ZITHA TECH SPECIALTY CABLES (Pty) Ltd

Aggregation Layer Switch Model Selection



Overview

What Is an Aggregation Switch and How to Choose?

Discover the role of aggregation switches. Explore differences between aggregation, access, and core switc.

Key Takeaways

Top aggregation layer switches include Cisco Nexus 9500, Arista 7500R, Juniper QFX10000, Huawei CloudEngine 16800/S6750-H, and Ruijie RG-CS85C, offering high throughput, redundancy, and advanced Layer 2/3 features.Key Considerations for Aggregation Switch Selection

Aggregation switches consolidate traffic from multiple access switches and forward it to core switches, providing high bandwidth, redundancy, and advanced traffic management features such as QoS, VLAN segmentation, and link aggregation (LACP) . When selecting a model, consider:

• Port density: Support for multiple 10/25/40/100 GigE ports to handle uplinks from access switches .

• Layer 2/3 capabilities: Routing, spanning tree, and default gateway redundancy .

• Redundancy and failover: Dual-switch aggregation modules for session state maintenance .

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

• Performance: High switching fabric and forwarding rate to prevent bottlenecks .

• Value-added services: Server load balancing, firewalling, and SSL offloading .

• Distance and connectivity: SFP ports for fiber connections over long distances .
Recommended Models
• Cisco Nexus 9500 Series: High performance and scalability, ideal for large data centers with support for 10/25/40/100 GigE uplinks and advanced Layer 3 features .

• Arista 7500R Series: Ultra-low latency, deep analytics, and high throughput, suitable for high-traffic enterprise and data center environments .

• Juniper QFX10000 Series: Offers high port density, deep telemetry, and robust Layer 2/3 capabilities for large-scale aggregation .

• Huawei CloudEngine 16800 / S6750-H: AI-enhanced operations, high-speed connectivity, and extensive port options for campus and data center aggregation .

• Ruijie RG-CS85C Series: Designed for campus and large office deployments, supporting high availability, VLAN segmentation, and link aggregation .

• Cisco Catalyst 9500: High-end campus aggregation with strong security, Layer 3 routing, and PoE support for converged networks .
Deployment Tips
• Use dual aggregation switches for redundancy and session state preservation .

• Ensure uplink capacity matches access layer traffic to avoid oversubscription .

• Test hashing algorithms for load balancing across multiple links to optimize performance .

• Consider future scalability for additional 10/25/40/100 GigE ports as network demands grow . These models and considerations provide a robust foundation for building scalable, high-performance aggregation layers in enterprise or data center networks.

Article Content

What Is an Aggregation Switch and How to Choose?

Discover the role of aggregation switches. Explore differences between aggregation, access, and core switches, and

Cisco Switch Selector

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

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Core, Aggregation, or Access Switches? Choose the

Discover the crucial differences between core, aggregation, and access switches. Find out

Which Aggregation Switch to Choose?

In-depth discussion of the key role and selection points of aggregation switches in network architecture, and

Data Center Multi-Tier Model Design

In a large data center, a single pair of data center core switches typically interconnect multiple aggregation modules

What is an Aggregate Switch?

An aggregate switch consolidates traffic from access switches, while a core switch forms the backbone of the

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®

Aggregation Layer

Aggregation-layer submodule The aggregation-layer submodule plays a pivotal role in providing a highly reliable, scalable “middle

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

Key Features of 3 layers design of Data Center: Data center network is divided into 3 standard three-layer structure.

What Is an Aggregation Switch and How to Choose?

These aggregation switches typically operate at Layer 2 or Layer 3 of the OSI model, depending on the network

Data Center Multi-Tier Model Design

The multi-tier model relies on a multi-layer network architecture consisting of core, aggregation, and access layers, as shown in

Designing and Configuring the Aggregation Layer

Designing and Configuring the Aggregation Layer The network switches in the aggregation layer provide additional resiliency

Aggregation Switch

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

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

Access Layer vs Aggregation Layer Fiber Equipment Selection Guide

A comprehensive comparison of access layer and aggregation layer fiber optic network equipment, covering switch

Chapter 5. Enterprise Data Center Design

The aggregation layer extends spanning-tree or Layer 3 routing protocols into the access layer, depending on which access layer

Link_Aggregation_Config_Guide

1 Link Aggregation Configuration Guide This document describes the Link Aggregation feature supported in

Access vs. Distribution vs. Core Switch Comparison Guide

The most common model is the three-tier hierarchy: Access Layer, Distribution Layer, and Core Layer. Each layer is served by

Aggregation layer | FortiSwitch 7.6.0 | Fortinet Document Library

This model allows the aggregation switches to easily accommodate thousands of devices passing through this layer while simplifying

FS Community

We would like to show you a description here but the site won''t allow us.

Aggregation layer | FortiSwitch 7.4.0 | Fortinet Document Library

This model allows the aggregation switches to easily accommodate thousands of devices passing through this layer while simplifying

How to Choose Best Aggregation Switch?

Do you know what role an aggregation switch plays in your network and how to choose the best one? you will get the

Router & Switch Layers: Enterprise Network Components | BizTech

The aggregation layer connects to the uplinks of the edge switches and is uplinked to the distribution layer toward the network core.

What is Switch Aggregation, Its Role and Selection Advice

This article wraps up "what is switch aggregation" and suggestions for choosing an aggregation switch. By

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Core, Aggregation, or Access Switches? Choose the Perfect Fits

Discover the crucial differences between core, aggregation, and access switches. Find out which type can best

Build Your Skills: The three-layer hierarchical model

The Distribution layer acts as an aggregation point for all the Access layer devices. The Core layer connects all

FS Community

We would like to show you a description here but the site won''t allow us.

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®

Aggregation Layer

Aggregation-layer submodule The aggregation-layer submodule plays a pivotal role in providing a highly reliable, scalable “middle

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

Key Features of 3 layers design of Data Center: Data center network is divided into 3 standard three-layer structure.

What Is an Aggregation Switch and How to Choose?

These aggregation switches typically operate at Layer 2 or Layer 3 of the OSI model, depending on the network

Data Center Multi-Tier Model Design

The multi-tier model relies on a multi-layer network architecture consisting of core, aggregation, and access layers, as shown in

Designing and Configuring the Aggregation Layer

Designing and Configuring the Aggregation Layer The network switches in the aggregation layer provide additional resiliency

Everything You Need to Know About Aggregation Switch

An aggregation switch operates at Layer 2 or Layer 3 of the OSI model, depending on the configuration and topology

Can the same model of an Aggregation Switch in a Distribution Layer ...

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

I wanted to know if let''s say I install a "Cisco random model no" Aggregation Switch in the Distribution layer, can I buy the exact

What is Switch Aggregation, Its Role and Selection Advice

This article wraps up "what is switch aggregation" and suggestions for choosing an aggregation switch. By

Switch (3) Features of access layer, aggregation layer and core layer ...

Friends in the network-related industries will definitely not be unfamiliar with the switch-related network terms such as access layer,

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

Access Layer vs Aggregation Layer Fiber Equipment Selection Guide

A comprehensive comparison of access layer and aggregation layer fiber optic network equipment, covering switch

Chapter 5. Enterprise Data Center Design

The aggregation layer extends spanning-tree or Layer 3 routing protocols into the access layer, depending on which access layer

Link_Aggregation_Config_Guide

1 Link Aggregation Configuration Guide This document describes the Link Aggregation feature supported in

What Is an Aggregation Switch and How to Choose?

Discover the role of aggregation switches. Explore differences between aggregation, access, and core switches, and

Cisco Switch Selector

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

Core, Aggregation, or Access Switches? Choose the

Discover the crucial differences between core, aggregation, and access switches. Find out

Which Aggregation Switch to Choose?

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

In-depth discussion of the key role and selection points of aggregation switches in network architecture, and

Data Center Multi-Tier Model Design

In a large data center, a single pair of data center core switches typically interconnect multiple aggregation modules

What is an Aggregate Switch?

An aggregate switch consolidates traffic from access switches, while a core switch forms the backbone of the

Cisco Switch Selection Guide for Enterprise Campus Networks

Select Cisco campus switches by network role first, then by model. Access switch selection depends on endpoint

Aggregation layer | FortiSwitch 7.6.0 | Fortinet Document Library

This model allows the aggregation switches to easily accommodate thousands of devices passing through this layer while simplifying

How to Choose Best Aggregation Switch?

Aggregation layer switches typically accept all traffic from the access layer and forward it to the core, so to ensure a

Access Layer vs Aggregation Layer Fiber Equipment Selection Guide

A comprehensive comparison of access layer and aggregation layer fiber optic network equipment, covering switch

What Is an Aggregation Switch and How to Choose?

Discover the role of aggregation switches. Explore differences between aggregation, access, and core switches, and

Cisco Switch Selector

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

Core, Aggregation, or Access Switches? Choose the

Discover the crucial differences between core, aggregation, and access switches. Find out

Which Aggregation Switch to Choose?

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

In-depth discussion of the key role and selection points of aggregation switches in network architecture, and

Data Center Multi-Tier Model Design

In a large data center, a single pair of data center core switches typically interconnect multiple aggregation modules

What is an Aggregate Switch?

An aggregate switch consolidates traffic from access switches, while a core switch forms the backbone of the

Cisco Switch Selection Guide for Enterprise Campus Networks

Select Cisco campus switches by network role first, then by model. Access switch selection depends on endpoint

Aggregation layer | FortiSwitch 7.6.0 | Fortinet Document Library

This model allows the aggregation switches to easily accommodate thousands of devices passing through this layer while simplifying

How to Choose Best Aggregation Switch?

Aggregation layer switches typically accept all traffic from the access layer and forward it to the core, so to ensure a

Access Layer vs Aggregation Layer Fiber Equipment Selection Guide

A comprehensive comparison of access layer and aggregation layer fiber optic network equipment, covering switch

Related Video Reference

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

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Contact Us

Continue your research online:

Website: https://zithatech.co.za
Technical inquiry: https://zithatech.co.za/contact.html

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

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved