HCIP-Datacom-Campus Network Planning and Deployment

Zetlan Technologies

Online Course

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Course Modules

1.IP Routing Basics

- Intro to Netwrk Devices: Hardware modules of modular switchs
- Three planes of network devices
- Packet processing on network devices.
- IP Routing Basics: RIB and FIB
- Route import scenario.

2.OSPF Core Knowledge

- OSPF Basics: Introduction to dynamic routing protocols
- Basic OSPF concepts
- Process of establishing an OSPF neighbor relationship
- Basic OSPF configuration
- OSPF Route Calculation: Intra-area route calculation
- Inter-area route calculation
- External route calculation
- OSPF Special Area and Other Features: Stub area & totally stub
- NSSA area and totally NSSA area
- Inter-area route summarization and external route summarizatn
- OSPF Features

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3.IS-IS Core Knowledge

- IS-IS Principles and Configuration: Basic concepts of IS-IS
- IS-IS working principle
- Basic IS-IS configuration

4.BGP Core Knowledge

- BGP Basics: BGP overview
- Basic concepts of BGP
- Basic BGP configuration
- BGP Path Attributes and RRs
- BGP route selection
- BGP EVPN Basics: MP-BGP
- EVPN overview
- Common EVPN routes
- Typical EVPN application scenarios

5.Routing and Traffic Control

- Routing Policy and Route Control: Route matching tool
- Routing policy tool
- Route control cases

Traffic Filtering & Forwarding Path Control: Policy-based routing

- MQC
- Traffic filtering

6.Switching Core Knowledge

- RSTP Principles and Configuration: RSTP overview
- Improvements of RSTP over STP
- RSTP working process
- Basic RSTP configurations
- MSTP Principles and Configuration: MSTP overview
- Basic concepts of MSTP
- Working principles of MSTP
- Basic MSTP configuration
- Stack and CSS: Overview of Stack and CSS technologies
- Stacking principles
- CSS principles
- Basic configuration

7.Multicast Basics

- IP Multicast Basics: Basic concepts of IP multicast
- Multicast data forwarding principle
- IGMP Principles and Configuration: IGMP working principle
- Introduction to the IGMP feature
- PIM Principles and Configuration: PIM basics
- PIM-DM
- PM-SM

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8.IPv6 Core Knowledge

- IPv6 Overview: IPv6 overview
- Introduction to IPv6 addresses
- ICMPv6 and NDP: ICMPv6 overview
- NDP overview
- Router discovery
- Duplicate address detection
- Redirection
- IPv6 address configuration: IPv6 address configuration mode
- Stateless IPv6 address autoconfiguration
- DHCPv6
- Implementation of IPv6 address autoconfiguration

9.Network Security Basics

- Huawei Firewall Technology: Firewall overview
- Basic concepts of firewalls
- Basic firewall configuration
- Network Device Security Features: Security hardening policies
- Netwrk device security hardeng deployment eg VPN Technolgy
- Common VPN technologies
- Basic Concepts and Applications of VRF

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10. Network Reliability

- BFD Principles and Configuration: BFD Overview
- BFD working principle
- BFD application scenarios
- Basic BFD configurations
- VRRP Principles and Configuration: VRRP overview
- VRRP working principles
- Typical VRRP application
- Basic VRRP configuration

11. Network Service and Management

- DHCP Principles and Configuration: DHCP background
- DHCP working principle and configuration
- DHCP Relay working principle and configuration
- Introduction to Network Management Protocols: Development
- Functional features of network management
- Network management protocols
- Application scenarios of network management

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12. Large-scale WLAN Architecture

- Large-Scale WLAN Networking and Deployment
- VLAN pool
- DHCP technology
- Roaming technology
- High reliability technology
- Network Admission Control technology

13. Network Solution

- Enterprise Datacom Solution Overview: Campus, Data center
- SDN-WAN, SD-WAN

14. Campus Network and Solution Overview

- Campus Network Concept
- Different Types of Campus Networks and their Main Features
- Common Campus Networks and their Characteristics
- Logical and Physical Architecture of a Typical Campus Network
- Development Trends and Challenges of Campus Networks
- Huawei Campus Network Solution

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15. Campus Network Architecture & Typical Technology App

- Typical Campus Network Architecture
- Common Ethernet Switching Technologies
- Common WLAN Network Architecture
- Campus Network Reliability Technologies
- Common Network Services and Management Technologies
- Common Network Security Technologies on Campus Networks
- Common VPN Technologies on Campus Networks

16. Network Admission Control

- Basic Concepts of Network Admission Control
- Common Authentication Technologies, Working Principles
- Basic User Access Authentication Configuration
- Function and Principle of Policy Association

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17. Free Mobility

- Policy Control Requirements of Large-Scale Campus Networks
- Differences Between Free Mobility and Traditional Technologies
- Basic Functions and Working Mechanism of Free Mobility
- Relationshp betwn Free Mobility & Campus Network Admission
- Typical Application Solution of Free Mobility
- VXLAN and Campus Network Virtualization
- New Network Requirements in Data Center Scenarios
- Basic Concepts of VXLAN
- Basic Principles of VXLAN
- VXLAN Application in Campus Network Virtualization
- Application of BGP EVPN in Campus Virtualization Scenarios
- Campus Multi-branch Interconnection Technology
- Enterprise WAN Development Trend
- Common Campus Network Interconnection Solutions
- Basic Concepts, Application Scenarios, and Working Principles
- Basic Concepts of SD-WAN
- Technical Architecture of Huawei SD-WAN Solution
- SD-WAN Interconnection Solution Implementation

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19. Campus Network Design and Deployment

- Large- & Medium-sized VXLAN Virtual Campus Network Desgn
- Requirements for Large- and Medium-sized Campus Networks
- Network Layers and Architecture of the CloudCampus
- Concepts & rltnshpof Underlay, Fabric, & Overlay on Campus
- Underlay Network Design for VXLAN-based Virtual Campus
- Fabric & Ovrlay Netwrk Desgn for VXLAN-basd Virtual Campus
- WLAN Service Design, Authenticatn Design, and O&M Mngmnt
- VXLAN-based Virtualized Campus Network Deployment Guide
- Deployment Process of the VXLAN-based Virtual Campus
- Deploying a Typical VXLAN-based Virtual Campus Network
- Configuring iMaster NCE-Campus to Mange the VXLAN Virtual
- Small- and Medium-Sized Campus Network Design Guide
- Service Requirements, Development Trends, and Challenges
- Huawei CloudCampus Solution Architecture
- Typical Small- and Medium-Sized Campus Network Solution
- Small- and Medium-Sized Campus Network Deployment Guide
- AR Routers PnP through DHCP
- AR Routers PnP through Command Lines
- Configure AR Routers Using iMaster NCE-Campus
- Configure Wireless Services on iMaster NCE-Campus

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- Campus Wireless Network Planning and Design
- WLAN Network Planning and Delivery Process
- WLAN Requirement Collection and Site Survey
- Signal Coverage Analysis, Service Analysis, Capacity Design
- Wireless Channel Planning, AP Deploymt Design, Power Supply
- WLAN Acceptance

18. Huawei CloudCampus Solution

- CloudCampus Soln Architecture, Key Components, & Functions
- Ultra-Broadband & Simplified Network Defined by the Cloud
- VXLAN-based Virtual Campus and Application Scenarios
- Common Campus Network Admission Authentication Solutions
- CloudCampus Intelligent Policy & Intelligent O&M Implementn

20. Campus Insight Intelligent O&M

- Pain Points & Requremnts of Intelligent Campus Network O&M
- Application Scenarios & Deployment Modes of Campus Insight
- Typical Campus Insight Network Scenarios
- Logical Architecture and External Interfaces of Campus Insight
- Main Functions and Features of Campus Insight
- Technical Principles and Applications of Campus Insight
- Main Operations of Campus Insight

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