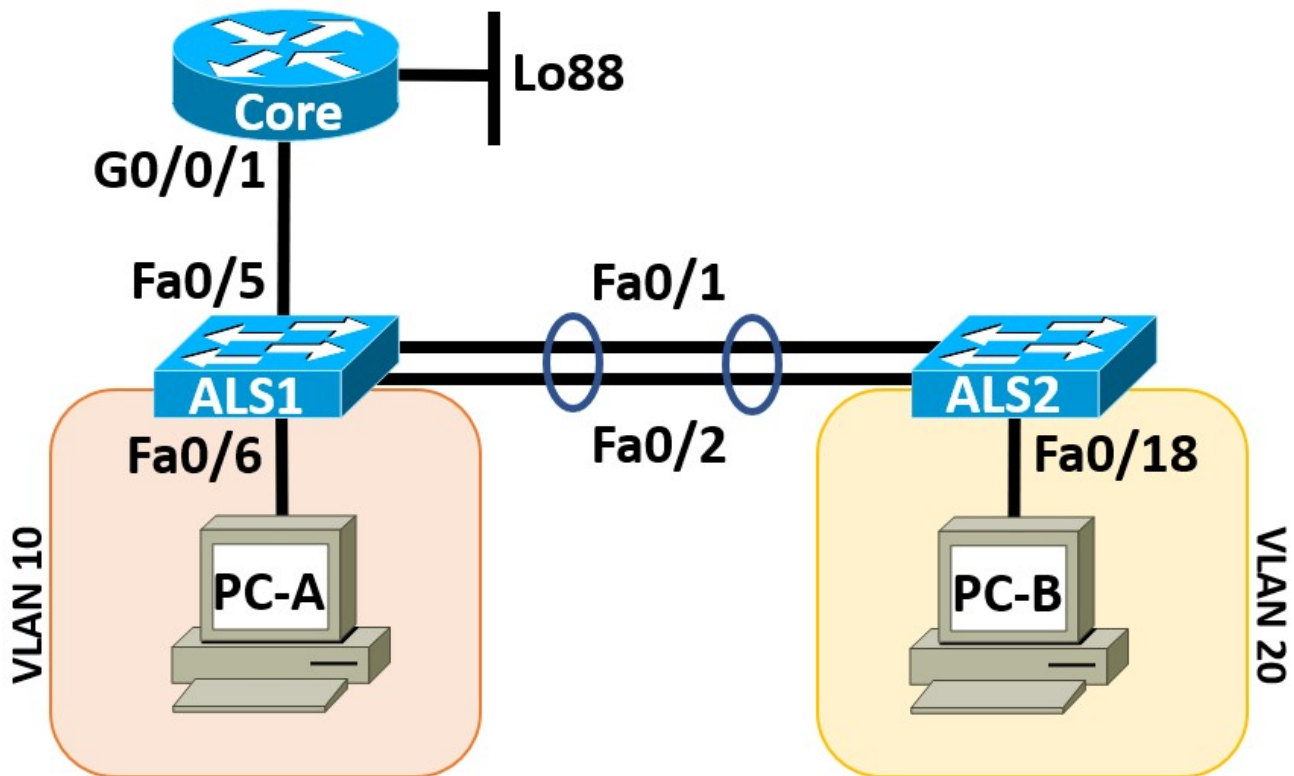


CCNA: Routing and Switching Essentials

Troubleshooting (Layer 2) – [NETLAB Edition](#)

Topology Diagram



These labs were created with Cisco 4300 series routers using IOS XE 16 and Cisco 2960 series switches. If you use any other device, you may need to adjust the broken configurations accordingly prior to beginning the lab.

Note: Although you are given the broken configurations, NETLAB will setup the networking devices using the broken configurations by default. All usernames (if any) are “**admin**”, all passwords (if any) are “**cisco**”.

IP Addressing Table

Device	Interface	IPv4 Address	IPv6 Address	IPv6 Link-Local	Default Gateway
Core	Lo88	9.3.3.1 /29	2001:DB8:DEAD::C/64	FE80::C	N/A
	G0/0/1.10		2001:DB8:ACAD:A10::C/64		
	G0/0/1.20				
	G0/0/1.30				
	G0/0/1.40				
	G0/0/1.50	172.17.50.5 /29			
ALS1	VLAN 40	172.17.40.10 /24 (DHCP)	N/A	N/A	
	VLAN 50	172.17.50.1 /29	N/A	N/A	
ALS2	VLAN 30	172.17.30.10 /28 (DHCP)	N/A	N/A	
	VLAN 50	172.17.50.2 /29	N/A	N/A	
PC-A	NIC	172.17.10.10 /26 (DHCP)	2001:DB8:ACAD:A10::10/64		172.17.10.1 FE80::C
PC-B	NIC	172.17.20.10 /27 (DHCP)	2001:DB8:ACAD:B20::10/64		172.17.20.1 FE80::C

Part 1: Basic Understanding of the Topology

- R1 is the DHCPv4 server for the network. The first 9 IPv4 addresses should be excluded from every pool. IPv6 should use static IP addressing.
- All access ports in use on S1 and S2 should be secured with port security and allow 2 MAC addresses (NETLAB requires the use of 2 MAC addresses).
- S1 and S2 have two trunk links in Etherchannel using LACP. S1 and S2 should be configured for PVST+ with BPDU guard.
- All devices should be configured for SSH access.
- Interfaces VLAN 30 and VLAN 40 on S2 and S1 respectfully should get their addresses via DHCP.

VLAN	VLAN Name
10	Orange
20	Gold
30	Brown
40	Green
50	MGMT&NATIVE
99	Blackhole

Part 2: Verify Network Connectivity

Step 1: Verify end-to-end connectivity.

- a. Take corrective action if results are other than expected.

From	Protocol	To	Expected Results	Success?	
PC-A	ping (IPv4 & IPv6)	PC-B	Pings should be successful.		
PC-A	ping (IPv4 & IPv6)	Loopback 88	Pings should be successful.		
PC-B	ping (IPv4 & IPv6)	Loopback 88	Pings should be successful.		
PC-A	ping (IPv4)	ALS2 – VLAN 30	Ping should be successful.		
PC-B	ping (IPv4)	ALS1 – VLAN 40	Ping should be successful.		
PC-A	ping (IPv4)	ALS1 – VLAN 50	Ping should be successful.		
PC-B	ping (IPv4)	ALS2 – VLAN 50	Ping should be successful.		

Note: It may be necessary to disable the PC firewall for pings to be successful

Step 2: Verify remote management.

- a. Take corrective action if results are other than expected.

From	Protocol	To	Expected Results	Success?
PC-A	SSH (IPv4)	ALS1	SSH should be successful.	
PC-B	SSH (IPv4)	ALS2	SSH should be successful.	
PC-B	SSH (IPv4)	Core	SSH should be successful.	

Part 3: Documentation

- a. This page of the lab needs to be turned in for the lab to be considered complete.

NAME #1	NAME #2	Reservation ID#	Date Completed

Step 1: Document the problems in the lab

- a. Please list the device, the technology (protocol) related to the issue in addition to any steps taken to resolve the issue itself.

No.	Device	Issue and Solution
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		