

**Overview**

Eye of the Storm® (EYE) managed the successful upgrade of University of Minnesota’s infrastructure. EYE’s integrated performance, fault and inventory management, reporting capabilities and extensibility minimizes the number of tools University of Minnesota requires, so helping to manage costs and deliver services more effectively.

**University of Minnesota Uses Eye of the Storm to Strategically Manage and Upgrade Complex Network Environment**

The University of Minnesota is dedicated to teaching and learning, research and discovery, and public engagement. The University serves more than 70,000 students and faculty. It offers degrees in more than 370 fields of study through its four campuses (Twin Cities, Duluth, Morris, and Crookston), a collaborative center in Rochester, extension offices, and research and outreach centers.

Keeping its distributed community well-connected 24x7 is vital to the University’s Office of Information Technology (OIT). OIT’s Networking and Telecommunications Services (NTS) group operates and manages the Twin Cities campus network. It provides front-end voice, data, and video communications services, including telephone and data connections and remote access services.

“The ability to integrate leading edge emerging technologies into our network infrastructure to support and improve it for future growth and sustained availability is crucial,” states Pete Bartz, Manager Data Network, Design and Operations within the Networking and Telecommunications Services group. Reliable access to the network for its entire community helps the University in its overall goal of providing premier research and educational services. An in-depth review of the University’s existing infrastructure highlighted that the Twin Cities campus data network, installed in 1997, had outlived its life expectancy of five years. “We were hitting a ceiling – we could not easily extend and add new technologies and services to the network to effectively support our community,” explains Bartz.

The NTS group determined a major upgrade of the Twin Cities’ campus network infrastructure was required. With a distributed and expanding network that already included 60,000 ports, the NTS group also determined it required a more effective and proactive means to monitor and manage the upgrade to a new network. The NTS group developed a

detailed Request For Proposal (RFP) for the network upgrade, including a thorough section on network management, to replace the outdated systems.

## University of Minnesota's Challenges

- Reliable, proactive IT support to students, faculty, staff and departments.
- Inventory management to reveal network resource capacity and bandwidth utilization
- Understand the impact of infrastructure changes on the network and University
- Effective monitoring of devices for proactive network fault management
- Consistent, reliable management reporting
- Ability to provide department administrators with views that securely show key statistical information on their LANs and the core network.

## The Solution

Through its extensive RFP scoring process, the University chose new equipment – Cisco 6500's for the border, backbone and core infrastructure, and over 2,200 Cisco 3750 switches across 300 buildings for the distribution and edge devices.

The NTS group also evaluated several network management tools. Entuity's Eye of the Storm (EYE) was selected based on its scoring performance against the RFP.

"We needed network monitoring and management that could easily handle our complex, changing environment," states Mike Faust, Design Engineer. "Entuity's EYE scored the highest in our RFP evaluation. EYE's integrated performance, fault and inventory management, reporting capabilities and extensibility helped it attain a leading score."

"Entuity's EYE satisfied our network management system requirements and did so all in one solution. EYE minimizes the number of tools we need, helping us to manage our costs and deliver services more effectively," explains Pete Bartz.

Also critical in the University's RFP scoring evaluation is that EYE consolidates and correlates three operational disciplines using a centralized repository, a powerful analytics engine, presentation and notification and unprecedented reporting. The convergence of different types of information allows Eye of the Storm a unique understanding of network events, changes in

**Advanced Spare Ports**  
Over the 1 day period Tues Dec 1 2009 - Wed Dec 2 2009  
No prime time is set for this report  
Generated for the Regional view

Switch Device Details					
Manufacturer	Model	Name	Serial Number	Version	Modules
cisco	WS-C3950-24-EM	10.44.1.42	CA70827NDGV	12.120EA1a	1
cisco	WS-C5508	10.44.1.5	86061666	4.5(4)	3
cisco	WS-C5508	10.44.1.6	86061330	4.5(4)	2
cisco	WS-C5508	10.44.1.7	86061262	4.5(4)	4
cisco	C2950XL	10.44.1.9	PCZ0209YHEF	12.122EA4	0
cisco	WS-C3945-24-EM	10.44.1.12	CA70827NDG8	12.120EA1a	1

Port Details for Switch Device '10.44.1.7'/Module 'Module 3'				
Description (Mbit)	Duplex	Status	Operational Status	Ref. Speed
10/100 utp ethernet	Full	Duplex	up	100 Mb/s
10/100 utp ethernet	Auto	down	down	10 Mb/s
10/100 utp ethernet	Full	Duplex	up	100 Mb/s
10/100 utp ethernet	Full	Duplex	up	100 Mb/s
10/100 utp ethernet	Full	Duplex	up	100 Mb/s
10/100 utp ethernet	Auto	down	down	10 Mb/s
10/100 utp ethernet	Auto	down	down	100 Mb/s
10/100 utp ethernet	Full	Duplex	up	100 Mb/s
10/100 utp ethernet	Auto	down	down	100 Mb/s
10/100 utp ethernet	Full	Duplex	up	100 Mb/s
10/100 utp ethernet	Auto	down	down	10 Mb/s

Module Details for Switch Device '10.44.1.5'								
Description	Name	Module Model Number (Last Valid)	Module Serial Number (Last Valid)	Module Slot Number (Last Valid)	Module Hardware Version (Last Valid)	Module Firmware Version (Last Valid)	Module Software Version (Last Valid)	Ports
WS-X5530	Module 1	wsr5530	1837909	1	3.4	5.1(2)	4.5(4)	0
WS-X5234	Module 2	wsr5234	17414267	2	1.0	4.5(2)	4.5(4)	24

network usage and their impact on a business. EYE provides:

- Performance Management, using Service Degradation Sensitivity to predict problems so infrastructure managers can take action before users notice
- Availability Management which distinguishes between network, server and application faults and then reports the True Cause along with its business implications.
- Resource Management, offering a full inventory of IT infrastructure assets and what they are connected to. Included is a Spare Ports Report that saves costs in just hours after implementation.

According to Bartz, Entuity's EYE was also selected for its RFP scoring on the following features and capabilities:

- Extensibility: The University's network constantly changes as new technologies are added, such as BGP, VPN and new security firewall services. EYE is easily extensible and configurable to quickly add these components to monitor and manage them. The University plans to 'tune' EYE to collect the specific information needed to improve the management and operation of the entire network
- Ease of use: EYE requires less overhead, administration and maintenance. Infrastructure discovery is up-to-date and information is quickly available. EYE provides a distributed

view down to the object level – device, port, WAN link, etc.

- Reporting: EYE's reporting offers access to important statistical data, providing for proactive network management and the ability to extend information to all customers
- Rapid implementation and out-of-the-box flexibility: EYE is quickly installed, up and running and collecting network data within a few hours.

"Entuity is a partner. They quickly respond to our questions, training requests and operational needs, continuing to demonstrate their commitment as a strategic element of our leading edge Network Upgrade Project," explains Pete Bartz. "We have input into product planning for EYE. Participating with Entuity in the process to progress EYE will help us meet our goals and objectives as we evolve to more proactive network management for the future."

## The Result

"With Entuity Eye of the Storm to monitor and manage our network, we are in the process of implementing an effective, successful network upgrade," according to Bartz. "Without EYE, we would be blind to potential network collisions and blockages. Instead, we are able to manage proactively, avoiding major issues."

Upon implementation, Entuity Eye of the Storm discovered the University's production network within a few hours, allowing the NTS group to begin to easily monitor and manage a wide variety of 86,000 ports, devices, WAN links, interfaces, etc. After running in parallel with the outdated existing network management system, EYE was fully operational in production mode within 2 months of installation.

As the Network Upgrade Project continues, Entuity EYE monitors and manages the new network as well as the old network, both at the same time.

The new upgraded network now delivers 10/100/1000 MB services to all ports. Entuity EYE makes it easy to see edge port conditions. As a new campus building and departments are added to the network and connections turned on, the NTS group easily views port errors previously unseen. The NTS group now proactively manages these errors, working with departments to help correct and fix the problems.

EYE's extensive reporting capabilities provide easy access to statistical data such as WAN link usage

and edge port usage to the University's IT management team. The University no longer has to use and maintain home-grown reporting systems, saving time and costs.

The NTS group plans on using EYE's Impact Analysis in the management of its new network to help the team forecast future needs. Eventually, network information will be distributed in a secure manner. Each department will see information about their network connections that pertains specifically to them. Departments will be able to view network availability at any time. With greater visibility for the entire University, the NTS group is more proactive and effective in delivering network services.

Entuity is a strategic partner working with the University of Minnesota to build its network of the future. With Entuity's EYE of the Storm performance, availability and resource management capabilities, the University is supporting a network infrastructure that will allow it to easily extend and add new technologies and services for the future.

## The University of Minnesota

Founded in 1851, the prestigious University of Minnesota is one of the most comprehensive public universities in the United States. It is a premiere research university with faculty of national and international reputation, providing a strong tradition of education and public service.

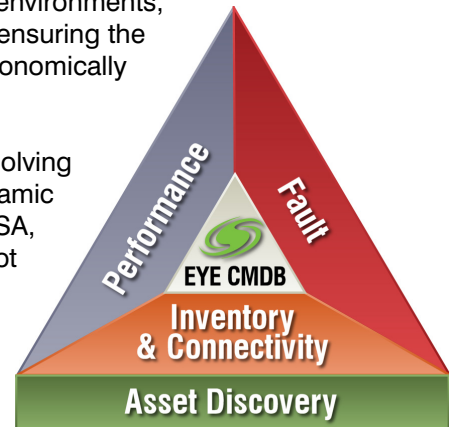
Utilizing EYE to Meet the University of Minnesota's network goals:

- Proactively managing network and connections; providing more reliable community support
- Leveraging inventory management and statistical reporting; determining resource limitations to improve network utilization
- Utilizing impact analysis; understanding the impact of changes and forecasting future needs
- Identifying and addressing collisions, blockages with effective fault management
- Viewing previously hidden edge port conditions; communicating to departments and fixing problems
- Retiring home-grown systems
- Preventing service problems from developing.

## Eye of the Storm Summary

Entuity® offers a complete line of contemporary network management solutions for reducing operational costs while improving services delivery – affordable enterprise class management. Eye of the Storm® (EYE) network management solutions enable IT organizations to quickly and materially reduce costs, and to deliver - and prove - the service levels expected by its customers. EYE gives you insight, control, and predictability of your network's performance and availability - from the core to the edge - with a range of products at price points to match your business model. The EYE product line helps businesses realize the maximum benefit of today's distributed applications, virtualized environments, network-based services, and contemporary data sharing strategies by ensuring the foundational resource for all these initiatives – the network – is economically deployed and optimally performing.

Entuity's customers include Global 2000 companies proactively solving mission-critical business initiatives, leveraging complex and dynamic distributed network environments. A sampling includes: ABB, ACSA, Amtrak, Astra Zeneca, BMC Software, IBM Global Services, Perot Systems, The Royal Bank of Scotland, SASSA, Sony, Visteon, and WorldPay.



## Eye of the Storm Enterprise Network Suite

EYE Enterprise Network Suite is the company's flagship scalable, multi-server solution for medium to large enterprises managing the largest and most dynamic networks for some of the most demanding organizations in the world. EYE Enterprise delivers network control and predictability enabling enterprises, system integrators and MSPs to manage network services and assets, meet service level commitments, implement best practices in service delivery, and even develop and monitor Green IT initiatives.

EYE automatically and continually discovers and captures in-depth network data and analytics, and provides integrated fault, device- and flow-based performance management capabilities that help enterprises, service providers, and system integrators reduce network downtime, commit to, deliver, assure and prove service levels, and ensure network configuration compliance. Real-time notifications of physical network and configuration changes, visibility to virtual servers and environments, and open data accessibility prevent user-impacting business service interruptions and enable transparent business-level reporting through high level and detailed reports, corporate dashboards, or mash-ups.

## EYE NPE Integrated SME Network Suite

The Entuity Eye of the Storm Network Professional Edition (EYE NPE) is a new class of network management solution focused on the needs of small to medium enterprises (SMEs). It allows SMEs to manage their networks using enterprise-class technology at an affordable price. EYE NPE provides SMEs with a live, accurate view of their network in order to reduce network downtime and ensure optimal network operation so critical business initiatives can be effectively deployed and efficiently maintained.

EYE NPE provides a succinct suite of the most important functionality for network management, presented in an easy to use, quickly to deploy format. EYE NPE delivers extremely fast time to value and low total cost of ownership, resulting in superior overall price-performance. Its wide range of capabilities are the practical middle ground between single function point utilities and tools that are difficult and costly to integrate, and heavily laden frameworks that are difficult to deploy, learn, use, and expensive to support. EYE NPE enables SMEs to quickly and optimally manage their networks.

To learn more about EYE NPE for SMEs or Eye of the Storm Enterprise for medium and large enterprises, please contact your local Entuity office, visit [www.entuity.com](http://www.entuity.com), or email [info@entuity.com](mailto:info@entuity.com).



[www.entuity.com](http://www.entuity.com)

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