ORACLE

Capacity Planning

Technical Deep Dive on Observability and Management

Product Management
Observability and Management

Customer challenges

Gain 360-degree insight into the infrastructure and database investments

Understand IT estate

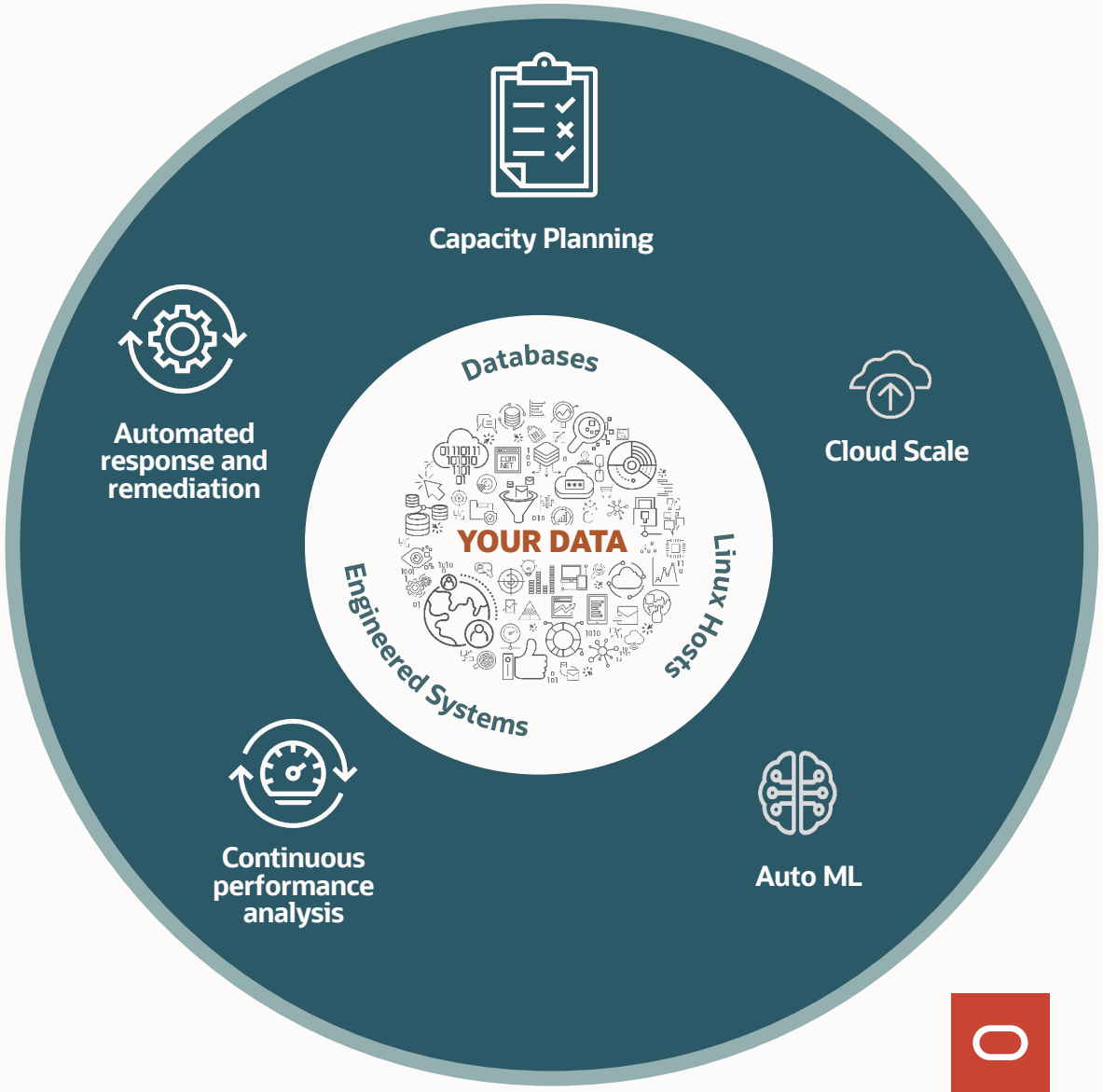
Optimize database estate

Ensure there's enough **capacity** without **overbuying**

Improve efficiency through **consolidation**

Improve performance **enterprise-wide** to keep up **with user demand**

Enable custom analytics on operational data using a **Data Lake**



Operations Insights overview

IT Analytics re-imagined for OCI Gen2 cloud

Insights across data center assets

- Reduce cost of operation
- Enhanced inventory visibility
- Continuous improvement
- Increase business productivity

Machine learning based and data driven capacity planning

- Optimize resource utilization

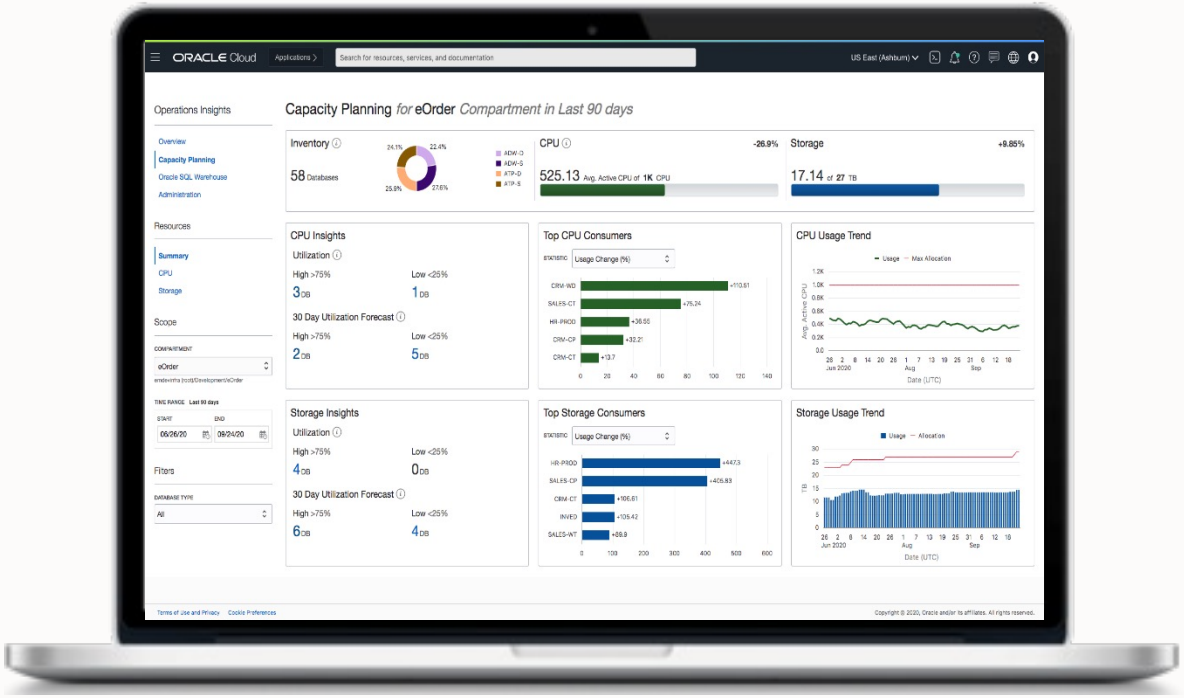
Proactive performance management

- Maximizing application performance
- Prevent outages

Operations Insights value propositions

Do simple stuff at scale on curated data and make harder stuff possible

- Enable business executives, database and DevOps personnel to make informed, data-driven compute resource and performance management decisions
- Anticipate and control CapEx spend using aggregated demand forecasts
- Improve application throughput by tracking and trending SQL execution performance across the enterprise



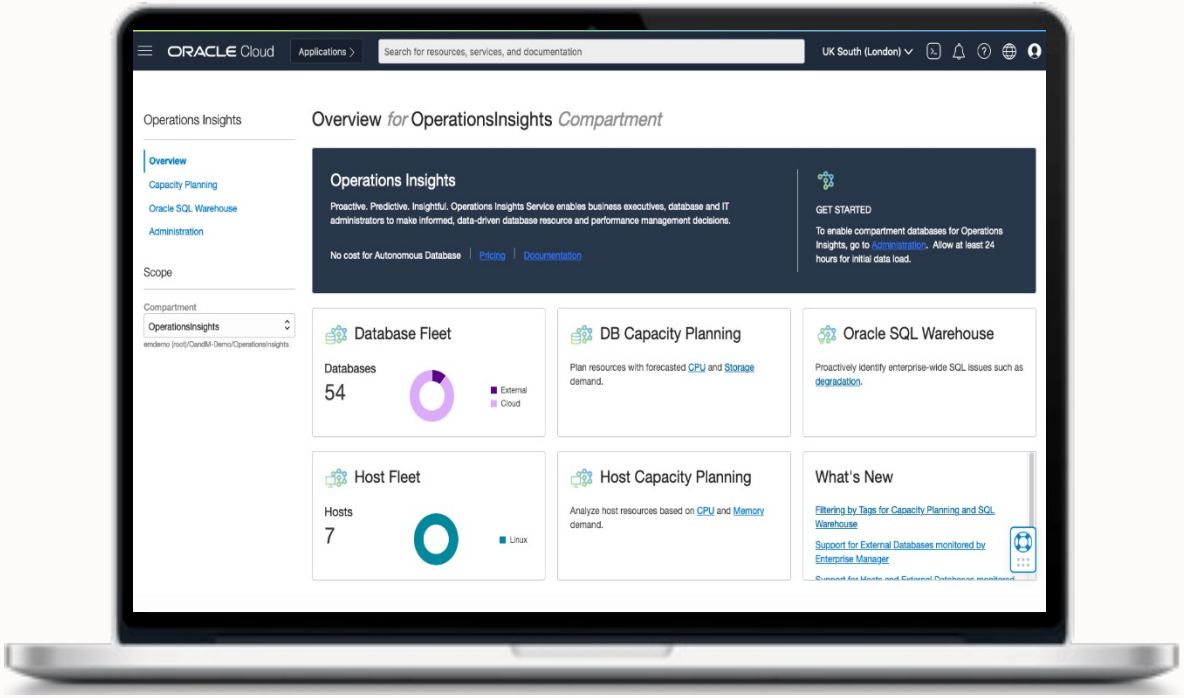
Operations Insights
Solution areas

Trend and forecast resource requirements
- Capacity Planning
- Databases
- Hosts

Insights into SQL performance
- SQL Warehouse

Exadata resource insights and database consolidation
- Exadata Insights

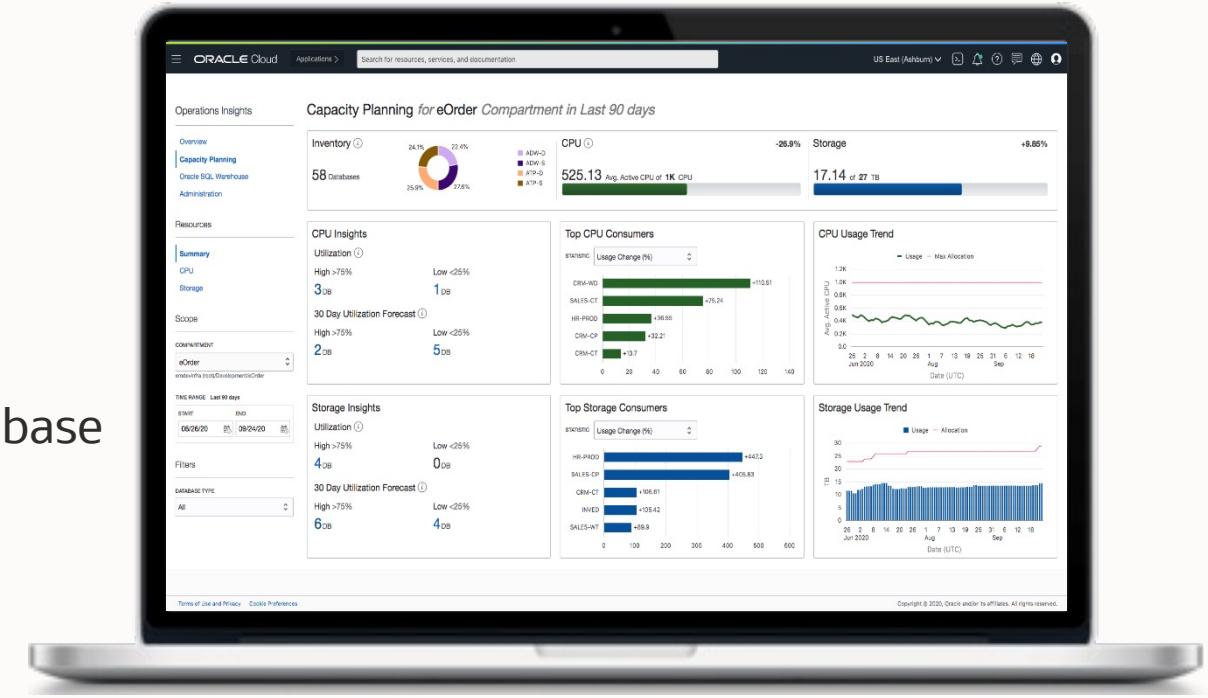
Data lake for custom analytics
- AWR Hub
- EM Warehouse
- Exadata Warehouse



Forecast resource requirements

Analyzing compute resource demand

- Aggregate demand compartment-wide
- Trend and forecast CPU and Storage needs
- Identify impending capacity issues
- Identify re-allocation opportunities
- Estimate cloud migration footprint
- Configure auto-scale for Oracle Autonomous Database



Forecast Capacity

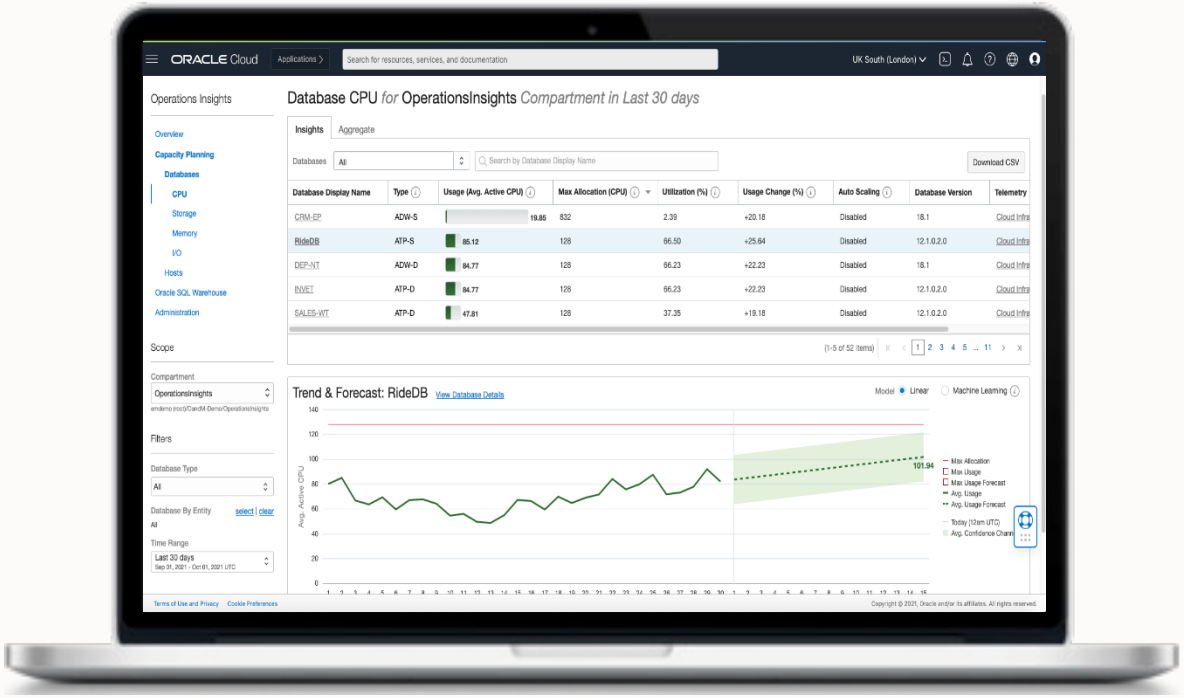
Predict demand from changing workloads

Trend and forecast resource demand using up to 25 months historical data

- Max and average demand forecasts
- Machine learning seasonality models
- Automatic prediction of near-term issues

Quickly isolate the largest, most utilized, and fastest growing databases

Identify under-utilized and over-allocated footprint for right sizing



Aggregation

Show everything and each together

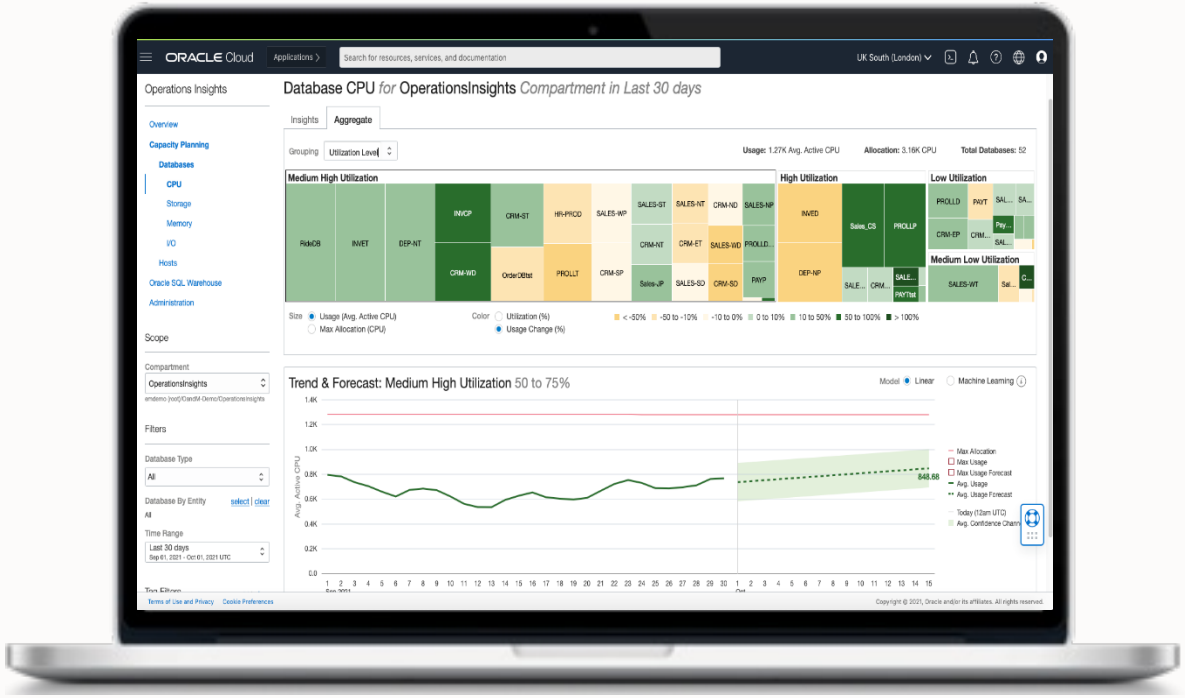
Treemap visualization of entire fleet

- Size by usage or allocation
- Group by DB type or utilization level
- Color by percent change or utilization

Trend and forecast by group or individual

See growth patterns over time for the entire fleet as well as each member

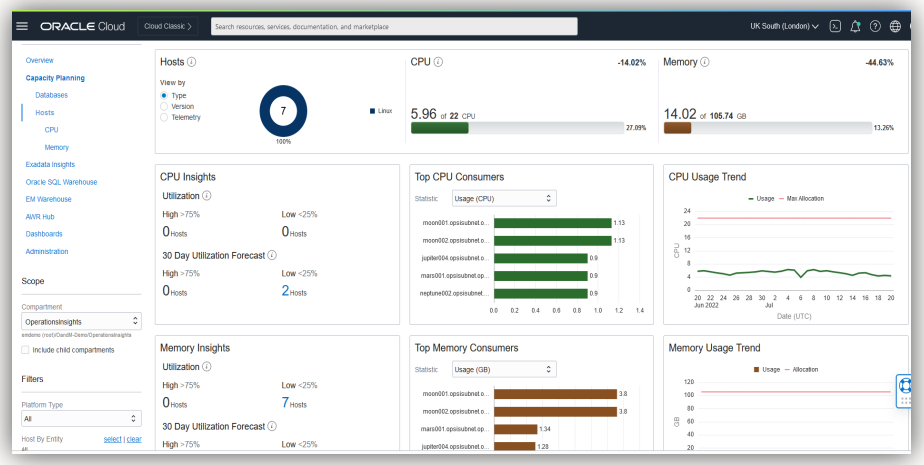
Quantify under-utilized footprint for repurposing



Capacity Planning for OCI Compute Instances

Show everything and each together

- Enterprise-wide analysis of resource utilization, capacity planning for OCI Compute instances
- Improve resource utilization by identifying under and over-utilized resources
- Identify systems projected to reach high utilization and deal with spikes in demand that are impossible to plan for ahead of time
- Identify total lead time to expand capacity forecast (via machine learning) based on long-term historic data to project future resource growth
- Track and avoid overspending due to excessive resource usage



Insights into SQL performance

Execution level SQL workload analysis

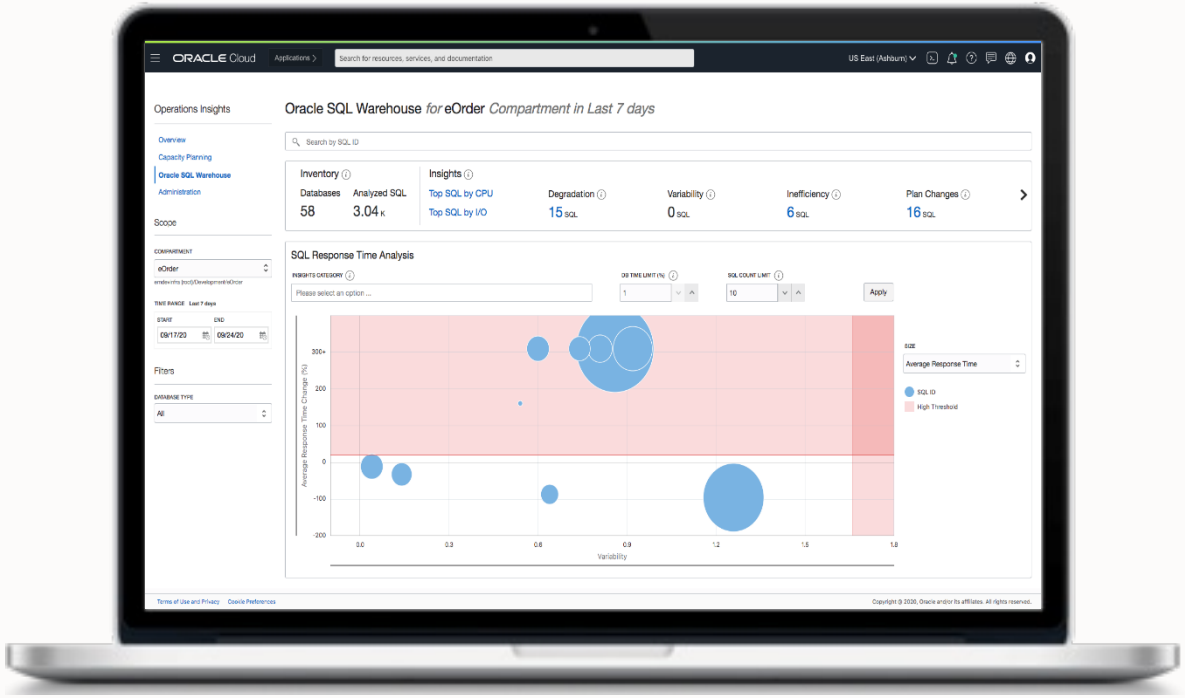
Detect performance degradation in business-critical SQL

Correlate performance and plan changes

Compare and diff execution plans for same SQL

Aggregate and compare across databases

Identify application scalability and inefficiency issues

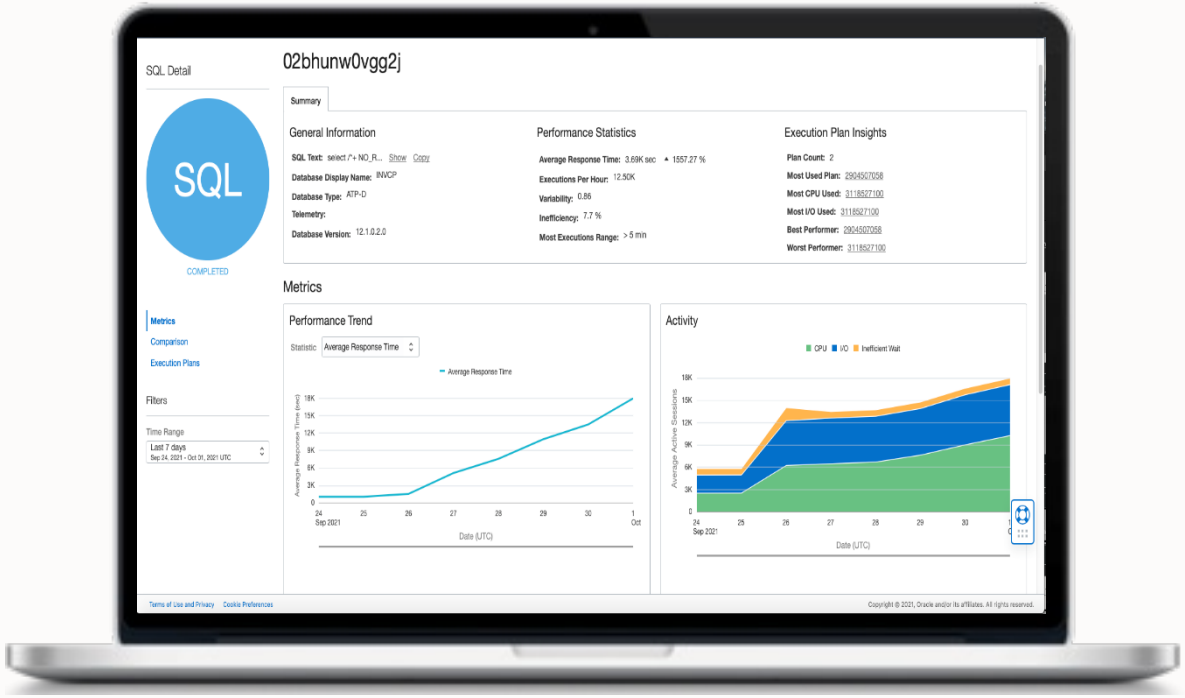


SQL details
Historical execution profiling

Performance of SQL statement over time
- DB time breakdown
- Average latency

Response time analytics
- By execution plan
- By latency bucket

Execution plan details



SQL Explorer

Interactively query application SQL history

Exploratory query-driven interface

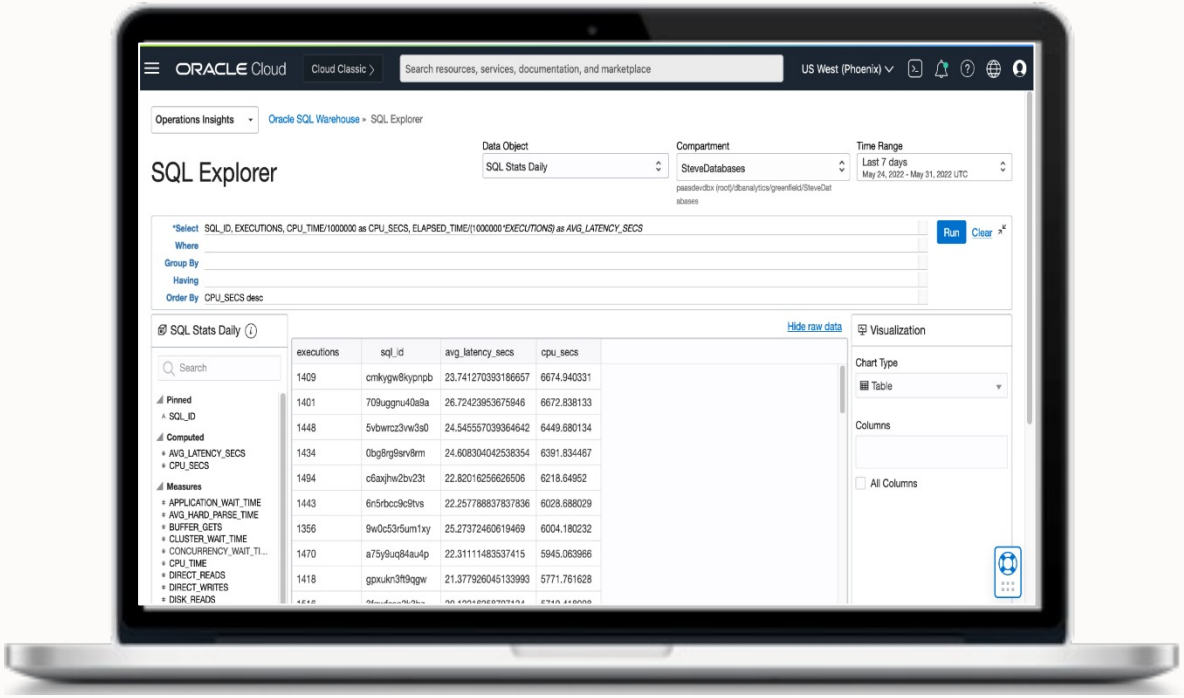
- Interactive, easy to use query builder
- Visualization of result sets

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



Oracle Exadata Insights

Forecast resource requirements

- Enterprise-wide analysis of resource utilization, capacity planning for Exadata
- Improve resource utilization by identifying under & over utilized resources
- Identify Exadata systems projected to reach high utilization
- Identify total lead time to expand capacity using machine learning based forecast based on long term historic data to project future resource growth
- Available to use with all Exadata systems i.e.
  - Oracle Exadata Database Service on Dedicated Infrastructure (ExaCS)
  - ExaC@C via EM only
  - Exadata (On-prem)