

Data Center Interconnect System



AI Overview

A Data Center Interconnect (DCI) system connects multiple data centers to enable high-speed, secure, and reliable data transfer across short or long distances.

Overview A Data Center Interconnect (DCI) is a network solution that links two or more data centers, allowing them to operate as a unified infrastructure. DCIs are essential for sharing compute and storage resources, supporting disaster recovery, live workload migration, and distributed applications across geographically separated sites. Unlike public internet connections, DCI uses private, dedicated circuits to provide predictable latency, guaranteed bandwidth, and enhanced security.

Key Technologies Modern DCI systems rely heavily on optical fiber communication to achieve high capacity and long-distance transmission. Single-mode fiber is commonly used due to its low attenuation and ability to transmit signals over hundreds or thousands of kilometers. Dense Wavelength Division Multiplexing (DWDM) allows multiple data channels to travel simultaneously over a single fiber by using different wavelengths of light, often combined with coherent optical transmission and optical amplifiers to support data rates of 400 Gbit/s or higher per wavelength. Next-generation coherent optics can reach speeds up to 800 Gb/s per wavelength.

DCI connections can be implemented using various technologies, including dark fiber, wavelength services, Ethernet circuits, and MPLS networks, depending on distance and performance requirements. For ultra-long distances, subsea cables are used to connect data centers across continents.

Types of Connectivity DCI solutions typically provide three types of connectivity:

- LAN Extension (Layer 2):** Extends a single Layer 2 domain across data centers, useful for legacy applications or virtual machine mobility.
- Layer 3 Extension:** Provides routed connectivity for segmentation, virtualization, and backup applications, often using VPNs with bandwidth and QoS considerations.
- SAN Extension:** Extends storage networks, such as Fibre Channel, over...

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NADDOD AI Data Center (AIDC) Network Cabling Solutions

NADDOD's AI Data Center (AIDC) Network Cabling solutions provide high-density fiber cabling systems, including MPO, MMC, and Shuffle fiber management architectures, enabling scalable, low-latency,

Data Center Interconnect: A Guide to DCI and Connectivity

Explore how data center interconnect works, and what to consider when connecting facilities, clouds, carriers, and network partners.

What is data center interconnect (DCI)?

DCI technology links data centers together to share resources. DCI provides several benefits. It lets organizations share resources by dynamically

FinancialContent

Aehr Receives Follow-On Order From Major Silicon Photonics Customer for Fully Automated Wafer-Level Burn-In System for Hyperscale Data Center Optical Interconnect

What is Data Center Interconnect? Full Guide 2026

Data Center Interconnect means a dedicated system that joins two or more data centers through high-speed and secure connections. It can be

AI Interconnect Delays Spur \$1.75B National Grid-Joullent Deal

AI Interconnect Delays Spur \$1.75B National Grid-Joullent Deal The utility's planned \$1.75 billion investment in Joullent illustrates how dedicated power infrastructure is becoming central to AI

Cellink Technologies | Accelerating the Transition to an

Cellink's high-conductance circuits integrate bussing, power cabling, voltage monitoring, temperature monitoring, and fusing systems in the Current Collector

Data center interconnect

Recent developments in data center interconnect (DCI) are strongly driven by the rapid growth of artificial intelligence (AI), cloud computing, and global data traffic.

Data Center Interconnect Market Report 2025-2030,

Growth in the global data center interconnect (DCI) market is driven by the rising demand for high-bandwidth, low-latency connections spurred by

Scaling AI Factories with Co-Packaged Optics for Better

This includes Spectrum-X Ethernet, NVIDIA Quantum InfiniBand, and BlueField platforms. By orchestrating compute and communication together,

800G Data Center Interconnect Guide: DAC, AEC, AOC

DAC · ACC · AEC · AOC · Optical Transceivers — the complete engineer's framework for choosing the right interconnect for every link in your AI

Coherent demonstrates industry first 400G/lane in Si

All photonic components are manufactured in-house by Coherent. "As with most early-stage solutions, CPO will be explored in various scale-out and scale-up

Marvell to Acquire Celestial AI, Accelerating Scale-up Connectivity for ...

Celestial AI: Breakthrough Photonic Fabric Technology Platform for Scale-Up Interconnect As bandwidth and reach continue to increase, every connection point in the data center must move

Aehr Receives Follow-On Order for Fully Automated

Fremont, CA (March 3, 2026) – Aehr Test Systems (NASDAQ: AEHR), a leading provider of test and burn-in solutions for semiconductor devices used in artificial

Networking Solutions for the Era of AI | NVIDIA

Networking Purpose-Built for the Era of AI Factories AI factories now span tens of thousands of GPUs—and soon, millions—operating as a single distributed

Data Center Interconnect (DCI) — Design

Data Center Interconnect (DCI) is the foundational technology that enables the seamless connection of geographically dispersed data centers into a unified infrastructure.

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Optical interconnect startup Ayar Labs closes \$500m

Optical interconnect startup Ayar Labs has raised \$500 million in a Series E funding round that saw participation from Nvidia, AMD, MediaTek, and

Switch Bottleneck: Why AI Infrastructure Has a Network Problem

AI workloads are outpacing network capabilities, leaving expensive chips idle. Mark Rushworth explains why the switch is the bottleneck and how to fix it.

How is Ciena Advancing AI and Cloud Network Infrastructure?

Ciena Corporation CIEN is advancing AI and cloud network infrastructure through its leadership in high-speed optical connectivity, expanding data center interconnect solutions and

Optical networks | Nokia

An optical transport network is a high-speed communication system that sends light signals over fiber-optic cables to move large amounts of data across long

Data Center Interconnect Solutions

Data center interconnect refers to the solutions and technologies that link multiple data centers, enabling them to function as a cohesive network. This capability is

DCI and scale-across networks

Our highly automated, scalable transport solutions efficiently connect data centers across any distance—optimizing performance, power use, and space. Our solutions can be tailored to your

Memory-Semantic Interconnect_Baiduwiki

Memory-Semantic Interconnect is a core interconnect technology for modern high-performance computing and Data Center, forming part of data center architecture. It emerged to address the

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The Engine Behind AI Factories | NVIDIA Blackwell

Breaking Barriers in Accelerated Computing and Generative AI Explore the groundbreaking advancements the NVIDIA Blackwell architecture brings to

What is Data Center Interconnect (DCI)?

Data Center Interconnect (DCI) technology connects two or more data centers together over short, medium or long distances using high-speed packet-optical connectivity.

Contact Us

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