Silicon Certified Core Networking Expert (SCCNE+) Curriculum

(Advanced Networking training beyond CCNA)

Centre Address:

Noida: B 77-78 2nd Floor Sec. 6 Noida 201301

Noida: B 106 2nd Floor Sec. 6 Noida 201301

Karol Bagh: 16/8 3rd Floor Karol Bagh New Delhi 110005

For queries on Training, please contact the undersigned: -

Nikita Bhasin 9310719612

Silicon Univ EC-Council Accredited Training Centre- Training Arm of Silicon Comnet

SCCNE+ Training Details:-

- **Duration: 110-120 Hours**
- **Mode: Hybrid (Online/Classroom)**
- **Classes: Weekdays/Weekends/Evening**

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Silicon Certified Core Networking Expert

S. NO	Topics	Network Fundamentals, OSI & TCP Models, IP Addressing (IPv4 and IPv6)
1	**Network Fundamentals**	Data Communication
2		OSI & TCP models
3		Compare TCP to UDP
4	**Network Devices**	Explain the role and function of network components
5		Routers
6		Layer 2 and Layer 3 switches
7		Next-generation firewalls and IPS
8		Access points (data and voice)
9		Controllers (Cisco DNA Center and WLC)
10		Endpoints
11		Servers
12		PoE
13		Wireless Networking & components
14	**Network Topologies**	Describe characteristics of network topology architectures
16		LAN Topologies
17		Two-tier
18		Three-tier
19		Spine-leaf
20		WAN
21		Small office/home office (SOHO)
22		On-premise and cloud
23	**Cabling - Physical**	Compare physical interface and cabling types
24		Single-mode fiber, multimode fiber, copper
25		Connections (Ethernet shared media and point-to-point)
26		Identify interface and cable issues (collisions, errors, mismatch duplex, and/or speed)
27	**Addressing - IPv4**	Describe addressing
28		Physical Addressing
29		MAC Addressing
30		Logical Addressing
31		Configure and verify IPv4 addressing and subnetting
32		IPv4 Address Classes
33		Subnetting
34		CIDR
35		VLSM

36		Private IP
37		Public IP
38	**Addressing - IPv6**	**IPv6 - Configure and verify IPv6 addressing and prefix**
39		Describe IPv6 address types - Unicast (global, unique local, and link local)
40		Anycast
41		Multicast
42		Modified EUI 64
43		Verify IP parameters for Client OS (Windows, Mac OS, Linux)
		Switching
44	**Fundaments**	Switching Basics
45		Switching Concepts
46		MAC learning and aging
47		Frame switching
48		Frame flooding
49		MAC address table
50	**VLAN**	VLANs(IVR/SVI/gateway)-Theory
51		Configure and verify VLANs (normal range) spanning multiple switches
52		Access ports (data and voice)
53		Default VLAN
54		Connectivity
55		Configure and verify interswitch connectivity
56	**Connectivity Types**	Trunk ports
57		802.1Q
58		Native VLAN
59		Configure and verify Layer 2 discovery protocols (Cisco Discovery Protocol and LLDP)
60		Configure and verify (Layer 2/Layer 3) Ether Channel (LACP)
61	**STP & RSTP**	Interpret basic operations of Rapid PVST+ Spanning Tree Protocol
62		Root port, root bridge (primary/secondary), and other port names
63		Port states (forwarding/blocking)
64		Port Fast
65	**Switch Security**	Switch Port Security
66	**Ether Channel**	Port Aggregation Protocol Overview
67		LAG Overview(LACP)
68		Switch Stacking & Chassis Aggregation
69		**Routing**
70	**Fundamentals**	Basic Routing
71		Classful & Classless Protocols
72		The objectives of Routing Protocols

73		Routing Problems Avoidance Mechanisms
74		Connectivity
75		Configure and verify interswitch connectivity
76		Inter VLAN Routing
77	**Routing - protocols**	Static Routes
78		Static Routes configuration
79		IPv4 and IPv6 static routing
80		Default route
81		Network route
82		Host route
83		Floating static
84	**Details**	Routing protocol code
85		Prefix
86		Network mask
87		Next hop
88		Administrative distance
89		Metric
90		Gateway of last resort
91		Determine how a router makes a forwarding decision by default
92		Longest prefix match
93		Routing protocol metric
94		Describe the purpose, functions, and concepts of first hop redundancy protocols
95	**Dynamic Routing**	Distance Vector - RIP
96		RIP Version 2
97		Configuration process of RIP v2
98		Link State routing protocol fundamentals(OSPF)
99		OSPF Fundamentals
100		OSPF Configuration
101		Configure and verify single area OSPFv2
102		Neighbor adjacencies
103		Point-to-point
104		Broadcast (DR/BDR selection)
105		Router ID
106	**Security**	ACL Basics
106		Port Numbers
107		ACL Rules
108		Wildcard Masks
109		**Wireless**
110		Describe wireless principles
111		Non overlapping Wi-Fi channels

112		SSID
113		RF
114		Encryption
115		Describe Cisco Wireless Architectures and AP modes
116		Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, and LAG)
117		Describe AP and WLC management access connections (Telnet, SSH, HTTP, HTTPS, console, and TACACS+/RADIUS)
118		Interpret the wireless LAN GUI configuration for client connectivity, such as WLAN creation, security settings, QoS profiles, and advanced settings
119		**DHCP,DNS & NTP**
120	**IP Services**	NAT Basics
121		Configure and verify inside source NAT using static and pools
122		NTP operating in a client and server mode
123		Explain the role of DHCP and DNS within the network
124		Explain the function of SNMP in network operations
125		Describe the use of syslog features including facilities and levels
126		Configure and verify DHCP client and relay
127		Explain the forwarding per-hop behavior (PHB) for QoS, such as classification, marking, queuing, congestion, policing, and shaping
128		Configure network devices for remote access using SSH
129		Describe the capabilities and function of TFTP/FTP in the network
130		fundamental of Port Mirroring
131		Ping, Traceroute & Their Extended Options
132		Device logs fundamentals
133		GRE Tunnel Connectivity
134		Configure GRE Tunnels
135	**Other Technology**	**MPLS Fundamental (Exclusively in SCCNE)**
136	**Monitoring Tools**	**Nagios Fundamental (Exclusively in SCCNE)**
137	**SDWAN**	**SDWAN (Exclusively in SCCNE)**
138		Traditional WAN
139		Limitations of Traditional WAN
140		SDWAN Overview
141		Traditional WAN vs SDWAN
142		Underlay and Overlay Network
143		Control Plane vs Data Plane
144		Describe Multiprotocol BGP
145		Describe VXLAN Encapsulation
146		Versa SDWAN Architecture and Components
147		Versa Headend component

148		Versa Control Plane and Dataplane
149		How MP-BGP is used as control Plane
150		Versa Private Route
151		Versa Director User Interface
152		Template Overview
153		Workflow Overview
154		Topology Type
155		i) Full Mesh
156		ii) Spoke to Hub only
157		iii) Spoke to Spoke via Hub
158		iv) Spoke to Spoke direct
159		Device Onboarding
160		URL based - Zero Touch Provisioning
161		Management and Operations
162		Monitoring & Analytic Overview
163		Troubleshooting
164		**QOS**
165		Class of Service
166		Traffic Steering (Policy based Forwarding) and SLA Monitoring
167		**Advanced Security**
168		Security Services Overview
169		Metadata for Security Process
170		SSL Decryption and Inspection
171		Firewall Features
172		Stateful Firewall
173		Ddos Protection
174		Application Filtering
175		URL Filtering
176		IP Filtering
177		User and Group Authorization
178		Lab Session
		Fortinet Firewall
179		Unified Threat Management and Architecture
180		Models and Licensing / Product Matrix
181		Bootstrapping and Lab Buildup
182		Initial Configuration and access via GUI and CLI
183		Firewall Policies
184		Network Address Translation (NAT)
185		Routing
186		Layer 2 Switching
187		Application Control

188		Virtual Domains
189		High Availability
190		Transparent Mode
191		Firewall Authentication
192		Web Proxy (HA)
193		UTM Features
194		o Antivirus
195		o Web Filtering
196		o File Blocking
197		o Intrusion Prevention System
198		Denial of Service Prevention
199		Site to Site IPSec VPN
200		SSL VPN
201		Software defined WAN
202		Security Fabric
203		Diagnostics
	Network Scanning	**Network Scanning**
204		Introduction to Ethical Hacking
205		Foot Printing and Reconnaissance
206		Scanning Networks
207		Vulnerability Analysis
	NAC	**802.1x Authentication**
208		Understanding 802.1x
209		Authentication methods
210		Configuring 802.1x Authentication for a Wired Client
211		Configuring 802.1x Authentication for a Wired Client with VLAN Assignment
212		Configuring Wired MAB Authentication with VLAN Assignment