

Selection Guide for DML Aggregation Switches for Intelligent Computing Centers



Article Overview

Choosing the right aggregation switch for AI and intelligent computing centers requires balancing high throughput, low latency, lossless networking, and scalability to support GPU clusters and AI workloads.

Key Selection Criteria

1. Port Density and Speed High-performance AI workloads demand switches with high-density 400G/800G ports to handle massive data flows between servers and GPUs. For example, the H3C S9857 offers 8×800GE OSFP800 and 24×400GE QSFP112 ports, supporting ultra-large data centers and AI-generated content workloads . Cisco Nexus 9000 Series and Dell PowerSwitch also provide flexible port speeds from 1G to 800G, enabling scalable Leaf-Spine or Top-of-Rack (ToR) architectures . 2. Latency and Lossless Networking AI training requires predictable microsecond-level latency and zero packet loss. Switches should support RoCE (RDMA over Converged Ethernet) with features like PFC, ECN, AI ECN, and Agile Buffer to ensure lossless, low-latency communication between GPUs and storage . InfiniBand switches provide ultra-low latency for HPC environments, while PicOS® Ethernet switches balance performance and flexibility for mixed AI workloads . 3. Scalability and Topology Support Aggregation switches must support Leaf-Spine topologies for scalable GPU clusters. High-speed spine switches aggregate multiple leaf switches to maintain non-blocking bandwidth and enable synchronous operations like all-reduce for distributed trainin...

Article Content

Application and Deployment of Optical Modules in Intelligent Computing ...

As a core component connecting servers, switches, and storage systems, optical modules play a pivotal role in

The evolution of Google's Jupiter data center network | Google Cloud

Thanks to optical circuit switching (OCS) and wave division multiplexing (WDM) in the Jupiter data center network,

Cisco Switch Selector

This versatile modular switch is designed for high-density, end-of-row, and high-performance aggregation-layer deployments in both

Core Switch

Core switches are defined as high-capacity switches located at the top of a cloud data center network, connecting aggregation

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Data Center Switches

Data Center Switches CloudEngine Data Center Switches — Ethernet switches widely used in diverse

How to Choose the Right 400G/800G Switch for AI Data Centers

Learn how to choose the right 400G switch or 800G switch for AI data centers. Explore key factors including

Eliminating Latency: Best Enterprise Switches for AI Data Centers 2026

Enterprise switches are critical for eliminating latency in AI data centers, where high-speed 400G and 800G connectivity ensures

The 9 Best Enterprise Network Switches for 2026

The network infrastructure is undergoing unprecedented changes. The explosion of AI/ML workloads, the popularity of

AI Network Switch Selection Guide: Network Architecture for Low

Technical guide to AI network switch selection covering latency, throughput, lossless Ethernet, RoCEv2, InfiniBand,

H3C S9827 Series Data Center Switches

H3C S9827 high-density intelligent series switches is developed for data centers and cloud computing networks. It provides powerful

The Ultimate Guide To Buying Data Center Switches: Your

Data Center Switch Brand Selection: Navigating Your Options As cloud data centers expand and virtualization

Data Center Switches | Dell USA

Optimize your network with flexible, scalable, and high-performance data center switches. Designed for modern workloads,

Beginner's Guide to Intelligent Computing Centers

Contributing to or studying open-source AI projects related to intelligent computing centers is a practical way to learn

Optical Switching Data Center Networks: Understanding ...

e been proposed to demonstrate the potential of optical data center networks. Optical data center networks are mainly classified into

HPE Aruba unveils raft of new switches for data center,

HPE Aruba Networking has rolled out the next generation of its flagship high-performance

5 Key Steps to Choose Network Switches for an AI Cluster

A five-step guide to selecting AI data center switches—from workload and topology to switching capacity, ports, and supplier

Data Center Multi-Tier Model Design

Data Center Core Layer The data center core layer provides a fabric for high-speed packet switching between

Cisco Data Center Networking Blueprint for AI/ML Applications

The Cisco Nexus 9000 switches have the hardware and software capabilities available today to provide the right

H3C S12500AI Data Center Intelligent Switch

Aligning with the trend toward automated operations in data centers, The S12500AI series switches support visualization functions.

Hierarchical distributed edge data aggregation and reporting method ...

To address these issues, this paper presents a hierarchical distributed edge data aggregation reporting method based

H3C S9855 DataCenter Switches

H3C S9855 series switches are a new generation of high-performance, high-density 400GE/100GE Ethernet switches launched by

Gartner® Magic Quadrant™ | DC Switching | Huawei Enterprise

Leveraging the CloudEngine series data center switches and StarryLink optical modules, Huawei implements high-precision traffic

Aggregation Switch

An aggregation switch refers to a type of switch used to connect multiple ToR switches to a core switch/router in a cloud data center

Data Center Design: Basic 3 Layers, Core, Aggregation, and Access

Data Center Basic Layered Design of Core, Aggregation, and Access The data center network design is based on a

Data Center Aggregation Layer Design and Configuration with ...

Introduction This chapter covers the design recommendations for a data center design deployment consisting of a Cisco Nexus®

CloudEngine Series Data Center Switches

Huawei CloudEngine series switches are high-performance cloud switches designed for next-generation data centers and high-end

Optical Switching Data Center Networks: Understanding Techniques

This paper first summarizes the topologies and traffic characteristics in data centers and analyzes the reasons and importance of

How to Choose a Next-Gen 400/800G Switch for AI Data Center

This article explains the 400G/800G switch market trends and key factors to consider — such as chip type, port

Different Types of Network Switches

There are several types of network switches and understanding the differences can help you make the right choices for your small

H3C S9857 Series Data Center Switches

The S9857 switches align with the trend of automated operations in data centers, supporting visualization features. Through

CloudEngine 8800 Series Data Center Switches

CE8800 switches can function as core or aggregation switches on data center networks to help enterprises and carriers build a

Exploring the Ideal Switches for Artificial Intelligence

Discover how to choose the ideal AI switch to build a scalable, high-performance AI network. Learn key technologies

Cisco Data Center Networking Blueprint for AI/ML Applications

In its simplest iteration, this network is dedicated to AI/ML workloads and is built with simple massively scalable data

Cisco Data Center Infrastructure 2.5 Design Guide

The enterprise data center contains at least one aggregation module that consists of two aggregation layer switches.

Differences Between Data Center Switch And

Discover the key differences between data center and enterprise switches. Compare Networking Solutions

For AI-driven workloads, Dell offers high-performance Ethernet and InfiniBand switches, including the Dell PowerSwitch Z-Series and

Cisco N9300 Series Smart Switches

Cisco N9300 Series Smart Switches Fuse Security with Data Center Networks Secure east/west traffic with top-of-rack Cisco N9300

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