

CASE STUDY

Large East Coast Research University

Empowered Networks teams-up with Infoblox NetMRI to Deploy Cisco IOS in record time

The Customer:

- Leading Big 10 research university ranked among the leading institutions in the U.S.

The Challenge:

- Deploy a Cisco IOS upgrade to hundreds of student residence locations around campus in less than six weeks

The Solution:

- Infoblox NetMRI Network Change and Configuration Management (NCCM)

The Results:

- Network discovery, visibility, automation, scalability and control
- Rapid change, configuration management, deployment and minimal manual intervention
- Four-week reduction in the delivery plan

Summary

A large, Big 10 research university had to rapidly deploy a Cisco IOS upgrade to hundreds of student residence locations in and around campus. The IT department had minimal time and resources to complete the project over the summer break. They faced a manual deployment effort with critical time constraints and minimal allowable project slippage before students returned to campus. The university selected Empowered Networks to help automate and manage the rollout. They teamed with Infoblox and selected the Infoblox NetMRI Network Change and Configuration Management (NCCM) solution. The original plan allowed only six weeks to complete, test and deliver the upgrade.

Empowered Networks completed the project in less than two weeks with minimal defects that required manual resolution. Using Infoblox NetMRI, they delivered previously unavailable network discovery and visibility, rapid configuration and updates, scalability to reach hundreds of connection points, and saved considerable manual effort and cost while shaving four weeks off the original deployment schedule.

The Challenge

As a part of the university's IT infrastructure, the networking team delivers essential Internet connectivity and WiFi access to hundreds of student residence locations on and immediately around the campus. They needed to roll out, test and verify a Cisco IOS upgrade to their residence network in less than six weeks during the July and August break before students returned to campus for the new semester. The project

was initially considered as a manual effort engaging the entire team with on-site device upgrades at each location, and extended, ongoing work schedules with only a few days of slack available for schedule slippage.

The Situation

Concerned about the project scope, labor effort, timeline and budget, the networking team sought an alternative to the manual network upgrade. Ideally, they preferred a technology-delivered solution to save time, limit errors and



rework, improve efficiency and scalability and ensure rapid deployment to meet challenging time constraints. They hired Empowered Networks to assist in automating and managing the Cisco IOS rollout. Empowered Networks met with the university to understand their requirements. The team wanted a fast, accurate deployment with discovery and visibility of all devices and endpoints. They also needed to synchronize IP addresses, manage conflicts and detect rogue and compromised assets. Further, since connectivity was mission-critical for the delivery of educational services, auto-failover, resiliency and redundancy were crucial priorities. Automated configuration, change, policy and compliance management were also important, as was port control and switch port management. Finally, the team needed to monitor performance and generate network reports for ongoing management. Empowered Networks knew that the upgrade could be completed quickly within scope and budget by teaming with Infoblox and the NetMRI NCCM solution.

The Solution

The university and Empowered Networks collaborated to build a script for Infoblox NetMRI that uploaded new code to the networking devices, set the device configuration then restarted the device to install the new code. All of these steps were performed using NetMRI's automation engine. Following the device reboot, NetMRI then validated that the device had deployed and was using the new code version.

The combined Empowered Networks and Infoblox NetMRI solution offered the university many advantages:

- **Network Auto Discovery and IPAM Sync:** NetMRI automatically discovers, views and synchronizes multi-vendor infrastructure, IP addresses, end hosts, network constructs (L2 physical data, L3 logical data, routes, VLANs, virtual forwarding and routing) and topologies with current and historical information through a single control plane.
- **Change Management:** NetMRI manages change tasks with powerful but simple methods for encoding change logic. NetMRI's automatic change detection saves considerable time, and delivers historical views, side-by-side comparisons and configuration search.
- **Configuration Analysis:** NetMRI auto-detects and audits network updates, receives detailed analysis, and performs configuration backup, search and date/time stamp correlation of

network problems. Analysis and alerts on network performance, configuration and problems saves time and speeds resolution.

- **Change and Configuration Automation:** NetMRI enables and embeds variable-based jobs and scripts, customizable templates, scripting (CCS, Perl and Python), user-based role access control and job scheduling for further time-saving automation.
- **Switch Port Management:** NetMRI tracks free, available and unused ports. It also provides provisioning, remediates compromised endpoints, monitors connected wired and wireless end-hosts, and supports capacity planning.
- **Policy and Compliance Management:** Another helpful provision is automatic, continuous real-time and historical tracking of network changes against multiple security policies. Embedded compliance rules, best-practice templates, violation detection and remediation tools further assist in resolving conflicts.
- **Automated Failover:** NetMRI provides redundancy and resiliency for data center collectors and appliances to support network availability requirements.
- **Reporting:** Finally, the single-click, pre-built and customizable executive and granular reports, filtering, on-demand, scheduled and role-based access enables IT management the visibility to see and share network information across the ecosystem.

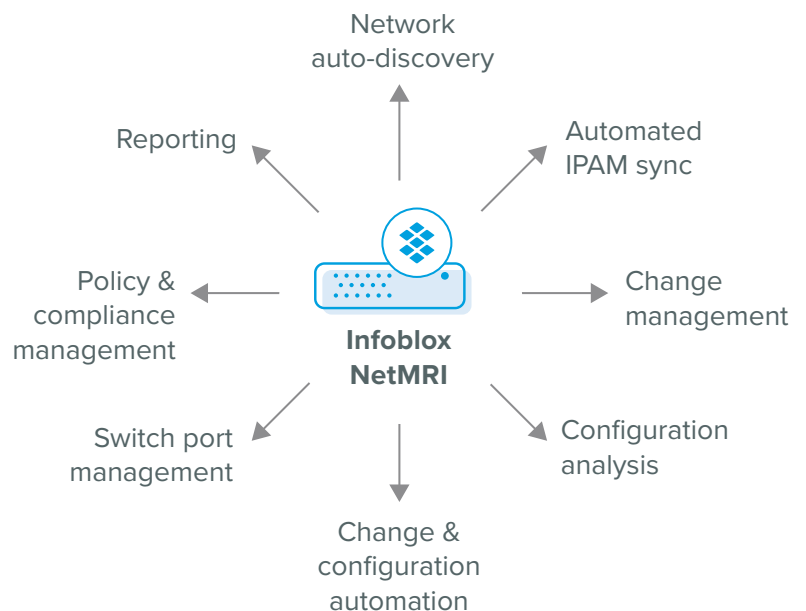


Figure 1: Infoblox NetMRI

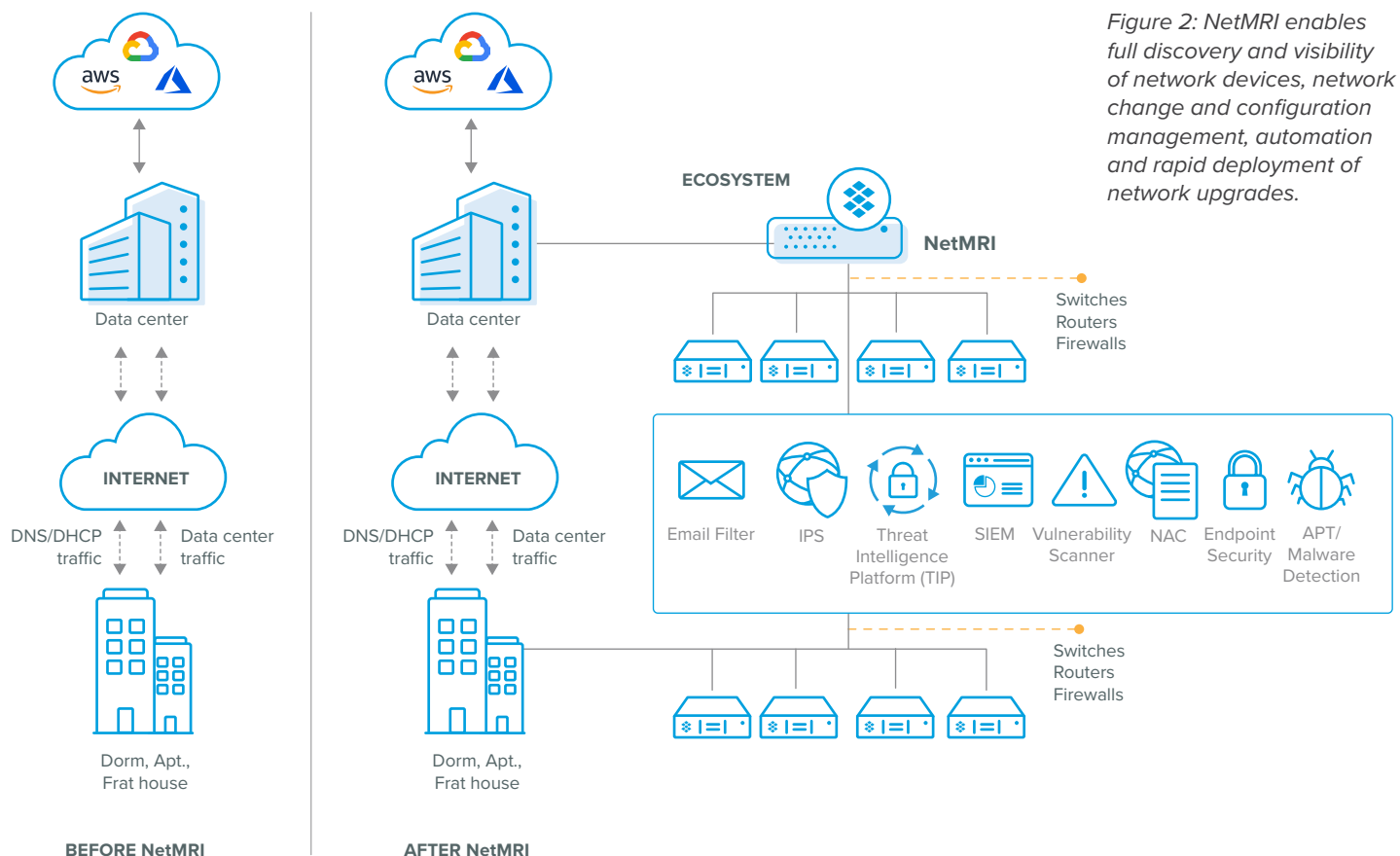


Figure 2: NetMRI enables full discovery and visibility of network devices, network change and configuration management, automation and rapid deployment of network upgrades.

The Result

Using Infoblox NetMRI, Empowered Networks and the university network team were able to complete the project in two weeks with only a few hardware issues that required human intervention. They shaved four weeks off the expected project time, saved considerable labor and expense and delivered the upgrade with confidence and time to spare.

Because NetMRI had already collected a complete inventory of the entire network, it was possible to identify quickly all of the devices that needed attention. With clear visibility into the complete device inventory, it was fast and easy to group the devices into several smaller subsets and target them for action.

NetMRI's comprehensive automation capabilities tested the preflight checks, upgraded the device software and ran post-flight checks to confirm operability. The networking team uses the system to manage the university's network configurations with increased confidence, fewer resources and lower cost.