



Cloud at Customer Academy 3.0

Exadata Cloud - Overview Session

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LAD Partner Enablement Knowledge Team

July, 2023



Nossos Valores

Integridade

Compliance

Trabalho em
Equipe

Satisfação do
Cliente

Qualidade

Ética

Inovação

Respeito
Mútuo

Justiça

Comunicação

Como empresa líder em tecnologia, abraçamos a **diversidade** em todas as suas formas. Acreditamos realmente que a **inovação** começa com a **inclusão**. E isso só pode ser alcançado com a cooperação de nossos **parceiros**. Afirmamos nosso **compromisso** em manter um **ambiente respeitoso e livre de discriminação** e esperamos isso dos nossos **parceiros de negócios**.

A Oracle espera que seus **parceiros** conduzam os negócios de forma **justa** e **ética**, para cumprir as leis anticorrupção em todo o mundo, para cooperar com os pedidos de informação da Oracle e evitar envolver-se em qualquer atividade que envolva até mesmo a aparência de impropriedade.

É vital que os nossos parceiros sejam aderentes aos valores do **Código de Ética e Conduta Empresarial da Oracle**, que baseia-se e implementa os valores que são essenciais para o nosso sucesso como empresa. Nossos valores são a base de tudo o que fazemos e todos nós devemos viver esses valores todos os dias.



Utilize o QR code para acessar o Código de
Ética e Conduta Empresarial da Oracle.

Agenda

Exadata C@C Overview

Exadata C@C Features

Exadata C@C Patching

Exadata C@C Security and MAA

Exa-ADB on Dedicated Infrastructure

Oracle CSM Roles and Responsibilities

Exadata C@C Network

Exadata X10M What is new?

Exadata Academy 3.0 | Register Now



Oracle Exadata Cloud at Customer Academy

Visando capacitar nossos parceiros em OCI Services, criamos a Academia Oracle Exadata Cloud at Customer ou Academia Oracle ExaC@C.

A academia contará com **10 sessões de treinamentos**, a partir de **10 de julho**, que permitirá aos participantes conhecer os principais recursos e funcionalidades do Oracle ExaC@C. Também será uma excelente oportunidade para você esclarecer todas as suas dúvidas para obter a sua certificação!

Participe conosco dessa academia e descubra por que o Oracle ExaC@C é a maneira mais simples de migrar as cargas de trabalho críticas do Oracle Database de uma organização para a nuvem.

Confira a agenda a seguir e inscreva-se. Contamos com a sua participação!

Agenda

Troubleshooting tools – Demo Session

21 de agosto

10h às 11h30h (horário de Brasília)

[Inscreve-se](#)

Monitoring – Demo Session

28 de agosto

10h às 11h (horário de Brasília)

[Inscreve-se](#)

Smart Scan, HCC compression & In-Memory – Demo Session

11 de setembro

10h às 12h (horário de Brasília)

[Inscreve-se](#)

A&Q for Certification

18 de setembro

10h às 12h (horário de Brasília)

[Inscreve-se](#)

New Features - Demo Session

25 de setembro

10h às 12h (horário de Brasília)

[Inscreve-se](#)

PCA - Private Cloud Appliance

17 de julho

10h às 12h (horário de Brasília)

[Inscreve-se](#)

Patching – Demo Session

24 de julho

10h às 12h (horário de Brasília)

[Inscreve-se](#)

Backup & Restore – Demo Session

31 de julho

10h às 11h30h (horário de Brasília)

[Inscreve-se](#)

[Click Here](#)



Exadata Cloud Overview

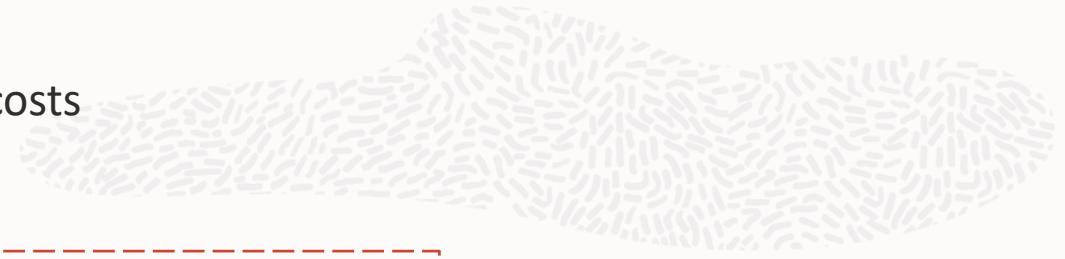


Exadata Advantages Increase Every Year



Exadata runs everywhere

Identicality across deployments improves IT agility and reduces costs



On-premises



Exadata Database
Machine

[Click Here](#)

Public Cloud



Exadata in Oracle
Cloud Infrastructure
(OCI)

[Click Here](#)

Hybrid Cloud



Exadata
Cloud@Customer

[Click Here](#)

Multicloud

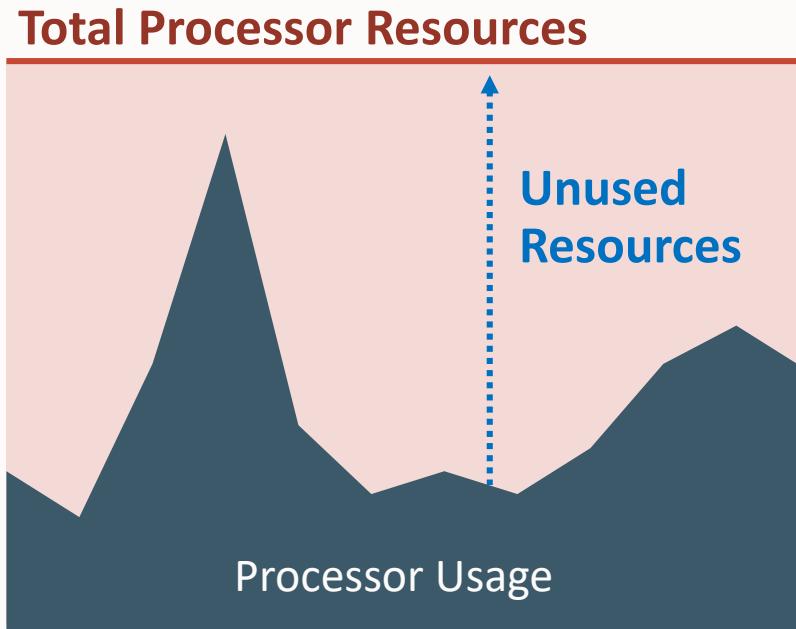


Exadata through Oracle
Database Service for
Azure

[Click Here](#)

Online, Elastic Scaling with Exadata Cloud@Customer

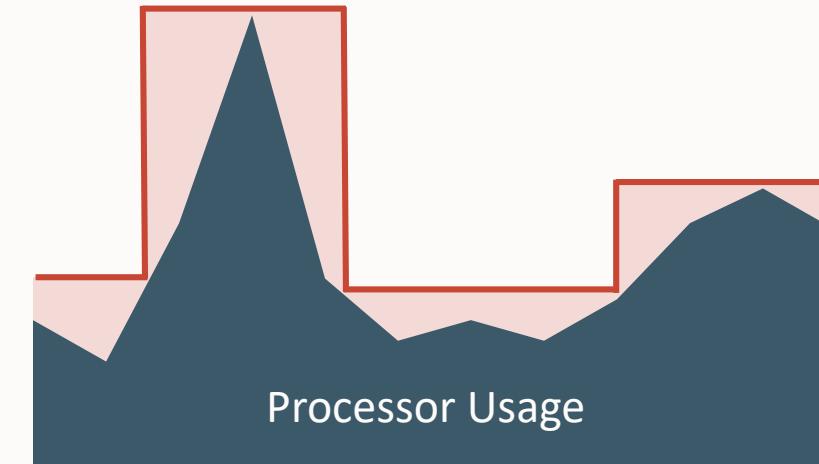
Pay Only for What You Use



On-Premises – Static

Purchase server processors and software licenses for **highest projected peak load**

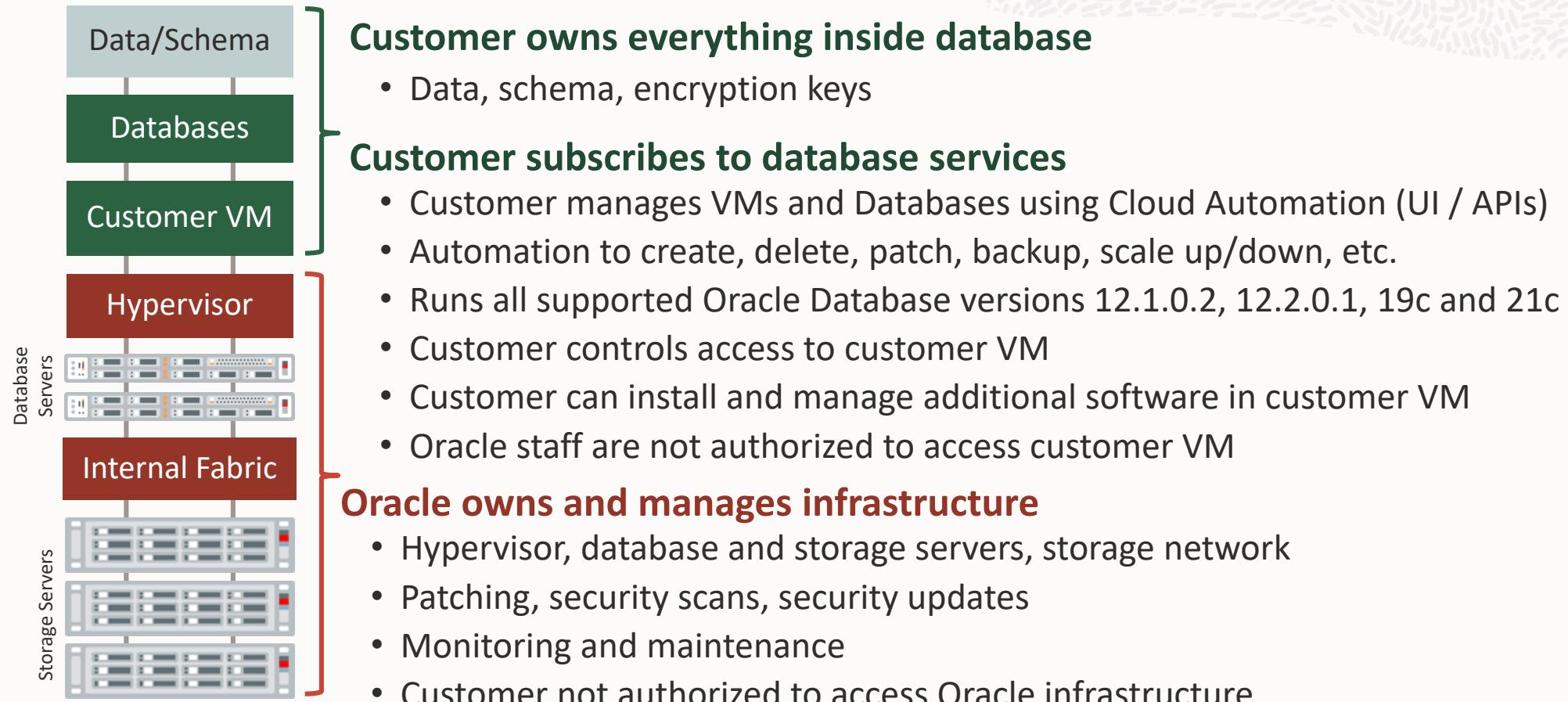
Manually Scaled vCPUs



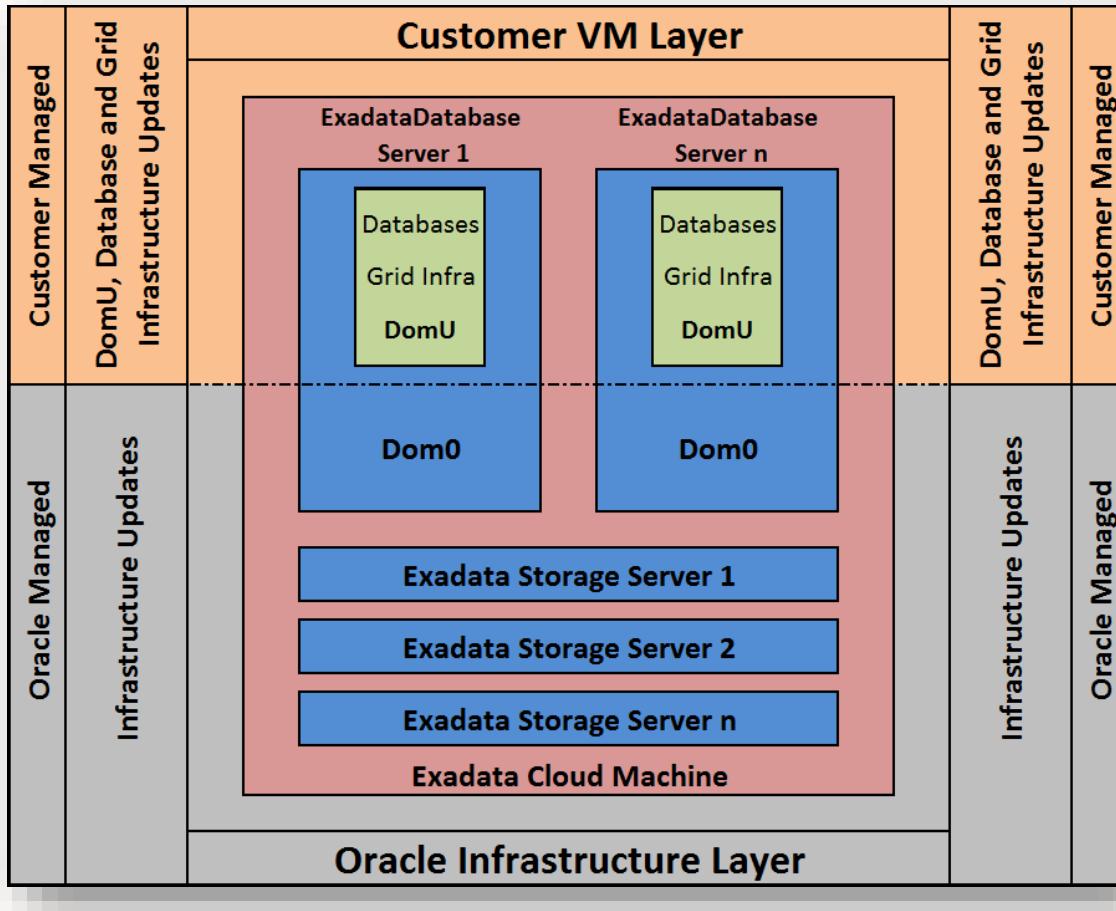
Exadata Database Service – Elastic

Adjust enabled vCPUs to match **actual workload** via APIs and web UI - vCPUs are charged per second

Simple Cloud Management Model in at Customer Cloud



Exadata Cloud at Customer - Dom0 and DomU



About *Dom0* Oracle Responsibilities

- Oracle Cloud Ops manage Exadata infrastructure (hardware, system software) & hypervisor (*dom0*);
- Oracle Support is responsible for update any version;
- Customer is responsible for scheduling *Dom0* maintenance and must provide at least 4 dates per year;

About *DomU* Customer Responsibilities

- Adjust license (BYOL or License Included)
- Scale UP/Down resources
- For Exadata Cloud at Customer *DomU* uses KVM virtualization
- Customer have root access to *DomU*;
- The customer is responsible for any update or configuration change on *DomU*;

Find me on OCI Console



Oracle Database

[Overview](#)

[Autonomous Database](#)

Autonomous Data Warehouse

Autonomous JSON Database

Autonomous Transaction Processing

[Autonomous Dedicated Infrastructure](#)

[Oracle Base Database Service](#)

[Oracle Exadata Database Service on Dedicated Infrastructure](#)

[Oracle Exadata Database Service on Cloud@Customer](#)

[External Database](#)

[Data Safe - Database Security](#)

Overview

Security Assessment

User Assessment

Data Discovery

Data Masking

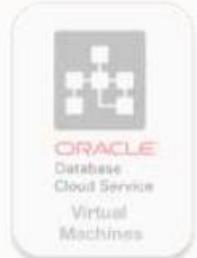
Activity Auditing

[Database Backups](#)

[GoldenGate](#)

[Operator Access Control](#)

Database Cloud Service | Exadata

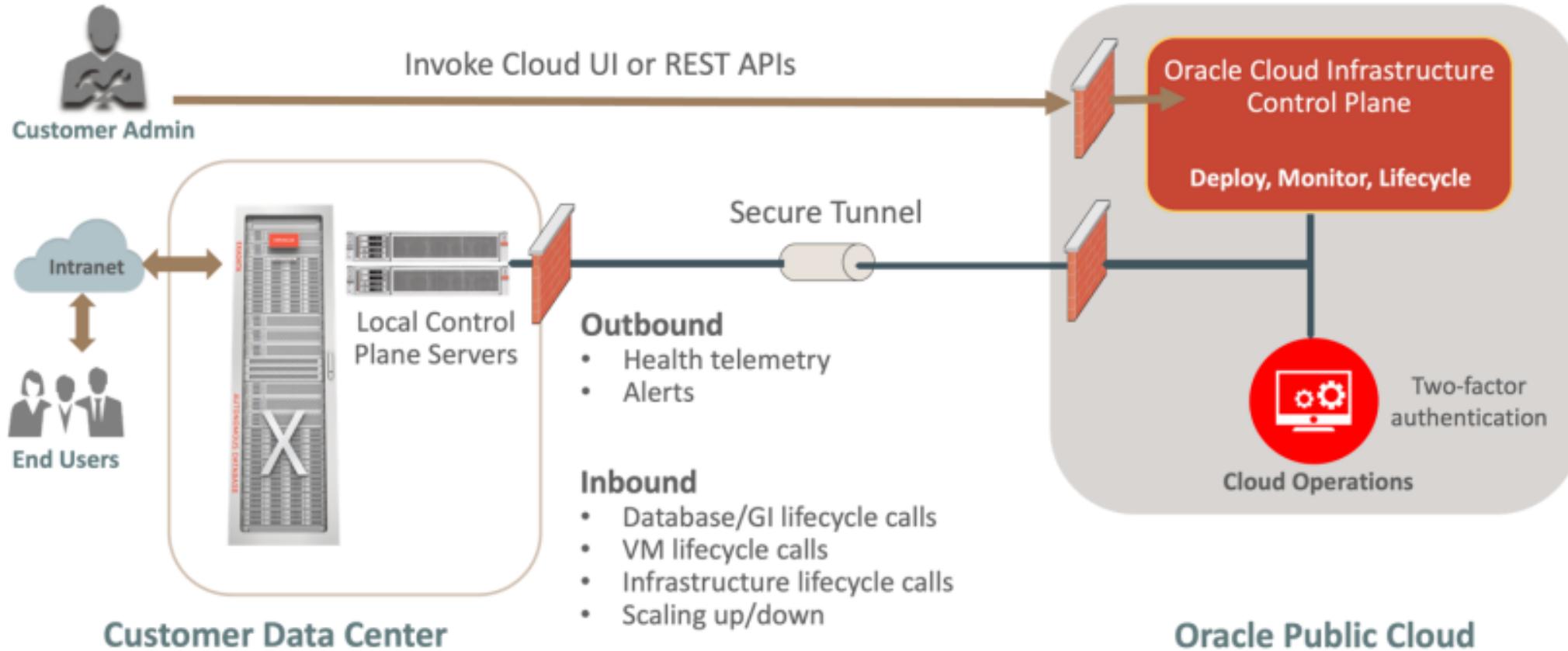


World's Best Database Performance Machine

- As many databases as you want!
- No Single Instance allowed. Just RAC!
- Start With 2 cores and Scale Up/Down OCPU's based on your workload
- Only Oracle Database Enterprise Editions allowed.
- Exadata Cloud X9M Shapes (Base, Quarter, Half and Full Rack)
- Exadata Cloud X10M Shapes (Quarter and Elastic Expansion)
- Works with Autonomous Database on Dedicated Infrastructure

Exadata Console Management and Control Plane Diagram

Exadata Cloud@Customer – Management Flow



Exadata Cloud X9M Flexible Shapes

Available in high-performance, cost-effective shapes to match enterprise needs



SCAN ME

Storage ↑

Base System

Ideal for small-scale consolidation and the lowest cost

- Total Flash 3.8 TB
- **2 DB Servers 3 Storages**
- 48 CPUs
- 73 TB usable storage

X9M Quarter Rack

Ideal for large databases, small-scale consolidation, and petabyte-scale analytics

- Total Flash 76.8 TB
- **2 Db Servers 3 Storages**
- 124 OCPUs
- 190 TB usable storage, expandable to 763 TB
- 4.5 TB PMEM

X9M Half Rack

Ideal for very large databases and medium-scale consolidation

- Total Flash 153.6 TB
- **4 Db Servers 6 Storages**
- 248 OCPUs
- 381 TB usable storage, expandable to 763 TB
- 9.0 TB PMEM

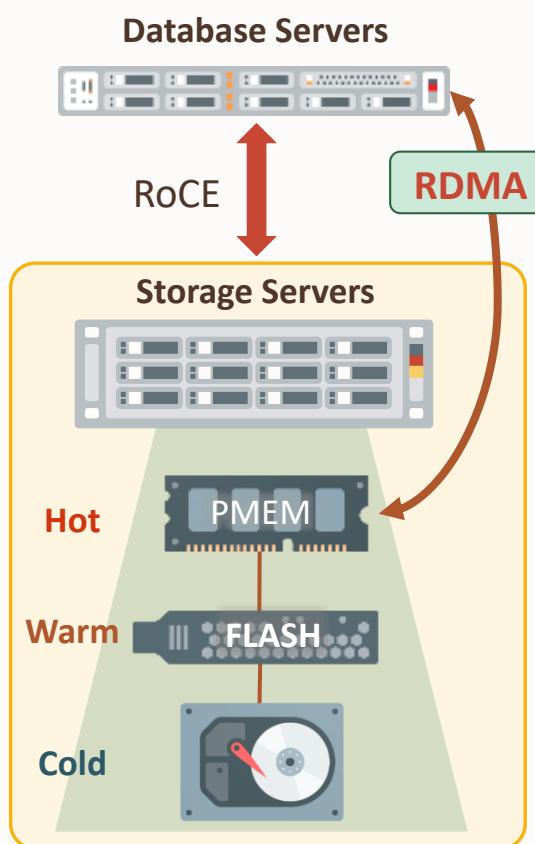
X9M Full Rack

Ideal for large-scale consolidation for all type of database workloads

- Total Flash 307.2 TB
- **8 Db Servers 12 Storages**
- 496 OCPUs
- 763 TB usable storage
- 18 TB PMEM

Compute →

Exadata X8M and X9M – Scale out design with persistent memory



Scale-out system architecture and software

- Oracle RAC across multiple database servers for scaling and high availability
- Smart Scan offload of SQL to parallel intelligent storage servers
- Speeds up queries and scans with local access to data

Database uses RDMA instead of I/O to read PMEM in Smart Storage

- Bypasses network and I/O software, interrupts, context switches
- Hottest data transparently managed in PMEM
- Automatic redundancy across multiple storage servers
- Speeds up both database reads and commits

Results - 19µs IO latency from Database to PMEM in Storage

- 10X faster than flash for OLTP

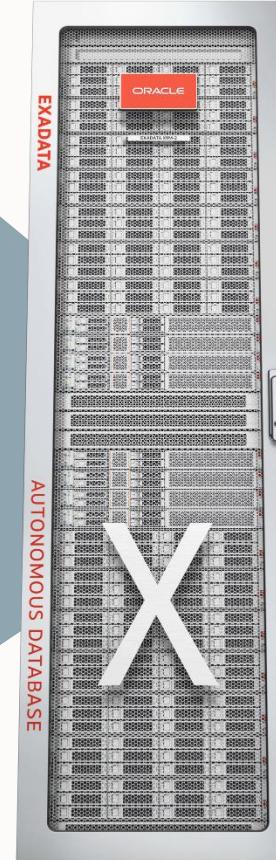
Exadata Cloud Features



Oracle Exadata Database and Platform Innovations

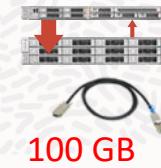
- Multitenant
- In-Memory DB
- Real Application Clusters
- Active Data Guard
- Partitioning
- Advanced Compression
- Advanced Security, Label Security, DB Vault
- Real Application Testing
- Advanced Analytics, Spatial and Graph
- Management Packs for Oracle Database

All Oracle Database Innovations



All Exadata Innovations

Offload SQL to Storage



RoCE Fabric



PMEM Commit and Data Accelerators



Smart Flash Cache



Storage Indexes



Columnar Flash Cache



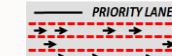
Hybrid Columnar Compression



I/O Resource Management



Network Resource Management



In-Memory Fault Tolerance



Exafusion Direct-to-Wire Protocol



Fastest Cloud In Memory, Smart Scan and HCC

Unique: Smart Scan (SQL Offload)

- Data-intensive processing* runs in Exadata Storage, bypassing network bottlenecks and freeing up DB CPUs

Unique: Tiered Flash Cache

- Active data is automatically cached on PCI NVMe Flash, inactive data on low cost, high-capacity disks

Unique: Storage Indexes

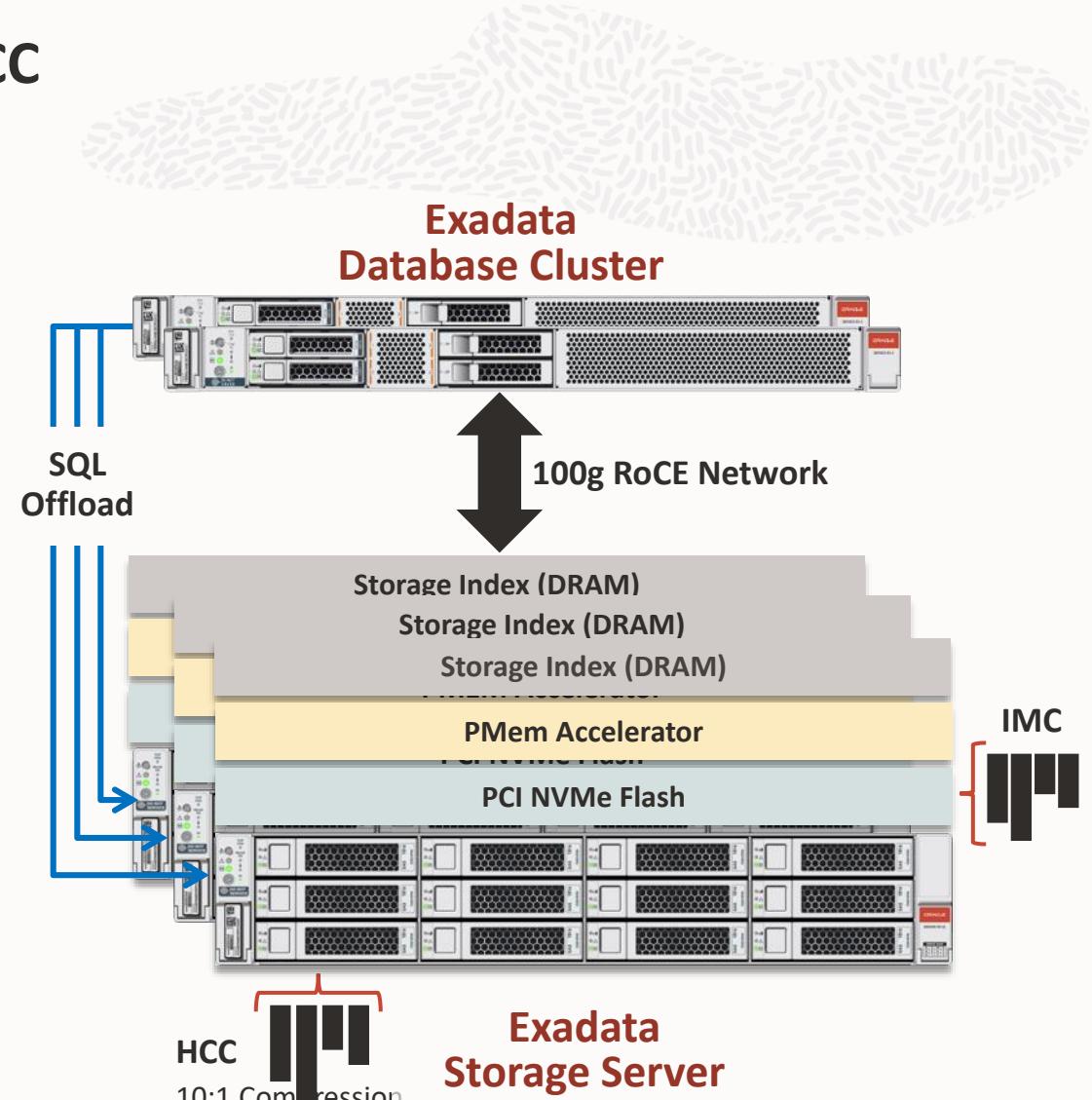
- Eliminates I/O not relevant to a particular query

Unique: Hybrid Columnar Compression (HCC)

- Compressed, columnar format in storage, saving space, reducing I/O, speeding analytic queries

Unique: In-Memory Columnar (IMC)

- Extends In-Memory database performance to higher capacity Flash memory in storage



*Includes long-running SQL queries, backups, decryption, aggregation, data mining

Exadata C@C Network





SCAN ME

Exadata Cloud at Customer | VM Cluster Network

Resources

VM Cluster Networks

VM Cluster Networks

Exadata VM Clusters

DB Servers

Autonomous Exadata VM Clusters

Work Requests (3)

Create VM Cluster Network

| Display name | State | Created | ⋮ |
|--------------|---------------------|---------------------------------|---|
| [REDACTED] | Allocated | Fri, Aug 12, 2022, 15:42:12 UTC | ⋮ |
| [REDACTED] | Allocated | Wed, Mar 16, 2022, 20:37:30 UTC | ⋮ |
| [REDACTED] | Requires Validation | Fri, Jan 21, 2022, 14:33:07 UTC | ⋮ |
| [REDACTED] | Allocated | Sat, Jun 26, 2021, 00:40:53 UTC | ⋮ |
| [REDACTED] | Allocated | Fri, Jun 25, 2021, 20:34:28 UTC | ⋮ |

Displaying 5 VM Cluster Networks < 1 of 1 >

[Click Here](#)



Exadata Cloud at Customer | Client Network

Client Network

VLAN ID: 19

Netmask: 255.255.255.0

Gateway: 10.0.0.1

| Database servers | State | Address Type | Hostname | Fully Qualified Domain Name | IP Address | |
|------------------|-----------|--------------------------|----------|-----------------------------|------------|---|
| dbServer-1 | Allocated | Client network interface | exacc01 | exacc06-brosc.oracle.com | 10.0.0.101 | ⋮ |
| | | Virtual IP (VIP) | exacc01 | vip.br.osc.oracle.com | 10.0.0.102 | |
| dbServer-2 | Allocated | Client network interface | exacc02 | exacc06-brosc.oracle.com | 10.0.0.103 | ⋮ |
| | | Virtual IP (VIP) | exacc02 | vip.br.osc.oracle.com | 10.0.0.104 | |

Exadata Cloud at Customer | Backup Network

Backup Network

VLAN ID: 16

Netmask: 255.255.255.0

Gateway: 10.0.0.1

| Database servers | State | Address Type | Hostname | Fully Qualified Domain Name | IP Address | |
|------------------|-----------|--------------------------|--------------------------|-----------------------------|------------|---|
| dbServer-1 | Allocated | Backup network interface | exacc6-01-00-11-00-00-00 | bkp.br.osc.oracle.com | 10.0.0.100 | ⋮ |
| dbServer-2 | Allocated | Backup network interface | exacc6-02-00-11-00-00-00 | bkp.br.osc.oracle.com | 10.0.0.101 | ⋮ |
| Showing 2 Items | | | | | | |

Exadata Cloud at Customer | NTP, DNS and Scan Listener

DNS and NTP Services

DNS Servers: 140.██████, 140.██████

NTP Servers: 10.██████, 10.██████

| Address Type | Hostname | Fully Qualified Domain Name | IP Address |
|----------------|---------------|---------------------------------|------------|
| SCAN Addresses | ████████-scan | ████████.scan.br.osc.oracle.com | 10.██████ |
| | | | 10.██████ |
| | | | 10.██████ |

Showing 1 Item



Exadata Cloud Security



Oracle Exadata | Advanced Security

Encryption and redaction of sensitive data prevent out-of-band access



- **Transparent Data Encryption**

- Stop would-be attackers from bypassing the database and reading sensitive information directly from storage by enforcing data-at-rest encryption in the database layer.

- **Data redaction**

- Reduce the risk of unauthorized data exposure in applications by redacting sensitive data before it leaves the database. Partial or full redaction prevents large-scale extraction of sensitive data

- **Transparent to applications**

- Encryption is implemented at the database kernel level, eliminating the need for any changes to applications.



[Click Here](#)

Exadata Cloud Management Tools



Exadata Cloud Automation on OCI Console

Oracle Cloud Web base UI, REST APIs, SDK, CLI, Terraform

- Scale OCPUs
- Create Database Homes and Databases
- Schedule Infrastructure Maintenance
- Update Operating System, Grid Infrastructure, and Databases
- Backup and recovery
- Enable Data Guard

The screenshot shows three panels side-by-side:

- Create Database:** A form for creating a new database. It includes fields for Database name (X8MDB1), Database version (19c), PDB name (Optional), Database Home (Create a new Database Home selected), Database Home display name (X8MDBHome1), and Create administrator credentials. Buttons at the bottom are "Create Database" and "Cancel".
- Scale VM Cluster:** A form for scaling a VM cluster. It includes fields for Specifying OCPU count per virtual machine (10) and Requested OCPU count for the Exadata VM cluster (40). Below it, Current Exadata storage is listed as 150.528 TB. Buttons at the bottom are "Update" and "Cancel".
- Enable Data Guard:** A form for enabling Data Guard. It includes sections for Data Guard association details (Protection mode: Maximum Performance, Transport type: Read-Only (Async)), and Select Peer VM Cluster (Peer region: Read-Only (US East (Ashburn))).

A modal dialog titled "Create Backup" with a "Name" input field. Below it is a note: "If you previously used RMAN or dbcli to configure backups and then you switch to using the Console or the API for backups, a new backup configuration is created and associated with your database. This means that you can no longer rely on your previously configured unmanaged backups to work." Buttons at the bottom are "Create Backup" and "Cancel".

Exadata Cloud Command Line Interface (*dbaascli*)

How to upgrade DBAAS Cloud Tooling using dbaascli (Doc ID 2350471.1)



Database Commands

- *dbaascli* database create
- *dbaascli* pdb create
- *dbaascli* pdb relocate



Backup Commands

- *dbaascli* database backup
- *dbaascli* database recover
- *dbaascli* create-dbstorage



Database Home Patch

- *dbaascli* database upgrade
- *dbaascli* db home patch
- *dbaascli* grid patch
- *dbaascli* update-dbhomedir



[Click Here](#)

Patching Exadata Cloud



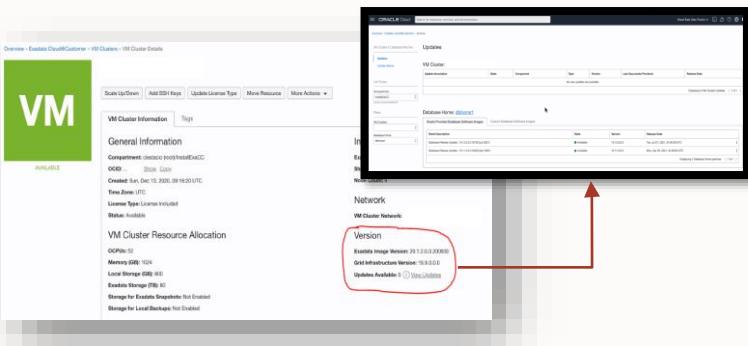
Exadata Cloud at Customer Pathing Overview

Pathing dom0, domU, Tooling, Grid and Oracle home, how and how to do

DOMU - CUSTOMER RESPONSIBILITY

Maintaining a secure Exadata Service instance in the best working order requires you to perform the following tasks regularly:

- Patching Grid Infrastructure.
- Patching Database software.
- Patching Exadata Software Image (SO).
- Patching Tooling (dbaaScli).
- Patching other components installed on DomU.



DOM0 - ORACLE RESPONSIBILITY

Oracle manages quarterly infrastructure maintenance updates of all other infrastructure components:

- Patching Database Servers (Dom0).
- Patching Storage servers.
- Patching Network switches.
- Patching Control Planes.

Quarterly maintenance updates may require a restart of the customer-managed guest virtual servers.

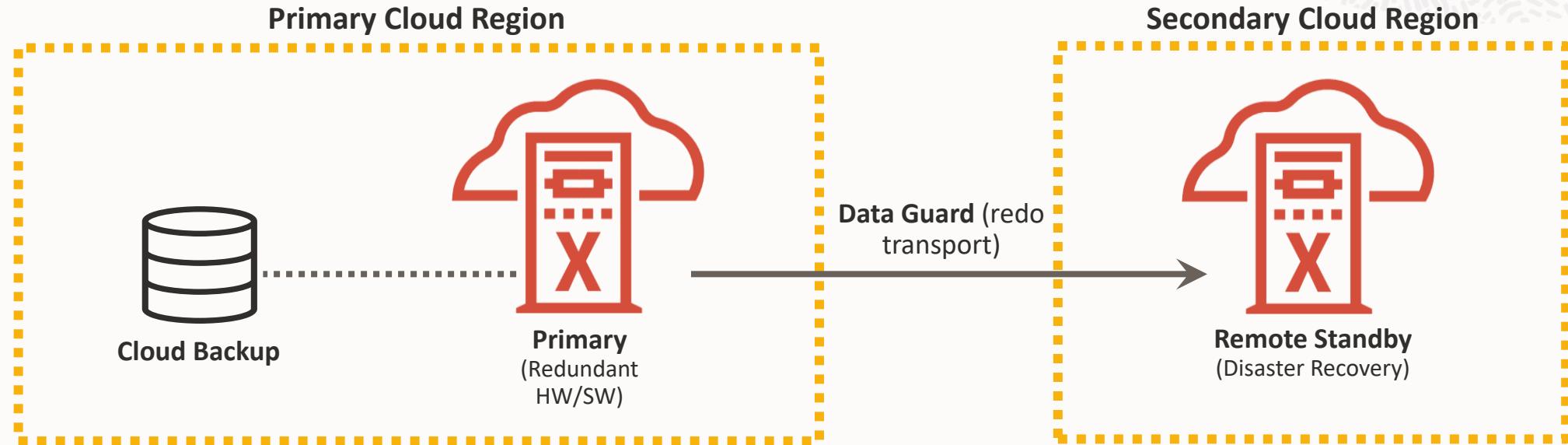
| Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 |
|--|---|---|--|
| <input checked="" type="checkbox"/> JANUARY | <input checked="" type="checkbox"/> APRIL | <input checked="" type="checkbox"/> JULY | <input checked="" type="checkbox"/> OCTOBER |
| <input checked="" type="checkbox"/> FEBRUARY | <input checked="" type="checkbox"/> MAY | <input checked="" type="checkbox"/> AUGUST | <input checked="" type="checkbox"/> NOVEMBER |
| <input checked="" type="checkbox"/> MARCH | <input checked="" type="checkbox"/> JUNE | <input checked="" type="checkbox"/> SEPTEMBER | <input checked="" type="checkbox"/> DECEMBER |

Exadata Cloud MAA Architecture

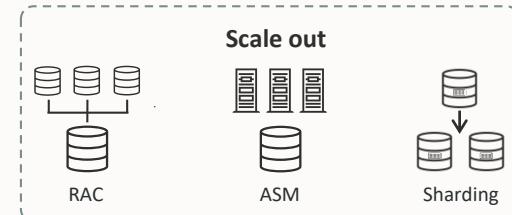
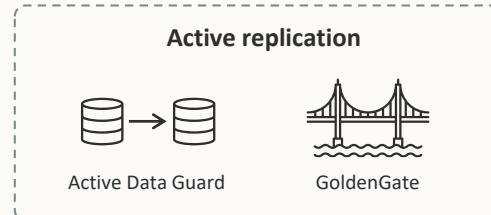
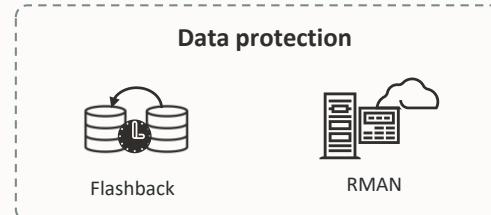


Exadata Cloud Oracle Maximum Availability Architecture (MAA)

High-Availability Blueprint in the Cloud



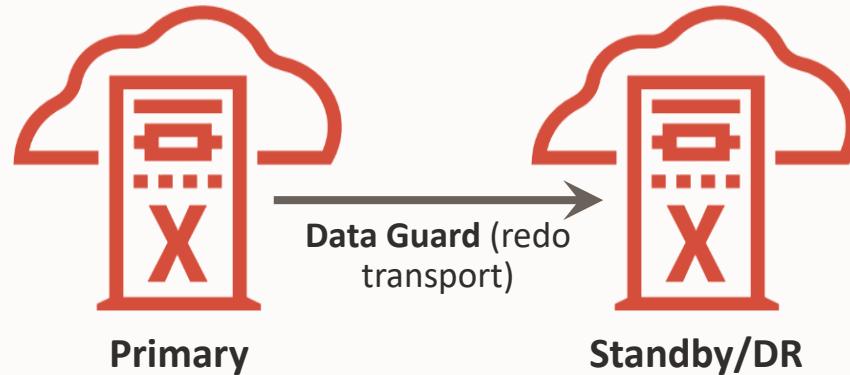
Key Cloud MAA Technologies





SCAN ME

HA Standby / Disaster Recovery



Data Guard / Active Data Guard Replication

- Real-time, database-optimized disaster recovery
- Zero data loss (RPO), near-zero recovery time (RTO)
- Cloud automation for Create/Delete/Switchover/Failover/Reinstate
- Asynchronous or synchronous replication

The screenshot shows the Oracle Cloud interface with the title 'Enable Data Guard'. It includes sections for 'Data Guard association details' (Protection mode: Read only, Maximum Performance), 'Select peer DB system' (Region: Germany Central (Frankfurt), Availability domain: Select an availability domain, Shape: First select an Availability Domain), and 'Configure standby database' (Buttons: Enable Data Guard, Cancel). The bottom of the screen displays the Oracle logo and copyright information: Copyright © 2020, Oracle and/or its affiliates. All rights reserved.

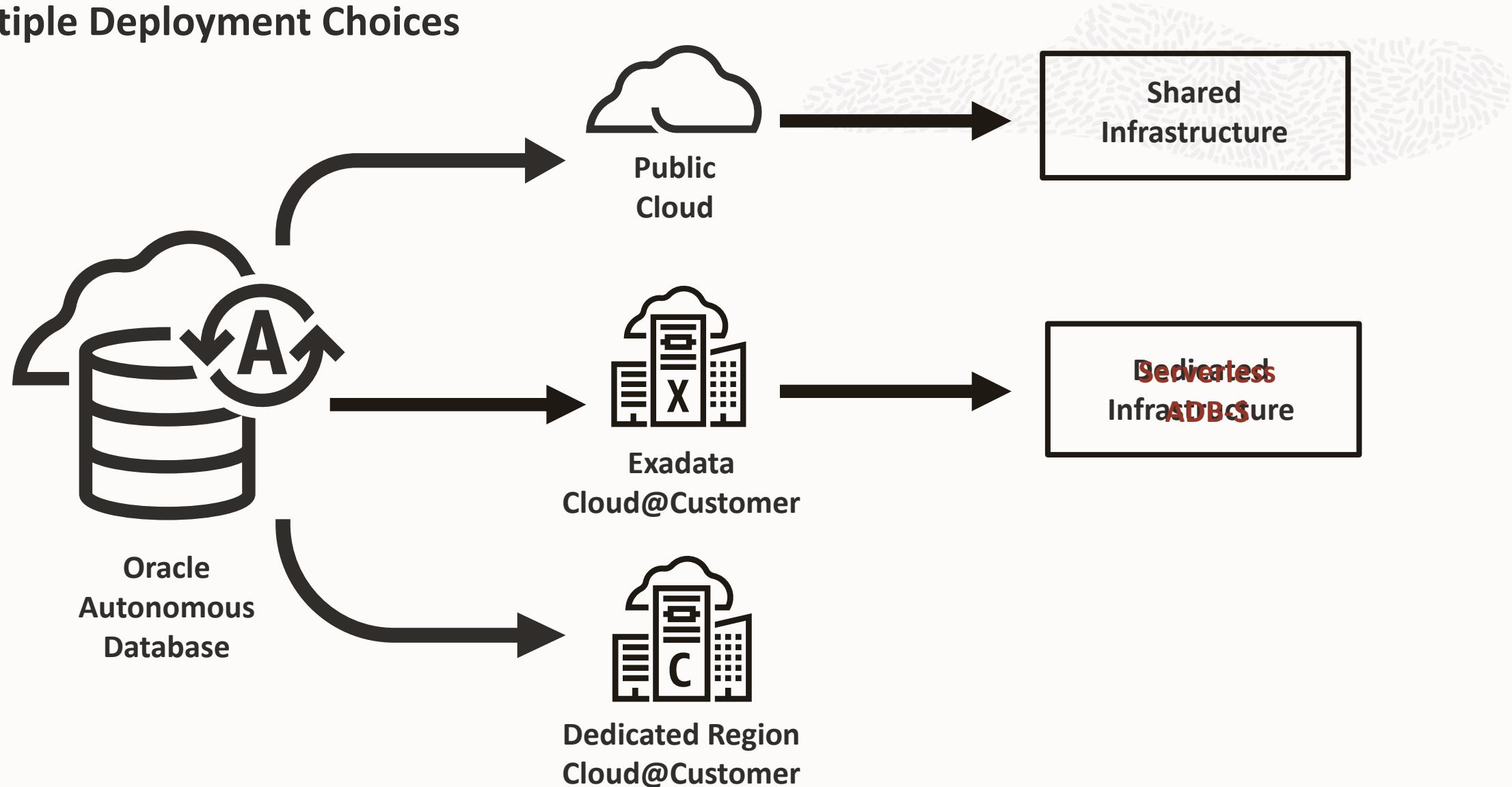
[Click Here](#)



Autonomous on Dedicated Infrastructure



Multiple Deployment Choices



Find me on OCI Console



Oracle Database

[Overview](#)

[Autonomous Database](#)

Autonomous Data Warehouse

Autonomous JSON Database

Autonomous Transaction Processing

**Autonomous Dedicated
Infrastructure**

[Oracle Base Database Service](#)

[Oracle Exadata Database Service
on Dedicated Infrastructure](#)

[Oracle Exadata Database Service
on Cloud@Customer](#)

[External Database](#)

[Data Safe - Database Security](#)

Overview

Security Assessment

User Assessment

Data Discovery

Data Masking

Activity Auditing

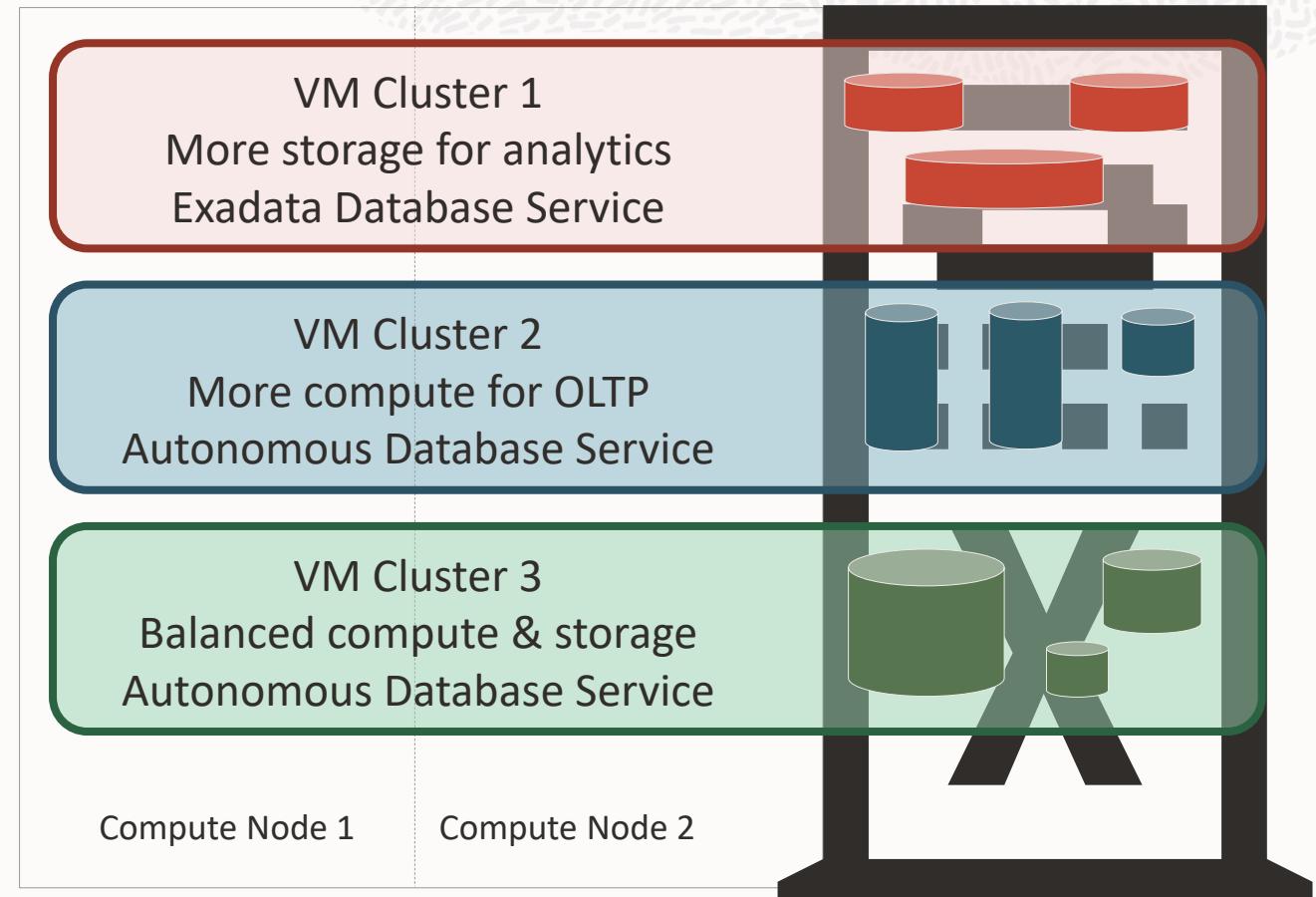
[Database Backups](#)

[GoldenGate](#)

[Operator Access Control](#)

Increasing Resource Utilization Efficiency and Consolidation Savings

1. Multiple VM clusters can be created on Exadata Cloud@Customer Infrastructure
2. Each VM cluster can be configured to match workload needs (e.g. more storage for analytics or more compute for OLTP)
3. Each VM cluster can be used for either Autonomous or Exadata Database Service
4. Each VM cluster can support multiple databases for consolidation
5. More VM clusters can be added as needed using unallocated resources
6. Consumption in each cluster can be scaled independently (and automatically with Autonomous Database)



Available on Exadata Cloud@Customer Infrastructure X7 through X10M



Oracle Autonomous Console Management

Create Autonomous Database

Data Warehouse
Built for decision support and data warehouse workloads. Fast queries over large volumes of data.

Transaction Processing
Built for transactional workloads. High concurrency for short-running queries and transactions.

JSON
Built for JSON-centric application development. Developer-friendly document APIs and native JSON storage.

APEX
Built for Oracle APEX application development. Creation and deployment of low-code applications, with database included.

Choose a deployment type

Shared Infrastructure
Run Autonomous Database on shared Exadata infrastructure.

Dedicated Infrastructure
Run Autonomous Database on dedicated Exadata infrastructure.

Choose Autonomous Container Database

Autonomous Data Guard-enabled Autonomous Container Databases

Autonomous Container Database in **FleetCompartment** ([Change Compartment](#))

FLEET_ACD

Configure the database

OCPU count
 You can enable up to 35 OCPUs. Available cores are subject to compartment quotas and existing core allocation. [Learn more](#).

Auto scaling
Allows system to use up to three times the provisioned number of cores as the workload increases. [Learn more](#).

Storage (GB)
 The available storage, up to 131072 GB. Available storage is subject to compartment quotas. [Learn more](#).

General Information

Database Name: ATPDevTest1

Workload Type: Transaction Processing

Compartment: [REDACTED] /PM_Compartment

OCID: ...ibmzoq [Show](#) [Copy](#)

Created: Tue, May 25, 2021, 17:34:32 UTC

OCPU Count: 0.1

Auto Scaling: Enabled [i](#)

Storage: 32 GB

Database Version: 19.11.0.0.0

Lifecycle State: Available

Instance Type: Paid

Scale Up/Down

[Help](#)

OCPU count

0.6

You can enable up to 74 OCPUs. Available cores are subject to compartment quotas and existing core allocation. [Learn more](#).

Auto Scaling

Allows system to use up to three times the number of cores specified by the OCPU count as the workload increases. [Learn more](#).

Storage (GB)

512

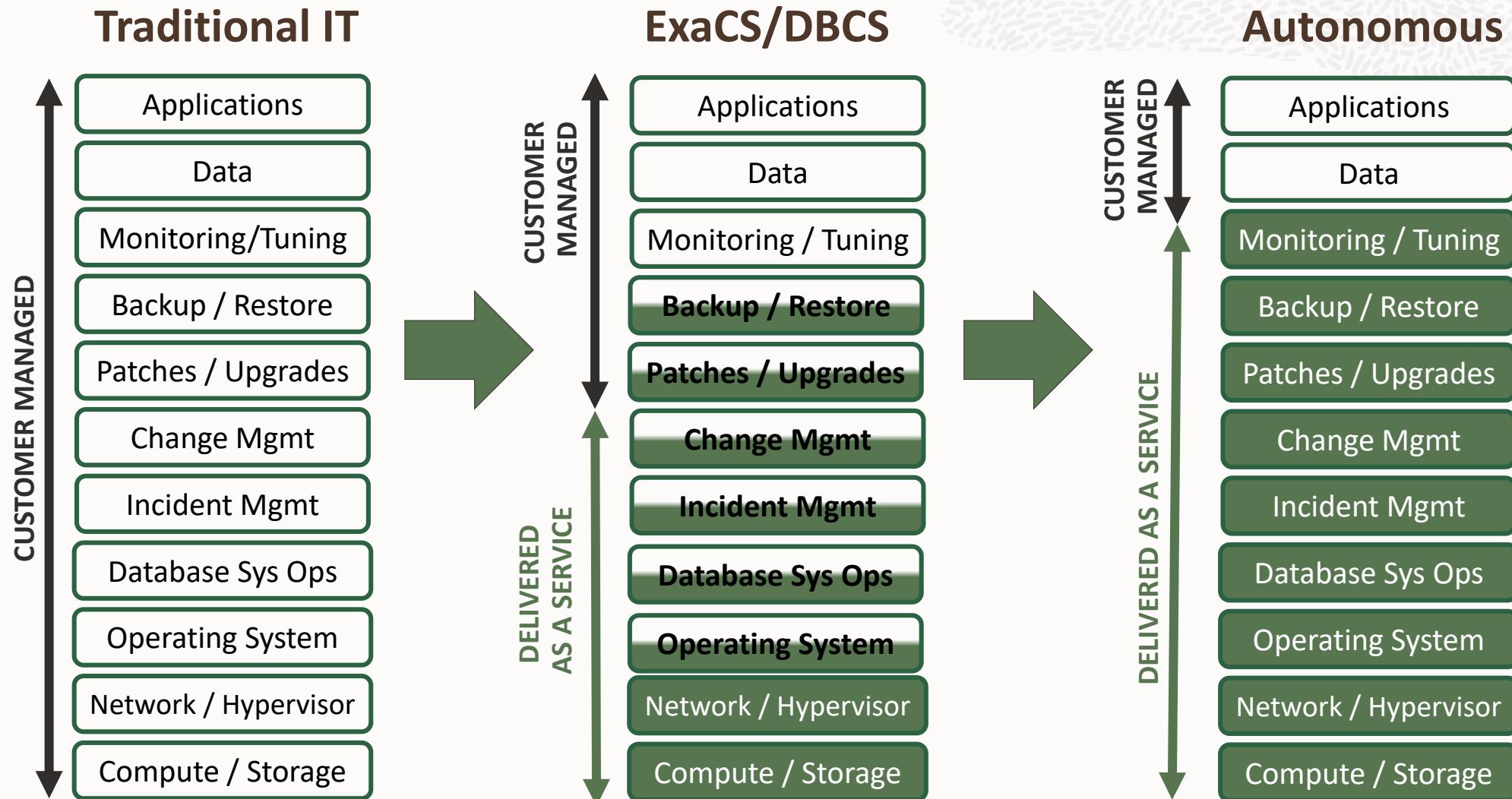
The available storage, up to 131072 GB. Available storage is subject to compartment quotas. [Learn more](#).

[Update](#)

[Cancel](#)



Automation Eliminates DBA responsibilities and Lowers Costs



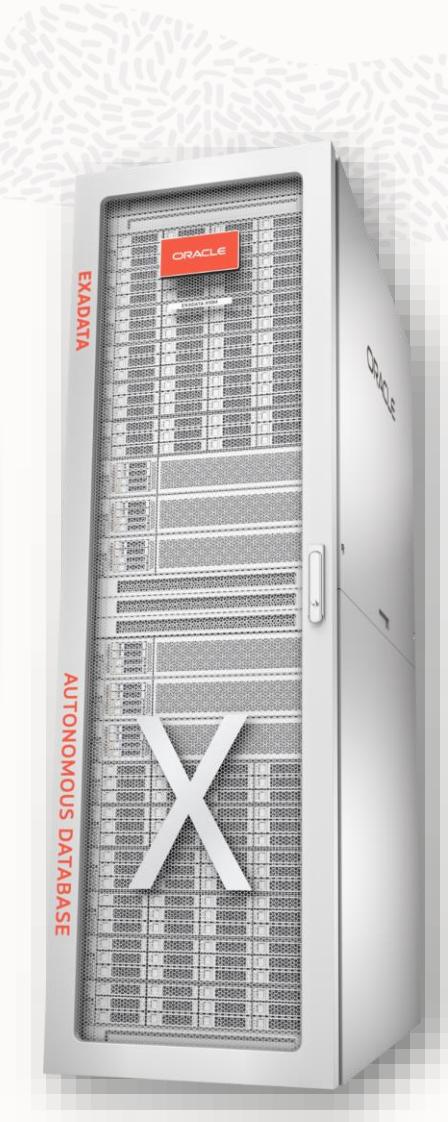
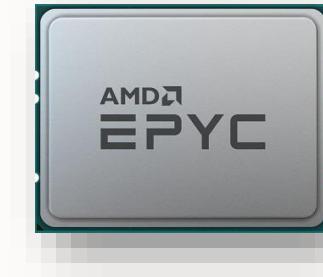
Exadata Cloud X10M





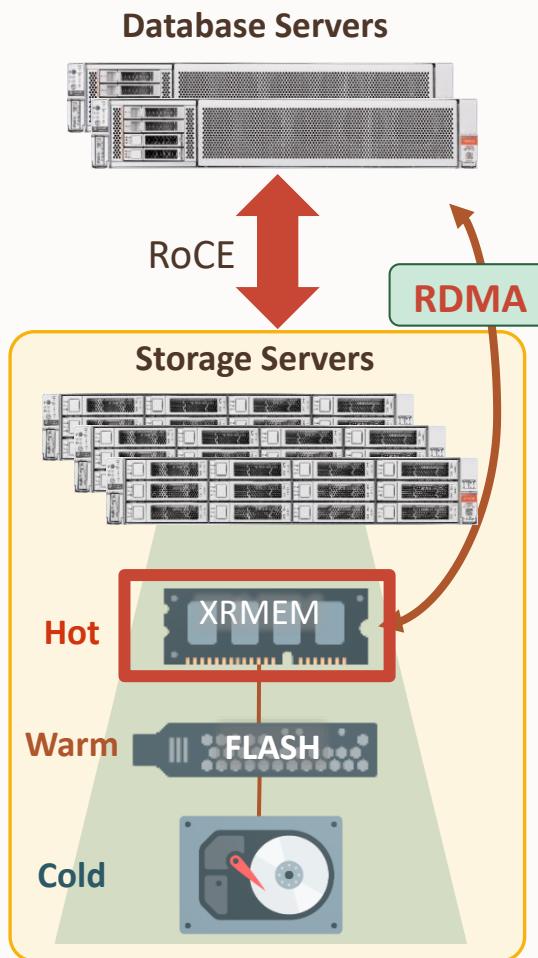
Nice to meet you! I'm Exadata X10M

Featuring AMD EPYC™ CPUs



[Click Here](#)

Exadata architecture – scale out with intelligent storage



Scale-out system architecture and software

- Independent, online scaling of database and storage servers
- Scales from 2 to 210 Exadata X10M database servers
- Scales from 3 to 264 Exadata X10M storage servers
- Redundancy with fast failover provides high availability

Database uses RDMA instead of I/O to read XRMEM in Smart Storage

- Bypasses network and I/O software, interrupts, context switches
- Data is transparently managed in multiple storage tiers to minimize latency
- High-performance active-active 100 Gbit/s internal network maximizes throughput
- Speeds up both database reads and commits

Database cluster virtualization

- Deploy environments with different needs on the same system
 - Dev-Test, Staging, Production, DR
 - OLTP, Analytics, Mixed Workloads
- Share and manage pools of resources to increase efficiency and lower costs
- Isolate resources to meet differing security and predictability requirements

Exadata X10M: Extreme performance scale-out database platform

Increasing capabilities throughout the stack



Scale-out 2-socket Database Servers

- Latest **96-core** AMD EPYC CPUs
- Up to **3 TB** of DDR5 Memory

Scale-out intelligent 2-socket Storage Servers

- Latest 32-core AMD EPYC CPUs
- Three tiers of storage: XRMEM, NVMe Flash, HDD minimize access latency and maximize throughput
 - **1.25 TB DDR5** Exadata RDMA Memory (XRMEM) plus
 - **122.88 TB** of raw all-flash capacity in Extreme Flash storage servers
 - **264 TB** of raw disk space in High Capacity and Extended storage servers

Dedicated active-active 100 Gbit/s RDMA over Converged Ethernet network

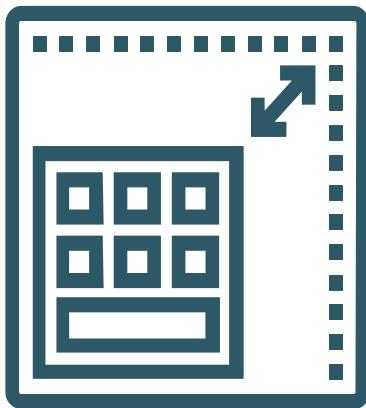
- Low-latency, high-bandwidth connectivity
- Links up to 14 racks of database and storage servers together

Comparison X9M vs X10M

| Server Type |
|--|
|  AMD EPYC |
| # of Usable DB Cores per DB Server |
|  Usable DRAM (GB) per DB Server / Total all Servers |
|  XRMEM |
| Total Usable Disk Capacity (TB) |
| Max DB Size with no local backup (TB) |
|  FLASH |

| X9M Quarter Rack | X10M Quarter Rack | X10M-L Quarter Rack | X10M-XL Quarter Rack |
|------------------|-------------------|---------------------|----------------------|
| 62 | | 190 | |
| 1,390 | 1,390 | 2,090 | 2,800 |
| 4.5 | | 3.75 | |
| 192 | | 240 | |
| 154 | | 192 | |
| 76 | | 81 | |

Vertical vs Horizontal Scaling concept



Vertical scaling (or "scaling up")

- Adding more hardware to an existing machine
- Run the same workload on better specs;
- For example, if a server requires more processing power, vertically scaling the device would mean upgrading its CPU.



Horizontal scaling (or "scaling out")

- Add more nodes;
- Do not improve the specifications of the existing machine;
- Add more same-size servers to the cluster and share the workload across more devices.

Exadata Unique Cloud-Scale Database-Optimized Architecture

Unique Next Generation RAC Scale-Out for Any Workload

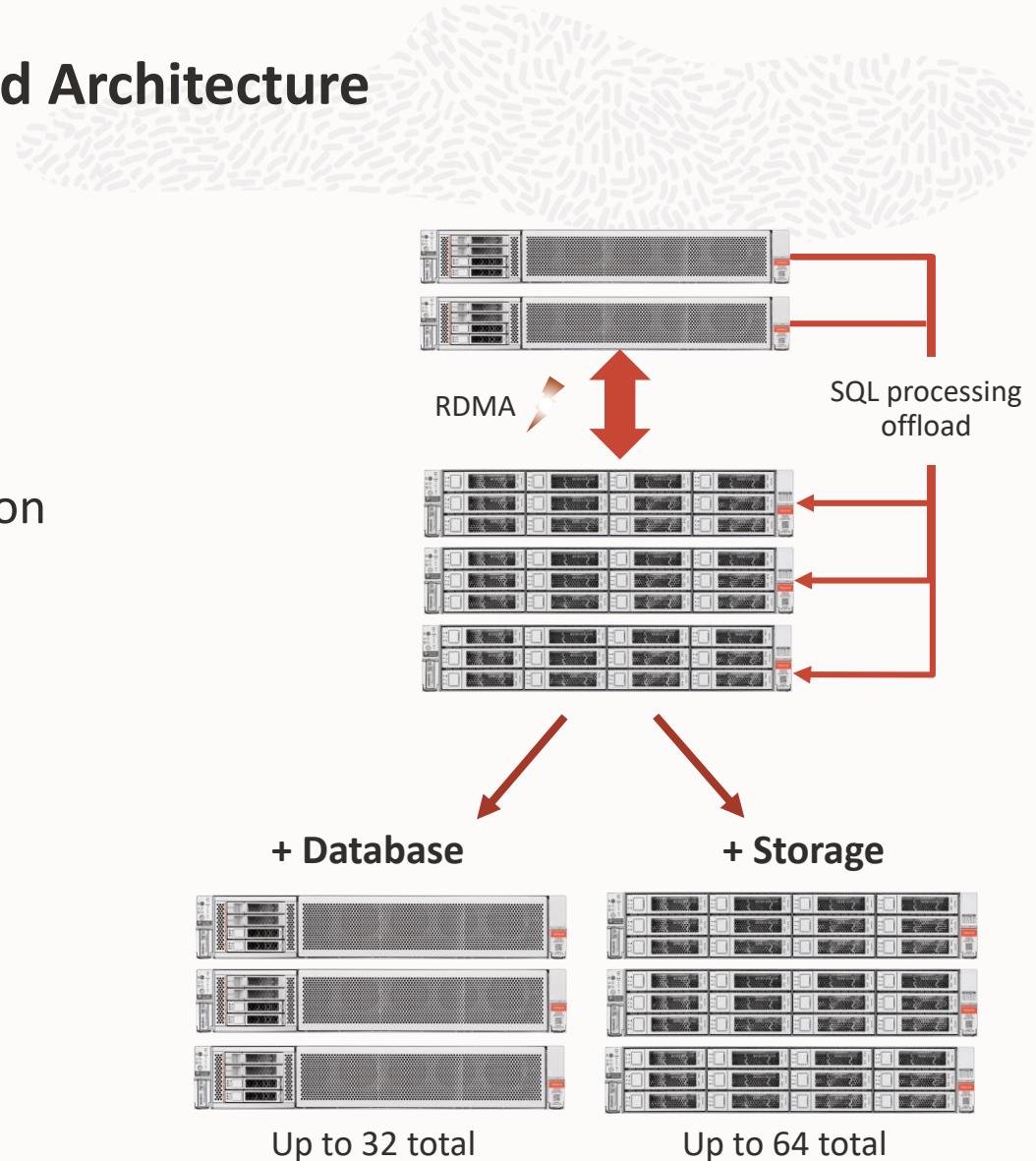
- Application-transparent database scalability & availability

Start small with minimum size High Availability configuration

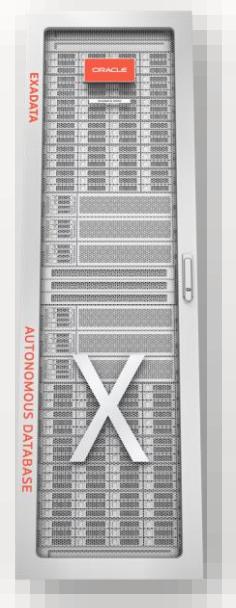
- 2 Compute Servers, 3 Storage Servers
- Dedicated to you – no noisy or malicious neighbors

Add individual Database or Storage servers as needed

Expansion happens **fully online**



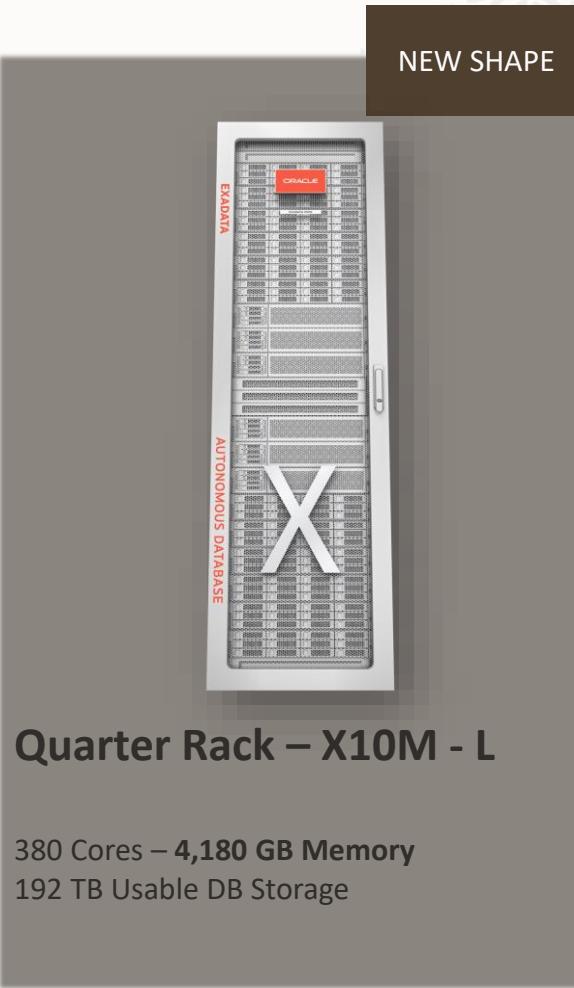
Exadata Cloud@Customer X10M Shapes



Quarter Rack – X10M

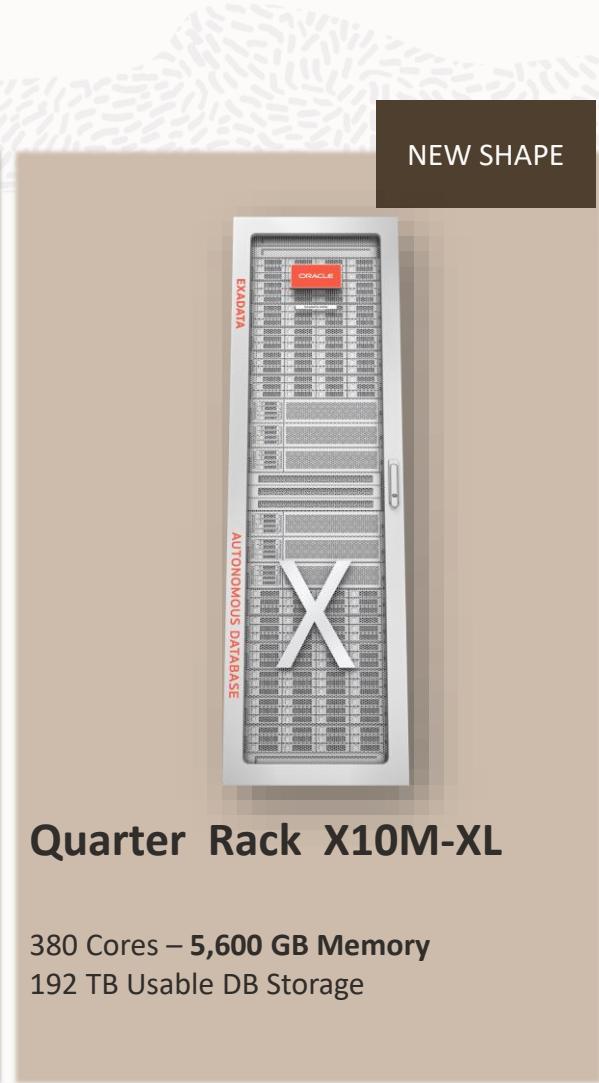
Total Capacity

| | |
|-----------------|-----------------------------|
| DB Servers | 380 Cores – 2,780 GB Memory |
| Storage Servers | 192 TB Usable DB Storage |



Quarter Rack – X10M - L

380 Cores – 4,180 GB Memory
192 TB Usable DB Storage



Quarter Rack X10M-XL

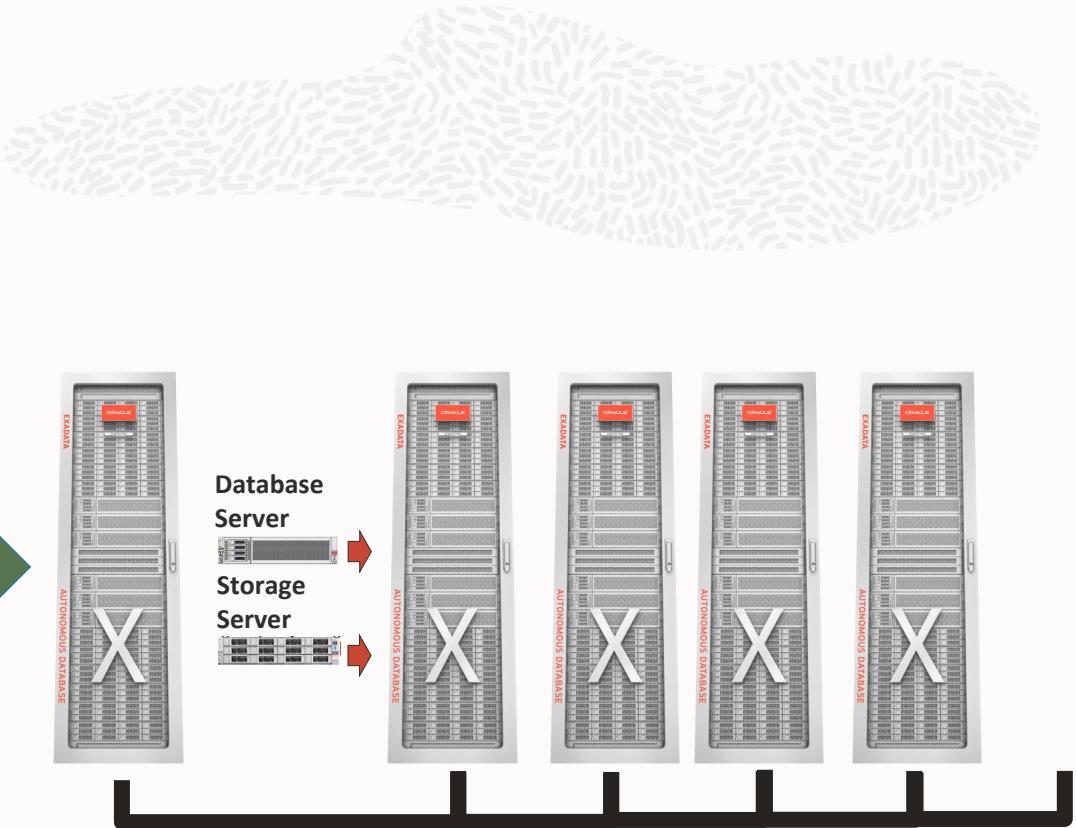
380 Cores – 5,600 GB Memory
192 TB Usable DB Storage

There are no Half and Full rack shapes.

Expand Quarter Racks using Expansion Servers.

Exadata Cloud@Customer X10M Shapes

All Configurations greater than a Quarter Rack are elastic



Start with a Standard Configuration

- Quarter Rack
- Quarter Rack-L
- Quarter Rack – XL

Elastically Expand Rack with Servers

- Database Server
- Storage Server
- Can NOT mix Database Servers with different memory configurations
 - e.g. X10M cannot be mixed with X10M-XL

Continue to Expand Servers using Expansion Rack(s)

- Up to 6 Racks including primary rack
- Max 32 Database Servers
- Max 64 Storage Servers
- Max 5 Expansion Racks

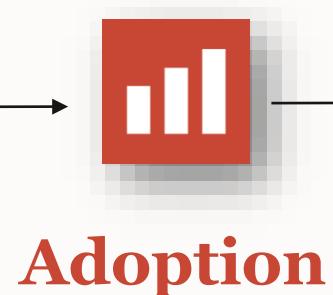
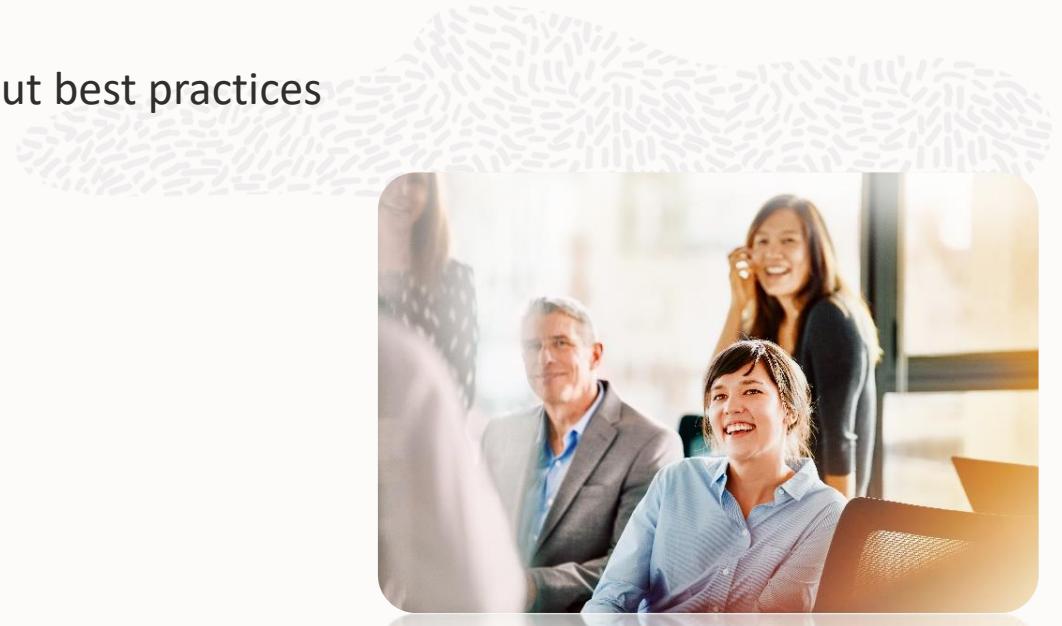
Oracle CSM Roles and Responsibilities



What is a Cloud Specialist?

A cloud specialist (CSM) is a technical expert to guide customer about best practices

Oracle Cloud Specialist is an Oracle organization dedicated to pursuing **customer satisfaction** through the **best use of our solutions**.



MOS Service Request Options





SCAN ME

What is a Breiking Glass Service Request ?

A Breaking Glass Service request is a formal process to request and allow Oracle support to get into your Exadata Cloud at Customer Virtual Machines (DomU) and fix the issue customer reported.

The customer must to open this SR and share this SR number on parent SR as soon as possible.

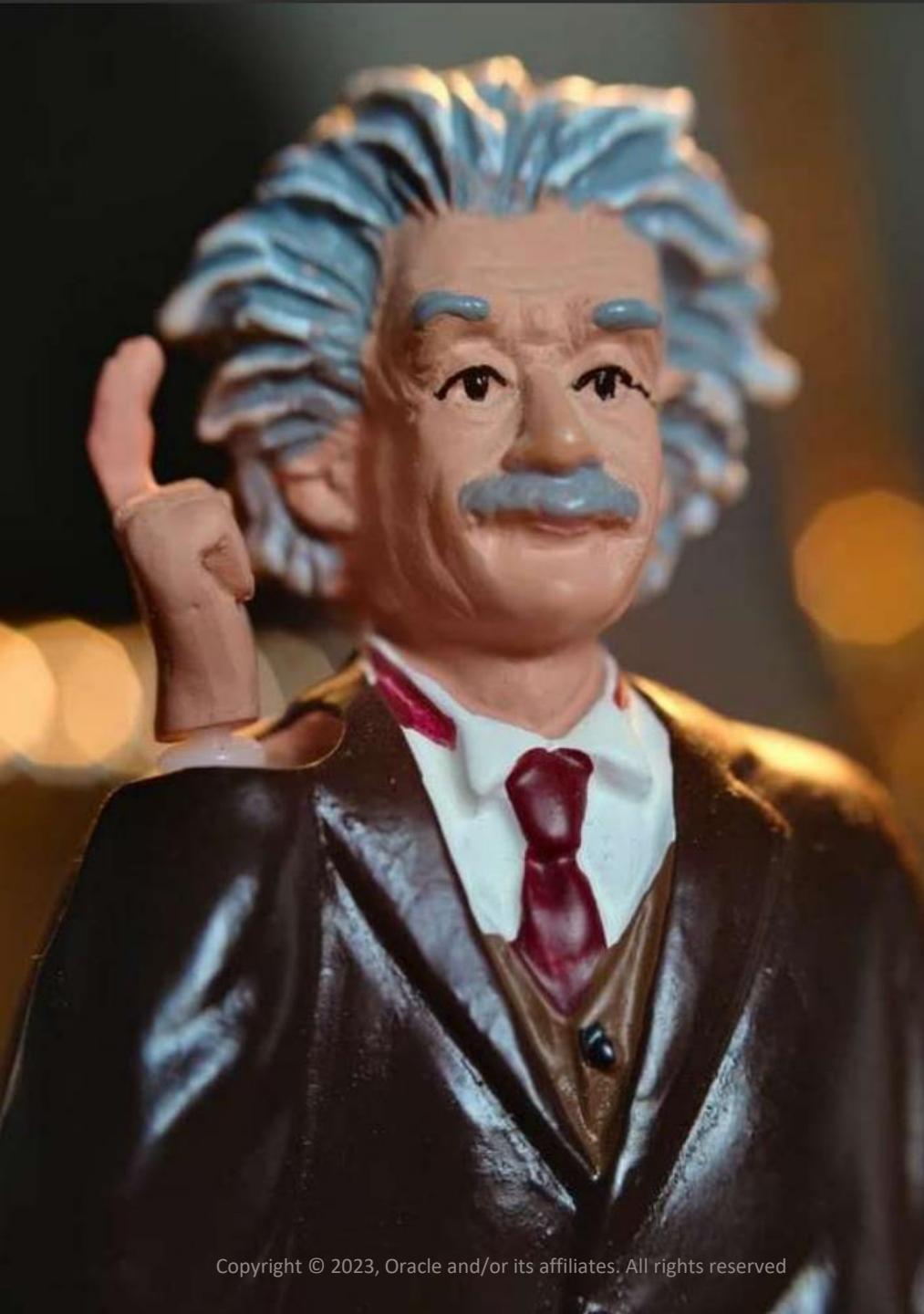
You must provide :

- Parent SR Number
- Exadata VM Cluster OCID
- Exadata Database OCID
- DomU Host Names



[Click Here for BG Text Template](#)





Demo 1 – OCI Console Tour

- Check Dom0 Patch Version
- License Type
- Manage Contacts
- Create a new PDB using Oracle Home already provisioned
- VM Cluster scale Up/ and Down



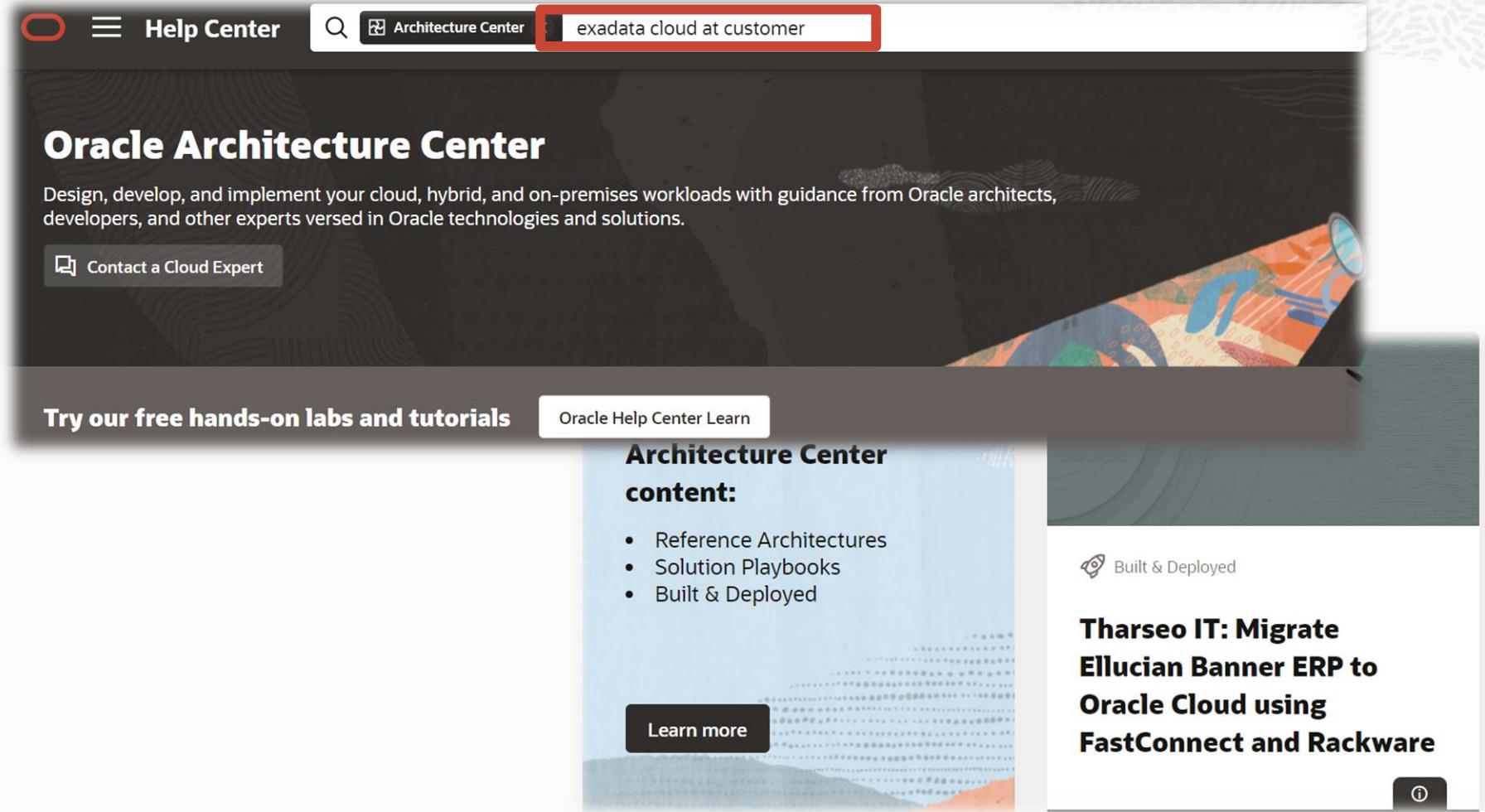
Demo 2 – Dbaascli

- Check ***dbaascli*** Version and how to upgrade
- ***dbaascli*** tour and available options

Resources



Exadata Cloud Oracle on Architecture Center



The screenshot shows the Oracle Architecture Center homepage with a search bar containing the query "exadata cloud at customer". Below the search bar, there's a large banner for "Oracle Architecture Center" with a subtext: "Design, develop, and implement your cloud, hybrid, and on-premises workloads with guidance from Oracle architects, developers, and other experts versed in Oracle technologies and solutions." A "Contact a Cloud Expert" button is visible. On the left, a callout box says "Try our free hands-on labs and tutorials" and "Oracle Help Center Learn". It lists "Architecture Center content:" which includes "Reference Architectures", "Solution Playbooks", and "Built & Deployed". A "Learn more" button is present. To the right, there are two cards: one for "Tharseo IT: Migrate Ellucian Banner ERP to Oracle Cloud using FastConnect and Rackware" (status: "Built & Deployed") and another for "Deploy a containerized Jenkins CI/CD pipeline by using Terraform on Oracle Cloud Infrastructure" (status: "Automation Available"). Both cards have a "Reference Architecture" link.

[Click here](#)



Exadata Cloud on Oracle Live Labs



SCAN ME

Oracle Autonomous Database Dedicated for Fleet Administrators



As fleet administrator, set up your dedicated ADB platform in the OCI and on Exadata Cloud@Customer.

⌚ 7 hrs

5463 Views

Oracle Exadata Platform Performance Features



Get hands-on with Oracle Exadata, Exadata Database Service on Cloud@Customer, and Exadata Database (...)

⌚ 1 hr, 20 mins

717 Views

Get Started with Oracle Exadata Database Service on Cloud@Customer



Explore getting started with Oracle Exadata Database Service on Cloud@Customer.

⌚ 1 hr

[Click Here](#)



Time to test your skill!

Are you ready?

Exadata Cloud at Customer on Up to August, 31th 2023



SCAN ME

The screenshot shows a video player interface. At the top, there's a navigation bar with 'MyLearn | Oracle University' and a search bar 'What do you want to learn?'. Below the search bar are icons for 'Home', 'Community', and a menu. The main area displays a video thumbnail for 'Course : Oracle Base Database Services Professional Workshop'. The thumbnail features a dark background with a white 'X' icon and the text 'Mission-critical cloud database capabilities where you need them'. To the right of the thumbnail, the course title 'Oracle Base Database Services Professional Workshop' is shown, along with a progress bar indicating 28:56 / 30:20. The video content itself shows a slide with the number '1' and the heading 'Exceptional Performance, Availability, and Security' followed by a bulleted list: 'Superior architecture with unique software optimizations', 'Full-stack redundancy and integrated disaster recovery', and 'Defense in-depth security'. The bottom of the video player has standard controls for play/pause, volume, and full-screen.

Database Services Oracle Base Database Services Professional (2023)

Data Architect

[Click Here](#)

The screenshot shows the 'Playlist' tab of the course interface. At the top, there are tabs for 'Playlist' (which is selected), 'Student Guides', and 'About'. Below the tabs, the course title 'Course 7h 41m' is displayed with a progress bar showing 2%. Underneath, there are sections for 'SEARCH', 'SKILL CHECKS', and 'AUTOPLAY'. The main content area is titled '2 : Exadata Database Service' and contains a list of video items:

- Exadata Database Service Overview (30m) - Marked as 'New'
- Exadata: Network, Infrastructure, VM Cluster Overview (28m)
- Exadata Infrastructure and VM Cluster Management (28m)
- Database Lifecycle Management (38m) - Marked as 'New'
- Management Tools (21m) - Marked as 'New'



Exadata Cloud at Customer on Up to August, 31th 2023



SCAN ME

The screenshot shows a video player interface. At the top, there's a navigation bar with 'MyLearn | Oracle University' and a search bar 'What do you want to learn?'. Below the search bar are icons for 'Home', 'Community', and a menu. The main area displays a video thumbnail for 'Course : Oracle Base Database Services Professional Workshop'. The thumbnail features a dark background with a white 'X' icon and the text 'Mission-critical cloud database capabilities where you need them'. To the right of the thumbnail, the course title 'Oracle Base Database Services Professional Workshop' is displayed. The video player controls show a progress bar at 28:56 / 30:20. The video content itself shows a slide with the number '1' and the heading 'Exceptional Performance, Availability, and Security' followed by a bulleted list: 'Superior architecture with unique software optimizations', 'Full-stack redundancy and integrated disaster recovery', and 'Defense in-depth security'. The bottom of the video player has a 'Data Architect' button.

Database Services Oracle Base Database Services Professional (2023)

Data Architect

[Click Here](#)

The screenshot shows the 'Playlist' tab of the course interface. At the top, there are tabs for 'Playlist' (which is selected), 'Student Guides', and 'About'. Below the tabs, the course title 'Course 7h 41m' is shown with a progress bar at 2%. There are three buttons: 'SEARCH', 'SKILL CHECKS', and 'AUTOPLAY' (which is turned on). The main area is titled '2 : Exadata Database Service' with a collapse arrow. It lists five video items: 'Exadata Database Service Overview' (selected, 30m), 'Exadata: Network, Infrastructure, VM Cluster Overview' (28m), 'Exadata Infrastructure and VM Cluster Management' (28m), 'Database Lifecycle Management' (New, 38m), and 'Management Tools' (New, 21m).



My Oracle Support

ORACLE® MY ORACLE SUPPORT

The screenshot shows the My Oracle Support homepage. At the top, there's a banner with a photo of a man and the text "My Oracle Support: Year of Innovation". Below the banner, there's a section titled "New to My Oracle Support?" with three numbered steps: 1. New user? Register here (Create your account), 2. Watch (Learn the basics in minutes), and 3. Explore (Sign in for more quick training videos). To the right of this is a "Sign In" form with fields for "Language" (set to English), "Sign In...", "Forgot User ID / Password?", and "New user? Register here". Below the sign-in form, there's a "Welcome to My Oracle Support!" section with a globe icon and a list of features: Search for solutions, Download patches and updates, Access proactive support tools, Collaborate in the My Oracle Support Community, and Create a Service Request. It also says "Register, sign in, and visit the User Resource Center to learn more.". At the bottom left, there's a "COLLECT ANALYZE ACT" section with screenshots of the support interface. At the very bottom, there's a copyright notice: "Copyright (c) 2013, Oracle. All rights reserved." followed by links to Legal Notices and Terms of Use, Privacy Statement, and a note about the site being intended for authorized Oracle customers, partners, and employees.

- First contact for resolution, support and technical assistance through Service Request (SR) ticketing system.
- Online Resources via My Oracle Support Portal.
- Knowledge Base
 - Known issues and bugs.
 - Guides and tutorials.
- Updated information on patches, bug fixes, security, alerts, new features
- How to use My Oracle Support -How-to Training Video Series (Doc ID 603505.1)



Exadata Cloud at Customer - General MOS notes

ExaCC General Useful doc's and tips



- ❑ Oracle Exadata Best Practices (Doc ID 757552.1)
- ❑ Exadata Critical Issues (Doc ID 1270094.1)
- ❑ Exadata Cloud Support Information Center (Doc ID 2522950.2)
- ❑ Getting Started with Oracle E-Business Suite on Oracle Exadata Cloud@Customer Gen 2 (Doc ID 2774983.1)
- ❑ Cloud@Customer Gen 2 (Doc ID2758998.1)
- ❑ Cloud Infrastructure or Oracle Cloud at Customer (Doc ID 2368508.1)
- ❑ Release Schedule of Current Database Releases (Doc ID 742060.1)
- ❑ HugePages on Oracle Linux 64-bit (Doc ID 361468.1)

Exadata Cloud Troubleshooting Tools Note



- ❑ How To Collect Sosreport on Oracle Linux (Doc ID 1500235.1)
- ❑ Oracle Exadata Database Machine EXAchk (Doc ID 1070954.1)
- ❑ HugePages on Oracle Linux 64-bit (Doc ID 361468.1)
- ❑ Shell Script to Calculate Values Recommended Linux HugePages / HugeTLB Configuration (Doc ID 401749.1)
- ❑ ExaWatcher Utility On Exadata and SuperCluster Compute and Storage Nodes (Doc ID 1617454.1)
- ❑ Autonomous Health Framework (AHF) - Including TFA and ORAchk/EXAchk (Doc ID 2550798.1)
- ❑ Troubleshooting Exadata Database Service on Cloud@Customer Systems :
 - ❑ <https://docs.oracle.com/en-us/iaas/exadata/doc/ecc-troubleshooting-systems.html#GUID-84CF1009-A4FA-4C73-8C16-5EC556D8F1A1>

Exadata Cloud - Upgrade Mos Documents and Link's



- [19c Database Self-Guided Upgrade with Best Practices \(Doc ID 1919.2\)](#)
- [Oracle 19c Complete Checklist for upgrading Oracle 12c, 18c Container Database \(CDB\)](#)
- [Upgrading to 19c Oracle Grid Infrastructure on Exadata Cloud Service \(ExaCS\) and Exadata Cloud at Customer Gen2 \(ExaCC\) \(Doc ID 2624992.1\)](#)
- [Upgrading to 19c Oracle Grid Infrastructure on Gen 1 Exadata Cloud at Customer \(Doc ID 2709296.1\)](#)
- [Upgrading to 19c Oracle Database on Gen 1 Exadata Cloud at Customer \(Doc ID 2709284.1\)](#)

Patching Usefull links and MOS notes

- Patch Set Updates for Oracle Products (Doc ID 854428.1)
- Updating Exadata Database Server Software using the DBNodeUpdate Utility and patchmgr (Doc ID 1553103.1)
- Exadata Cloud Service Software Versions (Doc ID 2333222.1)
- How to update the Exadata Image (OS) in Exadata Cloud at Customer (Doc ID 2391164.1)
- How to upgrade DBAAS Cloud Tooling using dbaascli (Doc ID 2350471.1)
- How-To Update the OSC-Exawatcher Package on All Database Domains (Doc ID 2044825.1)

Atualização do cloud tooling sem utilizar dbaascli (necessário em versões antigas) :

<https://docs.oracle.com/en/cloud/paas/database-dbaas-cloud/csdbi/problems-administering-deployments.html#GUID-14724B31-FE0B-4D8C-BE36-CEE81FC84A5B>

Patching Exadata Cloud at Customer :

<https://docs.oracle.com/en/cloud/cloud-at-customer/exadata-cloud-at-customer/exacc/patch.html>

Rolling Back a Patch or Failed Patch :

<https://docs.oracle.com/en/cloud/cloud-at-customer/exadata-cloud-at-customer/exacc/roll-back-patch.html#GUID-0D1B9B1E-62E4-4A66-8D5D-6D1AC2B69A3F>



Exadata Cloud - *Backup and restore*

- Exadata Cloud Compute Node Backup and Restore Operations (Doc ID 2809393.1)



Monitoring Useful links and MOS notes



- ❑ Privilege Analysis is not Working in a Procedure PL/SQL block Using DBMS_PRIVILEGE_CAPTURE (Doc ID 2891332.1)
- ❑ <https://community.oracle.com/mosc/discussion/3913477/without-database-vault-installed-use-of-dbms-privilege-capture-needs-licence>
- ❑ <https://community.oracle.com/mosc/discussion/4517433/how-to-use-dbms-privilege-capture-generate-result-when-using-database-wide-capture-and-database-link>

Exadata Cloud at Customer - Migration Useful Link's



- Creating a Physical Standby Database for 11g Through 19c Databases (Doc ID 2275154.1)
- Creating a Physical Standby using RMAN Duplicate (RAC or Non-RAC) (Doc ID 1617946.1)
- Using Transportable Tablespaces to Migrate Oracle E-Business Suite Release 12.2 Using Oracle Database 19c Enterprise Edition On a Multitenant Environment (Doc ID 2674405.1)
- V4 Reduce Transportable Tablespace Downtime using Cross Platform Incremental Backup (Doc ID 2471245.1)
- Cross Platform Database Migration using ZDLRA (Doc ID 2460552.1)
- Is GG certified for EBS Database Migrations and upgrades (Doc ID 2491869.1)
- [BACKUP AND RECOVER BEST PRACTICES FOR RECOVER APPLIANCE] <https://www.oracle.com/a/otn/docs/oda-backup-recovery-technical-brief.pdf>
- [WALLET MANAGER] <https://docs.oracle.com/en/database/oracle/oracle-database/19/dbimi/using-oracle-wallet-manager.html#GUID-D0AA8373-B0AC-4DD8-9FA9-403E345E5A71>
- [ORACLE DATABASE 19C SECURITY GUIDE] <https://docs.oracle.com/en/database/oracle/oracle-database/19/dbseg>
- <https://www.oracle.com/webfolder/s/assets/webtool/cloud-migration-advisor/index.html>
- <https://docs.oracle.com/en-us/iaas/Content/Database/Tasks/mig-onprembackup.htm>
- <https://docs.oracle.com/en/cloud/paas/database-dbaas-cloud/csdbi/create-hybrid-dr-deployment.html>





Thank You 😊

Questions / Feedback / Training Suggestions

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Ask for help 😊

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