Methodist Health System Prepares for SaaS-Oriented Future with Hybrid Infoblox Architecture

THE CUSTOMER - METHODIST HEALTH SYSTEM

Methodist Health System was established in 1982 as the first health system in the Nebraska region.

It engages four hospitals, more than 20 health clinic locations, and a nursing and allied health college to deliver world-class and specialty healthcare services to communities throughout Nebraska and southwest Iowa.

Due to increasing demands and rapid technological advancements, the Methodist Health System IT department's existing network hardware was too outdated to keep pace in delivering the best care and service for patients. High availability (HA), redundancy, and failover, along with network performance, are critical to ensuring consistent uptime and responsiveness for clinical, business, and guest networks. When it came time for network modernization, Methodist leveraged the reliability of their 16 year relationship with Infoblox to upgrade DNS, DHCP, and IPAM (DDI) and implement a more flexible and virtualized environment to better manage costs and prepare for an increasingly SaaS-oriented future.

The Methodist team recently upgraded its internal data center infrastructure, virtualized networks for hospital and clinic locations, and established external authoritative DNS for the guest network. This initiative provided a variety of HA and redundancy options for data centers, resiliency at distributed locations, and improved overall network performance. It also enabled them to bring the guest network in house for greater visibility and control rather than relying on higher-cost third-party vendors.

THE CHALLENGE

Improving Service Availability and Reliability

As a not-for-profit healthcare system, Methodist operates four hospitals with over 700 beds within the system, including Methodist Jennie Edmundson Hospital, Methodist Women's Hospital, Methodist Hospital, and Methodist Fremont Health, with another new hospital and multiple clinic construction projects underway.

In addition, Methodist operates two dozen more facilities in rural Nebraska and Iowa, delivering services in family practice, acute care, allergy, behavioral health, cancer care, cardiology, geriatrics, neurology, obstetrics, pediatrics, and rehabilitative care. The Methodist network is managed through a fairly small IT team responsible for keeping mission-critical e-health network services available and performing, especially in emergent and clinical areas where patient lives are at stake.

Methodist has a complex environment, further complicated by geographically distributed locations, primary, acute, and specialty care, and an increasing scale of services delivered to a diverse urban and rural population. To meet these demands, the Methodist team needed to deliver five-nines reliability, operational efficiency, automated maintenance, trouble-free software upgrades, and streamlined application deployments.

With limited staffing levels, hardware end-of-service deadlines, increasing network demands, and rising performance, service, security, compliance, and regulatory requirements, upgrading and virtualizing the environment was the top priority.

Since Infoblox makes hardware lifecycle announcements well in advance, the Methodist team decided to upgrade early and deploy on its own schedule rather than wait and rush at the deadline. The team looked to modernize its network design to include locally-controlled, external authoritative DNS, HA, and resiliency and streamlined software upgrade processes for improved efficiency.

THE SOLUTION
MODERNIZED NETWORK ARCHITECTURE

The Methodist team modernized its network architecture from a completely physical environment to a mostly virtual environment using a combination of Trinzic next-level physical and virtual appliances in several Grids configured with HA pairing and failover associations. The IT team also deployed Advanced DNS Protection (ADP) to protect the external DNS from DDoS and other attacks and NetMRI for network change and configuration management. Upgrading and virtualizing the network enables the local control, reliability, redundancy, and streamlined workflows the team needed to meet its primary objectives.

Furthermore, the Methodist team wanted better control of its external authoritative DNS. Some services were hosted internally, while others, like the web presence, were hosted externally by third-party carriers. However, this arrangement was tedious, inconvenient, and time consuming to administer, especially as marketing activities often required IP changes on hosted servers to support campaigns and communications. This setup required Methodist to schedule vendor DNS changes, resulting in extra work and delays. What's more, carriers were often unable to return certain DNS record type data, making reporting and management more difficult. Methodist

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Customer: **Methodist Health System**
Industry: **Healthcare**
Location: **Omaha, Nebraska**

OBJECTIVES:

- Modernize outdated network hardware

- Achieve better performance with physical and virtualized infrastructure

- Deliver high availability, reliability, redundancy, and scalability

RESULTS:

- Modernized infrastructure with "set and forget" reliability and redundancy

- High performance internal and external guest networks distributed across data centers and locations

- Improved authoritative external DNS service in the cloud

- Easier management and control over third-party vendors

- Efficient critical infrastructure software upgrades completed during normal operating hours without disruption

PRODUCTS:

- NIOS DDI

- NetMRI

- Advanced DNS Protection

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decided to bring the primary external DNS domain into the Infoblox authoritative infrastructure for better local control. Once this decision was made, it was only logical to do the same with all Methodist-owned domains, so they acquired the budget and dedicated additional appliances for external DNS. The new functionality enabled Methodist to log into the Grid, select the desired DNS view, and make the DNS or DHCP change locally when needed and with full control.

The Methodist IT team took its network upgrade a step further. The team did not want to risk an internalnet work outage (e.g., via an Internet circuit or DNS failure) that could take external sites offline. So, they chose to leverage a hosted-DNS provider for secondary zones as backup for all Infoblox authoritative zones. With secondaries setup, IT could make a DNS change in the Infoblox Grid and it would automatically update the secondary provider, resulting in authoritative DNS.

For Internet clients on-premises and in the cloud, both could then be actively authoritative, providing an easy-to-manage process, especially helpful in managing a large number of zones. While adding new zones is infrequent, the team can simply make the change in the hosted provider when required and do the bulk of the work in Infoblox with automatic offsite replication. Further, when upgrades and migrations are planned, the team has local control without being bound to any third-party vendor's schedules.
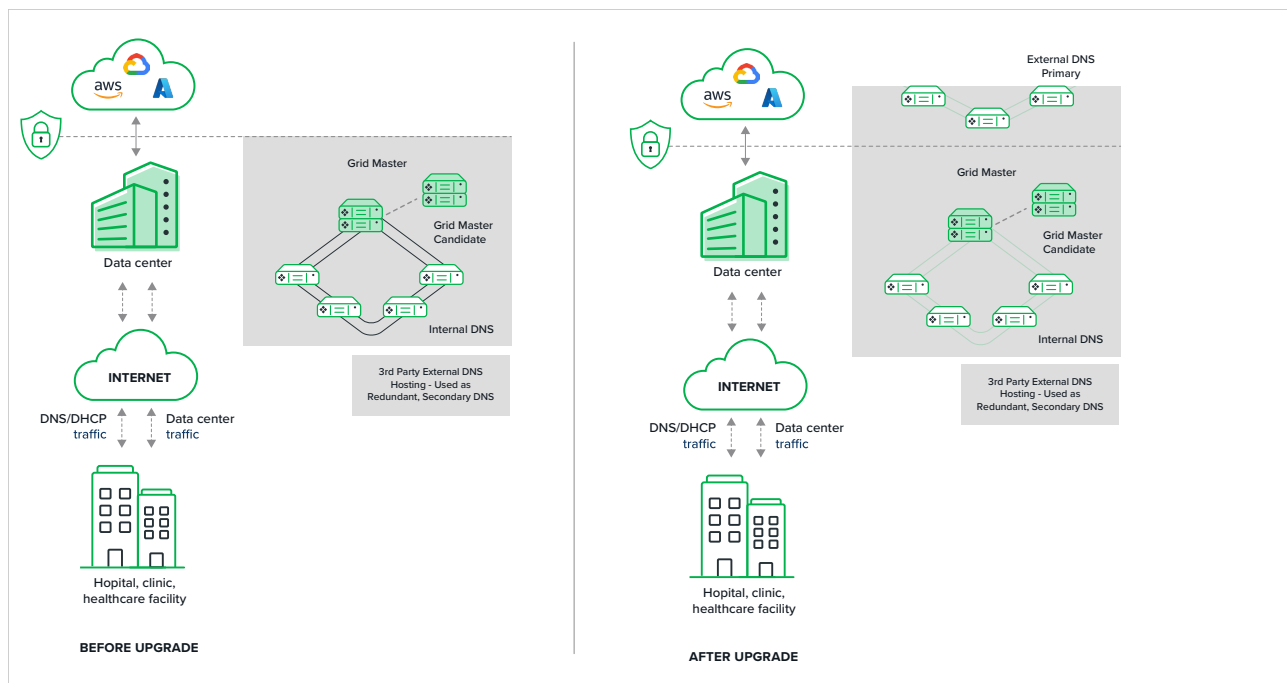
Infrastructure software upgrades are another key impact area. The guest network, for example, is critical, 24/7 infrastructure used by patients at all hours for communications and entertainment, so consistent uptime is essential. Disruptions due to upgrades or outages are simply unacceptable. Fortunately, the Infoblox Grid made it simple with a combination of HA pairs and failover associations, which enabled critical infrastructure upgrades to be scheduled and to run at any time, even during regular daytime hours.

Tim Bertino, Methodist Network Manager states, "Infoblox is just so simple, easy, and reliable. With the combination of HA pairs and failover associations, all we do is schedule the upgrade and sit back and watch it deploy. There are no calls. It doesn't cause an outage. Users don't even know it's happening. It's so convenient to schedule critical infrastructure upgrades at any time of day and just know it will work and not cause an issue—that's astronomical in my opinion. Plus, we can count on doing releases quickly without having to research caveats, how to do it, or go through our change approval board because we don't know what impact it will cause. We can just set it and forget it. We can do it internally without professional services. It's super reliable and just doesn't produce issues, outages, or disruptions.

THE RESULT

A FUTURE-READY PLATFORM

The Infoblox network infrastructure upgrade enabled Methodist to achieve its objectives of delivering diverse, best care services to patients across its regional health network. It continues to choose Infoblox after 16 years and counting to ensure availability and to modernize its physical infrastructure. As a result, Infoblox has made it easier to manage zones, set up domains for new facilities and marketing campaigns, deliver efficient critical infrastructure software upgrades during normal operating hours without disruptions or outages, and enable a future-ready platform for new service and location scalability, SaaS, and network edge expansion in the future.

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.

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