



The Medical University of South Carolina Simplifies Network Management with BlueCat



THE CHALLENGE

With nearly 3,000 students in six colleges, 1,500 full and part-time teaching staff and a 750-bed medical center, the Medical University of South Carolina (MUSC) is the only comprehensive academic health center in South Carolina. MUSC offers educational programs in the biomedical sciences, dentistry, health professions, medicine, nursing and pharmacy. Each year, MUSC admits almost 33,000 patients to its hospitals, while its outpatient facilities serve 800,000 patients.

MUSC's network spans 30+ remote sites and its IP address space is comprised of approximately 30,000 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," said Patrick J. Lazorchak, Network Engineer, MUSC. "The number of IP-connected devices on our network is also growing exponentially – from smart phones 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."

“Since implementing [BlueCat 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. 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.”

– Patrick J. Lazorchak
Network Engineer
MUSC

THE SOLUTION

In March 2011, MUSC’s network and UNIX administration teams, who co-administer DNS core network services for the university, began to look 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/DHCP core services for all networks across the organization, while also allowing tasks to be delegated among administrators and field engineers.

“We evaluated other IPAM solutions including BT Diamond and Alcatel-Lucent (VitalQIP) before finally selecting BlueCat,” explains Lazorchak. “[Another DDI vendor] 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’s IPAM solution provides centralized management and visibility into “everything IP” in the network including IP addresses, DNS and DHCP. The solution includes a built-in workflow engine and change control system to free up time and resources by pushing recurrent network administration tasks out to the field with full approval and auditing controls.

“The BlueCat Address Manager (formerly Proteus) 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,” said Lazorchak. “All in all, BlueCat Address Manager provides great visibility into the system.”

The BlueCat solution was successfully deployed using a phased approach to minimize the risk of network disruption or downtime.

“Replacing your existing DNS and DHCP solution is a little like replacing the engine in your car while you’re cruising down the highway,” said Lazorchak. “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 3-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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THE RESULTS

With tightly integrated IP Address Management, DNS and DHCP, the BlueCat solution has provided MUSC with real-time visibility across its highly dynamic IP address space and greater core services reliability and resiliency.

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

“We have a number of field engineers who manage specialty networks such as printer VLAN networks,” explained Lazorchak.

“BlueCat 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. BlueCat Address Manager allows us to delegate workload while still maintaining visibility and control.”

Since deploying BlueCat Address Manager to manage IP address space, DHCP and internal DNS, MUSC has seen a number of operational benefits.

“Since implementing BlueCat 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,” said 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 BlueCat 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, MUSC has acquired IPv6 address blocks and has taken preliminary steps toward IPv6 readiness,” said Lazorchak.

“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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