

ORACLE

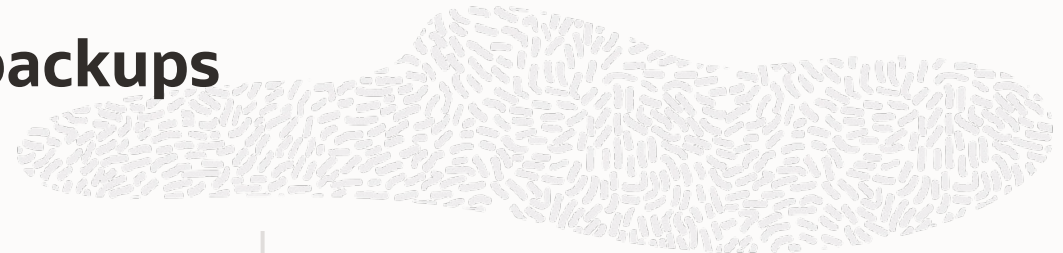


# Zero Data Loss Autonomous Recovery Service

Zero Data Loss Protection of Oracle Database on Oracle Cloud Infrastructure



# Challenges with today's database cloud backups



## Ransomware risk

- Help prevent data theft during and after an attack
- Minimize data loss exposure & down-time after an attack
- Protection against backup deletion or alteration during an attack



## Operational cost impact

- Weekly full backups are time and resource intensive on production
- Backup validations consume production database resources
- Cloud costs are difficult to interpret when managing overall consumption



## Complex management

- Time consuming to config and manage cloud-scale protection
- Difficult to determine backup health and recoverability
- Difficult to calculate backup space utilization for a database

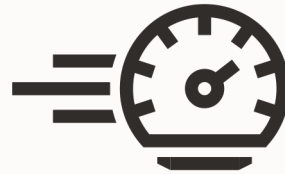


# Zero Data Loss Autonomous Recovery Service



## Ransomware resiliency

- Automated and mandatory encryption to help prevent data theft
- Safeguards backups with enforced 14-day minimum retention
- Optimizes backups in 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



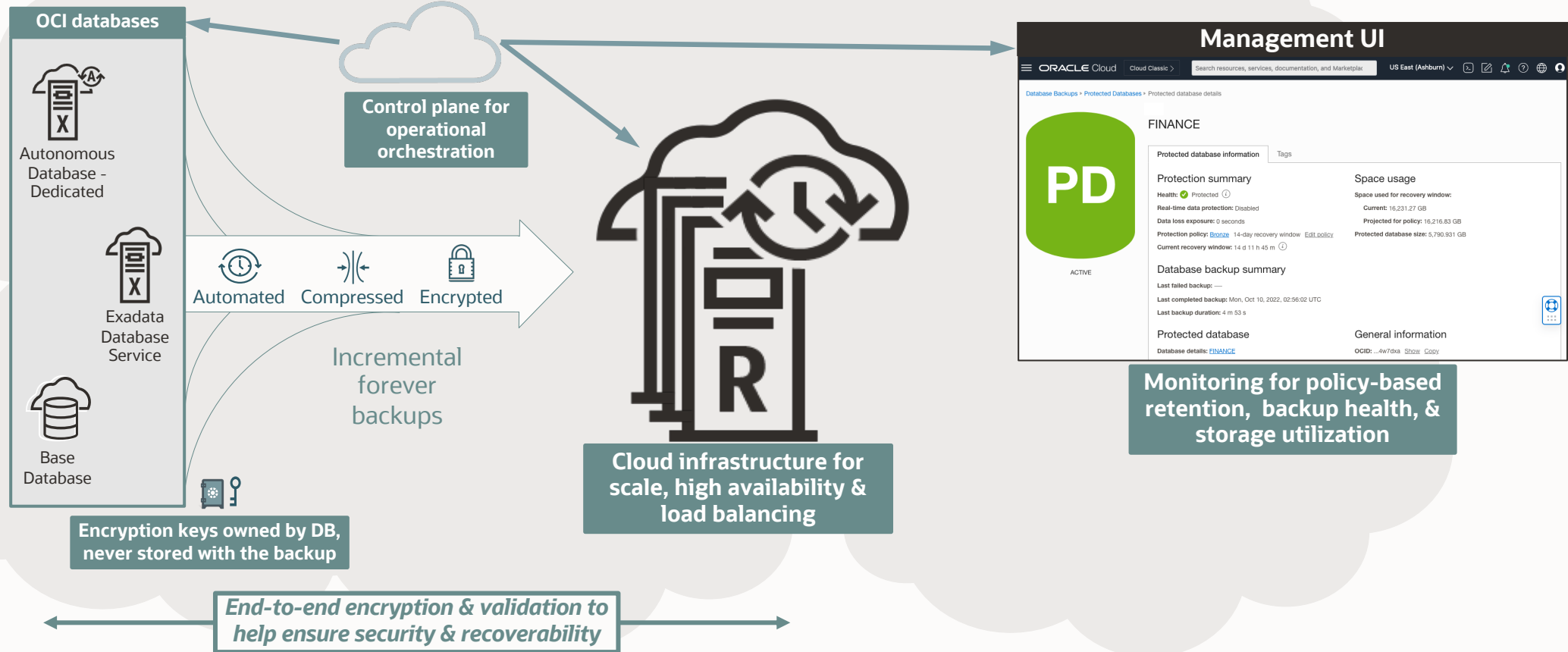
## Cloud simplicity

- 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

# Zero Data Loss Autonomous Recovery Service



Oracle Cloud Infrastructure



# Autonomous Recovery Service SKUs/Pricing



SKU	Description	Metric	List Price (USD)	Notes
<b>B95240</b>	Oracle Database Autonomous Recovery Service	Virtualized-GB per Month	\$0.0306	Minimum 1 GB
<b>B95241</b>	Oracle Database Zero Data Loss Autonomous Recovery Service	Virtualized-GB per Month	\$0.0400	Minimum 1 GB

Only B95241 comes with sub-second RPO through real-time data protection.



# Zero Data Loss Autonomous Recovery Service

—  
Quick Demo



# Backup configuration

Overview > Oracle Exadata Database Service on Dedicated Infrastructure > Exadata VM Clusters > Exadata VM Cluster Details > Data



FINANCE

- DB connection
- Performance Hub
- Restore
- Configure automatic backups

Database information Tags

### Configure automatic backups

Enable automatic backups ⓘ

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

Backup scheduling (UTC) ⓘ  
2:00AM - 4:00AM

Backup destination ⓘ  
Autonomous Recovery Service

Protection policy in **ZDLRA** ⓘ [\(Change Compartment\)](#)  
Bronze (14-days recovery window)

Enable real-time data protection ⓘ

Deletion options after database termination ⓘ

- Retain backups according to the protection policy retention period
- Retain backups for 72 hours, then delete

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



# Monitoring – Database console

Overview > Oracle Exadata Database Service on Dedicated Infrastructure > Exadata VM Clusters > Exadata VM Cluster Details > Database Home Details > Database Details



AVAILABLE

## FINANCE

DB connection

Performance Hub

Restore

Configure automatic backups

More actions ▾

Database information

Tags

### General information

**Lifecycle state:** Available

**OCID:** ...avmp3a [Show](#) [Copy](#)

**Created:** Wed, Sep 14, 2022, 00:17:35 UTC

**Database unique name:** FINANCE\_dfw\_iad

**Oracle SID Prefix:** FINANCE

**Database Workload:** OLTP

**Character Set:** AL32UTF8

**National Character Set:** AL16UTF16

### Database version

**Database software image:** [database1916withrtrtpatch](#)

### Backup

**Automatic backup:** Enabled ⓘ

**Health:** Protected ⓘ

**Data loss exposure:** 0 seconds

**Last failed backup:** -

**Last completed backup:** Fri, Oct 14, 2022, 02:57:53 UTC

**Next scheduled backup:** 2:00AM - 4:00AM UTC

**Space used for recovery window:** 10847.2 GB

**Backup destination:** [Autonomous Recovery Service](#)

**Enable real-time data protection:** Enabled

**Protection policy:** [Bronze](#) (14-day recovery window) [Edit policy](#)



# Monitoring – Database console

## Backup

**Automatic backup:** Enabled ⓘ

**Health:** Protected ⓘ

**Data loss exposure:** 0 seconds

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**Enable real-time data protection:** Enabled

**Protection policy:** [Bronze](#) (14-day recovery window) [Edit policy](#)

# Monitoring – Recovery Service console: Database details

Database Backups > Protected Databases > Protected database details



ACTIVE

## FINANCE

Protected database information

Tags

### Protection summary

Health: ✓ Protected i

Real-time protection: Enabled [Edit](#)

Data loss exposure: 0 seconds

Protection policy: [Bronze](#) 14-day recovery window [Edit policy](#)

Current recovery window: 14 d 14 h 20 m

### Database backup summary

Last failed backup: —

Last completed backup: Fri, Oct 14, 2022, 02:57:53 UTC

Last backup duration: 5 m 39 s

### Protected database

Database details: [FINANCE](#)

### Space usage

Space used for recovery window:

Current: 10,847.2 GB

Projected for policy: 10,836.17 GB

Protected database size: 5,790.931 GB

### General information

OCID: ...4w7dxa [Show](#) [Copy](#)

# Monitoring – Recovery Service console: Database details

## FINANCE

Protected database information

Tags

### Protection summary

Health:  Protected 

Real-time protection: Enabled [Edit](#)

Data loss exposure: 0 seconds

Protection policy: [Bronze](#) 14-day recovery window [Edit\\_policy](#)

Current recovery window: 14 d 14 h 20 m

### Database backup summary

Last failed backup: —

Last completed backup: Fri, Oct 14, 2022, 02:57:53 UTC

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# Monitoring – Recovery Service console: Database details

Database Backups > **Protected Databases** > Protected database details



ACTIVE

## FINANCE

Protected database information

Tags

### Protection summary

Health: ✔ Protected ⓘ

Real-time protection: Enabled [Edit](#)

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Protection policy: [Bronze](#) 14-day recovery window [Edit policy](#)

Current recovery window: 14 d 14 h 20 m

### Database backup summary

Last failed backup: —

Last completed backup: Fri, Oct 14, 2022, 02:57:53 UTC

Last backup duration: 5 m 39 s

### Protected database

Database details: [FINANCE](#)

### Space usage

Space used for recovery window:

Current: 10,847.2 GB

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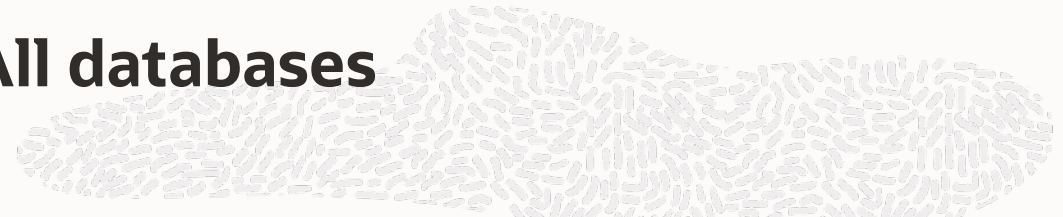
Protected database size: 5,790.931 GB

### General information

OCID: ...4w7dxa [Show](#) [Copy](#)



# Monitoring – Recovery Service console: All databases



## Protected databases in ZDLRA Compartment

Oracle Database Autonomous Recovery Service protects Oracle databases in Oracle Cloud. Policy-driven backup retention, automated recovery validation, end-to-end encryption, and efficient backups provide complete and secure data protection. [Learn more.](#)

A protected database uses Recovery Service as the backup destination. View protected databases associated with automatic backups. [Learn more.](#)

Name	State	Health	Source database	Real-time protection	Data loss exposure	Current recovery window	Recovery window space used	Protection policy	Database size
<a href="#">FINANCE</a>	● Active	Protected ⓘ	<a href="#">FINANCE</a>	Enabled	0	14 d 15 h 20 m ⓘ	10,847.22 GB	<a href="#">Bronze</a>	5,790.931 GB ⋮
<a href="#">SALES</a>	● Active	Protected ⓘ	<a href="#">SALES</a>	Disabled	12 m 16 s	25 d 2 h 42 m ⓘ	16,271.93 GB	<a href="#">Silver</a>	3,956.352 GB ⋮
<a href="#">HRMS</a>	● Active	Protected ⓘ	<a href="#">HRMS</a>	Disabled	12 m 15 s	15 d 10 h 14 m ⓘ	9,051.16 GB	<a href="#">Bronze</a>	3,921.172 GB ⋮

Showing 3 Items < 1 of 1 >



# Restore– Database console

Overview > Oracle Exadata Database Service on Dedicated Infrastructure > Exadata VM Clusters > Exadata VM Cluster Details > Database Home Details > Database Details



## FINANCE

- DB connection
- Performance Hub
- Restore**
- Configure automatic backups
- More actions ▾

Database information Tags

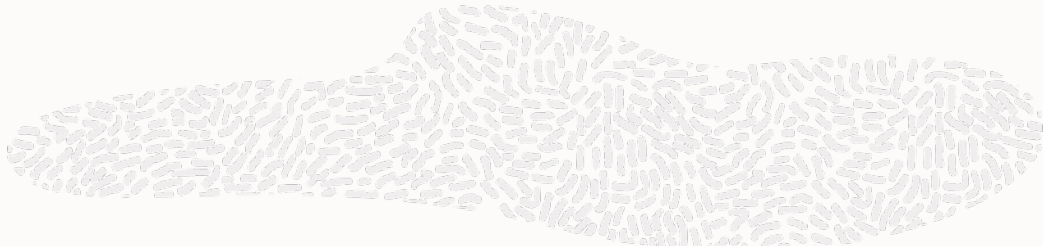
### Restore Database Help

- Restore to latest**  
The database is restored and recovered with zero, or least possible, data loss.
- Restore to a timestamp**  
The database is restored and recovered to the specified timestamp.
- Restore to SCN**  
The database is restored and recovered to the specified Oracle Database System Change Number (SCN).

**Restore Database** [Cancel](#)



# Restore– Database console



Resources

## Backups

[Metrics](#)

**[Backups \(26\)](#)**

[Data Guard Associations \(0\)](#)

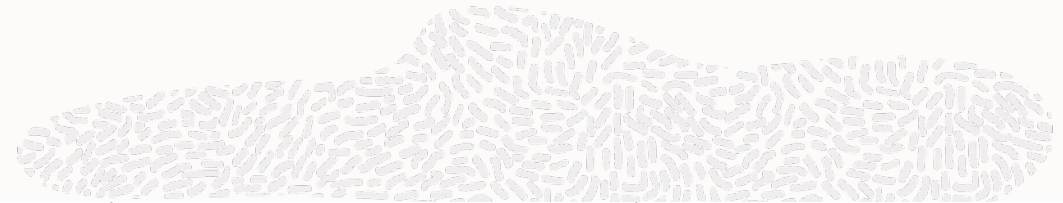
[Pluggable Databases \(4\)](#)

[Work requests \(1\)](#)

<a href="#">Create Backup</a>						
Name	State	Type	Encryption Key	Started	Ended	
Automatic Backup	● Active	Incremental Backup, Initiated by Auto Backup	Oracle-managed key	Fri, Oct 14, 2022, 02:52:13 UTC	Fri, Oct 14, 2022, 02:52:13 UTC	<a href="#">Create database</a> ⋮
Automatic Backup	● Active	Incremental Backup, Initiated by Auto Backup	Oracle-managed key	Thu, Oct 13, 2022, 02:50:40 UTC	Thu, Oct 13, 2022, 02:50:40 UTC	<a href="#">Copy OCID</a> ⋮
Automatic Backup	● Active	Incremental Backup, Initiated by Auto Backup	Oracle-managed key	Wed, Oct 12, 2022, 02:51:35 UTC	Wed, Oct 12, 2022, 02:51:35 UTC	<a href="#">Delete</a> ⋮
Automatic Backup	● Active	Incremental Backup, Initiated by Auto Backup	Oracle-managed key	Tue, Oct 11, 2022, 02:50:57 UTC	Tue, Oct 11, 2022, 02:50:57 UTC	⋮



# Restore– Database console



[Metrics](#)

[Backups \(26\)](#)

[Data Guard Associations \(0\)](#)

[Pluggable Databases \(4\)](#)

[Work requests \(1\)](#)

Operation	State	% complete	Accepted	Started
<a href="#">Restore Database</a>	● Succeeded	100%	Thu, Sep 22, 2022, 14:45:44 UTC	Thu, Sep 22, 2022, 14:45:51 UTC





# Summary



## Ransomware Resiliency

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



## Operational Efficiency

- No more weekly full backups – eliminates production database overhead
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- 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



# Additional resources

Website: <https://www.oracle.com/recovery-service/>

Blog: <https://blogs.oracle.com/maa/post/introducing-recovery-service>

Cost Estimator: <https://www.oracle.com/cloud/costestimator/-/load&tag=ZRCV>

Documentation: <https://docs.oracle.com/en/cloud/paas/recovery-service/dbrsu>

Product demo:

- Backup - <https://youtu.be/p0-YyVEY140>
- Monitoring - <https://youtu.be/HF6yqlaoFNc>
- Restore - <https://youtu.be/q-ugDTHKVic>

# Thank you

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