



Simplifying the management of optical networks

MANAGEMENT SUITE SOFTWARE



Network and element management for all components of Meriton's Agile Optical Networking solution

Easily manage all aspects of network operations

Reduce network downtime

Reduce network management costs

Quickly generate new revenue streams

Meriton's Management Suite of products includes:

- 8600 NMS (Network Management System)
- 8500 EMS (Element Management System)
- 8300 EMS (Element Management System) and 6400 CIT craft terminals

A fundamental component of Meriton's Agile Optical Network, the Management Suite is the key to operational savings for the carrier through comprehensive and simplified NOC (Network Operations Centers)-ready management.

The suite's industry-leading, graphical software tools manage Meriton's portfolio of optical networking products, bringing ease of operation to every facet of network management: planning, installation, test and turn-up, remote monitoring, service provisioning, fault management, diagnostics, as well as network maintenance.

Not only does the Management Suite encompass the whole range of carrier operations, but it operates remotely. Almost every aspect of operations can be handled from the NOC, reducing the need for expensive truck rolls.

For those occasions that require field engineering, the Management Suite has craft terminals that provide all the functionality needed to manage a network element. Like the other members of the Management Suite, the craft terminals provide an intuitive graphical GUI for commissioning and diagnostic operations.

Another particularly convenient component of Meriton's Management Suite design is its OSS interface, which allows the system to integrate with the carrier's other support systems—such as fault management, billing, and provisioning.

Meriton's Management Suite combines the benefit of cost savings with its ability to reduce network down-time and simplify operations management.



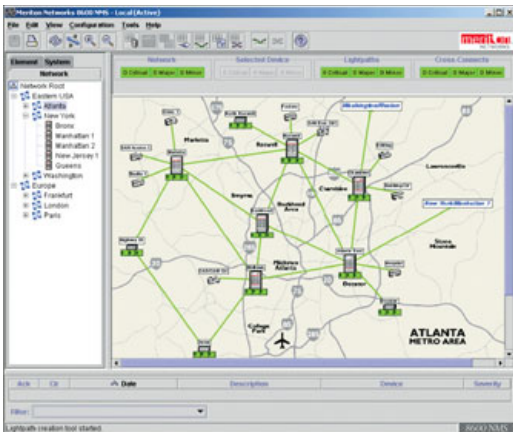
BENEFIT FROM COST SAVINGS AND RAPID REVENUE

Meriton's Management Suite is packed with features that help carriers to benefit from significant cost savings as well as rapidly realize revenue.

NETWORK AUTO-DISCOVERY

One of the suite's key features is auto-discovery of the network's fiber and WDM topology. The technology underlying this feature is a standards-based GMPLS control plane, which enables all the network elements to auto-discover and communicate with each other. By simply connecting to a single gateway network element, the Management Suite can learn and automatically upload details of all the topology, equipment, and configuration of the network.

The Management Suite transforms the discovered data into a series of GUI windows that enable operators to visualize the network in multiple intuitive and easy-to-understand views. These windows include navigational trees and graphical representations of the network that break down into sub-network, lightpath, node, shelf, and service views.



8600 NMS Network Map

INCREASING NETWORK AVAILABILITY

Meriton knows that another vital concern of many carriers is to increase network availability and reduce down-time. The Meriton Management Suite improves the visibility and awareness of network operations, enabling the operator to detect degradation in performance and correct problems before they result in network outage. When failures do occur, the suite facilitates a rapid response.

STATUS MONITORING

Meriton's Management Suite software is constantly monitoring all aspects of network operation. Any change in status, configuration, or performance detected by the system is immediately notified to all systems connected through management interfaces.

The Management Suite tracks the status of all equipment, lightpaths, and services, conveying event information to the operators through graphical and tabular views that include

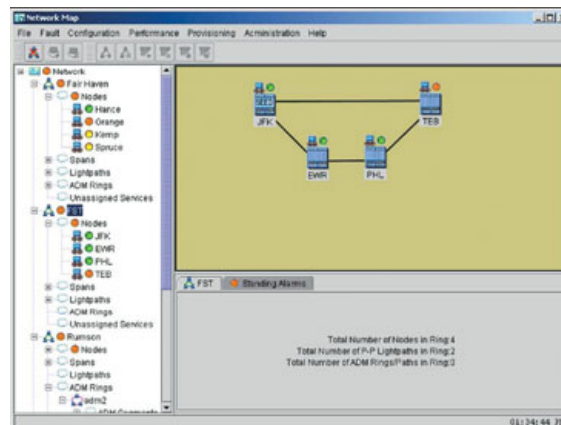
- Event and log viewers
- Colored status icons on graphical views
- Status fields in summary reports

PERFORMANCE MONITORING

At the same time, the Management Suite is continuously monitoring and collecting comprehensive performance statistics from the network elements. Meriton's advanced software allows the operator to monitor performance data in real-time plots or historical views.

Performance data can easily be sorted and filtered, and also exported through the reporting system into files for later analysis. The operator can configure collection thresholds at the port or node level, and icons in the graphical views show at a glance exactly where data collection is taking place.

The system's end-to-end performance management and remote diagnostics allow the operator to detect service degradations before they develop into failures. For instance, reduced optical power levels often warn of impending bit errors, and Meriton's graphical optical power-level diagnostics let the operator catch the problem before it causes down-time.



8500 EMS Subnet/Ring View

FAULT AND ALARM MANAGEMENT

The Management Suite is designed for rapid and easy response to network faults. The alarm viewer consolidates the information relating to each alarm or event that occurs throughout the network.

From here, the operator can quickly investigate the fault. Through a single menu command, the operator can jump to the screen which best displays the source of the fault or drill down through the graphical and tabular views of paths, path-points, and cross-connects. As the operator navigates through network and element views, the path highlight function points out all the equipment that's part of the selected lightpath. If there is protection for the path, the redundant lightpath is highlighted in a different color.

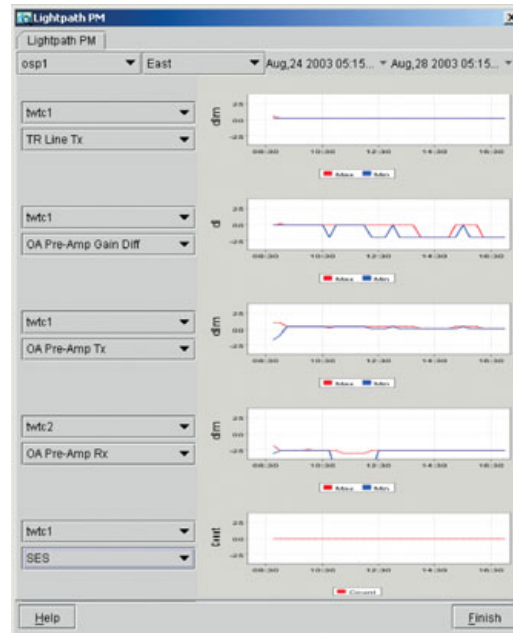
Color-coded by severity, alarm icons also help the operator to isolate the fault. As well as displaying the equipment associated with an alarm, the Management Suite shows which services are affected by the fault.

Once found, many faults can be corrected remotely. For example, if the operator traces the fault to a cable mis-match, a simple re-provisioning can correct the problem.

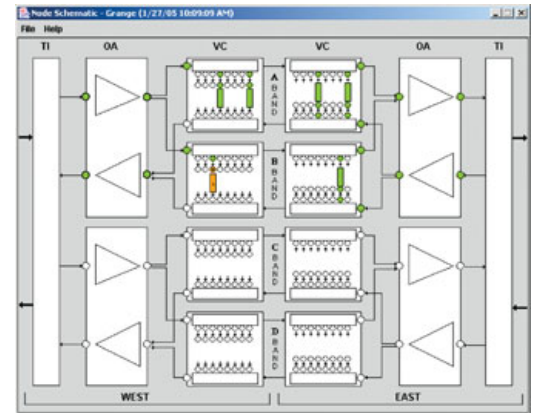
Many of the Management Suite's alarm management features are configurable, and all of them are designed to increase network availability and reduce service disruption.

SIMPLIFYING NETWORK MANAGEMENT

The primary objective of Management Suite design is to reduce a carrier's operating expenses through the speed and simplicity of its provisioning, performance monitoring, and fault management operations.



8500 EMS Lightpath PM Browser



Optical Power Monitoring – Logical Node View

The Meriton Management Suite is an intuitive, graphical, integrated network and element manager. At all levels—network, subnetwork, lightpath, node, fiber wavelength, card, port—Meriton's Management Suite simplifies network management. From the auto-discovery of a new network element or the automated routing of a lightpath to the bridge and roll of a lightpath for network optimization, Meriton's software automates the tedious, time-consuming tasks of network management.

From the highlighting of a single lightpath through the network and element views to the colored icons that indicate performance monitoring points or alarms, the graphical interface provides network data in easy-to-follow displays and tables designed for specific operations tasks. For instance, the lightpath view provides the ideal interface for service provisioning, the shelf view is best for maintenance purposes, and the statistical plots and graphs are invaluable for studying the network's performance.

From the ease of its administration tasks—such as software upgrade or database backup—to its comprehensive security management and reporting systems, Meriton's Management Suite demonstrates optical network management at its best.

Technical specifications

8600 NMS (Network Management System)

The 8600 NMS manages Meriton's network of 7200 OSP (Optical Switching Platform) and 3300 OSM (Optical Services Multiplexer) products.

SYSTEM REQUIREMENTS:

- Sun Server Platform example to manage a network of up to 100 Nodes: Sun Fire V210 with a single 1.34 GHz CPU, 1 Gigabyte of RAM, 73 Gigabytes Hard-Drive
- Solaris 8 operating system with all patches and updates installed
- A second workstation with the same requirements is needed for the standby management server in a hot standby configuration.

FEATURES AND FUNCTIONALITY:

- Network management
 - Full-featured network and element management system
 - Intuitive graphical interface
 - Optional warm-standby server architecture
 - Dual Gateway network elements for communications redundancy
- Configuration and provisioning
 - Auto-discovery
 - Network and element management
 - Automatic routing
 - Point-and-click lightpath and service provisioning
 - Lightpath bridge and roll
 - Circuit-centered visualization and management
 - TL1 command interface

- Performance monitoring and fault management
 - Advanced real-time monitoring
 - Performance monitoring threshold configuration
 - Historical performance analysis
 - Status notification through management interfaces (CORBA, TL1, SNMP)
 - Alarm, event, and log viewers
 - Alarm severity configuration
 - Fault diagnosis and repair
- External system integration
 - Integration with carriers' support systems
 - 7200/3300 TL1, and SNMP management interfaces
 - CORBA TMF814-compliant north-bound interface for Inventory, Fault, Provisioning and Performance management
 - Export of alarm data in HTML or Comma Separated Values format
 - Export of performance data through the reporting system
- Security
 - Standards-based user authentication
 - User management of multiple, configurable privilege levels
 - Administrative user EMS or NE session monitoring
 - Security logs
- Network administration
 - Network element software upgrade
 - Network element database backup and restore
- Reporting
 - Inventory summary
 - Ports summary
 - Free resource summary
 - Lightpaths summary
 - Services summary
 - Wavelengths summary

8500 EMS (*Element Management System*)

The 8500 EMS manages Meriton's network of 6400 OPT (Optical Transport Platform) and 3300 OSM (Optical Services Multiplexer) products.

SYSTEM REQUIREMENTS:

- Sun Server Platform example to manage a network of up to 100 Nodes: Sun Fire V210 with a single 1.34 GHz CPU, 1 Gigabyte of RAM, 73 Gigabytes Hard-Drive
- Solaris 8 operating system with all patches and updates installed
- A second workstation with the same requirements is needed for the standby management server in a hot standby configuration.
- Running or have connectivity to an Oracle 8i (8.1.7) or Oracle 9i database.

FEATURES AND FUNCTIONALITY:

- Network management
 - Full-featured ring management system
 - Full-featured network management (FCAPS)
 - Intuitive graphical interface
 - Optional Redundant load-sharing server architecture
 - Dual Gateway network elements for communications redundancy
- Configuration and provisioning
 - Auto-discovery
 - Network and element management
 - Automatic routing
 - Point-and-click lightpath and service provisioning
 - Template provisioning
 - CLI and TL1 command interface

- Performance monitoring and fault management
 - Advanced real-time monitoring
 - Performance monitoring threshold configuration
 - Database storage for historical performance analysis
 - Status notification through management interfaces (TL1 , SNMP)
 - Real-time fault collection, correlation, and graphical and audible reporting
 - Alarm, event, and log viewers
 - Alarm severity configuration
 - Fault diagnosis and repair
- External system integration
 - Integration with carriers' support systems
 - CORBA, TL1, and SNMP management interfaces
 - CORBA TMF814-compliant north-bound interface
 - Export of alarm data in HTML or Comma Separated Values format
 - Export of performance data through the reporting system
- Security
 - Standards-based user authentication
 - User management of multiple, configurable privilege levels
 - Administrative user EMS or NE session monitoring
 - Security logs
- Network administration
 - Network element software upgrade
 - Network element database backup and restore
- Reporting
 - Inventory summary
 - Ports summary
 - Free resource summary
 - Lightpaths summary
 - Services summary
 - Wavelengths summary

8300 EMS (Element Management System) and 6400 CIT (Craft Interface Technology)

The 8300 EMS and 6400 CIT craft terminals manage Meriton's network elements—nodes and rings—in the field, typically used by craftspersons for installation, turn-up and test, and diagnosis and repair.



SYSTEM REQUIREMENTS:

- Sun Server Platform example to manage a network of up to 100 Nodes: Sun Fire V210 with a single 1.34 GHz CPU, 1 Gigabyte of RAM, 73 Gigabytes Hard-Drive
- Solaris 8 operating system with all patches and updates installed
- A second workstation with the same requirements is needed for the standby management server in a hot standby configuration.

FEATURES AND FUNCTIONALITY:

- Comprehensive element management
 - Runs on a PC or laptop
 - Local and remote element management
 - Intuitive graphical interface
- Configuration and provisioning
 - Auto-discovery of node equipment and connections
 - Point-and-click navigation
 - Lightpath highlighting, bridge and roll
 - Cross-connection, wavelength protection, and loopback configuration
 - CLI and TL1 command interface
- Performance monitoring and fault management
 - Point-and-click monitoring
 - Color-coded status indicators
 - Local and remote troubleshooting, fault diagnosis, and repair
 - Detection and resolution of mis-cabled fibers



ABOUT MERITON NETWORKS INC.

Meriton Networks Inc. has developed the industry's first unified end-to-end Agile Optical Networking (AON) architecture, a crucial element for carrier and enterprise migration to next-generation IP services networks. A flexible, scalable, future proof infrastructure capable of multi-service, multi-topology support, the Meriton AON architecture equips telecommunications networks with the capabilities needed for the Broadband Revolution, including rapid service deployment with one-time node engineering and zero-touch, automated provisioning under a unified control plane. With metro access, metro core and regional extension products, all fully managed by a best-in-class suite of network planning and management tools, Meriton Networks gives network operators a single source for the rapid, cost-effective delivery of high-speed services.

Corporate Headquarters

309 Legget Drive
Ottawa, ON, Canada
K2K 3A3

Phone: +1.613.270.9279
Fax: +1.613.270.9628
Toll Free: +1.866.270.2007

United States

Phone: +1.732.465.1000
Fax: +1.732.465.1010

Asia Pacific

Hong Kong
Phone: +852.2150.1328
Fax: +852.2159.9688

South Korea

Phone: +82.2.559.0695
Fax: +82.2.559.0700

Europe

UK
Phone: +44.(0)117.344.5028
Fax: +44.(0)117.344.5208

Caribbean and Latin America

Phone: +1.407.924.5666
Fax: +1.613.270.9628

www.meriton.com
info@meriton.com

Meriton and the Meriton Networks logo are registered trademarks of Meriton Networks Inc. MeritonCare, IVFN, Out-of-the-box WDM and ADM-on-a-Wavelength are trademarks of Meriton Networks Inc. Other trademarks that may be used in this document are property of their respective owners. Technical specifications may change.

© Meriton Networks Inc., 2006
Printed in Canada

Part No. MKTPRD-0007 Rev 1.0