infoblox®

University of Utah Hospital

Infoblox network infrastructure refresh delivers improved reliability, capacity and best practices

SUMMARY

For ten years in a row, University of Utah Health has ranked in the top ten participating medical centers nationwide including twice as the No. 1 academic medical center, and for the fourth year in a row, in the top five for delivering high-quality, patient-centered outpatient care (source: Vizient Inc.'s Quality and Accountability Studies).

This ongoing commitment to quality requires IT and networking services that are available, reliable and resilient to deliver in-person, urgent care and virtual services so that patients always have the best care possible to meet their health care needs.

Under COVID-19, patient care and administrative loads escalated at the same time that the hospital's aging DNS/DHCP/IPAM (DDI) network approached its end of service life. With five hospitals and a dozen neighborhood health care centers under management, network demands on the existing outdated DDI legacy equipment were high and increasing. In addition, pandemic precautions forced many support workers from onsite to remote work—further taxing the aging infrastructure.

In response and as part of its planned modernization initiative, U of U Health leveraged its six-year relationship with Infoblox to upgrade its DDI system, and implement a new environment to increase capacity and performance to support patient care. As a teaching hospital, however, the medical center's IT team had to perform the upgrade during a highly constrained three-week timeframe over summer break before residents and students returned for the fall term.

> " You can't do the bells and whistles until the basics are done, and things are working well. In spite of all of the demands, we've been even more productive and haven't missed a beat. People are happier when things are working correctly, and it affords us more time for higherlevel tasks like hardening our security, improving traffic management and getting more insights from our reporting."
>
> **Ray Carsey,**
> **Network Manager,**
> **University of Utah Health**

UNIVERSITY OF UTAH
HEALTH CARE

Before the upgrade, Infoblox Professional Services provided a DNS health check to identify outdated and vulnerable assets. They helped streamline processes, implement best practices and deploy the upgrade to ensure high availability and redundancy, and improve overall network performance and efficiency. After the upgrade, even with the increased pandemic demand and remote workers, the network provided the availability and reliability needed to support the quality patient care for which U of U Health is known.

THE CHALLENGE

Steady growth pushes once-stable networking equipment to the Limit

U of U Health operates five hospitals including University Hospital, University Orthopedic Center, University Neuropsychiatric Institute and the new Nielsen Rehabilitation Hospital. In addition, it manages a dozen community clinics for routine care, and numerous centers for specialized treatment for cancer, cardiology, diabetes, fertility, genetics, organ transplant ophthalmology, orthopedics, neurosciences, radiology and over 200 other medical specialties.

The U of U Heath network is managed by 23 engineers and seven students who maintain its mission-critical e-health network services for primary, acute and specialty care. It transitioned to Infoblox in 2014 when network outages from an accumulation of old network and legacy hardware disrupted operations. U of U Health selected Infoblox Trinzic appliances at that time and restored network reliability. However, as time passed, network services grew, traffic expanded and the Trinzics reached the end of their serviceable life. Anycast deployments exceeded the caching limits of the older appliances, technical issues related to service restarts emerged, and network traffic began to be dropped. U of U Health was growing into an increasingly complex network, complicated by geographically distributed locations, primary, emergent and specialty care, educational applications and expanding services. At the same time, COVID-19 introduced new protocols, policies and challenges that placed even greater demands on application availability, reliability, operational efficiency, automated maintenance, trouble-free software upgrades and streamlined application deployments.

Before Upgrade
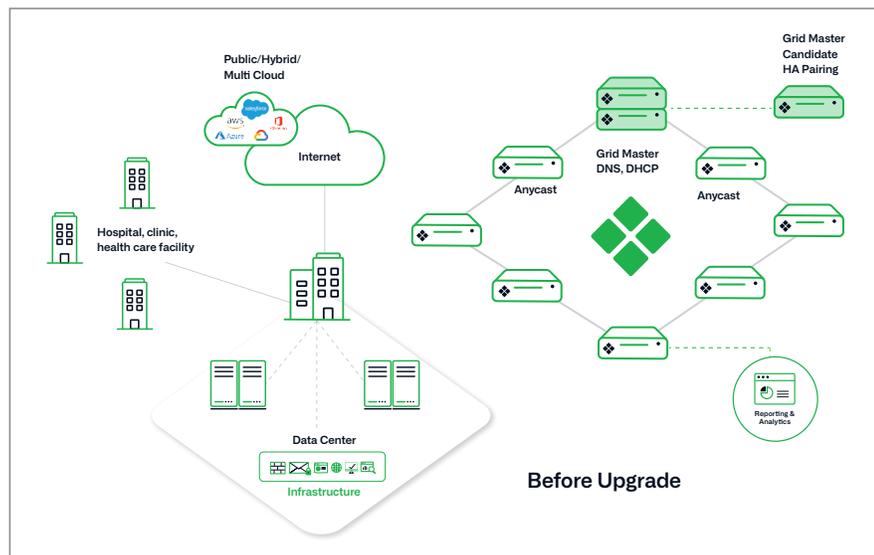
INITIATIVES:

- Utah research and teaching hospital with over 1,400 physicians and 5,000 employees delivering primary care and over 200 specialty health services through five hospitals and a dozen neighborhood health centers

CHALLENGE:

- Modernize outdated DNS/DHCP/IPAM (DDI) network infrastructure

- Boost performance of physical and virtualized infrastructure

- Improve service availability, reliability, redundancy and capacity across a geographically distributed network

SOLUTIONS:

- Infoblox Core DDI

- DNS Health Check

- DNS Traffic Control (DTC) for Global Server Load Balancing

OUTCOMES:

- Modernized infrastructure with better reliability

- High performance internal and external DNS now distributed across data centers and locations

- Modern workforce transition and business continuity from onsite to remote locations without an outage during COVID-19

- Efficient critical infrastructure software upgrades completed without disruptions or outages

## COVID-19 complicates an already-complex situation

The U of U Heath team was pleased with Infoblox's historical reliability and existing architecture, but knew it needed to upgrade to Infoblox's next generation data center solutions to meet capacity, performance and efficiency requirements. At the same time, the team had to redirect its focus toward COVID-19 support as testing tents were set up at clinic locations to respond to community needs, even as classes began. COVID-19 slowed normal supply chain processes, pushing refresh plans late into the summer. By the time the team secured the necessary upgrade approvals, only three weeks remained before students returned for the Fall Semester. Further, the platform refresh would involve onsite upgrades across distributed locations including a disaster recovery facility hundreds of miles away. It was a very demanding, high-pressure situation with high expectations and COVID-impacted lives at stake.

To expedite the upgrade process, U of U Health engaged Infoblox Professional Services to conduct a DNS Health Check assessment of its existing external DNS infrastructure.
The Infoblox team looked for failure points, disaster recovery and resilience, name service architecture, firewall, software and platform configuration, security, DNS change control processes and more. It examined and reported on existing processes for securing, upgrading, backing-up, modifying and monitoring architecture, and provided detailed recommendations for compliance with current DNS architecture best practices.

Network Manager Ray Carsey said, "Performing the Health Check before the upgrade engagement helped to identify the assets that required clean-up and really tightened-up the network. It helped set the stage for deploying best practices to ensure that our essentials were working well." The Health Check and upgrade assistance were invaluable for auditing the existing platform, prioritizing and resolving vulnerabilities, aligning to best practices and expediting the upgrade.
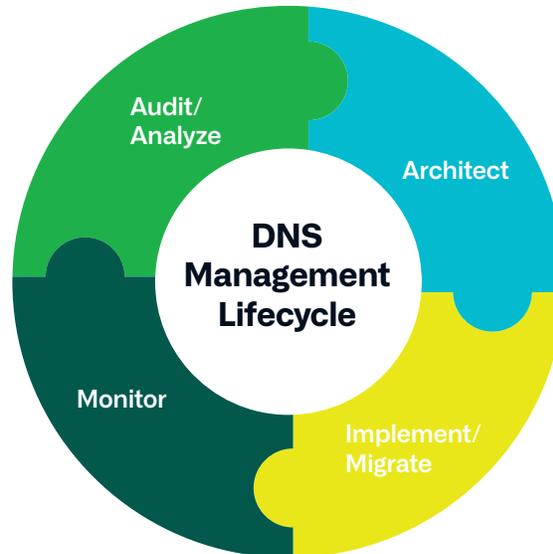
DNS Health Check Methodology

After Upgrade
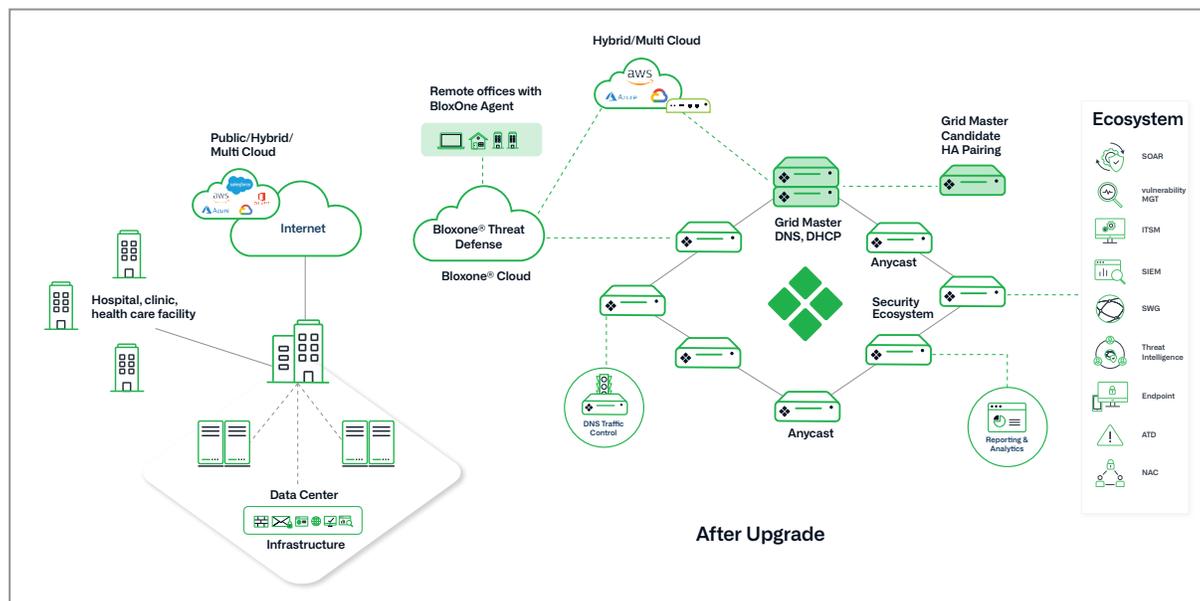
THE SOLUTION

Next level DDI networking infrastructure from Infoblox

U of U Health modernized with Infoblox Trinzic next level physical and virtual appliances supporting internal and external DNS, DHCP on campus with high availability (HA) pairing and redundant failover associations, and higher capacity anycast boxes in multiple locations. The team also upgraded its physical Reporting and Analytics appliance to a virtual, scalable solution for greater network alerting, visibility and predictive modeling. To manage network traffic across their environment, they deployed DNS Traffic Control (DTC) for Global Server Load Balancing—an effective solution to ensure that applications were available and performing to expectations, and new applications were easily deployed and managed. To address its security needs, U of U Health selected and plans to implement BloxOne® Threat Defense including the Security Ecosystem for its FireEye threat detection integration, cybersecurity attack protection and malicious software risk mitigation. Upgrading the network provided local control, reliability, redundancy and streamlined workflows needed to meet patient care and academic objectives.

THE RESULT

A more reliable platform for patient care

The Infoblox network infrastructure upgrade enabled U of U Health to achieve its objectives in continuing a full range of quality health care and academic services to patients, medical students and faculty across the regional health network. It ensured availability and modernized physical infrastructure by improving reliability and redundancy. It delivered highly performing, highly available, locally controllable networks distributed across data centers and locations. As a result, the Infoblox upgrade increased visibility and control, simplified zone management, setup domains for new facilities, delivered efficient critical infrastructure software upgrades without disruptions, improved the security posture and enabled a tomorrow-ready platform for new service and location scalability. Most importantly, it enabled IT staff to deliver a reliable platform for patient care and be able to focus on higher value security and reporting initiatives knowing that core network services were stable and reliable. Carsey said, "You can't do the bells and whistles until the basics are done, and things are working well. In spite of all of the demands, we've been even more productive and haven't missed a beat. People are happier when things are working correctly, and it affords us more time for higher-level tasks like hardening our security, improving traffic management and getting more insights from our reporting."

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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