

ORACLE

**AUTONOMOUS  
DATABASE**

**LEARNING  
LOUNGE**

**Migration to ADB Part III: OCI Database  
Management, the Swiss Army knife for databases**

Autonomous Database Learning Lounge

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**Hosted by Marcos Arancibia**

Autonomous Database Product Management

# Agenda



**Derik Harlow**

**Germán Viscuso**

## Topics

- Learn about the new advanced monitoring capabilities for Autonomous Databases.
- Obtain deeper insights and realtime performance monitoring for ADB and own performance administration of your code and application.
- From fleet wide analysis to a single resource, Database Management in OCI will provide scalable operations and powerful tools to maximize your database's performance.

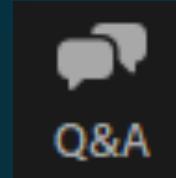
## Q&A

- **Product Managers will answer any questions**

# Before we begin...

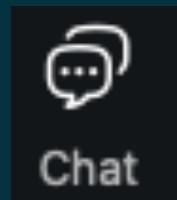
**This session is for you !!!**

Ask your questions using **Q&A**



Product Managers are monitoring your questions

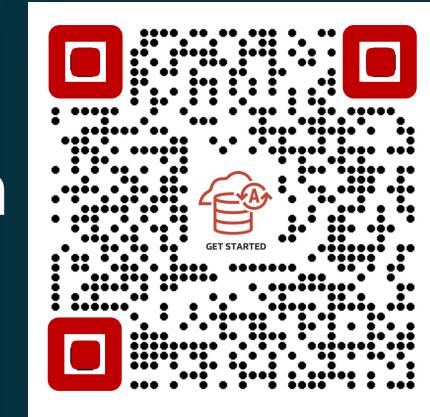
We will share links in **Chat**



The recording will be made available in a few days at  
[oracle.com/goto/adb-learning-lounge](https://oracle.com/goto/adb-learning-lounge)

# Important links to bookmark

**Links to get you started and to keep up to date with Autonomous Database**



**1** New Get Started page:  
[oracle.com/autonomous-database/get-started/](https://oracle.com/autonomous-database/get-started/)

**2** Join us:  [bit.ly/adb-linkedin-grp](https://bit.ly/adb-linkedin-grp) [@AutonomousDW](https://twitter.com/@AutonomousDW)

 **Bluesky**  
[autonomousdb.bsky.social](https://autonomousdb.bsky.social)

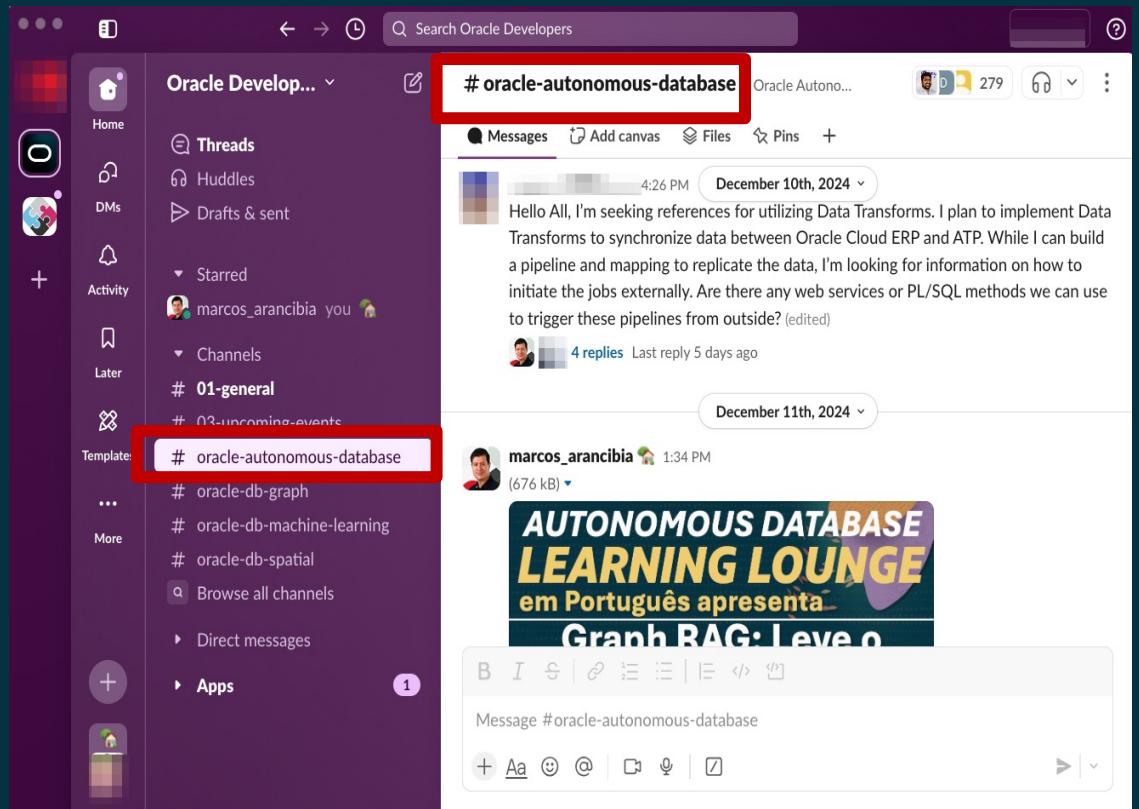
**3** Got a question?  
We are on **stackoverflow**  
[bit.ly/adb-stackoverflow](https://bit.ly/adb-stackoverflow)

Join us on Developers Slack  
(search **#oracle-autonomous-database**)  
[bit.ly/odevrel\\_slack](https://bit.ly/odevrel_slack) (odevrel\_slack)

# Join our External Slack

**STEP 1:** [bit.ly/odevrel\\_slack](https://bit.ly/odevrel_slack) (odevrel\_slack)

**STEP 2:** search for **#oracle-autonomous-database** at the top and click on the Channel



# Polls



# Speakers



**Derik  
Harlow**



**Germán  
Viscuso**



# OCI Database Management and Ops Insights

## Autonomous Database and Exadata advanced monitoring

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Observability and Management

January 14, 2025

# Autonomous, an innovative Oracle Database-as-a-Service

Automated, fully managed for any type of workload, data, operational criticality and at any scale



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**Converged Database**  
Any workload, any data type, unified management and security (no data silos).

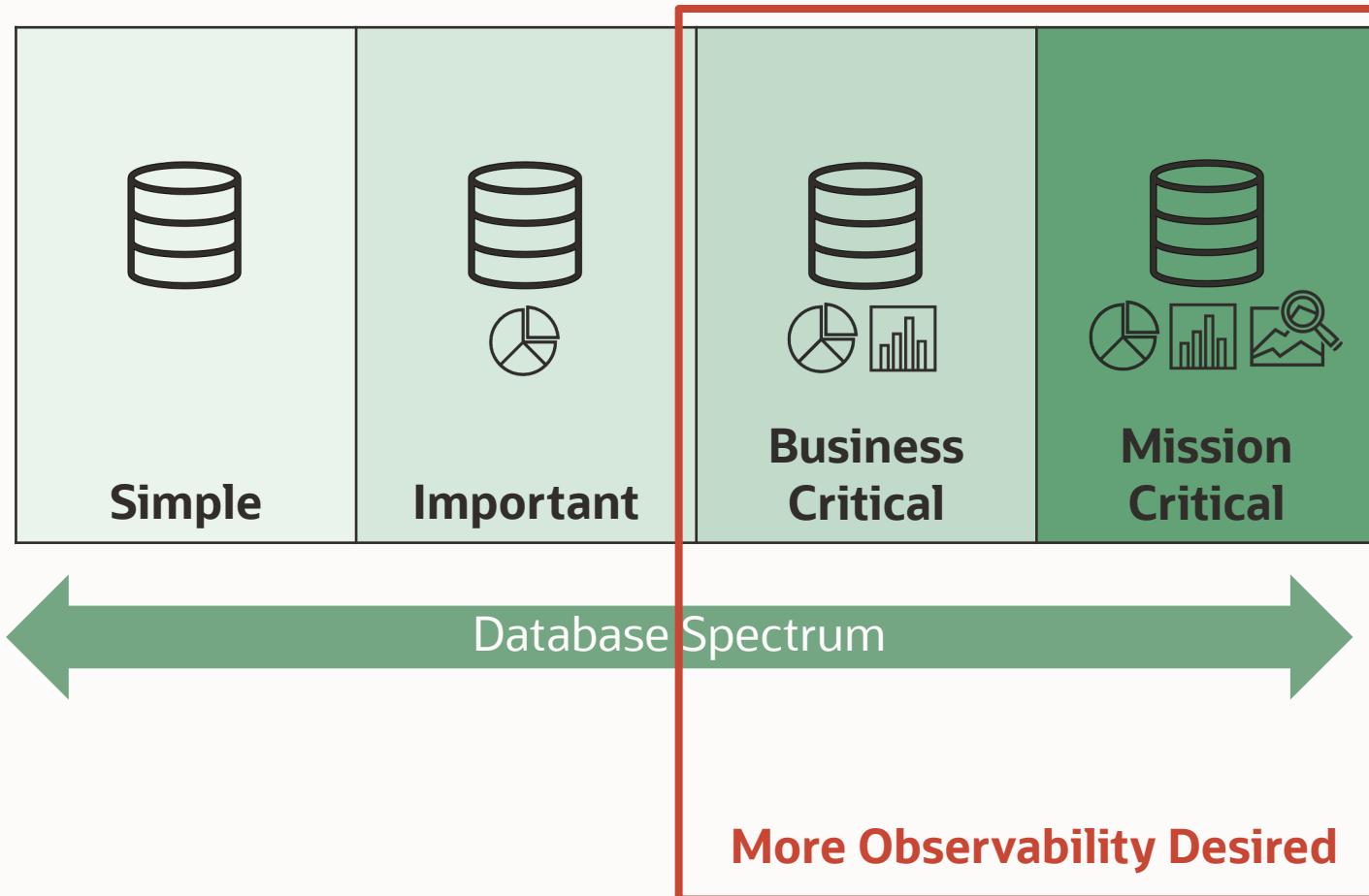
**Cloud Native**  
Industry leading cloud (OCI) with self-service for Oracle Exadata Database.

**Machine Learning**  
Self-tuning, self-securing, self-patching, does all the hard work for you.

**Autonomous Database**  
Fusion of the best of database, cloud and ML technology for the 21<sup>st</sup> century.

# Why Database Observability is Important?

Business and Mission Critical need to observe Performance and Availability

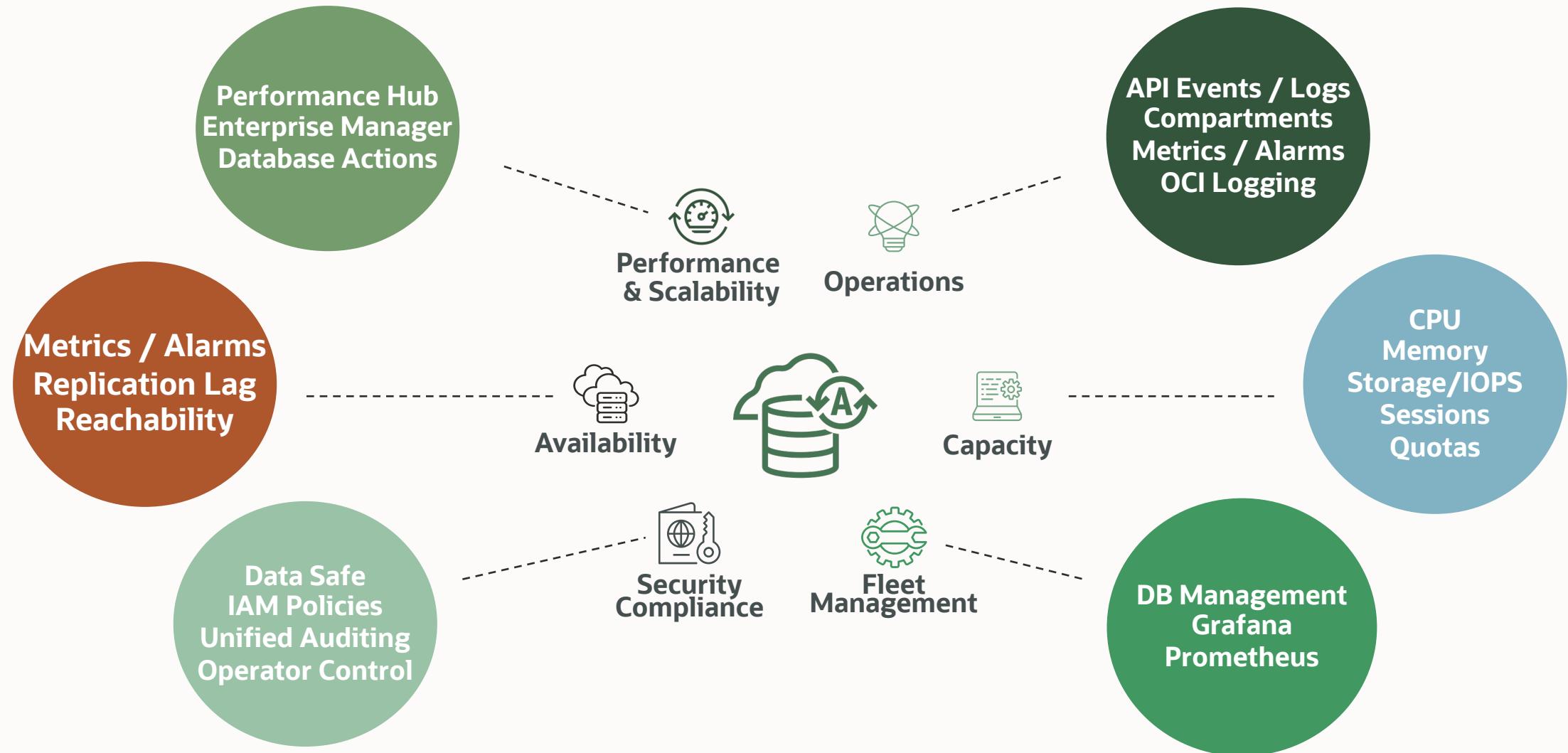


Business and Mission Critical  
need  
Performance and Availability  
Trust-and-Verify Oversight



Autonomous Database

# Autonomous Database Observability – key categories and tools



# Agenda

1. Observability and Management
2. Database Management overview
3. Fleet management
4. Single database management
5. Performance diagnostics
6. Performance tuning
7. Database administration
8. Exadata infrastructure monitoring
9. Ops Insights features
- 10.Resources

# Oracle Multicloud Observability and Management

## Observability and Management Platform



Application  
Performance  
Monitoring



Stack  
Monitoring



Logging  
Analytics



Database and OS  
Management



Ops  
Insights

Ingest all telemetry



Metrics



Events



Logs



Traces



SQL

From all clouds and on-premises

**ORACLE**  
Cloud

Microsoft  
Azure



Google Cloud

**aws**



# Oracle Cloud Infrastructure Database Management service

1

## **View databases in one place** (on-premises, hybrid, multicloud)

With full insight into Oracle Database availability, performance and infrastructure operations

2

## **Get insight on issues, availability and key statistics**

Active operation drill-down for troubleshooting and diagnostics

3

## **Perform operations on a single database or at a fleet level**

Run a job on databases supporting a specific application or function (DEV, TEST, PROD)

## Benefits

- Get information on your databases within minutes of subscription
- Latest Oracle Database support removes risk of unmanaged databases
- Replace silo' d 3<sup>rd</sup> party tools, recover hardware and resources, save money
- Database information for who needs it, when they need it for their job role
- In-depth diagnostic and SQL metric detail no other vendor can provide
- Common , shareable source of information enables faster troubleshooting, eliminates “finger-pointing
- Create once, run across many databases, reduces error, saves time
- Aids database security, configuration and compliance management
- “Modernize” management on your own terms, don’t have code or rip and replace



# Oracle Cloud Infrastructure Database Management service

## Leading database performance diagnostics

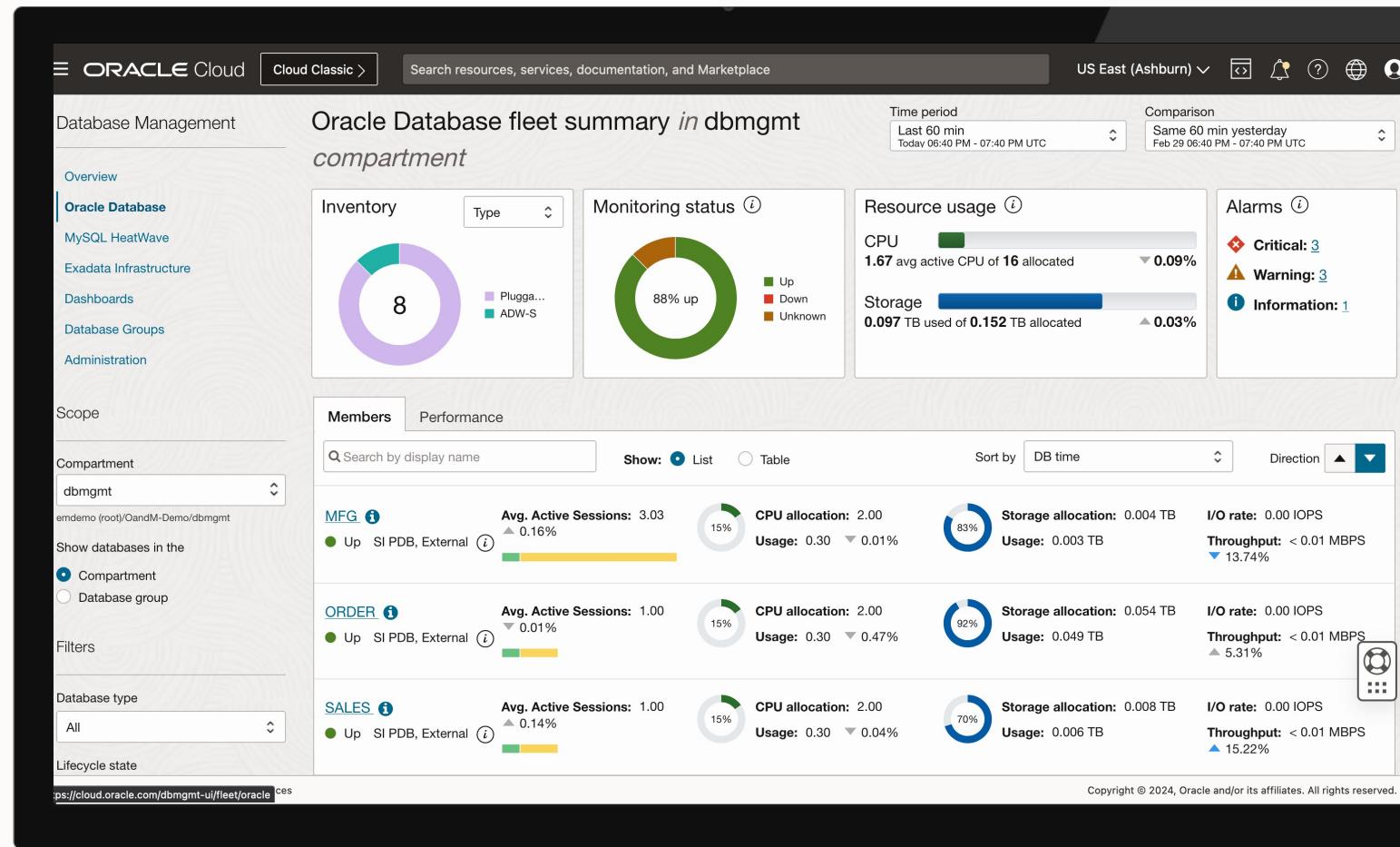
- Single pane of glass management view
- Visualization driven interfaces

## Cloud native

- Fully managed by Oracle
- Cloud elasticity
- Low operations cost

## Key use cases

- Real-time performance monitoring
- Manage multi-cloud or on-premises databases



# Database Management features

## Monitor and manage many database

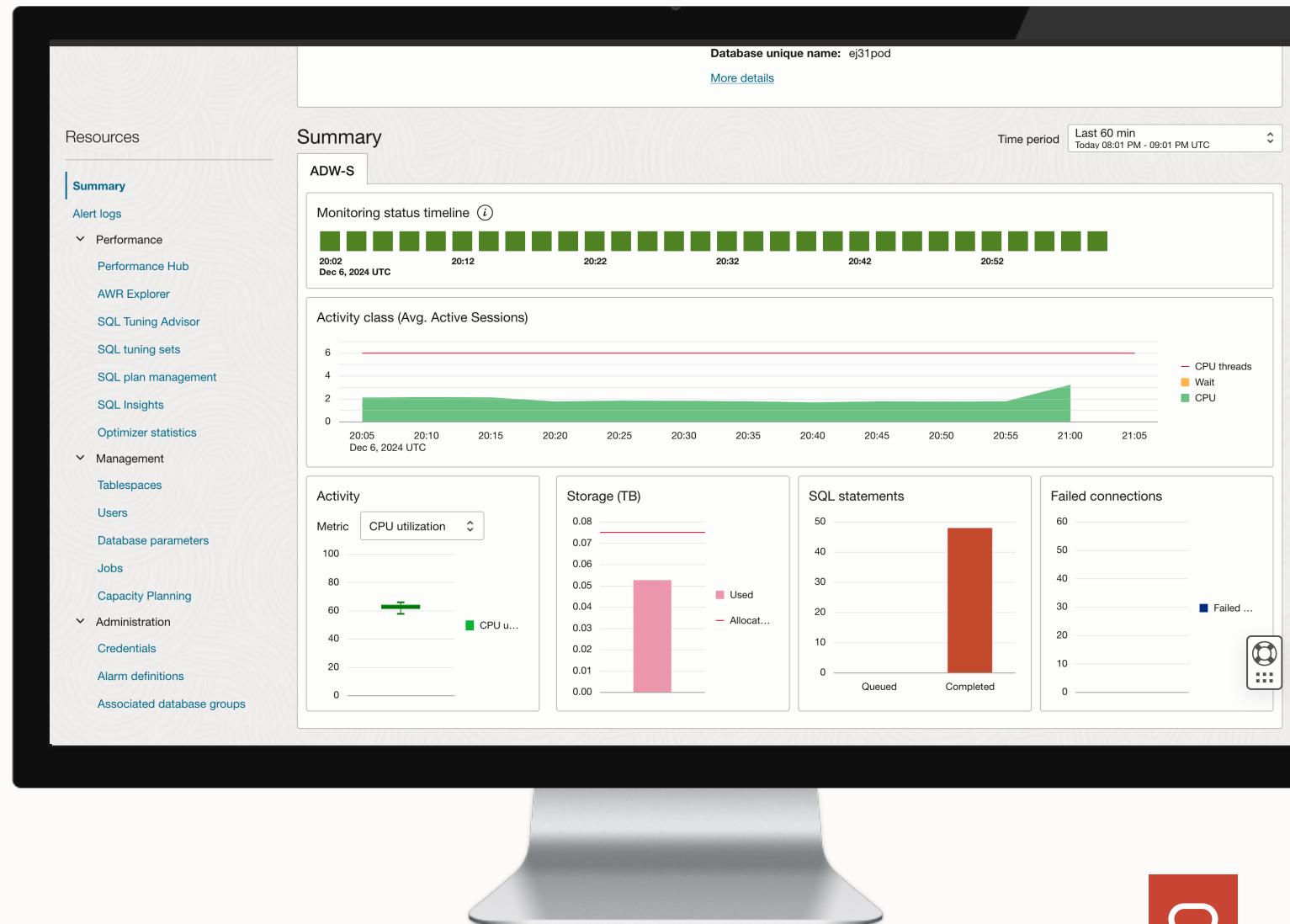
- Unified view for monitoring and managing Oracle Databases across on-premise and cloud
- Out-of-the-box performance dashboards to quickly monitor single and fleet of databases

## Performance diagnostics

- Integrated view of database activity
- ASH Analytics, SQL/Session details, blocking sessions, SQL Tuning Advisor, etc.
- Advanced SQL execution plan analysis

## Database administration

- Tablespace management, database parameter configuration, user management, TCPS support, etc.



# Key Autonomous Database advanced features

Feature	Comments
Database performance administration	<ul style="list-style-type: none"><li>• SQL Tuning Advisor</li><li>• SQL tuning sets</li><li>• SQL Plan Management</li></ul> <ul style="list-style-type: none"><li>• Optimizer Statistics</li><li>• AWR Explorer</li><li>• SQL Insights integration</li></ul>
Performance Hub	<ul style="list-style-type: none"><li>• Top Activity Lite</li><li>• SQL Monitoring</li><li>• Blocking sessions list</li></ul> <ul style="list-style-type: none"><li>• Instance level AWR report</li><li>• ASH report</li><li>• On-demand ADDM</li></ul>
Alert Log view	Alert Log: Same support as Cloud and External DB
Storage administration	ADB-S: Read-only view of tablespaces <b>ADB-D: Full management. Same support as Cloud and External DB</b>
Optimizer Statistics	ADB Admin user has privilege to collect stats, enable stats advisor and implement advisor recommendation
Database parameters	List of updatable parameters for ADB
Out-of-the-box alarm creation	Quickly create alarms for ADB resources with integration to OCI Monitoring service

# Fleet management

# Database Management service for hybrid fleet-monitoring

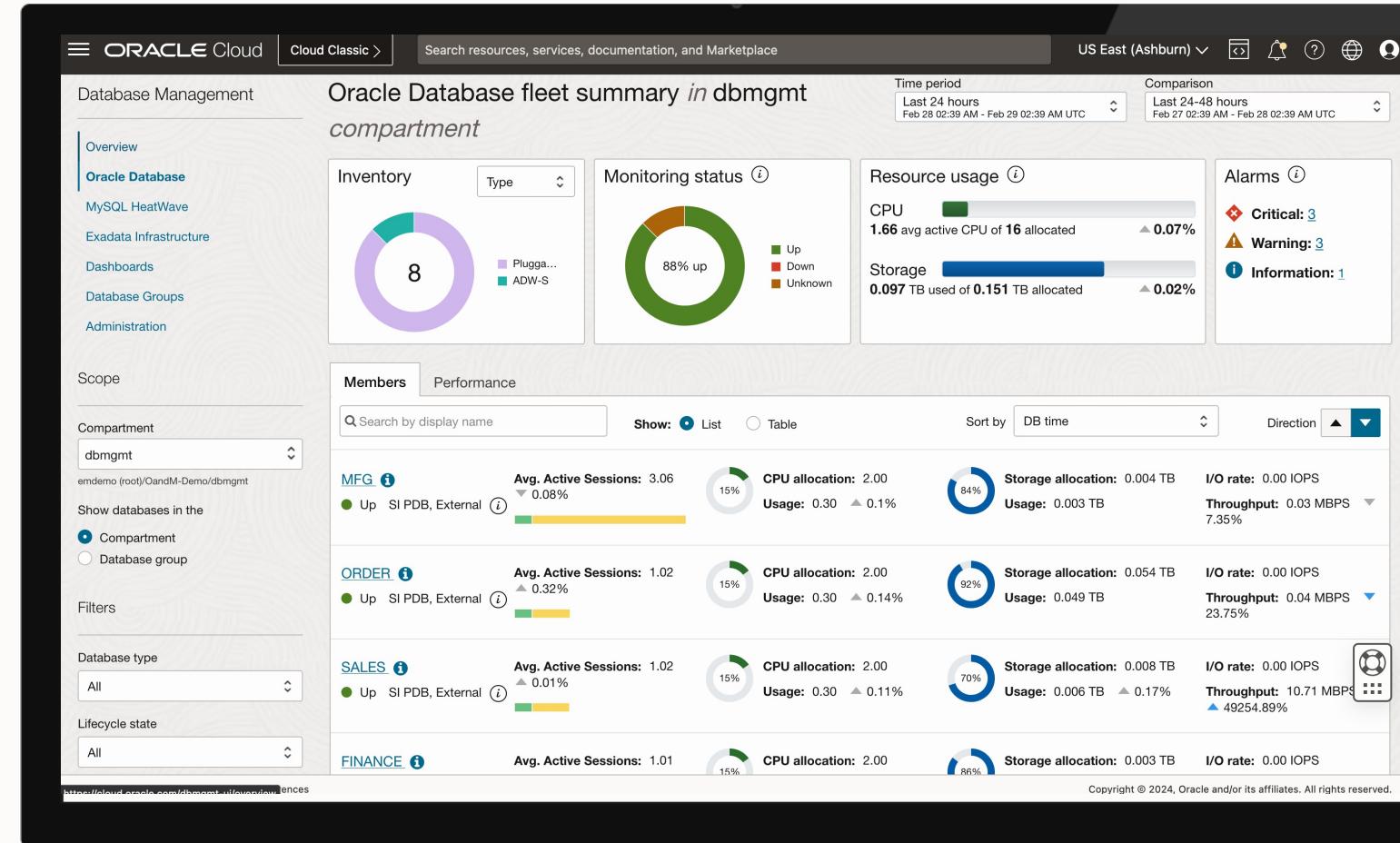
Unified fleet view of databases across Oracle Cloud, other clouds, and on-premises

- On the Fleet Summary page, you can monitor multiple Databases
- Deployment type and tag integration for grouping resource views

Native OCI metrics for DevOps event alarms and monitoring

Drill down from the Fleet Summary page to a specific database of interest

Visualization-driven load and performance analysis



# Database Management service for hybrid fleet-monitoring

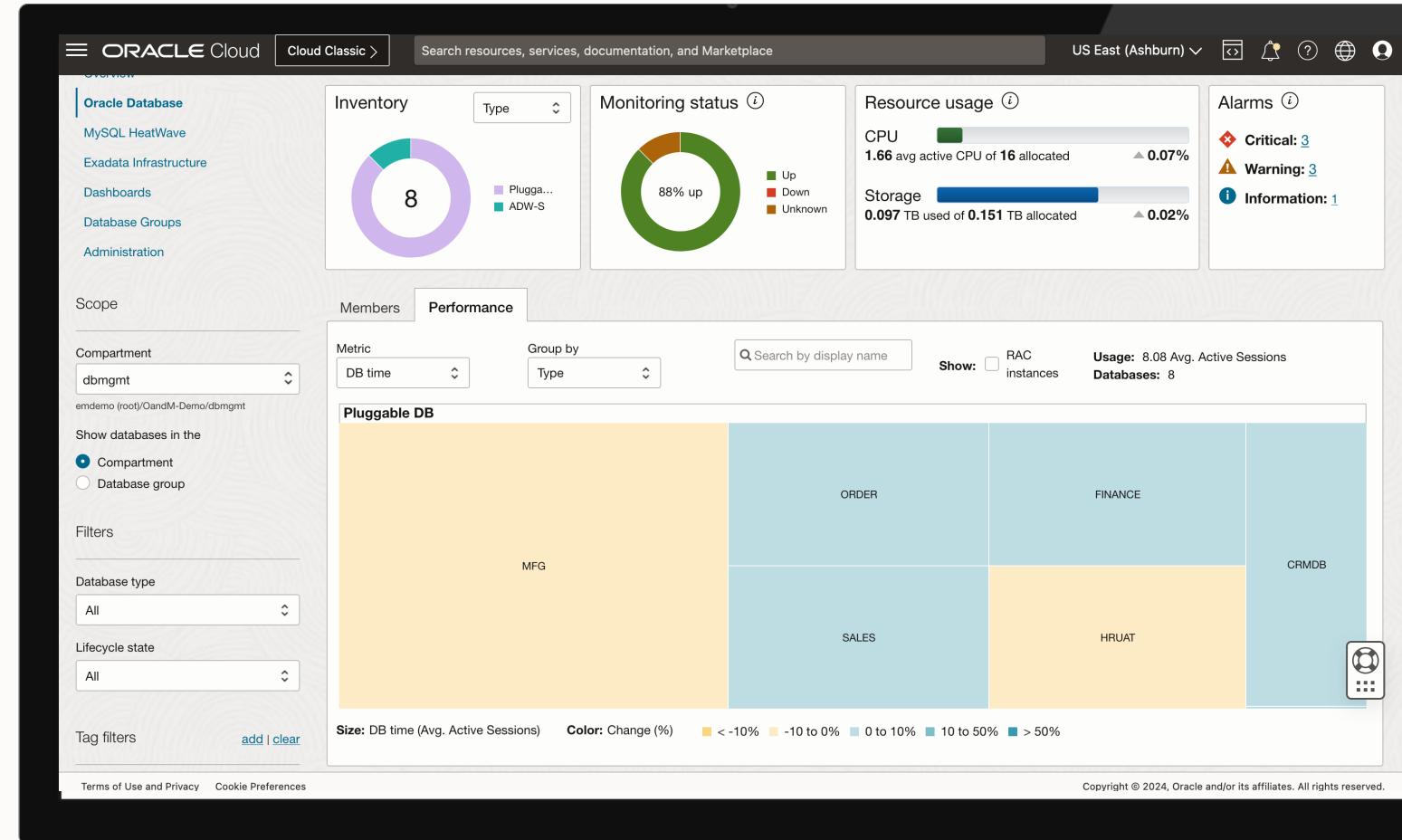
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# Monitor and manage a specific database

# Database details page

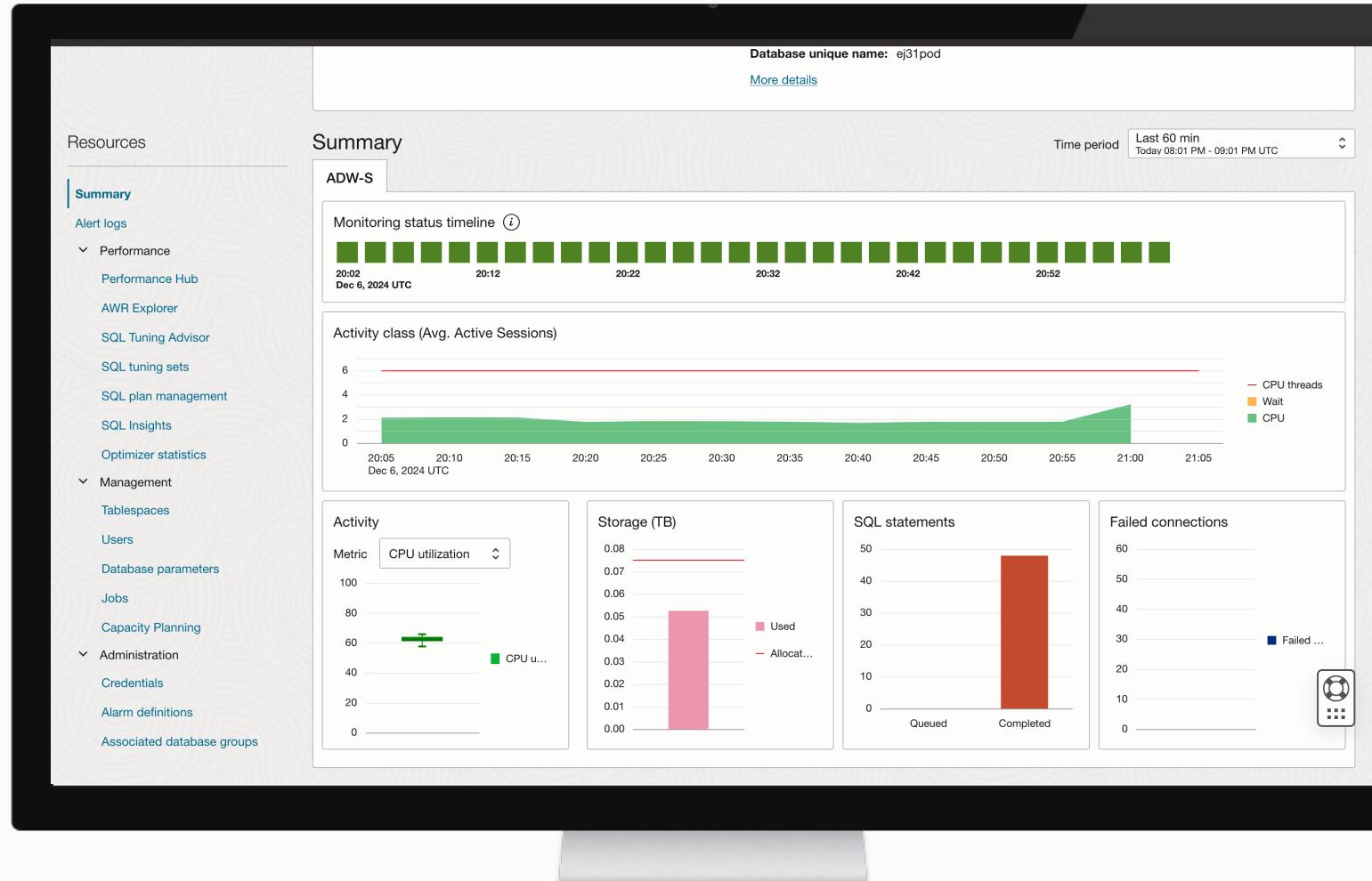
Detailed database performance and configuration details

Summary provides key metric details including availability

Enhanced performance tools with key visualizations

Seamless navigation between monitoring and administration tasks

Cross-service integration and dashboard links



# Performance diagnostics

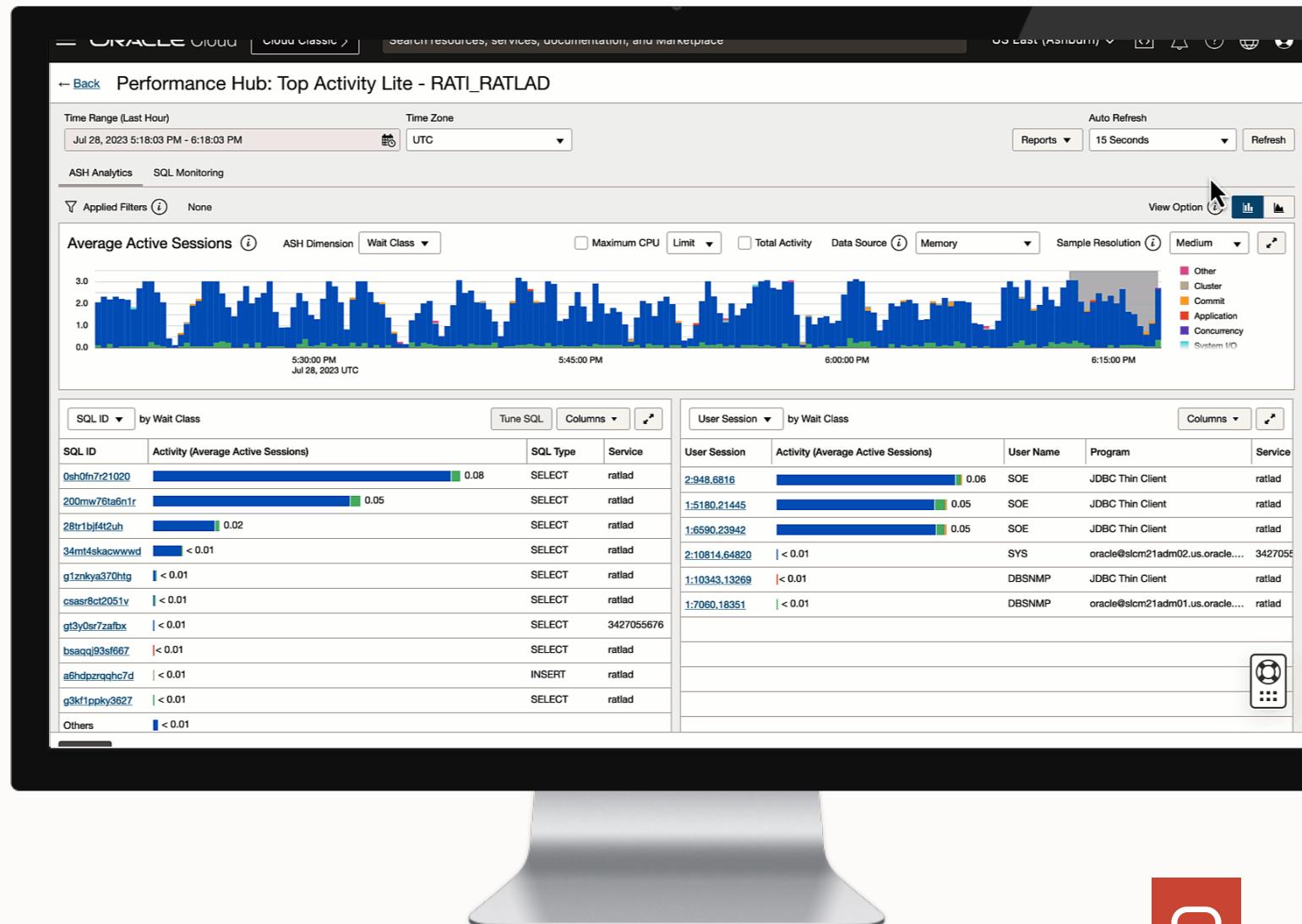
# Diagnose persistent and transient performance problems

Integrated system-wide and session-specific views of database activity

- ASH Analytics
- SQL Details
- Blocking Sessions
- Guided problem resolution
- Historical SQL Monitoring reports

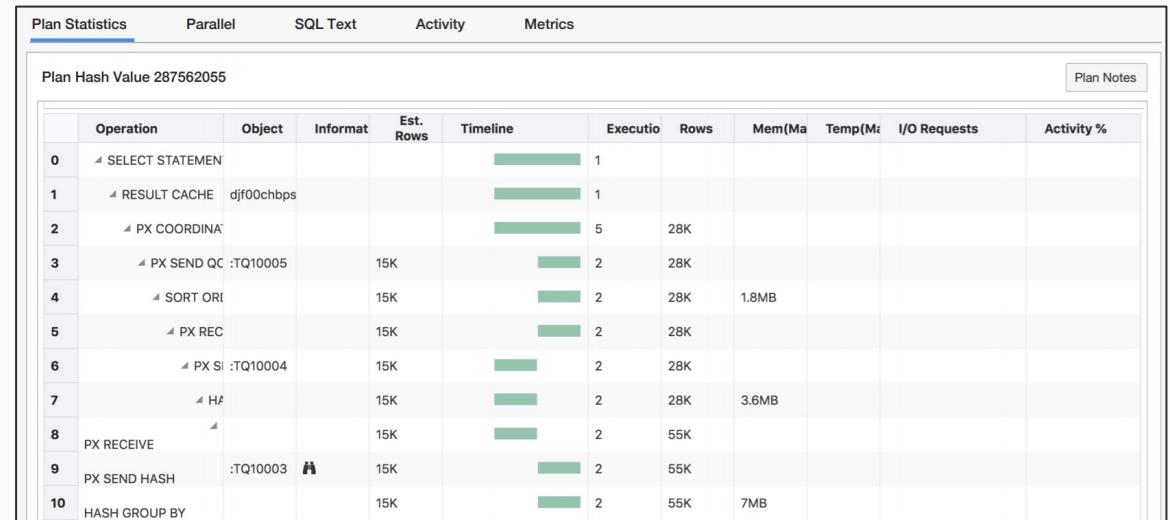
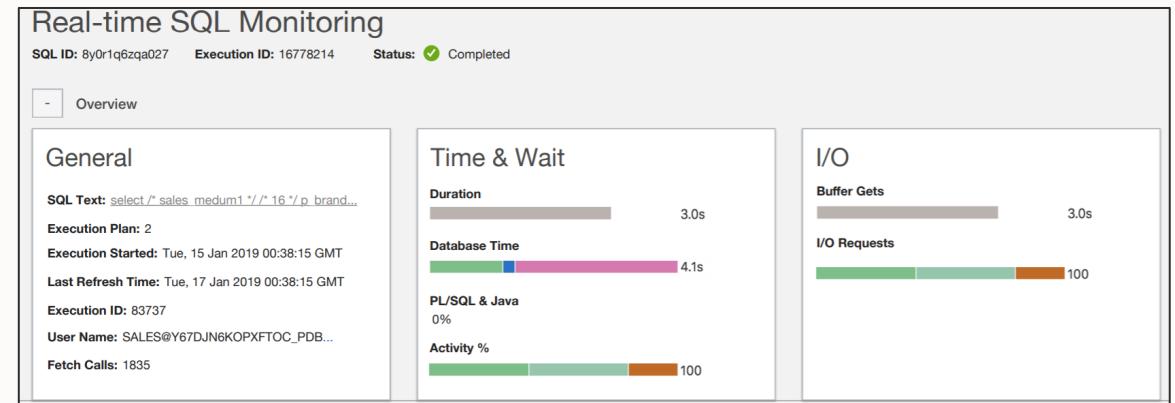
## Top Activity Lite

- Simplified version of Performance Hub, optimized for near real-time performance diagnostics
- Displays last-hour activity efficiently even under heavy load
- Single screen with easy visualization of issues through compact UI
- Suitable for NOC-like display on large screens



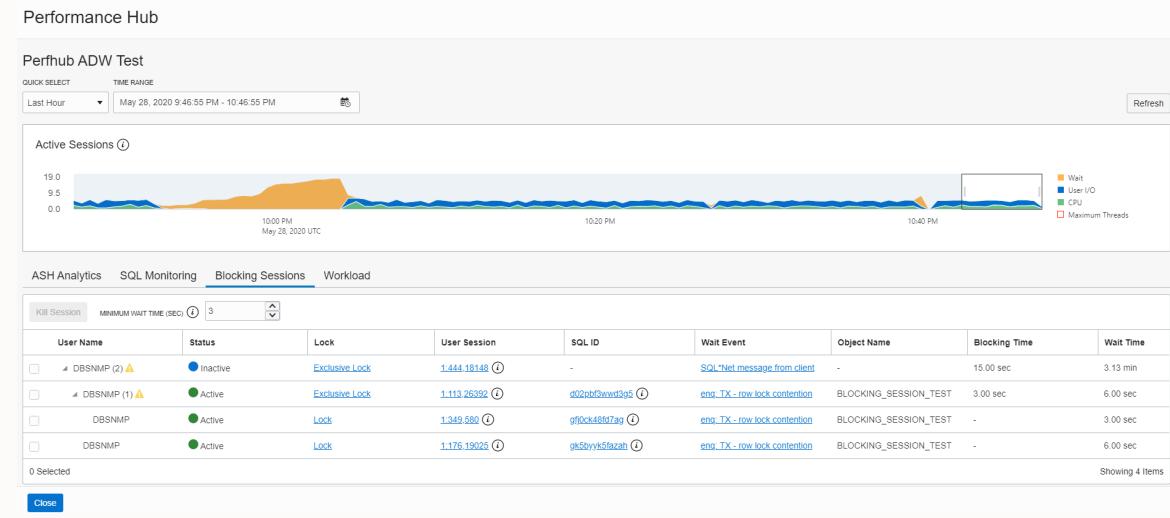
# Real-time SQL Monitoring

- In-depth application performance analysis
  - Identifies poorly written and designed SQL statements
  - Identify and guide optimization of application calls in the data tier
  - Captures fine-grained SQL statistics at each step of the execution plan
  - Interactive Visualization
  - Analyze current and historical SQL statements



# Blocking sessions

- In-depth application wait analysis
  - Displays the current blocking and waiting sessions in a hierarchical manner
  - Detailed information about each blocking session
  - Inspect or drill down into the SQL involved, to determine the cause of the blocking
  - Perform kill operations on one or more of the listed sessions to resolve a waiting session problem

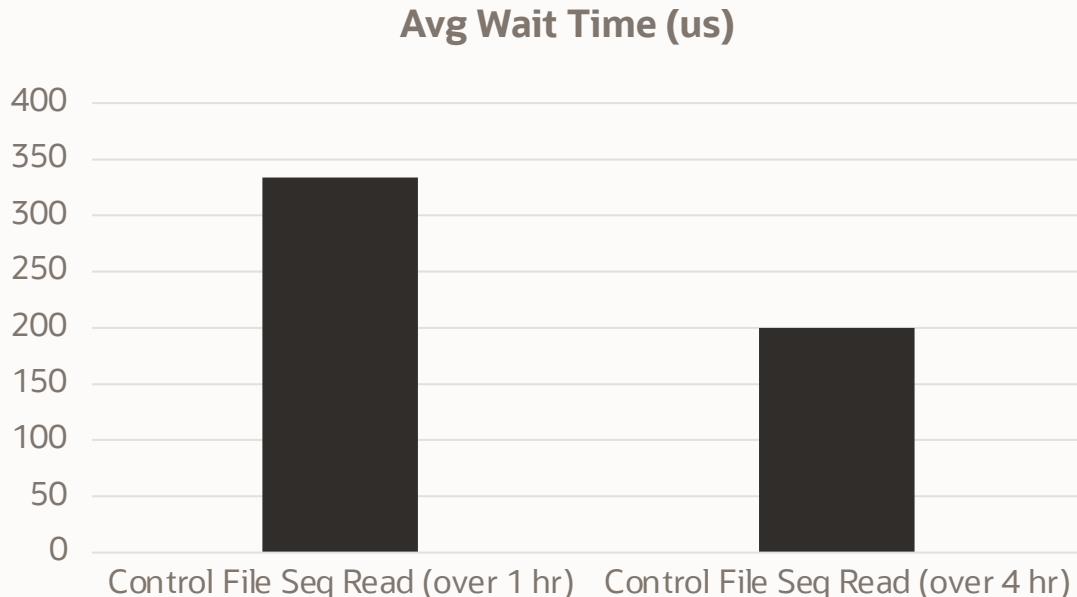


# AWR performance data review without Database Management

## Challenges

Single AWR report over several snapshots

- For e.g., Avg Wait Time is 200 sec for Control File Seq Read over 4 hours
- Still one data point, and metric data is averaged over 4 hours
- Is it good or bad?



### Foreground Wait Events (Global)

- s - second, ms - millisecond, us - microsecond, ns - nanosecond
- Summary 'Avg Wait Time': Per-Instance 'Wait Time Avg' used to compute [Avg/Min/Max/Std Dev]
- ordered by wait time desc, waits desc (idle events last)

Class	Event	Wait		Event		Wait Time		Summary Avg Wait Time			
		Waits	%Timeouts	Total(s)	Avg Wait	%DB time	Avg	Min	Max	Std Dev	
Other	recovery area: reading checkpoint file	2,653	0.00	551.39	207.84ms	4.23	208.15ms	204.84ms	211.40ms	4.70ms	
System I/O	control file sequential read	441,360	0.00	140.98	319.42us	3.23	334.19us	298.27us	370.11us	50.80us	
Other	Sync ASM rebalance	18,238	0.00	139.90	7.67ms	3.20	7.67ms	7.67ms	7.67ms		
User I/O	direct path read temp	150,399	0.00	110.57	735.15us	2.53	733.90us	713.25us	754.56us	29.21us	
Scheduler	acknowledge over PGA limit	9,500	75.23	70.46	7.42ms	1.61	7.40ms	6.84ms	7.95ms	783.01us	
Other	PX Deq: Slave Session Stats	145,026	0.00	52.78	363.94us	1.21	364.36us	358.57us	370.15us	8.19us	
Other	log switch/archive	523	100.00	52.37	100.13ms	1.20	100.13ms	100.13ms	100.13ms	2.29us	
User I/O	Disk file operations I/O	1,214,358	0.00	50.48	41.57us	1.16	41.57us	41.54us	41.59us	35.35ns	
User I/O	direct path write temp	136,721	0.00	49.95	365.33us	1.14	364.06us	343.66us	384.45us	28.84us	
Other	name-service call wait	840	0.00	44.19	52.61ms	1.01	54.03ms	34.18ms	73.88ms	28.08ms	
Administrative	switch logfile command	15	0.00	43.37	2891.13ms	0.99	2540.66ms	1489.27ms	3592.05ms	1486.89ms	
User I/O	Disk file Mirror Read	73,699	0.00	37.08	503.14us	0.85	555.02us	451.98us	658.06us	145.73us	
Administrative	Backup: MML extended initialization	160	0.00	35.78	223.60ms	0.82	223.58ms	223.21ms	223.96ms	534.64us	
Other	enq: PS - contention	78,609	1.30	20.38	259.31us	0.47	259.51us	246.51us	272.51us	18.39us	
Other	CRS call completion	400	0.00	17.10	42.74ms	0.39	42.74ms	42.29ms	43.19ms	635.99us	
Other	recovery area: computing backed up files	24,367	0.00	16.78	688.45us	0.38	689.34us	680.24us	698.43us	12.86us	
Concurrency	library cache: mutex X	38,942	0.00	13.51	346.99us	0.31	341.11us	297.10us	385.12us	62.24us	
Other	PX Deq: reap credit	2,869,736	99.97	11.90	4.15us	0.27	4.15us	4.11us	4.18us	50.46ns	
Administrative	JS kgf get object wait	100	0.00	9.96	99.59ms	0.23	99.61ms	99.58ms	99.65ms	47.93us	
Other	PX Deq: Join ACK	36,842	0.00	8.01	218.61us	0.18	250.86us	206.70us	295.03us	62.46us	
Other	PGA memory operation	616,760	0.00	7.18	11.65us	0.16	11.61us	11.11us	12.11us	706.46ns	
System I/O	control file single write	6,910	0.00	6.75	.98ms	0.15	.98ms	.95ms	1.01ms	38.35us	
Other	GPnP Get Item	400	0.00	6.16	15.41ms	0.14	15.41ms	15.37ms	15.45ms	54.97us	
Other	reliable message	10,147	0.00	4.28	421.62us	0.10	391.93us	333.87us	449.99us	82.11us	
Other	enq: JQ - contention	12,263	100.00	4.05	329.93us	0.09	329.94us	323.26us	336.61us	9.44us	
User I/O	cell single block physical read	5,030	0.00	3.44	683.78us	0.08	682.18us	521.74us	842.63us	226.90us	
Other	enq: WL - contention	44	52.27	3.26	74.15ms	0.07	68.49ms	52.95ms	84.04ms	21.98ms	
Other	ASM file metadata operation	2,685	0.00	2.72	1.01ms	0.06	530.44us	8.17us	1.05ms	738.60us	
Other	recovery area: computing dropped files	31	0.00	2.07	66.66ms	0.05	66.66ms	66.65ms	66.67ms	12.49us	
Other	CSS initialization	1,052	0.00	1.81	1.72ms	0.04	1.72ms	1.67ms	1.77ms	72.83us	
Other	KSV master wait	4,762	0.00	1.68	353.27us	0.04	352.69us	342.07us	363.30us	15.01us	
Other	enq: IV - contention	4,920	8.66	1.64	332.46us	0.04	332.33us	331.42us	333.24us	1.29us	
Concurrency	cursor: pin S wait on X	60	0.00	1.51	25.21ms	0.03	26.40ms	8.60ms	44.20ms	25.18ms	
System I/O	log file sequential read	388	0.00	1.39	3.58ms	0.03	3.52ms	3.19ms	3.85ms	465.82us	
Other	CSS operation: action	1,073	0.00	1.35	1.26ms	0.03	1.26ms	1.26ms	1.27ms	7.69us	
Other	PX gref latch	822,999	100.00	1.28	1.56us	0.03	1.59us	1.55us	1.62us	51.18ns	
Other	oracle thread bootstrap	13	0.00	1.20	92.25ms	0.03	92.25ms	92.25ms	92.25ms		
Concurrency	library cache: bucket mutex X	3,444	0.00	0.95	274.53us	0.02	273.05us	249.48us	296.62us	33.34us	

# AWR Explorer visualization of reports for advanced diagnostics

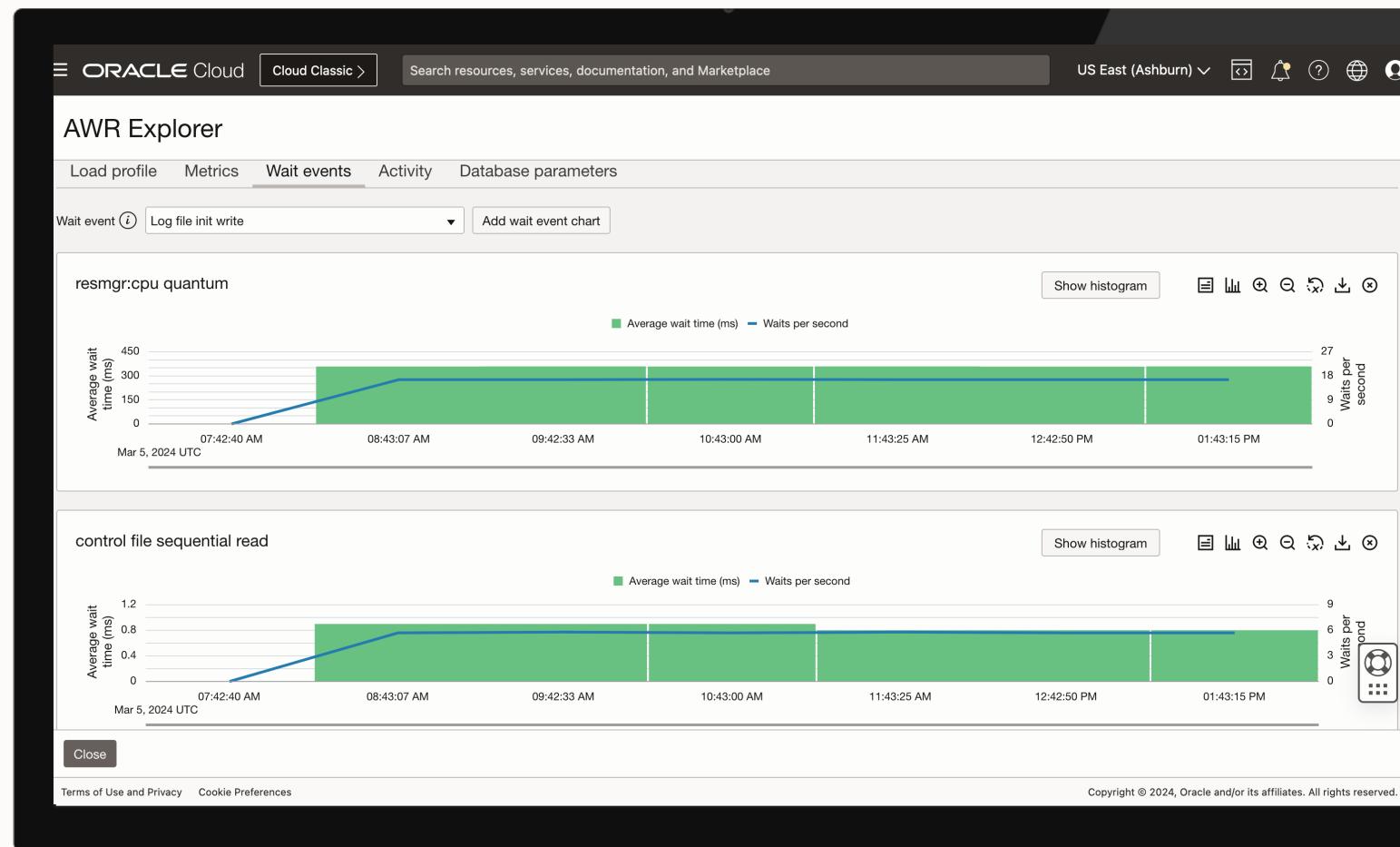
Enables DBAs to perform advanced performance analysis

Integration of Oracle performance tools plus data visualization

Provides different aspects of Oracle Database performance data which can be very helpful in issue detection

Visualize performance trends easily without needing to toggle between hourly AWR reports

Generate AWR, ASH, SQL reports, etc.



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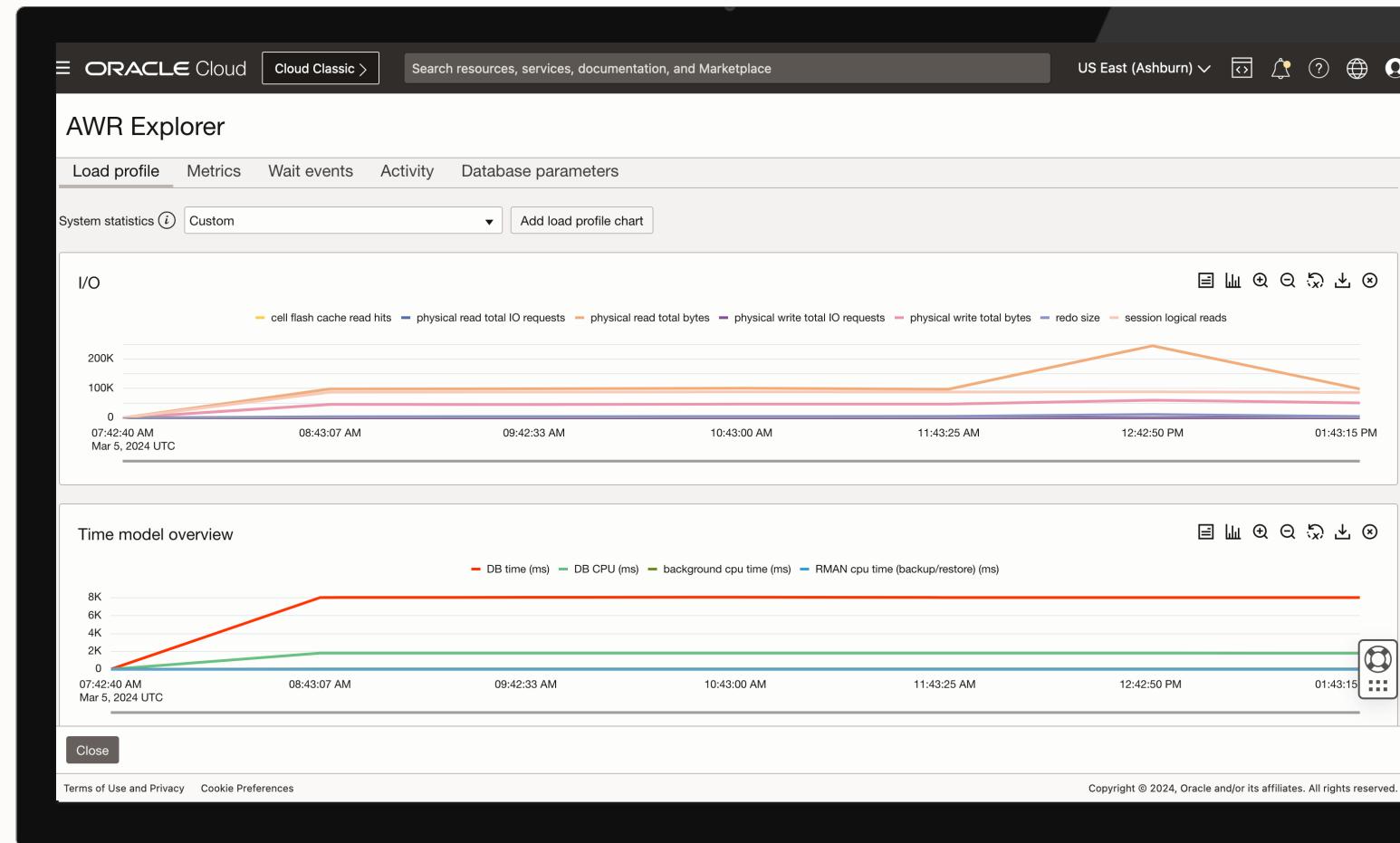
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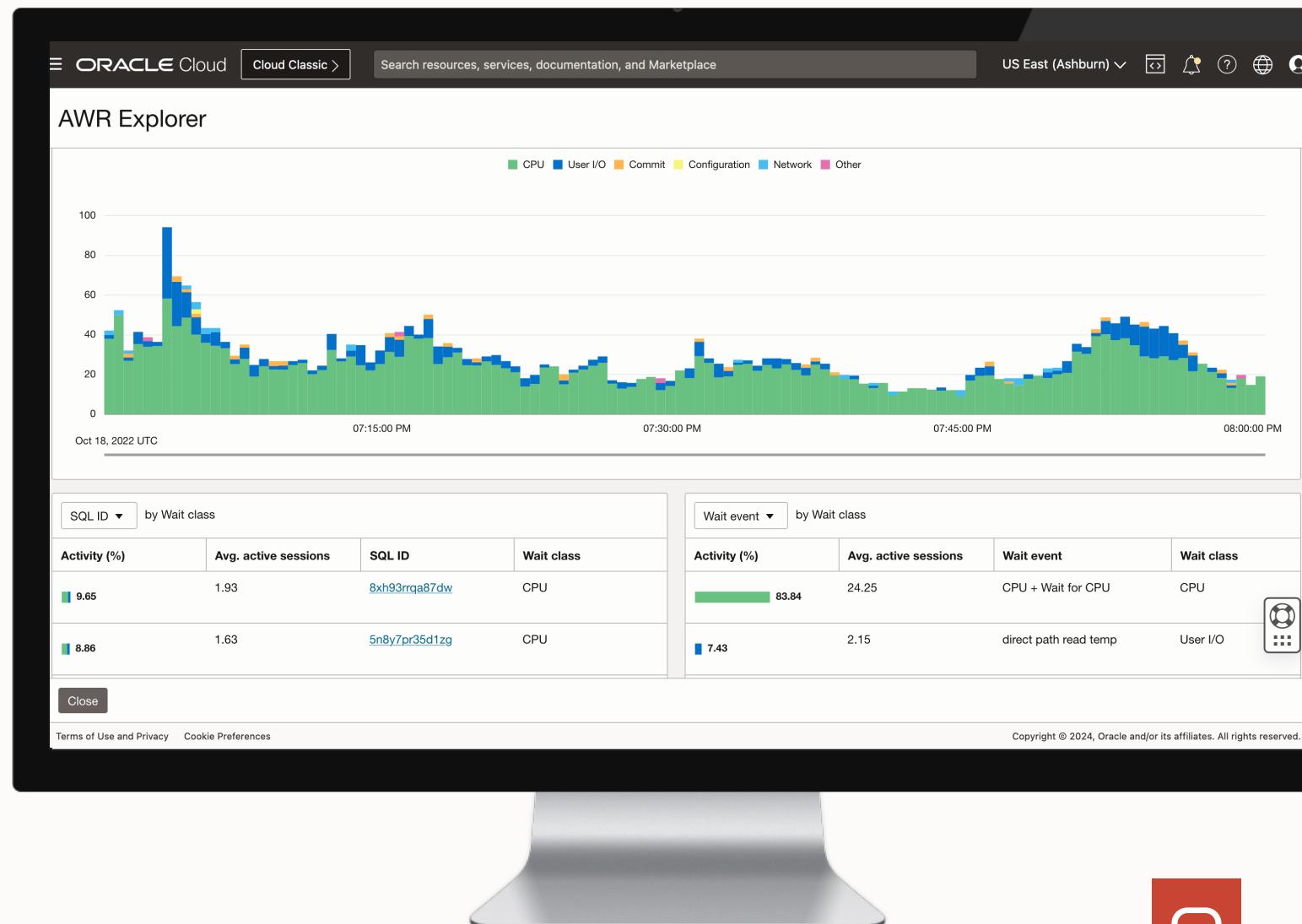
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# Performance tuning

# Rapidly identify and tune SQL performance issues

Integrated tools to optimize performance tuning

- SQL tuning sets (STS)
- SQL Tuning Advisor (STA)
- SQL plan management (SPM)
- Optimizer Statistics monitoring

Full tuning workflow from running SQL Tuning Advisor to managing SQL plans

Large scale tuning operations by collecting STS for input into STA

Scheduled runs to automate STS and STA capabilities

The screenshot shows the Oracle Cloud interface for managing SQL tuning sets. On the left, a sidebar lists various resources like Summary, Alert logs, Performance (SQL Tuning Advisor, SQL tuning sets, Optimizer statistics, SQL plan management), Management (Tablespaces, Users, Database parameters, Jobs), and Administration (Credentials, Alarm definitions). The 'SQL tuning sets' section is currently selected. On the right, a modal dialog titled 'Create SQL tuning set' is open, showing options for loading SQL statements: 'Incremental cursor cache', 'Current cursor cache', 'AWR snapshots' (which is selected and highlighted in blue), and 'Skip loading'. Below the modal, there are fields for 'Start snapshot' (Feb 17, 2024, 2:42:44 AM UTC) and 'End snapshot' (Feb 17, 2024, 3:43:10 AM UTC), and dropdowns for 'Sort results by', 'Result percentage' (100), 'Result limit' (0), and 'Load option' (Insert). At the bottom of the modal are 'Back', 'Create', 'Show SQL', and 'Cancel' buttons. The footer of the page includes 'Terms of Use and Privacy' and 'Cookie Preferences' links, and a copyright notice: 'Copyright © 2024, Oracle and/or its affiliates. All rights reserved.'

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SQL Tuning Set	Schema	Description
MY_STS	MFGADM	STS to run SQL Tuning Advisor against
SQLTune1	MFGADM	
SYS_AUTO_STS	SYS	System auto SQL Tuning Set
TUNEMFG	MFGADM	
mfgtune01	MFGADM	

# Rapidly identify and tune SQL performance issues

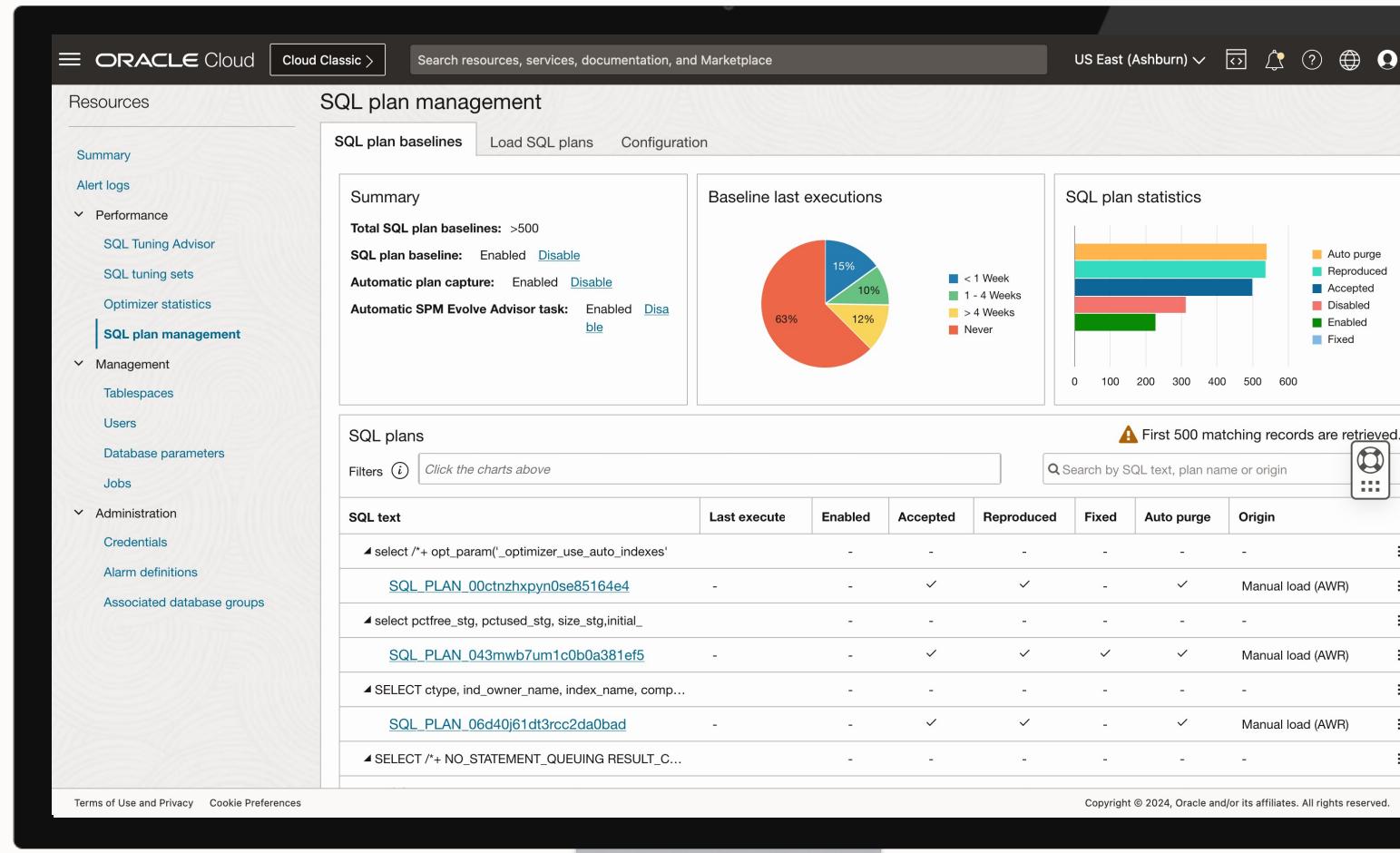
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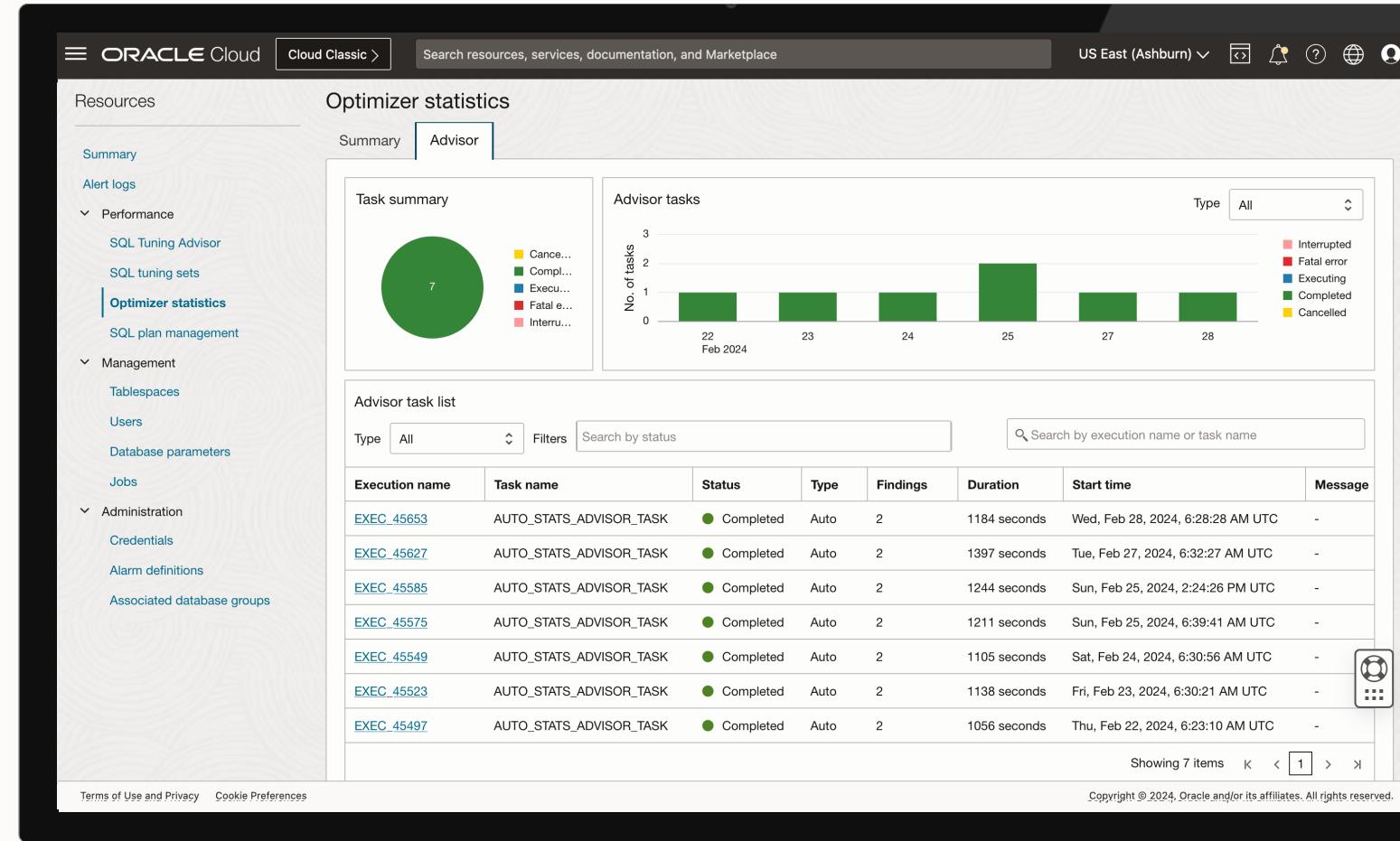
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# Database administration

# Database administration

## Basic administration

- Database configuration parameters
- Group and manage databases by purpose
- Database user configuration
- Monitor Database Alert log and Attention Log

## Storage management

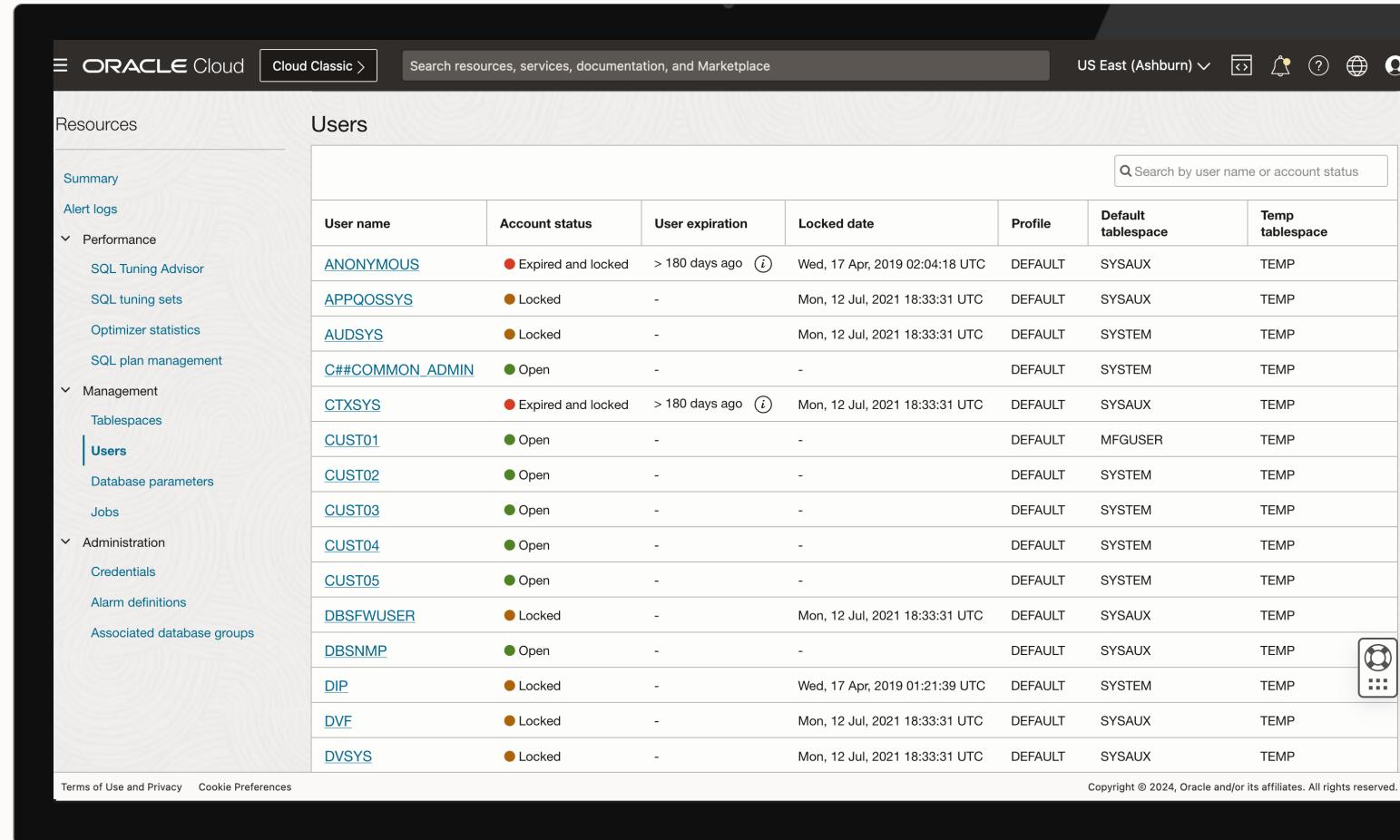
- Tablespaces, data files

## Alarm configuration

- OCI Monitoring integration
- View and create alarms
- Out-of-the-box alarms

## Job automation

- Jobs templates for SQL scripts on a single or group of databases
- Developers can create templates to perform work across compartments within a group



The screenshot shows the Oracle Cloud Classic interface. The top navigation bar includes the Oracle Cloud logo, 'Cloud Classic >', a search bar, and account information for 'US East (Ashburn)'. The main content area has a sidebar titled 'Resources' with sections for 'Summary', 'Alert logs', and 'Performance' (SQL Tuning Advisor, SQL tuning sets, Optimizer statistics, SQL plan management). The 'Management' section is expanded, showing 'Tablespaces', 'Users' (which is selected and highlighted in blue), 'Database parameters', and 'Jobs'. The 'Administration' section includes 'Credentials', 'Alarm definitions', and 'Associated database groups'. The main panel is titled 'Users' and displays a table with 15 rows of user information. The columns are: User name, Account status, User expiration, Locked date, Profile, Default tablespace, and Temp tablespace. The users listed are: ANONYMOUS, APPQOSSYS, AUDSYS, C##COMMON\_ADMIN, CTXSYS, CUST01, CUST02, CUST03, CUST04, CUST05, DBSFWUSER, DBSNMP, DIP, DVF, and DVSY. The table includes icons for account status (green for open, red for expired and locked, orange for locked), and a search bar at the top right.

User name	Account status	User expiration	Locked date	Profile	Default tablespace	Temp tablespace
ANONYMOUS	Expired and locked	> 180 days ago	Wed, 17 Apr, 2019 02:04:18 UTC	DEFAULT	SYSAUX	TEMP
APPQOSSYS	Locked	-	Mon, 12 Jul, 2021 18:33:31 UTC	DEFAULT	SYSAUX	TEMP
AUDSYS	Locked	-	Mon, 12 Jul, 2021 18:33:31 UTC	DEFAULT	SYSTEM	TEMP
C##COMMON_ADMIN	Open	-	-	DEFAULT	SYSTEM	TEMP
CTXSYS	Expired and locked	> 180 days ago	Mon, 12 Jul, 2021 18:33:31 UTC	DEFAULT	SYSAUX	TEMP
CUST01	Open	-	-	DEFAULT	MFGUSER	TEMP
CUST02	Open	-	-	DEFAULT	SYSTEM	TEMP
CUST03	Open	-	-	DEFAULT	SYSTEM	TEMP
CUST04	Open	-	-	DEFAULT	SYSTEM	TEMP
CUST05	Open	-	-	DEFAULT	SYSTEM	TEMP
DBSFWUSER	Locked	-	Mon, 12 Jul, 2021 18:33:31 UTC	DEFAULT	SYSAUX	TEMP
DBSNMP	Open	-	-	DEFAULT	SYSAUX	TEMP
DIP	Locked	-	Wed, 17 Apr, 2019 01:21:39 UTC	DEFAULT	SYSTEM	TEMP
DVF	Locked	-	Mon, 12 Jul, 2021 18:33:31 UTC	DEFAULT	SYSAUX	TEMP
DVSYS	Locked	-	Mon, 12 Jul, 2021 18:33:31 UTC	DEFAULT	SYSAUX	TEMP

# Database administration

## Basic administration

- Database configuration parameters
- Group and manage databases by purpose
- Database user configuration
- Monitor Database Alert log and Attention Log

## Storage management

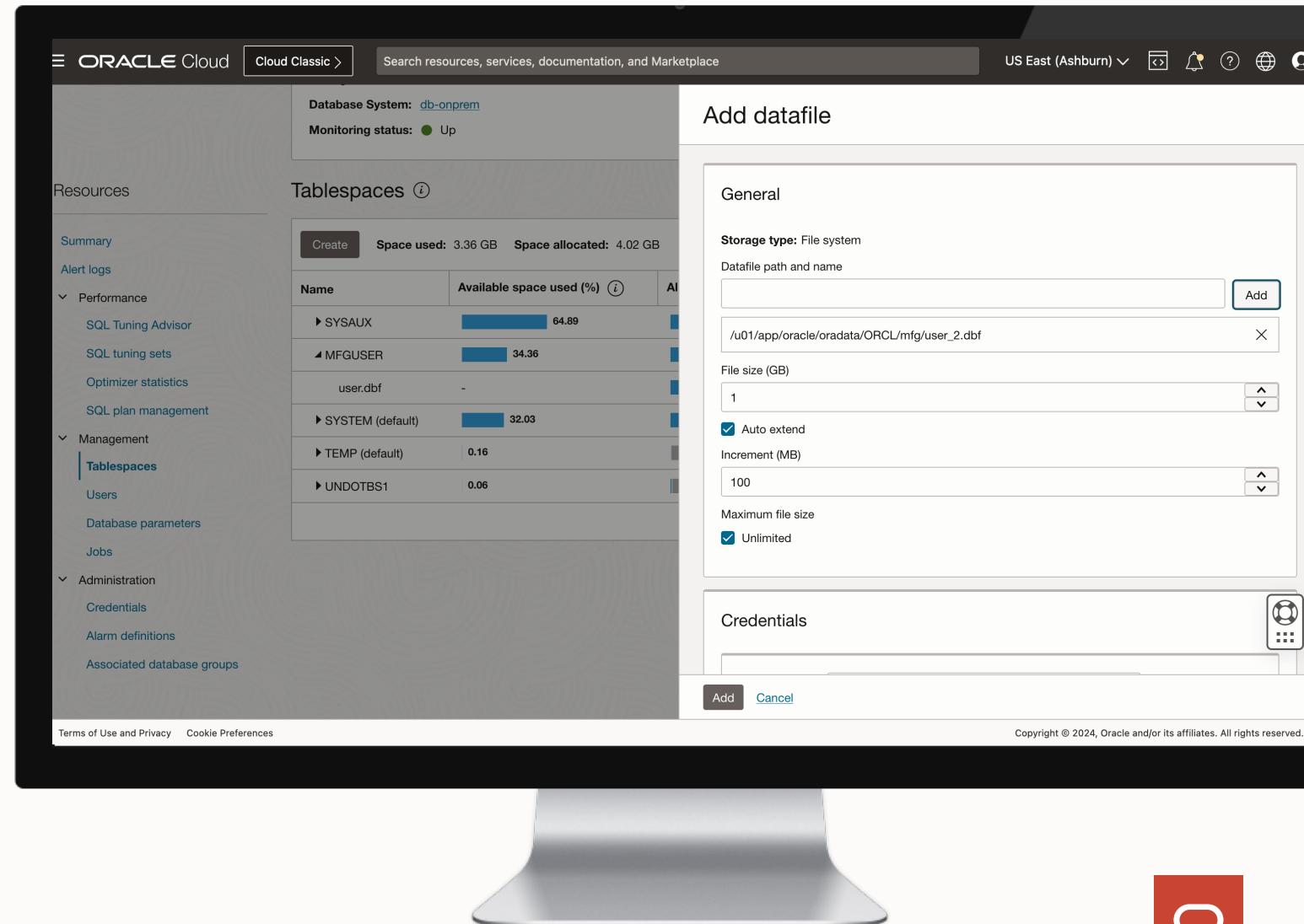
- Tablespaces, data files

## Alarm configuration

- OCI Monitoring integration
- View and create alarms
- Out-of-the-box alarms

## Job automation

- Jobs templates for SQL scripts on a single or group of databases
- Developers can create templates to perform work across compartments within a group



The screenshot shows the Oracle Cloud Database Administration interface. The main left panel displays a navigation menu with options like 'Resources', 'Summary', 'Alert logs', 'Performance' (with 'SQL Tuning Advisor' and 'SQL tuning sets' sub-options), 'Optimizer statistics', 'SQL plan management', 'Management' (with 'Tablespaces' selected), 'Users', 'Database parameters', 'Jobs', and 'Administration' (with 'Credentials', 'Alarm definitions', and 'Associated database groups' sub-options). The 'Tablespaces' section shows a table with the following data:

Name	Available space used (%)
SYSAUX	64.89
MFGUSER	34.36
user.dbf	-
SYSTEM (default)	32.03
TEMP (default)	0.16
UNDOTBS1	0.06

A modal dialog box titled 'Add datafile' is open on the right, containing the 'General' tab. The 'Storage type' is set to 'File system'. The 'Datafile path and name' field contains '/u01/app/oracle/oradata/ORCL/mfg/user\_2.dbf'. The 'File size (GB)' is set to 1. The 'Auto extend' checkbox is checked. The 'Increment (MB)' is set to 100. The 'Maximum file size' checkbox is checked. The 'Credentials' tab is partially visible at the bottom. At the bottom of the dialog are 'Add' and 'Cancel' buttons.

# Database administration

## Basic administration

- Database configuration parameters
- Group and manage databases by purpose
- Database user configuration
- Monitor Database Alert log and Attention Log

## Storage management

- Tablespaces, data files

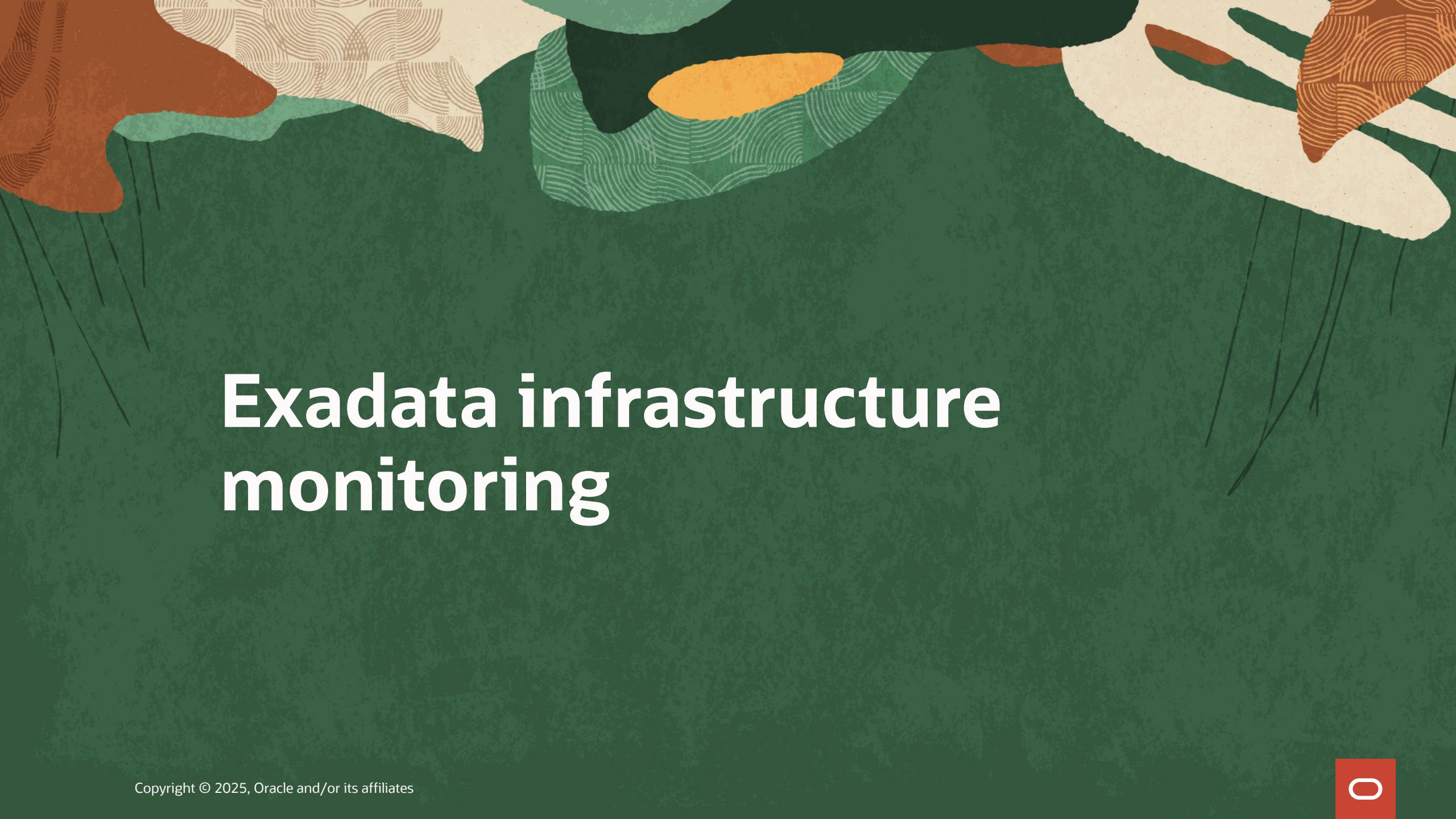
## Alarm configuration

- OCI Monitoring integration
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## Job automation

- Jobs templates for SQL scripts on a single or group of databases
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The screenshot shows the Oracle Cloud Database Management interface. At the top, there's a navigation bar with 'ORACLE Cloud', 'Cloud Classic >', a search bar, and a 'US East (Ashburn)' dropdown. Below the navigation is a large blue circular icon with 'DG' in white. The main content area is titled 'Database Management > Database groups > Database group details' for 'dbmgmt\_pdbs\_group'. It shows a summary card with 'Fleet summary', 'Edit description', 'Move resource', 'Add tags', and a 'Delete' button. The 'Database group details' tab is selected, showing a description, compartment information, and alarm counts (12 open alarms, 6 critical, 6 warning). The 'Jobs' section shows a table of recent runs with columns for 'Name', 'Database Name', 'Status', 'Duration', and 'Submitted'. The table includes rows for 'HOL\_account\_status\_2024-03-01T19:00:17.139Z', 'HOL\_account\_status\_MFG\_2024-03-01T19:00:17.373Z', 'HOL\_account\_status\_FINANCE\_2024-03-01T19:00:17.373Z', and 'HOL\_account\_status\_ORDER\_2024-03-01T19:00:17.373Z', all marked as 'Completed'.



# Exadata infrastructure monitoring

# Exadata fleet infrastructure monitoring

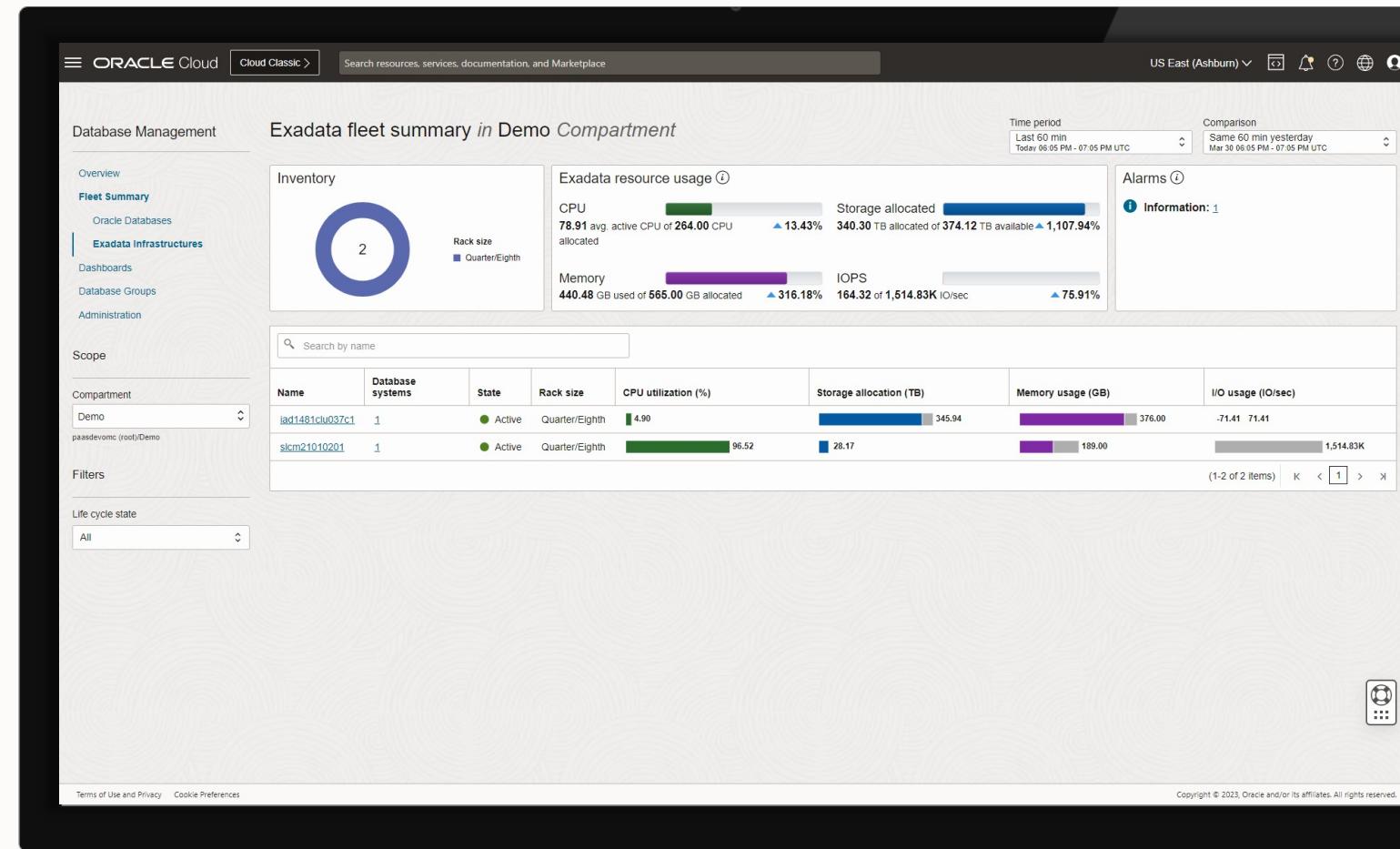
Exadata fleet overview displaying entire inventory in a single view

Find outliers in resource utilization and view short-term trend analysis

- CPU
- Storage Allocated
- Memory
- IOPS

Consolidated fleet Exadata alarms to triage and correlate performance activity

Drill down into Exadata infrastructure details



# Exadata infrastructure monitoring

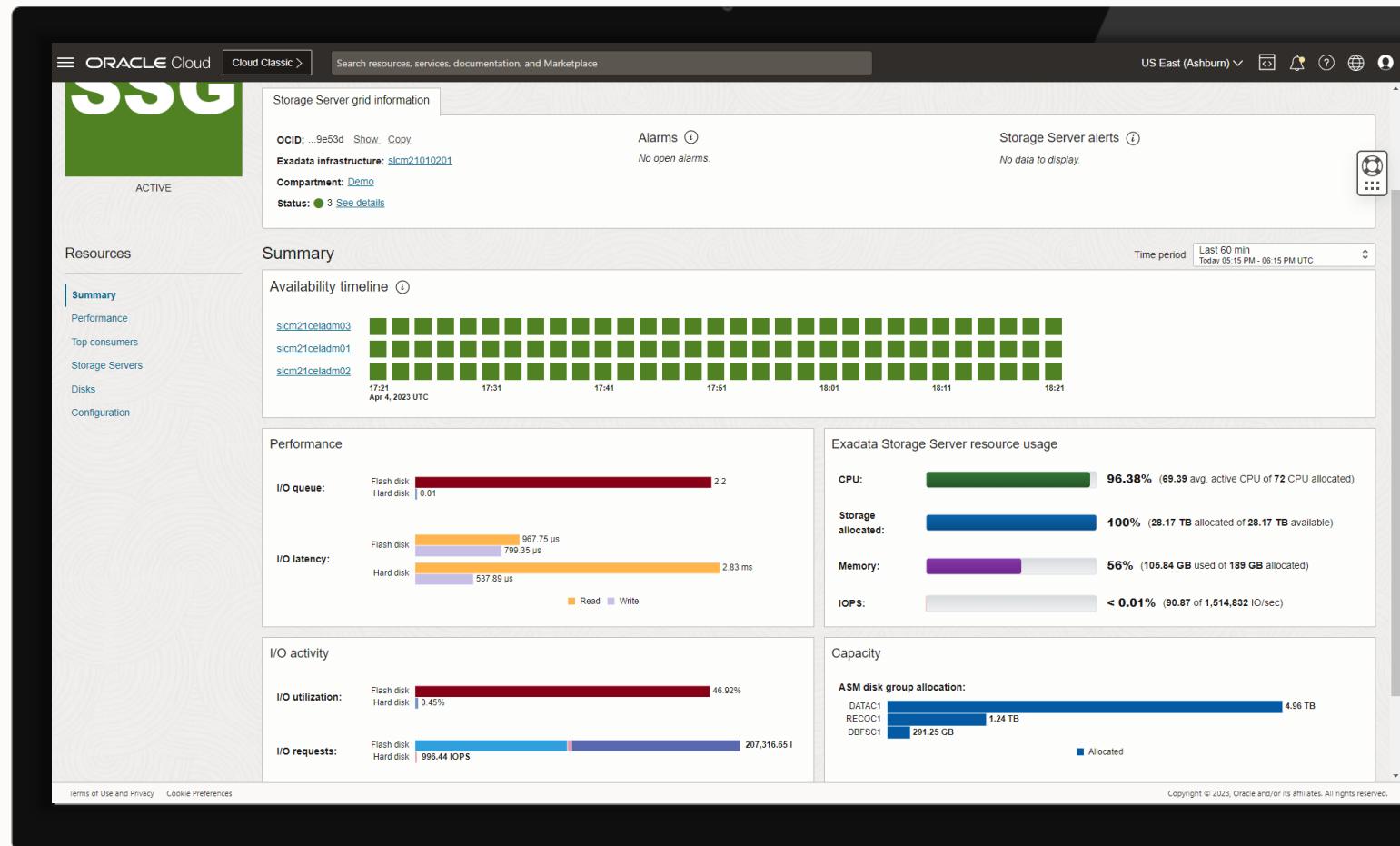
## Storage server health

- Track throughput usage and utilization
- Review flash latency, IORM, and disk latency wait times
- Relate metrics with the performance charts to compare the I/O distribution across databases
- Top activity by SQL statement within the storage cells

## Top DB Resource utilization

- Holistic view of I/O distribution
- Top I/O consumers
- Flash cache usage

Drill down to the Storage server details to monitor the availability, flash and disk latency, and IORM waits of individual cell disks





# Exadata performance diagnostics

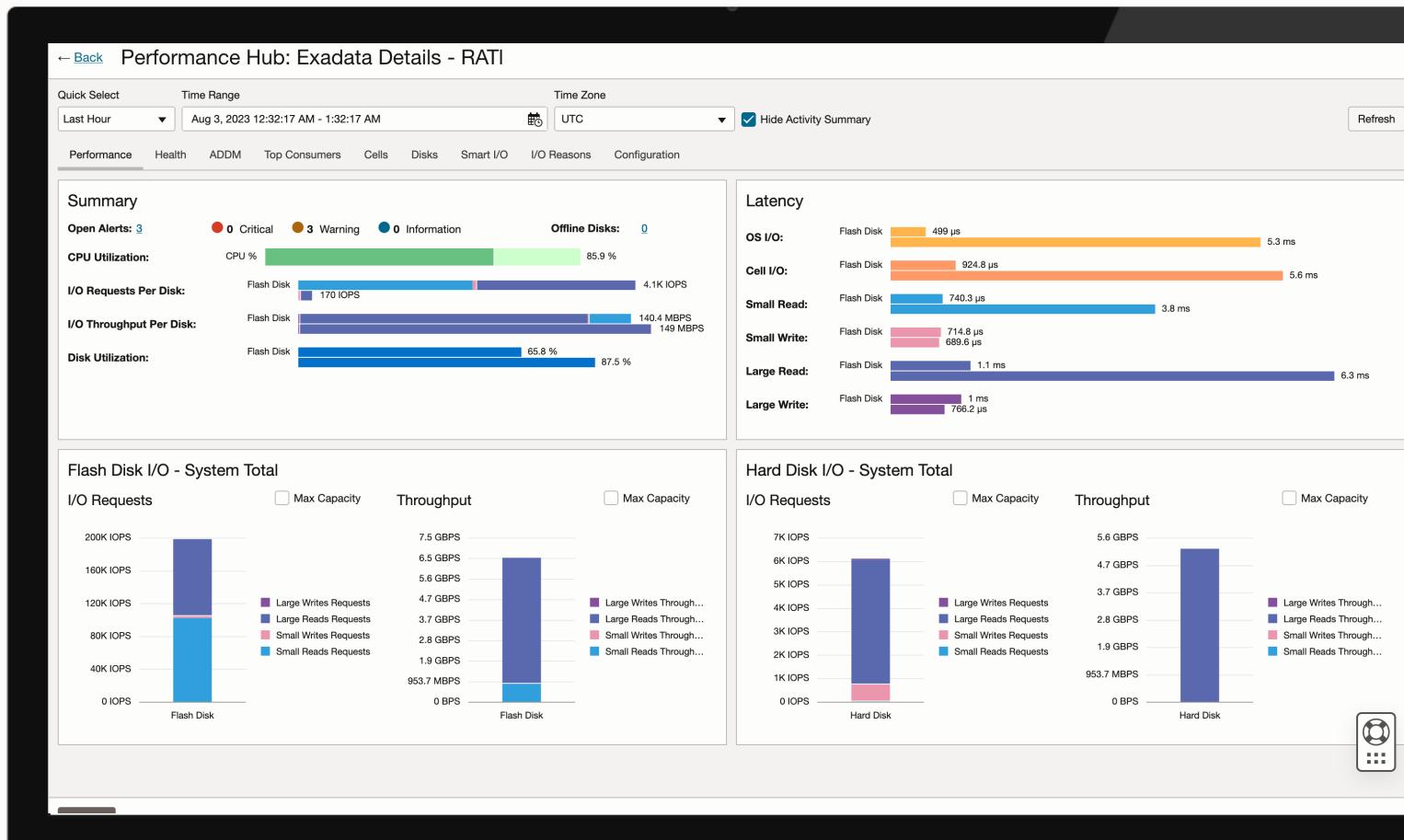
# Performance Hub – Exadata tab

## Exadata tab in Performance Hub

- One Click Away

### Key use cases:

- Uneven workload on cells or disks
  - Spot I/O bottlenecks
  - Instrument small I/O vs large I/O requests
  - Understand I/O correlation to database single block reads
- Noisy neighbor
  - Instrument I/O resource load per database, resource consumer group, or resource category
- Configuration differences
  - Differences in flash cache or flash log sizes
  - Number of cell disks or grid disks in use



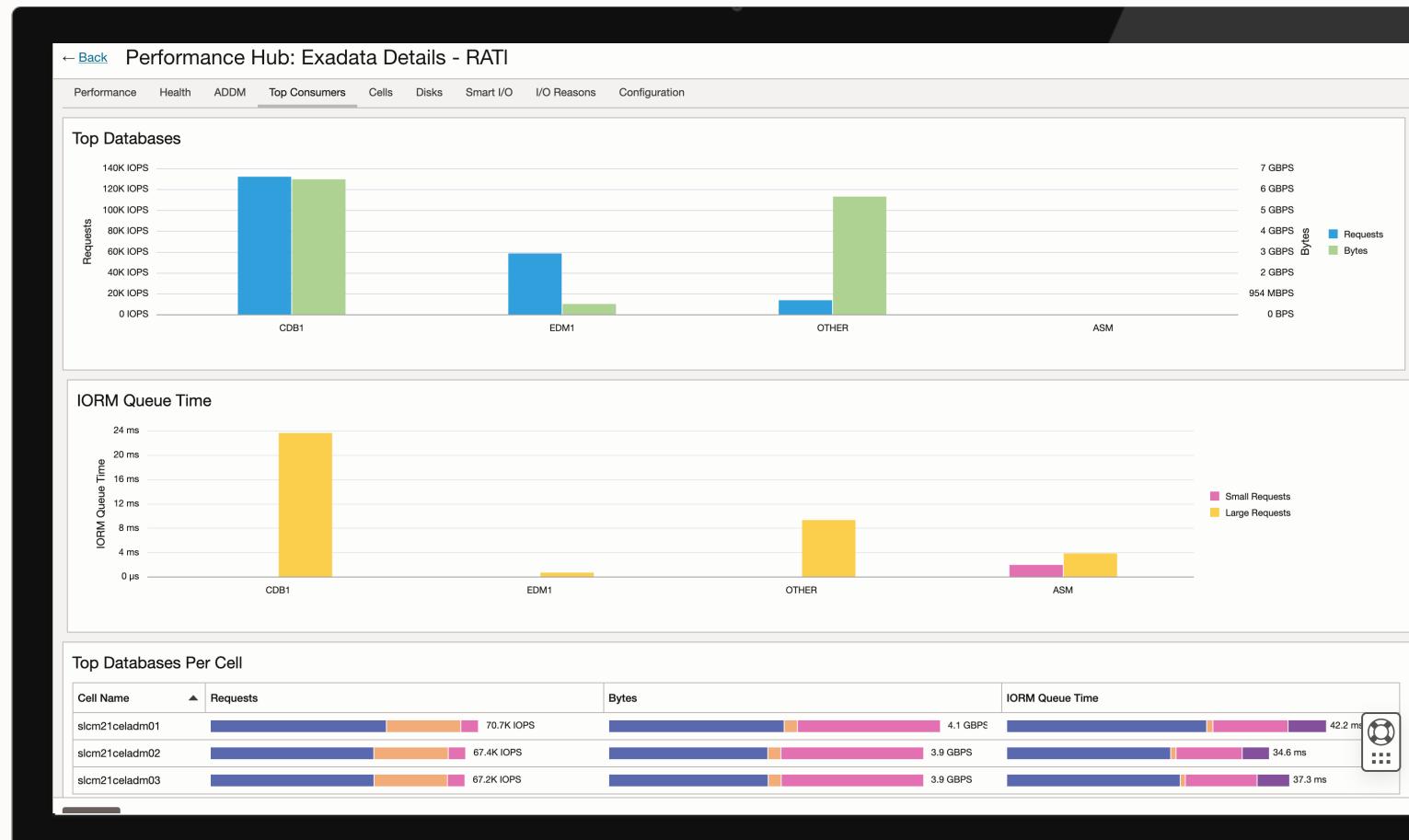
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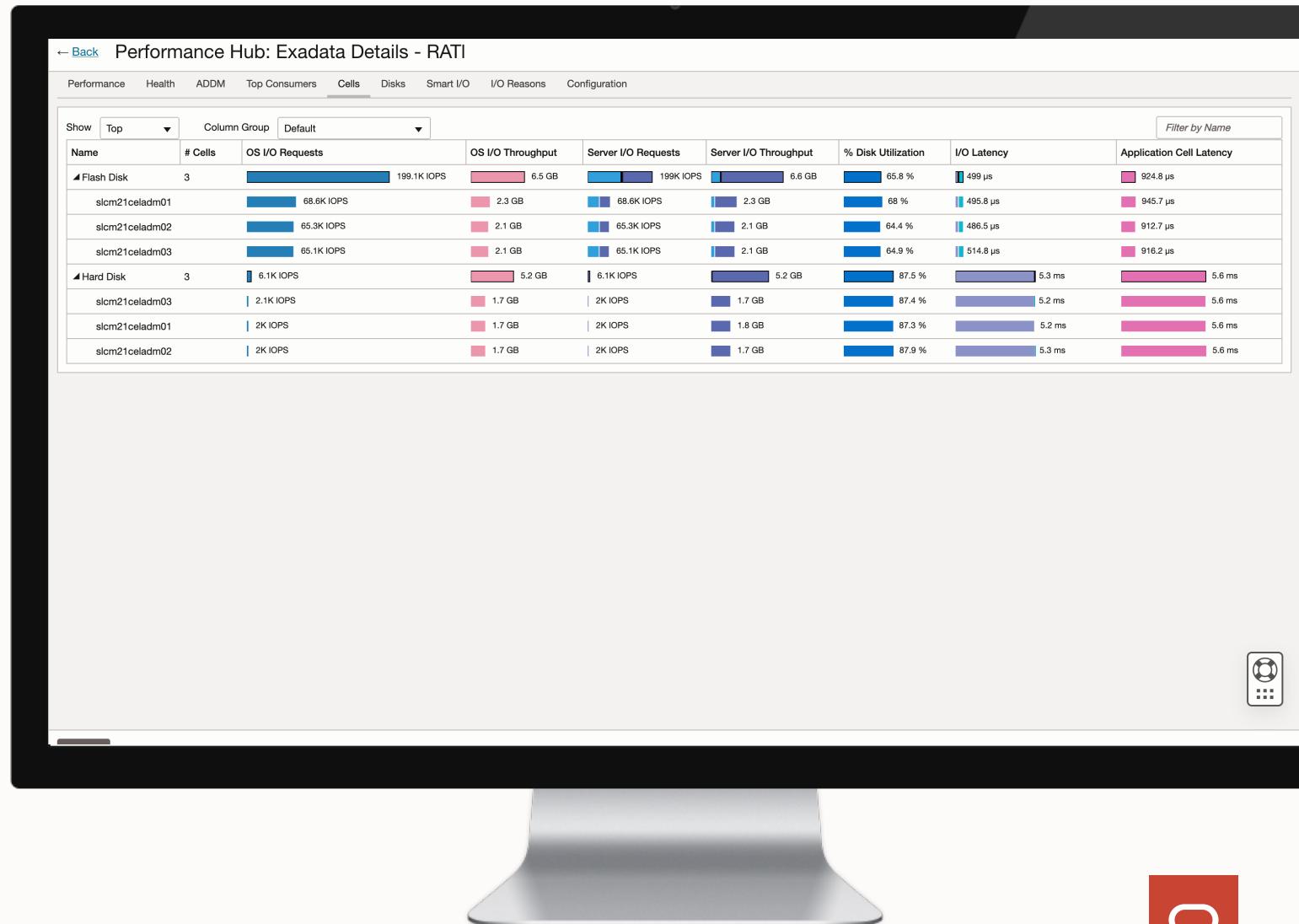
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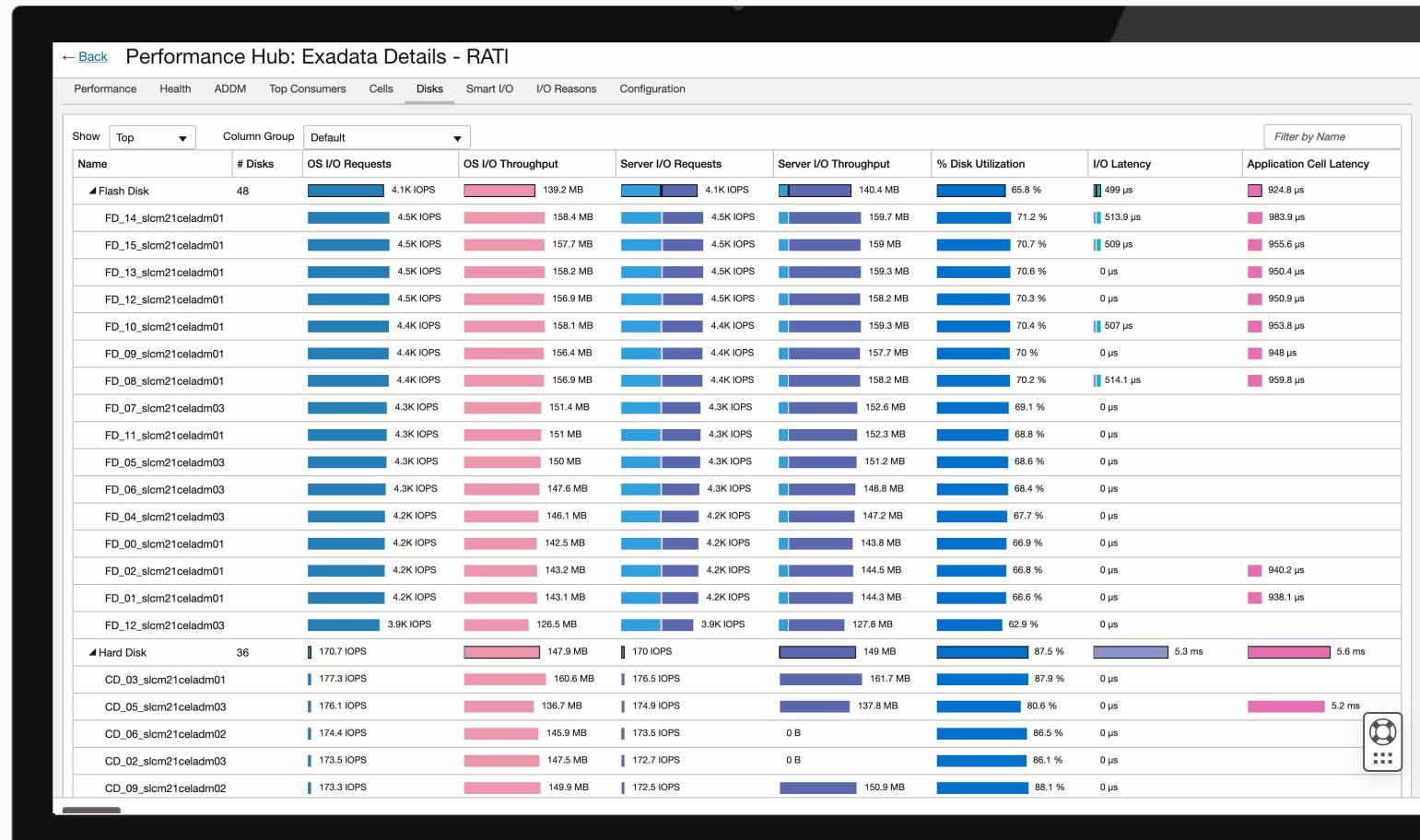
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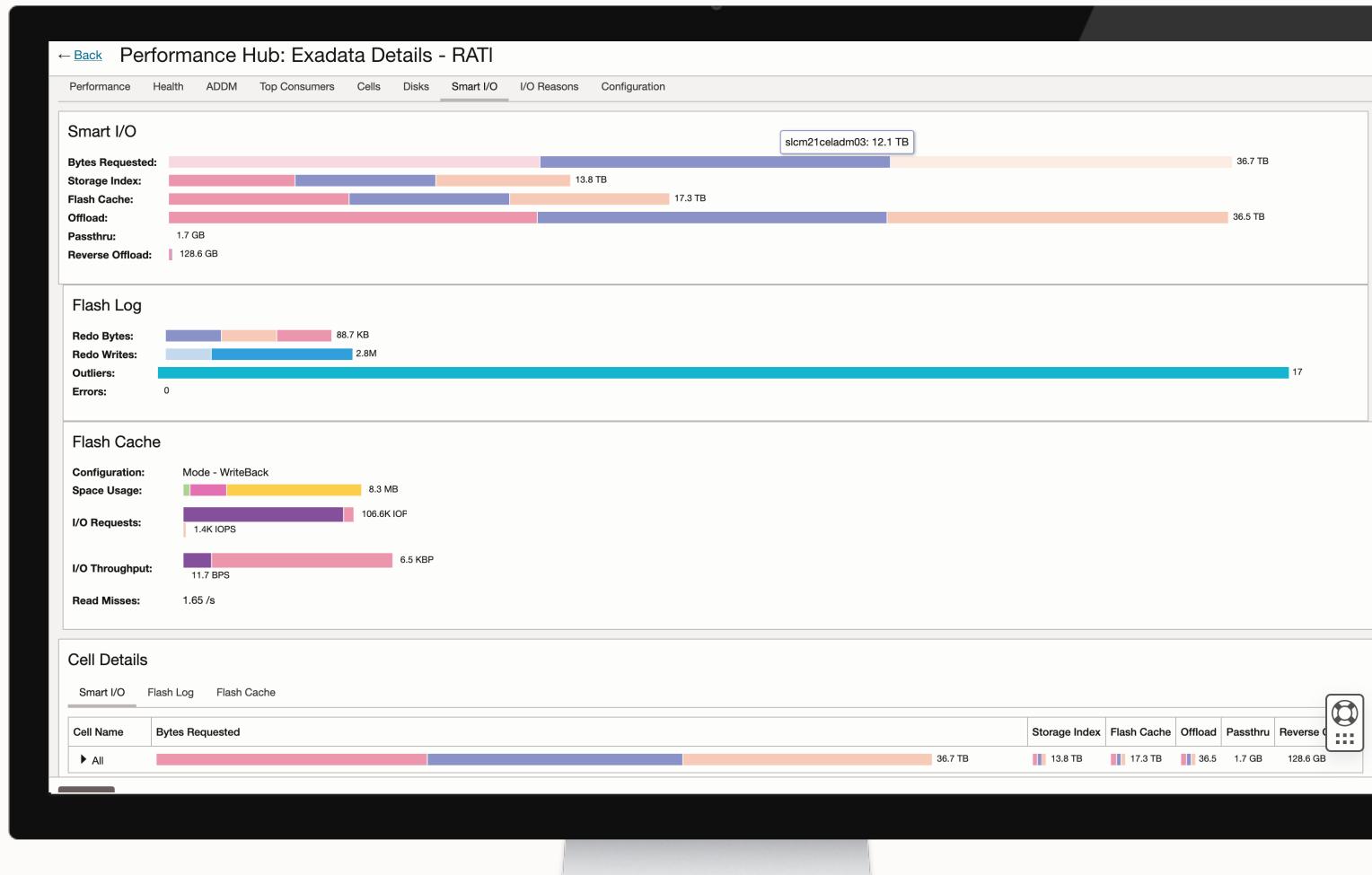
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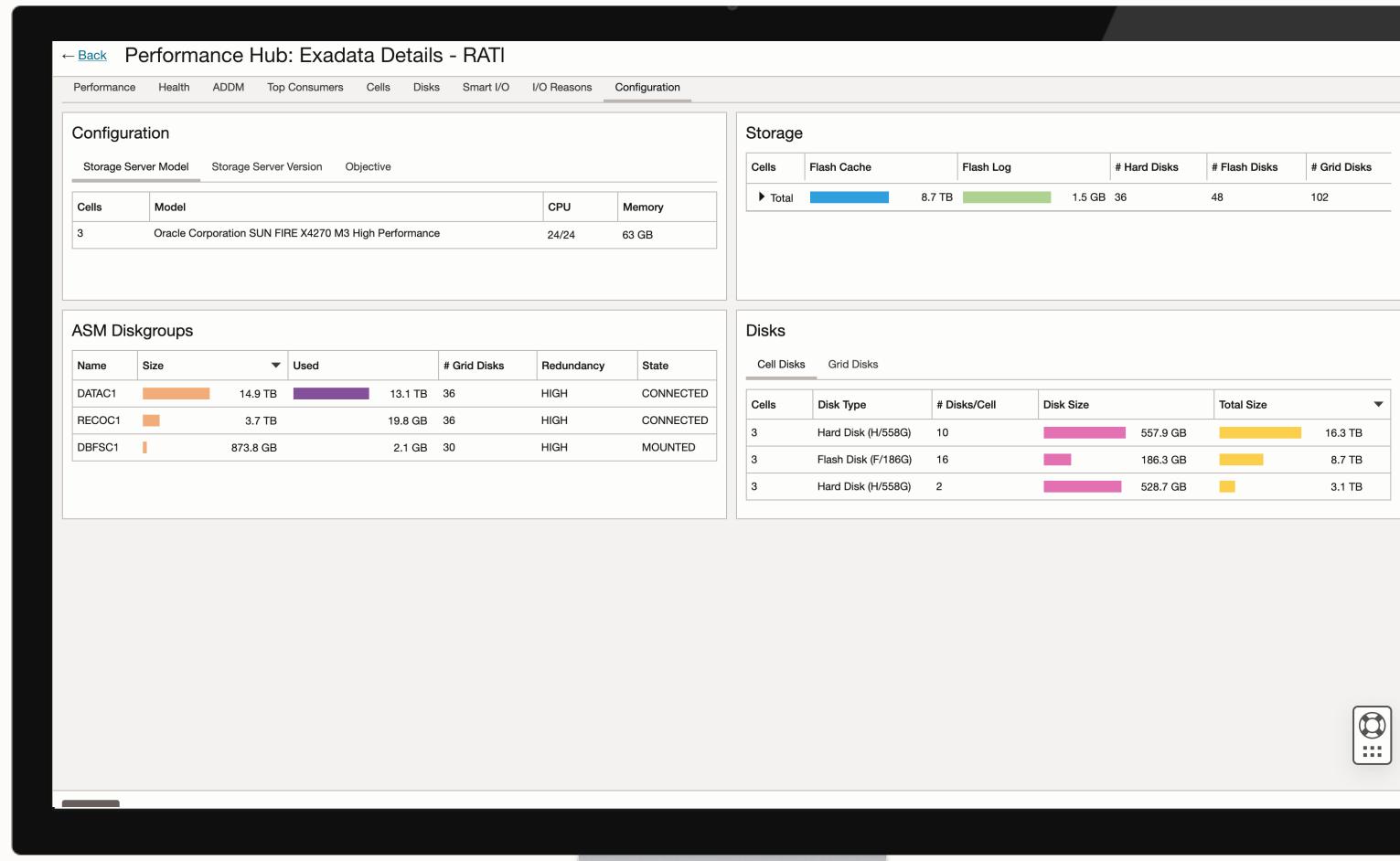
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# Features and more...

# Database Management features

## Manage many-as-one

- Database fleet management
- Database Summary
- Database groups
- Scheduled jobs
- Out-of-the-box performance dashboards

## Cloud Native multi-cloud Monitoring

- Exadata infrastructure
- Exadata AWR analysis
- Monitoring RAC
- Supports CDB & PDB
- Monitor entire Database system (Cluster, ASM, Listener etc.)

## Performance Diagnostics & Tuning

- Performance Hub
- Top Activity Lite
- ASH analytics
- Blocking sessions
- ADDM
- AWR Explorer
- AWR reports
- SQL Tuning Advisor
- SQL plan management
- SQL tuning set management
- SQL details
- SQL Monitoring reports
- Optimizer Statistics & Advisor

## Database Administration

- OOB alarm configuration
- Guided policy setup
- Database parameters
- Tablespace management
- User management
- Alert log monitoring
- Preferred credentials
- Named credentials
- TCPS support
- Search session
- Search SQL

# Database Management supported deployments

Feature / Deployment Type	Autonomous DB	BaseDB/ExaDB-D*	ExaDB-C@C	Multicloud (DB@A, GCP)	Exadata (on-prem)
Database Fleet	Yes	Yes	Yes	Yes	Yes
Database Summary	Yes	Yes	Yes	Yes	Yes
PDB Support	Yes	Yes	Yes	Yes	Yes
Performance Hub	Yes	Yes	Yes	Yes	Yes
Exadata storage infrastructure monitoring	N/A	Yes (PerfHub tab)*	Yes (PerfHub tab)	Yes (PerfHub tab)	Yes
Exadata fleet monitoring	N/A	Roadmap*	Roadmap	Roadmap	Yes
Database system monitoring	N/A	Roadmap*	Roadmap	Roadmap	Yes
RAC monitoring	Yes	Yes	Yes	Yes	Yes
AWR Explorer	Yes	Yes	Yes	Yes	Yes
Tablespace monitoring	Yes	Yes	Yes	Yes	Yes
Scheduled Jobs	Yes	Yes	Yes	Yes	Yes
SQL Tuning Advisor, STS, SPM	Yes	Yes	Yes	Yes	Yes
Metric Extensions	N/A	Yes	Yes	Yes	Yes
Optimizer Statistics Advisor	Yes	Yes	Yes	Yes	Yes

# Ops Insights

Make informed, data-driven compute resource & performance management decisions using long term data

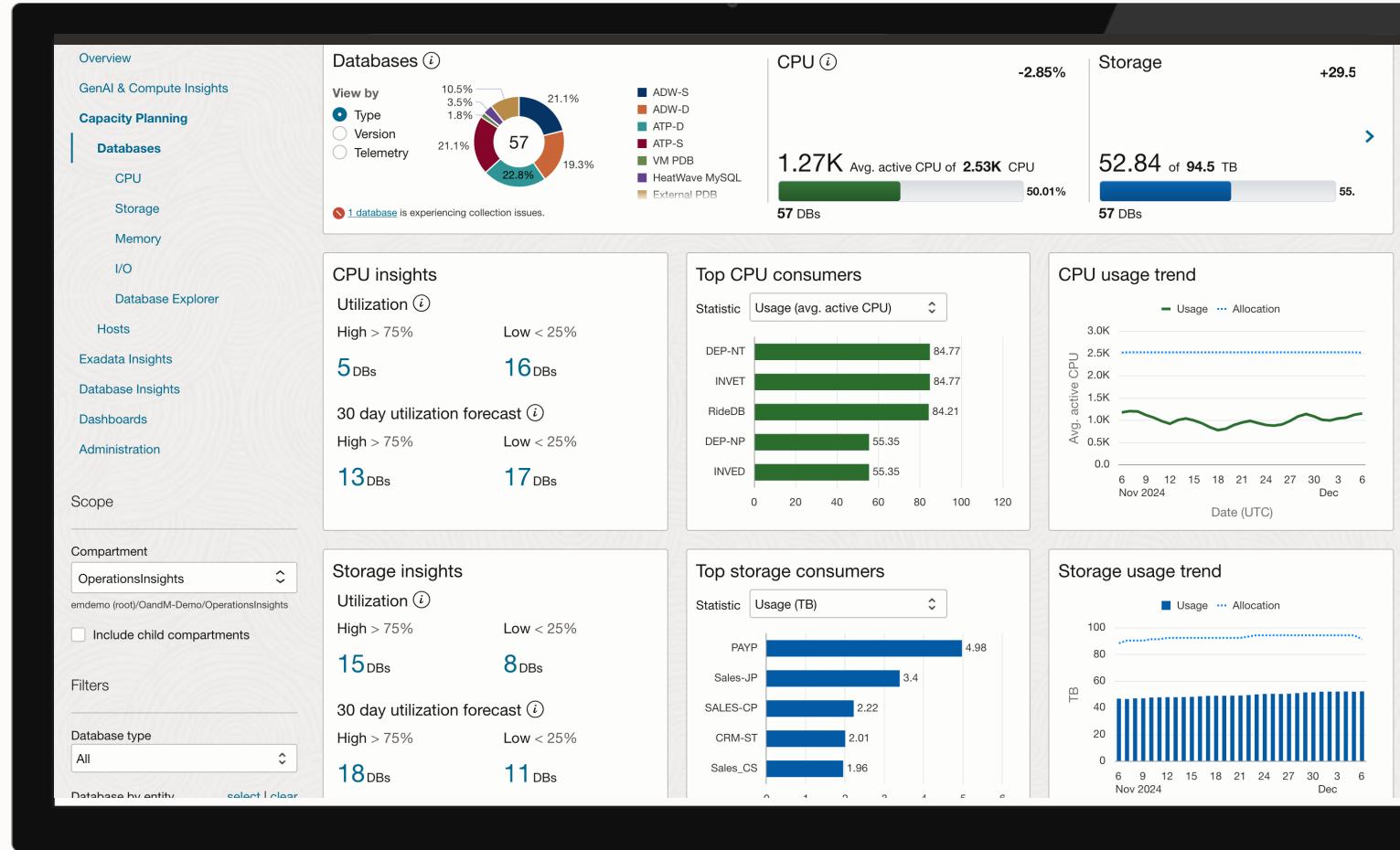
## Personas

- Business executives
- Database admins
- DevOps personnel

Holistic insights into database, host resource utilization and capacity to reduce costs

Anticipate and control Cap Ex spend using aggregated demand forecasts

Improve application throughput by tracking and trending SQL execution performance across the enterprise



# Ops Insights

Make informed, data-driven compute resource & performance management decisions using long term data

## Capacity Planning

- Analyze and forecast database and host resource usage based on long-term historical data
- Improve costs by identifying over and underutilized database and servers

## Exadata Insights

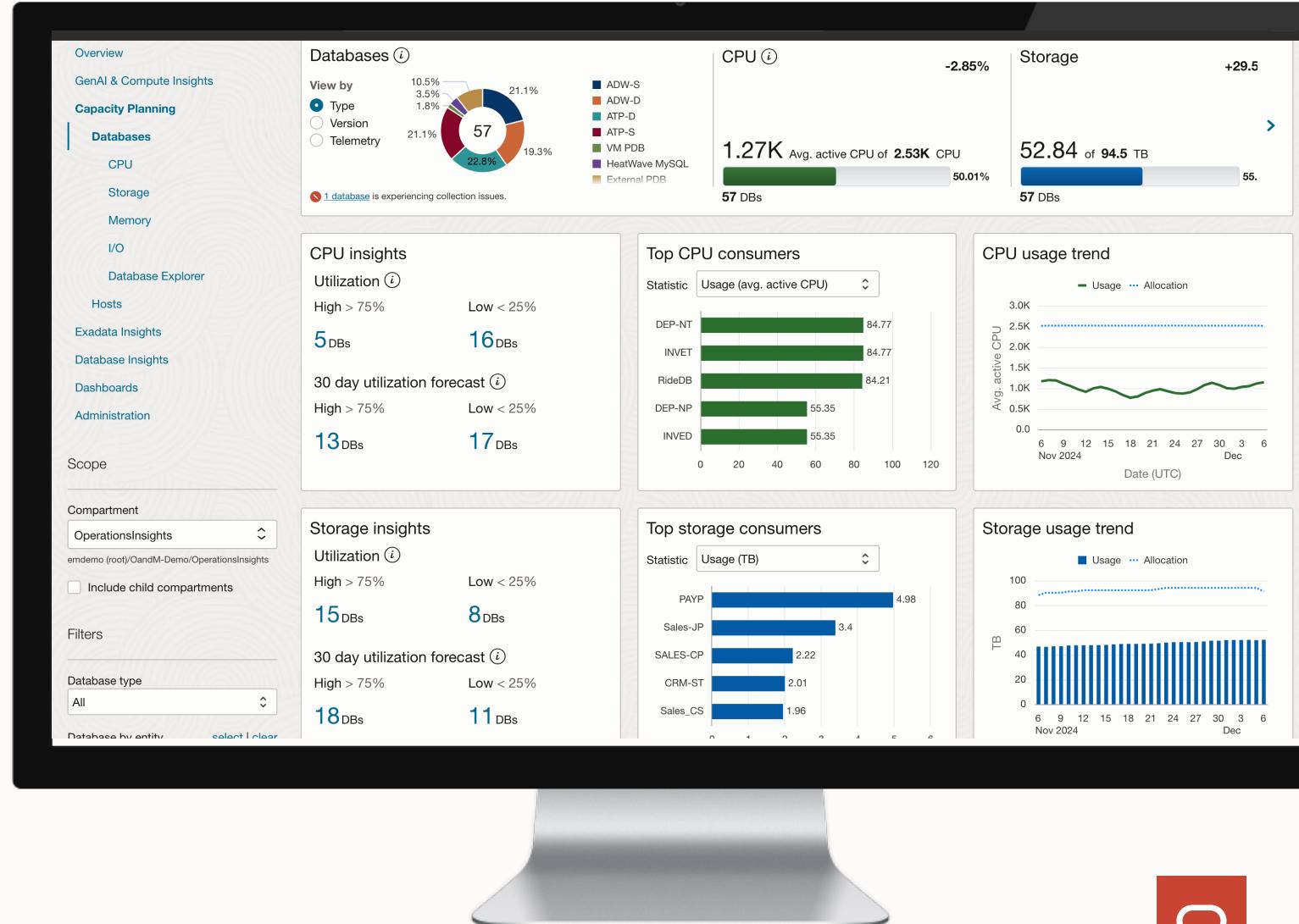
- Enterprise-wide analysis of resource utilization, trending, capacity planning and performance insights for Exadata

## ADDM Spotlight

- Strategic database performance insights

## SQL Insights

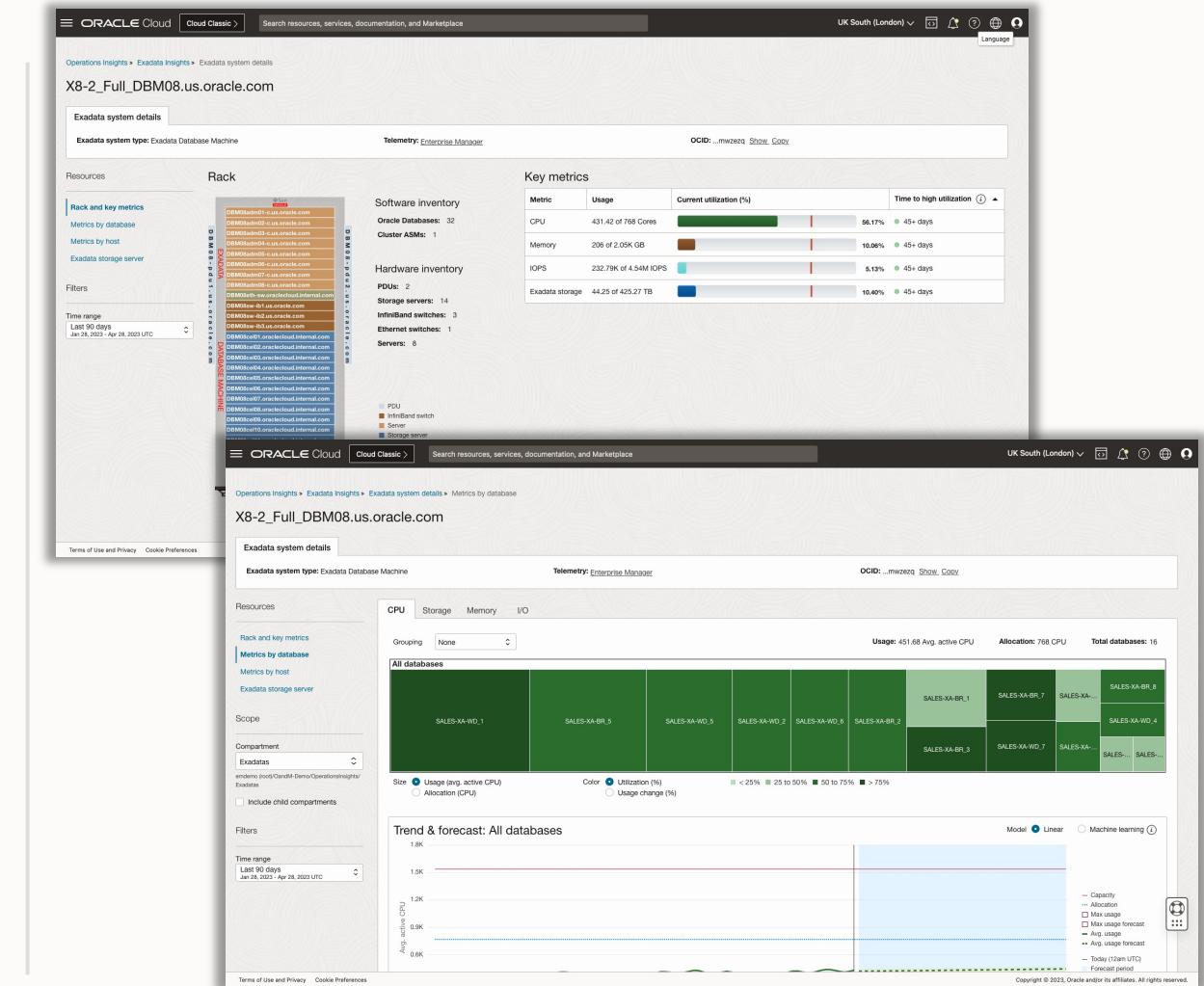
- Long-term SQL store for performance and trend analysis, with interactive data exploration of SQL statistics
- Interconnected dashboards with context-sensitive drill-downs from fleet-level to database to individual SQL level



# Exadata Insights

## Consolidate Oracle Databases on Exadata

- Use Operations Insights - Exadata Insights feature to identify Exadata servers that satisfy resource requirements
- Find low resource utilization servers
- Use forecasting and capacity planner functionality to ensure that Exadata satisfies future needs of databases being consolidated
- Plan ahead using performance history and seasonality
- Ensure service levels can be met over time



# ADDM Spotlight

Aggregate expert tactical advice into strategic optimization insights

## ADDM findings are deep performance diagnostics

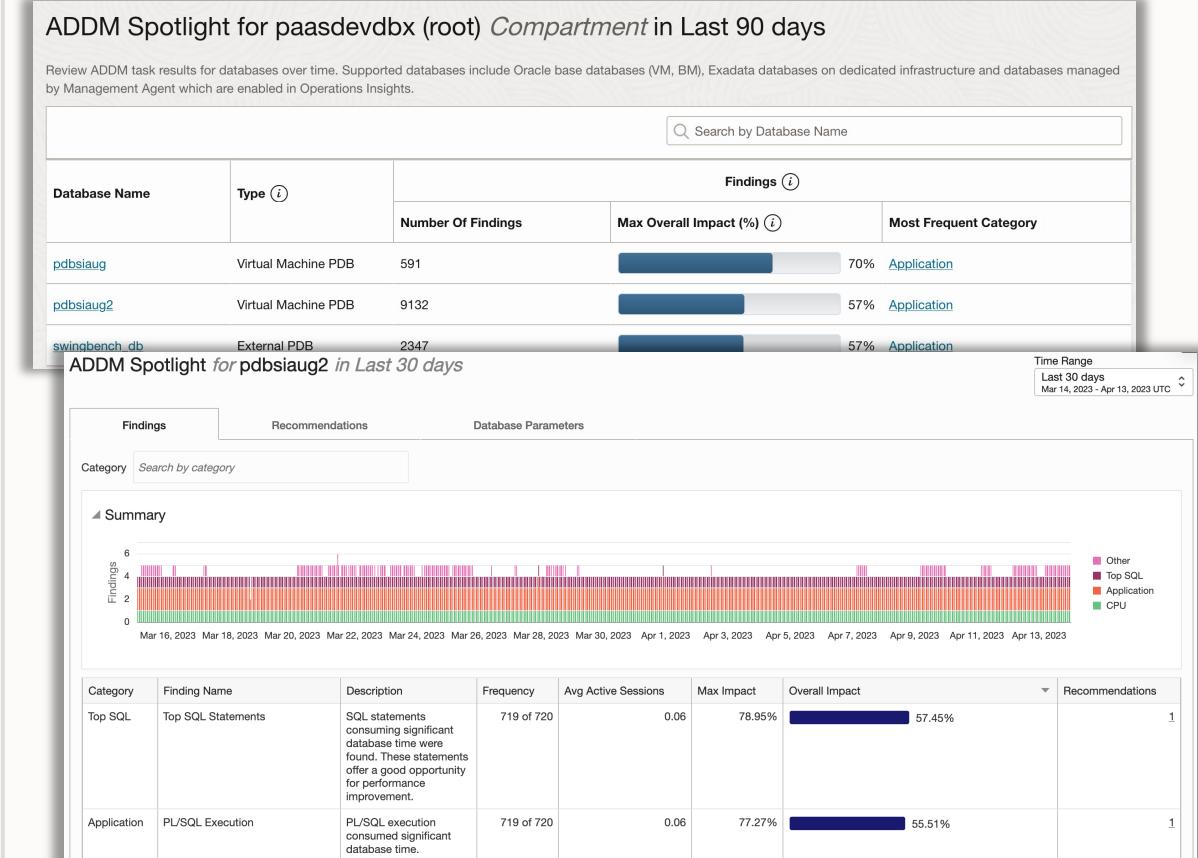
- Generated over 1-hour AWR snapshots
- Tactical in nature, diagnose incidents

## ADDM Spotlight

- Categorizes and aggregates findings over longer periods and many ADDM runs
- Identify chronic issues over entire workload

## Aggregates by finding and recommendation

- Frequency of occurrence
- Overall Impact and benefit
- Maximum impact and benefit



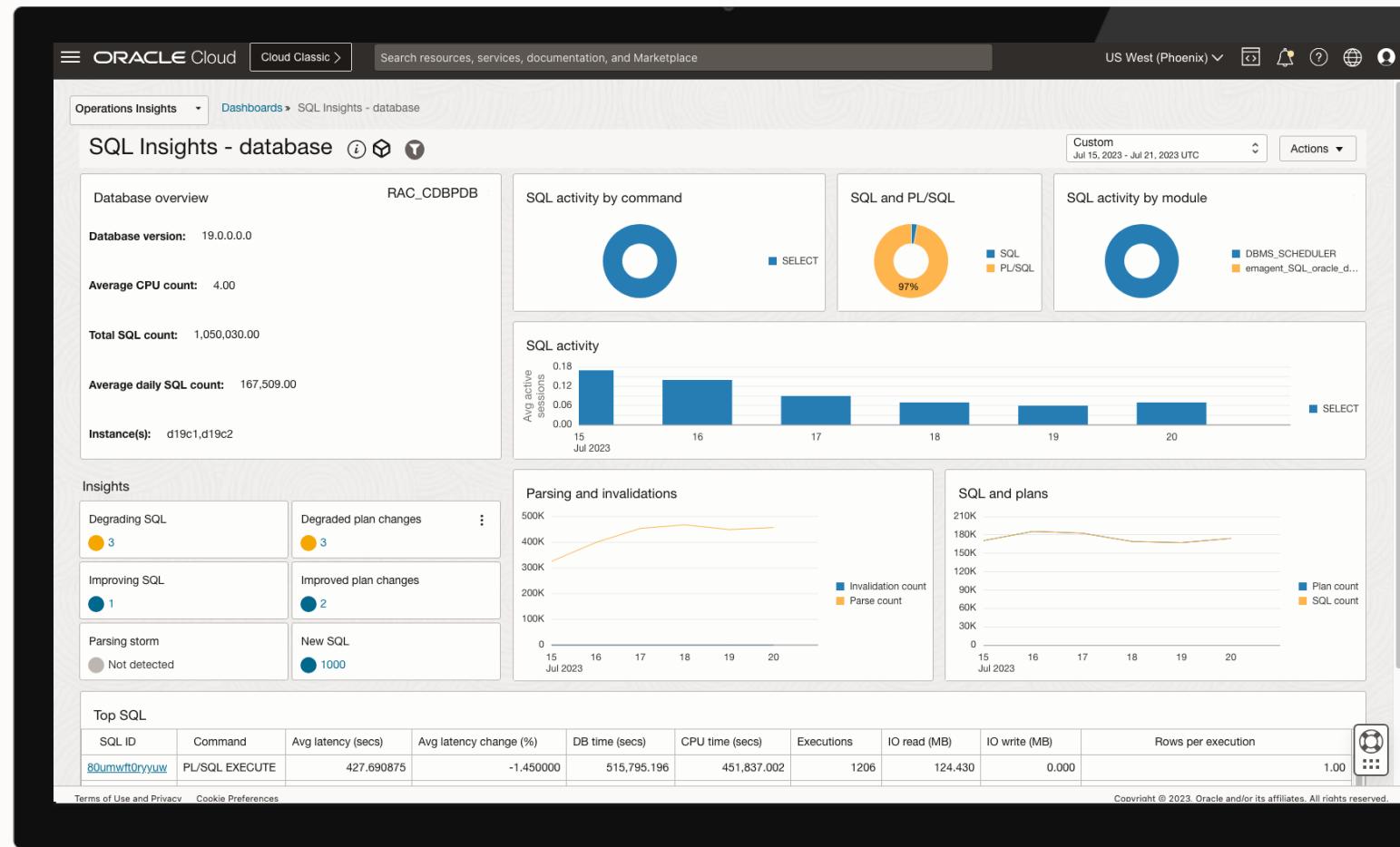
# SQL Insights

Detailed insights and historical performance data for SQL executions aggregated on multiple fleet levels

- **SQL:** Key performance metrics for a SQL running on a single database
- **Database:** Performance summary for all SQL statements running on a database
- **Fleet:** Global tree-map view of SQL performance running on multiple database environments

Context sensitive drill-downs in performance

Dashboard framework SQL performance details



# SQL Explorer

## Exploratory query-driven interface

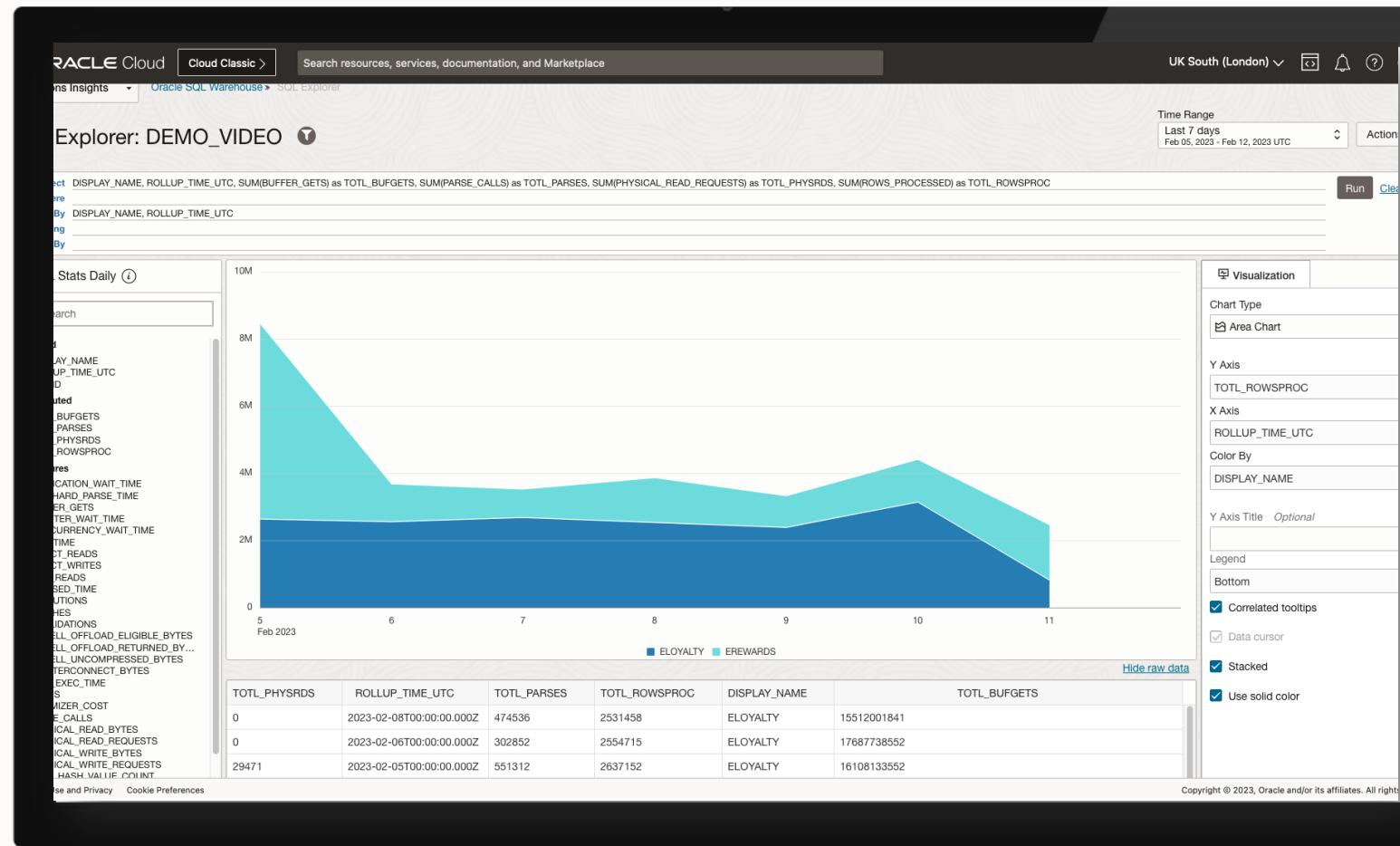
- Interactive, easy to use query builder for rapid experimentation
- Uses SQLSTATS DAILY data object
- Ships with collection of searches
- Visualization of result sets (pie, line, bar, table)

## SQL statistics data object

- Daily roll-up of SQL performance stats by SQL\_ID
- Built-in time and entity dimensions

## Dashboard integration

- Create widgets from saved queries
- Add widgets to enterprise observability dashboards



# Support Matrix for Heterogeneous Oracle DB Deployments

Categories	Features	Autonomous DB Shared/Dedicated*	ExaDB-D	Enterprise Manager managed ExaDB-C@C, ExaDB-D, Exadata (On-prem) (EM13.5 RU10+)
Capacity Planning	Database	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
	Host	<b>N/A</b>	<b>Yes</b>	<b>Yes</b>
	SQL Insights	<b>Yes<sup>+</sup></b>	<b>Yes</b>	<b>Yes</b>
SQL Insights	SQL Explorer	<b>Yes<sup>+</sup></b> (With Full feature only)	<b>Yes</b> (Database running on it)	<b>Yes</b> (EM13.5 RU13+)
	Exadata Insights	<b>N/A</b>	<b>Yes</b>	<b>Yes</b>
Exadata Insights	Exadata Explorer	<b>N/A</b>	<b>Yes</b>	<b>Yes</b>
	ADDM Spotlight	<b>Yes<sup>+</sup></b>	<b>Yes</b>	<b>Roadmap</b>
Other	News Reports	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
	AWR Hub	<b>Yes</b> (No database patches needed)	<b>Roadmap</b>	<b>Yes</b> (Needs database patches)
	AWR Explorer	<b>Yes</b>	<b>Roadmap</b>	<b>Yes</b>
Warehouses	AWR Hub Explorer	<b>Yes</b>	<b>Roadmap</b>	<b>Yes</b>
	Exadata Warehouse	<b>N/A</b>	<b>N/A</b>	<b>Yes</b>

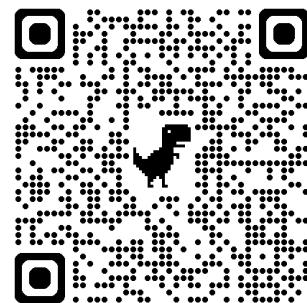
Note\*: Capacity Planning for ADB on ExaDB-C@C is not supported

Note<sup>+</sup>: Requires Full Features availability

# Demo

## Learn More

1. [oracle.com/manageability](https://oracle.com/manageability)
2. [Database Management Videos](#)
3. [Database Management Blogs](#)
4. [Database Management Documentation](#)
5. [Hands-on lab: Get Started with Oracle Cloud Infrastructure Database Management](#)
6. [Operations Insights Videos](#)
7. [Operations Insights Blogs](#)
8. [Operations Insights Documentation](#)
9. [Hands-on lab: Get started with Oracle Cloud Infrastructure Operations Insights](#)



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ORACLE

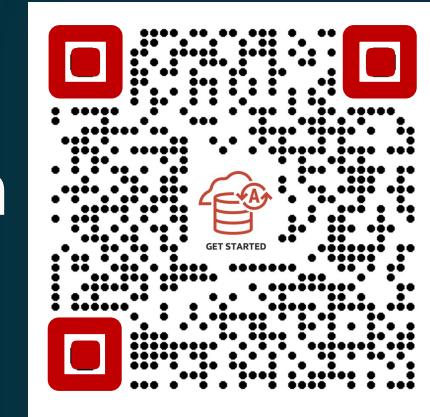


# Q&A Open



# Important links to bookmark

**Links to get you started and to keep up to date with Autonomous Database**



**1** New Get Started page:  
[oracle.com/autonomous-database/get-started/](https://oracle.com/autonomous-database/get-started/)

**2** Join us:  [bit.ly/adb-linkedin-grp](https://bit.ly/adb-linkedin-grp) [@AutonomousDW](https://twitter.com/@AutonomousDW)

 **Bluesky**  
[autonomousdb.bsky.social](https://autonomousdb.bsky.social)

**3** Got a question?  
We are on **stackoverflow**  
[bit.ly/adb-stackoverflow](https://bit.ly/adb-stackoverflow)

Join us on **Developers Slack**  
(search **#oracle-autonomous-database**)  
[bit.ly/odevrel\\_slack](https://bit.ly/odevrel_slack) (odevrel\_slack)



# Final Thoughts

[oracle.com/goto/adb-learning-lounge](https://oracle.com/goto/adb-learning-lounge)

Links

Upcoming

Replays

Autonomous Database Learning Lounge

The Autonomous Database Learning Lounge series offers free bi-weekly Live Webinars where **Oracle Product Managers** share the many ways you can unlock your talents with complete tutorials on the most important topics for any professional looking to improve their skills for the best **Data Platform** on the Cloud with Autonomous Database.

For more information on all things **Autonomous Database**, make sure to go to our site for **Get Started with Autonomous Database** at: <https://www.oracle.com/autonomous-database/get-started/>

There are other **Autonomous Database Learning Lounge** series for different languages:

- Autonomous Database Learning Lounge en Español: <https://oracle.com/goto/adb-learning-lounge-es>
- Autonomous Database Learning Lounge em Português: <https://oracle.com/goto/adb-learning-lounge-pt>

The listing below shows the Autonomous Database Learning Lounge sessions, their recordings, links to the slides and other information for each session.

Upcoming

Replays

Sort By: Newest

Graph RAG: Bring the Power of Graphs to Generative AI

Migration to ADB Part II: Easily migrate from previous database releases with DMS

Migration to ADB Part I: Visualize and Evaluate your entire database estate with Oracle Estate Explorer

Multicloud, scalable and fault-tolerant key management with Oracle Key Vault

Migration to ADB Part II: Visualize and Evaluate your entire database estate with Oracle Estate Explorer

Marcos Arancibia, Jorge Martinez

Marcos Arancibia, Paul Brankin, Simon Griffiths

Peter Wahl

November 21, 2024 · 54:17 Mins · 638

November 19, 2024 · 59:08 Mins · 115

November 12, 2024 · 54:05 Mins · 96

November 07, 2024 · 54:42 Mins · 3

Thank you for joining !!! *AUTONOMOUS  
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LOUNGE**