

Oracle Utilities Smart Grid Gateway – Vendor Adapters

Statement of Direction

DISCLAIMER

This document in any form, software or printed matter, contains proprietary information that is the exclusive property of Oracle. Your access to and use of this confidential material is subject to the terms and conditions of your Oracle Software License and Service Agreement, which has been executed and with which you agree to comply. This document and information contained herein may not be disclosed, copied, reproduced or distributed to anyone outside Oracle without prior written consent of Oracle. This document is not part of your license agreement nor can it be incorporated into any contractual agreement with Oracle or its subsidiaries or affiliates.

This document is for informational purposes only and is intended solely to assist you in planning for the implementation and upgrade of the product features described. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described in this document remains at the sole discretion of Oracle.

Due to the nature of the product architecture, it may not be possible to safely include all features described in this document without risking significant destabilization of the code.

PURPOSE

This document provides an overview of features in the existing Oracle Utilities Smart Grid Gateway product and the associated AMI vendor adapters. It also provides information about the partnerships that enable the vendor adapters to be certified against newer versions of the AMI systems as they are released by the AMI vendors and needed to support the Oracle Utilities Smart Grid Gateway customer base.

Oracle Utilities Smart Grid Gateway

The ubiquitous term 'Smart Grid' has opened up the traditional utility software space to a variety of new applications all requiring access to the wealth of data provided by smart devices deployed on the smart grid. These devices can be meters, data concentrators, grid sensors, smart appliances or a host of other devices. They have the ability to measure commodity usage for a utility's customer base at such a discreet level that there are many new business uses being explored to benefit from smart data above and beyond the more typical meter-to-cash use cases. These use cases have expanded to cover outage management, customer information, asset management, and device management systems. Each of these systems have a unique set of business requirements, but what is not unique is the need to be able to receive data from smart devices, or interact with smart devices. This interaction is always required in order to fully realize the business benefit and cost savings of the smart grid. To meet these requirements, Oracle Utilities has centralized all smart device interaction into a single product, Oracle Utilities Smart Grid Gateway, rather than requiring a utility to build AMI integration into each product requiring access to smart grid data.

The Oracle Utilities Smart Grid Gateway provides the capability to receive data from smart devices and route this data to subscribing applications. It can also interact with smart devices by issuing smart commands and orchestrating the communication between the devices and enterprise applications. Key features of the Smart Grid Gateway are listed below:

- Standardized transformation and processing of inbound commodity usage data for use by applications such as Oracle Utilities Meter Data Management
- Processing and transformation of inbound device event data for use by systems such as Oracle Utilities Meter Data Management and Oracle Utilities Network Management System
- Out of the box smart meter commands including:
 - Device Commissioning / Decommissioning
 - Remote Connect/Disconnect
 - Meter Ping
 - On Demand Read
- Standards based Adapter Development Kit to support extensions based on the same architecture as base product usage and event processing and smart meter commands

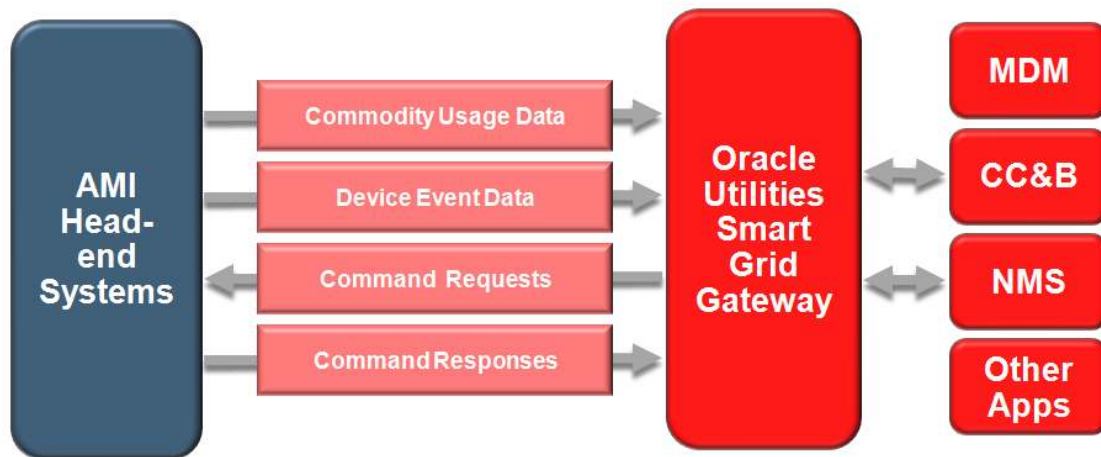


Figure 1: Oracle Utilities Smart Grid Gateway AMI Integration Data Flows

Oracle Utilities Integration

Though the key use cases are easy to define, there is additional complexity in solving the problem because there are multiple sources for AMI data for a typical utility's smart device population. Smart device data is provided to utilities from multiple AMI head-end system vendors as well as AMR system vendors across a multitude of data formats and communication protocols. To combat this integration problem, Oracle Utilities developed the Smart Grid Gateway from the start as a centralized smart

device communications hub, along with multiple, productized adapters to integrate with the top AMI vendors in the world. Each adapter provides functionality to convert inbound usage or event data from the AMI vendor specific format to a standard format used by other Oracle Utilities applications such as Oracle Utilities Meter Data Management. Also delivered with each adapter are smart meter command business processes that conform to the integration best practices specified by each AMI vendor.

For legacy AMR vendors, or for AMI vendors for which integration adapters are not available, the Oracle Utilities Smart Grid Gateway Adapter Development Kit provides integration to the Oracle Utilities Smart Grid Gateway and its usage, event, and smart meter command processing architecture, but also enables the customer to configure vendor specific transformation and integrate this configuration into the Smart Grid Gateway Framework. The currently available, productized Smart Grid Gateway adapters are:

- Oracle Utilities Smart Grid Gateway Adapter for Echelon
- Oracle Utilities Smart Grid Gateway MV-90 Adapter for Itron
- Oracle Utilities Smart Grid Gateway Adapter for Itron OpenWay
- Oracle Utilities Smart Grid Gateway Adapter for Landis+Gyr
- Oracle Utilities Smart Grid Gateway Adapter for Sensus RNI
- Oracle Utilities Smart Grid Gateway Adapter for Silver Spring Networks

Reduce Implementation and Long-Term Maintenance Costs

As one of the most important and complex integration points not just for an MDM implementation but for virtually any smart grid program, Oracle Utilities is committed to reducing total cost of ownership for customers purchasing Smart Grid Gateway and one or more productized adapter(s). Each adapter has been built by leveraging strong, long-term partnerships with each AMI vendor. These partnerships enable Oracle Utilities to build each adapter to conform to the best practices established by the vendor for integration with their respective head-end system. These strong partnerships lead to better products and therefore reduce the implementation times for AMI to MDM integrations as well as the AMI integrations to other enterprise applications such as customer care and billing or network management applications.

After the adapters have been built, the partnership does not end. Oracle Utilities regularly meets with the Product Management representatives for each AMI vendor in order to discuss roadmaps, timing and impact for future releases of the Smart Grid Gateway and AMI head-end systems. As a result of these meetings, Oracle Utilities works closely with the AMI vendors in order to plan certification in a timely manner (within 12 months) against new releases of the head-end systems as required to support our joint customers' needs.

The Oracle Advantage

Oracle Utilities works to offer not only individual, best in class utilities applications, but complete, integrated solutions that greatly decrease the total cost of ownership for our customers. These integrated solutions are not just across products within the Oracle Utilities offering, but also across critical third-party applications such as AMI head-end systems. The integration of many of the world's leading AMI systems to the Smart Grid Gateway, meter data management and network management systems, built as a result of long-term partnerships with these AMI vendors, provides a significant value to Oracle Utilities customers that goes well beyond simply the purchase and implementation of the software.

For more information, visit www.oracle.com/goto/utilities.

This document is intended solely to help you to plan your Information Technology projects and provide an outline to our general product direction. Timelines and features are subject to change without notice. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.



Oracle Utilities – MDM and Integration Statement of Direction

Jan 2011

Oracle Corporation

World Headquarters

500 Oracle Parkway

Redwood Shores, CA 94065

U.S.A.

Worldwide Inquiries:

Phone: +1.650.506.7000

Fax: +1.650.506.7200

oracle.com

Copyright © 2011, Oracle. All rights reserved.

This document is provided for information purposes only and the contents hereof are subject to change without notice.

This document is not warranted to be error-free, nor subject to any other warranties or conditions, whether expressed orally or implied in law, including implied warranties and conditions of merchantability or fitness for a particular purpose. We specifically disclaim any liability with respect to this document and no contractual obligations are formed either directly or indirectly by this document. This document may not be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without our prior written permission.

Oracle, JD Edwards, and PeopleSoft, are registered trademarks of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.