Training: Huawei
HCIA-Datacom

TRAINING GOALS:

Huawei Certified ICT Associate-Datacom training and certificating engineers with basic datacom knowledge and skills.

Objectives

After completing the training, you will be able to:

- Understand the definition of data communication and the capability model of data communication engineers.
- Understand the network reference model and the entire data communication process.
- Be familiar with the VRP system and be able to perform basic operations.
- Understand IPv4 address protocol and related concepts
- Understand the forwarding principles of Layer 3 devices such as routers and Layer 3 switches.
- Understand the concept of routing and use static route or OSPF to build a Layer 3 network.
- Understand basic Ethernet concepts and describe the functions and working principles of Layer 2 switching devices.
- Be familiar with common Ethernet protocols, such as VLAN, Spanning Tree Protocol , link aggregation and stacking.
- Configure ACLs and AAA to provide basic security solutions for the network.
- Be familiar with the NAT protocol and master the NAT configuration in different scenarios.
- Master the configuration of common services on enterprise networks, such as DHCP, FTP and Telnet.
- Understand basic WLAN concepts and complete basic configurations of small or medium-sized WLAN networks.
- Understand basic WAN concepts and WAN solutions such as MPLS and SR.
- Have general knowledge of basic concepts of enterprise network management.
- Be familiar with traditional network management and SDN-based network management solutions.
- Have a good command of IPv6 protocols and be able to build small-scale IPv6 networks.
- Have a good command of the campus network construction process. Be able to independently construct small-sized campus networks.
- Understand the basic concepts of SDN and programming automation and master the basics of

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Python.

Target Audience

- Who wants to become Data Communication Engineers
- Who wants to obtain the HCIA-Datacom Certification

CONSPECT:

- Data Communication and Network Basics
  - 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
  - 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
  - Huawei VRP Basics
    - Common Network Devices
    - VRP Basics
    - CLI Command Views
    - Basic Commands and Function Keys of the CLI
- Constructing an Interconnected IP Network
  - 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

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- IP Routing Basics
  - Basic Working Principles of Routers
  - Routing Table Concepts
  - Routing and Forwarding Features
  - Static Route Configuration
- OSPF Basics
  - Basic Features of OSPF
  - OSPF Application Scenarios
  - Working Principle of OSPF
  - Basic OSPF configurations

- Constructing an Ethernet Switching Network
  - 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
  - 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
  - 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
    - Other Layer 2 Loop Elimination Technologies
  - Ethernet Link Aggregation and Switch Stacking
    - Basic Concepts of Link Aggregation
    - Working Principles of Manual Link Aggregation
    - Working Principles and Features of Link Aggregation in LACP Mode
    - Basic Concepts of iStack and CSS
  - Implements Communication Between VLANs.
    - Working Principles of Sub-interfaces
    - Working Mechanism of Layer 3 Switches
    - Sub-interface Configuration

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- VLANIF Configuration
- Network Security and Network Access Basics
  - 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
  - AAA Principles and Configuration
    - Basic Principles and Application Scenarios of AAA
    - Basic Configuration of the Local AAA
  - NAT Basics
    - Background of NAT
    - NAT Classification and Technical Principles
    - NAT Configuration in Different Scenarios
- Network Services and Applications
  - Network Services and Applications
    - Principles of TFTP, FTP, DHCP, and HTTP
    - Configuration of FTP and DHCP
- WLAN Basics
  - 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
  - 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
  - Network Management and O&M
    - Basic Concepts of the NMS and O&M
    - Common NMS and O&M Methods and Tools

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- Working Principle of SNMP
- SDN-based NMS and O&M Solution

- IPv6 Basics
  - 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
  - SDN and NFV Basics
    - Basic SDN Concepts
    - Huawei SDN Products and Solutions
    - Basic NFV Concepts
    - Huawei NFV Products and Solutions
  - 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 telnetlib.
- Typical Campus Network Architectures and Practices
  - Typical Networking Architecture and Cases
    - Campus Network Architecture
    - Campus Network Lifecycle
    - Campus Network Construction Cases
    - Campus Network Construction Practice

REQUIREMENTS:

- Be familiar with PC operations.
- Basic understanding of IT technologies and network knowledge

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Difficulty level



CERTIFICATE:

The participants will obtain certificates signed by Huawei (course completion).

This course also helps you prepare for the Huawei HCIA-Datacom exam.

- Exam Code: H12-811
- Exam Type: Written examination
- Exam Format: Single-answer Question,Multiple-answer Question,True or false,Short Response Item,Drag and Drop Item
- Time: 90min
- Passing Score/Total Score: 600/1000

TRAINER:

Huawei Certified Trainer.

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