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Data Sheet

# Private Cloud Appliance X10

Oracle Private Cloud Appliance X10 enables customers to efficiently consolidate business critical middleware and application workloads. Private Cloud Appliance  is a rack-scale engineered system delivering Oracle Cloud Infrastructure (OCI) compatible APIs, SDKs, and management tools on-premises, making workloads, user experiences, tool sets and skills portable between private and public clouds.

Oracle Private Cloud Appliance X10 delivers OCI compatible infrastructure services on-premises easing private-public cloud portability

### OCI Compatible Infrastructure services in a Disconnected Mode

Private Cloud Appliance delivers OCI compatible compute, storage, and networking constructs on-premises. It enables rapid deployment of applications, middleware, and workloads that are cloud-compatible via automation in an OCI-like environment while being disconnected from the public cloud.

Private Cloud Appliance is designed for customers who want a cloud-like development and deployment experience while also meeting data residency requirements.

- Compatible APIs, SDKs, and management tools for public and private cloud
- Consistent infrastructure constructs across private and public clouds: compute, network and storage
- Disconnected from the public cloud: Identical capabilities as the Oracle Compute Cloud@Customer offered via a CAPEX model where the customer owns the infrastructure, manages it, and does not pay for consumption.
- Compatible tools: Target infrastructure deployment for either Oracle Private Cloud Appliance X10 or the Oracle Cloud with the OCI designer and visualization toolkit (OKIT)
- Cloud Portability: Migrate infrastructure configurations, workloads, and data between Private Cloud Appliance X10, Compute Cloud@Customer, and the Oracle Cloud with little or no modification

### 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 Compute Cloud@Customer
- Oracle Site Guard
- Oracle Exadata and Exadata Cloud@Customer



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### Ideal for Applications and Middleware with cloud-like operational benefits

Oracle Private Cloud Appliance is an Oracle Engineered System that provides a highly resilient, modern application environment. The Private Cloud Appliance can be paired with Oracle Exadata or Oracle Database Appliance to create an ideal infrastructure for scalable, multi-tier applications. It's direct connection to Oracle's database platforms provides extremely low latency and high throughput between applications and databases in a full-stack application environment.

Customers using the Private Cloud Appliance X10 realize "cloud-like" operational benefits, including single-vendor support for their full-stack environment and Trusted Partitions that enables efficient software licensing for Oracle software based on the size of the VMs used.

### Container Engine for Kubernetes (OKE)

OKE - simplifies the operations of enterprise-grade Kubernetes at scale. OKE lets you deploy Kubernetes clusters and ensure reliable operations for both the control plane and the worker nodes with automatic scaling, patching and security updates. OKE on Private Cloud Appliance brings basic cluster capabilities on-premises delivering reduced overall utilization, modernization and consolidation and lower total cost of ownership.

## Oracle Private Cloud Appliance: Infrastructure Features

| | INFRASTRUCTURE | OCI INTEROPERABILITY |
|---|---|---|
| **OCI Services and Features** | **Compute**<br>**VM Shapes**<br>• Flex Shapes: 1-96 OCPUs, 1-64 GB per OCPU, up to 960 GB per instance<br>• Supported guest operating systems include: Oracle Linux, Oracle Solaris, 3rd Party Linux and Microsoft Windows. See product documentation for guest requirements.<br>**Storage**<br>**Block**<br>• "Balanced" and (optional) "Performance" pools<br>• On-demand and policy-based backups<br>**File**<br>• NFS v3, v4.1, SMB 3.1/2.0<br>• Snapshots<br>**Object**<br>• OCI object store<br>**Network**<br>• VCNs, Subnets, Gateways, Security Lists, Route Tables, Network Load Balancer, Application Load Balancer<br>**Governance**<br>**IAM**<br>• Federation with Active Directory | **User & Administrative Access**<br>• OCI API, CLI, and SDK<br>• OCI Designer Toolkit (OKIT)<br>• OCI-*like* user interface<br>• Terraform<br>**Portability**<br>Seamless movement to and from Oracle Cloud<br>• Infrastucture configuration<br>• VM images<br>• Terraform/ Ansible scripts<br>• Infrastructure-as-code (Software defined compute, storage and networking)<br>**Load Balancer**<br>• Application Load Balancer<br>• Network Load Balancer |
| **Available OCI Resources** | **Compute**<br>• 552-2208 OCPUs<br>• 6.7 – 26.8 TB memory<br>**Storage**<br>• 150 TB – 3.65 PB Combined Balanced Block, File, and Object storage<br>• Up to 1.2 PB Performance Block storage<br>• | **Governance**<br>• Up to 8 Tenancies |

| | AVAILABILITY | SECURITY |
|---|---|---|
| **Private Cloud Features** | **Disaster Recovery**<br>• Disaster recovery orchestration between two Oracle Private Cloud Appliance X10 systems is offered by Oracle Site Guard and 3rd party solutions like Rackware[1]<br>**Replication**<br>• Replication targeting another Oracle Private Cloud Appliance X10 system<br>**Architecture[2]**<br>• Fault Domains utilize physical servers for isolation. | **Architecture**<br>• System divided into isolated *enclaves*, each with its own interfaces.<br>  ○ Compute Enclave – the set of system resources allocated to tenancy's infrastructure and workloads<br>  ○ Service Enclave - the system resources and services necessary to run Private Cloud Appliance's cloud services<br>**Data**<br>• Encryption at rest; all storage services |
| | **SUPPORT** | **DEPLOYMENT SERVICES** |
| **Services and Support** | **Premier Support**<br>• Hardware Warranty: 1 year with a 4-hour web / phone response during local business hours, with 2 business day on-site response/parts exchange<br>• 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).<br>• Platinum support is available at no additional cost for Platinum certified configurations | **ACS Services**<br>• 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: https://www.oracle.com/assets/services-ovca-ds-1990356.pdf |

1 Application-level disaster recovery may require purchase of Enterprise Manager WebLogic Server Management Pack Enterprise Edition or Oracle Database Lifecycle Management Packs

2 See **Learn about architecting a highly available cloud topology** at https://docs.oracle.com/en/solutions/design-ha/index.html#GUID-76ECDDB4-4CB1-4D93-9A6D-A8B620F72369

## System Hardware

### SERVERS

#### Compute Nodes (3 to 12)

*Compute Enclave*

- CPU: 2x AMD® EPYC® 9J14 96C/2.6GHz/400W
- DRAM:2.3TB, 24x 96GB DDR5
- Boot: 2x M.2 NVMe 480GB

#### Management Servers (3)

*Service Enclave*

- CPU: 2x Intel® Xeon® 5318Y 24C/2.1GHz/165W
- DRAM:1TB, 16x 64GB DDR4-3200
- Boot: 2x M.2 SATA 240GB
- Storage: 2x NVMe 3.84TB

### STORAGE SUBSYSTEM[6]

#### Controllers (2)

**Oracle ZFS Storage ZS9-2**
Dual-controller HA cluster

- CPU:2x Intel® Xeon® 5318Y 24C/2.1GHz/165W processors
- DRAM:1TB, 16x 64GB DDR4-3200

#### Storage

**High Capacity** (DE3-24C)

- Minimum 1, maximum 20 disk enclosures
- 20x 22TB, SAS-3, 3.5-inch, 7200 RPM HDDs
- 2x read SSD accelerator
- 2x write SSD accelerator

**High Performance** ( DE3-24P)

- Up to 20 disk enclosures
- 20x 7.68TB SAS-3 2.5-inch SSDs
- 2x write SSD accelerator

### NETWORKING

#### Leaf Switches (2)

100 Gbps flexible speed switch using QSFP28 ports

#### Spine Switches (2)

100 Gbps flexible speed switch using QSFP28 ports

- *QSFP+ transceivers (0 to 4)*
- QSFP28 transceivers (0 to 4)

#### Management Switch

48-port 1/10 Gbps Ethernet Switch

### RACK[6]

#### Physical Dimensions

- Height: 42U, 78.66 in 1998 mm
- Width: 23.62 in – 600 mm
- Depth: 47.24in –1,200mm

#### Power (Watts)

- Maximum (Base/Full): 9,288 / 20,988
- Typical (Base/Full): 6,502 /14,692

#### Cooling (BTU/Hr.)

- Maximum (Base/Full): 31,691 / 71,611
- Typical (Base/Full) :22,183/ 50,128

#### Airflow in CFM

- Maximum (Base/Full): 1,467 / 3,315
- Typical (Base/Full): 1,027 / 2,321

#### Weight

- Rack Weight with Shipping Pallet (Base/Full): 679.09 kg (1493.33 lb) /916.36 kg (2016lbs)
- Installed Rack Weight (Base/Full): 559 kg (1229.8 lb) / 796 kg (1,751.2lbs)

### OPERATING ENVIRONMENT

- 5 degrees Celsius to 32 degrees Celsius (41 degrees Fahrenheit to 89.6 degrees Fahrenheit), 10% to 90% relative humidity, non-condensing
- Altitude operating temperature: Up to10,000 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)

### REGULATIONS[3,4,5]

**Safety**

- UL/CSA 60950-1, EN 60950-1, IEC60950-1 CB Scheme with all countries deviations
- UL/CSA 62368-1, EN 62368-1, IEC62368-1 CB Scheme with all countries deviations

**EMC**

- Emissions: FCCCFR47Part15, ICES-003, EN55032, EN61000-3-11, EN61000-3-12
- Immunity: EN55024, KN35 condensing

### CERTIFICATIONS[3,4]

- North America (NRTL)
- CE (European Union)
- International CB Scheme
- HSE Exemption (India)
- BSMI (Taiwan)
- RCM (Australia)
- EAC (EAEU including Russia)
- KC (Korea)
- UKCA (United Kingdom)

### EUROPEAN UNION DIRECTIVES[5]

- 2014/35/EU Low Voltage Directive
- 2014/30/EU EMC Directive
- 2011/65/EU RoHS Directive
- 2012/19/EU WEEE Directive

3 All standards and certifications referenced are to the latest official version. For additional details, please contact your sales representative.
4 Other country regulations/certifications may apply.
5 Regulatory and certification compliance were obtained for the shelf-level systems only
6 Compliance number ESY910 for the rack and the Add on Storage is shipped under SE42U and SE44U

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