



**UK Press contacts:**

Sam Burrough  
Cisco Systems  
+44 (0)20 8824 1000  
[sburroug@cisco.com](mailto:sburroug@cisco.com)

Steven Douthwaite  
Brands2Life  
+44 20 7592 1200  
[cisco@brands2life.com](mailto:cisco@brands2life.com)

**Cisco Extends its Leadership in Network-Based Storage Virtualization through Intelligent Fabric Applications**

*New Standards-Based Hardware, Software Support and Ecosystem of Storage Software Vendors and Applications*

HANOVER, Germany (CeBIT 2005) – March 10, 2005 – Cisco Systems, Inc.® today unveiled significant updates to its network-based storage virtualization solutions that will help Cisco and a wide variety of independent software vendors (ISVs) jointly address key customer pain points related to storage provisioning, data migration/replication, backup/recovery, disk capacity utilization, and storage management costs.

Cisco enables these new solutions, or “Intelligent Fabric Applications”, based on open standards such as Fabric Application Interface Standard (FAIS), which has the goal of delivering a common framework for implementing storage applications in storage area networks (SANs). Cisco’s commitment to standards will help foster industry-wide interoperability to provide customers more flexibility in choosing the best solution for their business/IT requirements while driving down the total costs associated with managing their data.

In practical terms, Cisco, through the Cisco MDS 9000, provides an open, standards-based platform with the necessary hardware-assist required to help enable high-performance Intelligent Fabric Applications -- such as network-based volume management, remote replication, and continuous data protection -- from third-party storage software vendors. These Intelligent Fabric Applications also support the Cisco Business Ready Data Center, an end-to-end network architecture that includes the data network, the storage network, data center connectivity solutions, and integrated intelligent services.

The Cisco technologies that power Intelligent Fabric Applications are available through the new Cisco MDS 9000 Storage Services Module and the Cisco MDS 9000 SAN-OS 2.1 software release. The Storage Services Module is a highly specialized 32-port Fibre Channel line card that can operate on any modular Cisco MDS 9000 platform, specifically the Cisco MDS 9500 Series directors and the Cisco MDS 9200 Series fabric switches. The SAN-OS 2.1 is the latest version of the operating system for the Cisco MDS 9000 and largely includes features designed specifically to work with third-party storage software. The Intelligent Fabric Applications they enable are categorized accordingly:

**Network-Hosted Storage Applications**, defined as storage software that operates directly within the Cisco MDS 9000 via the Storage Services Module. Storage ISVs write to the Storage Services Module using the intelligent storage application program interface that is based on the FAIS, which is currently in consideration as a Fibre Channel industry standard by the Technical Committee T11.5 within the International Committee for Information Technology Standards (INCITS).

Today Cisco is announcing that EMC Corporation and VERITAS are expected to be among the first companies to offer network-hosted storage applications built onto the Storage Services Module. For example, EMC will offer a storage virtualization solution code-named, Storage Router, which includes software specifically built to take advantage of intelligent SAN switches. Cisco and EMC will demonstrate this combined solution at the Cisco booth (Hall 13, Booth C58) at CeBIT 2005, which runs through March 16.

“EMC and Cisco share a common view that, in order to maximize performance and scalability while also protecting customers’ existing investments in functionality, storage virtualization is best implemented on the storage network,” said Todd Oseth, vice president, Storage Infrastructure Software, EMC Corporation. “This approach results in greater business value while helping our mutual customers take greater advantage of an information lifecycle management strategy.”

“IBM and Cisco have been partnering for years in high-performance, scalable storage virtualization technologies including Cisco Virtual SANs and IBM’s SAN Volume Controller,” said Bob Mahoney, business line executive, Storage Networking at IBM.

“These new offerings will enable even more integration of IBM’s business continuity capabilities into the intelligent fabric.”

**Network-Assisted Storage Applications**, which allow customers to deploy third-party appliance-based storage software in Cisco MDS 9000 SANs without compromising the integrity, availability, and performance of the primary data path. Cisco delivers this functionality through the Cisco MDS 9000 SANTap Service, a protocol that operates between the Storage Services Module and a SANTap-enabled storage software appliance. In addition to performance and reliability gains, the SANTap Service also provides other customer benefits such as the flexibility to choose from a wide variety of storage software appliances to meet a specific business/operational need, or to protect its existing investment in a particular storage infrastructure.

Today Cisco announced that Alacritus Software, Cloverleaf Communications, FalconStor Software, Kashya, Topio, and XIOTech Corporation will among the first storage software vendors expected to support the SANTap Service on their respective appliances (Refer to today’s related announcements from Cloverleaf, FalconStor, Kashya, Topio, and XIOTech). Cisco will host a demonstration of SANTap at CeBIT using storage software appliances from FalconStor, Kashya, Topio, and XIOTech.

“BT is excited to support Cisco’s launch of new network-hosted and network-assisted intelligent applications. We believe that these applications help address key pain points in our customer data centers and BT will be offering and supporting several of these solutions under our Advanced Technology Partner (ATP) program relationship with Cisco,” said Craig Parker, head of storage at BT Retail.

**Network-Accelerated Storage Applications**, which help customers address two important storage networking requirements – the need for more efficient backups and the need for cost-effective, high-performance SAN extension solutions for disaster recovery/business continuity.

Cisco is addressing the first requirement with Network-Accelerated Serverless Backup, which uses standards-based Extended Copy technique to offload the data movement from backup servers to the high-performance, highly scalable Storage Services Module, thereby enabling IT administrators to backup large amounts of data in shorter backup windows. Computer Associates, Commvault Systems, Inc. and VERITAS Corporation

are expected to be among the first backup software vendors to support Network Accelerated Serverless Backup on the Cisco MDS 9000. (Refer to related announcement from Commvault).

Cisco is addressing the second requirement through Fibre Channel Write Acceleration, which uses Cisco-developed intelligence to reduce latency and improve network performance for synchronous data replication between two SANs interconnected by Fibre Channel links over a variety of transport technologies such as dark fiber, dense wavelength division multiplexing (DWDM), and Synchronous Optical Networks (SONET)/ Synchronous Digital Hierarchy (SDH). This allows customers to extend native Fibre Channel connectivity over longer distances, which enhances their business continuity/disaster recovery plans.

“Cisco’s continued innovation in network-based virtualization continues to amaze me,” said Arun Taneja, founder and consulting analyst at Taneja Group. “With today’s announcement, Cisco is extending its market leadership and has positioned the Cisco MDS 9000 as the intelligent SAN switch of choice for many storage ISVs.”

### **About Cisco Systems**

Cisco Systems, Inc. (NASDAQ: CSCO), the worldwide leader in networking for the Internet, this year celebrates 20 years of commitment to technology innovation, industry leadership and corporate social responsibility. News and information are available at [www.cisco.com](http://www.cisco.com).

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