ORACLE DATABASE APPLIANCE X4-2

FEATURES

- Fully integrated database appliance
- Simple installation, patching, and diagnostics
- Oracle Database, Enterprise Edition
- Oracle Real Application Clusters or Oracle Real Application Clusters One Node
- Oracle Automatic Storage Management
- Oracle Enterprise Manager
- Oracle Linux
- Oracle VM
- Two database servers
- 48 processor cores
- 512 GB of memory
- Up to 36 TB SAS disk storage with optional storage expansion

BENEFITS

- World's #1 database
- High availability database solutions for a wide range of applications
- Reduced planned and unplanned downtime
- Cost-effective consolidation platform
- Ease of deployment and management
- Single-vendor support
- Capacity-on-demand licensing

The Oracle Database Appliance X4-2 saves time and money by simplifying deployment, maintenance, and support of high availability database solutions. Built with world's most popular database—Oracle Database—it offers customers a fully integrated system of software, servers, storage, and networking that delivers high availability database services for a wide range of custom and packaged online transaction processing (OLTP) and data warehousing applications. All hardware and software components are supported by a single vendor—Oracle—and offer customers unique capacity-on-demand software licensing to quickly scale from 2 to 48 processor cores without incurring the costs and downtime usually associated with hardware upgrades.

Fully Redundant Integrated System

Providing access to information 24/7 and protecting databases from unforeseen as well as planned downtime can be a challenge for many organizations. Indeed, manually building redundancy into database systems can be risky and error-prone if the right skills and resources are not available in-house. The Oracle Database Appliance X4-2 is designed for simplicity and reduces that element of risk and uncertainty to help customers deliver higher availability for their databases.

The Oracle Database Appliance X4-2 hardware is a 4U rack-mountable system containing two Oracle Linux servers and one storage shelf. Each server features two 12-core Intel Xeon E5-2697 v2 processors, 256 GB of memory, and 10-Gigabit Ethernet (10GbE) external networking connectivity. The two servers are connected together via a redundant 10GbE interconnect for cluster communication and share direct-attached high performance SAS storage. The appliance contains 18 TB of raw storage that's double-mirrored or triple-mirrored, offering 9 TB or 6 TB, respectively, of resilient usable database storage. And, there are four 200 GB solid-state disks for the database redo logs to boost performance. The appliance is also designed with mission-critical requirements in mind, with hot-swappable and redundant components.

The Oracle Database Appliance X4-2 runs Oracle Database, Enterprise Edition, and customers have the choice of running Oracle Real Application Clusters (Oracle RAC) or Oracle RAC One Node for "active-active" or "active-passive" database server failover.

Optional Storage Expansion

The Oracle Database Appliance X4-2 offers the flexibility to double the storage capacity of the system. With the optional storage expansion shelf, the raw storage capacity of the appliance increases to a total of 36 TB. With double-mirrored or triple-mirrored data redundancy, the usable database storage increases to a total of 18 TB or 12 TB, respectively.

There are also an additional four 200 GB solid-state disks in the storage expansion shelf. And, to expand storage outside of the appliance, external NFS storage is supported for online backups, data staging, or additional database files.

Ease of Deployment, Management, and Support

To help customers easily deploy and manage their databases, the Oracle Database Appliance X4-2 features the Appliance Manager software to simplify the provisioning, patching, and diagnosing of database servers. The Appliance Manager feature greatly simplifies the deployment process and ensures that the database configuration adheres to Oracle's best practices. It also drastically simplifies maintenance by patching the entire appliance, including all firmware and software, in one operation, using an Oracle-tested patch bundle engineered specifically for the appliance. Its built-in diagnostics also monitor the system and detect component failures, configuration issues, and deviations from best practices. Should it be necessary to contact Oracle Support, the Appliance Manager collects all relevant log files and environmental data into a single compressed file. In addition, the Oracle Database Appliance X4-2 Auto Service Request (ASR) feature can automatically log service requests with Oracle Support to help speed resolution of issues.

Capacity-On-Demand Licensing

The Oracle Database Appliance X4-2 offers customers a unique capacity-on-demand database software licensing model to quickly scale from 2 to 48 processor cores without any hardware upgrades. Customers can deploy the system and license as few as 2 processors cores to run their database servers, and incrementally scale up to the maximum of 48 processor cores. This enables customers to deliver the performance and high availability that business users demand, and align software spending with business growth.

Solution-In-A-Box through Virtualization

The Oracle Database Appliance X4-2 enables customers and ISVs to quickly deploy both database and application workloads in a single appliance on a virtualized platform, based on Oracle VM. Support for virtualization adds additional flexibility to the already complete and fully integrated database solution. Customers and ISVs benefit from a complete solution that efficiently utilizes resources and takes advantage of capacity-on-demand licensing for multiple workloads by leveraging Oracle VM hard partitioning.

Oracle Database Appliance X4-2 Specifications

Architecture
System
• Two servers and one storage shelf per system • Optional second storage shelf may be added for storage expansion
Processor
• Two 12-core Intel® Xeon® processors E5-2697 v2 per server
Cache per Processor
• Level 1: 32 KB instruction and 32 KB data • Level 2: 256 KB unified • Level 3: 30 MB shared inclusive
Main Memory
• 256 GB per server

Interfaces

Standard I/O

- USB: Six USB 2.0 ports (two front, two rear, two internal) per server
- Four 100/1000/10G Base-T Ethernet ports (onboard) per server
- Four PCIe 3.0 slots:
  - PCIe internal slot: dual-port internal SAS-2 HBA
  - PCIe slot 3: dual-port external SAS-2 HBA
  - PCIe slot 2: dual-port external SAS-2 HBA
  - PCIe slot 1: dual-port 10GbE SFP+ NIC
- Optional 10GbE SFP+ or 10GBase-T external networking connectivity

Storage

- Storage shelf capacity:
  - Twenty 2.5-inch 900 GB 10K rpm SAS-2 HDDs
    - 18 TB raw, 9 TB (double-mirrored) or 6 TB (triple-mirrored) usable capacity
  - Four 2.5-inch 200 GB SAS-2 SLC SSDs per shelf for database redo logs
- Optional storage expansion with additional storage shelf doubles storage capacity
- Two 2.5-inch 600 GB 10K rpm SAS-2 HDDs (mirrored) per server for OS
- External NFS storage support

Graphics

- VGA 2-D embedded graphics controller
- Support for resolutions of up to 1,280 × 1024 × 16 bits @ 60 Hz (1,024 × 768 when viewed remotely via Oracle Integrated Lights Out Manager [Oracle ILOM] *RKVMS*)
- Rear HD15 VGA port per server

Systems Management

Interfaces

- Dedicated 10/100M Base-T Ethernet network management port
- In-band, out-of-band and side-band network management access
- RJ-45 serial management port

Service Processor

Oracle Integrated Lights Out Manager (Oracle ILOM) provides:

- Remote Keyboard, Video, Mouse redirection
- Full remote management through command-line, IPMI, and browser interfaces
- Remote media capability (DVD, CD, ISO image, floppy)
- Advanced power management and monitoring
- Active Directory, LDAP, RADIUS support

Monitoring

- Comprehensive fault detection and notification
- In-band and out-of-band and side-band SNMP monitoring V1, V2c, V3
- Syslog and SMTP alerts, WS-MAN
- Automatically create a service request for key hardware faults with Oracle Auto Service Request (ASR)

Oracle Enterprise Manager Ops Center

- OS observability for monitoring
- Auto Service Request (ASR) generation

Software

Oracle Software

- Oracle Linux Release 5.9 UEK2 (Pre-Installed)
- Appliance Manager (Pre-Installed)
- Oracle VM (Optional)

Oracle Database Software (Sold Separately)

- Choice of Oracle Database software, depending on the desired level of availability:
  - Oracle Database, Enterprise Edition 11*g* Release 2
  - Oracle Database, Enterprise Edition 11*g* and Oracle Real Application Clusters One Node
  - Oracle Database, Enterprise Edition 11*g* and Oracle Real Application Clusters
- Support for
  - Oracle Database, Enterprise Edition 11*g* options
  - Oracle Enterprise Manager Management Packs for Oracle Database, Enterprise Edition 11*g*

Capacity-On-Demand Software Licensing

- Bare Metal: Enable and license 4, 8, 12, 16, 20, or 24 cores per server
- Virtualized Platform: Enable and license 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, or 24 cores per server
- Note: Both servers must have the same number of cores enabled, however it is possible to license software for only one of the servers or both servers, depending on the high availability requirements

Power

- Two hot-swappable, redundant power supplies per server
  - Power Supply Output Rated Maximum: 600W at 100-127VAC/200-240VAC
  - AC power: Maximum AC input current at 100VAC and 600W output: 7.2A
- Two hot-swappable, redundant power supplies per storage shelf
  - Power Supply Output Rated Maximum: 580W at 100-127VAC/200-240VAC
  - AC Power : Maximum AC input current at 100VAC and 580W output: 8A

Environment

- Operating temperature: 5° C to 35° C (41° F to 95° F) at sea level; 5° C to 28° C (41° F to 82° F) at altitude
- Nonoperating temperature: –40° C to 70° C (–40° F to 158° F)
- Operating relative humidity: 10% – 90%, noncondensing
- Nonoperating relative humidity: 93% relative humidity, noncondensing
- Operating altitude: up to 3,000 m; maximum ambient temperature is derated by1° C per 300 m above 900 m (except in China where regulations may limit installations to a maximum altitude of 6560 feet or 2000 m)
- Nonoperating altitude: up to 12,000 m
- Acoustic noise: 7.9 B operating, 5.58 B idling - (LwAd: 1 B=10 dB)
- Airflow: 290 CFM typical, 400 CFM max

Regulations [1,2,3]

• Product Safety: UL/CSA 60950-1, EN 60950-1, IEC 60950-1 CB Scheme with all country differences
• EMC
  • Emissions: FCC CFR 47 Part 15, ICES-003, EN55022, EN61000-3-2, EN61000-3-3
  • Immunity: EN55024

Certifications [2]
• North America (NRTL), European Union (EU), International CB Scheme, BIS (India), BSMI (Taiwan), RCM (Australia), CCC (PRC), MSIP (Korea), VCCI (Japan)
European Union Directives
• 2006/95/EC Low Voltage, 2004/108/EC EMC, 2011/65/EU RoHS, 2012/19/EU WEEE
Dimensions and Weight
• Height: 42.6 mm (1.7 in.) per server; 87.9 mm (3.5 in.) per storage shelf • Width: 437 mm (17.2 in.) per server; 483 mm (19 in.) per storage shelf • Depth 737 mm (29.0 in.) per server; 630 mm (24.8 in.) per storage shelf • Weight**:** 18 kg (40 lb.) per server; 24 kg (52.9 lbs) per storage shelf
Mounting Options
• Rack-mounting slide rail kit (included)

1. All standards and certifications referenced are to the latest official version. For additional detail, contact an Oracle representative.
2. Other country regulations/certifications may apply.
3. Regulatory and certification compliance were obtained at the component system level only.

Contact Us

For more information about the Oracle Database Appliance X4-2, visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.

Oracle is committed to developing practices and products that help protect the environment

Hardware and Software, Engineered to Work Together