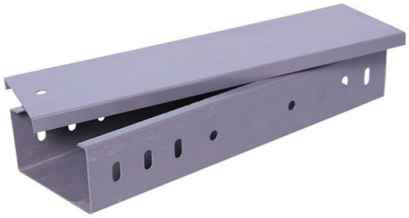
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How the FC Interface Works



Overview

FCoE transports native FC frames over an Ethernet network by encapsulating the unmodified frames in Ethernet.

Key Takeaways

The Fibre Channel (FC) interface enables high-speed, reliable data transport between servers and storage devices in SANs, supporting both physical and virtual connections, port virtualization, and inter-fabric communication.Core Functions of an FC Interface

Data Transport and Storage Access The FC interface allows servers and storage devices to communicate over a Storage Area Network (SAN), providing high-speed, low-latency access to disk arrays, solid-state drives, and NVMe storage systems . It supports multiple upper-layer protocols, with SCSI (FCP) being the most common, and can also carry IP, ATM, and FICON traffic . Port Types and Connectivity FC interfaces include several port types to manage connections:

• N_Port: Node port on a server or storage device connecting to the fabric .

• F_Port: Fabric port on a switch connecting to an N_Port .

• E_Port: Connects FC switches to form a fabric .

• G_Port: Auto-negotiates between E_Port and F_Port modes .

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• NP_Port: Connects F_Ports on switches . Virtualization and Trunking FC interfaces can be virtualized using N_Port ID Virtualization (NPIV), allowing multiple virtual N_Ports to share a single physical link while maintaining logical separation . Virtual FC (vFC) interfaces on devices like Cisco Nexus switches operate in trunk mode, carrying multiple VSANs and enabling flexible SAN segmentation . FCoE and Gateway Functions FC interfaces can integrate with Ethernet networks through FCoE (Fibre Channel over Ethernet). FCoE gateways convert traffic between Ethernet and FC, allowing Ethernet-connected devices to access the FC SAN without requiring native FC ports on the SAN switches . Routing and Inter-Fabric Communication Advanced FC interfaces support FC routing, enabling communication across multiple fabrics using LSANs (Logical SANs) and proxy devices. This allows devices in separate SAN fabrics to share storage resources while maintaining zoning and access controls . Management and Configuration FC interfaces provide configurable properties such as speed, mode, MTU size, buffer credits, and port tracking, allowing administrators to optimize performance and reliability in large-scale SAN deployments .
Summary

In essence, the FC interface is a versatile and high-performance network interface for storage environments. It supports direct and switched connections, virtualized ports, integration with Ethernet networks, and inter-fabric routing, making it a critical component for enterprise SANs and large-scale storage infrastructures .

Article Content

Support

A virtual fibre channel (VFC) interface is a logical interface manually created on an FCF switch to simulate the functionality of a

Support

After an FC interface is assigned to an FC aggregation group, it uses the configuration of the FC aggregate interface to perform link

Fundamentals of Fibre Channel

It is a high-speed fibre channel topology in which fibre channel ports/hubs use arbitration to establish a point-to

Fibre Channel Interfaces

Fibre Channel hardware interconnects storage devices with servers to form the Fibre Channel fabric. The fabric consists of the

What is Fibre Channel over Ethernet (FCoE)? How It Works, Benefits ...

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FCoE moves Fibre Channel traffic and data storage across an existing high-speed Ethernet infrastructure, allowing

Understanding Interfaces on an FCoE-FC Gateway

When a switch functions as an FCoE-FC gateway to connect FCoE devices on an Ethernet network to a Fibre

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Fibre Channel provides in-order, lossless delivery of block data. The technology connects devices using

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Fibre Channel Layers

In summary, the FC-2 layer is responsible for the routing and switching of data frames in a Fibre Channel network, and

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Fibre Channel is a high-speed network technology used to connect server to data storage area network. It handles

Understanding Fibre Channel Terminology

Disabling Storm Control on FCoE Interfaces on an FCoE-FC Gateway Understanding Load Balancing in an FCoE-FC Gateway

Fibre Channel Interfaces

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Fibre Channel Protocol (FCP) is the SCSI (Small Computer System Interface) interface protocol operating on an

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How FC Works on the Switch The switch connects devices that support FC and Ethernet (such as FCoE servers on an Ethernet

Storage Networking Basics: Understanding the Fibre Channel Protocol

The term FCP, Fibre Channel Protocol, refers to the interface protocol for SCSI, or the FC-4 mapping. We''re talking

Fibre Channel over Ethernet

Fibre Channel over Ethernet (FCoE) is a computer network technology that encapsulates Fibre Channel

Storage Networking 101: Understanding Fibre Channel

FC wouldn''t be much use without something on top of it, namely SCSI. FC is the low-level transport that ships data, but hosts are

The Ultimate Guide to FC Connector: Everything You

The FC connector is one of the most significant in fiber optic communications. The FC

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The FCoE-FC gateway handles FCoE Initialization Protocol (FIP) and FCoE traffic on the interfaces connected to FCoE devices. The

The Difference Between Ethernet Cards and Fibre Channel (FC)

In the world of networking and data storage, two key components play pivotal roles: Ethernet cards and Fibre

Fibre Channel 101

Fibre Channel (FC) is the storage networking protocol for enterprise data centers, with over 11 Million ports deployed.

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Fibre Channel (FC) interface

A Fibre Channel (FC) interface consists of multiple components that work together to facilitate high-speed data transfer in Storage

How should I set up my Fibre Channel (FC) network?

Assuming you have all the physics of your FC network taken care of, the question becomes "How do I configure my

FIBRE CHANNEL

The layers of the Fibre Channel standard define the physical media and transmission rates, encoding scheme, framing protocol and

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Fibre Channel Overview

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Fibre Channel is equally adept at transporting both network and channel information and allows both protocol types to be

Support

An FC aggregation group is a group of FC interfaces, which are called member interfaces of the FC aggregation group. For each FC

What Is Fibre Channel Network and How Does It Differ from ISCSI

What is Fibre Channel network? What can you benefit from it? This post will introduce Fiber Channel network including

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