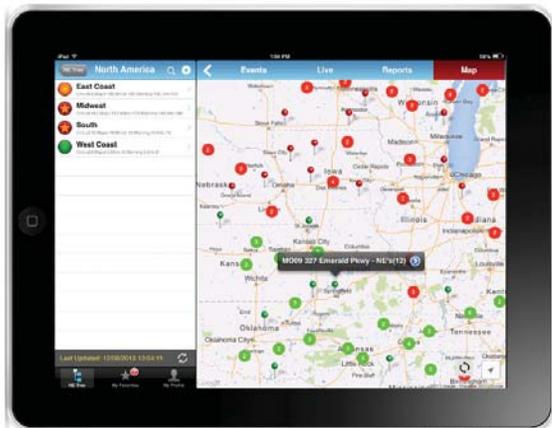


Optima Management System®

The Optima Management System provides comprehensive site monitoring, management, and control of a network's site infrastructure. Remote sites such as cell sites, substations, and remote communication huts and all of its systems (power, environmental, communications, and security for example) can be remotely monitored. This gives immediate operational cost reductions for organizations that need to access, monitor, and manage a large number of sites.

The key features provided by Optima include:

- Performance management
- Event management
- Site management
- Remote access
- Site data collection



Optima regional map

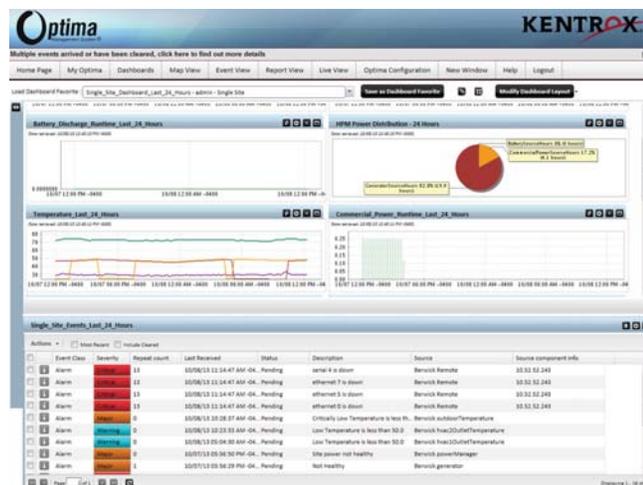
Virtually any type of system can be integrated with and utilize Optima's intelligent site management capabilities. Visibility into the network allows users to work proactively to prevent problems. When outages do occur, Optima reduces the need for site visits while enabling the operations team to resolve most network problems in 50% less time. When a site visit is required, the remote troubleshooting capabilities provide in-depth insight regarding alarm conditions to ensure technicians are dispatched with the proper equipment, tools, and information required to fix the problem quickly and on the first visit. Optima helps proactively diagnose and repair potential network problems at any time, anywhere in the world, before they have an impact on subscribers and operating costs.

Reduce energy usage

Today, most companies are looking for ways to reduce energy consumption to save money and lower their carbon footprint. Using Optima to monitor remote network locations can help reduce energy usage by cutting technician travel time and improving equipment efficiency. Optima's remote monitoring and troubleshooting capabilities reduce or eliminate diagnostic site visits. Maintenance and repairs can often be done remotely, without an expensive site visit. Proactive performance management helps operators ensure that energy-consuming equipment, such as air conditioning and generators, run more efficiently.

Optima provides comprehensive site management and monitoring for a complete view and control of infrastructure assets. Optima highlights include:

- Access from a desktop and virtually any Apple® iOS and Android™ device
- Performance and event management to capture and record all performance information, events, and alarms at a site
- Remote management to provide access to network elements from anywhere at anytime
- Site data collection to monitor and report site data
- Hybrid power management to support sites when commercial power fails, is unreliable, or does not exist



Optima dashboard

Optima Management System

Improve site security

Site security has gained importance for remote sites due to theft of items such as copper, aluminum, pipes, and fuel. Safety concerns are also increasing because of weather and technician visits to unfriendly areas. Optima monitors activity, notifies personnel, and enables remote diagnostics when problems occur at a site. Optima also helps carriers manage third party security issues, such as fuel delivery, to ensure suppliers deliver what is expected.

Manage power effectively

Power is essential to maintain the level of network availability that subscribers demand. Whether it comes from commercial service, solar panels, generators (diesel or propane), batteries, or hydrogen fuel cells, power is a critical component, required 24 hours a day, 7 days a week.

Optima reduces the need for physical site visits and enables structured and routine preventative maintenance for power-related equipment. Additionally, Optima supports hybrid power sources where commercial power has either failed or is unreliable. It provides an intuitive, easy-to-use interface displaying critical alarm status and runtime reports from a central console or a technician's laptop enabling commercial power and battery monitoring, generator management, a complete network view, and history reporting.

Mobile and desktop accessibility

Network Operations Center (NOC) users and technicians need a complete view and control of their networks from anywhere. Optima's mobile applications allow easy access to monitor the functionality of site infrastructure from virtually any Apple iOS and Android device. Power, security, communications, and environmental management are critical applications that can be managed on a mobile device or a desktop - wherever the user demands it.

Interfaces and platforms

Thin client user interface

- User access via common web browser
- Dynamic alert and event lists
- Real-time view of site alarm and performance data status
- Navigable Graphical Information System (GIS) map view
- Scheduled or on-demand reports
- Standard reports for every application
- Customizable reports and executive dashboards

Platform

- Distributed scalable architecture
- Red Hat Linux
- Embedded Oracle Enterprise Edition DB
- Support for database clustering for high availability

Management functionality

Alarm and event management

- Capture and record all events and alarms at sites
- Immediate view of inter-relationships among network equipment, remote site devices, power and security systems
- Notify and escalation of events and alarms via SNMP, email, or SMS
- Monitor IP and non-IP devices

Performance management

- Collect key performance indicators
- Automatically store conditions and analog performance thresholds
- Create reports and dashboards that illustrate network performance
- Correlate measurements from multiple network elements to focus on key issues

Element management

- View health, port status, or software management of Kentrox® products
- Complete element management including scheduled software download

Remote access

- Provide access to network elements from anywhere at anytime
- Use proprietary third party software or standard packages

Open integration capabilities

Data collection protocols

- SNMP
- TCP/IP
- FTP and SFTP
- Telnet
- Java Message Service (JMS)

Alarm forwarding protocols

- SNMP
- SMS via SMPP or SMTP
- Email
- Pager (TAP)

Performance data export

- Email
- FTP

Network element adapters

- Off-the-shelf adapters available for many common network elements

Intelligent Site Management Solution



Applications managed by Optima

For more information, visit www.kentrox.com, email info@kentrox.com, or call 800-733-5511 (US), +1 614-798-2000 (outside US).

05-19-004-5 01/14 Copyright © 2014 by Westell, Inc. All Rights Reserved. Westell, Kentrox, and Optima Management System are registered trademarks of Westell, Inc.. All other names are trademarks of their respective owners. Information is correct at time of printing and is subject to change without notice. Westell, Inc. is an Equal Opportunity/Affirmative Action employer.

KENTROX