

Oracle Utilities
Meter Data Management

User's Guide

Release 2.1.0.0

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Chapter 1

Overview

This User Guide describes how to work with Oracle Utilities Meter Data Management. This includes:

[*Getting Started*](#) on page 8

[*User Documentation*](#) on page 13

[*System Administration*](#) on page 50

[*Reference Topics*](#) on page 59

[*FAQs*](#) on page 74

This guide contains the same content as the Oracle Utilities Meter Data Management section of the online help.

Chapter 2

What's New

This section outlines the new features in Oracle Utilities Meter Data Management.

New Features in Version 2.1.0.0

Feature	For More Information
Support for manually entering scalar readings via Device Configuration 360 Degree View zone or Scalar Measurements device configuration portal zone.	Manually Adding Register Readings for Scalar Measuring Components on page 38
Support for "master" and "sub" usage subscriptions. "Master" and "sub" usage subscriptions allow for hierarchical relationships between usage subscriptions to represent situations where a subscription is a subordinate to another usage subscription (such as when a utility is issuing a bill for a third-party service).	About Usage Subscriptions on page 40
New Override Start and End Date/Time fields for usage subscription service points.	About Usage Subscriptions on page 40

Chapter 3

Getting Started

This section provides an overview of Oracle Utilities Meter Data Management.

About Oracle Utilities Meter Data Management

Oracle Utilities Meter Data Management provides functionality for handling large volumes of meter data to enable increased accuracy, flexibility, and scalability.

Oracle Utilities Meter Data Management supports the following business process:

- Defining meters, meter configurations, service points, and meter installations
- Loading of meter readings from a head-end system or other source
- Automatic validation, editing, and estimation of measurement data
- Calculation and publishing of bill determinants and other data from measurement data for use in external down-stream systems such as billing, pricing, etc.

Oracle Utilities Meter Data Management includes the following functional areas (including functionality provided by Oracle Utilities Service and Measurement Data Foundation):

- **360 Degree Search and View:** Used by analysts and administrators to search and view data for devices, measuring components, service points, usage subscriptions, and contacts.
- **Aggregations:** Used by analysts and administrators to search, view and maintain aggregated measurements that represent a summarization of other measurements from a set of devices and/or measuring components.
- **Device Management:** Used by analysts and administrators in managing and defining the devices used to record and capture meter data. Device management functionality is provided by both Oracle Utilities Meter Data Management and the Oracle Utilities Service and Measurement Data Foundation.
- **Device Installation:** Used by analysts and administrators in managing the installation of devices, including defining markets and service providers, service points and contacts, and installation events. Device installation also includes communication between devices, as well as defining the schedules for manual meter reading. Device installation functionality is provided through Oracle Utilities Service and Measurement Data Foundation.

- **Usage Management** : Used by analysts and administrators to define calculation rules to be applied to measurement data, and to provide the results of those calculations (commonly referred to as bill determinants) to external systems and parties. Usage management functionality is provided in Oracle Utilities Meter Data Management
- **Validation, Editing, and Estimation (VEE)**: Used by analysts and administrators to define validation, editing, and estimation (VEE) rules to be applied to measurement data. VEE functionality is provided by both Oracle Utilities Meter Data Management and the Oracle Utilities Service and Measurement Data Foundation.

Starting the Application

Use this procedure to start Oracle Utilities Meter Data Management.

1. Click the desktop icon or program menu option to start the Oracle Utilities Meter Data Management server application.
2. Log in using your user ID and password.
3. If prompted, select a language.
4. Use the toolbar or menu bar (on the left edge of the screen) to select the function you want to perform.

Understanding the User Interface

For information about the application's main toolbar, menu system, user setup and security, and user interface standards, see the System Wide Standards topic in the Framework Business Processes online help.

Menus and Navigation

This topic describes the Oracle Utilities Meter Data Management menus and general rules for navigating the system.

Main Menu and Admin Menu

The Oracle Utilities Meter Data Management menu displays on the left side of the application screen. The menu is configurable, so the options that appear may vary based on your user profile and your system's configuration.

By default, the system provides two menus: the Main menu and the Admin menu.

The Main Menu is displayed by default. Click the Menu icon in the main toolbar to display a list of available menus, then select the menu you want to use. The selected menu appears on the left-hand side of the screen.

The Admin menu provides access to functions used for setup and administration. Only users who have administrative privileges will be able to see this menu. The main menu provides access to all other functions. The options displayed on each menu are based on the settings defined in your user profile. Your user profile also controls your access to different portals and dashboard zones.

Functional and Alphabetical Menus

The system supports two different menu styles: alphabetical and functional.

The functional menu groups menu options by the function, such as Device, Device Installation, and Usage Rules. Thus, to add a new Usage Rule, you would first click the Usage submenu, and then select the Usage Rule option.

Functional menu groups (including menu options from Oracle Utilities Service and Measurement Data Foundation) include the following:

- Common (Admin Menu)
- Communication (Admin and Main Menus)
- Customer Information (Admin and Main Menu)

- Device (Admin and Main Menus)
- Device Installation (Admin and Main Menus)
- Usage (Main and Admin Menus)
- Usage Rules (Admin Menu)
- VEE Rules (Admin Menu)
- Data Synchronization (Main Menu)
- Total and Trends (Main Menu)

The alphabetical menu groups menu options by the first letter of the option name. Thus, to add a new Usage Rule, you would first click the U submenu, and then select the Usage Rule option.

The procedures outlined in this documentation assume that you are using the functional menus. If you are using alphabetical menus instead, simply replace the functional submenu with the alphabetical submenu. For example, if the procedure instructs you to select:

Main Menu > Usage > Usage Rule

then you would instead select:

Main Menu > U > Usage Rule

The menu system provides access to Oracle Utilities Application Framework functions, Oracle Utilities Service and Measurement Data Foundation, and Oracle Utilities Meter Data Management functions. If you have additional Oracle Utilities applications installed, the menu system will provide access to functions for that application as well. Framework functions are described in the Framework online help; Framework help topics are listed under the appropriate Framework heading in the help contents panel. Likewise, Oracle Utilities Service and Measurement Data Foundation topics are listed in the help contents panel under the appropriate Oracle Utilities Service and Measurement Data Foundation heading.

Navigating to Portals in Add or Edit Mode

Most menu options display a + sign next to the option name. If you click the plus sign, rather than the option name, you will go directly to a screen that lets you add a new record. For example, if you click the plus sign next to the **Usage Rule** option, the system navigates to the Usage Rule add/edit screen so you can begin creating a new Usage Rule. This is referred to as 'navigating to the Usage Rule portal in add mode.' In this online help, using this option will be notated as **Usage Rule+**.

If you click the option name, rather than the + sign, the system navigates to a search portal, where you can select the entity you want to view or edit. (For admin-level data maintenance, the system navigates to a screen that lists the entities and lets you select one from the list.) This is referred to as 'navigating to the Usage Rule portal in edit mode.' Once you have found the entity you want to work with, the system displays a maintenance portal listing all the actions you can perform on that entity. The valid options will vary depending on the entity, your user privileges, and your system's configuration. Standard actions typically include Edit, Duplicate, and Delete, but other actions may be available depending on the configuration of the entity. Valid actions also typically include changes to the entity's status.

Oracle Utilities Meter Data Management Menu Options

This topic describes the Oracle Utilities Meter Data Management menu options.

The following tables list the base menu functions for the Oracle Utilities Service and Measurement Data Foundation and the Oracle Utilities Meter Data Management application. Online documentation for all functions listed below is provided under the Oracle Utilities Service and Measurement Data Foundation and Oracle Utilities Meter Data Management options on the online help contents panel.

Note: Note that an implementation can add or remove any of these functions from the menu system, change the menu option name or the submenus under which they appear, or restrict access to the options for some or all users.

Oracle Utilities Service and Measurement Data Foundation Menu Options

Menu (Admin or Main)	Functional Menu	Menu Option
Admin	Common	Exception Type
Admin	Common	Factor
Admin	Common	Service Quantity Identifier
Admin	Common	Service Type
Admin	Common	Time of Use
Admin	Common	Unit of Measure
Admin	Communications	Activity Type
Admin	Communications	Communication Type
Admin	Communications	Device Event Type
Admin	Communications	Market
Admin	Communications	Service Provider
Admin	Customer Information	Contact Type
Admin	Device	Device Configuration Type
Admin	Device	Device Type
Admin	Device	Manufacturer
Admin	Device	Measuring Component Type
Admin	Device Installation	Service Point Type
Admin	Device Installation	Measurement Cycle
Admin	Device Installation	Measurement Cycle Schedule
Admin	VEE Rules	VEE Group
Admin	VEE Rules	VEE Rule
Main	Customer Information	Contact
Main	Device Installation	Install Event
Main	Device Installation	Service Point
Main	Device Installation	Route Management
Main	Device	Device
Main	Device	Device Configuration
Main	Device	Measuring Component
Main	Communication	Activity
Main	Communication	Completion Event
Main	Communication	Communication
Main	Communication	Device Event
Main	Communication	Load IMDs / Events (XML)
Main	Initial Measurement Data	
Main	Data Synchronization	Sync Request Inbound
Main	Data Synchronization	Sync Request Inbound Exceptions
Main	Data Synchronization	Sync Request Outbound
Main	Total and Trends	Processing Statistics

Oracle Utilities Meter Data Management Menu Options

Menu (Admin or Main)	Functional Menu	Menu Option
Admin	Usage	Dynamic Option Type
Admin	Usage	TOU Group
Admin	Usage	TOU Map Template
Admin	Usage	TOU Map Type
Admin	Usage	Usage Subscription Type
Admin	Usage Rules	Usage Group
Admin	Usage Rules	Usage Rule
Main	Device	Scratchpad Measuring Component
Main	Usage	Dynamic Option
Main	Usage	Dynamic Option Event
Main	Usage	TOU Map
Main	Usage	Usage Subscription
Main	Usage	Usage Transaction
Main	Total and Trends	Consumption Statistics
Main	360 Degree Search	Search by Name
Main	360 Degree Search	Search by Address
Main	360 Degree Search	Search by Device

Chapter 4

User Documentation

This section describes the application functions that support day-to-day operations. These functions are available from the Oracle Utilities Meter Data Management application Main Menu.

360 Degree Search

This section describes use of the 360 Degree Search feature.

About the 360 Degree Search

The 360 Degree Search feature allows users to search for devices, measuring components, service points, and/or usage subscriptions using a variety of search criteria.

From the search results list, you can navigate to the 360 Degree View portal to view data on one of the following tabs:

- Measuring Component
- Device
- Service point
- Usage Subscription
- Contact

When accessed, the 360 Degree View opens on the tab corresponding to the type of object (device, measuring component, etc.) you select. For example, if you click the Measuring Component description, the Measuring Component tab opens.

Searching Data Using the 360 Degree Search

Use this procedure to search for data using the 360 Degree Search portal.

1. Select **Main Menu > 360 Search > [Option]** .
You can search by Name, Address, or Device.
2. Enter your search criteria.

Base package query options include the following:

- **Search by Name:** Allows search by name/address OR contact identifier OR usage subscription identifier. To search by address, click **Go To Search by Address**. To search by device, click **Device**.
- **Search by Address:** Allows search by address/name OR service point identifier. To search by name, click **Go To Search by Name**. To search by device, click **Device**.

Note: “Search by Address” search results contain service points with one or more active usage subscriptions only.

- **Search by Device:** Allows search by device identifier OR measuring component identifier. To search by name, click **Go To Search by Name**. To search by address, click **Address**.

3. Click **Refresh**.

4. In the search results list, click the link for the object you want to view.

The 360 Degree View opens on the tab corresponding to the type of object (device, measuring component, etc.) you selected. For example, if you click the Measuring Component description, the Measuring Component tab opens.

360 Degree View

This section describes use of the 360 Degree View feature.

About the 360 Degree View

The 360 Degree View feature allows users to view data for devices, measuring components, service points, usage subscriptions, and contacts from a single set of portals.

The 360 Degree View has a separate portal for each type of object:

- Measuring Component
- Device
- Service point
- Usage Subscription
- Contact

Viewing Measuring Component Data Using the 360 Degree View

Use this procedure to view measuring component-related data on the 360 Degree View.

The Measuring Component tab contains the following zones:

- **Measuring Component Overview:** Displays the service point, device, device configuration, install event, and usage subscription for the selected device.
- **Device Configuration Overview:** Displays an overview of the measuring component's parent device's configurations over time, including the measuring components associated with each configuration, and service points (along with the relevant install events) at which the device's configurations have been installed over time, if any exist.
To create a new reading for a scalar measuring component associated to a device configuration, click the **New Reading** link in the zone title bar.
- **Interval - Initial Measurement Overlay:** Overlays initial interval measurements (either pre-VEE or post-VEE) against the final measurements for a given period in graphic and tabular formats.
- **Final Values Overlay:** Graphs final measurements for a measuring component, and provides the ability to overlay the graphed data with final measurements from other measuring components. The zone also permits overlaying data from

the same measuring component for different time periods, as well as data from measuring components that measuring different quantities, such as temperature.

- **Interval - Audit View:** Allows users to view an interval measurement curve for a given period overlaid with the count of audit records for each individual measurement. It also allows users to magnify a portion of the curve and see how the measurements looked at different points in time.
- **Time of Use By Day:** Displays daily TOU-mapped usage data for an interval measuring component based on a user-defined time period and TOU map.
- **Time of Use Overlay:** Displays an overlay of the TOU periods on a final interval measurement along with totalized TOU consumption based on a user-defined time period and TOU map.
- **Time of Use Over Time:** Displays usage for each TOU period based on a user-defined time period and TOU map.

Note: The Time of Use Over Time zone is included with demonstration data ONLY, and may not be available in your implementation.

- **Scalar - Initial Measurement Overlay:** Overlays initial scalar measurements (either pre-VEE or post-VEE) against the final measurements for a given period in graphic and tabular formats.
- **Scalar - Audit View:** Allows users to view a scalar measurement for a given period overlaid with the count of audit records for each individual measurement. It also allows users to magnify a portion of the measurement and see how the measurements looked at different points in time.
- **Measurements:** Displays measurement details for the current measuring component, including the following for each measurement displayed:
 - Date/Time
 - Primary Value Identifier (UOM, TOU, or SQI)
 - Measured Values (Value 1, Value 2, Value 3, etc.)
 - Additional Details (start reading, stop reading, condition codes, etc.)

You can access the Measuring Component tab by clicking the Measuring Component tab from any other tab on the 360 Degree View, or you can search for a specific measuring component. To search for a measuring component:

1. Select **Main Menu > 360 Search > [Option]** .

You can search by Name, Address, or Device.

2. Enter your search criteria.

Base package query options include the following:


- **Search by Name:** Allows search by name/address OR contact identifier OR usage subscription identifier. To search by address, click **Go To Search by Address**. To search by device, click **Device**.
- **Search by Address:** Allows search by address/name OR service point identifier. To search by name, click **Go To Search by Name**. To search by device, click **Device**.
- **Search by Device:** Allows search by device identifier OR measuring component identifier. To search by name, click **Go To Search by Name**. To search by address, click **Address**.

3. Click **Refresh**.

4. In the search results list, click the **Measuring Component** link for the measuring component you want to view.

The 360 Degree View opens on the Measuring Component tab.

5.

To navigate to a related measuring component or service point in the 360 Degree View, click the  button on the Device Configuration Overview zone.

Using the Interval-Initial Measurement Overlay Zone

Use this procedure to view interval measurement data using the Interval-Initial Measurement Overlay zone.

You access the Interval-Initial Measurement Overlay zone from the Measuring Component tab of the 360 Degree View.

The Interval-Initial Measurement Overlay zone overlays initial interval measurements (either pre-VEE or post-VEE) against the final measurements for a given period in graphic and tabular formats. This zone displays the following:

- **Measuring Component:** The measuring component from which the measurement data comes.
- **Start Date/Time:** The start date and time of the measurement data displayed in the zone. The default start date/time is X amount of time prior to the End Date/Time where X is the **Hours of Data to Display** on the measuring component type.
- **End Date/Time:** The end date and time of the measurement data displayed in the zone. The default is the most recent end date of the measuring component's initial measurements.
- **Event Bar Profile:** The event bar profile displayed in the zone. This specifies how events are depicted on the graph. Available event bar profiles are defined for the measuring component type.
- **Interval Data:** Details derived from the interval measurement displayed, including average, minimum, and maximum values. This section also provides a list of available functions for the measuring component.
- **Initial Measurement Data Graph:** A graphical display of the initial measurement data for the measuring component. The upper portion of the graph displays interval values as a line graph, with Complete, Finalized, VEE Ready, etc. quantities indicated as color-shaded areas below the line graph. The lower portion displays events (based on the selected Event Bar Profile) as a bar graph.
- **Initial Measurement Data Table:** A table that lists the initial measurement data available for graphing. This table displays a description, measurement count, and Pre-VEE and Post-VEE values for measurement count, average value, minimum value, and maximum value for each initial measurement data in the table.

To use the Interval-Initial Measurement Overlay zone:

1. Navigate to the Measuring Component tab in the 360 Degree View for the measuring component you wish to view.
2. To change the dates or times for the display, adjust the dates and times as appropriate, and click **Load**.
3. To change the event bar profile for the display, select the profile from the drop-down list, and click **Load**.
4. To use a function, select the function from the **Select Function** drop-down list. See [Applying Functions](#) for more information.
5. To change the Pre-VEE measurements included in the display, select or deselect the initial measurement data as appropriate, and click **Reload Initial Measurements Using Pre-VEE**.
6. To change the Post-VEE measurements included in the display (if available), select or deselect the initial measurement data as appropriate, and click **Reload Initial Measurements Using Post-VEE**.
7. To view an individual initial measurement data in more detail, click the description link for the data you wish to view.

The initial measurement data is displayed in the Initial Measurement zone. See [Viewing Initial Measurement Data for a Measuring Component](#) for more information.

Using the Final Values Overlay Zone

Use this procedure to view measurement data using the Final Values Overlay zone.

You access the Final Values Overlay zone from the Measuring Component tab of the 360 Degree View.

The Final Values Overlay zone graphs final measurements for a measuring component, and provides the ability to overlay the graphed data with final measurements from other measuring components. The zone also permits overlaying data from the same measuring component for different time periods, as well as data from measuring components that measuring different quantities, such as temperature. This zone displays the following:

- **Measuring Component:** The measuring component from which the measurement data comes.

- **Value Identifier Type:** The value identifier of the measurement data displayed in the zone. Value identifiers are used to provide short descriptions for the various types of values measured by the measuring component (KWH, KW, etc.).
- **Start Date/Time:** The start date and time of the measurement data displayed in the zone. The default start date/time is X amount of time prior to the End Date/Time where X is the **Hours of Data to Display** on the measuring component type.
- **End Date/Time:** The end date and time of the measurement data displayed in the zone. The default is the most recent end date of the measuring component's final measurements.
- **Final Values Overlay Profile:** The final values overlay profile displayed in the zone. This specifies which types of final values are available for the graph. Available final values overlay profiles are defined for the measuring component type.
- **Event Bar Profile:** The event bar profile displayed in the zone. This specifies how events are depicted on the graph. Available event bar profiles are defined for the measuring component type.
- **Values to Graph:** A table that lists additional measurement data to be included in the graph.
- **Interval Data:** Details derived from the interval measurement displayed, including average, minimum, and maximum values. This section also provides a list of available functions for the measuring component.
- **Measurement Data Graph:** A graphical display of the measurement data for the measuring component and other data (from the Values to Graph section). The upper portion of the graph displays interval values as a series of line graphs. The lower portion displays events (based on the selected Event Bar Profile) as a bar graph. The Y-axis on the graph are based on the UOMs for the selected measurement data. The graph can display up to two unique UOMs.
- **Measuring Component Data Table:** A table that lists the measuring components whose data is displayed on the graph. This table displays a description, offset days, value identifier type, total, average value, minimum value, and maximum value for each measuring component in the table (if available).

To use the Final Values Overlay zone:

1. Navigate to the Measuring Component tab in the 360 Degree View for the measuring component you wish to view.
2. To change the value identifier type, select the type from the drop-down list, and click **Load**.
3. To change the dates or times for the display, adjust the dates and times as appropriate, and click **Load**.
4. To change the final values overlay profile, select the profile from the drop-down list, and click **Load**.
5. To change the event bar profile for the display, select the profile from the drop-down list, and click **Load**.
6. To add measuring components to the graph, add them to the Values to Graph table, as follows:
 - a) Check the **Show on Graph** checkbox to include the new measuring component on the graph.
 - b) Click the **Search for Data** icon to search for the measuring component.
 - c) Select the **Value Identifier Type** from the drop-down list.
 - d) To overlay the new measuring component for a different time-period, enter the time-period's **Offset Day**. For example, to display the same date range from the previous year, enter -365; to display the date range for the previous month, enter -30 (or-31).
 - e) Click **Load** to reload the graph with the new measuring component.
7. To use a function, select the function from the **Select Function** drop-down list. See [Applying Functions](#) for more information.

Using the Interval - Audit View Zone

Use this procedure to view interval measurement data using the Interval - Audit View zone.

You access the Interval-Audit View zone from the Measuring Component tab of the 360 Degree View.

The Interval - Audit View zone allows users to view an interval measurement curve for a given period overlaid with the count of audit records for each individual measurement. It also allows users to magnify a portion of the curve and see how the measurements looked at different points in time. This zone displays the following:

- **Measuring Component:** The measuring component from which the measurement data comes.
- **Start Date/Time:** The start date and time of the measurement data displayed in the zone. The default start date/time is X amount of time prior to the End Date/Time where X is the **Hours of Data to Display** on the measuring component type.
- **End Date/Time:** The end date and time of the measurement data displayed in the zone. The default is the most recent end date of the measuring component's final measurements.
- **Event Bar Profile:** The event bar profile displayed in the zone. This specifies how events are depicted on the graph. Available event bar profiles are defined for the measuring component type.
- **Interval Data:** Details derived from the interval measurement displayed, including average, minimum, and maximum values. This section also provides a list of available functions for the measuring component.
- **Interval Data Graph:** A graphical display of the measurement data for the measuring component. The upper portion of the graph displays interval values as a line graph. The lower portion displays events (based on the selected Event Bar Profile) as a bar graph. The Y-axis on the left side of the graph displays the UOM of the measurement data. The y-axis on the right side of the graph displays the count of the number of measurement logs for each interval (Log Count).
- **Lens Graph:** A graph displaying a selected portion of the interval data graph (highlighted in red in the interval data graph above).
- **Lens Values Table:** A table displaying individual interval values for the data displayed in the lens graph, including date/time, number of changes, current quantity, previous quantity, current condition code, and previous condition code for each interval value.

To use the Interval-Audit View zone:

1. Navigate to the Measuring Component tab in the 360 Degree View for the measuring component you wish to view.
2. To change the dates or times for the display, adjust the dates and times as appropriate, and click **Load**.
3. To change the event bar profile for the display, select the profile from the drop-down list, and click **Load**.
4. To use a function, select the function from the **Select Function** drop-down list. See [Applying Functions](#) for more information.
5. To move the start of the Lens Graph to a specific interval, enter the interval number in the **Lens Start Index** field and click the **Enter** key. You can also use the mouse to change the start of the Lens Graph, or click the left and right arrows on either side of the **Lens Start Index** field.
6. To change the size (in number of intervals) for the Lens Graph, enter the appropriate number of intervals in the **Lens Size** field, and click the **Enter** key.
7. To view values in the Lens Values Table for an interval on the Lens Graph, click the interval.
The selected interval will be highlighted in the Lens Values Table.
8. To locate an interval on the Lens Graph based on data in the Lens Values Table, click the Current Quantity in the Lens Values Table.
The selected interval will be indicated on the Lens Graph.
9. To view quantities and conditions for a different point in history, select the time range on the **Snapshot as of** drop-down list.

Using the Time Of Use By Day Zone

Use this procedure to view interval measurement data using the Time of Use By Day zone.

You access the Time of Use By Day zone from the Measuring Component tab of the 360 Degree View.

The Time of Use By Day zone displays daily TOU-mapped usage data for an interval measuring component based on a user-defined time period and TOU map. This zone displays the following:

- **Measuring Component:** The measuring component from which the measurement data comes.
- **Value Identifier Type:** The value identifier of the measurement data displayed in the zone. Value identifiers are used to provide short descriptions for the various types of values measured by the measuring component (KWH, KW, etc.).
- **Start Date:** The start date of the measurement data displayed in the zone. The default start date is 30 days prior to the end date.
- **End Date:** The end date of the measurement data displayed in the zone. The default is the most recent end date of the measuring component's final measurements.
- **TOU Map:** The TOU map being applied to the measurement data displayed in the zone. .
- **Event Bar Profile:** The event bar profile displayed in the zone. This specifies how events are depicted on the graph. Available event bar profiles are defined for the measuring component type.
- **Interval Data:** Details derived from the interval measurement displayed, including average, minimum, and maximum values. This section also provides a list of available functions for the measuring component.
- **TOU Usage Graph:** A graphical display of TOU usage data for the measuring component. The upper portion of the graph displays TOU periods for each day as a series of color-coded vertical bars (weather data is displayed as a line graph). The lower portion displays events (based on the selected Event Bar Profile) as a horizontal bar graph. The Y-axis on the left side of the graph displays the UOM of the measurement data. The y-axis on the right side of the graph displays UOM for the temperature data displayed.
- **Time Of Use Table:** A table that lists the TOU periods displayed in the graph, including a color code and quantity for each. Up to four TOUs can be selected at one time. If there are more than 5 TOUs in the table, remaining TOUs will be grouped together using a single color.

To use the Time of Use By Day zone:

1. Navigate to the Measuring Component tab in the 360 Degree View for the measuring component you wish to view.
2. To change the value identifier type, select the type from the drop-down list, and click **Load**.
3. To change the dates for the display, adjust the dates as appropriate, and click **Load**.
4. To change the TOU Map for the display, search for and select the appropriate TOU map, and click **Load**.
5. To change the event bar profile for the display, select the profile from the drop-down list, and click **Load**.
6. To use a function, select the function from the **Select Function** drop-down list. See [Applying Functions](#) for more information.
7. To change the TOU periods displayed on the graph, select or deselect the TOU periods in the Time of Use Table as appropriate and click **Reload**.

Using the Time of Use Overlay Zone

Use this procedure to view interval measurement data using the Time of Use Overlay zone.

You access the Time of Use Overlay zone from the Measuring Component tab of the 360 Degree View.

The Time of Use Overlay zone displays an overlay of the TOU periods on a final interval measurement along with totalized TOU consumption based on a user-defined time period and TOU map. This zone displays the following:

- **Measuring Component:** The measuring component from which the measurement data comes.
- **Value Identifier Type:** The value identifier of the measurement data displayed in the zone. Value identifiers are used to provide short descriptions for the various types of values measured by the measuring component (KWH, KW, etc.).
- **Start Date/Time:** The start date and time of the measurement data displayed in the zone. The default start date/time is X amount of time prior to the End Date/Time where X is the **Hours of Data to Display** on the measuring component type.

- **End Date/Time:** The end date and time of the measurement data displayed in the zone. The default is the most recent end date of the measuring component's final measurements.
- **TOU Map:** The TOU map being applied to the measurement data displayed in the zone. .
- **Event Bar Profile:** The event bar profile displayed in the zone. This specifies how events are depicted on the graph. Available event bar profiles are defined for the measuring component type.
- **Interval Data:** Details derived from the interval measurement displayed, including average, minimum, and maximum values. This section also provides a list of available functions for the measuring component.
- **Measurement Data Graph:** A graphical display of the measurement data for the measuring component. The upper portion of the graph displays the measurement data as a line graph with TOU periods indicated as color-shaded areas below the line graph. The lower portion displays events (based on the selected Event Bar Profile) as a horizontal bar graph.
- **Time Of Use Table:** A table that lists the TOU periods displayed in the graph, including a color code and quantity for each. Up to four TOUs can be selected at one time. If there are more than 5 TOUs in the table, remaining TOUs will be grouped together using a single color.

To use the Time of Use Overlay zone:

1. Navigate to the Measuring Component tab in the 360 Degree View for the measuring component you wish to view.
2. To change the value identifier type, select the type from the drop-down list, and click **Load**.
3. To change the dates and times for the display, adjust the dates and times as appropriate, and click **Load**.
4. To change the TOU Map for the display, search for and select the appropriate TOU map, and click **Load**.
5. To change the event bar profile for the display, select the profile from the drop-down list, and click **Load**.
6. To use a function, select the function from the **Select Function** drop-down list. See [Applying Functions](#) for more information.
7. To change the TOU periods displayed on the graph, select or deselect the TOU periods in the Time of Use Table as appropriate and click **Reload**.

Using the Time of Use Over Time Zone

Use this procedure to view TOU data using the Time of Use Over Time zone.

You access the Time of Use Over Time zone from the Measuring Component tab of the 360 Degree View.

Note: The Time of Use Over Time zone is included with demonstration data ONLY, and may not be available in your implementation.

The Time of Use Over Time zone displays usage for each TOU period within a user-defined time period for a user-specified TOU map. This zone displays the following:

- **Measuring Component:** The measuring component from which the measurement data comes.
- **Value Identifier Type:** The value identifier of the measurement data displayed in the zone. Value identifiers are used to provide short descriptions for the various types of values measured by the measuring component (KWH, KW, etc.).
- **From Year:** The start year of the measurement data displayed in the zone.
- **To Year:** The end year of the measurement data displayed in the zone.
- **TOU Map:** The TOU map being applied to the measurement data displayed in the zone. .
- **Group By:** The manner in which the data is grouped (typically by month or year).
- **TOU Quantities Table:** A table that lists a series of time periods (based on the Group By setting), and quantities for each TOU with the period.

To use the Time of Use Over Time zone:

1. Navigate to the Measuring Component tab in the 360 Degree View for the measuring component you wish to view.
2. To change the value identifier type, select the type from the drop-down list, and click **Load**.
3. To change the years for the display, adjust the years as appropriate, and click **Load**.
4. To change the TOU Map for the display, search for and select the appropriate TOU map, and click **Load**.
5. To change the manner in which the data is grouped, select the appropriate setting from the drop-down list, and click **Load**.

Using the Scalar-Initial Measurement Overlay Zone

Use this procedure to view scalar measurement data using the Scalar-Initial Measurement Overlay zone.

You access the Scalar-Initial Measurement Overlay zone from the Measuring Component tab of the 360 Degree View.

The Scalar-Initial Measurement Overlay zone overlays initial scalar measurements (either pre-VEE or post-VEE) against the final measurements for a given period in graphic and tabular formats. This zone displays the following:

- **Measuring Component:** The measuring component from which the measurement data comes.
- **Start Date/Time:** The start date and time of the measurement data displayed in the zone. The default start date/time is X amount of time prior to the End Date/Time where X is the **Hours of Data to Display** on the measuring component type.
- **End Date/Time:** The end date and time of the measurement data displayed in the zone. The default is the most recent end date of the measuring component's initial measurements.
- **Event Bar Profile:** The event bar profile displayed in the zone. This specifies how events are depicted on the graph. Available event bar profiles are defined for the measuring component type.
- **Scalar Data:** Details derived from the scalar measurement displayed, including total, minimum, and maximum values. This section also provides a list of available functions for the measuring component.
- **Initial Measurement Data Graph:** A graphical display of the measurement data for the measuring component. The upper portion of the graph displays scalar values as a line graph, with Complete, Finalized, VEE Ready, etc. quantities indicated as color-coded bars below the line graph. The lower portion displays events (based on the selected Event Bar Profile) as a bar graph.
- **Initial Measurement Data Table:** A table that lists the initial measurement data available for graphing. This table displays a description, measurement count, Pre-VEE and Post-VEE quantities, final quantities and condition codes, and start/end readings for each initial measurement data in the table.

To use the Scalar-Initial Measurement Overlay zone:

1. Navigate to the Measuring Component tab in the 360 Degree View for the measuring component you wish to view.
2. To change the dates or times for the display, adjust the dates and times as appropriate, and click **Load**.
3. To change the event bar profile for the display, select the profile from the drop-down list, and click **Load**.
4. To use a function, select the function from the **Select Function** drop-down list. See [Applying Functions](#) for more information.
5. To change the Pre-VEE measurements included in the display, select or deselect the initial measurement data as appropriate, and click **Reload Initial Measurements Using Pre-VEE**.
6. To change the Post-VEE measurements included in the display (if available), select or deselect the initial measurement data as appropriate, and click **Reload Initial Measurements Using Post-VEE**.
7. To view an individual initial measurement data in more detail, click the description link for the data you wish to view.

The initial measurement data is displayed in the Initial Measurement zone. See [Viewing Initial Measurement Data for a Measuring Component](#) for more information.

Using the Scalar-Audit View Zone

Use this procedure to view scalar measurement data using the Scalar-Audit View zone.

You access the Scalar-Audit View zone from the Measuring Component tab of the 360 Degree View.

The Scalar - Audit View zone allows users to view a scalar measurement for a given period overlaid with the count of audit records for each individual measurement. It also allows users to magnify a portion of the measurement and see how the measurements looked at different points in time. This zone displays the following:

- **Measuring Component:** The measuring component from which the measurement data comes.
- **Start Date/Time:** The start date and time of the measurement data displayed in the zone. The default start date/time is X amount of time prior to the End Date/Time where X is the **Hours of Data to Display** on the measuring component type.
- **End Date/Time:** The end date and time of the measurement data displayed in the zone. The default is the most recent end date of the measuring component's final measurements.
- **Event Bar Profile:** The event bar profile displayed in the zone. This specifies how events are depicted on the graph. Available event bar profiles are defined for the measuring component type.
- **Scalar Data:** Details derived from the scalar measurement displayed, including total, minimum, and maximum values. This section also provides a list of available functions for the measuring component.
- **Scalar Data Graph:** A graphical display of the measurement data for the measuring component. The upper portion of the graph displays scalar values as a line graph. The lower portion displays events (based on the selected Event Bar Profile) as a bar graph.
- **Lens Graph:** A graph displaying a selected portion of the scalar data graph (highlighted in red in the interval data graph).
- **Lens Values Table:** A table displaying individual scalar values for the data displayed in the lens graph, including start date/time, end date/time, number of changes, current quantity, current condition code, and an indication if the measurement has been edited by a user.

To use the Scalar-Audit View zone:

1. Navigate to the Measuring Component tab in the 360 Degree View for the measuring component you wish to view.
2. To change the dates or times for the display, adjust the dates and times as appropriate, and click **Load**.
3. To change the event bar profile for the display, select the profile from the drop-down list, and click **Load**.
4. To use a function, select the function from the **Select Function** drop-down list. See [Applying Functions](#) for more information.
5. To move the start of the Lens Graph to a specific measurement, enter the measurement number in the **Lens Start Index** field and click the **Enter** key. You can also use the mouse to change the start of the Lens Graph, or click the left and right arrows on either side of the **Lens Start Index** field.
6. To change the size (in number of measurement) for the Lens Graph, enter the appropriate number of measurement in the **Lens Size** field, and click the **Enter** key.
7. To view quantities and conditions for a different point in history, select the time range on the **Snapshot as of** drop-down list.

Applying Functions

Use this procedure to apply and perform functions when using the 360 Degree View and the Interval-Initial Measurement Lens zone.

You must be viewing measurement data for a measuring component on the 360 Degree View or Interval-Initial Measurement Lens zone before you can apply or perform a function.

The functions available are based on the zone you are working in. When working in the 360 Degree View zones, functions allow users to create new measurement data, export data to a file, or save existing data to a new measuring component. When working in the Interval-Initial Measurement Lens zone, functions allow users to edit and manipulate the interval data.


- Interval measurement zones on the Measuring Component tab of the 360 Degree View (Interval-Initial Measurement Overlay, Final Values (interval), Interval-Audit View, Time of Use By Day, and Time of Use Overlay) provide access to the following base package functions:
 - **Create Scratchpad:** Creates a scratchpad measuring component along with new initial measurement data by copying all or some of the final measurements from the measuring component displayed in the zone.
 - **Create / Override:** Creates new initial measurement data for a selected measuring component for all or part of a selected time period. This function can either copy existing final measurements or create new measurement data for the initial measurement it creates.
 - **Export to Excel:** Exports measurement data to a comma-separated values spreadsheet.
 - **New Reading:** Creates a new interval initial measurement reading for the measuring component.
 - **Rederive Values:** Rederives the measurement's values displayed in the zone.
 - **Save As:** Creates new initial measurement data for a measuring component other than that being displayed by copying all or some of the final measurements shown in the zone.
- Scalar measurement zones on the Measuring Component tab of the 360 Degree View (Scalar-Initial Measurement Overlay, Final Values (scalar), and Scalar-Audit View) provide access to the following base package functions:
 - **Convert to Interval:** Converts scalar consumption into interval consumption. The converted consumption is held in a new scratchpad measuring component.
 - **Create / Override:** Creates new initial measurement data for a selected measuring component for all or part of a selected time period. This function can either copy existing final measurements or create new measurement data into the initial measurement it creates
 - **Export to Excel:** Exports measurement data to a comma-separated values spreadsheet.
 - **New Reading:** Creates a new scalar initial measurement reading for the measuring component.
 - **Rederive Scalar Values:** Rederives the measurement's values displayed in the zone.
- The Interval-Initial Measurement Lens zone on the Initial Measurement portal provides access to the following base package functions:
 - **Adjust Intervals to Scalar Quantity:** Adjusts all interval values within a user-defined time period in an interval measurement such that the total of all interval values equals a user-defined scalar quantity.
 - **Adjust Intervals Using Math:** Adjusts all interval values within a user-defined time period using math operations (add, subtract, multiply, or divide).
 - **Insert Intervals:** Inserts intervals into initial measurement data.
 - **Remove Intervals:** Removes intervals from initial measurement data
 - **Set Conditions:** Sets condition codes within initial measurement data. Condition codes indicate the circumstances (estimated, missing, etc.) of individual measurements. Condition codes are assigned to both scalar and interval measurement data both for initial measurement data and final measurements.
 - **Shift Intervals:** Shifts intervals of initial measurement data to a new start date and time.
 - **Smooth Spikes:** Reduces "spike" intervals (intervals with values that are more than a user-defined percentage higher than other intervals within the initial measurement data).

To perform a function:

1. Navigate to one of the 360 Degree Measuring Component zones or the Interval-Initial Measurement Lens zone (as appropriate).
2. Select the function you wish to perform from the **Select Function** drop-down list.

The function screen for the selected function opens.

3. Enter the parameters for the function.

Click  to display descriptions of the function, and the fields and parameters used by the function.

4. Click **OK**.

Viewing Initial Measurement Data for a Measuring Component

Use this procedure to view initial measurement data for a measuring component.

Prerequisite: You must be viewing a measuring component in the Measuring Component portal or 360 Degree View into order to view initial measurement data for that measuring component.

You use the Initial Measurement portal to view initial measurement data. This portal includes the following zones:

- **Open Exception Summary:** Displays a list of open exceptions for the initial measurement. This zone appears only if open exceptions exist for the initial measurement
- **Interval Initial Measurement Lens:** Displays a graphical view of the measurement data and allows manual editing of interval measurements. This zone allows users to magnify a portion of the measurement data for editing. This zone appears only when viewing initial measurement data for an interval measuring component.
- **Scalar Initial Measurement:** Displays basic information for the scalar measurement data, including start and end quantities, and allows users to edit the quantity and final condition of the measurement. This zone appears only when viewing initial measurement data for a scalar measuring component.
- **Initial Measurement:** Defines the basic attributes, pre-VEE data, and post-VEE data for the initial measurement.
- **Measurements of Initial Measurement:** Lists final measurements based on the initial measurement.
- **Initial Measurement Exception Detail:** Displays details of a broadcast exception listed in the Open Exception Summary zone.

To view initial measurement data:

1. From the Measuring Component portal:
 - a) Navigate to the Measuring Component portal in edit mode.
 - b) Click the initial measurement in the Initial Measurement Data History zone.
The initial measurement opens in the Initial Measurement portal.
2. From the 360 Degree View:
 - a) Navigate to the Measuring Component tab in the 360 Degree View for the measuring component you wish to view.
 - b) Click the initial measurement you wish to view in the Interval (or Scalar) Initial Measurement Overlay zone.
The initial measurement opens in the Initial Measurement portal.
3. To view details of an exception, click the **Broadcast** icon in the Open Exception Summary zone. The broadcast exception opens in the Initial Measurement Exception Detail zone.
4. To view and edit interval initial measurement data using the Interval-Initial Measurement Lens zone, see [Using the Interval Initial Measurement Lens Zone](#).
5. To view and edit scalar initial measurement data using the Scalar-Initial Measurement Lens zone, see [Using the Scalar Initial Measurement Zone](#).
6. To perform an action on the Initial Measurement zone, click the appropriate button.

The specific actions available for a measurement are based on the current status of the measurement, and the measurement business object. The statuses in which each action are allowed are listed in parentheses. Action options include the following:

Options	Description
Trace	Turns Trace On or Off (Allowed Status: All)

Options	Description
Edit	Allows user to edit the initial measurement. (Allowed Status: Pending, Error)
Delete	Deletes the initial measurement. (Allowed Status: Pending, Error)
Prepare for VEE	Prepares the initial measurement for VEE processing, and changes the status to VEE Ready, and then to either Error or VEE Complete. (Allowed Status: Pending, Error)
Remove from Processing	Removes the initial measurement from further processing (Allowed Status: Pending, Error)
Perform VEE	Performs VEE processing on the initial measurement, based on the VEE groups defined for the measuring component. This changes the status of initial measurements to VEE Complete and then either Exception (if the measurement falls one or more validations) or Complete (if the measurement passes all validations) (Allowed Status: Exception)
Force Complete	Changes the state of the initial measurement to Force Complete, regardless of whether or not the measurement passes VEE processing, (Allowed Status: Exception)
Re-Process	(Allowed Status: Error)
Discard	Discards the initial measurement. (Allowed Status: Error, Exception)

7. To view the pre-VEE data, click the expand icon in the Pre-VEE Initial Measurement Data section.

This section displays the attributes of initial measurement data prior to VEE processing. For interval measurements, this includes a list of interval data values.

8. To view the post-VEE data, click the expand icon in the Post-VEE Initial Measurement Data section.

This section displays the attributes of initial measurement data after VEE processing. For interval measurements, this includes a list of interval data values.

9. To view an individual final measurement based on the initial measurement, click the measurement in the Measurements of Initial Measurement zone. The selected measurement opens in the Measurement zone. See [Viewing Final Measurements for a Measuring Component](#) for more information about viewing final measurements.

Using the Interval-Initial Measurement Lens Zone

Use this procedure to view and edit interval initial measurement data using the Interval-Initial Measurement zone.

You access the Interval- Initial Measurement zone from the Initial Measurement portal.

The Interval- Initial Measurement zone displays a graphical view of the measurement data and allows manual editing of interval measurements. This zone allows users to magnify a portion of the measurement data for editing. This zone displays the following:

- **Initial Measurement Data:** The start and end date and time for the initial measurement.
- **Measuring Component:** The measuring component from which the initial measurement data comes.
- **Area Content:** The type of values (Pre-VEE or Final) displayed as shaded areas below the line graph. The default setting is none.
- **Interval Data:** Details derived from the interval measurement, including total, minimum, and maximum values. This section also provides a list of available functions for the measuring component.
- **Interval Data Graph:** A graphical display of the initial measurement data. The upper portion of the graph displays Post-VEE interval values as a line graph, with Pre-VEE or Final values depicted as color-shaded areas below the line graph (based on the current Area Content setting).
- **Lens Graph:** A graph displaying a selected portion of the interval data graph (highlighted in red in the interval data graph above).
- **Lens Values Table:** A table displaying individual interval values for the data displayed in the lens graph, including the following for each:

- Date Time, current quantity, previous quantity, current condition code, and previous condition code for each interval value.
- Post VEE Quantity and Condition (editable)
- User Edited Flag (indicates if the interval value has been manually edited by a user)
- Pre-VEE Quantity and Condition (view only)
- Final Quantity and Condition

To use the Interval-Initial Measurement zone:

1. From the Measuring Component portal:
 - a) Navigate to the Measuring Component portal in edit mode.
 - b) Click the initial measurement in the Initial Measurement Data History zone.
The initial measurement opens in the Initial Measurement portal.
2. From the 360 Degree View:
 - a) Navigate to the Measuring Component tab in the 360 Degree View for the measuring component you wish to view.
 - b) Click the initial measurement you wish to view in the Interval (or Scalar) Initial Measurement Overlay zone.
The initial measurement opens in the Initial Measurement portal.
3. To change the types of values (Pre-VEE or Final) displayed as shaded areas below the line graph, select the setting from the **Area Content** drop-down list, and click **Load**.
4. To apply a function to the measurement, select the function from the **Select Function** drop-down list. See [Applying Functions](#) for more information.
5. To move the start of the Lens Graph to a specific interval, enter the interval number in the **Lens Start Index** field and click the **Enter** key. You can also use the mouse to change the start of the Lens Graph, or click the left and right arrows on either side of the **Lens Start Index** field.
6. To change the size (in number of intervals) for the Lens Graph, enter the appropriate number of intervals in the **Lens Size** field, and click the **Enter** key.
7. To view values in the Lens Values Table for an interval on the Lens Graph, click the interval.
The selected interval will be highlighted in the Lens Values Table.
8. To locate an interval on the Lens Graph based on data in the Lens Values Table, click the Post-VEE Quantity in the Lens Values Table.
The selected interval will be indicates on the Lens Graph.
9. To highlight all Pre-VEE or Post-VEE interval values of a certain condition code in the Lens Graph, select the condition code in the **Highlight Pre-VEE Condition** or **Highlight Post-VEE Condition** drop-down lists (respectively).
Note: You can highlight either Pre-VEE or Post-VEE interval values at one time.
10. To edit a value in the Lens Graph, select the interval in the graph and adjust the interval value up or down as appropriate.
The corresponding value in the Lens Values Table will change accordingly, and the condition will change to the default condition (if defined).
11. To edit a value on the Lens Value Table, select the interval to change in the table and enter the appropriate Quantity in the Post-VEE column.
The corresponding value in the Lens Graph will change accordingly.
12. To edit a condition on the Lens Value Table, select the appropriate Condition in the Post-VEE column.
13. To set a default condition code for user-edited values, select the condition the **Default Condition** drop-down list.

14. To apply changes to interval values and condition codes, click **Apply Changes**.

15. To undo the last set of changes (since the last time you clicked **Apply Changes**), click **Undo Changes**.

Using the Scalar Initial Measurement Zone

Use this procedure to view and edit scalar initial measurement data using the Scalar Initial Measurement zone.

You access the Scalar Initial Measurement zone from the Initial Measurement portal.

The Scalar Initial Measurement zone displays basic information for the scalar measurement data, including start and end quantities, and allows users to edit the quantity and final condition of the measurement. This zone displays the following:

- **Initial Measurement Data:** The start and end date and time for the initial measurement.
- **Measuring Component:** The measuring component from which the initial measurement data comes.
- **Start Quantity:** The start quantity for the scalar measurement.
- **End Quantity:** The end quantity for the scalar measurement.
- **Quantity:** The total quantity for the measurement (taking into account factors such as register multipliers, installation constants, etc.)
- **Final Condition:** The condition code for the scalar measurement.

To use the Scalar-Initial Measurement zone:

1. From the Measuring Component portal:

- a) Navigate to the Measuring Component portal in edit mode.
- b) Click the initial measurement in the Initial Measurement Data History zone.

The initial measurement opens in the Initial Measurement portal.

2. From the 360 Degree View:

- a) Navigate to the Measuring Component tab in the 360 Degree View for the measuring component you wish to view.
- b) Click the initial measurement you wish to view in the Interval (or Scalar) Initial Measurement Overlay zone.

The initial measurement opens in the Initial Measurement portal.

3. To change the quantity for the measurement, adjust the quantity as appropriate, and click **Apply Changes**.

4. To change the final condition for the measurement, select the condition code from the drop-down list, and click **Apply Changes**.

5. To save the measurement to a different measuring component:

- a) Click **Save As**.
- b) Search for and select the measuring component to which you wish to save the measurement.
- c) Click **OK**.

Viewing Final Measurements for a Measuring Component

Use this procedure to view final measurements for a measuring component.

Prerequisite: You must be viewing a measuring component in the Measuring Component portal or 360 Degree View in order to view final measurements for that measuring component.

You use the Measurement portal to view final measurements. This portal includes the following zones:

- **Measurement:** Displays details of the final measurement, including:
 - **Measuring Component:** The parent measuring component of the measurement.
 - **Measurement Date/Time:** The date and time of the measurement in standard time.

- **Condition:** The condition code of the measurement.
- **Measurement Use:** A flag that indicates if the measurement should be used.
- **User Edited:** A flag that indicates if the measurement has been manually edited.
- **Initial Measurement:** The initial measurement the measurement was derived from.
- **Measurement:** The value of the measurement.
- **Local Date/Time:** The date and time of the measurement in local time.

To view final measurements:

1. From the Measuring Component portal:

- a) Navigate to the Measuring Component portal in edit mode.
- b) Click the initial measurement in the Initial Measurement Data History zone.
The initial measurement opens in the Initial Measurement portal.
- c) Click the final measurement you wish to view in the Measurements of Initial Measurement zone.
The selected measurement opens in the Measurement portal.

2. From the 360 Degree View:

- a) Navigate to the Measuring Component tab in the 360 Degree View for the measuring component you wish to view.
- b) Click the initial measurement you wish to view in the Interval (or Scalar) Initial Measurement Overlay zone.
The initial measurement opens in the Initial Measurement portal.
- c) Click the final measurement you wish to view in the Measurements of Initial Measurement zone.
The selected measurement opens in the Measurement portal.

Viewing Device Data Using the 360 Degree View

Use this procedure to view device-related data on the 360 Degree View.

The Device tab contains the following zones:

- **Device Overview:** Displays the device, service point, install event, and usage subscription for the selected device.
- **Device Configuration Overview:** Displays an overview of the device's configurations over time, including the measuring components associated with each configuration, and service points (along with the relevant install events) at which the device's configurations have been installed.

You can access the Device tab by clicking the Device tab from any other tab on the 360 Degree View, or you can search for a specific device. To search for a device:

1. Select **Main Menu > 360 Search > [Option]** .

You can search by Name, Address, or Device.

2. Enter your search criteria.


Base package query options include the following:

- **Search by Name:** Allows search by name/address OR contact identifier OR usage subscription identifier. To search by address, click **Go To Search by Address**. To search by device, click **Device**.
- **Search by Address:** Allows search by address/name OR service point identifier. To search by name, click **Go To Search by Name**. To search by device, click **Device**.
- **Search by Device:** Allows search by device identifier OR measuring component identifier. To search by name, click **Go To Search by Name**. To search by address, click **Address**.

3. Click **Refresh**.

4. In the search results list, click the **Device** link for the device you want to view.

The 360 Degree View opens on the Device tab.

5. To navigate to a related measuring component or service point in the 360 Degree View, click the  button on the Device Configuration Overview zone.

Viewing Service Point Data Using the 360 Degree View

Use this procedure to view service point-related data on the 360 Degree View.

The Service Point tab contains the following zones:

- **Service Point Overview:** Displays the service point, device, device configuration, install event, and usage subscription for the selected service point.
- **Measuring Component Types:** Lists the measuring component types configured for the service point.
- **Interval Consumption History:** Displays a graph of interval consumption for a broadcast interval measuring component type.
- **Scalar Consumption History:** Displays a graph of scalar consumption for a broadcast scalar measuring component type.
- **Timeline:** Displays a timeline of events for the service point, including usage transactions, activities, and VEE exceptions. Each event is depicted as a button containing the date on which the event occurred.
- **Service Issue Monitors Related to SP:** displays a list of service issue monitors and related service investigative orders related to the current service point, in reverse chronological order.

You can access the Service Point tab by clicking the Service Point tab from any other tab on the 360 Degree View, or you can search for a specific service point. To search for a service point:

1. Select **Main Menu > 360 Search > [Option]** .

You can search by Name, Address, or Device.

2. Enter your search criteria.

Base package query options include the following:

- **Search by Name:** Allows search by name/address OR contact identifier OR usage subscription identifier. To search by address, click **Go To Search by Address**. To search by device, click **Device**.
- **Search by Address:** Allows search by address/name OR service point identifier. To search by name, click **Go To Search by Name**. To search by device, click **Device**.
- **Search by Device:** Allows search by device identifier OR measuring component identifier. To search by name, click **Go To Search by Name**. To search by address, click **Address**.

3. Click **Refresh**.

4. In the search results list, click the **Service Point** link for the service point you want to view.

The 360 Degree View opens on the Service Point tab.

5. To display consumption history for a measuring component, click the **Broadcast** icon in the Measuring Component Types zone.

The Interval or Scalar Consumption History zone opens for the selected measuring component. See [Using the Consumption History Zones](#) for more information about using these zones.

6. To search for a specific month and year in the Timeline zone, select the month and year from the drop-down lists and click the **Search** icon. To navigate forward and back along the timeline, use the left and right arrows.
7. To view an event displayed in the Timeline zone, click the event button. A description of the event displayed below the timeline. Click the description to navigate to view more details for the event.

Using the Service Point Consumption History Zone

Use this procedure when using the Service Point Consumption History zones.

You access the Service Point Consumption History zones from the Service Point tab of the 360 Degree View.

The Service History Consumption History zone graphs consumption for a broadcast measuring component type. This zone displays the following:

- **Service Point:** The service point from which the consumption data comes.
- **Measuring Component Type:** The measuring component type from which the measurement data comes.
- **Value Identifier Type:** The value identifier of the measurement data displayed in the zone. Value identifiers are used to provide short descriptions for the various types of values measured by the measuring component (KWH, KW, etc.).

Note: This option is disabled if the display period straddles a meter exchange in which the measuring components are of different measuring component types.

- **Start Date/Time:** The start date and time of the measurement data displayed in the zone. The default start date/time is X amount of time prior to the End Date/Time where X is the **Hours of Data to Display** on the measuring component type.
- **End Date/Time:** The end date and time of the measurement data displayed in the zone. The default is the most recent end date of the measuring component's final measurements.
- **Event Bar Profile:** The event bar profile displayed in the zone. This specifies how events are depicted on the graph. Available event bar profiles are defined for the measuring component type.
- **Interval Data:** Details derived from the interval measurement displayed, including total, minimum, and maximum values. This section appears only if the broadcast measuring component type is an interval measuring component type.
- **Scalar Data:** Details derived from the scalar measurement displayed, including total, minimum, and maximum values. This section appears only if the broadcast measuring component type is a scalar measuring component type.
- **Consumption Data Graph:** A graphical display of the consumption data for the service point. The upper portion of the graph displays consumption values as a line graph. The lower portion displays events (based on the selected Event Bar Profile) as a bar graph.

Note: In the case of a meter exchange where a scalar meter is replaced by an interval meter, if the scalar meter references a measuring component type defined as a "Consumption Compatible Scalar MC Type" on the interval channel measuring component, the display will include consumption from both measuring components. If the scalar meter is not of a "compatible" measuring component type, consumption will only be displayed for the interval channel measuring component.

When displaying consumption from more than one measuring component, the shaded area will display a different color for each different device type installed at the service point during the display period.

- **Service Point Data Table:** A table that displays the install event, measuring component, and total, average value, minimum value, and maximum values for the consumption data displayed.

To use the Service Consumption History zones:

1. Navigate to the Service Point tab in the 360 Degree View for the service point you wish to view.
2. Click the broadcast icon for the measuring component type applicable to the consumption history you wish to view.
3. To change the value identifier type, select the type from the drop-down list, and click **Load**.
4. To change the dates or times for the display, adjust the dates and times as appropriate, and click **Load**.
5. To change the event bar profile for the display, select the profile from the drop-down list, and click **Load**.

Viewing Usage Subscription Data Using the 360 Degree View

Use this procedure to view usage subscription-related data on the 360 Degree View.

The Usage Subscription tab contains the following zones:

- **Usage Subscription Overview:** Displays the usage subscription, main customer, and service point for the selected usage subscription.
- **Usage Transaction History:** Lists usage transaction records for the usage subscription, including the start date/time, end date/time, description, and duration (in days) for each.
- **Timeline:** Displays a timeline of events for the usage subscription, including usage transactions, activities, and VEE exceptions. Each event is depicted as a button containing the date on which the event occurred.

You can access the Usage Subscription tab by clicking the Usage Subscription tab from any other tab on the 360 Degree View, or you can search for a specific usage subscription. To search for a usage subscription:

1. Select **Main Menu > 360 Search > [Option]** .

You can search by Name, Address, or Device.

2. Enter your search criteria.

Base package query options include the following:

- **Search by Name:** Allows search by name/address OR contact identifier OR usage subscription identifier. To search by address, click **Go To Search by Address**. To search by device, click **Device**.
- **Search by Address:** Allows search by address/name OR service point identifier. To search by name, click **Go To Search by Name**. To search by device, click **Device**.
- **Search by Device:** Allows search by device identifier OR measuring component identifier. To search by name, click **Go To Search by Name**. To search by address, click **Address**.

3. Click **Refresh**.

4. In the search results list, click the **Usage Subscription** link for the service point you want to view.

The 360 Degree View opens on the Usage Subscription tab.

5. To search for a specific month and year in the Timeline zone, select the month and year from the drop-down lists and click the **Search** icon. To navigate forward and back along the timeline, use the left and right arrows.
6. To view an event displayed in the Timeline zone, click the event button. A description of the event displayed below the timeline. Click the description to navigate to view more details for the event.

Viewing Contact Data Using the 360 Degree View

Use this procedure to view contact-related data on the 360 Degree View.

The Contact tab contains the following zones:

- **Contact Overview:** Displays contact information (name, phone number, email address, etc.) for the selected contact.
- **Contact's Service Points:** Lists the service points related to the contact, including the relationship type (main contact, main customer, etc.) for each.
- **Contact's Usage Subscriptions:** Lists the usage subscriptions related to the contact, including the relationship type (main contact, main customer, etc.) for each.

You can access the Contact tab by clicking the Contact tab from any other tab on the 360 Degree View, or you can search for a specific contact. To search for a contact:

1. Select **Main Menu > 360 Search > [Option]**.

You can search by Name, Address, or Device.

2. Enter your search criteria.

Base package query options include the following:

- **Search by Name:** Allows search by name/address OR contact identifier OR usage subscription identifier. To search by address, click **Go To Search by Address**. To search by device, click **Device**.
- **Search by Address:** Allows search by address/name OR service point identifier. To search by name, click **Go To Search by Name**. To search by device, click **Device**.
- **Search by Device:** Allows search by device identifier OR measuring component identifier. To search by name, click **Go To Search by Name**. To search by address, click **Address**.

3. Click **Refresh**.

4. In the search results list, click the **Contact** link for the contact you want to view.

The 360 Degree View opens on the Contact tab.

Aggregations

This section describes concepts and procedures related to managing aggregations.

About Aggregations

Aggregations are measurements that represent a summarization of other measurements from a set of devices and/or measuring components.

For example, an aggregation may be based on the sum of the electric consumption of all residential customers in a particular postal code within the utility's service territory.

The group of related measuring components for which measurements are summarized are referred to as constituent measuring components.

Every type of aggregation has one or more dimensions. For example, a transformer aggregation might be defined with three dimensions as follows:

- Substation
- Feeder
- Transformer

Aggregations are defined by aggregator measuring components. A separate aggregator measuring component should be defined for every distinct combination of dimensions for a given type of aggregation. For example, the transformer aggregation described above would require an aggregator measuring component for every distinct combination of substation / feeder / transformer found among the electric service points.

Aggregations can also be aggregated. For example, the aggregator measuring components for each substation / feeder / transformer combination can in turn be used to aggregate consumption at each substation / feeder combination. In this case, a distinct aggregator measuring component would be defined for each unique substation / feeder combination. Likewise, the aggregator measuring components for each substation / feeder combination could be used to aggregate consumption at each substation, in which case, distinct aggregator measuring components would be defined for every unique substation. Finally, the aggregator measuring components for each substation can be used to aggregate total consumption for all substations, with an aggregator measuring component defined to represent the entire service area.

Base Package Aggregators

This topic describes the base package aggregators delivered with Oracle Utilities Meter Data Management.

Base package aggregators are delivered as aggregator measuring component business objects and measuring component types.

The base package contains the following aggregators:

- **Postal and Service Type:** Aggregates measurement quantities for constituent measuring components based on postal code and service type dimensions.
- **Business Intelligence Aggregators:** The following aggregators are used by Oracle Utilities Meter Data Management Business Intelligence, and aggregate measurement data (including quantities and counts) for constituent measuring components based on the following dimensions: Postal, City, Head-End, Device Type, Usage Calculation Group, Market and Service Provider, and Service Type.
 - **Measurement Measured Quantity Aggregator:** Aggregates measurement quantities and distributes the constituents' measurements across Value Identifiers based on condition codes.
 - **Measurement Quality Count Aggregator:** Aggregates measurement counts and distributes the constituents' counts across Value Identifiers based on condition codes.
 - **Measurement Timeliness Count Aggregator:** Aggregates measurement counts that arrived on time or are late.
 - **Measurement Timeliness Quantity Aggregator:** Aggregates measurement quantities that arrived on time or are late.

Working with Aggregations

This section describes common tasks related to working with aggregations.

Creating Aggregations

Use this procedure to manually create a new aggregator measuring component.

Aggregator measuring components are automatically created when new "dimensional values" are detected. For example, if a new substation is added to the system a new aggregator measuring component will be created for the substation. However, users can also create aggregator measuring components using the following procedure.

1. **Main Menu > Total and Trends > Consumption Statistics .**
2. Click the **Add** link in the Aggregator Search zone title bar.
3. Select the measuring component type for the new aggregator.
The list of available measuring component types is filtered by Measuring Component Category to display only Aggregator measuring component types.
4. Click **OK**.
5. If the aggregator is to aggregate data for a one time event, check the **One Time Aggregation** checkbox. If aggregation for the aggregator measuring component are to be performed indefinitely, leave this unchecked.
6. Complete any remaining fields and sections.

Note: Remaining fields and sections are based on the measuring component type you selected.

7. Enter the start and end date and time for the aggregation period in the **Next Aggregation Horizon** section.
8. Click **Save**.

Once the aggregator has been created, aggregated measurements can be calculated manually, or via batch process.

Aggregation Search

Use this procedure to search for aggregations using the Consumption Statistics portal.

1. Select **Main Menu > Total and Trends > Consumption Statistics .**
2. Enter your search criteria.
Base package search options include service type and postal code.
3. Click **Refresh**.

4. In the search results list, click the link for the aggregation you want to view.

The selected aggregation is displayed in the Total and Trends View portal.

Maintaining Aggregations

Use this procedure to maintain an existing aggregation.

You use the Total and Trends View portal to maintain aggregations. This portal includes the following zones:

- **Measuring Component:** defines the basic attributes of the aggregator measuring component.
- **Measurements:** displays aggregated measurement data for the selected aggregator measuring component.
- **Interval - Audit View:** allows users to view an interval measurement curve for a given period overlaid with the count of audit records for each individual measurement.
- **Final Values Overlay:** displays final measurements for a measuring component, and provides the ability to overlay the graphed data with final measurements from other measuring components.
- **Time of Use Overlay:** displays an overlay of the TOU periods on a final interval measurement along with totalized TOU consumption based on a user-defined time period and TOU map

To maintain an aggregation:

1. Select **Main Menu > Total and Trends > Consumption Statistics** to navigate to the Consumption Statistics portal.
2. Search for and select the appropriate aggregation.
3. Click the **Edit** or **Delete** button as appropriate.

Note: Other actions available for the aggregations are based on the business object used to define the aggregation, and the current status of the aggregation.

4. To activate an inactive aggregation, click the **Activate** button.
5. To deactivate an active aggregation, click the **Deactivate** button.
6. To aggregate measurements for the aggregator measuring component, click the **Aggregate** button.

Device Management

This section describes concepts and procedures related to managing meter-related objects such as meters, registers, and channels. This includes managing devices, device configurations, and measuring components.

Understanding Devices and Measuring Components

This section describes concepts related to device management.

About Devices

Devices are physical or virtual objects that hold one or more measuring components that can produce data to be handled by the system.

Examples of devices include meters, substations, transformers, demand response devices, weather stations, etc.

Attributes used to define devices include the following:

- The device type of the device
- One or more device identifiers such as serial number, badge number, meter number, etc.
- Manufacturer and model

- The status of the device (active, inactive, retired, etc.)

A device can have one or more device configurations over time. A device's measuring components are associated with the device via device configurations.

You use the Device portal to maintain devices. This portal includes the following zones:

- **Device:** defines the basic attributes of the device
- **Device Configuration Overview:** lists the device configurations for the device
- **Device Activities:** lists activities related to the device in date descending order
- **Device Exceptions:** lists the first 50 VEE exceptions for all measuring components for the device, sorted by the exception creation date in descending order

Refer to the Oracle Utilities Service and Measurement Data Foundation online help for more information about working with devices.

About Device Configurations

Device configurations represent specific configurations of a device as of a certain time.

Over time, a device can have many configurations. Device configurations are effective-dated, allowing a device to retain its identifiers (such as serial number, badge number, etc.) even while the quantities it measures change over time.

Attributes used to define device configurations include the following:

- The device configuration type
- The parent device
- The effective date and time of the device configuration
- The time zone in which the device operates
- The status of the device configuration (active, inactive, etc.)

Each device configuration can have one or more measuring components associated with it.

You use the Device Configuration portal to maintain device configurations. This portal includes the following zones:

- **Device Configuration:** Defines the basic attributes of the device configuration
- **Measuring Components:** Lists the measuring components for the device configuration
- **Scalar Readings:** Displays a list of scalar readings for scalar measuring components associated with the current device configuration. To create a new reading for scalar measuring components associated with the device configuration, click **New Reading**. To edit an existing reading, click the edit icon for the reading you wish to edit.

Note: The **Scalar Readings** zone is available only with Oracle Utilities Meter Data Management.

Refer to the Oracle Utilities Service and Measurement Data Foundation online help for more information about working with device configurations.

About Measuring Components

Measuring components are single points for which data will be received and stored in the system.

A measuring component can be associated to a device, which can have one or more measuring components, or it can be "virtual" or "stand-alone," meaning that it is not associated to a device. Examples of stand-alone measuring components include:

- **Aggregator:** A class of measuring component that stores measurements that represent a summarization of other measurements from a potentially diverse set of devices. For example, an aggregator may derive the sum of the natural gas consumption of all residential customers in a particular postal code within the utility's service territory.

- **Interval Scratchpad:** A class of measuring component that provides users with a means to manipulate "scratchpad" measurement data without affecting existing "live" measurement data.

Attributes used to define measuring components can include the following:

- The measuring component type
- The device configuration to which the measuring component is associated
- Details concerning how the measuring component is read, such as the number of digits, the type of read out (dials or digital), the meter multiplier, etc.
- The VEE groups used for validation and estimation of measurement data. The base package supports the following type of VEE groups:
 - **VEE Group for Initial Load:** the VEE group used for validation upon initial load of the measurement data
 - **VEE Group for Estimation:** the VEE group used for estimation of missing data for the measuring component
 - **VEE Group for Manual Override:** the VEE group used for when the measurement data is in the Manual Override state (this state allows users to edit data prior to VEE processing)

You use the Measuring Component portal to maintain measuring components. This portal includes the following zones:

- **Measuring Component:** defines the basic attributes of the measuring component
- **Initial Measurement Data History:** lists the last 50 initial measurements for the measuring component, in date-descending order.
- **Measuring Component Profile Use:** lists all profile factors on which the measuring component is referenced as a factor value.
- **Measurements:** lists final measurements for the measuring component, including any derived values for each measurement.
- **Device Configuration Overview:** Displays an overview of the measuring component's parent device's configurations over time, including the measuring components associated with each configuration, and service points (along with the relevant install events) at which the device's configurations have been installed over time, if any exist.

Refer to the Oracle Utilities Service and Measurement Data Foundation online help for more information about working with measuring components.

About Scratchpad Measuring Components

Scratchpad measuring components are stand-alone measuring components that provides users with a means to manipulate "scratchpad" measurement data without affecting existing "live" measurement data.

Scratchpad measuring components are defined by the same attributes as "regular" measuring components, with the following additional attributes:

- **User:** The name of the user who created the scratchpad. All scratchpad measuring components "belong" to a user.
- **Source Measuring Component:** The measuring component upon which the scratchpad is based.

Like "regular" measuring components, scratchpad measuring components can be related to a device through a device configuration, but scratchpad measuring components are not considered "active" for purposes of install events, and are not used in usage calculations for usage subscriptions.

Like "regular" measuring components, scratchpad measuring components are viewed and maintained using the Measuring Component portal, and measurement data for scratchpad measuring components can be viewed using the Initial Measurement portal or the 360 Degree View.

Working with Scratchpad Measuring Components

This section describes common tasks related to working with scratchpad measuring components.

Creating Scratchpad Measuring Components

Use this procedure to create a new scratchpad measuring component.

Prerequisites: You must define at least one scratchpad measuring component type before you can create scratchpad measuring components.

You create scratchpad measuring components based on a specific measuring component, via the Create Scratchpad function on the Select Function drop-down list on zones on the Measuring Component tab in the 360 Degree View.

1. Navigate to the Measuring Component tab of the 360 Degree View for the measuring component upon which you wish to base your new scratchpad measuring component.
2. Select **Create Scratchpad** from the **Select Function** drop-down list in the Interval Data section of one of the following zones:
 - Interval - Initial Measurement Overlay
 - Final Values Overlay
 - Interval - Audit View
 - Time of Use By Day
 - Time of Use Overlay

3. Enter the Start and End dates and times for the new scratchpad measuring component. These define the time range for the measurement data for the scratchpad measuring component.

The start and end dates and times default to the dates on the zone from which you selected the function, but can be adjusted.

4. To shift the start time of the measurement data (and the interval measurements it contains), check the Shift Intervals checkbox, and enter a **New Start Date/Time**.
5. Select the scratchpad measuring component type for the new scratchpad measuring component.
6. Enter a description for the new scratchpad measuring component.
7. Click **OK**.

You can now view and edit the measurement data for this scratchpad measuring component as you might for any other measuring component.

Scratchpad Measuring Component Search

Use this procedure to search for a scratchpad measuring component on the Scratchpad Measuring Component portal.

1. Select **Main Menu > Device > Scratchpad Measuring Component**.

The Scratchpad Measuring Component portal contains the following zones:

- **My Scratchpad Measuring Components:** Lists all the scratchpad measuring components for the current user.
 - **Scratchpad Measuring Component Search:** Allows the user to search for scratchpad measuring components.
2. To view one of your scratchpad measuring components in the 360 Degree View, click the **Go To 360 Degree View** icon for the scratchpad measuring component you wish to view.
 3. To search for a scratchpad measuring component, enter your search criteria in the Scratchpad Measuring Component Search zone.

You can search by source measuring component, or user.
 4. Click **Refresh**.
 5. In the search results list, click the link for the scratchpad measuring component you want to view or edit.

Maintaining Scratchpad Measuring Components

Use this procedure to maintain an existing scratchpad measuring component.

You use the Measuring Component portal to maintain scratchpad measuring components. This portal includes the following zones:

- **Measuring Component:** Defines the basic attributes of the scratchpad measuring component
- **Initial Measurement Data History:** Lists the last 50 initial measurements for the scratchpad measuring component, in date-descending order.
- **Measuring Component Profile Use:** Lists all profile factors on which the scratchpad measuring component is referenced as a factor value.
- **Device Configuration Overview:** Lists device configuration information for the source measuring component, including the measuring components associated with each configuration. This zone also lists service points (along with the relevant install events) at which the device's configurations have been installed over time.

To maintain a scratchpad measuring component:

1. Select **Main Menu > Device > Scratchpad Measuring Component** to navigate to the Measuring Component portal.
2. Search for and select the appropriate scratchpad measuring component.
3. Click the **Edit** or **Delete** button as appropriate.
4. To deactivate the scratchpad measuring component, click the **Deactivate** button.
5. To view initial measurement data for the measuring component, click the initial measurement in the Initial Measurement Data History zone. The selected measurement opens in the Initial Measurement portal. See [Viewing Initial Measurement Data for a Measuring Component](#) for more information.

Manually Adding Register Readings for Scalar Measuring Components

Use this procedure to manually add or modify scalar readings for register measuring components.

Scalar reads can only be entered manually for manually-read scalar “Register” measuring components. This feature can not be used with “Register — Auto Read” measuring components.

You can add register readings from either the **Device Configuration Overview** zone on the **360 Degree View** portal, or the **Scalar Readings** zone on the **Device Configuration** portal. To add or modify scalar readings:

1. Click the **New Reading** link.

The **Meter Read** page opens.

The **Main** section defines the device configuration and date and time for scalar readings. When creating new readings or editing existing readings, the date/time fields can be edited as needed to reflect the date and time of the reading(s).

The **Registers** section defines details of the scalar readings for the scalar register measuring components on the device configuration, including:

- **Sequence:** The sequence for the reading (display-only).
- **Measuring Component:** The measuring component for the reading.
- **Reading:** The dial reading for the register. When creating/editing readings, enter the appropriate value in this field.
- **Measurement Condition:** The condition code the reading. When creating/editing readings, select the appropriate condition code for the reading from the drop-down list.
- **Reading Information:** Details concerning the reading (updated when reading is saved).
- **Previous Reading Information:** Details about the read that precedes this read (updated when reading is saved).

Note: Any errors with existing readings will be indicated when this page opens. Also, if you enter invalid data (based on the configuration of the measuring component), an error will be returned when you attempt to save the readings.

2. Enter the **Read Date/Time** for the reading(s).
3. Enter the **Reading** value. This is typically the dial reading as of the date/time.
4. Select the condition code for the reading from the **Measurement Condition** drop-down list.
5. Click **Save**.

The **Reading Information** and **Previous Reading Information** fields are populated when the reading is saved.

Usage Management

This section describes concepts and procedures related to managing usage subscriptions, usage transactions, and related data.

Understanding Usage Management

This section describes concepts related to usage management.

About Dynamic Options

Dynamic Options specify terms that override how usage is normally calculated, such as a critical peak period that affects the TOU mapping of interval consumption.

Dynamic options allow flexibility for ad-hoc and special events that might impact how usage calculations are performed. For example, if a utility requests that its customers curtail their usage for a specific time period, a dynamic option and corresponding dynamic option event could be used to represent the curtailment request. During the time period of the curtailment request, usage might be calculated differently (with a different set of TOU periods, for example), which in turn might impact how the customer's bill is calculated.

Attributes used to define dynamic options include the following:

- Dynamic Option Type
- Status

About Dynamic Option Events

Dynamic Option Events are specific periods of time during which a dynamic option is applicable.

A dynamic option may have many dynamic option events over time.

Attributes used to define dynamic option events include the following:

- **Status:** The status of the event
- **Start Date/Time:** The start time for the period during which the dynamic option is in effect
- **Stop Date/Time:** The stop time for the period during which the dynamic option is in effect

About TOU Maps

TOU Maps are collections of TOU map data derived via a given TOU map template at a specific interval size and TOU.

A TOU map is typically specified when configuring a usage calculation rule for TOU mapping. This TOU map's data will then be used when summarizing the interval data for each TOU period.

TOU Map Data are interval date/times and associated TOU periods as defined by a TOU map template. For example, if the schedule defined for a TOU map template specifies that the period on weekdays from 9 AM to 5 PM falls into On-Peak, and the data is hourly, TOU map data for that template would include records with the date/time 5/3/2010 at 10 AM, 5/3/2010 at 11 AM, 5/3/2010 at 12 PM, etc., each with a value of On-Peak.

TOU maps can also have dynamic options defined for them, which are used to override normal TOU map data creation for specific date ranges (defined as dynamic option events). Each dynamic option defined for a TOU map has a related alternative TOU map used to create TOU map data during the period of the dynamic option event. For example, assume a schedule defined for a TOU map template specifies that the period on weekdays from 9 AM to 5 PM falls into On-Peak (same as above). You could define a dynamic option that overrides this for a certain period of time (specified in a dynamic option event) during which the period on weekdays from 9 AM to 5 PM falls into Off-Peak (or some other TOU).

About Usage Subscriptions

Usage Subscriptions are ongoing requests to send one or more service points' usage to one or more external systems (such as a billing application).

Attributes used to define usage subscriptions include the following:

- **Master Usage Subscription:** The "master" usage subscription for this "sub" usage subscription (if applicable). "Master" and "sub" usage subscriptions allow for hierarchical relationships between usage subscriptions to represent situations where a subscription is a subordinate to another usage subscription (such as when a utility is issuing a bill for a third-party service).
- **Start and End Date and Times:** The start and end times that define the time period during which the usage subscription is active.
- **Usage Recipient:** The recipient of bill determinants and usage calculated for the usage subscription, based on Valid Service Providers defined by the usage subscription's type.
- **Usage Approved:** A flag that indicates if usage must be approved before being sent to the recipient.
- **Main Contact:** The main contact for the usage subscription.
- **Time Zone:** The time zone in which the usage subscription is active.
- **Factor Overrides:** One or more factors used as override values when calculating bill determinants or usage.
- **Usage Groups:** The usage groups used to calculate bill determinants or usage. Usage groups are effective-dated and can have an expiration date and time. If all usage groups for the usage subscription have expired or none are in effect when calculations are performed, calculations are performed using the Fallback Usage Group defined for the usage subscription's type.
- **Service Points:** The service points whose measurements are used to calculate usage for the usage subscription.
 - **Start Date/Time:** The start date and time of the relationship between the usage subscription and the service point. All measurements used calculate usage for the usage subscription should have a start date/time later than this date and time.
 - **Override Start Date/Time:** An override date and time used to specify the start date and time when identifying measurements used to calculate usage for the usage subscription. If not specified, the **Start Date/Time** is used
 - **Stop Date/Time:** The stop date and time of the relationship between the usage subscription and the service point. All measurements used calculate usage for the usage subscription should have a stop date/time before than this date and time.

- **Override Stop Date/Time:** An override date and time used to specify the stop date time when identifying measurements used to calculate usage for the usage subscription. If not specified, the **Stop Date/Time** is used.
- **Usage:** A flag that indicates how the consumption from this service point is used when calculating usage for the usage subscription. Valid values include:
 - **Add:** The service point's consumption should be added to the consumption of other service points when calculating usage for the usage subscription.
 - **Exclude:** The service point's consumption should be excluded when calculating usage for the usage subscription.
 - **Subtract:** The service point's consumption should be subtracted from the consumption of other service points when calculating usage for the usage subscription.
- **Use Percent:** The percentage of consumption from this service point that should be used when calculating usage for the usage subscription.

About Usage Transactions

Usage transactions are records of bill determinant calculations for a usage subscription.

Attributes used to define usage transactions include the following:

- **Parent Usage Transaction:** The "parent" usage transaction for this "sub" usage transaction (if applicable). "Master" and "sub" usage transaction allow for hierarchical relationships between usage transactions. Applicable only to "sub" usage transactions.
- **Usage Subscription:** The usage subscription for which the usage transaction was created.
- **Previous Usage Transaction:** The information string for the previous usage transaction for the same usage subscription.
- **Usage External ID:** An ID used by external systems used to identify the usage transaction. When Oracle Utilities Meter Data Management is integrated with Oracle Utilities Customer Care and Billing, Oracle Utilities Customer Care and Billing can send this to help identify the previous usage transaction.
- **Status:** the current state of the usage transaction
- **Start and End Date and Times:** The start and end times that define the time period for the usage transaction.
- **Usage Group:** The usage group (or groups) used to calculate usage for the usage transaction.
- **Bill Condition:** The status of the bill associated with the usage transaction (if applicable), used for informational purposes only. Valid values include "Initial", "Interim", and "Closing"
- **Automated Retry:** A flag that indicates if system should automatically retry to perform calculations in the event that an issue is detected.
- **Next Retry Date/Time:** The date and time for the next time at which the system will retry to perform calculations following the detection of an issue. Applicable only if the **Automated Retry** drop-down list is set to "Yes".
- **Retry Until Date/Time:** The last date and time until which the system will retry to perform calculations following the detection of an issue. Applicable only if the **Automated Retry** drop-down list is set to "Yes".
- **Sub Usage Transactions Exist:** A flag that indicates if sub-usage transactions exist for the usage transaction.
- **Defer Calculation:** A flag that indicates if calculations for the usage transaction should be deferred.
- **Trace:** Indicates if tracing is on for the usage transaction.
- **Interval Measuring Component:** Start and End dates and times for the interval measuring component that created the measurements used in calculating usage for the usage transaction (if applicable).
- **Scalar Measuring Component:** Start and End dates and times (and other details) for the scalar measuring component that created the measurements used in calculating usage for the usage transaction (if applicable).
- **Date Break:** One or more date breaks for the usage transaction. Date breaks are used to break up a usage period into sub-periods based on the dates on which rate changes took place for the service point (and its related account).

- **Issues:** A list of issues or exceptions related to the usage transaction
- **Scalar Detail:** Details of scalar measurements used in calculating for the usage transaction
- **Usage Period:** A list of the usage quantities calculated for the usage transaction, including the following:
 - UOM, TOU, SQI (as applicable)
 - Quantity
 - Service Point
 - SQ Type
 - Measuring Component
 - TOU Map (if applicable)
 - Usage Group
 - Usage Rule

Working with Dynamic Options

This section describes common tasks related to working with dynamic options.

Creating Dynamic Options

Use this procedure to create a new dynamic option.

Prerequisites: You must define at least one dynamic option type before you can create dynamic options.

1. Select **Main Menu > Usage > Dynamic Option+** .
2. Select the dynamic option type that will define the dynamic option.
3. Enter a description for the dynamic option.
4. Click **Save**.

Dynamic Option Search

Use this procedure to search for a dynamic option on the Dynamic Option Query portal.

1. Select **Main Menu > Usage > Dynamic Option** .
2. Enter your search criteria.
You can search by Dynamic Option ID or Description, or Dynamic Option Type or Description.
3. Click **Refresh**.
4. In the search results list, click the link for the dynamic option you want to view or edit.

Maintaining Dynamic Options

Use this procedure to maintain an existing dynamic option.

You use the Dynamic Option portal to maintain dynamic options. This portal includes the following zones:

- **Dynamic Option:** Defines basic information about the dynamic option
- **Dynamic Option Event List:** Lists dynamic option events based on the dynamic option

To maintain a dynamic option:

1. Select **Main Menu > Usage > Dynamic Option** to navigate to the Dynamic Option portal.
2. Search for and select the appropriate dynamic option.

3. Click the **Edit** or **Delete** button as appropriate.
4. To view a dynamic option event, click the event in the Dynamic Option Event List zone. See [Maintaining Dynamic Option Events](#) for more information.

Working with Dynamic Option Events

This section describes common tasks related to working with dynamic option events.

Creating Dynamic Option Events

Use this procedure to create a new dynamic option event.

Prerequisites: You must define at least one dynamic option before you can create dynamic option events.

1. Select **Main Menu > Usage > Dynamic Option Event+** .
2. Search for and select the dynamic option on which the new dynamic option event will be based.
3. Click **OK**.
4. Enter a start and end date and time for the dynamic option event.
5. Click **Save**.

Dynamic Option Event Search

Use this procedure to search for a dynamic option event on the Dynamic Option Event Query portal.

1. Select **Main Menu > Usage > Dynamic Option Event** .
2. Enter your search criteria.
You can search by Dynamic Option Event ID or or Dynamic Option ID and Start and End dates and times.
3. Click **Refresh**.
4. In the search results list, click the link for the dynamic option event you want to view or edit.

Maintaining Dynamic Option Events

Use this procedure to maintain an existing dynamic option event.

You use the Dynamic Option Event portal to maintain dynamic option events. This portal includes the following zones:

- **Dynamic Option Event:** Defines basic information about the dynamic option

To maintain a dynamic option event:

1. Select **Main Menu > Usage > Dynamic Option Event** to navigate to the Dynamic Option Event portal.
2. Search for and select the appropriate dynamic option event.
3. Click the **Edit** or **Delete** button as appropriate.

Working with TOU Maps

This section describes common tasks related to working with TOU maps.

Creating TOU Maps

Use this procedure to create a new TOU map.

Prerequisites: You must define at least one TOU map type before you can create TOU maps.

1. Select **Main Menu > Usage > TOU Map+** .
2. Select the TOU map type that will define the TOU map.
3. Click **OK**.
4. Enter a description for the TOU map.
5. Select the TOU map template for the TOU map
6. To add dynamic options to the TOU map, click the + or – sign in the Dynamic Option/Dynamic TOU Map section and do the following each:
 - Enter a sequence number for the dynamic option
 - Search for and select the dynamic option
 - Search for and select the TOU to use with the dynamic option
7. Click **Save**.

TOU Map Search

Use this procedure to search for a TOU map on the TOU Map Query portal.

1. Select **Main Menu > Usage > TOU Map**.
2. Enter your search criteria.

You can search by Description, TOU Map Type, or creation date.
3. Click **Refresh**.
4. In the search results list, click the link for the TOU map you want to view or edit.

Maintaining TOU Maps

Use this procedure to maintain an existing TOU map.

You use the TOU Map portal to maintain TOU maps. This portal includes the following zones:

- **TOU Map**: Defines basic information about the TOU map, including dynamic options
- **TOU Map Data List**: Lists TOU map data created from the TOU map

To maintain a TOU map:

1. Select **Main Menu > Usage > TOU Map** to navigate to the TOU Map portal.
2. Search for and select the appropriate TOU map.
3. Click the **Edit** or **Delete** button as appropriate.
4. To deactivate the TOU map, click the **Deactivate** button.
5. To generate TOU map data for the TOU map, click the **Generate TOU Map Data** button, enter the Start and End date and time, and click **Generate**.

The TOU Map Data List zone will refresh displayed the generated TOU map data.

6. To edit TOU map data, click the **Edit** icon for the record you wish to change.

Working with Usage Subscriptions

This section describes common tasks related to working with usage subscriptions.

Creating Usage Subscriptions

Use this procedure to create a new usage subscription.

Prerequisites: You must define at least one usage subscription type before you can create usage subscriptions.

1. Select **Main Menu > Usage > Usage Subscription+ .**
2. Select the usage subscription type that will define the usage subscription. This specifies the business object that defines the usage subscription.
3. Click **OK**.
4. Select the “master” usage subscription for the current usage subscription (if applicable).
5. Enter the Start and End date and time for the usage subscription.
6. Select the usage recipient for the usage subscription. Usage recipients are defined as service providers.
7. Enter an external ID for the usage subscription.
8. Search for and select a main contact for the usage subscription.
9. Select the time zone applicable for the usage subscription.
10. To add or remove service points for the usage subscription, click the + or – sign in the Service Points section and do the following for each:
 - Search for and select the service point.
 - Enter the override start and end dates for the service point.
 - Enter the start and end dates for the service point.
 - Select the manner in which usage is calculated for the service point.
 - Specify the percentage of usage allocated to the service point.
11. To add or remove factor overrides for the usage subscription, click the + or – sign in the Factor Overrides section and do the following for each:
 - Select the factor
 - Enter the start and end dates for the factor override
 - Enter the value for the factor override
12. To add or remove usage groups for the usage subscription, click the + or – sign in the Usage Groups section and do the following for each:
 - Enter the effective date and time for the usage group.
 - Enter the expiration date and time for the usage group.
 - Select the usage group.
13. Click **Save**.

You can now use this usage subscription to create usage transactions.

Usage Subscription Search

Use this procedure to search for a usage subscription on the Usage Subscription Query portal.

1. Select **Main Menu > Usage > Usage Subscription .**
2. Enter your search criteria.

Base package query options include name/address, usage subscription identifier, and contact identifier.
3. Click **Refresh**.
4. In the search results list, click the link for the usage subscription you want to view or edit.

Maintaining Usage Subscriptions

Use this procedure to maintain an existing usage subscription.

You use the Usage Subscription portal to maintain usage subscriptions. This portal includes the following zones:

- **Usage Subscription:** Defines basic information about the usage subscription, including factor overrides, usage groups, and service points.
- **Sub Usage Subscriptions:** Lists the first fifty “sub” usage subscriptions for the master usage subscription displayed in the **Usage Subscription** zone. This zone is only displayed for “master” usage subscriptions.

To maintain a usage subscription:

1. Select **Main Menu > Usage > Usage Subscription** to navigate to the Usage Subscription portal.
2. Search for and select the appropriate usage subscription.
3. Click the **Edit** or **Delete** button as appropriate.
4. To deactivate the usage subscription, click the **Deactivate** button.

Working with Usage Transactions

This section describes common tasks related to working with usage transactions.

Creating Usage Transactions

Use this procedure to create a new usage transaction.

Prerequisites: You must define at least one usage subscription before you can create usage transactions.

1. Select **Main Menu > Usage > Usage Transaction+ .**
2. Search for and select the usage subscription for the usage transaction.
3. Select the Bill Condition for the usage transaction.
4. Select whether or not tracing for the usage transaction is on or off. Tracing allows users to view a trace zone that lists the steps performed during usage calculations.
5. If the usage transaction will calculate usage from interval measuring components, enter the Start and End dates and times for the usage period in the Interval Measuring Component section. Note that a usage transaction can calculate usage from both interval and scalar measuring components.
6. If the usage transaction will calculate usage from scalar measuring components, enter the Start and End dates and times for the usage period in the Scalar Measuring Component section. Note that a usage transaction can calculate usage from both interval and scalar measuring components.
7. Click **Save**.

Usage Transaction Search

Use this procedure to search for a usage transaction on the Usage Transaction Query portal.

1. Select **Main Menu > Usage > Usage Transaction .**
2. Enter your search criteria.
Base package query options include name/address, usage subscription ID, and usage transaction ID.
3. Click **Refresh**.
4. In the search results list, click the link for the usage transaction you want to view or edit.

Maintaining Usage Transactions

Use this procedure to maintain an existing usage transaction.

You use the Usage Transaction portal to maintain usage transactions. This portal includes the following zones:

- **Usage Transaction:** Defines basic information about the usage transaction, including usage period date ranges, date breaks within the usage period, scalar usage details, and usage quantity details.
- **Service Quantity Overlay:** Displays interval data for each service quantity for the usage transaction's usage period
- **Time of Use By Day:** Displays TOU-mapped interval data by day for the usage transaction's usage period

To maintain a usage transaction:

1. elect **Main Menu > Usage > Usage Transaction** to navigate to the Usage Transaction portal.
2. Search for and select the appropriate usage transaction.
3. To perform an action, click the appropriate button.

The specific actions available for a usage transaction are based on the current status of the usage transaction. The statuses in which each action are allowed are listed in parentheses. Action options include the following:

Options	Description
Edit	Allows user to edit the usage transaction. (Allowed Status: Any)
Delete	Deletes the usage transaction. (Allowed Status: Any)
Approve	Approves the usage transaction, and sets the status of the usage transaction to Sent (Allowed Status: Approval In Progress, Issue Detected)
Re-Calculate	Re-calculates usage for the usage transaction. (Allowed Status: Approval In Progress, Issue Detected)
Subsequent Correction	Allows a user to indicate that the usage transaction was corrected after being sent. Sets the status of the usage transaction to Subsequent Correction. (Allowed Status: Sent)
Discard	Discards the usage transaction. (Allowed Status: Issue Detected)

Reports

This section describes concepts and procedures related to reports.

About Reports

Reports include operational reports related to device events, validation exceptions, and other operational data. Reports can also be based on devices, measuring components, service points, service providers, and other data.

Oracle Utilities Meter Data Management reports are implemented using Oracle Business Intelligence Publisher (BI Publisher), and are administered via Oracle Business Intelligence Publisher and the Report functionality of the Oracle Utilities Application Framework.

Refer to the Oracle Business Intelligence Publisher documentation for more information about installing Oracle Business Intelligence Publisher and creating and defining reports.

Refer to the Oracle Utilities Application Framework for more information about how reports are defined and administered.

About the Device VEE Exceptions Report

The Device VEE Exceptions report displays VEE exceptions based on user-specified parameters.

Reported Data

The report displays the following:

- **Exceptions By Type:** a pie graph depicting the percentage of each type of exception reported.
- For each exception listed in the report:
 - Device Type
 - Device ID
 - Serial Number
 - Status
 - Date
 - Exception ID
 - Service Point ID
 - Service Point Information
- Exceptions are grouped by Market, and then by Exception Type within each market.

Report Parameters

The Device VEE Exceptions report uses the following parameters:

- **From Date:** the start date for the report (required).
- **To Date:** the end date for the report (required).
- **Market:** the market in which the exceptions and/or events occurred (used to restrict the report output by market).
- **Exception Type:** the exception type (used to restrict the report output by exception type).
- **Device Type:** the device type for the report (used to restrict the report output by device type).
- **Device ID:** the device ID for the report (used to restrict the report output based on a specific device)

About the Device Events Report

The Device Events Report displays device events based on user-specified parameters.

Reported Data

The report displays the following:

- **Events By Type:** a pie graph depicting the percentage of each type of event reported.
- For each event listed in the report:
 - Device Event ID (Dvc Evt ID)
 - Business Object
 - Service Provider
 - Status
 - Event Date/Time
 - Device ID

- Device Information
- Device Events are grouped by Device Event Type.

Report Parameters

The Device VEE Exceptions report uses the following parameters:

- **From Date:** the start date for the report (required).
- **To Date:** the end date for the report (required).
- **Device Event Type:** the device event type (used to restrict the report output by device event type).
- **Service Provider:** the service provider (used to restrict the report output by service provider).

Working with Reports

This section describes common tasks related to working with reports.

Running Reports

Use this procedure to run a report.

A report must have previously been defined in Oracle Business Intelligence Publisher and in the Report Definition portal of the Oracle Utilities Application Framework before it can be run.

1. **Main Menu > Batch > Report Submission.**
2. Search for and select the report you wish to run. You can search by the **Report Code** or **Description**.
3. Enter parameter values for the report as appropriate.
4. Click **Submit**.

The Oracle BI Publisher window opens. Enter a user ID and password to access the Oracle BI Publisher server.

5. Use the Oracle BI Publisher viewer to view the report.
 - a) The default output format for reports is Adobe Acrobat (PDF). To change the output format, select the desired format from the drop-down list and click **View**.
 - b) To export the report, click **Export** and specify a directory and file name for the report.
 - c) Refer to the Oracle BI Publisher documentation for more information about using the Oracle BI Publisher viewer.

Chapter 5

System Administration

This section describes the functions available from the Oracle Utilities Meter Data Management Admin Menu. It provides conceptual information and instructions for performing various setup and administration tasks.

Usage Administration

This section describes concepts and common tasks related to usage administration.

Understanding Usage Setup and Administration

This section describes entities used to support the management of usage-related objects.

About Dynamic Option Types

Dynamic option types store information common to dynamic options of a specific type.

About TOU Groups

TOU Groups are groups of TOUs used to limit the set of TOUs usable in a TOU schedule.

TOU groups are used when defining a TOU schedule via a TOU map template.

About TOU Map Templates

TOU Map Templates are the schedules used for TOU map data generation.

Attributes used to define TOU map templates include the following:

- **TOU Group:** the TOU group used by the map template
- **Default TOU:** the default TOU for the map template (from the TOU Group). This is the TOU used when creating TOU map data for dates not accounted for in the TOU Schedules section.

- **Work Calendar:** the work calendar associated with the map template. Work calendars define the days of the week on which work is performed, and specify holidays.
- **Holiday TOU:** the TOU used for holidays (from the TOU Group)
- **Holiday Template:** the TOU map template used for holidays (if applicable)
- **Interval Size:** the size of the intervals for TOU map data created from the map template, represented as hours:minutes:seconds (HH:MI:SS).
- **TOU Schedules:** date ranges (including month, day, and time ranges) and which TOUs should be used during each.

About TOU Map Types

TOU Map Types define important properties of TOU maps of the type, including the interval size (SPI) and the valid TOU map templates.

Attributes used to define TOU map types include the following:

- **Time Zone:** the time zone in which TOU maps of this type are applicable
- **Interval Size:** the size of the intervals for TOU map data created from maps of this type, represented as hours:minutes:seconds (HH:MI:SS).
- **Default TOU Map Template:** the default TOU map template used by maps of this type
- **Override TOU Map Templates:** one or more TOU map templates that can be used as an override on TOU maps of this type.

About Usage Subscription Types

Usage Subscription Types define a collection of properties defining a class of usage subscriptions.

Usage subscription types also control valid values for various attributes of usage subscriptions.

Usage subscription types are defined by the following:

- **Usage Recipient :** The service provider for usage subscriptions of this type
- **Usage Group Determination Override Algorithm:** An override algorithm used to determine the usage calculation group to use when creating usage transactions for usage subscriptions of this type. If an algorithm is specified, its logic overrides the existing method of determining the usage group. If no algorithm is specified, the default method of using the usage group specified on the usage subscription is used.
- **Valid Service Point Types:** One or more service point types considered valid for usage subscriptions of this type
- **Valid Usage Recipients:** One or more service providers considered valid recipients for usage transactions created from usage subscriptions of this type
- **Valid Usage Groups:** One or more usage groups considered valid for usage subscriptions of this type
- **Fallback Usage Groups:** One or more fallback usage groups for usage subscriptions of this type. Fallback usage groups are used in the event that a usage group defined for a usage subscription is not in effect at the time usage is to be calculated.

About Usage Groups

Usage groups are collections of usage rules that are applied to measurement data to calculate bill determinants for usage subscriptions.

Usage groups are associated with specific usage subscriptions and usage subscriptions types (or both). When assigned to usage subscriptions, usage groups contain the usage rules to be used to calculate usage and bill determinants. Usage groups associated with usage subscription types are those groups considered valid for usage subscriptions of that type.

Usage groups can also specify a list of device configuration types that are considered valid. Usage groups should only be associated with usage subscriptions for service points related to device configurations of a valid device configuration type.

Usage groups can also be referenced by individual Execute Usage Group usage rules. See [About Usage Rules](#) for more information.

About Usage Rules

Usage rules are standard and custom rules that perform calculations on measurement data to generate bill determinants and other values used by external systems, such as billing systems, customer information systems, etc.

Usage rules are created for a specific usage group. For example, if you were configuring two usage groups and both included a specific usage rule, you would need to create two instances of the usage rule, one for each group.

Attributes used to define usage rules typically include the following:

- **Basic Information:** Basic information about the usage rule, including its name and description, the usage group to which the rule belongs, the sequence of the rule within the group, and the usage rule category. This information is standard for most usage rules.
- **Parameters:** The parameters used by the rule. Parameters are specific to each rule.

Oracle Utilities Meter Data Management includes the following "generic utility" base package usage rule type that can be used when configuring usage rules:

- **Execute Usage Group :** used to define business logic to allow reference to a usage group. This allows rules that are used frequently to be bunched under a single usage group, which can be referenced/called by other rules as needed. For example, if a set of standard rules should be applied to all usage subscriptions, this set of rules can be configured as part of a usage group, which is referenced by a single usage rule of this type. Referred Usage Group rules use the following options:
 - **Referred Usage Group:** defines the usage group referenced by the rule.

Oracle Utilities Meter Data Management includes the following base package usage rule types that can be used when creating usage rules:

- **Apply Math to Interval Data:** summarizes interval measurements and applies a mathematical formula against the results to derive a usage quantity.
- **Get Interval Data:** retrieves interval data for a measuring component and date range.
- **Get Scalar Details:** assembles scalar readings and measurements (consumption).
- **Get TOU Mapped Usage:** summarizes interval measurements into TOU buckets based on a TOU map (where the TOU map is created based on the schedule defined within a TOU map template).
- **Math:** derives a set of interval measurements based on a formula. This rule can also apply TOU mapping to the derived values, and perform mathematical operations on Usage Transaction Service Quantity entries.
- **Validate Usage Against Tolerance:** validates calculated usage against a specified tolerance.

About Usage Rule Eligibility Criteria

Usage rule eligibility criteria are user-definable conditions that could cause a given usage rule to be applied or skipped. This can involve the evaluation of some attribute of the usage subscription or service point, or something else entirely.

A usage rule can have multiple eligibility criteria for determining if the rule should be applied or skipped, based on a user-defined sequence. Each eligibility criteria uses the following settings:

- **Criteria Comparison:** defines the specific comparison for the criteria, based on the following:
 - **Criteria Field:** the algorithm used to retrieve the value of the criteria field
 - **Comparison Operator:** the operator used in the comparison
 - **Value:** a user-specified value to which the retrieved value is compared (using the comparison operator)
- **Comparison Results:** defines how the rule should behave, based on the results of the comparison defined under Criteria Comparison:
 - **If True:** the action to take if the comparison is true

- **If False:** the action to take if the comparison is false
- **If Insufficient Data:** the action to take if there is insufficient data to perform the comparison

Base Package Usage Rules

Oracle Utilities Meter Data Management includes a number of base package usage rules that can be configured to calculate usage from measurements.

Oracle Utilities Meter Data Management includes the following base package usage rules:

- **Apply Math (Interval Data):** summarize interval measurements and apply a mathematical formula against the results to calculate usage quantities.
- **Get Interval Data:** calculate interval data quantities from interval measurements for a specified UOM, TOU, or SQL.
- **Get Scalar Details:** assemble scalar readings and measurements.
- **Get TOU Mapped Usage:** calculate usage from interval measurements based on a TOU map. Service quantities are created for each TOU period defined for the TOU map used by the rule. For example, usage calculated from a TOU map with "On-Peak" and "Off-Peak" TOU periods would result in both "On-Peak" and "Off-Peak" service quantities.
- **Vector and Service Quantity Math:** derive interval data measurements based on a formula, and apply TOU mappings and/or other operations to the derived data to calculate usage quantities. Math rules can also perform operations on existing Usage Transaction Service Quantity entries.
- **Validate Against Tolerance:** validate calculated usage service quantities against a specified tolerance. These rules are typically used later in the usage calculation process to validate results of previously executed usage rules. For example, after calculating kilowatt hour usage for a particular service point, a rule of this type could be used to validate that the calculated usage does not exceed a certain threshold.

Defining Dynamic Option Types

Use this procedure to define dynamic option types.

Prerequisites: You must define time zones before you can create dynamic option types. Refer to the Oracle Utilities Application Framework online help for more information about creating time zones.

To maintain existing dynamic option types, select **Admin Menu > Usage > Dynamic Option Type**, then use [standard actions](#) to edit, duplicate, or delete a dynamic option type.

To define a new dynamic option type, follow these steps:

1. Select **Admin Menu > Usage > Dynamic Option Type+ .**

Note: If your system supports more than one dynamic option type business object, you will be prompted to select a business object for this dynamic option type.

2. Enter a name and a meaningful description for the dynamic option type.
3. Select the business object to use when creating dynamic options of this type.
4. Select the time zone for dynamic options of this type.
5. Click **Save**.

Now you can use the dynamic option type when creating dynamic options.

Defining TOU Groups

Use this procedure to define TOU groups.

Prerequisites: You must define TOU periods (TOUs) before you can create TOU groups. Refer to the Oracle Utilities Service and Measurement Data Foundation online help for more information about creating TOU periods.

To maintain existing TOU groups, select **Admin Menu > Usage > TOU Group**, then use [standard actions](#) to edit, duplicate, or delete a TOU group.

To define a new TOU group, follow these steps:

1. Select **Admin Menu > Usage > TOU Group+** .

Note: If your system supports more than one TOU group business object, you will be prompted to select a business object for this TOU group.

2. Enter a name and a meaningful description for the TOU group.
3. To add or remove TOU periods for this TOU group, click the + or – sign in the TOU Section, enter a priority, and select the TOU.
4. Click **Save**.

Now you can use the TOU group when creating TOU map templates.

Defining TOU Map Templates

Use this procedure to define TOU map templates.

Prerequisites: You must define TOU groups and work calendars before you can create TOU map templates. Refer to the Oracle Utilities Application Framework online help for more information about creating work calendars.

To maintain existing TOU map templates, select **Admin Menu > Usage > TOU Map Template**, then use [standard actions](#) to edit, duplicate, or delete a TOU map template.

To define a new TOU map template, follow these steps:

1. Select **Admin Menu > Usage > TOU Map Template+** .

Note: If your system supports more than one TOU map template business object, you will be prompted to select a business object for this TOU map template.

2. Enter a name and a meaningful description for the TOU map template.
3. Select the TOU group for the TOU map template.
4. Select the default TOU for the TOU map template.
5. Select the work calendar for the TOU map template.
6. Select the holiday TOU for the TOU map template.
7. Select the TOU map template used for holidays (if applicable).
8. Specify the interval size for TOU map data created from the map template. Interval size is designated as hours:minutes:seconds (HH:MM:SS)
9. To specify TOU schedules for this TOU map template, click the + or – sign in the TOU Schedule Section and enter or select the following:
 - **Start and Stop Dates**
 - **Start and Stop Weekdays:** To add or remove Start and Stop Weekday pairs with the Start and Stop Dates, click the + or – sign and select the appropriate weekdays
 - **Start and Stop Times:** To add or remove Start and Stop Times within a Start and Stop Weekday pair, click the + or – sign and enter the appropriate times
 - **TOU**
10. Click **Save**.

Now you can use the TOU map template when creating TOU types.

Defining TOU Map Types

Use this procedure to define TOU map types.

Prerequisites: You must define TOU map templates and time zones before you can create TOU map types. Refer to the Oracle Utilities Application Framework online help for more information about creating time zones.

To maintain existing TOU map types, select **Admin Menu > Usage > TOU Map Type**, then use [standard actions](#) to edit, duplicate, or delete a TOU map type.

To define a new TOU map type, follow these steps:

1. Select **Admin Menu > Usage > TOU Map Type+** .

Note: If your system supports more than one TOU map type business object, you will be prompted to select a business object for this TOU map type.

2. Enter a name and a meaningful description for the TOU map type.
3. Select the time zone for the TOU map type.
4. Specify the interval size for TOU map data created from the map type. Interval size is designated as hours:minutes:seconds (HH:MM:SS)
5. Select the default TOU map template for the TOU map type.
6. Select the business object to use when creating TOU maps of this type
7. To add or remove override TOU map templates for this TOU type, click the + or – sign in the Override TOU Map Templates section and select the TOU map template.
8. Click **Save**.

Now you can use the TOU map type when creating TOU maps.

Defining Usage Subscription Types

Use this procedure to define usage subscription types.

Prerequisites: You must define service providers before you can create usage subscriptions types. Refer to the Oracle Utilities Service and Measurement Data Foundation online help for more information about creating service providers.

To maintain existing usage subscription types, select **Admin Menu > Usage > Usage Subscription**, then use [standard actions](#) to edit, duplicate, or delete a usage subscription type.

To define a new usage subscription type, follow these steps:

1. Select **Admin Menu > Usage > Usage Subscription+** .

Note: If your system supports more than one usage subscription type business object, you will be prompted to select a business object for this usage subscription type.

2. Enter a name and a meaningful description for the usage subscription type.
3. Select the service provider for the usage subscription type. This will be used as the Recipient for usage subscriptions based on this type.
4. Select the business object to use when creating usage subscriptions of this type
5. To add or remove valid service point types for this usage subscription type, click the + or – sign in the Valid Service Point Types section and select the service point type.
6. To add or remove valid service providers for this usage subscription type, click the + or – sign in the Valid Service Providers section and select the service provider.

7. To add or remove valid usage groups for this usage subscription type, click the + or – sign in the Valid Usage Groups section and select the usage group.
8. To add or remove fallback usage groups for this usage subscription type, click the + or – sign in the Fallback Usage Groups section and select the usage group.
9. Click **Save**.

Now you can use the usage subscription type when creating usage subscriptions.

Working with Usage Groups

This section describes common tasks related to working with usage groups.

Creating Usage Groups

Use this procedure to create a new usage group.

1. Select **Admin Menu > Usage Rules > Usage Group+** .

Note: If your system supports more than one usage group business object, you will be prompted to select a business object for the usage group.

2. Enter the name, description, and detailed description for the usage group.
3. To add device configuration types to the usage group, click the + or – sign in the Device Configuration Types section and select the device configuration type.
4. Click **Save**.
5. To add a usage rule to the usage group, click the **Add Rule** link in the Usage Rules List zone title bar. See [Creating Usage Rules](#) for more information about creating usage rules.

Now you can create usage rules for this group.

Usage Group Search

Use this procedure to search for a usage group on the Usage Group Query portal.

1. Select **Admin Menu > Usage Rules > Usage Group** .
2. Enter your search criteria.
You can search by Usage Group or Description.
3. Click **Refresh**.
4. In the search results list, click the link for the usage group you want to view or edit.

Maintaining Usage Groups

Use this procedure to maintain an existing usage group.

You use the Usage Group portal to maintain usage groups. This portal includes the following zones:

- **Usage Group:** Defines basic information about usage group
- **Usage Rules List:** lists the usage rules belonging to the group
- **Referencing Usage Rules List:** lists the usage rules that reference the group
- **Referencing Usage Subscription Type List:** lists the usage subscription types that reference the group
- **Referencing Usage Subscriptions List:** lists the usage subscriptions that reference the group

To maintain a usage group:

1. Select **Admin Menu > Usage Rules > Usage Group** to navigate to the Usage Group portal.
2. Search for and select the appropriate usage group.
3. Click the **Edit**, **Duplicate**, or **Delete** button as appropriate.
4. To add a Usage rule to the Usage group, click the **Add Rule** link in the Usage Rules List zone title bar. See [Creating Usage Rules](#) for more information about creating Usage rules.
5. To change the sequence of usage rules for the group, click the **Resequence Rules** link in the Usage Rules List zone title bar, edit the Execution Sequence in the Resequence Rules dialog, and click **Save**.

Working with Usage Rules

This section describes common tasks related to working with usage rules.

Creating Usage Rules

Use this procedure to create a new usage rule.

Prerequisites: You must define at least one usage group before you can create usage rules.

1. Select **Admin Menu > Usage Rules > Usage Rule+**.
2. Search for and select the usage group to which the new usage rule will belong.
3. Select the business object that will define the usage rule.
4. Click **OK**.
5. Enter a name, sequence number, description, and detailed description for the rule.
6. Select the category for the rule.
7. Complete the remaining fields and sections.

Note: The remaining fields and sections are based on the usage rule business object you selected.

8. Click **Save**.
9. To define eligibility criteria for the rule, click the **Add** link in the Eligibility Criteria List zone title bar. See [Defining Eligibility Criteria for a Usage Rule](#) for more information.

Usage Rule Search

Use this procedure to search for a usage Rule on the Usage Rule Query portal.

1. Select **Admin Menu > Usage Rules > Usage Rule**.
2. Enter your search criteria.
You can search by Usage Rule or Description.
3. Click **Refresh**.
4. In the search results list, click the link for the usage rule you want to view or edit.

Maintaining Usage Rules

Use this procedure to maintain an existing usage rule.

You use the Usage Rule portal to maintain usage rules. This portal includes the following zones:

- **Usage Rule:** Defines the usage rule, including parameters used when executing the rule
- **Eligibility Criteria List:** Lists the eligibility criteria defined for the rule

To maintain a usage rule:

1. Select **Admin Menu** > **Usage Rules** > **Usage Rule** to navigate to the Usage Rule portal.
2. Search for and select the appropriate usage rule.
3. Click the **Edit**, **Duplicate**, or **Delete** button as appropriate.
4. To define eligibility criteria for the rule, click the **Add** link in the Eligibility Criteria List zone title bar. See [Defining Eligibility Criteria for a Usage Rule](#) for more information.

Defining Eligibility Criteria for a Usage Rule

Use this procedure to define eligibility criteria for a usage rule.

Prerequisites: You must create a usage rule before you can define eligibility criteria.

1. Click the **Add** link in the Eligibility Criteria List zone title bar.

Note: If your system supports more than one eligibility criteria business object, you will be prompted to select a business object for the eligibility criteria.

2. Enter a sequence number, description, and detailed description for the criteria.
3. Complete the Criteria Comparison section as follows;
 - Criteria Field: the algorithm used to retrieve the value of the criteria field
 - Comparison Operator: the operator used in the comparison
 - Value: a user-specified value to which the retrieved value is compared (using the comparison operator)
4. Complete the Comparison Results section as follows:
 - If True: the action to take if the comparison is true
 - If False: the action to take if the comparison is false
 - If Insufficient Data: the action to take if there is insufficient data to perform the comparison
5. Click **Save**.

Chapter 6

Reference Topics

This section provides reference information to support tasks.

Glossary

This glossary provides definitions of commonly used terms.

A-C	D-G	H-K	L-O	P-R	S-U	V-Z
<hr/>						
360 Degree View - Final Values Overlay				A zone that graphs final measurements for a measuring component, and provides the ability to overlay the graphed data with final measurements from other measuring components. The zone also permits overlaying data from the same measuring component for different time periods, as well as data from measuring components measuring different quantities, such as temperature.		
360 Degree View - Audit View				A zone that allows users to view an interval measurement curve for a given period overlaid with the count of audit records for each individual measurement. It also allows users to magnify a portion of the curve and see how the measurements looked at different points in time.		
360 Degree View - Time of Use by Day				A zone that displays daily TOU-mapped usage data for a measuring component based on a user-defined time period and TOU Map.		
360 Degree View - Time of Use Overlay				A zone that displays an overlay of the TOU periods on a final measurement along with totalized TOU consumption based on a user-defined time period and TOU map.		
360 Degree View - Timeline Zone				A zone that displays a timeline of activities and other events for a given service point, device, etc.		
Adjust Intervals To Scalar Quantity				An initial measurement data function used to adjust all interval values within a user-defined time period in an interval measurement such that the total of all interval values equals a user-defined scalar quantity.		

Adjust Intervals Using Math	<p>This function results in a measurement that retains the shape of the original measurement, but has been scaled up or down.</p> <p>An initial measurement data function used to adjust all interval values within a user-defined time period using math operations (add, subtract, multiply, or divide).</p>
Bill Determinants	<p>Measurement data summarized for use by a billing application. Bill determinants can take the form of TOU-mapped interval consumption, scalar consumption, scalar readings, and/or interval consumption obtained via measurements. A common variety of bill determinant is TOU-mapped interval consumption, which reduces a full month's worth of interval data into several buckets of consumption based on time of use.</p>
Consumption	<p>A measurement by a given device of the amount of energy, water, gas, etc. consumed over a given time period. Synonymous with the term "measurement".</p>
Convert Scalar to Interval Consumption	<p>A measuring component consumption function used to convert scalar consumption into interval consumption. The converted consumption is held in a new scratchpad measuring component. The "shape" of the new interval measurement can be based on either a profile or can have a flat distribution.</p>
Create/Override	<p>A measuring component consumption function used to create new initial measurement data for a selected measuring component for all or part of a selected time period. This function can either copy existing final measurements (for example, from a profile) or create new measurement data for the IMD it creates.</p>
Create Scratchpad Interval Consumption	<p>A measuring component consumption function used save all or some of the final measurements shown in the zone as a new initial measurement for a scratchpad measuring component.</p>
Dynamic Option	<p>Used to specify terms that override how usage is normally calculated - such as a critical peak period that affects the TOU mapping of interval consumption.</p>
Dynamic Option Event	<p>The period of time during which a dynamic option is applicable. A dynamic option may have many events over time.</p>
Dynamic Option Type	<p>Used to define information common to dynamic options of a specific type.</p>
Factor	<p>A centrally stored set of values for use in validation rules, bill determinants calculations, and other processes. A factor can have different values depending upon some definable attribute of a system object, such as customer size associated with a service point. The values are effective-dated so that changes over time are retained. Examples of factors can include minimum/maximum thresholds, loss factors, etc. Classes of factors are defined that can have numeric values (as in the above examples), or values pointing to profile measuring components or VEE groups.</p>
Function	<p>An online-initiated action applied to measurement data, comprising one or more measurement services.</p>

Initial Measurement Data Function (IMDF)	An online means of manipulating initial measurement data. IMD Functions typically move intervals (shift, insert, remove, etc.) or manipulate their values or conditions.
Insert Intervals	An initial measurement data function used to insert intervals into initial measurement data. Intervals can be inserted at either the beginning or end of the measurement. The end date/time of the measurement is shifted to account for the inserted intervals.
Interval Data Snapshot	A copy of the interval data associated with a usage transaction that can be sent to external systems for using in billing calculations (such as real-time pricing). Snapshots are included in outbound messages sent to external systems.
Interval Size	The "size" of an interval, representing the length of time between intervals. Interval size is typically measured in seconds-per-interval (SPI).
Measuring Component Consumption Function (MCCF)	An online means of initiating the process of adding or editing measurements. Measuring Component Consumption Functions typically create new initial measurements based on a copy of existing final measurements.
New Scalar Reading	<p>A measuring component consumption function used to create new initial measurement data containing a reading (rather than consumption) for the scalar measuring component displayed in the zone for a user-defined time period.</p> <p>Note: A reading refers to the measurements as read from the meter, while consumption refers to the total consumption, accounting for meter multiplier and/or offset.</p>
Oracle Utilities Meter Data Management	Oracle Utilities application that provides functionality for handling large volumes of meter data to enable increased accuracy, flexibility, and scalability.
Profiling of Scalar Data	The process of applying an interval consumption "shape" to a scalar measurement, using an existing interval measuring component. The individual interval values are adjusted such that when totaled, they equal the value of the scalar measurement.
Remove Intervals	An initial measurement data function used to remove intervals from initial measurement data. Intervals can be removed from either the beginning or end of the measurement. The end date/time of the measurement is shifted to account for the new number of intervals in the measurement.
Save As Interval Consumption	A measuring component consumption function used save all or some of the final measurements shown in the zone as a new initial measurement for a different (new or existing) measuring component.
Self-Service Meter Read	Meter reads created by end-users via the Oracle Utilities Self-Service application.
Service Point	A location at which a company supplies service. Used to store information describing the type of service and how it is measured.

Set Condition Codes	An initial measurement data function used to set condition codes within initial measurement data. Condition codes indicate the circumstances (estimated, missing, etc.) of individual measurements. Condition codes are assigned to both scalar and interval measurement data both for initial measurement data and final measurements.
Shift Intervals	An initial measurement data function used to shift intervals of initial measurement data forward or backward time. The end result is a measurement with a different start or end time.
Smooth Spikes	<p>An initial measurement data function used to reduce "spike" intervals (intervals with values that are more than a user-defined percentage higher than other intervals within the initial measurement data). The function smoothes spikes using linear interpolation as follows:</p> <ul style="list-style-type: none"> • Get the value of the interval immediately preceding the spike (the "Left Value"). • Get the value of the interval immediately after the spike (the "Right Value"). • Subtract the Left Value from the Right Value, divide result by two. The result is called the Estimation Adder • Add the Estimation Adder to the interval immediately before the spike.
Sub Usage Subscription	A "child" usage subscription that is subordinate to another usage subscription (such as when a utility is issuing a bill for a third party service).
Usage	A generic term for the amount of energy, water, gas, etc. consumed at one or more service points, sometimes representing quantities that have been adjusted from the original calculated consumption.
Usage Calculation Group	A set of sequenced usage rules used to calculate usage for a usage subscription.
Usage Rule	Business rules / logic used to calculate usage (bill determinants), such as a TOU-mapped consumption calculation. Each rule is a modular unit that can be grouped together and sequenced within a calculation group.
Usage Rule - Apply Math (Interval Data)	A usage rule used to summarize interval measurements and apply a mathematical formula against the results to derive a usage quantity.
Usage Rule - Get Interval Data	A usage rule used to get interval data for a measuring component and date range.
Usage Rule - Get Scalar Details	A usage rule used to assemble scalar readings and measurements (consumption).
Usage Rule - Get TOU Mapped Usage	A usage rule used to summarize interval measurements into TOU buckets based on a TOU map (where the TOU map is created based on the schedule defined within a TOU map template).
Usage Rule - Validate Usage Against Tolerance	A usage rule used to validate calculated usage against a specified tolerance.
Usage Rule Eligibility Criteria	Configured criteria used to determine whether to execute a specific usage rule when calculating usage.
Usage Subscription Type	A collection of properties defining a class of usage subscriptions. The usage subscription type also controls valid values for various attributes of usage subscriptions.

Usage Subscription	A record of an ongoing request to send one or more service points' usage to one or more external systems (such as a billing application).
Usage Transaction	A record of bill determinant calculations for a usage subscription.
Usage Transaction Correction Processor	An activity used to update usage transactions if needed when updated initial measurements are received that might impact the usage transaction(s).

VEE Rule - Duplicate IMD Check	VEE Rule that checks to determine whether the current initial measurement is a duplicate of one already received for the same measuring component.
VEE Rule - Ensure IMD Exists for Sibling MCs	VEE Rule that checks to ensure that initial measurement data exists for siblings measuring components.
VEE Rule - High/Low Check	VEE Rule that compares consumption of incoming initial measurement data against historical data as a means of assuring the reasonableness of the data.
VEE Rule - Interval Adjustment from Scalar	VEE Rule that adjust an interval initial measurement based on values from a related scalar initial measurement.
VEE Rule - Interval Averaging Estimation	VEE Rule that estimates interval initial measurement data based on averaging historical values for the same measuring component.
VEE Rule - Interval Interpolation Estimation	VEE Rule that estimates interval initial measurement data based on linear interpolation.
VEE Rule - Interval Profile Estimation	VEE Rule that estimates interval initial measurement data based on profile initial measurement data.
VEE Rule - Interval Replacement Rule	VEE Rule that determines whether or not an incoming initial measurement will replace any existing measurements and if so, whether or not to allow this to happen.
VEE Rule - Interval Size Validation	VEE Rule that checks to ensure that the interval size of the incoming initial measurement data matches the value defined in the measuring component type.
VEE Rule - Interval Spike Check	VEE Rule that examines incoming initial measurement data to identify intervals with conspicuously high usage relative to surrounding intervals.
VEE Rule - Multiplier Check	VEE Rule that checks to ensure that the device multiplier value of the incoming initial measurement data matches the multiplier value stored on the measuring component.
VEE Rule - Negative Consumption Check	VEE Rule that checks for negative consumption.
VEE Rule - Raise Missing Quantity Exception	VEE Rule that checks for missing measurement quantities in interval initial measurements.
VEE Rule - Scalar Calculation from Interval	VEE Rule that calculates a scalar initial measurement based on values from a related interval initial measurement.
VEE Rule - Scalar Estimation	VEE Rule that estimates scalar initial measurement data based on historical initial measurement data for the same measuring component.
VEE Rule - Scalar Profile Estimation	VEE Rule that estimates scalar initial measurement data based on profile initial measurement data.
VEE Rule - Scalar Replacement Rule	VEE Rule that identifies whether or not a scalar reading will completely replace an existing measurement and if so, whether or not to allow this to happen.

VEE Rule - Scalar Replacement Rule

VEE Rule that determines whether or not an incoming scalar measurement will replace any existing measurements and if so, whether or not to allow this to happen.

VEE Rule - Sum Check

VEE Rule that checks the difference between the total consumption of incoming initial measurement data against the total consumption (based on final measurements) for one or more related measuring components on the same device over the same time period.

VEE Rule - Unit Of Measure Check

VEE Rule that checks to ensure that the Unit of Measure (UOM) of the incoming initial measurement data matches the UOM specified on the measuring component's type.

VEE Rule - Zero Consumption Check

VEE Rule that checks for zero consumption.

Standard Actions for Admin-Level Data Maintenance

A standard set of maintenance portals are used to define objects that are maintained from the Admin menu. These portals use a common interface and support a set of standard actions for creating and maintaining objects.



The following quick reference table provides the basic steps for performing any of the standard actions.

Action	Steps
Add	Click the Add link in the list or search zone title bar. Provide all necessary information and click Save .
Edit	Select the object you want to edit from the list zone, then click the Edit icon. Enter your changes and click Save .
Delete	Select the object you want to delete from the list zone, then click the Delete icon. Confirm the deletion.
Duplicate	Select the object you want to duplicate from the list zone, then click the Duplicate icon. Key fields will be cleared in the new record. Complete all required fields and click Save .
Broadcast	Select the object you want to broadcast from the list zone, then click the Broadcast icon. The details and available actions for the selected object are displayed in the appropriate zones.
Activate or Deactivate	Select the object you want to activate or deactivate from the list zone, then click Activate or Deactivate as appropriate. Note: These actions only apply to objects that support an Active and Inactive status, such as activity types. When such an object is deactivated, no new objects of this type can be created.
Sort	Click a column header in the list zone to resort by the values in that column. Click again to reverse the order (from ascending to descending or descending to ascending).
Filter	If a list zone supports filtering, a Filter icon is displayed in the list zone title bar (on the far right). Click the Filter icon, then select the field by which you want to filter and click Refresh .
View or add log entries	Click the Log tab to view log entries. To add an entry, click the Add link in the list zone title bar and provide the requested information.

Standard Actions for Data Maintenance

This topic provides the basic steps for performing standard actions on data maintained from the Main Menu.

Note: The system displays buttons for all valid actions, based on the object's current status, your user privileges, and your system's configuration. The following table provide instructions for performing all standard actions.

Action	Steps
Edit	<p>From the Main Menu:</p> <ol style="list-style-type: none">1. Select the option for the object you want to maintain. A query portal is displayed.2. Enter search criteria to locate the object. The maintenance portal is displayed.3. Click the Edit button in the Record Actions section.4. Enter your changes. Click  to display field descriptions.5. Click Save.
Delete	<p>From the Main Menu:</p> <ol style="list-style-type: none">1. Select the option for the object you want to delete. A query portal is displayed.2. Enter search criteria to locate the object. The maintenance portal is displayed.3. Click the Delete button in the Record Actions section. A confirmation dialog opens asking you to confirm the deletion of the record. Click OK to delete the object.
Duplicate	<p>From the Main Menu:</p> <ol style="list-style-type: none">1. Select the option for the object you want to duplicate. A query portal is displayed.2. Enter search criteria to locate the object. The maintenance portal is displayed.3. Click the Duplicate button in the Record Actions section. A new record is created and the Add/Edit screen is displayed. Key fields will be cleared in the new record.4. Complete all required fields. Click  to display field descriptions.5. Click Save.
View or add log entries	<p>From the Main Menu:</p> <ol style="list-style-type: none">1. Select the option for the object you want to manage log entries for. A query portal is displayed.2. Enter search criteria to locate the object. The maintenance portal is displayed.3. Click the Log tab.4. To add a log entry, click the Add link in the Log zone title bar.5. Type the log detail and click Save.

Viewing and Adding Log Entries

Use the Log tab to view or add log entries for the current object.

The log displays a list of user and system actions associated with an object, such as when it was created, last updated, or transitioned to different status. For each log entry, the system displays the date and time the action occurred, the user/system that initiated the action, the type of action, and related object, if any.

To create a new log entry, click the **Add Log Entry** link in the zone title, then enter log entry details and click **Save**. Your user ID is saved with the log entry.

Oracle Meter Data Management Base Package Objects

Base Package Usage Management Objects

This section provide descriptions of the base package objects used by usage management functionality of Oracle Utilities Meter Data Management.

Dynamic Option

Dynamic options are used to specify terms that override how usage is normally calculated - such as a critical peak period that affects the TOU mapping of interval consumption.

Field	Description
Information	The information string for the dynamic option (comprises the dynamic option description and current status).
Description	A description of the dynamic option. This is used in information strings when referencing the dynamic option.
Dynamic Option Type	The dynamic option type upon which the dynamic option is based
Status	The current status of the dynamic option.

Business Object: D2-DynamicOption

Dynamic Option Event

Dynamic option event define the period of time during which a dynamic option is applicable. A dynamic option may have many events over time.

Field	Description
Information	The information string for the dynamic option (comprises status, dynamic option description, start date/time, and stop date/time).
Dynamic Option ID	The ID of the dynamic option the event is based on.

Field	Description
Status	Status: The status of the event.
Start Date/Time	The start time for the period during which the dynamic option is in effect.
Stop Date/Time	The stop time for the period during which the dynamic option is in effect.

Business Object: D2-DynamicOptionEvent

TOU Map

TOU maps are collections of TOU map data derived via a given TOU map template at a specific interval size. A TOU map is typically specified when configuring a usage calculation rule for TOU mapping. This TOU map's data will then be used when summarizing the interval data for each TOU period.

Field	Description
Information	The information string for the TOU map (comprises the TOU map description).
Description	A description of the TOU map. This is used in information strings when referencing the TOU map.
TOU Map Type	The TOU map type upon which the TOU map is based.
Status	The current status of the TOU map.
Override TOU Map Template	An override TOU map template for the TOU map. This allows overriding of the default TOU map template specified on the TOU map's type.
Dynamic Option / Dynamic TOU Map Section	A list of dynamic option/dynamic TOU map pairings for the current TOU map.

Business Object: D2-TOUMap

Usage Subscription

Usage Subscriptions are ongoing requests to send one or more service points' usage to one or more external systems (such as a billing application).

Field	Description
Information	The information string for the usage subscription (comprises contact information (if present), usage subscription type, start/end dates, and current status).
Usage Subscription Type	The usage subscription type upon which the usage subscription is based.
Status	The current status of the usage subscription.
Master Usage Subscription	The "master" usage subscription for this "sub" usage subscription (if applicable). "Master" and "sub" usage subscriptions allow for hierarchical relationships between usage subscription to represent situations where a subscription is a subordinate to another usage subscription (such as when a utility is issuing a bill for a third-party service).
Start Date/Time	The start time for the time period during which the usage subscription is active.
End Date/Time	The end time for the time period during which the usage subscription is active.
Usage Recipient	The recipient of bill determinants and usage calculated for the usage subscription, based on Valid Usage Recipients defined for the usage subscription's type.
Usage Approval	A flag that indicates if usage must be approved before being sent to the recipient.
External ID	An ID used in an external application identify the usage subscription.
Main Contact	The main contact for the usage subscription.

Field	Description
Time Zone	The time zone in which the usage subscription is active.
Service Points	<p>Defines the service points whose measurements are used to calculate usage for the usage subscription.</p> <ul style="list-style-type: none"> • Start Date/Time: The start date and time of the relationship between the usage subscription and the service point. All measurements used calculate usage for the usage subscription should have a start date/time later than this date and time. • Override start Date/Time: An override date and time used to specify the start date and time when identifying measurements used to calculate usage for the usage subscription. If not specified, the Start Date/Time is used. • Stop Date/Time: The stop date and time of the relationship between the usage subscription and the service point. All measurements used calculate usage for the usage subscription should have a stop date/time before than this date and time. • Override Stop Date/Time: An override date and time used to specify the stop date time when identifying measurements used to calculate usage for the usage subscription. If not specified, the Stop Date/Time is used. • Usage: A flag that indicates how the consumption from this service point is used when calculating usage for the usage subscription. Valid values include: <ul style="list-style-type: none"> • Add: The service point's consumption should be added to the consumption of other service points when calculating usage for the usage subscription. • Exclude: The service point's consumption should be excluded when calculating usage for the usage subscription. • Subtract: The service point's consumption should be subtracted from the consumption of other service points when calculating usage for the usage subscription. • Use Percent: The percentage of consumption from this service point that should be used when calculating usage for the usage subscription.
Factor Overrides	One or more factors used as override values when calculating bill determinants or usage.
Usage Groups	The usage groups used to calculate bill determinants or usage. Usage groups are effective-dated and can have an expiration date and time. If all usage groups for the usage subscription have expired or none are in effect when calculations are performed, calculations are performed using the Fallback Usage Group defined for the usage subscription's type.
Fallback Usage Groups	Defines effective dated fallback usage groups for the current usage subscription type (used in event that no valid usage groups are defined for the usage subscription).
Rate History	One or more effective-dated Oracle Utilities Customer Care and Billing rates for the usage subscription. These are used when integrating Oracle Utilities Meter Data Management with Oracle Utilities Customer Care and Billing to support dynamic determination of the usage groups to use when calculating usage for the usage subscription.

Business Object: D2-UsageSubscription

Usage Transaction

Usage transactions are records of bill determinant calculations for a usage subscription

Field	Description
Information	The information string for the usage transaction (comprises status, start date/time, end date/time, and usage group).
Parent Usage Transaction	The "parent" usage transaction for this "sub" usage transaction (if applicable). "Master" and "sub" usage transaction allow for hierarchical relationships between usage transactions. Applicable only to "sub" usage transactions.
Usage Subscription	The usage subscription upon which the usage transaction is based.
Previous Usage Transaction	The information string for the previous usage transaction for the same usage subscription.

Field	Description
Usage External ID	An ID used by external systems used to identify the usage transaction. When Oracle Utilities Meter Data Management is integrated with Oracle Utilities Customer Care and Billing, Oracle Utilities Customer Care and Billing can send this to help identify the previous usage transaction.
Status	The current status of the usage transaction. Options include "Pending", "Calculation Deferred", "Approval in Progress", "Issue Detected", "Sent", "Subsequent Correction", and "Discarded".
Start Date/Time	The start date and time of the time period covered by the usage transaction.
End Date/Time	The end date and time of the time period covered by the usage transaction.
Usage Group	The usage group used to calculate usage for the usage transaction.
Bill Condition	The status of the bill associated with the usage transaction (if applicable), used for informational purposes only. Valid values include "Initial", "Interim", and "Closing".
Automated Retry	A flag that indicates if system should automatically retry to perform calculations in the event that an issue is detected.
Next Retry Date/Time	The date and time for the next time at which the system will retry to perform calculations following the detection of an issue. Applicable only if the Automated Retry drop-down list is set to "Yes".
Retry Until Date/Time	The last date and time until which the system will retry to perform calculations following the detection of an issue. Applicable only if the Automated Retry drop-down list is set to "Yes".
Sub Usage Transactions Exist	A flag that indicates if sub-usage transactions exist for the usage transaction.
Defer Calculation	A flag that indicates if calculations for the usage transaction should be deferred.
Trace	A flag that indicates if tracing is enabled for the usage transaction. Tracing can be used to troubleshoot issues in usage transaction processing when implementing the system.
Skip	A flag that indicates if the usage transaction should be skipped.
Skip Reason	A reason for skipping the usage transaction.
Next Scheduled Read Date	The next scheduled read date for the service point associated with the usage transaction.
Interval Measuring Component	<p>Defines attributes of the interval measuring component related to the current usage transaction.</p> <p>Date Break: Defines one or more date breaks for the usage transaction. Date breaks are used to break up a usage period into sub-periods based on the dates on which rate changes took place for the service point (and its related account).</p>
Scalar Measuring Component	<p>Defines attributes of the scalar measuring component related to the current usage transaction.</p> <ul style="list-style-type: none"> • Start Date/Time: Defines the start date and time of the usage period for scalar usage transactions. • End Date/Time From: Defines the start date and time for the 'end range' of the usage period for scalar usage transactions. • End Date/Time To: Defines the end date and time for the 'end range' of the usage period for scalar usage transactions. • End Range Option: Indicates the end range option used for scalar usage transactions. Valid values include "Specified" and "Derive Using Service Cycle Schedule" • Minimum Offset Days / Maximum Offset Days: Used when End Range Option is set to "Derive Using Service Cycle Schedule", these values define a range of days for the end date of the usage transaction, based on the Service Cycle Schedule date. • Allow Estimate: Indicates whether or not to allow use of estimated measurement data when calculating usage. Valid values include "Allow Estimate" and "Do Not Allow Estimate". • Estimate Date: Indicates the date on which estimated measurement data used in the usage calculation was estimated.

Field	Description
	<ul style="list-style-type: none"> • Is Estimate: Indicates if estimated measurement data was used in the usage calculation.
Usage Period	One or more usage periods for the current usage transaction. A usage period is a period of time for which bill determinants (usage) are calculated. This section displays details for each service quantity calculated for each usage period.

Business Object: D2-UsageTransaction

Business Object: D2-SubUsageTransaction

Base Package Usage Management Administration Objects

This section provide descriptions of the base package objects used by usage management administration functionality of Oracle Utilities Meter Data Management.

Dynamic Option Type

Dynamic option types store information common to dynamic options of a specific type. Dynamic options are used to specify terms that override how usage is normally calculated - such as a critical peak period that affects the TOU mapping of interval consumption.

Field	Description
Dynamic Option Type	The code/name for the dynamic option type.
Description	A description of the dynamic option type. This is used in information strings when referencing the dynamic option type.
Dynamic Option Business Object	The business object used to create dynamic options of this type.
Time Zone	The time zone in which dynamic options of this type are applicable..

Business Object: D2-DynamicOptionType

TOU Group

TOU Groups are groups of TOUs used to limit the set of TOUs usable in a TOU schedule. TOU groups are used when defining a TOU schedule via a TOU map template.

Field	Description
TOU Group	The code/name of the TOU group.
Description	A description of the TOU group. This is used in information strings when referencing the TOU group.
TOU Section	Defines the specific TOUs associated to the current TOU group. The Priority column is used to specify the order in which TOU periods are displayed when displaying TOU data for maps created based on this TOU group;

Business Object: D2-TOUGroup

TOU Map Template

TOU map templates define the schedules used for TOU map data generation.

Field	Description
TOU Map Template	The code/name for the TOU map template.
Description	A description of the TOU template. This is used in information strings when referencing the TOU template.

Field	Description
TOU Group	The TOU group upon which the TOU map template is based. The specific TOU group determines the TOU periods available for the TOU map template.
Default TOU	The default TOU for the map template (from the TOU Group). This is the TOU used when creating TOU map data for dates not accounted for in the TOU Schedules section.
Work Calendar	The work calendar associated with the map template. Work calendars define the days of the week on which work is performed, and specify holidays.
Holiday TOU	The TOU used for holidays (from the TOU Group)
Holiday Template	The TOU map template used for holidays (if applicable)
Interval Size	The size of the intervals for TOU map data created from the map template, represented as hours:minutes:seconds (HH:MI:SS).
TOU Schedule Section	Defines date ranges (including month, day, and time ranges) and which TOUs should be used during each.

Business Object: D2-TOUMapTemplate

TOU Map Type

TOU map types define important properties of TOU maps of the type, including the interval size (SPI) and the valid TOU map templates. TOU maps are collections of TOU map data derived via a given TOU map template at a specific interval size. A TOU map is typically specified when configuring a usage calculation rule for TOU mapping. This TOU map's data will then be used when summarizing the interval data for each TOU period.

Field	Description
TOU Map Type	The code/name of the TOU map type.
Description	A description of the TOU type. This is used in information strings when referencing the TOU type.
TOU Map Business Object	The business object used to create TOU maps of this type.
Time Zone	the time zone in which TOU maps of this type are applicable
Interval Size	The size of the intervals for TOU map data created from maps of this type, represented as hours:minutes:seconds (HH:MI:SS).
Default TOU Map Template	The default TOU map template used by maps of this type
Override TOU Map Templates	One or more override TOU map templates for the current TOU map type. If a TOU map has an Override TOU Map Template, it is used in processing TOU map data. If not, the Default TOU Map Template in TOU map's type is used.

Business Object: D2-TOUMapType

Usage Subscription Type

Usage subscription types define a collection of properties defining a class of usage subscriptions. Usage subscription types also control valid values for various attributes of usage subscriptions. Usage subscriptions are ongoing requests to send one or more service points' usage to one or more external systems (such as a billing application).

Field	Description
Usage Subscription Type	The code/name of the usage subscription type.
Description	A description of the usage subscription type. This is used in information strings when referencing the usage subscription type.

Field	Description
Usage Subscription Business Object	The business object used to create usage subscriptions of this type.
Usage Recipient	The service provider to which usage transactions created from usage subscriptions of this type are sent.
Subscription Type	A flag that specifies the type of usage subscription, used to identify the type of system to which usage transactions created from usage subscriptions of this type are sent.
Usage Group Determination Override Algorithm	An override algorithm used to determine the usage calculation group to use when creating usage transactions for usage subscriptions of this type. If an algorithm is specified, its logic overrides the existing method of determining the usage group. If no algorithm is specified, the default method of using the usage group specified on the usage subscription is used.
Valid Service Point Types	One or more service point types considered valid for usage subscriptions of this type.
Valid Usage Recipients	One or more service providers considered valid as recipients of usage transactions created from usage subscriptions of this type
Valid Usage Groups	Defines valid usage groups for the current usage subscription type.
Fallback Usage Groups	Defines effective dated fallback usage groups for the current usage subscription type (used in event that no valid usage groups are defined for the usage subscription).

Business Object: D2-UsageSubscriptionType

Base Package Usage Groups and Rules

This section provides descriptions of the attributes used to define usage groups and rules provided with the base package.

Usage Group

Usage groups are collections of usage rules that are applied to measurement data to calculate bill determinants for usage subscriptions and usage transactions. Usage groups are associated with specific usage subscriptions and usage subscription types (or both). When assigned to usage subscriptions, usage groups contain the usage rules to be used to calculate usage and bill determinants. . Usage groups can also specify a list of device configuration types that are considered valid. Usage groups should only be associated with usage subscriptions for service points related to device configurations of a valid device configuration type.

Field	Description
Usage Group	The code/name of the usage group.
Description	A description of the usage group. This is used in information strings when referencing the usage group.
Detailed Description	A detailed description of the usage group. This can be used to provide additional details about the content and intended uses of the usage group.
Device Configuration Types	One or more device configuration types that use the current usage group when calculating bill determinants.

Business Object: D1-UsageGroup

Execute Usage Group

Execute Usage Group rules are used to define business logic to allow reference to a usage group. This allows rules that are used frequently to be bunched under a single usage group, which can be referenced/called by other rules as needed. For example, if a set of standard rules should be applied to all usage subscriptions, this set of rules can be configured as part of a usage group, which is referenced by a single usage rule of this type.

Field	Description
Usage Group	The usage group to which the rule belongs. All usage rules belong to a group.
Usage Rule	The code/name for the usage rule.
Sequence	The sequence in which the rule appears in its usage group. The sequence determines the order in which rules are processed within a group.
Description	A description of the usage rule. This is used in information strings when referencing the usage rule.
Detailed Description	A detailed description of the rule. This can be used to provide additional details about the rule.
Usage Rule Category	The category of rule for the usage rule. Options include "Usage Calculation" and "Validation".
Referenced Usage Group	Defines the usage group executed by the rule.

Business Object: D1-UsageRuleReferredUsageGroup

Usage Rule Eligibility Criteria

Usage rule eligibility criteria are user-definable conditions that could cause a given usage rule to be applied or skipped. This can involve the evaluation of some attribute of the usage subscription or service point, or something else entirely. A usage rule can have multiple eligibility criteria for determining if the rule should be applied or skipped, based on a user-defined sequence.

Field	Description
Usage Group	The usage group to which the rule associated with the eligibility criteria belongs.
Usage Rule	The code/name for the usage rule to which the eligibility criteria is applied.
Sequence	The sequence in which the eligibility criteria is evaluated for the rule. The sequence determines the order in which criteria are processed for the rule.
Description	A description of the eligibility criteria . This is used in information strings when referencing the eligibility criteria .
Detailed Description	A detailed description of the eligibility criteria . This can be used to provide additional details about the eligibility criteria .
Criteria Comparison	Defines how eligibility criteria are compared and evaluated for the usage rule, including the criteria field, comparison operator, and value used in the comparison.
Comparison Results	<p>Defines how the usage rule should behave, based on the results of the comparison defined in the Criteria Comparison section.</p> <ul style="list-style-type: none"> • If True: The action to perform if the criteria comparison is true. • If False: The action to perform if the criteria comparison is false. • If Insufficient Data: The action to perform if there is insufficient data to perform the criteria comparison . <p>Actions include:</p> <ul style="list-style-type: none"> • Apply Rule: Apply the usage rule associated with the eligibility criteria. • Check Next Condition: Check the next eligibility criteria defined for the rule (if applicable) • Skip Rule: Skip the usage rule associated with the eligibility criteria. • Error: Create an exception using the Exception Type and Severity defined for the Insufficient Input Data Exception for the usage rule associated with the eligibility criteria. Applicable only for the If Insufficient Data drop-down list.

Business Object: D1-UsgRuleEligibilityCriteria

Chapter 7

FAQs

This section provides answers to commonly asked questions.

How Do I...?

This topic answers questions about how to perform day-to-day functions.

Q. How do I configure Usage rules that are only applied under certain circumstances?

A. You can define eligibility criteria for usage rules that specify that the rule should only be executed when specific circumstances apply.

How do I override how TOU map data is created for special events?

A. Do the following:

1. Create a TOU group, TOU map template, TOU map type, and TOU map that define how TOU map data are to be created during the override period.
2. Create a dynamic option for the override.
3. Create a dynamic option event that represents the override period.
4. Associate the dynamic option and override TOU map with the TOU map you use under normal circumstances. When you generate TOU map data for the override period, the TOU map data creation process will use the override TOU map during the period defined in the dynamic option event.

What's the Difference Between ...?

This topic describes the difference between terms and concepts that are closely related.

Q. What's the difference between Oracle Utilities Service and Measurement Data Foundation and Oracle Utilities Meter Data Management?

A. **Oracle Utilities Service and Measurement Data Foundation** provides shared functionality, including device management, device installation management, and Validation, Editing, and Estimation used by Oracle Utilities Meter Data Management, Oracle Utilities Smart Grid Gateway, and other Oracle Utilities products.

Oracle Utilities Meter Data Management is an application based on Oracle Utilities Service and Measurement Data Foundation that provides additional device management, device installation management, and VEE functionality, in addition to usage management and analytic tools.

Q. What's the difference between a measuring component and a scratchpad measuring component?

A. A **measuring component** is a single point for which data will be received and stored in the system.

A scratchpad measuring component is a measuring component that provides users with a means to manipulate "scratchpad" (or non-production) measurement data without affecting existing measurements.

Q. What's the difference between a TOU Map Template and a TOU Map Type?

A. A **TOU Map Template** is the schedule used for TOU map data generation, for example defining year, month, and day ranges and which TOUs should be used during each.

A **TOU Map Type** defines certain important properties of TOU maps of the type, including the interval size, and the valid TOU map templates.

Q. What's the difference between a TOU Map and TOU Map Data?

A. A **TOU Map** is a collection of TOU map data derived via a given TOU map template at a specific interval size and TOU. A TOU map is typically specified when configuring a usage calculation rule for TOU mapping. This TOU map's data will then be used when summarizing the interval data for each TOU period.

TOU Map Data are interval date/times and their associated TOU as defined by a TOU map template. For example, if the schedule defined for a TOU map template specifies that the period on weekdays from 9 AM to 5 PM falls into On-Peak, and the data is hourly, rows would be stored in the TOU map data table with the date/time 5/3/2010 at 10 AM, 5/3/2010 at 11 AM, 5/3/2010 at 12 PM, etc., each with a value of On-Peak.

Q. What's the difference between a Usage rule and a Usage group?

A. A **Usage rule** is a standard or custom rule that calculates bill determinants from measurement data.

A **Usage group** is a collection of Usage rules.

Q. What's the difference between a VEE rule and a usage rule?

A. A **VEE rule** is a standard or custom Validation, Estimation and Editing (VEE) rules that performs checking and/or manipulation of initial measurement data.

A **Usage rule** is a standard or custom rule that calculates bill determinants (or other Usage Transactions) from measurement data.

Q. What's the difference between a Usage Subscription and a Usage Transaction?

A. A **Usage Subscription** is a record of an ongoing request to send one or more service points' usage to one or more external systems (such as a billing application).

A **Usage Transaction** is a record of bill determinant calculations for a usage subscription.

Can I ...?

This topic answers questions about whether certain actions or configurations are permitted.

Q. Can I configure usage rules that are only applied under certain circumstances?

A. Yes. By defining eligibility criteria for Usage rules, you can define the circumstances under which the rules are applied or skipped.

Q. Can I create usage groups that can be reused by more than one usage subscription?

A. Yes. You can create an Execute Usage Group rule that reference a usage group. When this rule is executed, the rules within the referred usage group are executed.

Q. Can I override how TOU map data is created for special events?

A. Yes. By defining dynamic options, dynamic option events, and TOU maps for the override period, and associating the dynamic option and override TOU map to your TOU map.