand interconnect cards on Oracle Database Appliance X5-2, then you disable the Oracle Database Appliance in-memory fault tolerance feature. Also, interconnect bandwidth is reduced from 40 GB to 10 GB. If you have Oracle RAC databases, then you may experience slower intercommunication speeds, depending on the system workload.

In the following figure, callouts 1 and 2 show how to cable the interconnect between Node 1 and Node 0 using the green and yellow copper ports (onboard ports `net0` and `net1`) to use a fiber public network. Note that the illustration shows the rear panel of an Oracle Database Appliance X4-2. The rear panel of the Oracle Database Appliance X5-2 is slightly different, but the interconnect cabling is the same.

Figure 3-3   Interconnects When Using Fiber Connections to the Public Network on Oracle Database Appliance Models X5-2 and X4-2
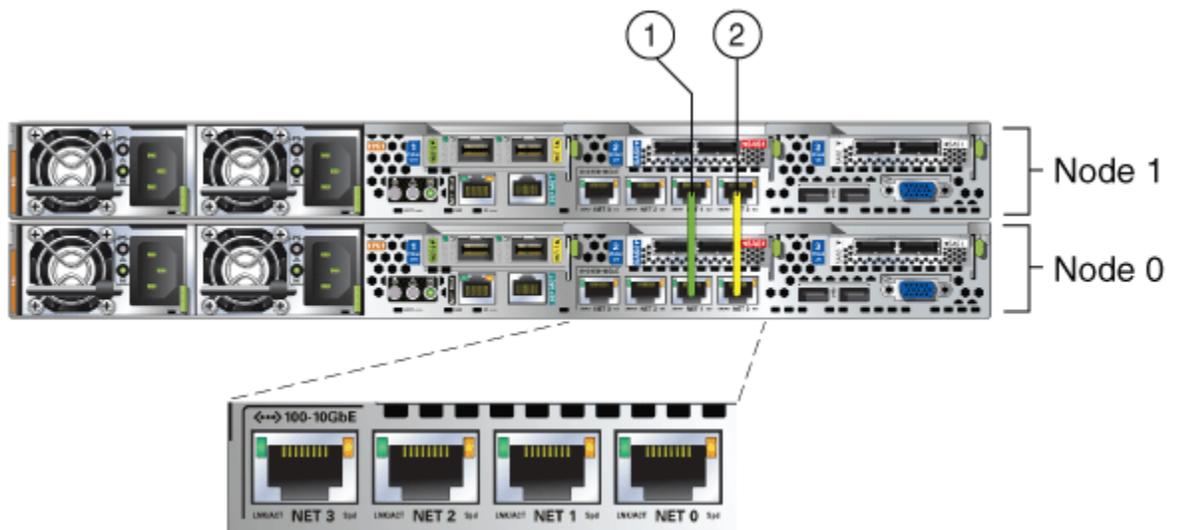
The following sections show the cabling options for 10 GbE SFP+ PCI cards.

Fiber Cables

For optical cables, you must purchase either Short Range (SR) or Long Range (LR) SFP+ transceivers for each of the network ports, and then plug in the appropriate optical cable. Currently, Oracle sells both the SR and LR SFP+ transceivers. In

addition to these transceivers, you must purchase the appropriate LC-LC terminated fiber optic cables from a third-party vendor.

Name	Oracle Sun Part Number
10 GbE Transceiver SR (SFP+)	X2129A-N
10 GbE Transceiver LR (SFP+)	X5562A-Z

Copper Cables

You can purchase the following copper cables from Oracle Sun. These cables have built-in SFP+ connectors:

Name	Length	Oracle Sun Part Number
TwinAx 1m	1m	X2130-1M
TwinAx 3m	3 m	X2130-3M
TwinAx 5m	5m	X2130-5M

3.3 Attaching a Storage Expansion Shelf to Oracle Database Appliance

Review these topics to install and cable a storage expansion shelf for Oracle Database Appliance.

Topics:

- About Attaching and Cabling Storage Shelves (page 3-7)
  Review these options and best practices for adding storage shelves for Oracle Database Appliance X3-2, X4-2 and X5-2.

- Installing and Cabling a Storage Expansion Shelf (page 3-8)
  Use this procedure to install and cable a storage expansion shelf for Oracle Database Appliance

3.3.1 About Attaching and Cabling Storage Shelves

Review these options and best practices for adding storage shelves for Oracle Database Appliance X3-2, X4-2 and X5-2.

Storage Shelf Options for Oracle Database Appliance X3-2, X4-2 and X5-2

Oracle Database Appliance models X3-2, X4-2, and X5-2 can be shipped with one or two storage shelves. You can obtain the second shelf at a later time to double your storage capacity.

If you originally deployed Oracle Database Appliance with one storage shelf, then you can add a storage expansion shelf at any time without having to shut down your databases or applications.

Best Practice Guidelines for Adding Storage Expansion Shelves

Oracle recommends that you add a storage expansion shelf when you have relatively little activity on your databases. When the system discovers the new storage, Oracle

ASM automatically rebalances the disk groups. The rebalance operation may degrade database performance until the operation completes.

> ⚠️ **Caution:**
>
> Review cabling instructions to ensure that you have carried out cabling correctly. Incorrect connections can cause data loss when adding a storage expansion shelf to Oracle Database Appliance with existing databases.
>
> Do not attach cables to Ethernet ports in the I/O modules labeled "SERVICE ONLY" when cabling the system. These ports are intended for use by service engineers only.

3.3.2 Installing and Cabling a Storage Expansion Shelf

Use this procedure to install and cable a storage expansion shelf for Oracle Database Appliance

1. Place the storage expansion shelf below your Oracle Database Appliance, if possible, or else close enough to connect the provided cables.

   The storage expansion shelf normally sits at the bottom of Oracle Database Appliance, beneath the storage shelf. However, because racks should always be provisioned from the bottom up, that space may be unavailable. In that case, to avoid re-rack mounting the entire system, you can position the storage expansion shelf above the server nodes, or in a different, but adjacent, rack.

2. Install the extension storage shelf in exactly the same manner as the original storage shelf.

3. Use the figures in this topic to assist you to cable the storage expansion shelf for your Oracle Database Appliance model.

> ⚠️ **Caution:**
>
> Incorrect connections can cause data loss when adding a storage expansion shelf to Oracle Database Appliance with existing databases.

4. Attach the supplied power cords. Refer to the section "Attaching Power Cords and Initializing Components" to obtain information and see figures showing how to attach power cords.

Figures Showing How to Cable a Storage Expansion Shelf

The following figures show you how to insert the required cables into the storage expansion shelf of Oracle Database Appliance. The cables for the two nodes and the original storage shelf are included in the illustration for reference.

The cables are color-coded. Match the colors of the labels at the ends of each cable with the colored line shown in the following illustration. Also match the cable colors to the background colors of the socket identification labels.

You can also use the callouts in the diagrams and the callout table that follows the diagrams to identify the cables and ports. Because all cables with the same terminations are interchangeable, you can ignore the color coding.

> **Note:**
>
> The back panel of each node contains three PCIe generation 3 terminal slots, with two sockets in each slot. The PCIe slots are labeled *X* **PCIe3**, where *X* is the PCIe slot number. Review the callout table that follows the figures for more information.

Figure 3-4   Cables for Storage Expansion Shelf on Oracle Database Appliance X5-2
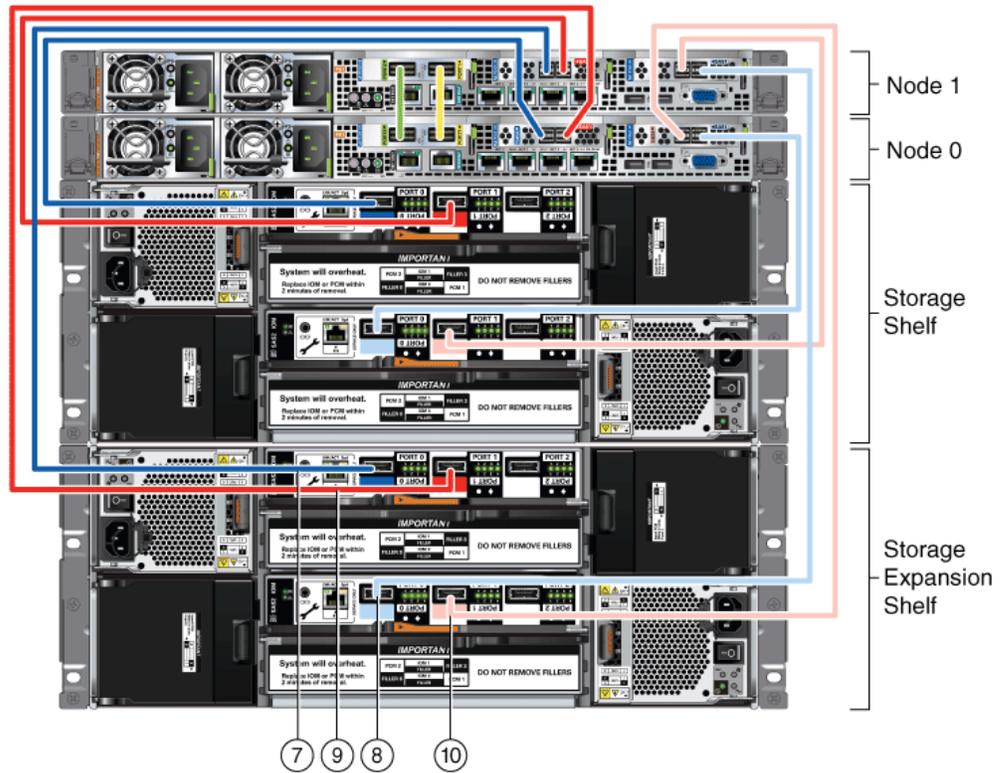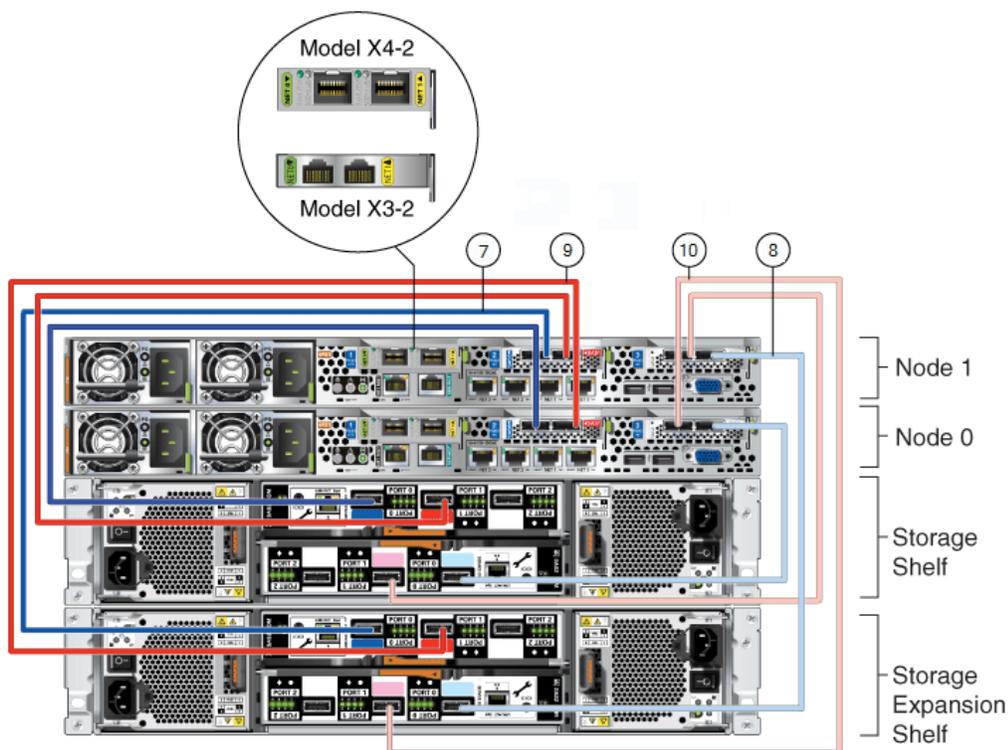
Figure 3-5   Cables for Storage Expansion Shelf on Oracle Database Appliance X3-2 and X4-2

The cables identified with callout numbers in the preceding figures are included with each shipped Oracle Database Appliance storage expansion shelf. These cables are all black, but have colored labels at each end that match the references to cable colors in the text and the label colors on the back panels.

Table 3-3   Description of Callouts for Cabling Oracle Database Appliance Storage Expansion Shelf

Callout Number	Description
7	Dark blue SAS cable: • From: Node 1, PCIe slot 2, SAS0 • To: Storage expansion shelf, top I/O port 0
8	Light blue SAS cable: • From: Node 1, PCIe slot 3, SAS1 • To: Storage expansion shelf, bottom I/O port 0
9	Dark red SAS cable: • From: Node 0, PCIe slot 2, SAS1 • To: Storage expansion shelf, top I/O port 1
10	Light red SAS cable: • From: Node 0, PCIe slot 3, SAS0 • To: Storage expansion shelf, bottom I/O port 1

> **⚠ Caution:**
>
> Do not attach cables to Ethernet ports in the I/O modules labeled "SERVICE ONLY" when cabling the system. These ports are intended for use by service engineers only.

> **✎ See Also:**
>
> Attaching Power Cords and Initializing Components (page 3-17)
>
> To review information about installing optional components for Oracle Database Appliance, see the section "Optional Component Installation" in Chapter 4 of *Oracle Database Appliance Owner's Guide*.

3.4 Attaching Peripheral Devices

Complete this task if you have direct access to Oracle Database Appliance and you intend to use a locally connected monitor, keyboard and mouse.

Oracle Database Appliance is not equipped with human-computer interface devices, such as a monitor or keyboard. If you want to log in locally, instead of through a network, then you must attach interface devices.

Attach a monitor to the graphics card port, and attach a keyboard and a mouse to the USB ports. Refer to the figure and table to identify the ports.

Figure 3-6   Peripheral Device Connections for Oracle Database Appliance
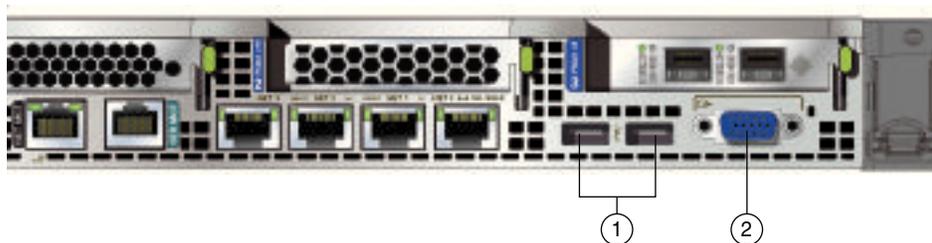
In the figure, callout 1 identifies the ports for the keyboard and mouse. Callout 2 identifies the monitor port.

Table 3-4   Peripheral Device Connections for Oracle Database Appliance

Callout Number	Description
1	USB ports for the keyboard and mouse

**Table 3-4   (Cont.) Peripheral Device Connections for Oracle Database
Appliance**

Callout Number	Description
2	Graphics card port for the monitor

3.5 First Startup of Oracle Database Appliance

Use this procedure to start up either a newly-installed Oracle Database Appliance, or
to start up the appliance after you power it down.

To ready Oracle Database Appliance for the powering on the first time, you need to
attach all of the required power cords and confirm that initialization completes
successfully. You can then start up the system by pushing the power button once.

- Attaching Power Cords and Initializing Components (page 3-12)
  Attach power cords for Oracle Database Appliance.

- Powering On Oracle Database Appliance the First Time (page 3-12)
  Use this procedure to power on Oracle Database Appliance.

- Defining Your Public Network Interface Type (X4-2) (page 3-15)
  For Oracle Database Appliance X4-2, after system startup, you are prompted to
  indicate if you are using copper or fiber network interfaces for your public network.

3.5.1 Attaching Power Cords and Initializing Components

Attach power cords for Oracle Database Appliance.

> ⚠ **Caution:**
>
> Before plugging in the power cords, ensure that the electrical outlets
> providing the power are grounded.

If you use only a single AC circuit, then connect both power cords for each component
to that circuit. If you want to maintain N+1 power supply redundancy, then use two
separate AC circuits. Connect one power cord from each AC circuit into each
component.

For more information about cabling with the supplied Cable Management Arm, refer to
Oracle Database Appliance Owner's Guide.

3.5.2 Powering On Oracle Database Appliance the First Time

Use this procedure to power on Oracle Database Appliance.

Before starting to power on the appliance, make sure that all of the required power
cables are attached to both Oracle Database Appliance nodes, and to all storage
shelves, if they are included with your appliance.

> **Note:**
>
> After you connect power cords, the green SP OK light-emitting diode (LED) lights blink for a few minutes, and then turn to steady ON. The cooling fans also may turn on. However, these events do not indicate that the system is started. You must complete all of the steps in this section to turn on the appliance properly. Read through the entire section to understand the sequence required for initial system startup.

1. Power on the storage shelves. If attached, switch each storage shelf storage power supply On/Off switch to the On position.

    Each storage shelf has two power switches on the rear panel. One switch is on the right side, and one switch is on the left side. Turn on both power switches.

    The storage disks begin to initialize, which can take several minutes.

2. Check the Green SP OK LEDs on the storage shelves and the server nodes to see if they are fully initialized. When they are all fully initialized, push the recessed power button on each node to turn it on.

    > **Note:**
    >
    > The fully-initialized state is indicated by the green SP OK LEDs staying steadily lit. If any of the green LED lights on the server nodes and on any attached storage nodes are still blinking. then wait for them to complete their initialization steps. Do not power on the server nodes (Node 0 and Node 1) until the storage shelves are fully initialized.

    Refer to the figures and to the following callout table to identify the power button and the system initialization status indicator lights:

Table 3-5   Description of Callouts for Powering On Oracle Database Appliance

Callout	Function
1	SP OK LED light, located on the front panel of each node.
2	Recessed On/Off power button, which is located on the front panel for each node (Node 0 and Node 1). Push this button only once. Do not repeatedly push the power button.
3	Green Power OK LED for a node, located on the node's front panel. These lights must be in the steady ON position (Green light does not blink) before you log on to the system.

Figure 3-7   Front of Oracle Database Appliance Models X3-2, X4-2, and X5-2: Power Panel
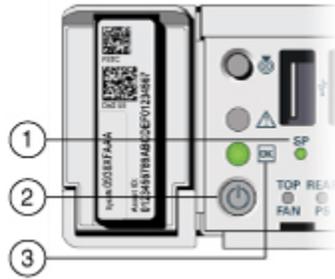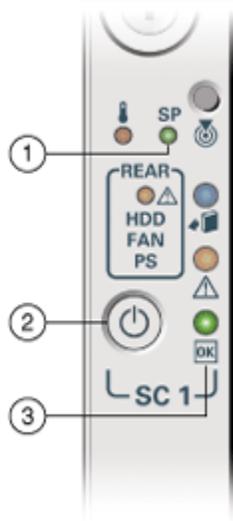

Figure 3-8   Front of Oracle Database Appliance Version 1: Power Panel

3. Wait for Oracle Database Appliance to complete startup.

> **✎ Note:**
>
> Do not repeatedly push the power buttons. Startup can take several minutes to complete.

Oracle Database Appliance is ready for use when the green Power OK LEDs (callout 3) on the front of both system nodes remain steadily on.

4. For X5-2, X4-2, and X3-2 models of Oracle Database Appliance: To ensure that the storage and interconnect is properly configured, log into the console as `root` and run the following `oakcli validate` command:

```
/opt/oracle/oak/bin/oakcli validate -c storagetopology
```

3.5.3 Defining Your Public Network Interface Type (X4-2)

For Oracle Database Appliance X4-2, after system startup, you are prompted to indicate if you are using copper or fiber network interfaces for your public network.

After you power on Oracle Database Appliance X4-2 for the first time, a short script runs on each node. Use an attached keyboard to answer questions that the script displays on the local monitor.

> **Note:**
>
> This procedure applies only to Oracle Database Appliance X4-2. When you power on 5-2 for the first time, the system automatically defines your public network interface based on the interconnect. On Oracle Database Appliance X5-2, the InfiniBand network is used for the interconnect if InfiniBand cards are used. If InfiniBand cards are replaced with 10 GbE SFP+ (fiber) cards, then the onboard 10GBase-T (Copper) ports are used for the interconnect.

1. Oracle Database Appliance displays the following message to prompt you to indicate your public interface connection type:

   ```
   Do you want to use Fiber or Copper card for public network? Please Choose
   [C]opper or [F]iber.
   ```

   If you are connecting to a copper-based public network, then enter `C`. If you are connecting to a fiber-based public network, then enter `F`. The script then prompts you to confirm your choice.

2. Proceed with system configuration.

   If you make a mistake, or if you want to change your public interface type later, then you can do the following to change your public network interface type:

   a. Log into Node 0 as root.

   b. Run the following script:

      ```
      /opt/oracle/oak/lib/setupX4network.pl
      ```

   c. Repeat steps a and b on Node 1.

   > **Note:**
   >
   > If you have already deployed the End-User Bundle (Bare Metal installation) or the ODA_BASE template (Virtualized Platform installation), then you must redeploy that software after running `setupX4network.pl`.

3.6 Configuring Oracle Integrated Lights Out Manager

Configure Oracle Integrated Lights Out Manager (Oracle ILOM) to manage Oracle Database Appliance independent of the operating system.

Oracle ILOM provides alternate ways to restart and troubleshoot Oracle Database Appliance.

You must set up the following items first to configure Oracle ILOM:

- A name and IP address

- A password to replace the default Oracle ILOM password

- Access to a management network, using an assigned netmask

- An Ethernet cable connected from the NET MGT port to the management network

In the default configuration, Dynamic Host Configuration Protocol (DHCP) is enabled in Oracle ILOM and the DHCP server automatically assigns network settings. To determine the IP address or host name assigned by the DHCP server, use the network tools provided with the DHCP server.

If you do not use DHCP, then use the custom option in Oracle Database Appliance Manager Configurator to assign IP addresses and host names to Oracle ILOM when you deploy your database.

> **✎ Note:**
>
> If you have not enabled DHCP, then you must complete Oracle Database Appliance configuration to access Oracle ILOM.

To connect to the Oracle ILOM, use one of the following two methods:

1. Log in using a web interface by completing these steps:

    a. Using a client system's browser, enter the IP address or host name assigned by DHCP into the browser address field and press **Enter**.

    b. At the login page, enter the default user name, `root` and the default password, `changeme`.

       The Oracle ILOM web interface appears.

2. Log in using a command-line interface (CLI) by completing these steps:

    a. Using a client system, establish a secure shell (SSH) connection by entering the following on the command line:

       `ssh -l root sp_ip_address`

       where `sp_ip_address` is the IP address assigned by DHCP.

    b. Enter the default user name, `root`, and the default password, `changeme`.

       The Oracle ILOM CLI prompt appears.

Troubleshooting the ILOM Configuration

If the ILOM is not working, then ensure that the ILOM NIC is enabled and that `ipv4` is enabled.

You can configure the ILOM with the IPMI tool or through the BIOS. The following describes how to use the IPMI tool:

1. Open the IPMI tool.

```
# ipmitool -I open sunoem cli
```

2. Go to `SP/network` and verify that the port is enabled:

```
cd /SP/network
```

3. If the port is not enabled, then enable the port.

```
set state=enabled
```

4. In `SP/network`, verify that `ipv4` is enabled.

5. If `ipv6` is enabled, then disable `ipv6` and enable `ipv4`

```
# ipmitool -I open sunoem cli "set /SP/network/ipv6 state=disabled"
# ipmitool -I open sunoem cli "set /SP/network/ipv4 state=enabled"
```

3.7 Attaching Power Cords and Initializing Components

Attach power cords for Oracle Database Appliance.

> ⚠️ **Caution:**
>
> Before plugging in the power cords, ensure that the electrical outlets providing the power are grounded.

If you use only a single AC circuit, then connect both power cords for each component to that circuit. If you want to maintain N+1 power supply redundancy, then use two separate AC circuits. Connect one power cord from each AC circuit into each component.

For more information about cabling with the supplied Cable Management Arm, refer to *Oracle Database Appliance Owner's Guide*.

3.8 Configuring an Initial Network Connection

Configure a temporary network configuration framework to build your network information during deployment.

To manage your Oracle Database Appliance deployment across a network, you must configure an initial network connection. Use this network to transfer deployment software to Oracle Database Appliance.

If you have physical access to your Oracle Database Appliance, then you can use a USB storage device to transfer deployment software to the appliance. In that case, you do not need to set up an initial network configuration.

> ✎ **Note:**
>
> The initial network configuration is temporary. It is replaced during the final image deployment.

1. Log in to Oracle Database Appliance as `root`.

On Bare Metal installations, log in to a console.

On Oracle Database Appliance Virtualized Platforms, log in to Dom0.

2. On Bare Metal installations, if you have one or more storage shelves, then run the command `oakcli validate` with the `storageTopology` option to perform a validity check of cabling.

For example:

```
oakcli validate -c storageTopology
```

On Virtualized Platform installations, you perform this check as part of the Oracle Software deployment process.

3. Run the command `oakcli configure firstnet` to configure the initial network.

As needed, refer to the network configuration information that you previously collected in preparation for deployment.

To use the global option, accept the default value in the first prompt, and then provide the required data for the remaining prompts. You do not need to enter anything to accept the default values that are shown in square brackets at the end of prompts.

Use the following example to help you to respond to prompts. In this example, default values are always selected. Values that you need to provide are shown in *italic font*, with the exception of the net1 gateway address; the program obtains the gateway IP.

In the preceding example, the prompt for the `net1` gateway address includes a default value, shown as `gateway-IP-address`. The program derives this gateway address using the network information you provided for the other IP addresses. Accept this value, unless your network administrator provides an alternative gateway address that is different from the default that the appliance command-line interface detects:

```
oakcli configure firstnet
Configure the network for the node(s)(local, global) [global]:
The network configuration for both nodes:
Domain Name:  my-organization-domain-name
DNS Server(s):  Primary Dns Server:  my-primary-DNS-server
                Secondary Dns Server:  my-secondary-DNS-server
                Tertiary Dns Server:  my-tertiary-DNS-server
Node Name        Host Name
0                my-Node-0-host-name
1                my-Node-1-host-name
Choose the network interface to configure (net1, net2, net3, net4) [net1]:
Configure DHCP on net1 (yes/no) [no]:
You have chosen static configuration on net1
Enter the IP address for net1 on Node 0: my-Node-0-IP-address
Enter the IP address for net1 on Node 1: my-Node-1-IP-address
Netmask for net1: your-netmask
Gateway Address for net1 [gateway-IP-address]:
Plumbing the IPs now on Node 0 …
::::::::::::::::::::::::::::::::::::::::::::::::::::::
Plumbing the IPs now on Node 1 …
::::::::::::::::::::::::::::::::::::::::::::::::::::::
```

> **⚠ Caution:**
>
> Oracle recommends using the `oakcli configure firstnet` command only one time on Oracle Database Appliance. Subsequent use after configuring the initial network can cause unpredictable changes to your network settings.

3.9 Validating Oracle Appliance Manager Software Version

Before deploying Oracle Database Appliance, you should have the current version of the Oracle Appliance Manager software installed.

Run the following command to find the installed version on your appliance:

```
oakcli show version
```

Confirm that you have the most current version of Oracle Appliance Manager.

4

Deploying Oracle Software on Oracle Database Appliance

Complete these tasks to deploy the Oracle Database Appliance software.

- About Deploying Oracle Database Appliance Software Using OAKCLI (page 4-1)
  Review this information to understand the steps required for different deployments, where log files are placed, and how to change deployment types.

- Deploying Virtualized Platform Oracle Database Appliance Software (page 4-2)
  Complete this procedure to deploy a Virtualized Platform configuration on Oracle Database Appliance.

- Deploying Bare Metal Platforms on Oracle Database Appliance (page 4-5)
  Complete this procedure to deploy Oracle software directly on the appliance, also known as a Bare Metal configuration of Oracle Database Appliance.

4.1 About Deploying Oracle Database Appliance Software Using OAKCLI

Review this information to understand the steps required for different deployments, where log files are placed, and how to change deployment types.

Tasks in this chapter are marked to indicate if they apply to Bare Metal deployments, Virtualized Platform deployments, or both. Perform only the tasks designated for a deployment on your platform.

> ✎ **Note:**
>
> If you are planning to convert from Oracle Database Appliance Virtualized Platform to a bare metal deployment, first check with My Oracle Support to confirm that you have a compatible image installed.

Recovering from Failed Deployments, Or Changing Deployments

You can use the cleanup script `cleanupDeploy.sh` described in this chapter to reset your system or to repeat a failed deployment.

About OAKCLI Deploy Command Log Files

The oakcli deploy command creates log files in the following filepath:

`/opt/oracle/oak/onecmd/tmp/`

Log files are prefaced with the string `STEP`. For example:

```
/opt/oracle/oak/onecmd/tmp/STEP-6-20160226103534.log
```

4.2 Deploying Virtualized Platform Oracle Database Appliance Software

Complete this procedure to deploy a Virtualized Platform configuration on Oracle Database Appliance.

The procedure to deploy software in a Virtualized Platform configuration consists of the following steps:

1. Check Oracle Database Appliance hardware to see if it is configured with a virtual machine (VM).
2. Install the ODA_BASE template on Oracle Database Appliance.
3. Prepare the appliance to run Oracle Appliance Manager Configurator.
4. Deploy your configuration using Oracle Appliance Manager.

You must complete the deployment tasks in the order that they are listed.

1. Log in as `root`.
2. Enter the command `oakcli show env_hw`

   This command displays the Oracle Database Appliance hardware on which you are deploying. If the output of this command is prefixed with the string `VM-ODA_BASE`, then the system is configured with a virtual machine (`dom0/oda_base`).

   For example, the output of the following command shows both the hardware platform, and that the platform is configured with a virtual machine environment:

   [root@oda3n1 ~]# oakcli show env_hw VM-ODA_BASE ODA X5-2

   [root@oda3n1 ~]# oakcli show env_hw VM-ODA_BASE ODA X4-2

   [root@oda2n1 ~]# oakcli show env_hw VM-ODA_BASE ODA X3-2

   [root@oda1n1 ~]# oakcli show env_hw VM-ODA_BASE ODA V1

   If you do not have the Oracle Database Appliance Virtual option deployed, then refer to My Oracle Support note 1520579.1 for the procedure to reimage Oracle Database Appliance virtual option.

3. Log in to My Oracle Support, and download and install the ODA_BASE Template.

   Complete the following steps to download the appropriate ODA_BASE VM template to an external client, and then copy the template to your Oracle Database Appliance.

   a. Go to My Oracle Support and locate patch 16186172 for the Oracle Database Appliance Virtualized OS ISO Image.

      http://support.oracle.com

   b. Select release 12.2.1.4.0.

   c. Click **View Read Me** and review the Readme file.

   d. Click **Download** to download the zip file.

      ```
      p16186172_122140_Linux-x86-64.zip
      ```

e. Use either a Secure Copy (scp) command or a USB storage device to copy the ODA_BASE template from the external client to `Dom0` on Node 0. Use the `/scp` or `/OVS` directory as the target location.

> ✎ **Note:**
>
> If you choose to use a USB drive to transfer the file, then format it first as `FAT32`, `ext3`, or `ext4`. NTFS file formats are not supported.

f. Log in to `Dom0` as `root` on Node 0 of Oracle Database Appliance Virtualized Platform, and copy the ODA_BASE template to the `/OVS` directory on `Dom0` if it is not already there. Remain logged in to `Dom0` while you complete the remaining steps in this task.

g. Run the command `oakcli deploy oda_base`, and provide the template location, core licensing options, and select the base domain memory allocation.

The `deploy oda_base` option automatically deploys ODA_BASE on both nodes. Values, such as the CPU core licensing options, differ between Oracle Database Appliance Virtualized Platform hardware platforms. The following is example output for Oracle Database Appliance X5-2 where the ODA_BASE template is in the `/OVS` directory.

```
# /opt/oracle/oak/bin/oakcli deploy oda_base
Thu May 26 18:13:23 PDT 2017
INFO: Validating LSI HBA PCI Cards on node 1
Enter the template location: /OVS/oda_base_12.1.2.12.tar.gz
Core Licensing Options:
1.    2 CPU Core
2.    4 CPU Cores
3.    6 CPU Cores
4.    8 CPU Cores
5.   10 CPU Cores
6.   12 CPU Cores
7.   14 CPU Cores
8.   16 CPU Cores
9.   18 CPU Cores
10.  20 CPU Cores
11.  22 CPU Cores
12.  24 CPU Cores
13.  26 CPU Cores
14.  28 CPU Cores
15.  30 CPU Cores
16.  32 CPU Cores
17.  34 CPU Cores
18.  36 CPU Cores

        Selection[1 .. 9](default 36 CPU Cores) :
INFO: Using the default cpu cores i.e. 36 cores
        ODA base domain memory in GB(min 16, max 244)[default 244]      :
INFO: Using default memory size i.e. 244 GB
```

Continue configuration choices in the next step.

h. Assign additional virtual local area networks (VLANs) to your ODA_BASE.

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To assign VLANs, respond with `y` when you are prompted for VLAN networks, and respond with `n` if you do not want to deploy another VLAN, or if you have completed assigning additional VLANs.

```
Additional vlan networks to be assigned to oda_base ? (y/n) : y
Select the network to assign [Test00,Test01,Test02,Test03]: Test00
Additional vlan networks to be assigned to oda_base ? (y/n) : y
Select the network to assign [Test00,Test01,Test02,Test03]: Test01
Additional vlan networks to be assigned to oda_base ? (y/n) : n
```

i. When the command completes, verify that your deployment of ODA_BASE is valid by running the command `show oda_base`, and confirming that ODA_BASE is configured.

For Example:

```
# oakcli show oda_base
ODA base domain
ODA base CPU cores :2
ODA base domain memory :16
ODA base template :/tmp/oda_base_12.1.2.12.tar.gz
ODA base vlans :['priv1', 'net1', 'net2', 'net3', 'net4', 'db_mgmt']
ODA base current status :Running
```

> **Note:**
>
> If you encounter problems, and need to clean up and start again with a new ODA_BASE deployment, then first run the following command from `Dom0` on Node 0:
>
> `/opt/oracle/oak/tools/cleanOdabase.py`
>
> This command removes ODA_BASE, so that you can try a fresh deployment.

j. Oracle recommends that you check the storage cabling before continuing with deployment.

To perform this check, connect to ODA_BASE on Node 0 as `root`. After connecting, run the following command:

```
# oakcli validate -c storagetopology
```

The command displays errors if the cables between the two nodes and the storage shelf or shelves are not in the correct sockets.

4. Log in to Node 0 as `root`, and log in to ODA_BASE by starting VNC, using host name: `dom0`, and port: 5900.

5. Start the deployment using `oakcli deploy`. Either use an existing configuration file that you created earlier, or build a new one.

For example, to start the deployment using an existing configuration, enter a command similar to the following, substituting your file's name and directory path:

```
# oakcli deploy -conf /tmp/onecommand.param
```

If the command `oakcli deploy` fails to open the Oracle Appliance Manager Welcome window, then check to make sure that your DISPLAY variable is set to display to your terminal.

> **Note:**
>
> Do not use a configuration file created for an earlier version of Oracle
> Appliance Manager Configurator. If you do not have a current
> configuration file, then complete a real-time configuration and
> deployment, as described in the following step.

To initiate a real-time configuration and deployment, enter the following command:

```
# oakcli deploy
```

Follow the instructions to complete the Oracle Appliance Manager Configurator
screens, as described in "Running the Standalone Oracle Database Appliance
Configurator." Select the **Install** option on the Configurator Summary page to
complete the deployment.

Related Topics

4.3 Deploying Bare Metal Platforms on Oracle Database Appliance

Complete this procedure to deploy Oracle software directly on the appliance, also
known as a Bare Metal configuration of Oracle Database Appliance.

The procedure to deploy software in a bare-metal configuration consists of the
following steps:

1. Install the end-user bundle for Bare Metal platform deployments

2. Prepare the appliance to run Oracle Appliance Manager Configurator

3. Deploy your configuration using Oracle Appliance Manager.

The End-User GI/RDBMS Clone files contain specific Grid Infrastructure (GI) and
RDBMS software components, for deployment on an Oracle Database Appliance in
the "shipped from factory" state, or an Oracle Database Appliance that has been re-
imaged using the OS ISO Image.

You must install the end-user bundle on Oracle Database Appliance before you deploy
any other software. To install the end-user bundle, download the appropriate patch file
to an external client. Copy the patch from your client to Oracle Database Appliance,
and install the patch.

> **Note:**
>
> Oracle Database Appliance is ready when the green Power OK LED lights
> on the front of the system remain steadily on. If any of the green LED lights
> on the server are still blinking, then wait for them to complete their
> initialization steps.

1. Run the following command on the appliance to determine if your Oracle Appliance Manager software version is current: `/opt/oracle/oak/bin/oakcli show version -detail`

   If your version is earlier than 12.2.1.4.0, then download the patches and update your base image.

2. Download the Oracle Database Appliance 12.2.1.4.0 End-User Bundle (GI/ RDBMS Clone) to a location on Node 0.

   a. Sign in to MyOracle Support, then locate patch 12978712 for the Oracle Database Appliance End-User Bundle.

      https://support.oracle.com

   b. Select the patch version for release 12.2.1.4.0.

   c. Click **Download** to download the zip file.

   ```
   p12978712_122140_Linux-x86-64_1of2.zip
   p12978712_122140_Linux-x86-64_2of2.zip
   ```

   You can copy the file either by using a USB storage device or by using Secure Copy command (`scp`).

   • To use a USB drive to transfer the file, you must format it first as `FAT32`, `ext3`, or `ext4`. NTFS file formats are not supported.

   • To use secure copy, you must first set up a static IP address (for example. `oda_host`) and configure Oracle Database Appliance with that address by using the `oakcli configure firstnet` command.

   For example, if you use the `scp` command, then enter a command similar to the following, where the temporary host address is `oda_host`, and you are copying the bundle to `/tmp` on Node 0:

   ```
   scp p12978712_122140_Linux-x86-64_1of2.zip root@odahost:/tmp
   ```

   ```
   scp p12978712_122140_Linux-x86-64_2of2.zip root @odahost:/tmp
   ```

3. Use the command syntax `oakcli unpack -package /directory_path/package_name` to unpack the Oracle Database Appliance software, where *directory_path* is the path where the end-user bundle patch file is located, and *package_name* is the name of the package.

   For example, if the end-user bundle patch files are in `/tmp`, and the patch names are `p12978712_122140_Linux-x86-64_1of2.zip` and `p12978712_122140_Linux-x86-64_2of2.zip`, then enter the following commands:

   ```
   # oakcli unpack -package /tmp/p12978712_122140_Linux-x86-64_1of2.zip
   # oakcli unpack -package /tmp/p12978712_122140_Linux-x86-64_2of2.zip
   ```

   The command `oakcli unpack` unpacks the bundle patch, and places the extracted files in the directory locations required for deployment.

4. Startup VNC server on Node 0. Then use VNC to log in to Node 0 and port 5901 of Oracle Database Appliance as the `root` user using the default password.

5. Enter the following command to launch the Oracle Appliance Manager Configurator: `# /opt/oracle/oak/bin/oakcli deploy`

   The Oracle Appliance Manager Welcome screen appears.

> **Note:**
>
> If the Welcome window in Oracle Appliance Manager Configurator fails to open, then set the user DISPLAY variable to display to your terminal window.

6. Click **Next**.

7. On the Configuration Type page, select the options for configuration type: Typical, Custom, or SAP Application. If you have an existing configuration file that you want to load and edit, then click **Browse** and locate the file on your client.

> **Note:**
>
> Do not use a configuration file created for an earlier version of Oracle Appliance Manager Configurator. If you do not have a current configuration file, then complete a real-time configuration and deployment.

Oracle recommends in most cases that you select the typical configuration. If you intend to deploy SAP applications, then select **SAP Application**. Choose the **Custom** option if you want to configure additional or alternate network interfaces, or if you want to override the default values for one or more of the following:

- Database block size, language, territory, backup file location, or disk redundancy level for the DATA and RECO disk groups
- Oracle Integrated Lights Out Manager (Oracle ILOM) server
- Oracle Auto Service Request (Oracle ASR) configuration
- Oracle Cloud File System mount point and file system size
- Network Time Protocol service server

To see the default values for your version of Oracle Database Appliance software before choosing the **Typical** or **Custom** option, run the Configurator using the **Custom** option.

> **Note:**
>
> The **SAP Application** option is only valid with the Bare Metal option.

Make your selection, then click **Next**.

8. On the System Information page, provide the system name, and select the correct value from the lists for your region and time zone.

In the **New Root Password** and **New Root Password (confirm)** fields, enter a new password for the `root` user. This password is encrypted in the configuration file. It is temporarily decrypted to reset the password during deployment.

9. Click **Next**.

10. On the Network Information page, provide your domain name, DNS server addresses, public and VIP addresses for your two nodes, SCAN name and addresses, and netmask and Gateway addresses.

As you enter data on this page, some fields are automatically filled with values derived from earlier entries. For example, if the address that you provide for the

Node 0 public IP address is 192.0.2.18, then the default node addresses generate as follows:

- Node 0 public IP address: 192.0.2.18

- Node 1 public IP address: 192.0.2.19

- Node 0 virtual IP (VIP) address: 192.0.2.20

- Node 1 virtual IP (VIP) address: 192.0.2.21

- SCAN addresses (two addresses resolving to the SCAN VIP name): 192.0.2.22, 192.0.2.23

11. Click **Next**.

12. On the Database Information page, select if you want to create an initial database. If you check the box to create a database, then you can also provide your database details. These details include the database name, which you must enter, and the following options, selected from the available list values:

- **Is Container Database** The default is **false**. If you leave the default value, then the Configurator builds a non-container database

- **Database Type** The default type is **OLTP**. You can also select **DSS**, or select **In-Memory**.

- **Database Class** Select the database class that you want to deploy. Not all options are available for all models of Oracle Database Appliance; the default class is **odb-06**

- **Database Language** The default language is **AMERICAN**

- **Database Deployment** Select one of the following, where **RAC** is the default:

  – Oracle RAC

  – Oracle RAC One Node

  – Oracle Database Enterprise Edition (no Oracle RAC)

- **Data File Size (GB)** If you indicate that you want to build a container database, then provide a database data file size in the final field on this page. (This field does not accept input unless the **Is Container Database selection** is **True**.) If you do not want to create an initial database, then do not select the check box for **Create Initial Database**.

- **Data Files on Flash Storage** Select **false**. For Oracle Database Appliance X6-2-HA, the database is always stored in flash storage.

Click **Next**.

13. On the Summary page, review the configuration options that you have selected. Click **Save** to save the configuration file, or click **Back** to modify your selections.

You can print the contents of the configuration file and use the printout to review your configuration entries for deployment planning purposes. You can also load the configuration file later when you run the Configurator again.

If you are running the Configurator on Oracle Database Appliance, and you have completed the preliminary steps to configure your initial network and install the End-User Bundle or deploy ODA_BASE, then you can click **Install** to deploy the configuration.

If you are not ready to complete the deployment, then first click **Save**, and then click **Finish**. Note the name and location of the configuration file. You can copy this configuration file to your Oracle Database Appliance for deployment. If you need to make corrections before deployment, then rerun the standalone Oracle Appliance Manager Configurator, load your configuration file, make the changes, and save the file again.

5

Oracle Database Appliance Postinstallation Tasks

Complete these administrative tasks after you have deployed software, but before the system is operational.

- Changing the Oracle Installation Owner Passwords (page 5-1)
  You must change the default administrative account passwords after installation to secure your system.

- Changing the IPMI User Name and Password (page 5-1)
  If you completed a custom deployment and configured IPMI, then change the default user name and password.

- Configuring Oracle Auto Service Request (page 5-2)
  Configure Oracle Auto Service Request (Oracle ASR) to automatically generate service requests for specific hardware faults.

5.1 Changing the Oracle Installation Owner Passwords

You must change the default administrative account passwords after installation to secure your system.

During deployment, the `root` and database users `SYS`, `SYSTEM` and `PDBADMIN` are set to the master password. After deployment, the `oracle` and `grid` passwords are also set to the master password. Change the passwords to comply with your enterprise user security protocols.

Refer to the *Oracle Database Appliance Security Guide* and *Oracle Database Security Guide* for information about the required configuration and best practices to secure database systems.

5.2 Changing the IPMI User Name and Password

If you completed a custom deployment and configured IPMI, then change the default user name and password.

Oracle Clusterware supports the Intelligent Platform Management Interface (IPMI), an industry-standard protocol that can isolate a failed node from the rest of the cluster. IPMI can restart a problematic node without cooperation from either Oracle Clusterware or from the operating system.

Configuring IPMI is an option when performing a custom deployment of Oracle Database Appliance. Change the default user name and password using the following procedure:

1. Log in as the user `grid`.

2. Enter the command `crsctl set css ipmiadmin` *username*, where *username* is the new name for the IPMI administrator account. Provide a new password when prompted. You must enable IPMI version 1.5 first. For example:

    ```
    $ ipmitool -I open sunoem cli "set /SP/services/ipmi v1_5_sessions=enabled"
    $ /u01/app/12.1.0.2/grid/bin/crsctl set css ipmiadmin racadm
    $ IPMI BMC password:CRS-4229: The IPMI information change was successful $
    ipmitool -I open sunoem cli "set /SP/services/ipmi v1_5_sessions=disabled"
    $ IPMI BMC password:
    CRS-4229: The IPMI information change was successful
    ```

> ⚠ **Caution:**
>
> Do not change the default passwords until after you deploy software on Oracle Database Appliance. If you change the passwords before deployment completes, then you may encounter configuration errors.

5.3 Configuring Oracle Auto Service Request

Configure Oracle Auto Service Request (Oracle ASR) to automatically generate service requests for specific hardware faults.

Oracle ASR is a secure support feature that can improve system availability through expedited diagnostics and priority service request handling. You can configure Oracle ASR on Oracle Database Appliance to use its own ASR Manager or use Oracle ASR Manager configured on another server in the same network as your appliance (internal Oracle ASR). If you already have Oracle ASR Manager configured in your environment, you can register Oracle Database Appliance with your existing Oracle ASR Manager (external Oracle ASR).

To support Oracle ASR, your Oracle Database Appliance hardware must be associated with a Support Identifier (SI) in My Oracle Support.

You can configure Oracle ASR in the Oracle Appliance Manager Web Console or from the command-line interface at any time, or edit an existing configuration.

An Oracle ASR configuration requires you to enter your My Oracle Support account user name and password. If a proxy server is required for Internet access to Oracle, then you must also provide the name of the proxy server. You can optionally configure Oracle ASR to use Simple Network Management Protocol (SNMP) Version 2 or SNMP Version 3.

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