

# Oracle Private Cloud at Customer X8-2

Oracle Private Cloud at Customer delivers Oracle enterprise-grade IaaS services to customers who want to improve agility in deployment of IT resources while keeping their data on their premises.

Oracle Private Cloud at Customer is ideal for customers desiring cloud benefits but cannot move to the public cloud due to data sovereignty requirements, industry regulations, corporate policies, security constraints, network latency, or any organizations that find it impractical to move away from other tightly coupled on-premises IT infrastructure.

## ORACLE PRIVATE CLOUD AT CUSTOMER

Oracle Private Cloud at Customer enables Oracle and non-Oracle applications to run in customers' data centers, with infrastructure managed by Oracle's cloud experts. Oracle Private Cloud at Customer comes pre-configured according to best-practices that have been proven at hundreds of mission critical Oracle Private Cloud Appliance sites around the world.

Whether customers are running Linux, Microsoft Windows or Oracle Solaris applications or running containerized cloud native applications, Oracle Private Cloud at Customer supports consolidation for a wide range of mixed workloads in medium-to-large sized data centers.

Oracle Private Cloud at Customer integrates seamlessly with customer's data center network via 10/25/40 or 100 GbE to deliver a wire-once private cloud solution in the customer's datacenter. High-performance, low-latency Software Defined Networking allow automated configuration of the server and storage networks. Customers need to enter only basic configuration parameters and create virtual machines (VMs) manually or by using Oracle VM Templates to get a full application up and running in a few hours.

By leveraging this integrated platform, administrators are free to focus on addressing strategic needs and delivering business agility, rather than investing valuable resources on integrating and managing infrastructure.

## SERVICE OVERVIEW AND SCALABILITY

Customers choose an Oracle Private Cloud at Customer configuration starting with a Base System, which includes management servers and other supporting networking infrastructure, a minimum of two X8-2 compute servers, and one ZS7-2 storage appliance with two DE3-24C disk shelves, at a convenient subscription based pricing.



A Private Cloud at Customer rack can scale up to 20 compute servers per system. In addition, as the customer workloads grow, the ZFS storage for a single rack can be expanded by connecting up to 14 additional disk shelves for Oracle ZFS Storage Appliance ZS7-2. The storage expansion trays for ZS7 can be various combinations of Oracle Storage Drive Enclosure DE3-24C and DE3-24P All-Flash disk shelves.

Pricing is based on the number of compute servers and disk shelves that are in service, and as business grows, customers can add more compute servers and disks to meet the requirements. All the cores, disk/flash storage, and memory for the configuration chosen is included in the subscription price. There is no charge for network communication to the Oracle Private Cloud at Customer.

Customers can also integrate with existing Exadata Cloud at Customer machines enabling higher compute, network and storage capacity and reducing latency between application and the database layer.

### SUBSCRIPTION BASED PRICING TO AVOID CAPEX

Oracle Private Cloud at Customer is available through a subscription offering that requires a minimum term of 4 years.

Pricing for all cloud services on Oracle Private Cloud at Customer is subscription based and fully managed by Oracle, with single vendor support. One subscription fee covers hardware, software and all management and support services.

### EASY ADMINISTRATION WITH ORACLE ENTERPRISE MANAGER

Customers have access for VM management through an Enterprise Manager 13c IaaS portal. Virtual Machine provisioning is accomplished through the use of imported ISO images or pre-defined VM templates available through Oracle e-Delivery. Customers perform familiar OS administration tasks aided by Cloud Automation for application provisioning, backup, patching, and upgrades. Application and OS updates are initiated by customers on their preferred schedule. Underlying infrastructure for Oracle Private Cloud at Customer, including network infrastructure, physical servers, hypervisors, ZS7-2 storage array, is deployed, monitored, maintained and managed by Oracle Cloud Operations. This allows customers to focus on business application requirements, and not on infrastructure monitoring and management.

### EASILY DEPLOY APPLICATIONS IN CONTAINERS USING ORACLE LINUX CLOUD NATIVE ENVIRONMENT

Oracle Private Cloud at Customer fully supports Oracle Linux Cloud Native Environment to easily automate deployment, scaling and management of application containers. Oracle Private Cloud at Customer includes premier support for Oracle Linux, which comes with support for OL CNE.

Oracle Linux Cloud Native Environment is a fully integrated suite for the development and management of cloud-native applications. The Kubernetes module is the core module. It is used to deploy and manage containers and also automatically installs and configures CRI-O, runC and Kata Containers. CRI-O manages the container runtime for a Kubernetes cluster. The runtime may be either runC or Kata Containers. The Kubernetes module also includes Flannel, the default overlay network for a Kubernetes cluster and CoreDNS, the DNS server for a Kubernetes cluster.

### Key Features

- Cloud simplicity with on-premises deployment
- Oracle operated and delivered as a service in your datacenters
- Subscription based pricing, with bringing your own licenses (BYOL)
- Reduced IT Administration
- 100GbE local network connectivity delivers better response times than Public clouds
- Support for Oracle Linux Cloud Native Environment (OL CNE) to automate deployment, scaling and management of containerized applications
- On premises deployment to meet compliance and data sovereignty requirements
- One platform to develop, deploy and manage Oracle and non-Oracle workloads
- Integrates with Oracle Enterprise Manager for unified IT as a service cloud management
- Single vendor support for full hardware and software stack

The Oracle Linux Cloud Native Environment packages are available on the Oracle Linux yum server in the ol7\_olcne repository, or on the Unbreakable Linux Network (ULN) in the ol7\_x86\_64\_olcne channel

The container images that are deployed by the Platform CLI are hosted on the Oracle Container Registry at:

<https://container-registry.oracle.com/>

## REMOTE MONITORING AND SUPPORT THROUGH ORACLE ADVANCED SUPPORT GATEWAY

Another essential component of the Oracle Private Cloud at Customer configuration is the Oracle Advanced Support Gateway (OASG). The OASG, which is part of Oracle Advanced Support Platform and has been used for a number of years to facilitate numerous Oracle Support Services at leading customer sites around the world.

The OASG acts as the central conduit to facilitate remote monitoring and management of Oracle Private Cloud at Customer systems. The OASG is based on the Oracle Linux operating system and hosts a full stack of Oracle software, including Automated Service Request (ASR) and Oracle Configuration Manager. Together, these applications aggregate and route telemetry messages from the Oracle Private Cloud at Customer environment to the Oracle Support Services infrastructure. The OASG provides secure remote access for Oracle Cloud Operations to access the Oracle Private Cloud at Customer infrastructure for monitoring and maintenance purposes.

The OASG is located in the customer data center with network access to the Oracle Private Cloud at Customer systems it is monitoring. It does not need to be directly exposed to the Internet, but it should be continuously accessible from Oracle Cloud Operations infrastructure through a TLS/VPN tunnel.

## ORACLE CLOUD OPERATIONS

All hardware and software infrastructure associated with Oracle Private Cloud at Customer systems are managed and maintained by Oracle Cloud Operations, powered by Oracle Advanced Customer Support (ACS). This is done via the Oracle Advanced Support Platform, which includes:

- Automation tools to deliver Oracle Advanced Support Service
- Oracle Advanced Support Gateway
- Oracle Cloud Operations delivery teams

**Infrastructure management of the Oracle Private Cloud at Customer consists of managing the following components:**

- Management Nodes
- Compute Nodes
- Integrated Oracle ZS7-2 Storage Appliance
- 100GbE Switches for in-rack and datacenter connectivity
- Management Switch
- Power Distribution Units (PDUs)

### Key Business Benefits

- Achieve faster time to market by deploying applications faster
- Application portability with fully supported Oracle Linux Cloud Native Environment
- Automate deployment, scaling and management of containerized applications
- Flexible subscription pricing

- Oracle VM (Hypervisor)
- System Software and all firmware
- Oracle Enterprise Manager
- Oracle Linux
- Oracle Solaris

With Oracle Cloud Operations managing the infrastructure and support for the Oracle Private Cloud at Customer, employees can now be empowered to focus on application and business logic necessary for the core business, instead of getting bogged down with infrastructure maintenance projects. This enables customers to accelerate time to market, increase availability, and reduce business risk.

This also brings ACS' global business and technical expertise directly to customer data centers. For more than 10 years, ACS has been helping 4000+ global customers drive rapid return on their Oracle investment through an outstanding global capability and local service affinity. ACS has 3000+ delivery professionals, with an average of 15 years Oracle experience, providing 24 x 7 monitoring and management to more than 100,000 targets. ACS utilizes ISO 27001:2013 and SSAE16/SOC 1 Type II compliant global competence centers to deliver such outstanding service.

A suite of Cloud Operations Services is available to customers as part of subscribing to Oracle Private Cloud at Customer. All of these services are delivered by Oracle Cloud Operations. Some of the key services offered are:

#### Oracle Private Cloud At Customer

Oracle Private Cloud at Customer delivers cloud like agility and subscription pricing while running in customer's datacenters

#### Related Products

- Oracle Cloud Services
- Exadata Cloud at Customer
- Oracle Private Cloud Appliance
- Oracle Linux

#### Related Services

The following services support Oracle Private Cloud at Customer:

- Advanced Customer Services
- Oracle Consulting Services
- Oracle University

ORACLE PRIVATE CLOUD AT CUSTOMER X8-2: SERVICES PROVIDED BY ORACLE CLOUD OPERATIONS	
<p><b>Installation and Configuration:</b> Comprehensive, standard system hardware installation including site audit, installation and configuration, hardware, network and operating system functionality validation</p>	<p><b>Monitoring:</b> Predictive monitoring provides 24x7 proactive system monitoring; these services help ensure uptime and deliver increased service levels via proactive notification of potential issues, enabling staff to focus on core business activities</p>
<p><b>Change Management:</b> Maintains the integrity of the Private Cloud at Customer environment in a proactive manner by governing all change requests and maintenance records</p>	<p><b>Incident Management and Resolution:</b> ITIL-based processes and technological expertise for system administration and incident resolution</p>
<p><b>Oracle Cloud Support:</b> Management of product support Service Requests (SR) for hardware and software components of the Oracle Private Cloud at Customer</p>	<p><b>Backup and Restoration:</b> Regularly scheduled backups of the Oracle Private Cloud at Customer system configuration data</p>
<p><b>Upgrades:</b> Management of on-boarding of new Cloud Services and enhancements to existing services</p>	<p><b>Patching:</b> Periodic deployment of patches to proactively keep the underlying Oracle Private Cloud Platform updated.</p>

## PROVISIONING

Upon subscribing to Oracle Private Cloud at Customer, following deployment steps are carried out by Oracle Cloud Operations working with designated customer IT staff members:

- Deploying Oracle Advanced Support Gateway

- Deploying Oracle Private Cloud at Customer
- Connecting the Gateway to the Oracle Private Cloud at Customer
- Capturing required network/IP Address information, and executing commands to generate necessary configuration files

Once an Oracle Private Cloud at Customer system is provisioned, the designated customer account administrator gets notified that their service is available for use. Customers now can create users and groups and assign privileges to create, monitor, and manage their VM and applications in a very simple manner through included Enterprise Manager 13c.

## CONCLUSION: TRANSFORM IT, UNLEASH BUSINESS POTENTIAL

Oracle Private Cloud at Customer features the most versatile, highly available and functional application platform, with the simplicity and cost effectiveness of Oracle Cloud software deployed in customer premises. Enterprise applications can now be easily deployed to maximize productivity, lower risk and accelerate time-to-value. Finally, with Oracle Private Cloud, organizations no longer have to dedicate limited IT talent to managing and maintaining infrastructure.

## ORACLE PRIVATE CLOUD AT CUSTOMER: HARDWARE SPECIFICATIONS

### Oracle Private Cloud at Customer X8-2 Hardware Specifications

ATTRIBUTE	MINIMUM CONFIGURATION	MAXIMUM CONFIGURATION
Number of Servers	2	20 <sup>1</sup>
Number of Cores	96	960
Total Memory (GB)	1,536	15,360
Total Usable Disk Capacity <sup>2</sup> (TB)	200	2300

1. In Maximum Configuration, 20 server maximum is possible when the PDU used is 24 KVA or 22 KVA. With 15KVA PDUs, the maximum number of compute nodes supported is 11.
2. Usable capacity is measured using normal powers of 2 space terminology with 1 TB = 1024 \* 1024 \* 1024 \* 1024 bytes. It is the actual space available after taking into account space needed for redundancy and recovering from a drive failure, but before compression

#### *Additional Notes on Technical Specifications:*

- Each rack is 42 RU (Rack Units) in height, has 2x redundant Power Distribution Units (PDUs), 1x 48-port Cisco Ethernet switch for infrastructure administration by Oracle Cloud Operations.
- Each X8-2 Server has 2x 1.2TB local drives

### Oracle Private Cloud at Customer X8-2 Environmental Specifications

ATTRIBUTE	MINIMUM CONFIGURATION	MAXIMUM CONFIGURATION
Max Power Usage (KW)	8.52 KW	18.78 KW
Typical Power Use (KW)	5.97 KW	13.15 KW
Max Cooling (BTU/hr)	29,094	64,122
Typical Cooling (BTU/hr)	20,366	44,885

ATTRIBUTE	MINIMUM CONFIGURATION	MAXIMUM CONFIGURATION
Max Airflow (CFM) Typical Airflow (CFM)	1,347 943	2,969 2,078
Weight of the OPCC rack	1,080 lb	1,800 lb

ATTRIBUTE	DETAIL FOR ORACLE PRIVATE CLOUD AT CUSOMER X8-2
Operating Temperature	<ul style="list-style-type: none"> <li>5 degrees Celsius to 32 degrees Celsius (59 degrees Fahrenheit to 89.6 degrees Fahrenheit), 10% to 90% relative humidity, non-condensing</li> <li>Altitude operating temperature: Up to 10,000 feet (3,048 m), 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>
Physical Dimensions	<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: 47.24 in – 1,200 mm</li> </ul>
Regulations <sup>1,2,3</sup>	<p><b>Safety</b></p> <ul style="list-style-type: none"> <li>UL/CSA 60950-1, EN 60950-1, IEC 60950-1 CB Scheme with all country differences</li> <li>EMC</li> <li>Emissions: FCC CFR 47 Part 15, ICES-003, EN 55032, EN61000-3-11, EN61000-3-12</li> <li>Immunity: EN 55024, KN35</li> </ul>
Certifications <sup>2,3</sup>	<ul style="list-style-type: none"> <li>North America (NRTL), European Union (EU), International CB Scheme, HSE Exemption(India), EAC (EAEU including Russia), BSMI (Taiwan), CCC (PRC), RCM (Australia), KC (Korea), VCCI (Japan)</li> </ul>
European Union Directives <sup>3</sup>	<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>

<sup>1</sup>All standards and certifications referenced are to the latest official version. For additional details, please contact your sales representative.

<sup>2</sup>Other country regulations/certifications may apply.

<sup>3</sup>Regulatory and certification compliance were obtained for the shelf-level systems only.

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## Integrated Cloud Applications & Platform Services

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