

Hands-on course , 5  
day(s)  
Ref : CNT

### Participants

Engineers/administrators and  
network technicians.

### Pre-requisites

Have taken the course "Cisco  
CCENT Routing & Switching,  
ICND1 Certification Prep".

### Next sessions

## Cisco ICND2, CCNA Routing & Switching, certification preparation

*This training will help you acquire all of the techniques and methodologies needed to take the ICND2 exam for CCNA certification. It will teach you to design and manage a midsize enterprise network and show you problem solving techniques.*

### OBJECTIVES

Balanced mix of presentations, workshops on a simulator, and scenarios under similar conditions to the certification test.

#### 1) Ethernet switching

#### 2) IP routing

#### 3) Wide area network technologies

#### 4) Troubleshooting practice

#### 5) Final preparation

### Workshop

*Many workshops to practice troubleshooting, a universal goal of certification.*

### Certification

*CCNA Cisco Certified Network Associate / ICND2. This course includes the voucher needed to register for and take the test from Cisco's partner, Pearson Vue.*

## 1) Ethernet switching

- Identifying advanced switching technologies.
- The SpanningTree (STP) protocol, IEEE 802.1D, root bridge election.
- The Rapid SpanningTree (RSTP) protocol, IEEE 802.1w.
- Aggregating links with Etherchannel.
- Troubleshooting LAN switching.

### Workshop

*Altering the default behavior of STP in order to force the choice of a primary root switch and secondary root switch. Configuring PortFast, RSTP.*

## 2) IP routing

- The start sequence of a CISCO router in IOS.
- Managing iOS images, licensing.
- Routing methods, routing protocols, notions of administrative distance, metrics, and horizon sharing.
- The EIGRP routing protocol, notions of feasible distance, of feasible successors, of feasibility conditions.
- The OSPF routing protocol, theory, OSPF states, notions of Router ID, adjacency, types of LSAs.
- Implementing OSPF v2, v3 in a multiarea context.

### Workshop

*Configuring and troubleshooting EIGRP then OSPF in a preconstructed topology using a simulator.*

## 3) Wide area network technologies

- Identifying different WAN technologies and where they are used: Metro Ethernet, MPLS, T1/E1, DSL, Frame Relay, etc.
- Configuring and verifying a serial WAN link between two routers.
- Configuring and verifying a PPP link between two routers.
- Frame Relay, concepts, configuration and troubleshooting.
- Implementing and troubleshooting PPPoE.

### Workshop

*Configuring different types of encapsulation (HDLC, PPP, Frame Relay) on WAN links of a preconstructed topology using a simulator.*

## 4) Troubleshooting practice

- How to troubleshoot and solve problems caused by the SpanningTree protocol?
- Knowing how to troubleshoot and solve routing problems.
- Learning to troubleshoot and solve problems caused by routing between VLANs.
- Troubleshooting and solving problems caused by the implementation of WAN wide area networks.

### Workshop

*Practice on preconfigured problems on simulators.*

## 5) Final preparation

- Activities for reviewing and memorizing each chapter's subjects.

- Practice on QCM and LAB.

**Jeu de rôle**

*Intensive testing session under conditions similar to the exam, with group sharing of results.*