

White Paper: Data Center High Speed Migration

Infrastructure issues, trends, drivers and recommendations *Global Communication*

In the data center, speed is everything. The challenge is to look ahead and know what you have to be prepared to deliver—in the immediate future and later on—and [chart the most expedient and flexible course forward](#). The faster that available technologies and applicable standards evolve, the harder that job becomes.

Recent data-center trends predict bandwidth requirements will continue growing 25 percent to 35 percent per year. A key impact of this sustained growth is the shift to higher switching speeds. According to a recent study by Dell’Oro, Ethernet switch revenue will continue to grow through the end of the decade, with the biggest sales forecasted for 25G and 100G ports. Lane capacities are expected to continue doubling, reaching 100G by 2020 and enabling the next generation of high speed links for fabric switches. A number of factors are driving the surge in data center throughput speeds.

- Server densities are increasing by approximately 20 percent a year.
- Processor capabilities are growing, with Intel recently announcing a 22-core processor.
- Virtualization density is increasing by 30 percent, which is driving the uplink speeds to switches.
- East-west traffic in the data center has far surpassed the volume of north-south traffic.

The network design has to reflect this massive amount of traffic, and, importantly, has to allow for server, storage, and network capacity to all be scaled up independently and with as little disruption and reconfiguration as possible. As a result, data center professionals must support higher server densities, deploy more fiber and accelerate plans to migrate to higher speeds in their core and aggregation networks. The network infrastructure within the data center must be able to scale to support these significant changes.

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