Cisco Unified Computing Systems Case Study

So-net Corporation

Cisco UCS used as infrastructure for new service boasting “world’s fastest” speed A balance between limitation of personnel and cost, and highly efficient infrastructure achieved by fully utilizing excellent integrated management

Installation Solution

Cisco Unified Computing System
B Series
Cisco UCS 6248UP
Fabric Interconnect
Cisco Catalyst 3750 Switch
Cisco MDS 9124
Fabric Switch

Issues and cases for review prior to installation

- So-net wanted to reduce the period required for integrating infrastructure with the aim of quickly providing the new “NURO Hikari” service.
- The company wanted to limit personnel and cost by establishing an operating framework enabling responses to be made without going to the data center.
- So-net wanted to expand its options for future business expansion by implementing products that are different to those of conventional server vendors.

Benefits of Installation

- The integration time could be dramatically shortened to two to three weeks including two days of on-site setup work (one week including fault tests) and the preparation period.
- A system for efficient management with few personnel has been realized through the high level of integrated management and the utilization of remote management tools, also limiting the impact on cost.
- We have realized all of the effects we expected before implementation and have obtained solid results.

So-net Corporation, which has provided Internet access services enabling secure use by many users for many years, is working to provide new value by quickly ascertaining changes in the environment and the diversification of users’ values. The “NURO Hikari” service that boats the “world’s fastest” speeds is one such example, and by using the Cisco Unified Computing System as the infrastructure for the service, So-net has been able to achieve numerous goals such as significantly shortening the integration period, limiting the burden of administration, and maintaining high-quality service for customers.

Details of installation

- **Cisco UCS was determined to be optimal for quickly integrating the infrastructure for new services**
- **It is also expected to resolve operational issues such as personnel and cost**

So-net’s NURO Hikari provides download speeds of up to 2Gbps*1, and boasts the “world’s fastest” speed for a commercial FTTH*2. Since the service was launched in April 2013, it has gained attention for its performane and reasonable price. The impressive monochrome promotional materials have also created much interest.

The company chose the Cisco Unified Computing System (Cisco UCS) equipped with Intel® Xeon® processors as the infrastructure for deploying the service. The expected results were obtained, and it is highly regarded within the company.

Masahiro Imabayashi of the Core Network System Department, described the reason for choosing Cisco UCS as follows.

“The integration of the service infrastructure needed to be completed in a short period ahead of the launch of the service and have low running costs. We felt that Cisco UCS was the best system for reliably responding to these requirements.We sympathize with the concept of integrated management of the entire system including the network, and it is a product that we had focused upon since its release. Recently, it has been common for server products from other companies to boast integrated management, but I think the consistency of the concept and the level of actual construction of Cisco UCS are completely different because it utilizes being a latecomer to its advantage. This was the most appealing point for us due to our aim for a short turnaround and low cost.

In the review phase, we also estimated the cost of operation and management after integration, and Cisco UCS was shown to be superior due to the clear difference compared to when implementing other companies’ products. Masanobu Matsubara of the Core Network System Department made the following comment.

Network Infrastructure Division
Core Network Systems Department
Communication System Infrastructure Section
Masahiro Imabayashi

Network Infrastructure Division
Core Network Systems Department
Communication System Infrastructure Section
Masanobu Matsubara

"The integrated management realized with Cisco UCS was expected to have an effect not only when integrating the system, but also in subsequent operation. Cisco's "Wire Once" approach is very appealing and we thought it would provide significant advantages when considering the total system including running costs. One of the objectives from the review phase was not needing to go to the data center each time a problem occurs due to being able to operate the system smoothly with few personnel.
Imabayashi says that when implementing the system, there was a desire to increase the company's options for server systems.
"Normally, unless a particular problem arose with the products of a certain vendor that we had implemented, next time we would often use the products of the same vendor who has established a track record and know-how, but there were concerns that this would result in only one company remaining as an option for servers. There are options in various aspects such as functions, performance and cost, and we felt that it was important to be able to choose the best one according to scale and requirements.This time, Cisco UCS was a perfect match and I think it was the best choice."

*1 The maximum speed provided from the NURO network to the terminating equipment (home gateway) installed in the customer's home.
*2 In the market for commercial FTTH services for home useResearch by Informa Telecom & Media current as of April 2013

Creation Process

- **The work period was dramatically shortened with on-site setup being completed in two days**
- **The high level of integrated management provided by Cisco UCS was felt again**

When another company's blade servers were used in the past, several months were required just for integration.In this implementation of Cisco UCS, the time required was dramatically shortened to around one week including two days for on-site (data center) configuration work and the days required for fault testing. These tasks were all directly carried out by So-net, and all necessary tasks were completed in two to three weeks including preparation. Imabayashi says this was better than expected.
"We did all of the integration work ourselves. When implementing blade servers, we normally ask an integration vendor to do the work, but we decided to it ourselves based on the cost and schedule.The fact that So-net has engineers able to oversee all infrastructure, and the fact that training was received from Cisco in advance to provide a systematic understanding of the Cisco UCS setup process also contributed to the decision. It was a challenging decision, but the results were better than expected. I think Cisco UCS is a product that can be handled to meet engineers' expectations."
Matsubara added that the content of the settings being properly decided upon was also a key point.
"I think another major factor was that we understood how to use the Cisco UCS Manager, which is the integrated management tool for Cisco UCS, and the actual setup procedures through training. Furthermore, actually integrating the system only took around one week because the parameters to be input on site were considered finalized in advance, and these were reflected in the system on the day. I think it took around two to three weeks including the preparation period, as initially estimated, and this was clearly a significant reduction."
Also, very little work needed to be redone when integrating the system, and it went very smoothly, says Matsubara.
"In general, when inputting settings to build a server, I don't think they reflect our design or that work proceeds as planned. In an environment combining numerous products, it is not uncommon for the schedule to be suddenly delayed because a certain port won't connect properly. However, this hardly applied in the setup of Cisco UCS, and I was impressed by how smoothly it went. I felt that this aspect showed the strength of a product that was developed with integrated management in mind from the outset."

Benefits of Installation - Future Developments

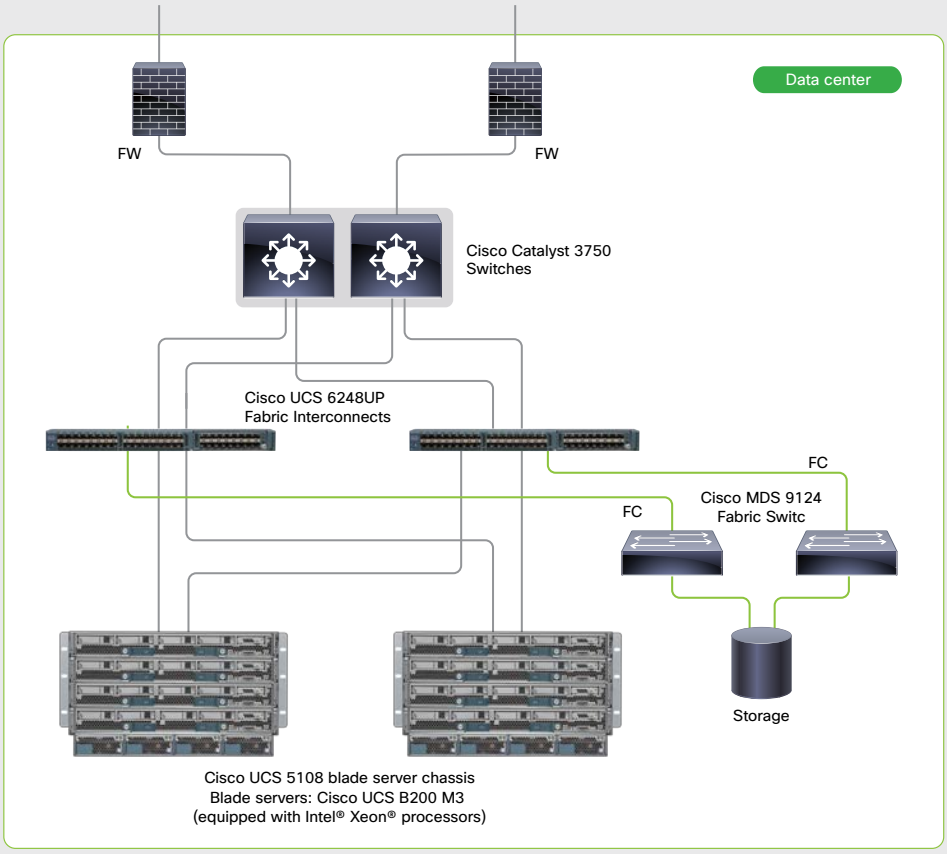
- **High level of satisfaction for expected results from integration to operation**
- **Aiming to enhance resources while utilizing them better as stable infrastructure**

At present all administration of Cisco UCS is handled remotely, and tasks such as the setup of virtual machines are being conducted smoothly. Imabayashi says that there have not been any particular problems that would impede the provision of services, and that extremely stable operation has been achieved.
"The cost and personnel are almost exactly as expected before implementation. In particular, with regard to personnel, there are remote management tools and an environment enabling the use of everything, so we ensure that these are used. We sometimes have a maintenance vendor work in the data center for the replacement of parts, etc., but we basically handle everything remotely. I understand the feeling that there is a greater sense of security in going on site to check when something happens, but using such a system affects the number of personnel and cost required, and we wanted to avoid this because it also leads to increases in the workload of personnel and unseen costs. I think you could say that the realization of such ideal operation is thanks to the high level of manageability of Cisco UCS."
Due to running many virtual machines, an immediate issue is a lack of memory capacity compared to CPU

System Configuration

Cisco
UCS Manager

Remote management



usage. Matsubara says that there are plans to increase this in the future to secure system resources.
"When using virtual machines, there is often a lack of memory. Cisco UCS can carry more memory than a normal blade server, so we plan to expand it in the near future.
The system configuration itself will not change significantly, but there are several issues and concerns that emerge in actual use, so we would like to take steps to reduce the impact once associated with services. We are considering matters such as redundancy and the idea as a design."
Finally, Imabayashi summed up the process from implementation of Cisco UCS to the current situation as follows.
" I feel that Cisco UCS is an extremely good server system not only because of its high level of manageability, but also the ability to reduce the number of physical connecting cables. Another point is the evidence of Cisco's approach centered on integrated management in various areas such as the presence of the fabric interconnect for consolidating the connections between blades (chassis), the network and storage. We are very satisfied that our expectations were met in all aspects including implementation, integration and operation.
In the future, I think how we deal with new issues while maintaining current costs and personnel will become important.
Sufficient infrastructure is required to provide high-quality services to customers at a reasonable cost. There is no doubt that Cisco UCS reliably meets these requiremens and will continue to play an important role in the future."

So-net Corporation

Head office address:
ThinkPark Tower, 2-1-1 Osaki,
Shinagawa-ku, Tokyo

Established:
November 1, 1995

Capital
7,969 million yen (as of March 31, 2013)

Employees
773 (as of March 31, 2013, consolidated)
477 (as of March 31,2013, non-consolidated)

In January the company launched an Internet service under the name "So-net" as the Sony Group's ISP (Internet service provider).
The company actively worked to provide communication services according to its vision of "providing new value" based on the changing times such as changes in the environment for the usage of the Internet and diversification of customers' values. It has 2.26 million broadband users (as of Septemebr 30, 2013).

World's fastest*1 optical fiber service "NURO Hikari"

It provides the fastest speed*1 for a commercial FTTH service for home use, with download speeds up to 2Gbps and upload speeds up to 1Gbps*2 .Wireless LAN and security functions provided as standard.Another point is the simple and reasonable price of 4,980 yen*3 all inclusive of line usage fees and provider fees.

• Maximum download speed of 2Gbps

A variety of Internet services such as downloading large files and streaming high-definition video can be used comfortably. Even when a multiple devices such as televisions, PCs, smartphones, game consoles and tablets are simultaneously connected, rich content can be enjoyed in the home as a combined speed of up to 2Gbps.

• Wireless LAN up to 450Mbps provided as standard

The home gateway (ONU) installed in the customer's home is equipped with wireless LAN functionality (IEEE802.11a/b/g/n, 2.4GHz/5GHz) as standard. Wireless LAN with an effective maximum speed of 450Mbps*4 can also be used. No additional equipment is required.

• Reassuring security service provided as standard

A comprehensive security service including functions such as antivirus and privacy protection is provided as standard. It can be used on up to five devices including PCs (Windows and Mac) and smart devices (Android).

• Simple setup

Use on the PC simply requires a wired connection to the home gateway (ONU) installed in the customer's home. Wireless LAN devices can also be easily connected with the entry of a single key.

• The Internet can be securely used on a high quality line

It utilizes the GPON*5 international standard for optical fiber communication. So-net uses NTT East Japan's optical fiber lines to provide high-quality services end-to-end from the customer7s home to the Internet.

• Available in 7 prefectures

The service is provided for houses and collective housing no more than two floors high in Tokyo, Kanagawa, Chiba, Saitama, Gunma, Tochigi and Ibaraki.

*1 This is the world's fastest speed in the commercial FTTH service market for home use.
(Research by Informa Telecom & Media current as of April 2013)
*2 The communication speed is the maximum speed provided from the NURO network to the terminating equipment (home gateway) installed in the customer's home. The effective speed when using the Internet may vary depending on the customer's usage environment and the state of congestion of the line.
*3 The price displayed is the monthly fee (excluding tax) for the "NURO Hikari G2 V" course.
- An additional administrative fee of 840 yen, and basic setup charge of 31,500 (1,050 yen per month over 30 months) are also required.
- "NURO Hikari G2 V" is available on the condition of signing up for a two-year contract. The contract is automatically renewed every two years. Cancellation during the contract period requires a cancellation fee of 9,975 yen.
*4 This is the maximum value based on technical specifications, and does not indicate the speed of actual use.
*5 GPON (Gigabit capable passive optical network)
A transfer standard for optical fiber standardized by ITU-T.

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at **www.cisco.com/go/offices**.

0942-1312-01A-F 03/14