



# Oracle Cloud Systems Portfolio

Enabling the information age



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LAD Partner Enablement

July, 2023





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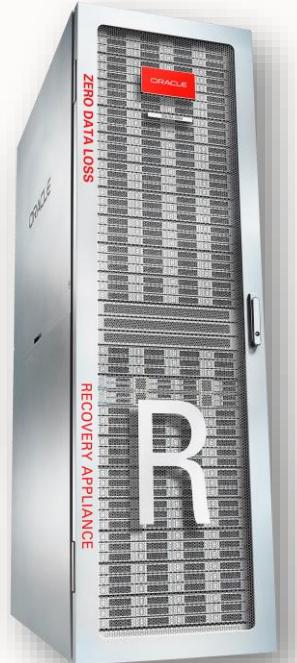


# Oracle Cloud Systems Portfolio

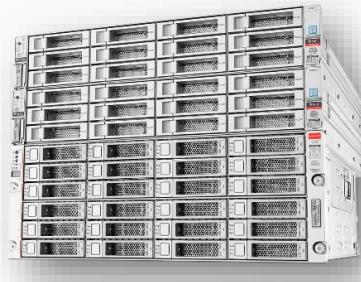
ZFS Storage Appliance



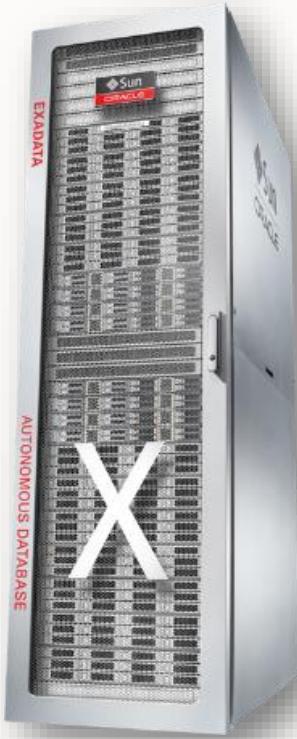
Zero Data Loss Recovery Appliance



Oracle Database Appliance



Exadata



Private Cloud Appliance



Databases

Middleware / Apps

Data Protection

# Oracle Database Appliance





SCAN ME

# Oracle Database Appliance

The simplest, most affordable solution for Oracle Database and applications

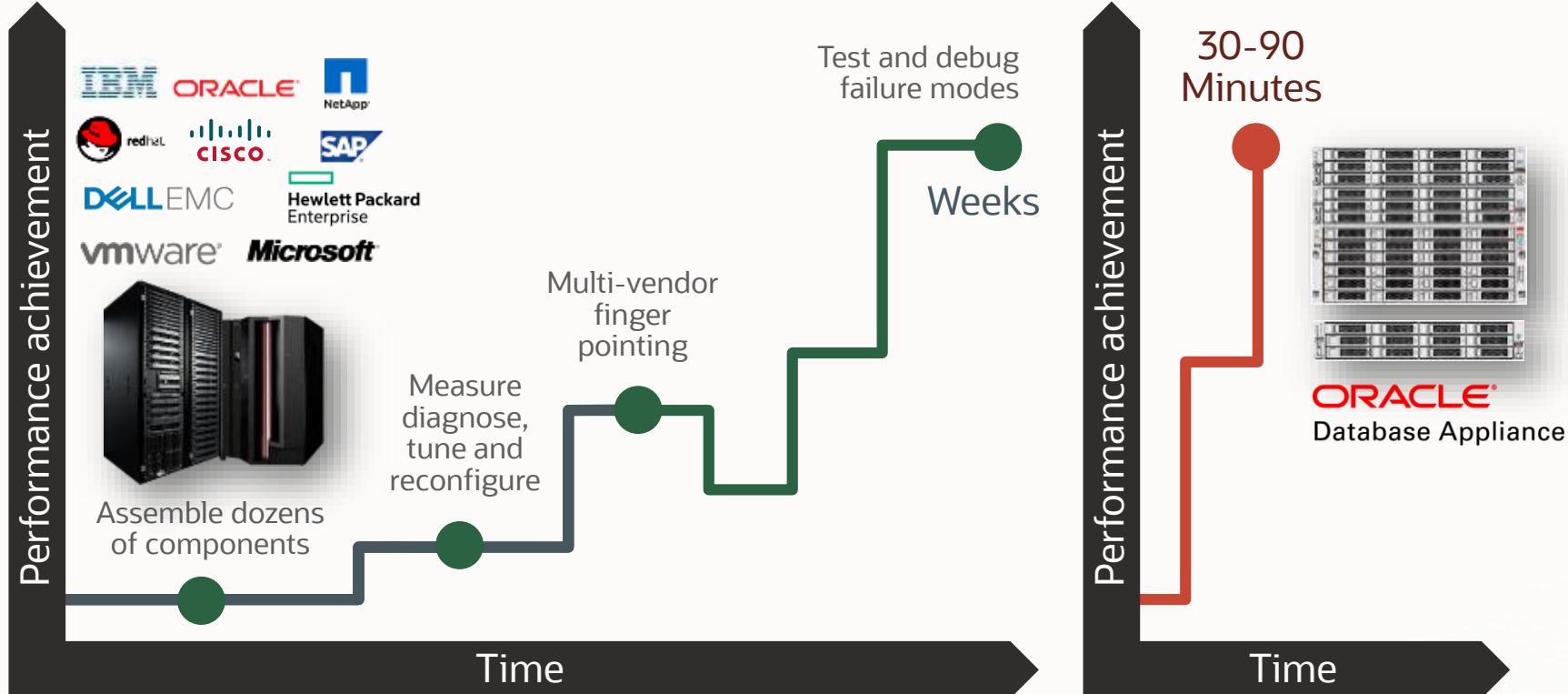
- Costs less than DIY alternatives
- Fast and easy to install
- Secure throughout the entire stack
- Reduces risk and uncertainty



Discover more: [www.oracle.com/oda](http://www.oracle.com/oda)

# Reduced OPEX through simplicity and automation

Build your own (Dell, HP, CISCO, etc.)



## Key benefits

- Simplify IT environment
- 40% reduced TCO
- License only the cores you use
- 10X faster deployment time
- 20X less maintenance

# Get the most out of your Oracle Database investment

Oracle Database Appliance is a complete system designed for Oracle Database and applications



**Fast deployment  
and results**

**Reduces risk**

**Affordable**

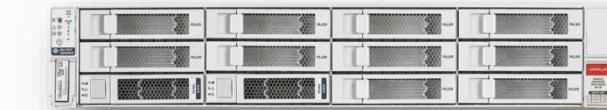
**All supported by  
Oracle**

**Integrated with  
OCI**

# Oracle Database Appliance X9 Model Family

HIGHER  
↑

PERFORMANCE



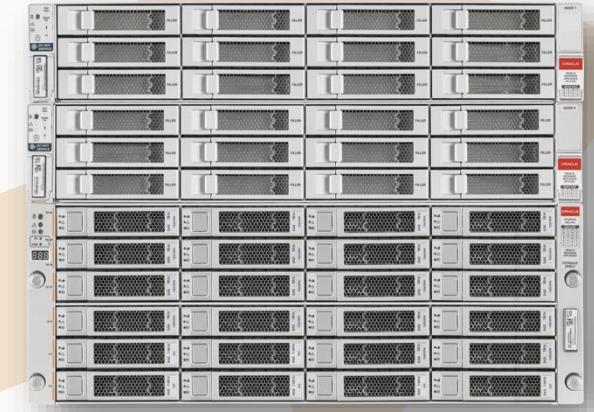
**Oracle Database Appliance X9-2S**  
Single-instance  
16 Cores  
256 GB Memory, expandable to 512 GB  
Up to 3x Public Network Cards  
13.6 TB Data Storage (Raw)

## What's New?

- Latest Intel Xeon processor technology
- Increased storage capacity
- 33% more capacity and faster RAM



**Oracle Database Appliance X9-2L**  
Single-instance  
32 Cores  
512 GB Memory, expandable to 1 TB  
Optional: 2TB PMem  
Up to 3x Public Network Cards  
13.6 TB Data Storage,  
expandable up to 81.6 TB (Raw)



**Oracle Database Appliance X9-2-HA**  
Single-instance and RAC  
64 Cores  
1 TB GB Memory, expandable to 2 TB  
Up to 3x Public Network Cards per Server  
46 TB SSD Data Storage, expandable up to  
368 TB SSD or up to 92 TB SSD / 648 TB HDD (Raw)

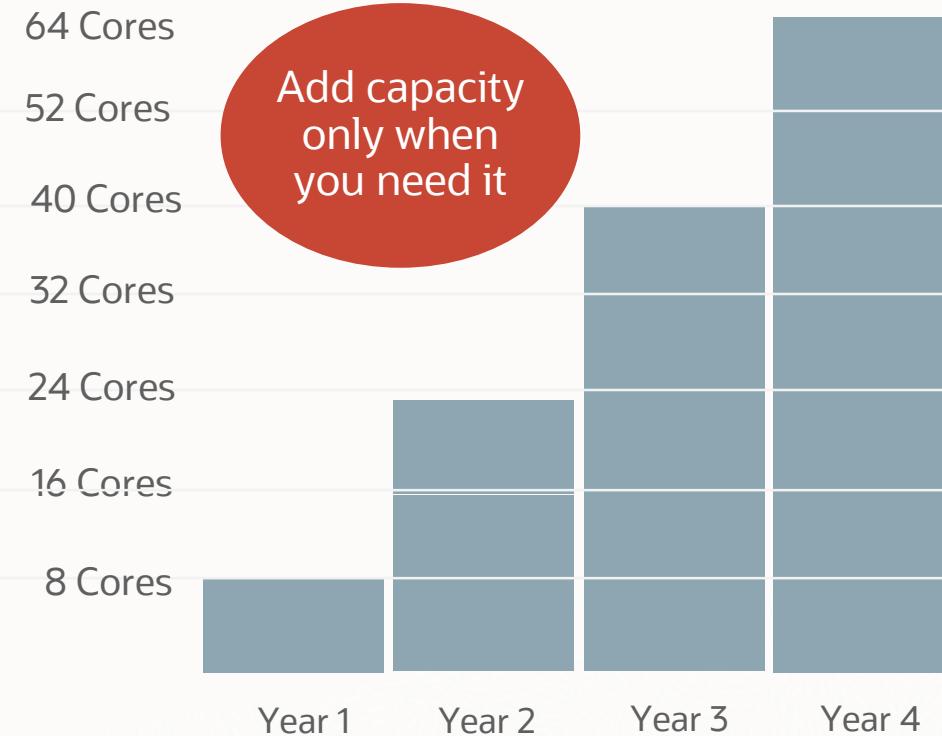
CAPACITY →  
HIGHER

# Manage license costs using capacity on-demand

Option 1: Build your own  
License all 64 cores for anticipated growth



Option 2: Buy database appliance  
License as you grow and save significantly



# Enhanced Security

## Layered approach to build a secure system



### Secure Oracle Operating System



Ultra secure operating system that defaults to highest levels of security



### Advanced Security Features



Supports security options: Advanced Security, Audit Vault Database Firewall, and Database Vault



### Secure Out of the Box



Installs only the required RPMs to run the stack



### Timely System Updates



Single patch file for entire stack



### Complete In-House HW Design



BIOS, Processor instruction encryption, service processor firmware designed 100% by Oracle

## Business Value Highlights

498%

five-year ROI

54%

lower five-year cost  
of operations

67%

faster deployment of  
new databases

Less than  
1 minute

of unplanned downtime  
per user per year

61%

more efficient DBA teams

20%

lower cost of infrastructure

## IDC customer business value analysis of Oracle Database Appliance

“The result for this sample of Oracle customers is **strong value** relative to investment costs in Oracle Database Appliance, which IDC projects will lead to an average five-year ROI of **498%**.”

### Customer's say:

**Speed:** “It's about seven times faster. Our load time for a full database load has gone from around 40 hours to 4 hours.”

**Value:** “We have 90 servers with Oracle Database Appliance, but **if we used traditional servers**, we'd need maybe around 120... **we would be paying probably about 30% more in licensing, about \$1 million more per year.**”

# Private Cloud Appliance

Converged System designed for fast and rapid application deployments





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# Oracle Private Cloud Appliance X9-2

The Datacenter in a box Provides 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

[Click Here](#)

# Oracle Private Cloud Appliance

The best platform for middleware and applications in customer data centers



## Manage diverse workloads

- Supports multiple operating systems (Oracle Linux, Oracle Solaris, and Windows)
- Runs enterprise workloads alongside cloud-native applications
- Proven consolidation platform

## Deploy mission critical Oracle applications and middleware

- Highly available: 3 isolated fault domains and no single point of failure
- Lowest latency Exadata direct connect
- Integrated disaster recovery

## Reduce TCO by over 40%

- Trusted Partitions optimize software license costs
- Eliminates infrastructure “tax” by including cloud administration and management, Oracle Linux, Oracle Solaris, Cloud Native Stack, etc.
- Up to 8 tenancies securely consolidate infrastructure for multiple organizations



# Oracle Private Cloud Appliance X9

Delivers consistent development and deployment for public and private cloud

## OCI-compatible

Tools, operational approaches, and skill sets are common between Private Cloud Appliance and OCI



## Cloud-native

Develop and deploy containerized, cloud-native applications in infrastructure as code environments



## One platform

Modern infrastructure for applications and middleware consolidation on a single cloud platform



## On-premises control

Retain control of all data to meet data sovereignty and privacy requirements



# Oracle Cloud Compatible Infrastructure on Premises

Engineered for Mission Critical Private Cloud



**Image portability to OCI  
OCI compatible APIs**



**Tools and Services**

CI/CD  
SDK



ANSIBLE



**Business Continuity**

Fault Domains  
Disaster Recovery



**Monitoring and Management**

Grafana, Prometheus



**Security and Governance**

Identity and Access  
Policy  
Tagging  
Encryption



**Storage**

Block  
File  
Object



**Network**

Virtual Cloud Network  
Network Services  
Security Lists  
Gateway Services  
Datacenter Connectivity



**Compute**

Virtual Machines



# Exadata Database Machine

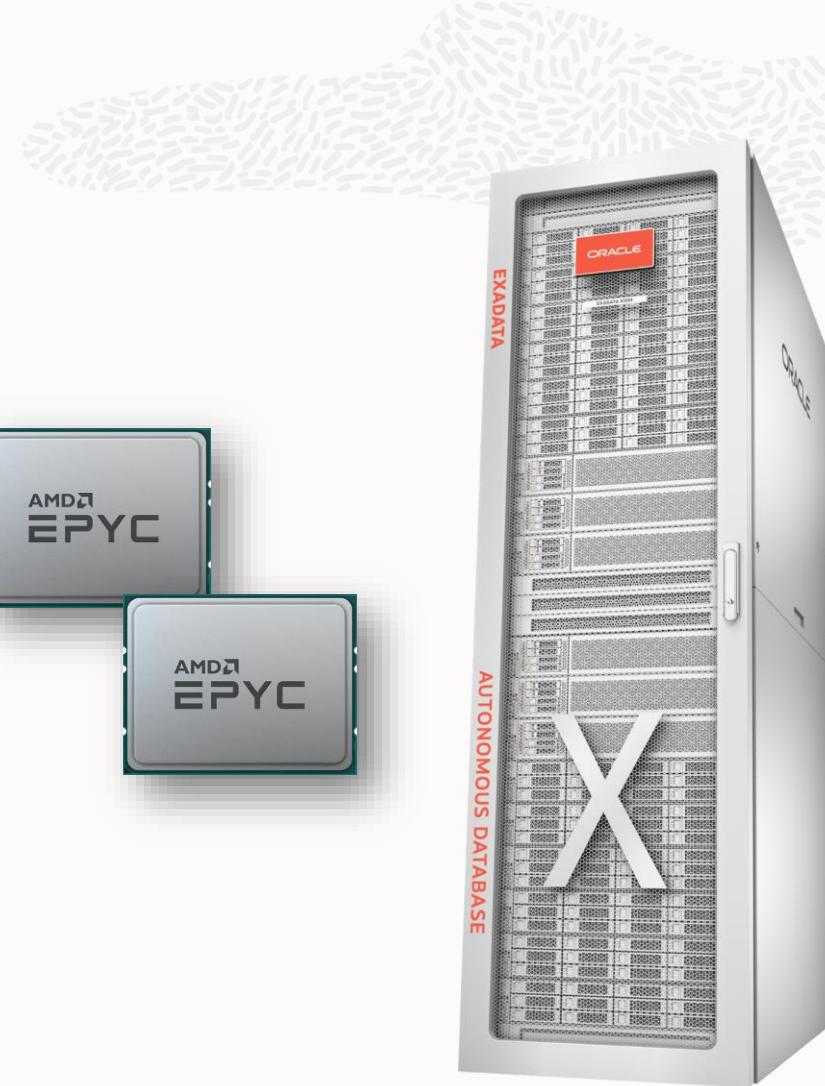
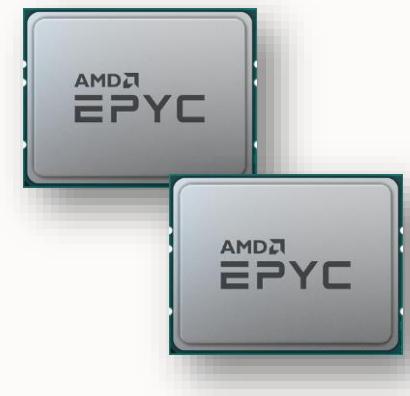




SCAN ME

# I'm Exadata X10M

Featuring AMD EPYC™ CPUs



**Major Innovations Enable Extreme Scale with Dramatically Improved Cost Performance**

[Click Here](#)

# Exadata runs everywhere

Identicality across deployments improves IT agility and reduces costs

On-premises



Exadata Database  
Machine

Public Cloud



Exadata in Oracle  
Cloud Infrastructure  
(OCI)

Hybrid Cloud



Exadata  
Cloud@Customer

Multicloud



Exadata through  
Oracle Database  
Service for Azure

**39% of Fortune Global 100 have adopted Exadata Cloud**

# Leading organizations in every industry rely on Exadata

10 of the Top 10 Telecoms | **10** of the Top 10 Banks | **9** of the Top 10 Retailers

**10 of top 10** **Banking**



**10 of top 10** **Telecommunications**



**10 of top 10** **Food & Drug**



**9 of top 10** **Automotive**



**9 of top 10** **Healthcare**



**9 of top 10** **Retail**



**8 of top 10** **Technology**



**7 of top 10** **Energy**



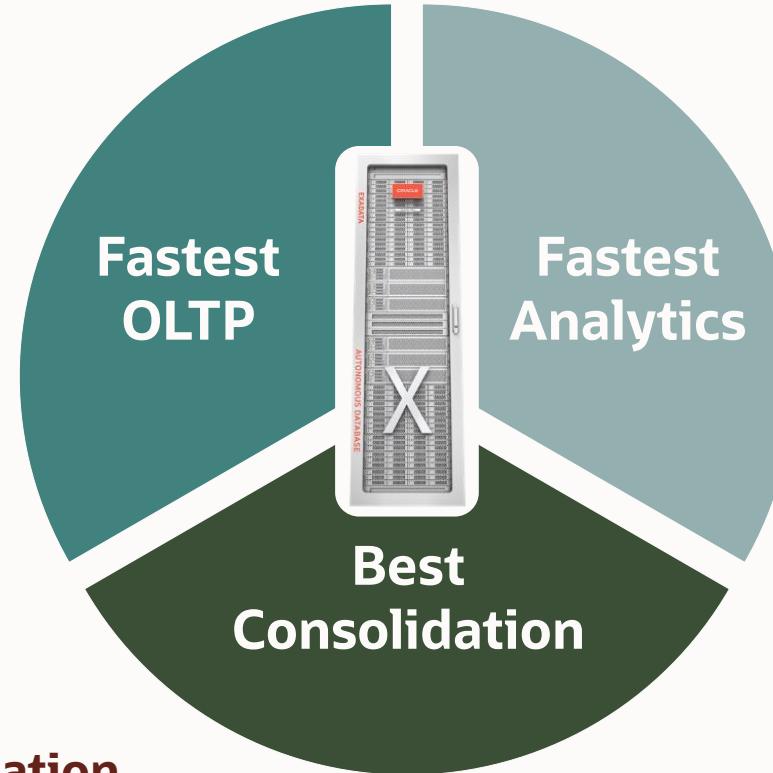
\* Ranking based on 2022 [Fortune Global 500](#)

# Exadata's Superior Software Architecture Highlights

Smart system software enables highest performance for OLTP | Analytics | Consolidation workloads

## Fastest OLTP

- **Fastest OLTP I/O** with scale-out storage, RDMA to storage, and NVMe flash
- **Fastest scale-out** with unique RDMA algorithms for inter-node cluster coordination
- **Fastest recovery** from unplanned downtime and component failure



## Best Consolidation

- **Unique Prioritization** of latency sensitive or important workloads
- **Unique Workload Isolation** of multiple tenants or workloads

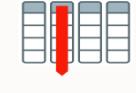
## Fastest Analytics

- **Unique Smart Scan** automatically offloads data intensive SQL operations to storage
- **Unique Smart Flash Cache** and **Storage Index** automatically accelerate database I/O
- **Unique Columnarization** automatically converts data to fast In-Memory Columnar format in flash

# 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

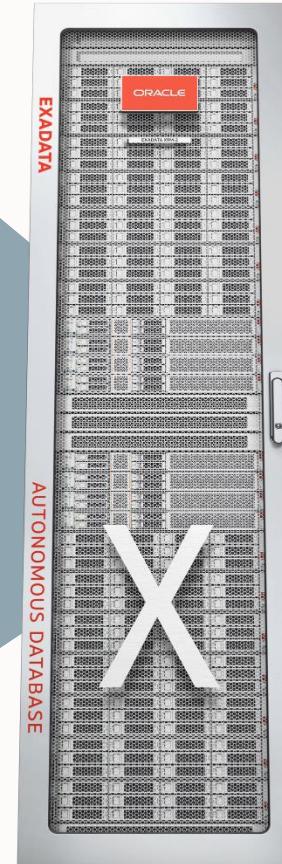


Advanced Analytics,  
Spatial and Graph



Management Packs for  
Oracle Database

All Oracle  
Database  
Innovations



All Exadata  
Innovations

Offload SQL to Storage



100 GB

RoCE Fabric  
PMEM Commit and  
Data Accelerators



PCI Flash



Smart Flash Cache



Storage Indexes



Columnar Flash Cache



Hybrid Columnar  
Compression



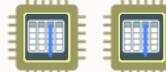
I/O Resource  
Management



Network Resource  
Management



In-Memory Fault  
Tolerance



Exafusion  
Direct-to-Wire Protocol



# Exadata X10M greatly improves **OLTP** performance

Performance **improvements** over Exadata X9M



Up to **3X**

## Higher Transaction Throughput

3X more cores per database server (192 cores)

Up to 9% faster per core performance

Up to **50%**

## Higher Flash Write IOPS in Storage Servers

2X more cores

916K IOPS per storage server

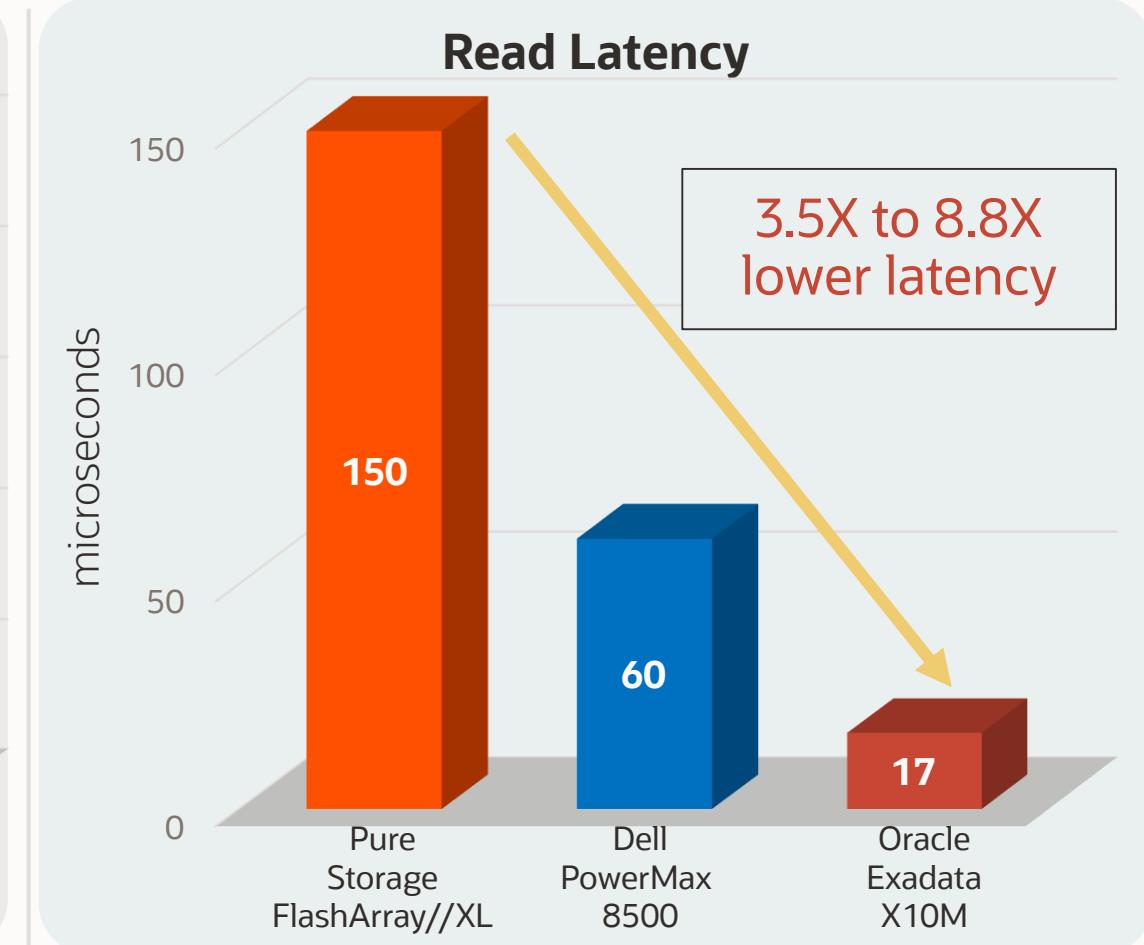
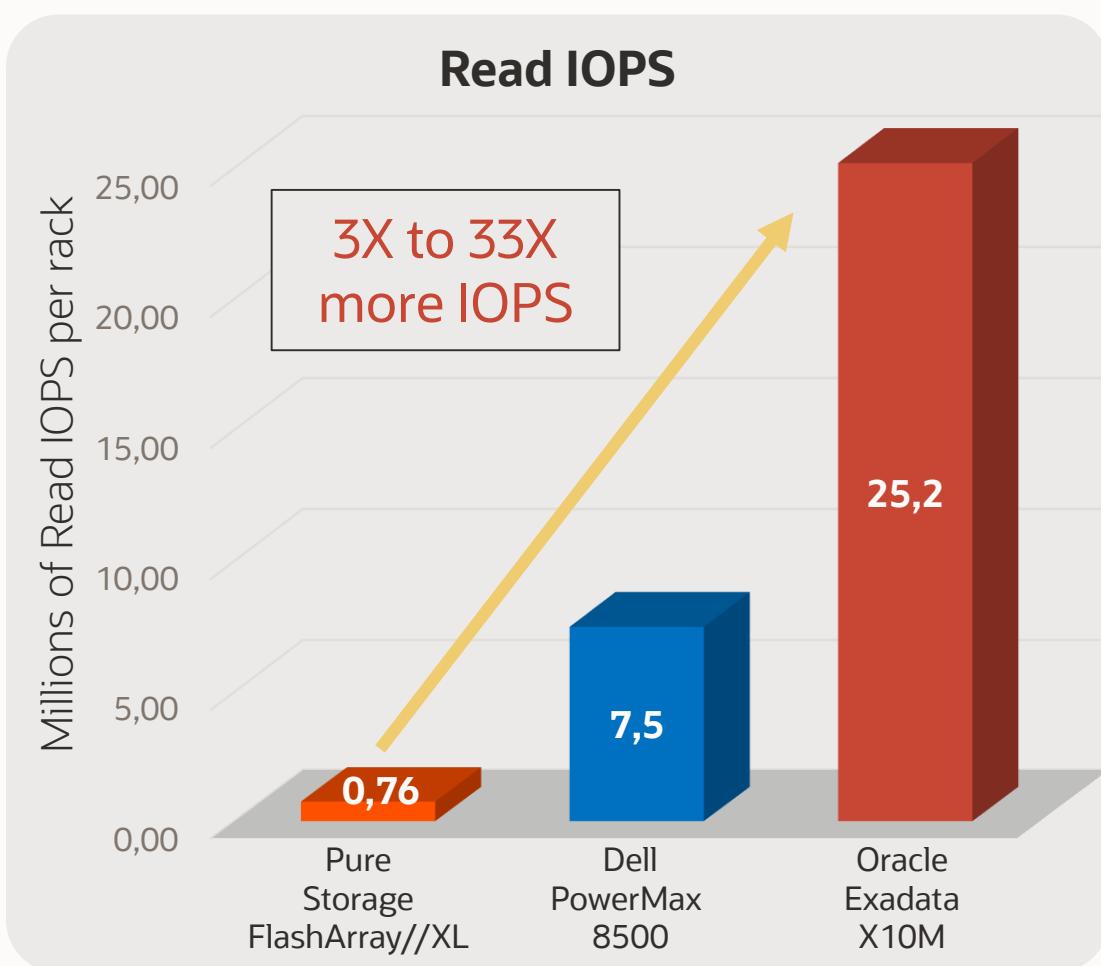
Up to **15%**

## Faster Read IOPS and Lower Latency

2.8 million 8K RDMA reads per storage server

< 17 microseconds latency

# Dramatically higher OLTP IOPS and lower latency than traditional on-premises platforms



Single system, per-rack capabilities – PowerMax scales to 2 racks, **Exadata X10M scales to 14 racks**

# Exadata X10M greatly improves **analytics** performance

Performance **improvements** over Exadata X9M



Up to **3.6X**

## Faster database queries

3X more compute cores  
20% faster per core analytics

Up to **2.6X**

## Faster storage server queries

2X more storage cores  
30% faster per core smart scan

Up to **2.4X**

## Faster in-memory analytics scan

More cores  
Faster memory

Up to **35%**

## Faster Extreme Flash Decryption

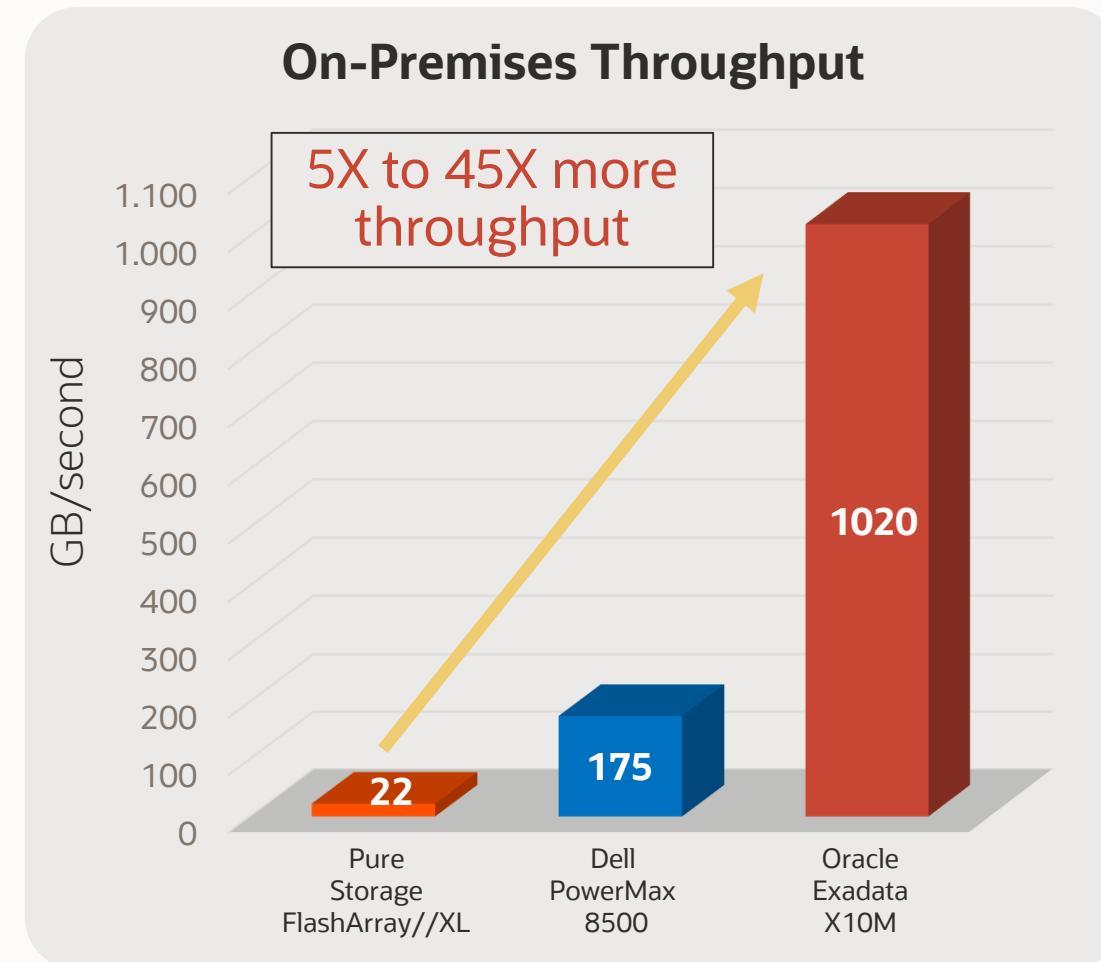
More cores enable flash scans on encrypted data  
to run at full flash bandwidth

Up to **25%**

## More columnar cache capacity in flash

New compression algorithms enable storing  
more data

# Dramatically higher analytics performance than traditional on-premises platform



# Exadata X10M greatly improves consolidation and capacity

Performance improvements over Exadata X9M



**1.5X**

## Higher Memory capacity

Up to 3 TB DRAM per database server  
For higher consolidation, larger  
in-memory columnar scans

**2.4X**

## More flash capacity in all-flash config

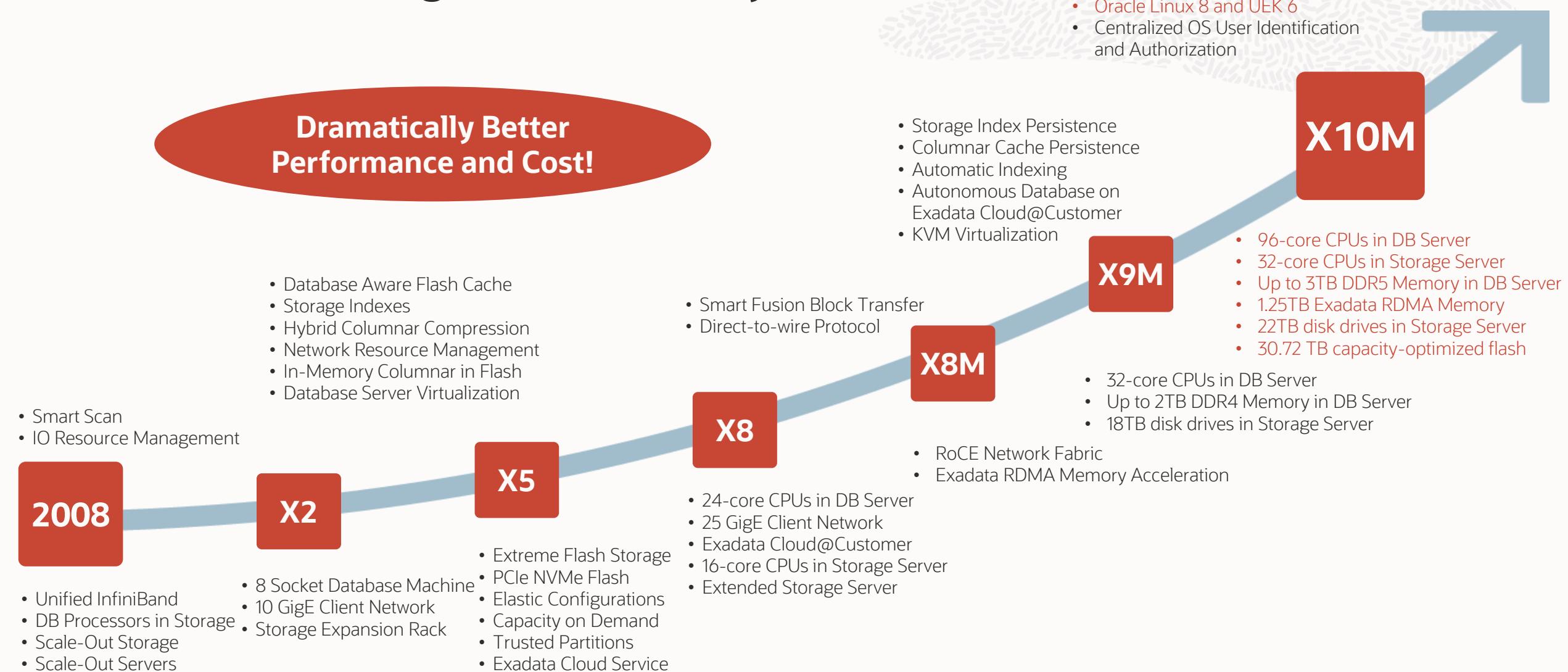
New capacity-optimized flash drives  
Up to 2 PB of raw all-flash storage  
in one rack

**22%**

## More disk storage capacity

22 TB Disks replace 18 TB  
Up to 4.2 PB of raw data storage in one rack

# Exadata Advantages Increase Every Year





# Extreme Performance and Consolidation = Extreme Value

Reduce costs with economies of scale

## Spend less by doing more

- Compared to previous generations, accomplish more on a same-size system
  - ✓ Enable more workloads
  - ✓ Support more users
  - ✓ Deploy more databases
  - ✓ Process more data
- Or, run the same workloads on a smaller system

## Spend less by administrating less

- Capacity-on-Demand with Trusted VMs enables rightsizing database spend to match workloads
- A complete, preconfigured, hardened, secured, tuned database platform
- Push-Button Database as a Cloud Service in Oracle Cloud Infrastructure or Cloud@Customer
- Migration to Exadata Cloud Infrastructure with no application or data model changes

# Thousands of critical deployments, on-premises and cloud

Superior architecture  
for ALL workloads

- Petabyte warehouses
- Mission critical systems
  - Financial trading
  - Process manufacturing
  - E-commerce
- Packaged applications
  - SAP, Oracle, Siebel, PSFT, ...
- Database consolidation



# Zero Data Loss Recovery Appliance



# Oracle's Zero Data Loss Recovery Appliance



Up to 10X  
faster data  
recovery

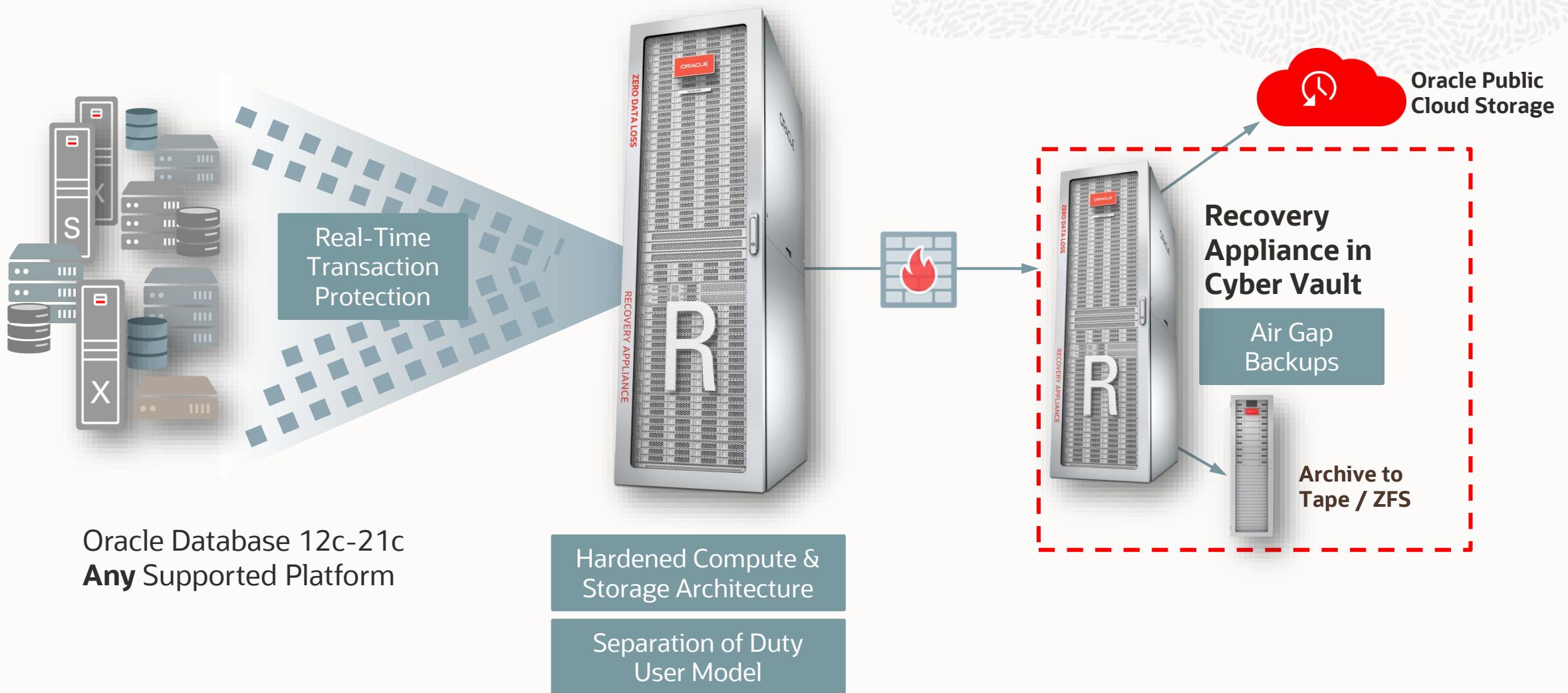
Real-time  
recovery  
status

Recover to  
any  
point-in-time

Never restore  
a bad backup  
again

Millions in  
savings

# Built to Defend and Recover Databases from Ransomware Attacks



# Recovery Appliance X9M Entry-Level to Multi-Rack Configurations



**Base Rack**

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

Add more  
storage servers  
if necessary



**Full Rack**

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

Add more racks  
if necessary



**18 Racks**

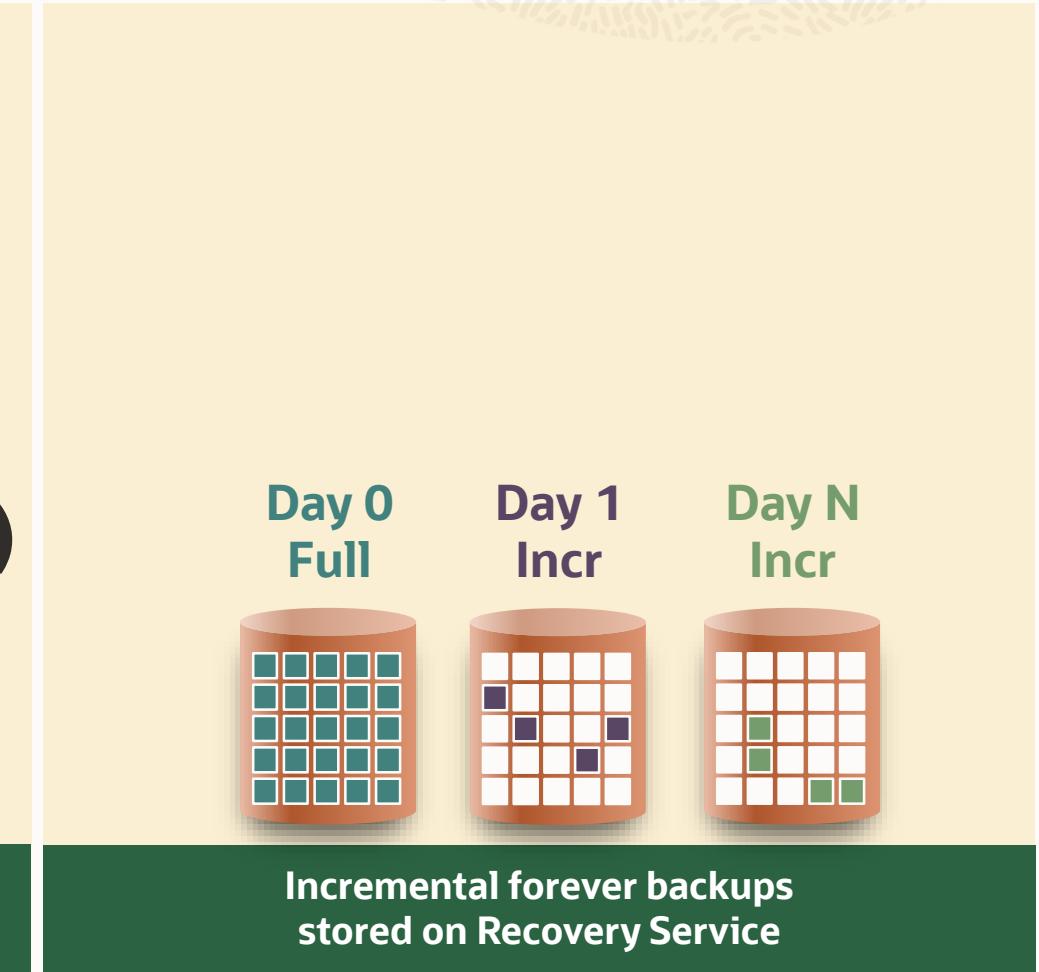
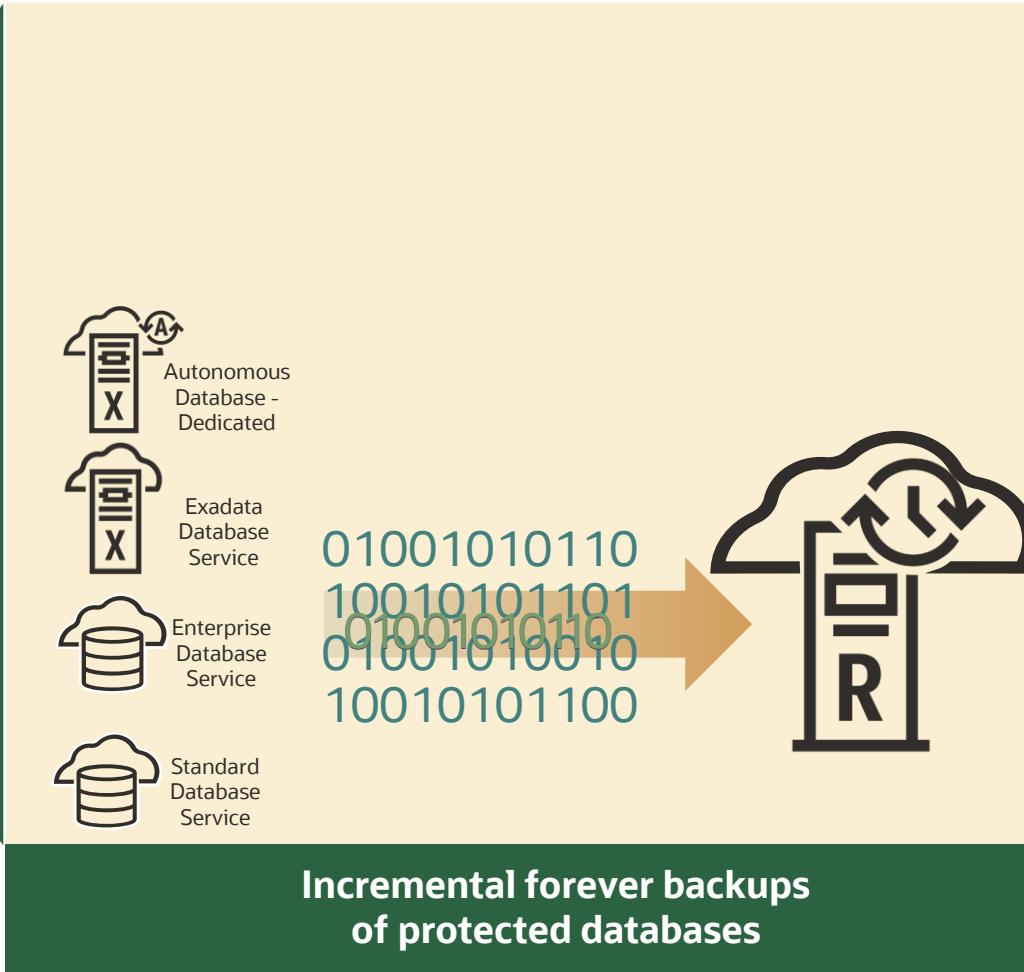
36 Compute Servers, 324 Storage Servers  
22 PB Usable / 4+ PB/Hr Restore

# Recovery Service eliminates weekly full backups

Incremental-forever backups reduce backup overhead on production database services

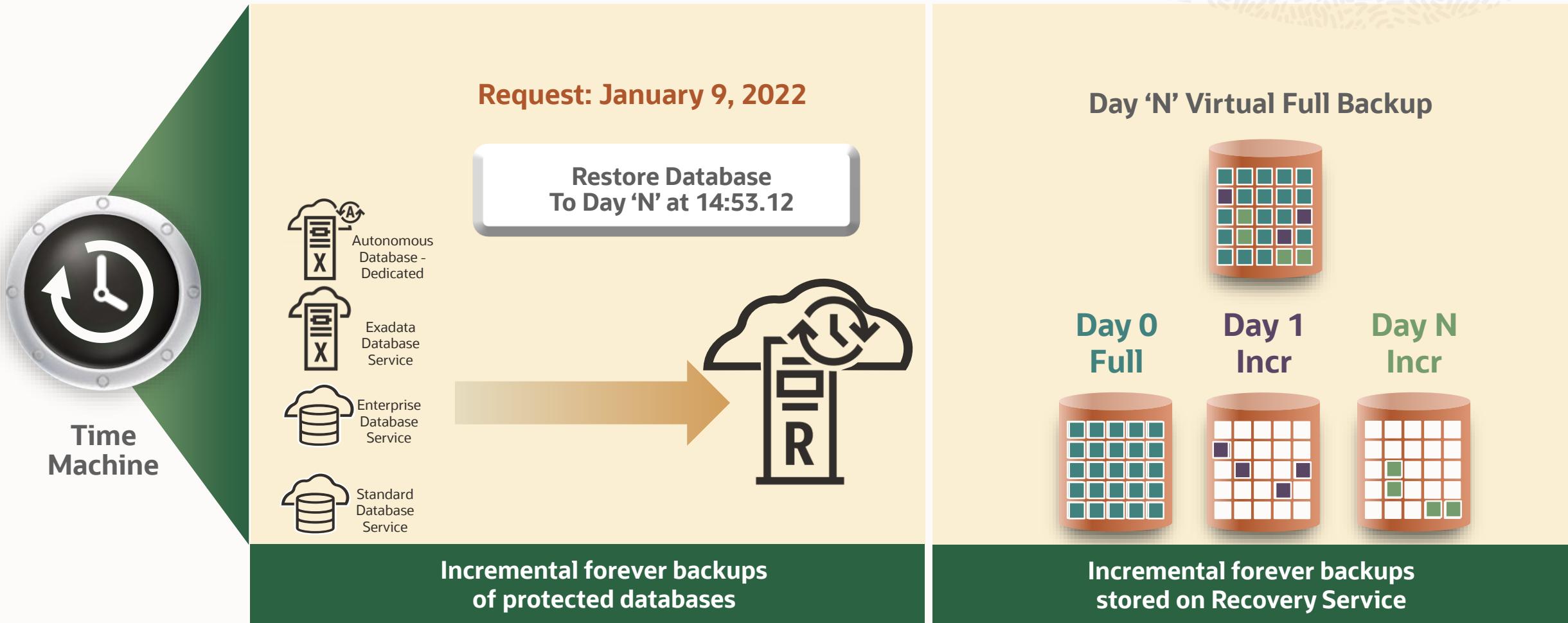


Time  
Machine



# Zero Data Loss recovery simplifies database restores

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



# ZFS Storage Appliance

Optimized for Oracle workloads and Cloud Integration



# Oracle ZFS Storage Appliance

Unified Storage for modern IT and easy operation

- 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

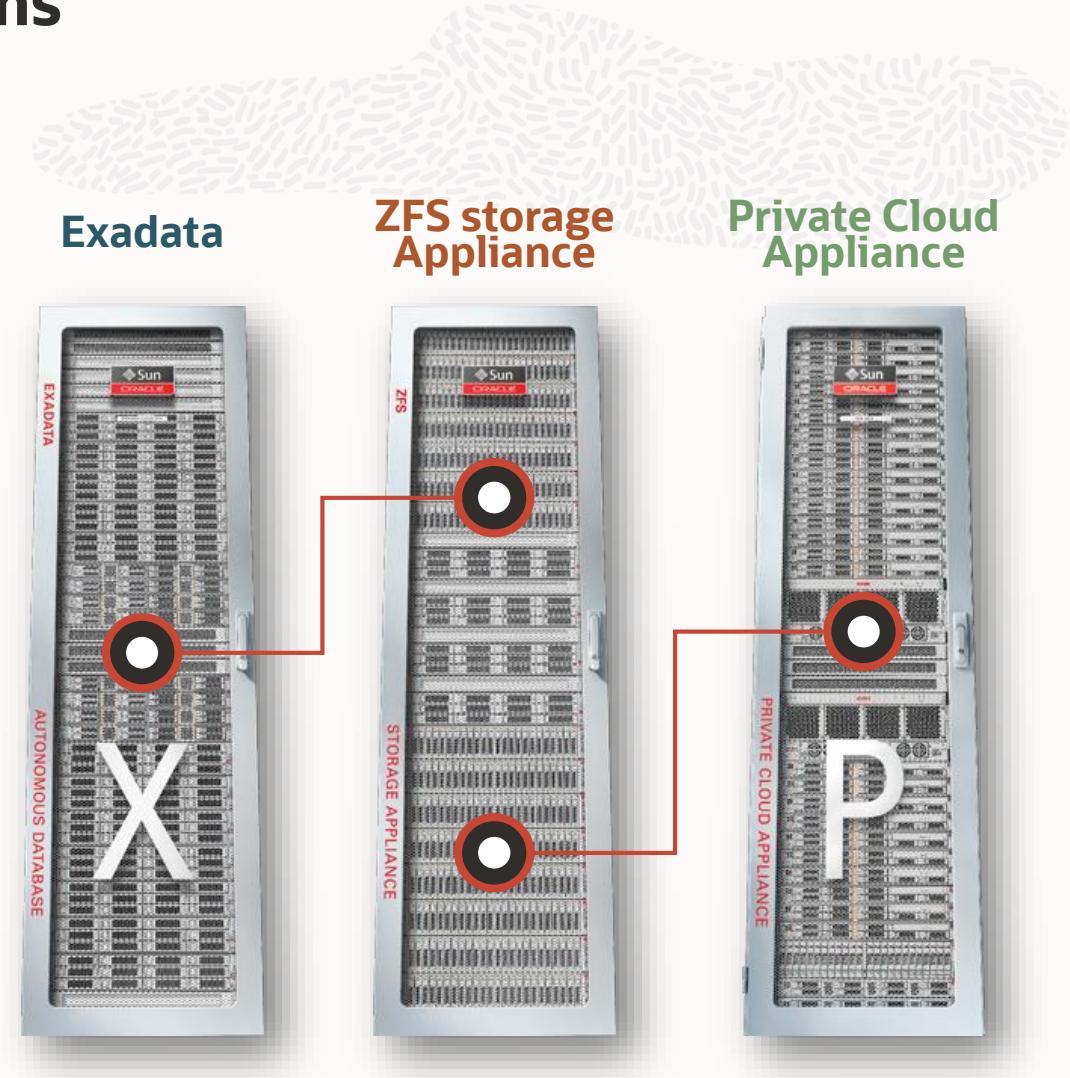


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# Tight Integration with Oracle Cloud Systems

Oracle Exadata, ZFS Storage and PCA can work together!

- 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



# Oracle Resources





SCAN ME

# Nice to meet you! I'm Sales Accelerator...

Sales Central

Welcome alexandre.afagundes@oracle.com

Sales Accelerator is live! Sales Central is going away. [Visit Sales Accelerator](#)

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Sales Role

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Engineered Systems x

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Modernize your Business

Oracle Database Consolidation

Cloud Backup Or Disaster Recovery

Shared Data Management Use Cases

Product Content

Engineered Systems

Oracle Live Event July 8, 2020

Exadata

Big Data Appliance

Private Cloud Appliance

Private Cloud at Customer

Autonomous Database on Cloud@Customer

Exadata Cloud@Customer

Database Appliance

ZDURA

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Oracle Red Bull Racing has arrived

Driven by data, built to win

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- Sales Plays

Featured Content

ORACLE Red Bull RACING

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# 2023 Cloud at Customer Content

The screenshot shows the Oracle Learning Platform interface. At the top, there's a navigation bar with links for 'University Learning Subscription', 'Back', 'Courses', 'Live Sessions', 'Progress', 'Favorites 0', 'Sign In | Guest User'. Below the navigation, the title 'Oracle Cloud at Customer 2023 Solution Engineer Specialist' is displayed. A large text block describes the Oracle Cloud@Customer product family, mentioning Autonomous Database on Exadata Cloud@Customer and Exadata Cloud@Customer, which brings Oracle's complete portfolio of public cloud infrastructure, fully managed cloud services, and Oracle Fusion SaaS applications into the customer's data center. It highlights high-performance capabilities, autonomous operations, and low-cost subscription pricing. The course is marked as 'Not Started' and has a goal of 'Pass Assessment' with 0 of 8 items completed. On the left, there's a 'Learning Path' section indicating 1+ Hours of expert training and a heart icon for favoriting. Two cards are shown below: 'Oracle Cloud at Customer 2023 Solution Engineer Specialist' (1h 35m) and 'Oracle Cloud at Customer 2023 Sales Specialist' (1h 35m). Both cards have a heart icon and a 'View Outline' button.

<https://learn.oracle.com/ols/home/89350>

<https://learn.oracle.com/ols/learning-path/oracle-cloud-at-customer-2023-sales-specialist/89350/111199>

<https://learn.oracle.com/ols/learning-path/oracle-cloud-at-customer-2023-solution-engineer-specialist/89350/111250>

# Sell Expertise | Oracle Exadata Database Machine



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Customers seek partners with the specific skills and experience they need to succeed. Oracle Expertise constitutes proof of competency, demonstrated customer success and continued commitment, whether a partner is building on, selling, or implementing Oracle technology.

Expertise in a specific cloud service or product family is attained by completing focused "Qualifiers" (criteria, such as maintaining a number of Oracle-certified individuals) and opens the door to targeted go-to-market Benefits. Browse the Expertise Catalog below to learn more about each track-specific Expertise and its Qualifiers. We encourage you to start achieving Expertise today and join an elite group of partners that stands out from the rest!

Video: Why Achieve Expertise (1:51)    Datasheet: Expertise in Modern OPN

Cloud Build    Cloud Sell    Cloud Service ▾    License & Hardware ▾

**Expertise Qualifiers**

## Sales Specialists\*

**1 Individual Accredited as:**  
Oracle Exadata On-Premises 2022 Sales Specialist

## Solutions Engineers\*

**1 Individual Accredited as:**  
Oracle Exadata On-Premises 2022 Solutions Engineer Specialist

\* Same Individuals can be both a Sales Specialist and Solution Engineer

[Click Here](#)

# Successful Use Cases





**Jet Propulsion Laboratory**  
California Institute of Technology



# NASA's Deep Space Network powered by Oracle Private Cloud Appliance

## Business Challenge:

NASA's Jet Propulsion Laboratory (JPL) relies on its Deep Space Network (DSN) to provide uninterrupted communications with spacecraft exploring beyond Earth's orbit. NASA needed to upgrade from a legacy environment to a modernized infrastructure to receive data from space, then process it quickly and efficiently running a number of homegrown applications.

## Results:

- ✓ Crucial for monitoring and managing satellite assets for NASA
- ✓ Consolidated over 300 legacy servers to six Oracle Private Cloud Appliances
- ✓ Achieved zero downtime for critical operations.

## Products Used:

Oracle Private Cloud Appliance

Link to Forbes article:

<https://www.forbes.com/sites/oracle/2017/09/27/how-nasa-captured-the-moment-of-cassinis-last-dive>



## Accelerated processing and reporting ensures uninterrupted operations

“By adopting Oracle Database 12c’s Multitenant option and consolidating six databases into Oracle Database Appliance, we gained a high-performing and reliable database platform to process sales and production data 40% faster, generate reports 30x faster, and ensure business continuity.”

**Masayuki Gouya**

Department, Production Technology Division, Mitsubishi Aluminum Co. Ltd

### Business Challenge:

Mitsubishi Aluminum desired to increase daily manufacturing efficiency and reduce costs by integrating six databases into a single platform. In addition, they wanted to improve system response time and enhance business continuity to ensure uninterrupted manufacturing operations.

### Results:

- ✓ Processed aluminum sales and production data 40% faster by integrating multiple databases across all the plants into a single Oracle Database Appliance..
- ✓ Created sales and production reports 30x faster by using Oracle Database Appliance's solid-state drives.
- ✓ Ensured continuous manufacturing operations using Oracle's Maximum Availability Architecture to ensure high availability and eliminate production line outages.

### Products Used:

Oracle Database Appliance

Oracle Database



# Thank You 😊

**Questions / Feedback / Training Suggestions**

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[marcel.lamarca@oracle.com](mailto:marcel.lamarca@oracle.com)

**Ask for help 😊**

ORACLE

