



CCNP

ADVANCED ROUTING . BGP . MULTICAST . VPNs . QoS . HIGH AVAILABILITY . NETWORK AUTOMATION . TROUBLESHOOTING

DURATION

100 Hours

LEVEL

Advanced

MODULES

8

MODE

**Classroom ·
Online · Hybrid**

01 COURSE OVERVIEW

An advanced enterprise networking course covering routing at scale, VPNs, high availability and automation.

The course assumes CCNA-level competence and moves into multi-area OSPF, EIGRP, BGP, redistribution, MPLS and VPN technologies, with QoS, redundancy protocols and network automation.

Learners design and troubleshoot an enterprise topology with redundancy and policy routing.

WHO IT IS FOR

Working network engineers

NOC and support engineers advancing

Infrastructure architects

Candidates preparing for CCNP ENCOR

PREREQUISITES

CCNA-level knowledge and hands-on switching and routing experience.

02 LEARNING OUTCOMES

01 Design and tune multi-area OSPF and EIGRP.

03 Redistribute routes between protocols safely.

05 Implement QoS classification and queuing.

07 Automate configuration with Python and Ansible.

02 Configure BGP peering, attributes and policy.

04 Deploy VPN technologies including DMVPN concepts.

06 Provide gateway redundancy with HSRP and VRRP.

08 Troubleshoot complex path and policy problems.

01 ADVANCED SWITCHING

Advanced STP tuning

VTP considerations

First-hop security

MST

Layer 3 switching

Troubleshooting L2

02 ADVANCED OSPF AND EIGRP

Multi-area design

Summarisation

EIGRP metrics and feasibility

LSA types

Stub areas

Authentication

LAB

MULTI-AREA DESIGN

03 BGP

Peering

Route selection

Filtering

Internet edge design

Path attributes

Communities

Route reflectors

LAB

BGP POLICY

04 REDISTRIBUTION AND PATH CONTROL

Redistribution rules

Prefix lists

PBR

Route maps

Administrative distance

Loop avoidance

05 VPN AND OVERLAY

IPSec

DMVPN concepts

SD-WAN concepts

GRE

MPLS L3VPN overview

VRF basics

06 qos

Classification and marking

Policing and shaping

Voice and video requirements

Queuing

Congestion avoidance

07 HIGH AVAILABILITY

HSRP

GLBP

Link redundancy

VRRP

StackWise and VSS concepts

Failover testing

LAB

REDUNDANT GATEWAY

08 AUTOMATION AND ASSURANCE

Python for network tasks

Ansible playbooks

Monitoring design

NETCONF and RESTCONF

Telemetry

PROJECT

ENTERPRISE TOPOLOGY DESIGN AND TROUBLESHOOTING

04 ASSESSMENT & CERTIFICATION

Module assignments and labs

25%

Mini projects

20%

Internal assessments

15%

Final project and review

40%

CERTIFICATION

Learners who complete all modules, submit the final project and clear the review receive a course completion certificate from Kaizen Infinities Private Limited. Project work is documented for the learner's portfolio, and interview preparation is included in the closing sessions.

05 CAREER OUTCOMES

ROLES THIS PROGRAMME PREPARES FOR

SENIOR NETWORK ENGINEER

NETWORK ARCHITECT

NETWORK CONSULTANT

INFRASTRUCTURE LEAD

NOC TEAM LEAD

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