System Integrator Simplifies and Automates Data Center Infrastructure

Executive Summary

- **Customer Name:** NEC Networks & System Integration Corporation
- **Industry:** System integrator
- **Location:** Tokyo, Japan
- **Number of Employees:** 7,100

Challenge

- Unify infrastructure management for both virtual and physical environments
- Reduce time and labor involved with deploying infrastructure
- Improve cost-efficiency of cloud services and solutions

Solution

- Implemented UCS Director to automate provisioning while maintaining high quality governance
- Deployed Cisco UCS B-Series Servers to reduce cabling and simplify infrastructure

Results

- Delivered unified provisioning and management to support cloud environment with UCS Director
- Automated provisioning to reduce server deployment time by 50% and deliver cost savings in labor and time
- Enabled existing staff to manage more workloads and projects

NESIC uses Cisco UCS B-Series Servers and Cisco UCS Director to transform how it manages and delivers cloud services.

Challenge

NEC Networks & System Integration Corporation (NESIC) is a large-scale network and system integrator for the NEC Group. With more than 7,000 employees, the company is listed in the First Section of the Tokyo Stock Exchange. NESIC works with corporations, telecommunication providers, government offices, and social infrastructure organizations to provide a wide variety of services, including implementation, maintenance, and operation of ICT infrastructure, office solutions, and security solutions.

Since 2009, NESIC has offered cloud services to customers, and cloud services quickly became one of the company's most important lines of businesses. In addition to hosting applications on the cloud, the company offers infrastructure-as-a-service through "S-iDC Cloud Hosting Service," desktop-as-a-service through "Thin Client Service STclient," and email services. NESIC also offers procurement, implementation, and management of servers and other ICT infrastructure.

As part of the company's business strategy, each service is owned by a separate business unit, but as cloud services have grown, the cost of deploying infrastructure to support these cloud services was becoming a burden. The company needed a way to reduce labor costs while meeting the changing demands of their business in a more flexible manner.

The company realized that in order to continue growing its business, it needed to unify management of ICT infrastructure for its numerous cloud services. NESIC decided to implement an internal cloud service as well as automate their infrastructure operations and management.
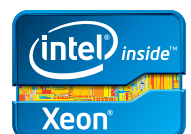
Utilizing Cisco Unified Computing System (UCS) B-Series Blade Servers with Intel Xeon processors, the company was able to create a dynamic infrastructure, managed by Cisco UCS Director, as the infrastructure foundation to support their cloud environment.

Solution

Streamlined implementation and management processes

Hiroshi Matsuda, head of the cloud architecture department, new solutions division, and enterprise solutions operations unit, oversaw deploying and managing the shared infrastructure. Matsuda deployed Cisco UCS B-Series Blade Servers because they are designed for large-scale virtualization—a feature that set the servers apart from the competition. When combined with Cisco UCS Director, the company was able to dramatically shorten the time to deploy and manage new large-scale environments.

Unlike traditional blade servers, the Cisco UCS B-Series Servers significantly streamline server management as well as energy consumption. NESIC had not used blade servers in the past because of their tendency to increase the number of Ethernet and fibre channel switches required for each blade server chassis. According to Matsuda, Cisco UCS B-Series Blade Servers do not require any additional switches but rather utilize a fiber interconnect for the Ethernet and fibre channel connections which greatly increases efficiency while lowering the workload on server teams.

NESIC also deployed the Cisco UCS B-Series Servers for their unique service profiles. Normally, IT staff would perform unique settings on each server to identify the hardware and enable staff to manage and operate multiple servers from a single location. With the combination of Cisco UCS Director and UCS Manager, NESIC is able to manage all servers, and their fibre interconnects, from a single pane of glass—greatly reducing management complexity.

"For example, if we need to add eight servers to the system, normally we would need to upgrade the firmware and set the BIOS settings for each individual server," says Matsuda. "To connect to the SAN storage through fibre channel, we needed to check the World Wide Name (WWN) of the host bus adapter (HBA) before setting the fibre channel settings. Deploying a server could be a complex and time-consuming process with lots of room for error."

"On the other hand, with Cisco UCS B-Series Blade Servers, we can create service profiles before we even receive the physical servers," says Matsuda. "We simply run the service profiles once the equipment has arrived, and the servers are immediately ready for installation."

Working with Cisco UCS service profiles and UCS Director, NESIC has reduced the time needed to deploy servers by 50%. Since equipment can be deployed quickly and when it is needed, the company doesn't need to purchase and install equipment to meet future demands. As a result, the company can reduce costs and idle servers.

The network connection between each server chassis and the fabric interconnect achieves Ethernet speeds of at least 10 Gbs, with two lines used for redundancy. Since the fabric interconnect uses Fibre Channel over Ethernet (FCoE) for fibre channel connections, the IP network, fibre channel, and NFS can all pass through a single cable. Furthermore, by distributing the 10 Gbps bandwidth logically and partitioning the bandwidth, NESIC can identify issues in the virtual environment more easily and achieve stable operations even within a complex network environment.

Unified Infrastructure Management

The addition of Cisco UCS Director to NESIC's solution has also provided end-to-end infrastructure automation and management across compute, network, storage and hypervisor layers. Utilizing the task library which is available out of the box with UCS Director, NESIC can automate all the steps needed to provision and configure the storage and network VLAN settings across their virtual and physical environment.

Before Cisco UCS Director, the infrastructure teams were required to follow a strict, manual set of processes that included review and verification steps. With different teams overseeing this process, NESIC found this to be a time consuming and laborious process. Cisco UCS Director allows the NESIC teams to include approval steps as part of the workflows which eliminates these time-consuming processes, resulting in flexibility and agility for their data center infrastructure teams while maintaining a high level of governance.

"The effects of Cisco UCS Director have been enormous. Teams spend half as much time deploying environments from the cloud architecture department, new solutions promotion department, and enterprise solutions operations unit," says Matsuda. "NESIC looked at other options for automated management tools for virtual environments, but only Cisco UCS Director could manage both virtual and physical environments."

Lastly, UCS Director's infrastructure portal designed for IT operations and administrators allows the infrastructure team to provision their own environments needed for specific projects. These data center teams now have the ability to manage complete lifecycle operations, including provisioning and de-provisioning resources, instead of needing to issue a trouble ticket or perform the activity manually.

Results

Using Cisco's products and solutions, NESIC's data center team can single-handedly provide the required infrastructure services within minutes allowing their cloud teams to focus on developing new services and innovative projects. With Cisco UCS Director, NESIC is expected to reduce overall operations costs that can fund new cloud services.

"There are many costs associated with cloud services—including hardware, rack, and power—but labor expenses always accounted for a large portion of the costs," says Matsuda. "With Cisco solutions, we should be able to expand into large-scale services and develop new products much more easily without increasing staff."

Next Steps

"After experiencing the Cisco UCS B-Series Blade Servers for ourselves, we realized what an incredible product it is," says Matsuda. "In the future, we plan to use the skills gained constructing our internal cloud environment to expand our business as system integrators with Cisco." By introducing more people to the Cisco UCS B-Series Blade Servers, NESIC plans to continue evolving its ICT infrastructure and business methods into the cloud age.

Product List

Data Center Solutions

- Cisco Unified Computing System (UCS)
- Cisco UCS B-Series Blade Switches
- Cisco UCS Director
- Cisco UCS Manager

For More Information

To find out more about Cisco Unified Data Center, please visit:
www.cisco.com/go/unifieddatacenter.
To learn more about Cisco UCS Director, please visit: www.cisco.com/go/ucsdirector.

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