

CCNP

90 Days Training Program



**Master the Network, Elevate Your Skills:
Unleash Your Potential with CCNP!**

IIHT Jaipur believe that upskilling is mightier than massive layoffs. And not just us, but countless companies attest to it and have adopted this approach in their businesses as well. The domain expertise these upskilled individuals bring in is what sets them apart. We focus on nurturing these aspects. So, whether you are a student in college or a fresh graduate entering corporate, we have something for you to offer. We are an online and offline training institution that provides students and professionals with courses in high demand. We provide training in a vast array of technologies, including Cloud Computing, DevOps, Cyber Security, Full stack development, Data Science, Digital Marketing, and Web Development, among others.

Python covers the principles of the language as well as how to apply it to various applications in the real world. The modules, projects, and assignments that make up the curriculum cover data operations in Python, strings, conditional statements, error handling, shell scripting, web scraping, and the Python web framework Django, which is widely used.

Build your talents for actual professional advancement

Curriculum that is cutting edge and was built in consultation with industry and academics to build skills that are job-ready.

Time To Crack Python

Leading practitioners who present the most recent and best practices as well as case studies to classes that are tailored to accommodate your work schedule.

Effortless Comprehension

Python is a simple and easy-to-learn programming language. However, you can opt for the IIHT Python courses to make it even more effortless for yourself. Assure yourself the fastest and most skillful learning process with our Python courses.



1 Routing Basics

- FIB
- Adjacency table

2. Explain general network challenges

- Unicast
- Out-of-order packets
- Asymmetric routing

3. Describe IP operations

- ICMP Unreachable and Redirects
- IPv4 fragmentation
- TTL and traceroute

4. Explain TCP operations

- IPv4 and IPv6 (P)MTU
- MSS
- Latency
- Windowing
- Bandwidth-delay product
- Global synchronization

5. Describe UDP operations

- Starvation
- Latency
- Configure and verify PPP
- Authentication (PAP, CHAP)
- PPPoE (client side only)
- Explain Frame Relay

6. Identify, configure, and verify IPv4 addressing and subnetting

- Address types (Unicast, broadcast, multicast, and VLSM)
- ARP

7. Routing

- Configure and verify static routing
- Configure and verify default routing
- Describe administrative distance
- Evaluate routing protocol types

1. Distance vector

2. Link state

3. Path vector

- Configure and verify RIPv2

1. Configure and verify loop prevention mechanisms

2. Split-horizon

3. Route poisoning

- Describe passive interfaces

1. Route tagging and filtering

- Describe EIGRP packet types
 - Configure and verify EIGRP neighbor relationships and authentication
 - Configure and verify EIGRP stubs
 - Configure and verify EIGRP load balancing
 - Equal cost
 - 2. Unequal cost
 - Describe and optimize EIGRP metrics
 - Configure and verify filtering with any protocol (Route map, distribute list, ACL)
 - Configure and verify manual and autosummarization on a routing protocol
 - Configure and verify policy-based routing
 - Identify suboptimal routing
 - Describe OSPF packet types
 - Configure and verify OSPF neighbor relationships and authentication
 - Configure and verify network types, area types, and router types
 - Point-to-point, multipoint, broadcast, nonbroadcast
 - 2. LSA types, area type: backbone, normal, transit, stub, NSSA, totally stub
 - 3. Internal router, backbone router, ABR, ASBR
 - 4. Virtual link
 - Configure and verify OSPF path preference
 - Configure and verify OSPF operations
 - Describe, configure, and verify BGP peer relationships and authentication
1. Peer group
 2. Active, passive
 3. States and timers
 - Configure and verify eBGP (IPv4 and IPv6 address families)
 1. eBGP
 2. 4-byte AS number
 3. Private AS
 4. Explain BGP attributes and best-path selection
 - Configure and verify GRE
 - Describe DMVPN (single hub)
 - Describe IOS AAA using local database
 - Describe device security using IOS AAA with TACACS+ and RADIUS
 - 1. AAA with TACACS+ and RADIUS
 - 2. Local privilege authorization fallback
 - 3. Configure and verify device access control
 - Lines (VTY, AUX, console)
 - Management plane protection
 - Password encryption
 - Configure and verify router security features
 - 1. IPv4 access control lists (standard, extended, time-based)
 - 2. Unicast reverse path forwarding

- Configure and verify device management
- 1. Console and VTY
- 2. Telnet, HTTP, HTTPS, SSH, SCP
- 3. (T)FTP
- Configure and verify SNMP v2 and v3
- Configure and verify logging
- 1. Local logging, syslog, debugs, conditional debug, Timestamps
- Configure and verify Network Time Protocol (NTP)
- 1. NTP master, client, version 3, version 4
- 2. NTP authentication
- 3. Configure and verify IPv4 and DHCP
- 4. DHCP client, IOS DHCP server, DHCP relay
- 5. DHCP options (describe)
- 6. Configure and verify IPv4 Network Address Translation (NAT)
- Static NAT, dynamic NAT, PAT
- Describe SLA architecture
- Configure and verify IP SLA
- 1. ICMP
- Configure and verify tracking objects
- 1. Tracking objects
- 2. Tracking different entities (for example, interfaces, IP SLA results)
- 3. Configure and verify Cisco NetFlow
- NetFlow v5, v9
- Local retrieval
- 1. Export (configuration only)
- Identify IPv6 addressing and subnetting
- 1. Unicast
- 2. EUI-64
- 3. ND, RS/RA
- 4. Autoconfig (SLAAC)
- Describe RIPng
- Configure and verify EIGRP for IPv6
- Configure and verify OSPF for IPv6
- Describe IPv6 NAT
- 1. NAT64
- 2. NPTv6
- 3. Network Principles
- Use Cisco IOS troubleshooting tools
- 1. Debug, conditional debug
- 2. Ping and trace route with extended options
- Apply troubleshooting methodologies
- 1. Diagnose the root cause of networking issues (analyze symptoms, identify and describe root cause)
- 2. Design and implement valid solutions
- 3. Verify and monitor resolution

8. Switching

- Layer 2 Technologies

1. Troubleshoot switch administration

2. SDM templates

3. Managing MAC address table

4. Troubleshoot Err-disable recovery

- Troubleshoot Layer 2 protocols

1. CDP, LLDP

2. UDLD

3. Troubleshoot VLANs

4. Access ports

5. VLAN database

6. Normal, extended VLAN, voice VLAN

- Troubleshoot trunking

1. VTPv1, VTPv2, VTPv3, VTP pruning

2. dot1Q

3. Native VLAN

4. Manual pruning

- Troubleshoot EtherChannels

1. LACP, PAgP, manual

2. Layer 2, Layer 3

3. Load balancing

4. EtherChannel misconfiguration guard

- Troubleshoot spanning tree

1. PVST+, RPVST+, MST

2. Switch priority, port priority, path cost, STP timers

3. PortFast, BPDUguard, BPDUfilter

4. Loopguard, Rootguard

9. Tshoot

- Troubleshoot other LAN switching technologies

- 1. SPAN, RSPAN

- Troubleshoot chassis virtualization and aggregation technologies

- 1. Stackwise

10. Layer 3 Technologies

- Troubleshoot IPv4 addressing and subnetting

- Address types (Unicast, broadcast, multicast, and VLSM)

- ARP

3. DHCP relay and server

4. DHCP protocol operations

- Troubleshoot IPv6 addressing and subnetting

1. Unicast

2. EUI-64

3. ND, RS/RA

4. Autoconfig (SLAAC)

5. DHCP relay and server

6. DHCP protocol operations

- Troubleshoot static routing
- Troubleshoot default routing
- Troubleshoot administrative distance
- Troubleshoot passive interfaces
- Troubleshoot VRF lite
- Troubleshoot filtering with any protocol

11. Layer 2 Technologies

- Configure and verify switch administration
 - SDM templates
2. Managing MAC address table
 3. Troubleshoot Err-disable recovery
 - Configure and verify Layer 2 protocols
1. CDP, LLDP
 2. UDLD
 - Configure and verify VLANs
1. Access ports
 2. VLAN database
 3. Normal, extended VLAN, voice VLAN
 - Configure and verify trunking
1. VTPv1, VTPv2, VTPv3, VTP pruning
 2. dot1Q
 3. Native VLAN
 4. Manual pruning
 - Configure and verify EtherChannels
1. LACP, PAgP, manual
 2. Layer 2, Layer 3
 3. Load balancing
 4. EtherChannel misconfiguration guard
 - Configure and verify spanning tree
1. PVST+, RPVST+, MST
 2. Switch priority, port priority, path cost, STP timers
 3. PortFast, BPDUguard, BPDUfilter
 4. Loopguard and Rootguard
 - Configure and verify other LAN switching technologies
1. SPAN, RSPAN
 - Describe chassis virtualization and aggregation technologies
1. Stackwise

12. Infrastructure Security

- Configure and verify switch security features
 - DHCP snooping
2. IP Source Guard
 3. Dynamic ARP inspection

4. Port security
5. Private VLAN
6. Storm control

Describe device security using Cisco IOS AAA with TACACS+ and RADIUS

1. AAA with TACACS+ and RADIUS
2. Local privilege authorization fallback

13. Infrastructure Services

Configure and verify first-hop redundancy protocol

1. HSRP
2. VRRP
3. GLBP



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