Oracle Utilities Analytics Dasboards for Distribution Analytics, Outage Analytics

Metric Reference Guide

Release 2.5.0.0.1

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Oracle Utilities Analytics Dasboards for Distribution Analytics, Outage Analytics Metric Reference Guide

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Contents

Preface

This document describes the Oracle Utilities Network Management Analytics metrics (such as dashboards, analyses, and subject areas) available in Oracle Utilities Analytics Dashboards. These metrics are used in the pre-built analyses, and/or available for customers to use via OBIEE Answers in building new analyses or extending existing analyses.

Audience

This guide is intended for all users of Oracle Utilities Analytics Dashboards for Oracle Utilities Network Management System.

Related Documents

For more information, see the following documents:

- *Oracle Utilities Analytics for Oracle Utilities Extractors and Schema and Oracle Utilities Analytics Dashboards Installation Guide*
- *Oracle Utilities Analytics for Oracle Utilities Extractors and Schema and Oracle Utilities Analytics Dashboards Quick Install Guide*
- *Oracle Utilities Analytics for Oracle Utilities Extractors and Schema and Oracle Utilities Analytics Dashboards Release Notes*
- *Oracle Utilities Analytics for Oracle Utilities Extractors and Schema and Oracle Utilities Analytics Dashboards User's Guide*
- *Oracle Utilities Analytics for Oracle Utilities Extractors and Schema and Oracle Utilities Analytics Dashboards Administration Guide*

See Also:

- Oracle Utilities Network Management System Documentation Library

Notational Conventions

The following notational conventions are used in this document:

Notation	Indicates
boldface	Graphical user interface elements associated with an action, terms defined in text, or terms defines in the glossary

Notation	Indicates
italic	Book titles, emphasis, or placeholder variables for which you supply particular values
monospace	Commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter

Chapter 1

Dashboard Content Reference

Oracle Utilities Analytics Dashboards, Release 2.5.0.0.1, provides analysis of and data from Oracle Utilities Network Management System using Oracle Business Intelligence Enterprise Edition built-in metrics. Non-spatial analytics, information that is not tied to geography, is represented in a series of dashboards showing tables, bar graphs, pie charts, and gauges. Spatial analytics, or information that is geographically related, use OBIEE integrated Map Viewer technology to represent events, weather data, map data, and other geographical information.

This chapter describes the Oracle Utilities Analytics Dashboards content for Oracle Utilities Network Management System. The dashboards are grouped by the following analytics:

- **Distribution Analytics**
- **Outage Analytics**

Distribution Analytics

This section describes the metrics available in Distribution Analytics of Oracle Utilities Analytics Dashboards. The analytics enable the Utilities' customers to monitor and measure network distribution.

The analytics mainly focus on feeder functionality. Based on certain feeder values (such as its length, capacity, etc), users can calculate the power actually distributed.

Oracle Utilities Analytics Dashboards for Oracle Utilities Network Management System provides Distribution Analytics content in the **Distribution** dashboard.

Distribution

The Distribution dashboard provides various analytics about feeders and their performance.

To access this dashboard:

1. Go to the **Home** page.
2. Select **Dashboards** > **Distribution Analytics** > **Distribution**.

The dashboard includes the following dashboard pages. The data for current calendar year and month is displayed by default. You may modify the criteria per requirement.

- **Feeder Load (Composite)**
- **Feeder Performance**

Feeder Load (Composite)

The Feeder Load (Composite) dashboard page focuses on the feeder load statistics in the Oracle Utilities Network Management System model.

Feeder Load

Property	Details
Description	This analysis shows the average feeder load on a monthly basis, for previous 15 months. The load is measured in kilovolt-ampere (kVA).
Purpose	Business users can analyze if the feeder is handling the load as per its capacity or it is being overloaded.
Representation	The line graph shows the average feeder load for previous 15 months. Hover over the line for specific details. The X-axis denotes the calendar month. The Y-axis denotes the average feeder load in kVA. Use the graph to view low-level details of the feeder load. For example: Click a calendar month on the X-axis of the graph. The application page shows the feeder load data for all calendar days in the selected month.
Drill Down	No drill down
Source Object	Feeder Delivered Load Snapshot Fact
OBIEE Subject Area	DMS - Feeder Delivered Load Snapshot
Metrics	Average kVA, kw, kVAr, Amp, Voltage

Feeder Load Detail

Property	Details
Description	This analysis displays the maximum daily feeder load details for the selected month. The details include feeder information and maximum load that can be carried by the feeder in terms of amperes, voltage, etc.
Purpose	Business users can analyze the data and observe or monitor the peaks in the feeder load for the selected month. Any deviations in the load will impact the network distribution.
Representation	The table shows the name of the feeder, the manufacturing company of the feeder, and the load details for the selected month. Use the **Company** column link to view the company hierarchy.
Drill Down	No drill down
Source Object	Feeder Delivered Load Snapshot Fact
OBIEE Subject Area	DMS - Feeder Delivered Load Snapshot
Metrics	Maximum kVA, Maximum kw, Maximum kVAr, Maximum Amp, Maximum Voltage

Greatest Feeder Peak Load Detail

Property	Details
Description	This analysis shows the feeders that experienced the maximum peak load (in kVA) in the selected month. It also shows where the heaviest load exists within the distribution network.
Purpose	The feeders are ranked based on the load each one of them experienced in the selected month. Business users can monitor such feeders closely to ensure the overload conditions do not occur. Overload might cause breakdowns leading to outages.
Representation	The table shows the maximum load for each of the feeder and also the ranking.
Drill Down	No drill down
Source Object	Feeder Delivered Load Snapshot Fact
OBIEE Subject Area	DMS - Feeder Delivered Load Snapshot
Metrics	Maximum kVA

Smallest Feeder Capacity Margin

Property	Details
Description	"Breaker capacity" is the margin before which an overload may occur. This analysis displays the breaker capacity for each feeder that helps to determine the feeders having the smallest remaining margin before overloads may occur, possibly resulting in a breaker lock-out.
Purpose	Business users can identify the feeders with lowest margin and take necessary measures to set an even distribution amongst the feeders.
Representation	The table shows the maximum amplitude, maximum breaker amp limit, and the capacity margin for the respective feeder. Capacity Margin = (Maximum Breaker Amp Limit - Maximum Amp)
Drill Down	No drill down
Source Object	Feeder Delivered Load Snapshot Fact
OBIEE Subject Area	DMS - Feeder Delivered Load Snapshot
Metrics	Capacity Margin, Maximum Amp, Maximum Breaker Amp Limit

Feeder Performance

The Feeder Performance dashboard page provides a snapshot of the overall health of feeders, such as worst performing feeders. It also compares the feeder performance with that of the previous period, along with the number of interruptions and customers impacted. This can alert the businesses to take preventive action in advance.

Feeder Performance

Property	Details
Description	This analysis displays the reliability indices for company, region, branch, substation, and feeder level, along with the number of customers served per control zone. The data is displayed for the selected calendar year.
Purpose	Business users can verify the reliability indices to state the effectiveness of feeders. Users can identify the impact of the outages in specific year and control zone.
Representation	The table shows the number of sustained interruptions, number of momentary interruptions, number of customers served, and the relative reliability indices for the selected calendar year. Use the **Calendar Year** column link to view the details for each quarter, month, and calendar day. Use the **Company** column link to view the details for each region, branch, and substation.
Drill Down	No drill down
Source Object	Control Zone Outage Fact
OBIEE Subject Area	NMS - Control Zone Outage
Metrics	SAIDI, SAIFI, CMI, CAIDI, MAIFI, Number of Sustained Interruptions, Number of Customer Served

Top 10 Worst Performing Feeders

Property	Details
Description	This analysis displays the top 10 worst performing feeders in the selected month, sorted by their SAIDI numbers.
Purpose	Business users can identify the feeders that are not performing well, and thus analyze how each feeder contributes to the total SAIDI value. Based on the analysis, they might choose to replace or upgrade feeders or check if there are any external factors impacting the feeder performance. Also, they can figure out if any load balancing techniques have to be used.
Representation	The table shows the SAIDI values for each of the feeders and their corresponding SAIDI rank. The previous SAIDI rank is also shown to compare the performance in the current month and the previous month. It also shows the % of Total for each of the feeders. % of Total = (SAIDI * 100) / Total SAIDI The pie chart shows the share of each feeder in total SAIDI.
Drill Down	No drill down
Source Object	Control Zone Outage Fact

Property	Details
OBIEE Subject Area	NMS - Control Zone Outage
Metrics	SAIDI, SAIFI, CMI, CAIDI, MAIFI, Number of Sustained Interruptions, Number of Customer Served

Top 10 Consecutive Worst Performing Feeders

Property	Details
Description	Sometimes, feeders tend to under perform because of environmental factors, overload, or outdated hardware issues. This analysis displays the top 10 feeders that are consecutively performing badly. The data is shown for the selected month.
Purpose	Feeders that perform worse consecutively might need more attention and any degrade in the performance might need necessary measures.
Representation	The table shows the SAIDI values and the respective SAIDI ranks for each of the top 10 feeders in the selected and previous months. It also shows the % of Total for each of the feeders. % of Total = (SAIDI * 100) / Total SAIDI Use the **Rank** text box to view the selected ranks in the report.
Drill Down	No drill down
Source Object	Control Zone Outage Fact
OBIEE Subject Area	NMS - Control Zone Outage
Metrics	SAIDI, % of Total, Rank of SAIDI, Previous SAIDI Rank, Previous SAIDI

Outage Analytics

This section describes the metrics available in Outage Analytics of Oracle Utilities Analytics Dashboards. The analytics enable the Utilities' customers to monitor and measure outage management system.

The analytics mainly focus on restoration of power. It helps the business users to prioritize restoration efforts and manage resources based on the criteria, such as number of customers impacted, locations of emergency facilities, size of outages, duration of outages, and more.

Oracle Utilities Analytics Dashboards for Oracle Utilities Network Management System provides Outage Analytics content in the following dashboards:

- **Overview**
- **Current Outages**
- **Historical Outages**
- **Reliability**

Overview

The Overview dashboard provides a high-level overview of the near real-time information about outages. The near real-time period can be configured.

To access this dashboard:

1. Go to the **Home** page.
2. Select **Dashboards** > **Outage Analytics** > **Overview**.

The dashboard includes the following dashboard pages. The data for current calendar year and month is displayed by default. You may modify the criteria per requirement.

- **Current Outages Map**
- **Unrestored Outages**
- **Restoration Status**

Current Outages Map

The Current Outages Map dashboard page provides a snapshot of the current outages based on the near real-time data extracted from the Oracle Utilities Analytics schema.

Outage Map

Property	Details
Description	This analysis provides a spatial representation of the customers impacted and the minutes interrupted due to an outage in a specific region. **Note**: Select the date (begin date) for the details you want to view.
Purpose	Business analysts can identify outage locations and crew locations, and propose solutions for faster restoration. It helps in reducing the outage durations.

Property	Details
Representation	Outage locations are represented in green, yellow, and red dots on the map. The severity of these outages is based on number of customers impacted. Crews that are working on the outages are represented by yellow working hats. The heat map shows where the intensity of an issue is highest, as in the longest outage durations. The color-coded region on the map shows the outage details, such as the number of customers impacted, average outage duration, customer minutes interrupted). The table shows the event details, the outage duration, and the estimated restoration time, customer minutes interrupted, and customers impacted and calls received. The **Event number** column link broadcasts the event information and displays various details, such as the event status, crew ID, and crew type.
Drill Down	The **Customers Impacted** column link drills down to the **Customer** dashboard page showing the respective details of the customer experiencing outage.
Source Object	Recent Customer Outage Fact, Recent Job Fact
OBIEE Subject Area	NMS - NRT Overview
Metrics	Customers Impacted, Outage Duration, CMI, Calls Received

Unrestored Outages

The Unrestored Outages dashboard page provides an overview of the current outages which are not yet restored - different types of outages being faced currently, unresolved customer events, and the details of critical customers currently experiencing outage.

Outage Summary

Property	Details
Description	This analysis shows a summary of outage details, such as the average outage duration, customer minutes interrupted, and average customers impacted, as on the last extraction time, along with the count of various types of outages at various hierarchy levels.
Purpose	Business analysts can calculate the estimation of restoration times and thus manage the crews assisting in restoration.
Representation	The table displays the outage information, along with a tree view of control zone hierarchy. The outage duration, customer minutes interrupted, and customers impacted are also displayed.
Drill Down	No drill down
Source Object	Recent Customer Outage Fact, Recent Job Fact

Property	Details
OBIEE Subject Area	NMS - NRT Overview
Metrics	Non Outage Events, Outage Events, Fuzzy Events, Dispatched Outages, Confirmed Outages, Device Outages, Service Outages, Average Outage Duration, CMI, Customers Impacted

Unresolved Customer Events

Property	Details
Description	This analysis displays the number of customer calls received corresponding to a given outage event, grouped by the event status. The events are categorized into event statuses. For example: new (NEW), onsite (ONS), assigned (ASN), and enroute (ENR). The data is displayed as on the last extraction time. **Note**: A single outage event can have an impact on multiple customers.
Purpose	Based on the number of calls against each outage event, business analysts can quickly identify the state with highest priority.
Representation	The bar graph shows the number of calls received from customers against each outage event status. The X-axis represents the event status. The Y-axis represents the number of customer calls received. Hover over the graph for respective values. The table shows the number of customer calls received per each outage event number against the respective event status.
Drill Down	No drill down
Source Object	Recent Call Fact
OBIEE Subject Area	NMS - NRT Overview
Metrics	Number of Calls

Critical Customers

Property	Details
Description	This analysis focuses on the critical, critical, key, medical, and LSE customers affected by the current outages as on the last extraction time.
Purpose	This tool provides the details of major customers impacted due to an outage. Business users can prioritize the restoration services accordingly.

Property	Details
Representation	The bar graph shows the number of customers against each customer bucket. The X-axis represents the branch of the customer. The Y-axis represents the number of customers. Hover over the bars for specific values. The graph bars drill down to granular details. The table shows the customers' account information and the criticality type. It also shows the estimated restoration time for the respective outage events. The customers' details are collated as a control zone hierarchy.
Drill Down	No drill down
Source Object	Recent Customer Outage Fact
OBIEE Subject Area	NMS - NRT Overview
Metrics	Total Customers Impacted, Critical Customers, Key Customers, Medical Customers, LSE Customers

Restoration Status

The Restoration Status dashboard page provides an hourly summary of the number of customers interrupted, customers restored, along with the total number of calls received every hour. It gives an overview of the overall restoration progress, analyzing if more crews need to be introduced to improve the overall strategy planning.

Restoration Status for Last 24 Hours

Property	Details
Description	This analysis shows the number of customers currently in outage, the number of customers who have been restored, and the number of new customers in outage. The data is shown as of the previous extraction time.
Purpose	Business users can analyze the extent of outages and number of customers impacted. They can help to prioritize restoration efforts and managing resources based upon the criteria, such as locations of emergency facilities, size of outages, and duration of outages.
Representation	The bar graph shows the number of new customers in outage, number of customers restored, and number of customers still experiencing outage. The line graph represents number of calls received. The X-axis represents the time in hours. The Y1-axis represents the number of customers, while the Y2-axis represents the number of calls. At some point, the customers still experiencing outage should reach zero indicating that all the customers experiencing outages are restored.
Drill Down	No drill down
Source Object	Outage Fact

Property	Details
OBIEE Subject Area	NMS - NRT Overview
Metrics	Number of Customers Append, Number of New Customers Out

Estimated Number of Restorations for Next 24 Hours

Property	Details
Description	This analysis shows the number of customers expected to be restored in the next few hours.
Purpose	Business users can track the number of customers going to be restored at each time interval.
Representation	The line graph shows the number of customers going to be restored on an hourly basis. The X-axis represents the time in hours. The Y-axis represents the number of customers.
Drill Down	No drill down
Source Object	Outage Fact
OBIEE Subject Area	NMS - NRT Overview
Metrics	Number of customers expected to be restored

Restored Customers

Property	Details
Description	This analysis compares the customers still not restored to the total number of customers affected by all outage events. The data is displayed as of the previous extraction time.
Purpose	This analysis helps the business analysts to prioritize outage restoration efforts. The efforts may include estimating the restoration time, managing crews required for restoration, and more.
Representation	The pie chart shows the percentage of customers still not restored when compared to total number of customers affected by all outage events. The table shows the number of restored and unrestored customers by the **Control Zone** hierarchy.
Drill Down	No drill down
Source Object	Recent Customer Outage Fact
OBIEE Subject Area	NMS - NRT Overview
Metrics	Restored Customers, Unrestored Customers

Wire Down Overview

Property	Details
Description	This analysis provides an overview of all the events, the number of customer calls, and the total number of customers affected due to the wire downs at control zone hierarchy level. The data is displayed as of the previous extraction time.
Purpose	Business users can identify the number of customers impacted in a region across the control zone hierarchy.
Representation	The table shows the number of events, number of customer calls, and the total number of customers affected due to the wire downs. It also shows the measures across the control zone hierarchy.
Drill Down	Click the **Customers Interrupted** column link to drill down to the **Wire Downs** dashboard page for specific details.
Source Object	Recent Job Fact, Recent Customer Outage Fact, Recent Call Fact
OBIEE Subject Area	NMS - NRT Overview
Metrics	Number of Events, Customers Interrupted, Number of Calls

Current Outages

The Current Outages dashboard provides a snapshot of the network outages recorded in a region.

To access this dashboard:

1. Go to the **Home** page.
2. Select **Dashboards** > **Outage Analytics** > **Current Outages**.

The dashboard includes the following dashboard pages. The data for current calendar year and month is displayed by default. You may modify the criteria per requirement.

- **Current Outages**
- **Customer**
- **Crew**
- **Wire Downs**

Current Outages

The Current Outages dashboard page provides a replay of all the recent outage events in a region.

Current Outages

Property	Details
Description	This map replays all outage events that are within near real-time range. The playback is based on an hourly summary of all outage events.
Purpose	This analysis is typically used to analyze how quickly outages in a region are restored during a storm.

Property	Details
Representation	The color-coded region on the map shows specific details about the outage events in that region. The **Legend** drop down displays the data by average outage duration, customer minutes impacted, customers impacted, and number of momentary interruptions. Outage locations are represented in green, yellow, and red dots on the map. The severity of these outages is based on number of customers impacted.
Drill Down	No drill down
Source Object	Recent Customer Outage Fact
OBIEE Subject Area	NMS - NRT Overview
Metrics	CMIs, Customers Impacted

Customer

The Customer dashboard page provides a snapshot of the customers currently experiencing outages.

Customers Impacted

Property	Details
Description	This analysis provides a spatial representation of customers currently experiencing outages in a specific region.
Purpose	This analysis shows the customers impacted due to an outage in a specific region. Business users can predict probable outage locations and plan faster restoration.
Representation	The color-coded region on the map shows specific details about the customers impacted in that region, such as the customers impacted, the average outage duration, and the customer minutes interrupted, along with its postal code. The postal code link broadcasts the postal code value to the **Customer Details** analysis on the same dashboard page.
Drill Down	No drill down
Source Object	Recent Customer Outage Fact
OBIEE Subject Area	NMS - NRT Overview
Metrics	Customers Impacted, Outage Duration, CMIs

Customer Details

Property	Details
Description	This analysis displays a list of all customers currently experiencing outages in a specific region (postal code). The customers are grouped by events, which helps in analyzing the number of customers out due to each event. The data is based on the postal code selected on the **Customers Impacted** map.
Purpose	This analysis helps business analysts to prioritize restoration efforts and manage resources based on criteria, such as location, size of outages, and duration of outages.
Representation	Use the **Postal Code** drop down to view the data for a specific area. The table displays customer and outage duration, and the estimated restoration time details for the selected postal code.
Drill Down	The **Event Number** column link drills down to the **Crew** dashboard page for granular details.
Source Object	Recent Customer Outage Fact
OBIEE Subject Area	NMS - NRT Overview
Metrics	Outage Duration

Crew

The Crew dashboard page provides details about how efficiently crews are allocated and are responding to the current outages.

Crew Assignment Summary

Property	Details
Description	This analysis displays a list of all crew assignments for the current outages. These details provide an overview of how crews are assigned with the tasks. The data is displayed as of the previous extraction time.
Purpose	Business users can successfully manage the crews assisting in restoring the outages.
Representation	The table displays the crew type and all the crew names corresponding to this type.
Drill Down	No drill down
Source Object	Recent Crew Activity Fact
OBIEE Subject Area	NMS - NRT Overview
Metrics	Number of Assignments

Onsite Crew List

Property	Details
Description	This analysis displays a list of all crews who are assigned the outage restoration tasks. These crews represent all the resources that are actively working on restoring the current outages. The data is displayed as of the previous extraction time.
Purpose	Business users can get a snapshot of which crew is assigned which task, and other specific outage details.
Representation	The table displays the crew details (crew and crew type), along with the assignment time, en route time, and on site time for each of the crews.
Drill Down	No drill down
Source Object	Recent Crew Activity Fact, Recent Crew Fact
OBIEE Subject Area	NMS - NRT Overview
Metrics	Assignment Time

Outage Event Status by Control Zone

Property	Details
Description	This analysis shows the status of outage events at various control zone level hierarchies. The data is displayed as of the previous extraction time.
Purpose	Business users can analyze the status of outage events at any given point in time.
Representation	The table displays the total number of outage events and also the status (unassigned, assigned, en-route, on-site, or complete) of each event as of the previous extraction time. The bar graph shows the number of outage events in each status bucket, at branch level of control zone hierarchy. The X-axis represents the branch. The Y-axis represents the number of outage events. Hover over the bars for specific details. The bars drill down to show the details for lower level hierarchy.
Drill Down	No drill down
Source Object	Recent Crew Activity Fact, Recent Crew Fact
OBIEE Subject Area	NMS - NRT Overview
Metrics	Unassigned, Assigned, Enroute, Onsite, Completed, Total Outage Events

Wire Downs

The Wire Downs dashboard page displays the near real-time events associated with all wire downs.

Events with Wire Down Calls

Property	Details
Description	This analysis displays the number of events associated with active wire downs on a calendar day.
Purpose	Business users can figure out the time of the day that has the maximum number of wire down events.
Representation	The bar graph shows the number of active events, thus helping to understand the trend of number of outage events. The X-axis represents the time buckets on the selected calendar day. The Y-axis represents the outage events with active wire down calls. Hover over the graph for specific details. The graph bars drill down to show granular details.
Drill Down	No drill down
Source Object	Recent Job Fact
OBIEE Subject Area	NMS - NRT Overview
Metrics	Number of Events

Call Summary

Property	Details
Description	This analysis shows the customer call summary by hour.
Purpose	This analysis helps the business users to monitor the progress of outage restoration. Decrease in the number of calls may indicate that the restoration is in progress.
Representation	The line graph shows the number of customer calls received on an hourly basis. The X-axis represents the time in hours. The Y-axis represents the number of customer calls. Hover over the graph for specific details.
Drill Down	No drill down
Source Object	Recent Call Fact
OBIEE Subject Area	NMS - NRT Overview
Metrics	Number of Calls

Active Wire Down Calls

Property	Details
Description	This analysis displays a list of all wire down calls that are associated with active events only. The event number and caller information are also displayed to help take immediate action on those calls.
Purpose	Due to increase in awareness of outage restoration progress, there are better chances of improving customer satisfaction.
Representation	The table displays the event number and caller information across the control zone hierarchy.
Drill Down	No drill down
Source Object	Recent Call Fact
OBIEE Subject Area	NMS - NRT Overview
Metrics	Call Time

Historical Outages

The Historical Outages dashboard provides historical information showing trends that help plan for future actions. The historical data can be filtered by date range, storm name, control zone, etc.

To access this dashboard:

1. Go to the **Home** page.
2. Select **Dashboards** > **Outage Analytics** > **Historical Outages**.

The dashboard includes the following dashboard pages. The data for current calendar year and month is displayed by default. You may modify the criteria per requirement.

- **Historical Outage Map**
- **Trend**
- **Event Detail**

Historical Outage Map

The Historical Outage Map dashboard page provides a geographical representation of the outage details.

Historical Monthly Outage Playback

Property	Details
Description	Replay on this map is played using historical data that could span over several years. The entire data for the result set is shown on the map. The playback is based on a monthly summary of all outage events.
Purpose	This analysis is typically used to analyze how quickly outages in a region are restored in various circumstances, such as during a storm.

Property	Details
Representation	The color-coded region on the map shows the customers impacted and minutes interrupted in that region. The **Legend** drop down displays the data by customer minutes impacted and customers impacted. Outage locations are represented in green, yellow, and red dots on the map. The severity of these outages is based on number of customers impacted.
Drill Down	No drill down
Source Object	Restored Customer Outage Fact
OBIEE Subject Area	NMS - Historical Overview
Metrics	Customer impacted, CMIs

Trend

The Trend dashboard page provides a snapshot of all the events occurred throughout the calendar year, along with their impact on customers.

Yearly Summary

Property	Details
Description	This analysis displays the number of events against the impacted customers, aggregated by year. It shows a trend of whether the number of events are increasing or decreasing over the years.
Purpose	Business users can compare the data and analyze the event trend. If there is an increase in the number of events from the previous year, appropriate business decisions need to be taken to reduce it.
Representation	The bars show the year-on-year comparison of the customers interrupted. The line shows the number of events by year. It also shows the trend in increase or decrease of events in those years. The X-axis represents the year. The Y-axis represents the number of customers impacted due to outage events. Hover over the bars for specific values.
Drill Down	No drill down
Source Object	Restored Job Fact, Restored Customer Outage Fact
OBIEE Subject Area	NMS - Historical Overview
Metrics	Number of Events, Customer Interrupted

Estimated Versus Actual Restoration Time

Property	Details
Description	This analysis shows how well the restoration times were estimated in the past.
Purpose	If there is a large difference between the estimated and the actual restorations times, businesses may need to change their estimation methods.
Representation	The line graph is shows the average difference between estimated restoration time and restoration time, for each year. The X-axis represents the month and year. The Y-axis represents the time in minutes. Hover over the graph for specific values.
Drill Down	No drill down
Source Object	Restored Job Fact
OBIEE Subject Area	NMS - Historical Overview
Metrics	Average Difference Between ERT, Restore Time

Events by Device Type

Property	Details
Description	This analysis shows the number of outage events against each device type. The data is shown for the selected month.
Purpose	Business users can identify which device types are majorly causing the outage events.
Representation	The pie chart shows the outage events (as percentage of total) by each device type.
Drill Down	No drill down
Source Object	Restored Job Fact, Restored Customer Outage Fact
OBIEE Subject Area	NMS - Historical Overview
Metrics	Percentage of Events per Device Type

Outage Causes

Property	Details
Description	This analysis shows the number of events by each outage cause in the selected calendar month. The outage causes can include tree trimming, foreign interference, weather, etc.
Purpose	This analysis helps the business users to plan the current outage restorations to prevent any outages in the future.

Property	Details
Representation	The pie chart shows the outage causes (as percentage of total) in the selected month. The table shows the number of events against each outage cause.
Drill Down	The **Outage Cause** column link drills down to the **Event Detail** dashboard page for specific details about the outage events.
Source Object	Restored Job Fact
OBIEE Subject Area	NMS - Historical Overview
Metrics	Percentage of Events per Outage Cause

Average Duration by Crew Activities

Property	Details
Description	This analysis shows the average duration (in minutes) of various crew activities for the selected month.
Purpose	This analysis helps the business users to plan the current outage restorations to prevent any outages in the future.
Representation	The stacked bar graph displays the average duration taken for each crew activity in the selected month. The X-axis represents the year and month. The Y-axis represents the average duration. Hover over the bars for specific details.
Drill Down	No drill down
Source Object	Restored Job Fact
OBIEE Subject Area	NMS - Historical Overview
Metrics	Arrive to Complete, Dispatch to Arrive, Assign to Dispatch, Call to Assign

Event Detail

The Event Detail dashboard page provides a detailed summary about the outage events at account level.

Event Detail

Property	Details
Description	This analysis shows a summary of all outage events that occurred in the selected month.
Purpose	Business users can plan effective restoration processes to reduce the outage durations.

Property	Details
Representation	The table displays the outage duration, number of customers impacted, CMI, and the customer calls received in the selected month. The data is shown per control zone hierarchy.
Drill Down	No drill down
Source Object	NMS - NRT Overview Fact
OBIEE Subject Area	NMS - NRT Overview
Metrics	Average Outage Duration (In Minutes), Restoration Time Deviation (in Minutes), Customers Interrupted, Customer Minutes Interrupted, Number of Calls

Reliability

The Reliability dashboard provides a summary of the feeder performance and also the following IEEE performance metrics:

- SAIDI (System Average Interruption Duration Index)
- SAIFI (System Average Interruption Frequency Index)
- CAIDI (Customer Average Interruption Duration Index)
- MAIFI (Momentary Average Interruption Frequency Index)

These indices represent the customer satisfaction and how quickly the outages are restored.

To access this dashboard:

1. Go to the **Home** page.
2. Select **Dashboards** > **Outage Analytics** > **Reliability**.

The dashboard includes the following dashboard pages. The data for current calendar year and month is displayed by default. You may modify the criteria per requirement.

- **Reliability**
- **Feeder Performance**
- **Reliability by Control Zone**

Reliability

The Reliability dashboard page provides a summary of the reliability indices calculated for each city and control zone.

Reliability by City

Property	Details
Description	This analysis provides a spatial representation of the customers interrupted in a specific region. It displays the reliability indices calculated for each city in the selected month.
Purpose	Business users can identify improvements on reliability for the lowest cost.

Property	Details
Representation	The color-coded region on the map shows the customers interrupted in that region. The table displays the number of customers interrupted in each city, along with the respective SAIDI, CMI, CAIDI, and SAIFI indices.
Drill Down	No drill down
Source Object	City Outage Fact
OBIEE Subject Area	NMS - City Outage
Metrics	Customers Interrupted, SAIDI, CAIDI, CMI

Feeder Performance

The Feeder Performance dashboard page provides a snapshot of the overall health of the feeders, including those performing worse. This can alert the businesses to take the action well in advance.

Top 10 Worst Performing Feeders

Property	Details
Description	This analysis shows the top 10 worst performing feeders in the selected month. It displays the feeders sorted by their SAIDI numbers, and also how each feeder contributes to the total SAIDI value.
Purpose	Business users can identify the feeders that are not performing well, and thus analyze how each feeder contributes to the total SAIDI value. Based on the analysis, they might choose to replace or upgrade feeders or check if there are any external factors impacting the feeder performance. Also, they can figure out if any load balancing techniques have to be used.
Representation	The table shows the SAIDI values and ranks (for both current month and previous month) for each of the top 10 worst performing feeders. The **% of Total** value is also shown.
Drill Down	No drill down
Source Object	Control Zone Outage Fact
OBIEE Subject Area	NMS - Control Zone Outage
Metrics	SAIDI, % of Total, Rank of SAIDI, Previous SAIDI Rank

Top 10 Consecutive Worst Performing Feeders

Property	Details
Description	This analysis displays feeders that were in the worst performing feeder list for the past two months. It means that these feeders are consecutively performing badly, and any issues need to be identified. Previous month's SAIDI is also displayed to compare the current and previous period's performance. This shows whether the feeder performance is better or worse than the last month.
Purpose	The analysis compares the SAIDI values for the current and previous months. Business users can analyze whether the feeder performance is better or worse than the previous period. Users can thus identify any feeder issues.
Representation	The table shows the SAIDI values and ranks (for both current month and previous month) for each of the top 10 feeders that are consecutively not performing well. The **% of Total** value is also shown.
Drill Down	No drill down
Source Object	Control Zone Outage Fact
OBIEE Subject Area	NMS - Control Zone Outage
Metrics	SAIDI, % of Total, Rank of SAIDI, Previous SAIDI Rank, Previous SAIDI

System Monthly Trend

Property	Details
Description	This analysis shows the SAIDI trend in the previous 12 months.
Purpose	The analysis compares the SAIDI values for the current and previous months. Business users can analyze whether the system performance is better or worse than the previous period. Users can thus identify any system issues.
Representation	The line graph shows the SAIDI values for each month, along with the average monthly SAIDI. The X-axis represents the month and year. The Y-axis represents the SAIDI values. Hover over the lines for specific details.
Drill Down	No drill down
Source Object	Control Zone Outage Fact
OBIEE Subject Area	NMS - Control Zone Outage
Metrics	Monthly SAIDI, Average Monthly SAIDI

Feeder Monthly Trend

Property	Details
Description	This analysis shows the SAIDI trend for the selected feeder in the previous 12 months.
Purpose	The analysis compares the SAIDI values for the current and previous months. Business users can analyze whether the feeder performance is better or worse than the previous period. Users can thus identify any feeder issues.
Representation	The **Feeder** drop down slices the data by various feeders in the system. The line graph shows the SAIDI values for each month, along with the average monthly SAIDI, for the selected feeder. The X-axis represents the month and year. The Y-axis represents the SAIDI values. Hover over the lines for specific details.
Drill Down	No drill down
Source Object	Control Zone Outage Fact
OBIEE Subject Area	NMS - Control Zone Outage
Metrics	Monthly SAIDI, Average Monthly SAIDI

System Rolling Year To Date

Property	Details
Description	This analysis shows the trend of cumulative SAIDI for the year to date (YTD) period. The data is shown from January of the selected year till the selected month.
Purpose	The analysis compares the SAIDI values for the current and previous months. Business users can analyze whether the system performance is better or worse than the previous period. Users can thus identify any system issues.
Representation	The line graph shows the year to date SAIDI values for each month. The X-axis represents the month and year. The Y-axis represents the SAIDI values. Hover over the lines for specific details.
Drill Down	No drill down
Source Object	Control Zone Outage Fact
OBIEE Subject Area	NMS - Control Zone Outage
Metrics	YTD SAIDI

Feeder Rolling Year To Date

Property	Details
Description	This analysis shows the trend of cumulative SAIDI for year to date (YTD) period for selected feeder. The data is shown from January of the selected year till the selected month.
Purpose	The analysis compares the SAIDI values for the current and previous months. Business users can analyze whether the feeder performance is better or worse than the previous period. Users can thus identify any feeder issues.
Representation	The **Feeder** drop down slices the data by various feeders in the system. The line graph shows the year to date SAIDI values for each month. The X-axis represents the month and year. The Y-axis represents the SAIDI values. Hover over the lines for specific details.
Drill Down	No drill down
Source Object	Control Zone Outage Fact
OBIEE Subject Area	NMS - Control Zone Outage
Metrics	YTD SAIDI

System Rolling 12 Months

Property	Details
Description	This analysis shows the sum of SAIDI for the previous 12 months for each month on the X-axis.
Purpose	The analysis compares the SAIDI values over the previous 12 months. Business users can analyze whether the system performance is better or worse than the previous period. Users can thus identify any system issues.
Representation	The line graph shows the respective 12-month rolling SAIDI values for each month. The X-axis represents the month and year. The Y-axis represents the SAIDI values. Hover over the lines for specific details.
Drill Down	No drill down
Source Object	Control Zone Outage Fact
OBIEE Subject Area	NMS - Control Zone Outage
Metrics	12-Month Rolling SAIDI

Feeder Rolling 12 Months

Property	Details
Description	This analysis shows the sum of SAIDI for the previous 12 months for each month on the X-axis for the selected feeder.
Purpose	The analysis compares the SAIDI values over the previous 12 month. Business users can analyze whether the feeder performance is better or worse than the previous period. Users can thus identify any feeder issues.
Representation	The **Feeder** drop down slices the data by various feeders in the system. The line graph shows the respective 12-month rolling SAIDI values for each month. The X-axis represents the month and year. The Y-axis represents the SAIDI values. Hover over the lines for specific details.
Drill Down	No drill down
Source Object	Control Zone Outage Fact
OBIEE Subject Area	NMS - Control Zone Outage
Metrics	12-Month Rolling SAIDI

Reliability by Control Zone

The Reliability by Control Zone dashboard page focuses on the reliability indices calculated for each control zone.

Momentary/Sustained Interruptions

Property	Details
Description	This analysis shows the feeder performance for momentary interruptions and sustained interruptions occurring for a considerable period in the selected year.
Purpose	Business users can analyze the data and identify the customers impacted in a specific control zone.
Representation	The first table shows the number of momentary interruptions and the customers impacted in the control zone hierarchy. The second table shows the number of sustained interruptions and the customers impacted in the control zone hierarchy, along with SAIDI, CMI, SAIFI, and CAIDI values. The data is shown for the selected month.
Drill Down	No drill down
Source Object	Control Zone Outage Fact
OBIEE Subject Area	NMS - Control Zone Outage
Metrics	MAIFI, Number of Momentary Interruptions, Number of Customer Served, SAIDI, SAIFI, ASAI, CMI, CAIDI

Additional Information

The Licensing and Packaging Guide contains valuable information on the features and data structures available in Oracle Utilities Analytics Dashboards. The guide is provided as an Excel spreadsheet, Oracle Utilities Analytics v2.5.0.0.1 Licensing and Packaging Guide.xls. Content includes:

- A list of all of the available Oracle Utilities Analytics products.
- Installer Options - the required extractors and schemas for each product.
- Subject Areas, Facts, and Dimensions.
- Dashboards and Answers - the standard dashboards available and the associated Answers along with the Answer path.