

Class Of SE

Security

ORACLE MANAGEMENT CLOUD - DEMO GUIDE

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OVERVIEW

The following guide has been designed to assist facilitators on how to drive the Security and Management ClassOf session.

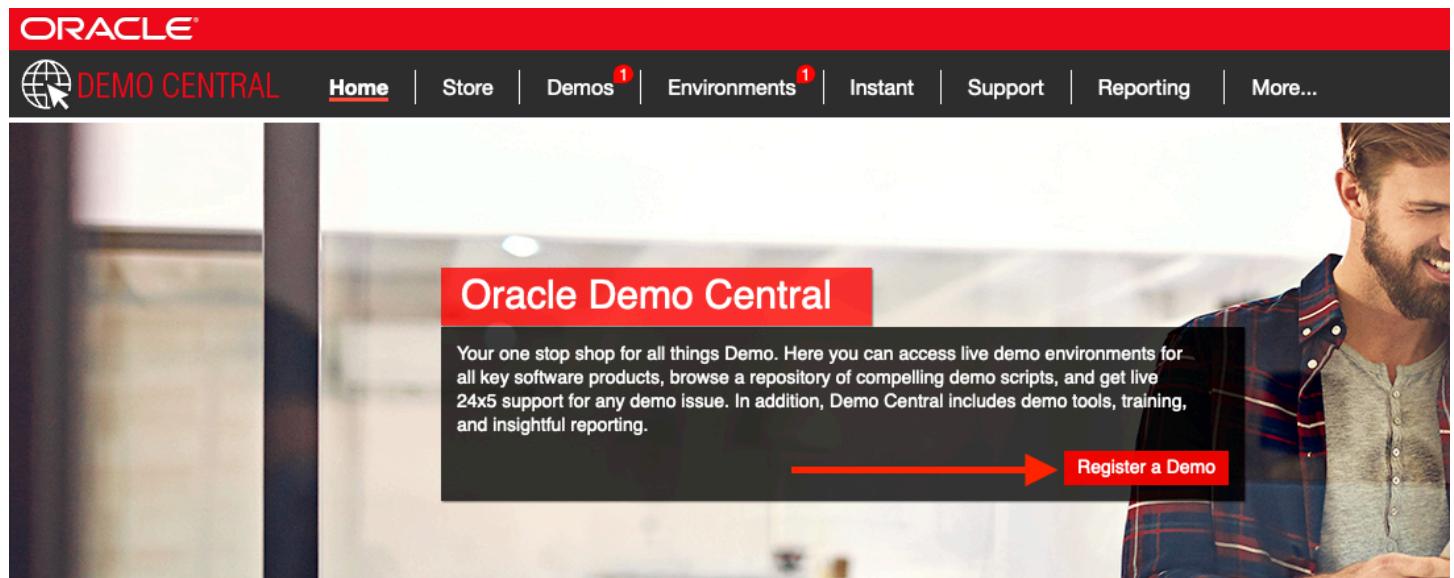
The intent of this document is to outline the items that must be considered during the Oracle Management Cloud Demo section of the training.

The individual modules allow you to get first hands-on exposure working with Oracle Management Cloud Service using a demo environment, where you will see how key features and functionality are deployed. The following demo instructions assume you understand the basics of Oracle Management Cloud Service including its problem statement, basic functions and logical architecture.

NOTE: OMC is a dynamic service that is, by design, constantly in flux. As a result, what you see in the console may not match exactly with the demo screenshots. Screenshots are provided solely for illustrative purposes to help guide you directionally through the OMC console.

Pre-requisites: Environment Registration

- Register your Oracle Management Cloud instance at <https://demo.oracle.com>. Click on “Register Demo”



- On the search bar type “Oracle Management Cloud” and click on the “**Oracle Management Cloud(OMC)**” Demo

The screenshot shows the Oracle Demo Registrations interface. At the top, there are tabs for "Demo Registrations" (which is selected) and "Workshop Requests". Below this, a section titled "Featured Demos" lists five options: EPM Enterprise Planning & Budgeting Cloud Service (EPBCS), Fusion GSI - ERP, SCM, HCM, Student & Engagement Cloud, Oracle Service Cloud (RightNow), Oracle Field Service Cloud (TOA), and Oracle Management Cloud (OMC). Each item has a "Register Demo" button and a "Click Through Demo" button. Below the featured demos is a search section titled "Search Demo Titles" with a "Filter by Product" dropdown set to "Oracle Management Cloud". A red arrow points from the "Filter by Product" dropdown to the search term "Oracle Management Cloud".

Demo Title	Demo Scripts	Access Type	Demo Description
Oracle Management Cloud (OMC)			Oracle Management Cloud (OMC) is a suite of next-generation, integrated monitoring, management and analytics solutions delivered across end-user and infrastructure data, enabling rapid trouble-shooting and the ability to run IT like a business. The demo includes proactive monitoring, diagnostics and so on.

- Fill the form with the information about the training, dates and timeframe. You can add additional information about the business need for this instance. Once completed, click “**Next**”

The screenshot shows the "Details" step of a demo registration form. The form is titled "Demo Title: Oracle Management Cloud (OMC) - (AP)". It includes sections for "Details", "Demo Resource Details", "Activity Dates", and "Additional Information".

Details: Demo Purpose is set to "Oracle or Partner Training". Customer Name is "ClassOf 2019" (12 of 80).

Demo Resource Details: Demo Resource Request Type is "A new Deal Server Environment".

Activity Dates: Time Zone is "Europe/Madrid". Activity Start Date and End Date are both "23-Jun-2019". Activity Start Time is "06:00" and Activity End Time is "20:00". A timeline grid shows availability from 00:00 to 23:00. A legend indicates green squares for "Available" and yellow squares for "Low Availability". A note states: "(*) Hours with asterisks require approval."

Additional Information: A text area contains "This instance will be used for ClassOf SE 2019 demo purposes." A checkbox at the bottom says "I have special requirements which I would like to discuss, please create a ticket to initiate this discussion."

At the bottom, there are "Previous" and "Next" buttons. A red arrow points from the "Next" button to the right.

- Select Horizontal (Not-industry specific) from the drop-down menu,
- Add any additional facilitator / Lab assistant that would need access to this environment,
- Select all the products check-box,
- Click on “Next”

Demo Registrations Workshop Requests

Will your demo include content and/or functionality that is HORIZONTAL or INDUSTRY-SPECIFIC? *

Horizontal (NOT Industry-Specific)

Add Others to this Demo (this can also be done after the Demo is registered)

Remove Member Primary Sales Contact alejandro.casas@oracle.com

Select Products you plan to include in your Demo *

Products

PaaS & IaaS

Details Additional Info Confirmation

Next >



- Review the details and submit your request. Instance will be provisioned according to environment availability. We strongly recommend booking your instance with at least one week previous the training. Once your form has been submitted, you will receive an email with details about the environment and the admin assigned to this request.

Demo Registrations Workshop Requests

In compliance with Oracle security policies, I acknowledge I will not load actual confidential customer data or Personally Identifiable Information (PII) into my demo environment.

Show All Registration Details Additional Information

Registration Details

Customer Name	ClassOf 2019	Activity Start Date	23-Jun-2019 06:00
Demo Title	Oracle Management Cloud (OMC)	Activity End Date	23-JUN-2019 20:00
Demo Purpose	Oracle or Partner Training	Demo Dates	23-JUN-2019 06:00 to 20:00
Opportunity Number	N/A	Time Zone	Europe/Madrid

Additional Information

This instance will be used for ClassOf SE 2019 demo purposes.

Additional Information

Industry	Horizontal (NOT Industry-Specific)
Demo Team	alejandro.casas@oracle.com (Primary Sales Contact)
Products	PaaS & IaaS > Management > Application Performance Monitoring Cloud Service PaaS & IaaS > Management > Analytics Cloud Service PaaS & IaaS > Management > Infrastructure Monitoring Cloud Service PaaS & IaaS > Management > Log Analytics Cloud Service PaaS & IaaS > Management > Orchestration Cloud Service PaaS & IaaS > Security > Configuration & Compliance Cloud Service PaaS & IaaS > Security > Security Monitoring & Analytics Cloud Service

Submit

A red arrow labeled '4' points to the 'Submit' button at the top right of the 'Confirmation' step screenshot.

Logging to OMC

1. Let's start by logging in. Use the URL and Identity Domain provided during registration process.

SIGN IN TO
ORACLE CLOUD

Traditional Cloud Account

Enter your Identity Domain

omcinternal

Remember my choice (?)

Go

ORACLE

2. Login with the credentials provided during registration.

SIGN IN TO
ORACLE CLOUD

Traditional Cloud Account

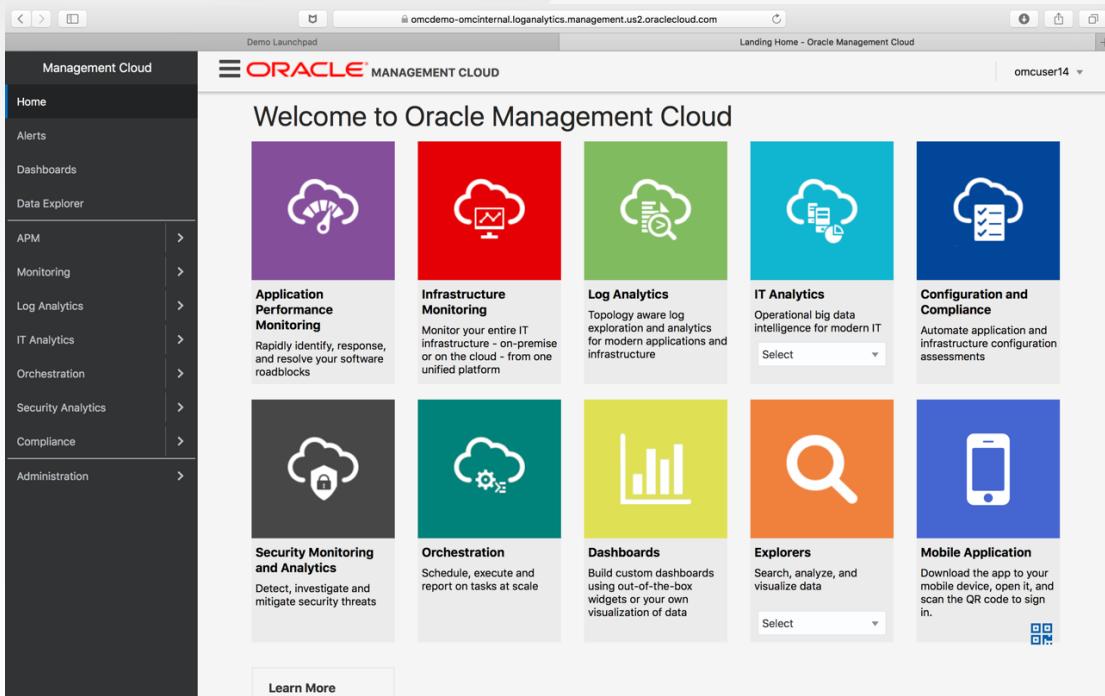
Welcome omcinternal change domain (?)

omcuser14

Can't access your account?

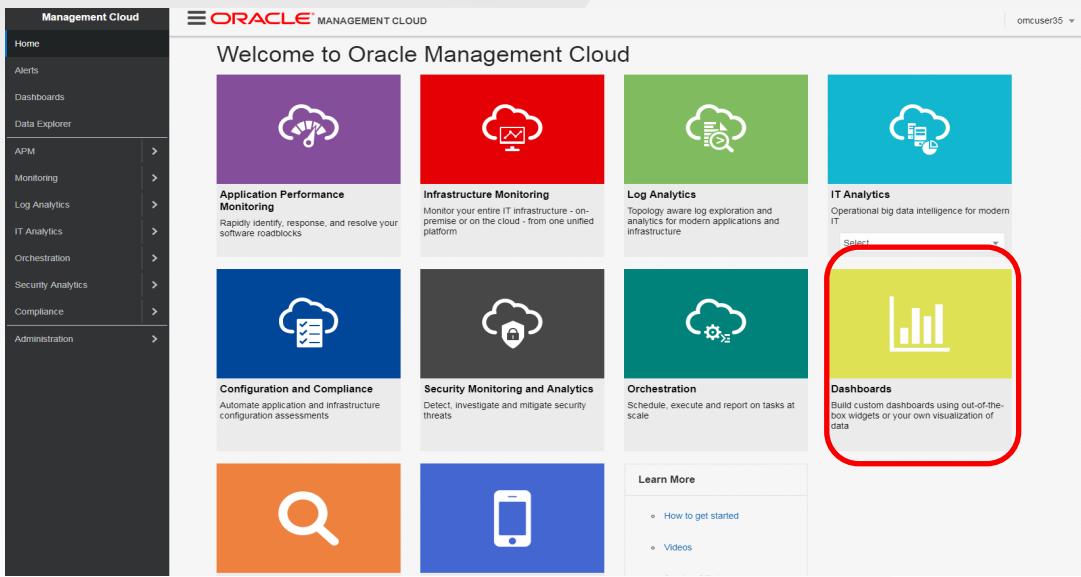
Sign In

3. Welcome to the OMC launch page. You can now start the regular exercises to learn and practice OMC solutions [Note: The Menu may appear differently from here, depending on how its rendered and your screen resolution. If that happens, you can always access this pulldown menu by clicking on the Hamburger menu. This is the Global menu with three bars on the top-left corner of your display as shown next to the Oracle Management Cloud logo]

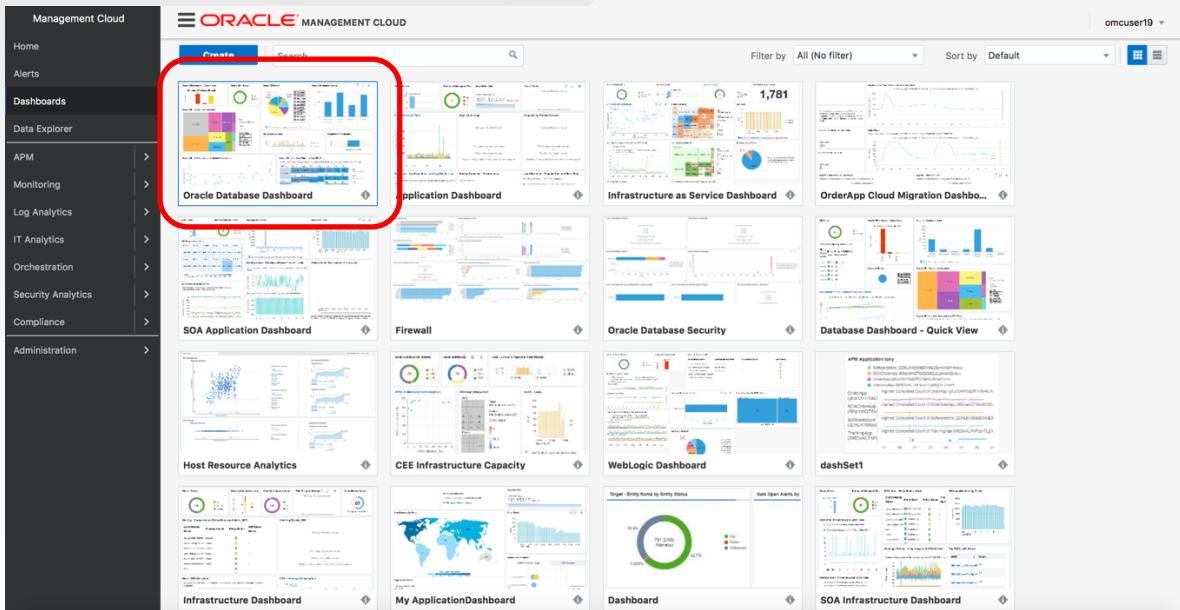


Demo 1: Centralized Visibility to entire Oracle DB Infrastructure

1. Click on the Dashboard option as shown in the picture



2. ‘Oracle Database Dashboard’ is a custom dashboard designed to manage Oracle Database Infrastructure. This dashboard demonstrates OMC’s capability of managing the Oracle DB Infrastructure across multiple cloud service providers in the single dashboard.

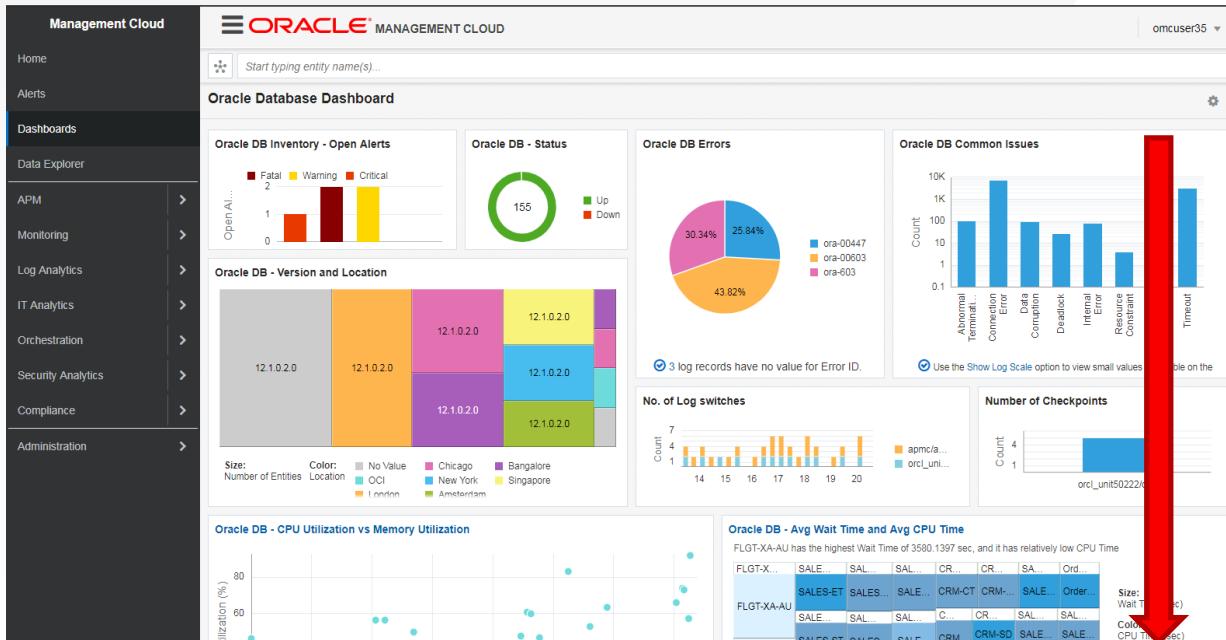


3. Click “Oracle Database Dashboard”

This provides complete visibility to your database, whether those are running in on-premises monitored by multiple Enterprise Managers, deployed in the cloud and natively monitored by OMC. It shows the database and breakdown by versions, alerts, their performance, errors reported in the logs of database infrastructure, capacity utilization, security threats and compliance.

We have not applied any filters on this dashboard, so you are seeing the complete Oracle DB infrastructure of the organization.

4. Scroll Down



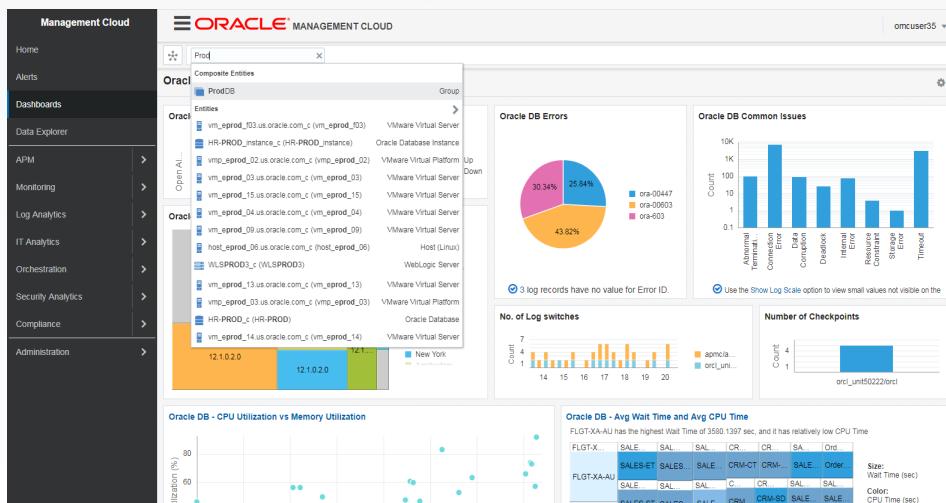
These are the remaining widgets: CPU Utilization and Memory Utilization, Average Wait time and Average CPU Time, Oracle DB Inventory – Average Compliance, Threats and Oracle DB inventory.

The screenshot displays the Oracle Database Dashboard within the Oracle Management Cloud interface. The left sidebar shows navigation links for Home, Alerts, Dashboards, Data Explorer, APM, Monitoring, Log Analytics, IT Analytics, Orchestration, Security Analytics, Compliance, and Administration. The main dashboard area contains several widgets:

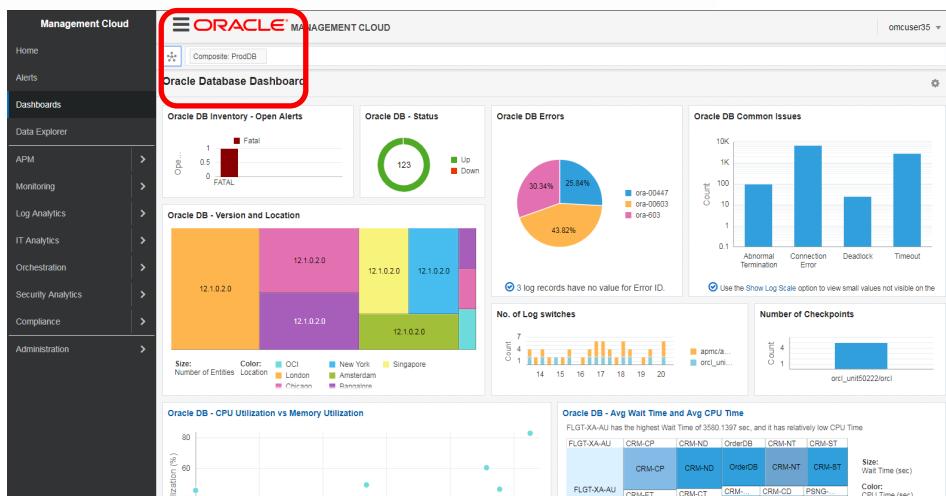
- Oracle DB - CPU Utilization vs Memory Utilization:** A scatter plot showing Memory Utilization (%) on the Y-axis (0 to 80) versus CPU Utilization (%) on the X-axis (0 to 70). Data points are colored by CPU Time (sec), with a color scale from 0 (light blue) to 2800 (dark blue).
- Oracle DB - Avg Wait Time and Avg CPU Time:** A table listing entities along with their average wait time and CPU time. The table includes columns for Entity Name, Sales, CRM, Order, and various sub-components like SALES-ET, CRM-CT, etc. A note indicates that FLGT-XA-AU has the highest wait time of 3580.1397 sec.
- Oracle DB Inventory - Avg Compliance ...:** A donut chart showing a Compliance Score of 38.
- Oracle Databases with Threats:** A bar chart showing Threat levels (0.5, 2.0, 3.5) for different databases, with 'findb' having the highest threat level.
- Oracle DB Inventory:** A table listing Oracle DB inventory entities with columns for Entity Display Name, Entity Type, Entity Status, and Open Alerts. Entities listed include orderAppASM2, apmc/apmc2, ca3579 compute-5906*, and omcoci sub030508394*.

Let us now filter by Production Databases group which a typical DBA will be interested in managing.

5. Type **Prod** in global context bar
6. Select **ProdDB** Group (If is not selected already)
7. This is a group of Production Oracle Databases.



The content of all the widgets now gets filtered for the ProdDB group.



8. Scroll down. From the 'Oracle DB Inventory' widget, we can see that one of the Oracle DB instance has open alert. ***Note that this is "live" environment and the number of alerts for entities may look different from what is shown in these screenshots. Please pay more attention to the steps, rather than the exactness of the alert data displayed.***

9. If ‘apmc/apmc2’ is not shown at the top, please search it in the search box.

10. Hover over ‘apmc/apmc2’

11. Click View More icon i.e. three horizontal dots

The screenshot shows the Oracle Management Cloud interface. On the left, the navigation bar includes 'Management Cloud', 'Home', 'Alerts', 'Dashboards' (selected), 'Data Explorer', 'APM', 'Monitoring', 'Log Analytics', 'IT Analytics', 'Orchestration', 'Security Analytics', 'Compliance' (with a red arrow pointing to 'apmc/apmc2'), and 'Administration'. The main dashboard features several cards: 'Oracle DB - CPU Utilization vs Memory Utilization' (a scatter plot), 'Oracle DB - Avg Wait Time and Avg CPU Time' (a heatmap), 'Oracle DB Inventory - Avg Compliance ...' (a donut chart with a score of 20), 'Oracle Databases with Threats' (empty), and 'Oracle DB Inventory' (a table). The 'Oracle DB Inventory' table has a red box around the row for 'apmc/apmc2', which is listed as an 'Oracle Database Instance' with a red downward arrow under 'Entity Status'.

Entity Display Name	Entity Type	Entity Status
apmc/apmc2	Oracle Database Instance	***
AdvertiseDB-XA-CH	Oracle Database	
AdvertiseDB-XA-CH_1	Oracle Database Inst	
AdvertiseDB-XA-CH_2	Oracle Database Inst	
AdvertiseDB-XA-CH_3	Oracle Database	

This opens the entity card for the entity which gives the summary of the open alert.

12. Click number '1' next to Total alerts in the entity card header

The screenshot shows the Oracle Management Cloud interface. On the left, the navigation menu includes Home, Alerts, Dashboards (selected), Data Explorer, APM, Monitoring, Log Analytics, IT Analytics, Orchestration, Security Analytics, Compliance, and Administration. The main area displays the 'Oracle Database Dashboard'. A central entity card for 'apmc/apmc2 Oracle Database Instance' is shown, indicating it is 'Down since Feb 12, 2018 5:08 PM' with a duration of '117d 6h 50m 4s'. It has 1 total alert. Below the card is a chart titled 'Oracle DB - CPU Utilization vs Memory Utilization' showing CPU utilization (0-80%) and memory utilization (0-40%) across various database instances. To the right is a heatmap titled 'Wait Time and Avg CPU Time' showing wait times and CPU times for various database components. At the bottom is a table titled 'Inventory' listing database entities with their status and open alerts. The 'Open Alerts' column shows a red downward arrow for the first row, indicating 1 open alert.

Clicking on the alert count link takes to the alert page which provides full details regarding the open alert.

The screenshot shows the Oracle Management Cloud interface. The left sidebar is titled "Management Cloud" and includes links for Home, Alerts, Dashboards, Data Explorer, APM, Monitoring, Log Analytics, IT Analytics, Orchestration, Security Analytics, Compliance, and Administration. The main content area is titled "Alerts" and displays a summary table with counts for Total (1), Fatal (1), Critical (0), Warning (0), and Informational (0) alerts. Below this is a detailed table with columns: Severity, Message, Entity, Entity Type, Last Updated, and Duration. One alert is listed: "apmc/apmc2(Oracle Database Instance) is Down. Reason : Test event DOWN" with Entity "apmc/apmc2", Entity Type "Oracle Database Instance", Last Updated "2/23/18 4:55:57 AM", and Duration "117d 6h 50m 27s".

Total	Fatal	Critical	Warning	Informational
1	1	0	0	0

Severity	Message	Entity	Entity Type	Last Updated	Duration
●	apmc/apmc2(Oracle Database Instance) is Down. Reason : Test event DOWN	apmc/apmc2	Oracle Database Instance	2/23/18 4:55:57 AM	117d 6h 50m 27s

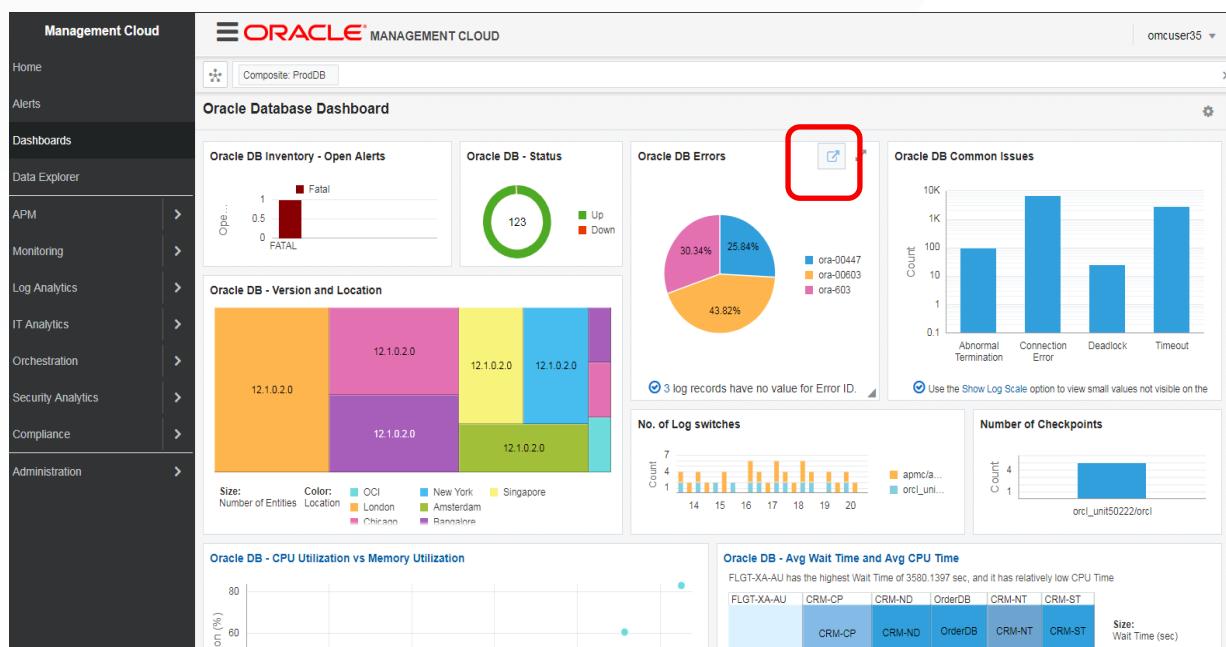
Demo 2: Rapid Problem Isolation

1. Navigate back to ‘Oracle Database Dashboard’. (Go to Dashboards, click on this Dashboard again and remove **apmc/apmc2** from global context list at the top ... next to the Composite: **ProdDB** in the box with a *)

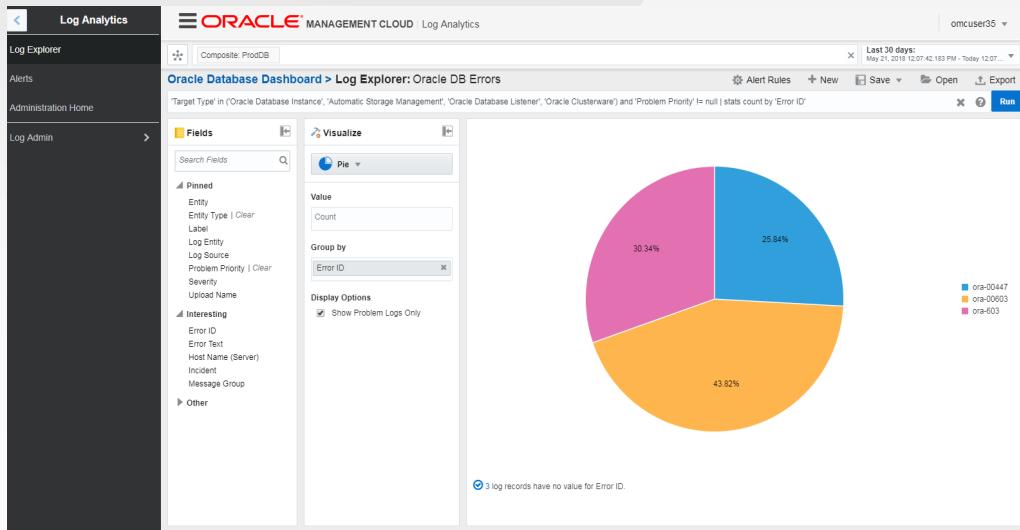
The widgets ‘Oracle DB Errors’ and ‘Oracle DB Common Issues’ give overview of the DB errors/issues in the infrastructure.

Now, let’s see how we can diagnose the potential root cause of one of the issues in the infrastructure.

2. Click on highlighted icon in ‘Oracle DB Errors’ widget



This will open the widget in the Log Explorer



3. Replace the Log Explorer query with “*”. This will bring all the logs from the **ProdDB** infrastructure.
4. Click Run
5. If the ‘Records with Histogram’ is not displayed, Click ‘Pie’ dropdown in Visualize Palette. This will open visualization selector.
6. Select ‘Records with Histogram’

This will show all the logs for the **ProdDB** infrastructure as records with Histogram.

7. Click on the Topology icon on top left if is not already displayed.

The screenshot shows the Oracle Management Cloud Log Analytics interface. On the left, there's a sidebar with 'Log Explorer', 'Alerts', and 'Administration Home'. The main area has a title 'Oracle Database Dashboard > Log Explorer: Oracle DB Errors'. It features a 'Fields' section with pinned and interesting fields like Entity, Entity Type, Label, Log Entry, Log Source, Problem Priority, Severity, Upload Name, File, Host Name (Server), Image, OS Process ID, Oracle Process ID, and Other. Below this is a 'Visualize' section with a dropdown set to 'Records with Histogram'. A histogram chart shows the count of records over time from May 22 to June 19. A note says 'Use the Show Log Scale option to view small values not visible on the chart'. Below the chart is a 'Time (UTC+5:00)' dropdown set to 'Original Log Content' showing log entries for AUTO SGA parameters. A red box highlights the topology icon in the top-left corner of the visualization area.

This will show the topology of the **ProdDB** group.

8. Click on upward arrow on the bottom right of topology

The screenshot is identical to the previous one, showing the Oracle Management Cloud Log Analytics interface with the 'Records with Histogram' visualization. A red box highlights the upward arrow icon in the bottom-right corner of the visualization area.

This will show various options for viewing topology.

9. Click on Settings icon and Click ‘Associated Entities’ check box

The screenshot shows the Oracle Management Cloud Log Analytics interface. On the left, there's a sidebar with 'Log Explorer', 'Alerts', 'Administration Home', and 'Log Admin'. The main area has a title 'Oracle Database Dashboard > Log Explorer: Oracle DB Errors'. At the top right, there's a dropdown for 'Last 30 days' and a 'Run' button. Below the title, there are tabs for 'Entity Map', 'Tier', 'Node Value', and 'Alert Count'. A color legend indicates status: Down (red), Error (orange), No Value (yellow), Not Heard From (light blue), Unknown (dark blue), and Up (green). A red box highlights the 'Associated Entities' checkbox in the top right corner of the main content area. The content area includes sections for 'Fields' (with pinned and interesting filters), 'Visualize' (with 'Records with Histogram'), 'Field Summary' (with a histogram chart), and 'Original Log Content' (listing log entries from June 20, 2018).

This will show all the associated entities for the Oracle Databases in the **ProdDB** group.

The screenshot shows the Oracle Management Cloud Log Analytics interface, similar to the previous one but with a different view. It features a large, complex network diagram at the top labeled 'Composite: ProdDB' showing connections between various entities like Host, Storage, and Database. Below this is the same 'Log Explorer' interface with its respective tabs, color legend, and log content section. The 'Associated Entities' checkbox is also visible in the top right of the main content area.

From here we can see that one Automatic Storage Management Instance i.e. orderAppASM2 is down since Feb 12 2018.

The screenshot shows the Oracle Management Cloud Log Analytics interface. On the left, there's a sidebar with 'Log Explorer', 'Alerts', 'Administration Home', and 'Log Admin'. The main area has a title 'ORACLE MANAGEMENT CLOUD Log Analytics' and a sub-section 'Composite ProdDB'. Below this is a grid of entities, with 'orderAppASM2' highlighted by a red box and marked as 'Down' with a red arrow icon. A tooltip says 'Down since Feb 12, 2018 5:08 PM' and '1 Total Alerts'. To the right is a histogram titled 'Field Summary' with 'Histogram' selected. The x-axis represents dates from May 22 to June 19, and the y-axis represents 'Count' from 10K to 50K. Below the histogram is a section for 'Original Log Content' showing a single log entry from Jun 20, 2018, at 12:06:11 PM.

Let's fetch the logs from the time window when the entity went down.

10. Action: Click on 'Last 30 days' in time selector drop down

11. Action: Click Custom

12. Action: Select custom Range radio button. Provide start date as 6th Feb 2018.

This screenshot shows the same Log Analytics interface as above, but the time selector dropdown is open. The 'Range' option is selected, and the start date is set to '06/02/2018'. The end date is set to '06/20/2018' and the time is '12:09:42.254 PM'. The rest of the interface remains the same, showing the histogram and log content for the specified range.

13. Provide end date of Feb 16, 2018

14. Click Apply

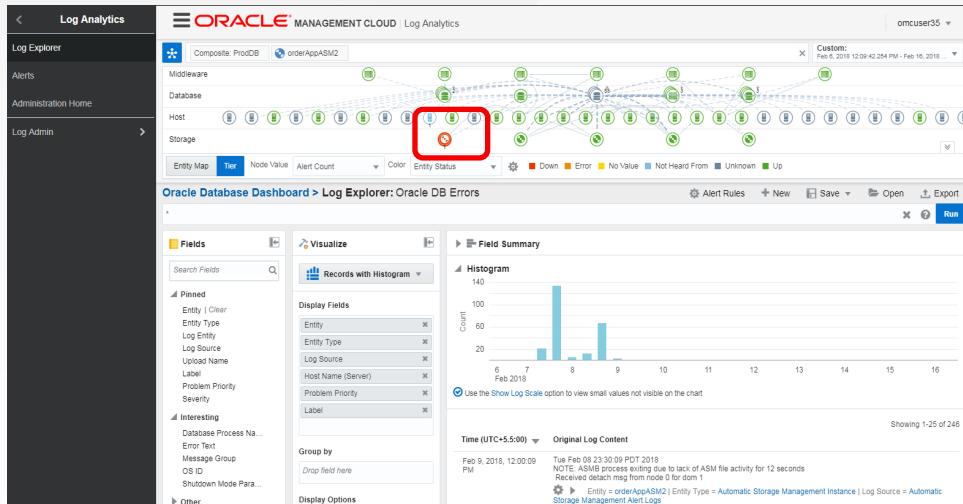
This screenshot shows the Oracle Management Cloud Log Analytics interface. On the left, there's a navigation sidebar with options like Log Explorer, Alerts, Administration Home, and Log Admin. The main area is titled "Oracle Database Dashboard > Log Explorer: Oracle DB Errors". It features a histogram titled "Field Summary" with a Y-axis labeled "Count" ranging from 0 to 70K and an X-axis showing dates from May 22 to June 19. A red box highlights the date range from Feb 16 to Feb 17. Below the histogram, there's a section for "Original Log Content" showing two log entries from Feb 16, 2018, at 12:06:11 PM.

This will filter the logs for the provided custom time Note: Results may delay based on actual environment usage.

This screenshot shows the same Log Analytics interface as the previous one, but with a different time range selected in the top right: "Feb 5, 2018 12:09:42.254 PM - Feb 16, 2018". The histogram shows a much larger peak around Feb 11, with a red box highlighting the date range from Feb 5 to Feb 16. The "Original Log Content" section below shows log entries from Feb 16, 2018, at 12:09:40 PM.

15. Click on the down ASM instance 'orderAppASM2' from topology

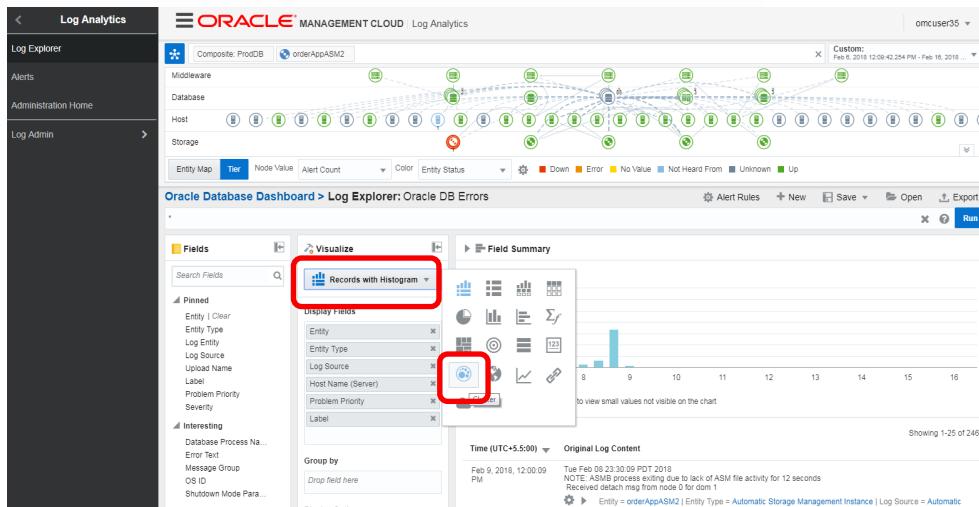
This will add 'orderAppASM2' in global context and filter to show logs coming only from orderAppASM2.



The screenshot shows the Oracle Management Cloud Log Analytics interface. In the top navigation bar, 'Log Analytics' is selected. Below it, the 'Composite: ProdDB' and 'orderAppASM2' nodes are shown in a network diagram. A red box highlights the 'orderAppASM2' node, which is currently marked as 'Down'. The main pane displays the 'Oracle Database Dashboard > Log Explorer: Oracle DB Errors'. On the left, the 'Fields' panel lists various log fields like Entity, Entity Type, Log Source, etc., with 'Entity' and 'Entity Type' pinned. The 'Visualize' panel shows a histogram titled 'Records with Histogram' with a single data point at bin 7. The 'Field Summary' section shows a histogram with data points at bins 7 and 8. The 'Original Log Content' section shows a log entry for Feb 9, 2018, 12:00:09 PM, indicating an ASMB process exiting due to lack of ASM file activity for 12 seconds.

16. Click on Records with Histogram

17. Click Cluster icon



This screenshot is similar to the previous one but focuses on the 'Visualize' panel. A red box highlights the 'Records with Histogram' visualization. Within the 'Visualize' panel, another red box highlights the cluster icon (a blue hexagon with a white dot) in the toolbar. The rest of the interface is identical to the previous screenshot, showing the Log Analytics dashboard with the 'orderAppASM2' node marked as 'Down' in the topology.

18. Click on Potential Issues

The screenshot shows the Oracle Management Cloud Log Analytics interface. The main dashboard displays various system components like Middleware, Database, Host, and Storage in a network-like graph. Below the graph, a histogram titled '38 Clusters' shows log record counts across different time bins. A red box highlights the '5 Potential Issues' section, which is a callout box containing a summary of five potential issues found in the logs.

ID	Log Source	Message Summary
1	Automatic Storage Management Alert Logs	Disk Error: unable to read disk NOTE: ASM instance shutting down abnormally NOTE: cache opening disk 0 of grp 1: ORA_DATA01_0000 path:/dev/raw/raw7
2	Automatic Storage Management Alert Logs	Errors in file [ora_db_home/app/oracle/admin/+ASM/bdump/+asm2_rbal_1 0559.trc] ORA-15183: ASMLIB initialization error [/opt/oracle/extmp/64/asm/orcl/libasm.so] ORA-15183: ASMLIB initialization error [driver/agent not installed]
3	Automatic Storage Management Alert Logs	Errors in file [ora_db_home/app/oracle/admin/+ASM/bdump/+asm2_rbal_1 0559.trc] ORA-15183: ASMLIB initialization error [/opt/oracle/extmp/64/asm/orcl/libasm.so] ORA-15183: ASMLIB initialization error [driver/agent not installed]
4	Automatic Storage Management Alert Logs	Errors in file [ora_db_home/app/oracle/admin/+ASM/bdump/+asm2_rbal_1 0559.trc] ORA-15183: ASMLIB initialization error [/opt/oracle/extmp/64/asm/orcl/libasm.so] ORA-15183: ASMLIB initialization error [driver/agent not installed]
5	Automatic Storage Management Alert Logs	Errors in file [ora_db_home/app/oracle/admin/+ASM/bdump/+asm2_rbal_1 0559.trc] ORA-15183: ASMLIB initialization error [/opt/oracle/extmp/64/asm/orcl/libasm.so] ORA-15183: ASMLIB initialization error [driver/agent not installed]

Go through the details of the potential issues

This shows disk error which could be the potential reason for the ASM instance going down

The screenshot shows the Oracle Management Cloud Log Analytics interface, similar to the previous one but with a different focus. A red box highlights the first potential issue listed in the table below, which details a disk error and its impact on an ASM instance.

ID	Log Source	Message Summary
1	Automatic Storage Management Alert Logs	Disk Error: unable to read disk NOTE: ASM instance shutting down abnormally NOTE: cache opening disk 0 of grp 1: ORA_DATA01_0000 path:/dev/raw/raw7
2	Automatic Storage Management Alert Logs	Errors in file [ora_db_home/app/oracle/admin/+ASM/bdump/+asm2_rbal_1 0559.trc] ORA-15183: ASMLIB initialization error [/opt/oracle/extmp/64/asm/orcl/libasm.so] ORA-15183: ASMLIB initialization error [driver/agent not installed]
3	Automatic Storage Management Alert Logs	Errors in file [ora_db_home/app/oracle/admin/+ASM/bdump/+asm2_rbal_1 0559.trc] ORA-15183: ASMLIB initialization error [/opt/oracle/extmp/64/asm/orcl/libasm.so] ORA-15183: ASMLIB initialization error [driver/agent not installed]
4	Automatic Storage Management Alert Logs	Errors in file [ora_db_home/app/oracle/admin/+ASM/bdump/+asm2_rbal_1 0559.trc] ORA-15183: ASMLIB initialization error [/opt/oracle/extmp/64/asm/orcl/libasm.so] ORA-15183: ASMLIB initialization error [driver/agent not installed]
5	Automatic Storage Management Alert Logs	Errors in file [ora_db_home/app/oracle/admin/+ASM/bdump/+asm2_rbal_1 0559.trc] ORA-15183: ASMLIB initialization error [/opt/oracle/extmp/64/asm/orcl/libasm.so] ORA-15183: ASMLIB initialization error [driver/agent not installed]

Now, let's see whether the host on which this ASM instance is running shows any error in this time duration.

19. Click on cross icon on **orderAppASM2** in global context bar

This will remove **orderAppASM2** from global context bar.

The screenshot shows the Oracle Management Cloud Log Analytics interface. On the left, there is a sidebar with 'Log Analytics' selected, followed by 'Log Explorer', 'Alerts', 'Administration Home', and 'Log Admin'. The main area is titled 'Composite: ProdD' and shows a network graph with various nodes. A specific node labeled 'orderAppASM2' is highlighted with a red box and has a small red cross icon next to it. Below the graph, there are tabs for 'Entity Map', 'Tier', 'Node Value', 'Alert Count', 'Color', and 'Entity Status'. The 'Tier' tab is selected. A legend at the bottom indicates colors for different status levels: Down (red), Error (orange), No Value (yellow), Not Heard From (blue), Unknown (dark blue), and Up (green). The central part of the screen displays the 'Oracle Database Dashboard > Log Explorer: Oracle DB Errors'. It includes a histogram titled '38 Clusters' with '5 Potential Issues', a table of trends, and a detailed view of two specific log entries. The detailed view shows a trend for disk errors and a sample message about an ASM instance shutting down abnormally due to a disk failure.

Trend	Count	Sample Message	ID	Log Source
Up	3	Disk Error - unable to read disk NOTE: ASM Instance shutting down abnormally NOTE: cache openning disk 0 of grp 1: ORA_DATA01_0000 path: /dev/rw/rw7	1	Automatic Storage Management Alert Logs
Up	3	Errors in file /ora_db/home/app/oracle/admin/ASM/bdump/asm2_rbal_1 0559.trc:	2	Automatic Storage Management Alert Logs

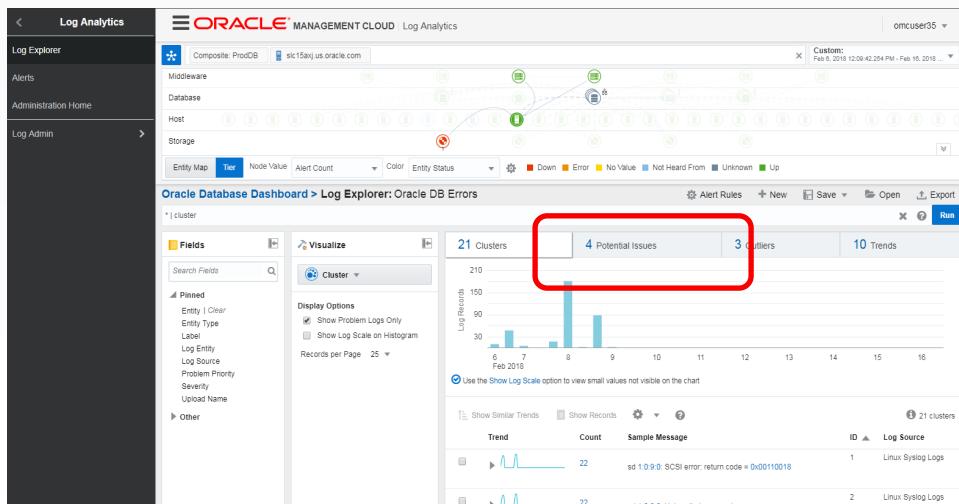
Check the host on which **orderAppASM2** is running from the topology which is '**slc15axj.us.oracle.com**'.

Note: If the hosts connected to orderAppASM2 are shown as group, click on the group and select "Expand"

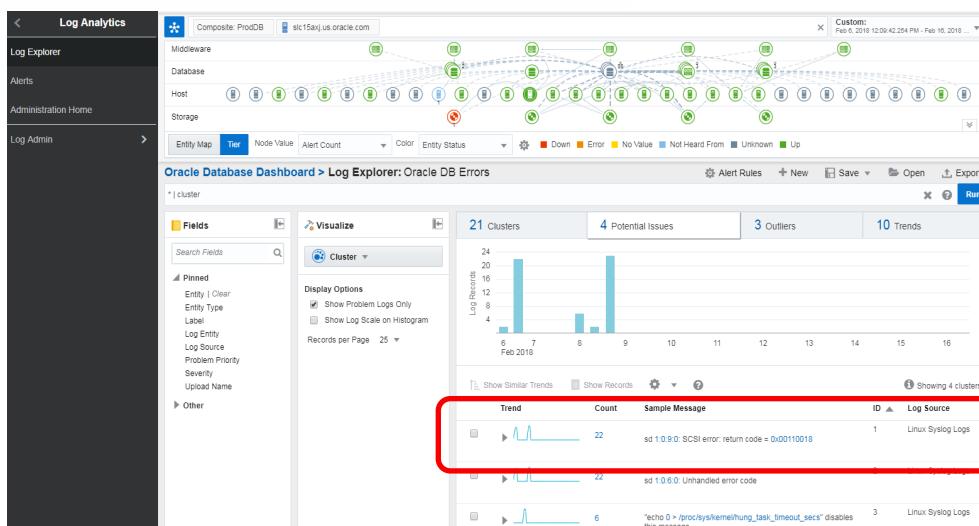
20. Click on the host icon from topology

This will add this host in the global context bar and filter logs for this host.

21. Click on Potential Issues



This shows a SCSI error from the host logs to be the root cause of the disk failure.



Demo 3: Identifying Performance Bottlenecks

1. Navigate back to 'Oracle Database Dashboard'.

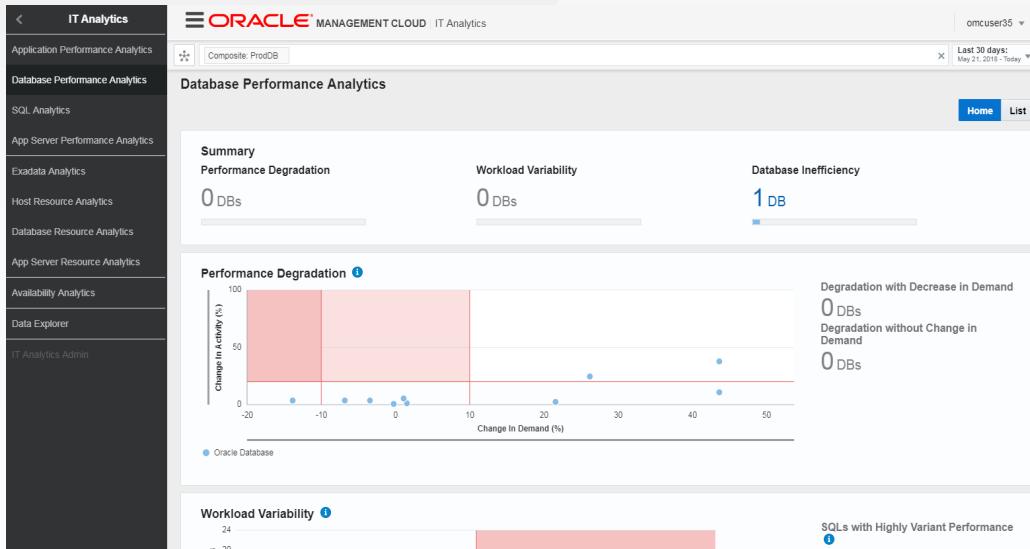
The widget '**Oracle DB - Avg Wait Time and Avg CPU Time**' shows the average wait time and average CPU time for the Oracle Databases. The size denotes wait time and color denotes CPU time. This provides performance overview of the Oracle DBs in the **ProdDB** group and highlights database 'FLGT-XA-AU' which has high wait time but less CPU time. Let's analyze performance further.

2. Click on the "IT Analytics" and then on "Database Performance Analytics"

The screenshot shows the Oracle Management Cloud interface. On the left, the navigation menu includes sections like Home, Alerts, Dashboards, Data Explorer, APM, Monitoring, Log Analytics, IT Analytics, Orchestration, Security Analytics, Compliance, and Administration. The main area displays several dashboards:

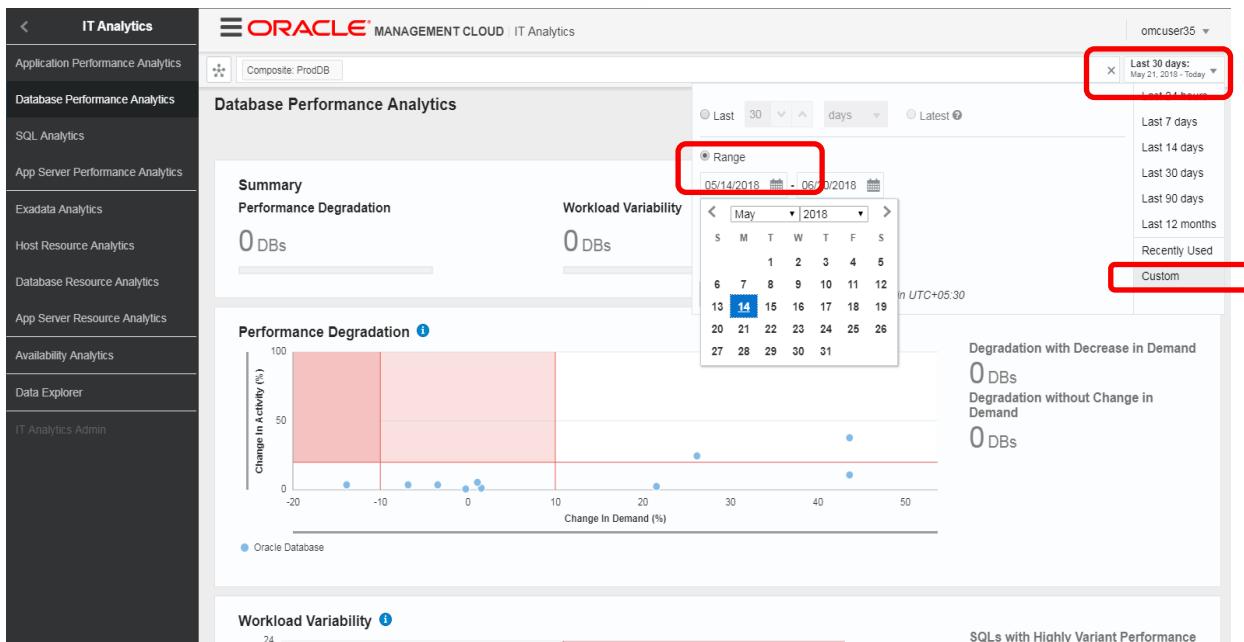
- Oracle DB - CPU Utilization vs Memory Utilization:** A scatter plot showing Memory Utilization (%) on the Y-axis (0-80) versus CPU Utilization (%) on the X-axis (0-50). Data points are colored by CPU time and sized by wait time. One point for 'FLGT-XA-AU' is highlighted with a red box.
- Oracle DB - Avg Wait Time and Avg CPU Time:** A callout box highlights this chart, stating 'FLGT-XA-AU has the highest Wait Time of 3580.1397 sec, and it has relatively low CPU Time'. The chart shows a large blue circle for 'FLGT-XA-AU' with a small orange dot inside, indicating high wait time and low CPU time.
- Oracle DB Inventory - Avg Compliance ...:** A donut chart showing a 'Compliance Score' of 20.
- Oracle Databases with Threats:** Displays a message: 'No Log Records Found' and 'Try changing the time range or Modify the search query or Review if any active filters need to be changed.'
- Oracle DB Inventory:** A table listing database entities with their status (e.g., apmc/apmc2, AdvertiseDB-XA-CH, AdvertiseDB-XA-CH_1, AdvertiseDB-XA-CH_2) and alert counts (e.g., 1, 2, 3).

This will open 'Database Performance Analytics' dashboard which is an OOB dashboard provided by OMC for DB performance analysis.



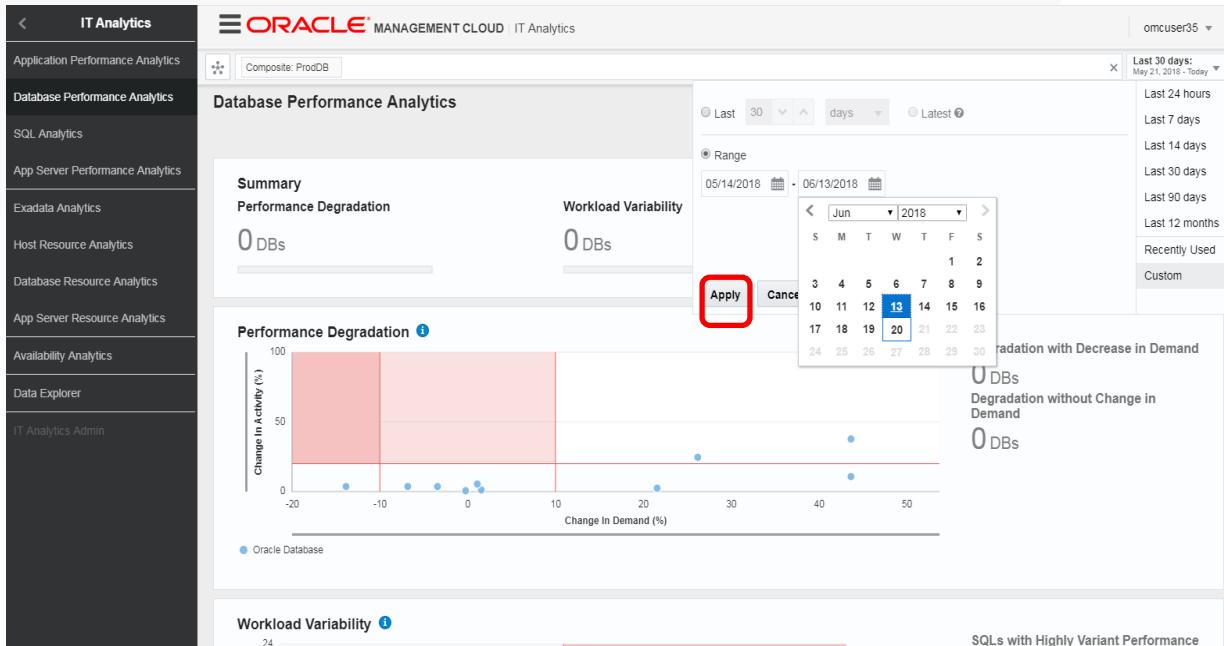
Now, select the period for which the performance analysis needs to be done.

3. Click on 'Last 30 days' in time selector drop down
4. Click Custom
5. Select custom Range radio button. Provide start date as **14th May 2018**



6. Provide end date as 13th June 2018.

7. Click Apply



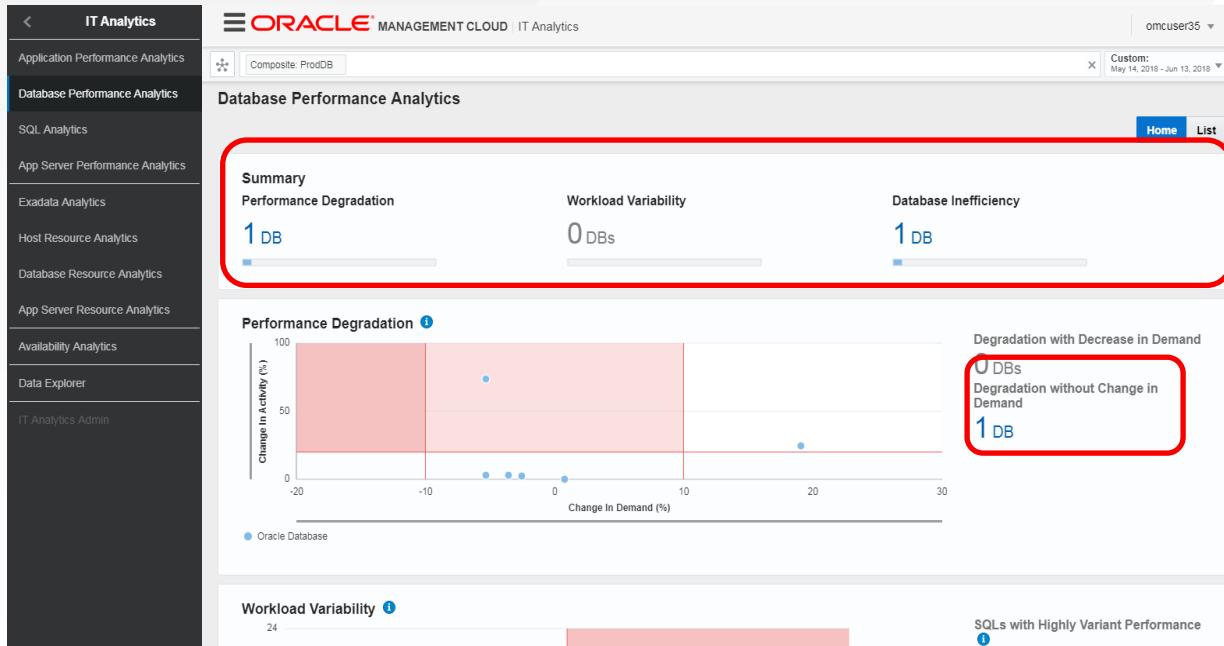
The dashboard now highlights the Oracle DBs in the **ProdDB** group which have following performance issues in the provided period:

- DBs with performance degradation.
- DBs with workload performance variability.
- DBs with inefficiency.

Performance Degradation section shows change in activity (%) vs change in demand (%) for various DBs in **ProdDB** group and highlights the DBs whose activity has increased with decrease in demand or no change in demand.

Note: Values might be subject to changes based on current environment data.

- Click on '1 DB' link under 'Degradation without Change in Demand'

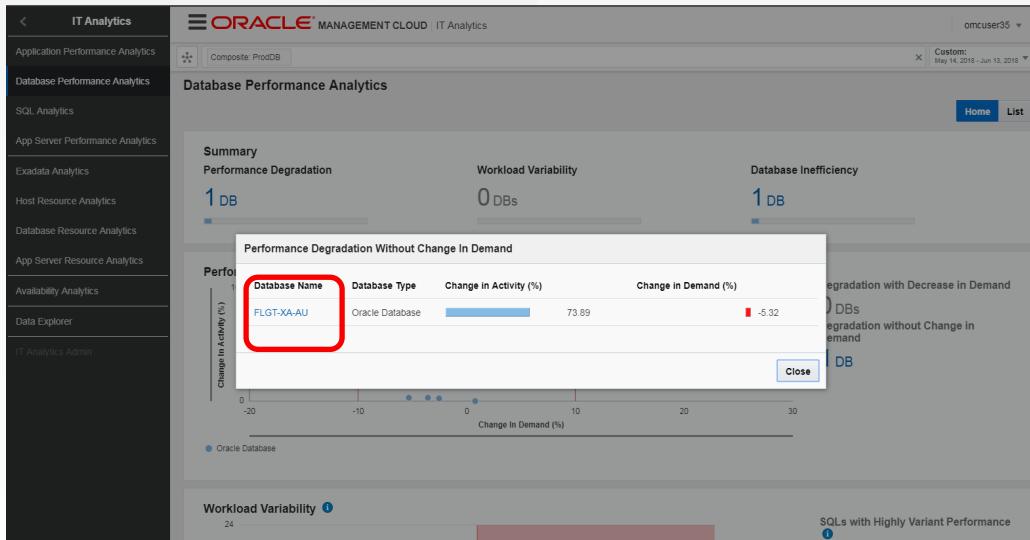


This gives the details of the database i.e. FLGT-XA-AU with performance degradation.

This DB was also highlighted by our custom widget in 'Oracle Database Dashboard'.

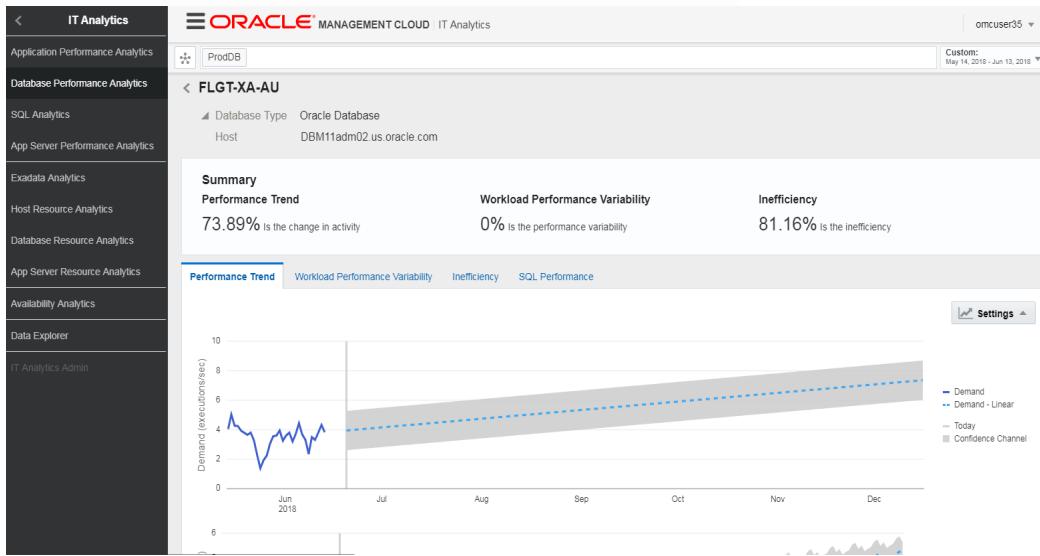
To further drill down

9. Click DB link i.e. FLGT-XA-AU



This navigates to page with more details about this database in terms of performance.

10. Scroll Down

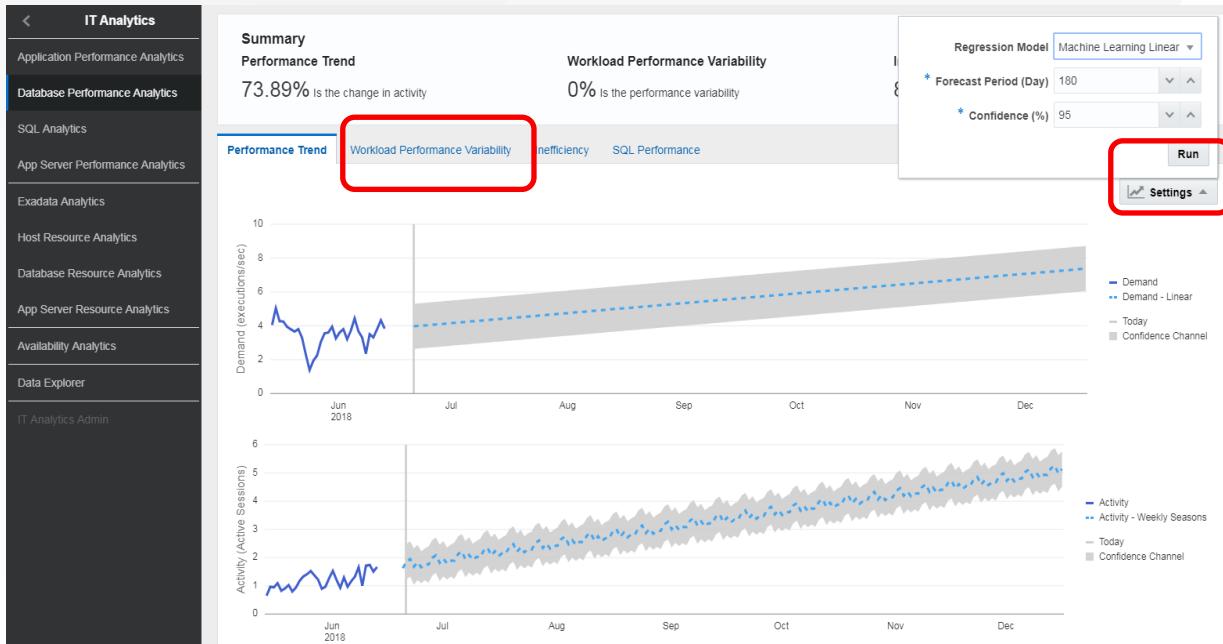


The 'Performance Trend' tab provides the details of the activity and the demand trend for this database.

11. Click on Settings

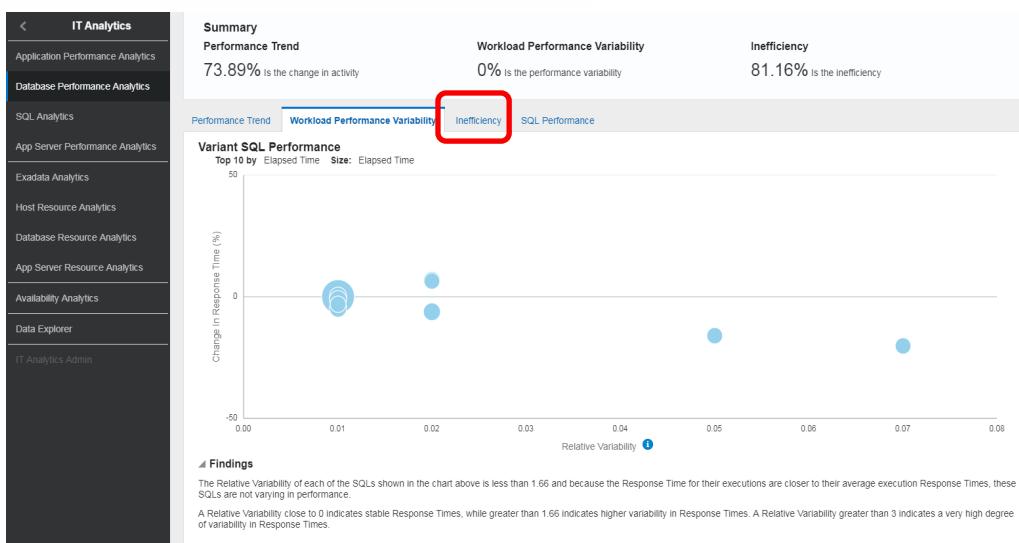
With this, one can also do projections for the activity and demand for the future using different regression models.

12. Click on Workload Performance Variability



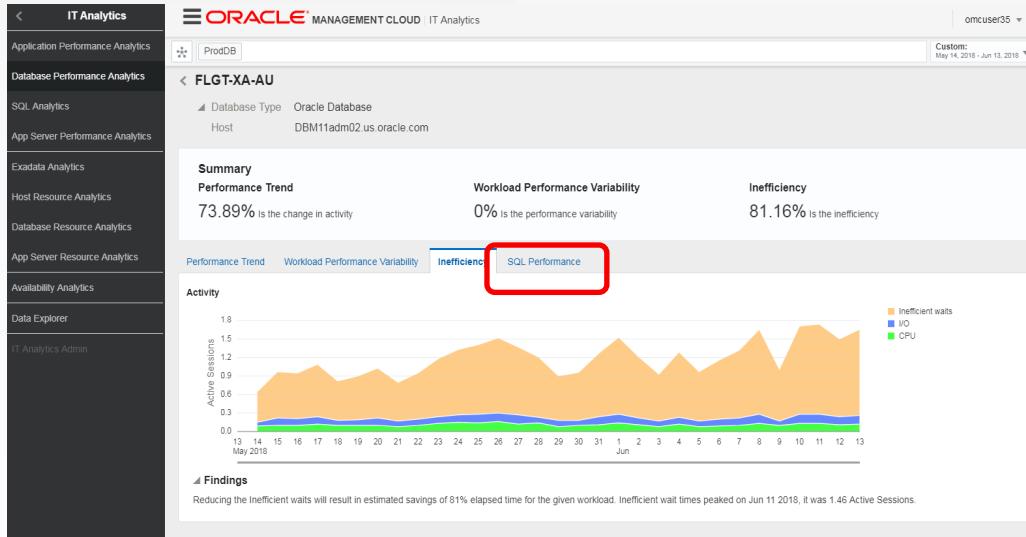
This tab shows the variance in the SQL performance.

13. Click on Inefficiency



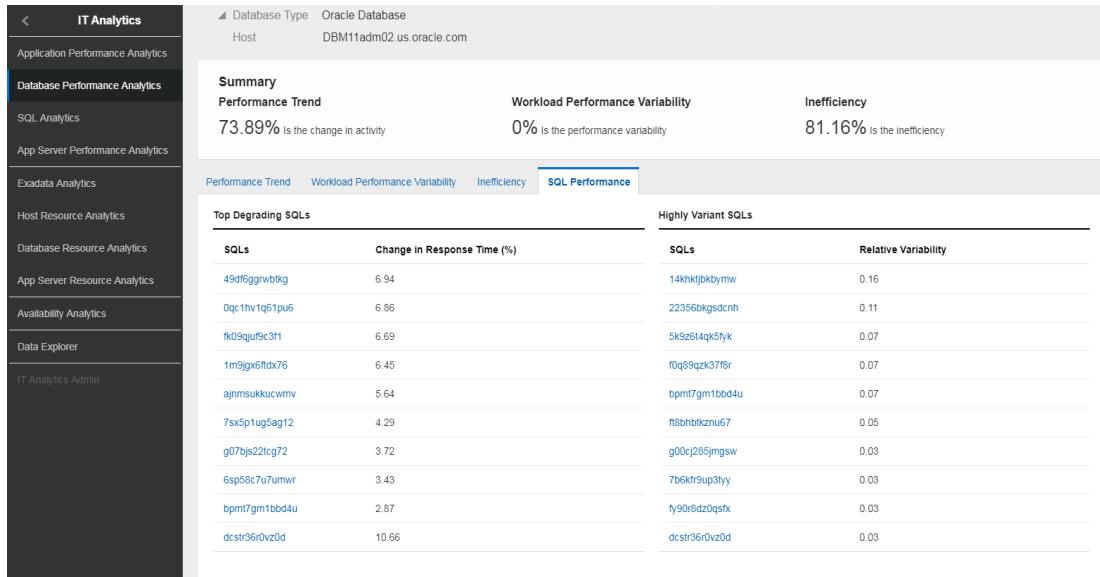
This tab shows activity in terms of active sessions and their breakup by CPU, I/O and Inefficient waits. Reducing the Inefficient Waits improves the performance of the database.

14. Click on SQL Performance



This tab highlights the top degrading and highly variant SQLs on this database.

15. Scroll Up



16. Click on the back button “<” on the top, next to DB name

The screenshot shows the Oracle Management Cloud IT Analytics interface. On the left, a sidebar lists various analytics categories: Application Performance Analytics, Database Performance Analytics (selected), SQL Analytics, App Server Performance Analytics, Exadata Analytics, Host Resource Analytics, Database Resource Analytics, App Server Resource Analytics, Availability Analytics, and Data Explorer. The main content area is titled "FLGT-XA-AU". It displays a summary section with performance metrics: "Performance Trend" (73.89%), "Workload Performance Variability" (0%), and "Inefficiency" (81.16%). Below this are tabs for "Performance Trend", "Workload Performance Variability", "Inefficiency", and "SQL Performance" (selected). The "SQL Performance" tab contains two tables: "Top Degrading SQLs" and "Highly Variant SQLs".

SQLs	Change in Response Time (%)
49df6ggrwbtkg	6.94
0qc1hv1q61pu6	6.86
fk09qju9c3f1	6.69
1m9jgx6fdx76	6.45
ajnmsukkucwmv	5.64
7sx5p1ug5ag12	4.29
g07bjs221cg72	3.72
6sb58c7u7umwr	3.43

SQLs	Relative Variability
14khktjbkbymw	0.16
22356bkgscnh	0.11
5k9z6l4qk5fyk	0.07
f0q89qzk37f8r	0.07
bpm7gm1bbd4u	0.07
ft8bhbtkznu67	0.05
g00cj285jmgsw	0.03
7b6kfr9uo3tvv	0.03

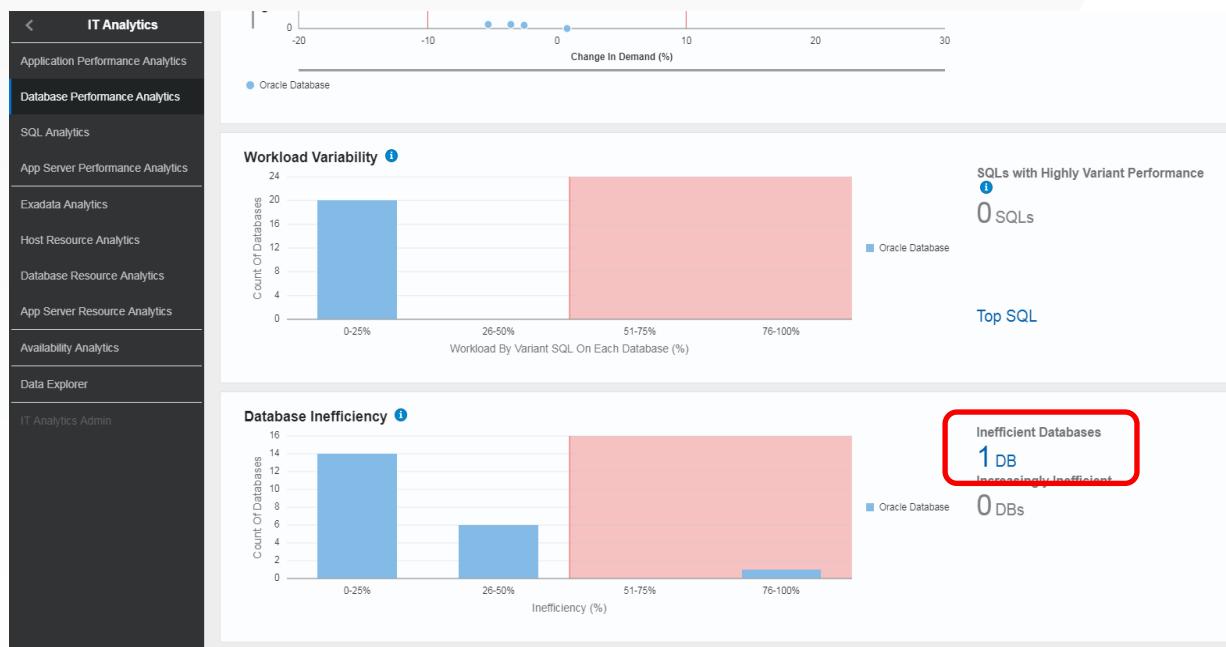
This brings us back to the ‘Database Performance Analytics’ dashboard.

17. Scroll Down

'Workload Variability' section shows the SQL performance variance summary for the DBs and highlights SQLs with high performance variance.

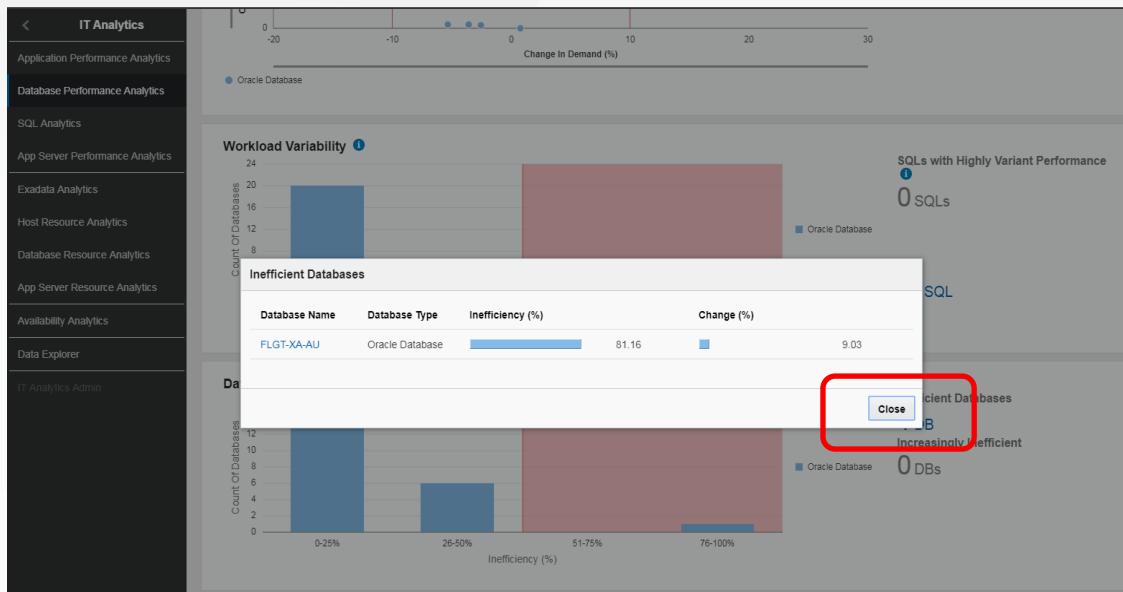
'Database Inefficiency' section shows summary of the inefficiency for all DBs and highlights the inefficient DBs.

18. Click 1 DB under 'Inefficient Databases'



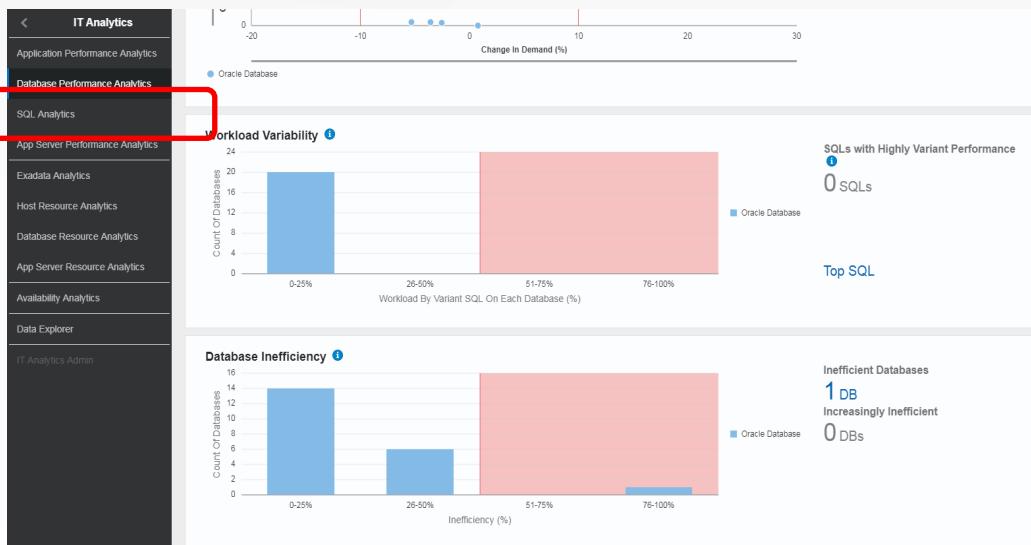
This gives the details of the DB with high inefficiency.

19. Click Close



20. Click 'SQL Analytics' from Global Menu

[Note: the global menu is the icon with three bars on the top-left corner of your display. This menu may not show up fully extended as shown here. If it doesn't, click on the Global menu and these pulldown options will appear]

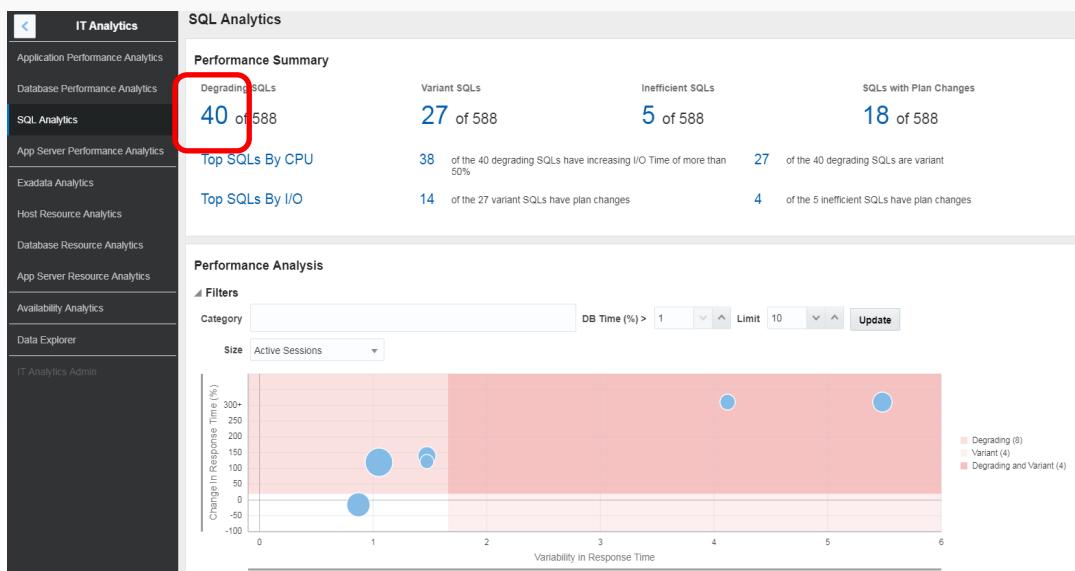


This opens another OOB dashboard provided by OMC for SQL performance analysis.

This shows the degrading, highly variant, inefficient SQLs and SQLs with plan changes running across all DBs in **ProdDB**. Also highlights top SQLs by CPU and I/O.

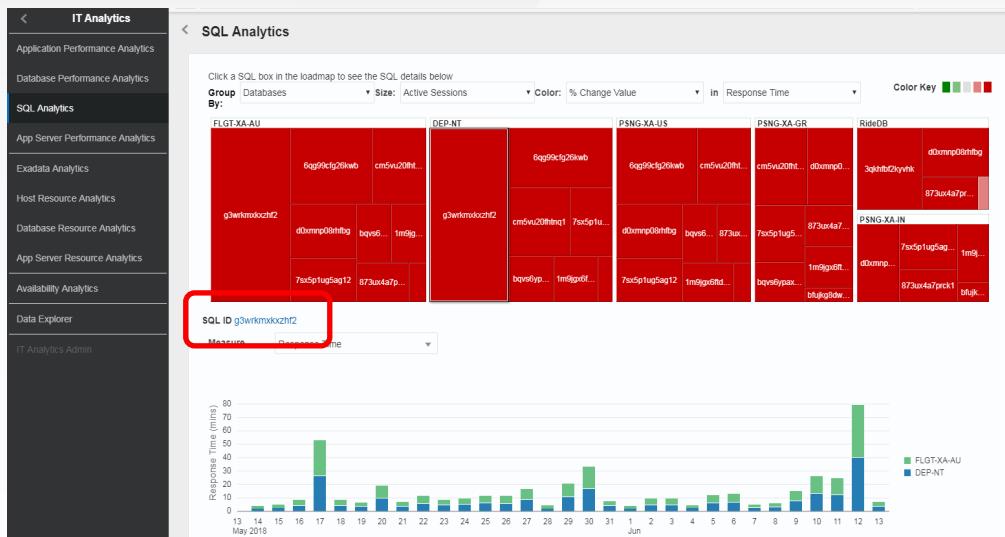
At the bottom, it shows performance analysis chart for SQLs with various filter options.

21. Click on degrading SQLs count 40 (This value might vary depending on your configuration)

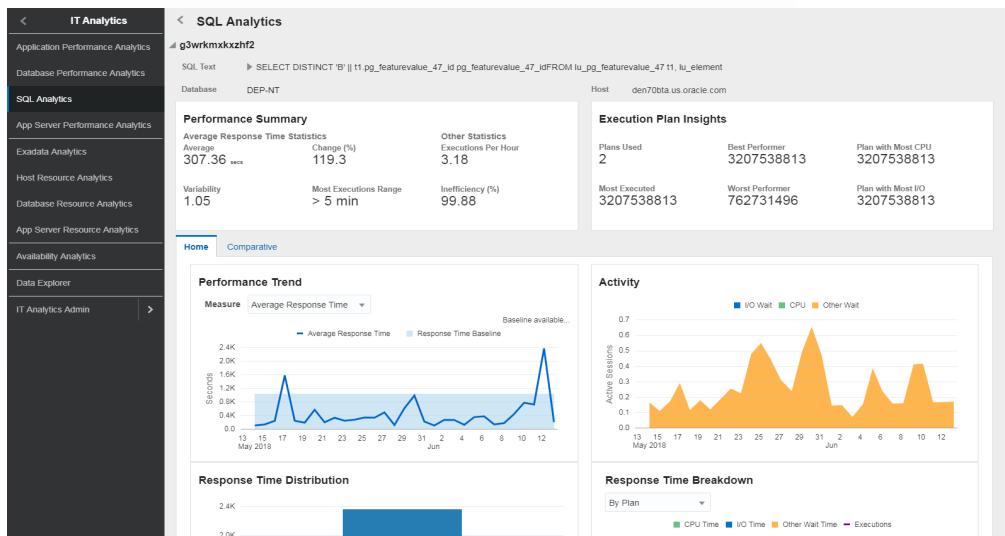


Here one can view all these degrading SQLs and select one to analyze further.

22. Click on SQL ID i.e. 'g3wrkmxxzhf2'



From here one can drill down into a specific degrading SQL and analyze to find the reason for slowness.

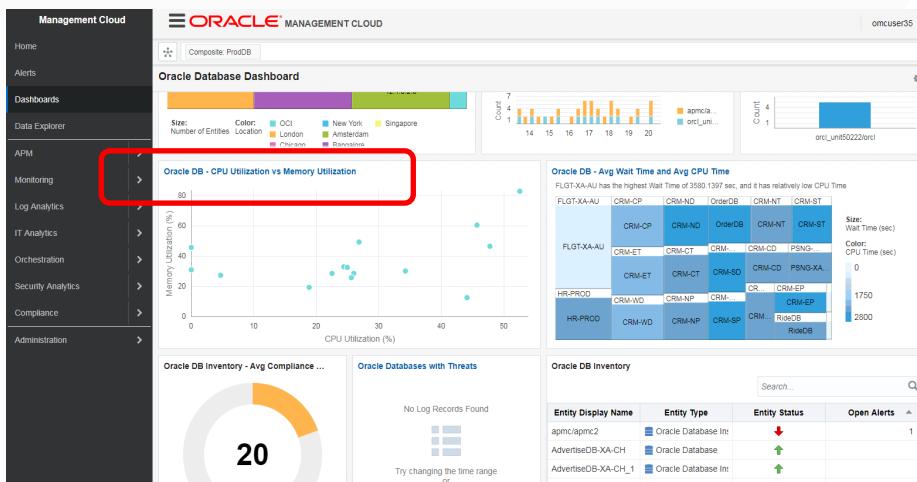


Demo 4: Database Resource and Capacity Planning

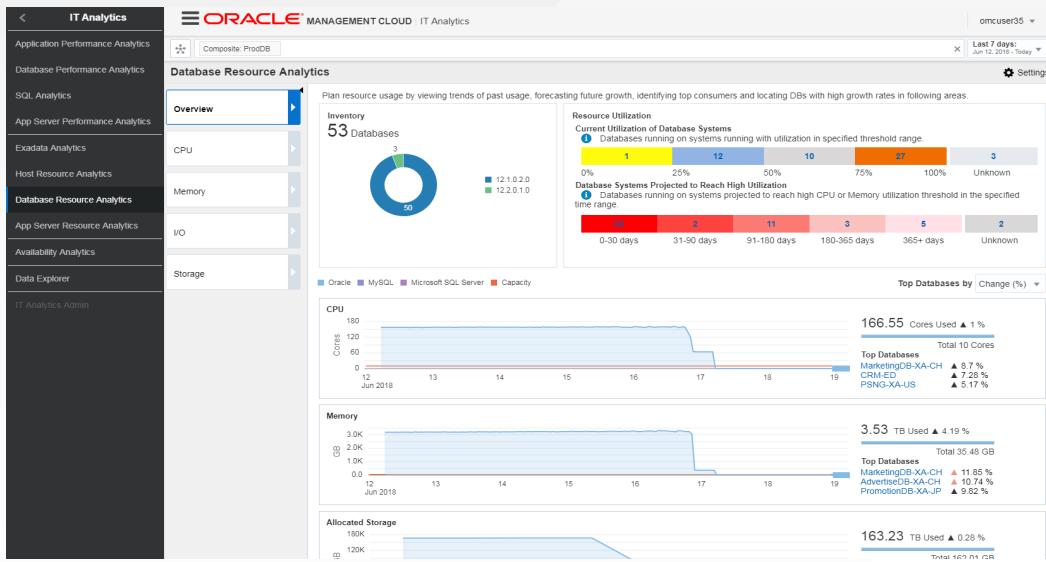
1. Navigate back to 'Oracle Database Dashboard'.

The widget 'Oracle DB - CPU Utilization vs Memory Utilization' shows the CPU and Memory Utilization (in %) for the Oracle Databases in a scatter chart. The high utilization threshold is set to 95% for both CPU and memory. It gives the resource utilization overview of the Oracle DBs and gives an idea regarding which DBs are loaded and which are not.

2. Click on the "IT Analytics" and then on "Database Resource Analytics"

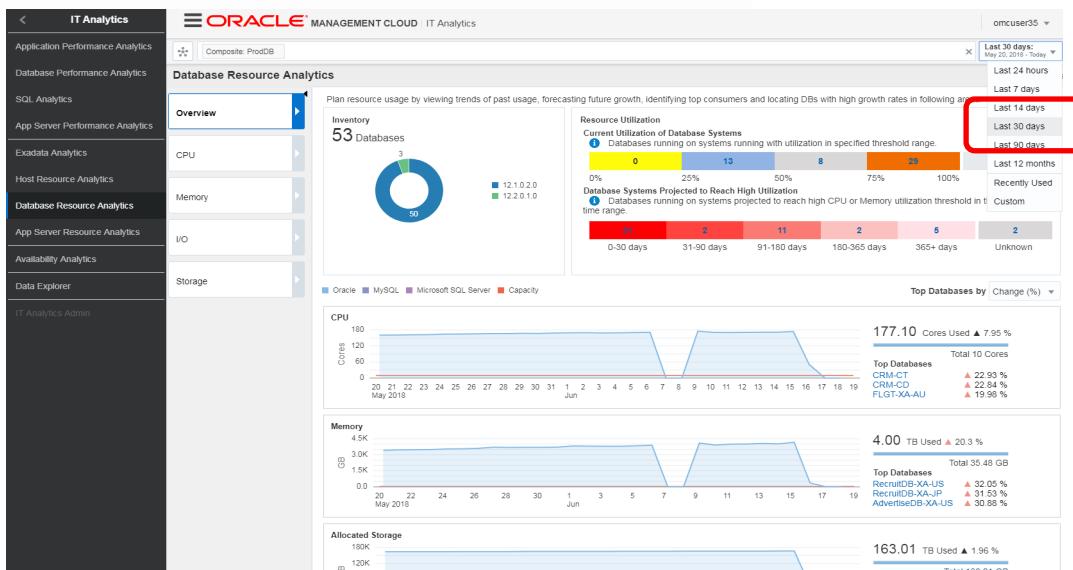


This opens up the ‘Database Resource Analytics’ dashboard. This is an OOB dashboard provided by OMC for doing Database resource analytics.



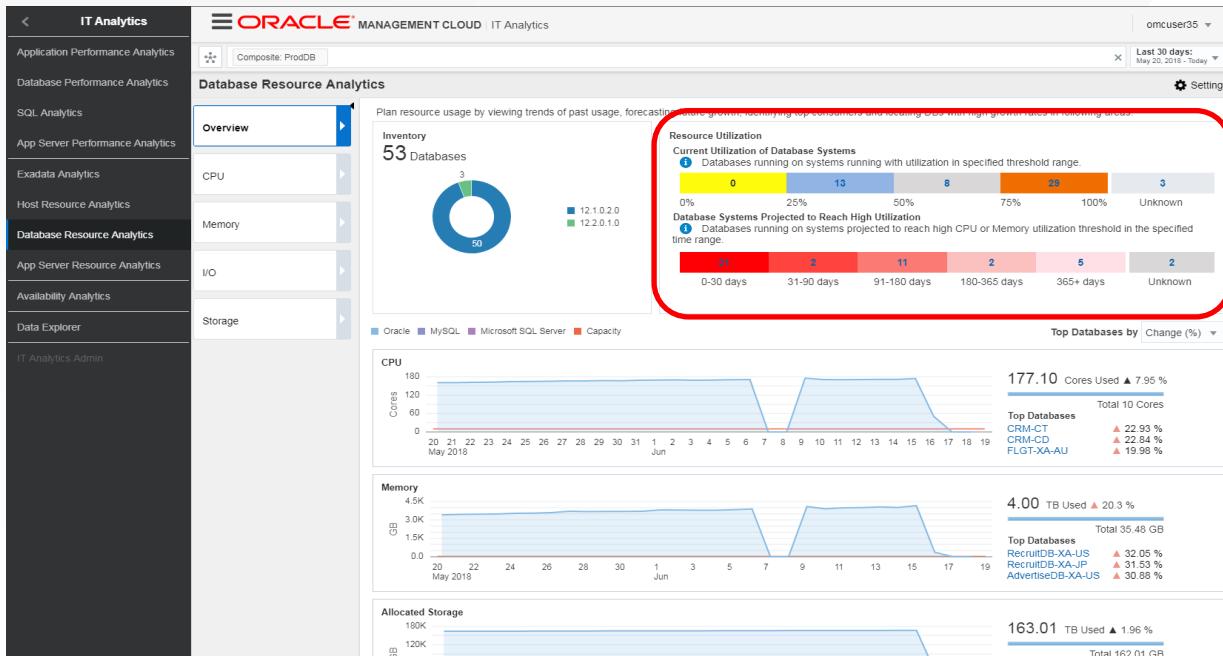
3. Click on time selector drop down

4. Select ‘Last 30 days’



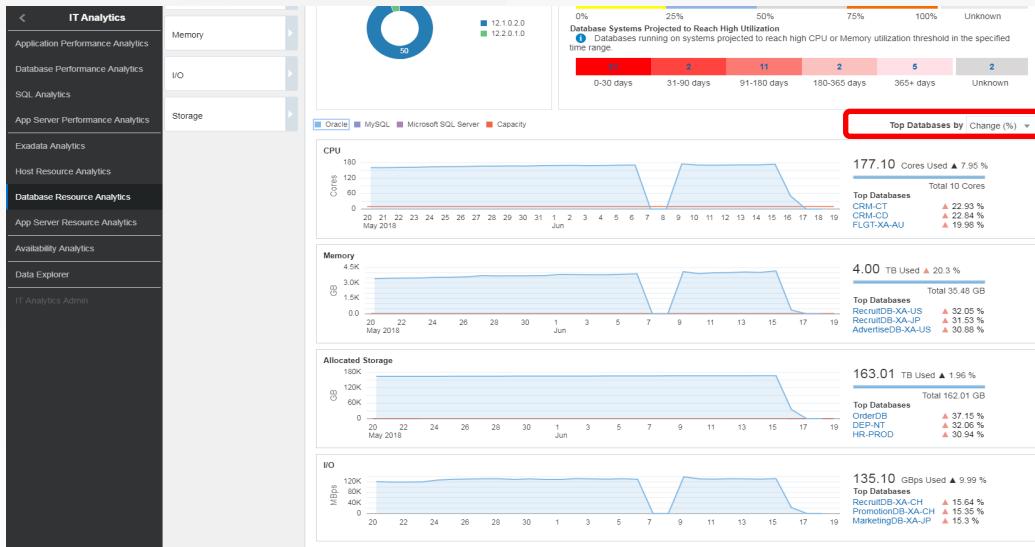
The ‘Resource Utilization’ section of the dashboard categorizes the databases based on their current resource utilization. It also categorizes the databases based on the duration in which they are projected to reach high CPU or Memory utilization threshold by leveraging machine learning techniques.

1. Scroll Down

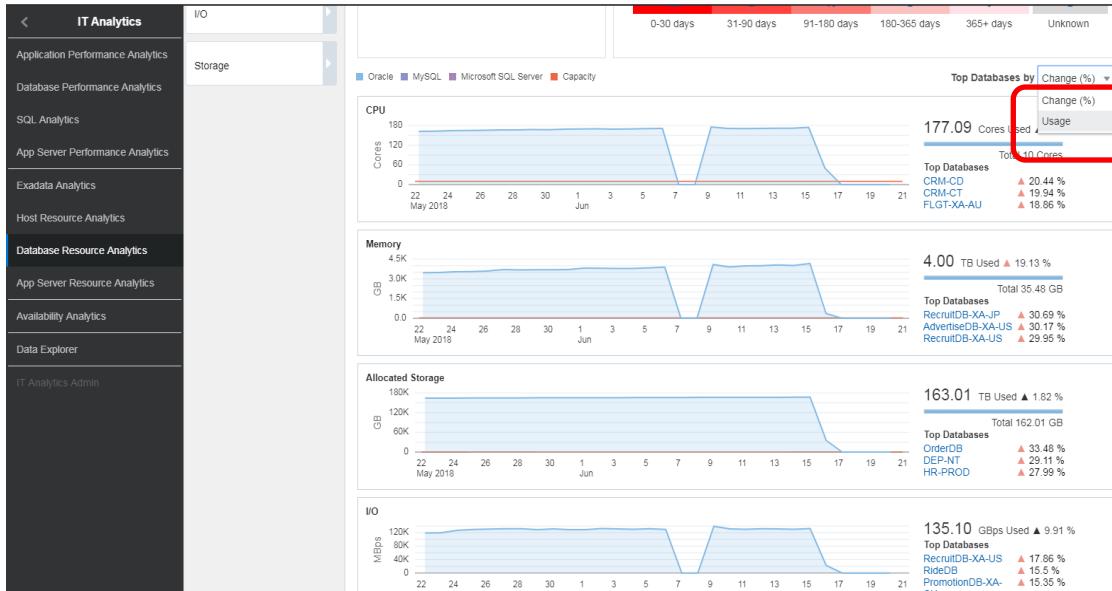


The lower section of the dashboard shows aggregate usage of the CPU, Memory, Allocated Storage and I/O and highlights top databases by percentage change in their usage of these resources.

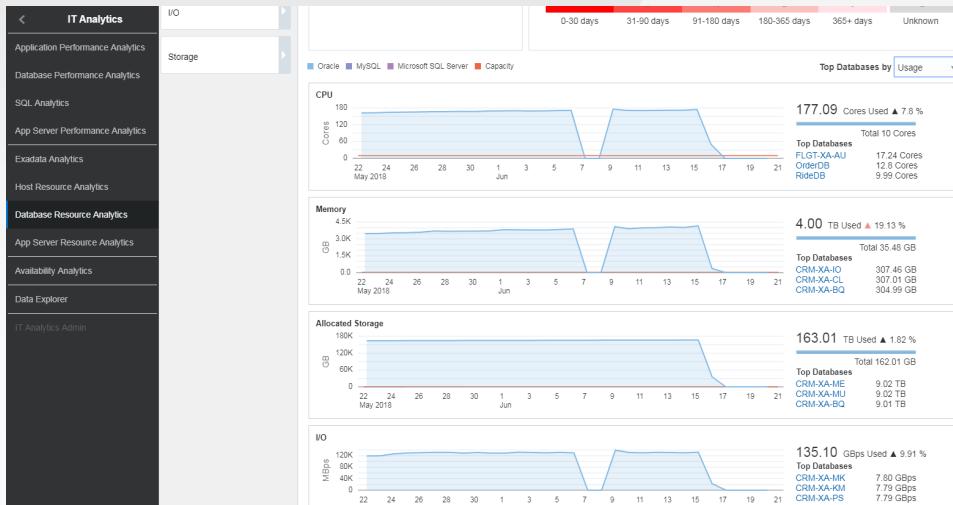
2. Click dropdown 'Top Databases by'



3. Select 'Usage' from the dropdown



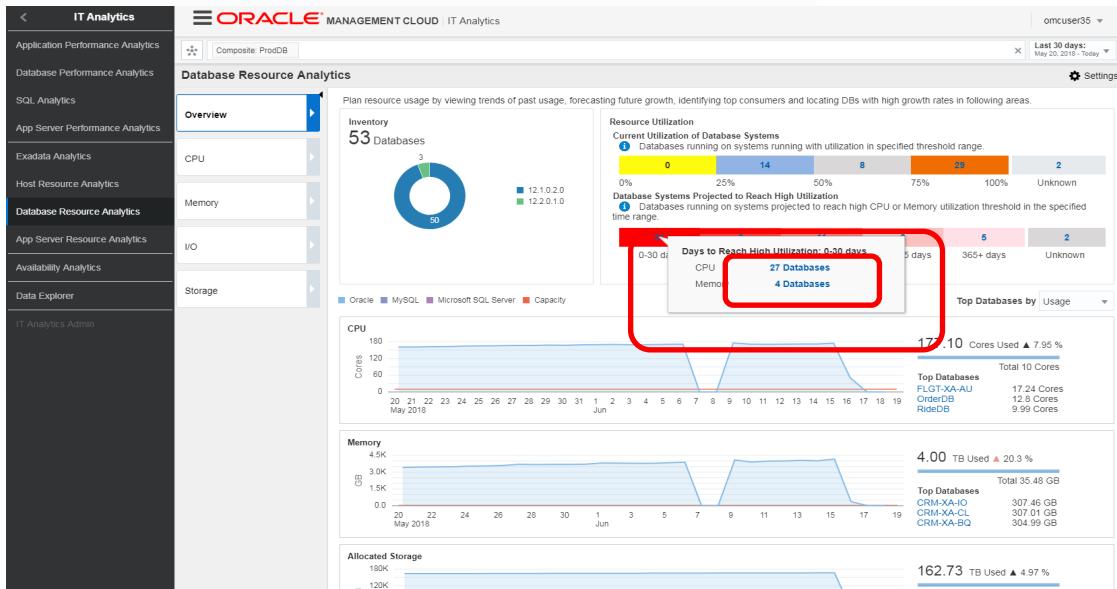
It now shows the top databases by their usage of resources



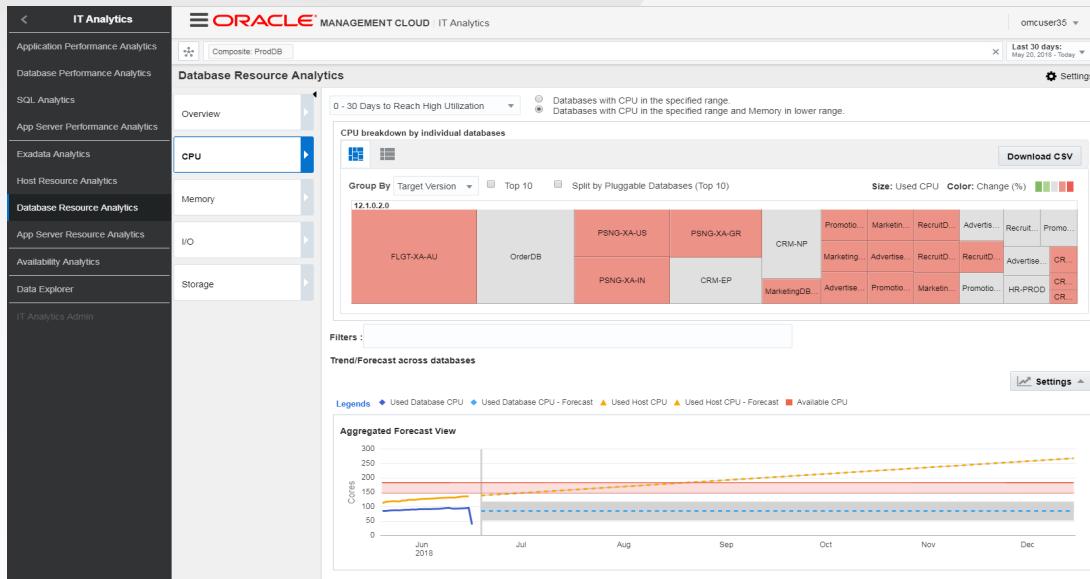
4. Scroll Up
5. Hover over number '31' for the DBs which are reaching resource usage threshold in 0-30 days

It shows how many DBs are projected to reach CPU utilization and memory utilization maximum thresholds in next 30 days.

6. Click on '27 databases' which are reaching CPU threshold limit in next 30 days

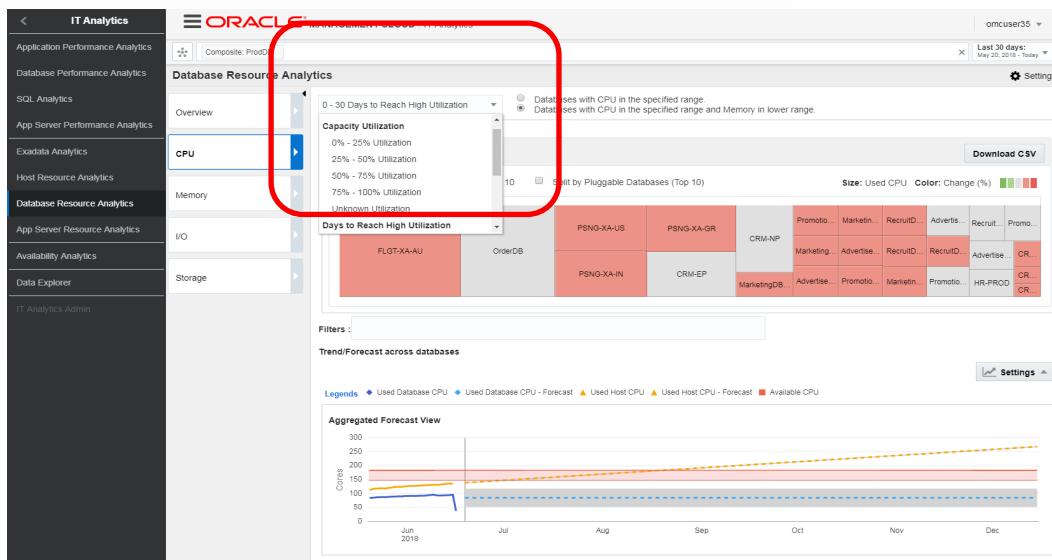


This will open the CPU tab. This gives more details on CPU usage. It also provides forecast for the CPU usage of these DBs



7. Click on dropdown '0-30 Days to reach High Utilization'

From here one can filter the databases based on their current utilization or Days to Reach High Utilization.

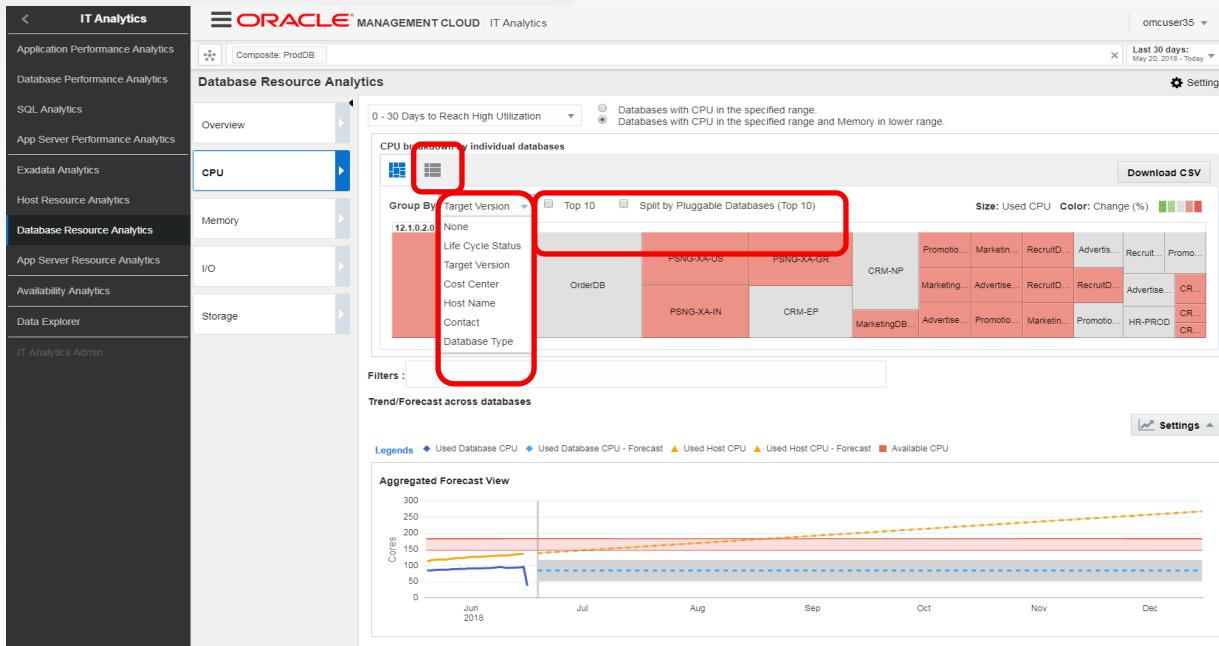


8. Click on 'Target Version' in Group By dropdown

From here one can select group by option by various properties for the treemap.

There are check boxes to view only “Top 10” DBs and “Split by Pluggable Databases (Top 10)”.

There is also an option to view these DBs in table instead of treemap by clicking on the table icon next to the treemap icon.

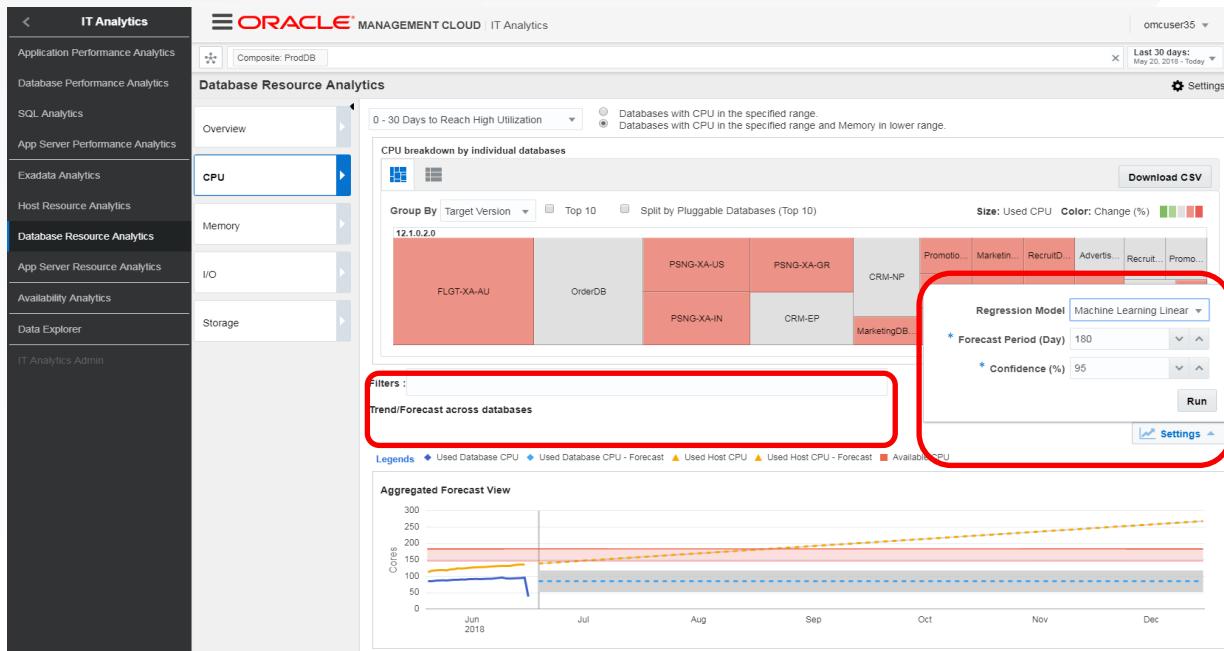


9. Click Settings

From here one can provide various options to predict the CPU utilization for the DBs.

The 'Filters' can be used to limit the forecast to selected set of databases.

Similar functionalities are available for the analysis of the utilization of other resources i.e. Memory, I/O and Storage.



Demo 5: OMC to De-Risk Lift and Shift

To walk through the lift-and-shift process we will show how you would use OMC to establish a performance baseline of your on-premises application, understand capacity needs of that application, compare the lifted-and-shifted version of that application to your on-premises baseline, and manage the lifted-and-shifted application going forward. The application in question is called **OrderApp**.

Let's start with the on-premises baseline.

Navigate to “**Home**” and “**Dashboards**” and select as shown

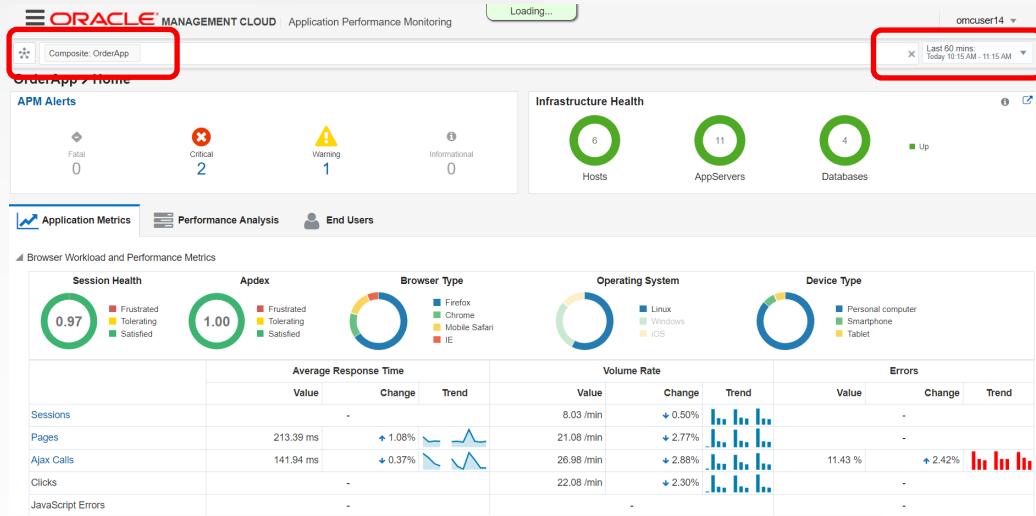
The screenshot shows the Oracle Management Cloud (OMC) interface. On the left, there is a navigation sidebar with the following menu items:

- Management Cloud
- Home
- Alerts
- Dashboards** (selected)
- Data Explorer
- APM
- Monitoring
- Log Analytics
- IT Analytics
- Orchestration
- Security Analytics
- Compliance
- Administration

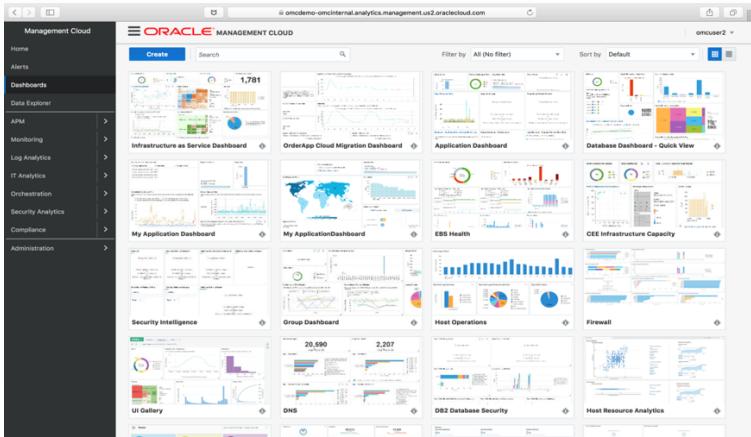
The main area displays a grid of various dashboards. One dashboard, titled "Application Dashboard", is highlighted with a red box. Other visible dashboards include "Infrastructure as Service Dashboard", "OrderApp Cloud Migration Dashboard", "My Application Dashboard", "EBS Health", "Database Dashboard - Quick View", "CEE Infrastructure Capacity", "Firewall", "Host Resource Analytics", and "Host Operations".

You should start using OMC immediately to get several months of performance baseline against OrderApp on-premises. OMC automatically learns normal system behavior, system topology and expected performance so you can get a true sense of your application performance and inform SLAs.

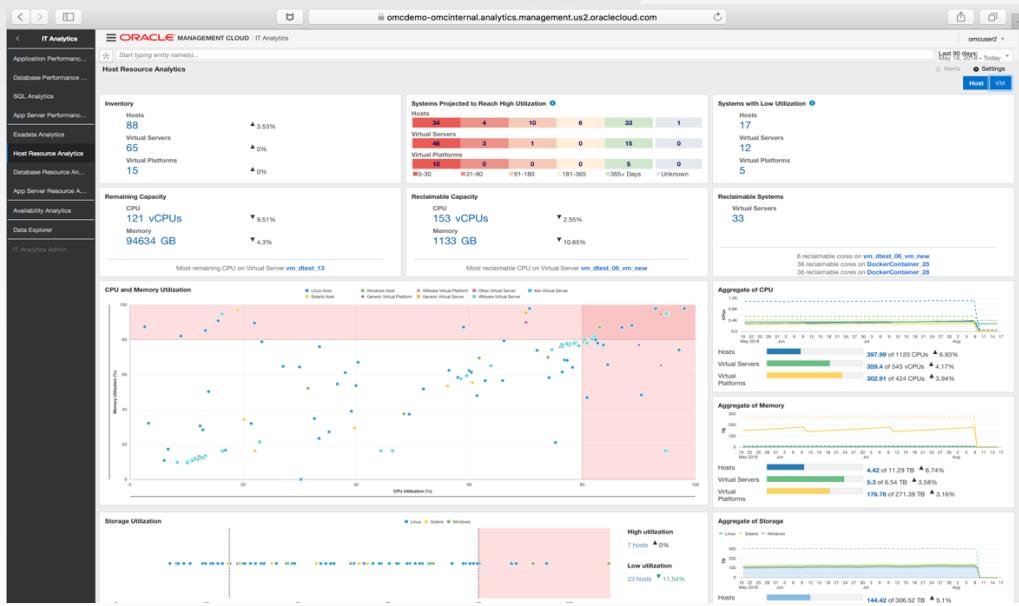
1. Start this Vignette by removing any other selected entities in the Topology sections (*) and select “OrderApp” as shown above and Select “Last 60 mins” as shown in the timeline (right hand top).
2. Select APM from the Global Menu. This is the starting point for Deep dive troubleshooting on the Server Requests or the Browser side (Pages, AJAX)



3. Let's look at how to understand capacity planning needs. To get here, click on Home in the Global menu, then to IT Analytics (and keep the OrderApp in the Topology selection) and then on “Host Resource Analytics”

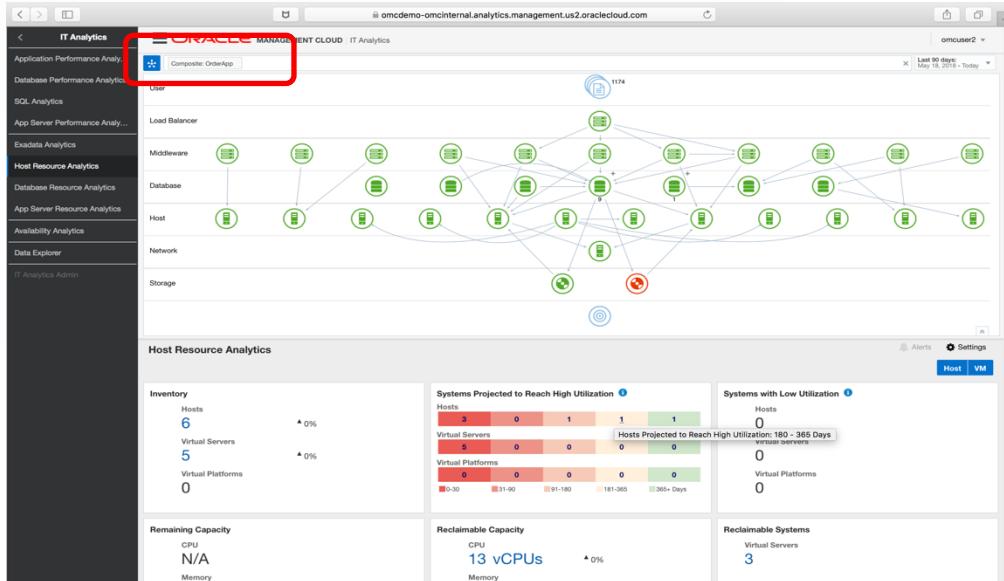


This is the Host Resource Analytics application, which looks at utilization and trending across our enterprise. We're going to subset the data to look only at our **OrderApp**.

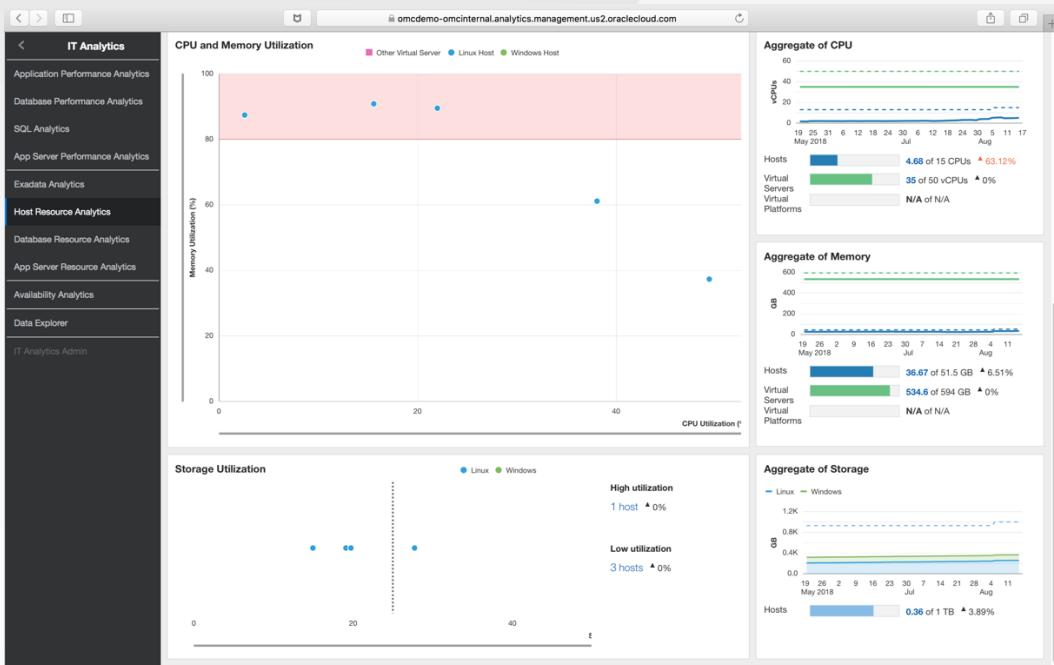


4. Click on Topology (*) to expand the Tier View

Here's our **OrderApp** on-premises. You can see the topology is the same discovered topology we saw in the APM app. Here you can see that we have a variety of physical and virtual hosts that are in various degrees of utilization. We can use this info to size our OCI capacity needs (as well as optimize our on-premises resources in the process).

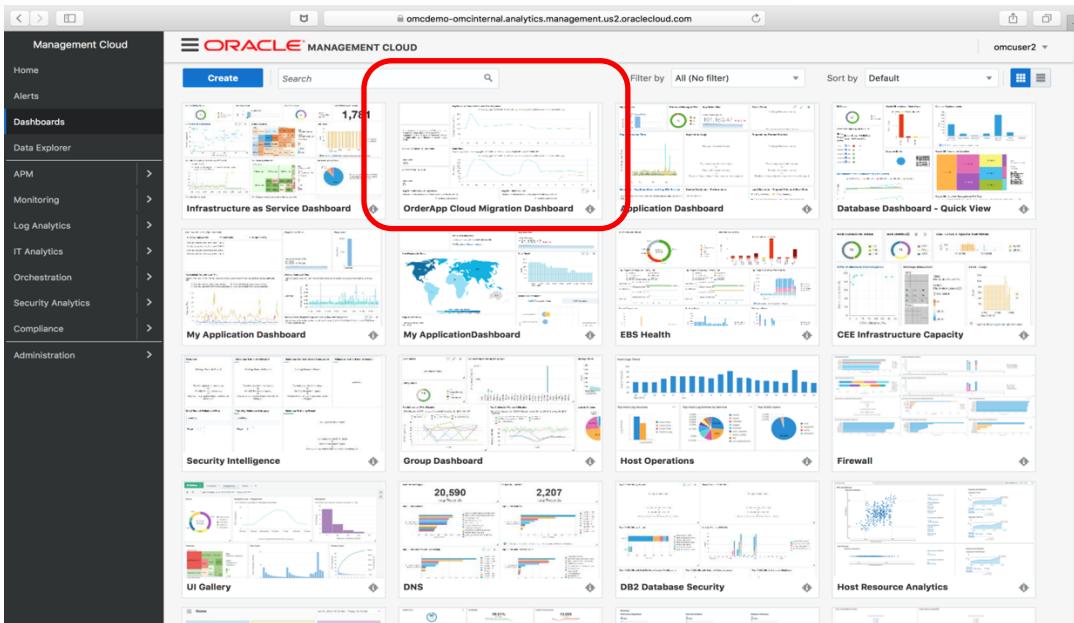


We can quickly get a sense of where we have excess capacity and where we are over-burdened.

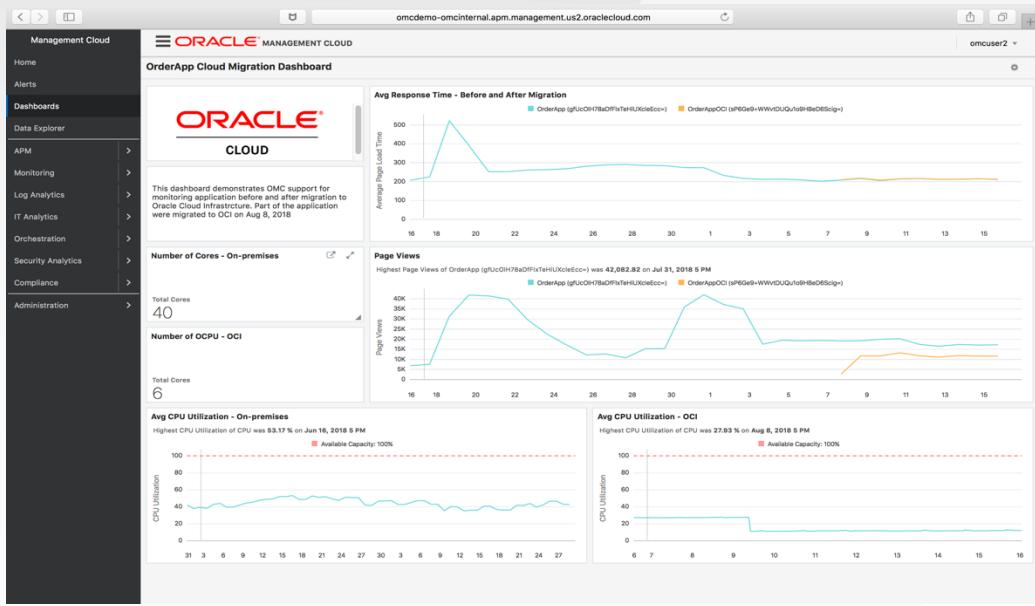


Let's look at the Lift-and-Shift comparison.

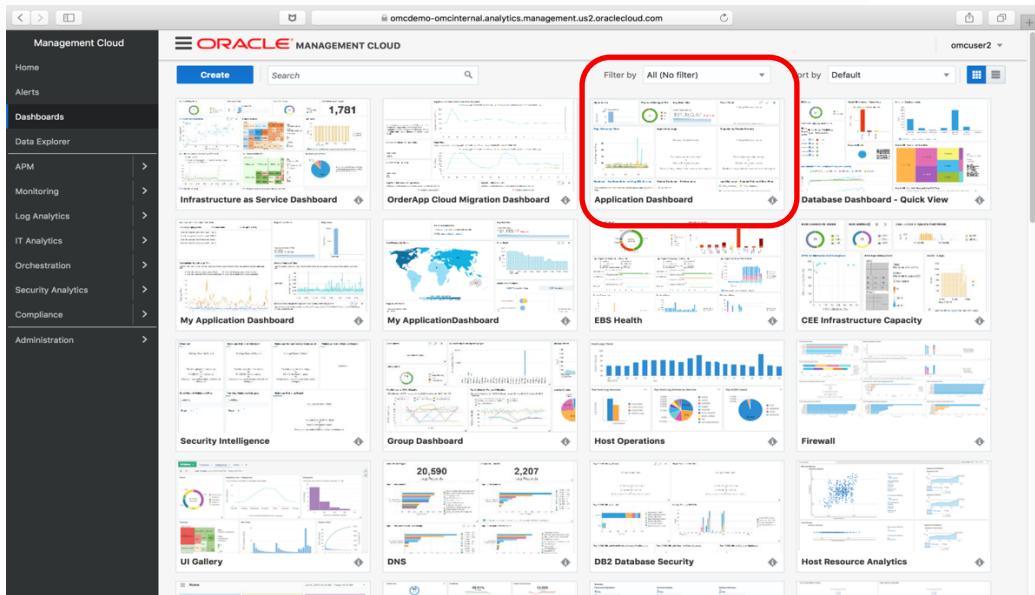
5. Navigate in Global Menu back to “Home” and then “Dashboards” and search for “Migration” and select as shown



Once we've made our initial lift-and-shift, we compare the performance and utilization metrics in OCI against the performance and utilization of our on-premises app. Here we have combined metrics from **OrderApp** (on-premises) with **OrderAppOCI** (lifted into OCI). This both de-risks the move and demonstrates the value. Note the lower CPU utilization in OCI.



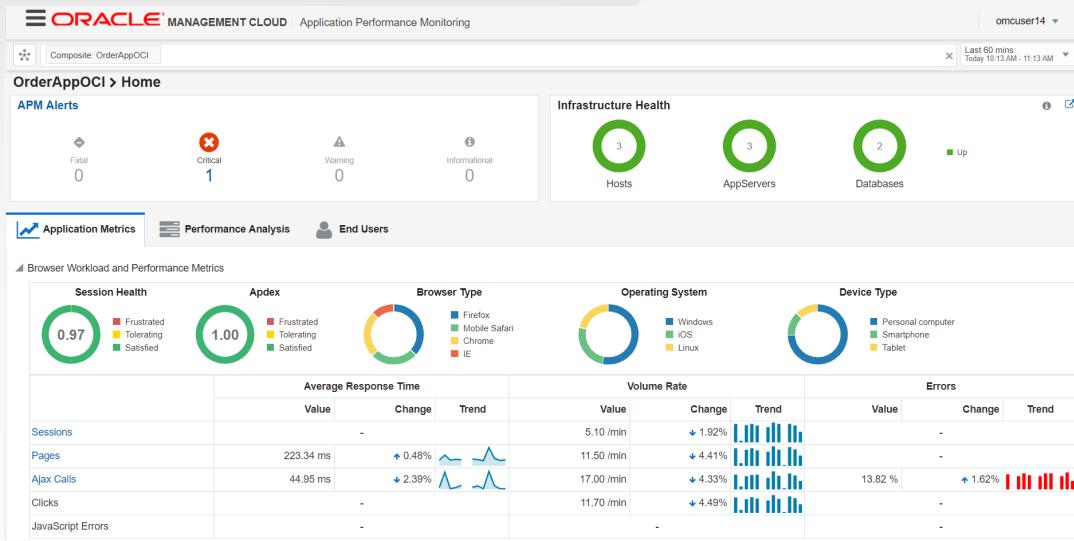
Let's look at OrderApp in OCI



Here is the **OrderApp** that has been lifted-and-shifted into OCI. We can manage it going forward like any other app.

- Select APM from Global Menu. Remove OrderApp and Type “**OrderAppOCI**” into Topology bar and select it as shown.

The OCI lifted **OrderApp** portion can be now managed the same as **OrderApp** is managed, on-premises.



Let's look at our IaaS estate across the board

The main dashboard displays a grid of various service dashboards:

- Infrastructure as Service Dashboard (highlighted)
- OrderApp Cloud Migration Dashboard
- Application Dashboard
- Database Dashboard - Quick View
- My Application Dashboard
- EBS Health
- CEE Infrastructure Capacity
- Security Intelligence
- Group Dashboard
- Host Operations
- Firewall
- UI Gallery
- DNS
- DB2 Database Security
- Host Resource Analytics

An on ongoing basis, we can use all of OMC's capabilities to monitor the IaaS estate and maximize both out utilization and its performance and security. Here you can see resources across Oracle Cloud, our on-premises private cloud and Amazon, for example.

