

Cisco Packet Tracer CLI Commands Reference

Contents

1 Basic Configuration	6
2 Interface IP Configuration	6
3 Static Routing	6
4 RIP Configuration	6
5 EIGRP Configuration	6
6 OSPF Configuration	7
7 DHCP Configuration	7
8 NAT Configuration	7
9 Switch VLAN Configuration	7
10 Trunk Port Configuration	8
11 VTP Configuration	8
12 Inter-VLAN Routing	8
13 Access Control List (ACL)	8
14 Telnet/SSH Access	8
15 Save Configuration	9
16 ACL Logging (Optional)	9
17 IPv6 ACLs	9
18 Web, SSH, FTP Server (Simulation Use)	9

19 DNS Static and Dynamic Setup	10
20 Local User Authentication for Console / VTY	10
21 PortFast and BPDU Guard	10
22 Manual Root Bridge Configuration	10
23 Storm Control (Broadcast Suppression)	10
24 MTU Configuration	11
25 Backup via USB (Packet Tracer Simulation)	11
26 MAC Filtering / Secure MAC List	11
27 IPv6 Router Advertisement (RA Only)	11
28 802.1X Dot1X Authentication (Simulation)	11
29 Access Point CLI (PT CLI Mode)	11
30 VTP Server / Client Mode	12
31 IP SLA Configuration (Simulation Example)	12
32 Additional Advanced Sections	12
32.1 VLAN Database Mode (Legacy Switches)	12
32.2 DHCP Relay (IP Helper Address)	12
32.3 Voice VLAN Configuration	12
32.4 OSPF Load Balancing	13
32.5 Router on a Stick (Subinterfaces)	13
32.6 Loopback Interfaces	13
32.7 Syslog and Logging	13
32.8 CDP and LLDP	13
32.9 Interface Range Configuration	13
32.10 Password Recovery (Simulation)	14
32.11 Frame Relay Setup (Legacy)	14
32.12 MPLS (Theoretical Preview)	14
32.13 Access Layer Security (DHCP Snooping + DAI)	14
32.14 Private VLANs (Theory + PT Simulation)	14
32.15 VRRP Configuration	15
32.16 GRE Tunnel Setup	15
32.17 PPP with PAP Authentication	15
32.18 PPP with CHAP Authentication	15
32.19 SNMP Setup	16
32.20 Syslog Verification	16

32.21	Static ARP Mapping	16
32.22	Extended Ping Traceroute	16
32.23	Useful “do” Commands Inside Config Mode	16
32.24	TFTP / FTP Configuration (for backups)	16
32.25	Simulated Switch Stack Commands	17
32.26	Redundant Default Gateway (Simulation)	17
32.27	Packet Tracer Simulation Tips	17
32.28	SPAN (Port Mirroring)	17
32.29	Wireless Router Configuration (CLI)	17
32.30	IPv6 Routing Protocols	18
33	HSRP Configuration (Hot Standby Router Protocol)	18
34	Lab 42: Multicast Routing with PIM Sparse Mode	18
35	: VLAN Trunking Protocol Pruning	19
36	DHCP Snooping with Option 82	19
37	IPsec VPN Tunnel Setup	19
38	SNMPv3 User Setup	20
39	NetFlow Configuration	20
40	Port Security Violation Mode	20
41	IPv6 DHCP Server Configuration	20
42	EtherChannel (Port Aggregation Protocol - PAgP)	20
43	EtherChannel (Link Aggregation Control Protocol - LACP)	20
44	NTP Configuration	21
45	Switch Port Security Sticky MAC	21
46	DHCP Relay with Multiple Helper Addresses	21
47	IPv6 Static Routing	21
48	IPv6 EIGRP Configuration	21
49	IPv6 OSPF Configuration	22
50	DMVPN (Dynamic Multipoint VPN) Basic Setup	22
51	MST (Multiple Spanning Tree)	22

52 Lab 60: IPv6 ACL with Logging	22
53 BFD (Bidirectional Forwarding Detection) Setup	22
54 IPv6 Router Advertisement with SLAAC Only	23
55 PBR (Policy-Based Routing)	23
56 VRF Configuration (Virtual Routing and Forwarding)	23
57 NAT Overload with Static NAT	23
58 IPv6 DHCPv6 Client	24
59 ACL Time-Based Access	24
60 Packet Tracer Simulation with QoS (Quality of Service)	24
61 IP Multicast Filtering with IGMP Snooping	24
62 NetBIOS Filtering on Switch	24
63 DHCP Option 150 Configuration (Cisco VoIP)	25
64 Route Redistribution Between OSPF and EIGRP	25
65 DHCP Binding Table Verification	25
66 PPPoE Client Setup	25
67 ZTP (Zero Touch Provisioning) Simulation	25
68 IPv6 Prefix Delegation (DHCPv6-PD)	26
69 ACL with Reflexive Access List	26
70 Spanning Tree Path Cost Configuration	26
71 Disabling CDP Globally and on Interface	26
72 Router IP Unnumbered Interface	26
73 IPv6 DHCPv6 PD for LAN	27
74 REMOTE SPAN (RSPAN) Setup	27
75 Configuring IP SLA with Tracking	27
76 VRF-Aware NAT	27

77 Multilink PPP (MLPPP) Configuration	27
78 BGP Basic Configuration	28
79 Lab 87: BGP Route Filtering with Prefix Lists	28
80 DHCP Port Security Violation	28
81 MD5 Authentication on OSPF	28
82 DHCPv6 Stateful Configuration	28
83 LAN Switch MAC Address Table Cleanup	29
84 SNMP Trap Receiver Setup	29
85 Syslog Timestamp Format Configuration	29
86 Logging Buffer Configuration	29
87 Dynamic Trunk Negotiation with DTP	29
88 Router Routing Protocol Verification Commands	29
89 Lab 97: Layer 3 Switch SVI Configuration	30
90 PPPoE Server Setup (Simulation)	30
91 DHCP Option 66 and 67 (PXE Boot)	30
92 Configuration Backup with EEM (Embedded Event Manager)	30

1 Basic Configuration

```
enable
configure terminal
hostname Router1
no ip domain-lookup
enable secret cisco
service password-encryption
banner motd #Unauthorized access prohibited#
```

2 Interface IP Configuration

```
interface FastEthernet0/0
ip address 192.168.1.1 255.255.255.0
no shutdown
exit
```

3 Static Routing

```
ip route 192.168.2.0 255.255.255.0 192.168.1.2
```

4 RIP Configuration

```
router rip
version 2
network 192.168.1.0
network 192.168.2.0
no auto-summary
```

5 EIGRP Configuration

```
router eigrp 1
network 192.168.0.0
no auto-summary
```

6 OSPF Configuration

```
router ospf 1
network 192.168.1.0 0.0.0.255 area 0
```

7 DHCP Configuration

```
ip dhcp pool LAN
network 192.168.1.0 255.255.255.0
default-router 192.168.1.1
dns-server 8.8.8.8
exit
ip dhcp excluded-address 192.168.1.1 192.168.1.10
```

8 NAT Configuration

```
access-list 1 permit 192.168.1.0 0.0.0.255
ip nat inside source list 1 interface FastEthernet0/0 overload

interface FastEthernet0/0
ip nat outside

interface FastEthernet0/1
ip nat inside
```

9 Switch VLAN Configuration

```
vlan 10
name Sales

interface FastEthernet0/1
switchport mode access
switchport access vlan 10

interface FastEthernet0/2
switchport mode access
switchport access vlan 20
```

10 Trunk Port Configuration

```
interface FastEthernet0/24
switchport trunk encapsulation dot1q
switchport mode trunk
```

11 VTP Configuration

```
vtp domain cisco
vtp mode server
vtp password cisco
```

12 Inter-VLAN Routing

```
interface FastEthernet0/0.10
encapsulation dot1Q 10
ip address 192.168.10.1 255.255.255.0

interface FastEthernet0/0.20
encapsulation dot1Q 20
ip address 192.168.20.1 255.255.255.0
```

13 Access Control List (ACL)

```
access-list 1 deny 192.168.1.100
access-list 1 permit any

interface FastEthernet0/0
ip access-group 1 in
```

14 Telnet/SSH Access

```
line vty 0 4
password cisco
login

username admin password cisco
ip domain-name example.com
crypto key generate rsa
```

```
ip ssh version 2
```

```
line vty 0 4
transport input ssh
login local
```

15 Save Configuration

```
copy running-config startup-config
```

16 ACL Logging (Optional)

```
access-list 101 deny tcp any any eq 80 log
interface FastEthernet0/0
ip access-group 101 in
```

17 IPv6 ACLs

```
ipv6 access-list BLOCK-WEB
deny tcp any any eq 80
permit ipv6 any any

interface GigabitEthernet0/0
ipv6 traffic-filter BLOCK-WEB in
```

18 Web, SSH, FTP Server (Simulation Use)

- Configure a PC as server in Packet Tracer
- Assign static IP, then enable:
 - HTTP service
 - SSH service (set username/password)
 - FTP service (upload file)
- Access from client PC browser or FTP app

19 DNS Static and Dynamic Setup

```
ip host server1 192.168.1.100
ip name-server 192.168.1.1

ip dhcp pool LAN
dns-server 192.168.1.1
```

20 Local User Authentication for Console / VTY

```
username admin privilege 15 secret cisco123

line console 0
login local
exit

line vty 0 4
transport input ssh
login local
```

21 PortFast and BPDU Guard

```
interface range fa0/1 - 24
spanning-tree portfast
spanning-tree bpduguard enable
```

22 Manual Root Bridge Configuration

```
spanning-tree vlan 1 priority 4096
```

23 Storm Control (Broadcast Suppression)

```
interface FastEthernet0/1
storm-control broadcast level 10.00
```

24 MTU Configuration

```
interface GigabitEthernet0/1
mtu 1500
```

25 Backup via USB (Packet Tracer Simulation)

```
copy running-config usbflash0:backup.cfg
copy usbflash0:backup.cfg startup-config
```

26 MAC Filtering / Secure MAC List

```
interface FastEthernet0/5
switchport mode access
switchport port-security
switchport port-security mac-address 00:11:22:33:44:55
```

27 IPv6 Router Advertisement (RA Only)

```
interface g0/0
ipv6 address 2001:db8:1::1/64
ipv6 nd prefix 2001:db8:1::/64 2592000 604800
ipv6 nd other-config-flag
```

28 802.1X Dot1X Authentication (Simulation)

```
aaa new-model
interface FastEthernet0/1
authentication port-control auto
```

29 Access Point CLI (PT CLI Mode)

```
interface Dot11Radio0
ssid mySSID
authentication open
exit
```

```
interface Dot11Radio0
station-role root
```

30 VTP Server / Client Mode

```
vtp domain CISCO
vtp mode server
vtp password cisco

vtp mode client
```

31 IP SLA Configuration (Simulation Example)

```
ip sla 1
icmp-echo 8.8.8.8
frequency 10
ip sla schedule 1 life forever start-time now
show ip sla statistics
```

32 Additional Advanced Sections

32.1 VLAN Database Mode (Legacy Switches)

```
vlan database
vlan 2 name HR
exit
```

32.2 DHCP Relay (IP Helper Address)

```
interface FastEthernet0/0
ip address 192.168.2.1 255.255.255.0
ip helper-address 192.168.1.1
```

32.3 Voice VLAN Configuration

```
interface FastEthernet0/1
switchport mode access
switchport access vlan 10
switchport voice vlan 20
```

32.4 OSPF Load Balancing

```
router ospf 1  
maximum-paths 2
```

32.5 Router on a Stick (Subinterfaces)

```
interface FastEthernet0/0.10  
encapsulation dot1Q 10  
ip address 192.168.10.1 255.255.255.0  
  
interface FastEthernet0/0.20  
encapsulation dot1Q 20  
ip address 192.168.20.1 255.255.255.0
```

32.6 Loopback Interfaces

```
interface loopback0  
ip address 10.1.1.1 255.255.255.255
```

32.7 Syslog and Logging

```
logging 192.168.1.5  
logging trap debugging  
service timestamps log datetime msec
```

32.8 CDP and LLDP

```
show cdp neighbors  
show cdp entry *  
no cdp run  
  
lldp run  
show lldp neighbors
```

32.9 Interface Range Configuration

```
interface range f0/1 - 24  
switchport mode access  
switchport access vlan 30
```

32.10 Password Recovery (Simulation)

```
confreg 0x2142
reset
% After reboot:
copy startup-config running-config
no enable secret
enable secret newpass
config-register 0x2102
write memory
```

32.11 Frame Relay Setup (Legacy)

```
interface serial0/0
encapsulation frame-relay
no shutdown

interface serial0/0.1 point-to-point
ip address 192.168.1.1 255.255.255.0
frame-relay interface-dlci 101
```

32.12 MPLS (Theoretical Preview)

```
mpls ip
interface Serial0/0
mpls ip
router ospf 1
mpls ldp router-id Loopback0 force
```

32.13 Access Layer Security (DHCP Snooping + DAI)

```
ip dhcp snooping
ip dhcp snooping vlan 10
interface FastEthernet0/1
ip dhcp snooping trust

ip arp inspection vlan 10
interface FastEthernet0/1
ip arp inspection trust
```

32.14 Private VLANs (Theory + PT Simulation)

```
vlan 100
private-vlan primary
vlan 101
private-vlan community
vlan 102
private-vlan isolated

vlan 100
private-vlan association 101,102

interface FastEthernet0/1
switchport mode private-vlan host
switchport private-vlan host-association 100 101
```

32.15 VRRP Configuration

```
interface FastEthernet0/0
ip address 192.168.1.2 255.255.255.0
vrrp 1 ip 192.168.1.1
vrrp 1 priority 120
vrrp 1 preempt
```

32.16 GRE Tunnel Setup

```
interface Tunnel0
ip address 10.10.10.1 255.255.255.252
tunnel source Serial0/0/0
tunnel destination 203.0.113.2
```

32.17 PPP with PAP Authentication

```
interface Serial0/0/0
encapsulation ppp
ppp authentication pap
ppp pap sent-username R1 password cisco
```

32.18 PPP with CHAP Authentication

```
interface Serial0/0/0
encapsulation ppp
ppp authentication chap
```

```
hostname R1
username R2 password cisco
```

32.19 SNMP Setup

```
snmp-server community public RO
snmp-server location DataCenter1
snmp-server contact admin@example.com
```

32.20 Syslog Verification

```
logging 192.168.1.10
show logging
```

32.21 Static ARP Mapping

```
arp 192.168.1.10 00-11-22-33-44-55 ARPA
```

32.22 Extended Ping Traceroute

```
ping
> Protocol [ip]:
> Target IP address: 192.168.1.1
> Repeat count [5]: 10
> Datagram size [100]: 1500
> Timeout in seconds [2]:
> Extended commands [n]: y
```

32.23 Useful “do” Commands Inside Config Mode

```
do show ip interface brief
do copy running-config startup-config
do ping 192.168.1.1
```

32.24 TFTP / FTP Configuration (for backups)

```
copy running-config tftp:
Address or name of remote host []? 192.168.1.10
Destination filename [running-config]? backup1.cfg
```

```
copy tftp: running-config  
  
ip ftp username admin  
ip ftp password cisco  
copy running-config ftp:
```

32.25 Simulated Switch Stack Commands

```
show switch  
switch 1 priority 15  
switch 2 renumber 3
```

32.26 Redundant Default Gateway (Simulation)

```
ip default-gateway 192.168.1.254  
standby 1 ip 192.168.1.1  
standby 1 priority 105
```

32.27 Packet Tracer Simulation Tips

- Use the Simulation tab to view packet flow.
- Click “Capture / Forward” to step through traffic.
- Use event filters (ICMP, DNS, HTTP) to limit view.
- Use ”inspect” tool to view packet content.

32.28 SPAN (Port Mirroring)

```
monitor session 1 source interface FastEthernet0/1  
monitor session 1 destination interface FastEthernet0/24
```

32.29 Wireless Router Configuration (CLI)

```
interface Dot11Radio0  
ssid WiFi  
authentication open  
encryption mode wep  
encryption key 1 size 40bit 0123456789  
no shutdown  
  
interface FastEthernet0
```

```
ip address dhcp  
no shutdown  
exit
```

32.30 IPv6 Routing Protocols

```
ipv6 unicast-routing  
  
interface g0/0  
ipv6 address 2001:db8:1::1/64  
ipv6 rip RIPng enable  
  
interface g0/1  
ipv6 address 2001:db8:2::1/64  
ipv6 rip RIPng enable  
  
ipv6 router rip RIPng  
  
ipv6 router ospf 1  
router-id 1.1.1.1  
  
interface g0/0  
ipv6 ospf 1 area 0  
  
ipv6 router eigrp 1  
router-id 2.2.2.2  
  
interface g0/0  
ipv6 eigrp 1
```

33 HSRP Configuration (Hot Standby Router Protocol)

```
interface FastEthernet0/0  
ip address 192.168.1.2 255.255.255.0  
standby 1 ip 192.168.1.1  
standby 1 priority 110  
standby 1 preempt
```

34 Lab 42: Multicast Routing with PIM Sparse Mode

```
ip multicast-routing
interface FastEthernet0/0
ip pim sparse-mode
router pim
```

35 : VLAN Trunking Protocol Pruning

```
vtp pruning
vtp mode server
```

36 DHCP Snooping with Option 82

```
ip dhcp snooping
ip dhcp snooping vlan 10
ip dhcp snooping information option
interface FastEthernet0/1
ip dhcp snooping trust
```

37 IPsec VPN Tunnel Setup

```
crypto isakmp policy 1
encryption aes
hash sha
authentication pre-share
group 2
exit

crypto isakmp key cisco123 address 10.10.10.2

crypto ipsec transform-set TRANS esp-aes esp-sha-hmac
crypto map VPN 10 ipsec-isakmp
set peer 10.10.10.2
set transform-set TRANS
match address 100

interface FastEthernet0/0
crypto map VPN
```

38 SNMPv3 User Setup

```
snmp-server group MYGROUP v3 priv  
snmp-server user admin MYGROUP v3 auth sha cisco123 priv aes 128 cisco123
```

39 NetFlow Configuration

```
ip flow-export destination 192.168.1.100 9996  
ip flow-export version 9  
interface FastEthernet0/0  
ip route-cache flow
```

40 Port Security Violation Mode

```
interface FastEthernet0/1  
switchport port-security violation restrict
```

41 IPv6 DHCP Server Configuration

```
ipv6 dhcp pool VLAN10  
address prefix 2001:db8:10::/64  
dns-server 2001:4860:4860::8888  
domain-name example.com  
interface FastEthernet0/1  
ipv6 dhcp server VLAN10
```

42 EtherChannel (Port Aggregation Protocol - PAgP)

```
interface range FastEthernet0/1 - 2  
channel-group 1 mode desirable  
interface Port-channel1  
switchport mode trunk
```

43 EtherChannel (Link Aggregation Control Protocol - LACP)

```
interface range FastEthernet0/3 - 4
channel-group 2 mode active
interface Port-channel2
switchport mode trunk
```

44 NTP Configuration

```
ntp server 192.168.1.10
ntp access-group peer 10
```

45 Switch Port Security Sticky MAC

```
interface FastEthernet0/5
switchport port-security
switchport port-security mac-address sticky
switchport port-security maximum 2
```

46 DHCP Relay with Multiple Helper Addresses

```
interface FastEthernet0/1
ip helper-address 192.168.1.10
ip helper-address 192.168.2.10
```

47 IPv6 Static Routing

```
ipv6 route 2001:db8:2::/64 2001:db8:1::2
```

48 IPv6 EIGRP Configuration

```
ipv6 unicast-routing
ipv6 router eigrp 1
router-id 1.1.1.1
interface g0/0
ipv6 eigrp 1
```

49 IPv6 OSPF Configuration

```
ipv6 router ospf 1
router-id 2.2.2.2
interface g0/1
ipv6 ospf 1 area 0
```

50 DMVPN (Dynamic Multipoint VPN) Basic Setup

```
interface Tunnel0
ip address 10.0.0.1 255.255.255.0
tunnel source FastEthernet0/0
tunnel mode gre multipoint
ip nhrp network-id 1
ip nhrp map multicast dynamic
ip nhrp authentication cisco
```

51 MST (Multiple Spanning Tree)

```
spanning-tree mode mst
spanning-tree mst configuration
name MST1
revision 1
instance 1 vlan 10-20
instance 2 vlan 30-40
exit
```

52 Lab 60: IPv6 ACL with Logging

```
ipv6 access-list BLOCK-SSH
deny tcp any any eq 22 log
permit ipv6 any any
interface g0/0
ipv6 traffic-filter BLOCK-SSH in
```

53 BFD (Bidirectional Forwarding Detection) Setup

```
interface FastEthernet0/0
  bfd interval 50 min_rx 50 multiplier 3
  router ospf 1
  bfd all-interfaces
```

54 IPv6 Router Advertisement with SLAAC Only

```
interface g0/0
  ipv6 nd prefix 2001:db8::/64
  ipv6 nd managed-config-flag
```

55 PBR (Policy-Based Routing)

```
access-list 10 permit 192.168.1.0 0.0.0.255
route-map PBR permit 10
match ip address 10
set ip next-hop 192.168.2.1

interface FastEthernet0/0
  ip policy route-map PBR
```

56 VRF Configuration (Virtual Routing and Forwarding)

```
ip vrf BLUE
rd 100:1
route-target export 100:1
route-target import 100:1

interface FastEthernet0/1
  ip vrf forwarding BLUE
  ip address 10.0.10.1 255.255.255.0
```

57 NAT Overload with Static NAT

```
ip nat inside source static 192.168.1.100 203.0.113.10
access-list 1 permit 192.168.1.0 0.0.0.255
ip nat inside source list 1 interface FastEthernet0/0 overload
```

58 IPv6 DHCPv6 Client

```
interface g0/0
ipv6 address autoconfig
ipv6 dhcp client pd LAN1
```

59 ACL Time-Based Access

```
time-range WORKHOURS
periodic weekdays 08:00 to 18:00

access-list 101 permit tcp any any eq 22 time-range WORKHOURS
```

60 Packet Tracer Simulation with QoS (Quality of Service)

```
class-map match-any VOICE
match ip dscp ef
policy-map PRIORITY
class VOICE
priority 1000

interface FastEthernet0/1
service-policy output PRIORITY
```

61 IP Multicast Filtering with IGMP Snooping

```
ip igmp snooping
ip igmp snooping vlan 10
```

62 NetBIOS Filtering on Switch

```
access-list 101 deny udp any any eq 137
access-list 101 deny udp any any eq 138
access-list 101 permit ip any any

interface FastEthernet0/1
ip access-group 101 in
```

63 DHCP Option 150 Configuration (Cisco VoIP)

```
ip dhcp pool VOIP
network 192.168.100.0 255.255.255.0
option 150 ip 192.168.1.20
default-router 192.168.100.1
```

64 Route Redistribution Between OSPF and EIGRP

```
router ospf 1
redistribute eigrp 10 metric 10 subnets

router eigrp 10
redistribute ospf 1 metric 10000 100 255 1 1500
```

65 DHCP Binding Table Verification

```
show ip dhcp binding
```

66 PPPoE Client Setup

```
interface Dialer1
ip address negotiated
encapsulation ppp
dialer pool 1
pppoe-client dial-pool-number 1

interface FastEthernet0/0
pppoe enable
pppoe-client dial-pool-number 1
```

67 ZTP (Zero Touch Provisioning) Simulation

- Prepare bootstrap config file on TFTP server.
- Switch set to boot from TFTP.
- Auto-provision config on boot.

68 IPv6 Prefix Delegation (DHCPv6-PD)

```
ipv6 dhcp pool ISP
prefix-delegation pool ISP prefix-length 60

interface g0/0
ipv6 address dhcp
ipv6 dhcp client pd ISP
```

69 ACL with Reflexive Access List

```
ip access-list extended OUTSIDE_IN
permit tcp any any established
deny ip any any

interface FastEthernet0/0
ip access-group OUTSIDE_IN in
```

70 Spanning Tree Path Cost Configuration

```
interface FastEthernet0/1
spanning-tree cost 19
```

71 Disabling CDP Globally and on Interface

```
no cdp run
interface FastEthernet0/0
no cdp enable
```

72 Router IP Unnumbered Interface

```
interface Serial0/0
ip unnumbered Loopback0
no shutdown
```

73 IPv6 DHCPv6 PD for LAN

```
interface g0/0
ipv6 address 2001:db8:1::1/64
ipv6 dhcp server LAN

ipv6 dhcp pool LAN
address prefix 2001:db8:1::/64 7
dns-server 2001:4860:4860::8888
```

74 REMOTE SPAN (RSPAN) Setup

```
monitor session 1 source interface FastEthernet0/1
monitor session 1 destination remote vlan 100
```

75 Configuring IP SLA with Tracking

```
ip sla 10
icmp-echo 8.8.8.8 source-interface FastEthernet0/0
frequency 5
ip sla schedule 10 life forever start-time now

track 1 ip sla 10 reachability
interface FastEthernet0/1
ip address 192.168.1.2 255.255.255.0
ip route 0.0.0.0 0.0.0.0 192.168.1.1 track 1
```

76 VRF-Aware NAT

```
ip nat inside source list 1 interface FastEthernet0/0 vrf BLUE overload
```

77 Multilink PPP (MLPPP) Configuration

```
interface Multilink1
ip address 10.1.1.1 255.255.255.0
ppp multilink
ppp multilink group 1

interface Serial0/0/0
```

```
encapsulation ppp
ppp multilink group 1
```

78 BGP Basic Configuration

```
router bgp 65001
neighbor 192.168.1.2 remote-as 65002
network 10.0.0.0 mask 255.0.0.0
```

79 Lab 87: BGP Route Filtering with Prefix Lists

```
ip prefix-list PLIST seq 5 permit 10.0.0.0/8 le 24

router bgp 65001
neighbor 192.168.1.2 prefix-list PLIST in
```

80 DHCP Port Security Violation

```
interface FastEthernet0/1
switchport port-security
switchport port-security violation protect
```

81 MD5 Authentication on OSPF

```
interface FastEthernet0/0
ip ospf message-digest-key 1 md5 cisco123

router ospf 1
area 0 authentication message-digest
```

82 DHCPv6 Stateful Configuration

```
ipv6 dhcp pool CLIENTS
dns-server 2001:4860:4860::8888
domain-name example.com

interface g0/0
ipv6 address 2001:db8:1::1/64
```

```
ipv6 dhcp server CLIENTS
```

83 LAN Switch MAC Address Table Cleanup

```
clear mac address-table dynamic
```

84 SNMP Trap Receiver Setup

```
snmp-server host 192.168.1.10 traps version 2c public  
snmp-server enable traps
```

85 Syslog Timestamp Format Configuration

```
service timestamps log datetime msec localtime
```

86 Logging Buffer Configuration

```
logging buffered 64000  
logging console
```

87 Dynamic Trunk Negotiation with DTP

```
interface FastEthernet0/1  
switchport mode dynamic desirable
```

88 Router Routing Protocol Verification Commands

```
show ip route  
show ip protocols  
show ip ospf neighbor  
show ip eigrp neighbors  
show ip bgp summary
```

89 Lab 97: Layer 3 Switch SVI Configuration

```
interface vlan 10
ip address 192.168.10.1 255.255.255.0
no shutdown
ip routing
```

90 PPPoE Server Setup (Simulation)

```
bba-group pppoe global
virtual-template 1

interface Virtual-Template1
ip unnumbered FastEthernet0/0
peer default ip address pool PPPoE
ppp authentication pap

ip local pool PPPoE 10.10.10.1 10.10.10.10
```

91 DHCP Option 66 and 67 (PXE Boot)

```
ip dhcp pool PXE
network 192.168.1.0 255.255.255.0
option 66 ascii "192.168.1.10"
option 67 ascii "pxelinux.0"
default-router 192.168.1.1
```

92 Configuration Backup with EEM (Embedded Event Manager)

```
event manager applet BackupConfig
event timer cron cron-entry "0 2 * * *"
action 1.0 cli command "enable"
action 2.0 cli command "copy running-config startup-config"
```