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

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

- 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

- 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

- - - 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.