Government IT Group Aligns SAN with Growth

Customer Case Study

Madhya Pradesh needed to make sure that its SAN could grow without limitations and without compromising service quality.

EXECUTIVE SUMMARY

Customer Name:
Madhya Pradesh State Electronics Development Corporation Ltd.

Location: Bhopoal, State of Madhya Pradesh, India

Employees: 60

Business Challenge:

- Increase SAN performance
- Support QoS and other advanced characteristics across a massive SAN and multiple vendor operating systems
- Simplify everything—management, scaling up, and eventual cloud services deployment

Network Solution:

- Cisco MDS 9710 Multilayer Director
- Cisco Prime Data Center Network Manager

Business Results:

- Obtained full line-rate 16 Gbps performance
- Increased redundancy for 24-hour availability
- Simplified SAN management through built-in switch intelligence

Business Challenge

In one of India's largest states, 6000 government entities across 53 departments need storage capacity. That means thousands of network connections ultimately deliver traffic to the Madhya Pradesh data center SAN. And once traffic arrives, things get interesting.

Today, the data center SAN houses 120 TB of storage. Based on projected growth, soon it will need to support 500 TB. The Madhya Pradesh data center SAN is also operationally complex. It supports both co-located and co-hosted server farms, and an upcoming cloud initiative will require at least one dedicated cloud server cluster. Because traffic comes from hundreds of applications with specialized requirements, the right traffic has to be directed to the right server based on application, Quality of Service (QoS), priority, and other attributes. A disaster recovery site also is located 700 kilometers from the main data center, so backup data must be transported there.

"We're also consolidating multiple public-facing portals into one so that citizens can access government services from a single place," says Rajesh Banbah, IT head at Madhya Pradesh State Electronics Development Corporation (MPSEDC). "This demands even more server resources, and therefore, more SAN switching capacity."

The data center SAN originally implemented two Cisco® MDS 9148 Multilayer Fabric switches, but they were no longer enough to accommodate rapid growth. MPSEDC now needed director-class switches that could consolidate more servers into each switch for easier management. New switches also had to offer 16 Gbps Fibre Channel and Fibre Channel over Ethernet (FCoE) interfaces in the same chassis so that the team wasn't limited by interface availability when they needed to add servers. Also, the team also wanted a single management window to simplify customization and troubleshooting.

"We had expected to use 120 TB of storage capacity in three years and we used it in one year. Now with the Cisco MDS 9710, we can evaluate storage needs every six months and scale in baby steps with pay-as-we-grow simplicity."

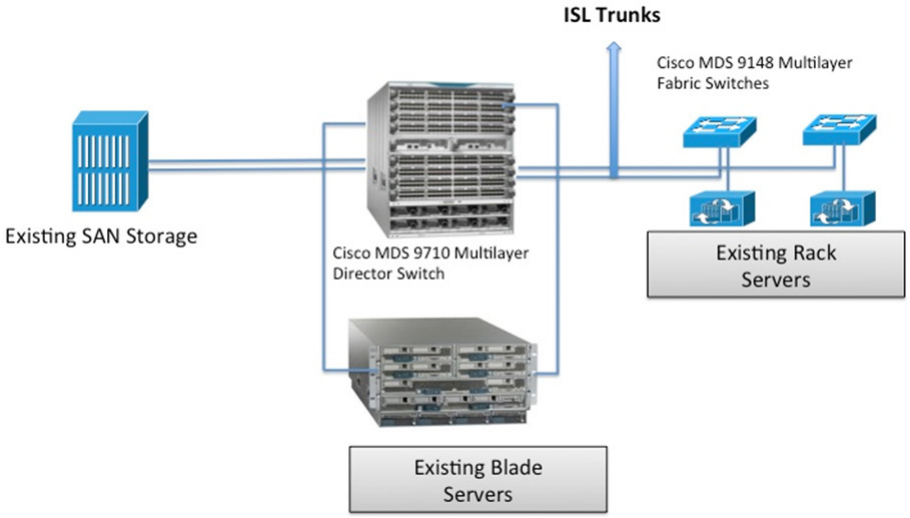
Rajesh Banbah
IT Head for Madhya Pradesh

Network Solution

Based on its experience with the Cisco MDS 9148 switches, the data center team chose the Cisco MDS 9710 Multilayer Director Switch. It brings high performance and intelligent network services to a high-availability, protocol-independent switch fabric. With the Cisco MDS 9710, MPSEDC can deploy Fibre Channel, FCoE, and even IBM Fibre Connectivity (FICON) from a single chassis while meeting the stringent requirements of a large storage environment.

The Cisco MDS 9710 Multilayer Director switch replaces the two Cisco MDS 9148 Multilayer Fabric Switches, which are now used for backup, as shown in Figure 1. MPSEDC has implemented N-Port ID virtualization on the Cisco MDS 9710 switch, enabling each port to support multiple fabric logins.

Figure 1. Cisco MDS 9710 Multilayer Director in MPSEDC SAN Deployment



MPSEDC also has implemented features of the switch's extensive security framework to protect sensitive data crossing the networks. In the Madhya Pradesh network, intelligent, port-level packet inspection and advanced port security features are deployed, together with access control lists (ACLs) for hardware enforcement of zones. A fabric-binding feature helps ensure that Cisco Inter-Switch Links (ISLs) are enabled only between specified switches in the fabric-binding configuration. Virtual SANS (VSANs) also are used to achieve greater security and stability by providing complete isolation of devices that are connected to the same physical SAN.

"The Cisco MDS 9710 Multilayer Director switches deliver the high performance and availability we need," says Banbah. "With 16 Gbps, we can get line rate, predictable performance across all traffic conditions for every port."

Business Results

The SAN has to be available all the time for all departments and applications, and the new Cisco MDS 9710 switch delivers unprecedented availability with redundancy across all major components. It also handles backup and disaster recovery because many departments rely on the data center for these functions.

PRODUCT LIST

- Cisco MDS 9710 Multilayer Directors
- Cisco Prime Data Center Network Manager

With servers running on Windows, UNIX, and Linux operating systems, the SAN has to be smart–and it is. The Cisco MDS 9710 switch integrates VSANs and the Inter-VSAN Routing (IVR) feature with port-level hardware. Any port in a system or fabric can be partitioned to any VSAN. MPSEDC gains line rate routing between any ports in a system or fabric. It delivers the right QoS for every application in either the co-location or co-hosting environment, and it does it all without external routing appliances. As a result, state applications are achieving significant performance increases.

The Cisco MDS 9700 Series includes built-in storage network management through Cisco Prime™ Data Center Network Manager (DCNM). Cisco DCNM centralizes fabric management to simplify operations. Now the team can view and manage up to 150,000 devices from a single management pane.

Next Steps

"We had expected to use 120 TB of storage capacity in three years and we used it in one year," says Banbah. "Now with the Cisco MDS 9710, we can evaluate storage needs every six months and scale in baby steps with pay-as-we-grow simplicity."

For More Information

To find out more about Cisco Multilayer Director Switches, visit http://www.cisco.com/en/US/products/ps5990/index.html.

For more information about MPSEDC, please visit http://www.mpsedc.com.

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