

# High-Performance SAN to Deliver Managed Backup Services

Customer Case Study



IBM builds new SAN for industry-leading client with help from Cisco MDS solutions and Cisco Services.

## EXECUTIVE SUMMARY

### Customer Name:

IBM

**Location:** Armonk, NY

**Employees:** 431,000

### Business Challenge:

- Deliver high-quality managed backup services for new operating entity of world-leading client
- Build in high scalability to meet future demands
- Deploy new large-scale SAN on time

### Network Solution:

- Cisco MDS 9513 Multilayer Directors
- Cisco 9148 Multilayer Fabric Switches
- Cisco Prime Data Center Network Manager

### Business Results:

- Implemented large-scale SAN that meets IBM client's bandwidth and availability requirements
- Achieved smooth, on-time implementation
- Gained outstanding education for engineers and offshore SAN management and operations teams

## Business Challenge

IBM is on a mission to transform markets, industries, and IT for the era of the cloud. Some of the world's most talented people help solve problems for businesses, governments, and non-profits in more than 170 countries. As one example, the IBM Business Continuity and Resiliency Services (BCRS) team helps clients protect their mission-critical information and maintain continuous business operations, no matter the circumstances.

Recently, IBM BCRS in the United Kingdom engaged with a new operating entity of a world-leading financial services organization. The challenge was to ensure that the organization's business data was backed up and preserved in the event of a disruption. The client chose IBM Managed Backup offerings. And because IBM had to build the SAN infrastructure from the ground up, it teamed with Cisco to create and implement a dedicated, large-scale, best-of-class enterprise SAN solution.

The client's primary need is establishing a backup infrastructure and processes for maximum resiliency. However, scalability is also critical. The client organization has more than a petabyte of data now and expects storage needs to increase by 500 TB year over year. The SAN switching core must be able to easily accommodate growth and maintain high performance.

## Network Solution

IBM and Cisco designed the SAN to span two locations with Fibre Channel connectivity. For the SAN core, IBM chose Cisco® MDS 9513 Multilayer Directors—high-performance, multi-protocol, director-class SAN switches that meet the most stringent enterprise data center storage requirements. The Cisco MDS 9513 supports up to 528 high-performance 1, 2, 4, and 8 Gbps Fibre Channel ports in one chassis. It layers a comprehensive set of intelligent features onto a high-performance, protocol-independent switch fabric for high availability, security, scalability, and ease of management.



“Implementation ran smoothly with outstanding support from Cisco. Besides building and configuring the deployment, Cisco delivered superb education to our engineering, SAN management, and operations teams. Together, IBM and Cisco operated as one team to get the right solution implemented on time.”

Jamie Levett  
Lead Infrastructure Architect, IBM Business  
Continuity and Resilience Services



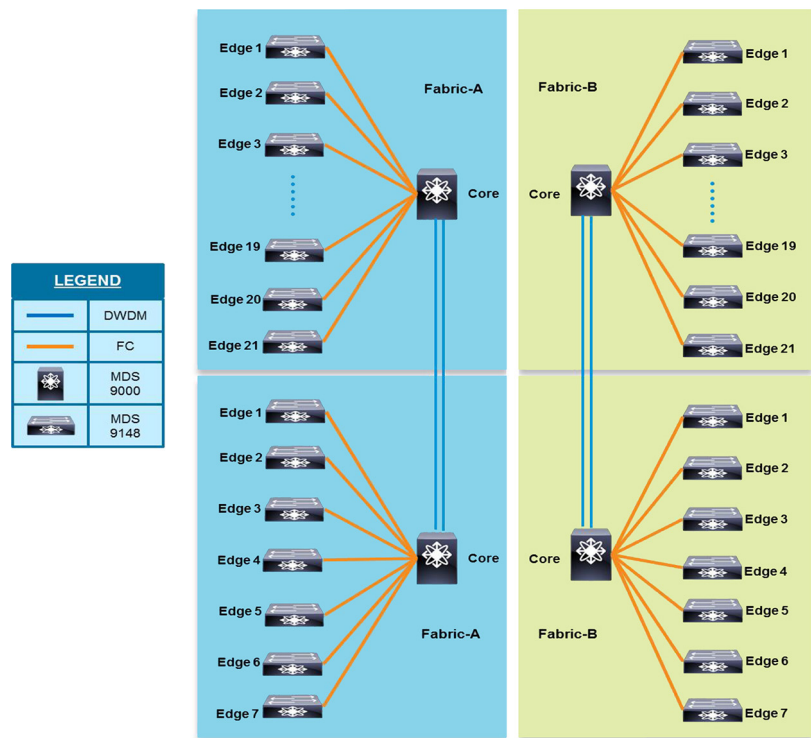
“Several members of the Cisco MDS family were options,” says Jamie Levett, lead infrastructure architect for IBM BCRC. “However, the Cisco MDS 9513 offered the high throughput we needed to support backup traffic.”

For edge switches, IBM chose Cisco MDS 9148 Multilayer Fabric Switches. These high-performance, flexible platforms deliver the industry’s highest port density and lowest power consumption available in a compact one rack-unit (1RU) chassis form factor. With up to 48 autosensing Fibre Channel ports capable of speeds of 1, 2, 4, and 8 Gbps and an aggregate platform bandwidth of 768 Gbps, the Cisco MDS 9148 offers powerful, intelligent, cost-effective storage networking capabilities.

The deployment is illustrated in Figure 1. Four Cisco MDS 9513 and 56 Cisco MDS 9148 systems are deployed across two sites. The two locations are connected using 4x8-Gbps dense wavelength division multiplexing (DWDM) links. Fibre Channel traffic is extended over those links. Edge switches are connected to the core with 4x8-Gbps Fibre Channel links.

For backup, the IBM TS3500 Tape Library connects directly to the Cisco MDS 9513 switches (not shown) using 8-Gbps links. IBM Tivoli Storage Manager provides backup services, and the servers connect to the fabrics through Cisco MDS 9148 switches.

Figure 1. SAN Infrastructure for IBM Managed Backup Service



Total storage capacity for the production environment is approximately 875 TB, while capacity in the backup environment is 750 TB. This architecture now provides comprehensive backup capabilities across sites for maximum resiliency. Cisco Prime™ Data Center Network Manager (DCNM) provides SAN management capabilities.

“We like Cisco DCNM because it’s a best-of-breed solution and easy to learn and use,” says Levett. “This feature is critical because the IBM BCRC SAN management team is centralized offshore, and it needed to be able to quickly learn and manage the new SAN.”

## PRODUCT LIST

- Cisco MDS 9513 Multilayer Directors
- Cisco MDS 9148 Multilayer Fabric Switches
- Cisco Prime Data Center Network Manager

## Business Results

The new infrastructure will meet or exceed the client's needs. Even with projected storage growth, Cisco MDS industry-leading scalability will provide 8.4 terabits per second (Tbps) of system bandwidth and up to 528 1/2/4/8-Gbps autosensing Fibre Channel ports in a single chassis or up to 1584 Fibre Channel ports in a single rack.

IBM's prior experience with the Cisco MDS 9513 gives it great confidence in the system's reliability. Levett says that he can't remember experiencing a failure in any of the systems they have previously deployed.

"Implementation ran smoothly with outstanding support from Cisco," says Levett. "Besides building and configuring the deployment, Cisco delivered superb education to our engineering, SAN management, and operations teams. Together, IBM and Cisco operated as one team to get the right solution implemented on time." Levett notes that the education and knowledge transfer gained from this implementation will be invaluable in helping secure future client engagements.

## Next Steps

IBM and Cisco are putting the finishing touches on the new infrastructure, which is expected to be placed in production in summer 2014.

"We have enjoyed outstanding teamwork from Cisco," says Levett. "We anticipate being able to deliver high-quality managed backup services to our client as a result."

## 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 IBM, visit [www.ibm.com](http://www.ibm.com).

This customer story is based on information provided by IBM 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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