

ORACLE EXALOGIC ELASTIC CLOUD X4-2



KEY FEATURES

- Hardware:**
 Intel Xeon E5-powered compute nodes, InfiniBand and Ethernet switches, integrated storage system
- Operating Systems:**
 Choice of Oracle Linux or Oracle Solaris
- Cloud Software:**
 Complete Infrastructure-as-a-Service (IaaS) management
- Server Virtualization:**
 High performance Type 1 hypervisor
- Storage Software:**
 Complete storage management, including clones, snapshots and replication
- Management Tools:**
 Configuration management, diagnostics and remote health monitoring
- Oracle Enterprise Manager Integration:**
 Integrated support for end-to-end Oracle middleware and application management

Oracle Exalogic Elastic Cloud is a datacenter building block that integrates compute, networking and storage hardware with virtualization, operating system and management software. It provides breakthrough performance, reliability, availability, scalability and investment protection for the widest possible range of business application workloads, from middleware and custom applications to packaged applications from Oracle and hundreds of 3rd party vendors, in both conventional and cloud deployments. As an Oracle Engineered System, Oracle Exalogic delivers faster deployment, higher user productivity, lower TCO, reduced risk and one-stop support.

Exalogic: The Logical Choice for Running Business Applications

Today many organizations have limited ability to process business transactions at a speed their business requires. This restricts their business choices and prevents them from seizing market opportunities. Oracle Exalogic addresses these problems by providing the performance and scalability that applications need, while supporting consolidation of multiple applications on the same system to reduce data center costs. Exalogic offers value to customers across three key dimensions:

Seize Market Opportunities

- For back office applications, close business up to 10X faster with applications tuned for blazing performance
- For front-office applications, improve the customer buying experience by dramatically reducing application response time and improving usability
- Respond rapidly to market needs by provisioning applications up to 5X faster than on traditional platforms

Lower Business Risk and Protect Your IT Investment

- Protect your sensitive data with true application isolation at the hardware and software levels
- Reduce application deployment and maintenance complexity while maximizing application availability and user productivity
- Enjoy peace of mind with the industry-leading Platinum Services for Engineered Systems, offering a 5-minute support SLA

Reduce Cost and Complexity of Application Deployments

- Deploy and/or consolidate mission-critical business applications and middleware with push-button simplicity onto a virtualized environment
- Simplify application delivery with easy-to-use, built-in load balancing
- Align application resources to business priorities with full built-in management, from applications to disk

Exalogic Elastic Cloud Software

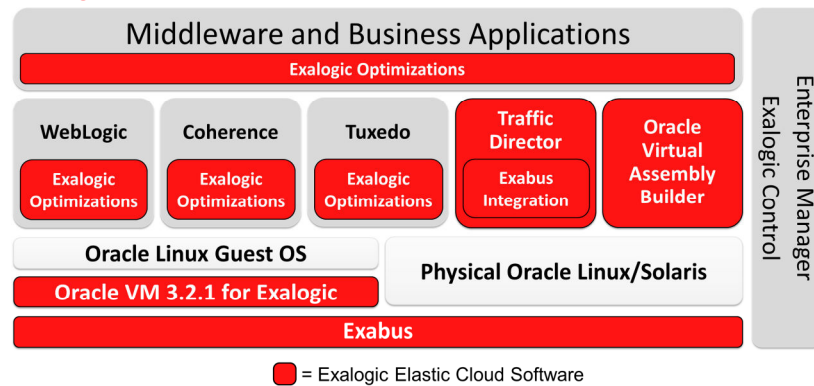


Figure 1: Key Components of Oracle Exalogic Elastic Cloud

Oracle Exalogic Elastic Cloud software includes:

- **Oracle Exabus:** A communication fabric connecting compute, storage and networking components of Exalogic. It is comprised of firmware, device drivers and application APIs built upon Oracle InfiniBand technology. Through special integration with Oracle Cloud Application Foundation middleware, Exabus provides ultra-low latency Remote Direct Memory Access.
- **Oracle VM Server for Exalogic:** Optimized Type I hypervisor that Exalogic uses to host virtual servers running an optimized version of Oracle Linux, with the highest performance and lowest overhead of any virtualization technology.
- **Oracle Traffic Director:** An integrated application delivery controller capable of everything from standard load-balancing to complex traffic shaping, traffic metering and security enforcement. It features native Oracle Exabus integration for maximum performance, manageability and security.
- **Exalogic Control:** Allows administrators to manage and monitor system hardware, perform firmware and software upgrades, create user accounts, manage virtual resources and monitor resource utilization. It runs directly on Exalogic and provides comprehensive cloud management capabilities.
- **Operating Systems:** Oracle Exalogic includes extensions to Oracle Linux and Oracle Solaris for enhanced application performance and manageability while maintaining compatibility with existing applications. All software certified for the appropriate Linux or Solaris versions is fully supported for Exalogic.
- **Storage Management Software:** Oracle Exalogic includes a complete storage management system that supports snapshots, volume cloning and remote replication for backup and disaster recovery.

Exalogic Elastic Cloud Hardware

Oracle Exalogic Elastic Cloud X4-2 hardware includes:

- **Converged Fabric:** The foundation of Oracle Exalogic is its ultra-high-performance, converged I/O backplane. Exalogic contains multiple QDR InfiniBand switches that connect the components inside the system and serve as gateways to the data center's Ethernet network. The Exalogic fabric offers extremely low latency, 40 Gb/s throughput, full redundancy, integrated end-point security and massive scalability up to thousands of virtual servers.
- **Compute Nodes:** Exalogic compute nodes are self-contained servers

containing Intel Xeon E5 CPUs, high-speed DIMM memory, redundant InfiniBand Host Channel Adapters and redundant solid state disks. Each node runs a single instance of Oracle Linux, Oracle Solaris or Oracle VM Server hypervisor. Nodes may be added or removed without any downtime.

- **Integrated Storage:** Exalogic features a fully integrated, enterprise-grade Oracle ZFS Storage Appliance, used as the primary shared storage for the system. It is designed to be fully redundant for maximum fault tolerance and serviceability and has high performance DIMM and flash memory for optimal read/write performance under the most demanding file storage workloads.

Exalogic X4-2 Hardware Specifications

Exalogic X4 2	Eighth Rack	Quarter Rack	Half Rack	Full Rack
Aggregate Specifications				
• Processor Cores	96	192	384	720
• Memory	1 TB	2 TB	4 TB	7.5 TB
• Integrated Disk Storage	80 TB	80 TB	80 TB	80 TB
Power				
• Maximum	4.128 kW 4.211 kVA	6.040 kW 6.161 kVA	10.184 kW 10.388 kVA	17.516 kW 17.866 kVA
• Typical	2.890 kW 2.947 kVA	4.228 kW 4.313 kVA	7.129 kW 7.271 kVA	12.261 kW 12.506 kVA
Cooling				
• Maximum	14093 BTU/hour 14868 kJ/hour	20621 BTU/hour 21755 kJ/hour	34768 BTU/hour 36680 kJ/hour	59800 BTU/hour 63089 kJ/hour
• Typical	9865 BTU/hour 10408 kJ/hour	14434 BTU/hour 15228 kJ/hour	24338 BTU/hour 25676 kJ/hour	41680 BTU/hour 44162 kJ/hour
Airflow (front to back)				
• Maximum	652 CFM	955 CFM	1610 CFM	2769 CFM
• Typical	457 CFM	668 CFM	1127 CFM	1938 CFM
Weight				
• Installed	526 kg 1160 lbs	599 kg 1320 lbs	755 kg 1665 lbs	1030 kg 2270 lbs
• Shipping	570 kg 1257 lbs	643 kg 1417 lbs	799 kg 1762 lbs	1074 kg 2367 lbs
10 GbE Network Uplinks (Max)	16	16	16	32
Power Distribution Units (PDU)				
• HV 3-Phase 24kVA	Y	Y	Y	Y
• LV 3-Phase 24kVA	Y	Y	Y	Y
• HV 1-Phase 22kVA	Y	Y	Y	Y
• LV 1-Phase 22kVA	Y	Y	Y	Y
• HV 3-Phase 15kVA	Y	Y	Y	N
• LV 3-Phase 15kVA	Y	Y	Y	N
• HV 1-Phase 15kVA	Y	Y	Y	N
• LV 1-Phase 15kVA	Y	Y	Y	N
Management Switch	1	1	1	1
• (48) GbE ports (BASE-T)				
Storage Subsystem	1	1	1	1
• (4) QDR InfiniBand ports (one active and one passive per storage head)				
• 6.4 TB solid state disk read cache				
• 292 GB solid state disk write cache				
• 80 TB Serial Attached SCSI (SAS) disks				
• (2) GbE management ports				
InfiniBand Spine Switch(es)**	0	0	1	1
• (36) QDR InfiniBand ports				
• (1) GbE management ports (BASE-T)				

Exalogic X4 2	Eighth Rack	Quarter Rack	Half Rack	Full Rack
InfiniBand Gateway Switch(es)**	2	2	2	4
<ul style="list-style-type: none"> • (32) QDR InfiniBand ports (BASE-T) • (8) 10GbE ports (LC – SFP+) • (1) GbE management port (BASE-T) 				
Compute Node(s)	4	8	16	30
<ul style="list-style-type: none"> • (2) Intel 2.7 GHz Xeon (12-core) processors • 256 GB 1600 MHz RAM • (2) 400GB SSDs (RAID1) • (1) Dual-port QDR InfiniBand HCA (PCIe) • (1) GbE management port (BASE-T) • Redundant power supplies 				
Operating Temperature				
<ul style="list-style-type: none"> • 5 degrees Celsius to 32 degrees Celsius (59 degrees Fahrenheit to 89.6 degrees Fahrenheit), 10 percent to 90 percent relative humidity, non-condensing • Altitude operating temperature: Up to 3048 m, maximum ambient temperature is de-rated by 1 degree Celsius for every 300 m above 900 m 				
Physical Dimensions (Unpackaged)				
<ul style="list-style-type: none"> • Height: 42U, 78.66" - 1998 mm • Width: 23.62" – 600 mm • Depth: 47.24" – 1200 mm 				
Pre-installed Software				
<ul style="list-style-type: none"> • Oracle Exalogic (Compute Node) Base Image • Storage system software • Oracle Exalogic Configuration Utilities 				
Regulations^{1, 2, 3}				
<ul style="list-style-type: none"> • Product Safety: UL/CSA 60950-1, EN 60950-1, IEC 60950-1 CB Scheme with all country differences • EMC <ul style="list-style-type: none"> ◦ Emissions: FCC CFR 47 Part 15, ICES-003, EN55022, EN61000-3-11, EN61000-3-12, Immunity: EN55024 • Emissions and Immunity: EN300 386 				
Certifications²				
North America (NRTL), European Union (EU), International CB Scheme, BIS HSE Exemption (India), BSMI (Taiwan), RCM (Australia), CCC (PRC), MSIP (Korea), VCCI (Japan)				
European Union Directives*				
<ul style="list-style-type: none"> • 2006/95/EC Low Voltage Directive • 2004/108/EC EMC Directive • 2011/65/EU RoHS Directive • 2012/19/EU WEEE Directive 				
1) All standards and certifications referenced are to the latest official version. For additional detail, please contact your sales representative.				
2) Other country regulations/certifications may apply.				
3) In some cases, as applicable, regulatory and certification compliance were obtained at the component level only.				

Contact Us

For more information about Exalogic, visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.



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Hardware and Software, Engineered to Work Together