

# Private Cloud Appliance X9-2

Oracle Private Cloud Appliance enables customers to efficiently consolidate business critical middleware and application workloads. Oracle Private Cloud Appliance X9-2 utilizes Oracle Cloud Infrastructure's APIs and management tools on-premises at rack scale, making workloads, user experience, tool sets and skills portable between private and public clouds.

## Same Infrastructure in both Public and Private Clouds

Oracle Private Cloud Appliance enables customers to retain full control of all data to meet the most demanding data regulation and data privacy requirements. Oracle Private Cloud Appliance X9-2 supports Oracle Cloud Infrastructure compatible APIs for a consistent development experience across public and private clouds.

### Oracle Cloud Infrastructure IaaS on premises

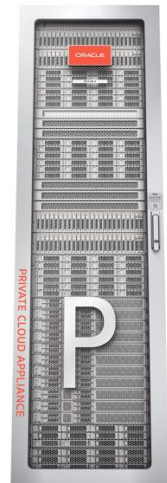
Oracle Private Cloud Appliance X9-2 brings infrastructure and architectures that are compatible with Oracle Cloud Infrastructure to the enterprise datacenter enabling customers to utilize the same infrastructure, skill sets, tooling, and related services for deployments in both public and private clouds. Customers deploying workloads within both the Oracle Cloud and the Oracle Private Cloud Appliance have a consistent development experience.

- *Compatible APIs* for public and private cloud
- *Consistent infrastructure across private and public clouds: compute, network, storage, identity*
- *Compatible tools:* Target infrastructure deployment for either Oracle Private Cloud Appliance X9 or the Oracle Cloud with the **OCI designer and visualization toolkit (OKIT)**
- *Cloud Portability:* Migrate infrastructure configurations, workloads, and data between Oracle Private Cloud Appliance X9-2 and the Oracle Cloud with little or no modification

### Engineered System for Applications and Middleware

Oracle Private Cloud Appliance is an Engineered System architected to provide a highly resilient, modern application environment. The Oracle Private Cloud Appliance can be paired with Oracle Exadata to create an ideal infrastructure for scalable, multi-tier applications. Customers using the Oracle Private Cloud Appliance X9-2 realize “cloud-like” operational benefits:

- Single vendor support for full public/private cloud stack
- Direct connect to Oracle Exadata for high-performance & secure application to database connectivity
- Trusted Partitioning enables efficient software licensing



Oracle Private Cloud Appliance X9-2 delivers OCI compatible infrastructure in private cloud deployments

### Related services

The following services support Oracle Private Cloud Appliance:

- Advanced Customer Services
- Oracle Premier Support for Systems
- Oracle Platinum Services
- Oracle Consulting Services
- Oracle University

### Related products

- Oracle Cloud Infrastructure
- Oracle Site Guard
- Oracle Exadata and Exadata Cloud at Customer

## Oracle Cloud Infrastructure Features

	INFRASTRUCTURE	OCI INTEROPERABILITY
<b>OCI Services and Features</b>	<p><b>Compute VM Shapes</b></p> <ul style="list-style-type: none"> <li>Flex Shapes: 1-32 OCPUs, 64 GB per OCPU, up to 512 GB per instance</li> <li>Fixed VM Shapes-1:16 OCPU:Memory (GB) ratio</li> <li>Supported guest operating systems include: Oracle Linux, Oracle Solaris, 3rd Party Linux, and Microsoft Windows. See product documentation for guest requirements.</li> </ul> <p><b>Storage</b></p> <p><b>Block</b></p> <ul style="list-style-type: none"> <li>“Balanced” and (optional) “Performance” pools</li> <li>On-demand and policy-based backups</li> </ul> <p><b>File</b></p> <ul style="list-style-type: none"> <li>NFS v3, v4.1, SMB 3.1/2.0</li> <li>Snapshots</li> </ul> <p><b>Object</b></p> <ul style="list-style-type: none"> <li>OCI object store</li> </ul> <p><b>Network</b></p> <ul style="list-style-type: none"> <li>VCNs, Subnets, Gateways, Security Lists, Route Tables, ...</li> </ul> <p><b>Governance</b></p> <p><b>IAM</b></p> <ul style="list-style-type: none"> <li>Federation with Active Directory</li> </ul>	<p><b>User &amp; Administrative Access</b></p> <ul style="list-style-type: none"> <li>OCI API, CLI, and SDK</li> <li>OCI Designer Toolkit (OKIT)</li> <li>OCI-like user interface</li> <li>Terraform</li> </ul> <p><b>Portability</b></p> <p>Seamless movement to and from OCI</p> <ul style="list-style-type: none"> <li>Infrastructure configuration</li> <li>VM images</li> <li>Terraform scripts</li> </ul>
<b>Available OCI Resources</b>	<p><b>Compute</b></p> <ul style="list-style-type: none"> <li>180 – 1,080 OCPUs</li> <li>3 – 18 TB memory</li> </ul> <p><b>Storage</b></p> <ul style="list-style-type: none"> <li>100 TB – 8.4 PB Combined Balanced Block, File, and Object storage</li> <li>Up to 3.5 PB Performance Block storage (Raw)</li> </ul>	<p><b>Governance</b></p> <ul style="list-style-type: none"> <li>Up to 8 Tenancies</li> </ul>
	AVAILABILITY	SECURITY
<b>Private Cloud Features</b>	<p><b>Disaster Recovery</b></p> <ul style="list-style-type: none"> <li>Oracle Site Guard provides disaster recovery orchestration between two Oracle Private Cloud Appliance X9-2 systems<sup>1</sup></li> </ul> <p><b>Replication</b></p> <ul style="list-style-type: none"> <li>Replication targeting another Oracle Private Cloud Appliance X9-2 system</li> </ul> <p><b>Architecture<sup>2</sup></b></p> <ul style="list-style-type: none"> <li>Fault Domains utilize physical servers for isolation.</li> </ul>	<p><b>Architecture</b></p> <ul style="list-style-type: none"> <li>System divided into isolated <i>enclaves</i>, each with its own interfaces. <ul style="list-style-type: none"> <li>Compute Enclave – the set of system resources allocated to tenancy's infrastructure and workloads</li> <li>Service Enclave - the system resources and services necessary to run Private Cloud Appliance's cloud services</li> </ul> </li> </ul> <p><b>Data</b></p> <ul style="list-style-type: none"> <li>Encryption at rest; all storage services</li> </ul>
	SUPPORT	DEPLOYMENT SERVICES
<b>Services and Support</b>	<p><b>Premier Support</b></p> <ul style="list-style-type: none"> <li>Hardware Warranty: 1 year with a 4-hour web / phone response during local business hours, with 2 business day on-site response/parts exchange</li> <li>Oracle Premier Support for Systems includes Oracle Linux support and 24x7 with 2-hour on-site hardware service response (subject to proximity to service center).</li> <li>Platinum support is available at no additional cost for Platinum certified configurations</li> </ul>	<p><b>ACS Services</b></p> <ul style="list-style-type: none"> <li>Oracle Advanced Customer Services offers a suite of services for Oracle Engineered Systems. The services data sheet for the Private Cloud Appliance can be found here: <a href="https://www.oracle.com/assets/services-ovca-ds-1990356.pdf">https://www.oracle.com/assets/services-ovca-ds-1990356.pdf</a></li> </ul>

<sup>1</sup> Application-level disaster recovery may require purchase of Enterprise Manager WebLogic Server Management Pack Enterprise Edition or Oracle Database Lifecycle Management Packs  
<sup>2</sup> See [Learn about architecting a highly available cloud topology](https://docs.oracle.com/en/solutions/design-ha/index.html#GUID-76ECDDB4-4CB1-4D93-9A6D-A8B620F72369) at <https://docs.oracle.com/en/solutions/design-ha/index.html#GUID-76ECDDB4-4CB1-4D93-9A6D-A8B620F72369>

## System Hardware

SERVERS	STORAGE SUBSYSTEM	NETWORKING	RACK
<p><b>Compute Nodes (3 to 20)</b> <i>Compute Enclave</i></p> <ul style="list-style-type: none"> <li>CPU: 2x Intel® Xeon® 8358 32C/2.6GHz/250W</li> <li>DRAM: 1TB, 16x 64GB DDR4-3200</li> <li>Boot: 2x M.2 SATA 240GB</li> </ul>	<p><b>Controllers (2)</b></p> <p><b>Oracle ZFS Storage ZS9-2</b> Dual-controller HA cluster</p> <ul style="list-style-type: none"> <li>CPU: 2x 24-core 2.1 GHz Intel® Xeon® processors</li> <li>DRAM: 1TB, 16x 64GB DDR4-3200</li> </ul>	<p><b>Leaf Switches (2)</b></p> <p>100 Gbps flexible speed switch using QSFP28 ports</p> <p><b>Spine Switches (2)</b></p> <p>100 Gbps flexible speed switch using QSFP28 ports</p> <ul style="list-style-type: none"> <li>QSFP+ transceivers (1 to 4)</li> <li>QSFP28 transceivers (0 to 4)</li> </ul> <p><b>Management Switch</b></p> <p>48-port Ethernet Switch</p>	<p><b>Physical Dimensions</b></p> <ul style="list-style-type: none"> <li>Height: 42U, 78.66 in 1998 mm</li> <li>Width: 23.62 in – 600 mm</li> <li>Depth: 47.24in –1,200mm</li> </ul> <p><b>Power (Watts)</b></p> <ul style="list-style-type: none"> <li>Maximum (Base/Full): 8,050 / 22,704</li> <li>Typical (Base/Full): 5,635 / 15,893</li> </ul> <p><b>Cooling (BTU/Hr.)</b></p> <ul style="list-style-type: none"> <li>Maximum (Base/Full): 27,483 / 77,511</li> <li>Typical (Base/Full) 19,238 / 54,258</li> </ul> <p><b>Airflow in CFM</b></p> <ul style="list-style-type: none"> <li>Maximum (Base/Full): 1,272 / 3,588</li> <li>Typical (Base/Full): 891/ 2,512</li> </ul> <p><b>Weight</b></p> <ul style="list-style-type: none"> <li>Rack Weight with Shipping Pallet (Base/Full): 595 kg (1309 lb) /903 kg (1,897 lbs)</li> <li>Installed Rack Weight (Base/Full): 486 kg (1080 lb) / 794 kg (1,746 lbs)</li> </ul>
<p><b>Management Servers (3)</b> <i>Service Enclave</i></p> <ul style="list-style-type: none"> <li>CPU: 2x Intel® Xeon® 5318Y 24C/2.1GHz/165W</li> <li>DRAM: 1TB, 16x 64GB DDR4-3200</li> <li>Boot: 2x M.2 SATA 240GB</li> <li>Storage: 2x NVMe 3.84TB</li> </ul>	<p><b>Storage</b></p> <p><b>High Capacity (1 to 48 DE3-24C)</b></p> <ul style="list-style-type: none"> <li>20x 18 TB, SAS-3, 3.5-inch, 7200 RPM HDDs</li> <li>2x read SSD accelerator</li> <li>2x write SSD accelerator</li> </ul> <p><b>High Performance (0 to 47 DE3-24P)</b></p> <ul style="list-style-type: none"> <li>20x 7.68TB SAS-3 2.5-inch SSDs</li> <li>2x write SSD accelerator</li> </ul>		
OPERATING ENVIRONMENT	REGULATIONS <sup>4,5,6</sup>	CERTIFICATIONS <sup>4,5</sup>	EUROPEAN UNION DIRECTIVES <sup>6</sup>
<ul style="list-style-type: none"> <li>5 degrees Celsius to 32 degrees Celsius (41 degrees Fahrenheit to 89.6 degrees Fahrenheit), 10% to 90% relative humidity, non-condensing</li> <li>Altitude operating temperature: Up to 10,000 feet (3,048m), maximum ambient temperature is derated by 1 degree Celsius for every 300 m above 900 m, except in China where regulations may limit installations to a maximum altitude of 6,560 feet (2000 m)</li> </ul>	<p><b>Safety</b></p> <ul style="list-style-type: none"> <li>UL/CSA 60950-1, EN 60950-1, IEC60950-1 CB Scheme with all countries deviations</li> <li>UL/CSA 62368-1, EN 62368-1, IEC62368-1 CB Scheme with all countries deviations</li> </ul> <p><b>EMC</b></p> <ul style="list-style-type: none"> <li>Emissions: FCCCFR47Part 15, ICES-003, EN55032, EN61000-3-11, EN61000-3-12</li> <li>Immunity: EN55024, KN35 condensing</li> </ul>	<ul style="list-style-type: none"> <li>North America (NRTL)</li> <li>CE (European Union)</li> <li>International CB Scheme</li> <li>HSE Exemption (India)</li> <li>BSMI (Taiwan)</li> <li>RCM (Australia)</li> <li>EAC (EAEU including Russia)</li> <li>KC (Korea)</li> <li>UKCA (United Kingdom)</li> </ul>	<ul style="list-style-type: none"> <li>2014/35/EU Low Voltage Directive</li> <li>2014/30/EU EMC Directive</li> <li>2011/65/EU RoHS Directive</li> <li>2012/19/EU WEEE Directive</li> </ul>

4 All standards and certifications referenced are to the latest official version. For additional details, please contact your sales representative.

5 Other country regulations/certifications may apply.

6 Regulatory and certification compliance were obtained for the shelf-level systems only

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