



Overview

Cisco Nexus 5000 Series devices support the Fibre Channel over Ethernet features that are described in this guide.

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Fibre Channel over Ethernet

Fibre Channel over Ethernet (FCoE) allows Fibre Channel traffic to be encapsulated over a physical Ethernet link. FCoE frames use a unique EtherType so that FCoE traffic and standard Ethernet traffic can be carried on the same link.

Classic Ethernet is a best-effort protocol; in the event of congestion, Ethernet will discard packets, relying on higher level protocols to provide retransmission and other reliability mechanisms. Fibre Channel traffic requires a lossless transport layer; as a data storage protocol, it is unacceptable to lose a single data packet. Native Fibre Channel implements a lossless service at the transport layer using a buffer-to-buffer credit system.

For FCoE traffic, the Ethernet link must provide a lossless service. Ethernet links on Cisco Nexus 5000 Series switches provide two mechanisms to ensure lossless transport for FCoE traffic: link-level flow control and priority flow control.

IEEE 802.3x link-level flow control allows a congested receiver to signal the far end to pause the data transmission for a short period of time. The pause functionality is applied to all the traffic on the link.

The priority flow control (PFC) feature applies pause functionality to specific classes of traffic on the Ethernet link. For example, PFC can provide lossless service for the FCoE traffic and best-effort service for the standard Ethernet traffic. PFC can provide different levels of service to specific classes of Ethernet traffic (using IEEE 802.1p traffic classes).

