

# Naval IT Department

## EXECUTIVE SUMMARY

### Objective

- Upgrade an aging network infrastructure
- Increase security to prevent rogue devices and analyze down to the port level
- Build in support for IPv6 at wire speed

### Solution

- Network backbone consists of NetIron MLX routers
- FastIron Edge X switches and FastIron Workgroup switches make up the network's distribution and edge layers
- ServerIron application delivery and traffic management switches balance traffic entering the organization's firewalls
- IronView Network Manager supports security, monitoring, and other critical functions

### Results

- Performance has increased to gigabit speeds over switched Ethernet
- Improved security, including RADIUS, MAC authentication, and support for 802.1X
- A separate management VLAN can continue operating even in the event of failures
- The time to find rogue devices has dropped from 2 hours to just a few minutes

## Brocade Sails Into Navy Systems Center Network

The U.S. Navy is much more than submarines and aircraft carriers. To keep this branch of the military running smoothly on all fronts, the Navy relies on a massive support infrastructure.

On the information technology side, that support comes in part from a large IT department that supports the naval systems in San Diego.

### Objective

The large network consists of 5,000 users, 10,000 clients, and about 1,000 servers. Because parts of the network on one of the campuses were between 7 and 11 years old, it was past time to upgrade the infrastructure. "Everything in the network was old," says a representative from the IT department. "We were facing problems common to an aging infrastructure—deficient management, poor security, and minimal user mobility."

One major concern was rogue devices. The IT team was unable to prevent users from connecting to the network because they could not manage at the port level. "The architecture was hard to maintain, and people were connecting laptops to the network without our knowing it," he says.

On the flip side, the group wanted to give legitimate users more mobility so they could connect throughout the campus. "We wanted a legitimate user to be able to move anywhere on the network and get a standard IP address," he says.

Another major goal was enabling IPv6 in the LAN to complement the WAN, which was already supporting IPv6. "This was an absolute requirement since we had to support IPv6 at wire speed," he says.

### Solution

These forward-looking LAN requirements led the Navy to choose Brocade® to support a critical IT function. "We were looking strictly at a local installation, and Brocade's emphasis on the LAN made the sale," he says.

A number of Brocade solutions were installed during a multi-year, multi-phase deployment. Like other government agencies, the network backbone must meet government requirements to support IPv6. The IT team needed to equally support IPv6 and IPv4 in the local area network. They chose the NetIron® MLX switch because of its ability to support IPv4 and IPv6 at wire speed.

In addition, the team installed FastIron® Edge X switches and FastIron Workgroup

switches. The Brocade ServerIron® application delivery and traffic management switch balances traffic to the organization's firewall, and IronView® Network Manager (INM) provides network visibility and management.

INM collects data from Brocade switches and routers, and the data helps network managers gain detailed visibility into all areas of the network. "sFlow is a very attractive feature for us since it's used for security, network visibility, and monitoring. By coupling sFlow with InMon, we have incredible network visibility," he says. "IronView automates a number of functions, including inventory, upgrades, deployment of configuration changes, VLAN management, data logging, and alert distribution."

## Results

The environment went from 48-port, 10Mb/sec shared hubs and a 100Mb/sec uplink to 10 Gigabit Ethernet and Gigabit Ethernet in the core and 10/100 switched Ethernet at the edge and Gigabit Ethernet at the labs. "The Brocade network is an order of magnitude increase in performance," he says.

In addition to the improved performance, the IT team has been impressed with the inherent scalability of the new infrastructure. "It's highly scalable, and we can add switches as necessary down the road."

For a military installation security is paramount, and the Brocade installations have increased security features while enabling a safe mobile environment. Dynamic VLANs use RADIUS during MAC authentication to specify a VLAN for the port, which means a device can connect to the network anywhere and will always be put onto the same VLAN. This type of set-up also means locating devices is much easier during security events.

The use of sFlow and InMon has made it possible to find rogue devices at the port level. "It used to take 2 hours to do this, and now we can do it in 5 minutes," he says. "MAC authentication and 802.1X can prevent unauthorized users from connecting to the network, which makes us more proactive from a security perspective, rather than reactive."

On the management front, having a separate VLAN for management functions has resulted in a number of benefits, including a clear separation of management infrastructure from user and customer information. Simple access control lists (ACLs) allow or deny access as appropriate, and management capabilities can continue even in the event of failures.

The IT team has been extremely impressed with Brocade's commitment to customer service. "From the start Brocade would show up each week and offer assistance and training," he says.

The decision to choose core, distribution, edge, and management solutions from a single vendor has greatly benefited the entire group in the form of fast problem resolution, good synergy among all players, and a more proactive attitude about addressing issues.

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