

# CLOUD SYSTEMS PORTFOLIO

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## **Safe harbor statement**

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The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, timing, and pricing of any features or functionality described for Oracle's products may change and remains at the sole discretion of Oracle Corporation.

## Sales Play

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### Modernize your Business

Modernize your Business

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### Oracle Database Consolidation

Oracle Database Consolidation

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### Cloud Backup Or Disaster Recovery

HA and DR for Oracle Database

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### Shared Data Management Use Cases

Real-time data integration across on-prem and cloud

Converged Database

## Product Content

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### Engineered Systems

Oracle Live Event July 8, 2020 Assets

Exadata

Big Data Appliance

Private Cloud Appliance

Private Cloud at Customer

Autonomous Database on Exadata Cloud@Customer

Exadata Cloud@Customer

Database Appliance

ZDLRA

PaaS/OCI Learning & Enablement

# SALES PLAYS

[salescentral.oracle.com](https://salescentral.oracle.com)

[salesaccelerator.oracle.com](https://salesaccelerator.oracle.com) – COMING SOON!

# ORACLE CLOUD SYSTEMS PORTFOLIO (X86)

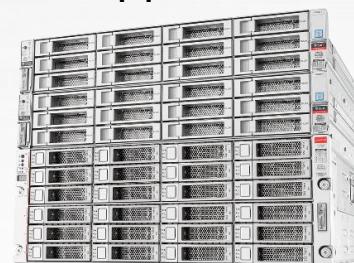
ZFS Storage Appliance



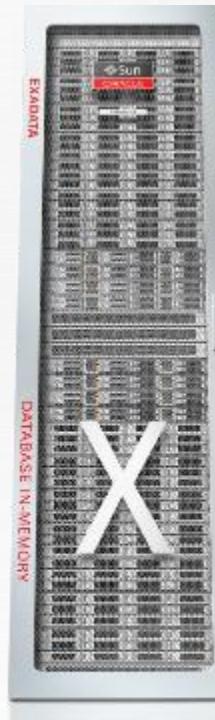
Zero Data Loss Recovery Appliance



Oracle Database Appliance



Exadata Database Machine



Private Cloud Appliance



Data Protection

Database

Middleware / Apps

# ZFS Storage Appliance

# ORACLE ZFS STORAGE APPLIANCE: UNIFIED STORAGE FOR MODERN IT

- DELIVERS HIGHER PERFORMANCE AND CONSOLIDATION AT A LOWER COST
- OPTIMIZES ORACLE DATABASE STORAGE WITH UNIQUE FEATURES AND AUTOMATION
- TIGHT ORACLE ENGINEERED SYSTEMS INTEGRATION
- EXTENSIVE DATA INTEGRITY AND SECURITY OPTIMIZATIONS
- ACCELERATES BACKUP AND RECOVERY FOR ORACLE DATABASE AND ALL OTHER SOURCES
- REPLICATES BACKUPS TO ORACLE CLOUD



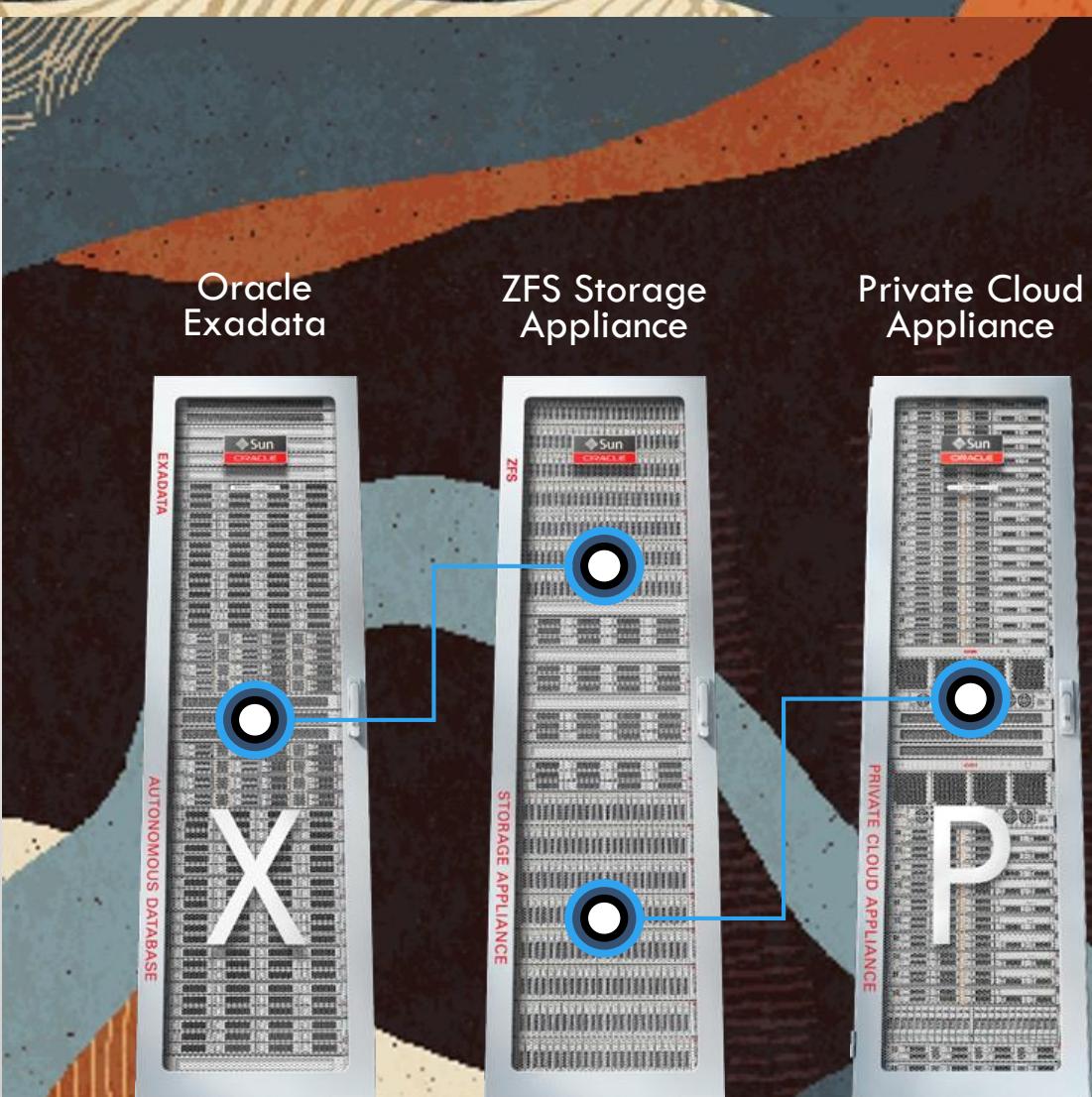
# ORACLE ZFS STORAGE APPLIANCE: HIGH- PERFORMANCE ARCHITECTURE

- HIGHLY MULTI-THREADED FOR SCALABLE WORKLOADS
  - UP TO 96 CPU CORES FOR 1000'S OF IOS AND DATA SERVICES
- DRAM AND FLASH CACHES MINIMIZE READ AND WRITE LATENCY
  - OVER 90% OF READS COME FROM 3TB OF DRAM
- PETABYTES OF CAPACITY TO MEET SCALABLE BUSINESS NEEDS
  - UP TO 7.2PB OF FLASH MIXED WITH 20PB OF DISK STORAGE
- ACTIVE-ACTIVE DESIGN FOR MAXIMUM AVAILABILITY
- ADVANCED ANALYTICS TO MINIMIZE MANAGEMENT
- DATABASE CO-ENGINEERING TO FURTHER OPTIMIZE PERFORMANCE, EFFICIENCY, AND MANAGEABILITY



## TIGHT INTEGRATION WITH ORACLE CLOUD SYSTEMS

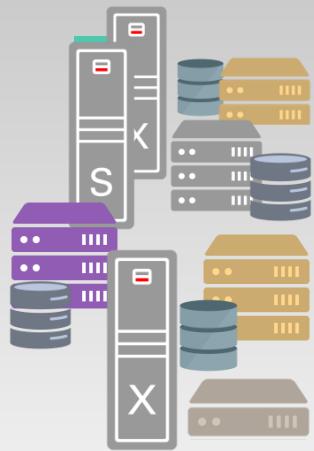
- HIGH-PERFORMANCE 100GB/SECOND ETHERNET FOR DATA ACCESS AND PROTECTION
- DATABASE IO PERFORMANCE AND EFFICIENCY OPTIMIZATIONS
- END-TO-END MANAGEMENT WITH ORACLE ENTERPRISE MANAGER
- PRODUCTION STORAGE INTEGRATED WITH ORACLE PRIVATE CLOUD APPLIANCE
- SHARED STORAGE EXPANSION FOR ORACLE DATABASE APPLIANCE



# Zero Data Loss Recovery Appliance

# ZDLRA - OVERVIEW

## Protected Databases



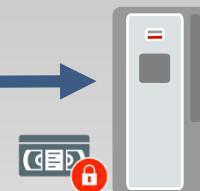
### Delta Push

- Só mudanças são enviadas
- Impacto mínimo na produção
- *Real-time redo transport protege instantaneamente transações correntes*

## Recovery Appliance



Offloads Cloud  
Tape Backup



Replicates to Remote Recovery Appliance



## Protected Databases

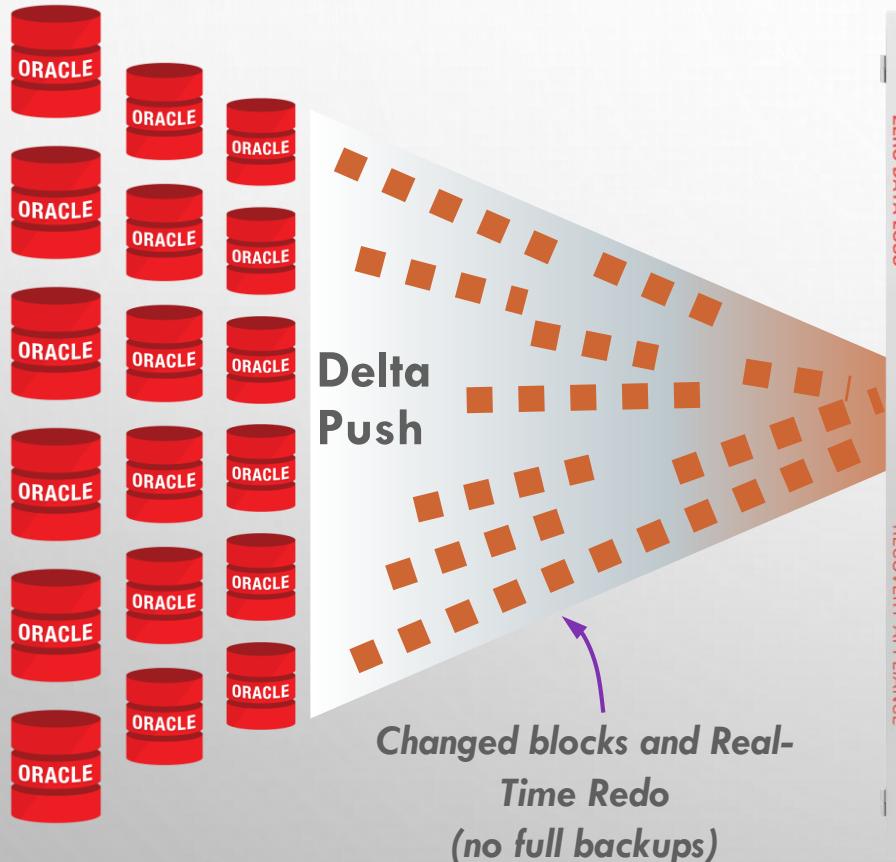
- Petabytes de dados
- RMAN Driven bkp&restore
- Oracle 11g – 19c, qualquer plataforma
- Sem utilização de agentes

## Centralized, Data Protection Management for Oracle Databases

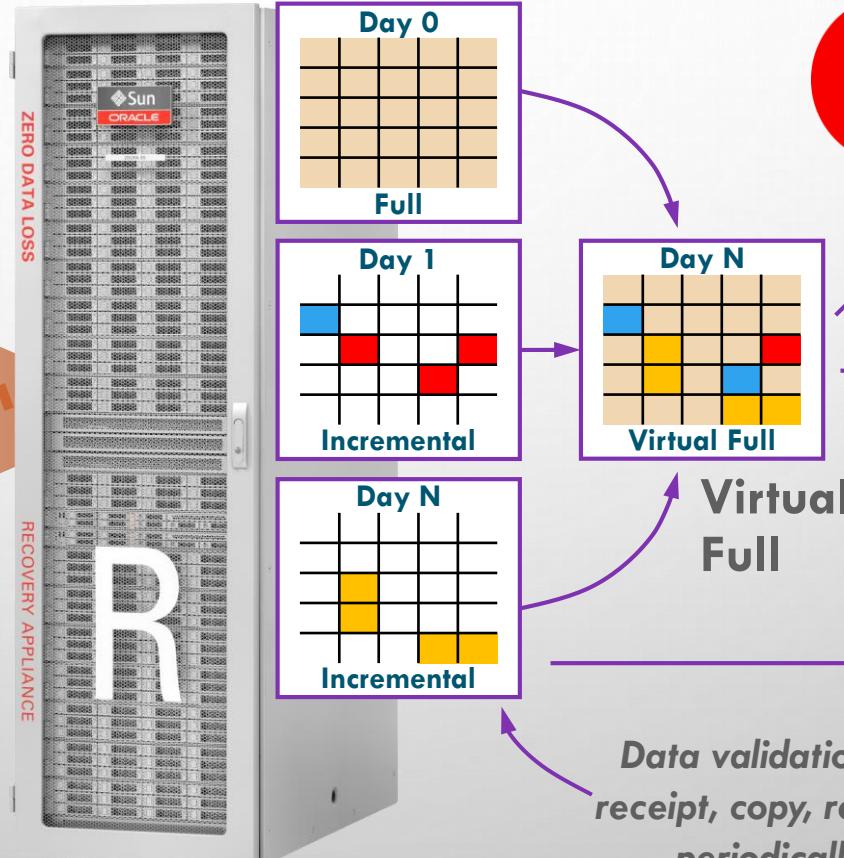
- Backups validados, comprimidos e armazenados no disco
- Rápidos restores em qualquer ponto no tempo utilizando “virtual full”
- Enterprise Manager end-to-end control

# ZDLRA - ARCHITECTURE

## Protected DBs



## Compressed Delta Store



DB Backup  
Cloud Service

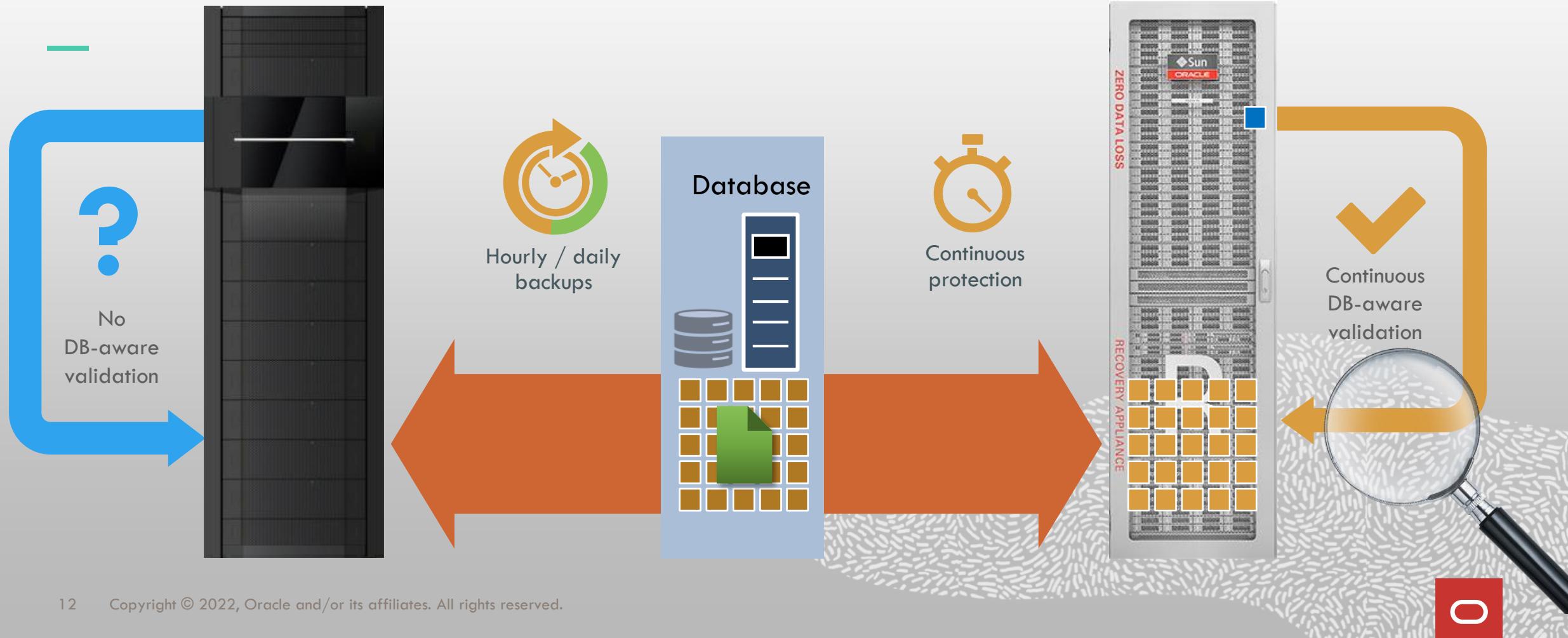
Cloud  
Archive

Tape  
Backup

Remote  
Replica

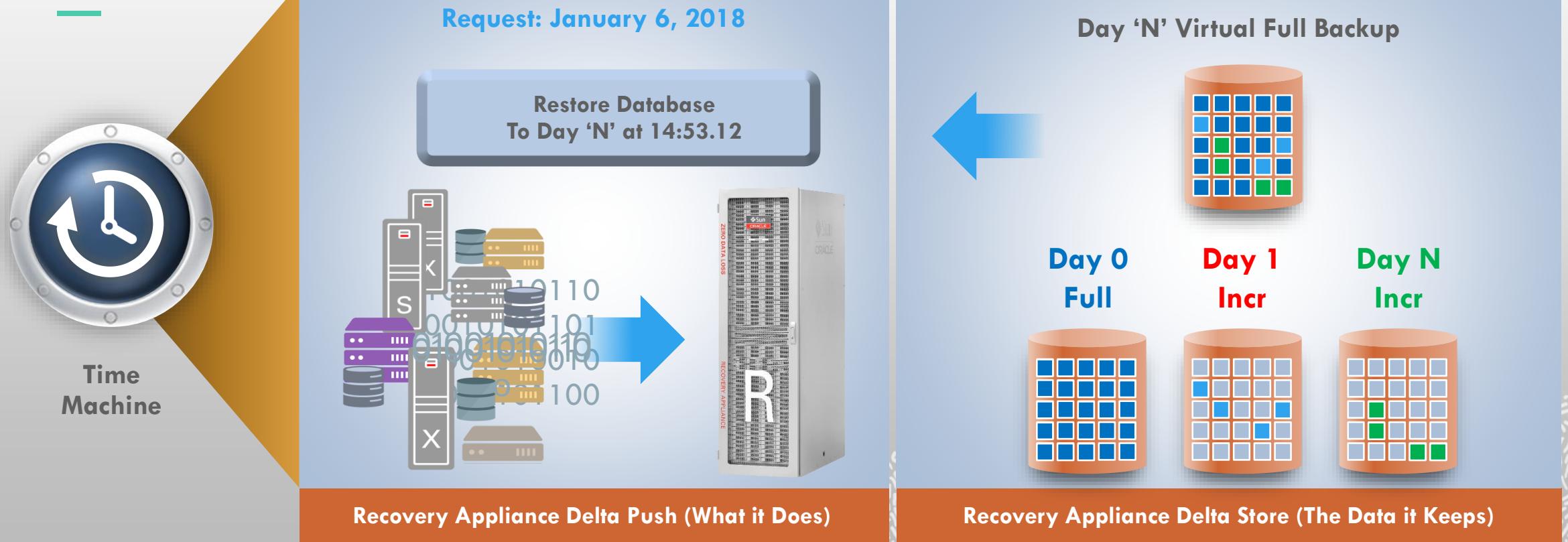
# GENERAL PURPOSE BACKUP VS. RECOVERY APPLIANCE

## CONTINUOUS PROTECTION AND BUILT-IN INTEGRITY CHECKING



# ENABLES POINT-IN TIME RECOVERY OF THE ORACLE DATABASE

POINTER-BASED REPRESENTATION OF PHYSICAL FULL BACKUP AT INCREMENTAL BACKUP TIME



# ORACLE'S ZERO DATA LOSS RECOVERY APPLIANCE



## RECOVERY APPLIANCE X8M

## ENTRY-LEVEL TO MULTI-RACK CONFIGURATIONS

Base Rack

2 Compute Servers, 3 Storage Servers  
**207 TB Usable / 15+ TB/Hr Restore**

Full Rack

2 Compute Servers, 18 Storage Servers  
**1.26 PB Usable / 24+ TB/Hr Restore**

Adição de mais Racks quando necessário

18 Racks

36 Compute Servers, 324 Storage Servers  
**22 PB Usable / 4+ PB/Hr Restore**

# Oracle Database Appliance

# APENAS A INFRAESTRUTURA OTIMIZADA ENTREGA RESULTADOS OTIMIZADOS

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Facilidade na implantação,  
gerenciamento e suporte

Rode seu banco de dados e  
aplicativos em um appliance  
desenvolvido com esse  
propósito

Controle os gastos de  
capital e os custos  
operacionais

**Simples**

**Otimizado**

**Econômico**

# ORACLE DATABASE APPLIANCE

## A SOLUÇÃO MAIS SIMPLES E MAIS ACESSÍVEL PARA OS APLICATIVOS E O BANCO DE DADOS DA ORACLE

- CUSTA MENOS DO QUE AS ALTERNATIVAS DIY
- RÁPIDO E FÁCIL DE INSTALAR
- PROTEGE TODAS AS CAMADAS
- REDUZ O RISCO E A INCERTEZA



# ORACLE DATABASE APPLIANCE | CONFIGURAÇÃO EM ALTA DISPONIBILIDADE



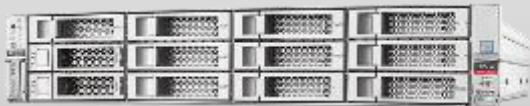
	<b>V1</b>	<b>X3</b>	<b>X4</b>	<b>X5</b>	<b>X6</b>	<b>X7</b>	<b>X8</b>	<b>V2 – X8 Crescimento</b>
SSD Storage (TB, raw)	---	---	---	<b>3.2</b>	<b>48</b>	<b>128</b>	<b>369 TB</b>	<b>115 X</b>
HDD Storage (TB, raw)	<b>12</b>	<b>36</b>	<b>36</b>	<b>128</b>	---	<b>300</b>	<b>504 TB</b>	<b>42 X</b>
CPU (cores)	<b>24</b>	<b>32</b>	<b>48</b>	<b>72</b>	<b>40</b>	<b>72</b>	<b>64 cores</b>	<b>2.7 X</b>
Max Memory (TB)	<b>0.2</b>	<b>0.5</b>	<b>0.5</b>	<b>1.5</b>	<b>1.5</b>	<b>1.5</b>	<b>1.5 TB</b>	<b>8 X</b>
Ethernet (Gb/s)	<b>48</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>100</b>	<b>300 Gb/s</b>	<b>6 X</b>
Max Read IOPS	<b>4,466</b>	<b>6,500</b>	<b>6,500</b>	<b>300,000</b>	<b>2,250,000</b>	<b>2,250,000</b>	<b>2,250,000</b>	<b>503 X</b>
Bandwidth (GB/sec)	<b>3.0</b>	<b>5.3</b>	<b>5.3</b>	<b>6.0</b>	<b>22.2</b>	<b>22.2</b>	<b>22.2</b>	<b>7.4 X</b>

# FAMÍLIA ORACLE DATABASE APPLIANCE MODELO X8

Mais alta

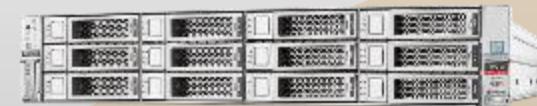
Desempenho

Atende a uma ampla gama de cargas  
de trabalho e de requisitos de  
disponibilidade



## Oracle Database Appliance X8-2S

- Instância única
- 16 cores
- 192 GB de memória, expansível até 384 GB
- Até 3 placas de rede pública
- Armazenamento de dados de 12,8 TB (bruto)



## Oracle Database Appliance X8-2M

- Instância única
- 32 cores
- 384 GB de memória, expansível até 768 GB
- Até 3 placas de rede pública
- Armazenamento de dados de 12,8 TB, expansível até 76,8 TB (bruto)



## Oracle Database Appliance X8-2-HA

- Instância única e RAC
- 64 núcleos
- 768 GB de memória, expansível até 1,5 TB
- Até 3 placas de rede pública por servidor
- 46 TB de armazenamento de dados SSD, expansível até 369 TB SSD ou até 92 TB SSD/504 TB HDD (bruto)

Capacidade

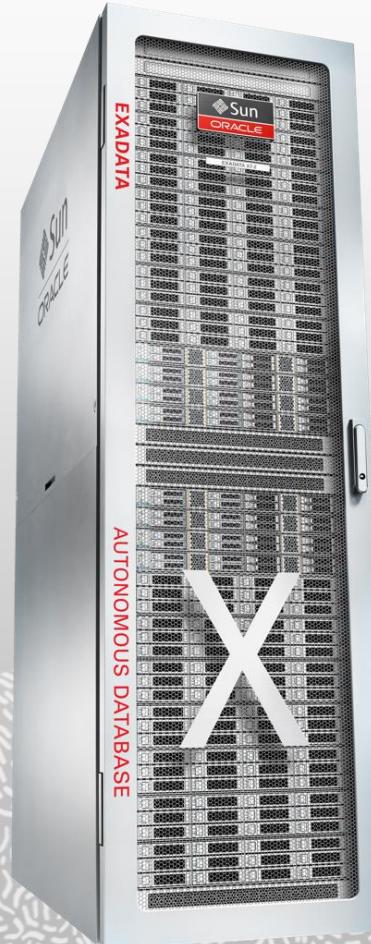
Mais alta

# Exadata Database Machine

# THE EXADATA VISION

DRAMATICALLY BETTER PLATFORM FOR ALL DATABASE WORKLOADS

- **IDEAL DATABASE HARDWARE** – SCALE-OUT, DATABASE OPTIMIZED COMPUTE, NETWORKING, AND STORAGE FOR FASTEST PERFORMANCE AND LOWEST COST
- **SMART SYSTEM SOFTWARE** – SPECIALIZED ALGORITHMS VASTLY IMPROVE ALL ASPECTS OF DATABASE PROCESSING: OLTP, ANALYTICS, AND DATABASE CONSOLIDATION
- **AUTOMATED MANAGEMENT** – AUTOMATION AND OPTIMIZATION OF CONFIGURATION, UPDATES, PERFORMANCE, AND MANAGEMENT CULMINATING IN FULLY AUTONOMOUS INFRASTRUCTURE AND DATABASE



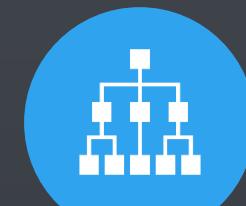
# ORACLE DATABASE ON ORACLE EXADATA

A CONVERGED DATABASE ON A SINGLE PLATFORM  
DRAMATICALLY REDUCES COMPLEXITY AND COST

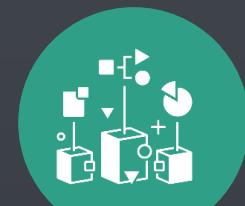
- OPTIMAL SUPPORT FOR MULTIPLE TYPES OF DATABASE WORKLOADS
- NO DATA INTEGRATION COMPLEXITIES
- UNIFIED SECURITY MODEL
- NO SPECIALIZED MANAGEMENT TEAMS
- CONSISTENT AVAILABILITY AND SCALABILITY
- PROTECTION AND RAPID RECOVERY FOR ALL DATABASE TYPES

ORACLE®  
Exadata

19c ORACLE®  
Database



RDBMS



Graph



Warehouse



JSON



XML



Time Series

# ORACLE PROVIDES FULL CHOICE OF DEPLOYMENT MODEL

## On-Prem Traditional

Exadata Database Machine



- **CUSTOMER DATA CENTER**
  - PURCHASED
  - CUSTOMER MANAGED

## Cloud at Customer

Exadata Cloud at Customer



Customer Data Center  
Subscription  
Oracle Managed

## Public Cloud

Exadata Cloud Service



Oracle Cloud  
Subscription  
Oracle Managed

# EXADATA CLOUD AT CUSTOMER HARDWARE SHAPES

	Base System*	Quarter Rack	Half Rack	Full Rack
Number of DB Servers	2	2	4	8
Max Number of OCPUs	48	124	248	496
Total Memory	720 GB	4,5 TB	9 TB	18 TB
No. of Storage Servers	3	3	6	12
Total Usable Disk Capacity	74 TB	192 TB	384 TB	769 TB

\* Base System is a hardware-version agnostic entry-level configuration for Exadata Cloud

- ExaCC X9M-2 also includes 4x 1.2TB local drives in DB server for VMs, OS, Oracle Homes, logs, etc.
- ExaCC X9M-2 has a pre-configured cluster file system for large files and sharing files across database servers



# X9M Update

Public Announcement: 28-SEP-2021

## Exadata / ExaC@C:

23% / 33% more cores with New Intel CPU – Ice Lake  
28% higher and faster storage capacity

Increased Memory Capacity

80% faster NVMe flash (PCIe Gen4 Speeds)

New Persistent memory (Intel Optane PMem Series 200)

## ZDLRA:

30% increased Backup Capacity

33% more and faster cores

1.8X bandwidth (PCIe Gen4)

New Base Rack capacity (207 TB)

New Storage Server capacity (70 TB)

New Full Rack Capacity (1.26 PB)

\*Price reduction by 50% from X8M\*

## IMPORTANT CONSIDERATIONS:

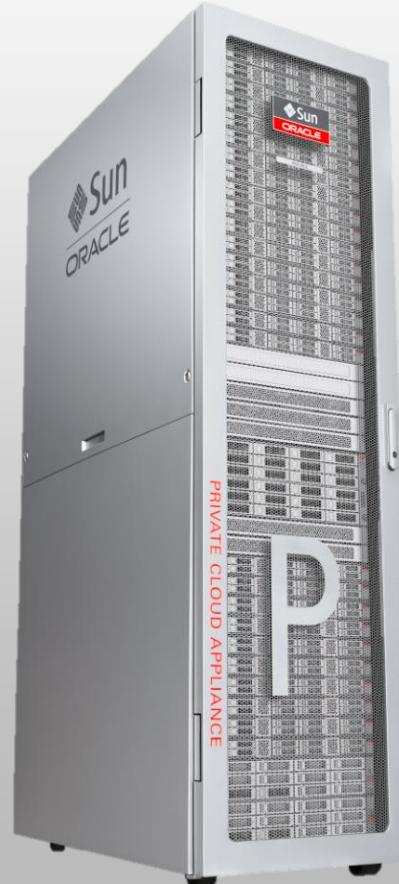
- Allocation and supply continue with restrictions.
- Following models will remain in RPL during Q2 FY22:
  - Exadata Eight Rack
  - ExaC@C Base Rack
- EF Storage not available in Eight Rack
- Memory upgrades not compatible with previous versions



# Private Cloud Appliance

# ORACLE PRIVATE CLOUD APPLIANCE X8-2

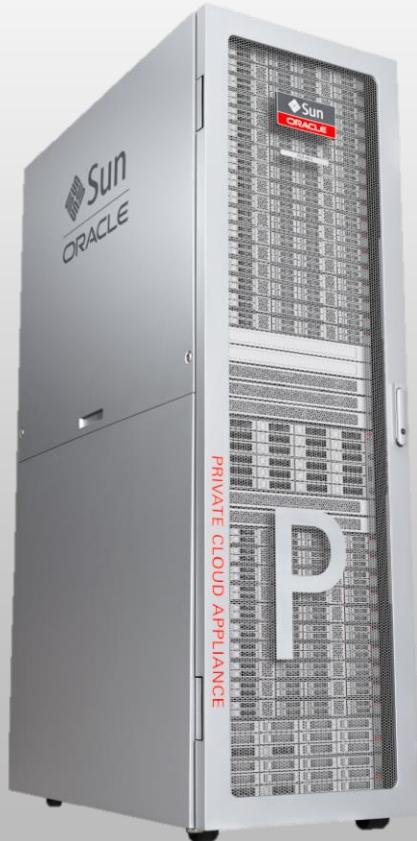
*PROVIDING VALUE FOR TODAY'S DIGITAL BUSINESS*



- On-premises cloud native converged infrastructure that allows customers to efficiently **consolidate business critical middleware and application workloads**
- Works with Oracle Exadata Machine to provide a powerful, single-vendor, application and database solution for today's data driven enterprise
- Runs enterprise workloads alongside cloud native applications to support a variety of application requirements
- Compliments Oracle Cloud Infrastructure providing customers with a complete solution to securely maintain workloads both on-premises and in public clouds
- Built in support for Oracle's Linux Cloud Native Environment, containers, and micro-services, decoupling the workloads from the infrastructure for application portability

# ORACLE PRIVATE CLOUD APPLIANCE X8-2

ORACLE'S ON-PREMISES PLATFORMS OF CHOICE



## Database

- Exadata
- Exadata Cloud at Customer

## Applications and middleware

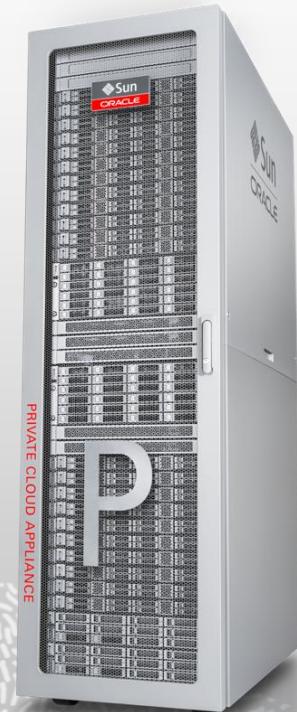
- Private Cloud Appliance
- Private Cloud at Customer



# ORACLE PRIVATE CLOUD APPLIANCE X8-2

*CLOUD READY, SECURE, VIRTUALIZED, FAST, SCALABLE*

- Highly Available, Integrated Cloud Native Environment
  - ✓ Simplify, Automate, Deploy and auto-scale Kubernetes Clusters in **30 minutes!**
  - ✓ Enable DevOps, modernization and application portability
  - ✓ Easily extend and/or migrate workloads to OCI
- Converged Engineered System for middleware and apps
  - ✓ Consolidate enterprise and cloud native workloads
  - ✓ Cost-effective and scalable
  - ✓ Single pane of glass management – Apps to Disk
  - ✓ Up to 40% better price/performance than Build-your-own
- Seamless integration with Oracle Exadata
  - ✓ Direct Attach – **Lowest latency** between Middleware and DB tier
  - ✓ Single vendor support for Applications, Middleware, Database and Infrastructure

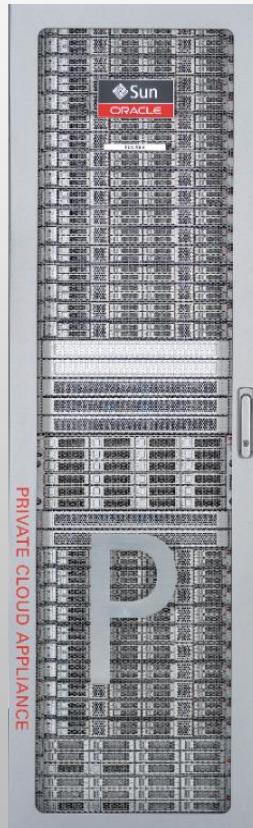


# ORACLE PRIVATE CLOUD APPLIANCE X8-2

*EVERYTHING YOU NEED TO GET STARTED - LESS THAN 6 HOURS FROM INSTALLATION TO PRODUCTION*

## HARDWARE

- Redundant management servers (X8-2)
- 2 – 25 compute nodes supporting up to 1.5 TB of memory
- Compute scales to 1200 cores and storage scales to 3.3PB
- Scalable storage architecture
  - ZS7-2 dual-controller system with 2TB DRAM
  - Scalable disk storage (280TB raw increments)
  - Scalable flash storage (150TB raw increments)
- State-of-the-art networking
  - 100Gb Ethernet internal fabric (2x per Compute Node)
  - 100/40/25/10Gb Ethernet data center connectivity



## SOFTWARE

### Virtualization

- Oracle VM 3.4.x Hypervisor & Manager

### Cloud Native

- Oracle Linux Cloud Native Environment

### Infrastructure Software

- Oracle Linux, and Solaris
- Oracle Enterprise Manager 13c, and
- Oracle SiteGuard for DR
- Oracle OpenStack
- Oracle SDN
- Oracle ZFS Storage Appliance Cloning
- Oracle ZFS Storage Appliance Replication
- Oracle ZFS Storage Appliance Encryption
- Oracle Java 8 Standard Edition (SE)

# Thank you

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LAD PARTNER ENABLEMENT

ORACLE CLOUD SYSTEMS PORTFOLIO

