

The Data Center LAN

The next generation of Ethernet not only accommodates the relentless growth of data traffic in today's IT data centers, but also expands Ethernet's traditional role. By gaining capability to interconnect clusters and IP SANs, 10 Gigabit Ethernet offers to run the whole data center over the same network.

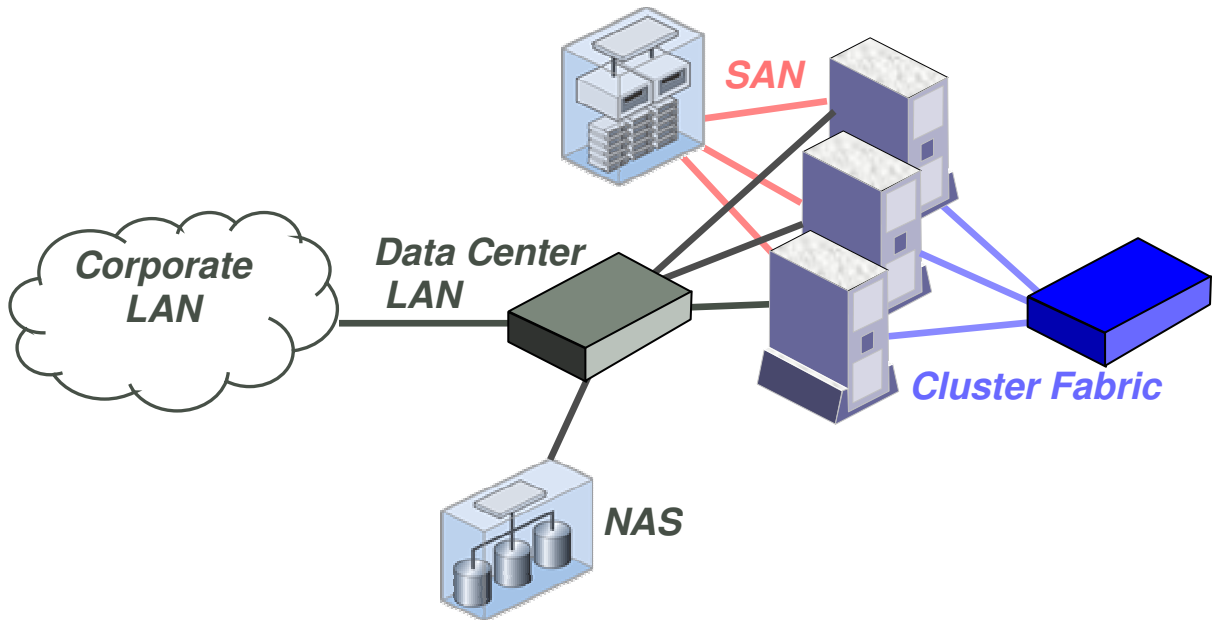
Overview

The enterprise data center's servers commonly are organized in three tiers - web servers, application servers, and database servers.

Web servers generate high LAN traffic, including NAS traffic on the LAN. Application servers generate relatively modest LAN traffic. Depending on the applications, they're often clustered and

require high bandwidth for IPC traffic. At the back end, database servers generate high SAN traffic, and, if clustered, also high IPC traffic.

All are LAN connected; the application servers are often also interconnected with a cluster fabric; and the database servers also have their own cluster fabric, and form a storage network as well.



*The challenge:
 Parallel networks for different purposes*

Enter 10 Gigabit Ethernet

In addition to the 10x bandwidth speedup, 10 Gigabit Ethernet facilitates absorbing other data center networks - the SAN and the cluster fabric.

In addition, 10GbE protocol engines for servers also support iSCSI and socket upper layer interfaces, enlarging the role that switched Ethernet can play. Meeting the low-latency and low-CPU-overhead requirements for SANs, and cluster fabrics, 10GbE becomes the logical choice for these networks. Converging all traffic with 10 GbE reduces the need for network interfaces, cabling, switches, management tools, spares, and technical skills.

Benefits

10 Gigabit Ethernet with Chelsio's protocol offload technology provides

dramatic advantages for data-center shared storage systems.

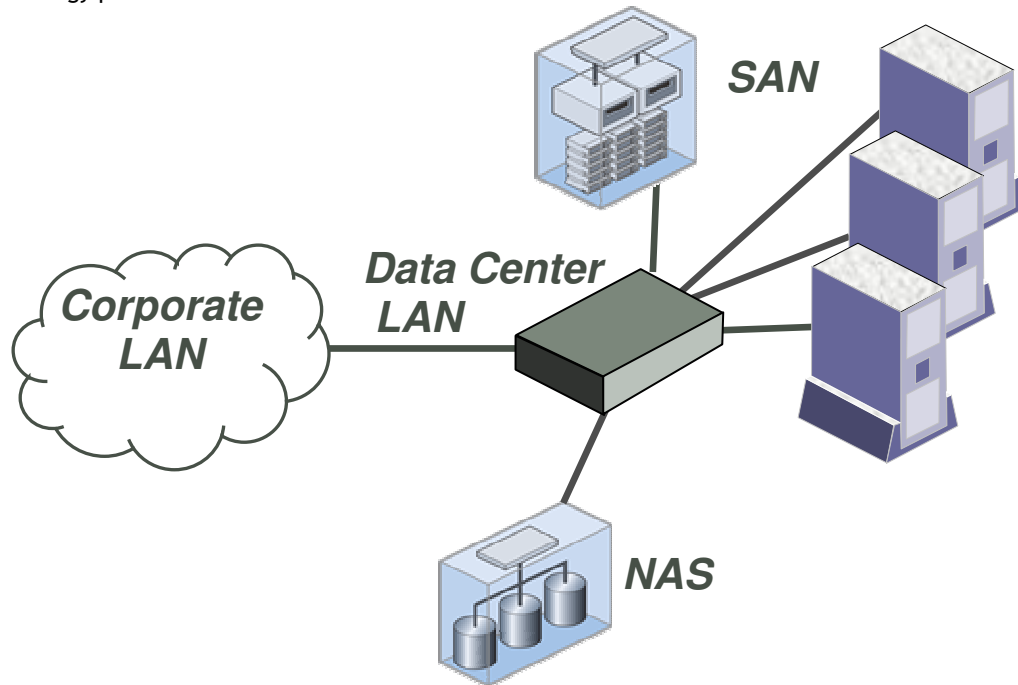
Performance - 10 GbE brings a tremendous boost in bandwidth, and when coupled with Chelsio's protocol offload adapters, lowers both network latency and CPU overhead.

Ethernet Cost Profile -- Ethernet is the most widely deployed networking technology. Each Ethernet generation's scale economies have driven down prices farther and faster than any other networking technology. Today, 10GbE is largely uses fiber media. Recently Chelsio introduced the first 10GbE network interface for copper technology, employing a copper media standard that Infiniband uses. In 2006, the industry will ratify its standard for twisted copper pair wiring. Chelsio, along with all other 10GbE vendors will introduce

10GBase-T interfaces and switches at low cost.

Convergence of SAN and LAN -- When SANs use the same network technology as the data-center LAN, the organization can reduce the cost for network interfaces, switches, cabling, management tools, spares, and technical skills needed to maintain two networks.

Integration of block- and file-storage capabilities -- Linking servers, block storage systems, and filers with a single network technology that can simultaneously support file and block protocols eliminates barriers to developing systems that support both block and file traffic.



The solution:

Shared mass storage systems (NAS or SAN) accessible to all users via Chelsio-enhanced 10 Gigabit Ethernet