

# Municipal Government Extends High-Performance Cloud Services to Agency Clients

Customer Case Study



The Xiamen Municipal Government chooses Cisco converged Fibre Channel over Ethernet (FCoE) solutions to improve storage performance, scalability, and manageability.

## EXECUTIVE SUMMARY

### Customer Name:

Xiamen Municipal Government

**Location:** Xiamen, People's Republic of China

### Business Challenge:

- Extend cloud services cost-effectively
- Cope with rapidly growing storage switching demands
- Simplify infrastructure to reduce operational costs

### Network Solution:

- Cisco Nexus 7000, 5000, and 2000 Series Switches
- Cisco UCS B-Series Blade Servers
- Cisco UCS 6200 Series Fabric Interconnects

### Business Results:

- Extended cloud services with high performance and scalability
- Reduced capital costs with converged FCoE network and unified storage fabric
- Achieved high reliability and stability with simpler operations

## Business Challenge

Xiamen is a port city on China's southeast coast, across a strait from Taiwan. It encompasses two main islands and a region on the mainland. The Xiamen Municipal Government offers cloud-based infrastructure as a service (IaaS) to municipal agencies and departments through its government affairs cloud.

The government affairs cloud is delivered from three data centers, which house a Cisco® network, multiple types of SANs, Cisco and other types of SAN switches, and VMware virtualization platforms. Xiamen Municipal Government currently operates IP SANs, Fibre Channel SANs, and FCoE SANs, which support 1000 terabytes of data—and growing. In spite of heavy server virtualization, rapid growth is straining the department's lean IT team. Fewer than 10 staff members operate, maintain, and deliver outsourced services to the government's internal clients. As storage volumes grow and government applications demand ever-increasing performance, the team needed to find a way to continue delivering application high performance, enable scalability, and help ensure interoperability and manageability.

"We decided that Fibre Channel over Ethernet offered the best solution for increasing performance while simplifying the infrastructure and operations," said Mr. Fang, senior engineer for the Xiamen Municipal Government. "After researching offerings from multiple vendors, we chose Cisco FCoE solutions for their low total cost of ownership and minimal operations requirements."

## Network Solution

The Xiamen Municipal Government IT team built the new end-to-end FCoE infrastructure on its existing Cisco network and storage environment. Multiple sets of blade storage, a new FCoE SAN storage environment, existing IP storage, and Cisco UCS® B-Series Blade Servers are uplinked to redundant Cisco Nexus® 5000 Series Switches.



“The Cisco end-to-end FCoE solution was easy to deploy and is simpler to operate. We completed the system deployment in less than four hours and now, three years later, it operates with a high level of reliability and stability.”

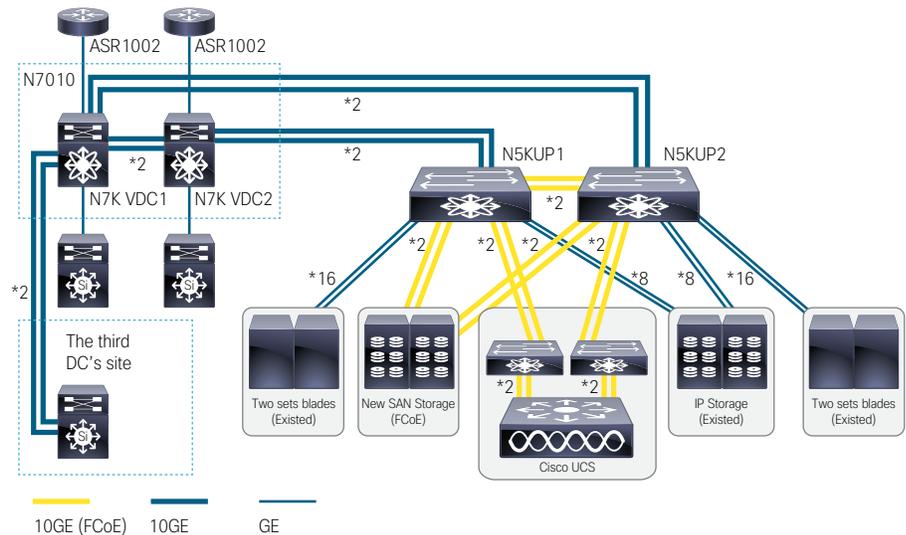
Mr. Fang  
Senior Engineer, Xiamen Municipal Government

Cisco UCS servers are connected in a fabric through Cisco UCS 6200 Series Fabric Interconnects, which provide network connectivity and management capabilities between Cisco UCS B-Series Blade Servers and 5100 Series Blade Server Chassis. The fabric offers bandwidth up to 960 Gbps with high port density—up to 48 ports in one rack unit—to save space and simplify infrastructure. The Cisco UCS servers and chassis connect to redundant Cisco Nexus 2000 Series Switches over dual 10 Gigabit Ethernet FCoE links, before being uplinked to Cisco Nexus 5000 Series Switches.

The new EMC SAN storage arrays also connect to the Cisco Nexus 5000 Series Switches using dual 10 Gigabit Ethernet FCoE links. Blade storage systems connect through redundant 16-Gbps Ethernet links, and the IP storage connects through redundant 8-Gbps Ethernet links.

Traffic from the storage environment is switched to redundant Cisco Nexus 7000 Series Switches in the data center network over dual 10 Gigabit Ethernet connections. See Figure 1 for the complete converged FCoE network diagram.

Figure 1. Xiamen Municipal Government Converged FCoE Storage Environment.



The new converged infrastructure with Cisco fabric interconnects enables east-west traffic to be switched as quickly and efficiently as north-south traffic and provides interface flexibility between Fibre Channel, FCoE, and IP. The storage environment also supports more than 200 virtual machines. Today, the converged network supports an equal amount of LAN and SAN traffic.

### Business Results

Xiamen Municipal Government now has tremendous flexibility in the storage systems it chooses and in its deployment options. Standards-based systems enabled tight integration between existing Cisco Nexus switches and existing storage environments in the cloud computing environment. Cisco fabric interconnects also simplify the data center architecture for easier management, high scalability, and superb performance with fewer network interface cards, host bus adapters, switches, and cables—reducing TCO.

## PRODUCT LIST

- Cisco Nexus 7000, 5000, and 2000 Series Switches
- Cisco UCS B-Series Blade Servers
- Cisco UCS 6200 Series Fabric Interconnects

Unified ports provided design flexibility, enabling the IT team to easily connect switches and storage systems while eliminating protocol-specific bandwidth constraints to reduce switching infrastructure costs.

“The Cisco end-to-end FCoE solution was easy to deploy and is simpler to operate,” said Mr. Fang. “We completed the system deployment in less than four hours and now, three years later, it operates with a high level of reliability and stability.”

The new infrastructure also enables the IT team to deliver high-performance services to its agency and department clients. With little or no budget for servers and other infrastructure, government departments can receive the cloud-based resources that they need easily and cost-effectively. The cloud infrastructure also allows the IT team to extend its resources efficiently.

“It is now much easier to extend cloud-based computing, networking, and storage to our clients,” said Mr. Fang. “We trust Cisco to provide highly reliable, flexible high-performance solutions and they do. Together, we solved the challenge of delivering cloud IT resources and our clients benefit from solid, cost-effective IT resources to complete their work.”

### For More Information

To find out more about Cisco Nexus Series Switches, visit <http://www.cisco.com/en/US/products/ps5990/index.html>.

To find out more about Cisco UCS blade servers, visit <http://www.cisco.com/c/en/us/products/servers-unified-computing/ucs-b-series-blade-servers/index.html>.

For more information about Xiamen Municipal Government, visit <http://english.xm.gov.cn>.

This customer story is based on information provided by Xiamen Municipal Government and describes how that particular organization benefits from the deployment of Cisco products. Many factors may have contributed to the results and benefits described; Cisco does not guarantee comparable results elsewhere.

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