

# Network Configuration and Troubleshooting

Hands-on course of 3 days - 21h

Ref.: RID - Price 2024: CHF2 290 (excl. taxes)

## THE PROGRAMME

last updated: 01/2018

### 1) Basic networking concepts

- OSI model and TCP/IP architecture.
- Different types of networks.
- Network equipment : routers, switches, client and server computers.
- Hardware and software aspects.
- Configuration, test, and troubleshooting principles.

*Hands-on work* : Basic IP configuration. Network test.

### 2) Local Area Networks

- Ethernet and IEEE 802.3. Switched Ethernet.
- Switching principles, switch operation.
- Spanning Tree Protocol.
- Virtual Local Area Networks (VLAN).
- Common problems.
- Configuring and troubleshooting ethernet switches.

*Hands-on work* : Switch installation and configuration using VLAN. Simulation troubleshooting.

### 3) Wireless Networks

- Methods and principles of operation.
- IEEE 802.11 Wireless Networking Standards .
- Wi-Fi alliance.
- Security models: WEP, WPA, WPA-2.

*Hands-on work* : Setting up and using a Wireless Access Point.

### 4) Routers

- How IP networks operate.
- Using IP addresses and netmasks.
- Routing techniques and protocols.
- Address Resolution Protocol (ARP).
- Saving and restoring router configuration .
- Troubleshooting router configuration.
- Security. SSH implementation.

*Hands-on work* : Basic router configuration. Using ping and traceroute. Using static and dynamic routing. Analyzing routing tables. Saving and restoring router configuration.

### 5) Network Infrastructure Services

- Dynamic Host Configuration Protocol (DHCP).
- DHCP server and DHCP relay. Using DHCP.
- Domain Name Service (DNS). Direct and reverse queries.
- Static versus dynamic DNS.
- Configuring DNS server and DNS client.
- Common problems.

#### 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.

#### 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.

- DNS testing and troubleshooting.

*Hands-on work : Setting up, testing and troubleshooting DHCP and DNS services.*

## 6) Simple Network Management Protocol (SNMP)

- SNMP principles : agent and supervisor.

- SNMP versions.

- Management Information Bases.

- Traps and notifications.

- Using SNMP on a switch, a router, a server.

- Configuring SNMP agents.

*Hands-on work : Installing and configuring SNMP on a Windows server. Configuring SNMP agents on a switch and a router. Using a MIB Browser.*

## DATES

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### REMOTE CLASS

2024 : 10 Jun, 25 Sep, 06 Nov