

Configuring a Layer 3 Switch for the Aggregation Layer

Article Overview

To configure a Layer 3 aggregation layer switch, create a Layer 3 link aggregation group, assign member interfaces, configure IP addresses, and set up routing for VLANs.

Step 1: Access Global Configuration

Enter the global configuration mode on your switch:

```
CodeCopyswitch> enableswitch# configure terminalswitch(config)#
```

This allows you to create aggregation interfaces and configure VLANs and IP addresses .

Step 2: Create a Layer 3 Aggregation Interface

Create a Layer 3 aggregate interface (LAG or EtherChannel):

```
CodeCopyinterface port-channel 1no switchportip address 10.10.10.1 255.255.255.0no shutdown
```

- o no switchport ensures the interface operates at Layer 3.

- o Assign an IP address to the aggregated interface for routing purposes .

- o The port-channel number can range depending on your switch model (e.g., 1-256 on Aruba switches), .

Step 3: Add Member Interfaces

Add physical interfaces to the aggregation group:

```
CodeCopyinterface range GigabitEthernet1/0/1 - 2channel-group 1 mode activeno shutdown
```

- o Use LACP (mode active) for dynamic aggregation or mode on for static aggregation.

- o Ensure all member interfaces are Layer 3 capable and have the same speed and duplex settings .

Step 4: Configure VLANs and Subinterfaces (Optional)

If you need to route multiple VLANs over the aggregated link:

```
CodeCopyinterface port-channel 1.10encapsulation dot1Q 10ip address 10.10.10.1 255.255.255.0
```

- o Each subinterface corresponds to a VLAN.

- o Only traffic tagged with the VLAN ID will be processed by the subinterface .

Step 5: Configure Routing

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Set up static or dynamic routing to enable Layer 3 connectivity:

```
CodeCopyip route 0.0.0.0 0.0.0.0 10.10.10.254
```

- o For multiple VLANs, ensure each subnet has a corresponding interface or subinterface.
- o Dynamic routing protocols (OSPF, EIGRP, BGP) can also be configured on the aggregated interfaces .

Step 6: Verify Configuration

Check the status of the aggregation interface:

```
CodeCopyshow etherchannel summaryshow ip interface briefshow running-config
```

- o Ensure the port-channel is up and member interfaces are in the selected state.
- o Verify IP addresses and routing are correctly applied .

Best Practices

- o Ensure all member interfaces have identical speed, duplex, and VLAN configurations.
- o Use LACP for automatic negotiation and redundancy.
- o Monitor the operational key and aggregation state to detect misconfigurations.
- o Document IP addressing and VLAN assignments for troubleshooting. By following these steps, you can configure a Layer 3 aggregation layer switch that provides high bandwidth, redundancy, and routing capabilities for your network .

Article ID:2860 Configuring Link Aggregation Group (LAG) on a Switch Objective Link Aggregation Group (LAG)

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

Layer 3 switches can work at Layer 2 and Layer 3 and be deployed at the access layer or aggregation layer as user

Network Diagram The diagram above shows one Layer 3 switch used for Aggregation, three Layer 2 switches used for access

This document describes how to configure the components for LAN services, including link aggregation groups,

Configuring a Layer 3 Switch for the Aggregation Layer

How to configure the link aggregation on layer 3 switch and disable spanning tree? Can show me sample? for

You can configure LAGs to connect a QFX Series product or an EX4600 switch to other switches, like aggregation switches, servers,

This guide discusses Multi-Chassis Link Aggregation (M-LAG), a technology that provides both link and device

The aggregation switch is located in the middle of the network architecture, which is

2.2 Comparing layer two and layer three switches for aggregation setups 2.3 Factors to

This article discusses the difference between layer 2 and layer 3 switches and the appropriate use cases for each.

It will be good if you can provide me sample etherchannel L2 configuration (without IP address) and etherchannel L3

Learn how to add and configure Layer 3 Switch (L3) to the GNS3 emulator seamlessly. Follow our step-by-step

While creating the layer 3 aggregate interface, the system automatically creates a layer 3 dynamic aggregation group numbered the

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

The following example shows how to configure three links between two Allied Telesis managed Layer 3 switches. The three links are

Web: <https://www.kremgroup.co.za>

