



# Oracle Cloud DBA

Sessão exclusiva Hostweb – Day I

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Licenses and Systems

LAD Partner Enablement Knowledge Team

October, 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 Day 1

OCI MySql Database

Oracle Autonomous Database ADB

OCI Oracle Security

OCI Data Safe Service

OCI Database Backup

Demo – Provisioning ADB

Demo – Data Safe Report

Demo – Oracle DBCS Auto Restore

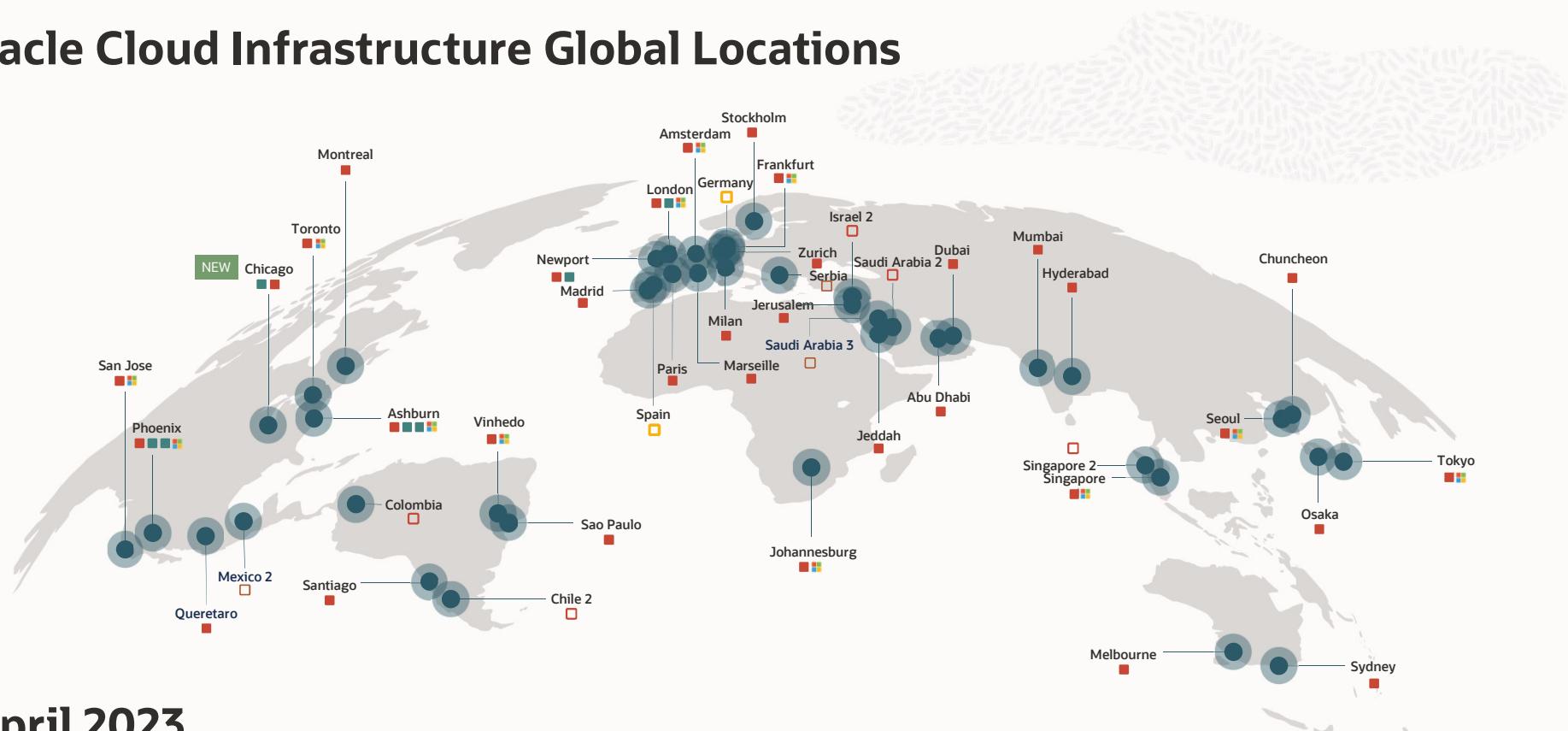
# OCI Cloud Region Map

Current Oracle Datacenter and Microsoft around the Word

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# Oracle Cloud Infrastructure Global Locations



April 2023

41 regions; 10 more planned  
12 Azure Interconnect Regions

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- Commercial
- Commercial Planned
- Sovereign Planned
- Government
- Microsoft Interconnect Azure



# MySQL

MySQL and MySQL Heatwave Available for deploy on OCI



# Oracle MySQL Database Services on OCI Console

The screenshot shows the OCI Console interface for MySQL Database Services. The top navigation bar has 'MySQL' selected. The main content area is titled 'Databases' and contains several service links:

- MySQL** (selected)
- DB Systems
- Backups
- Channels
- Configurations
- MySQL HeatWave on AWS** (highlighted with a dashed red border)
- Administration

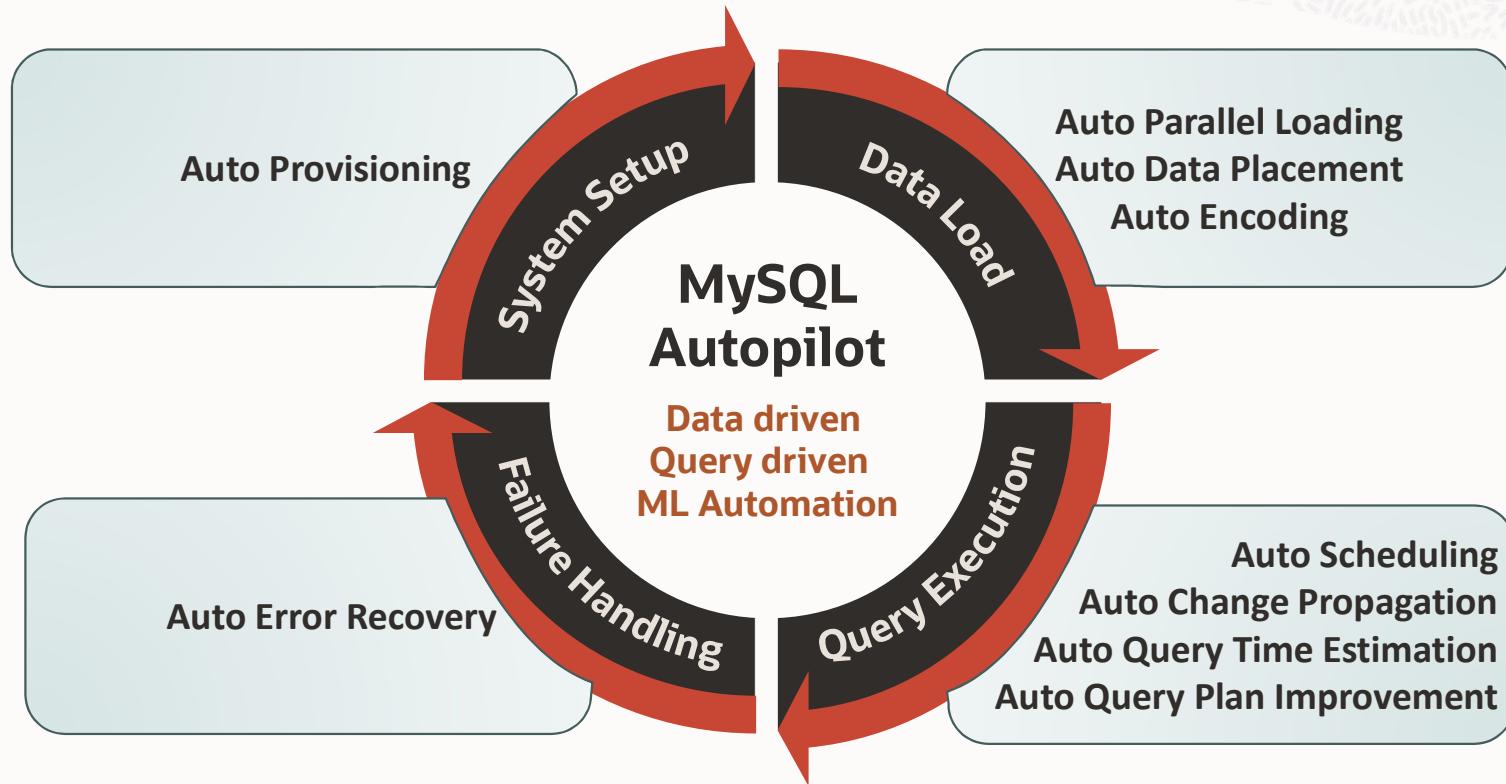
On the right side, there are links for other database services:

- Oracle NoSQL Database**
  - Tables
- OpenSearch**
  - Clusters
  - Backups



# MySQL Autopilot Features

Machine learning based Automation



# MySQL is the most popular database for developers

## Most popular databases

MySQL 47%

PostgreSQL 44%

SQLite 32%

MongoDB 28%

MS SQL Server 27%

[Stackoverflow survey](#)

## Which databases have you used in the last 12 months?

MySQL 64%

PostgreSQL 48%

Redis 36%

MS SQL Server 32%

SQLite 30%

[Jetbrains survey \(SQL is primary\)](#)



## Innovative organizations across many industries run MySQL

### Social

**facebook**



**LinkedIn**



**Pinterest**

### E-Commerce

**Booking.com**

**NETFLIX**

**U B E R**



**Taobao.com**

**阿里巴巴  
Alibaba.com™**

### Tech

**APPDYNAMICS**  
part of Cisco

**GitHub**

**HubSpot**

**zendesk**

**intuit.  
mint®**

**New Relic®**

### Finance

**Bank of America**  
The Bank of America logo, featuring a red stylized arrow icon above the company name.

**J.P.Morgan**

**citi**

**Fidelity  
INVESTMENTS**

**VISA**

**CA**

### Manufacturing

**TESLA**



**TOYOTA**

**CAT®**

# MySQL powers Open Source applications

## Custom Apps Development



**django**



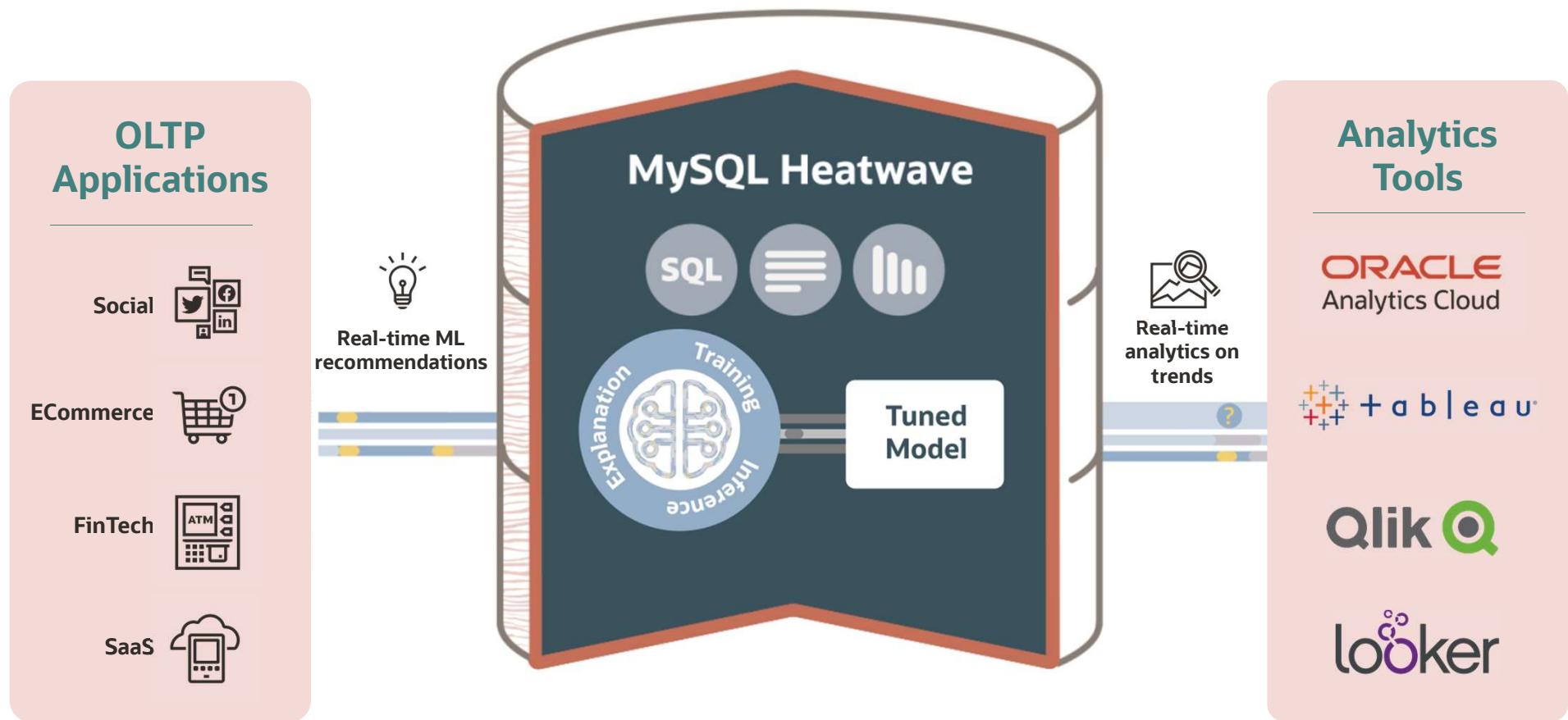
## Content management and eCommerce



## Learning platforms



# Machine learning in action with MySQL HeatWave



# Oracle MySQL Console Management

## Create DB system

**Production**  
Sets up a high availability DB system with recommended defaults for a production environment.

**Development or testing**  
Sets up a standalone DB system with recommended defaults for a development or testing environment.

**Provide DB system information**

Create in compartment  
marlamar

Administrator password  
acteamtd (root)@marlamar

MySQL, VM, Standard E4.4.64GB

CPU core count: 4  
Memory size: 64 GB  
Max network bandwidth: 4Gbps

A shape determines the number of OCPUs, memory, and other resources allocated to a MySQL instance of a DB system. A high availability DB system contains three MySQL instances and hence has thrice the number of OCPUs and memory. [See supported shapes.](#)

Data storage size (GB)  
1024

Storage allocated to each MySQL instance for data and log files. Storage size impacts IOPS and throughput. Data storage size must be an integer between 50 and 131,072.

Total IOPS: 76800  
Total throughput: 600 MB

**Standalone**  
Single-instance DB system

**High availability**  
Run a DB system with 3 MySQL Instances providing automatic failover and zero data loss.

**HeatWave**  
DB system that allows you to enable HeatWave for accelerated query processing, suitable for running both OLTP and OLAP workloads

**Create administrator credentials**

Username  Define the administrator username

**Browse all shapes**

A shape determines the number of OCPUs, memory, and other resources allocated to a MySQL instance of a DB system. A high availability DB system contains three MySQL instances and hence has thrice the number of OCPUs and memory. [See supported shapes.](#)

All types  Virtual machine  Bare metal

Available shapes

| Name                             | Supports HeatWave | CPU core count | Memory size | Max network bandwidth |
|----------------------------------|-------------------|----------------|-------------|-----------------------|
| MySQL, VM, Standard, E3.1.8GB    | No                | 1              | 8 GB        | 1Gbps                 |
| MySQL, VM, Standard, E3.1.16GB   | No                | 1              | 16 GB       | 1Gbps                 |
| MySQL, VM, Standard, E3.2.32GB   | No                | 2              | 32 GB       | 2Gbps                 |
| MySQL, VM, Standard, E3.4.64GB   | No                | 4              | 64 GB       | 4Gbps                 |
| MySQL, VM, Standard, E3.8.128GB  | No                | 8              | 128 GB      | 8Gbps                 |
| MySQL, VM, Standard, E3.16.256GB | No                | 16             | 256 GB      | 16Gbps                |
| MySQL, VM, Standard, E3.24.384GB | No                | 24             | 384 GB      | 24Gbps                |
| MySQL, VM, Standard, E3.32.512GB | No                | 32             | 512 GB      | 32Gbps                |

Select a shape  Cancel



## MySQL Available in OCI Free

Get \$300 in credits and try MySQL Database Service free for 30 days

### Try MySQL HeatWave for free

- Get US\$300 in cloud credits and try Oracle MySQL HeatWave for 30 days.
- Choose your cloud provider: Oracle Cloud Infrastructure (OCI) or Amazon Web Services (AWS).
- Simplify operations with one MySQL Database service for transactions, analytics, and machine learning (ML)—eliminating the complexity and cost of separate analytics database, ML, and ETL services.
- Get real-time analytics and improve security—eliminating the latency and risks of data movement between data stores.
- Benefit from unmatched price performance and machine learning-powered automation—with changes to current MySQL applications.



<https://www.oracle.com/mysql/free>

# Oracle Autonomous Database

Autonomous database on shared or dedicated infrastructure



# What is Oracle Autonomous Database?

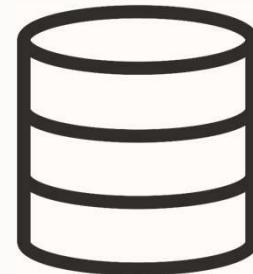
Using the cloud to eliminate all the complexity of mission critical databases



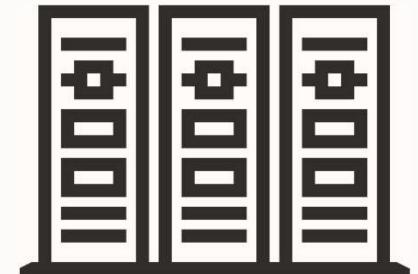
Oracle  
Autonomous  
Database



Complete  
Infrastructure  
Automation



Complete  
Database  
Automation



Automated  
Data Center  
Operations

# Autonomous Database | Shared Infrastructure

## Oracle Database

### Overview

#### Autonomous Database

Autonomous Data Warehouse

Autonomous JSON Database

Autonomous Transaction Processing

#### Autonomous Dedicated Infrastructure

#### Oracle Base Database (VM, BM)

#### Exadata on Oracle Public Cloud

### Exadata Cloud@Customer

#### External Database

#### Data Safe - Database Security

Overview

Security Assessment

User Assessment

Data Discovery

Data Masking

Activity Auditing

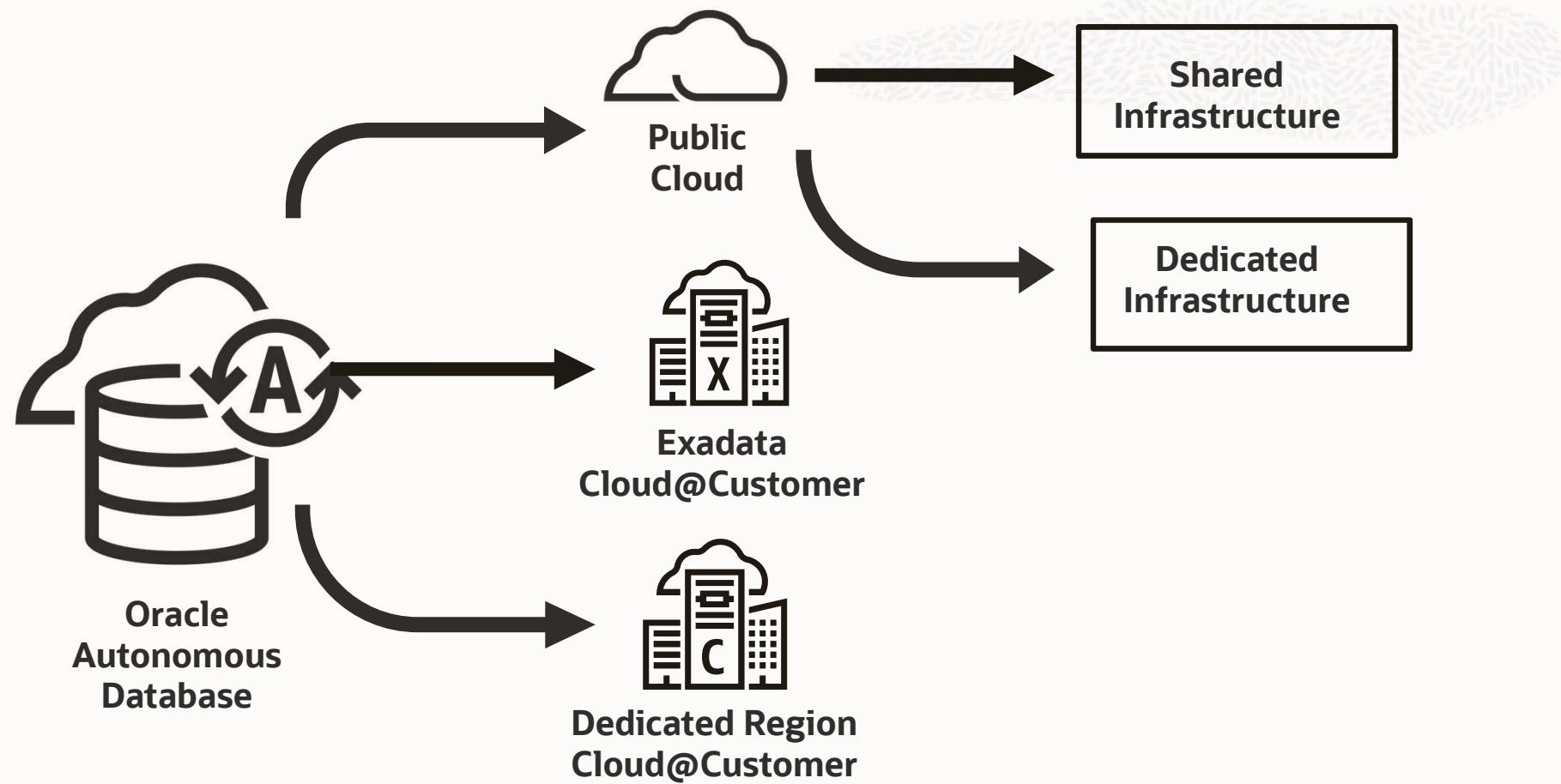
### Database Backups

#### GoldenGate

#### Operator Access Control



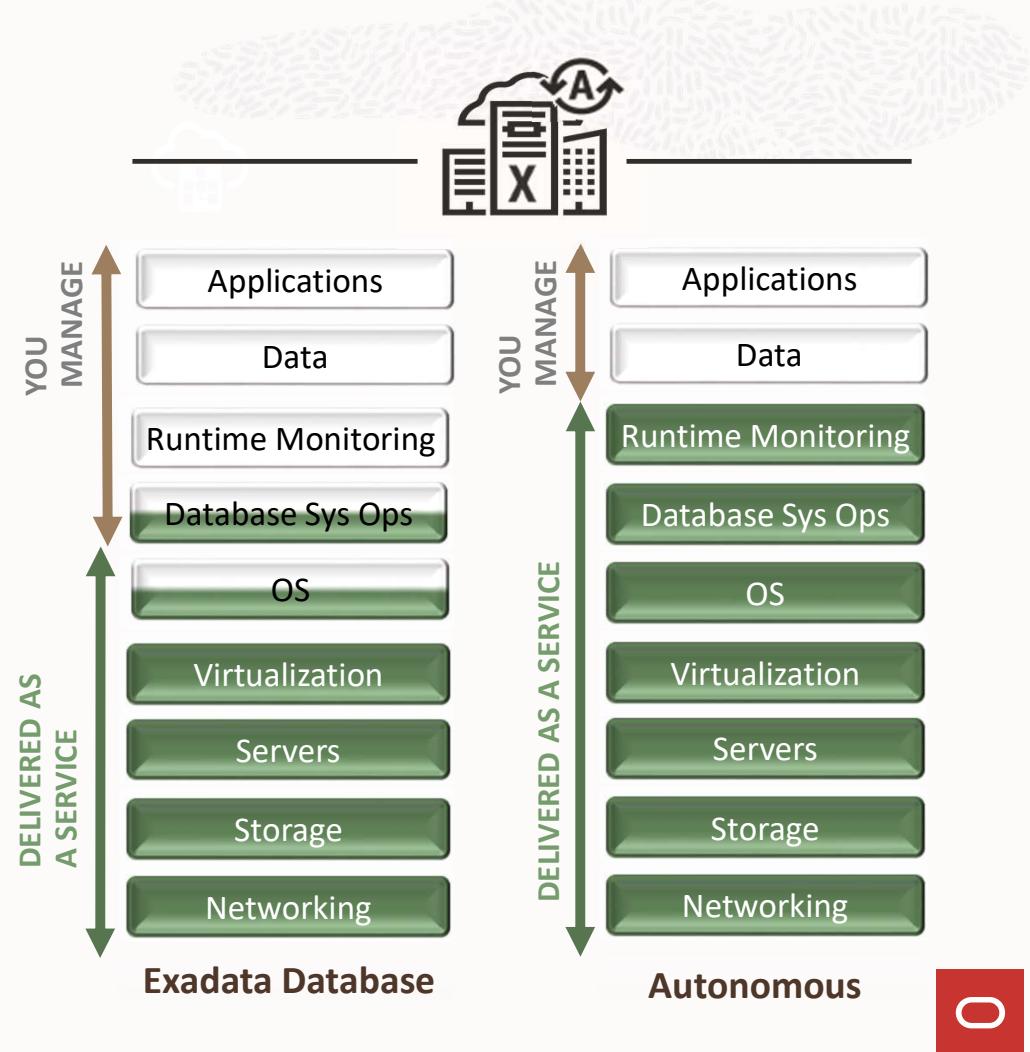
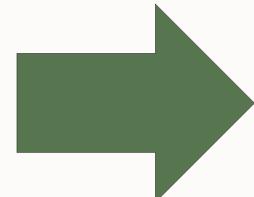
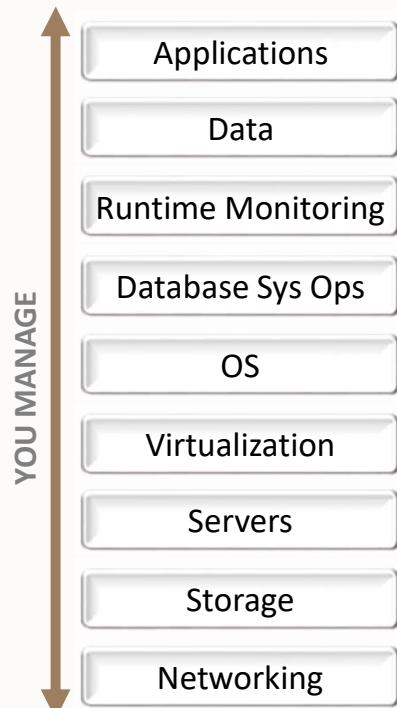
## Multiple Deployment Choices



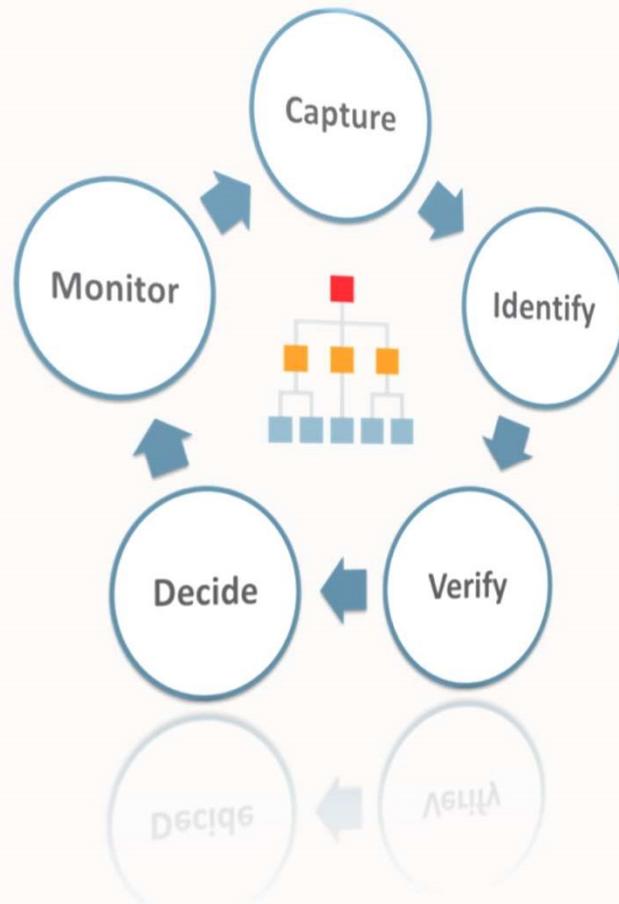
# Transfer more responsibility to the service while lowering costs

Same cost per OCPU, greater value with Autonomous

## Traditional IT



# Autonomous Database | Automatic Indexing



Indexes implemented using Machine Learning

The entire process is continuous and fully automatic

Index activities are viewable, controllable and auditable

# Oracle Autonomous Console Management

## Create Autonomous Database

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 (provisioned ACI-2)

Configure the database

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

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

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## General Information

**Database Name:** ATPDevTest  
**Workload Type:** Transaction Processing  
**Compartment:** [.../PM\\_Compartment](#)  
**OCID:** ...ibmzoq [Show](#) [Copy](#)  
**Created:** Tue, May 25, 2021, 17:34:32 UTC  
**OCPUs 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

OCPUs count

[\(i\)](#)  
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 provisioned number of cores as the workload increases. [Learn more](#)

Storage (GB)

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

[Update](#) [Cancel](#)



# Oracle Autonomous secure connection | Credential Wallet

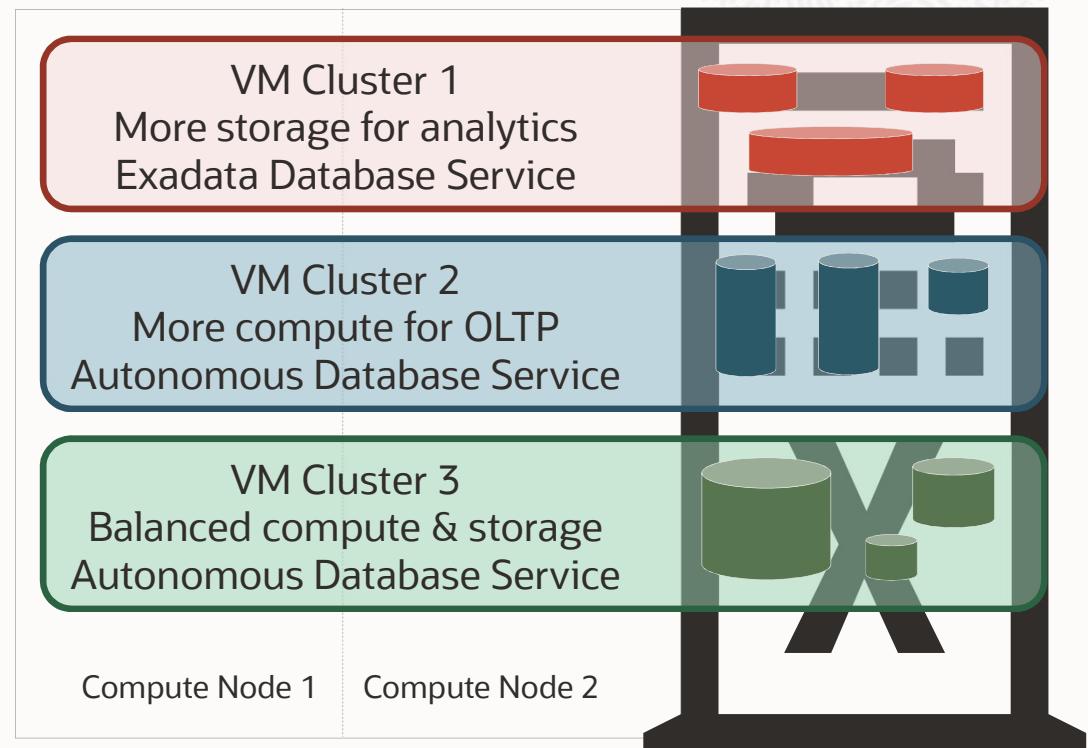
The screenshot shows the Oracle Cloud interface for an Autonomous Database. On the left, there's a sidebar with 'Autonomous Database' and 'Autonomous Database Details'. The main area has a large green 'ATP' logo with 'AVAILABLE' below it. A central modal window titled 'Database Connection' provides instructions for connecting to the database using client credentials and a wallet. It includes a 'Download Client Credentials (Wallet)' section with a 'Download' button and a 'Connection Strings' section listing various TNS names and their corresponding connection strings.

| TNS Name ⓘ          | Connection String ⓘ   |
|---------------------|---|
| ATPDB2_tp           | ...ME=ATPDB2_tp.atp.oraclecloud.com)) <a>Show</a> <a>Copy</a> |
| ATPDB2_medium       | ...TPDB2_medium.atp.oraclecloud.com)) <a>Show</a> <a>Copy</a> |
| ATPDB2_tpurgent     | ...DB2_tpurgent.atp.oraclecloud.com)) <a>Show</a> <a>Copy</a> |
| ATPDB2_low          | ...E=ATPDB2_low.atp.oraclecloud.com)) <a>Show</a> <a>Copy</a> |
| ATPDB2_high         | ...=ATPDB2_high.atp.oraclecloud.com)) <a>Show</a> <a>Copy</a> |
| ATPDB2_tp_tls       | ...ME=ATPDB2_tp.atp.oraclecloud.com)) <a>Show</a> <a>Copy</a> |
| ATPDB2_medium_tls   | ...TPDB2_medium.atp.oraclecloud.com)) <a>Show</a> <a>Copy</a> |
| ATPDB2_tpurgent_tls | ...DB2_tpurgent.atp.oraclecloud.com)) <a>Show</a> <a>Copy</a> |
| ATPDB2_low_tls      | E=ATPDB2_low.atp.oraclecloud.com)) <a>Show</a> <a>Copy</a>    |



# 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 X9M

# Automated Data Protection – Autonomous Data Guard On ADB

- One-click enable
- Simple and transparent data protection
- Fully-managed standby database
- Completely transparent to customer applications
- Automated failover for zero-data loss scenarios
- User initiated failover for other scenarios

- Seamless reconnection - no new wallet or network configuration required
- RPO: 5 mins, RTO: 2 mins
- Cross Exadata machine or Availability Domain (AD)
- Cross Region

The screenshot shows two panels from the Oracle Cloud Infrastructure console. The top panel is titled 'My Quick Start Lab' and displays an 'Autonomous Database Information' card. The card shows the database name 'QSLDB', workload type 'Data Warehouse', compartment 'adwoc-lpm (root)/ADW\_Frankfurt', OCID '...njbzq', and creation date 'Tue, Jan 19, 2021, 13:34:29 UTC'. It also indicates that 'Status: Disabled' and 'Enable' is a link. The bottom panel is titled 'Enable Autonomous Data Guard' and shows a dropdown menu for selecting a region. The 'Region' dropdown is open, showing various Oracle regions such as 'UK South (London) - Current Region', 'Canada Southeast (Toronto)', 'Chile Central (Santiago)', etc. The 'UK South (London)' option is highlighted with a blue background.





# Move Standard Database Workload Autonomous Database



Autonomous Database

## Autonomous Operation

- Reduce intensive and manual DBA Tasks
- Auto Database Tuning, Pathing and Securing Capabilities

## Lowest cost to adopt Autonomous Database (ADB)

- No additional infrastructure costs, pay only for ADB OCPUs
- Leverage features that drive a true pay-per-use consumption
- Use BYOL to reduce your costs and TCO

## Simplest transformation for new and existing workloads

- Autonomous automation and optimized end-to-end
- Developer self-service for new database application development

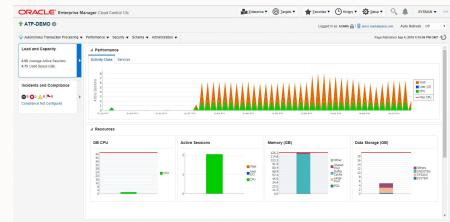


## Autonomous Management Tools | All Tools Bundled with ADB



# Oracle Management Cloud

Managing multiple DB instances across On-premises and Oracle Cloud - Need a consolidate view



# Enterprise Manager

Get rid of time-consuming and resource-intensive weekly full backups on production database services



## OCI Console DB Mgmt Services

Working across multiple ADB instances  
(dev, Test, QA and etc.)  
Needs access to SQL performance data



# Maximizing Data Privacy and Security

Keeping Data Safe with the Oracle Database

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## People are after **your** data



Nation States

Criminals

Hacktivists

Insiders

Former Employees

Curiosity Seekers

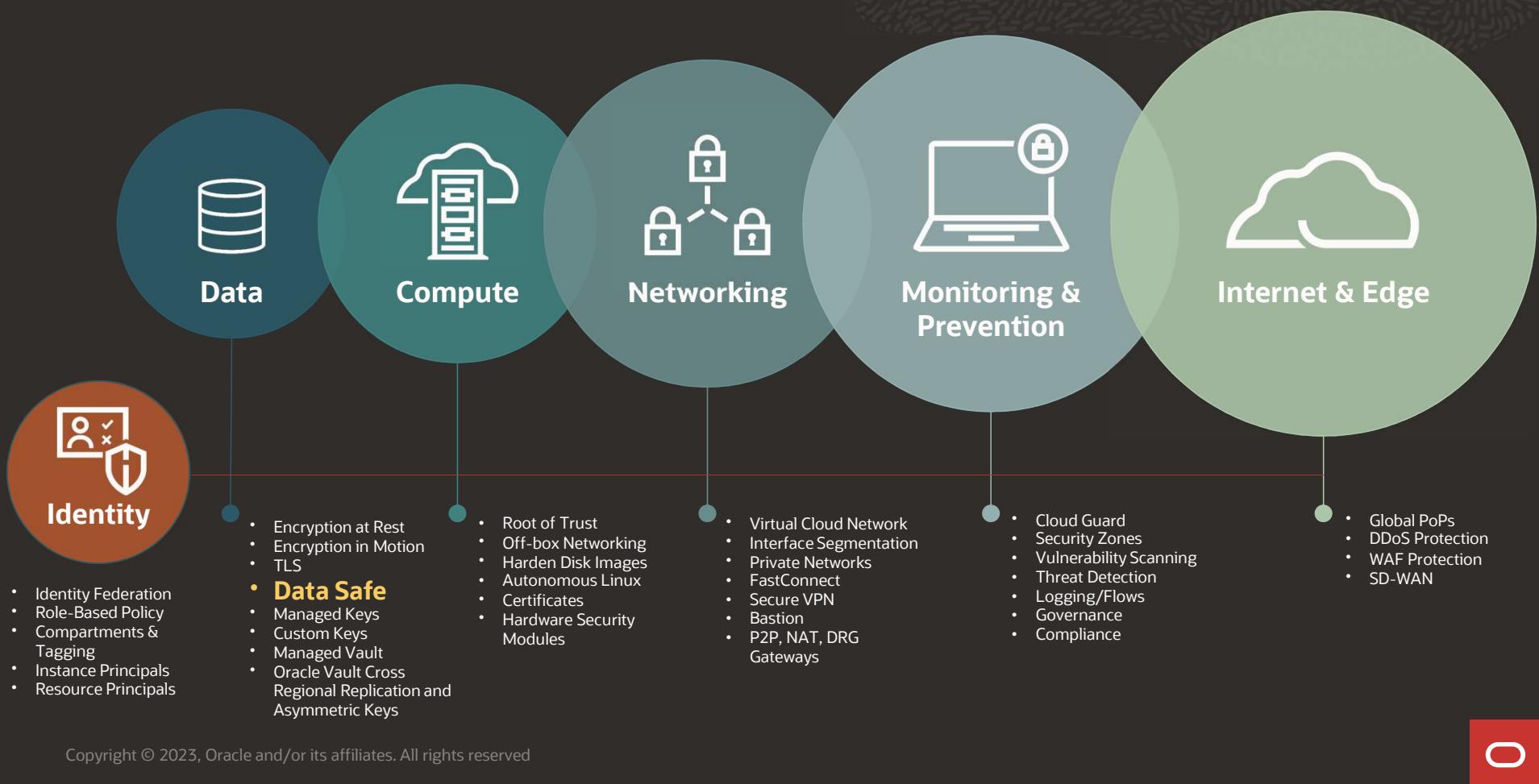
Customers

Competitors

Personal Data  
Financial Data  
Trade Secrets  
Regulated Data



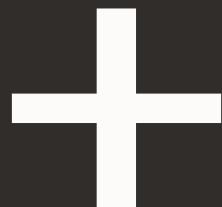
# Integrated and Automated Security from Data to Identity



# The best security for your data



ORACLE  
AUTONOMOUS  
DATABASE



ORACLE DATA  
SAFE



ORACLE CLOUD

# Oracle Data Safe available on your OCI Tenancy

## Oracle Database

### [Overview](#)

#### [Autonomous Database](#)

Autonomous Data Warehouse

Autonomous JSON Database

Autonomous Transaction Processing

#### [Autonomous Dedicated Infrastructure](#)

#### [Oracle Base Database \(VM, BM\)](#)

#### [Exadata on Oracle Public Cloud](#)

### [External Database](#)

#### [Data Safe - Database Security](#)

Overview

Security Assessment

User Assessment

Data Discovery

Data Masking

Activity Auditing

### [Database Backups](#)

# Introducing Oracle Data Safe

## Unified database security control center

- Risk dashboard: configuration, data, users
- Monitor user activity
- Mask data for test
- Extensible - more features to come...

## Benefits

- No special expertise needed: click-and-secure
- Saves time and mitigates security risks
- Defense-in-depth security for all customers

**Now available for securing ALL Oracle Databases, on-premises and in the cloud**



## Data Safe components



**Data safe comprises five components in a single integrated cloud service for securing Oracle Database targets**

Security Assessment

User Assessment

Activity Auditing

Data Discovery

Data Masking

# Oracle Advanced Security

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

- **Transparent Data Encryption**

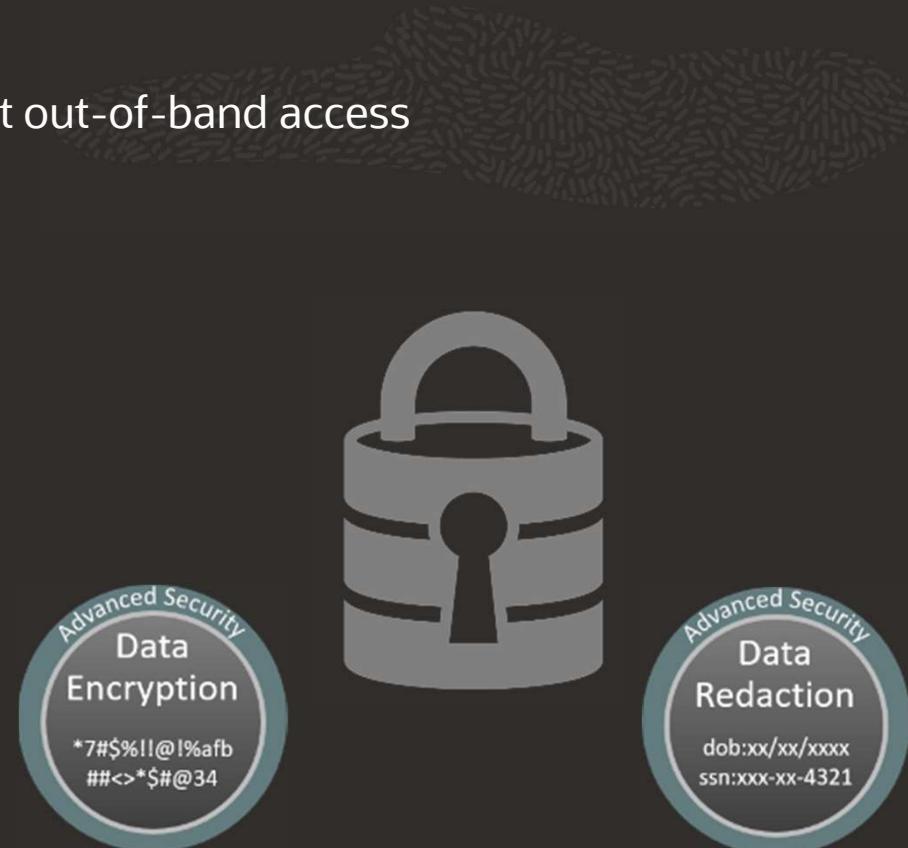
- Stop would-be attackers from bypassing the database and reading sensitive information directly from storage by enforcing data-at-rest encryption in the database layer.

- **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.



# Oracle Database Vault

Restrict access to application data by privileged users with the principle of least privilege

- **Separation of duties**

- Allow only security roles to manage users, profiles, and security controls while limiting admins to managing only the database.

- **Realms**

- Block unauthorized access to sensitive data by creating restricted application environments within Oracle Database.

- **Command rules**

- Block accidental or malicious changes to production databases attempted outside specific maintenance windows.

- **Trusted paths**

- Use factors like client IP address, program, user name, and time of day to control access to data and data operations.





## Security assessment

Instant feedback on configurations that may introduce unnecessary risk

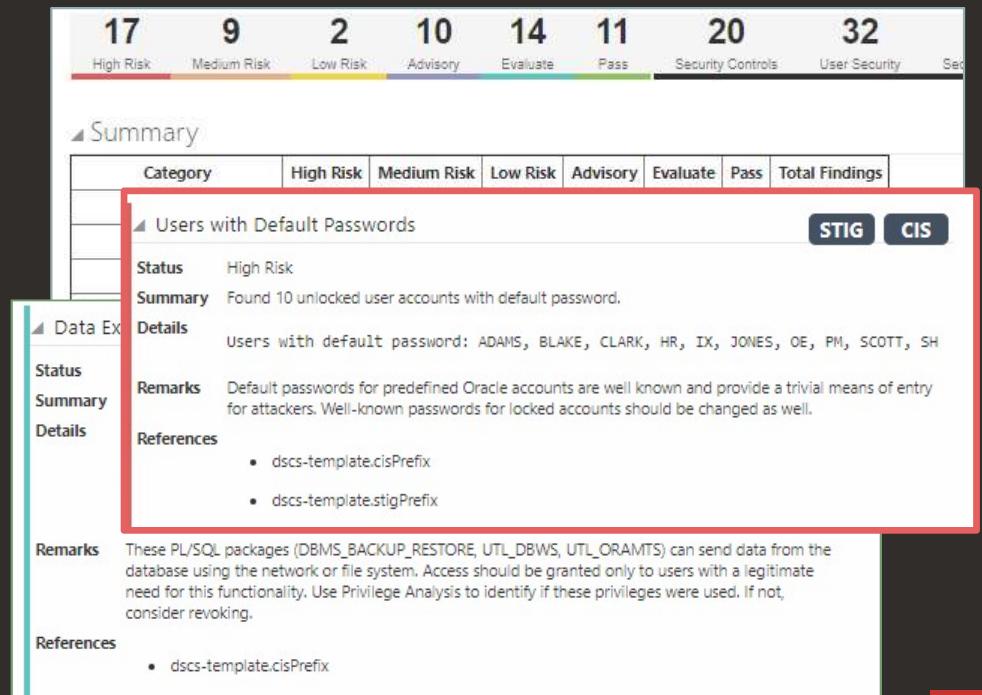
Comprehensive assessment

- Security parameters
- Security controls in use

Identify drift from best practices

Actionable reports

- Prioritized recommendations
- Compliance mappings (EU-GDPR, CIS)

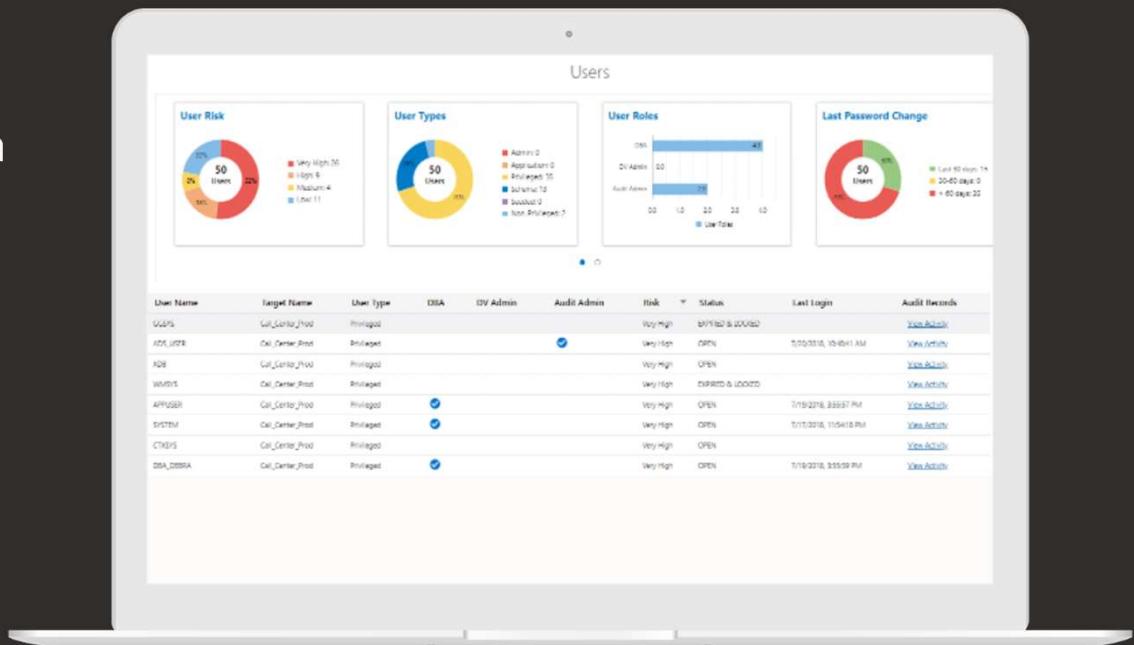


# User assessment

Reduce user risk by managing privileges and identifying risky behavior



- Identify over-privileged risky users
- Static profile: type of user, password policies
- Dynamic profile: last login, audit data





## Data masking

Minimize risk by replacing sensitive data with realistic yet obscured data for use in development, test, and partner environments

- Mask data identified as sensitive
- 55+ pre-defined masking formats
- Masking transformations
- Masking reports

A screenshot of a software interface titled "Sensitive Columns" and "Mask Format". The left pane lists categories of sensitive data: Financial Information, Payment Card Information, Personally Identifiable Information, Personal Categorization Data, Birth Details, Date of Birth, National Identification Number, and Information Technology Data. The right pane shows a specific column "PROD\_CC.CCA\_CARDINFO.ACCT\_NUMBER" and its corresponding "Generic Credit Card Number" mask format. A dropdown menu is open next to the mask format, listing various options: User Defined Function, Regular Expression, American Express Credit Card Number, Discover Card Credit Card Number, MasterCard Credit Card Number, Visa Credit Card Number, and Generic Credit Card Number. The "Visa Credit Card Number" option is highlighted.

| Sensitive Columns                   | Mask Format                |
|-------------------------------------|----------------------------|
| PROD_CC.CCA_CARDINFO.ACCT_NUMBER    | Generic Credit Card Number |
| User Defined Function               |                            |
| Regular Expression                  |                            |
| American Express Credit Card Number |                            |
| Discover Card Credit Card Number    |                            |
| MasterCard Credit Card Number       |                            |
| Visa Credit Card Number             |                            |
| Generic Credit Card Number          |                            |

## Activity auditing

Track user actions and streamline auditing with policy-based reporting



- Collect audit data from databases and track sensitive operations
- Provision audit, compliance, and alert policies
- Generate audit reports
  - Interactive and customizable reports
  - Summary and detailed reports

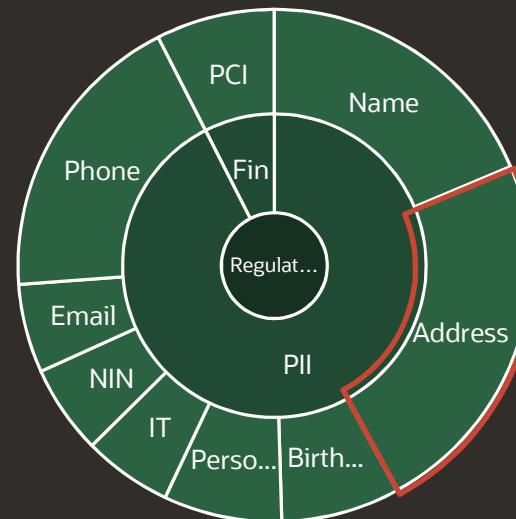
The screenshot shows a laptop screen displaying the Oracle Database Audit Policy Configuration interface. The main window is titled 'Edit Policies' and has a target name of 'Call\_Center\_Prod'. It is divided into two tabs: 'Audit Policies' (selected) and 'Alert Policies'. Under 'Audit Policies', there are several sections: 'Basic Auditing' (with checkboxes for 'Critical Database Activity' and 'Login Events', and an 'Exclude Users' field set to 'ALL USERS'), 'Admin Activity Auditing' (with a checkbox for 'All Admin Activity'), 'User Activity Auditing' (with a checkbox for 'All User Activity' and a 'List of Users' field), 'Audit Compliance Standards' (with a checkbox for 'Center for Internet Security (CIS) Configuration'), and 'Additional Audit Policies' (with links to 'Custom Policies' and 'Oracle Pre-seeded Policies'). At the bottom right of the dialog are 'Provision' and 'Cancel' buttons.

## Data discovery

Prioritize security efforts by revealing the location, type, and amount of sensitive data



- Discovers and classifies 150+ sensitive data types
  - Name, address, SSN, salary, medical health, payment card information and many more
- Supports user-defined sensitive data types
- Supports incremental discovery
- Reports amount and type of sensitive data

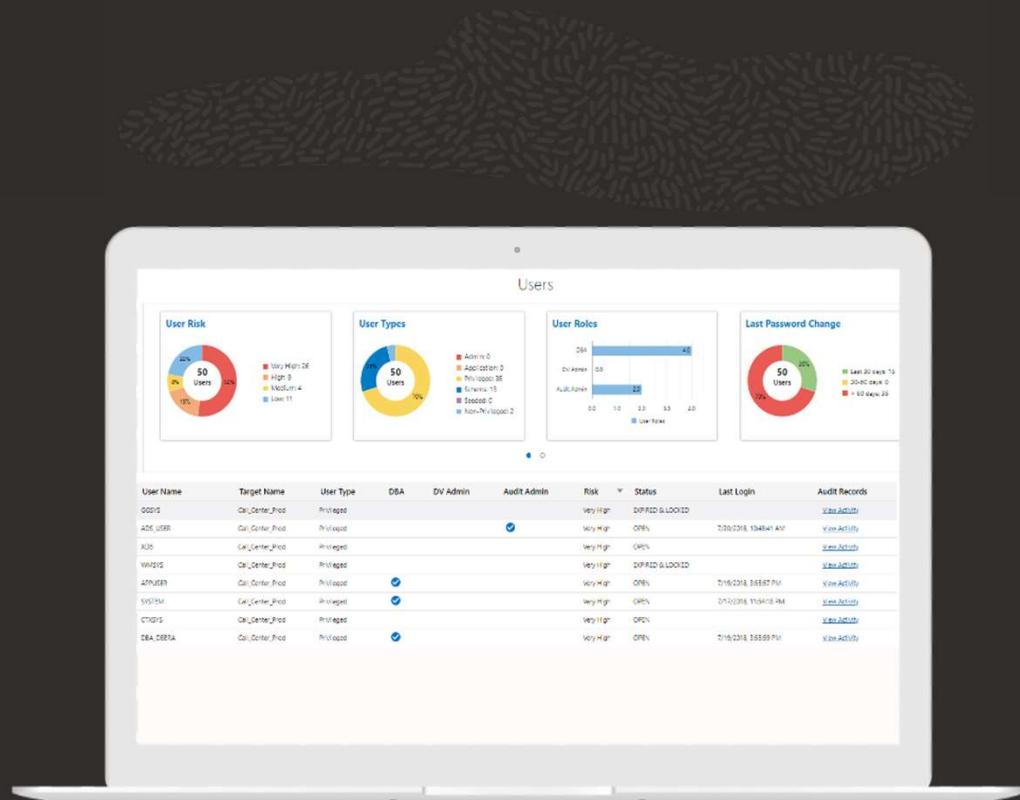


|                  |                   |
|------------------|-------------------|
| 16.6K            | 12                |
| Sensitive Values | Sensitive Types   |
| 4                | 17                |
| Sensitive Tables | Sensitive Columns |

# Summary: Oracle Data Safe

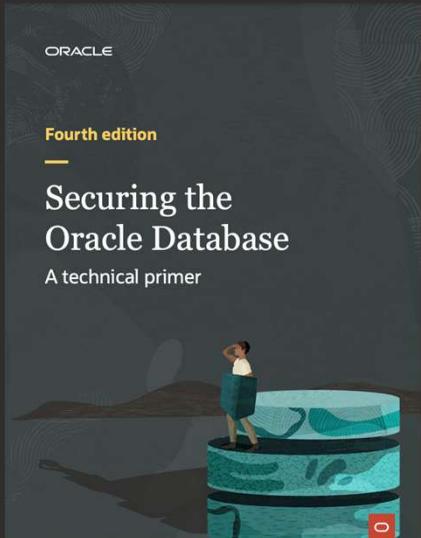
- Unified security control center for cloud and on-premises databases
  - Immediate visibility into risks from data, users, and configurations
  - Click-and-secure: no special expertise required
  - Complete set of proven database security capabilities
- Cuts customer operational cost for securing their databases

Raising the bar on security  
for ***all*** Oracle Database customers

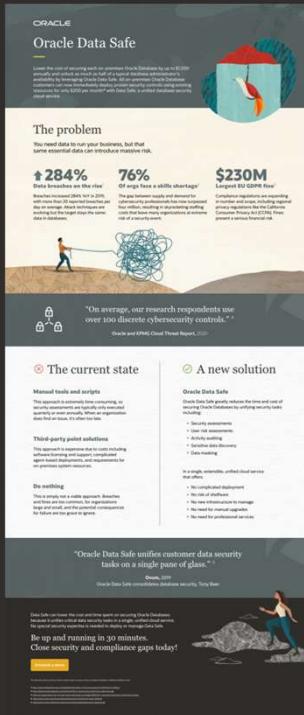


# Learn More

[Read the ebook](#)



[Check out the infographic](#)



[Read the IDC report](#)

White Paper  
The Security Benefits of a Fully Managed Database Service:  
Oracle Autonomous Database  
Sponsored by: Oracle Corp.  
Carl W. Orlitz  
March 2020  
  
IN THIS WHITE PAPER  
In this white paper, we consider the important role of security features such as detection and protection of privacy-related and other sensitive data, detection of improper or suspicious access, and control of database access in a comprehensive way. We also look at timely patching of database management systems (DBMS) to prevent security vulnerabilities from being exploited. Patching is done on an infrequent basis in most datacenters, exposing the database to risk in the delay. This white paper discusses how Oracle Autonomous Database addresses this availability issue. It also looks at other security concerns and how they may be addressed through technology.  
One might think that moving to a managed database service in the cloud would solve the availability problem, but these services may still require interaction between the customer and the service provider. In addition, the responsibility for patching the DBMS remains with the customer. While many security issues remain the user's responsibility, but without proper tools and features, this can be problematic at best. The Oracle Autonomous Database Cloud Service, by contrast, overcomes these issues, providing a managed service without downtime for continued availability but with maximum security and a range of capabilities that enable users to properly monitor and secure their data.  
  
SITUATION OVERVIEW  
The Patching Issue  
Computer software is never in a steady state. It requires constant improvement and updating. Some of this effort is done by the vendor to fix known bugs and security holes. Other times, it is done by the customer, but a great deal has to do with countering vulnerabilities that may be found and exploited by bad actors. This is especially important for databases, where breaches result in significant liability for the enterprise. These patches are applied through patching.  
What is Patching?  
A patch is a piece of code that is inserted into existing software to alter its behavior. It may represent a fix to a known problem, a much-requested enhancement, or the removal of a security vulnerability. Applying a patch to a database server normally requires taking it offline to modify the code and then bringing it up again.

March 2020, IDC #U546049719

# OCI DBCS Bare Metal

Understanding DBCS Bare Metal characteristics



# Database Cloud Service | Bare Metal

Understanding Oracle OCI DBCS Bare Metal Roles and Limitations



## Bare Metal DB Systems rely on Bare Metal servers running Oracle Linux

- One-node database system
- Two Bare Metal shapes
  - BM DenseIBM.01.36 up to 36 Cores, 512 GB Memory and 9 3.2 TB locally attached (28.8 TB total)
  - BM DenseIBM.02.52 up to 52 Cores, 768 GB Memory and 8 6.4 TB locally attached (51.2 TB total)
- Start With 2 cores and Scale Up/Down OCPU's based on your requirement
- Data Guard with and across Ads (Requires DB Enterprise Edition)
- No Oracle RAC Allowed, just Single Instance
- It is not possible to create a non-CDB via the console - use dbcli



# Oracle DBCS Bare Metal Console Management

## Create DB system

1 DB system information  
2 Database information

Select an availability domain

AD-1 wBCz:US-ASHBURN-AD-1 ✓    AD-2 wBCz:US-ASHBURN-AD-2    AD-3 wBCz:US-ASHBURN-AD-3

Select a shape type

Virtual Machine    Bare Metal ✓

Select a shape

BM.DenseIO1.36    2 Available Core Count    Change shape

## Configure storage

Data storage percentage

80%

## Browse All Shapes

A shape determines the options for resources such as node count, core count, and storage. For information about shapes, see [Shapes for Bare Metal DB Systems](#).

| Name   | Maximum Core Count | Minimum Core Count         |
|--|--------------------|----------------------------|
| <input checked="" type="checkbox"/> BM.DenseIO1.36 | 36                 | 2                          |
| <input type="checkbox"/> BM.DenseIO2.52            | 52                 | 2                          |
| 1 Selected   |                    | Showing 2 Items < 1 of 1 > |

## Configure the DB system

Total node count

1

The node count for the selected shape cannot be changed

Oracle Database software edition

Enterprise Edition High Performance

Select an Oracle Database Software Edition

**Standard Edition**

Enterprise Edition

Enterprise Edition High Performance

Enterprise Edition Extreme Performance

<https://docs.oracle.com/en-us/iaas/dbcs/doc/bare-metal-db-systems.html>

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# OCI DBCS Virtual Machines

Understanding DBCS Virtual Machine characteristics

# Database Cloud Service | Virtual Machine

Understanding Oracle OCI DBCS roles and limitations



## Entry-level, provision with GI or LVM (fast-provision)

Restrictions:

- 2 DB Systems types on VM
  - One Node – One VB Database System
  - Two Nodes – Two VM Clusters with Oracle RAC Features
- Can have only a Single Database Home and one Database
- Amount of memory allocation depends on VM Shapes
- On A RAC shape, each node is assigned on a different fault domain



# Oracle DBCS Virtual Machine Console Management

## Create DB system

1 DB system information  
2 Database information

Select a shape type

Virtual Machine ✓ Bare Metal

Configure shape

A shape determines the options for resources such as node count, core count, and storage. For information about shapes, see [Shapes for Virtual Machine DB Systems](#).

**AMD** VM.Standard.E4.Flex  
4 core OCPU, 64 GB memory, 4 Gbps Network Bandwidth, 64K IOPS

Change shape

## Change shape

### Shape series

A shape determines the options for resources such as node count, core count and storage. [Learn more](#).

**AMD** AMD

Flexible OCPU count. AMD processors.

**intel** Intel

Flexible and fixed OCPU count. Intel processors. ✓

Intel X9

Flexible OCPU count

Intel X7

Fixed OCPU count

## Change shape

Configure OCPU

| Name  | OCPU | Memory | Network bandwidth | Theoretical max IOPS |
|---|------|--------|-------------------|----------------------|
| <input checked="" type="checkbox"/> VM.Standard3.Flex | 8    | 128 GB | 8 Gbps            | 128K                 |

You can customize the number of OCpus. Other resources scale proportionately. [Learn more about flexible shapes](#).

Number of OCpus per node

8 1 32

1 Selected Showing 1 Item

## Configure the DB system

Total node count

2

Oracle Database software edition

Enterprise Edition Extreme Performance

Total storage (GB) *Read-only* ⓘ

912



# Backup Your Cloud Database

Continuous protection of Oracle Database in OCI



## Ransomware is a major concern

Contar com um plano sólido de segurança é fundamental



**62%**

More ransomware attacks in the US in 2021 to more than **3,500** on an annual basis  
*(source: US Treasury)*



**37%**

Das corporações Globais foram atacadas pelo ransomware em 2022  
*(source: IDC)*



**\$1.85M**

Average total cost of remediating a ransomware attack  
*(source: Sophos)*



**180%**

More annualized losses from ransomware attacks in the US during 2021 to **\$1.18B** on an annual basis  
*(source: US Treasury)*

**One minute of data loss due to ransomware attack could impact 100s to 1000s of business transactions in enterprise databases**

# Data protection goals in the cloud



## Minimize ransomware risk

- Reduce data loss exposure and downtime after an attack
- Protect against backup deletion or alteration during an attack
- Secure backups against unauthorized access and information disclosure



## Optimize operations

- Get rid of time-consuming and resource-intensive weekly full backups on production database services
- Eliminate backup validation resource consumption on production database services
- Simplify multistep recovery processes and make recovery times predictable
- Minimize backup-driven costs



## Reduce administration

- Consistently apply backup policies across an organization
- Understand backup health and recoverability
- Plan for database backup space utilization

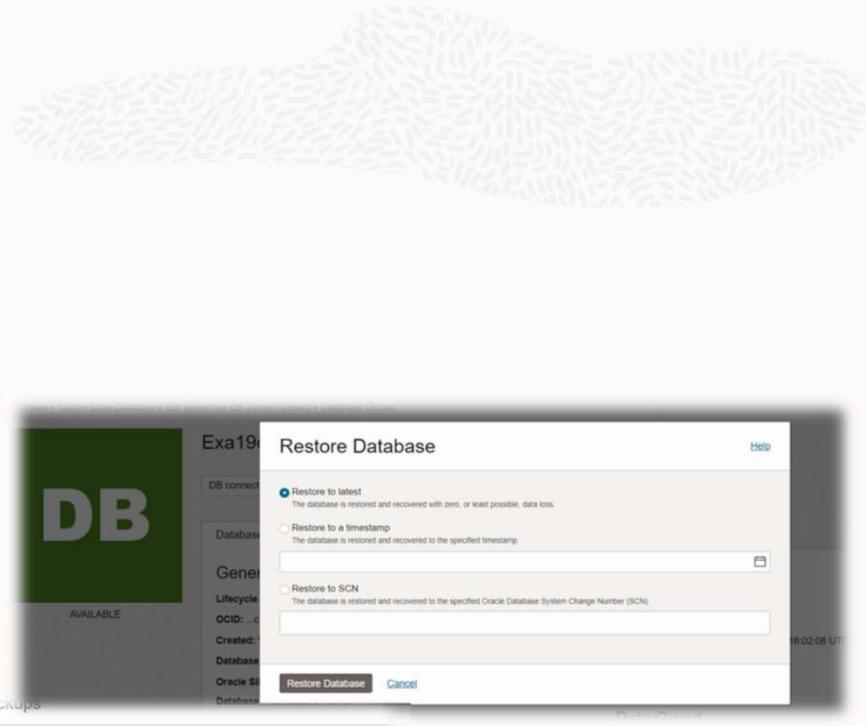
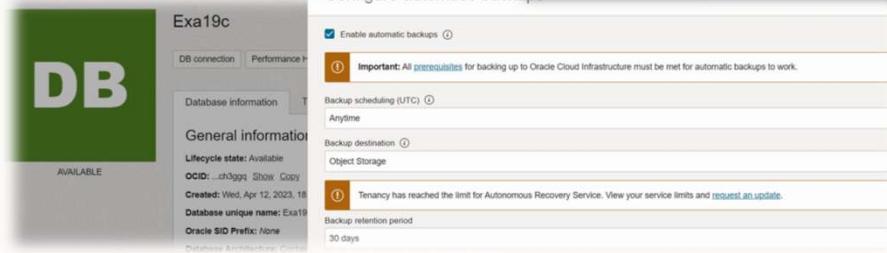
# Traditional OCI | Backup and Restore

## Manage backup and restore feature for VM/BM DB System

- Backup stored in Object or Local storage
- DB System in private subnets can leverage Service Gateway
- Start With 2 cores and Scale Up/Down OCPU's based on your requirement

### Backup Options

- It is not possible to create a non-CDB via the console - use dbcli

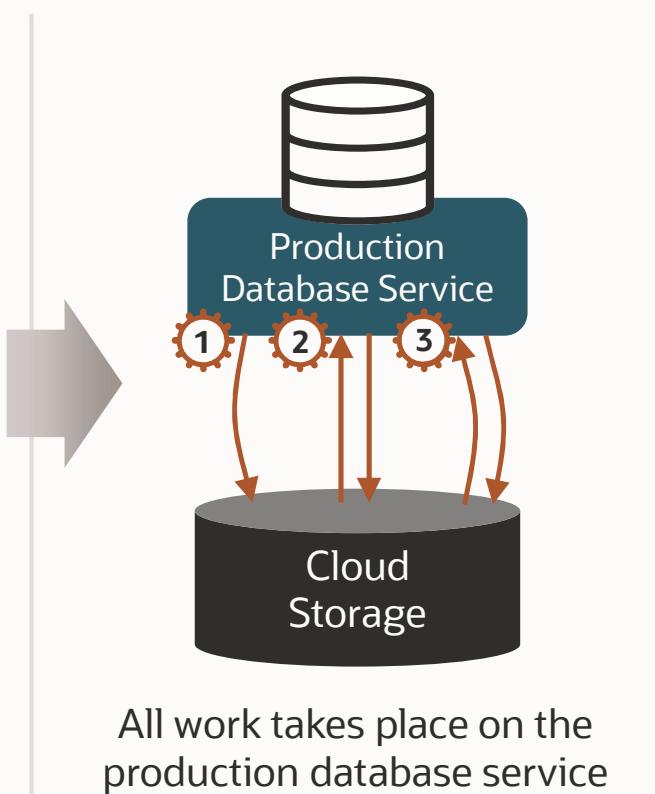


## Recovery Service offloads backup validation

All backups are checked for recoverability, reducing database service overhead

### Traditional cloud backup

1. Backup (full or incremental) is created on the production database service and stored in object storage
2. Production service reads the backup from object store, validates it, and fixes issues **doubling the impact on production database services**
3. Periodic revalidation **increases production database consumption**
4. Resulting in:
  - a. Lower production performance if resource constrained, or
  - b. Higher consumption costs if resources are unconstrained, or
  - c. Decision to not validate backups or revalidate them, increasing risk



# Oracle Database Zero Data Loss Autonomous Recovery Service

A fully managed, automated service for continuously protecting Oracle databases in OCI

## Ransomware resiliency

- Automatic and mandatory encryption to help prevent data theft
- Safeguards backups with enforced 14-day retention
- Optimizes backups in the background for fast recovery with zero data loss

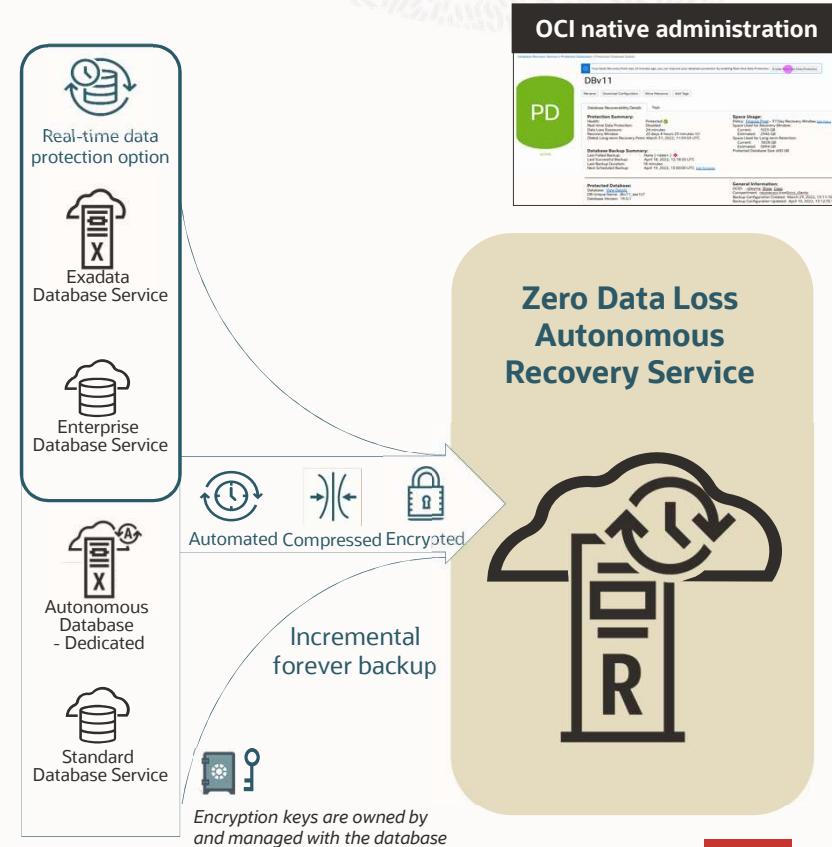
## Operational efficiency

- No more weekly full backups – eliminates production database overhead
- Shorter backup windows with incremental forever strategy
- Zero-impact database recovery validation for every backup

## Cloud simplicity

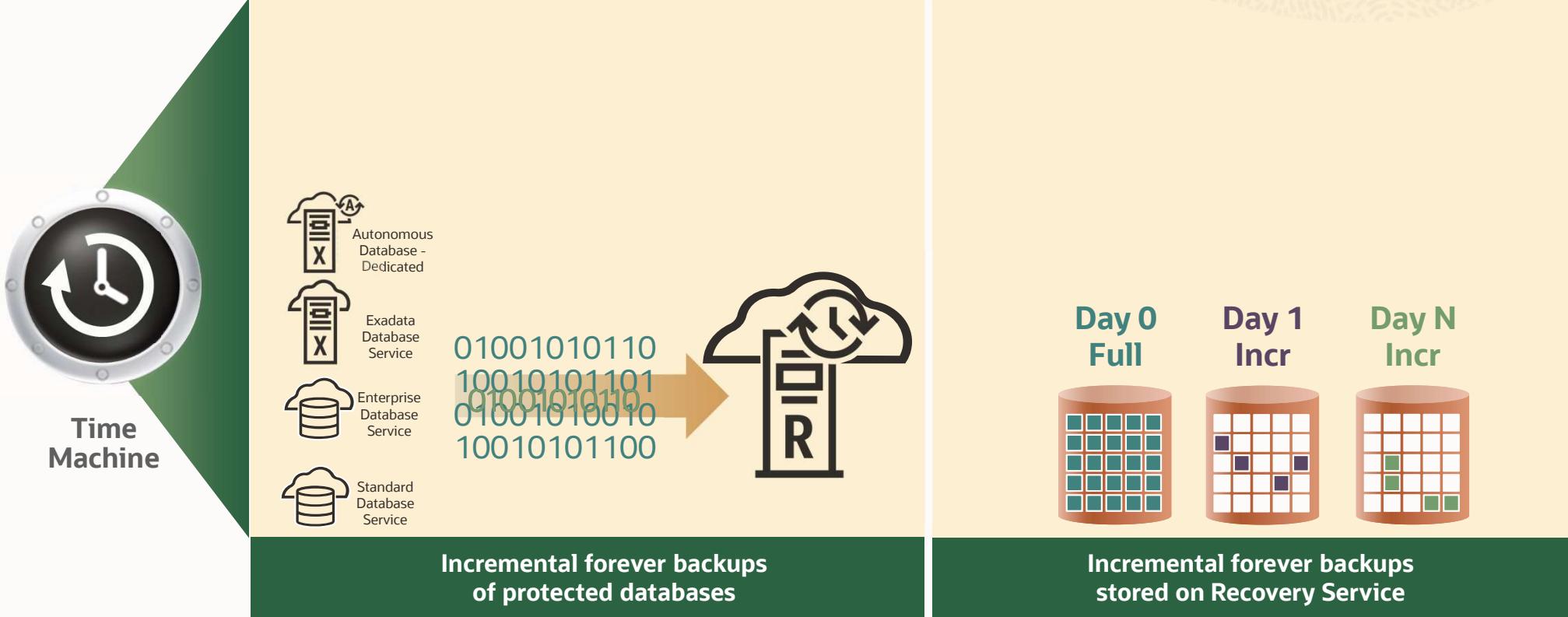
- Quickly configure database protection at scale with zero data loss
- Control costs with database-specific backup consumption metrics
- Gain deep data protection insights with granular recovery health dashboard

## Using proven Recovery Appliance technology



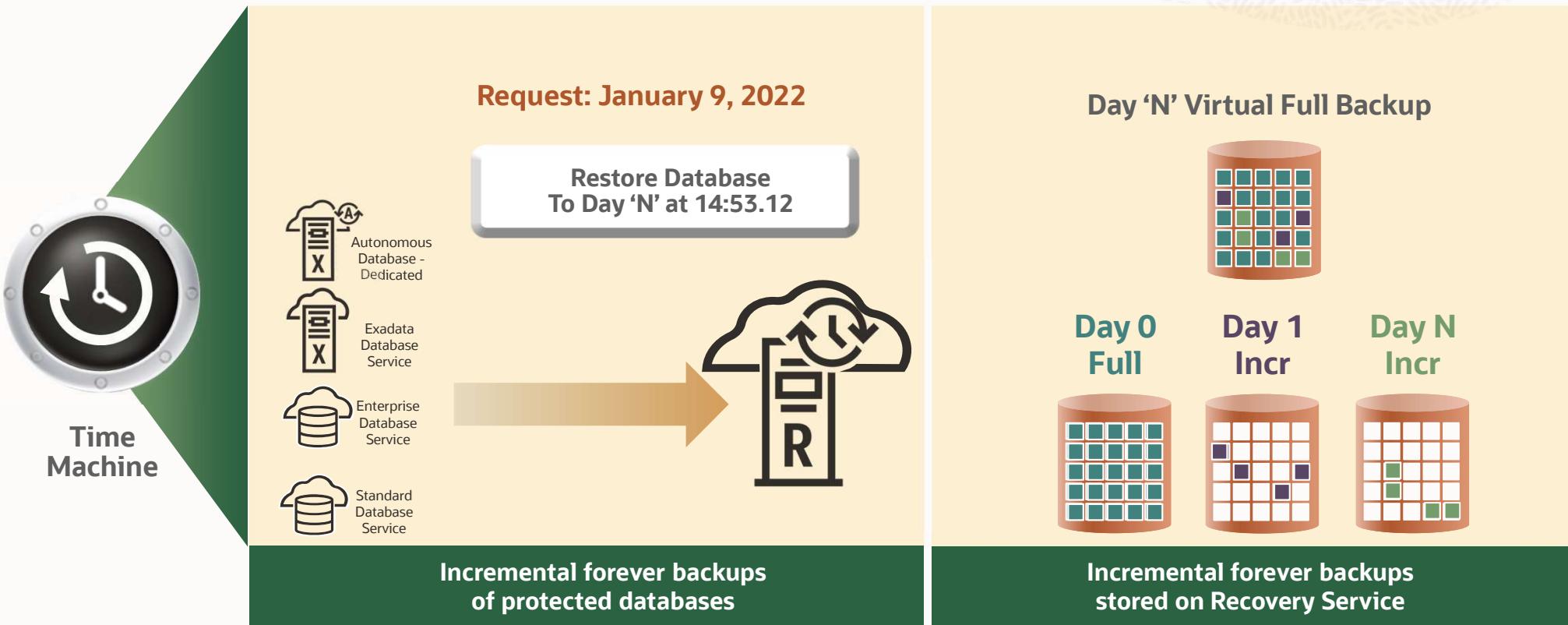
## Recovery Service eliminates weekly full backups

Incremental-forever backups reduce backup overhead on production database services



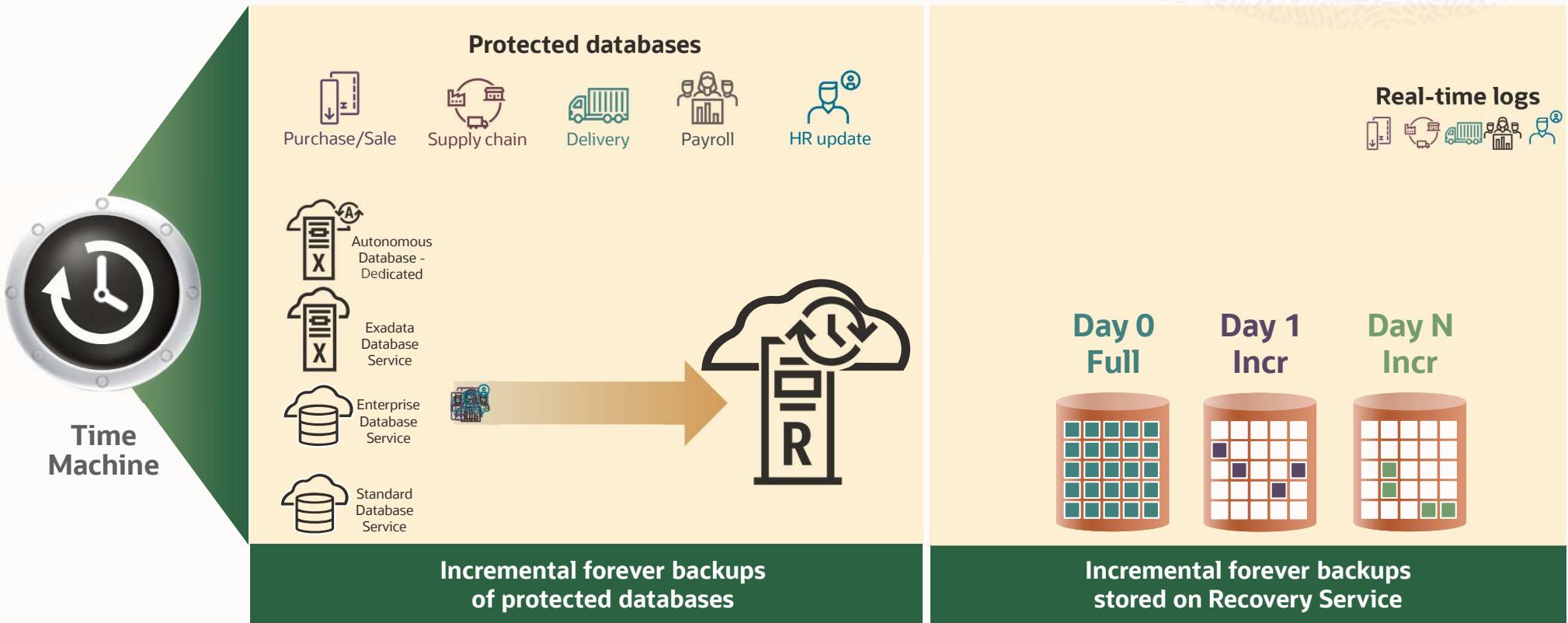
# Recovery Service simplifies database restores

Creation of virtual full backups eliminates multiple incremental restore & apply cycles



# Recovery Service continuously protects Oracle databases

Real-time protection of database changes increases resiliency with point-in-time recovery

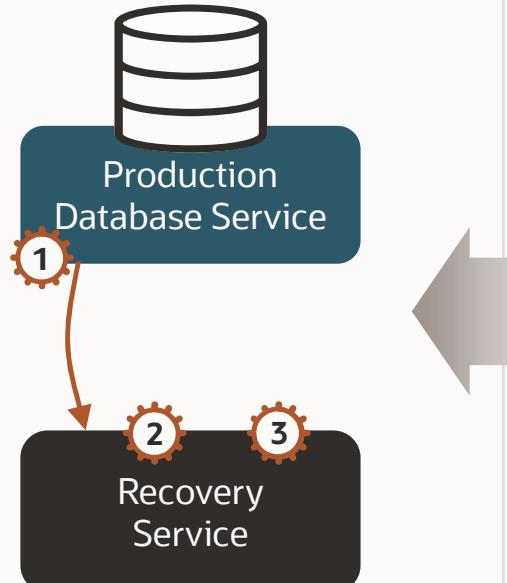


## Recovery Service offloads backup validation

All backups are checked for recoverability, reducing database service overhead

### Traditional cloud backup

1. Backup (full or incremental) is created on the production database service and stored in object storage
2. Production service reads the backup from object store, validates it, and fixes issues **doubling the impact on production database services**
3. Periodic revalidation **increases production database consumption**
4. Resulting in:
  - a. Lower production performance if resource constrained, or
  - b. Higher consumption costs if resources are unconstrained, or
  - c. Decision to not validate backups or revalidate them, increasing risk



Most work takes place on the Recovery Service

### Recovery Service backup

1. Incremental forever backup is created on the production database service and stored in the Recovery Service
2. The Recovery Service uses **internal Oracle Database knowledge** to check examine and fix backups when ingested, with **no impact on production databases**
3. The Recovery Service periodically revalidates backups with **no production database consumption**
4. Resulting in:
  - a. **Minimal backup impact on production databases**
  - b. **No additional production database service costs**
  - c. **Higher recoverability & lower risk**



# Recovery Service is easy to set up and use

Protect Oracle databases with less than 5 clicks in the OCI console

A fully managed OCI service with a simple UI

1. Enable automatic backups
2. Schedule daily incremental backups to meet your business schedule
3. Select Autonomous Recovery Service
4. Select protection window of 14 to 95 days
5. Enable real-time protection

## Configure automatic backups

[Help](#)

Enable automatic backups [\(i\)](#)



Important: For automatic backups to function, all [prerequisites](#) must be met.

Backup scheduling (UTC) [\(i\)](#)

2:00AM - 4:00AM

Backup destination [\(i\)](#)

Autonomous Recovery Service

Protection policy in **ZDLRA** [\(i\)](#) ([Change Compartment](#))

Bronze (14-days recovery window)

Enable real-time data protection [\(i\)](#)

Deletion options after database termination [\(i\)](#)

Retain backups according to the protection policy retention period

Retain backups for 72 hours, then delete

[Save changes](#) [Cancel](#)



# Recovery Service protects against unauthorized access

Built-in security and resiliency help safeguard mission-critical data

## Encryption is mandatory

- Non-encrypted databases are rejected
- Keys are never stored in the Recovery Service

## Access and management controls

- No direct user access to storage – backup only
- Access granted per protected database
- 14-day minimum retention enables recovery from human error or malicious internal actors

## Resilient operations

- Fault-tolerant across all infrastructure components
- Highly available across Availability Domains and Fault Domain
- Load balanced within a region

The screenshot shows the Oracle Cloud interface for managing protected databases. At the top, there's a navigation bar with the Oracle Cloud logo, 'Cloud Classic >', a search bar, and account information ('US East (Ashburn)'). Below the navigation is a breadcrumb trail: 'Database Backups > Protected Databases > Protected database details'. The main content area features a large green circular icon with 'PD' in white, labeled 'ACTIVE' below it. To the right of the icon, the database name 'FINANCE' is displayed. The page is divided into several sections: 'Protected database information' (selected tab), 'Tags', 'Protection summary' (Health: Protected, Real-time data protection: Disabled, Data loss exposure: 0 seconds, Protection policy: Bronze, 14-day recovery window), 'Space usage' (Current: 16,231.27 GB, Projected for policy: 16,216.83 GB, Protected database size: 5,790,931 GB), 'Database backup summary' (Last failed backup: —, Last completed backup: Mon, Oct 10, 2022, 02:56:02 UTC, Last backup duration: 4 m 53 s), 'Protected database' (Database details: FINANCE), and 'General information' (OCID: ...4w7dxa, Show, Copy). A small blue circular icon with a white 'O' is located in the bottom right corner of the page.



# Recovery Service provides insights into backup health and operations

Built-in dashboards and tools simplify reporting and planning

Continuous monitoring of potential business risks

- Data loss exposure
- Recovery window

Critical data for operational planning

- Capacity usage
- Protection policy

## Protected databases in ZDLRA Compartment

Protected databases offer an RMAN integrated 'incremental-forever' backup strategy to transfer Oracle Database backups to Oracle Cloud. Built to reduce network consumption and storage utilization, protected databases enable real-time data protection, backup validation and policy driven backup administration for all databases. [Learn more](#).

| Name    | State    | Health             | Source database | Real-time data protection | Data loss exposure | Current recovery window | Recovery window space used | Protection policy | Database size | ⋮ |
|---------|----------|--------------------|-----------------|---------------------------|--------------------|-------------------------|----------------------------|-------------------|---------------|---|
| FINANCE | ● Active | Protected <i>i</i> | FINANCE         | Enabled                   | 0                  | 7 d 7 h 54 m            | 8,121.12 GB                | Bronze            | 5,778 GB      | ⋮ |
| SALES   | ● Active | Protected <i>i</i> | SALES           | Disabled                  | 29 m 47 s          | 7 d 8 h 12 m            | 9,022.26 GB                | Silver            | 3,944 GB      | ⋮ |
| HRMS    | ● Active | Protected <i>i</i> | HRMS            | Disabled                  | 29 m 49 s          | 7 d 8 h 15 m            | 5,427.58 GB                | Bronze            | 3,909 GB      | ⋮ |

Real-time protection and data loss exposure

Recovery window and capacity used

Protection policy



# Recovery Service integrates with OCI observability and management

## Comprehensive visibility across the full cloud stack

Integration with OCI Metrics Explorer provides common access to critical information

The screenshot shows the Oracle Cloud Metrics Explorer interface. On the left, a sidebar menu includes 'Monitoring', 'Service Metrics' (which is selected), 'Metrics Explorer', 'Alarm Status', 'Alarm Definitions', and 'Health Checks'. The main area is titled 'Service Metrics' and displays two line charts. The first chart, 'Space used for recovery window', shows usage over time from Sep 18 to Oct 09. The second chart, 'Protected Database Size', shows database size over the same period. Both charts have 'Max' as the statistic and '1 day' as the interval. The interface also includes a 'Dimensions' section with an 'Add' button, date range filters ('Start time: Sep 11, 2022 7:03:24 PM; End time: Oct 11, 2022 7:03:24 PM; Quick Selects: Last 30 days'), and a 'Reset charts' button.

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Alarms and notifications are created within OCI for consistent monitoring and management

The screenshot shows the 'Create Alarm' interface in Oracle Cloud. On the left, a sidebar menu includes 'Monitoring', 'Service Metrics' (selected), 'Metrics Explorer', 'Alarm Status', 'Alarm Definitions' (which is selected), and 'Health Checks'. The main area is titled 'Create Alarm' and has sections for 'Define alarm' and 'Tags (optional)'. In the 'Define alarm' section, 'Production Data Loss Exposure Alarm' is entered in the 'Alarm name' field, and 'Critical' is selected in the 'Alarm severity' dropdown. The 'Alarm body' field contains the text 'Enter notification content. Example: High CPU usage alert. Follow runbook instructions for resolution.' Below this is a note: 'Limited to 1000 characters (0~1000)'. The 'Tags (optional)' section allows adding tags like 'Tag namespace: None (apply a freeform tag)', 'Tag key: Enter a tag key', and 'Value: Enter a tag key first'. At the bottom, the 'Metric description' section specifies the metric details: 'Compartment: ZDLRA', 'Metric namespace: oci\_recovery\_service', 'Resource group: No resource group', 'Metric name: DataLossExposure', 'Interval: 1h', and 'Statistic: Mean'.



# OCI Database Backup | Take Care before delete your Database

## Terminate Database

[Help](#)

Are you sure you want to terminate the peer database? Once it's terminated, the associated primary database will no longer be in high availability mode. Terminating the database permanently deletes it from its DB System and removes all automatic backups. You cannot recover a terminated database.

Are you sure you want to terminate database **DB12**? **Terminating the database permanently deletes it from its DB System and removes all automatic backups.** You cannot recover a terminated database.

Do you want to back up the database before terminating it?

Yes, back up the database

To confirm termination, enter the name of the database:

[Terminate Database](#)

[Cancel](#)



# Cloud Backup | Oracle Database Backup Cloud Service page

The screenshot shows the Oracle Database Backup Cloud Service page. At the top, there's a navigation bar with a logo, 'Help Center', a search bar containing 'Database Backup Service', and a user icon. The main content area has a breadcrumb trail: Home / Cloud / Cloud Platform / Database Backup Service. The title 'Oracle Database Backup Cloud Service' is prominently displayed. Below it, a 'Get Started' section includes a video thumbnail for 'Learn About Database Backup Cloud Service'. To the right, there are two more sections: 'Get a Subscription' (with icons for users and SFTP) and 'Get Started with Database Backup Cloud Service' (with an icon of a hand pointing to a button). The left sidebar contains links for 'Get Started', 'Tasks', 'Resources', 'Videos', 'Books', and 'Support'.

<https://docs.oracle.com/en/cloud/paas/db-backup-cloud>



# Dbcli Command Line Interface

Using dbcli to manage your entire Oracle DBCS database command



# OCI Command Line Interface (*dbcli*)

OCI Command Line Interface Database Options and doc references

## Backup Commands

- *dbcli* create-backup
- *dbcli* getstatus-backup
- *dbcli* schedule-backup



## DB Storage Commands

- *dbcli* list-dbstorages
- *dbcli* describe-dbstorage
- *dbcli* create-dbstorage
- *dbcli* delete-dbstorage



## Database Home Commands

- *dbcli* create-dbhome
- *dbcli* describe-dbhome
- *dbcli* list-dbhome
- *dbcli* update-dbhome



<https://docs.cloud.oracle.com/iaas/Content/Database/References/dbcli.htm>

# CLI Command Line Interface

The database CLI (dbcli) is a command line interface available on bare metal and virtual machine DB systems. After you connect to the DB system, you can use the database CLI to perform tasks such as creating Oracle database homes and databases.

Note: The database CLI is not for use on Exadata DB systems.

The database CLI commands must be run as the root user.

- dbcli is in the /opt/oracle/dcs/bin/ directory. This directory is included in the path for the root user's environment.
- Oracle Database maintains logs of the dbcli command output in the dcscli.log and dcs-agent.log files in the /opt/oracle/dcs/log/ directory.
  - The database CLI commands and most parameters are case sensitive and should be typed correctly. A few parameters are not case sensitive, you should look at parameter descriptions.



# OCI Data Guard MAA

Understanding options and Database editions limitations



## OCI Active Data Guard VS Data Guard

- Data Guard and Active Data Guard provide disaster recovery (DR) for databases with recovery time objectives (RTO) that cannot be met by restoring from backup.
- **Active Data Guard extends Data Guard capabilities** by providing advanced features for data protection and availability as well as **offloading read-only workload and fast incremental backups** from a production database. Active Data Guard is included in the Extreme Performance Edition and Exadata Service.
- To configure a Data Guard **system across regions or between on-premises** and Oracle Cloud Infrastructure DB systems, you must access the database host directly and use the **DGMGRL utility**.
- Oracle recommends that the DB system of **the standby database be in a different availability domain**.
- The standby databases in Oracle Cloud Infrastructure Database are physical standbys



# Oracle OCI Physical Data Guard Console Management

Database information Tags

**General information**

**Lifecycle state:** Available  
**OCID:** ...32vong [Show](#) [Copy](#)  
**Created:** Sat, Oct 22, 2022, 19:54:02 UTC  
**Database Role:** Standby  
**Database unique name:** DB12\_iad1r5  
**Oracle SID Prefix:** None  
**Database Architecture:** Container Database  
**Character Set:** AL32UTF8

**Backup**  
**Automatic backup:** Disabled [\(i\)](#)

**Data Guard**  
**Status:** Enabled

**Encryption**  
**Encryption Key:** Oracle-managed key

**Data Guard Associations**

[Enable Data Guard](#)

| Peer database | Peer DB system | Peer role | Protection Mode      | Transport type | Apply lag | Data Guard Type      | Launched                        |
|---------------|----------------|-----------|----------------------|----------------|-----------|----------------------|---------------------------------|
| DB12          | DB12STDBY      | Standby   | Maximum Availability | Sync           | 0 seconds | Mounted (Data Guard) | Sat, Oct 22, 2022, 19:50:14 UTC |

Showing 1 Item < 1 of 1 >

**Edit Data Guard Association**

[Help](#)

**Data Guard association details**

**Data Guard Type**  
**Active Data Guard**  
Active Data Guard is a licensed option to the Oracle Database Enterprise Edition and enables advanced capabilities that extend the basic Data Guard functionality. These capabilities include Real-Time Query and DML Offload, Automatic Block Repair, Standby Block Change Tracking, Far Sync, Global Data Services, and Application Continuity. [Learn more](#).

**Data Guard**  
Oracle Data Guard ensures high availability, data protection, and disaster recovery for enterprise data. Data Guard provides a comprehensive set of services that create, maintain, manage, and monitor one or more standby databases to enable production Oracle databases to survive disasters and data corruptions. Data Guard maintains these standby databases as transactionally consistent copies of the production database. [Learn more](#).

**Protection mode**  
Maximum Availability

**Data Guard Associations**

[Enable Data Guard](#)

| Peer database | Peer DB system  | Peer role | Protection Mode      | Transport type | Apply lag | Data Guard Type      | La... |
|---------------|-----------------|-----------|----------------------|----------------|-----------|----------------------|-------|
| DB12          | single_marcel01 | Standby   | Maximum Availability | Sync           | 0 seconds | Mounted (Data Guard) | Sa... |

**Switchover**

[Edit Data Guard Association](#)  
[Copy Peer Database OCID](#)  
[Copy Peer DB System OCID](#)



# Oracle OCI Data Guard Network Requirements

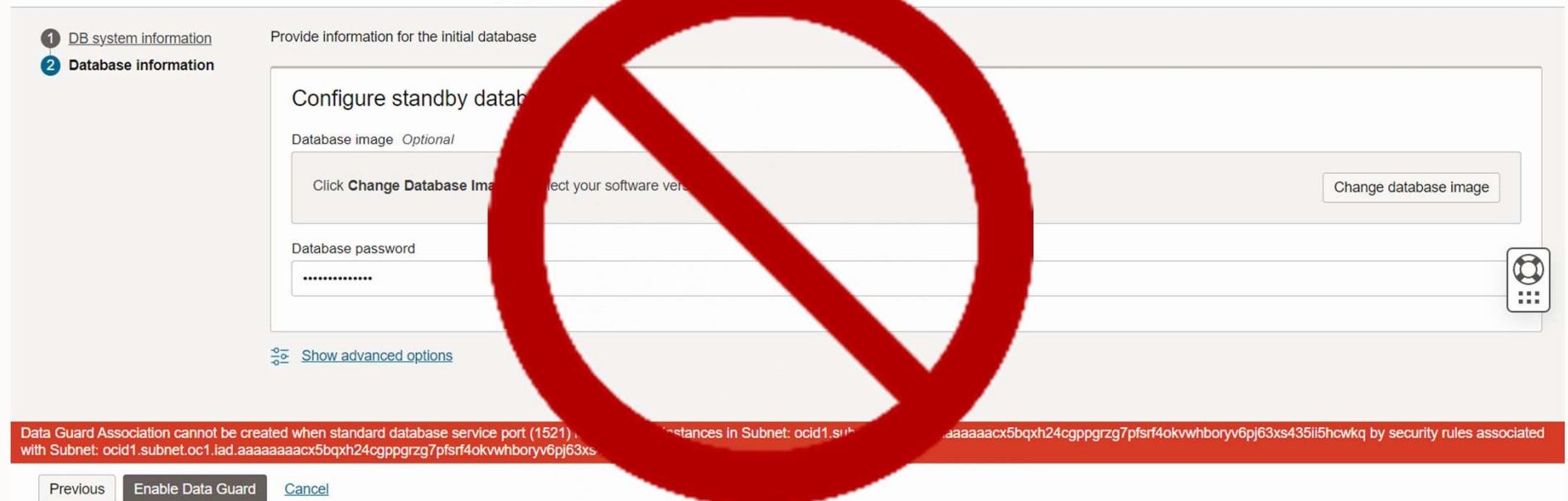
Avoid security know issues during physical OCI Data Guard provisioning

- Properly configure the security list ingress and egress rules for the subnets of both DB systems in the Data Guard association to allow TCP traffic to flow between the applicable ports. Ensure that the rules you create are stateful (the default).
- The egress rules in the example show how to enable TCP traffic only for port 1521, which is a minimum requirement for Data Guard to work. If TCP traffic is already enabled on all of your outgoing ports (0.0.0.0/0), then you need not explicitly add these specific egress rules. Service Gateway can provide NW connectivity.

| Rules(Prod) | Stateless | Source       | IP Protocol | Source Port | Dest Port |
|-------------|-----------|--------------|-------------|-------------|-----------|
| Ingress     | No        | 10.0.01.0/24 | TCP         | All         | 1521      |
| Egress      | No        | 10.0.1.0/24  | TCP         | All         | 1521      |
| Rules(Sby)  | Stateless | Source       | IP Protocol | Source Port | Dest Port |
| Ingress     | No        | 10.0.0.0/24  | TCP         | All         | 1521      |
| Egress      | No        | 10.0.0.0/24  | TCP         | All         | 1521      |

## Avoid Data Guard Provisioning Error | Change Ingress and Egress roles

## Enable Data Guard



# VM Data Guard Switchover through OCI Console

The screenshot shows the Oracle Cloud OCI console interface. At the top, there's a navigation bar with 'ORACLE Cloud' (Cloud Classic), search bar, and location 'US East (Ashburn)'. Below the navigation is a breadcrumb trail: Overview > Oracle Base Database > DB Systems > DB System Details > Database Home Details > Database Details > Work requests > Work request details.

The main area displays two work requests:

- Work request 1 (Left):** Title 'Switchover Data Guard'. Status: IN PROGRESS. Progress bar: 0% complete. Operation: Switchover Data Guard. Accepted: Tue, Apr 25, 2023, 22:28:56 UTC. Started: Tue, Apr 25, 2023, 22:29:33 UTC. Finished: —. A large orange button on the left says 'WR'.
- Work request 2 (Right):** Title 'Switchover Database'. A confirmation dialog asking 'Are you sure you want to perform a database switchover? A switchover reverses the primary and standby database roles.' It includes a password input field, 'OK' and 'Cancel' buttons, and a 'Help' link.

Below these, another work request is shown:

- Work request 3 (Bottom):** Title 'Switchover Data Guard'. Status: SUCCEEDED. Progress bar: 100% complete. Operation: Switchover Data Guard. Accepted: Tue, Apr 25, 2023, 22:28:56 UTC. Started: Tue, Apr 25, 2023, 22:29:33 UTC. Finished: Tue, Apr 25, 2023, 22:32:43 UTC. A large green button on the left says 'WR'.



# Studding and costs useful tools

Very good tools to test and



SCAN ME

# Certificações Gratuitas em OCI | Até Dezembro de 2023

Oracle University



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Certificação

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### Oracle Cloud Applications

Prepare for success. Start your cloud implementation project with Oracle Cloud Applications Business Process training.

[Free Training and Certification](#)

[Saiba Mais Aqui](#)



# Oracle Sales Accelerator Site

The screenshot shows the Oracle Sales Accelerator Site. At the top, there's a navigation bar with a house icon labeled "Sales Accelerator", a search bar with "Search Sales Accelerator", and buttons for "Content", "Product", "Industry", "Sales Play", and "Location". On the right of the search bar are "Create Story (Oppty ID)" and "ML" buttons. Below the navigation is a QR code. To the left is a sidebar with icons for "Products", "Customers", "Customer Stories", "Industries", "Campaigns", "Sales Plays", and "Competitors". The main content area features a banner with the text "Use in campaigns, events and sales activities" and a "Visit Page" button. To the right of the banner is a slide show with four items, the first of which is "Top Telcos get better results with Oracle". Below the banner is a section titled "Featured Content" with cards for "Sales Accelerator Training & FAQs for Sellers" (Mar 24, 2023 | Custom), "Advertising Claims" (Apr 11, 2023 | Custom), "Sustainability at Oracle" (May 10, 2023 | Custom), and "One Oracle Industry Narratives and Frameworks" (May 30, 2023 | Custom). A "Pause" button is visible next to the slide show.

[Clique Aqui](#)



# Oracle Suporte Rewards Program



Oracle Brasil > Nuvem >

## Oracle Support Rewards

Com o Oracle Support Rewards, quanto mais você usar a Oracle Cloud Infrastructure (OCI), maior será a sua economia. Os clientes ganham entre US\$0,25 e US\$0,33 em recompensas para cada US\$1 gasto na OCI. Você pode resgatar os valores para reduzir a sua conta da licença de suporte técnico de software, podendo chegar a zero<sup>1</sup>.

### Ganhe recompensas todos os meses

Você pode assinar ou renovar um pedido de Universal Credits para ganhar as recompensas, além de acompanhá-las no painel da OCI. O programa dá aos clientes o direito de ganhar e usar recompensas de suporte durante o período de seus serviços. O Support Rewards é uma obrigação contratual que a Oracle garante durante toda a vigência do contrato de UCM do cliente, que pode ser estendido a qualquer momento.

The composite image includes:  
1. A QR code in the top right corner.  
2. A screenshot of the Oracle Support Rewards landing page on the left, showing the navigation bar and the 'Suporte' section.  
3. A large graphic on the right side with the text 'Use OCI. Earn rewards. Reduce your bill by 25¢ for every \$1 spent on OCI'. It features a green '25¢' over a bar chart with a downward arrow, indicating cost reduction.

[Saiba mais aqui](#)



# Três maneiras de aproveitar o Oracle Support Rewards ao máximo



**Migre algumas cargas de trabalho novas para a OCI para obter uma grande economia com suporte.**

Vamos supor que você comece com uma conta anual de suporte de tecnologia da Oracle de **US\$ 1 milhão e gaste US\$ 2 milhões** na OCI para duas novas cargas de trabalho.

Nesse cenário, você receberá US\$ 500 mil no Oracle Support Rewards, reduzindo a sua conta anual pela metade.



**Faça ainda mais migrações e reduza a fatura da sua conta de suporte a zero<sup>1</sup>**

E se você identificar quatro novas cargas de trabalho a serem executadas na OCI? Isso não é problema.

Com uma conta de suporte de tecnologia da Oracle de **US\$ 1 milhão existente, mais US\$ 4 milhões** gastos na OCI, você ganhará US\$ 1 milhão no Oracle Support Rewards, reduzindo sua conta para US\$ 0



**Use sua economia de suporte em uma OCI Dedicated Region.**

Para este exemplo, vamos começar com US\$ 1,5 milhão de contas anuais de suporte à tecnologia Oracle.

Você identifica oito novas cargas de trabalho a serem transferidas para a OCI Dedicated Region e gasta US\$ 6 milhões.

Nesse cenário, você receberá US\$ 1,5 milhões no Oracle Support Rewards, reduzindo a sua conta de suporte anual a US\$ 0.





SCAN ME

# Oracle Cloud Cost Estimator

My Estimate ... Configure and estimate costs for OCI services ([Learn more](#)) Start for Free USD - US Dollar Estimated Monthly Cost \$0.00

Services Compute shapes Reference architectures My favorites Advanced Search

Select category All Categories Search

Most Popular Services

Serviços Formas de computação Arquiteturas de referência Meus favoritos Pesquisa Avançada

Selecionar categoria All Categories Search

Most Popular Services

**Compute VM**  
Um ambiente de Computação Virtual multitenant e totalmente escalável para executar aplicativos com desempenho incomparável, controle e resiliência incorporada.

**Base Database Service - Virtual Machine**  
Base Database Service - Virtual Machine allows you to create and manage full-featured Oracle Database systems in the cloud. It can be provisioned on virtual machines with block storage to provide high performance and cost-efficient pricing.

**Armazenamento de Objetos**  
O Object Storage permite que os clientes armazenem qualquer tipo de dados em seu formato nativo. Isso é ideal para criar aplicativos modernos que exigem escala e flexibilidade, uma vez que pode ser usado para consolidar diversas origens de dados para finalidades de análise, backup ou arquivamento. O Armazenamento de

**Armazenamento de Volumes em Blocos**  
O Oracle Cloud Block Volume fornece armazenamento em blocos confiável e de alto desempenho, projetado para funcionar com uma variedade de máquinas virtuais e instâncias bare metal. Com redundância incorporada, os Block Volumes são persistentes e duram mais que uma máquina virtual, podendo ser ampliados



# Oracle Live Labs

Easy to deploy our oracle solution and features

The screenshot shows the Oracle LiveLabs website. At the top, there's a navigation bar with a magnifying glass icon, a search bar containing "Search Workshops and Sprints...", and a "Event Code" button with a right-pointing arrow. Below the navigation is a banner for the "ORACLE Developer Resource Center". It features a dark background with a large asterisk (\*) and brackets [ ] graphic, and text encouraging users to "Dive into more developer content and resources" and "Explore Developer Resources". The main content area has a light gray background. It includes sections for "Welcome to LiveLabs", "Developer", "DBA", "Data Scientist", "DevOps", and "Low Code Developer", each with an icon and a brief description. A "Featured Workshops" section at the bottom left has a "View All Workshops" button. A red "O" logo is in the bottom right corner.

LiveLabs

Search Workshops and Sprints...

Event Code →

## Welcome to LiveLabs

Oracle LiveLabs gives you access to Oracle's tools and technologies to run a wide variety of labs and workshops.

Experience Oracle's best technology, live!

### ORACLE Developer Resource Center

Dive into more developer content and resources

Explore Developer Resources

Developer

DBA

Data Scientist

DevOps

Low Code Developer

### Featured Workshops

View All Workshops

[Click here live labs](#)



## **Oracle Learning Library Videos on YouTube :**

[Oracle Learning – YouTube](#)



## **OCI training and certification :**

[www.oracle.com/cloud/iaas/training](#)

[www.oracle.com/cloud/iaas/training/certification](#)

[www.education.oracle.com/oracle-certification-path](#)

## **Oracle Cloud always free tier:**

[www.oracle.com/cloud/free](#)





Upgrade your Database - NOW!



Mike Dietrich's Blog About Oracle Database Upgrades... Mostly



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Patching my environments with  
the January 2023 Bundle Patches

Photo by karokrasinska on Unsplash

Rolling back or removing  
all patch SQL changes

<https://mikedietrichde.com>



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**Thank You ☺**

**Questions / Feedback / Training Suggestions**

marcel.lamarca@oracle.com

**Ask for help ☺**

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# ORACLE

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