

# ORACLE PRIVATE CLOUD AT CUSTOMER

## ORACLE® Private Cloud at Customer



### KEY FEATURES

- Cloud simplicity with on-premises deployment
- Subscription based pricing, with bring your own licenses (BYOL)
- Reduced IT Administration
- 10GbE local network connectivity delivers better response times than Public clouds
- On premises deployment to meet compliance and data sovereignty requirements
- Oracle operated and delivered as a service in your datacenters
- Focus staff on improving business, not operating infrastructure
- 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

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 who cannot move their databases 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 thousands of mission critical Oracle Private Cloud Appliance sites around the world.

Oracle Private Cloud at Customer is designed for rapid and simple deployment of mission critical - Linux, Microsoft Windows or Oracle Solaris – applications.

High-performance, low-latency Oracle Fabric Interconnect and Oracle 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.

Finally, 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.

### SUBSCRIPTION OVERVIEW

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

### SERVICE OVERVIEW

Customers choose an Oracle Private Cloud at Customer configuration starting with a Base System, which includes management servers and other supporting infrastructure, a minimum of two compute servers, and one ZS7-2 storage unit. Customers can scale up to 25 compute servers per system. Pricing is based on the number of compute servers that are in service, and as business grows,

- Single vendor support for full hardware and software stack

#### RELATED PRODUCTS

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

#### RELATED SERVICES

- Oracle Consulting Services
- Oracle University

customers can add more compute servers to meet the processing power that they require. 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.

#### ADMINISTRATION

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 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 InfiniBand network, 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.

#### EXTREME ENTERPRISE STORAGE PERFORMANCE

Oracle Private Cloud Appliance at Customer comes with Oracle ZFS Storage Appliance ZS7-2 with a usable capacity of 200TB. Oracle ZFS Storage ZS7-2 provides unified storage capabilities with extreme performance and superior efficiency required by demanding enterprise applications and unpredictable cloud workloads. It has been co-engineered with Oracle Private Cloud Appliance to deliver the following capabilities:

- Accelerated performance for applications and workloads deployed on Oracle Private Cloud Appliance. It is optimized for IOPS-intensive workloads, such as OLTP databases, as well as for bandwidth-driven workloads including data warehousing, business intelligence analytics, and video processing. Oracle ZFS Storage Appliance is powerful enough to run a diverse set of workloads concurrently by leveraging the Oracle Private Cloud Appliance's InfiniBand network.
- Advanced set of management and real-time analytics tools, which allow customers to visualize and drill down into specific workloads to understand where congestion occurs and why. It can even allow them to examine and manage the storage aspects of Oracle Private Cloud Appliance environments all the way down to the VM level.
- Reduced risk by automating storage management using Oracle Enterprise Manager, so customers have fewer storage systems to integrate and manage. It also lowers risk by providing leading fault-monitoring and self-healing capabilities, and by simplifying setup and management through its DTrace Analytics feature.
- Oracle ZFS Storage Appliance reduces complexity because its large DRAM and flash cache-based architecture is more efficient in serving the I/O from large virtualized environments. In addition, Oracle Database's unique Hybrid Columnar Compression feature, when used in conjunction with Oracle Private Cloud Appliance, reduces the amount of storage needed for data warehouses. And, it enables customers to lower total cost of ownership because they need fewer systems that cost less and are easier to manage.



## 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
- Oracle F1-15 Fabric Directors
- Internal ZS5-2 Storage Appliance
- Oracle ZS7-2 Storage Appliance
- InfiniBand Network and Switches
- Dual 10GbE Interconnect switches
- Management Switch
- Power Distribution Units (PDUs)
- Oracle VM (Hypervisor)
- System Software and all firmware

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:

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## ORACLE PRIVATE CLOUD AT CUSTOMER

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### 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.

## SCALING ORACLE PRIVATE CLOUD AT CUSTOMER

With Private Cloud at Customer, customers can easily scale their business by expanding their allocated infrastructure. Scaling up within an allocated Private Cloud at Customer service enables customers to add compute node processing power within the existing system.

## 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

#### Technical Specifications

	Scaling Configuration		Compact Configuration <sup>1</sup>	
	Minimum Configuration	Maximum Configuration	Minimum Configuration	Maximum Configuration
Number of Servers	2	25 <sup>2</sup>	2	9 <sup>3</sup>
Maximum Number of Cores	96	1200	96	432
Total Memory (GB)	1,536	19,200	1536	6,912
Total Usable Disk Capacity (TB) <sup>4</sup>	200	200	200	200
Network Connectivity	4x 10 Gb Ethernet ports 1x 1Gb Ethernet port (OASG)			

1. Compact Configuration includes ZS7-2, Oracle Advanced Support Gateway and Ethernet switches for customer access network in the same rack as compute nodes.
2. In Scaling Configuration, 25 server maximum is possible when the PDU used is 24 KVA. With 22 KVA PDUs, the maximum number of compute nodes is 23 and with 15KVA PDUs, the maximum is 13 Compute Nodes
3. In Compact Configuration, 9 server maximum is possible when the PDUs used in the rack are 24 KVA or 22 KVA 1-phase. With 15 KVA PDUs, the maximum number of compute nodes is 6
4. 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), 2x 36-port QDR (40 Gb/s) InfiniBand switches and 2x 48-port Cisco Ethernet switch for infrastructure administration by Oracle Cloud Operations.
- Each Server in has 2x 1.2TB local drives

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**ORACLE PRIVATE CLOUD AT CUSTOMER**


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**Environmental Specifications**


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Metric	Scaling Configuration		Compact Configuration	
	Min Config	Max Config	Min Config	Max Config
Max Power Usage (KW)	8.07 KW	21.41 KW	12.62 KW	16.68 KW
Typical Power Use (KW)	5.65 KW	14.99 KW	8.83 KW	11.68 KW
Max Cooling (BTU/hr)	27,558	73,101	43,085	56,946
Typical Cooling (BTU/hr)	19,290	51,170	30,159	39,862
Max Airflow (CFM)	1,276	3,384	1,995	2,636
Typical Airflow (CFM)	893	2,369	1,396	1,845
Weight of the OPCC rack	1,177 lb	2,097 lb	1,567 lb	1,847 lb

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**Operating Temperature**


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- 5 degrees Celsius to 32 degrees Celsius (59 degrees Fahrenheit to 89.6 degrees Fahrenheit), 10% to 90% relative humidity, non-condensing
  - 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)
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**Physical Dimensions**


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- Height: 42U, 78.66 in 1998 mm
  - Width: 23.62 in – 600 mm
  - Depth: 47.24 in – 1,200 mm
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**Regulations<sup>1,2,3</sup>**


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**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, EN 55032, KN32, EN61000-3-11, EN61000-3-12
- Immunity: EN 55024, KN35

**Emissions and Immunity**

- EN 300 386
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**Certifications<sup>2</sup>**


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- North America (NRTL), European Union (EU), International CB Scheme, BIS HSE Exemption(India), EAC (EAEU), BSMI (Taiwan), RCM (Australia), MSIP (Korea), VCCI (Japan)
- European Union Directives
- 2014/35/EU Low Voltage Directive, 2014/30/EU EMC Directive, 2011/65/EU RoHS Directive, 2012/19/EU WEEE Directive

<sup>1</sup>All standards and certifications referenced are to the latest official version at the time the data sheet was written.

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

<sup>3</sup>In some cases, as applicable, regulatory and certification compliance were obtained at the component level.





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CONTACT US

For more information about Oracle Private Cloud Appliance, visit [oracle.com/pca](http://oracle.com/pca) or call +1.800.ORACLE1 to speak to an Oracle representative.

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Integrated Cloud Applications & Platform Services

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