Publication date : 03/14/2024

Course : Huawei, routers and switches, implementation

Practical course - 5d - 35h00 - Ref. HUA
Price : 3330 CHF E.T.

This course will teach you how to install, configure and maintain a Huawei router and switch. You'll also learn how to implement static or dynamic routing, interconnect LAN networks via a WAN solution, and filter traffic on the corporate network.

Teaching objectives

At the end of the training, the participant will be able to:

- Installing and configuring a Huawei router
- Implement static or dynamic routing
- Traffic filtering
- Installing and configuring a switch
- Monitoring routers via SNMP

Intended audience

Systems and network technicians and administrators.

Prerequisites

Basic knowledge of corporate networks and TCP/IP. Or knowledge equivalent to that acquired in the courses "TCP/IP, implementation" (ref. INR) or "Introduction to networks" (ref. TRM).

Practical details

Hands-on work

Discussions, experience sharing, demonstrations, tutorials and case studies.

Teaching methods

Active pedagogy based on examples, demonstrations, experience sharing, case studies and assessment of learning throughout the course.

Course schedule

PARTICIPANTS

Systems and network technicians and administrators.

PREREQUISITES

Basic knowledge of corporate networks and TCP/IP. Or knowledge equivalent to that acquired in the courses "TCP/IP, implementation" (ref. INR) or "Introduction to networks" (ref. TRM).

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

1 Huawei router architecture

- The Huawei IOS operating system.
- Router components and memories (Flash, VRAM, etc.).
- Startup configuration.
- Router management with Virtual Routing Platform (VRP).

2 Installation and configuration

- Preparing the router environment. Set up connections.
- Powering up. Accessing and configuring the console. Switch to privileged mode.
- Identification of hardware configuration. Version identification. Configuration mode.
- General configuration commands. Time setting, host name, password... Ethernet interfaces.
- View commands. Basic commands (ping, traceroute).
- Router access: via console and network.
- Configuration access protection. Password encryption.
- Set up filters on Telnet access.

Hands-on work

Installing a router on a LAN. Configure router connection interfaces. Protect telnet access using access-list. Check LAN access to router.

3 Huawei switch configuration

- The Huawei switch range.
- Frame switching. Configure a reliable LAN topology.
- Spanning-tree algorithm. Rapid Spanning Tree.
- Virtual LANs (Vlans).
- Vlan creation principles and criteria. Inter-Vlan routing.
- Vlan broadcasting with GARP & GRVP protocols.
- Implementation of link aggregation.
- Configuration commands. Integrating switches into a router network.

Hands-on work

Implementation and operation of a switch. Setting up Vlans. Implement spanning tree and rapid spanning tree. Inter-Vlans routing.

4 Configuring IP routing

- General information. Creating an interconnection network. Default routing.
- Static routing. Configuring routing tables. LAN-to-LAN checks.
- Continuity of service with the VRRP protocol. The virtual router. Architecture of a secure solution.
- Dynamic RIP routing (I, II). Routing implementation.
- Table distribution. RIP debugging. Handling incidents.
- Incident response. Routing supervision. Load balancing.
- OSPF dynamic routing.
- OSPF configuration and implementation.

Hands-on work

Setting up a LAN interconnection. Configuring static routes. Dynamic routing configuration. Validation and debugging. Protecting applications with extended ACLs. Implement VRRP protocol and validate failovers.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

5 Configuring a router for WAN networks

- PPP serial interfaces over leased lines.
- PPP and its security mechanisms. PAP and CHAP mode configuration. ML-PPP protocol.
- Special cases. HDLC-T serial interfaces on leased lines. Back to Back HDLC serial interfaces.

Hands-on work

Configure PPP serial interfaces. Implement PAP and CHAP. Validate routing and backup. Test and debug different configurations.

6 Safety

- Public and private addresses.
- Implementation of the translation function: NAT/PAT. Static or dynamic translation.
- Filter access for a given application. Extended Access-List.
- Additional functions. AAA authentication.
- DHCP request processing. Directing broadcasts. Supervise a router in HTTP Web mode.
- Integrate a router into SNMP administration. Processing available MIB information.
- Retrieve system messages from a syslog server.
- Presentation of Huawei eSight NMS technology solutions.

Hands-on work

Set up a dynamic translation table. Visualize translation using debug. Configure a router as a DHCP server. SNMP configuration and router supervision via a manager. Retrieve system messages via a syslog server.

7 Operating a Huawei router

- Password recovery.
- Deleting a configuration: what to do?
- Huawei startup. Configuration register states. Download a new software package.
- Save via TFTP. Upload new configuration.
- Supervision. Software verification. Change management. Configuration management.
- DHP service implementation.

8 Maintenance techniques

- Recognize and repair defective hardware components.
- Memory expansion. Hardware maintenance. Interface testing.
- Software maintenance. Debugging.

Hands-on work

Backup/reinstallation of configuration and IOS via network. Flash IOS loss recovery. Password recovery/replacement.

Dates and locations

REMOTE CLASS
2026 : 22 June, 5 Oct.