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1 Training Description

1.1 H3C Certification Training

1.1.1 Constructing Small- and Medium-Sized Enterprise Networks V7.0 (V7)

Training Object

- Personnel who are interested in network technologies and H3C certification
- H3C's agent engineers
- H3C training partner's trainers
- H3C product O&M personnel and technical support personnel

Entry Requirements

- Be familiar with computer operations and Windows UI.
- Understand basic principles and common network equipment of the communications network.
- Understand TCP/IP.

Objectives

Upon completing this training, trainees will be able to:

- Master the basic principles of computer network communications and TCP/IP principles.
- Master the principles and configurations of routers and Ethernet switches.
- Master the principles, configurations, and maintenance of the LAN and WAN protocols.
- Master the basic principles and configurations of IP routes and routing protocols.
- Take charge of the installation, configuration, and maintenance of low-end routers.
- Handle common failures in network connection and software configuration of routers.

Courses

Course ID	Course Name	Total Duration of Course (Working Days)	Practical Operation Duration (Working Days)
HL-101	Computer Network Foundation	0.5	
HL-102	Getting Started with H3C Network Devices	0.5	0.25
HL-103	LAN Switching	0.75	0.35
HL-104	Advanced TCP/IP	0.5	0.2
HL-105	IP Routing	1.25	0.5
HL-106	Configuring a Secure Branch Network	0.75	0.35
HL-107	WAN Access and Interconnection	0.75	0.35

Course ID	Course Name	Total Duration of Course (Working Days)	Practical Operation Duration (Working Days)
Total		5	2

Training Content

- Basic network knowledge, OSI model, and TCP/IP model
- IP subnetting and major TCP/IP working principles
- Typical LAN and WAN technologies
- Working principles and basic configurations of routers and Ethernet switches
- Principles and configurations of IP routes and routing protocols
- Packet filtering by ACL
- Address translation principles and configurations
- Principles and configurations of PPP and HDLC

Training Mode

Class teaching and practical operation

Training Duration

5 working day, including 2 working days of practical operation

2 Course Description

HL-101 Computer Network Fundamentals

Prerequisites

- Be familiar with computer operations and windows system operations.
- Master basic knowledge of data communications network.
- Have a preliminary understanding of TCP/IP.

Course Objectives

Master the definition, classification and major concepts of computer networks; understand hierarchical network models; understand the basic principles of technologies and protocols used on the data link layer, network layer, and transport layer.

Course Content

- Basic concepts of computer networks
- TCP/IP stack and OSI model
- Basic principles of LANs and WANs
- Basic principles of IP, TCP, and UDP

Training Mode

Class teaching

Maximum Number of Trainees

20

Course Duration

0.5 working days

HL-102 Getting Started with H3C Network Devices**Prerequisites**

- Personnel who have completed course HL-101 or have a comparable level of technology

Course Objectives

Understand the structure of routers and switches and the features of their operating systems; be familiar with the command-line interface; be able to implement basic management and configurations of routers and switches using various means; and use basic commands for troubleshooting.

Course Content

- H3C routers, switches, and operating systems
- Basic operations on the CLI
- Document management of network equipment
- **ping** and **tracert** commands
- System debugging

Training Mode

Class teaching and practical operation

Maximum Number of Trainees

20

Course Duration

0.5 working day, including 0.25 working days of practical operation

HL-103 LAN Switching

Prerequisites

- Personnel who have completed course HL-102 or have a comparable level of technology

Course Objectives

Understand the working principles of Ethernet switches; be able to configure VLANs and trunks in a small switched network environment; understand the principles of the Spanning Tree Protocol and perform basic configurations; perform basic configurations of port security and link aggregation of switches.

Course Content

- Shared and switched Ethernet, and learning, forwarding, and filtering logic for Ethernet switches
- VLAN, 802.1Q label, and trunk link
- Basic principles, functions, features, and configurations of STP/RSTP/MSTP
- Basic principles, functions, features, and configurations of port security and link aggregation technologies of switches

Training Mode

Class teaching and practical operation

Maximum Number of Trainees

20

Course Duration

0.75 working day, including 0.35 working days of practical operation

HL-104 Advanced TCP/IP**Prerequisites**

- Personnel who have completed course HL-103 or have a comparable level of technology

Course Objectives

Be able to plan and allocate IP addresses; understand the working principles of IP-related protocols such as DHCP, FTP/TFTP, and DNS, and perform basic configurations and operations; understand the characteristics of IPv6 and its address structure.

Course Content

- IP subnetting, VLSM, and CIDR
- Functions and system components of DNS, domain name structure, and domain name resolution
- Functions, features, and working principles of FTP/TFTP
- Functions, features, and system components of DHCP
- Features, addresses, and classifications of IPv6, IPv6 Neighbor Discovery Protocol, IPv6 address resolution, and automatic IPv6 address configuration

Training Mode

Class teaching

Maximum Number of Trainees

20

Course Duration

0.5 working day, including 0.2 working days of practical operation

HL-105 IP Routing**Prerequisites**

- Personnel who have completed course HL-104 or have a comparable level of technology

Course Objectives

Understand the basic principles of IP routing; understand the types of IP routing; understand the basic principles and configurations of inter-VLAN routing, static routing, RIP, and OSPF.

Course Content

- Principles of IP routing
- Direct route and static route
- Overview of routing protocols and related concepts and terms
- Features, working principles, and configurations of RIP, and differences and compatibility between RIPv2 and RIPv1
- Features, basic working principles, and basic configurations of OSPF

Training Mode

Class teaching and practical operation

Maximum Number of Trainees

20

Course Duration

1.25 working day, including 0.5 working days of practical operation

HL-106 Configuring a Secure Branch Network**Prerequisites**

- Personnel who have completed course HL-105 or have a comparable level of technology

Course Objectives

Be able to configure ACLs to improve the security of small networks; be able to configure NAT to provide Internet connections for small networks.

Course Content

- Packet filtering by ACL
- Principles, functions, types, and basic configurations of NAT

Training Mode

Class teaching and practical operation

Maximum Number of Trainees

20

Course Duration

0.75 working day, including 0.35 working days of practical operation

HL-107 WAN Access and Interconnection**Prerequisites**

- Personnel who have completed course HL-106 or have a comparable level of technology

Course Objectives

Understand the common WAN access protocols and interconnection technologies such as HDLC and PPP, and be able to perform basic configurations.

Course Content

- Basic principles, functions, features, and configurations of HDLC
- Basic principles, functions, features, and configurations of PPP

Training Mode

Class teaching and practical operation

Maximum Number of Trainees

20

Course Duration

0.75 working day, including 0.35 working days of practical operation