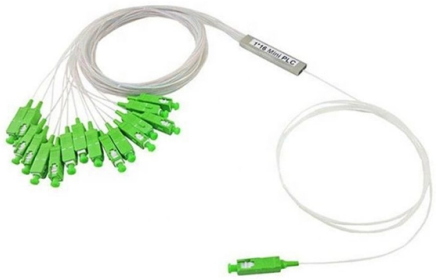
# How to interconnect cloud data centers



## Overview

Explore key interconnection approaches in colocation data centers to boost connectivity, agility, and business performance with real-world examples.

## Key Takeaways

Cloud data centers are interconnected using private, high-performance networks, enabling seamless data exchange, workload migration, and multicloud integration. Overview of Data Center Interconnection (DCI)Data center interconnect (DCI) refers to dedicated network connections between multiple data center facilities, allowing geographically separated infrastructure to operate as a unified environment. Unlike public internet connections, DCI provides predictable latency, guaranteed bandwidth, and enhanced security, which is critical for applications requiring real-time synchronization, disaster recovery, or distributed workloads.

DC

I can use technologies such as dark fiber, wavelength services, Ethernet circuits, or MPLS networks to establish private connectivity between sites. Types of ConnectivityLAN Extension (Layer 2): Extends a single Layer 2 domain across data centers, supporting legacy applications and virtual machine mobility. Layer 3 Extension: Provides routed connectivity for segmentation, virtualization, and backup applications, often using VPNs or MPLS.

SA

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved

N Extension: Connects storage networks across sites, addressing latency and distance challenges for Fibre Channel traffic. Path Optimization: Ensures efficient routing for client-to-server and server-to-server communication across stretched VLANs.

## Interconnection in Colocation and Multicloud Environments

Interconnection hubs in carrier-neutral data centers allow organizations to connect to multiple clouds and service providers with private, low-latency links, reducing provisioning time and improving scalability. These hubs support hybrid multicloud architectures, enabling enterprises to distribute workloads across public clouds, private clouds, and on-premises infrastructure while maintaining business continuity and compliance.

## Multicloud Connectivity Solutions

Cloud providers offer managed interconnect services to link different cloud environments. For example, AWS Interconnect – multicloud enables private Layer 3 connectivity between AWS and other cloud providers like Google Cloud or Microsoft Azure, using pre-provisioned interconnect capacity at global points of presence. This approach eliminates the need for physical cross-connects, reduces latency, and provides a consistent operational model for multicloud networking.

## Benefits of Interconnection

Reduced Latency: Direct connections minimize the number of network hops, improving application performance. Enhanced Security: Traffic flows over private circuits rather than the public internet, reducing exposure to attacks. High Availability and Resilience: Supports disaster recovery, workload migration, and distributed applications.

Operational Efficiency: Simplifies management of multi-site or multicloud deployments and optimizes resource placement.

## Key Considerations

When interconnecting cloud data centers, organizations must consider bandwidth requirements, latency sensitivity, redundancy, and compliance. For latency-sensitive workloads like AI model training, real-time analytics, or financial transactions, private interconnects and optimized routing are essential. Additionally, software-defined interconnection solutions allow dynamic, programmable connectivity across multiple clouds, improving agility and scalability.

In summary, interconnecting cloud data centers involves a combination of DCI technologies, interconnection hubs, and managed multicloud services to create a secure, high-performance, and resilient network fabric that spans multiple locations and cloud providers.

*© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved*

## Article Content

Understanding Interconnection in Colocation Data Centers

Explore key interconnection approaches in colocation data centers to boost connectivity, agility, and business performance with real-world examples.

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.

Data center interconnection for the cloud era

This white paper explains the need for multi-layer data center interconnection networks and how they need to support dynamic access to cloud applications and services. Today''s multiple, costly, static

Cross-Cloud Interconnect overview | Google Cloud Documentation

While Cross-Cloud Interconnect lets you turn up dedicated connectivity between Google Cloud and AWS, partner Cross-Cloud Interconnect for AWS lets you connect any Google Cloud and

Best practices for Cloud Interconnect

Use the following best practices when planning for and configuring Cloud Interconnect. Note: For definitions of terms used on this page, see Cloud Interconnect key terms. If your network...

Build resilient and scalable multicloud connectivity architectures with ...

In this post, we walk through the key design principles of AWS Interconnect – multicloud and explore reference architectures that demonstrate how to integrate this capability into existing

What is AWS Interconnect?

With AWS Interconnect, you no longer need to configure physical or virtual routers, order cross-connects, or manage BGP peering. Through a simplified process you select your AWS region, your

Data Center Interconnects: Powering Global Business Connectivity

At the heart of this transformation lies the concept of Data Center Interconnect (DCI)—an advanced solution that enables organizations to connect, synchronize, and optimize their data center

Data Centre Interconnect (DCI): Architecture & Validation

*© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved*

Learn how Data Centre Interconnect (DCI) enables secure, scalable multi-data-center connectivity using EVPN-VXLAN, MPLS, automation, and AI-driven validation by Happiest Minds.

Paris Data Centers | Premium Colocation Provider and

Colocate to our Paris data centers and interconnect with numerous companies, with low-latency routes to southern Europe, Africa and the Middle East.

ITPro Today, Network Computing, IoT World Today combine

ITPro Today, Network Computing and IoT World Today have combined with TechTarget . The page you are looking for may no longer exist.

STMicroelectronics to enable higher-performance cloud

STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications, is unveiling

Search Data Centers: Colocation, Bare Metal, Cloud

Datacenters is the #1 platform to acquire colocation, bare metal, and cloud infrastructure globally - top colocation data centers and cloud providers!

Data Center Networking Solutions

Stay in control with Cisco data center networking solutions that provide industry leading networking operations, automation, and sustainability.

CPO vs LPO vs Silicon Photonics: Optical Interconnects for AI Data ...

Compare CPO, LPO, and silicon photonics for AI data centers. Learn how power, cost, and compatibility impact optical interconnect selection.

Optimize Data Center Infrastructure Solutions | NVIDIA

Resources Data Center and AI Infrastructure Learn how to optimize your data center and AI factory —on prem and in the cloud—with NVIDIA''s full-stack solutions, continuously refined for maximum

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 computing engine. To keep

Data Center Interconnect Market Trend Analysis Report 2025-2034 ...

*© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved*

Data Center Interconnect Market Dublin, Sept. 26, 2025 (GLOBE NEWSWIRE) -- The "Data Center Interconnect Market Opportunity, Growth Drivers, Industry Trend Analysis, and

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

## Contact Us

Continue your research online:

Website: https://kenhardtprimary.co.za
Technical inquiry: https://kenhardtprimary.co.za/project-desk.html
African project coordination: Century City, Cape Town, Western Cape, South Africa

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved