



CASE STUDY

Nicklaus Children's Health System Enhances Network Performance and Automates Systems with Infoblox

THE CUSTOMER - NICKLAUS CHILDREN'S HEALTH SYSTEM

Nicklaus Children's Health System is the parent organization of Nicklaus Children's Hospital, South Florida's only licensed specialty hospital exclusively for children.

Headquartered in Miami, Florida, the organization employs over 5,000 people and includes a growing number of locations and services. The organization's vision is to provide the best healthcare possible to children through all stages of health and life, both physically and emotionally.

Marcus Rivera leads the IT department's technology development team and has worked for the organization since 2010. He brings over 24 years of healthcare IT experience to the organization. His focus has been on Microsoft Active Directory, Azure AD, Group Policy, Certificate Services, Windows Platforms, Exchange Server, Microsoft 365, and their respective wrap-around technologies. He has been working closely with Infoblox as a successful and loyal customer since 2008.

THE CHALLENGE

Designing Enterprise-Grade Network Architecture

Nicklaus Children's core networking challenges revolved around a change made to corporate IT strategy in 2009. At that time, the Network Engineering team identified the need to design enterprise-grade network infrastructure from the ground up that would be more resilient to network outages and downtime. The team thus needed to redesign the underlying architecture in order to create a more robust, reliable, and secure environment that would minimize outages and scale for current needs and future growth.

“ DNS is the heartbeat of any corporate network because many different systems depend on it to function. Not having to worry about a DNS system failure is priceless because it not only means 100% uptime but it enables our clinical teams to provide the best patient care experience. Having Infoblox's true and solid solution, one that is highly available, integrated with core network services (DNS/DHCP), and has support for automating workflows, is enormously attractive and key to efficiently and successfully managing any network.”

Marcus Rivera
Team Lead, Domain/Cloud
Services Architect
Nicklaus Children's Health System

Nicklaus Children's entire network was previously dependent on Microsoft Network Infrastructure (Windows Server – DNS, DHCP, and WINS), which originated during the early days of Windows 2000 Server. "Since the inception of Active Directory, Microsoft DNS/DHCP was the easiest option for IT professionals to adopt for several reasons," says Rivera. "First, it's free. Second, IT professionals like me are required to learn the platform as part of their MS certification track.

Naturally, system engineers would likely gravitate to using it in production with confidence after leveraging it in preparation for their exams. However, while inexpensive and easy to set up, Microsoft's implementation of DNS/DHCP was not sufficient for delivering the enterprise-grade network infrastructure that Nicklaus Children's needed.

Infoblox's integrated, centrally-managed approach to delivering enterprise-grade DNS, DHCP, and IPAM supports Nicklaus Children's current, evolving healthcare IT needs, while providing the highest standards for network security, service uptime, and operational efficiencies.

THE SOLUTION

Network Automation in Healthcare IT

Network automation has become an important element for healthcare IT. Exploding administrative costs, expanding patient expectations, and increasing burnout of clinicians have pressured healthcare organizations to accelerate the digital transformation in order to improve the healthcare experience.

Network automation is also a valuable strategy for supporting innovation, improving network performance, minimizing labor and operating costs, and more. Rivera explains, "Folks were initially resistant to adopting change and that forced me to be sort of an evangelist for a more robust IPAM solution. They were originally using an Excel spreadsheet for keeping track of IP addresses and device inventory," he explains further. "Having Infoblox's true and solid solution, one that is highly available, integrated with core network services (DNS/DHCP), and has support for automating workflows, is enormously attractive and key to efficiently and successfully managing any network."

In the beginning, IPAM was just the tip of the iceberg. With the dawn of the merge between Development and Operations (DevOps), automation became a real evolutionary step for the organization. It has allowed Nicklaus Children's to easily integrate siloed environments, leading to greater agility, service delivery performance, and reliability. The automation of these tasks has also helped the healthcare organization minimize costs and lets the Engineering and Operations teams focus on more productive tasks. Adopting Infoblox's NetMRI solution has helped Nicklaus Children's move closer toward this culture.

Customer: Nicklaus Children's Health System
Industry: Healthcare
Location: Miami, Florida

OBJECTIVES:

- Implement more robust, high performing network platform
- Improve resiliency against network outages

RESULTS:

- Reduction in network outages by 99%
- System automation reduced costs and labor
- Gained a single source of truth
- Standardized and documented processes

PRODUCTS:

- NIOS DDI
- NetMRI
- Reporting and Analytics

THE RESULTS

A Seamless Migration that Improves the Customer Experience

Despite facing the additional challenge of convincing different teams of the value of standardization, Nicklaus Children's has since experienced an overall improvement in its day-to-day operations since migrating to Infoblox. The organization underwent a seamless and virtually effortless migration process, executing a swing migration versus a total rip and replace. Working with the Network Engineering team, Nicklaus Children's started with the VLAN migration from Microsoft DHCP Server, followed by DNS zone transfers, zone data imports, and configuration of DNS forwarders. Over a period of a few days, as VLANs were migrated, so were the respective clients. Redirecting Active Directory domain controllers to the new DNS was the next step, and then, after finally eliminating any remaining legacy Windows DNS clients, the migration was complete.

As a result, Nicklaus Children's has significantly improved its overall network performance and reliability. The organization now benefits from minimized risk of network outages while also improving security posture by removing DNS from domain controllers; thereby, reducing the attack surface to Active Directory. "Nicklaus Children's Health System's mission is to inspire hope and to promote lifelong health by providing the best care to every child," Rivera states. "Everyone on the team was nervous about the migration because they knew how it would impact patient care if something were to go awry. Knowing that I don't have to worry about our DNS/DHCP infrastructure or worry about having a complete system outage is priceless. It allows us to focus on providing the best care to our patients and their families."

With the Technology Development team adopting system automation practices, it allowed Nicklaus Children's to move to an improved DevOps culture, enabling the IT department to improve efficiency, productivity, and internal collaboration. This all translates to better patient care.

The complete move to a DevOps culture continued with Nicklaus Children's integration of virtual machines and their deployment process. "Server provisioning is a big deal," Rivera stated. "In the past, it took hours to deploy a server. These days, leveraging virtualization technology and scripting automation processes, my team can spin up a server in minutes. Leveraging the power of Linux and Ansible Tower, Windows PowerShell, and Infoblox grid technology, we are able to automate our server deployments and integrate the solution end to end, including IP address management and DNS host record provisioning. It's a true start to finish solution, all with a few text fields to fill in and a mouse click".

To that end, the team integrated different platforms: Ansible Tower to help with Linux deployments and Microsoft Orchestrator to assist with the Windows platforms. Together, they automate processes across hybrid deployments and build bridges between logical IT services and support, where Infoblox became the single source of truth.

Nicklaus Children's is planning to execute several upcoming projects in the near future. While DNS and DHCP is running strong, Rivera goes on to say that there is always room for improvement. "My mentor has always told me that you can't get too comfortable. If you do, you know it's time to get going" he says. Future projects his team will be working on include implementing Anycast DNS, Reporting and Analytics, integrating with additional security platforms, and expanding the footprint of the Infoblox Grid into the perimeter network. Rivera concludes, "Infoblox is here to stay, at least while I am here, which is why we need to continue to capitalize on our investment."



Infoblox unites networking and security to deliver unmatched performance and protection. Trusted by Fortune 100 companies and emerging innovators, we provide real-time visibility and control over who and what connects to your network, so your organization runs faster and stops threats earlier.

Corporate Headquarters
2390 Mission College Blvd, Ste. 501
Santa Clara, CA 95054

+1.408.986.4000
www.infoblox.com