Implementing and Operating Cisco Enterprise Network Core Technologies (ENCOR)

ID ENCOR **Price** CHF 3,760.—(excl. VAT) **Duration** 5 days

Who should attend

- Entry- to mid-level network engineers
- Network administrators
- Network support technicians
- Help desk technicians

This course is part of the following Certifications

Cisco Certified Network Professional Enterprise (CCNP ENTERPRISE)
Cisco Certified Internetwork Expert (CCIE) Enterprise Wireless (CCIE ENTERPRISE WIRELESS)

Prerequisites

There are no formal prerequisites for this training. However, the knowledge and skills you are recommended to have before attending this training are:

- Understanding of how to implement enterprise LAN networks
- Basic understanding of enterprise routing and wireless connectivity
- Basic understanding of Python scripting

These skills can be found in the following Cisco Learning Offerings:

- Implementing and Administering Cisco Solutions (CCNA)
- Programming for Network Engineers (PRNE)

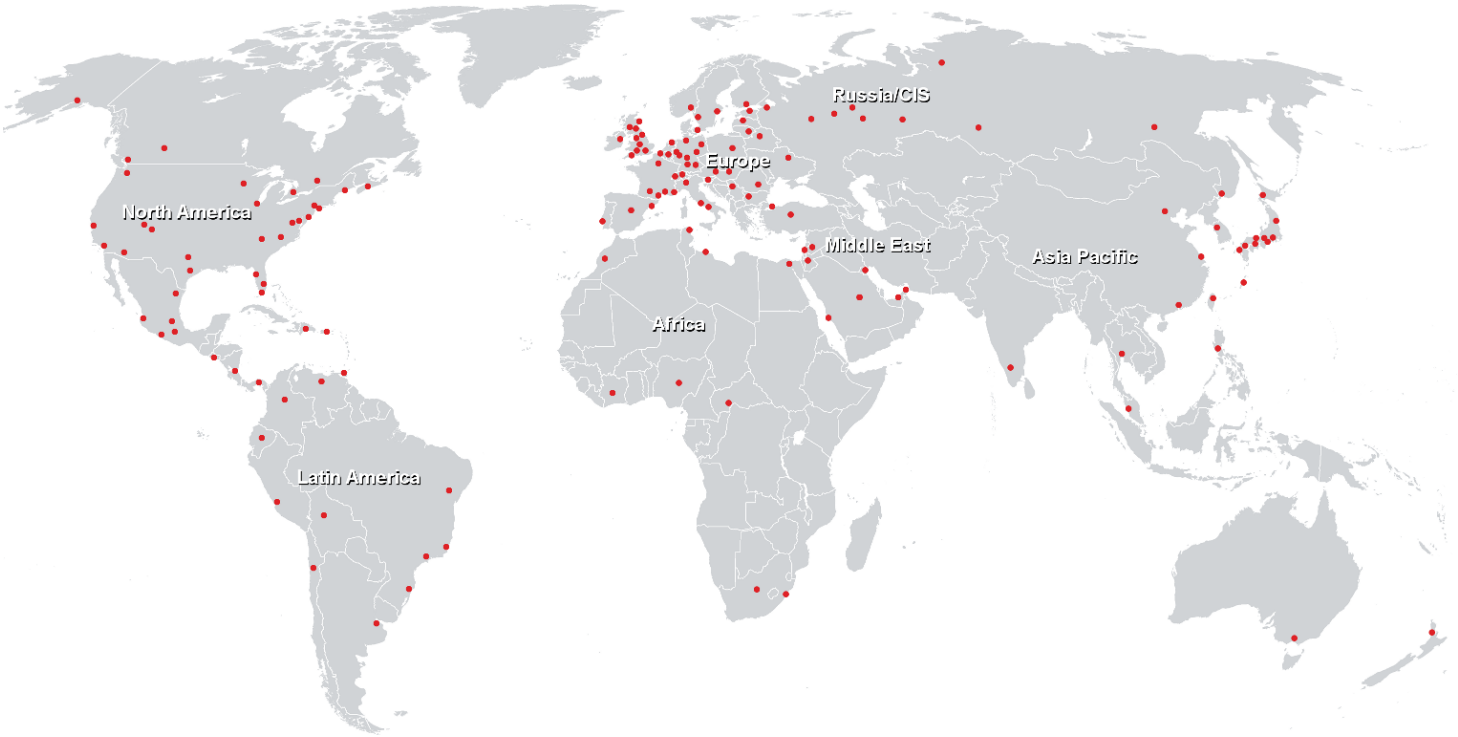
Course Objectives

After taking this training, you should be able to:

- Illustrate the hierarchical network design model and architecture using the access, distribution, and core layers
- Compare and contrast the various hardware and software switching mechanisms and operation, while defining the ternary content addressable memory (TCAM) and content addressable memory (CAM), along with process switching, fast switching, and Cisco Express Forwarding concepts
- Troubleshoot Layer 2 connectivity using virtual local area networks (VLANs) and trunking
- Implement redundant switched networks using Spanning Tree Protocol (STP)
- Troubleshoot link aggregation using EtherChannel
- Describe the features, metrics, and path selection concepts of Enhanced Interior Gateway Routing Protocol (EIGRP)
- Implement and optimize Open Shortest Path First (OSPF)v2 and OSPFv3, including adjacencies, packet types, areas, summarization, and route filtering for internet protocol (IP)v4 and IPv6
- Implement External Border Gateway Protocol (EBGP) interdomain routing, path selection, and single and dual-homed networking
- Implement network redundancy using protocols including Hot Standby Routing Protocol (HSRP) and Virtual Router Redundancy Protocol (VRRP)
- Implement internet connectivity within enterprise using static and dynamic Network Address Translation (NAT)
- Describe the virtualization technology of servers, switches, and the various network devices and components
- Implement overlay technologies, such as Virtual Routing and Forwarding (VRF), Generic Routing Encapsulation (GRE), virtual private network (VPN), and Location Identifier Separation Protocol (LISP)
- Describe the components and concepts of wireless networking including radio frequency (RF), antenna characteristics, and define the specific wireless standards
- Describe the various wireless deployment models available, including autonomous access point (AP) deployments and cloud-based designs within the centralized Cisco Wireless LAN Controller (WLC) architecture
- Describe wireless roaming and location services
- Describe how APs communicate with WLCs to obtain software, configurations, and centralized management
- Configure and verify Extensible Authentication Protocol (EAP), WebAuth, and pre-shared key (PSK) wireless client authentication on a WLC
- Troubleshoot wireless client connectivity issues using various available tools
- Troubleshoot enterprise networks using services such as Network Time Protocol (NTP), Simple Network Management Protocol (SNMP), Cisco Internetwork

Operating System (Cisco IOS®) IP Service Level Agreements (SLAs), NetFlow, and Cisco IOS Embedded Event Manager
- Explain the use of available network analysis and troubleshooting tools, which include show and debug commands, as well as best practices in troubleshooting
- Configure secure administrative access for Cisco IOS devices using the command-line interface (CLI) access, Role-Based Access Control (RBAC), access control list (ACL), and Secure Shell (SSH), and explore device hardening concepts to secure devices from less secure applications, such as Telnet and HTTP
- Implement scalable administration using authentication, authorization, and accounting (AAA) and the local database, while exploring the features and benefits
- Describe the enterprise network security architecture, including the purpose and function of VPNs, content security, logging, endpoint security, personal firewalls, and other security features
- Explain the purpose, function, features, and workflow of Cisco Catalyst Center™ Assurance for intent-based networking (IBN), network visibility, proactive monitoring, and application experience
- Describe the components and features of the Cisco SD-Access solution, including the nodes, fabric control plane, and data plane, while illustrating the purpose and function of the virtual extensible LAN (VXLAN) gateways
- Define the components and features of Cisco SD-WAN solutions, including the orchestration plane, management plane, control plane, and data plane
- Describe the concepts, purpose, and features of multicast protocols, including Internet Group Management Protocol (IGMP) v2/v3, Protocol-Independent Multicast (PIM) dense mode/sparse mode, and rendezvous points
- Describe the concepts and features of Quality of Service (QoS), and describe the need within the enterprise network
- Explain basic Python components and conditionals with script writing and analysis
- Describe network programmability protocols such as Network Configuration Protocol (NETCONF) and Representational State Transfer Configuration Protocol (RESTCONF)
- Describe application programming interfaces (APIs) in Cisco Catalyst Center and Cisco Catalyst SD-WAN Manager

Training Centres worldwide



Fast Lane Institute for Knowledge Transfer (Switzerland) AG

Husacherstrasse 3
CH-8304 Wallisellen
Tel. +41 44 832 50 80

info@flane.ch, https://www.flane.ch