

CCNP – SWITCHING

1. Internet Control Message Protocol (ICMP)
 - a. ICMP Messages – Query
Error
 - b. Utilities – PING
Traceroute
2. Cisco Discovery Protocol (CDP)
3. Link Layer Discovery Protocol (LLDP)
4. Media Access Control (MAC) Address
5. Ethernet Header
 - a. Ethernet Header II
 - b. Original IEEE Ethernet (802.3) Header
 - c. IEEE 802.3 with SNAP Header
6. Switch Functions
 - a. Addressing Learning
 - b. Forwarding
 - c. Filtering (VLAN)
 - d. Loop Avoidance
7. Switch ports
8. Tag/Frame Encapsulation
9. Dynamic Trunking Protocol (DTP)
10. Pruning
11. VLAN Trunking Protocol (VTP)
 - a. VTP configuration Steps
 - b. VTP Messages
 - c. How to RESET CR
 - d. Transparent Switch
12. VTP Pruning
13. Introduction – Spanning Tree Protocol (STP)
 - a. How loop is created between switches?
 - b. Election Criteria
 - c. Election Practice
 - d. Bridge Protocol Data Unit (BPDU)
 - e. STP States

f. STP Timers

14. Common Spanning Tree (CST)
15. Per VLAN Spanning Tree (PVST)
16. PVST+
17. Root Path Manipulation
18. How to make Primary Root Bridge Secondary and vice versa ?
19. Topology Change
 - a. Direct Topology Change
 - b. Indirect Topology Change
 - c. Insignificant Topology Change
20. Fast Convergence Method –
 - a. Uplink fast
 - b. Backbone fast
 - c. Port fast
21. Rapid Spanning Tree (RSTP) & RSTP+
22. Multiple Spanning Tree (MST)
23. STP Protection –
 - a. Root Guard
 - b. BPDU Guard
 - c. BPDU Filter
 - d. Loop Guard
 - e. UDLD
24. Etherchannel
 - a. Port Aggregation Protocol (PAgP)
 - b. Link Aggregation Protocol (LACP)
25. Etherchannel Load Balancing Algorithm
26. Port Security
27. Port based Authentication
28. Private VLAN
29. Dynamic Host Configuration Protocol (DHCP)
30. Automatic Private IP Addressing (APIPA)
31. Different DHCP messages –
 - a. Release
 - b. Negative Acknowledge
 - c. DHCP Decline
 - d. DHCP Inform
32. DHCP Relay Agent

- 33. DHCP Snooping
- 34. IP Source Guard
- 35. ARP Inspection
- 36. First Hop Redundancy Protocol (FHRP)
 - a. Hot Standby Router Protocol (HSRP)
 - b. Virtual Router Redundancy Protocol (VRRP)
 - c. Gateway Load Balancing Protocol (GLBP)
- 37. Switchport Analyzer (SPAN) / Remote SPAN
- 38. Switch Operations
- 39. Layer3 Forwarding Types –
 - a. Process Switching.
 - b. Fast Switching
 - c. Cisco Express Forwarding (CEF)