

Oracle Utilities Meter Solution Cloud Service

Overview Guide

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Chapter 1

Oracle Utilities Meter Solution Cloud Service Overview

This guide provides an overview of the Oracle Utilities Meter Solution Cloud Service, including:

- [Welcome to Oracle Utilities Meter Solution Cloud Service](#)
- [Oracle Utilities Meter Solution Cloud Service Applications](#)
- [Documentation](#)
- [Supported Client Platforms and Browsers](#)
- [Supported Integrations](#)
- [Performance Guidelines](#)
- [Functional Limitations and Restrictions](#)

Welcome to Oracle Utilities Meter Solution Cloud Service

Oracle Utilities Meter Solution Cloud Service is a cloud-based solution used to maintain information about meters and the service points at which they are installed. The solution provides a means of recording measurements and events associated with meters in the field as well as the ability to compute usage for the recorded measurements, and process smart meter commands.

Oracle Utilities Meter Solution Cloud Service comprises the following functional areas:

- **Device Management:** the maintenance of physical meters in the field
- **Device Installation:** the maintenance of service points and the installation of meters in the field. This includes the means of registering outside systems to Oracle Utilities Meter Data Management for provider/consumer-specific processing of meter events and activities
- **Device Communication:** the maintenance of communications between Oracle Utilities Meter Data Management and head-end systems, including import of usage and events, as well as two-way communications used in issuing meter commands
- **Validation, Editing, and Estimation:** the maintenance of measurement data and the engine used to validate and modify that data as it comes in
- **Usage Management:** the engine that calculates billable usage recorded on devices, applying factors and dividing the usage into configurable time of use periods
- **Aggregation:** summarization of measurement data for reporting and analysis purposes
- **Data Synchronization:** synchronizing data between Oracle Utilities Meter Data Management and other Oracle Utilities applications (including Oracle Utilities Operational Device Management and Oracle Utilities Customer Care and Billing).
- **Oracle Utilities DataConnect:** extraction of consumption and master data for use in external systems.
- **Oracle Utilities Cloud Service Foundation:** tools used to orchestrate and automate infrastructure related processes and migrate data from legacy applications into the cloud service.

Oracle Utilities Meter Solution Cloud Service Applications

Oracle Utilities Meter Solution Cloud Service includes the following Oracle Utilities applications:

- Oracle Utilities Meter Data Management v2.2.0.1.0*
- Oracle Utilities Smart Grid Gateway v2.2.0.1.0*
- Oracle Utilities Smart Grid Gateway Adapter for Echelon v2.2.0.1.0
- Oracle Utilities Smart Grid Gateway Adapter for Itron OpenWay v2.2.0.1.0
- Oracle Utilities Smart Grid Gateway Adapter for Landis+Gyr v2.2.0.1.0
- Oracle Utilities Smart Grid Gateway Adapter for Sensus RNI v2.2.0.1.0
- Oracle Utilities Smart Grid Gateway Adapter for Silver Spring Networks v2.2.0.1.0
- Oracle Utilities Smart Grid Gateway MV-90 Adapter for Itron v2.2.0.1.0
- Oracle Utilities Service Order Management v2.2.0.1.0
- Oracle Utilities Cloud Service Foundation v17.2
- Oracle Utilities Customer Care and Billing to Meter Data Management 12.1.0
- Oracle Utilities Integration for Device Operations 12.1.0

* Includes Oracle Utilities Service and Measurement Data Foundation V2.2.0.1.0

Documentation

Configuration and use of Oracle Utilities Meter Solution Cloud Service is described in the following documentation:

Oracle Utilities Meter Data Management / Smart Grid Gateway Documentation

- Oracle Utilities Meter Data Management Business User's Guide
- Oracle Utilities Meter Data Management Administrative User's Guide

Oracle Utilities Application Framework Documentation

- Oracle Utilities Application Framework Business User's Guide
- Oracle Utilities Application Framework Administrative User's Guide

Oracle Utilities Smart Grid Gateway Adapter for Echelon Documentation

- Oracle Utilities Smart Grid Gateway Adapter for Echelon Administrative User's Guide

Oracle Utilities Smart Grid Gateway Adapter for Itron OpenWay Documentation

- Oracle Utilities Smart Grid Gateway Adapter for Itron OpenWay Administrative User's Guide

Oracle Utilities Smart Grid Gateway Adapter for Landis+Gyr Documentation

- Oracle Utilities Smart Grid Gateway Adapter for Landis+Gyr Administrative User's Guide

Oracle Utilities Smart Grid Gateway Adapter for Sensus Documentation

- Oracle Utilities Smart Grid Gateway Adapter for Sensus Administrative User's Guide

Oracle Utilities Smart Grid Gateway Adapter for Silver Spring Networks Documentation

- Oracle Utilities Smart Grid Gateway Adapter for Silver Spring Networks Administrative User's Guide

Oracle Utilities Smart Grid Gateway MV90 Adapter for Itron Documentation

- Oracle Utilities Smart Grid Gateway MV90 Adapter for Itron Administrative User's Guide

Supported Client Platforms and Browsers

Users access Oracle Utilities Meter Solution Cloud Service via a web browser such as Microsoft Internet Explorer.

Oracle Utilities Meter Solution Cloud Service supports the following operating system / web browser combinations:

Operating System	Web Browser
Windows 7 (32-bit or 64-bit)	Microsoft Internet Explorer 11 Firefox ESR 45
Windows 8.1	Microsoft Internet Explorer 11 Firefox ESR 45
Windows 10	Microsoft Internet Explorer 11 Firefox ESR 45

Supported Integrations

Oracle Utilities Meter Solution Cloud Service supports integration with a number of other products, including:

- [Oracle Utilities Products](#)
- [Head-End Systems](#)

Oracle Utilities Products

The table below lists Oracle Utilities products that can be integrated with Oracle Utilities Meter Solution Cloud Service, and provides the product name, supported versions, and the integration products that enable the integration.

Oracle Utilities Product	Version(s)	Integration Product(s)
Oracle Utilities Customer Care and Billing	2.6.0 2.5.0.x 2.4.0.x 2.3.1	Oracle Utilities Customer Care and Billing Integration to Oracle Utilities Meter Data Management 12.1*
	2.6.0 2.5.0.x 2.4.0.x	Oracle Utilities Service Order Management Integration to Oracle Utilities Customer Care and Billing 12.2*
Oracle Utilities Customer Self Service	2.2.0	Oracle Utilities Customer Self Service*
Oracle Utilities Mobile Workforce Management	2.3.0.x 2.2.0.x	Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management 12.2*
Oracle Utilities Network Management System	2.3.0 1.12.0.x	Oracle Utilities Smart Grid Gateway Integration for Outage Operations Release 12.2*
Oracle Utilities Operational Device Management	2.1.1.x 2.2.0	Oracle Utilities Integration for Device Operations 12.1*

* The above integrations require separate licenses. In addition, the BPEL composites used by the Service Order Management integrations are not installed as part of Oracle Utilities Meter Solution Cloud Service, and must be installed locally.

Head-End Systems

Oracle Utilities Meter Solution Cloud Service supports integration with a number of vendor-specific head-end systems via Oracle Smart Grid Gateway Adapters (included as part of Oracle Utilities Meter Solution Cloud Service). The table below lists the supported versions of head-end system for each Adapter available with Oracle Utilities Meter Solution Cloud Service.

Adapter	Head-End System Version
Adapter for NES	NES 5.3
Adapter for Itron OpenWay	6.1
Adapter for Landis+Gyr	Gridstream Command Center 6.5
Adapter for Sensus RNI	Sensus RNI 3.3
Adapter for Silver Spring Networks	UtilityIQ Version 4.10
MV-90 Adapter for Itron	N/A SGG supports the .mv9 binary, mainframe data format.

Performance Guidelines

This section provides a number of performance-related guidelines and recommendations to take into account when implementing Oracle Utilities Meter Solution Cloud Service. This includes guidelines related to the following:

- [Initial Measurement Data and Event Processing](#)
- [Usage Transactions](#)
- [User Interfaces](#)
- [Commands and Events](#)
- [General Topics](#)

Initial Measurement Data and Event Processing

- The initial measurement data and event loading processes should be scheduled to avoid overlap with other intense processes. For instance, do not produce bill determinants when loading meter readings.
- Any VEE Rules, whether provided as part of base product or custom developed, should be configured to query no more than 30 cumulative days of historical data (i.e., High/Low) to achieve an efficient data loading process.
- The raw data section of the initial measurement data record should not be populated in a production environment.
- Use the Trace section of the IMD Log to troubleshoot VEE Rules. When an initial measurement data is in Pending status, the Trace On button can be used to trace all VEE Rules fired during initial measurement data processing. Once processing is complete, view the Log tab of the initial measurement data and review the results in the IMD Trace Log section. For any custom developed VEE rules, the average run time should be no longer than the average run time of other base product VEE rules.
- VEE and usage rule configurations can affect performance; test runs are needed during implementation to tune these processes.
- Avoid modifying the initial measurement data business objects.

Usage Transactions

- The number of usage transactions per day should not exceed 20% of the total service point volume.
- The "Daily Scalar Usage" usage rule should be used when calculating usage for frequently read scalar channels (one or more reading per day). This rule only exports the beginning and ending readings.
- Only use the "Vector and Service Quantity Math" rule when other usage rules cannot perform the same calculations. For example, although the "Vector and Service Quantity Math" rule can perform TOU mapping, you should use the "Get TOU Mapped Usage" rule if TOU mapping functionality is the only requirement.
- Minimize the amount of measurement data included in the Usage Transaction results, as individual interval records included with the usage transaction will slow down processing. Saving derived interval data and sending the data to an external system via the "Save Interval Vector" and "Extract Interval Data" options on the "Vector and Service Quantity Math" and "Get Interval Data" usage rules can have a noticeable impact on usage transaction processing. Usage transaction processing can be improved by up to 45% if extraction of interval data is eliminated. Use of these options should be limited to situations in which they are absolutely required.

- Usage transactions should not be used as an ETL tool to perform the mass export of interval data.

User Interfaces

- For better performance, user interface zones should be initially collapsed when not required for 90% or more of business processes. The initial state of zones (collapsed or not) can be controlled via the "Portal Preferences" tab on the **User** portal.
- The number of records returned to the user interface for a zone should be limited to 50 rows when building custom zones against large transactional tables.
- To troubleshoot a screen in the user interface, go click **Preferences** in the top right hand corner of the application and choose the Portal Preferences tab. Choose the appropriate portal and set all zones to "Initially Collapsed". Then navigate back to the screen that has performance issues, expand the zones one by one, and measure the execution time of each zone. This should be an accurate step-by-step representation of the full screen execution.
- For optimal user interface performance, laptop users should ensure their computer is in high performance mode.

Commands and Events

- Only meter events that have significant business value should be imported into MSCS. These are generally events that involve billing or outage processes. Superfluous events such as hourly meter communication confirmations should not be sent to MSCS.
- Meter command processing should be configured such that it does not slow billing processes and can be supported by the AMI network. For example, meters should not be pinged every five minutes.

General Topics

- Performance tests should be performed on all configurations to ensure daily processing windows are adequate. This includes configurations for: usage rules, VEE rules, aggregations processes, etc.
- Oracle should be consulted before significant solution changes are made. For example, adding new meter channels, adding a large number of meters, network changes, or new integrations, etc.

Functional Limitations and Restrictions

This section outlines some specific limitations and restrictions regarding the functionality of Oracle Utilities Meter Solution Cloud Service, including:

- [Usage and Event Data Formats](#)
- [Smart Meter Commands](#)

Usage and Event Data Formats

Oracle Utilities Meter Solution Cloud Service provides no data transformation or conversion functionality. Usage and event data being imported into Oracle Utilities Meter Solution Cloud Service must be converted or transformed into a format supported by one of the following vendor-specific adapters prior to import:

- Adapter for NES
- Adapter for Itron OpenWay
- Adapter for Landis+Gyr
- Adapter for Sensus RNI
- Adapter for Silver Spring Networks
- MV-90 Adapter for Itron

Smart Meter Commands

Oracle Utilities Meter Solution Cloud Service supports smart meters commands as described in the Smart Grid Gateway Adapter documentation (see **Documentation** on page 1-4). Additional smart meter command functionality must be implemented external to Oracle Utilities Meter Solution Cloud Service. This includes the following:

- Extensions to currently supported smart meter commands for supported head-end systems (see **Head-End Systems** on page 1-7)
- New smart meter commands beyond those currently supported
- Commands for non-supported head-end systems

Additional smart meter command functionality can be implemented via a Platform-as-a-Service or integration cloud service, or on premise at a customer site.