infoblox

CASE STUDY

Improved network performance, visibility and efficiency for Cyngor Gwynedd

A longtime Infoblox customer, Cyngor Gwynedd is the local government administrative body for the principal area of Gwynedd, one of the subdivisions of Wales within the United Kingdom.

In terms of land area, Gwynedd is the second largest in Wales at 2,535 square kilometers. Yet it's also one of the more sparsely settled counties with a population of just over 121,000 citizens, more than half of whom are native speakers of Welsh.

With a small IT team and limited budgetary resources, the emphasis was on organic growth using the equipment and solutions that would get the job done for the best value. As the complexity and scale of the WAN grew exponentially over the years, the team realized that in order to maintain quality of service they would need to streamline network design and boost performance in certain areas. In 2020, the council team embarked on a network refresh that would significantly increase its reliance on Infoblox solutions.

THE CHALLENGE

Ensuring network visibility, performance and efficiency

Among the key objectives of the refresh were to a) better organize DDI processes for smoother operations and b) significantly increase visibility into networking operations, which would enable the team to more effectively secure data traffic, devices and users. Prior to the refresh, the county's network relied on recursive DNS operations at the individual school level provided by local Windows AD servers, with queries for being forwarded to Infoblox at one of two main data centers. DHCP operations were split between "Corporate" networks, served from Infoblox, and local school networks for students running from local equipment.

Customer: *Cyngor Gwynedd*
Industry: *Government / Primary Public Education*
Location: *Gwynedd, Wales, United Kingdom*

INITIATIVES:

- Refresh network infrastructure to update and modernize DNS, DHCP and IPAM (DDI) processes,
- Consolidate onto a single DDI platform and server appliances
- Provide a strong networking foundation for future growth

OUTCOMES:

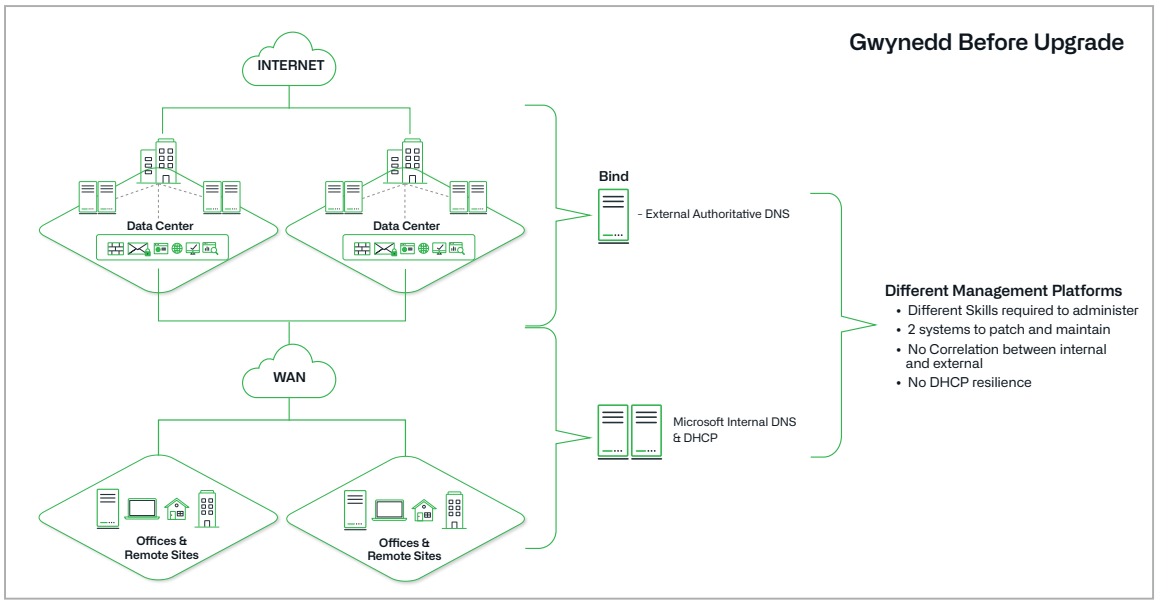
- Consolidated DDI operations through Infoblox NIOS DDI
- Centralized network management on Infoblox Grid platform.
- Many years of excellent, reliable network performance with Infoblox will continue into the years ahead.

SOLUTIONS:

- Infoblox NIOS DDI, Infoblox Grid, Next Level Trinzic appliances, Reporting and Analytics

CYNGOR GWYNEDD COUNCIL

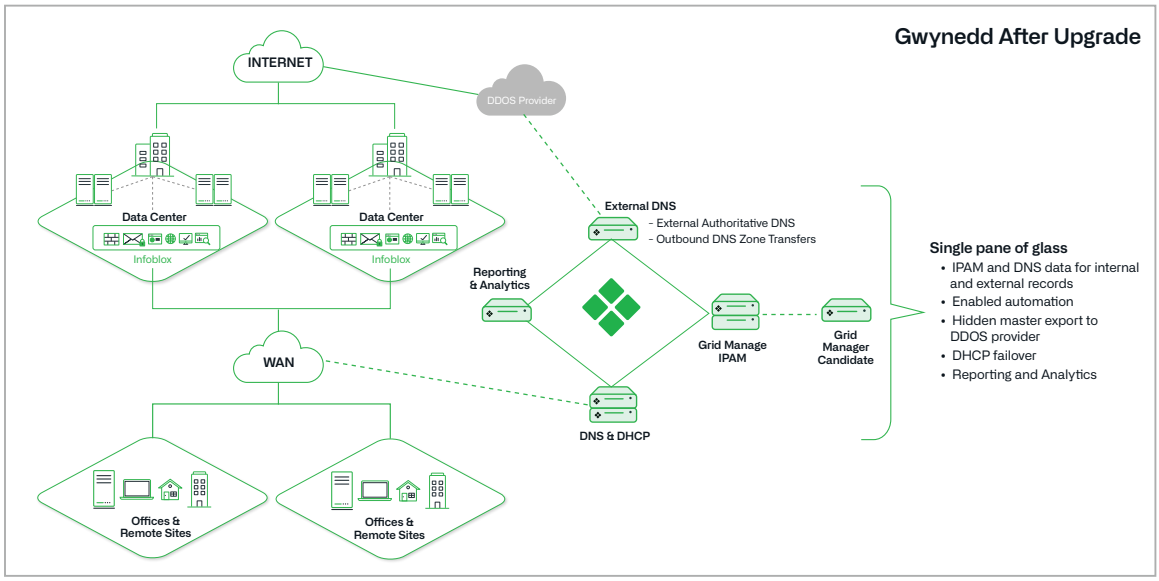
This arrangement was less than ideal because the school-level DNS infrastructure couldn't deliver the level of functionality provided by the Infoblox solution in the data center, the team had limited visibility into IP data at the school level. Switching the entire network over to Infoblox for DHCP and IPAM operations would eliminate that blind spot, while also enabling management from a single user interface with centralized reporting on capacity and usage.



THE SOLUTION

High performance DDI infrastructure from Infoblox

The Cyngor Gwynedd team began to formulate their network refresh plan in May of 2020. The centerpiece of the plan was an enterprise-grade DDI solution from Infoblox featuring Infoblox NIOS DDI, Infoblox Grid, Next Level Trinzic appliances and a Reporting and Analytics module. Over the following months the team solidified their plan, and the refresh got underway in 2021. Now in place, the Infoblox solution provides the Gwynedd team with a centralized, robust, network management system that enables team members to visualize and administer operations from a single pane of glass.



There were several noteworthy design elements that will enable the county to deliver secure, high-performance connectivity to government employees, students, teachers and administrators for many years to come. Taking advantage of the county's existing set up of two data centers, the schools and facilities were divided into two groups, North and South, which would enable DNS and DHCP traffic to be split between servers. Best practice in DDI design dictates that external and internal DNS be managed on separate Grid instances for the purposes of security, and resilience, and so that is how the refresh progressed. At least two public facing DNS servers are required for external DNS provision. The county's internal DNS services are now also split between authoritative and recursive services, which will benefit mitigation efforts were the county to ever experience a DOS attack. DHCP operations now also run its own servers, separated from the DNS services.

The team elected to deploy its refreshed Grid instance as a high availability pair, providing a high level of business continuity in the unlikely instance of an outage. A unified platform for core network services, the Grid delivers the high availability, security and management efficiency that organizations need to flourish in today's hybrid online world. Based on sophisticated distributed database technology, the Grid lets users easily link diverse network appliances into a single, integrated system that's secure, scalable, highly responsive and simple to manage. Effectively, the Grid eliminates single points of failure and enables organizations like Cyngor Gwynedd to achieve continuous uptime. Further, the new Grid deployment would support the team's plan to significantly expand the number of users it can support.

THE RESULTS

Centralized management eliminates need for on-site DDI support

Gwyn Jones, Infrastructure Systems Manager for Cyngor Gwynedd, has worked for the council for over 20 years. He's pleased that the refresh—the bulk of which is complete but will continue in certain aspects for months to come—has been such a success. "Now we're able to provision service right from data center via the Grid interface. There are still a few servers in schools now, but we are decommissioning the majority of them. So, there will be an overall reduction in our server footprint over the next two years."

The new network is currently supporting around 2,700 "corporate" users, as the team refers to government employees, and 17,000 pupils, teachers and administrators in the schools. As Ian Roberts, Technical Lead (Networking) points out, the team expects device management services to grow quickly in the years ahead. "By mid 2023 we expect to have about 13,000 additional devices under managed beyond where we're at currently. We also expect to see growth in our public access network, of which there are currently about 2,500 people connected. It's a big network for us, and it's getting bigger."

Gwyn also points out that Infoblox's new subscription pricing model gives the council team a lot of flexibility in adding to our modifying the refreshed network going forward. "With the subscription model we get continuous access to the latest features, updates and functions as they're released by Infoblox," he explains. "It also eliminates separate software maintenance agreements and end-of-life and support disruptions. We'll be able to easily increase or even decrease capacity as demands change. We appreciate the peace of mind that brings us."

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