



# Managing On-Premises and Cloud Databases Together from the Cloud

# Speaker for this session



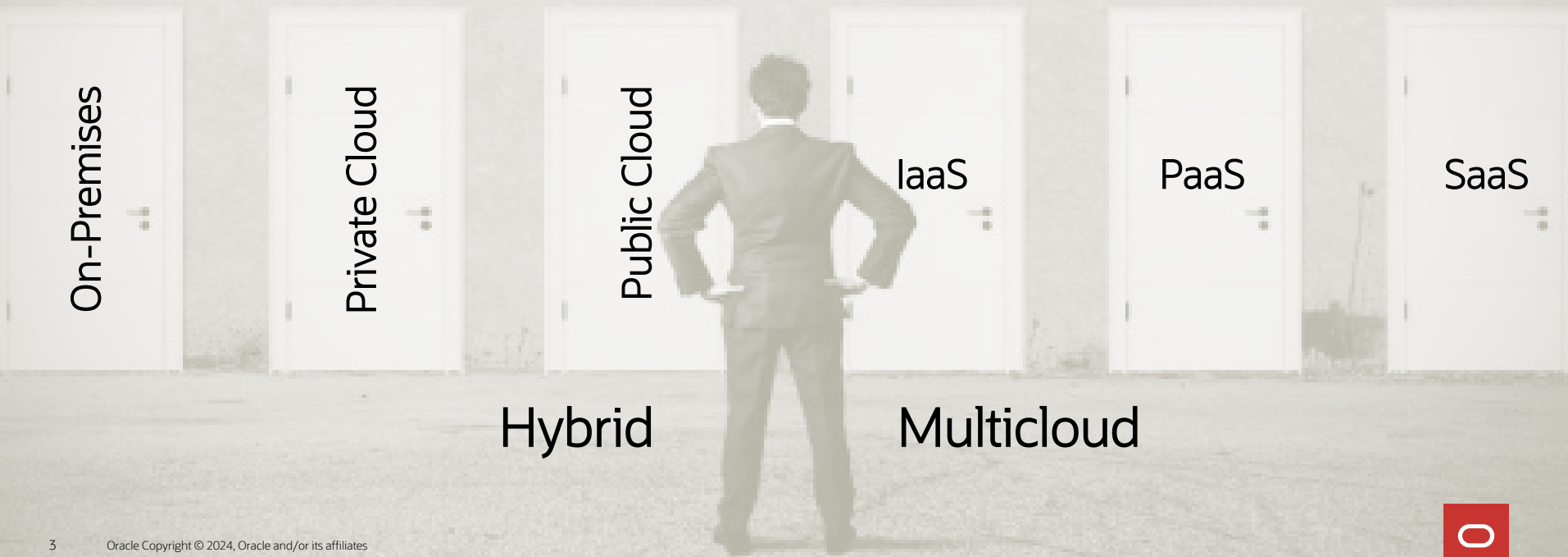
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Product Manager  
DBA, Oracle Poster and Book Author



# Who's minding all the databases deployed across your business

All are available, running at optimal efficiency, none at risk or compromised?



# Hybrid and multicloud database management challenges



Applications becoming increasingly spread-out, more complex, microservices based



More apps means more scripts, tool installs / staff time configurations, screens to view all the databases



Bad actors exploiting known vulnerabilities not patched in a timely manner



Prolonged time to identify, isolate, diagnose database issues



DevOps seek more Observability and Management telemetry for App Dev and customer satisfaction



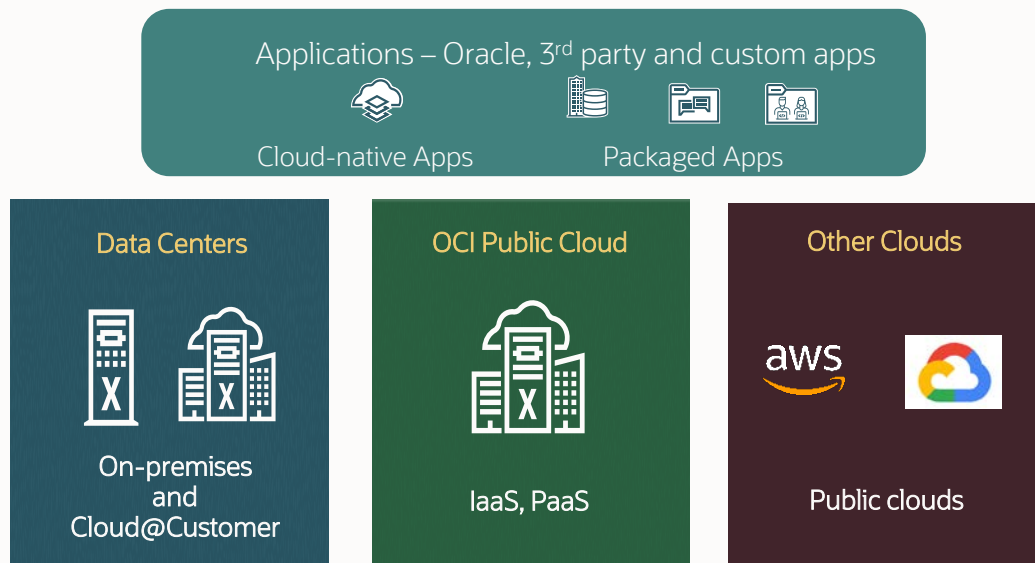


“Enterprises are becoming frustrated with the limitations of existing monitoring tools and, despite decades of investments in monitoring tools, continuing to rely on customers to notice an outage.”

Padraig Byrne, Josh Chessman  
Innovation Insight for Observability

9 March 2022

# Modernize Database Management encompasses



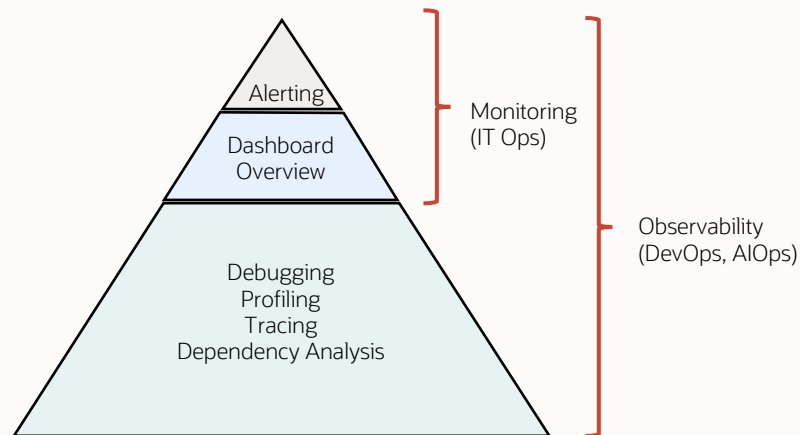
# Digital transformation has businesses reevaluating Methods, monitoring and tools

**Monitoring** - based on gathering predefined sets of metrics

- Typically performed by scripts or tools that allow teams to watch/be alerted about the state of a system change (working / not working)

**Observability** - based on having insight and ability to watch for and explore properties and patterns not defined in advance

- Usually comprised of metric, log, tracing, and user experience data that enables teams to actively watch and debug their app and its stack (why its not working)



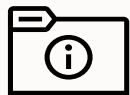
Modern businesses require an integrated solution with observability increasing in importance to understand and manage their modern applications and their infrastructure.

# Oracle DBAs have an advantage

Complete observability and management telemetry and insight



**M**etrics



**E**vents



**L**ogs



**T**races



**S**QL

Complete observability platform of pre-integrated services, covering the entire app stack inclusive of its infrastructure

- Collects all telemetry - metrics, events, logs, traces, SQL (MELTS)
- Discover infrastructure and topology - Infrastructure – OS, storage, network | Application – UI, business layer, database, middleware
- Out-of-box applied observability: preconfigured dashboards by application and best practices

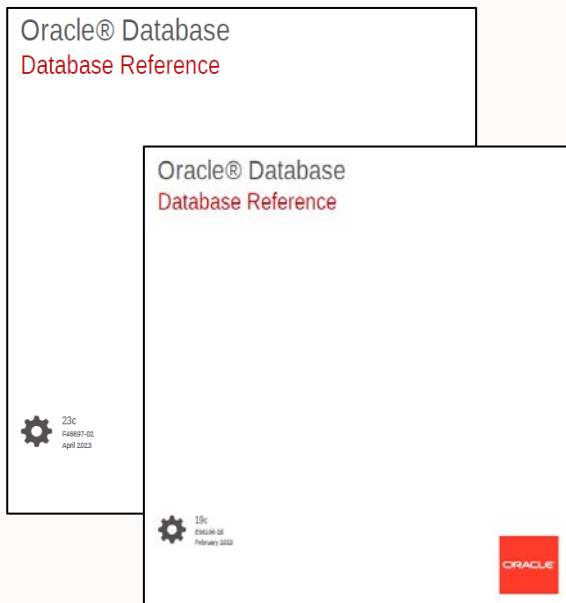
Oracle DBAs should seek out opportunities to apply their deep Oracle Database instrumentation and SQL knowledge in application modernization and cloud-native projects to provide their businesses with an Observability competitive advantage using Metrics Events Logs Traces and SQL (M.E.L.T.S).



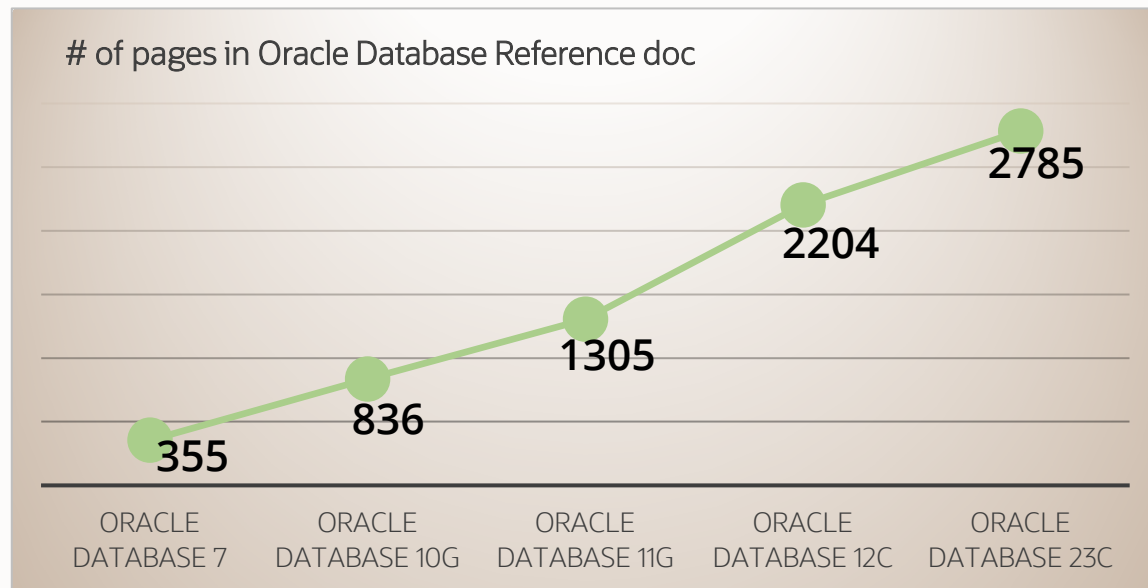


# Oracle Database Reference

Data dictionary views, instrumentation and telemetry collected by the database



<https://docs.oracle.com/en/database/oracle/oracle-database/23/refrn/index.html#Oracle%C2%AE-Database>



Most instrumented database in the industry



# Enterprise and cloud manageability strategy

Oracle observability and management services and solutions

**Provide maximum choice to customers through continued investment in both Enterprise Manager and cloud services**

## Enterprise Manager (EM)

- Tool for deep management of Oracle stack
- Hybrid and multicloud support
- Enhanced Ops automation
- Platform modernization for improved resilience and extensibility
- Telemetry integration with OCI provides added value

**You install, maintain and manage it**

## Observability and Management

- Complete set of core observability services (Monitoring, Logging, Service Connector Hub...)
- New advanced cloud services for APM, log analytics, database mgmt, stack monitoring, big data analytics
- Heterogeneous data, stack, and language support
- Hybrid and multicloud support

**Its managed and updated for you**



# Observability and Management for Database Management

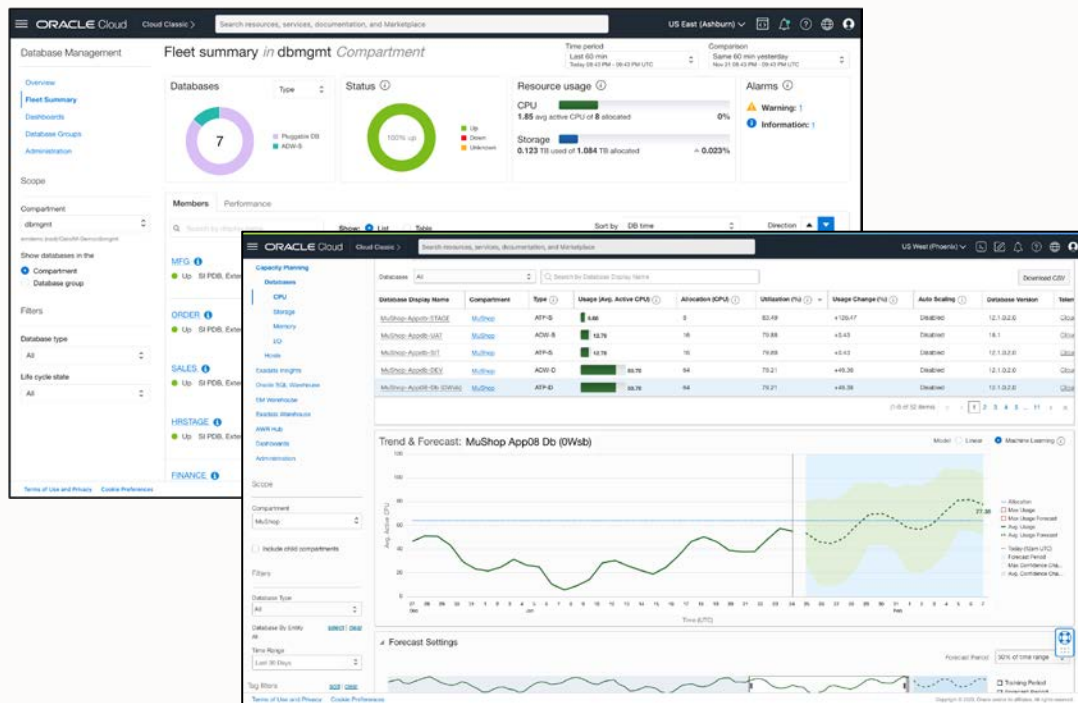
Use like a SaaS app – its managed for you, new features constantly added

**Cloud-native platform** with minimal maintenance overhead

**Full-stack, multicloud monitoring** of Oracle and non-Oracle technology

Zero-effort analytic insights across the entire estate, **powered by machine learning**

Unified operational data from Oracle Enterprise Manager and other tools



Multicloud  
Environment

**ORACLE®**  
Cloud

 Microsoft  
Azure

**aws**

  
On-premises



## Observability and Management Services



Application Performance  
Monitoring



Stack  
Monitoring



Logging  
Analytics



Database and  
OS Management



Capacity Planning  
SQL Insights

## Telemetry Types



Metrics



Events



Logs



Traces



SQL

## OCI Infrastructure



Compute



Storage



Database



Network



Security



# Oracle Cloud Database Management



Subscribe and start using it. No waiting for an environment, install of a repository, licensing of a pack, patching, integration or scripting work



Obtain application and stack diagnostics capabilities inclusive of the data tier so you can solve problems faster



Automate database management tasks on-premises and cloud to reduce risk and accomplish more



Modern Oracle Database Administration supporting latest database versions and capabilities. New abilities continuously added



# Manage databases deployed anywhere, from anywhere

Using the Oracle Cloud Database Management managed service

Single console for monitoring and management

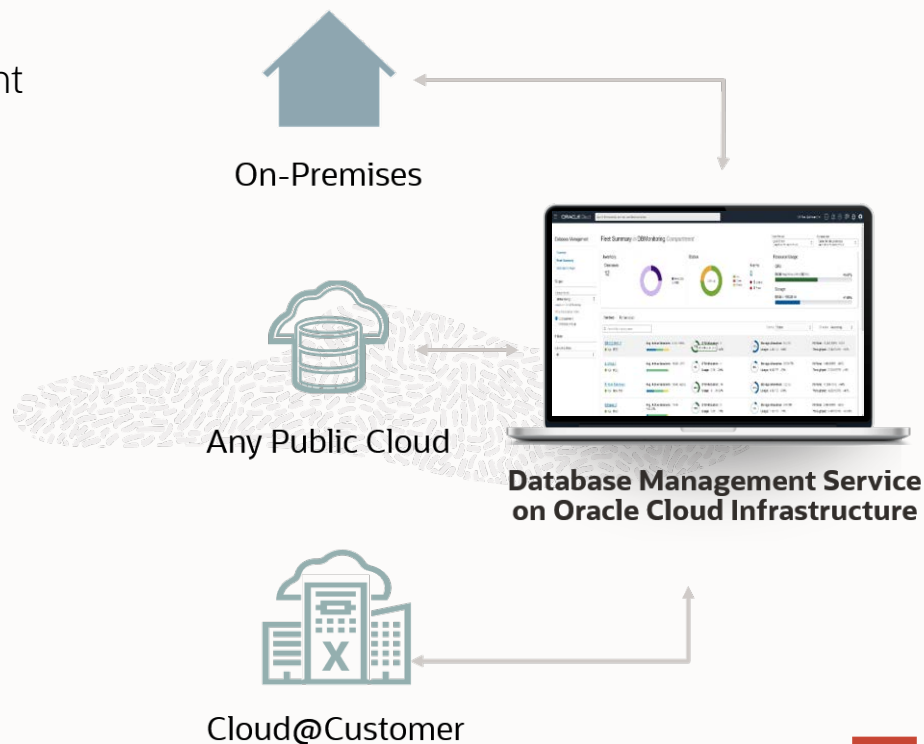
- Simple to adopt and use - fully managed cloud service
- Fleet-wide administration for greater operational efficiency

Unified database diagnostics and tuning

- Quickly troubleshoot issues with database diagnostics
- Optimize SQL with real-time SQL monitoring
- Optimize database performance

Simplified Database Administration

- Schedule SQL jobs
- Manage database parameters
- Manage Tablespaces



# Performance diagnostics, monitoring and management

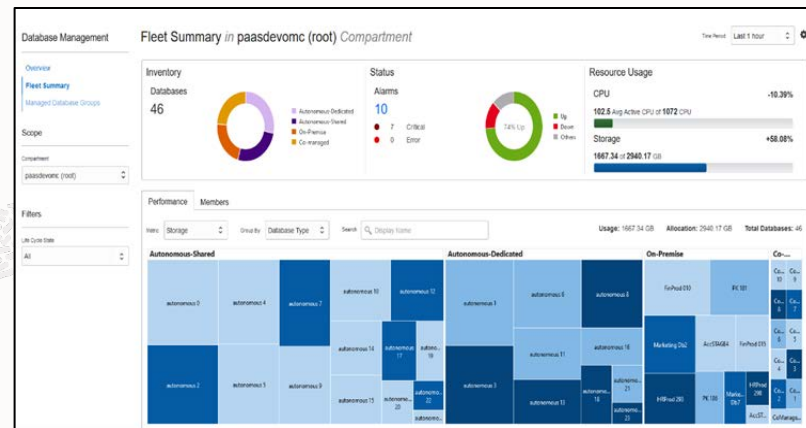
## Database Observability and Management

### Use case examples

- Administer database(s) quickly without having to install a tool on a on-premises server
- View database and infrastructure together for databases on-premises, hybrid, and multicloud
- Get in-depth diagnostic and SQL metric detail to enable faster troubleshooting

### Example uses

- DevOps to perform basic database administration without the need for an IT database specialist
- DBA use to quickly perform database housekeeping or problem triage
- IT to “Modernize” and transition management without having to rip and replace what they have



Database Management Performance Hub Fleet Summary



# Database Management

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



# Capabilities of Database Management service

Fleet monitoring

Status overview

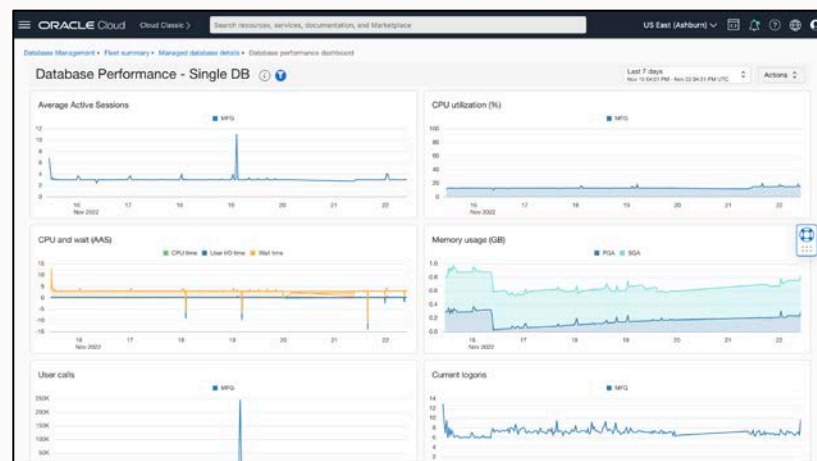
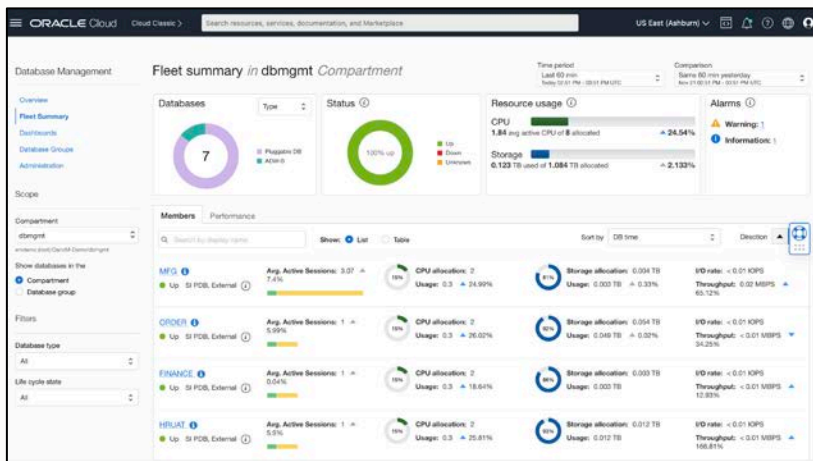
Resource trend analysis

Alarms summary

Custom monitoring dashboards

OCI dashboard framework design

Quick out-of-box configuration



# Capabilities of Database Management service

## Database system monitoring

Resource group encompassing individual components for system overview

Integrated navigation to system components from database target

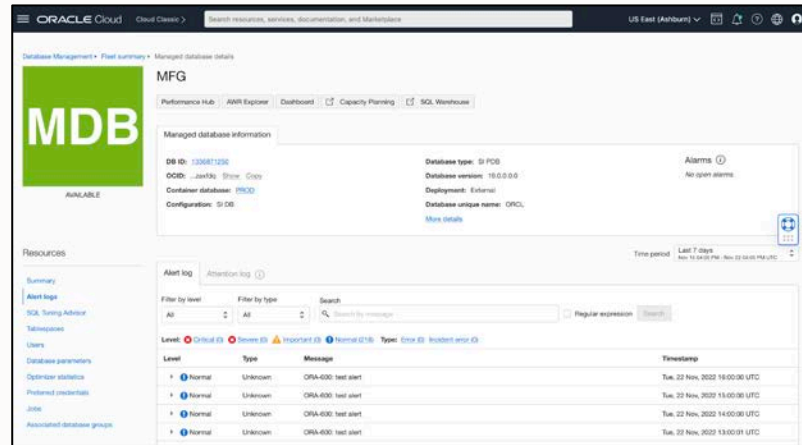
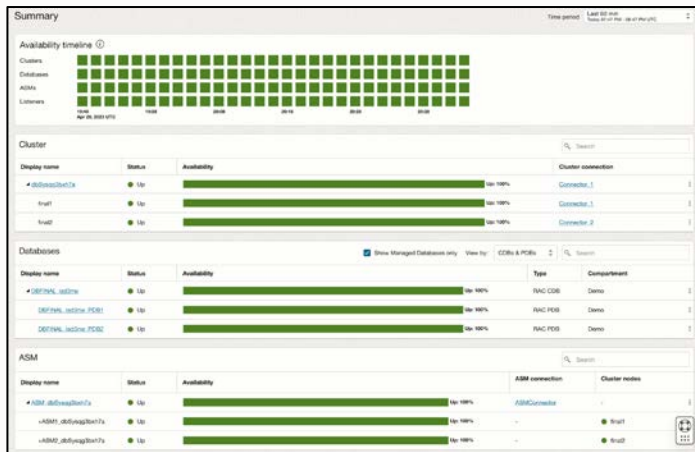
Out-of-box performance dashboards

## Database log monitoring

View attention and alert log entries

Search based on string or alert severity

Filter on criticality or alert type



# Capabilities of Database Management service

## Advanced SQL Monitoring

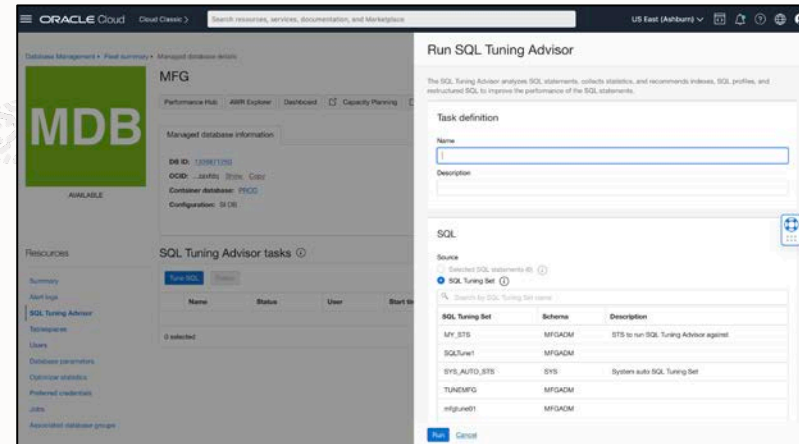
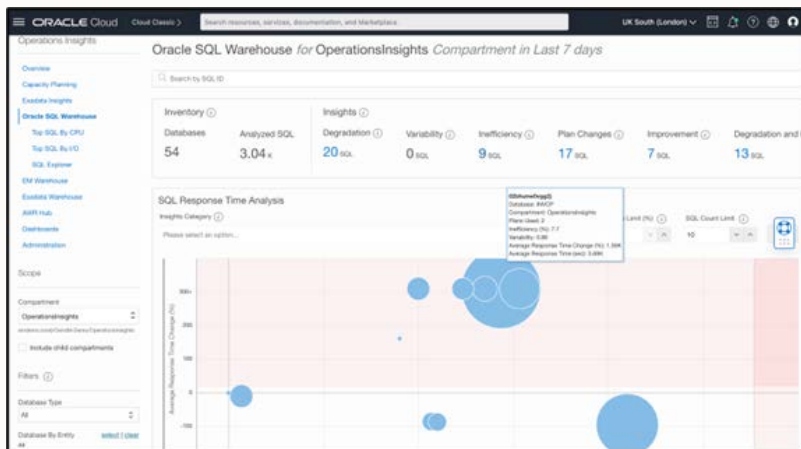
SQL Warehouse provides advanced, fleet-wide monitoring of SQL data

Groups performance trends and identifies the most impactful SQL IDs for tuning

## SQL Tuning

Recommendations for SQL performance on individual statements or SQL Tuning Sets

SQL Tuning Sets require generation on database to be used for analysis but can be scheduled automatically



# Capabilities of Database Management service

## Performance Hub

ASH Analytics

SQL Monitoring

Top Activity Lite

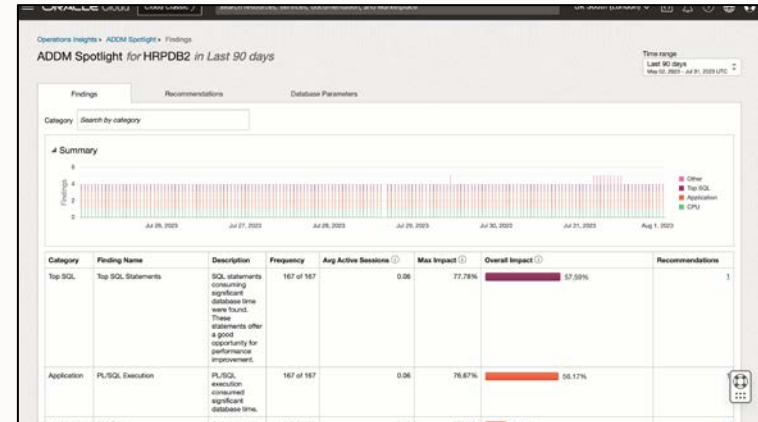
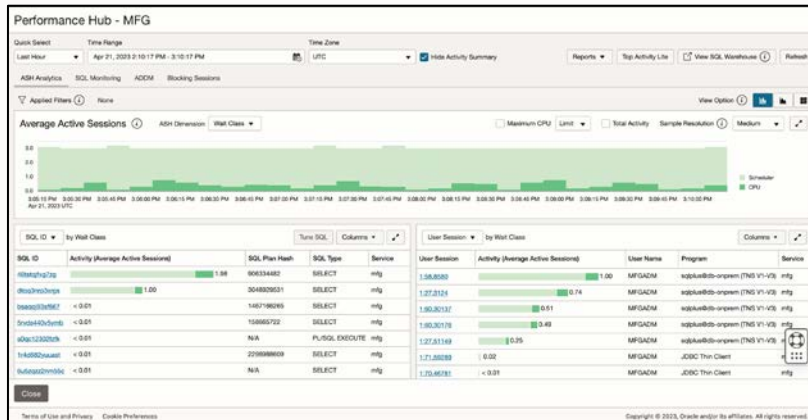
Blocking sessions

## ADDM Spotlight

Long-term (25 month) historical analysis of ADDM findings over time

Identify chronic issues over entire workload

High-level fleet overview





# Decision: replace or supplement what you have?

Inventory and review the tools your business has



Common to uncover many different monitoring tools

- Database tools
- IT infrastructure monitoring tools
- APM tools
- AIOps tools
- Log tools
- Observability tools...

Are they designed for

- Modern apps, databases and business?
- Client server or pre-cloud architecture?

Its advantageous for tools to integrate, provide insight across the full stack

- Tool overlap takes more resources and costs more
- As complexity rises, legacy tools fall short
  - Example, troubleshooting a database for a Kubernetes app
  - Inability of tool to scale or manage broader database deployments like hybrid or multicloud
- Tool doesn't support currently supported Oracle product releases or deployment choices
  - Watch for terms like “*Compatible*” and check with your vendor on what that means and how they test



# Summary

Key capabilities for managing databases together

## Monitor and manage many databases

Unified view and insight, observability and management of Oracle Databases across on-premises, cloud, hybrid, multicloud deployments

## Performance diagnostics

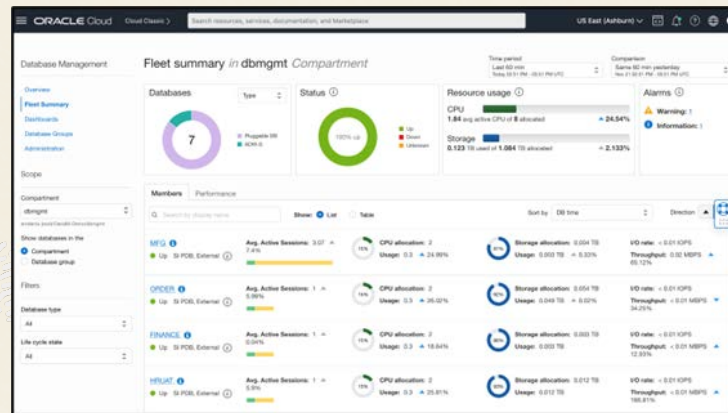
Integrated view of database activity for easy performance diagnostics

Includes ASH Analytics, SQL/ Session details, blocking sessions and SQL Tuning Advisor, etc.

Advanced execution plan analysis for monitoring and optimization

## Database administration

Tablespace management, database parameter configuration, user management, TCPS support and backup management, etc.



Database Management Status Overview

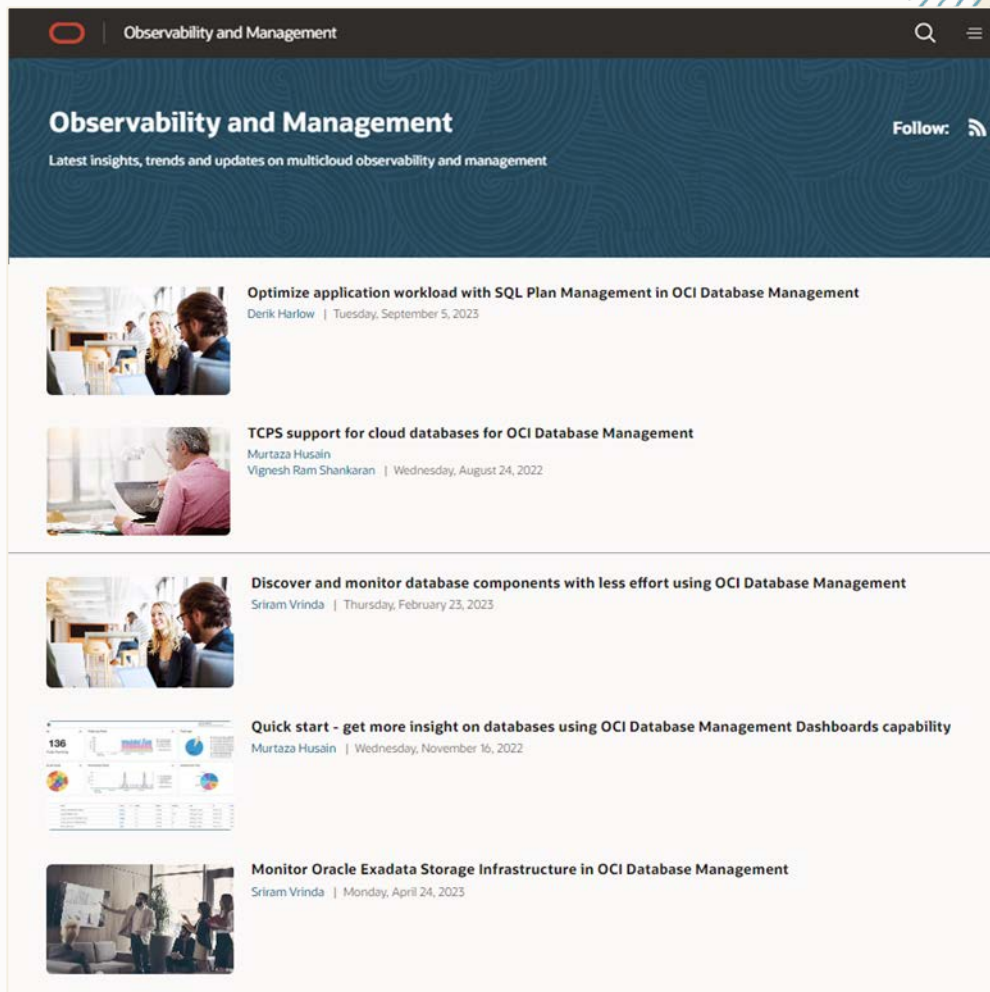




New capabilities, features, and support continuously being added

You just log in and use them

[Blogs.oracle.com/observability](https://blogs.oracle.com/observability)



# Learn More

1. [Oracle.com/observability](https://www.oracle.com/observability/)
2. Videos: [A New Platform for Multicloud Observability and Management](#) | [Channel](#)
3. <https://blogs.oracle.com/observability/>
4. [Observability and Management Webinars](#)
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