

Medical University of South Carolina centralizes IP visibility and management



Employees: 26,000
Hospitals: 16
Locations: 750
Budget: \$5.9 billion
Industry: Health care



Challenge

MUSC needs to support the daily additions of new devices on their network infrastructure, all while ensuring consistent network reliability across hundreds of sites. This rapid expansion places increased pressure on network teams to efficiently handle the growing number of IP addresses.



Solution

BlueCat Integrity, which includes BlueCat Address Manager, provides centralized management and visibility for DDI core network services. Address Manager offers a single pane of glass to manage devices and reconcile IP spaces across the network.



Results

- Real-time visibility across a dynamic IP address space
- More reliable and resilient core DDI services
- Networking experts are freed up for other initiatives
- Deeper insight into how the IP space is being used
- IPv6 readiness

The challenge: Increasing devices on a multisite network

With more than 3,200 students in six colleges, 1,500 full- and part-time teaching staff, and a 2,700-bed medical center, the Medical University of South Carolina (MUSC) is the only comprehensive academic health center in the state. MUSC offers educational programs in the biomedical sciences, dentistry, health professions, medicine, nursing, and pharmacy. Each year, MUSC sees over one million patients.

MUSC's network spans 350 remote sites and its IP address space is comprised of approximately 63,000 IP addresses. The network must support the diverse needs of both the hospital and university, as well as the intensive demands of medical researchers for online collaboration.

"Our faculty, staff, and students are extremely demanding users of technology," says Patrick J. Lazorchak, a network engineer for MUSC. "The number of IP-connected devices on our network is also growing exponentially—from smartphones and tablets to more specialized healthcare devices like wireless IV pumps. In addition, security cameras and door locks that used to be hard-wired are now IP-enabled. To maintain the reliability of our network and better serve our users, we needed an efficient way to manage, automate, and delegate day-to-day network administration tasks."

The solution: BlueCat Integrity

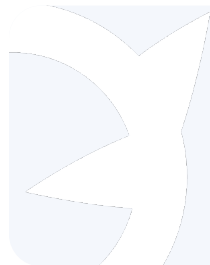
MUSC's network and UNIX administration teams, who co-administer DNS and DHCP core network services for the university, looked at options to replace their defunct Nortel NetID system. They needed a new solution that would simplify and automate IP address management (IPAM) and DNS and DHCP core services for all networks across the organization. It would also need to allow for tasks to be delegated among administrators and field engineers.

"We evaluated other IPAM solutions, including BT Diamond IP and Alcatel-Lucent [now Cygna Labs VitalQIP] before finally selecting BlueCat," explains Lazorchak. "Infoblox was not considered at the time because the university had a prior history with the company and its product that was far from positive. We chose BlueCat based on its ease of use, track record of reliability, system redundancy, Anycast DNS support, and built-in ability to delegate workflows with approval controls and auditing. BlueCat's great technical support and customer service also stood out and contributed to our decision."

BlueCat Integrity provides centralized management and visibility for DNS, DHCP, and IPAM (together known as DDI) core network services. Blue Cat Address Manager, a key element of Integrity, offers a single pane of glass to manage devices and reconcile IP spaces across your network. It also includes a built-in workflow engine and change control system. This frees up time and resources by pushing recurrent network administration tasks out to the field with full approval and auditing controls.

"The Address Manager graphical user interface scored high marks with our entire team for its simplicity and ease of use, while our UNIX group was impressed with the ability to securely access the command line to quickly diagnose and resolve issues," Lazorchak says. "All in all, Address Manager provides great visibility into the system."

To minimize the risk of network disruption or downtime, BlueCat deployed its solution using a phased approach. "Replacing your existing DNS and DHCP solution is a little like replacing the engine in your car while you're cruising down the highway," Lazorchak continues. "We needed to make sure that existing services wouldn't be impacted. To minimize any disruption to our environment, the implementation was rolled out in stages beginning with internal DNS for a few zones and sub-zones. The entire rollout from our initial three-week trial to our production 'go live' was guided by BlueCat's Professional Services team, who were sensitive to our need to avoid service outages. The BlueCat team had the knowledge and tools needed for a smooth transition."



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- Patrick J. Lazorchak, network engineer, MUSC

The results: Real-time visibility, self-administration, and deeper insight

With tightly integrated DDI management, BlueCat Integrity has provided MUSC with real-time visibility across its highly dynamic IP address space. Core DDI services are also more reliable and more resilient.

Currently, about 20 staff members use Address Manager. This includes a core team of seven network engineers, as well as other teams that must routinely touch DNS zones and networks. The solution has also allowed MUSC to effectively delegate DNS and DHCP configuration tasks to field engineers, freeing up the school's expert network administrators to concentrate on other IT initiatives.

"We have a number of field engineers who manage specialty networks such as printer VLAN networks," explains Lazorchak. "Address Manager allows these engineers to self-administer DHCP leases for the printers themselves so they work more quickly and efficiently without having to rely on the networking team for provisioning support. Address Manager allows us to delegate workload while still maintaining visibility and control."

Since deploying Integrity, including Address Manager, to manage their DDI services, MUSC has seen a number of operational benefits.

"Since implementing Address Manager, we are seeing fewer calls to our department requesting certain functions that used to require manual intervention but can now be self-administered," says Lazorchak. "We have also gained much deeper insight into how our IP space is being used, which allows us to better carve up and conserve our public IP space. With Address Manager, we can keep an eye on available IP space to avoid service disruptions and plan for future network growth without any surprises."

Looking to the future, Lazorchak says, MUSC has acquired IPv6 address blocks and has taken initial steps toward IPv6 readiness.

"We have been impressed with BlueCat's deep knowledge of IPv6 and the future-ready support for IPv6 that is built into the product. We anticipate that we will rely on BlueCat's expertise as we move further down the path toward IPv6 integration. We also know that we can rely on BlueCat's excellent support structure to assist us with any future initiatives. For any issues we deem to be critical, we can expect a quick resolution with the help of BlueCat's Customer Care."



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BlueCat's Intelligent Network Operations (NetOps) solutions provide the analytics and intelligence needed to enable, optimize, and secure the network to achieve business goals. With an Intelligent NetOps suite, organizations can more easily change and modernize the network as business requirements demand.

Next steps

Learn how Integrity offers centralized management and visibility for your DDI.

Contact us

