

Data Center Network



AI Overview

A data center network (DCN) connects servers, storage, and applications to enable high-speed, reliable, and scalable data communication within and beyond the data center. Overview Data center networking is the backbone of modern IT infrastructure, ensuring seamless communication between computing resources, storage systems, and applications within a facility or across multiple sites . It supports high-performance workloads, cloud computing, virtualization, and distributed applications by enabling efficient data movement and low-latency connectivity . Modern data centers rely on networks to centralize IT operations, maintain operational continuity, and deliver services to internal and external users . Traffic Patterns Data center networks manage two primary types of traffic: North-south traffic: Data moving between the data center and external users or the internet. Traditional networks were optimized for this flow . East-west traffic: Data moving internally between servers, storage, and applications. Modern workloads, including AI and microservices, generate high volumes of east-west traffic, requiring network designs that minimize latency and congestion . Architecture and Topologies Modern data center networks often use a spine-leaf architecture, where leaf switches connect to every spine switch, creating multiple non-blocking paths. This design improves performance, scalability, and redundancy, especially for east-west traffic . Legacy three-tier architectures (core, aggregation, access) were effective for north-south traffic but are less efficient for modern distributed workloads . Technologies and Management Software-Defined Networking (SDN): Separates the control plane from the data plane, allowing centralized management, automated configuration, and greater agility . Virtualization: Physical network resources can be virtualized into multiple logical networks, supporting multi-tenant environments and isolating workloads . Automation and Analytics: Modern DCNs use automation for provisionin...

Article Content

Data center network architectures

A data center is a pool of resources (computational, storage, network) interconnected using a communication network. A data center network (DCN) holds a pivotal role in a data center, as it

AWS Data Center Careers

Explore AWS data center careers in construction, electrical, networking, and HVAC. Join the team powering cloud infrastructure for millions. Apply now at Amazon.

Data Center Networking: What It Is, Why It Matters, And Types

Data center networking integrates multiple networking resources—load balancing, switching, analytics, and routing—to store and process data and applications. It connects data center

Data Centre Trends Report 2026

Explore the Data Centre Trends Report 2026. Discover how AI, cloud and 5G are driving data centre growth across Europe while power, permitting and supply-chain risks reshape delivery.

Data Center Switch – AI Back-end Networks

Dell'Oro Group's Data Center Switch – AI Back-End Networks reports track the global market for high-performance switching infrastructure used to interconnect accelerated server clusters in AI data centers.

Data center networks

Our data center networking solutions include high-performance switches and optics that ramp up connectivity inside the data centers, and IP and optical technologies that interconnect to, from, and

Data Center Networking Explained

Data center networking refers to the design, deployment, and management of the communication infrastructure that connects servers, storage

A Complete Guide to Data Center Network Architecture

As the name suggests, data center network architecture deals with the physical and logical arrangement of systems that interconnect servers, storage systems, and

Data Centers 101: What is a Data Center, and Why Do

Data centers that serve Americans should be based here in America, so that we can reap the benefits of infrastructure investment, new tech jobs and

Cisco 400G Data Center Networking

Transform your data center networking infrastructure with high-density 400G Cisco switches scalable to 800G. Optimized for simplicity and sustainability.

Colocation and connectivity in global, AI-ready data

Colocation with multicloud access, locality control and global reach Expand globally with digital infrastructure in more than 270 AI-ready data centers in the world's

Data Center Network Architecture

Data center network architectures are complex, so we've created this overview to explain essential data center components and networks.

What is a Colocation Data Center?: Colocation Benefits ...

What is a colocation data center? Get an introduction to these types of multi-tenant data centers, their benefits, challenges, solutions, and examples.

CBRE Essential Guide to Data Centre Infrastructure

Discover the essential components of data centre infrastructure, including power, cooling, networking, and security. Learn best practices for

Data Center Network Architecture: A Comprehensive

Data center network architecture is a critical component of modern computing infrastructure, enabling organizations to store, process, and manage

Data Center Networking

Stay in control with top-tier network management, automation, visibility, and security. Connect and protect data, apps, and workloads for efficient, simplified global

Data center investment drives US economy growth

Surging demand for data centers In August, Renaissance Macro Research estimated that the dollar value contributed to GDP growth by AI data-center buildout had surpassed US consumer

Net Zero Innovation Hub for Data Centers

Data centers are a cornerstone of the modern, knowledge-based society, and can play a vital part in the transition to a zero-carbon economy in Europe. The Net

2025 ESG Report: Data centre environmental impact

Structure Research has released its 2025 ESG Report, providing a look at the environmental footprint of data centres and hyperscalers.

Nvidia Tops Data Center Ethernet Switch Market

IDC data show Nvidia became the top vendor by revenue in the data center Ethernet switch market in calendar Q1 2026, generating \$2.1 billion in switch revenue and a 21.5% share of

London Data Centers | Premium Colocation Provider and Internet

London Data Centers Equinix London delivers unrivaled access and direct connections to European markets in one of the world's most important financial and business capitals. Home to Equinix

OFC 2026 Exhibit Connects the Global Optical Ecosystem Powering

Hundreds of global brands and innovators will showcase the technologies defining AI-era data centers and networks — from co-packaged optics (CPO) and optical I/O for scale-up systems, to advances in

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://lwazipm.co.za>

Email: info@lwazipm.co.za

Phone: +27 82 415 6392

Address: 15 Oxford Street, Rosebank, Johannesburg, 2196, South Africa

This document is for informational purposes only. Specifications subject to change without notice.

