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UTILITIES

MODERNIZE GRID PERFORMANCE AND RELIABILITY WITH ORACLE UTILITIES NETWORK MANAGEMENT SYSTEM

Oracle Utilities Network Management System is the lynchpin that ties together grid operations, business processes and customer-centricity. It provides utilities and their customers with a wide range of modern benefits tailored for today's power needs, such as more efficient usage, support for solar roof generation and other renewable resources, and electric vehicle charging.

KEY FEATURES

- Provides advanced distribution management for smart grid
- Underpins the storm center with robust outage management
- Links grid and business processes
- Provides seamless grid-to-customer operations
- Permits use of any SCADA and GIS
- Provides out-of-the-box integration with multiple utility business applications
- Includes a scenario-based simulator for user training and functional testing

KEY BENEFITS

- Provides visibility across the entire smart grid
- Provides access to real-time, decision-driving data
- Safeguards workers and the public
- Avoids outages through proactive response to forecasted load problems
- Delivers storm-proven outage management for severe weather-related events
- Reduces number of sustained outages
- Uses accurate restoration estimation to increase customer satisfaction
- Cuts cost of distribution asset management
- Reduces grid risk and uncertainty
- Improves operational efficiency
- Decreases total cost of ownership

The Changing Utility

Yesterday's grid managers used a discrete set of distribution software and hardware—operations technologies (OT) — to ensure the safe, secure and reliable flow of power. Elsewhere within the utility, other business units used separate information technology (IT) applications to address financial and customer needs. Rarely did the two collaborate.

Today, emerging community and customer needs require close coordination between grid operations and customer-facing departments. Communities want the cleaner environments and lower costs obtainable only when customers use electricity more efficiently. Customers, in turn, want to generate power from an on-site renewable and sell excess production to the utility. They also want more options to conserve electricity and check daily consumption against budget goals, and recharge electric vehicles.

No single part of the utility can address these needs alone. As a result, IT and OT are coming together, united by common corporate objectives. New business processes and programs are lowering the silo walls that once isolated grid engineers from the rest of the utility.

Grid operators are eager to step up to these new challenges. They recognize grid modernization as the next logical engineering advance in powering the globe. However, they cannot assume a smart grid leadership role without software that helps them span operational, business, and customer concerns—twentieth century technology is not enough.

Oracle Utilities Network Management System is the Answer

Oracle Utilities Network Management System gives you all the outage management and advanced distribution management functions you need to ensure cost-effective reliability and to meet customer and community power needs. Structured as a series of interlocking, interoperational Outage Management and Distribution Management modules, Oracle Utilities Network Management System improves planned and emergency event management and the efficiency of distribution, all while safeguarding the crews that work on the grid and the customers who depend on it.

A primary problem with historic operational technology is the network model on which it rests. Applications using SCADA-based models are challenged to include the flood of new, unmonitored network devices and parts, including consumption meters and alerts. On the other hand, GIS-centric network models base activity on an as-built view of the grid, not an as-operated view. Operational applications that have grown from separate roots—for instance,

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disparate outage management and distribution management systems—have difficulty sharing information and using all parts of the system to address a single goal with an optimal plan.

Oracle Utilities Network Management System solves the deficiencies of historic network model approaches and more. Its network model handles the entire grid, including every device and sensor. It allows engineers to operate systems like SCADA from within the Oracle Utilities Network Management System, provides the status of every part of the network and monitors changing conditions in detail. It also uses powerful algorithms to anticipate conditions and suggest proactive corrections.

The Oracle Utilities Network Management System network model helps grid operators forecast the effects of new customer programs, giving them parameters against which to measure and evaluate demand response proposals and alternative rate structures. Safeguarding you against unanticipated impact, Oracle Utilities Network Management System enables you to identify neighborhoods where a growing number of electric vehicles threaten asset life or service reliability, for example.

Uniting the Utility Enterprise

Utilities can use Oracle Utilities Network Management System to respond to the need for the grid to unite complex processes across multiple utility departments. It integrates intermittent renewables, optimizes existing load and handles major new requirements like electric vehicle recharging, enables efficient maintenance and rapid repair of grid assets, and informs customers about local outages and restorations.

Going far beyond traditional outage and distribution management, it provides the advanced distribution management functions that integrate the grid into the entire utility enterprise. Those functions ensure compatibility between engineering reality and proposed customer programs. Via intelligent decision-making support, it places operations decisions in the context of enterprise-wide objectives.

Oracle Utilities Network Management System Integrates Seamlessly into Existing Distribution Networks

With Oracle Utilities Network Management System, there's no need to make other major changes to your operational systems. It offers integrations to your existing SCADA system using standards-based options like Inter-Control Center Communications Protocol (ICCP), Common Information Model (CIM), and MultiSpeak-based web services. These integrations provide details of SCADA measurements, statuses, and alarms and enable operators to control the related devices from within Oracle Utilities Network Management System via standard interfaces, subject to tags and other constraints. Similarly, Oracle Utilities Network Management System offers easy integration to Esri, Intergraph, and Smallworld geographic information systems (GIS).

This standards-based approach frees you from vendor lock-in, letting you change your SCADA, AMI, or GIS systems at will, so you can take advantage of new technological developments.

Oracle Utilities Network Management System Reduces Administrative and Support Costs
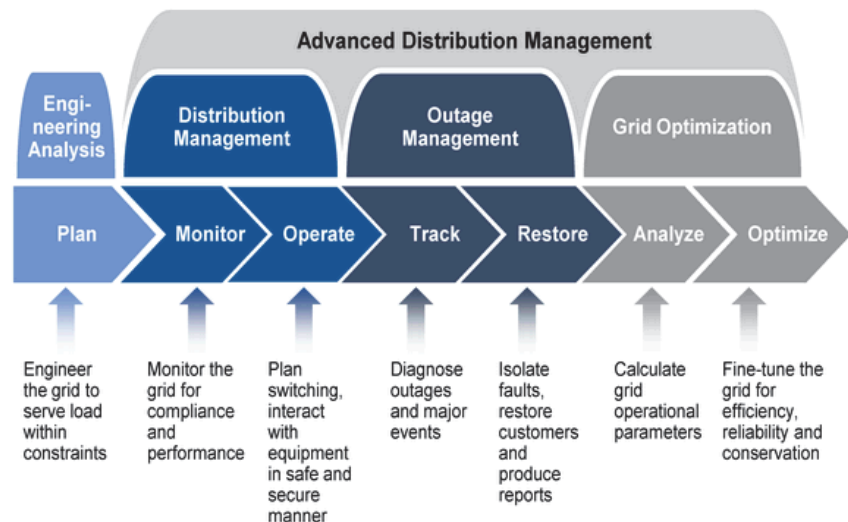
By using a single unifying platform for all outage and distribution functions, Oracle Utilities Network Management System reduces the system and data management support and administration costs that are common with other applications. It also reduces integration costs through built-in support for standards like ICCP, MultiSpeak, and CIM. Prepackaged adapters, available within Oracle Utilities Network Management System, are designed for a number of

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widely used SCADA systems. This not only enables utilities to show SCADA measurements, statuses, and alarms within the network management system operator's environment but also permits users to control many SCADA devices.

Configuration options within Oracle Utilities Network Management System also help keep administrative costs low. These options let utilities adjust user access levels and layouts without source code alterations, preserving straight-forward upgradeability. Oracle Utilities Network Management System also permits users to control preferences for tailoring their displays to their unique requirements without the need for IT involvement or source-code alterations, thus providing flexibility at no additional cost.

Oracle Utilities Network Management System is an Advanced Distribution Management System

Many of today's applications for network operations lack the analytics and operational modules necessary to extract value from the anticipated volume of smart grid information. Analysts frequently use the term "advanced distribution management" systems (ADMS) to refer to the combination of distribution management, outage management, analysis, and optimization functions needed for this new challenge. While ADMS is an evolving area, the graphic below shows how Gartner views it:

Source: Gartner, Market Definition: Advanced Distribution Management System Products, December 2010. Used with permission. © 2011 Gartner, Inc. and/or its affiliates. All rights reserved.

Oracle Utilities Network Management System has a number of ADMS functions already built in, providing utilities with the security, flexibility, and advanced capabilities required to cost-effectively manage the requirements of a modern and evolving distribution grid. Out of the box, it:

- Avoids negative events through use of automated modeling of control and switching plans and processes, combined with manual management.

- Reduces operational costs and defers capital expenditures through the use of conservation voltage reduction (CVR).

- Moves sustained outages to momentary outages by automatically invoking fault location, isolation, and service restoration (FLISR).

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- Improves reliability by using network reconfiguration to address capacity constraints.

- Facilitates interactions with smart grid programs, devices, and resources.

- Assesses and helps minimize risk.

- Provides a platform from which to control microgrids and virtual power plants.

- Mitigates overloads via feeder optimization.

- Increases crew efficiency by accurately locating faults.

- Supports switching plans for both planned and emergency work.

- Minimizes network losses through volt/var optimization.

- Accurately captures and summarizes damage assessments after major storms.

- Decreases training costs and efforts through a flexible scenario-based simulator.

Oracle Utilities Network Management System Offers Options

Many utilities already have some products that address today's network management issues. While they know they need more, they don't want to lose the value of previous investments.

Oracle Utilities Network Management System addresses that reality by offering its product as a series of optional, pre-integrated modules that work together and with other products you may already have in place. These modules also enable you to move to modernize your grid at a pace you determine, implementing as few or as many as appropriate.

Maximize Grid Value

Oracle Utilities Network Management System helps you visualize and improve the efficiency of the entire distribution grid. It provides the security, flexibility, and advanced capabilities you need to move toward and manage the increasingly innovative, reliable, and cost-effective grid of the future.

Contact Us

For more information about Oracle Utilities Network Management System, visit oracle.com/goto/utilities or call +1.800.ORACLE1 to speak to an Oracle representative.

Oracle is committed to developing practices and products that help protect the environment

Hardware and Software, Engineered to Work Together

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