



10 Gigabit Ethernet tutorial: Connecting data centers, storage, LAN and beyond

In this SearchNetworking.com Guide, learn how choosing the right cabling can affect 10 Gigabit Ethernet distance, speed and overall performance. Also, see how 10 Gigabit Ethernet networks can result in data center optimization by introducing flexibility and preventing latency. Finally, learn how upcoming 10 Gigabit Ethernet protocols will address the challenge of packet loss and enable more effective traffic prioritization in the network.

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Optimize Your Data Center Performance, while Reducing Risk and Lowering Costs

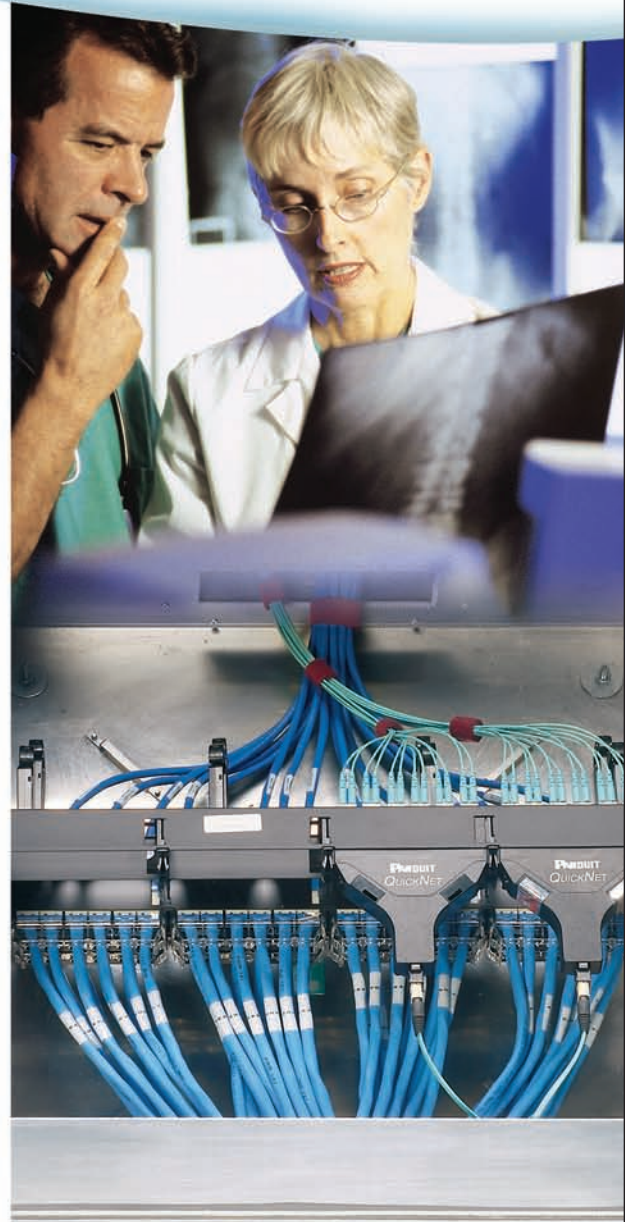
To fully address demands for availability, agility, flexibility and efficiency in your IT infrastructure, it may be necessary to introduce innovative physical infrastructure solutions into your data centers.

Panduit offers copper and fiber optic High Speed Data Transport (HSDT) solutions to improve network performance. These solutions enable network stakeholders to benefit from increased reliability, lower operating costs, and quicker deployment.

Learn how Panduit can help you determine the best physical infrastructure selection for your current and future data center requirements.

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There is no question that networking engineers are building 10 Gigabit Ethernet networks as they are pressed to support storage, the data center and the LAN with one solution. But IT teams have lots of choices to make when it comes to everything from basic cabling to network components in order to design and manage the data center and its connections.

This 10 Gigabit Ethernet tutorial, written by frequent contributor David Jacobs, includes the following tips:

10 Gigabit Ethernet interconnect solutions: Investigate carefully before choosing

In any 10 Gigabit Ethernet (10 GbE) data center, IT teams must decide among optical fiber, copper or twisted pair to support their networking equipment. Solutions vary by maximum interconnect distance, power and heat, signal latency, reliability, and adaptability to future requirements. For each option, there are advantages and drawbacks. Making the choice often boils down to weighing the challenges of each solution against the specific needs of your network and data center. Ultimately, understanding all of the options is central to making the right decisions for your network.

Learn about [10 Gigabit Ethernet interconnect](#) options.

Data center optimization with 10 Gigabit Ethernet

Networking and data center teams are charged with the task of creating one network that can support the LAN, server-to-server communications, and server-to-storage area networks (SANs) or network attached storage (NAS) and can connect to the wide-area network. 10 GbE has finally evolved to become a viable solution -- at least for now. Learn how 10 Gigabit networks can reduce cost and introduce flexibility in the data center and storage while taking on the processing load and preventing latency throughout the network.

Read how 10 Gigabit Ethernet enables [data center optimization](#).

Will new 10 Gigabit Ethernet protocols improve performance?

Price, performance and flexibility have made 10 GbE an attractive choice for the data center. While 10 GbE has made inroads, lack of features in existing Ethernet protocols limits its further penetration. The critical issue with Ethernet is that it does not guarantee that packets will not be lost when a switch or end node is momentarily overwhelmed by incoming packets.

The IEEE and Internet Engineering Task Force (IETF) are currently at work developing protocols that will improve network efficiency and eliminate packet loss. Their work is considered critical to ensuring the performance of Fibre Channel over Ethernet (FCoE) and Internet SCSI (iSCSI).

Learn about how new [10 Gigabit Ethernet protocols](#) can improve network performance.

Resources from Panduit



[Learn about High Speed Data Transport \(HSDT\) Solutions by visiting the Panduit Resource Center.](#)

[Enable InfiniBand, Fibre Channel, 10 Gig and 40/100 Gig with Panduit HSDT Solutions.](#)

[Are you ready for I/O Consolidation? Read about Implementing a 10 Gb/s Physical Infrastructure.](#)

About Panduit

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