Systems & Network Training

CCNP core

A 5 day Hands on training course

Save on expenses. This course is also available on your premises.

Description

The Implementing and Operating Cisco Enterprise Network Core Technologies (ENCOR) v1.2 course provides the knowledge and skills needed to configure, troubleshoot, and manage enterprise wired and wireless networks. You'll learn to implement security principles within an enterprise network and how to overlay network design using solutions such as SD-Access and SD-WAN. Course content includes 3 days of self-study material. This course helps you prepare for the 350-401 Implementing Cisco® Enterprise Network Core Technologies (ENCOR) exam

Key outcomes

By the end of the course delegates will be able to:

- ✔ Configure, troubleshoot, and manage enterprise wired and wireless networks
- ✔ Implement security principles within an enterprise network
- ✔ Prepare you prepare to take the 350-401 Implementing Cisco Enterprise Network Core Technologies (ENCOR) exam

Training approach

This structured course uses Instructor Led Training to provide the best possible learning experience. Small class sizes ensure students benefit from our engaging and interactive style of teaching with delegates encouraged to ask questions throughout the course. Quizzes follow each major section allowing checking of learning. Hands on sessions are used throughout to allow delegates to consolidate their new skills.

Details

Who will benefit?
Mid-level network engineers, Network administrators, Network support technicians, Help desk technicians
Prerequisites
Implementation of Enterprise LAN networks. Basic understanding of Enterprise routing and wireless connectivity, and Python scripting
Duration: 5 days

Overall rating: ★★★★★

Generic training	Small class sizes	Hands On training	Our courseware	Customise your course
Generic training complements product specific courses covering the complete picture of all relevant devices including the protocols "on the wire".	We limit our maximum class size to 8 delegates; often we have less than this. This ensures optimal interactivity between delegates and instructor.	The majority of our courses use hands on sessions to reinforce the theory.	We write our own courses; courseware does not just consist of slides and our slides are diagrams not bullet point text.	Please contact us if you would like a course to be customised to meet your specific requirements. Have the course your way.
"*Friendly environment with expert teaching that teaches the why before the how."* G.C. Fasthosts	*"Excellent course. The small class size was a great benefit..."* M.B. IBM	*"Not many courses have practice added to it. Normally just the theoretical stuff is covered."* J.W. Vodafone	*"Comprehensive materials that made the course easy to follow and will be used as a reference point."* V.B. Rockwell Collins	*"I was very impressed by the combination of practical and theory. Very informative. Friendly approachable environment, lots of hands on."* S.R. Qinetiq

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Course content

Cisco Enterprise Network Architecture: Access, distribution, core in the hierarchical network.
Cisco Switching Paths: Switching mechanisms, TCAM, CAM, process switching, fast switching, and CEF.
Implementing Campus LAN Connectivity: Troubleshoot L2 connectivity using VLANs and trunking
Building Redundant Switched Topology: STP
Implementing Layer 2 Port Aggregation
Troubleshoot link aggregation using Etherchannel
EIGRP
Implement and optimize OSPFv2/v3, including adjacencies, packet types, and areas, summarization, and route filtering for IPv4/v6
Implement EBGP interdomain routing, path selection, and single and dual-homed networking
Implementing Network Redundancy: HSRP and VRRP
Implement static and dynamic NAT
Virtualization Protocols and Techniques
VPNs and Interfaces: Overlay technologies such as VRF, GRE, VPN, and LISP
Wireless Principles: RF, antenna characteristics, and wireless standards.
Wireless Deployment: Models available, autonomous AP deployments and cloud-based designs within the centralized Cisco WLC architecture
Wireless Roaming and Location Services
Wireless AP Operation: How APs communicate with WLCs to obtain software, configurations, and centralized management
Wireless Client Authentication: EAP, WebAuth, and PSK wireless client authentication on a WLC.
Troubleshoot wireless client connectivity issues using various available tools
Troubleshoot networks using services such as NTP, SNMP, Cisco IP SLAs, NetFlow, and Cisco IOS EEM
Explain network analysis and troubleshooting tools, which include show and debug commands, as well as best practices in troubleshooting
Multicast Protocols: IGMP v2/v3, PIM DM/SM and RPs
Introducing QoS: Concepts and features.
Implementing Network Services: Secure administrative access for Cisco IOS devices using CLI access, RBAC, ACL, and SSH, and device hardening concepts to secure devices from less secure applications
Using Network Analysis Tools
Infrastructure Security: Scalable administration using AAA and the local database, features and benefits
Enterprise Network Security Architecture: VPNs, content security, logging, endpoint security, personal firewalls, and other security features.
Automation and Assurance with Cisco DNA Center: Purpose, function, features, and workflow. Intent-Based Networking, for network visibility, proactive monitoring, and application experience
Cisco SD-Access Solution: Nodes, fabric control plane, and data plane, VXLAN gateways
Cisco SD-WAN Solution: Components and features of Cisco SD-WAN solutions, including the orchestration, management, control, and data planes
Basics of Python Programming: Python components and conditionals with script writing and analysis
Network Programmability: NETCONF and RESTCONF APIs in Cisco DNA Center and vManage

Labs
Investigate the CAM. Analyze CEF. Troubleshoot VLAN and Trunk Issues. Tuning STP and Configuring RSTP. Configure MSTP. Troubleshoot EtherChannel. Implement Multi-area OSPF. Implement OSPF Tuning. Apply OSPF Optimization. Implement OSPFv3. Configure and Verify Single-Homed EBGP. Implementing HSRP. Configure VRRP. Implement NAT. Configure and Verify VRF. Configure and Verify a GRE Tunnel. Configure Static VTI Point-to-Point Tunnels. Configure Wireless Client Authentication in a Centralized Deployment. Troubleshoot Wireless Client Connectivity Issues. Configure Syslog. Configure and Verify Flexible NetFlow. Configuring Cisco IOS EEM. Troubleshoot Connectivity and Analyze Traffic with Ping, Traceroute, and Debug. Configure and Verify Cisco IP SLAs. Configure Standard and Extended ACLs. Configure Control Plane Policing. Implement Local and Server-Based AAA. Writing and Troubleshooting Python Scripts. Explore JSON Objects and Scripts in Python. Use NETCONF Via SSH. Use RESTCONF with Cisco IOS XE.