EXNM-2000 Network Management System
For the Extricom Interference-Free™ Wireless LAN

Wireless On the Move

- Single solution to manage large-scale, multi-device networks

- Intuitive GUI, including geographic map view of multiple domains

- Accelerated system rollouts and easy network updates

- FCAPS-based management model

- Full-featured fault management, including notification capabilities

- Real-time network health monitoring

- Scheduled bulk operations on multiple switches

- Integration with other major NMS solutions

- Secure, auditable management of users and user groups

Making Wireless LAN More Manageable

The Extricom Interference-Free™ Wireless LAN provides an unmatched combination of simplicity and performance, enabling companies to confidently and cost-effectively transform their operations wirelessly. An essential aspect of this transformation is the ability to efficiently manage multiple Extricom WLANs in a centralized manner.

To accomplish this, Extricom offers the EXNM-2000 Network Management System (NMS), a comprehensive tool that enables System Administrators to manage any size of Extricom WLAN from a single interface. Employing the FCAPS (Fault/Configuration/Accounting/ Performance/Security) network management model and a Client/Server architecture, the EXNM-2000 seamlessly connects with Extricom's complete line of enterprise switches and access points, providing easy, standards-based systems administration, configuration, and monitoring.

The EXNM-2000 supports medium-to-large-scale enterprises that have deployed up to 2,000 Extricom WLAN switches. It runs on standard enterprise server platforms and uses an MySQL 5.0 database to maximize affordability and flexibility.

From a single vantage point, System Administrators benefit from the highly intuitive NMS interface, which gives a quick and efficient way to commission multiple Extricom WLANs with minimal per-switch intervention.

Scalability

For enterprises, the WLAN is increasingly a business-critical part of their day-to-day operations, and it is essential that it be both flexible and scalable. The EXNM-2000 ensures this by consolidating multiple management tasks into two basic processes:

- Auto-discovery of up to 2000 switches associated to thousands of access points (APs).
- Group configuration of all discovered switches as if they were a single switch, and monitoring of the whole network from a single screen.
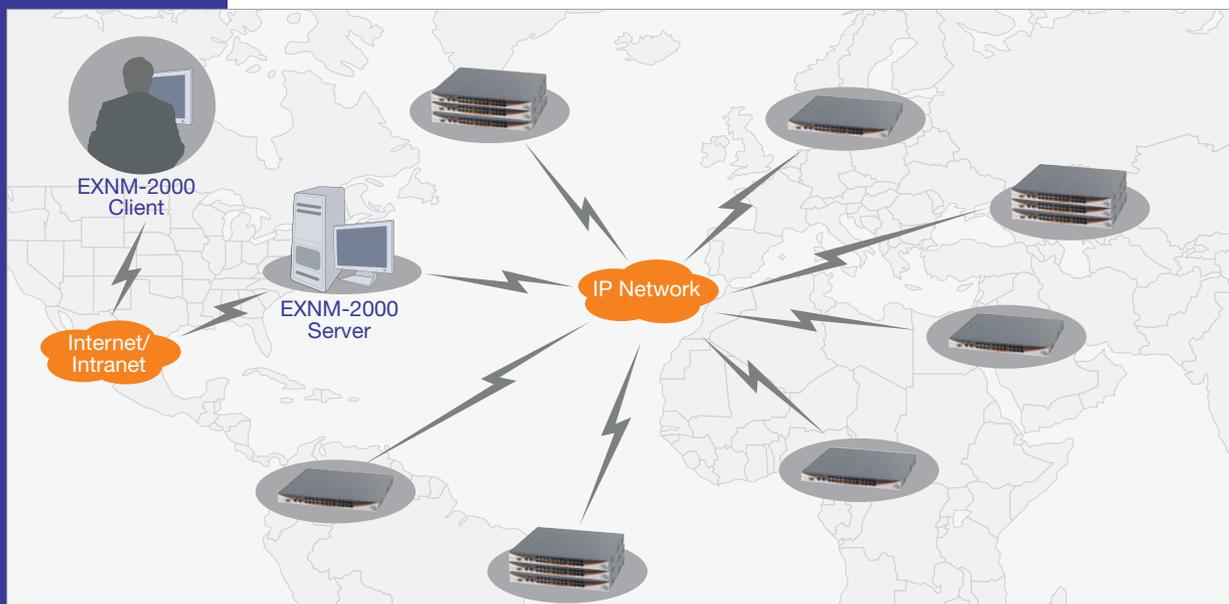

Figure 1. Multi-Site Management Scenario
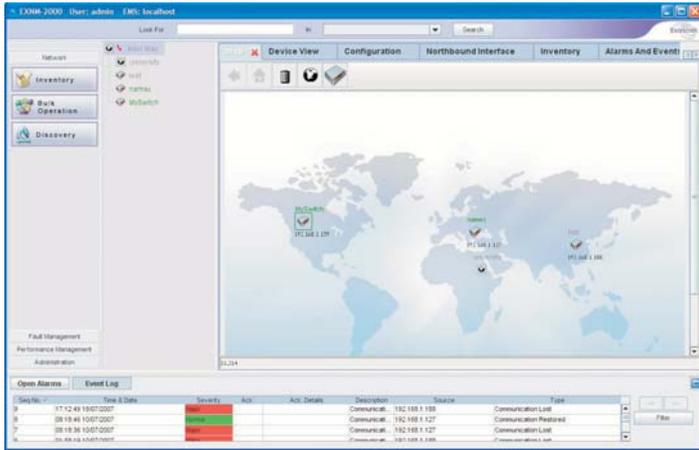
Figure 2. Geographic Map View

System Configuration

With the EXNM-2000, System Administrators can perform a complete set of configuration tasks on individual switches or groups of switches. Geographic map views allow the administrators to quickly drill down to specific devices and view key configuration parameters. The system also enables bulk operations such as applying standard configurations, adding the same ESSID to all switches in one operation, rebooting switches, or upgrading firmware.

Security Management

Ensuring enterprise security standards are strictly observed is a key component of any management solution. The EXNM-2000 provides a comprehensive set of configurable security management features, including secured client/server sessions; user management with the ability to interface LDAP servers for user authentication; user group custom privileges based on location/site and functionality management; and audit trails.
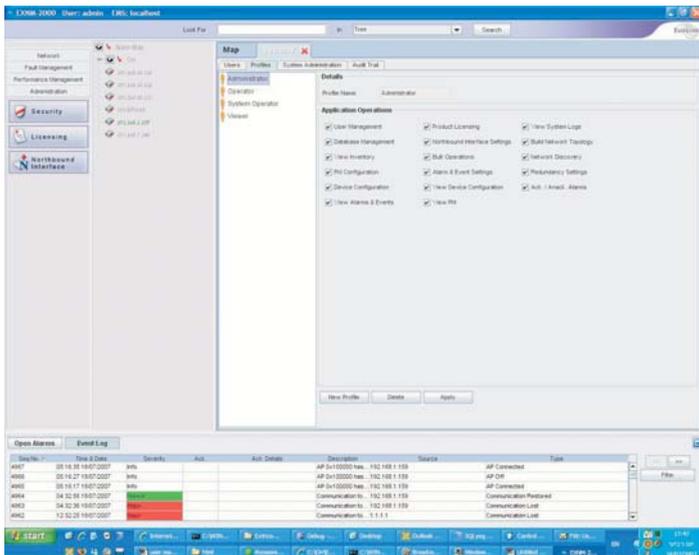
Figure 3. Security Configuration

Fault Management

A WLAN that does not meet Enterprise uptime requirements can impact company profitability. The EXNM-2000 includes extensive and highly customizable fault management capabilities, based on SNMP traps and real-time polling and visualization of the Extricom network.

Performance

In today's business climate, it's not enough for a WLAN to provide connectivity; it has to provide the kind of performance that will allow end-users to seamlessly access the backend applications they need to do their jobs. To ensure visibility into wireless performance, the EXNM-2000 offers configurable statistics polling rates, as well graphical reporting on the statistical performance of the whole system or individual devices.
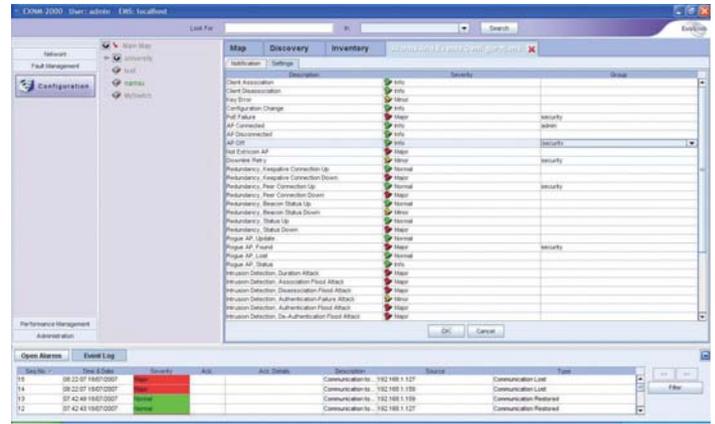
Figure 4. Alarm Configuration

Interoperability

In recognition of the fact that systems are often heterogeneous and multi-vendor, the EXNM-2000 provides a configurable northbound interface for third-party retrieval of the relevant traps by NMS solutions such as HP OpenView.

Wireless Made Simple

The hallmark of Extricom technology is simplicity, flexibility, and performance in high-stress, real-world environments. The EXNM-2000 extends this tradition, enabling a new level of quick, reliable, and cost-effective integration of Extricom's unique architecture into enterprise IT strategies.

Hardware/Software Requirements

Server Hardware

100 Managed Elements	Single Intel processor, core 2 duo 1.5GHz, 2MB L2-Cache, or equivalent
	Memory – 1GB DDR2-400 SDRAM
	Disk – 100GB SATA
	CD-ROM drive
	100Mbps Ethernet Interface
	Dual Power Supply - optional
1,000 Managed Elements	Single Intel processor, core 2 duo 1.8GHz, 2MB L2-Cache, or equivalent
	Memory – 1GB DDR2-400 SDRAM
	Disk – 100GB SATA
	CD-ROM drive
	Gigabit Ethernet Interface
	Dual Power Supply - optional
2,000 Managed Elements	Dual Intel processors, core 2 duo 1.8GHz, 2MB L2-Cache, or equivalent
	Memory – 2GB DDR2-400 SDRAM
	Disk – 200GB SATA
	CD-ROM drive
	Dual Gigabit Ethernet Interfaces
	Dual Power Supply - optional

Server Software

Supported Operating Systems	Microsoft Windows Vista/XP/2003
	Linux 2.6 kernel and above
	Sun Solaris 10
Database	MySQL 5.0 (requires separate license)

Client Hardware

Memory	1GB
Disk	2GB of free disk space
Interface	Fast Ethernet (100Mbps)
Display Resolution	1024 X 768 and above

Client Software

Supported Operating Systems	Microsoft Windows Vista/XP/2003
	Linux 2.6 kernel and above
	Sun Solaris 10
Supported Web Browsers	Microsoft Internet Explorer 5.0 & above
	Firefox 2.0 and above
Java Virtual Machine (JVM)	Sun Java SE 1.6 (6.0) installed automatically if not found

Client/Server Connections

Client size	10MB
Client location	Downloaded once and cached on the user's computer
Operational Bandwidth	Normal operation requires approx. 750Kbps for download
	Upload traffic is low; bandwidth of 32Kbps is sufficient / 64Kbps preferred
Server/Managed Element Bandwidth Requirements	1,000-device System: Required server-side bandwidth – symmetrical 2Mbps
	2,000-device System: Required server-side bandwidth – symmetrical 5Mbps
	On managed device side, minimal bandwidth is 250Kbps symmetrical

License Ordering Information

EXNM-2000/XX where XX stands for the number of managed switches: 2E- entry level, 5, 10, 25, 50, 100, U- Up to 2000	Extricom Network Management System with license for a single server and multiple clients

* Information is subject to change without prior notice.

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