Publication date : 01/12/2024

Course : Juniper, routing and switching, implementation

Practical course - 4d - 28h00 - Ref. JUN
Price : 2790 CHF E.T.

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Learn how to install, configure and maintain a Juniper router and switch. You'll see how to implement static and dynamic routing, interconnect LAN networks, and filter traffic of all types.

Teaching objectives

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

- Install and configure a Juniper router or switch
- Implement interconnected virtual LANs (VLANs)
- Configuring and using the Spanning Tree protocol
- Implement and configure RIP, OSPF and BGP routing protocols

Intended audience

Network engineer/administrator and technician.

Prerequisites

Basic knowledge of enterprise networks, TCP/IP and the Junos operating system.

Course schedule

1 Switching

- The principle of level 2 switching.
- Spanning Tree Protocol, Spanning Tree Protocol.
- Root switch election.
- Bridge Protocol Data Unit (BPDU), Loop and Root Protection.

Hands-on work

Setting up and using a switch. Configure and use the Spanning Tree protocol .

PARTICIPANTS

Network engineer/administrator and technician.

PREREQUISITES

Basic knowledge of enterprise networks, TCP/IP and the Junos operating system.

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.

2 Virtual LAN (VLAN)

- The contribution of VLANs. Improving network management.
- Optimize bandwidth.
- How do I configure VLANs?
- Tagged links, voice VLANs.
- Routed VLAN interfaces (RVI).

Hands-on work

Setting up interconnected virtual LANs. VTP configuration.

3 Safety

- Port security, MAC limiting, DHCP snooping.
- Dynamic ARP inspection (DAI) and IP source guard.
- Storm control, Firewall filters, monitoring.

Hands-on work

Safety implementation.

4 Protocol Independent Routing

- Concepts and features.
- Static routes, aggregated and generated.
- Configure non-routable Martian addresses.
- The different routing instances.
- Load balancing. Configuration.
- Introducing Filter-Based Forwarding.

5 RIP and OSPF protocols

- Presentation and differences.
- The simplicity of RIP. Loop handling.
- Convergence. Message processing.
- Metrics and multiple paths: traffic distribution.
- A network hierarchized by a backbone and zones.
- The notion of designated router. Secure broadcasting of link status.
- Areas, interfaces and neighbors.

Hands-on work

Implementation and configuration of RIP, OSPF and BGP protocols.

6 The BGP protocol

- BGP presentation and attributes.
- Topology, tables, loops, routes, political routing.
- BGP attributes and procedures. IBGP and EBGP.

Hands-on work

Implementation of an IP network interconnection using the BGP protocol.

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.

7 High availability

- The concept of high availability.
- Configure link aggregation.
- Redundant Trunk Groups.
- Implementation of LAG and RTG.
- Virtual Chassis, Graceful restart (GR).
- Nonstop active routing (NSR).
- Virtual Router Redundancy Protocol (VRRP).