



Customer Training Catalog Training Programs Carrier IP Product Technology Training



HUAWEI
HUAWEI Learning Service
2015



CONTENTS

- 1 Training Path..... 6
 - 1.1 IP Technology Principle Training Path 6
 - 1.2 IP Network Planning Training Path..... 7
 - 1.3 IP Network (IP Bearer Network/ IP MAN/ IP MEN) Operation and Maintenance Training Path..... 8
 - 1.4 Router Training Path 9
 - 1.5 MSP Training Path 10
 - 1.6 MSCG Training Path 10
 - 1.7 Network Security Training Path 11
 - 1.8 Broadband Ethernet Training Path 12
 - 1.9 IP Network Performance Management Training Path 12
 - 1.10 Datacom Engineer Certification Training Path..... 13
 - 1.11 IPv6 Solution (WBT)Training Path..... 14
 - 1.12 Mobile Backhaul Solution (WBT)Training Path..... 14
 - 1.13 Carrier IP Technology (WBT) Training Path..... 15
- 2 Training Programs 16
 - 2.1 IP Technology Principle Training Programs..... 21
 - 2.1.1 IP Network Technologies and Service Training 21
 - 2.1.2 IP Network Technologies Fundamental Training 22
 - 2.1.3 Routing Technologies Training..... 23
 - 2.1.4 QoS Technologies Training 24
 - 2.1.5 MPLS Technologies Fundamental Training..... 25
 - 2.1.6 MPLS VPN Technologies Training 26
 - 2.1.7 MPLS TE Technologies Training 27
 - 2.1.8 IP Multicast Technologies Training..... 28
 - 2.1.9 Constructing ALL-IP Service Network Training 29
 - 2.2 IP Network Planning Training Programs..... 30
 - 2.2.1 IP Bearer Network Planning and Design Fundamental Training 30
 - 2.2.2 IP MAN Planning and Design Fundamental Training 31
 - 2.2.3 IP Bearer Network Planning and Design Training 32
 - 2.2.4 IP MAN Planning and Design Training 33
 - 2.2.5 IP MEN Planning and Design Training..... 34
 - 2.2.6 IP Bearer Network Planning and Deployment Training 35
 - 2.2.7 IP MAN Planning and Deployment Training 36
 - 2.2.8 IP MEN Planning and Deployment Training 37
 - 2.3 IP Network (IP Bearer Network/ IP MAN/ IP MEN) Operation and Maintenance Training Programs 38
 - 2.3.1 IP Bearer Network Access Network Operation and Maintenance Training 38
 - 2.3.2 IP Bearer Network Core Network Operation and Maintenance Training 39
 - 2.3.3 IP MEN Basic Operation and Maintenance Training 40
 - 2.3.4 IP MEN 2nd Line Operation and Maintenance Training 41
 - 2.3.5 IP MEN 3rd Line Operation and Maintenance Training..... 43



- 2.3.6 IP MEN Advanced Troubleshooting Training 45
- 2.3.7 IP Bearer Network Basic Operation and Maintenance Training 46
- 2.3.8 IP Bearer Network 2nd Line Operation and Maintenance Training 47
- 2.3.9 IP Bearer Network 3rd Line Operation and Maintenance Training 49
- 2.3.10 IP Bearer Network Advanced Troubleshooting Training 51
- 2.3.11 IP Bearer Practice Camp 52
- 2.3.12 IP MAN Practice Camp 53
- 2.3.13 IP MEN Practice Camp 54
- 2.3.14 IP Network Performance Evaluation and Optimization Training 56
- 2.3.15 IP Network Migration and Capacity Expansion Training 57
- 2.3.16 iManager U2000 Monitoring Training (IP Network) 58
- 2.4 Router Training Programs 59
 - 2.4.1 NE Series Routers Installation and Commissioning Training 59
 - 2.4.2 NE Series Routers 1st Line Maintenance Training 60
 - 2.4.3 NE Series Routers 2nd Line Maintenance Training (IP Bearer Network) 61
 - 2.4.4 NE Series Routers 2nd Line Maintenance Training (IP MAN) 63
 - 2.4.5 NE Series Routers 3rd Line Maintenance Training (IP Bearer Network) 65
 - 2.4.6 NE Series Routers 3rd Line Maintenance Training (IP MAN) 67
 - 2.4.7 NE40E-X Series Routers 100G Feature Introduction Training 69
 - 2.4.8 NE40E-XA Series Routers 400G Feature Introduction Training 70
 - 2.4.9 NE40E-XM Series Routers FMC Feature Introduction Training 71
 - 2.4.10 NE5000E-X Series Routers 100G Cluster Feature Introduction Training 72
 - 2.4.11 NE5000E-XA Series Routers 400G Cluster Feature Introduction Training 73
 - 2.4.12 NE Series Routers IPTV Service Features Training (IP MAN) 74
 - 2.4.13 NE Series Routers Advanced Troubleshooting Training (IP Bearer Network) 75
 - 2.4.14 NE Series Routers Advanced Troubleshooting Training (IP MAN) 76
 - 2.4.15 iManager U2000 NE Series Routers Operation Training 77
 - 2.4.16 NE Series Routers Delta Training (Customized) 78
- 2.5 MSP Training Programs 79
 - 2.5.1 CX600 Products Installation and Commissioning Training 79
 - 2.5.2 CX600 Products IP MEN 1st Line Maintenance Training 80
 - 2.5.3 CX600 Products IP MEN 2nd Line Maintenance Training 81
 - 2.5.4 CX600 Products IP MEN 3rd Line Maintenance Training 83
 - 2.5.5 CX600 Products IP MEN IPTV Service Features Training 85
 - 2.5.6 CX600 Products IP MEN HA Features Training 86
 - 2.5.7 iManager U2000 IP MEN CX600 Products Operation Training 87
- 2.6 MSCG Training Programs 88
 - 2.6.1 ME60 Products 1st Line Maintenance Training 88
 - 2.6.2 ME60 Products 2nd Line Maintenance Training 89
 - 2.6.3 ME60 Products IPTV Service Features Training 90
 - 2.6.4 ME60 Products Troubleshooting Training 91
 - 2.6.5 iManager U2000 ME60 Product Operation Training 92



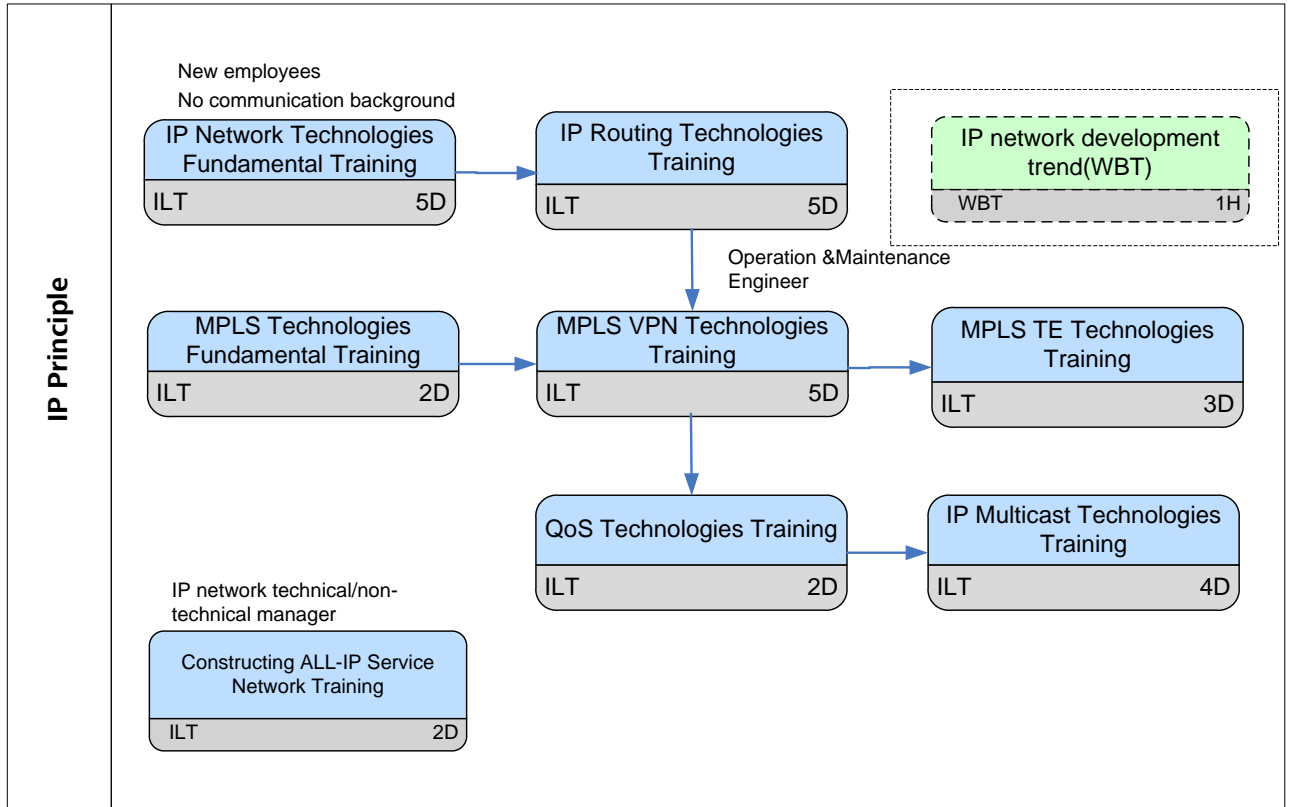
- 2.6.6 ME60 Products CGN Feature Training 93
- 2.6.7 ME60 Products IPv6 Feature Training 94
- 2.7 Network Security Training Programs 95
 - 2.7.1 Eudemon 1000E/200E Firewall Products 2nd Line Maintenance Training 95
 - 2.7.2 Eudemon 8000E Firewall Products 2nd Line Maintenance Training 96
 - 2.7.3 Eudemon 8000E/1000E/200E Firewall Products 2nd Line Maintenance Training 97
 - 2.7.4 Eudemon E1000E-N/E200E-N Firewall Products 2nd Line Maintenance Training 98
 - 2.7.5 Eudemon8000E DDoS Solution Training 99
 - 2.7.6 SIG9800 Products 2nd Line Maintenance Training 100
 - 2.7.7 IP MAN Value-added Service and Security Solution Training 101
 - 2.7.8 Security Solution for Mobile Internet Service Training 102
 - 2.7.9 Network Security Principle Training 103
 - 2.7.10 Eudemon 8000E CGN Feature Training 104
 - 2.7.11 IP MAN Datacom Products Security Features Training 105
- 2.8 Broadband Ethernet Training Programs 106
 - 2.8.1 S9300 Products Installation and Commissioning Training 106
 - 2.8.2 S9300 Products 1st Line Maintenance Training 107
 - 2.8.3 S9300 Products 2nd Line Maintenance Training 108
 - 2.8.4 S9300 Products 3rd Line Maintenance Training 110
 - 2.8.5 S63/53/33/23 Series Switches Products 2nd Line Maintenance Training 112
 - 2.8.6 S93/63/53/33/23 Series Switches Products 2nd Line Maintenance Training 114
- 2.9 IP Network Performance Management Training Programs 116
 - 2.9.1 iManager uTraffic Monitor Solution Training 116
 - 2.9.2 iManager U2520 Operation Training 117
 - 2.9.3 iManager U2000 IP Network Performance Monitoring Training 118
 - 2.9.4 iManager U2000 NMS Overview 119
- 2.10 Datacom Engineer Certification Training Programs 121
 - 2.10.1 HCDA-HNTD (Huawei Certified Datacom Associate-HuaWei Networking Technologies and Device) Training 121
 - 2.10.2 HCDP-BCRN (Huawei Certified Datacom Professional-Building Carrier Routing Network) Training 122
 - 2.10.3 HCDP-BCAN (Huawei Certified Datacom Professional-Building Carrier Access Network) Training 123
 - 2.10.4 HCDP-BITN (Huawei Certified Datacom Professional-Building IP Telecom Network) Training 124
 - 2.10.5 HCIE (Huawei Certified Internetwork Expert-Improve Carrier Network Performance) Training 125
- 2.11 Carrier IP Technology (WBT) Training Programs 127
 - 2.11.1 IP Network Basic Overview(WBT) 127
 - 2.11.2 IP Ethernet Overview(WBT) 128
 - 2.11.3 IP Route Fundamental(WBT) 129
 - 2.11.4 OSPF Protocol Fundamental(WBT) 130
 - 2.11.5 IS-IS Protocol Overview(WBT) 131
 - 2.11.6 BGP Overview(WBT) 132



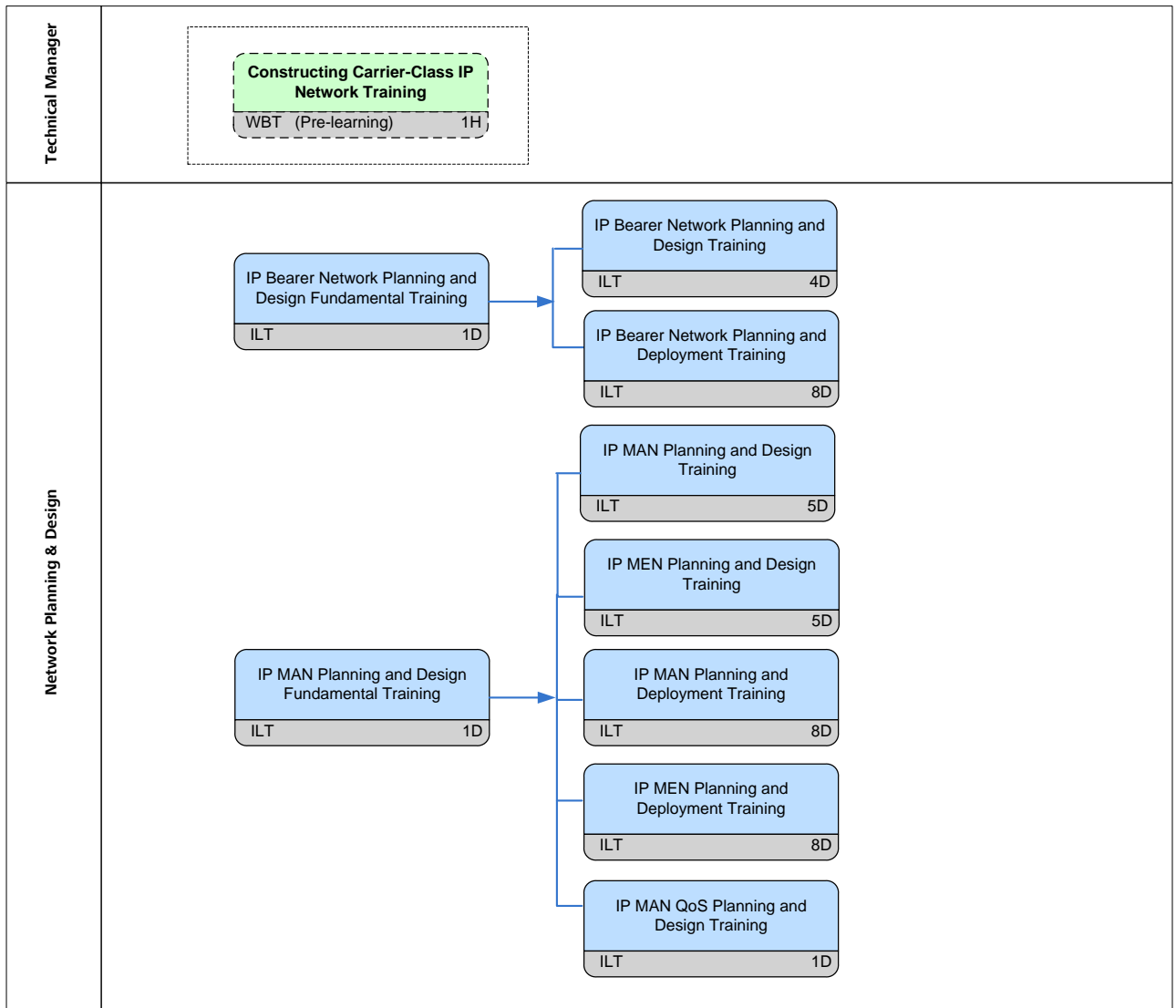
- 2.11.7 IP Multicast Fundamental(WBT) 133
- 2.11.8 MPLS VPN Overview(WBT) 134
- 2.11.9 IP MAN Service Introduction(WBT)..... 135
- 2.11.10 IP Bearer Network Service Introduction(WBT)..... 136
- 2.11.11 S9300 Switch Product Introduction(WBT)..... 137
- 2.11.12 NE Series Router Product Introduction(WBT)..... 138
- 2.11.13 Eudemon Series Firewall Product Introduction(WBT)..... 139
- 2.11.14 CloudEngine Series Switch Hardware Introduction(WBT) 140
- 2.11.15 MPLS L2 VPN Overview(WBT) 141
- 2.11.16 IP Network Development Trend(WBT)..... 142
- 2.12 IPv6 Solution (WBT) Training Programs..... 143
 - 2.12.1 IPv6 Technical Fundamental(WBT)..... 143
 - 2.12.2 IPv6 Solution Introduction(WBT)..... 144
 - 2.12.3 WLAN Services IPv6 Solutions Introduction(WBT)..... 145
- 2.13 Mobile Backhaul Solution (WBT) Training Programs 146
 - 2.13.1 IP RAN Mobile Backhaul Technical Overview(WBT)..... 146
 - 2.13.2 PTN Series Product Introduction(WBT) 147
 - 2.13.3 LTE Backhaul Solution Introduction(WBT)..... 148
 - 2.13.4 IP RAN LTE Video(eMBMS) Solution Overview(WBT) 149
 - 2.13.5 IP RAN SDN Solution Overview(WBT) 150

1 Training Path

1.1 IP Technology Principle Training Path

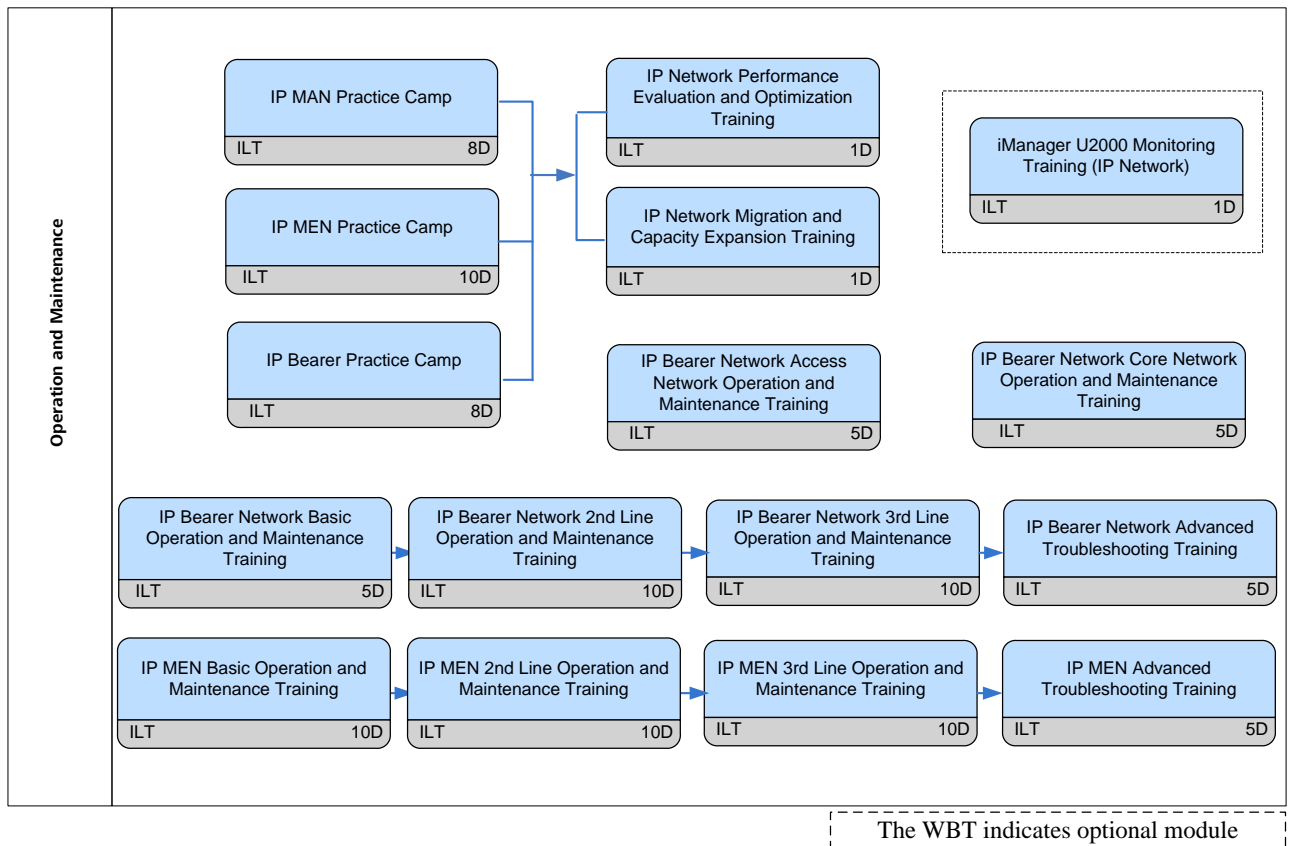


1.2 IP Network Planning Training Path

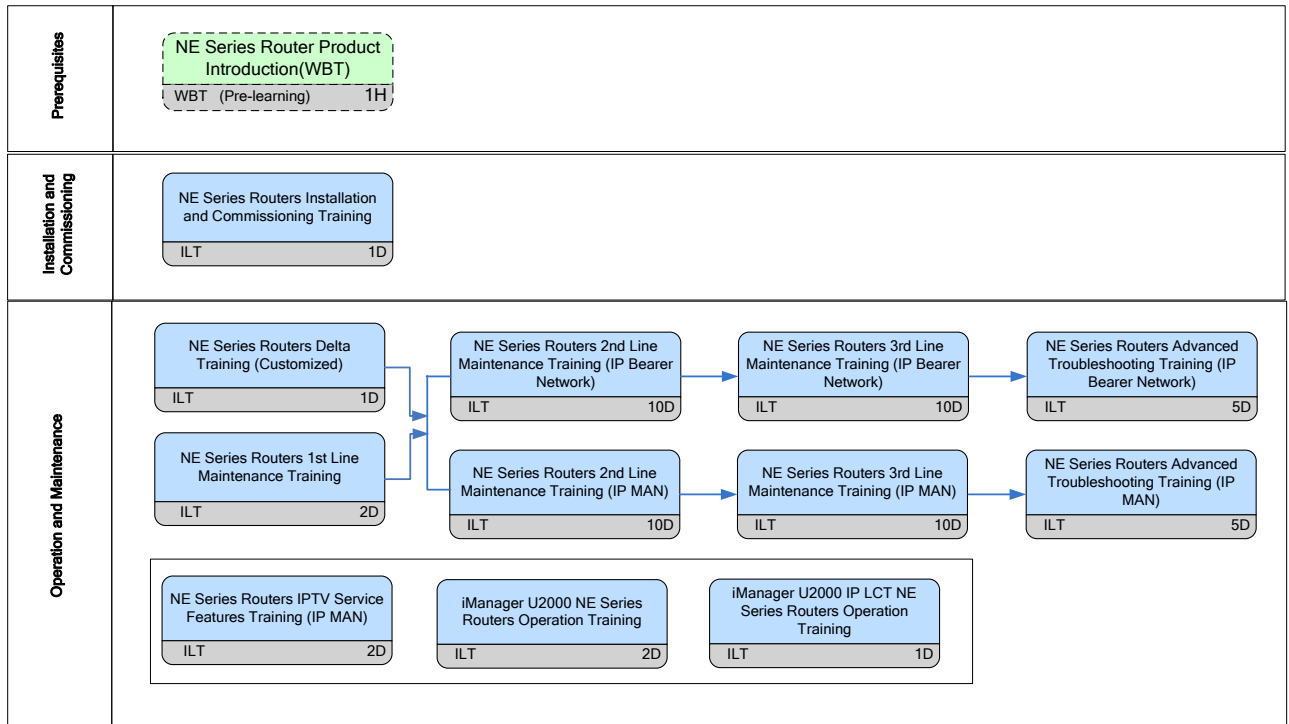


The WBT indicates optional module

1.3 IP Network (IP Bearer Network/ IP MAN/ IP MEN) Operation and Maintenance Training Path

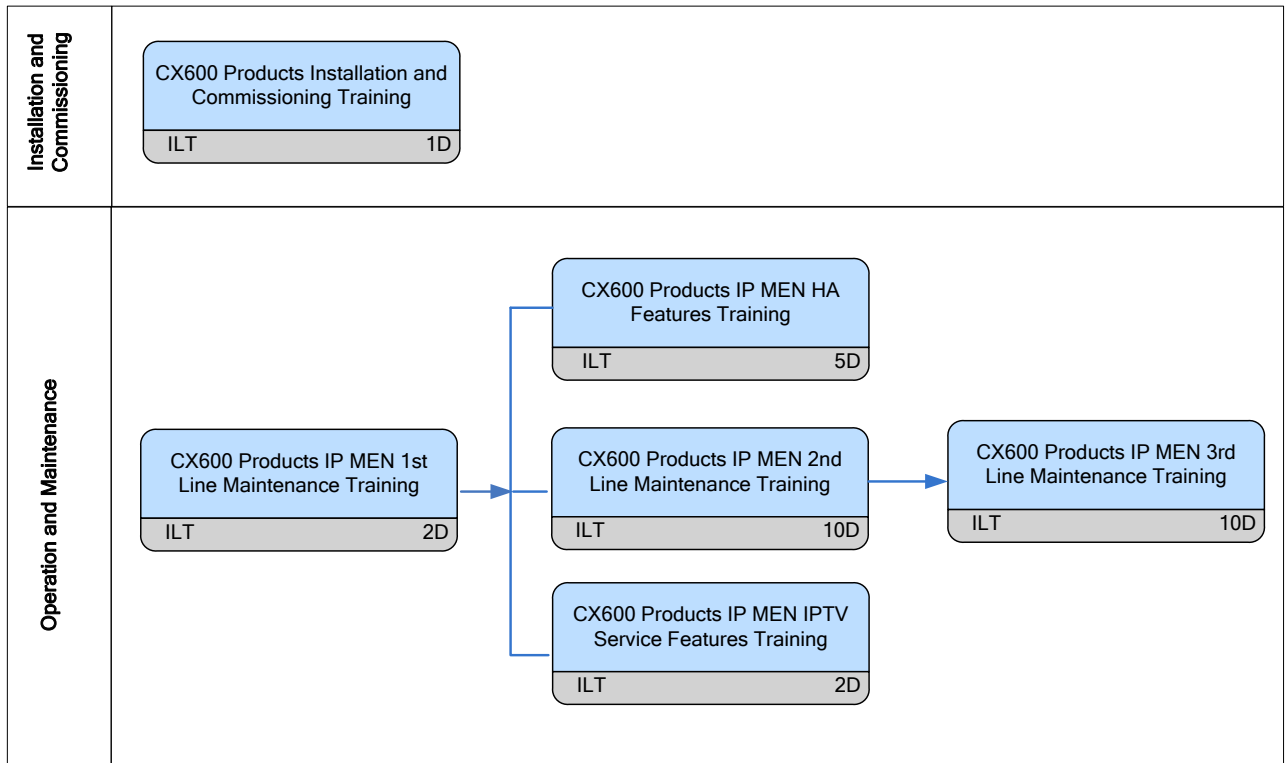


1.4 Router Training Path



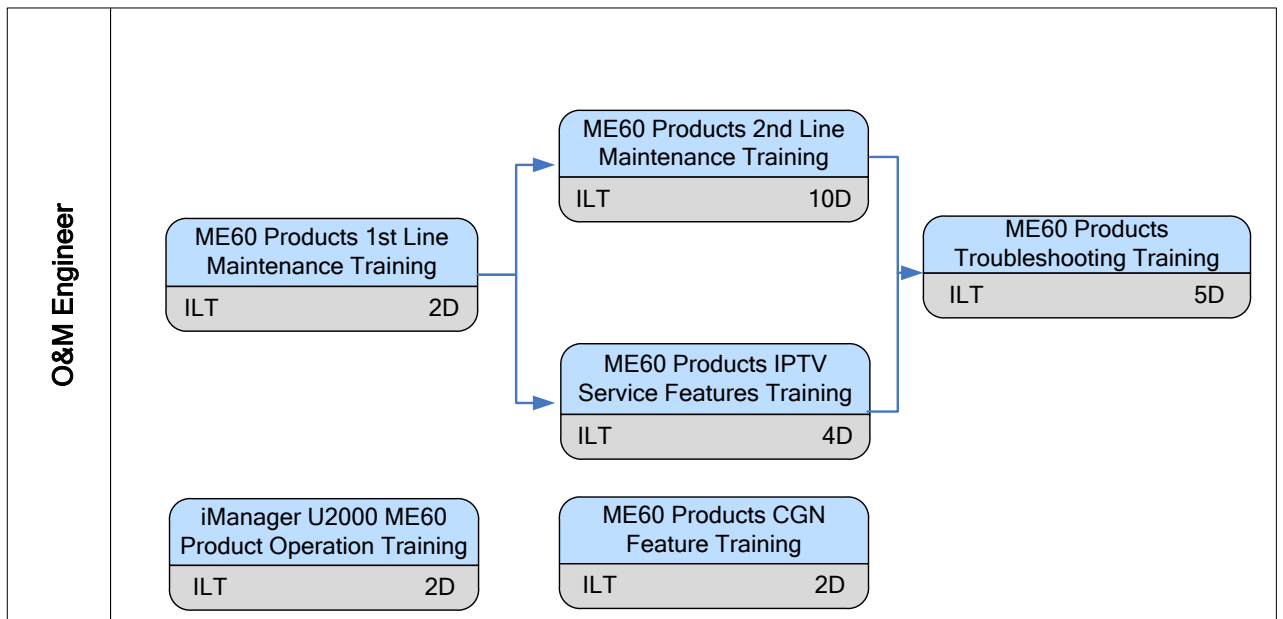
The WBT indicates optional module

1.5 MSP Training Path

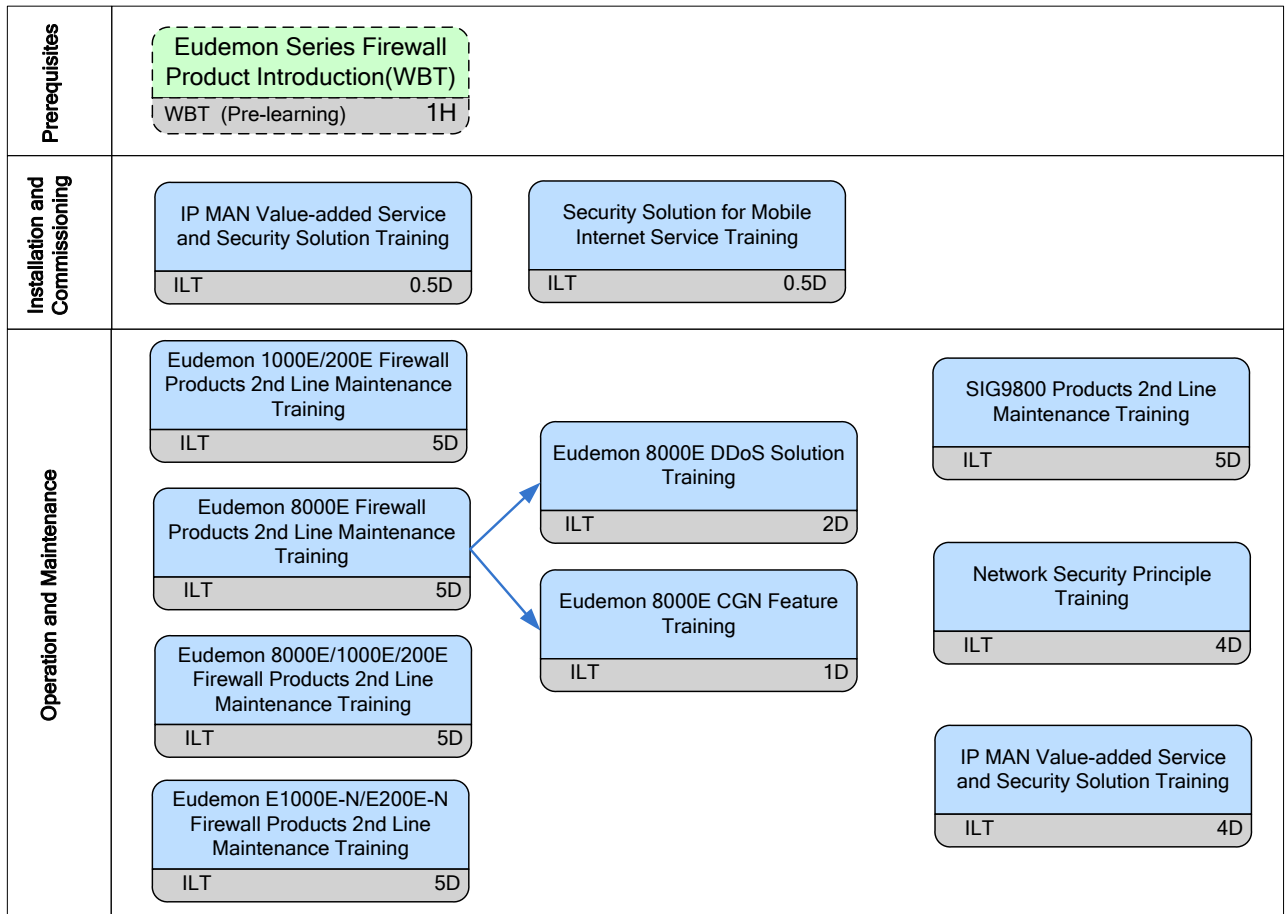


The WBT indicates optional module

1.6 MSCG Training Path



1.7 Network Security Training Path



The WBT indicates optional module

1.8 Broadband Ethernet Training Path

Prerequisites	<div style="border: 1px dashed black; padding: 5px; margin-bottom: 5px;"> <p>S9300 Switch Product Introduction(WBT)</p> <p>WBT (Pre-learning) 1H</p> </div>
Installation and Commissioning	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p>S9300 Products Installation and Commissioning Training</p> <p>ILT 1D</p> </div>
Operation and Maintenance	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>S9300 Products 1st Line Maintenance Training</p> <p>ILT/LVC 2D</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>S9300 Products 2nd Line Maintenance Training</p> <p>ILT 10D</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>S9300 Products 3rd Line Maintenance Training</p> <p>ILT 10D</p> </div> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>S93/63/53/33/23 Series Switches Products 2nd Line Maintenance Training</p> <p>ILT 10D</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p>S63/53/33/23 Series Switches Products 2nd Line Maintenance Training</p> <p>ILT 10D</p> </div>

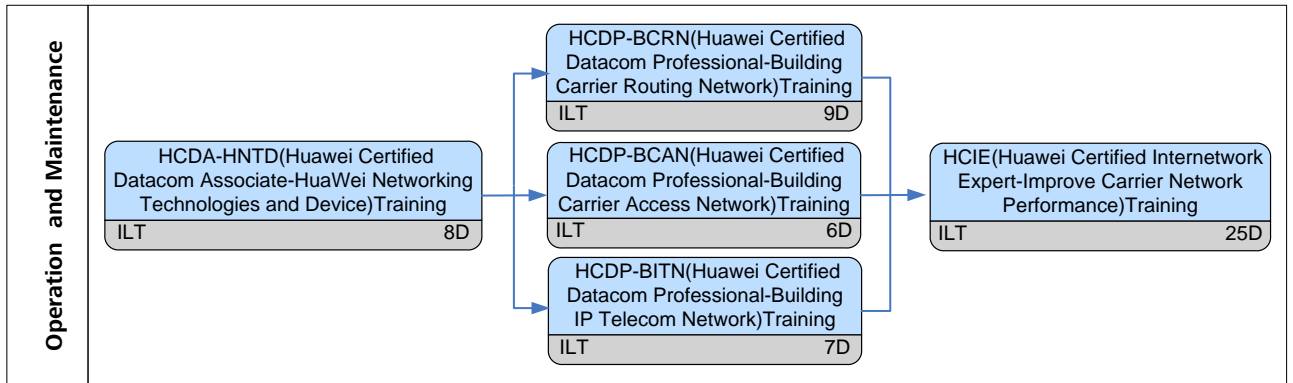
The WBT indicates optional module

1.9 IP Network Performance Management Training Path

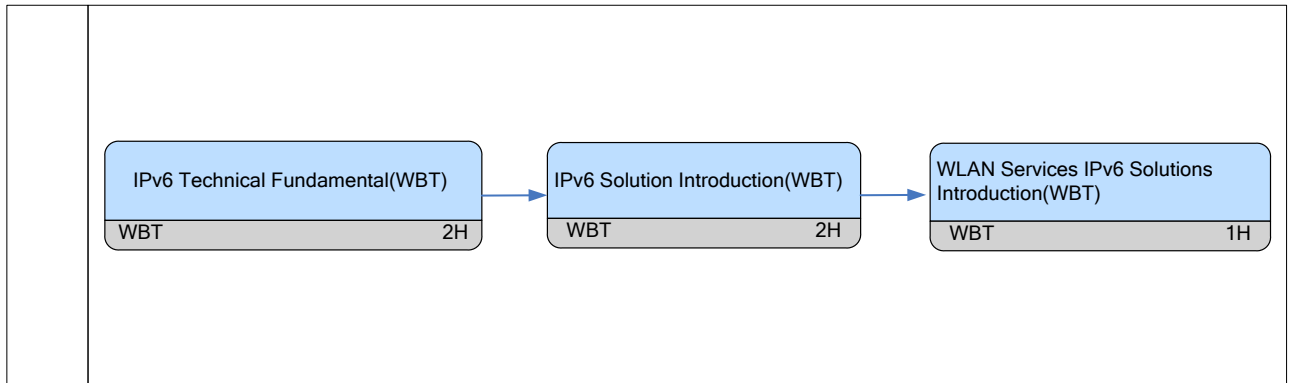
Operation and Maintenance	<div style="border: 1px solid black; padding: 5px; margin-right: 20px;"> <p>iManager U2520 Operation Training</p> <p>ILT 5D</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p>iManager uTraffic Monitor Solution Training</p> <p>ILT 1D</p> </div>
---------------------------	---

The WBT indicates optional module

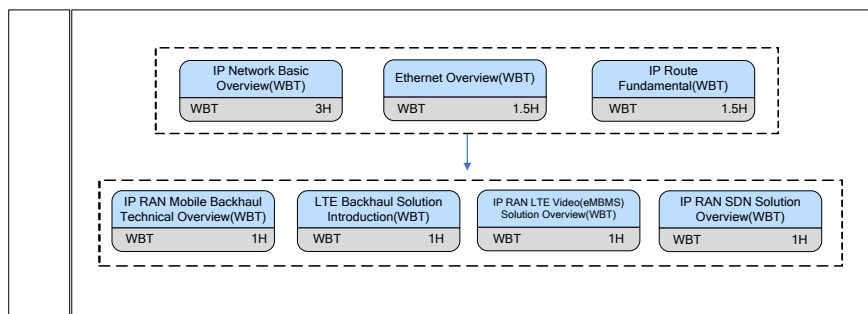
1.10 Datacom Engineer Certification Training Path



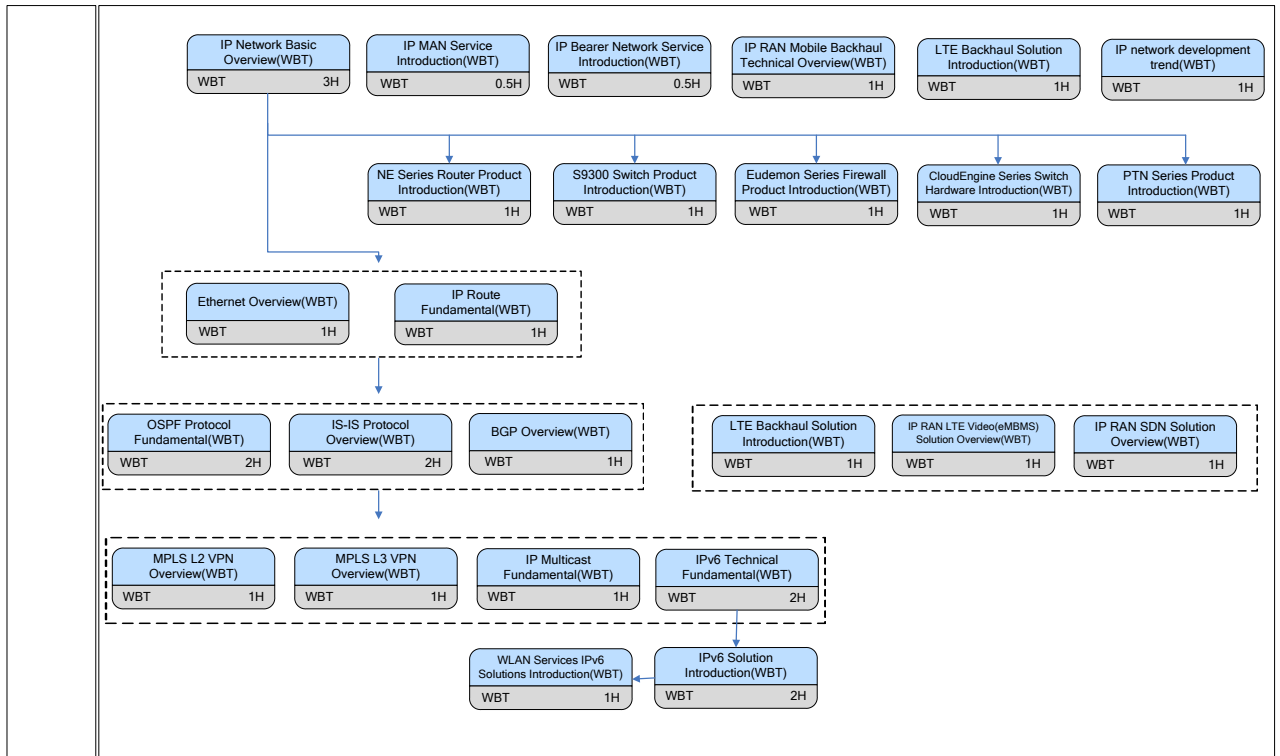
1.11 IPv6 Solution (WBT) Training Path



1.12 Mobile Backhaul Solution (WBT) Training Path



1.13 Carrier IP Technology (WBT) Training Path



2 Training Programs

Carrier IP Product Technology Training Training Programs are designed as follows:

Training Program	Program Level	Duration (workdays)	Training Location	Class Size
IP Technology Principle				
IP Network Technologies and Service Training	II	1		6 ~ 12
IP Network Technologies Fundamental Training	I	5		6 ~ 12
Routing Technologies Training	II	5		6 ~ 12
QoS Technologies Training	III	2		6 ~ 12
MPLS Technologies Fundamental Training	II	2		6 ~ 12
MPLS VPN Technologies Training	III	5		6 ~ 12
MPLS TE Technologies Training	III	3		6 ~ 12
IP Multicast Technologies Training	III	4		6 ~ 12
Constructing ALL-IP Service Network Training	III	1		6 ~ 12
IP Network Planning				
IP Bearer Network Planning and Design Fundamental Training	II	1		6 ~ 12
IP MAN Planning and Design Fundamental Training	II	1		6 ~ 12
IP Bearer Network Planning and Design Training	IV	4		6 ~ 12
IP MAN Planning and Design Training	IV	5		6 ~ 12
IP MEN Planning and Design Training	IV	5		6 ~ 12
IP Bearer Network Planning and Deployment Training	IV	8		4 ~ 8
IP MAN Planning and Deployment Training	IV	8		4 ~ 8
IP MEN Planning and Deployment Training	IV	8		4 ~ 8
IP Network (IP Bearer Network/ IP MAN/ IP MEN) Operation and Maintenance				
IP Bearer Network Access Network Operation and Maintenance Training	II	5		6 ~ 12
IP Bearer Network Core Network Operation and Maintenance Training	II	5		6 ~ 12
IP MEN Basic Operation and Maintenance Training	II	5		6 ~ 12

IP MEN 2nd Line Operation and Maintenance Training	II	10		6 ~ 12
IP MEN 3rd Line Operation and Maintenance Training	III	10		6 ~ 12
IP MEN Advanced Troubleshooting Training	III	5		6 ~ 12
IP Bearer Network Basic Operation and Maintenance Training	II	5		6 ~ 12
IP Bearer Network 2nd Line Operation and Maintenance Training	II	10		6 ~ 12
IP Bearer Network 3rd Line Operation and Maintenance Training	III	10		6 ~ 12
IP Bearer Network Advanced Troubleshooting Training	III	5		6 ~ 12
IP Bearer Practice Camp	IV	8		4 ~ 8
IP MAN Practice Camp	IV	8		4 ~ 8
IP MEN Practice Camp	IV	10		4 ~ 8
IP Network Performance Evaluation and Optimization Training	III	1		6 ~ 12
IP Network Migration and Capacity Expansion Training	III	1		6 ~ 12
iManager U2000 Monitoring Training (IP Network)	I	1		6 ~ 12
Router				
NE Series Routers Installation and Commissioning Training	I	1		6 ~ 12
NE Series Routers 1st Line Maintenance Training	I	2		6 ~ 12
NE Series Routers 2nd Line Maintenance Training (IP Bearer Network)	II	10		6 ~ 12
NE Series Routers 2nd Line Maintenance Training (IP MAN)	II	10		6 ~ 12
NE Series Routers 3rd Line Maintenance Training (IP Bearer Network)	III	10		6 ~ 12
NE Series Routers 3rd Line Maintenance Training (IP MAN)	III	10		6 ~ 12
NE40E-X Series Routers 100G Feature Introduction Training	III	1		6 ~ 12
NE40E-XA Series Routers 400G Feature Introduction Training	III	1		6 ~ 12
NE40E-XM Series Routers FMC Feature Introduction Training	III	1		6 ~ 12
NE5000E-X Series Routers 100G Cluster Feature Introduction Training	III	1		6 ~ 12
NE5000E-XA Series Routers 400G Cluster Feature Introduction Training	III	1		6 ~ 12
NE Series Routers IPTV Service Features Training (IP MAN)	III	2		6 ~ 12

NE Series Routers Advanced Troubleshooting Training (IP Bearer Network)	III	5		6 ~ 12
NE Series Routers Advanced Troubleshooting Training (IP MAN)	III	5		6 ~ 12
iManager U2000 NE Series Routers Operation Training	II	2		6 ~ 12
NE Series Routers Delta Training (Customized)	III	1		6 ~ 12
MSP				
CX600 Products Installation and Commissioning Training	I	1		6 ~ 12
CX600 Products IP MEN 1st Line Maintenance Training	I	2		6 ~ 12
CX600 Products IP MEN 2nd Line Maintenance Training	II	10		6 ~ 12
CX600 Products IP MEN 3rd Line Maintenance Training	III	10		6 ~ 12
CX600 Products IP MEN IPTV Service Features Training	III	2		6 ~ 12
CX600 Products IP MEN HA Features Training	III	5		6 ~ 12
iManager U2000 IP MEN CX600 Products Operation Training	II	2		6 ~ 12
MSCG				
ME60 Products 1st Line Maintenance Training	I	2		6 ~ 12
ME60 Products 2nd Line Maintenance Training	II	10		6 ~ 12
ME60 Products IPTV Service Features Training	III	4		6 ~ 12
ME60 Products Troubleshooting Training	III	5		6 ~ 12
iManager U2000 ME60 Product Operation Training	II	2		6 ~ 12
ME60 Products CGN Feature Training	III	2		6 ~ 12
ME60 Products IPv6 Feature Training	III	3		6 ~ 12
Network Security				
Eudemon 1000E/200E Firewall Products 2nd Line Maintenance Training	II	5		6 ~ 12
Eudemon 8000E Firewall Products 2nd Line Maintenance Training	II	5		6 ~ 12
Eudemon 8000E/1000E/200E Firewall Products 2nd Line Maintenance Training	II	5		6 ~ 12
Eudemon E1000E-N/E200E-N Firewall Products 2nd Line Maintenance Training	II	5		6 ~ 12
Eudemon8000E DDoS Solution Training	III	2		6 ~ 12

SIG9800 Products 2nd Line Maintenance Training	III	5		6 ~ 12
IP MAN Value-added Service and Security Solution Training	II	0.5		6 ~ 12
Security Solution for Mobile Internet Service Training	II	0.5		6 ~ 12
Network Security Principle Training	II	4		6 ~ 12
Eudemon 8000E CGN Feature Training	III	1		6 ~ 12
IP MAN Datacom Products Security Features Training	II	2		6 ~ 12
Broadband Ethernet				
S9300 Products Installation and Commissioning Training	I	1		6 ~ 12
S9300 Products 1st Line Maintenance Training	I	2		6 ~ 12
S9300 Products 2nd Line Maintenance Training	II	10		6 ~ 12
S9300 Products 3rd Line Maintenance Training	III	10		6 ~ 12
S63/53/33/23 Series Switches Products 2nd Line Maintenance Training	II	5		6 ~ 12
S93/63/53/33/23 Series Switches Products 2nd Line Maintenance Training	II	10		6 ~ 12
IP Network Performance Management				
iManager uTraffic Monitor Solution Training	II	1		6 ~ 12
iManager U2520 Operation Training	II	5		6 ~ 12
iManager U2000 IP Network Performance Monitoring Training	II	2		6 ~ 12
iManager U2000 NMS Overview	II	1		6 ~ 12
Datacom Engineer Certification				
HCDA-HNTD (Huawei Certified Datacom Associate-HuaWei Networking Technologies and Device) Training	II	8		6 ~ 12
HCDP-BCRN (Huawei Certified Datacom Professional-Building Carrier Routing Network) Training	III	9		6 ~ 12
HCDP-BCAN (Huawei Certified Datacom Professional-Building Carrier Access Network) Training	III	6		6 ~ 12
HCDP-BITN (Huawei Certified Datacom Professional-Building IP Telecom Network) Training	III	7		6 ~ 12
HCIE (Huawei Certified Internetwork Expert-Improve Carrier Network Performance) Training	IV	25		2 ~ 6

Carrier IP Technology (WBT)				
IP Network Basic Overview(WBT)	I	3 h		No limit
IP Ethernet Overview(WBT)	I	1 h		No limit
IP Route Fundamental(WBT)	I	1 h		No limit
OSPF Protocol Fundamental(WBT)	II	3 h		No limit
IS-IS Protocol Overview(WBT)	II	3 h		No limit
BGP Overview(WBT)	II	1 h		No limit
IP Multicast Fundamental(WBT)	II	1 h		No limit
MPLS VPN Overview(WBT)	II	1 h		No limit
IP MAN Service Introduction(WBT)	II	0.5 h		No limit
IP Bearer Network Service Introduction(WBT)	II	0.5 h		No limit
S9300 Switch Product Introduction(WBT)	II	1 h		No limit
NE Series Router Product Introduction(WBT)	II	1 h		No limit
Eudemon Series Firewall Product Introduction(WBT)	II	0.5 h		No limit
CloudEngine Series Switch Hardware Introduction(WBT)	II	1 h		No limit
MPLS L2 VPN Overview(WBT)	II	1 h		No limit
IP Network Development Trend(WBT)	III	1 h		No limit
IPv6 Solution (WBT)				
IPv6 Technical Fundamental(WBT)	II	2 h		No limit
IPv6 Solution Introduction(WBT)	II	2 h		No limit
WLAN Services IPv6 Solutions Introduction(WBT)	III	1 h		No limit
Mobile Backhaul Solution (WBT)				
IP RAN Mobile Backhaul Technical Overview(WBT)	II	0.5 h		No limit
PTN Series Product Introduction(WBT)	II	1 h		No limit
LTE Backhaul Solution Introduction(WBT)	II	1 h		No limit
IP RAN LTE Video(eMBMS) Solution Overview(WBT)	III	1 h		No limit
IP RAN SDN Solution Overview(WBT)	III	1 h		No limit

2.1 IP Technology Principle Training Programs

2.1.1 IP Network Technologies and Service Training

Training Path

IP Network Technologies and Services		
ODN01	Lecture, LVC	1d

Target Audience

IP network junior operation and maintenance engineer

Prerequisites

- Having an overview of telecommunications

Objectives

On completion of this program, the participants will be able to:

- Describe the features of IP network
- Describe the basic principle of IP network
- Describe the structure of IP network
- Describe the development of IP network

Duration

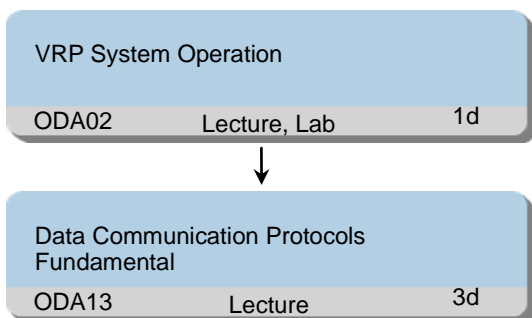
1 working day

Class Size

Min 6, Max 12

2.1.2 IP Network Technologies Fundamental Training

Training Path



Target Audience

IP network operation and maintenance support engineer

Prerequisites

- Having basic knowledge of PC operation

Objectives

On completion of this program, the participants will be able to:

- Describe the basic concepts of data communication
- Describe the basic knowledge of Internet
- Describe the organization for standardization
- Describe the basic structure of IP network
- Describe the OSI reference model layers
- Describe the TCP/IP model layers
- Describe the TCP/IP data encapsulation
- Describe the classification of IP address
- Describe the sub-netting of IP address
- Describe the principle of ARP/RARP protocols
- Describe the principle of TCP/UDP protocols
- Understand the differences between TCP and UDP
- Describe how to use the common application

tools

- Describe the VRP system structure
- Describe the basic configuration and commands
- Upgrade VRP system
- Configure the VRP user logging authentication
- Configure FTP service
- Describe basic troubleshooting process of VRP system
- Describe basic concepts of Ethernet
- Describe principles of Ethernet
- Describe principles of VLAN
- Describe principles of VLAN routing
- Describe principles of Isolate-User-VLAN
- Describe IP routing and routing table
- Describe static route
- Describe OSPF basic concepts
- Describe OSPF neighbor and adjacency relationship
- Describe OSPF intra-area route calculation
- Describe OSPF inter-area route calculation
- Describe ISIS basic concepts
- Describe ISIS adjacency relationship
- Describe ISIS route calculation
- Describe BGP basics
- Describe BGP route attributes and route selection

Duration

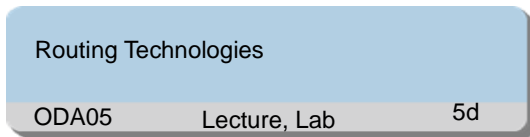
5 working days

Class Size

Min 6, Max 12

2.1.3 Routing Technologies Training

Training Path



Target Audience

IP network operation and maintenance support engineer

Prerequisites

- Having basic knowledge of TCP/IP
- Having basic knowledge of Ethernet
- Having basic knowledge of Routing

Objectives

On completion of this program, the participants will be able to:

- Describe the functions of route and analyze the routing table
- Describe the route load balance and the route standby
- Describe the basic features of OSPF
- Describe basic concepts of OSPF

- Describe the route calculation process of link state algorithm
- Describe basic configuration of OSPF
- Describe the function of LSP, PSNP and CSNP in ISIS
- Describe the ISIS LSDB synchronization process
- Describe the hierarchical routing level of ISIS
- Describe the similarities and differences between OSPF and ISIS
- Describe the common BGP attributes
- Describe the route selection rules of BGP
- Describe the BGP route aggregation methods
- Configure the route policy to select and filter routes

Duration

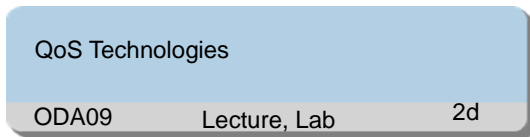
5 working days

Class Size

Min 6, Max 12

2.1.4 QoS Technologies Training

Training Path



Target Audience

IP network operation and maintenance support engineer

Prerequisites

- Having basic knowledge of TCP/IP
- Having basic knowledge of Ethernet
- Having basic knowledge of Routing

Objectives

On completion of this program, the participants will be able to:

- Describe the function of QoS
- Describe the classification of QoS
- Describe the typical applications of QoS
- Describe the concepts of IP QoS
- Describe the function and principle of traffic policing, traffic shaping, congestion management and congestion avoidance
- Describe MPLS QoS principle and function
- Describe three QoS models
- Configure QoS on VRP platform

Duration

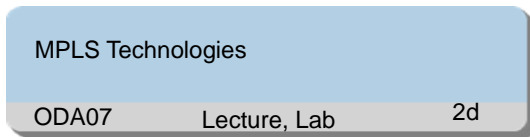
2 working days

Class Size

Min 6, Max 12

2.1.5 MPLS Technologies Fundamental Training

Training Path



Target Audience

IP network operation and maintenance support engineer

Prerequisites

- A basic understanding of data communication
- A general understanding of telecom network
- Familiar with the working principle of IGP routing protocol

Objectives

On completion of this program, the participants will be able to:

- Describe the working mechanism of MPLS
- Describe the application of MPLS

- Describe the structure of MPLS label
- Describe how MPLS forwards packets
- Describe the LDP neighbor discovery mechanism
- Describe the LDP session establishment process
- Describe the LDP label space
- Describe the LDP label distribution mode
- Describe the LDP label control mode
- Describe the LDP label retention mode
- Describe the MPLS loop detection methods
- Describe how MPLS handles TTL value

Duration

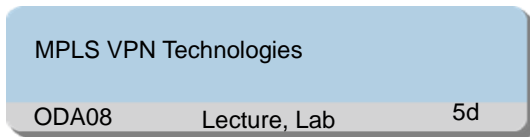
2 working days

Class Size

Min 6, Max 12

2.1.6 MPLS VPN Technologies Training

Training Path



Target Audience

IP network operation and maintenance support engineer

Prerequisites

- A basic understanding of data communication
- A general understanding of telecom network
- Familiar with the working principle of IGP routing protocol
- Familiar with the working principle of MPLS

Objectives

On completion of this program, the participants will be able to:

- Describe the basic concepts of MPLS BGP VPN
- Describe the route distribution and label distribution of MPLS BGP VPN
- Describe how packets are forwarded on MPLS

BGP VPN network

- Configure MPLS BGP VPN
- Describe the extended BGP attributes used in MPLS BGP VPN
- Describe how to access Internet through ISP
- Describe how to access Internet through MPLS BGP VPN backbone network
- Describe how to access Internet by different interfaces between PE and CE
- Describe the working principle and applications of inter-AS MPLS VPN, HoVPN, Multi-role host
- Describe the working principle of MPLS L2 VPN
- Describe the working principle of VPLS
- Describe the working principle of PWE3
- Configure MPLS, MPLS L3 VPN, MPLS L2 VPN and VPLS

Duration

5 working days

Class Size

Min 6, Max 12

2.1.7 MPLS TE Technologies Training

Training Path

MPLS TE Technologies		
ODA12	Lecture, Lab	3d

Target Audience

IP network operation and maintenance support engineer

Prerequisites

- A basic understanding of data communication
- A general understanding of telecom network
- Familiar with the working principle of IGP routing protocol
- Familiar with the working principle of MPLS

Objectives

On completion of this program, the participants will

be able to:

- Describe the concept and function of MPLS traffic engineering
- Describe the components of MPLS traffic engineering
- Describe MPLS traffic protection
- Describe the auto bandwidth adjustment and tunnel re-optimization methods
- Describe advanced applications of MPLS traffic engineering
- Implement MPLS traffic engineering

Duration

3 working days

Class Size

Min 6, Max 12

2.1.8 IP Multicast Technologies Training

Training Path

Target Audience

IP network operation and maintenance support engineer

Prerequisites

- A basic understanding of data communication
- A general understanding of telecom network
- Familiar with the working principle of IGP routing protocol

Objectives

On completion of this program, the participants will be able to:

- Describe the principle of IP multicast technologies
- Describe the working principle and versions of IGMP
- Describe the principle of PIM-SM and PIM-SSM
- Implement IP multicast service in real network

- Configure the multicast IGMP, PIM-SM and PIM-SSM
- Describe the BGP extension of MBGP
- Describe the multicast route transmission process of MBGP
- Describe the principle of MSDP
- Describe the special RPF detection process of MSDP
- Describe the function of multicast VPN
- Describe the implementation of multicast VPN
- Describe the concepts and principle of MD VPN
- Configure MBGP, MSDP and multicast VPN
- Configure MD VPN

Duration

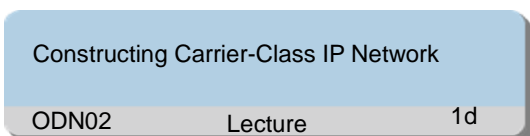
4 working days

Class Size

Min 6, Max 12

2.1.9 Constructing ALL-IP Service Network Training

Training Path



Target Audience

IP network technical/non-technical manager

Prerequisites

- Having an overview of telecommunications

Objectives

On completion of this program, the participants will be able to:

- Describe IP technology overview
- Describe IP network and service
- Describe IP network development trends
- Describe the main services of IP bearer network
- Describe the typical structure of IP bearer network
- Describe the key technologies of IP bearer network
- Describe the typical application of IP bearer

network

- Describe the network structure of IP bearer network
- Describe the challenge and opportunity of IP bearer network
- Describe the structure of broadband MAN
- Describe the key technologies of IP MAN
- Describe the solutions of IP bearer network
- Describe the development trend of MAN
- Describe the IP MAN technologies
- Describe the MBB's overall development trend
- Describe the demands and challenges of IP RAN (Radio Access Network)
- Describe the 3G and LTE mobile IP RAN backhaul solution
- Describe the MBB era of the operation and management

Duration

1 working day

Class Size

Min 6, Max 12

2.2 IP Network Planning Training Programs

2.2.1 IP Bearer Network Planning and Design Fundamental Training

Training Path

IP Bearer Network Planning and Design Basic		
ODN04	Lecture, Case, LVC	1d

Target Audience

IP bearer network planning and design engineer

Prerequisites

- Having basic knowledge of IP/MPLS/IP routing

Objectives

On completion of this program, the participants will be able to:

- Describe IP network planning and design process
- Describe IP backbone network planning and design process

Duration

1 working day

Class Size

Min 6, Max 12

2.2.2 IP MAN Planning and Design Fundamental Training

Training Path

IP MAN Planning and Design Basic		
ODN05	Lecture, Case, LVC	1d

Target Audience

IP MAN planning and design engineer

Prerequisites

- Having basic knowledge of IP/MPLS/IP routing

Objectives

On completion of this program, the participants will be able to:

- Describe IP network planning and design process
- Describe IP MAN planning and design process

Duration

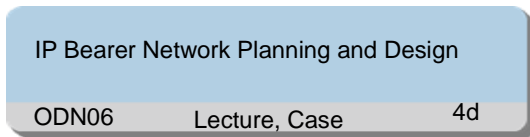
1 working day

Class Size

Min 6, Max 12

2.2.3 IP Bearer Network Planning and Design Training

Training Path



Target Audience

IP bearer network planning and design engineer

Prerequisites

- At least three years of experiences in the operation and maintenance of data communication equipment
- A good understanding of datacom network protocols

Objectives

On completion of this program, the participants will

be able to:

- Describe IP bearer network service and networking
- Plan and design IP bearer network core network connection
- Plan and design IP bearer network core network HA
- Plan and design IP bearer network central office
- Plan and design IP bearer network QoS

Duration

4 working days

Class Size

Min 6, Max 12

2.2.4 IP MAN Planning and Design Training

Training Path

IP MAN Planning and Design		
ODN07	Lecture, Case	5d

Target Audience

IP MAN planning and design engineer

Prerequisites

- At least three years of experiences in the operation and maintenance of data communication equipment
- A good understanding of datacom network protocols

Objectives

On completion of this program, the participants will be able to:

- Describe IP MAN services and products
- Plan and design IP MAN IGP
- Plan and design IP MAN BGP
- Plan and design IP MAN MPLS VPN
- Plan and design IP MAN multicast service
- Plan and design IP MAN HSI service

Duration

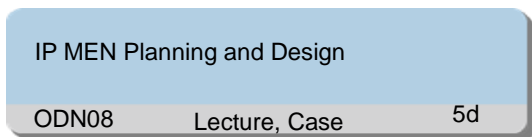
5 working days

Class Size

Min 6, Max 12

2.2.5 IP MEN Planning and Design Training

Training Path



Target Audience

IP MEN planning and design engineer

Prerequisites

- At least three years of experiences in the operation and maintenance of data communication equipment
- A good understanding of datacom network protocols

Objectives

On completion of this program, the participants will be able to:

- Describe the networking and service characteristics of the IP MEN
- Describe the characteristics of the Huawei IP MEN solution
- Describe the device naming conventions and name the devices
- Describe the device interface naming conventions and name the device interfaces
- Describe the principles of IP address planning and plan IP addresses
- Describe the modes and characteristics of terminal user and enterprise network access on an IP MEN
- Describe the IP MEN access networking and

characteristics

- Describe the functions and selection principles of the IGPs for an IP MEN
- Describe the principles of OSPF planning
- Describe the principles of IS-IS planning
- Plan OSPF in an IP MEN
- Describe the planning principle of MPLS L2 VPN for an IP MEN
- Describe the planning principle of HSI service for an IP MEN
- Describe the planning principle of enterprise VPN service for an IP MEN
- Describe the planning principle of multicast service for an IP MEN
- Plan HSI service in an IP MEN
- Plan Enterprise VPN service in an IP MEN
- Plan multicast service in an IP MEN
- Describe the application scenario and planning principle of HA features for an IP MEN
- Plan various HA features in an IP MEN
- Describe the implementation of QoS on CX600 product
- Describe the application scenario and planning principle of QoS for an IP MEN
- Plan QoS features in an IP MEN

Duration

5 working days

Class Size

Min 6, Max 12

2.2.6 IP Bearer Network Planning and Deployment Training

Training Path

IP Bearer Network Planning and Deployment		
ODN97	Lecture, Lab	8d

Target Audience

IP bearer planning and design engineer and technical support expert

Prerequisites

- At least three years of experiences in the operation and maintenance of data communication equipment
- A good understanding of datacom network protocols

Objectives

On completion of this program, the participants will be able to:

- Describe the structure of IP bearer network
- Describe the IP bearer network service and features
- Describe the networking and products of IP bearer network
- Describe the devices and interfaces of core network
- Describe the solutions of IP bearer network access part
- Describe the HA technologies of IP bearer network access part
- Configure HA features of IP bearer core network

- Describe the backbone networking of IP bearer network
- Describe the VLAN planning of IP bearer network
- Describe the fast detection technologies of IP bearer network
- Describe the fast convergence of routing protocols
- Describe the MPLS TE FRR and VPN FRR technologies of IP bearer network backbone
- Describe the GR technologies of IP bearer network
- Configure IGP/BGP and VPN of IP bearer core network
- Configure fast detection technologies of IP bearer network
- Configure fast convergence of routing protocols
- Configure MPLS TE FRR and VPN FRR technologies of IP bearer network backbone
- Configure GR technologies of IP bearer network
- Describe different QoS requirement of different services in IP bearer network
- Describe end to end QoS realization in IP bearer network
- Configure end to end QoS in IP bearer network

Duration

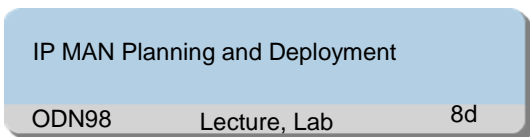
8 working days

Class Size

Min 4, Max 8

2.2.7 IP MAN Planning and Deployment Training

Training Path



Target Audience

IP MAN planning and design engineer and technical support expert

Prerequisites

- At least three years of experiences in the operation and maintenance of data communication equipment
- A good understanding of datacom network protocols

Objectives

On completion of this program, the participants will be able to:

- Describe the features of MAN
- Describe the device selection, topology selection and link selection processes in MAN

- Describe the route classification in MAN
- Plan IP address for IP MAN
- Describe IGP deployment in MAN
- Describe IGP fast convergence deployment in MAN
- Configure and adjust OSPF/ISIS in MAN
- Describe BGP deployment in MAN
- Describe BGP RR deployment in MAN
- Describe route control and route selection in IP MAN
- Configure and adjust BGP in MAN
- Describe VPN RR deployment in MAN
- Describe MPLS Inter-AS VPN deployment in MAN
- Configure and adjust MPLS VPN in MAN
-

Duration

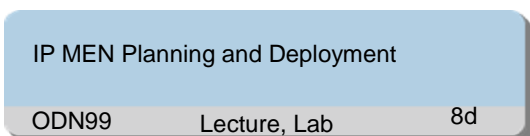
8 working days

Class Size

Min 4, Max 8

2.2.8 IP MEN Planning and Deployment Training

Training Path



Target Audience

IP MEN planning and design engineer and technical support expert

Prerequisites

- At least three years of experiences in the operation and maintenance of data communication equipment
- A good understanding of datacom network protocols

Objectives

On completion of this program, the participants will be able to:

- Describe the current situations and development trend of the IP MEN
- Describe the networking and service characteristics of the IP MEN
- Describe the characteristics of the Huawei IP MEN solution
- Describe the characteristics of the CX600-X series products
- Describe the device naming conventions and name the devices
- Describe the device interface naming conventions and name the device interfaces
- Describe the principles of IP address planning and plan IP addresses
- Describe the modes and characteristics of terminal user and enterprise network access on an IP MEN
- Describe the IP MEN access networking and characteristics
- Describe the principle of RRPP
- Plan and deploy the IP MEN access network by using RRPP

- Describe the functions and selection principles of the IGPs for an IP MEN
- Describe the principles of OSPF planning
- Describe the principles of IS-IS planning
- Plan and deploy OSPF in an IP MEN
- Describe the planning principle of MPLS L2 VPN for an IP MEN
- Describe the planning principle of HSI Service for an IP MEN
- Describe the planning principle of Enterprise VPN Service for an IP MEN
- Describe the planning principle of IPTV Service for an IP MEN
- Plan and deploy HSI service in an IP MEN
- Plan and deploy enterprise VPN service in an IP MEN
- Plan and deploy IPTV service in an IP MEN
- Describe the application scenario and planning principle of BFD for an IP MEN
- Describe the application scenario and planning principle of GR for an IP MEN
- Describe the application scenario and planning principle of MPLS TE for an IP MEN
- Describe the application scenario and planning principle of Ethernet OAM for an IP MEN
- Plan and deploy various HA features in an IP MEN
- Describe the implementation of QoS on CX600 product
- Describe the application scenario and planning principle of QoS for an IP MEN
- Plan and deploy QoS features in an IP MEN
-

Duration

8 working days

Class Size

Min 4, Max 8

2.3 IP Network (IP Bearer Network/ IP MAN/ IP MEN) Operation and Maintenance Training Programs

2.3.1 IP Bearer Network Access Network Operation and Maintenance Training

Training Path

IP Bearer Network Access Network Operation and Maintenance		
ODN10	Lecture, Lab, Case	5d

Target Audience

IP bearer network maintenance engineer

Prerequisites

- Having basic knowledge of IP/MPLS/IP routing

Objectives

On completion of this program, the participants will be able to:

- Describe the technical requirement of IP bearer network
- Describe the key technologies of IP bearer network
- Describe the IP bearer network solutions
- Describe the Ethernet technology
- Describe VLAN principle
- Perform VLAN configuration in IP bearer network
- Describe VRRP principle
- Describe VRRP protocol packets
- Perform VRRP configuration in IP bearer network
- Describe the principle of OSPF/ISIS

- Perform configuration and troubleshooting of OSPF/ISIS in IP bearer network
- Describe the QoS basic concept
- Describe the traffic classification and marking
- Describe the traffic policy and traffic shaping
- Describe the congestion management and congestion avoidance
- Describe the security requirement of IP bearer network
- Describe the network attack technologies
- Describe the working principle of firewall
- Describe the applications of firewall in IP bearer network
- Describe the IP features on Huawei Softswitch devices
- Describe the CE access solutions in Huawei IP bearer network
- Describe architecture of IP bearer network
- Describe the application of Huawei datacom products in the IP bearer network
- Perform access solution configuration of IP bearer network

Duration

5 working days

Class Size

Min 6, Max 12

2.3.2 IP Bearer Network Core Network Operation and Maintenance Training

Training Path

IP Bearer Network Core Network
Operation and Maintenance

ODN11

Lecture, Lab, Case

5d

Target Audience

IP bearer network maintenance engineer

Prerequisites

- Having basic knowledge of IP/MPLS/IP routing

Objectives

On completion of this program, the participants will be able to:

- Describe the principle of BGP
- Describe the features of BGP attributes
- Describe the BGP basic configuration
- Describe the general procedure of BGP troubleshooting in IP bearer network
- Describe the MPLS label structure
- Describe the LDP working process
- Describe the MPLS L3 VPN principle and configuration in IP bearer network
- Describe the QoS requirement of IP bearer network
- Describe the QoS realization principle
- Configure the QoS in the IP bearer network
- Describe the MPLS TE information distribution
- Describe the MPLS TE path calculation and path setup

- Describe the MPLS TE traffic forwarding
- Describe the MPLS TE deployment in the IP bearer network
- Describe the orientation and performance requirement of IP bearer network
- Describe the reliability technologies outline of IP bearer network
- Describe the features and classifications of FRR
- Describe the FRR principle
- Configure FRR (IP FRR, MPLS TE FRR, LDP FRR, VPN FRR) in IP bearer network
- Describe the improvement on router about reliability
- Describe the working steps of GR
- Describe the network structure of IP bearer network
- Describe the challenge and opportunity of IP bearer network
- Describe the key technologies of IP bearer network
- Describe the solutions of IP bearer network
- Perform core network solution configuration of IP bearer network

Duration

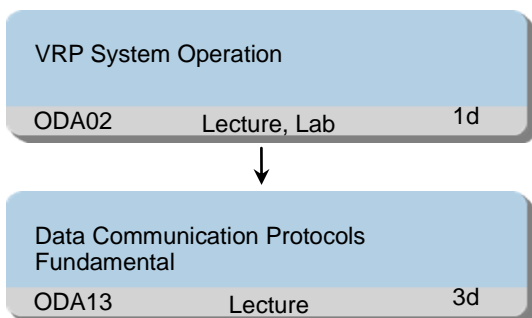
5 working days

Class Size

Min 6, Max 12

2.3.3 IP MEN Basic Operation and Maintenance Training

Training Path



Target Audience

IP MEN maintenance engineer
CX600-X3/X8/X16 routers maintenance engineer

Prerequisites

- Having basic knowledge of TCP/IP

Objectives

On completion of this program, the participants will be able to:

- Describe the basic concepts of data communication
- Describe the basic knowledge of Internet
- Describe the organization for standardization
- Describe the basic structure of IP network
- Describe the OSI reference model layers
- Describe the TCP/IP model layers
- Describe the TCP/IP data encapsulation
- Describe the classification of IP address
- Describe the sub-netting of IP address
- Describe the principle of ARP/RARP protocols
- Describe the principle of TCP/UDP protocols
- Understand the differences between TCP and UDP
- Describe how to use the common application

tools

- Describe the VRP system structure
- Describe the basic configuration and commands
- Upgrade VRP system
- Configure the VRP user logging authentication
- Configure FTP service
- Describe basic troubleshooting process of VRP system
- Describe basic concepts of Ethernet
- Describe principles of Ethernet
- Describe principles of VLAN
- Describe principles of VLAN routing
- Describe principles of Isolate-User-VLAN
- Describe IP routing and routing table
- Describe static route
- Describe OSPF basic concepts
- Describe OSPF neighbor and adjacency relationship
- Describe OSPF intra-area route calculation
- Describe OSPF inter-area route calculation
- Describe ISIS basic concepts
- Describe ISIS adjacency relationship
- Describe ISIS route calculation
- Describe BGP basics
- Describe BGP route attributes and route selection

Duration

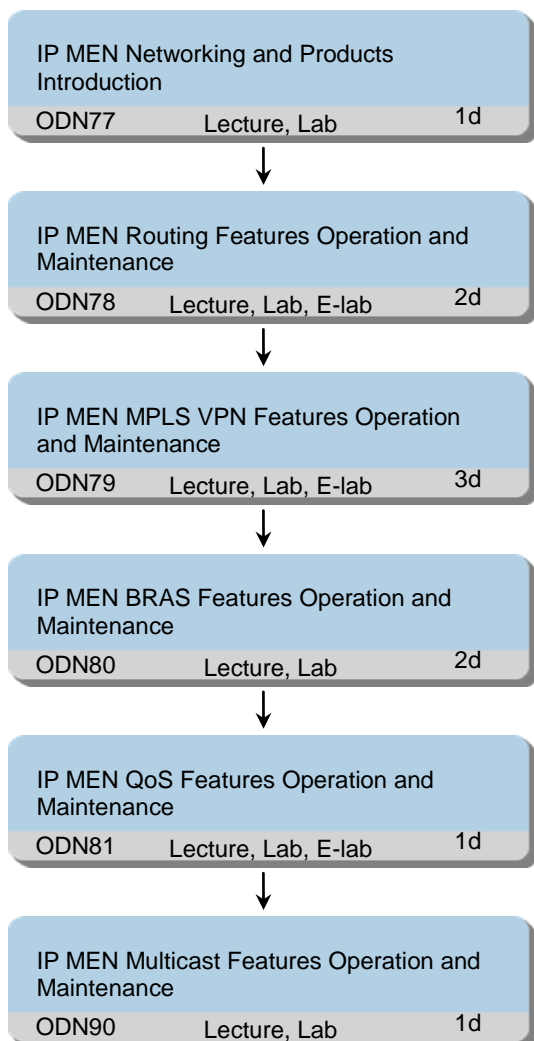
5 working days

Class Size

Min 6, Max 12

2.3.4 IP MEN 2nd Line Operation and Maintenance Training

Training Path



Target Audience

IP MEN 2nd line maintenance engineer
CX600-X3/X8/X16 routers 2nd line maintenance engineer

Prerequisites

- At least one year of experience in the operation and maintenance of data communication equipment
- A general understanding of data communication

Objectives

On completion of this program, the participants will be able to:

- Describe the current situations and development trend of the IP MEN
- Describe the networking and service characteristics of the IP MEN
- Describe the characteristics of the Huawei IP MEN solution
- Describe applications of Huawei datacom products in IP MEN
- Describe ME60 series products
- Describe S9300 series products
- Describe CX600-X series products
- Describe the meanings and functions of OSPF configuration parameters
- Configure OSPF on a network that consists of NE series routers
- Analyze and handle common faults that occur during OSPF configuration on NE series routers
- Describe the meanings and functions of IS-IS configuration parameters
- Configure IS-IS on a network that consists of NE series routers
- Analyze and handle common faults that occur during IS-IS configuration on NE series routers
- Describe the meanings and functions of BGP configuration parameters
- Configure BGP on a network that consists of NE series routers
- Analyze and handle common faults that occur during BGP configuration on NE series routers
- Choose correct route selection tools according to different route selection and control scenarios
- Properly configure route selection and control on a network consisting of NE series routers
- Describe the flow of locating an OSPF neighbor relationship establishment fault
- List common OSPF configuration errors
- Analyze and handle OSPF neighbor relationship establishment faults on a network consisting of NE series routers

- Describe the flow of locating an IS-IS neighbor relationship establishment fault
- List common IS-IS configuration errors
- Analyze and handle IS-IS neighbor relationship establishment faults on a network consisting of NE series routers
- Describe the flow of handling BGP neighbor relationship establishment faults
- List common BGP configuration errors
- Analyze and handle BGP neighbor relationship establishment faults in a network which be made of NE series routers
- Describe the meanings and functions of MPLS configuration parameters
- Configure MPLS on a network that consists of CX600-X series routers
- Describe the meaning and functions of each parameter involved in configuration of BGP MPLS VPN
- Configure BGP MPLS VPN on a network that consists of CX600-X routers
- Select suitable MPLS L2 VPN implementation modes for different MPLS L2 VPN application
- Configure MPLS L2 VPN on a network that consists of CX600-X series routers
- Master the VPLS implementation principle
- Configure VPLS on a network that consists of CX600-X routers
- Describe configuration steps of BGP MPLS VPN
- List common errors in BGP MPLS VPN configuration
- Analyze and rectify the fault that BGP MPLS

VPN users cannot visit each other on an CX600-X router network

- Describe CX600 series routers IGMP features
- Describe CX600 series routers PIM SM features
- Configure multicast features on CX600 series routers
- Describe RADIUS protocol principle
- Describe DHCP protocol principle
- Describe PPP and PPPoE protocol principle
- Describe ME60 PPP service features and realization
- Describe ME60 IP service features and realization
- Describe ME60 leased line service feature and realization
- Describe ME60 BRAS service features troubleshooting
- Configure ME60 PPP service features
- Configure ME60 IP service features
- Configure ME60 leased line service feature
- Describe CX600/CX600-X products QoS features
- Configure CX600/CX600-X products QoS features
- Locate and eliminate CX600/CX600-X products QoS features faults

Duration

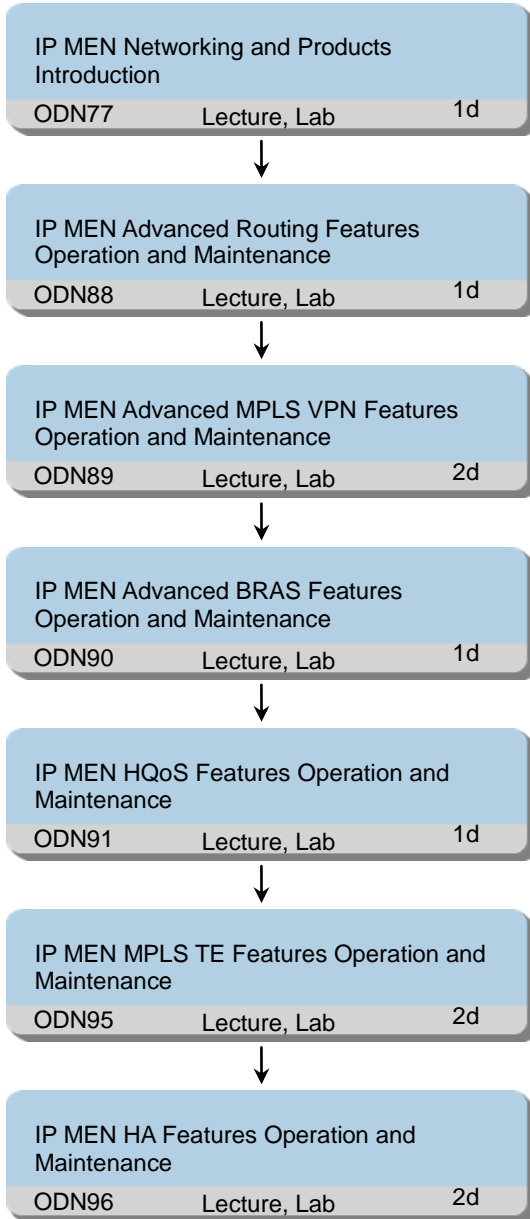
10 working days

Class Size

Min 6, Max 12

2.3.5 IP MEN 3rd Line Operation and Maintenance Training

Training Path



Target Audience

IP MEN 3rd line maintenance engineer or expert from technical supporting team
CX600-X3/X8/X16 routers 3rd line maintenance engineer or expert from technical supporting team

Prerequisites

- A good understanding of datacom network protocols
- Attended "IP MEN Operation and Maintenance

Training" or has the equivalent HCDP knowledge or experiences

Objectives

On completion of this program, the participants will be able to:

- Describe the current situations and development trend of the IP MEN
- Describe the networking and service characteristics of the IP MEN
- Describe the characteristics of the Huawei IP MEN solution
- Describe applications of Huawei datacom products in IP MEN
- Describe ME60 series products
- Describe S9300 series products
- Describe CX600-X series products
- Describe the OSPF reliability implementation mechanism on the CX600/CX600-X
- Describe the link state database (LSDB) structure
- Describe the implementation and application of OSPF VPNs on the CX600/CX600-X
- Describe the IS-IS reliability implementation mechanism of the CX600/CX600-X
- Describe the LSDB structure
- Describe the BGP reliability implementation mechanism of the CX600/CX600-X
- Describe the working principle of the BGP route reflector (RR) used on the CX600/CX600-X
- Describe the typical networking structure of the Metropolitan Ethernet Network (MEN) and route design features
- Deploy routing protocols on the MEN
- Optimize route deployment on the MEN
- Analyze and rectify routing protocol faults on the MEN
- Describe the inter-AS MPLS VPN, HoVPN, and interconnection between VPN and Internet
- Explain the implementation details of multiple VPN technologies

- Describe the application of the technologies on the network
- Describe ME60 RUI feature and realization
- Configure ME60 RUI feature
- Describe the HQoS implementation mechanism of the CX600-X/CX600
- Describe the HQoS scheduling process of the CX600-X/CX600
- Describe the HQoS implementation and applications of the CX600-X/CX600
- Describe the basic implementation principles of MPLS TE
- Deploy MPLS TE on the IP network
- Able to understand and describe RRPP

- Able to understand and describe BFD
- Able to understand and describe MPLS TE Protection
- Able to understand and describe VRRP + mVRRP
- Plan and deploy protection features on metro Ethernet

Duration

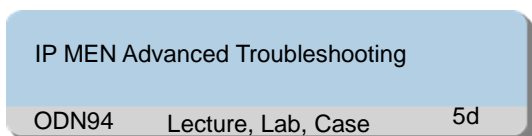
10 working days

Class Size

Min 6, Max 12

2.3.6 IP MEN Advanced Troubleshooting Training

Training Path



Target Audience

IP MEN 3rd line maintenance engineer
IP MEN expert from technical supporting team

Prerequisites

- A good understanding of datacom network protocols
- Attended "IP MEN Operation and Maintenance Advanced Training" or has the equivalent HCDP knowledge or experiences

Objectives

On completion of this program, the participants will be able to:

- Perform analysis and troubleshooting of

CX600/CX600-X routing protocols advanced features

- Perform analysis and troubleshooting of CX600/CX600-X MPLS L3 VPN advanced features
- Perform analysis and troubleshooting of CX600/CX600-X MPLS L2 VPN advanced features
- Perform analysis and troubleshooting of CX600/CX600-X multicast advanced features
- Perform analysis and troubleshooting of IP MEN ME60 PPPoE features
- Perform analysis and troubleshooting of IP MEN ME60 Leased-line features

Duration

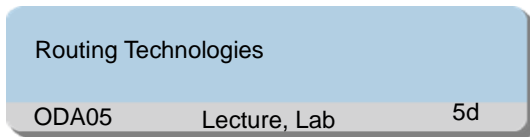
5 working days

Class Size

Min 6, Max 12

2.3.7 IP Bearer Network Basic Operation and Maintenance Training

Training Path



Target Audience

IP bearer network maintenance engineer

Prerequisites

- Having basic knowledge of TCP/IP

Objectives

On completion of this program, the participants will be able to:

- Describe the functions of route and analyze the routing table
- Describe the route load balance and the route standby
- Describe the basic features of OSPF
- Describe basic concepts of OSPF
- Describe the route calculation process of link

state algorithm

- Describe basic configuration of OSPF
- Describe the function of LSP, PSNP and CSNP in ISIS
- Describe the ISIS LSDB synchronization process
- Describe the hierarchical routing level of ISIS
- Describe the similarities and differences between OSPF and ISIS
- Describe the common BGP attributes
- Describe the route selection rules of BGP
- Describe the BGP route aggregation methods
- Configure the route policy to select and filter routes

Duration

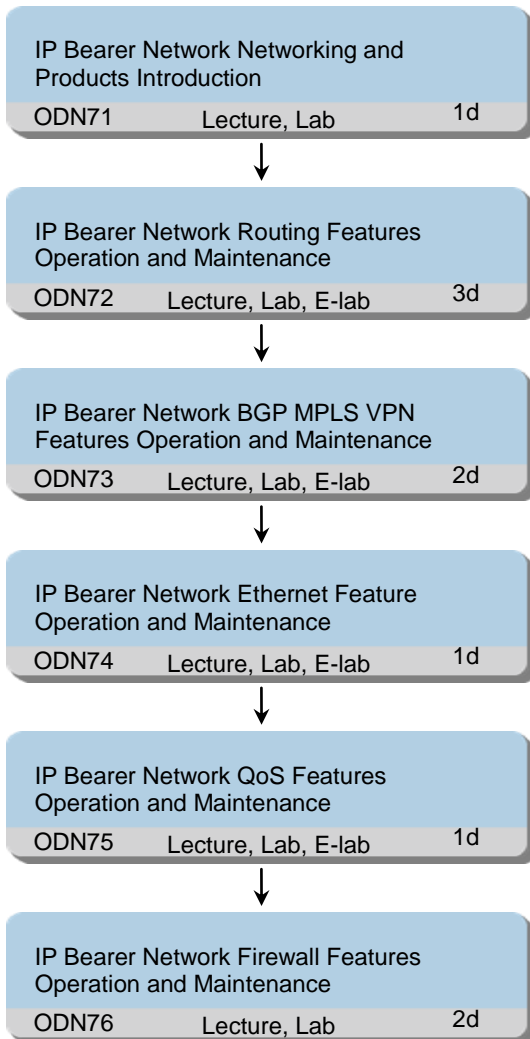
5 working days

Class Size

Min 6, Max 12

2.3.8 IP Bearer Network 2nd Line Operation and Maintenance Training

Training Path



Target Audience

IP bearer network maintenance engineer

Prerequisites

- At least two years of experiences in the operation and maintenance of data communication equipment
- A good understanding of datacom network protocols

Objectives

On completion of this program, the participants will be able to:

- Describe the structure of IP bearer network
- Describe the IP bearer network service and

features

- Describe the networking and products of IP bearer network
- Describe the meanings and functions of OSPF configuration parameters
- Configure OSPF for IP Bearer Network
- Analyze and handle common faults that occur during OSPF configuration for IP Bearer Network
- Describe the meanings and functions of IS-IS configuration parameters
- Configure IS-IS on a network that consists of NE series routers
- Analyze and handle common faults that occur during IS-IS configuration in IP Bearer Network
- Describe the meanings and functions of BGP configuration parameters.
- Configure BGP on a network that consists of NE series routers.
- Analyze and handle common faults that occur during BGP configuration in IP Bearer Network
- Describe the meanings and functions of MPLS configuration parameters.
- MPLS Configure MPLS on a network that consists of NE series routers
- Describe the meaning and functions of each parameter involved in configuration of BGP MPLS VPN
- Configure BGP MPLS VPN on a network that consists of NE routers
- Describe the implementation and application of OSPF VPNs in IP Bearer Network
- Describe what VLAN is.
- Describe concepts about VLAN.
- Know the mechanism and configuration of communication between VLANs.
- Know the mechanism and configuration of VLAN aggregation.
- Know the mechanism and configuration of VLAN mapping.
- Describe the basic VRRP concepts.

- Understand common VRRP features
- Learn techniques for QoS Implementation.
- Configure QoS on a Bearer Network, and describe the meaning and function of each parameter involved in QoS configuration.
- Analyze and rectify common faults during QoS configuration on IP Bearer Network
- Describe the hardware architecture and performance of the Eudemon200E-X/Eudemon1000E-X/Eudemon8000E-X products
- Identify Eudemon200E-X/Eudemon1000E-X/Eudemon8000E-X slots Numbers and veneer type
- Describes the Eudemon200E-X/Eudemon1000E-X/Eudemon8000E-X application scene

- Master main security technologies and features of the Eudemon firewalls.
- Master the configurations of the security features
- Master technical principles of the dual-system hot backup technology.
- Understand the relationship between VRRP, VGMP, and HRP.
- Understand the configurations of typical dual-system hot backup networking

Duration

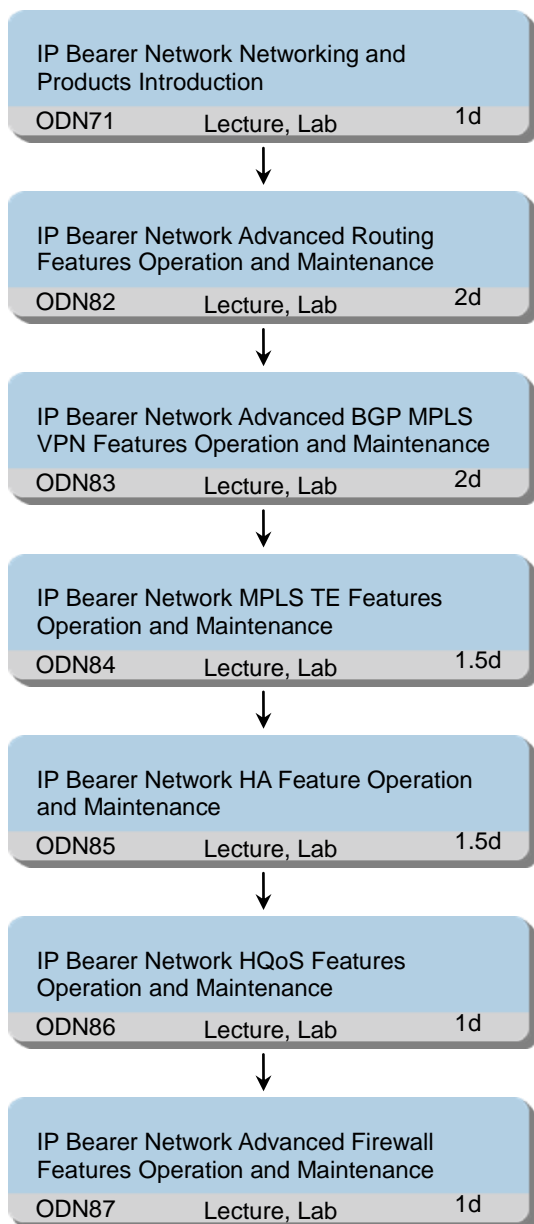
10 working days

Class Size

Min 6, Max 12

2.3.9 IP Bearer Network 3rd Line Operation and Maintenance Training

Training Path



Target Audience

IP bearer network maintenance engineer

Prerequisites

- At least two years of experiences in the operation and maintenance of data communication equipment
- Having basic knowledge of IP/MPLS/IP routing

Objectives

On completion of this program, the participants will be able to:

- Describe the structure of IP bearer network
- Describe the IP bearer network service and features
- Describe the networking and products of IP bearer network
- Describe the OSPF reliability implementation mechanism on the IP Bearer Network
- Describe the link state database (LSDB) structure
- Describe the implementation and application of OSPF VPNs on the IP Bearer Network
- Describe the IS-IS reliability implementation mechanism of the IP Bearer Network.
- Describe the LSDB structure
- Describe the BGP reliability implementation mechanism of the IP Bearer Network.
- Describe the working principle of the BGP route reflector (RR) used on the IP Bearer Network
- Describe the BGP reliability implementation mechanism of the IP Bearer Network.
- Describe the working principle of the BGP route reflector (RR) used on the IP Bearer Network
- Describe the basic implementation principles of MPLS TE
- Deploy MPLS TE on the IP network
- Describe basic concepts and classification of high availability (HA)
- Describe directional forwarding detection (BFD) principles and typical applications
- Describe Non-stop-routing (NSR) principles, advantages, and disadvantages
- Describe principles of various protection switchover techniques and implementation of the protection switchover techniques on the IP Bearer Network
- Describe end-to-end HA implementation on the IP bearer network

- Configure the common HA used on the IP bearer network
- Describe the HQoS implementation mechanism
- Describe the HQoS scheduling process
- Describe the HQoS implementation and applications
- Describe the concept and classification of VPN
- Describe the principles of IPSec
- Configure IPSec VPN On Eudemon

- Describe the concept and classification of VPN
- Describe the basic principles of GRE
- Describe the achievement of GRE
- Configure GRE On Eudemon

Duration

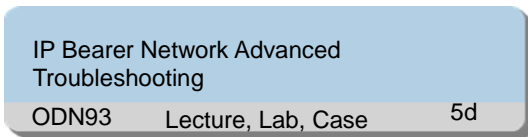
10 working days

Class Size

Min 6, Max 12

2.3.10 IP Bearer Network Advanced Troubleshooting Training

Training Path



Target Audience

IP bearer network maintenance engineer

Prerequisites

- At least two years of experiences in the operation and maintenance of data communication equipment
- Having basic knowledge of IP/MPLS/IP routing

Objectives

On completion of this program, the participants will be able to:

- Describe the procedure for troubleshooting faults with neighbor relationship setup during routing protocol configurations
- Describe common faults with routing protocol

configurations

- Describe methods for troubleshooting faults with routing protocols in NE router networks
- Troubleshoot the fault that peer relationships fail to be established between PEs
- Describe the common MPLS L3 VPN configuration errors
- Describe the procedure for MPLS TE troubleshooting
- Describe the methods for MPLS TE troubleshooting on
- IP Bearer Network
- Troubleshoot the problems that are related to Routes, MPLS L3 VPN, and MPLS TE

Duration

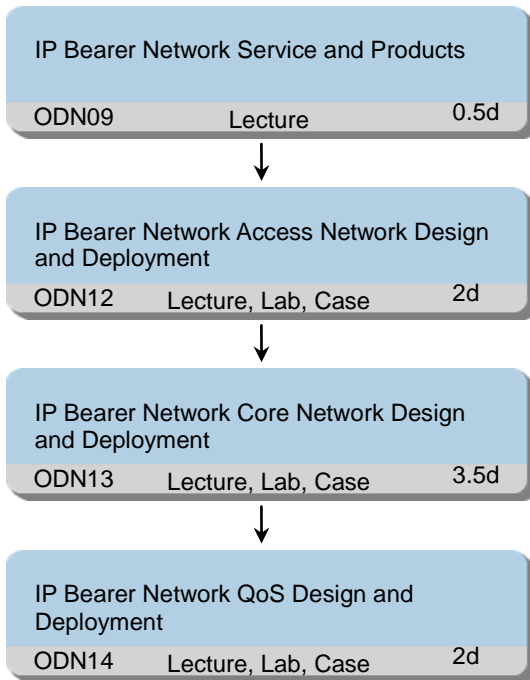
5 working days

Class Size

Min 6, Max 12

2.3.11 IP Bearer Practice Camp

Training Path



Target Audience

IP bearer network planning and design engineer and technical support expert

Prerequisites

- A good understanding of datacom network protocols
- At least three years of experience in the operation and maintenance of data communication equipment
- Attended "NE5000E/80E/40E Products 3rd Line Maintenance Training" or has the equivalent HCDP knowledge or experiences

Objectives

On completion of this program, the participants will be able to:

- Describe the structure of IP bearer network
- Describe the IP bearer network service and features
- Describe the networking and products of IP bearer network
- Describe the devices and interfaces of core

network

- Describe the solutions of IP bearer network access part
- Describe the HA technologies of IP bearer network access part
- Configure HA features of IP bearer core network
- Describe the backbone networking of IP bearer network
- Describe the VLAN planning of IP bearer network
- Describe the fast detection technologies of IP bearer network
- Describe the fast convergence of routing protocols
- Describe the MPLS TE FRR and VPN FRR technologies of IP bearer network backbone
- Describe the GR technologies of IP bearer network
- Configure IGP/BGP and VPN of IP bearer core network
- Configure fast detection technologies of IP bearer network
- Configure fast convergence of routing protocols
- Configure MPLS TE FRR and VPN FRR technologies of IP bearer network backbone
- Configure GR technologies of IP bearer network
- Describe different QoS requirement of different services in IP bearer network
- Describe end to end QoS realization in IP bearer network
- Configure end to end QoS in IP bearer network

Duration

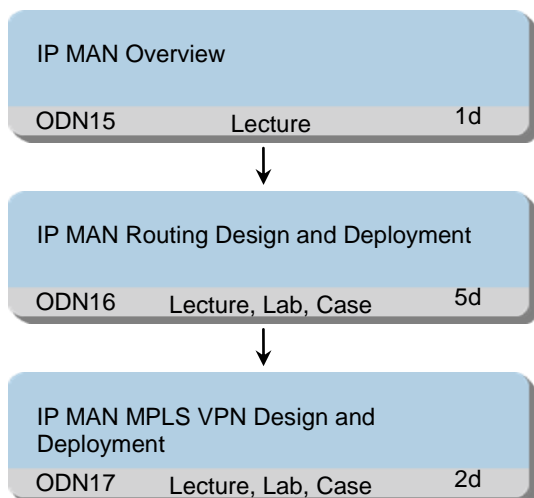
8 working days

Class Size

Min 4, Max 8

2.3.12 IP MAN Practice Camp

Training Path



Target Audience

IP MAN planning and design engineer and technical support expert

Prerequisites

- A good understanding of datacom network protocols
- At least three years of experience in the operation and maintenance of data communication equipment
- Attended "NE5000E/80E/40E Products 3rd Line Maintenance Training" or has the equivalent HCDP knowledge or experiences

Objectives

On completion of this program, the participants will be able to:

- Describe the features of MAN
- Describe the device selection, topology selection and link selection processes in MAN
- Describe the route classification in MAN
- Plan IP address for IP MAN
- Describe IGP deployment in MAN
- Describe IGP fast convergence deployment in MAN
- Configure and adjust OSPF/ISIS in MAN
- Describe BGP deployment in MAN
- Describe BGP RR deployment in MAN
- Describe route control and route selection in IP MAN
- Configure and adjust BGP in MAN
- Describe VPN RR deployment in MAN
- Describe MPLS Inter-AS VPN deployment in MAN
- Configure and adjust MPLS VPN in MAN

Duration

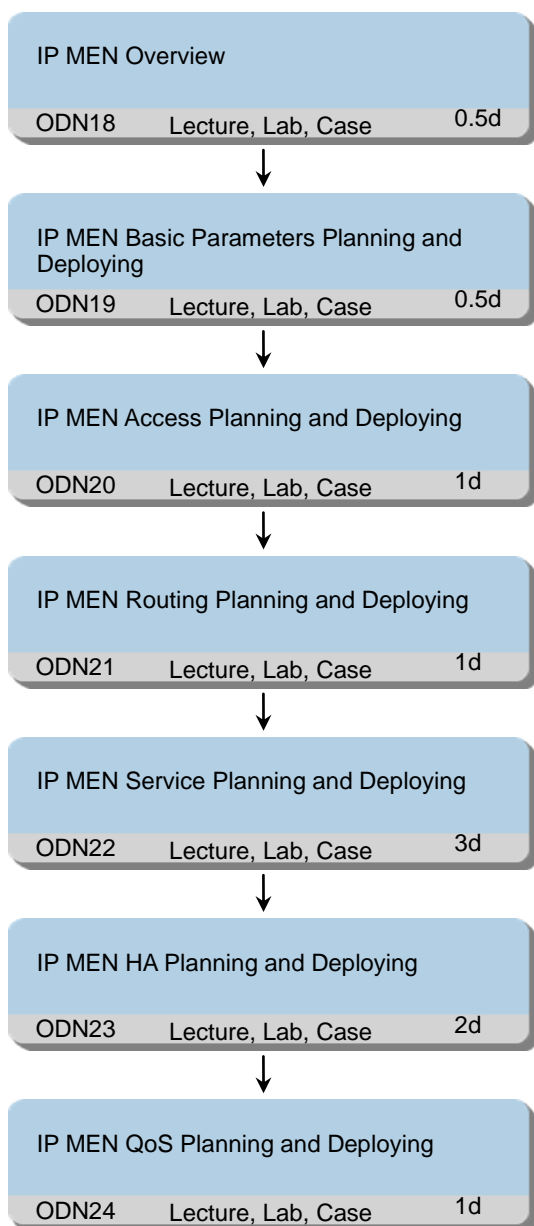
8 working days

Class Size

Min 4, Max 8

2.3.13 IP MEN Practice Camp

Training Path



Target Audience

IP MEN planning and design engineer and technical support expert

Prerequisites

- A good understanding of datacom network protocols
- At least three years of experience in the operation and maintenance of data communication equipment

- Attended "CX600 Products 3rd Line Maintenance Training" or has the equivalent HCDP knowledge or experiences

Objectives

On completion of this program, the participants will be able to:

- Describe the current situations and development trend of the IP MEN
- Describe the networking and service characteristics of the IP MEN
- Describe the characteristics of the Huawei IP MEN solution
- Describe the characteristics of the CX600-X series products
- Describe the device naming conventions and name the devices
- Describe the device interface naming conventions and name the device interfaces
- Describe the principles of IP address planning and plan IP addresses
- Describe the modes and characteristics of terminal user and enterprise network access on an IP MEN
- Describe the IP MEN access networking and characteristics
- Describe the principle of RRPP
- Plan and deploy the IP MEN access network by using RRPP
- Describe the functions and selection principles of the IGP for an IP MEN
- Describe the principles of OSPF planning
- Describe the principles of IS-IS planning
- Plan and deploy OSPF in an IP MEN
- Describe the planning principle of MPLS L2 VPN for an IP MEN
- Describe the planning principle of HSI Service for an IP MEN
- Describe the planning principle of Enterprise VPN Service for an IP MEN
- Describe the planning principle of IPTV Service

for an IP MEN

- Plan and deploy HSI service in an IP MEN
- Plan and deploy enterprise VPN service in an IP MEN
- Plan and deploy IPTV service in an IP MEN
- Describe the application scenario and planning principle of BFD for an IP MEN
- Describe the application scenario and planning principle of GR for an IP MEN
- Describe the application scenario and planning principle of MPLS TE for an IP MEN
- Describe the application scenario and planning principle of Ethernet OAM for an IP MEN

- Plan and deploy various HA features in an IP MEN
- Describe the implementation of QoS on CX600 product
- Describe the application scenario and planning principle of QoS for an IP MEN
- Plan and deploy QoS features in an IP MEN

Duration

10 working days

Class Size

Min 4, Max 8

2.3.14 IP Network Performance Evaluation and Optimization Training

Training Path

IP Network Performance Evaluation and Optimization		
ODN36	Lecture	1d

Target Audience

IP network 2nd or 3rd line maintenance engineer

Prerequisites

- At least two years of experiences in the operation and maintenance of data communication equipment
- A good understanding of datacom network

protocols

Objectives

On completion of this program, the participants will be able to:

- Describe principles of IP network performance evaluation and optimization

Duration

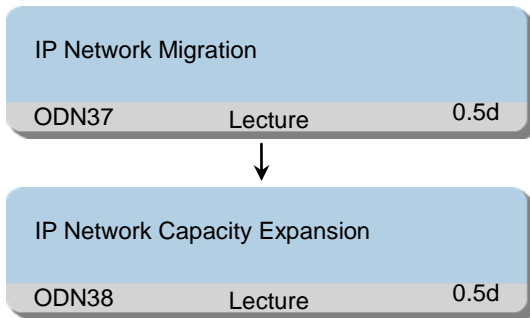
1 working day

Class Size

Min 6, Max 12

2.3.15 IP Network Migration and Capacity Expansion Training

Training Path



Target Audience

IP network 2nd line maintenance engineer

Prerequisites

- At least two years of experiences in the operation and maintenance of data communication equipment
- A good understanding of datacom network protocols

Objectives

On completion of this program, the participants will be able to:

- Describe principles of IP network migration
- Describe methods of IP network migration
- Describe operations of IP network migration
- Describe principles of IP network capacity expansion
- Describe methods of IP network capacity expansion
- Describe operations of IP network capacity expansion

Duration

1 working day

Class Size

Min 6, Max 12

2.3.16 iManager U2000 Monitoring Training (IP Network)

Training Path

Target Audience

U2000 operator and maintainer

IP network routine monitor and maintainer

Prerequisites

- Having the basic knowledge of network management
- Having the basic principle and equipment knowledge of IP network

Objectives

On completion of this program, the participants will be able to:

- Describe the architecture and main features of U2000

- Describe the directory structure of U2000
- List the main functions of U2000
- Describe the basic concepts in alarm and performance management of U2000
- Perform the browse and setting operation for alarm
- Perform the basic response operation for common alarm events
- Perform the browse and setting operation for performance events

Duration

1 working day

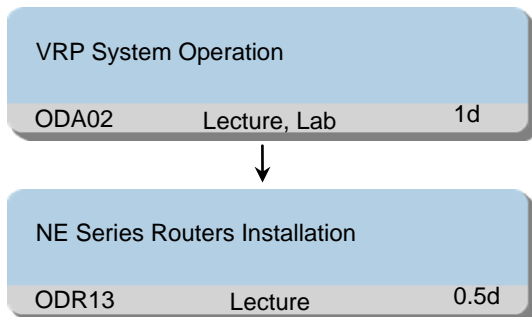
Class Size

Min 6, Max 12

2.4 Router Training Programs

2.4.1 NE Series Routers Installation and Commissioning Training

Training Path



Target Audience

NE series routers installation and commissioning engineer

Prerequisites

- A basic understanding of data communication
- A general understanding of telecom network

Objectives

On completion of this program, the participants will be able to:

- Describe NE series products installation process
- Describe the VRP system structure
- Describe the basic configuration and commands
- Upgrade VRP system
- Configure the VRP user logging authentication
- Configure FTP service
- Describe basic troubleshooting process of VRP system

Duration

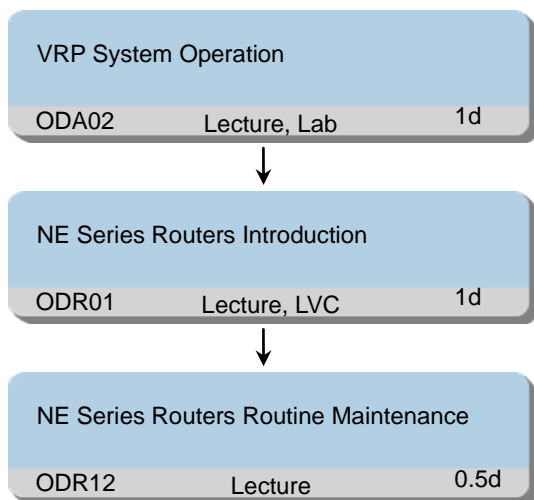
1 working day

Class Size

Min 6, Max 12

2.4.2 NE Series Routers 1st Line Maintenance Training

Training Path



Target Audience

NE series routers 1st line maintenance engineer

Prerequisites

- A basic understanding of data communication
- A general understanding of telecom network

Objectives

On completion of this program, the participants will be able to:

- Describe NE series routers hardware structure
- Describe NE series routers board types and functions
- Identify NE series routers board types
- Describe the status of NE series routers board

by indicators

- Describe NE series routers network positioning and application scenarios
- Describe NE series routers common features and highlights
- Describe the VRP system structure
- Describe the basic configuration and commands
- Upgrade VRP system
- Configure the VRP user logging authentication
- Configure FTP service
- Describe basic troubleshooting process of VRP system
- Distinguish the board status on MPU, SRU, LPU, SFU, power module and fan module based on the indicators on the boards
- Perform routine maintenance to check the operation status of NE device by using commands
- Describe the procedure and method for troubleshooting when boards cannot be registered

Duration

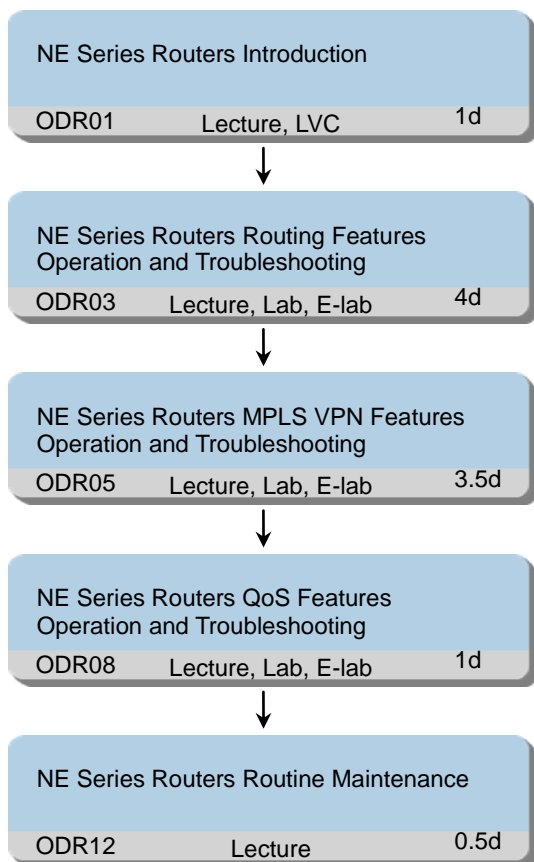
2 working days

Class Size

Min 6, Max 12

2.4.3 NE Series Routers 2nd Line Maintenance Training (IP Bearer Network)

Training Path



Target Audience

NE series routers IP bearer network 2nd line maintenance engineer

Prerequisites

- At least one year of experience in the operation and maintenance of data communication equipment
- A general understanding of data communication

Objectives

On completion of this program, the participants will be able to:

- Describe NE series routers hardware structure
- Describe NE series routers board types and functions
- Identify NE series routers board types
- Describe the status of NE series routers board

by indicators

- Describe NE series routers network positioning and application scenarios
- Describe NE series routers common features and highlights
- Describe the meanings and functions of OSPF configuration parameters
- Configure OSPF on a network that consists of NE series routers
- Analyze and handle common faults that occur during OSPF configuration on NE series routers
- Describe the meanings and functions of IS-IS configuration parameters
- Configure IS-IS on a network that consists of NE series routers
- Analyze and handle common faults that occur during IS-IS configuration on NE series routers
- Describe the meanings and functions of BGP configuration parameters
- Configure BGP on a network that consists of NE series routers
- Analyze and handle common faults that occur during BGP configuration on NE series routers
- Choose correct route selection tools according to different route selection and control scenarios
- Properly configure route selection and control on a network consisting of NE series routers
- Describe the flow of locating an OSPF neighbor relationship establishment fault
- List common OSPF configuration errors
- Analyze and handle OSPF neighbor relationship establishment faults on a network consisting of NE series routers
- Describe the flow of locating an IS-IS neighbor relationship establishment fault
- List common IS-IS configuration errors
- Analyze and handle IS-IS neighbor relationship establishment faults on a network consisting of NE series routers

- Describe the flow of handling BGP neighbor relationship establishment faults
- List common BGP configuration errors
- Analyze and handle BGP neighbor relationship establishment faults in a network which be made of NE series routers
- Describe the meanings and functions of MPLS configuration parameters
- Configure MPLS on a network that consists of NE series routers
- Describe the meaning and functions of each parameter involved in configuration of BGP MPLS VPN
- Configure BGP MPLS VPN on a network that consists of NE routers
- Select suitable MPLS L2 VPN implementation modes for different MPLS L2 VPN application
- Configure MPLS L2 VPN on a network that consists of NE series routers
- Describe the VPLS implementation principle
- Configure VPLS on a network that consists of NE routers
- Describe configuration steps of BGP MPLS VPN
- List common errors in BGP MPLS VPN configuration
- Analyze and rectify the fault that BGP MPLS VPN users cannot visit each other on an NE router network
- Describe key technologies of QoS
- Configure QoS on a network that consists of NE series routers, and describe the meaning and function of each parameter involved in QoS configuration
- Analyze and handle common faults during QoS configuration on NE series routers
- Distinguish the board status on MPU, SRU, LPU, SFU, power module and fan module based on the indicators on the boards
- Perform routine maintenance to check the operation status of NE device by using commands
- Describe the procedure and method for troubleshooting when boards cannot be registered

Duration

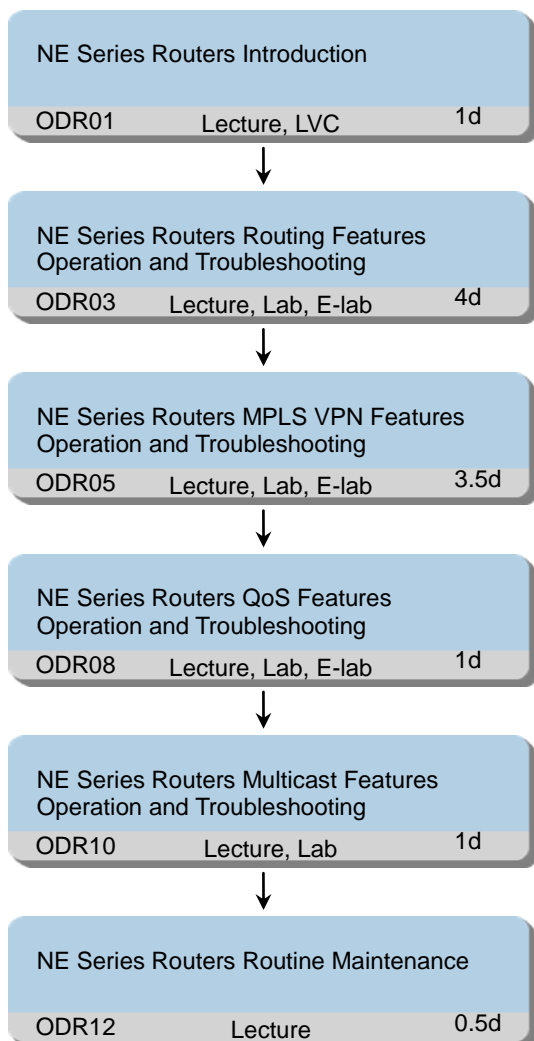
10 working days

Class Size

Min 6, Max 12

2.4.4 NE Series Routers 2nd Line Maintenance Training (IP MAN)

Training Path



Target Audience

NE series routers IP MAN 2nd line maintenance engineer

Prerequisites

- At least one year of experience in the operation and maintenance of data communication equipment
- A general understanding of data communication

Objectives

On completion of this program, the participants will be able to:

- Describe NE series routers hardware structure

- Describe NE series routers board types and functions
- Identify NE series routers board types
- Describe the status of NE series routers board by indicators
- Describe NE series routers network positioning and application scenarios
- Describe NE series routers common features and highlights
- Describe the meanings and functions of OSPF configuration parameters
- Configure OSPF on a network that consists of NE series routers
- Analyze and handle common faults that occur during OSPF configuration on NE series routers
- Describe the meanings and functions of IS-IS configuration parameters
- Configure IS-IS on a network that consists of NE series routers
- Analyze and handle common faults that occur during IS-IS configuration on NE series routers
- Describe the meanings and functions of BGP configuration parameters
- Configure BGP on a network that consists of NE series routers
- Analyze and handle common faults that occur during BGP configuration on NE series routers
- Choose correct route selection tools according to different route selection and control scenarios
- Properly configure route selection and control on a network consisting of NE series routers
- Describe the flow of locating an OSPF neighbor relationship establishment fault
- List common OSPF configuration errors
- Analyze and handle OSPF neighbor relationship establishment faults on a network consisting of NE series routers
- Describe the flow of locating an IS-IS neighbor relationship establishment fault

- List common IS-IS configuration errors
- Analyze and handle IS-IS neighbor relationship establishment faults on a network consisting of NE series routers
- Describe the flow of handling BGP neighbor relationship establishment faults
- List common BGP configuration errors
- Analyze and handle BGP neighbor relationship establishment faults in a network which be made of NE series routers
- Describe the meanings and functions of MPLS configuration parameters
- Configure MPLS on a network that consists of NE series routers
- Describe the meaning and functions of each parameter involved in configuration of BGP MPLS VPN
- Configure BGP MPLS VPN on a network that consists of NE routers
- Select suitable MPLS L2 VPN implementation modes for different MPLS L2 VPN application
- Configure MPLS L2 VPN on a network that consists of NE series routers
- Describe the VPLS implementation principle
- Configure VPLS on a network that consists of NE routers
- Describe configuration steps of BGP MPLS VPN
- List common errors in BGP MPLS VPN configuration
- Analyze and rectify the fault that BGP MPLS VPN users cannot visit each other on an NE router network
- Describe key technologies of QoS
- Configure QoS on a network that consists of NE series routers, and describe the meaning and function of each parameter involved in QoS configuration
- Analyze and handle common faults during QoS configuration on NE series routers
- Describe NE series routers IGMP features
- Describe NE series routers PIM SM features
- Configure multicast features on NE series routers
- Distinguish the board status on MPU, SRU, LPU, SFU, power module and fan module based on the indicators on the boards
- Perform routine maintenance to check the operation status of NE device by using commands
- Describe the procedure and method for troubleshooting when boards cannot be registered

Duration

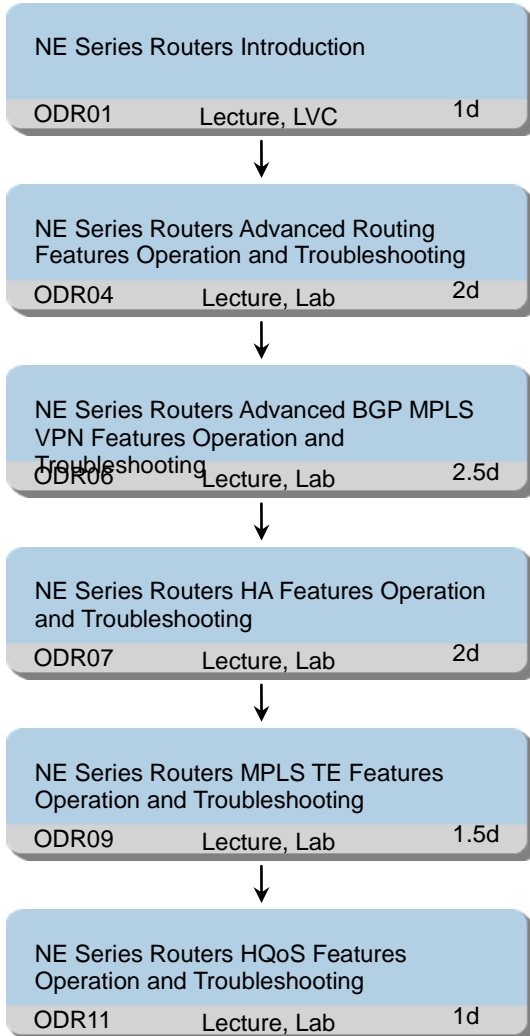
10 working days

Class Size

Min 6, Max 12

2.4.5 NE Series Routers 3rd Line Maintenance Training (IP Bearer Network)

Training Path



Target Audience

NE Series Routers IP bearer network 3rd line maintenance engineer
NE Series Routers IP bearer network expert from technical supporting team

Prerequisites

- A good understanding of datacom network protocols
- Attended "IP Bearer Network NE Series Routers 2nd Line Maintenance Training" or has the equivalent HCDP knowledge or experiences

Objectives

On completion of this program, the participants will be able to:

- Describe NE series routers hardware structure
- Describe NE series routers board types and functions
- Identify NE series routers board types
- Describe the status of NE series routers board by indicators
- Describe NE series routers network positioning and application scenarios
- Describe NE series routers common features and highlights
- Describe the OSPF reliability implementation mechanism on the NE Series Routers
- Describe the link state database (LSDB) structure
- Describe the implementation and application of OSPF VPNs on the NE Series Routers
- Describe the IS-IS reliability implementation mechanism of the NE Series Routers
- Describe the LSDB structure
- Describe the BGP reliability implementation mechanism of the NE Series Routers
- Describe the working principle of the BGP route reflector (RR) used on the NE Series Routers
- Describe the typical networking structure of the Metropolitan Area Network (MAN) and route design features
- Deploy routing protocols on the MAN
- Optimize route deployment on the MAN
- Analyze and rectify routing protocol faults on the MAN
- Describe the inter-AS MPLS VPN, HoVPN, and interconnection between VPN and Internet
- Explain the implementation details of multiple VPN technologies
- Describe the application of the technologies on the network
- Describe the basic implementation principles of

MPLS TE

- Deploy MPLS TE on the IP network
- Describe basic concepts and classification of high availability (HA)
- Describe bidirectional forwarding detection (BFD) principles and typical applications
- Describe Non-stop-routing (NSR) principles, advantages, and disadvantages
- Describe principles of various protection switchover techniques and implementation of the protection switchover techniques on the NE Series Routers
- Describe End-to-end HA implementation on the IP bearer network

- Configure common HA used on the IP bearer network, on the NE Series Routers
- Describe the HQoS implementation mechanism of the NE Series Routers
- Describe the HQoS scheduling process of the NE Series Routers
- Describe the HQoS implementation and applications of the NE Series Routers

Duration

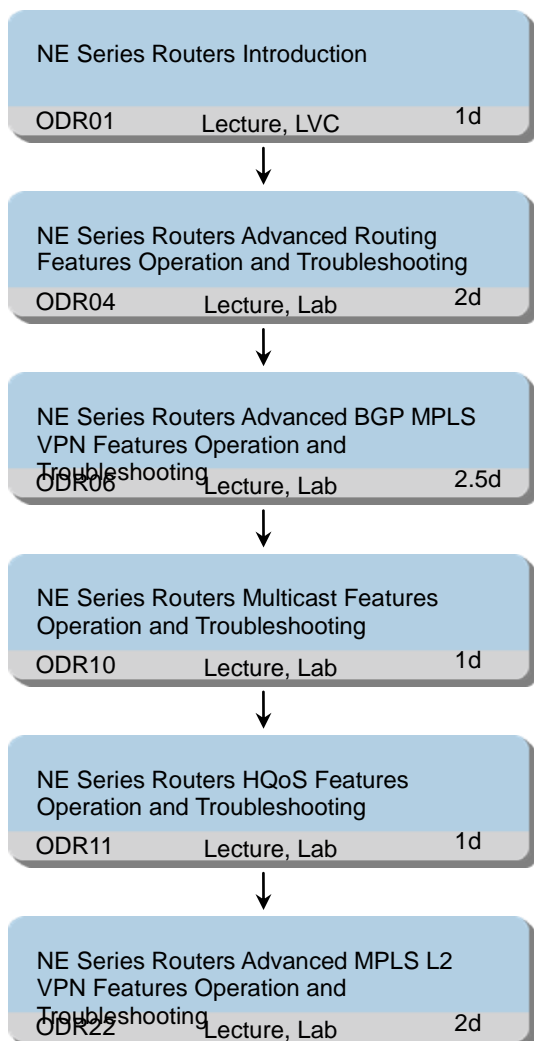
10 working days

Class Size

Min 6, Max 12

2.4.6 NE Series Routers 3rd Line Maintenance Training (IP MAN)

Training Path



Target Audience

NE Series Routers IP MAN 3rd line maintenance engineer

NE Series Routers IP MAN expert from technical supporting team

Prerequisites

- A good understanding of datacom network protocols
- Attended "IP MAN NE Series Routers 2nd Line Maintenance Training" or has the equivalent HCDP knowledge or experiences

Objectives

On completion of this program, the participants will

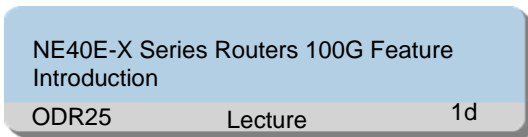
be able to:

- Describe NE series routers hardware structure
- Describe NE series routers board types and functions
- Identify NE series routers board types
- Describe the status of NE series routers board by indicators
- Describe NE series routers network positioning and application scenarios
- Describe NE series routers common features and highlights
- Describe the OSPF reliability implementation mechanism on the NE Series Routers
- Describe the link state database (LSDB) structure
- Describe the implementation and application of OSPF VPNs on the NE Series Routers
- Describe the IS-IS reliability implementation mechanism of the NE Series Routers
- Describe the LSDB structure
- Describe the BGP reliability implementation mechanism of the NE Series Routers
- Describe the working principle of the BGP route reflector (RR) used on the NE Series Routers
- Describe the typical networking structure of the Metropolitan Area Network (MAN) and route design features
- Deploy routing protocols on the MAN
- Optimize route deployment on the MAN
- Analyze and rectify routing protocol faults on the MAN
- Describe the inter-AS MPLS VPN, HoVPN, and interconnection between VPN and Internet
- Explain the implementation details of multiple VPN technologies
- Describe the application of the technologies on the network
- Describe the inter-AS VLL and VPLS principles
- Explain the implementation details of inter-AS VLL and VPLS
- Describe the HQoS implementation

- mechanism of the NE Series Routers
- Describe the HQoS scheduling process of the NE Series Routers
 - Describe the HQoS implementation and applications of the NE Series Routers
 - Describe NE series routers IGMP features
 - Describe NE series routers PIM SM features
 - Configure multicast features on NE series
- routers
- Duration
- 10 working days
- Class Size
- Min 6, Max 12

2.4.7 NE40E-X Series Routers 100G Feature Introduction Training

Training Path



Target Audience

Router operation and maintenance engineer

Prerequisites

- Having the basic knowledge of Huawei NE Series Routers

Objectives

On completion of this program, the participants will be able to:

- Describe NE40E-X series routers 100G platform product architecture
- Describe NE40E-X series routers 100G platform product chassis and boards
- Describe NE40E-X series routers 100G platform product router feature
- Describe VRP8 platform architecture and system feature

Duration

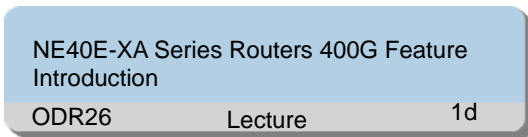
1 working day

Class Size

Min 6, Max 12

2.4.8 NE40E-XA Series Routers 400G Feature Introduction Training

Training Path



- Describe NE40E-XA series routers 400G platform product architecture
- Describe NE40E-XA series routers 400G platform product chassis and boards
- Describe NE40E-XA series routers 400G platform product router feature
- Describe VRP8 platform architecture and system feature

Target Audience

Router operation and maintenance engineer

Prerequisites

- Having the basic knowledge of Huawei NE Series Routers

Objectives

On completion of this program, the participants will be able to:

Duration

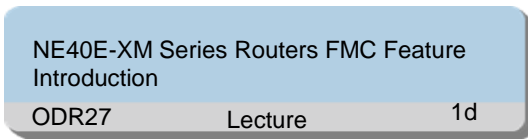
1 working day

Class Size

Min 6, Max 12

2.4.9 NE40E-XM Series Routers FMC Feature Introduction Training

Training Path



Target Audience

Router operation and maintenance engineer

Prerequisites

- Having the basic knowledge of Huawei NE Series Routers

Objectives

On completion of this program, the participants will be able to:

- Describe NE40E-XM series routers product architecture
- Describe NE40E-XM series routers chassis and boards
- Describe NE40E-XM series routers FMC feature
- Describe VRP8 platform architecture and system feature

Duration

1 working day

Class Size

Min 6, Max 12

2.4.10 NE5000E-X Series Routers 100G Cluster Feature Introduction Training

Training Path

NE5000E-X Series Routers 100G Cluster Feature Introduction		
ODR28	Lecture	1d

Target Audience

Router operation and maintenance engineer

Prerequisites

- Having the basic knowledge of Huawei NE Series Routers

Objectives

On completion of this program, the participants will

be able to:

- Describe NE5000E-X series routers 100G cluster product hardware architecture
- Describe NE5000E-X series routers 100G cluster product router feature
- Describe VRP8 platform architecture and system feature

Duration

1 working day

Class Size

Min 6, Max 12

2.4.11 NE5000E-XA Series Routers 400G Cluster Feature Introduction Training

Training Path

NE5000E-XA Series Routers 400G Cluster Feature Introduction		
ODR29	Lecture	1d

Target Audience

Router operation and maintenance engineer

Prerequisites

- Having the basic knowledge of Huawei NE Series Routers

Objectives

On completion of this program, the participants will

be able to:

- Describe NE5000E-XA series routers 400G cluster product hardware architecture
- Describe NE5000E-XA series routers 400G cluster product router feature
- Describe VRP8 platform architecture and system feature

Duration

1 working day

Class Size

Min 6, Max 12

2.4.12 NE Series Routers IPTV Service Features Training (IP MAN)

Training Path

NE Series Routers IPTV Service Features		
ODR19	Lecture, LVC	2d

Target Audience

NE Series Routers IPTV service maintenance engineer

NE Series Routers IPTV service maintenance engineer

Prerequisites

- A good understanding of datacom network protocols
- Attended "IP MAN NE Series Routers 2nd Line Maintenance Training" or has the equivalent

HCDP knowledge or experiences

Objectives

On completion of this program, the participants will be able to:

- Describe NE Series Routers IPTV solutions
- Describe IPTV bear network technical solutions
- Describe NE Series Routers MQE features
- Describe NE Series Routers multicast features
- Describe NE Series Routers multicast service deployment

Duration

2 working days

Class Size

Min 6, Max 12

2.4.13 NE Series Routers Advanced Troubleshooting Training (IP Bearer Network)

Training Path

NE Series Routers IP Bearer Network Advanced Troubleshooting		
ODR17	Lecture, Lab, Case	5d

Target Audience

NE Series Routers IP bearer network 3rd line maintenance engineer
NE Series Routers IP bearer network expert from technical supporting team

Prerequisites

- A good understanding of datacom network protocols
- Attended "IP Bearer Network NE5000E/80E/40E Products 3rd Line Maintenance Training" or has the equivalent HCDP knowledge or experiences

Objectives

On completion of this program, the participants will be able to:

- Perform analysis and troubleshooting of NE Series Routers routing protocols advanced features
- Perform analysis and troubleshooting of NE Series Routers MPLS L3 VPN advanced features
- Perform analysis and troubleshooting of NE Series Routers MPLS TE features

Duration

5 working days

Class Size

Min 6, Max 12

2.4.14 NE Series Routers Advanced Troubleshooting Training (IP MAN)

Training Path

NE Series Routers IP MAN Advanced Troubleshooting		
ODR21	Lecture, Lab, Case	5d

Target Audience

NE Series Routers IP MAN 3rd line maintenance engineer

NE Series Routers IP MAN expert from technical supporting team

Prerequisites

- A good understanding of datacom network protocols
- Attended "IP MAN NE5000E/80E/40E Products 3rd Line Maintenance Training" or has the equivalent HCDP knowledge or experiences

Objectives

On completion of this program, the participants will be able to:

- Perform analysis and troubleshooting of NE Series Routers routing protocols advanced features
- Perform analysis and troubleshooting of NE Series Routers MPLS L3 VPN advanced features
- Perform analysis and troubleshooting of NE Series Routers MPLS L2 VPN advanced features
- Perform analysis and troubleshooting of NE Series Routers multicast advanced features

Duration

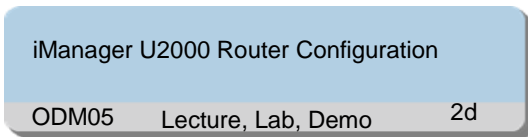
5 working days

Class Size

Min 6, Max 12

2.4.15 iManager U2000 NE Series Routers Operation Training

Training Path



Target Audience

U2000 operator and maintainer

IP network routine monitor and maintainer

Prerequisites

- Having the basic knowledge of Huawei NE Series Routers

Objectives

On completion of this program, the participants will be able to:

- Describe the architecture and main features of U2000
- Describe the directory structure of U2000

- List the main functions of U2000
- Describe the product orientation of U2000, the system architecture and system management capability of U2000
- Describe the main functions of U2000
- Discover the topology, set the communication parameters and synchronize the device data on U2000
- Upgrade the device on U2000 and manage the files of the device on U2000
- Manage devices, interfaces, the ACL, the route policy and routes on U2000
- Deploy MPLS, BGP MPLS VPN on U2000

Duration

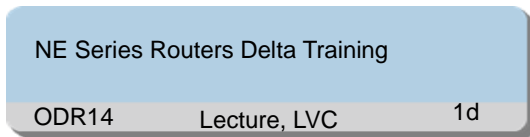
2 working days

Class Size

Min 6, Max 12

2.4.16 NE Series Routers Delta Training (Customized)

Training Path



Target Audience

- New staff
- Installation engineer
- Operation and maintenance engineer

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will be able to:

- Describe NE series routers hardware different

version

- Describe NE series routers hardware version support board
- Describe NE series routers hardware new features
- Describe NE series routers VPR different version
- Describe NE series routers VPR version support board
- Describe NE series routers VPR new features and commands

Duration

1 working day

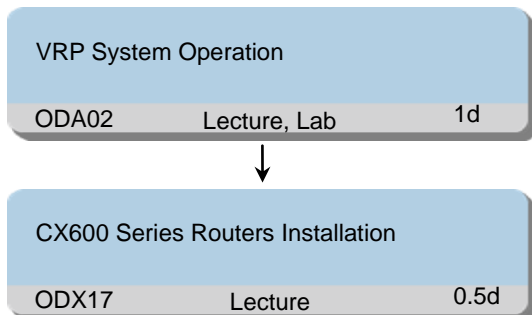
Class Size

Min 6, Max 12

2.5 MSP Training Programs

2.5.1 CX600 Products Installation and Commissioning Training

Training Path



Target Audience

CX600 series routers installation and commissioning engineer

CX600-X3/X8/X16 series routers installation and commissioning engineer

Prerequisites

- A basic understanding of data communication
- A general understanding of telecom network

Objectives

On completion of this program, the participants will be able to:

- Describe CX600/CX600-X series products installation process
- Describe CX600/CX600-X-X3/X8/X16 series products installation process
- Describe the VRP system structure
- Describe the basic configuration and commands
- Upgrade VRP system
- Configure the VRP user logging authentication
- Configure FTP service
- Describe basic troubleshooting process of VRP system

Duration

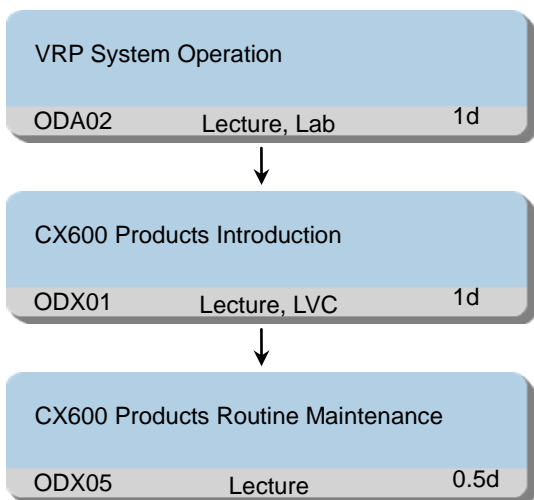
1 working day

Class Size

Min 6, Max 12

2.5.2 CX600 Products IP MEN 1st Line Maintenance Training

Training Path



Target Audience

CX600 series routers 1st line maintenance engineer

CX600-X3/X8/X16 routers 1st line maintenance engineer

Prerequisites

- A basic understanding of data communication
- A general understanding of telecom network

Objectives

On completion of this program, the participants will be able to:

- Describe CX600/CX600-X products hardware structure
- Describe CX600/CX600-X product Feature
- Describe the VRP system structure
- Describe the basic configuration and commands
- Upgrade VRP system
- Configure the VRP user logging authentication
- Configure FTP service
- Describe basic troubleshooting process of VRP system
- Describe CX600/CX600-X series products routine maintenance process

Duration

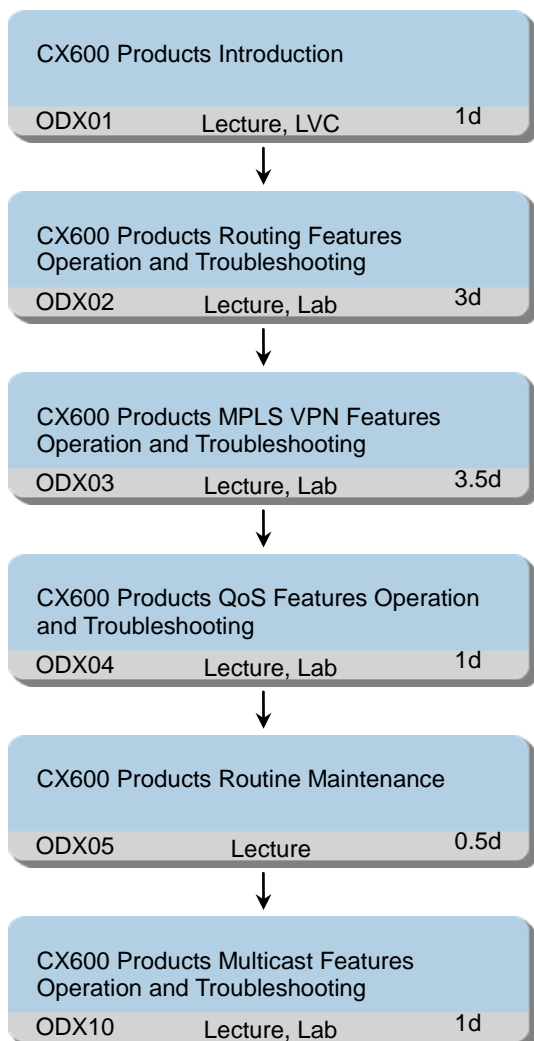
2 working days

Class Size

Min 6, Max 12

2.5.3 CX600 Products IP MEN 2nd Line Maintenance Training

Training Path



Target Audience

CX600 series routers 2nd line maintenance engineer

CX600-X3/X8/X16 routers 2nd line maintenance engineer

Prerequisites

- At least two years of experience in the operation and maintenance of data communication equipment
- A general understanding of data communication

Objectives

On completion of this program, the participants will

be able to:

- Describe CX600/CX600-X products hardware structure
- Describe CX600/CX600-X product Feature
- Describe CX600/CX600-X products OSPF protocol features
- Describe CX600/CX600-X products ISIS protocol features
- Describe CX600/CX600-X products BGP protocol features
- Describe CX600/CX600-X products routing control and selection features
- Configure CX600/CX600-X products OSPF protocol features
- Configure CX600/CX600-X products ISIS protocol features
- Configure CX600/CX600-X products BGP protocol features
- Configure CX600/CX600-X products routing control and selection features
- Deploy CX600/CX600-X products routing integrated configuration
- Locate and eliminate CX600/CX600-X products routing protocols faults
- Describe CX600/CX600-X products MPLS features
- Describe CX600/CX600-X products BGP MPLS VPN features
- Describe CX600/CX600-X products MPLS L2 VPN features
- Describe CX600/CX600-X products VPLS features
- Configure CX600/CX600-X products MPLS features
- Configure CX600/CX600-X products BGP MPLS VPN features
- Configure CX600/CX600-X products MPLS L2 VPN features
- Configure CX600/CX600-X products VPLS features
- Locate and eliminate CX600/CX600-X

- products MPLS VPN faults
- Describe CX600/CX600-X products QoS features
- Configure CX600/CX600-X products QoS features
- Locate and eliminate CX600/CX600-X products QoS features faults
- Describe CX600/CX600-X products multicast features
- Configure CX600/CX600-X products multicast features

- Locate and eliminate CX600/CX600-X products multicast faults
- Describe CX600/CX600-X series products routine maintenance process

Duration

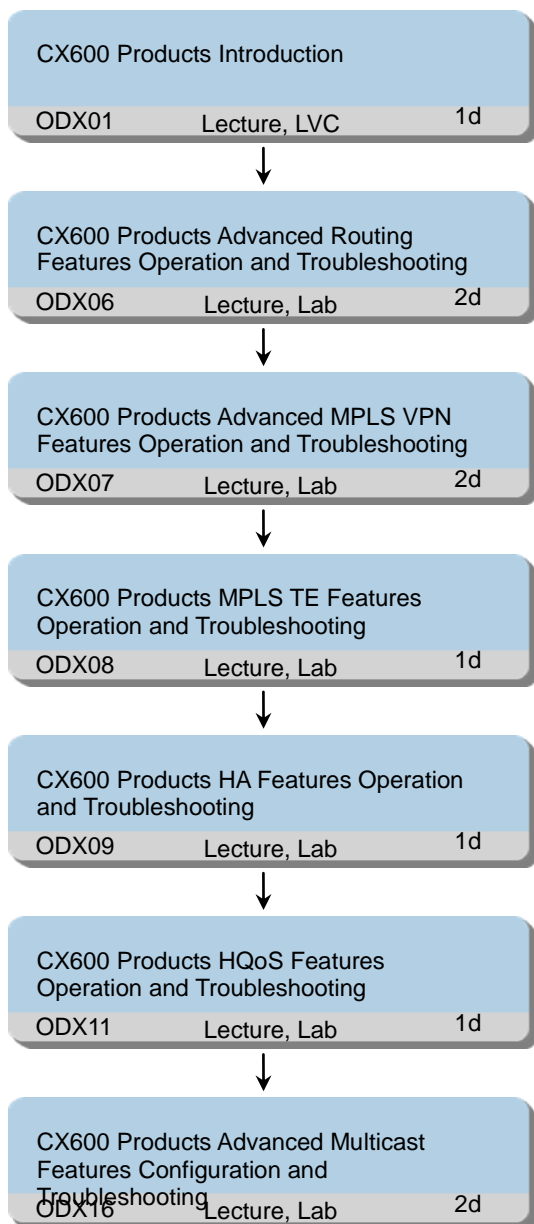
10 working days

Class Size

Min 6, Max 12

2.5.4 CX600 Products IP MEN 3rd Line Maintenance Training

Training Path



Target Audience

CX600 series routers 3rd line maintenance engineer or expert from technical supporting team
 CX600-X3/X8/X16 routers 3rd line maintenance engineer or expert from technical supporting team

Prerequisites

- A good understanding of datacom network protocols
- Attended "IP MEN CX600 Products 2nd Line

Maintenance Training" or has the equivalent HCDP knowledge or experiences

Objectives

On completion of this program, the participants will be able to:

- Describe CX600/CX600-X products hardware structure
- Describe CX600/CX600-X product Feature
- Describe CX600/CX600-X products advanced routing features
- Configure CX600/CX600-X products advanced routing features
- Locate and eliminate CX600/CX600-X products advanced routing faults
- Describe CX600/CX600-X products advanced MPLS VPN features
- Configure CX600/CX600-X products advanced MPLS VPN features
- Locate and eliminate CX600/CX600-X products advanced MPLS VPN faults
- Describe CX600/CX600-X products MPLS TE features
- Configure CX600/CX600-X products MPLS TE features
- Locate and eliminate CX600/CX600-X products MPLS TE faults
- Describe CX600/CX600-X products fault detection technologies
- Configure CX600/CX600-X products protection technologies
- Deploy CX600/CX600-X products HA features
- Describe CX600/CX600-X MSDP features principle and implementations
- Describe CX600/CX600-X MBGP features principle and implementations
- Describe CX600/CX600-X Multicast VPN features and implementations
- Locate and eliminate CX600/CX600-X products Advanced Multicast Features faults
- Describe CX600/CX600-X products HQoS

features

- Configure CX600/CX600-X products HQoS

features

- Locate and eliminate CX600/CX600-X products HQoS faults

Duration

10 working days

Class Size

Min 6, Max 12

2.5.5 CX600 Products IP MEN IPTV Service Features Training

Training Path

CX600 Products IPTV Service Features		
ODX14	Lecture, LVC	2d

Target Audience

CX600 series routers IPTV service maintenance engineer

CX600-X3/X8/X16 series routers IPTV service maintenance engineer

Prerequisites

- At least two years of experience in the operation and maintenance of data communication equipment
- A good understanding of datacom network protocols
- Attended "IP MEN CX600 Products 2nd Line Maintenance Training" or has the equivalent

HCDP knowledge or experiences

Objectives

On completion of this program, the participants will be able to:

- Describe CX600/CX600-X products IPTV solutions
- Describe IPTV bear network technical solutions
- Describe CX600/CX600-X products MQE features
- Describe CX600/CX600-X products multicast features

Duration

2 working days

Class Size

Min 6, Max 12

2.5.6 CX600 Products IP MEN HA Features Training

Training Path

CX600 Products Metro Ethernet HA Features		
ODX15	Lecture, Lab	5d

Target Audience

CX600 series routers 3rd line maintenance engineer or expert from technical supporting team
CX600-X3/X8/X16 routers 3rd line maintenance engineer or expert from technical supporting team

Prerequisites

- At least two years of experience in the operation and maintenance of data communication equipment
- A good understanding of datacom network protocols
- Attended "IP MEN CX600 Products 2nd Line Maintenance Training" or has the equivalent HCDP knowledge or experiences

Objectives

On completion of this program, the participants will be able to:

- Describe CX600/CX600-X E-Trunk features principle and implementations
- Describe CX600/CX600-X Ethernet OAM features principle and implementations

- Describe CX600/CX600-X BGP independent routing features principle and implementations
- Describe CX600/CX600-X IGP preference-based convergence features principle and implementations
- Describe CX600/CX600-X TE FRR features and implementations
- Describe CX600/CX600-X IGP shortcut features and implementations
- Describe CX600/CX600-X forwarding adjacency features and implementations
- Configure CX600/CX600-X E-Trunk features
- Configure CX600/CX600-X Ethernet OAM features
- Configure CX600/CX600-X TE FRR features
- Configure CX600/CX600-X IGP shortcut features
- Configure CX600/CX600-X forwarding adjacency features
- Configure CX600/CX600-X APS feature configurations and troubleshooting

Duration

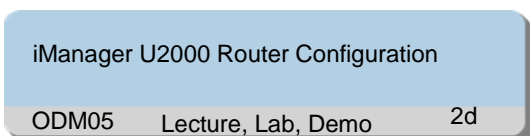
5 working days

Class Size

Min 6, Max 12

2.5.7 iManager U2000 IP MEN CX600 Products Operation Training

Training Path



Target Audience

U2000 operator and maintainer

IP network routine monitor and maintainer

Prerequisites

- Having the basic knowledge of Huawei CX600 Product

Objectives

On completion of this program, the participants will be able to:

- Describe the architecture and main features of U2000
- Describe the directory structure of U2000

- List the main functions of U2000
- Describe the product orientation of U2000, the system architecture and system management capability of U2000
- Describe the main functions of U2000
- Discover the topology, set the communication parameters and synchronize the device data on U2000
- Upgrade the device on U2000 and manage the files of the device on U2000
- Manage devices, interfaces, the ACL, the route policy and routes on U2000
- Deploy MPLS, BGP MPLS VPN on U2000

Duration

2 working days

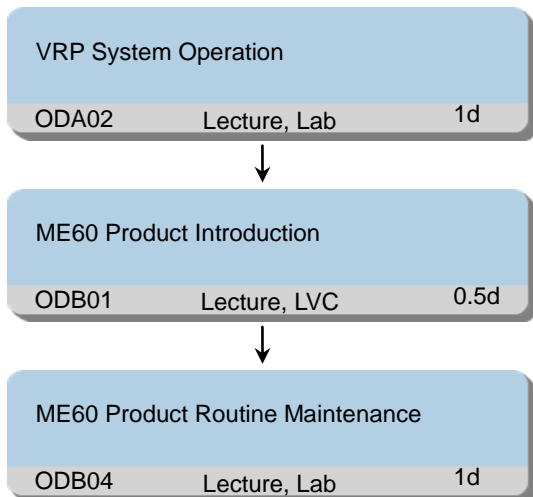
Class Size

Min 6, Max 12

2.6 MSCG Training Programs

2.6.1 ME60 Products 1st Line Maintenance Training

Training Path



Target Audience

ME60 product 1st line maintenance engineer

Prerequisites

- A basic understanding of data communication
- A general understanding of telecom network

Objectives

On completion of this program, the participants will

be able to:

- Describe ME60 product hardware structure
- Describe ME60-X series products hardware structure
- Describe ME60 product feature
- Describe the VRP system structure
- Describe the basic configuration and commands
- Upgrade VRP system
- Configure the VRP user logging authentication
- Configure FTP service
- Describe basic troubleshooting process of VRP system
- Describe basic BRAS technologies
- Describe ME60 product routine maintenance

Duration

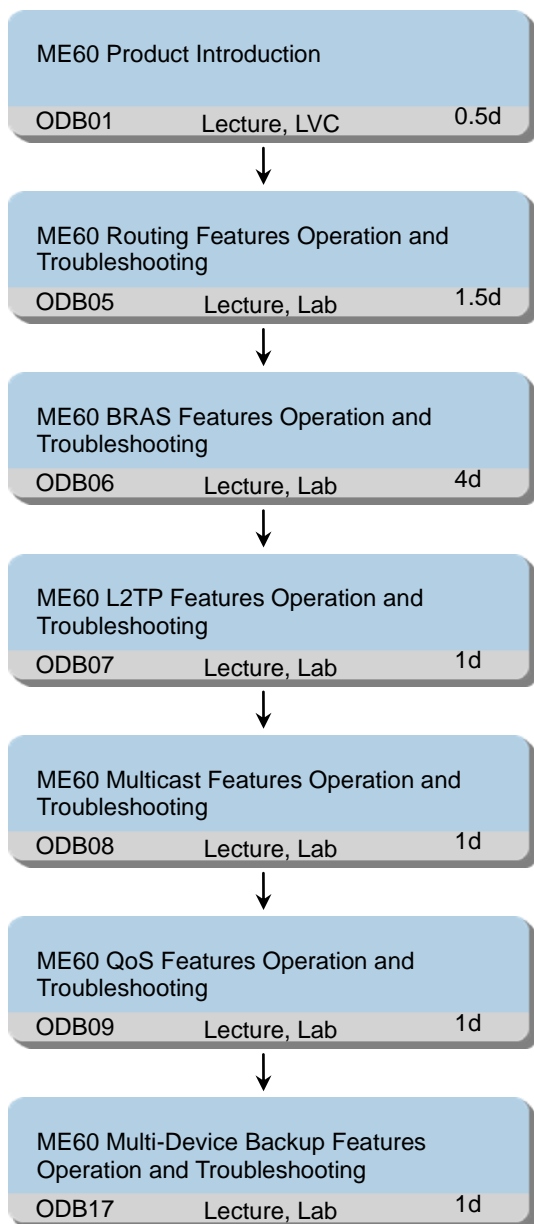
2 working days

Class Size

Min 6, Max 12

2.6.2 ME60 Products 2nd Line Maintenance Training

Training Path



Target Audience

ME60 product 2nd line maintenance engineer

Prerequisites

- At least one year of experience in the operation or maintenance of data communication equipment
- A general understanding of TCP/IP
- A general understanding of routing basics

Objectives

On completion of this program, the participants will be able to:

- Describe ME60 product hardware structure
- Describe ME60-X series products hardware structure
- Describe ME60 product feature
- Describe BRAS OSPF routing protocol features
- Describe BRAS ISIS routing protocol features
- Configure BRAS OSPF routing protocol features
- Configure BRAS ISIS routing protocol features
- Describe RADIUS protocol principle
- Describe DHCP protocol principle
- Describe PPP and PPPoE protocol principle
- Describe ME60 PPP service features and realization
- Describe ME60 IP service features and realization
- Describe ME60 leased line service feature and realization
- Describe ME60 BRAS service features troubleshooting
- Configure ME60 PPP service features
- Configure ME60 IP service features
- Configure ME60 leased line service feature
- Describe ME60 L2TP features and realization
- Configure ME60 L2TP feature
- Describe ME60 QoS feature and realization
- Configure ME60 QoS feature
- Describe ME60 RUI feature and realization
- Configure ME60 RUI feature

Duration

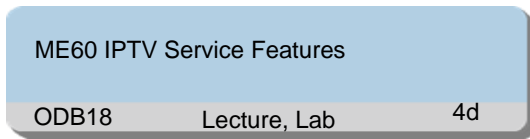
10 working days

Class Size

Min 6, Max 12

2.6.3 ME60 Products IPTV Service Features Training

Training Path



Target Audience

ME60 product IPTV service maintenance engineer

Prerequisites

- Attended "ME60 Products 2nd Line Maintenance Training"
- A good understanding of datacom network protocols

Objectives

On completion of this program, the participants will be able to:

- Describe ME60 BAS-Side multicast feature and realization
- Describe ME60 multicast hot-backup feature and realization
- Describe ME60 MQE feature and realization
- Describe ME60 IPTV solution features
- Describe IPTV bear network multicast deployment solutions
- Configure ME60 BAS-Side multicast feature
- Configure ME60 multicast hot-backup feature

Duration

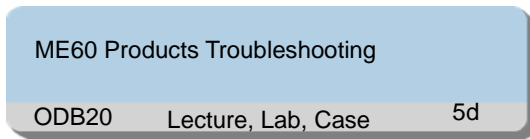
4 working days

Class Size

Min 6, Max 12

2.6.4 ME60 Products Troubleshooting Training

Training Path



Target Audience

ME60 product 3rd line maintenance engineer or expert from technical supporting team

Prerequisites

- Attended "ME60 Products 2nd Line Maintenance Training"
- A good understanding of datacom network protocols

Objectives

On completion of this program, the participants will be able to:

- Perform ME60 PPPoE features troubleshooting
- Perform ME60 IPoE features troubleshooting
- Perform ME60 leased line features troubleshooting
- Perform ME60 multicast features troubleshooting
- Perform ME60 QoS troubleshooting

Duration

5 working days

Class Size

Min 6, Max 12

2.6.5 iManager U2000 ME60 Product Operation Training

Training Path

iManager U2000 ME60 Configuration		
ODM06	Lecture, Demo	1d

Target Audience

U2000 operator and maintainer

IP network routine monitor and maintainer

Prerequisites

- Having the basic knowledge of Huawei ME60 product

Objectives

On completion of this program, the participants will be able to:

- Describe the architecture and main features of U2000
- Describe the directory structure of U2000

- List the main functions of U2000
- Describe the basic concepts in alarm and performance management of U2000
- Perform the browse and setting operation for alarm
- Perform the basic response operation for common alarm events
- Perform the browse and setting operation for performance events
- Manage ME60 by using U2000
- Deploy services on ME60 by using U2000

Duration

2 working days

Class Size

Min 6, Max 12

2.6.6 ME60 Products CGN Feature Training

Training Path

ME60 Products CGN Feature Introduction		
ODB21	Lecture, Lab	2d

Target Audience

ME60 product 2nd line technical support engineer

Prerequisites

- Attended "ME60 Products 2nd Line Maintenance Training"
- A good understanding of datacom network protocols

Objectives

On completion of this program, the participants will be able to:

- Describe ME60 product hardware structure
- Describe CGN principle
- Describe CGN access scenario classification

Duration

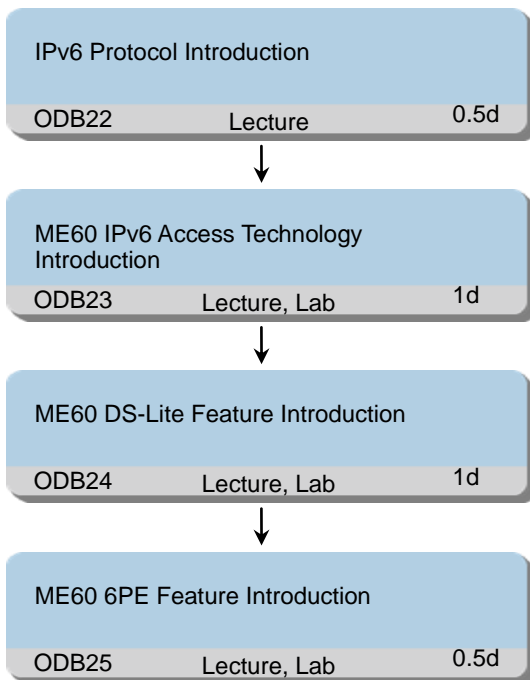
2 working days

Class Size

Min 6, Max 12

2.6.7 ME60 Products IPv6 Feature Training

Training Path



Target Audience

ME60 product technical support engineer and technical specialist

Prerequisites

- Attended "ME60 Products 2nd Line Maintenance Training"
- A good understanding of datacom network protocols

Objectives

On completion of this program, the participants will be able to:

- Describe ME60 IPv6 access related protocols
- Describe ME60 IPv6 user access flow
- Configure ME60 IPv6 user access feature
- Describe ME60 DS-Lite user access flow
- Configure ME60 DS-Lite user access feature
- Describe ME60 6PE feature
- Configure ME60 6PE feature

Duration

3 working days

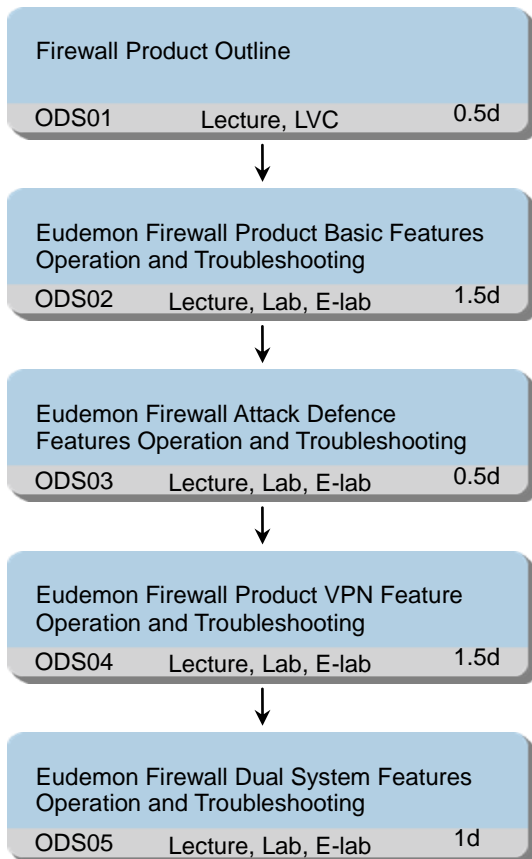
Class Size

Min 6, Max 12

2.7 Network Security Training Programs

2.7.1 Eudemon 1000E/200E Firewall Products 2nd Line Maintenance Training

Training Path



- Describe Eudemon series firewall product software feature
- Describe Eudemon Firewall basic function features
- Describe Eudemon Firewall NAT service feature
- Configure Eudemon Firewall basic function features
- Configure Eudemon Firewall NAT service feature
- Describe Eudemon Firewall attack defence service features
- Configure Eudemon Firewall attack defence service features
- Describe Eudemon Firewall L2TP service feature
- Describe Eudemon Firewall GRE service feature
- Describe Eudemon Firewall IP-Sec service feature
- Configure Eudemon Firewall L2TP service feature
- Configure Eudemon Firewall GRE service feature
- Configure Eudemon Firewall IP-Sec service feature
- Describe Eudemon Firewall dual system service features
- Configure Eudemon Firewall dual system service features

Target Audience

Eudemon1000E/200E series Firewall operation and maintenance engineer

Eudemon1000E-X/200E-X series Firewall operation and maintenance engineer

Prerequisites

- Be familiar with Windows operating system
- Having a general knowledge of TCP/IP basics

Objectives

On completion of this program, the participants will be able to:

- Describe Eudemon series firewall product hardware feature

Duration

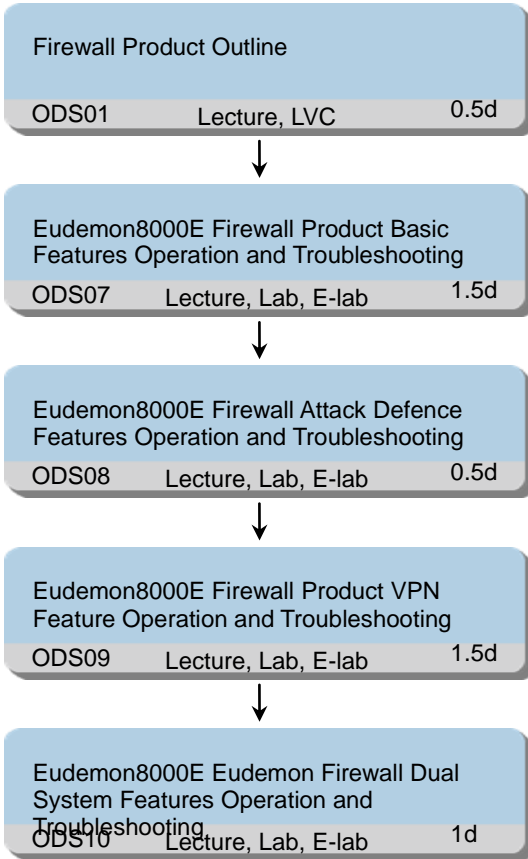
5 working days

Class Size

Min 6, Max 12

2.7.2 Eudemon 8000E Firewall Products 2nd Line Maintenance Training

Training Path



Target Audience

Eudemon8000E series Firewall operation and maintenance engineer

Eudemon8000E-X series Firewall operation and maintenance engineer

Prerequisites

- Be familiar with Windows operating system
- Having a general knowledge of TCP/IP basics

Objectives

On completion of this program, the participants will be able to:

- Describe Eudemon series firewall product

hardware feature

- Describe Eudemon series firewall product software feature
- Describe Eudemon8000E Firewall basic function features
- Describe Eudemon8000E Firewall NAT service feature
- Configure Eudemon8000E Firewall basic function features
- Configure Eudemon8000E Firewall NAT service feature
- Describe Eudemon8000E Firewall attack defend service features
- Configure Eudemon8000E Firewall attack defend service features
- Describe Eudemon8000E Firewall L2TP service feature
- Describe Eudemon8000E Firewall GRE service feature
- Describe Eudemon8000E Firewall IP-Sec service feature
- Configure Eudemon8000E Firewall L2TP service feature
- Configure Eudemon8000E Firewall GRE service feature
- Configure Eudemon8000E Firewall IP-Sec service feature
- Describe Eudemon8000E Firewall dual system service features
- Configure Eudemon8000E Firewall dual system service features

Duration

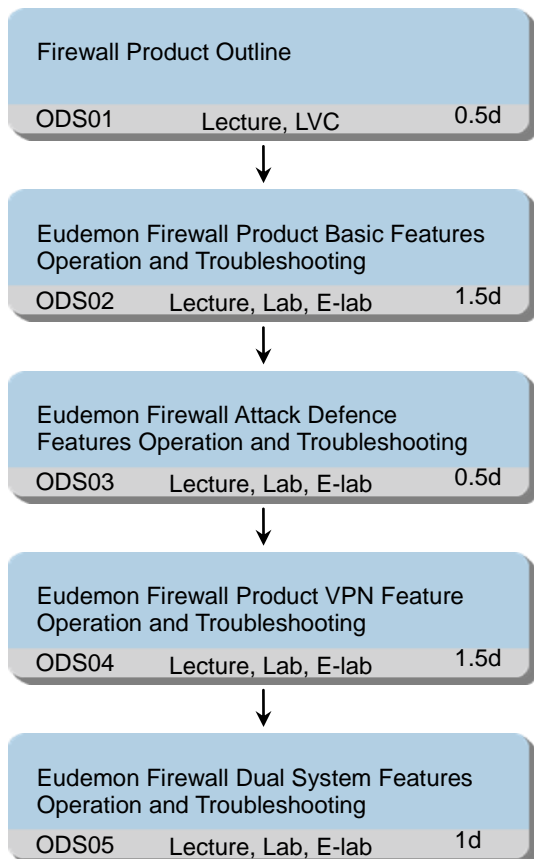
5 working days

Class Size

Min 6, Max 12

2.7.3 Eudemon 8000E/1000E/200E Firewall Products 2nd Line Maintenance Training

Training Path



Target Audience

Eudemon8000E/1000E/200E series Firewall operation and maintenance engineer
Eudemon8000E-X1000E-X/200E-X series Firewall operation and maintenance engineer

Prerequisites

- Be familiar with Windows operating system
- Having a general knowledge of TCP/IP basics

Objectives

On completion of this program, the participants will be able to:

- Describe Eudemon series firewall product

hardware feature

- Describe Eudemon series firewall product software feature
- Describe Eudemon Firewall basic function features
- Describe Eudemon Firewall NAT service feature
- Configure Eudemon Firewall basic function features
- Configure Eudemon Firewall NAT service feature
- Describe Eudemon Firewall attack defence service features
- Configure Eudemon Firewall attack defence service features
- Describe Eudemon Firewall L2TP service feature
- Describe Eudemon Firewall GRE service feature
- Describe Eudemon Firewall IP-Sec service feature
- Configure Eudemon Firewall L2TP service feature
- Configure Eudemon Firewall GRE service feature
- Configure Eudemon Firewall IP-Sec service feature
- Describe Eudemon Firewall dual system service features
- Configure Eudemon Firewall dual system service features

Duration

5 working days

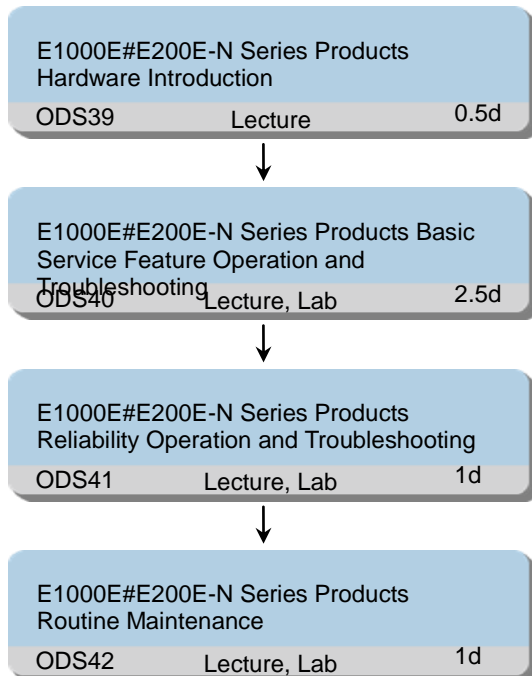
Class Size

Min 6, Max 12

2.7.4 Eudemon E1000E-N/E200E-N Firewall Products 2nd Line Maintenance

Training

Training Path



Target Audience

Eudemon E1000E-N/E200E-N Firewall operation and maintenance engineer

Prerequisites

- Be familiar with Windows operating system
- Having a general knowledge of TCP/IP basics

Objectives

On completion of this program, the participants will be able to:

- Describe Eudemon200E-N/1000E-N series products hardware architecture
- Describe Eudemon200E-N/1000E-N series products boards function and feature
- Describe Eudemon200E-N/1000E-N series products disk function and feature
- Describe the policy working process of Eudemon200E-N/1000E-N series products
- Configure the basic function and policy of Eudemon200E-N/1000E-N series products

- Describe the VPN feature of Eudemon200E-N/1000E-N series products
- Configure the VPN feature of Eudemon200E-N/1000E-N series products
- Describe the virtual system feature of Eudemon200E-N/1000E-N series products
- Configure the virtual system feature of Eudemon200E-N/1000E-N series products
- Describe the bandwidth management and service awareness feature of Eudemon200E-N/1000E-N series products
- Configure the bandwidth management and service awareness feature of Eudemon200E-N/1000E-N series products
- Describe the attack defence and IPS feature of Eudemon200E-N/1000E-N series products
- Configure the attack defence and IPS feature of Eudemon200E-N/1000E-N series products
- Describe the NAT feature of Eudemon200E-N/1000E-N series products
- Configure the NAT feature of Eudemon200E-N/1000E-N series products
- Describe the reliability feature of Eudemon200E-N/1000E-N series products
- Configure the reliability feature of Eudemon200E-N/1000E-N series products
- Configure the log system of Eudemon200E-N/1000E-N series products
- perform routine maintenance of Eudemon200E-N/1000E-N series products

Duration

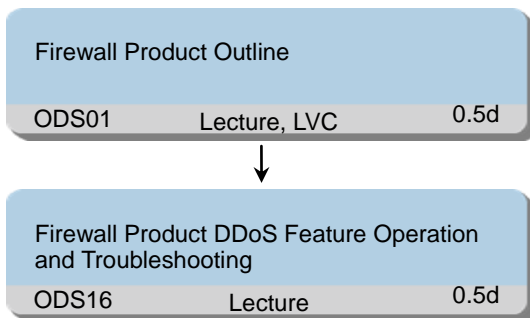
5 working days

Class Size

Min 6, Max 12

2.7.5 Eudemon8000E DDoS Solution Training

Training Path



Target Audience

Eudemon 8000E series firewall operation and maintenance engineer of MAN traffic cleaning solution

Prerequisites

- Attended the training program of "Eudemon Firewall Products 2nd Line Maintenance

Training"

Objectives

On completion of this program, the participants will be able to:

- Describe Eudemon series firewall product hardware feature
- Describe Eudemon series firewall product software feature
- Describe E8000E series firewall DDoS defence service feature

Duration

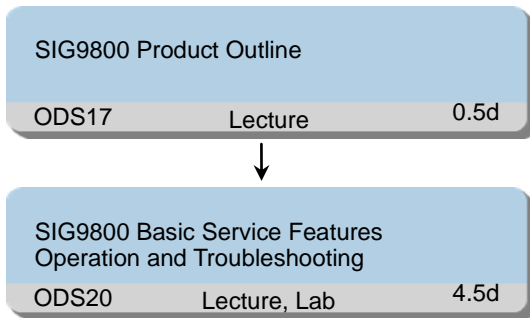
2 working days

Class Size

Min 6, Max 12

2.7.6 SIG9800 Products 2nd Line Maintenance Training

Training Path



Target Audience

SIG9800 series operation and maintenance engineer

Prerequisites

- Be familiar with Windows operating system
- Having a general knowledge of TCP/IP basics

Objectives

On completion of this program, the participants will be able to:

- Describe SIG9800 product hardware and features
- Describe SIG9800 basic function features
- Describe SIG9800 traffic monitor service feature

- Describe SIG9800 SPAM monitor service feature
- Describe SIG9800 URL monitor service feature
- Describe SIG9800 VOIP monitor service feature
- Describe SIG9800 FUP service feature
- Describe SIG9800 online charging service feature
- Describe SIG9800 offline charging service feature
- Describe SIG9800 greennet service feature
- Describe SIG9800 ipush service feature
- Describe SIG9800 smartbrowser service feature
- Describe SIG9800 security service feature
- Describe SIG9800 mirroring and diversion service feature
- Configure SIG9800 services

Duration

5 working days

Class Size

Min 6, Max 12

2.7.7 IP MAN Value-added Service and Security Solution Training

Training Path

IP MAN Value-added Service # Security Solution		
ODS30	Lecture, LVC	0.5d

Target Audience

Manager
Operation and maintenance engineer

Prerequisites

- Having a general knowledge of TCP/IP basics

Objectives

On completion of this program, the participants will

be able to:

- Describe the security threats that exist in the MAN
- Describe the demand for value-added services in the MAN
- Describe the Huawei MAN security and value-added solutions

Duration

0.5 working day

Class Size

Min 6, Max 12

2.7.8 Security Solution for Mobile Internet Service Training

Training Path

Security Solution for Mobile Internet Service		
ODS31	Lecture, LVC	0.5d

Target Audience

Manager
Operation and maintenance engineer

Prerequisites

- Having a general knowledge of TCP/IP basics

Objectives

On completion of this program, the participants will

be able to:

- Describe the security threats that exist in the mobile Internet services
- Describe the demand for value-added services for mobile Internet services
- Describe the Huawei solutions for the mobile Internet security and value-added services

Duration

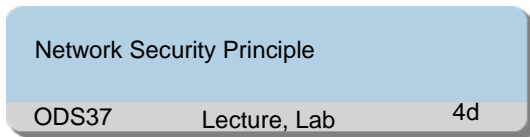
0.5 working day

Class Size

Min 6, Max 12

2.7.9 Network Security Principle Training

Training Path



Target Audience

Operation and maintenance engineer

Prerequisites

- Be familiar with Windows operating system
- Having a general knowledge of TCP/IP basics

Objectives

On completion of this program, the participants will be able to:

- Describe the importance of security
- Describe information security and network security
- Describe network security model
- Describe common network security risk
- Describe the common security risks of network devices

- Describe the security enhancement strategies for these risks and the basic configuration
- List the types of each series of Huawei security products
- Describe the basic functions of each security product
- Describe the typical networking application of each security product
- Describe the concept and classification of VPN
- Describe the principles of IPSec, GRE, L2TP VPN
- Configure IPSec, GRE, L2TP VPN on HUAWEI device
- Describe the concepts of network attack and defense
- Configure attack defense on HUAWEI firewall

Duration

4 working days

Class Size

Min 6, Max 12

2.7.10 Eudemon 8000E CGN Feature Training

Training Path

Eudemon8000E Firewall CGN Feature Introduction and Configuration		
ODS13	Lecture, Lab	1d

Target Audience

Eudemon8000E series Firewall operation and maintenance engineer

Prerequisites

- Be familiar with Windows operating system
- Having a general knowledge of TCP/IP basics

Objectives

On completion of this program, the participants will

be able to:

- Describe Eudemon 8000E CGN solution
- Describe the key technology of Eudemon 8000E CGN solution
- Describe different implementations of Eudemon 8000E CGN solution
- Configure Eudemon 8000E CGN solution

Duration

1 working day

Class Size

Min 6, Max 12

2.7.11 IP MAN Datacom Products Security Features Training

Training Path

IP MAN Datacom Products Security Features		
ODS38	Lecture, Lab	2d

Target Audience

Network Operation and maintenance engineer

Prerequisites

- Having a general knowledge of TCP/IP basics

Objectives

On completion of this program, the participants will be able to:

- Describe router security risks
- Describe NE-series router security features

and configuration

- Describe switch security risks
- Describe S-series switch security features and configuration
- Describe ME60 device security risks
- Describe ME60 device security features and configuration
- Describe IPTV service security features

Duration

2 working days

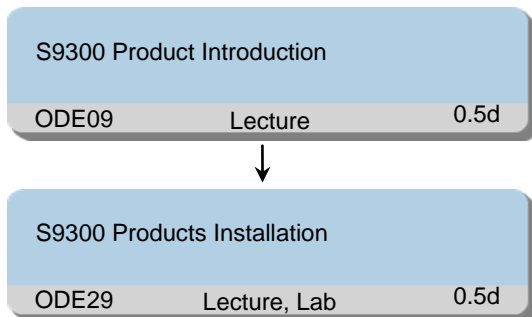
Class Size

Min 6, Max 12

2.8 Broadband Ethernet Training Programs

2.8.1 S9300 Products Installation and Commissioning Training

Training Path



Target Audience

Datacom equipment installation and commissioning engineer

Prerequisites

- A general familiarity with data communication network and general network equipment

Objectives

On completion of this program, the participants will be able to:

- Describe S9300 switches application
- Describe S9300 hardware architecture
- Describe S9300 software features
- Describe the typical networking of S9300
- Describe the precautions of S9300 installation
- Install S9300
- Configure the basic function of S9300

Duration

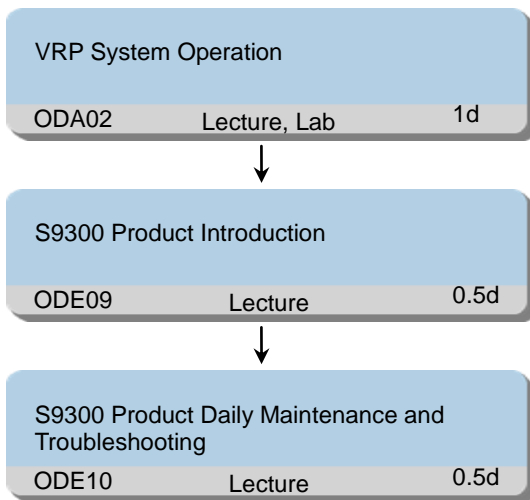
1 working day

Class Size

Min 6, Max 12

2.8.2 S9300 Products 1st Line Maintenance Training

Training Path



- Describe S9300 switches application
- Describe S9300 hardware architecture
- Describe S9300 software features
- Describe the typical networking of S9300
- View device status
- Perform routine maintenance on S9300
- Perform troubleshooting on S9300
- Describe the VRP system structure
- Describe the basic configuration and commands
- Upgrade VRP system
- Configure the VRP user logging authentication
- Configure FTP service
- Describe basic troubleshooting process of VRP system

Target Audience

S9300 products 1st line technical support engineer

Prerequisites

- A general familiarity with data communication network and general network equipment

Objectives

On completion of this program, the participants will be able to:

Duration

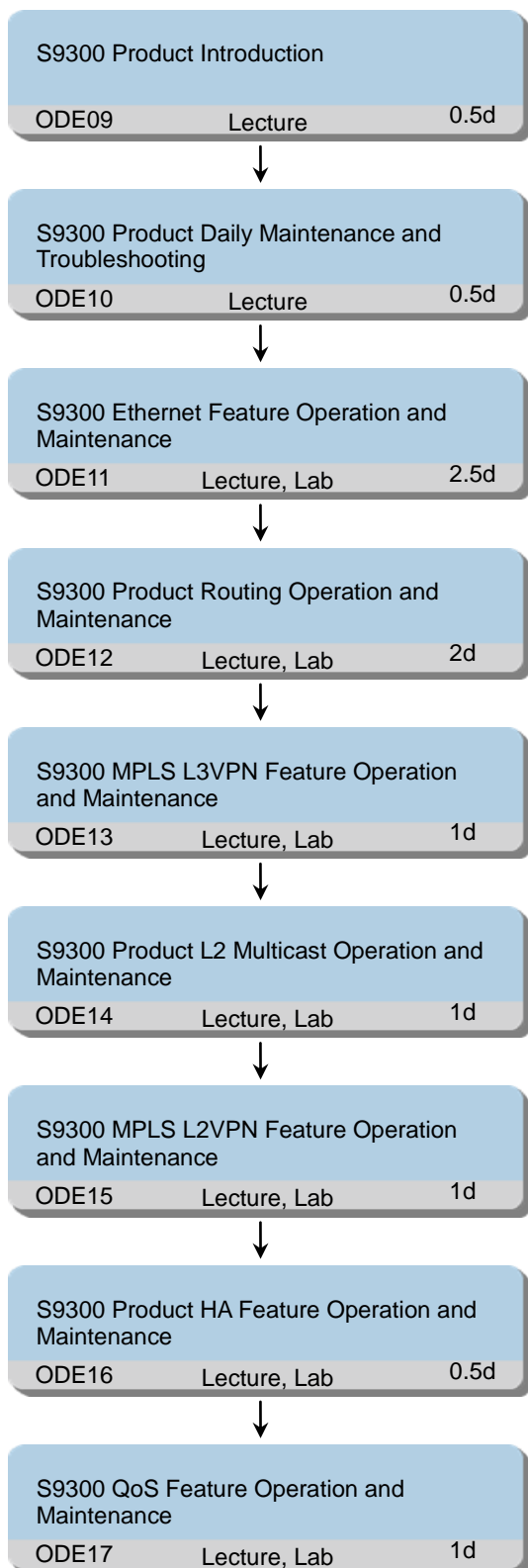
2 working days

Class Size

Min 6, Max 12

2.8.3 S9300 Products 2nd Line Maintenance Training

Training Path



Target Audience

S9300 products 2nd line technical support engineer

Prerequisites

- A general familiarity with data communication network and general network equipment
- A general understanding of relative network protocols

Objectives

On completion of this program, the participants will be able to:

- Describe S9300 switches application
- Describe S9300 hardware architecture
- Describe S9300 software features
- Describe the typical networking of S9300
- Describe what VLAN is
- Describe concepts about VLAN
- Describe the mechanism and configuration of communication between VLANs
- Describe the mechanism and configuration of VLAN aggregation.
- Describe the mechanism and configuration of VLAN mapping
- Describe functions of QinQ
- Describe how QinQ is implemented
- Describe how selective QinQ is implemented
- Configure QinQ and selective QinQ on S series switches
- Describe trunk implementation
- Describe trunk forwarding
- Describe the concept of LACP
- Configure link aggregation
- Describe the basic VRRP concepts
- Describe common VRRP features
- Configure VRRP on S series switches
- Describe STP functions
- Describe STP implementation
- Describe RSTP improvement compared with STP

- Describe MSTP calculation.
- Configure MSTP on S series switches
- Describe IP routing process
- Describe each field of IP routing table
- Configure static route on switches
- Describe the principle of OSPF
- Configure OSPF on switches
- Describe the meanings and functions of BGP configuration parameters.
- Configure BGP on a network that consists of S9300
- Analyze and handle common faults that occur during BGP configuration on S9300
- Describe MPLS basic concepts
- Describe process of MPLS label distribution protocol (LDP) session establishment
- Configure MPLS on S9300
- Describe the meaning and functions of each parameter involved in configuration of BGP MPLS VPN.
- Configure BGP MPLS VPN on a network that consists of S9300
- Select suitable MPLS L2 VPN implementation modes for different MPLS L2 VPN application
- Configure MPLS L2 VPN on a network that consists of S9300
- Describe what is multicast

- Describe IGMP implementation
- Describe the similarities and difference among IGMPv1, IGMPv2, and IGMPv3
- Describe the implementation and configuration of IGMP snooping
- Describe the implementation and configuration of IGMP proxy
- Configure Layer 2 multicast on S9300
- Describe the basic VRRP concepts
- Describe common VRRP features
- Configure VRRP on S9300 series switches
- Describe key technologies of QoS
- Configure QoS on a network that consists of S9300
- Describe the meaning and function of each parameter involved in QoS configuration
- Analyze and handle common faults during QoS configuration on S9300
- View device status
- Perform routine maintenance on S9300
- Perform troubleshooting on S9300

Duration

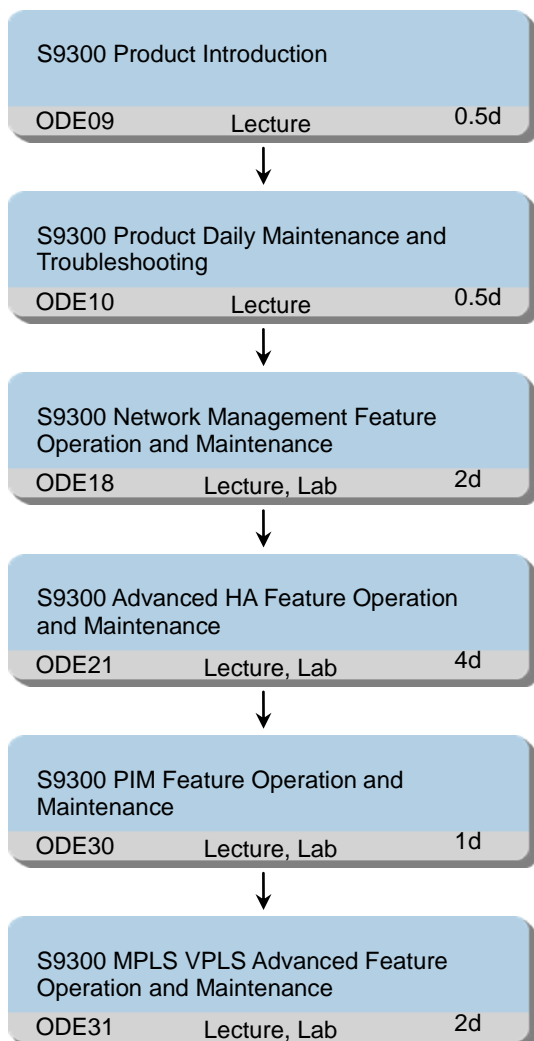
10 working days

Class Size

Min 6, Max 12

2.8.4 S9300 Products 3rd Line Maintenance Training

Training Path



Target Audience

S9300 3rd line technical support engineer/specialist

Prerequisites

- A general familiarity with data communication network and general network equipment
- A general understanding of relative network protocols
- At least two years of experience in the operation and maintenance of data communication equipment
- Completion of "S9300 Products 2nd Line Maintenance Training"

Objectives

On completion of this program, the participants will be able to:

- Describe S9300 switches application
- Describe S9300 hardware architecture
- Describe S9300 software features
- Describe the typical networking of S9300
- Describe the VPLS implementation principle
- Configure VPLS on a network that consists of S9300
- Describe the convergence VPLS implementation principle
- Configure convergence VPLS on a network that consists of S9300
- Describe NQA principle
- Configure NQA on S9300
- Describe Netstream principle
- Configure Netstream on S9300
- Describe BFD principle
- Configure BFD on S9300
- Describe Ethernet OAM principle
- Configure Ethernet OAM on S9300
- Describe Smart Link on S9300
- Configure Smart link on S9300
- Describe the basic principle of PIM-SM
- Describe the process that join the RPT and source registration
- Describe the switchover of SPT
- Describe the basic PIM-SM configuration of S9300
- Describe the key technologies for PIM SSM
- Describe how PIM SSM works
- Describe how to configure PIM SSM on S9300
- View device status
- Perform routine maintenance on S9300
- Perform troubleshooting on S9300

Duration

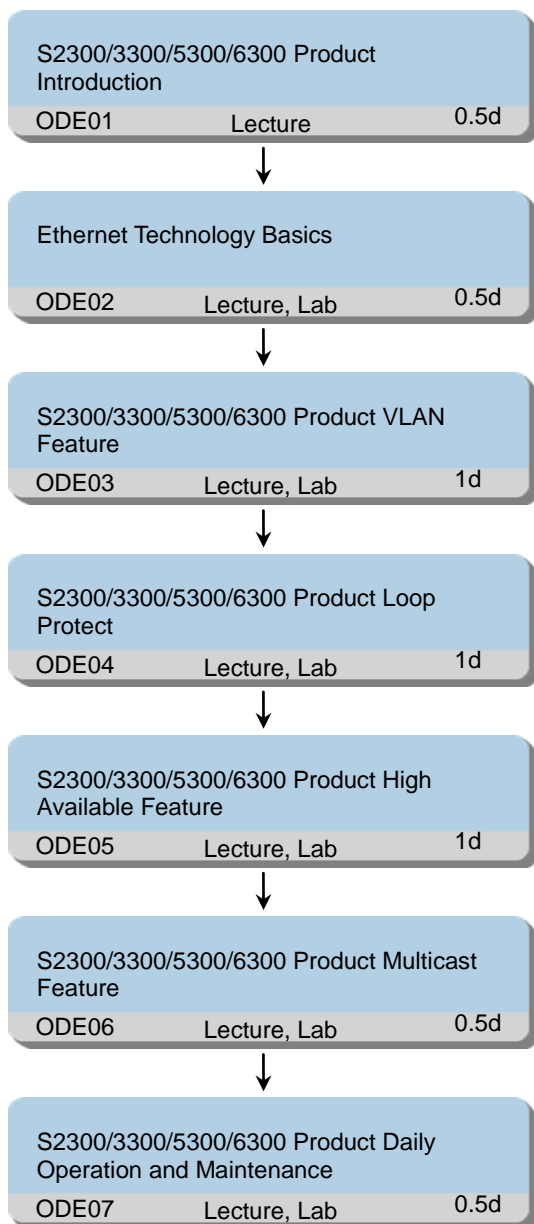
10 working days

Class Size

Min 6, Max 12

2.8.5 S63/53/33/23 Series Switches Products 2nd Line Maintenance Training

Training Path



Target Audience

S23/33/53 products 2nd line technical support engineer

Prerequisites

- A general familiarity with data communication network and general network equipment
- A general understanding of relative network protocols

Objectives

On completion of this program, the participants will be able to:

- Describe the positions of S series mid-range and low-end switches
- Describe hardware specifications and software features of S series mid-range and low-end switches
- Describe the key features of S series mid-range and low-end switches
- Describe the typical networking of S series mid-range and low-end switches
- Describe concepts about Ethernet
- Describe the working procedure of Ethernet switches
- Configure basic parameters of Ethernet on S series switches, such as the rate and duplex mode
- Describe what VLAN is
- Describe concepts about VLAN
- Describe the mechanism and configuration of communication between VLANs
- Describe the mechanism and configuration of VLAN aggregation
- Describe the mechanism and configuration of VLAN mapping
- Describe functions of QinQ
- Describe how QinQ is implemented
- Describe how selective QinQ is implemented
- Configure QinQ and selective QinQ on S series switches
- Describe trunk implementation
- Describe trunk forwarding
- Describe the concept of LACP
- Configure link aggregation
- Describe STP functions
- Describe STP implementation
- Describe RSTP improvement compared with STP
- Describe MSTP calculation

- Configure MSTP on S series switches
- Describe VRRP working principle
- List VRRP features
- Configure VRRP on Switches
- Describe RRPP working principle
- Describe RRPP application scenarios
- Configure basic RRPP functions
- Describe what is multicast
- Describe IGMP implementation
- Describe the similarities and difference among IGMPv1, IGMPv2, and IGMPv3
- Describe the implementation and configuration of IGMP snooping

- Describe the implementation and configuration of IGMP proxy
- Configure Layer 2 multicast on switches
- View device status
- Perform routine maintenance on switches
- Perform troubleshooting on switches

Duration

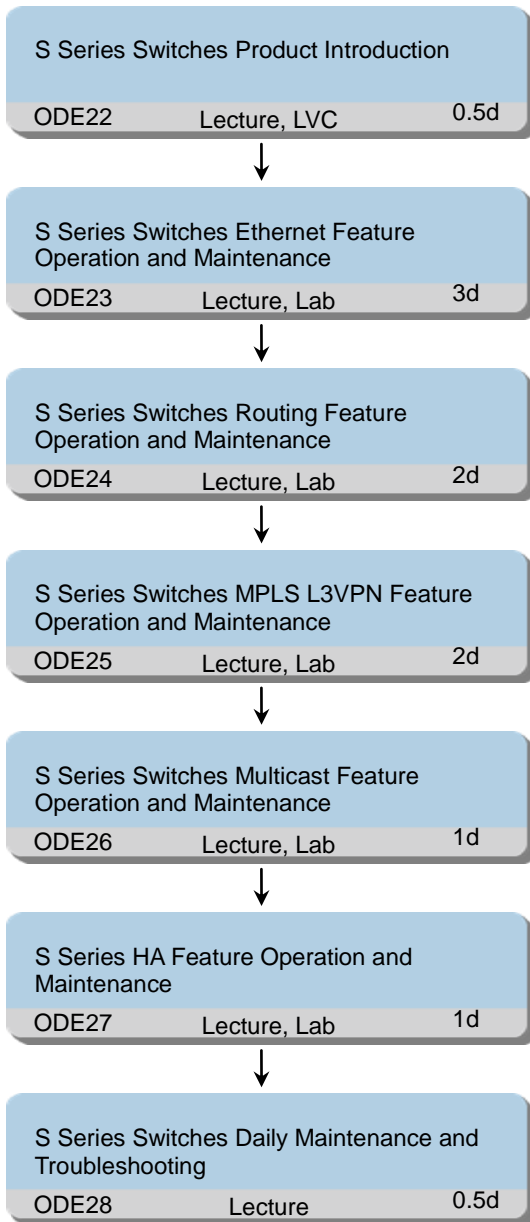
5 working days

Class Size

Min 6, Max 12

2.8.6 S93/63/53/33/23 Series Switches Products 2nd Line Maintenance Training

Training Path



Target Audience

S23/33/53/63/93 products 2nd line technical support engineer

Prerequisites

- A general familiarity with data communication network and general network equipment
- A general understanding of relative network protocols

Objectives

On completion of this program, the participants will be able to:

- Describe the positions of S series mid-range and low-end switches
- Describe hardware specifications and software features of S series mid-range and low-end switches
- Describe the key features of S series mid-range and low-end switches
- Describe the typical networking of S series mid-range and low-end switches
- Describe S9300 switches application
- Describe S9300 hardware architecture
- Describe S9300 software features
- Describe the typical networking of S9300
- Describe what VLAN is
- Describe concepts about VLAN
- Describe the mechanism and configuration of communication between VLANs
- Describe the mechanism and configuration of VLAN aggregation
- Describe the mechanism and configuration of VLAN mapping
- Describe functions of QinQ
- Describe how QinQ is implemented
- Describe how selective QinQ is implemented
- Configure QinQ and selective QinQ on S series switches
- Describe trunk implementation
- Describe trunk forwarding
- Describe the concept of LACP
- Configure link aggregation
- Describe STP functions
- Describe STP implementation
- Describe RSTP improvement compared with STP
- Describe MSTP calculation
- Configure MSTP on S series switches
- Describe IP routing process

- Describe each field of IP routing table
- Configure static route on switches
- Describe the principle of OSPF
- Configure OSPF on switches
- Describe the meanings and functions of BGP configuration parameters.
- Configure BGP on a network that consists of S9300
- Analyze and handle common faults that occur during BGP configuration on S9300
- Describe MPLS basic concepts
- Describe process of MPLS label distribution protocol (LDP) session establishment
- Configure MPLS on S9300
- Describe the meaning and functions of each parameter involved in configuration of BGP MPLS VPN
- Configure BGP MPLS VPN on a network that consists of S9300
- Describe what is multicast
- Describe IGMP implementation
- Describe the similarities and difference among IGMPv1, IGMPv2, and IGMPv3
- Describe the implementation and configuration

of IGMP snooping

- Describe the implementation and configuration of IGMP proxy
- Configure Layer 2 multicast on S9300
- Describe PIM principle
- Describe PIM-SM principle
- Describe PIM-SSM principle
- Configure PIM on S9300
- Describe VRRP working principle
- List VRRP features
- Configure VRRP on S9300
- Describe RRPP working principle
- Describe RRPP application scenarios
- Configure basic RRPP functions on S9300
- View device status
- Perform routine maintenance on switches
- Perform troubleshooting on switches

Duration

10 working days

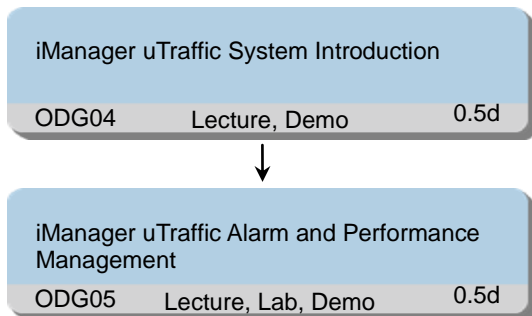
Class Size

Min 6, Max 12

2.9 IP Network Performance Management Training Programs

2.9.1 iManager uTraffic Monitor Solution Training

Training Path



Target Audience

iManager uTraffic operator and maintainer
IP network routine monitor and maintainer

Prerequisites

- Having the basic knowledge of network management
- Having the basic principle and equipment knowledge of IP network

Objectives

On completion of this program, the participants will

be able to:

- Describe the architecture and main features of iManager uTraffic
- Describe the directory structure of iManager uTraffic
- List the main functions of iManager uTraffic
- Describe the basic concepts in alarm and performance management of iManager uTraffic
- Perform the browse and setting operation for alarm
- Perform the basic response operation for common alarm events
- Perform the browse and setting operation for performance events

Duration

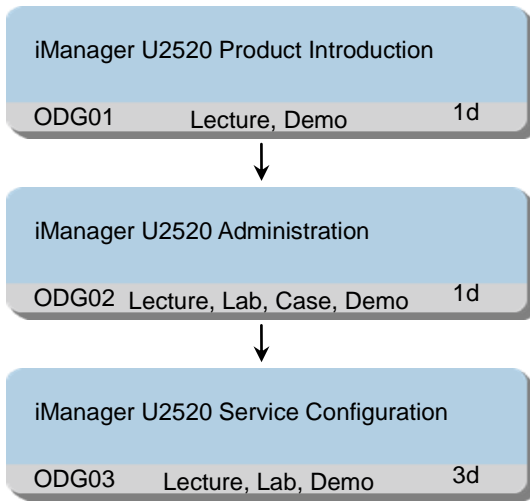
1 working day

Class Size

Min 6, Max 12

2.9.2 iManager U2520 Operation Training

Training Path



Target Audience

U2520 operator, monitor and maintainer

Prerequisites

- Having the basic knowledge of network management
- Having the basic principle and equipment knowledge of IP network, include IGP, BGP routing protocols, MPLS, BGP MPLS VPN, BoD, VoD basic principle

Objectives

On completion of this program, the participants will

be able to:

- Describe the system architecture of the U2520
- Describe the hardware component of the U2520 monitoring system
- Describe the application scenario of the U2520
- Describe the main functions of the U2520
- Perform the functions and operations of U2520 user and log management
- Perform the data lifecycle management of the U2520
- Perform the inventory import of the U2520
- Perform the file management, disk management and process management of the U2520
- Perform physical network, IP network, MPLS network, L3VPN network monitoring on U2520
- Perform BTV, VoD, VoIP, L3VPN, HSI service monitoring on U2520
- Perform test on-demand on U2520

Duration

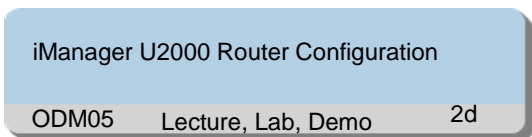
5 working days

Class Size

Min 6, Max 12

2.9.3 iManager U2000 IP Network Performance Monitoring Training

Training Path



Target Audience

U2000 operator, monitor and maintainer

Prerequisites

- Having the basic knowledge of network management
- Having the basic principle and equipment knowledge of IP network, include IGP, BGP routing protocols, MPLS, BGP MPLS VPN, BoD, VoD basic principle

Objectives

On completion of this program, the participants will be able to:

- Describe the product orientation of U2000, the system architecture and system management capability of U2000
- Describe the main functions of U2000
- Discover the topology, set the communication parameters and synchronize the device data on U2000
- Upgrade the device on U2000 and manage the files of the device on U2000
- Manage devices, interfaces, the ACL, the route policy and routes on U2000
- Deploy MPLS, BGP MPLS VPN on U2000

Duration

2 working days

Class Size

Min 6, Max 12

2.9.4 iManager U2000 NMS Overview

Training Path

Target Audience

U2000 operator, monitor and maintainer

Prerequisites

- Having the basic knowledge of network management
- Having the basic principle and equipment knowledge of IP network, include IGP, BGP routing protocols, MPLS, BGP MPLS VPN, BoD, VoD basic principle

Objectives

On completion of this program, the participants will be able to:

- Describe the architecture and main features of U2000

- Describe the directory structure of U2000
- List the main functions of U2000
- Describe the basic concepts in alarm and performance management of U2000
- Perform the browse and setting operation for alarm
- Perform the basic response operation for common alarm events
- Perform the browse and setting operation for performance events

Duration

1 working day

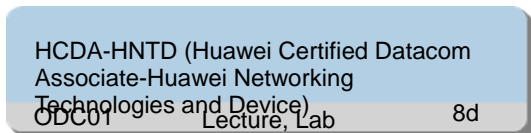
Class Size

Min 6, Max 12

2.10 Datacom Engineer Certification Training Programs

2.10.1 HCDA-HNTD (Huawei Certified Datacom Associate-HuaWei Networking Technologies and Device) Training

Training Path



Target Audience

This program is intended for those who are to be certified by HCDA exam

Prerequisites

- Be familiar with Windows operating system
- Know the basic function and conception of computer network

Objectives

On completion of this program, the participants will be able to:

- Describe the hierarchical structure of IP network and the function of each layer
- Describe Ethernet evolution and relative technology
- Outline network security and firewall concepts

- Describe TCP/IP model, the function of each layer, the function and the working principle of some common protocols
- Describe ICMP working principle
- Describe Router and Switch working principle
- Describe the basic principle and configuration of VLAN, STP, VRRP, Static Route, RIP, OSPF, PPP, Frame Relay
- Design IP addresses with IP address subnetting technology
- Apply ping, tracert in network maintenance and basic troubleshooting
- Configure IP address, VLAN, VRRP, Static Route, RIP, OSPF in VRP platform
- Locate and handle the simple fault
- Choose Huawei routers for each layer of IP network

Duration

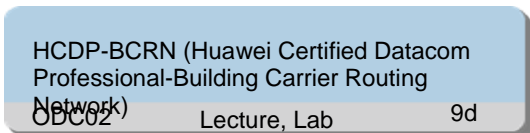
8 working days

Class Size

Min 6, Max 12

2.10.2 HCDP-BCRN (Huawei Certified Datacom Professional-Building Carrier Routing Network) Training

Training Path



Target Audience

This program is intended for those who are to be certified by the HCDP-BCRN exam

Prerequisites

- Have got the HCDA certification or have equivalent technical level

Objectives

On completion of this program, the participants will be able to:

- Flexibly apply the VLSM technique to design IP addresses
- Flexibly apply the CIDR technique to aggregate the routes
- Describe the IPv6 basic packets and the IPv6 address structure
- Describe the basic protocol of IPv6 (ICMPv6, ND, IPv6 address allocation protocol)
- Describe the working principle of OSPFv2/v3 routing protocol
- Describe several OSPF special areas
- Troubleshoot OSPF neighbor relationship failures and routing failures
- Describe the working principle of ISIS routing protocol in IPv4 and IPv6
- Troubleshoot ISIS common neighbor relations failure and routing failures
- Configure OSPF and ISIS in VRP platform to realize the IP connectivity of the large network
- Describe the working principle of BGP and

MP-BGP for IPv6

- Configure BGP/MP-BGP for IPv6 in VRP platform and use BGP route attributes and route policy to select and filter routing in large network based on demand
- Describe the working principle and function of BGP route reflector and confederation
- Describe the BGP multi-homed basic concepts and application scenarios
- Troubleshoot the BGP peer establishment failures, routing learning failures and path selection failures
- Flexibly apply the common route selection tools (Access control list, ip-prefix, as-path-filter, community-filter, route-policy)
- Describe the working principle of multicast protocol (IGMP, PIM-SM, PIM-DM)
- Configure IGMP/PIM-SM/PIM-DM in VRP platform
- Describe NE5000E/NE5000E-X16 series hardware features
- Describe NE80E/NE40E and NE40E-X series hardware features
- Select the appropriate Huawei middle and high end routers based on the device performance and service requirement to build the large network and deploy the service
- Locate and remove routing problems in large scale IP network

Duration

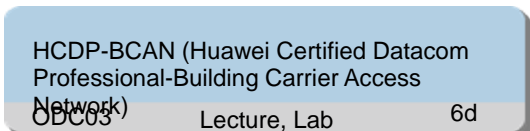
9 working days

Class Size

Min 6, Max 12

2.10.3 HCDP-BCAN (Huawei Certified Datacom Professional-Building Carrier Access Network) Training

Training Path



Target Audience

This program is intended for those who are to be certified by HCDP-BCAN exam

Prerequisites

- Have got the HCDA certification or have equivalent technical level

Objectives

On completion of this program, the participants will be able to:

- Describe the working principle of VLAN, GVRP, QinQ, STP, RSTP, MSTP
- Describe the working principle of PPP, PPPoE, IPoE, IPoEoVLAN

- Configure VLAN, GVRP, QinQ, STP, RSTP, MSTP in VRP platform
- Apply VLAN, GVRP, QinQ to access network to implement user isolation and service transportation
- Apply STP, RSTP, MSTP in access network to avoid loop
- Deploy PPPoE, IPoE, IPoEoVLAN in access network
- Perform the troubleshooting about VLAN, GVRP, QinQ, STP, RSTP, MSTP, PPPoE, IPoE, IPoEoVLAN in access network
- Choose appropriate Huawei switches and BRAS devices in access network deployment

Duration

6 working days

Class Size

Min 6, Max 12

2.10.4 HCDP-BITN (Huawei Certified Datacom Professional-Building IP Telecom Network) Training

Training Path

HCDP-BITN (Huawei Certified Datacom Professional-Building IP Telecom Network)

ODC04 Lecture, Lab 7d

Target Audience

This program is intended for those who are to be certified by the HCDP-BITN exam

Prerequisites

- Have got the HCDA certification or have equivalent technical level

Objectives

On completion of this program, the participants will be able to:

- Describe the features and performance of IP bearer network
- Describe the basic principle of MPLS
- Describe the basic process of MPLS data forwarding
- Describe the basic concepts and principles of the MPLS LDP
- Description the MPLS LDP label management mechanism and the loop protection mechanism
- Configure MPLS LDP in VRP platform
- Describe the basic concepts and basic

principles of the MPLS BGP VPN

- Configure the MPLS BGP VPN in VRP platform to realize the connectivity of the different sites
- Configure the MPLS BGP VPN in the single domain of the large IP bearer network to realize private network users to access Internet
- Master the troubleshooting methods of the MPLS BGP VPN in control plane and data plane
- Describe the working principle and the four components of MPLS TE
- Configure MPLS TE in VRP platform
- Describe the basic concepts of QoS and the different QoS models
- Describe the IP QoS technologies, such as classification and marking, traffic policy and shaping, congestion management and avoidance, link efficiency mechanisms, etc
- Describe the basic principle of the common HA technologies, such as NSR, BFD, protection switching technologies and VRRP

Duration

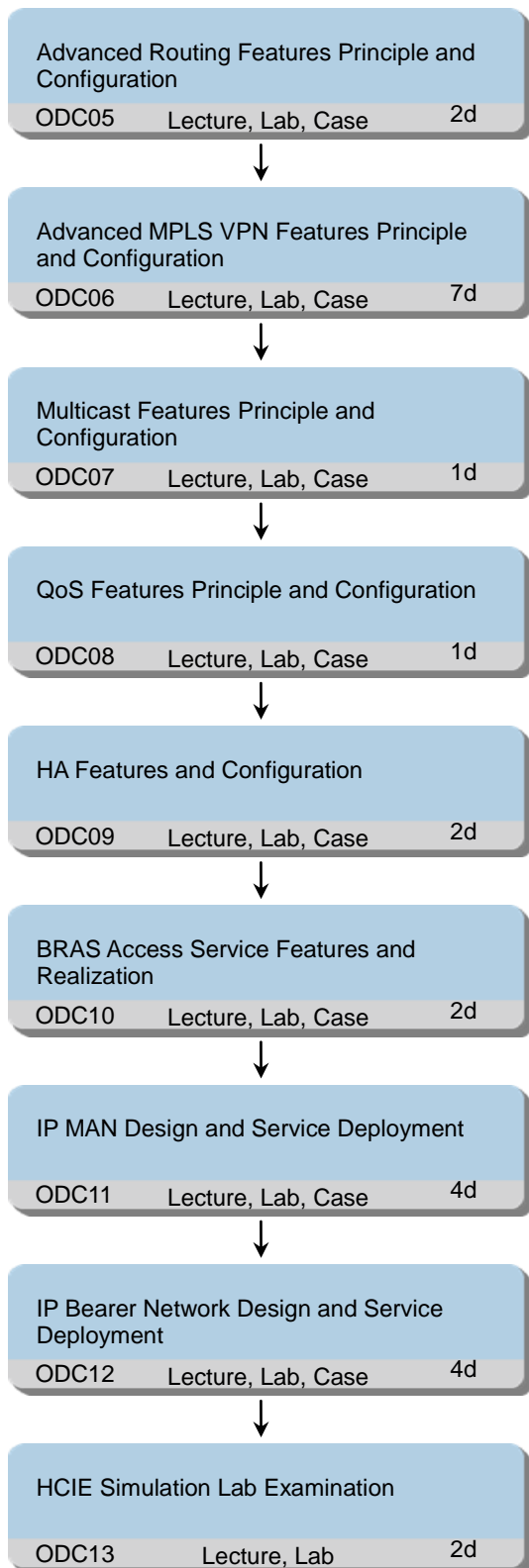
7 working days

Class Size

Min 6, Max 12

2.10.5 HCIE (Huawei Certified Internetwork Expert-Improve Carrier Network Performance) Training

Training Path



Target Audience

This program is intended for those who are to be certified by the HCIE exam

Prerequisites

- Have got the HCDP certification or have the equivalent technical knowledge level

Objectives

On completion of this program, the participants will be able to:

- Describe NE5000E/80E/40E advanced routing features
- Configure NE5000E/80E/40E advanced routing features
- Troubleshoot NE5000E/80E/40E advanced routing features
- Describe MAN typical network structure and routing design features
- Deploy routing protocol in MAN
- Optimize routing protocol deployment in MAN
- Troubleshoot the typical Failure of routing protocol in MAN
- Describe NE5000E/80E/40E advanced MPLS L3VPN and L2VPN features
- Configure NE5000E/80E/40E advanced MPLS L3VPN and L2VPN features
- Troubleshoot NE5000E/80E/40E advanced MPLS L3VPN and L2VPN features
- Describe IGMP principle and configuration
- Describe PIM-SM principle and configuration
- Describe PIM-SSM principle and configuration
- Analyse MSDP basic working principle
- Describe MSDP RPF detection
- Describe MSDP application
- Describe Multicast VPN function and technical solution
- Describe MD VPN concepts and working principle
- Configure and troubleshoot MD VPN

- Describe the QoS technology
- Configure QoS in the NE series routers
- Analyse and troubleshoot the common faults of QoS configuration in the NE series routes
- Describe the HQoS working principle in NE5000E80E40E
- Describe the HQoS scheduling process in NE5000E80E40E
- Describe the HQoS realization and application
- Describe HA basic concepts and HA classification
- Describe BFD principles and typical applications
- Describe NSR principle
- Describe the various protection switching technology and in NE5000E80E40E product
- Describe end-to-end HA features realization in IP bearer network
- Describe ME60andME60-X series products hardware
- Describe ME60andME60-X series products Features
- Describe the function of BRAS related components
- Analyse the ME60 PPP service working process
- Analyse the ME60 IP service working process
- Analyse the ME60 Leased line service working process
- Describe the ME60 Multicast Feature and Realization
- Describe IGP deployment in MAN
- Describe IGP fast convergence deployment in MAN
- Configure and adjust OSPF/ISIS in MAN
- Describe BGP deployment in MAN
- Describe BGP RR deployment in MAN
- Describe route control and route selection in IP MAN
- Configure and adjust BGP in MAN
- Describe the devices and interfaces of core network
- Describe the solutions of IP bearer network access part
- Configure HA features of IP bearer core network
- Describe the fast convergence of routing protocols
- Describe the MPLS TE FRR and VPN FRR technologies of IP bearer network backbone
- Describe the GR technologies of IP bearer network
- Configure IGP/BGP and VPN of IP bearer core network
- Configure fast detection technologies of IP bearer network
- Configure fast convergence of routing protocols
- Configure MPLS TE FRR and VPN FRR technologies of IP bearer network backbone
- Configure GR technologies of IP bearer network
- Describe different QoS requirement of different services in IP bearer network
- Describe end to end QoS realization in IP bearer network
- Configure end to end QoS in IP bearer network
- Help candidates to be familiar with examination mode,examination rules, and examination environment

Duration

25 working days

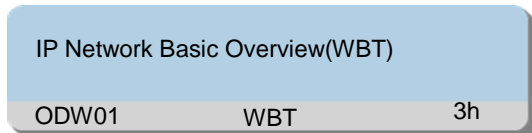
Class Size

Min 2, Max 6

2.11 Carrier IP Technology (WBT) Training Programs

2.11.1 IP Network Basic Overview(WBT)

Training Path



Target Audience

New staff

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will be able to:

- Describe basic concepts of data traffic
- Describe basic knowledge of network and internet

- Describe standardization organization
- Describe basic structure of IP network
- Describe architecture of OSI RM
- Master architecture of TCP/IP and the function of each layer
- Describe the process of TCP/IP data encapsulation
- Master the classes of IP address
- Plan subnet addresses reasonably
- Describe ARP/RARP protocol principle
- Describe the working principle of router
- Grasp the basic knowledge to use VRP CLI

Duration

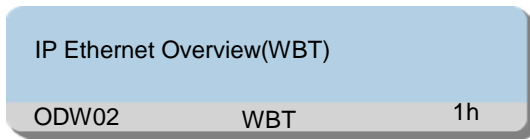
3 hours

Class Size

No limit

2.11.2 IP Ethernet Overview(WBT)

Training Path



Target Audience

- New staff
- Operation maintenance engineer

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will be able to:

- Describe the different types of Ethernet media
- Give an outline of Ethernet capabilities and limitations
- Describe Layer 2 and 3 switching principles
- Describe the working principle of HUB,L2 switch and L3 switch
- Describe VLAN routing concept
- Describe VLAN routing principle and configuration

Duration

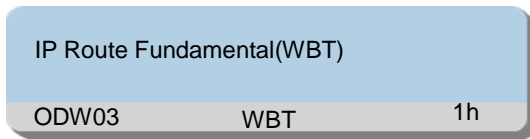
1 hour

Class Size

No limit

2.11.3 IP Route Fundamental(WBT)

Training Path



Target Audience

- New staff
- Operation maintenance engineer

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will be able to:

- Describe the concept of route
- Describe the classification of routing protocol
- Describe the routing process of data packet in the network
- Describe the structure of routing table
- Master static route configuration
- Master default route configuration
- Master route load balance and route backup

Duration

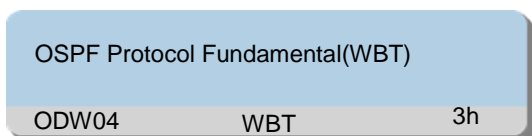
1 hour

Class Size

No limit

2.11.4 OSPF Protocol Fundamental(WBT)

Training Path



Target Audience

- New staff
- Operation maintenance engineer

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will be able to:

- Describe the basic features of OSPF
- Master basic concepts of OSPF
- Describe the route calculation process of link state algorithm
- Master basic configuration of OSPF
- Describe OSPF neighbor and adjacency concepts
- Describe OSPF DR and BDR concepts
- Describe the election of DR and BDR
- Describe OSPF packet header and packet types
- Describe LSA types
- Describe the function of Hello packet
- Describe OSPF neighbor state transition

- Describe the process of establishing neighbor and adjacency relationships
- Describe LSDB synchronization
- Describe Router-LSA
- Describe Network-LSA
- Describe calculation of the shortest- path tree
- Describe inter-area routing principle
- Describe Network-Summary-LSA
- Describe Virtual Link
- Describe inter-area route aggregation
- Describe AS-external-LSA
- Describe external route types
- Describe Forwarding Address attribute
- Describe configuration of importing external routes
- Describe configuration of OSPF multiple process
- Describe the concept and configuration of Stub Area
- Describe the concept and configuration of Totally Stub Area
- Describe the concept and configuration of NSSA Area

Duration

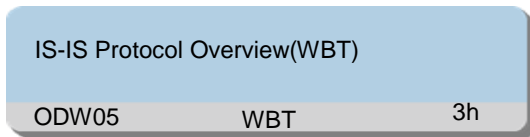
3 hours

Class Size

No limit

2.11.5 IS-IS Protocol Overview(WBT)

Training Path



Target Audience

- New staff
- Operation maintenance engineer

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will be able to:

- Describe the basic overview of ISIS protocol
- Master the basic characteristic of ISIS protocol
- Describe the basic working mechanism of ISIS protocol
- Master the concept of area, router type and adjacency relationship
- Describe the process of adjacency relationship

establishment on point to point link

- Describe the process of adjacency relationship establishment on broadcast network
- Describe the function of LSP, CSNP and PSNP packets in the process of link state database synchronization
- Describe the process of link state database synchronization
- Describe the concept of IS-IS areas and routing hierarchies
- Familiar with IS-IS LSDB structure
- Describe LSP structure
- Describe detailed description of IS-IS LSDB
- Describe the basic concept of the SPF algorithm
- Describe the concept of PRC
- Describe the concept of i-SPF

Duration

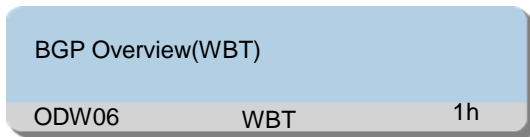
3 hours

Class Size

No limit

2.11.6 BGP Overview(WBT)

Training Path



Target Audience

New staff

Operation maintenance engineer

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will be able to:

- Describe the function of BGP routing protocol
- Describe the working mechanism of BGP

- Describe the characteristics of BGP
- Describe the two types of BGP neighbor relationship
- Describe the BGP route advertisement principles
- Describe how BGP advertises the route
- Describe what is path attribute
- Describe the path attribute which is often used by BGP
- Describe the route selection criteria of BGP

Duration

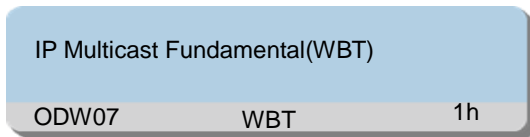
1 hour

Class Size

No limit

2.11.7 IP Multicast Fundamental(WBT)

Training Path



Target Audience

New staff

Operation maintenance engineer

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will be able to:

- Describe what is multicast and multicast address structure

- Describe the forwarding flow of multicast
- Describe the relevant concepts of source tree and shared tree
- Describe IGMP protocol principle
- Master IGMP configuration
- Describe the difference among IGMP versions
- Master PIM-SM basic principle and configuration
- Master the process of joining the RPT and source registration
- Master the switchover of RPT-to-SPT

Duration

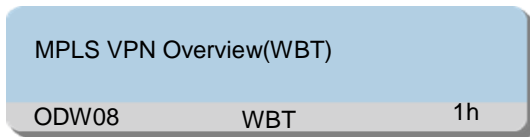
1 hour

Class Size

No limit

2.11.8 MPLS VPN Overview(WBT)

Training Path



Target Audience

New staff

Operation maintenance engineer

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will be able to:

- Master MPLS structure feature that contains two planes
- Master MPLS label structure

- Master the process of MPLS data forwarding
- Describe the model of BGP MPLS VPN
- Describe the basic concepts referred to BGP MPLS VPN
- Describe the mechanisms of the route and label distribution in BGP MPLS VPN
- Describe the process of data forwarding in BGP MPLS VPN
- Describe the basic MPLS BGP VPN configuration
- Describe the extended BGP attributes used by MPLS BGP VPN

Duration

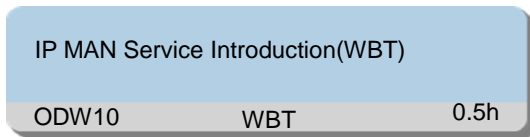
1 hour

Class Size

No limit

2.11.9 IP MAN Service Introduction(WBT)

Training Path



Target Audience

Technical manager

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will be able to:

- Describe the structure of MAN
- Describe the key technology of MAN
- Familiar to the classical MAN application

Duration

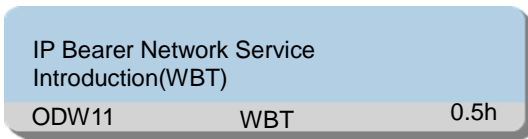
0.5 hour

Class Size

No limit

2.11.10 IP Bearer Network Service Introduction(WBT)

Training Path



Target Audience

Technical manager

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will

be able to:

- Describe the requirement of IP bearer network
- Describe the method of building IP bearer network
- Describe the key technologies of IP bearer network
- Describe the trend of IP bearer network

Duration

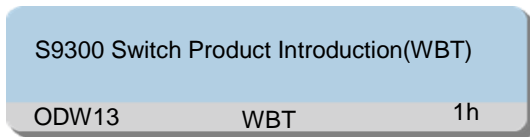
0.5 hour

Class Size

No limit

2.11.11 S9300 Switch Product Introduction(WBT)

Training Path



Target Audience

New staff
Installation engineer
Operation and maintenance engineer

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will be able to:

- List out the hardware modules of S9300
- Describe network application of S9300
- List out the functions of S9300
- Describe the application scenario of S9300 features

Duration

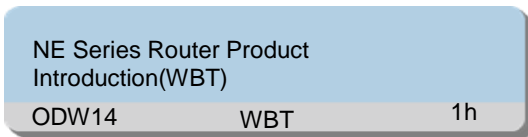
1 hour

Class Size

No limit

2.11.12 NE Series Router Product Introduction(WBT)

Training Path



Target Audience

New staff
Installation engineer
Operation and maintenance engineer

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will

be able to:

- Describe the development of Huawei NE series routers
- Describe NE5000E cluster system architecture
- Describe NE5000E router chassis and boards
- Describe NE80E/40E hardware system architecture
- Describe NE80E/40E board function

Duration

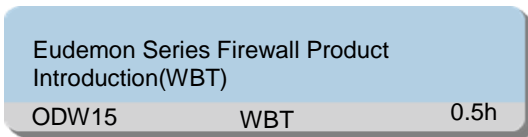
1 hour

Class Size

No limit

2.11.13 Eudemon Series Firewall Product Introduction(WBT)

Training Path



Target Audience

New staff
Installation engineer
Operation and maintenance engineer

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will be able to:

- Describe the types of Eudemon firewall
- Describe the network orientation of the firewall
- Describe the main functions of the firewall
- Describe the typical applications of the firewall

Duration

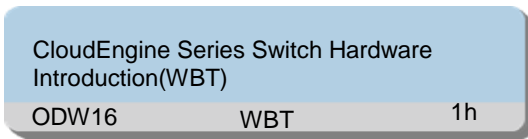
0.5 hour

Class Size

No limit

2.11.14 CloudEngine Series Switch Hardware Introduction(WBT)

Training Path



Target Audience

New staff
Installation engineer
Operation and maintenance engineer

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will

be able to:

- Describe hardware architecture of CE12800
- Describe how to install the hardware of CE12800
- Describe the precautions during the installation
- Describe how to check the equipment by the indicators
- Complete the installation of CE12800

Duration

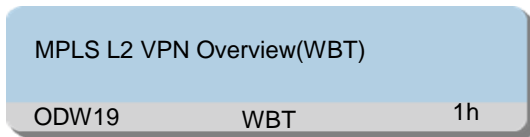
1 hour

Class Size

No limit

2.11.15 MPLS L2 VPN Overview(WBT)

Training Path



Target Audience

- New staff
- Installation engineer
- Operation and maintenance engineer

Prerequisites

- Having basic knowledge in IP network

Objectives

On completion of this program, the participants will be able to:

- Describe MPLS L2 VPN overview
- Describe MPLS L2 VPN implementation mode
- Configure MPLS L2 VPN on NE Series Routers

Duration

1 hour

Class Size

No limit

2.11.16 IP Network Development Trend(WBT)

Training Path

IP network development trend(WBT)		
ODW24	WBT	1h

Target Audience

IP network technical/non-technical manager

Prerequisites

- Having an overview of telecommunications

Objectives

On completion of this program, the participants will be able to:

- Describe IP technology overview
- Describe IP network and service
- Describe IP network development trends

Duration

1 hour

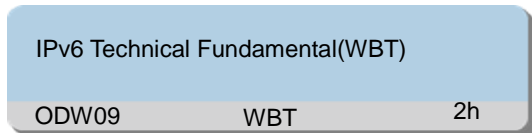
Class Size

No limit

2.12 IPv6 Solution (WBT) Training Programs

2.12.1 IPv6 Technical Fundamental(WBT)

Training Path



Target Audience

- New staff
- Operation maintenance engineer

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will be able to:

- Describe why there is a need to upgrade IPv4 to IPv6
- Describe the constitution of an IPv6 address

- Describe the constitution of an IPv6 packets
- Describe the type of ICMPv6 messages
- Describe the principle of IPv6 neighbor discovery
- Describe the principle of IPv6 address auto configuration
- Describe the process of PMTU discovery
- Describe the DNS of IPv6
- Describe the basic features of IPv6
- Describe the mainstream IPv6 network evolution solution
- Describe the application scenario of different IPv6 evolution solution

Duration

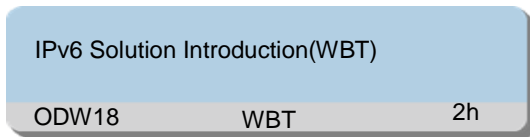
2 hours

Class Size

No limit

2.12.2 IPv6 Solution Introduction(WBT)

Training Path



Target Audience

- New staff
- Installation engineer
- Operation and maintenance engineer

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will be able to:

- Describe the evolution trend of the FBB network
- Describe the impact on the existing network due to FBB IPv6 evolution
- Describe FBB IPv6 solution application scenario division, solution features and solution

selection

- Describe FBB IPv6 solution involved products and their functions
- Describe the evolution trend of the MBB network
- Describe the impact on the existing network due to MBB IPv6 evolution
- Describe MBB IPv6 solution application scenario division, solution features and solution selection?
- Describe the evolution trend of the WLAN network
- Describe the impact on the existing network due to WLAN IPv6 evolution
- Describe WLAN IPv6 solution application scenario division, solution features and solution selection

Duration

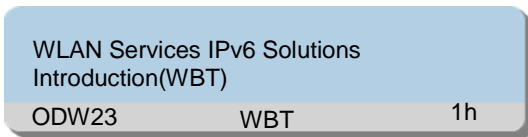
2 hours

Class Size

No limit

2.12.3 WLAN Services IPv6 Solutions Introduction(WBT)

Training Path



Target Audience

New staff

Operation maintenance engineer

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will be able to:

- Describe service analysis of WLAN IPv6 solution
- Describe application scenario of WLAN IPv6 solution

Duration

1 hour

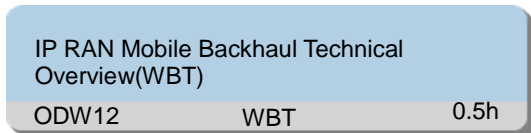
Class Size

No limit

2.13 Mobile Backhaul Solution (WBT) Training Programs

2.13.1 IP RAN Mobile Backhaul Technical Overview(WBT)

Training Path



Target Audience

Technical manager

Prerequisites

- Having basic knowledge in IP network

- Understanding basic network equipment

Objectives

On completion of this program, the participants will be able to:

- Outline ATN and CX600 product features

Duration

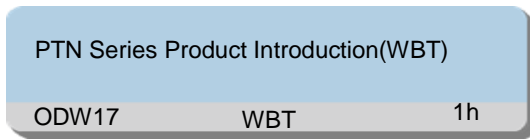
0.5 hour

Class Size

No limit

2.13.2 PTN Series Product Introduction(WBT)

Training Path



Target Audience

New staff
Installation engineer
Operation and maintenance engineer

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will be able to:

- Describe PTN series product application scenarios
- Describe PTN series product system structure
- Describe the main functions of PTN series product boards

Duration

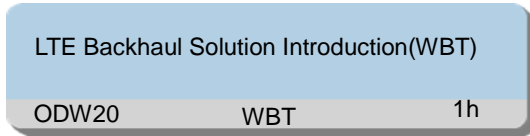
1 hour

Class Size

No limit

2.13.3 LTE Backhaul Solution Introduction(WBT)

Training Path



Target Audience

- New staff
- Installation engineer
- Operation and maintenance engineer

Prerequisites

- Having basic knowledge in IP network
- Understanding basic network equipment

Objectives

On completion of this program, the participants will be able to:

- Describe mobile communications evolution and LTE network architecture
- Describe LTE mobile backhaul network requirements
- Describe LTE mobile backhaul network solutions

Duration

1 hour

Class Size

No limit

2.13.4 IP RAN LTE Video(eMBMS) Solution Overview(WBT)

Training Path

IP RAN LTE Video(eMBMS) Solution Overview(WBT)		
ODW21	WBT	1h

Target Audience

Mobile backhaul network senior operation and maintenance engineer

Manager

Prerequisites

- Familiar with the working principle of routing protocol
- Familiar with the working principle of MPLS L3 VPN

- Familiar with the working principle of PIM

Objectives

On completion of this program, the participants will be able to:

- Describe the requirement for IP RAN LTE Video(eMBMS) Solution
- Describe the implementation of IP RAN LTE Video(eMBMS) Solution

Duration

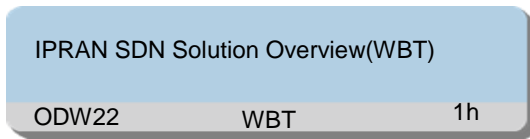
1 hour

Class Size

No limit

2.13.5 IP RAN SDN Solution Overview(WBT)

Training Path



Target Audience

Mobile backhaul network senior operation and maintenance engineer

Manager

Prerequisites

- Familiar with the IPRAN solution

Objectives

On completion of this program, the participants will be able to:

- Describe basic concepts of SDN technology
- Describe the requirement of IPRAN SDN solution
- Describe the implementation of IPRAN SDN solution

Duration

1 hour

Class Size

No limit