

# Oracle® Database Appliance

## Licensing Information User Manual



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The Oracle logo, consisting of a solid red square with the word "ORACLE" in white, uppercase, sans-serif font centered within it.

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# Preface

This document, which is part of the Program Documentation under the terms of your Oracle licensing agreement, is intended to help you understand the features, functionality, and options available for Oracle Programs.

If you have a question about your licensing needs, then contact your Oracle sales representative or the License Management Services representative at <http://www.oracle.com/us/corporate/license-management-services/index.html>. You can also refer to the resources listed in “Related Documents” for more information.

- [Audience](#)
- [Documentation Accessibility](#)
- [Related Documents](#)
- [Conventions](#)

## Audience

This book is intended for all purchasers of Oracle Database Appliance.

## 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.

## Related Documents

For more information about Oracle Database Appliance, go to <http://www.oracle.com/goto/oda/docs> and click the appropriate release. The following documents are published in the Oracle Database Appliance online documentation library:

- *Oracle Database Appliance Release Notes*
- *Oracle Database Appliance Licensing Information User Manual*
- *Oracle Database Appliance Security Guide*
- *Oracle Database Appliance Accessibility Guide*
- *Oracle Database Appliance X8-2 Deployment and User's Guide*

- *Oracle Database Appliance X7-2 Deployment and User's Guide*
- *Oracle Database Appliance X6-2-HA Deployment and User's Guide*
- *Oracle Database Appliance X6-2S/M/L Deployment and User's Guide*
- *Oracle Database Appliance X5-2 Deployment and User's Guide*
- Oracle Database Appliance Setup Posters and Booklets (a full-size printed copy ships with Oracle Database Appliance)
- *Oracle Database Appliance Owner's Guide*
- *Oracle Database Appliance Service Manual*
- *Oracle Database Appliance Series Safety and Compliance Guide*

For more information about using Oracle Database, go to <http://docs.oracle.com/en/database/> and select the database release from the menu. See the following documents in the Oracle Database online documentation library:

- *Oracle Database Security Guide*
- *Oracle Database Administrator's Guide*
- *Oracle Database SQL Language Quick Reference*
- *Oracle Database Backup and Recovery User's Guide*
- *Oracle Database Backup and Recovery Reference*
- *Oracle Database Utilities*
- *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/](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
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

# 1

## Introduction

This Licensing Information document is a part of the product or program documentation under the terms of your Oracle license agreement and is intended to help you understand the program editions, entitlements, restrictions, prerequisites, special license rights, and/or separately licensed third party technology terms associated with the Oracle software program(s) covered by this document (the "Program(s)").

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# 2

## Oracle Database Appliance Licensing Overview

This chapter provides an overview of the licensing process for each hardware platform.

Topics:

- [About Licensing](#)  
Oracle Database Appliance provides capacity-on-demand licensing.
- [CPUs and Core Count](#)  
Review this section for information about core license options for your Oracle Database Appliance hardware.
- [Oracle Database Appliance KVM Hard Partitioning Compliance](#)  
Review this section for information about Oracle Database Appliance KVM Hard Partitioning compliance.

### About Licensing

Oracle Database Appliance provides capacity-on-demand licensing.

Capacity-on-demand (CoD) refers to an Oracle Database Appliance server that has a subset of its cores turned off so that the Oracle Database Enterprise Edition software license cost can be reduced. The number of cores can be reduced before or after the deployment. The number of active cores can be increased at a later time, when more capacity is needed. Oracle Database is licensed separately. Refer to *Database Licensing Information User Manual* for additional information.

When you add your hardware Support Identifier (SI) for Oracle Database Appliance to your My Oracle Support account, you establish a license for all the cores on your system. Oracle Database Appliance model X9-2-HA can be deployed as a bare metal system. Oracle Database Appliance models X8-2-HA, X7-2-HA, X6-2-HA, and X5-2 can be deployed as a bare metal or virtualization platform. Both platform types offer capacity-on-demand licensing.

With bare-metal installations, you disable cores that you do not intend Oracle Database to use:

- For Oracle Database Appliance X9-2S, X9-2L, X9-2-HA, X8-2S, X8-2M, X8-2-HA, X7-2S, X7-2M, X7-2-HA, X6-2-HA, X6-2S, X6-2M, and X6-2L: Issue the command `odacli update-cpucore` to set the low water mark and to increase the cores.
- For Oracle Database Appliance X5-2: Add your hardware Support Identifier (SI) for Oracle Database Appliance to your My Oracle Support account and create a key.

If you deploy Oracle Database Appliance Virtualized Platform, then all the cores are enabled. However, capacity-on-demand licensing is established by assigning specific cores to the virtual machine where you run Oracle Database and related software (ODA\_BASE).

Chapter two explains how to obtain a licensing key and record your initial license requirements with My Oracle Support. It also explains how to change the licensed core count,



if necessary, later. Chapter two is only appropriate for bare metal installations where your license covers the cores that you are using for Oracle Database.

Chapter three contains information about the third-party products that are included with Oracle Database Appliance.

## CPUs and Core Count

Review this section for information about core license options for your Oracle Database Appliance hardware.

- Oracle Database Appliance X9-2-HA has 2 servers, each with 2 CPUs of 16 cores each. When you deploy Oracle Database Appliance X9-2-HA, all 64 cores (32 cores in each server) are active with hyper-threading enabled by default.
- Oracle Database Appliance X9-2L contains 2 CPUs with 16 cores for a total of 32 cores. When you deploy Oracle Database Appliance X9-2L, all 32 cores are active with hyper-threading enabled by default.
- Oracle Database Appliance X9-2S contains 1 CPU with 16 cores. When you deploy Oracle Database Appliance X9-2S, all 16 cores are active with hyper-threading enabled by default.
- Oracle Database Appliance X8-2-HA has 2 servers, each with 2 CPUs of 16 cores each. When you deploy Oracle Database Appliance X8-2-HA, all 64 cores (32 cores in each server) are active with hyper-threading enabled by default.
- Oracle Database Appliance X8-2M contains 2 CPUs with 16 cores for a total of 32 cores. When you deploy Oracle Database Appliance X8-2M, all 32 cores are active with hyper-threading enabled by default.
- Oracle Database Appliance X8-2S contains 1 CPU with 16 cores. When you deploy Oracle Database Appliance X8-2S, all 16 cores are active with hyper-threading enabled by default.
- Oracle Database Appliance X7-2-HA has 2 servers, each with 2 CPUs of 18 cores each. When you deploy Oracle Database Appliance X7-2-HA, all 72 cores (36 cores in each server) are active with hyper-threading enabled by default.
- Oracle Database Appliance X7-2M contains 2 CPUs with 18 cores for a total of 36 cores. When you deploy Oracle Database Appliance X7-2M, all 36 cores are active with hyper-threading enabled by default.
- Oracle Database Appliance X7-2S contains 1 CPU with 10 cores. When you deploy Oracle Database Appliance X7-2S, all 10 cores are active with hyper-threading enabled by default.
- Oracle Database Appliance X6-2-HA contains 2 CPU with 10 cores. When you deploy Oracle Database Appliance X6-2-HA, all 40 cores (20 cores in each server) are active with hyper-threading enabled by default.
- Oracle Database Appliance X6-2M and X6-2L each contain 2 CPU with 10 cores. When you deploy Oracle Database Appliance X6-2M or X6-2L, all 20 cores are active with hyper-threading enabled by default.
- Oracle Database Appliance X6-2S contains 1 CPU with 10 cores. When you deploy Oracle Database Appliance X6-2S, all 10 cores are active with hyper-threading enabled by default.

- Oracle Database Appliance X5-2 nodes each contain 2 CPUs and each CPU has 18 cores. When you deploy Oracle Database Appliance X5-2, all 72 cores (36 cores in each server) are active with hyper-threading enabled by default.
- Oracle Database Appliance X4-2 nodes each contain 2 CPUs and each CPU has 12 cores. When you deploy Oracle Database Appliance X4-2, all 48 cores (24 cores in each server) are active with hyper-threading enabled by default.

Oracle Database Appliance bare metal licensing is determined by the number of enabled cores that you have on your system. The capacity-on-demand licensing feature enables you to change the enabled core count as your system resource needs change.

Initialize the number of licensed cores to the level currently required by your applications. Each server node has the same number of active cores. Later, increase the licensed core count as your applications require more capacity. Change the number of licensed cores by obtaining and applying a core key to configure your appliance, using the tables for your Oracle Database Appliance platform.

### Oracle Database Appliance X9-2-HA Licensed Core Licensing Options

The table provides an example of how the licensed cores for each node of an Oracle Database Appliance X9-2-HA relate to active cores for Oracle RAC and Oracle Enterprise Edition and active cores for Oracle RAC One Node.

**Table 2-1 Example of Bare Metal License Options for Oracle Database Appliance X9-2-HA Systems**

Licensed Cores for Each Node (X9-2-HA Only)	Active Cores for Oracle RAC and Oracle Enterprise Edition (X9-2-HA Only)	Active Cores for Oracle RAC One Node (X9-2-HA Only)
2	4	2
4	8	4
6	12	6
8	16	8
10	20	10
12	24	12
14	28	14
16	32	16
18	36	18
20	40	20
22	44	22
24	48	24
26	52	26
28	56	28
30	60	30
32	64	32

**Oracle Database Appliance X9-2L and X9-2S Licensed Core Licensing Options**

**Table 2-2 Bare Metal License Options for all Oracle Database Appliance X9-2L and X9-2S Systems**

Licensed Cores for Single Node (X9-2S)	Licensed Cores for Single Node (X9-2L)
2	2
4	4
6	6
8	8
10	10
12	12
14	14
16	16
Not applicable	18
Not applicable	20
Not applicable	22
Not applicable	24
Not applicable	26
Not applicable	28
Not applicable	30
Not applicable	32

**Oracle Database Appliance X8-2-HA Licensed Core Licensing Options**

The table provides an example of how the licensed cores for each node of an Oracle Database Appliance X8-2-HA relate to active cores for Oracle RAC and Oracle Enterprise Edition and active cores for Oracle RAC One Node.

**Table 2-3 Example of Bare Metal License Options for Oracle Database Appliance X8-2-HA Systems**

Licensed Cores for Each Node (X8-2-HA Only)	Active Cores for Oracle RAC and Oracle Enterprise Edition (X8-2-HA Only)	Active Cores for Oracle RAC One Node (X8-2-HA Only)
2	4	2
4	8	4
6	12	6
8	16	8
10	20	10
12	24	12
14	28	14
16	32	16
18	36	18

**Table 2-3 (Cont.) Example of Bare Metal License Options for Oracle Database Appliance X8-2-HA Systems**

Licensed Cores for Each Node (X8-2-HA Only)	Active Cores for Oracle RAC and Oracle Enterprise Edition (X8-2-HA Only)	Active Cores for Oracle RAC One Node (X8-2-HA Only)
20	40	20
22	44	22
24	48	24
26	52	26
28	56	28
30	60	30
32	64	32

**Oracle Database Appliance X8-2M and X8-2S Licensed Core Licensing Options****Table 2-4 Bare Metal License Options for all Oracle Database Appliance X8-2M and X8-2S Systems**

Licensed Cores for Single Node (X8-2S)	Licensed Cores for Single Node (X8-2M)
2	2
4	4
6	6
8	8
10	10
12	12
14	14
16	16
Not applicable	18
Not applicable	20
Not applicable	22
Not applicable	24
Not applicable	26
Not applicable	28
Not applicable	30
Not applicable	32

**Oracle Database Appliance X7-2-HA Licensed Core Licensing Options**

The table provides an example of how the licensed cores for each node of an Oracle Database Appliance X7-2-HA relate to active cores for Oracle RAC and Oracle Enterprise Edition and active cores for Oracle RAC One Node.

**Table 2-5 Example of Bare Metal License Options for Oracle Database Appliance X7-2-HA Systems**

Licensed Cores for Each Node (X7-2-HA Only)	Active Cores for Oracle RAC and Oracle Enterprise Edition (X7-2-HA Only)	Active Cores for Oracle RAC One Node (X7-2-HA Only)
2	4	2
4	8	4
6	12	6
8	16	8
10	20	10
12	24	12
14	28	14
16	32	16
18	36	18
20	40	20
22	44	22
24	48	24
26	52	26
28	56	28
30	60	30
32	64	32
34	68	34
36	72	36

**Oracle Database Appliance X7-2 Licensed Core Licensing Options**

**Table 2-6 Bare Metal License Options for all Oracle Database Appliance X7-2 Systems**

Licensed Cores for Single Node (X7-2S)	Licensed Cores for Single Node (X7-2M)
2	2
4	4
6	6
8	8
10	10
Not applicable	12
Not applicable	14
Not applicable	16
Not applicable	18
Not applicable	20
Not applicable	22
Not applicable	24

**Table 2-6 (Cont.) Bare Metal License Options for all Oracle Database Appliance X7-2 Systems**

Licensed Cores for Single Node (X7-2S)	Licensed Cores for Single Node (X7-2M)
Not applicable	26
Not applicable	28
Not applicable	30
Not applicable	32
Not applicable	34
Not applicable	36

**Oracle Database Appliance X6-2 Licensed Core Licensing Options****Table 2-7 Bare Metal License Options for all Oracle Database Appliance X6-2 Systems**

Licensed Cores for Each Node	Active Cores for Oracle RAC and Oracle Enterprise Edition (X7-2-HA Only)	Active Cores for Oracle RAC One Node
2	4	2
4	8	4
6	12	6
8	16	8
10	20	10
12	24	12
14	28	14
16	32	16
18	36	18
20	40	20

**Oracle Database Appliance X5-2 Licensed Core Licensing Options****Table 2-8 Bare Metal License Options for Oracle Database Appliance X5-2**

Licensed Cores for Each Node	Active Cores for Oracle RAC and Oracle Enterprise Edition	Active Cores for Oracle RAC One Node
2	4	2
4	8	4
6	12	6
8	16	8
10	20	10
12	24	12
14	28	14
16	32	16

**Table 2-8 (Cont.) Bare Metal License Options for Oracle Database Appliance X5-2**

Licensed Cores for Each Node	Active Cores for Oracle RAC and Oracle Enterprise Edition	Active Cores for Oracle RAC One Node
18	36	18
20	40	20
22	44	22
24	48	24
26	52	26
28	56	28
30	60	30
32	64	32
34	68	34
36	72	36

**Oracle Database Appliance X4-2 Licensed Core Licensing Options**

**Table 2-9 Bare Metal License Options for Oracle Database Appliance X4-2**

Licensed Cores for Each Node	Active Cores for Oracle RAC and Oracle Enterprise Edition	Active Cores for Oracle RAC One Node
2	4	2
4	8	4
6	12	6
8	16	8
10	20	10
12	24	12
14	28	14
16	32	16
18	36	18
20	40	20
22	44	22
24	48	24

## Oracle Database Appliance KVM Hard Partitioning Compliance

Review this section for information about Oracle Database Appliance KVM Hard Partitioning compliance.

Oracle Database Appliance DB systems and application KVMs conform to Oracle Linux KVM Hard Partitioning requirements as specified in Hard Partitioning with Oracle Linux KVM:

<https://www.oracle.com/a/ocom/docs/linux/ol-kvm-hard-partitioning.pdf>

### Considerations for CPU Pool Subscription

CPU Pools are used for management of CPU resources only. Database license requirements are determined by KVM Hard Partitioning only.

In a DB system with a shared or internal CPU pool, the cores are pinned based on the database shape selected for the DB system. For example, if you create a DB system with `odb2`, then you must license 2 cores.

In a DB system with a shared CPU pool, consider both undersubscription and oversubscription scenarios.

- **Undersubscription:** Consider a shared CPU pool with 8 cores. If you create a DB system with `odb2` and another with `odb4`, then a total of 6 cores are used. So, although the shared CPU pool is undersubscribed, you must run the `virsh` command in each KVM or DB system to determine the pinned cores that need to be licensed. In this case, it is the same 8 cores visible to both DB systems.
- **Oversubscription:** Consider a shared CPU pool with 8 cores, and you create a DB system with `odb4` and another with `odb6`. Although the shared CPU pool is oversubscribed, you must run the `virsh` command in each KVM or DB System to determine the pinned cores that need to be licensed. In this case, it is the same 8 cores visible to both DB systems.

Note that the same CPU pool subscription policy applies to shared CPU pools for application KVMs too.

### Validating the CPUs for an Oracle Database Appliance DB System and Application KVM

You must run the `virsh` command for every DB system to identify the pinned vCPUs and CPU cores licensing requirements.

To validate that the CPUs for a virtual machine are pinned to a physical thread or core, run the following command:

```
# virsh --readonly vcpuinfo VM_name --pretty
```

The following example illustrates how you can validate the CPUs for an Oracle Database Appliance DB System with the db shape `odb2` that uses 2 cores (4 vCPUs):

1. Determine the VM Name by running this command:

```
# odacli describe-dbsystem -n dbs1 | grep "VM Name"
VM Name: x97f18b518
```

In this example, the DB System name is `dbs1`.

2. Run the `virsh` command to confirm that vCPUs are pinned to physical threads or cores for `x97f18b518`:

```
# virsh --readonly vcpuinfo x97f18b518 --pretty

VCPU:          0
CPU:           19
```



```
State:          running
CPU time:       79.3s
CPU Affinity:   19,24,55,60 (out of 72)

VCPU:          1
CPU:           55
State:         running
CPU time:      71.5s
CPU Affinity:  19,24,55,60 (out of 72)

VCPU:          2
CPU:           60
State:         running
CPU time:      71.7s
CPU Affinity:  19,24,55,60 (out of 72)

VCPU:          3
CPU:           24
State:         running
CPU time:      73.1s
CPU Affinity:  19,24,55,60 (out of 72)
-----
```

In this example, the pinned vCPUs are 19, 24, 55, and 60, out of 72.

# 3

## Capacity-On-Demand Licensing Information

This chapter provides capacity-on-demand licensing information for Oracle Database Appliance bare metal installations.

- [Oracle Database Appliance Capacity-on-Demand Licensing](#)  
Capacity-on-Demand software licensing enables you to deploy as few or as many processors in Oracle Database Appliance as your workload requires.
- [Capacity-On-Demand Licensing for Oracle Database Appliance X9-2S, X9-2L, and X9-2-HA](#)  
Review capacity-on-demand licensing for Oracle Database Appliance X9-2S, X9-2L, and X9-2-HA.
- [Capacity-On-Demand Licensing for Oracle Database Appliance X8-2S, X8-2M, and X8-2-HA](#)  
Review capacity-on-demand licensing for Oracle Database Appliance X8-2S, X8-2M, and X8-2-HA.
- [Capacity-On-Demand Licensing for Oracle Database Appliance X7-2S, X7-2M, and X7-2-HA](#)  
Review capacity-on-demand licensing for Oracle Database Appliance X7-2S, X7-2M, and X7-2-HA.
- [Capacity-On-Demand Licensing for Oracle Database Appliance X6-2-HA](#)  
Review capacity-on-demand licensing for Oracle Database Appliance X6-2-HA.
- [Capacity-On-Demand Licensing for Oracle Database Appliance X6-2M and X6-2L](#)  
Review capacity-on-demand licensing for Oracle Database Appliance X6-2M and X6-2L.
- [Capacity-On-Demand Licensing for Oracle Database Appliance X6-2S](#)  
Review capacity-on-demand licensing for Oracle Database Appliance X6-2S.
- [Capacity-On-Demand Licensing for Oracle Database Appliance X5-2](#)  
Review capacity-on-demand licensing for Oracle Database Appliance X5-2.

## Oracle Database Appliance Capacity-on-Demand Licensing

Capacity-on-Demand software licensing enables you to deploy as few or as many processors in Oracle Database Appliance as your workload requires.

Oracle Database Appliance's Capacity-on-Demand feature enables you to add more processor cores to scale up to increased system demands as you need to, without incurring the excessive costs and downtime usually associated with hardware upgrades. Additional cores are increased in 2-core increments.

### Oracle Database Appliance Scaling Capabilities

The following table lists the scaling capacities for Oracle Database Appliance bare metal and virtualized platform deployments. The decision to use bare-metal or Oracle Database Appliance Virtualized Platform depends on your company policies and the benefits that each implementation offers your company.

**Table 3-1 Oracle Database Appliance Scaling Capacities**

Oracle Database Appliance Platform	Minimum Number Processor Cores	Maximum Number Processor Cores
X8-2S	2	16
X8-2M	2	32
X8-2-HA	2	64
X7-2S	2	10
X7-2M	2	36
X7-2-HA	2	72
X6-2S	2	10
X6-2M	2	20
X6-2L	2	20
X6-2-HA	2	40
X5-2	2	72
X4-2	2	48

**Applications Deployed on Oracle Database Appliance and Capacity-on-Demand**

All Oracle products that are deployed on Oracle Database Appliance can take advantage of Capacity-on-Demand licensing.

**Note:**

For the procedure to set the CPU Core Count, see the *Oracle Database Appliance Deployment and User Guide* for your hardware model.

## Capacity-On-Demand Licensing for Oracle Database Appliance X9-2S, X9-2L, and X9-2-HA

Review capacity-on-demand licensing for Oracle Database Appliance X9-2S, X9-2L, and X9-2-HA.

For the procedure to set the CPU Core Count, see the *Oracle Database Appliance Deployment and User Guide* for your hardware model.

The following list describes the number of cores for each Oracle Database Appliance X9-2 model:

- Oracle Database Appliance X9-2S is a single server consisting of 16 cores.
- Oracle Database Appliance X9-2L is a single server consisting of 32 cores.
- Oracle Database Appliance X9-2-HA consists of two servers. Each server has 32 cores, for a total of 64 cores.

By default, Oracle Database Appliance ships with all cores enabled. You can reduce the number of active cores before or after deployment. You can increase the number

of active cores when additional capacity is needed. This is known as **capacity-on-demand**. Additional cores are increased in 2-core increments.

### Rules and Restrictions for Setting CPU Core Count on Oracle Database Appliance X9-2S, X9-2L, and X9-2-HA Bare Metal Deployments

Review the following rules and restrictions before changing the CPU core count:

- You can change the CPU core count to a value that is a multiple of two between 2 and the maximum number of cores for the hardware model. For example, for X9-2-HA, between 2 and 32 cores for each server for a maximum of 64 cores.
- If you change the CPU core count, then you can subsequently only increase the CPU core count.
- You should only change the CPU core count if you need less than the maximum number of cores.

For example, if you change the CPU core count to 8, then you can subsequently increase the CPU core count to a higher number (in increments of 2 cores), but you cannot decrease the CPU core count.

- If you want the maximum number of cores for each server (32 cores per server for X9-2L and X9-2-HA), then use the default configuration. There is no need to set the CPU core count.

#### Note:

If you mistakenly followed the procedure to set your CPU core count to the maximum, thereby preventing you from subsequently decreasing your CPU core count, and the error is caught immediately, then contact Oracle Support.

## Capacity-On-Demand Licensing for Oracle Database Appliance X8-2S, X8-2M, and X8-2-HA

Review capacity-on-demand licensing for Oracle Database Appliance X8-2S, X8-2M, and X8-2-HA.

For the procedure to set the CPU Core Count, see the *Oracle Database Appliance Deployment and User Guide* for your hardware model.

The following list describes the number of cores for each Oracle Database Appliance X8-2 model:

- Oracle Database Appliance X8-2S is a single server consisting of 16 cores.
- Oracle Database Appliance X8-2M is a single server consisting of 32 cores.
- Oracle Database Appliance X8-2-HA consists of two servers. Each server has 32 cores, for a total of 64 cores.

By default, Oracle Database Appliance ships with all cores enabled. You can reduce the number of active cores before or after deployment. You can increase the number of active cores when additional capacity is needed. This is known as **capacity-on-demand**. Additional cores are increased in 2-core increments.

### Rules and Restrictions for Setting CPU Core Count on Oracle Database Appliance X8-2S, X8-2M, and X8-2-HA Bare Metal Deployments

Review the following rules and restrictions before changing the CPU core count:

- You can change the CPU core count to a value that is a multiple of two between 2 and the maximum number of cores for the hardware model. For example, for X8-2-HA, between 2 and 32 cores for each server for a maximum of 64 cores.
- If you change the CPU core count, then you can subsequently only increase the CPU core count.
- You should only change the CPU core count if you need less than the maximum number of cores.

For example, if you change the CPU core count to 8, then you can subsequently increase the CPU core count to a higher number (in increments of 2 cores), but you cannot decrease the CPU core count.

- If you want the maximum number of cores for each server (32 cores per server for X8-2M and X8-2-HA), then use the default configuration. There is no need to set the CPU core count.

#### Note:

If you mistakenly followed the procedure to set your CPU core count to the maximum, thereby preventing you from subsequently decreasing your CPU core count, and the error is caught immediately, then contact Oracle Support.

## Capacity-On-Demand Licensing for Oracle Database Appliance X7-2S, X7-2M, and X7-2-HA

Review capacity-on-demand licensing for Oracle Database Appliance X7-2S, X7-2M, and X7-2-HA.

For the procedure to set the CPU Core Count, see the *Oracle Database Appliance Deployment and User Guide* for your hardware model.

The following list describes the number of cores for each Oracle Database Appliance X7-2 model:

- Oracle Database Appliance X7-2S is a single server consisting of 10 cores.
- Oracle Database Appliance X7-2M is a single server consisting of 36 cores.
- Oracle Database Appliance X7-2-HA consists of two servers. Each server has 36 cores, for a total of 72 cores.

By default, Oracle Database Appliance ships with all cores enabled. You can reduce the number of active cores before or after deployment. You can increase the number of active cores when additional capacity is needed. This is known as **capacity-on-demand**. Additional cores are increased in 2-core increments.

### Rules and Restrictions for Setting CPU Core Count on Oracle Database Appliance X7-2S, X7-2M, and X7-2-HA Bare Metal Deployments

Review the following rules and restrictions before changing the CPU core count:

- You can change the CPU core count to a value that is a multiple of two between 2 and the maximum number of cores for the hardware model. For example, for X7-2-HA, between 2 and 36 cores for each server for a maximum of 72 cores.
- If you change the CPU core count, then you can subsequently only increase the CPU core count.
- You should only change the CPU core count if you need less than the maximum number of cores.

For example, if you change the CPU core count to 8, then you can subsequently increase the CPU core count to a higher number (in increments of 2 cores), but you cannot decrease the CPU core count.

- If you want the maximum number of cores for each server (36 cores per server for X7-2M and X7-2-HA), then use the default configuration. There is no need to set the CPU core count.

#### Note:

If you mistakenly followed the procedure to set your CPU core count to the maximum, thereby preventing you from subsequently decreasing your CPU core count, and the error is caught immediately, then contact Oracle Support.

## Capacity-On-Demand Licensing for Oracle Database Appliance X6-2-HA

Review capacity-on-demand licensing for Oracle Database Appliance X6-2-HA.

Oracle Database Appliance X6-2-HA consists of two servers. Each server has 20 CPU cores. By default, Oracle Database Appliance ships with all cores enabled on both servers:

- 20 CPU cores enabled on each of the two servers
- 40 enabled CPU cores

### Rules and Restrictions for Setting CPU Core Count on Oracle Database Appliance X6-2-HA

Review the following rules and restrictions before changing the CPU core count:

- You can change the CPU core count to a value that is a multiple of two between 2 and 20 for each server.
- If you change the CPU core count, then you can subsequently only increase the CPU core count.

For example, if you change the CPU core count to 12, then you can subsequently change the CPU core count to 16, or 20. If you later change the CPU core count to 16, then you can subsequently change the CPU core count to 20.

- If you want 20 CPU cores for each server, then use the default configuration. There is no need to set the CPU core count to 40.

 **Note:**

If you mistakenly followed the procedure to set your CPU core count to 40, thereby preventing you from subsequently decreasing your CPU core count, and the error is caught immediately, then contact Oracle Support.

## Capacity-On-Demand Licensing for Oracle Database Appliance X6-2M and X6-2L

Review capacity-on-demand licensing for Oracle Database Appliance X6-2M and X6-2L.

Oracle Database Appliance X6-2M and X6-2L are each a single server consisting of 20 cores. By default, Oracle Database Appliance ships with all cores enabled. Capacity-on-demand is only applicable to Oracle Database Enterprise Edition software.

The number of active cores can be reduced before or after deployment. The number of active cores can be increased when additional capacity is needed. This is known as **capacity-on-demand**. Additional cores are increased in 2-core increments.

### Rules and Restrictions for Setting CPU Core Count on Oracle Database Appliance X6-2M and X6-2L Bare Metal Deployments

Review the following rules and restrictions before changing the CPU core count:

- You can change the CPU core count to a value that is a multiple of two between 2 and 20.
- If you change the CPU core count, then you can subsequently only increase the CPU core count.
- You should only change the CPU core count if you need less than 20 cores.

 **Note:**

If you mistakenly followed the procedure to set your CPU core count to 20, thereby preventing you from subsequently decreasing your CPU core count, then contact Oracle Support.

## Capacity-On-Demand Licensing for Oracle Database Appliance X6-2S

Review capacity-on-demand licensing for Oracle Database Appliance X6-2S.

Oracle Database Appliance X6-2S is a single server consisting of 10 cores. By default, Oracle Database Appliance ships with all cores enabled. Capacity-on-demand is only applicable to Oracle Database Enterprise Edition software.

The number of active cores can be reduced before or after deployment. The number of active cores can be increased when additional capacity is needed. This is known as **capacity-on-demand**. Additional cores are increased in 2-core increments.

### Rules and Restrictions for Setting CPU Core Count on Oracle Database Appliance X6-2S Bare Metal Deployments

Review the following rules and restrictions before changing the CPU core count:

- You can change the CPU core count to a value that is a multiple of two between 2 and 10.
- If you change the CPU core count, then you can subsequently only increase the CPU core count.
- You should only change the CPU core count if you need less than 10 cores.



#### Note:

If you mistakenly followed the procedure to set your CPU core count to 10, thereby preventing you from subsequently decreasing your CPU core count, then contact Oracle Support.

## Capacity-On-Demand Licensing for Oracle Database Appliance X5-2

Review capacity-on-demand licensing for Oracle Database Appliance X5-2.

Oracle Database Appliance X5-2 consists of two servers. Each server has 36 CPU cores. By default, Oracle Database Appliance ships with all cores enabled on both servers:

- 36 CPU cores enabled on each of the two servers
- 72 enabled CPU cores

You can use the default CPU core count of 2 for each server, or you can change the CPU core count by following the procedure in "Setting the CPU Core Count on Oracle Database Appliance X5-2 Bare Metal Deployments". For example, if you change the CPU core count to 18 for each server, then:

- 18 CPU cores are enabled on each of the two servers
- You have a total of 36 enabled CPU cores

### Rules and Restrictions for Setting CPU Core Count on Oracle Database Appliance X5-2 Bare Metal Deployments

Review the following rules and restrictions before changing the CPU core count:

- You can change the CPU core count to a value that is a multiple of two between 2 and 36 for each server.



- If you change the CPU core count, then you can subsequently only increase the CPU core count.

For example, if you change the CPU core count to 28, then you can subsequently change the CPU core count to 30, 32, 34, or 36. If you later change the CPU core count to 34, then you can subsequently change the CPU core count to 36.

- If your desired CPU core count is 36 for each server, then use the default configuration. There is no need to follow the procedure in "Setting the CPU Core Count on Oracle Database Appliance X5-2 Bare Metal Deployments" to set the CPU core count to 36.

 **Note:**

If you mistakenly followed the procedure to set your CPU core count to 36, thereby preventing you from subsequently decreasing your CPU core count, and the error is caught immediately, then contact Oracle Support.

# 4

## Third-Party Product Licenses for This Release

This chapter contains the licenses for the third-party products that are included with Oracle Database Appliance for this release.

- [Oracle Database Licensing Information](#)  
Review Oracle Database Appliance licensing information.
- [Other Third-Party Product Licenses](#)  
Review other third-party product licenses for Oracle Database Appliance.
- [Written Offer for Source Code](#)

### Oracle Database Licensing Information

Review Oracle Database Appliance licensing information.

Oracle Database Appliance includes the third-party products that are used in Oracle Database 19c, Oracle Database 18c, Oracle Database 12c release 2 (12.2), Oracle Database 12c release 1 (12.1), and Oracle Database 11g release 2 (11.2). To view the licenses for these third-party products, refer to the release-specific Oracle Database Licensing Information User Manual.

#### Related Topics

- [Licensing Information User Manual Oracle Database 19c](#)
- [Licensing Information User Manual Oracle Database 18c](#)
- [Licensing Information User Manual Oracle Database 12c Release 2](#)
- [Licensing Information User Manual Oracle Database 12c Release 1](#)
- [Oracle Database Licensing Information User Manual 11g Release 2 \(11.2\)](#)

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