HCIA-Datacom

Zetlan Technologies

Online Course

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Course Modules

Data Communication and Network Basics

1.Data Communication Network Basics

- Basic Concepts of Data Communication
- Data Transfer Process
- Network Devices and Basic Functions
- Network Type and Topology Type
- Network Engineering
- Network Engineers

2.Network Reference Model

- What is Data and Data Transfer
- Common Standard Protocols
- Layered Model Concept
- Application Layer and Related Protocols
- Transport Layer and Related Protocols
- Network Layer and Related Protocols
- Data link Layer and Related Protocols
- Physical Layer and Related Protocols
- Data Transfer, Encapsulation and Decapsulation

3.Huawei VRP Basics

- Common Network Devices
- VRP Basics
- CLI Command Views
- Basic Commands and Function Keys of the CLI

Constructing an Interconnected IP Network

4.Network Layer Protocol and IP Addressing

- Network Layer Protocol
- Concept, Classification, and Special IP Addresses of IPv4
- IP Network and IP Subnet Calculation
- IP Network Address Planning

5.IP Routing Basics

- Basic Working Principles of Routers
- Routing Table Concepts
- Routing and Forwarding Features
- Static Route Configuration

6.OSPF Basics

- Basic Features of OSPF
- OSPF Application Scenarios
- Working Principle of OSPF
- Basic OSPF configurations

Constructing an Ethernet Switching Network

7.Ethernet Switching Basics

- Basic Concepts of Ethernet
- Concept of MAC Address
- Working Process and Principles of Layer 2 Switches
- Composition and Formation of a MAC Address Table

8.VLAN Principles and Configuration

- Background of VLAN
- Basic Concepts and Principles of VLAN
- VLAN Data Communication Process on a Layer 2 Network
- Basic VLAN Configuration

9.Spanning Tree Protocol

- Background of STP
- Basic Concepts and Working Principles of STP
- Basic Concepts of RSTP and Improvements Compared with STP
- Basic STP Configuration
- Layer 2 Loop Elimination Technologies

10. Ethernet Link Aggregation and Switch Stacking

- Basic Concepts of Link Aggregation
- Working Principles of Manual Link Aggregation
- Working Principles & Features of Link Aggregatn in LACP Mode
- Basic Concepts of iStack and CSS

11. Implements Communication Between VLANs.

- Working Principles of Sub-interfaces
- Working Mechanism of Layer 3 Switches
- Sub-interface Configuration
- VLANIF Configuration

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Network Security and Network Access Basics

12. ACL Principles and Configuration

- Basic Principles and Functions of ACLs
- Basic Structure and Matching Order of ACL Rules
- Usage of Wildcard mask
- Basic ACL Configuration

13. AAA Principles and Configuration

- Basic Principles and Application Scenarios of AAA
- Basic Configuration of the Local AAA

14. NAT Basics

- Background of NAT
- NAT Classification and Technical Principles
- NAT Configuration in Different Scenarios

Network Services and Applications

15. Network Services and Applications

- Principles of TFTP, FTP, DHCP, and HTTP
- Configuration of FTP and DHCP

WLAN Basics

16. WLAN Overview

- Basic Concepts of WLAN and History of 802.11 Protocol suite
- WLAN devices
- WLAN Networking Mode
- WLAN Working Process
- Basic WLAN Configuration

WAN Basics

17. WAN Technology Basics

- Basic WAN Concepts
- Common WAN Technologies
- Working Principles of PPP and PPPoE
- Configuring PPP and PPPoE & Basic Concepts of MPLS/SR

Network Management and O&M

18. Network Management and O&M

- Basic Concepts of the NMS and O&M
- Common NMS and O&M Methods and Tools
- Working Principle of SNMP
- SDN-based NMS and O&M Solution

IPv6 Basics

19. IPv6 Basics

- Comparison Between IPv6 and IPv4
- Basic Concepts of IPv6
- Format and Principle of the IPv6 Packet Header
- IPv6 Address Format and Address Type
- IPv6 Address Configuration Method and Procedure
- Static and Dynamic IPv6 Address Configuration
- IPv6 Static Route Configuration

SDN and Automation Basics

20. SDN and NFV Basics

- Basic SDN Concepts
- Huawei SDN Products and Solutions
- Basic NFV Concepts
- Huawei NFV Products and Solutions

21. Network Programming and Automation

- Traditional Network O&M Status Analysis
- Implementation of Network Automation
- Programming Language
- Python Coding Specifications
- Implement Basic Automatic O&M Using Python telnet lib.

Typical Campus Network Architectures and Practices

22. Typical Networking Architecture and Cases

- Campus Network Architecture
- Campus Network Lifecycle
- Campus Network Construction Cases
- Campus Network Construction Practice

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