

Dell: Storage Area Network (SAN)



A network of shared storage resources

Overview

A SAN is a network of shared storage devices, such as disk storage arrays and tape automation. The architecture of a SAN is such that storage resources are made available to multiple servers on a local or wide area network. Because stored data does not reside directly on any of the network's servers, processing power is optimized for business applications and storage capacity can be provisioned on the server where it is needed most. It can also reduce management time and effort and data backup requirements versus other options such as DAS. Lastly, SAN storage can enable data tiering, can lead to better resource utilization and can often be more easily expanded as storage needs grow.

SANs are most often deployed using Fibre Channel or iSCSI protocols:

- » Fibre Channel SAN: A storage disk storage array built with Fibre Channel connectivity and connected to Fibre Channel, host bus adapters (HBAs) and switches
- » iSCSI or IP SAN: A disk storage array built with IP connectivity and connected to network interface cards (NICs) and Ethernet switches using the iSCSI standard protocol.

Fibre Channel Disk Storage Arrays

The unique Dell/EMC partnership brings to market enterprise-class storage with a common, high availability architecture and excellent investment protection. Fourth generation Dell/EMC CX4 arrays deliver new levels of performance, flexibility, ease-of-use, data management, and resource utilization. The Dell/EMC CX4 family forms the core of a scalable enterprise infrastructure that is easy to deploy, manage, and upgrade and supports both Fibre Channel and iSCSI protocols. The Dell AX4-5 arrays offer an intuitive user interface that helps simplify operations and capacity allocation.

Dell offers the following Fibre Channel storage arrays:

The CX4 series support Fibre Channel, SATA, Low Power SATA and Enterprise Flash disks, and it introduces UltraFlex technology that enables the user to customize the network interconnect and number of ports needed to



meet current and future storage requirements. The CX4 arrays come standard with both true end-to-end 4Gbit Fibre Channel and 1Gbit iSCSI connectivity and can be expanded with additional FC or iSCSI ports, as well as new network technologies, such as 8Gbit Fibre Channel and 10Gbit iSCSI, as they become available.

iSCSI Disk Storage Arrays

An iSCSI disk storage array enables the connection of servers and storage using a readily available IP network infrastructure. An iSCSI array can be shared by multiple servers on a network, therefore providing a flexible alternative to direct attached storage and potentially a lower cost alternative to a Fibre Channel-based storage network. Often the knowledge needed to implement an iSCSI SAN already exists in an organization since it is based on standard IP networking protocols, whereas a Fibre Channel SAN may require additional training and expertise.

Dell offers the following iSCSI storage arrays:

- » PowerVault MD3000i: Leveraging the modularity and availability of the MD family to create an expandable and easy to use iSCSI SAN.
- » Dell AX4-5iDell AX4-5i: An easy to use iSCSI SAN with the scalability and functionality of advanced storage arrays.
- » The Dell EqualLogic PS5000 series: An intelligent, expandable, virtualized iSCSI SAN solution optimized for virtualized environments.
- » Dell/EMC CX series combo arrays: Highly-scalable SANs that combine both Fibre Channel and iSCSI connections in a single advanced array.

Fibre Channel Switches

For connecting multiple servers to a fibre channel storage array, Dell partners with both Brocade and Cisco to provide many flexible and scalable solutions.

Fibre Channel Host Bus Adapters (HBAs)

Dell partners with Emulex and Qlogic to provide best-of-breed Fibre Channel SAN interconnects that cost-effectively integrate a wide array of storage protocols and speeds.

For more information about Dell's Storage Area Network (SAN), please contact your sales representative.

The logo for Systems Management/Planning, Inc. (SMP) consists of the letters "SMP" in a bold, white, sans-serif font, centered within a dark red oval. This oval is positioned on a white background that is part of a larger graphic element resembling a stylized arch or a thick, curved line that sweeps from the bottom left towards the top right. The arch is filled with a dark red color, matching the logo's background.**SMP**

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