Aoyama Gakuin Adopts a Holistic Solution to Network Management

THE CUSTOMER: AOYAMA GAKUIN UNIVERSITY

The educational institution Aoyama Gakuin is a Christian academy founded in 1874.

Including the kindergarten, elementary school, junior and senior high schools, women's junior college, university, graduate school, and professional graduate school, it has a total enrollment of 25,000 students in 23 departments and 9 faculties spread over 2 campuses in Aoyama and Sagamihara. The goal of its founders was to build a university open to society with exemplary values for its students.

THE CHALLENGE

Little Oversight over the Growing Demand for Costly Domains

Before the introduction of Infoblox, Aoyama Gakuin used server-based products for both DNS and DHCP servers in application management. Where DNS is concerned, multiple DNS servers were constructed and run using BIND for the respective external and internal DNS applications as the backbone system in both the Aoyama and Sagamihara campuses. As various faculties requested their own domains, hosting applications were carried out for each domain.

Application management for the DNS server in each faculty was carried out in the information center while server operations were carried out by each faculty. Under such circumstances, the number of DNS servers on the backbone and individual domain systems rose to almost 20 units. Naturally, the higher the number of servers, the higher the operating cost. For example, when applying patches, the process had to be carried out for each server.

For BIND, there was the added issue of faculty not being able to run the application without the necessary IT skills. There were no technical IT staff at the university, and managers didn't know when those experts in the information center were going to be transferred to other departments. A system that can be managed and run easily was thus required in such an environment.

Customer: Aoyama Gakuin University
Industry: Education
Location: Tokyo, Japan

OBJECTIVES:

- Centralize management of DNS and DHCP
- Reduce dependence on expert skill sets
- Eliminate duplication in functions, such as patch application
- decrease operational costs

RESULTS:

- Time- and cost-saving improvements in DNS/DHCP management functions
- Drastic reduction in operational load
- Rapid and accurate patching
- More resilient, stable operations

PRODUCTS:

- NIOS DDI

Where DHCP is concerned, application management had been carried out using Windows servers. However, this required a lot of time and money because there were many failures in application management functions, such as patch application. Aoyama Gakuin was in need of a DHCP system that would allow application management to be carried out easily.
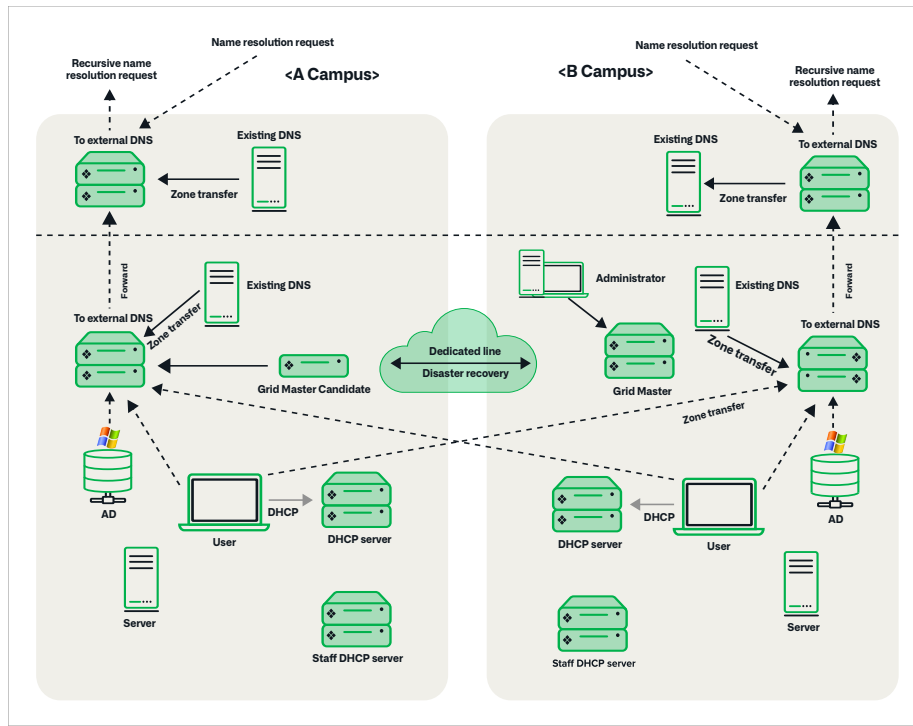
THE SOLUTION
A Reliable, Single-Vendor Network System Managed Centrally

In updating the overall network system, it was crucial to reduce the operating load and number of servers in order to overcome the problems mentioned above.

In this multi-vendor environment using a combination of generic servers and software, there was a possibility of malfunctions occurring due to various reasons. Moreover, in the event of a malfunction, it took a lot of time to identify and remediate the malfunctioning area.

Aoyama Gakuin turned to Infoblox for a solution, introducing Infoblox products in both the Aoyama and Sagamihara campuses. First of all, a grid master was installed using a high-availability (HA) configuration in the Sagamihara campus for the DNS network. Application management for the entire system is carried out from there. A grid master candidate was installed in the Aoyama campus as a backup in the event of a malfunction in the Grid Master.

Infoblox appliances were also installed with an HA configuration as internal and external DNS in both campuses. All backbone and individual domain DNSs are managed using this configuration. Infoblox have been installed in both campuses with an HA configuration as DHCP servers for the research laboratories, public areas, and office network.

DHCP services, together with a wireless LAN and authentication system, are in operation in public areas, such as the lounge, main street, and canteen. In some of the faculty areas, mobile terminals, such as iPhones—which have been distributed to the students—can also be used.

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THE RESULTS

An Integrated Solution for All DNS and DHCP Operations

A significant selling point for NIOS DDI was that the functions related to DNS and DHCP could be provided and the issues could be resolved in an integrated manner since the solution included dedicated DNS/DHCP appliances.

Another big attraction was the ability to drastically reduce the operation load using a single GUI for integrated operation of the overall system by switching from application management of individual BIND-based servers to application management using Infoblox products.

During patching, operating efficiency could also be improved significantly because patches—using patented Infoblox Grid technology—would be automatically applied to all members simply by applying them to the Grid Master. Other major benefits include the fact that services aren't suspended even when applying patches because of HA configuration, and the Aoyama Gakuin now has ability to cut off and revert back to normal operations with a single touch using the Revert function, even if a malfunction occurred while patches were being applied.

NIOS DDI has resolved the issues related to DNS and DHCP. DNS patch application and version upgrades are carried out using Infoblox Grid technology. Operations have become much easier since a patch can be applied to the entire system simply by applying it to the grid master. In addition, management of the overall system can be carried out easily through intuitive GUI operations. For example, changes in settings can be implemented immediately when there are requests to change the DNS records. Staff can also derive an instantaneous understanding of situations in which there are inquiries on the distribution information of IP addresses. And with HA configurations for both DNS and DHCP, services continue even if a malfunction occurs on the active end, by automatically switching to the standby end.

DNS and DHCP are core network services for Aoyama Gakuin, and stable operations are essential. With NIOS DDI in place, the institution is very satisfied that system operations can be maintained at all times without any disruptions and users won't be affected in any way, even when the version of the overall system is being upgraded.

Currently, Aoyama Gakuin is working to enable access to its web server from IPv6 terminals as well. Since there are several restrictions in accessing DNS from IPv6 terminals, the university considering Infoblox to resolve this issue as well.

For more information, please contact your Infoblox representative or visit www.infoblox.com.

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

+1.408.986.4000
www.infoblox.com