

Article Overview

Huawei core switches perform advanced Layer 3 routing, managing IP routes, forwarding packets, and supporting dynamic and static routing protocols like OSPF and BGP.

Overview of Routing on Huawei Core Switches

Huawei core switches, such as the CloudEngine series, integrate Layer 3 routing capabilities to enable efficient data forwarding across multiple VLANs and network segments. These switches can act as both routing devices and gateways, selecting optimal paths for packets and forwarding them to the next hop or destination host. They support route management, which involves establishing, updating, and maintaining the routing table to ensure accurate packet delivery.

Routing Protocols Supported

Huawei core switches support a variety of dynamic and static routing protocols:

- o Static Routing: Manually configured routes for predictable traffic paths.
- o OSPF/OSPFv3: Interior Gateway Protocol for exchanging routing information within a single autonomous system.
- o BGP/BGP4+: Exterior Gateway Protocol for exchanging routes between different autonomous systems, often used in large-scale enterprise or ISP networks.
- o IS-IS, RIP, RIPng: Additional protocols for specific network scenarios. These protocols allow the switch to dynamically discover routes, calculate optimal paths, and update the routing table automatically.

Route Iteration and Forwarding

When a route does not have a directly connected next hop, Huawei switches perform route iteration. The system searches the routing table for a direct route to the next-hop IP address, then adds the corresponding outbound interface to the Forwarding Information Base (FIB). This ensures that even routes learned via BGP or VPNs can be properly forwarded through the network.

VLAN and Inter-VLAN Routing

Huawei Layer 3 switches use VLAN interfaces (VLANIF) to provide routing between VLANs. Each VLANIF interface is assigned an IP address, acting as a gateway for devices within that VLAN. This allows single-arm routing or multi-VLAN routing, enabling communication across different network segments without requiring a separate router for each VLAN.

Key Benefits

- o High-speed packet forwarding with hardware-based routing.
- o Flexible route management supporting static, dynamic, and policy-based routing.
- o Scalability for large enterprise networks with multiple VLANs and autonomous systems.
- o Integration with Huawei VRP for centralized configuration, monitoring, and network optimization . Huawei core switches thus combine the performance of a switch with the routing intelligence of a router, making them suitable for enterprise core networks, data centers, and high-performance campus networks.

Configuration Roadmap The configuration roadmap is as follows: Configure basic BGP and OSPF functions.

Huawei Ethernet Switches Turbocharge your enterprise network with high-performance, high-availability for resilient services and

Basic Configuration for Interfaces This chapter describes interface types, interface numbering rules, and configuration parameters

CX91x Series Switch Modules V100R001C00 Configuration Guide 09 This document provides the basic concepts, configuration

Provides step-by-step guidance for configuring Policy-Based Routing (PBR) on Huawei devices, enhancing network traffic

Configuration Roadmap Configure the VLAN and IP address for the core switch to connect to iMaster NCE-Campus. Configure a

Small- and Mid-Sized Campus Networks This section uses the S2750 as an access switch (ACC1), S5700 as a core switch (CORE),

"Gateway + Core Switch + Aggregation Switch + Access Switch + WAC + AP + AR180"
Networking: Local Entire Network

In this lesson we will learn Layer 3 VLAN Routing with VLAN Routing Huawei Configuration Example. We do not need any other

The document provides configuration instructions and commands for basic switch configuration using Huawei switches. It covers

Layer 3 switches provide the routing function, which indicates a network-layer function in the OSI model.

Layer 3 switches can work

Default routes are used only when packets to be forwarded fail to match any entry in the routing table. You can run the display ip

When configuring interfaces and routes, you need to specify a VPN instance to isolate public network routes from the

Huawei Technical Support

Route management helps users realize that routing devices, routing tables, and routing protocols are indispensable for data

Configuration Roadmap The configuration roadmap is as follows: Create VLANs, add interfaces to the VLANs, and assign IPv4

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

