Provider Tailors Cloud Services to Customers' Applications

ITOCHU Techno-Solutions Corporation (CTC) implements end-to-end Fibre Channel over Ethernet (FCoE) fabric to support next-generation cloud services.

EXECUTIVE SUMMARY

ITOCHU TECHNO-SOLUTIONS CORPORATION (CTC)

BUSINESS CHALLENGE

- Deliver high-performance, easy-to-manage cloud services to businesses
- Help ensure data center scalability for the future
- Implement disaster recovery and load balancing between two identical data centers

NETWORK SOLUTION

- Cisco Unified Computing System
- Cisco Nexus 7000 Series Switches with FCoE
- Cisco UCS Manager

BUSINESS RESULTS

- Delivers services from one architecture with a single team
- Gained agility to tailor cloud services and resources specifically to multiple customers
- Gained power and scalability to support any customer application

Business Challenge

ITOCHU Techno-Solutions Corporation (CTC) provides a wide range of computer, network, IT, and systems integration services for business customers in Japan. The company's Cloud Platform Group recently launched its innovative ElasticCUVIC shared private cloud service, which helps customers reduce infrastructure cost and management complexity through predesigned, prebuilt, and pretested cloud offerings.

ElasticCUVIC offers standard IT resources and unique operational capabilities. Customers can choose combinations of storage, backup, disaster recovery, servers, and cluster services to meet their specific needs. In addition, ElasticCUVIC provides a number of operational features. The service can implement web, application, database, and operating systems for customers; it can provide operational capabilities, including job management, monitoring, and antivirus features; and it can provide network operations such as firewall, load balancing, and intrusion detection and prevention services.

ElasticCUVIC is delivered from five data centers across Japan. In the past, CTC had implemented Ethernet connections between its data networks and storage area networks (SANs). However, as application demands increased and customers increasingly needed more powerful compute capabilities and higher application performance, CTC built its two newest data centers in Yokohama and Kobe with ultra-high performance and flexibility in mind.

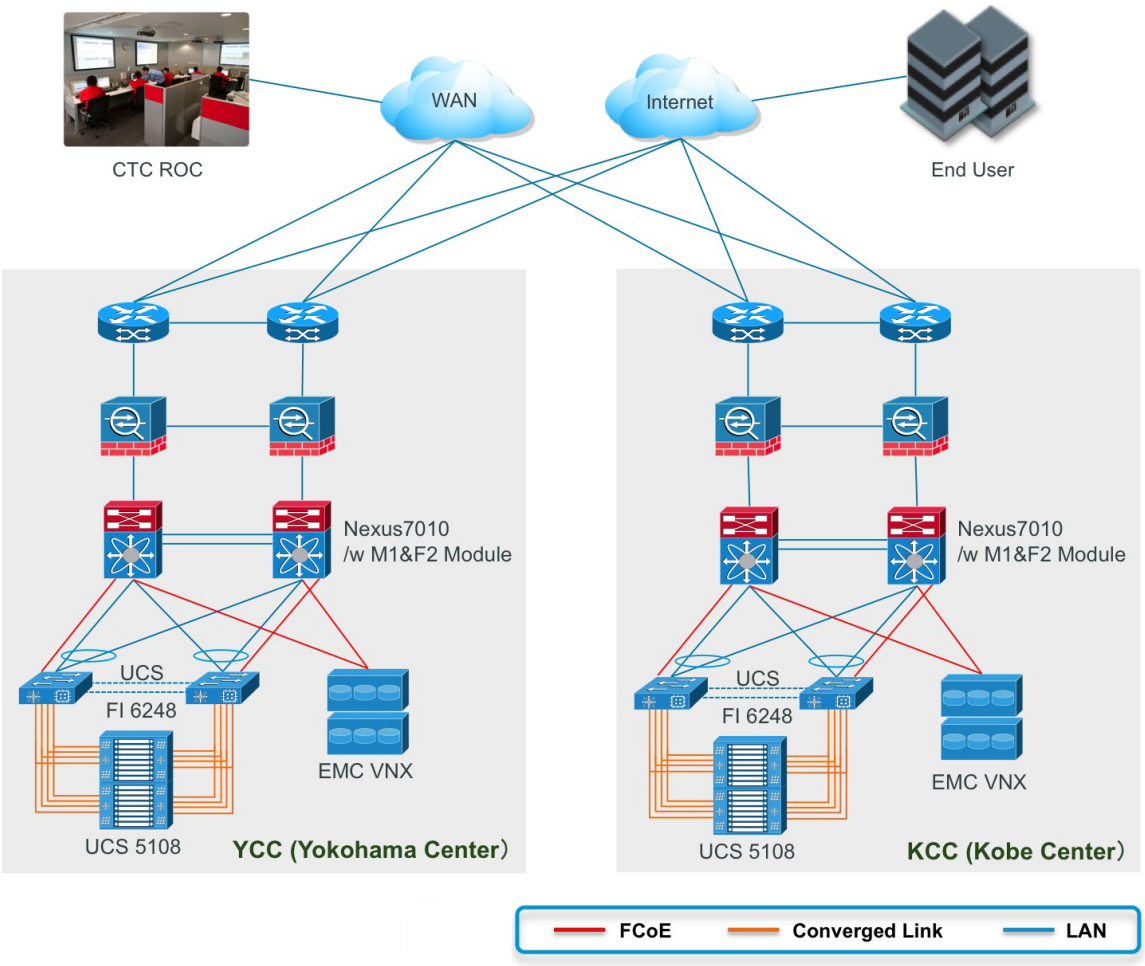
The two data centers are connected to each other, and CTC wanted to implement disaster recovery and load-balancing capabilities between them. With large numbers of virtual machines (VMs), CTC wanted to simplify its data center architecture and IT management while optimizing scalability. The company evaluated several storage networking solutions and turned to Cisco for Fibre Channel over Ethernet (FCoE) solutions, which greatly simplify the infrastructure and management.

Network Solution

CTC implemented an end-to-end FCoE architecture (Figure 1) using Cisco Nexus® 7000 Series Switches, Cisco Unified Computing System™ (Cisco UCS®) servers, and FCoE connections between the switches, servers, and EMC FCoE storage arrays.

“We chose Cisco Nexus 7000 Series Switches and the Cisco Nexus 7000 F2e-Series Fiber Module because they offer maximum flexibility for delivering converged services,” says Mr. Nagaki Fujioka, executive officer general manager, CTC Cloud Service Marketing and Development Division. “We anticipate rapid growth as customers increasingly migrate applications to the cloud, and we are prepared to deliver whatever they will need.”

Figure 1. CTC Data Center End-to-End FCoE Architecture



Cisco Nexus 7000 Series Switches offer the most comprehensive set of data center features in a single platform. The Cisco Nexus design integrates hardware, Cisco® NX-OS Software features, and management to support mission-critical environments. These switches are designed to handle virtualization, high density, and high performance with efficient power and cooling. For example, a Cisco Nexus 7000 18-slot switch fully populated with the Cisco Nexus 7000 F2e-Series Fiber Module can deliver up to 11.5 billion packets per second and 15.4 terabits per second of switching performance, with a typical power consumption of about 7.5 watts per port. The virtual device context (VDC) feature on the Cisco Nexus 7000 enables the switch to be virtualized at the device level. Each configured VDC operates as a separate logical entity in the switch, enabling administrators to logically split the switch and maintain management and fault isolation between LAN and SAN.

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> **– Mr. Nagaki Fujioka, Executive Officer General Manager, Cloud Service Marketing and Development Division, Cloud Platform Group**

Cisco UCS 6248 Series Fabric Interconnects connect the Cisco Nexus switches to Cisco UCS B200 M3 blade servers. Cisco UCS B200 Blade Servers are based on the Intel® Xeon® Processor E5-2600 family for maximum performance and efficiency while supporting the broadest set of workloads. Cisco UCS Manager software provides unified, policy-based embedded management of all hardware and software in the Cisco UCS systems to help reduce management and administration expenses. Service templates and profiles automate many functions to increase data center agility. The Cisco Nexus switches and Cisco UCS blade servers are linked by FCoE connections, which also connect them to EMC VNX storage resources.

The Yokohama and Kobe data centers are connected using Cisco Overlay Transport Virtualization (OTV) technology. Cisco OTV provides transparent Layer 2 connectivity across locations without regard to the type of transport used. Cisco OTV technology offers multihome and multipath connections to preserve fault isolation between data centers and help ensure nonstop application availability with flexible workload mobility.

Business Results

“The new converged infrastructure provides us with a single architecture that is supported by one team,” says Mr. Tomoyuki Higashi, assistant to general manager for the Cloud Service Marketing and Development Division. “It will support anything that customers want to host, both today and tomorrow, and allow us to differentiate our services for improving our competitive advantage.”

With the converged FCoE architecture, CTC expects to gain great flexibility in provisioning services that meet customers’ specific needs. The Cisco UCS blade server service profiles automate administration and accelerate provisioning. Customers can choose the grade of service that they need based on their reliability and availability requirements, instead of paying for a specific number of servers or computing cycles. Whether a customer needs a basic testing and development environment, a production environment, or mission-critical systems, the correct resources and operational capabilities are delivered. As a result, customers can reduce their IT workloads by as much as 50 percent.

PRODUCT LIST

- Cisco Nexus 7000 Series Switches
- Cisco UCS 6000 Series Fabric Interconnects
- Cisco Unified Computing System
- Cisco UCS Manager

In addition to the menu of core services, CTC offers a range of options that can be quickly provisioned through the intelligent, converged FCoE fabric. Customers can obtain operating system licenses, proof-of-concept environments, access features, additional security capabilities, application management, and professional technical services. By using ElasticCUVIC, customers can reduce their hardware costs through virtualization, right-size their infrastructures, and reinvest engineering resources in innovation instead of daily IT management. CTC expects adoption of cloud services to accelerate rapidly and is confident in its ability to handle the growth.

Next Steps

CTC is already planning to implement additional automated features in its new infrastructure and is looking ahead to programmable network capabilities. For now, though, ElasticCUVIC is enabling CTC customers to gain time and cost savings that were previously almost impossible to imagine.

For More Information

To find out more about Cisco Unified Computing, visit www.cisco.com/go/ucs.

To find out more about Cisco Nexus Series Switches, visit www.cisco.com/go/nexus.

To learn more about CTC, visit www.ctc-g.co.jp/en/.

This customer story is based on information provided by ITOCHU Techno-Solutions Corporation (CTC) and describes how that particular organization benefits from the deployment of Cisco products. Many factors might have contributed to the results and benefits described; Cisco does not guarantee comparable results elsewhere.

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