

> White Paper



# Enterprise Edge Management

*Bringing Cost-effective Control to the Network Edge*

## KEY BUSINESS BENEFITS OF EEM

- **Reduced Support Costs** by eliminating repetitive management cycles spent on maintenance, configuration, diagnosis and recovery operations.
- **Increased Network Availability** with physically-connected management control and intelligent automation you can accelerate the mean-time-to-recover from outages – including virtually eliminating disruptions caused by human error.
- **Improved Security & Compliance** by providing end-to-end support for all management security and complete auditing for regulatory compliance requirements.

## CHALLENGES AT THE EDGE

Today's enterprise networks are more distributed and more complex than ever before. In fact, Network World reports that 90% of employees now regularly work away from their company's headquarters, with 40% working at a remote location.

Businesses are taking full advantage of network-based technologies and applications — such as Voice over IP (VoIP), real-time inventory management, customer relationship management (CRM) on demand — to run with much greater efficiency.

However, these developments have also put unprecedented pressures on IT staff to ensure high service levels, security and 24/7 availability of the underlying networks. These pressures are even greater at the network's edge.

*In a recent survey of Fortune 500 companies, 88% of IT managers say they face "unique challenges in trying to manage, support and secure networks at remote locations."*

### Network edge management presents a number of unique challenges:

- *Remote locations must overcome single points of failure as well as reduced visibility, control and security.*
- *Branch offices face growing compliance requirements and security risks.*
- *Users at the edge frequently experience poor application and network performance, and IT staff often lack the proper tools to accurately measure performance and cost-effectively resolve issues.*
- *IT departments usually have to do more with less at the network's edge where technical resources are often limited.*

As a result, network management at the edge has become increasingly more complex, costly and time-consuming. A simple task like reconfiguring a router can turn into a major problem and expense if it requires deploying support personnel to physically distant or hard-to-service locations on the network.

## THE LIMITS OF EXISTING TECHNOLOGIES

Unfortunately, a critical solutions gap exists between current technologies and the management needs of today's growing networks.

Most in-band "management" solutions are really just monitoring tools. They were designed when most servers were connected by a local area network (LAN) instead of the wide area networks (WAN) more often used in today's distributed enterprises. With their high-bandwidth, these LAN environments had relatively few performance problems. The LANs were also easier to maintain since "remote locations" were, at most, only a few hundred yards away.

## RAPID ROI WITH EEM

On average, ROI for a deployment of Uplogix solutions can be realized in less than 12 months. This ROI is based on the automation of a majority of remote network support operations as well as significant reductions in network maintenance costs, annual network support costs and network downtime.

*"I can't always leave our main campus and drive to a remote site when we have a problem. With Envoy on duty, now I don't have to."* — **Prairie View A&M University**

However, these monitoring tools are not suited for supporting today's WAN environments that might cover hundreds or even thousands of miles. Even worse, these tools are limited to using the network itself to gather information, so they cannot always give you the depth or frequency of data collection required. If the network goes down, they go down. They can tell you that you have a problem, but actually fixing the problem still requires manual intervention and time-consuming, expensive on-site visits.

Out-of-band technologies such as console servers provide an alternative path to access devices at the network's edge, overcoming the problems of in-band tools' dependency on the network. However, out-of-band solutions lack robust automation capabilities to identify and resolve problems.

## EEM: FOR OPTIMIZED NETWORK MANAGEMENT

To address the challenges of managing today's highly distributed networks, Uplogix has developed a unique new management approach called Enterprise Edge Management (EEM).

Successfully proven at thousands of remote network locations around the world, EEM offers the best of both in-band and out-of-band technologies. Our Intelligent-Out-of-Band (IOOB) architecture combines the device-aware intelligence of centralized, software-based systems with the power and remote control of console-based administration. The result is optimized, automated management at the network's edge.

In fact, IOOB does more than just provide administrators with remote access to network devices. It delivers a framework for deploying management applications locally to each device, eliminating network dependencies and truly unlocking the power of automation and network management intelligence.

EEM delivers three key areas of capabilities for optimizing network management at the edge:

**Command & Control** to provide — regardless of the network's state — total control and visibility of the remote infrastructure, along with complete policy enforcement and auditing to solve the security and compliance challenges found at the edge. Even if the network goes down, Uplogix solutions continue to manage and to maintain secure contact through an alternative, on-demand communications path.

### Take **COMMAND** and **CONTROL** of your remote locations:

- *Secure, reliable remote access*
- *On-demand, out-of-band connectivity*
- *Best-of-breed security and auditing capabilities to address threats and satisfy compliance standards*
- *Real-time collection, analysis and reporting of all changes made*

*“Uplogix is making it possible to double our growth annually while maintaining the same level of staff. We can economically scale our business and provide our customers with more robust systems, without flying people all over the world.” — RigNet*

*“There are innovations in the marketplace that are beginning to pave the way for centralized control in a decentralized world. One of the most striking is Uplogix’ Envoy management appliance, with its unique mix of out-of-band management, in-band monitoring, and configuration control for network devices at the edge.”*  
— Enterprise Management Associates

**Recognize & Resolve** to proactively monitor and manage the network, automatically diagnosing and repairing problems preemptively. Network issues that might otherwise require an expensive, time-consuming visit from IT staff can be detected in seconds by Uplogix solutions and resolved in minutes. Maintenance tasks such as operating system upgrades, configuration changes or system-wide password resets can be automated and handled remotely, thereby saving operational costs and reducing management errors.

### **RECOGNIZE and RESOLVE problems automatically:**

- *Automated problem diagnosis and recovery*
- *System-wide, single-click patch management*
- *Centralized configuration management of remote devices*
- *User-extensible automation*

**Analyze & Adjust** to measure and manage service levels of network-specific applications. This means that you can move beyond just device-level monitoring to what your end users are actually experiencing on the network. Service-level data is combined and correlated with infrastructure performance data to better pinpoint and resolve problems, ensuring high levels of service across the network.

### **ANALYZE and ADJUST dynamically to changing conditions:**

- *Quality-of-Service (QoS) monitoring based on the Service Level Verification module*
- *Automatic QoS tuning for enhanced service delivery and reduced maintenance costs*
- *Behavior-based quarantining of security threats*
- *Sniffer capabilities to monitor network performance, application response time, and report on available bandwidth*

In short, EEM can help you minimize on-site support visits, reduce network management costs, improve availability and service levels, enhance security and reduce errors.



**Uplogix Envoy**

*"We need to be able to be able to secure access and control at all points throughout our network, including the Market Participants' locations, to ensure the protection and reliability of the power grid. Uplogix has provided that level of security out-of-the-box with its Envoy solution."*

— **Regional Independent System Operator**

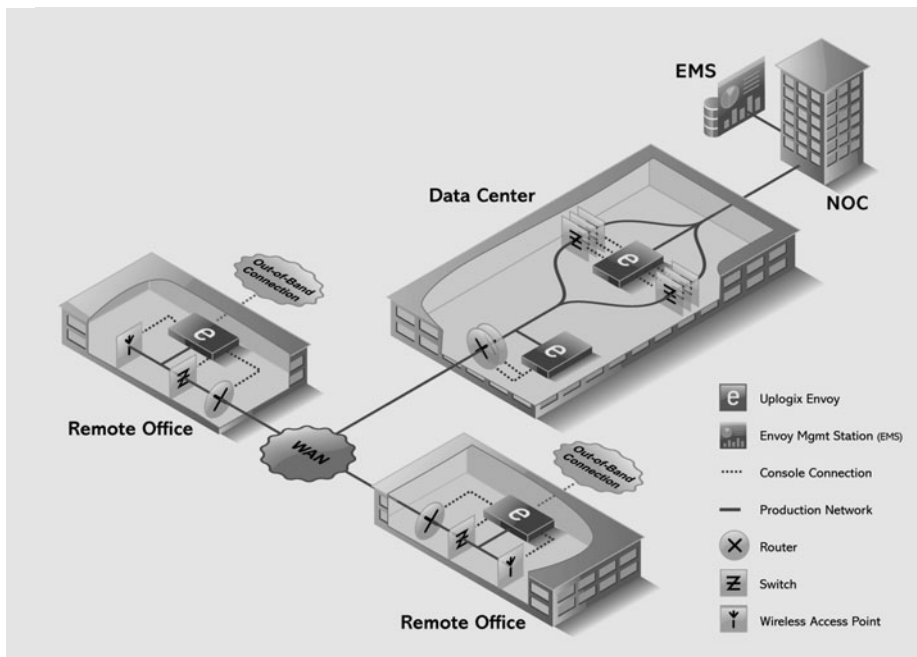
## AN ENTERPRISE-WIDE SOLUTION

Uplogix has responded to the unique challenges of network management at the edge by delivering a suite of integrated EEM solutions that provide automated, 24/7 access and control over all locations, backed by the ability to identify and resolve a wide range of network problems.

In fact, Uplogix solutions can fully automate more than 60% of network support functions and autonomously address 95% of issues that cause service outages.

### Uplogix' EEM solutions include —

- **Envoy**, a network management appliance co-located with routers, switches, and firewalls that provides automated network support, configuration, maintenance and recovery:
  - Proactive diagnosis and repair of network faults and failures
  - Remote performance of routine maintenance tasks such as configuration changes, OS upgrades, security patches or password updates
  - Secure, on-demand, out-of-the-box connectivity and management during an outage
  - Automatic provisioning and configuration of "drop-shipped" devices
  - Recovery from failed configuration changes, minimizing downtime caused by human error

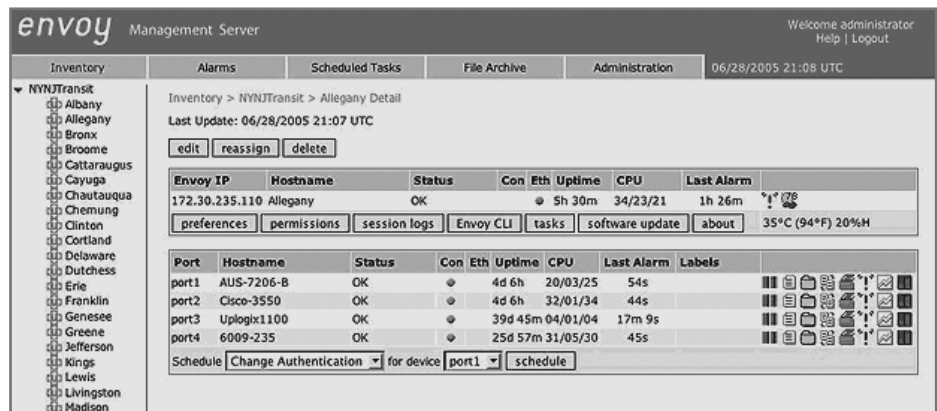


**Sample Deployment of UpLogix EEM Solutions**

*“Uplogix delivers verifiable savings and immediate benefit as they resolve a current enterprise pain by providing intelligent, automated management at the edge.”*

— Ptak, Noel & Associates

- **Envoy Management Station (EMS)**, a centralized, web-based administration portal for managing multiple Envoys distributed throughout the network:
  - *“One-click” administration of rules and changes across the entire Envoy network*
  - *Robust and flexible reporting of device statistics, alarms/events, user interactions and network service levels*
  - *Scalability to accommodate and manage even the most complex, distributed network environments*
  - *Easy integration with leading system management solutions*



**EMS Dashboard View** - Default view of all Envoys and devices under managed.

- **Envoy Management Modules**, powerful applications designed to monitor, measure and manage the performance and service quality of various network-related applications. For example, Service Level Verification (SLV) is a versatile module that measures network performance from the end-user's perspective. With SLV, IT staff has the visibility and control they need to accurately measure and manage network service levels through intelligent, cost-effective and efficient automation.

**SLV has the capability to:**

- *Measure the end-user's experience of service levels at remote locations, providing baselines and acceptable thresholds for the services being monitored*
- *Report on real-time service-level events as well as trends over time*
- *Correlate service-level data with infrastructure performance data to better diagnose problems which Envoy can automatically resolve*



## ABOUT UPLOGIX

Uplogix provides enterprise edge management solutions for organizations seeking to reduce the cost, complexity and risk of managing their networks. Uplogix' solutions dramatically increase network uptime, lower network support costs and improve management security. Uplogix is privately held and headquartered in Austin, Texas. For more information please visit [www.uplogix.com](http://www.uplogix.com).

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