



Inter VLAN Routing



SWITCH Module 4

Lab 4.0: Prepare Topology

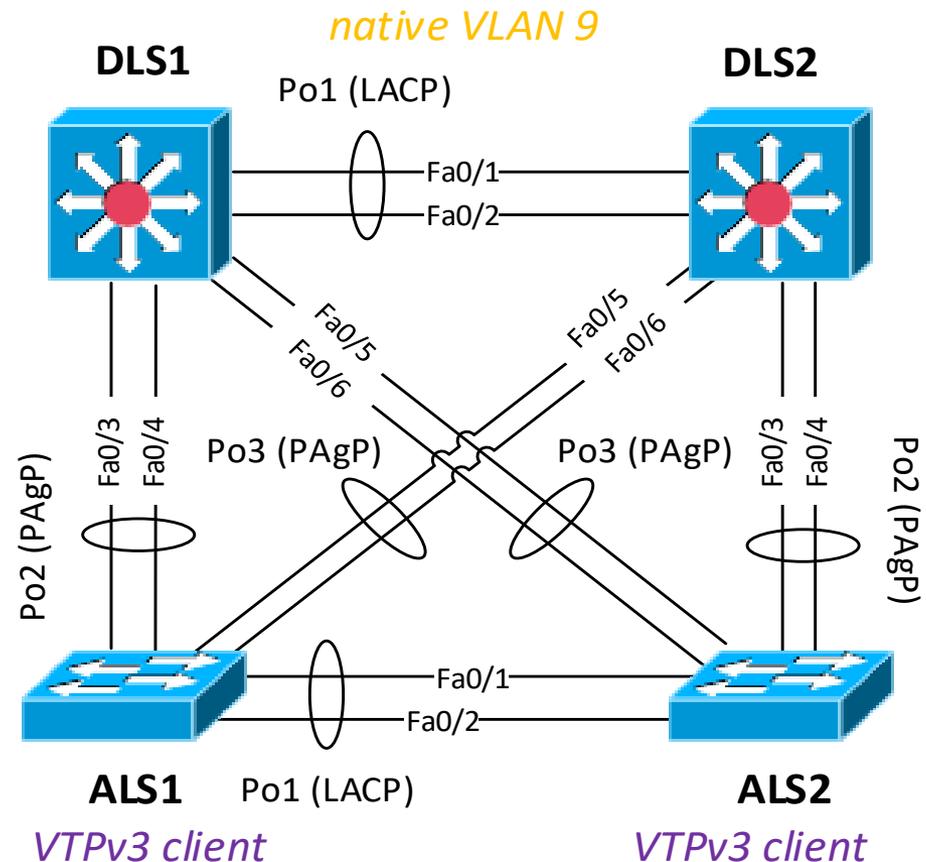
- Establish trunks
 - Dot1Q
 - Disable DTP
- VTPv3 for VLAN management
- Create VLANs
 - 9 – Native
 - 10 – UIFS
 - 20 – UPSY
 - 30 – UPGM
 - 40 – UITS
 - 50 – CVT
 - 99 – Management
 - 999 – Parking Lot
- Create Etherchannel
- Use RSTP and setup root bridges
 - # show interfaces trunks
 - # show etherchannel summary

root pri VLAN 10,20,30
root sec VLAN 40,50,99

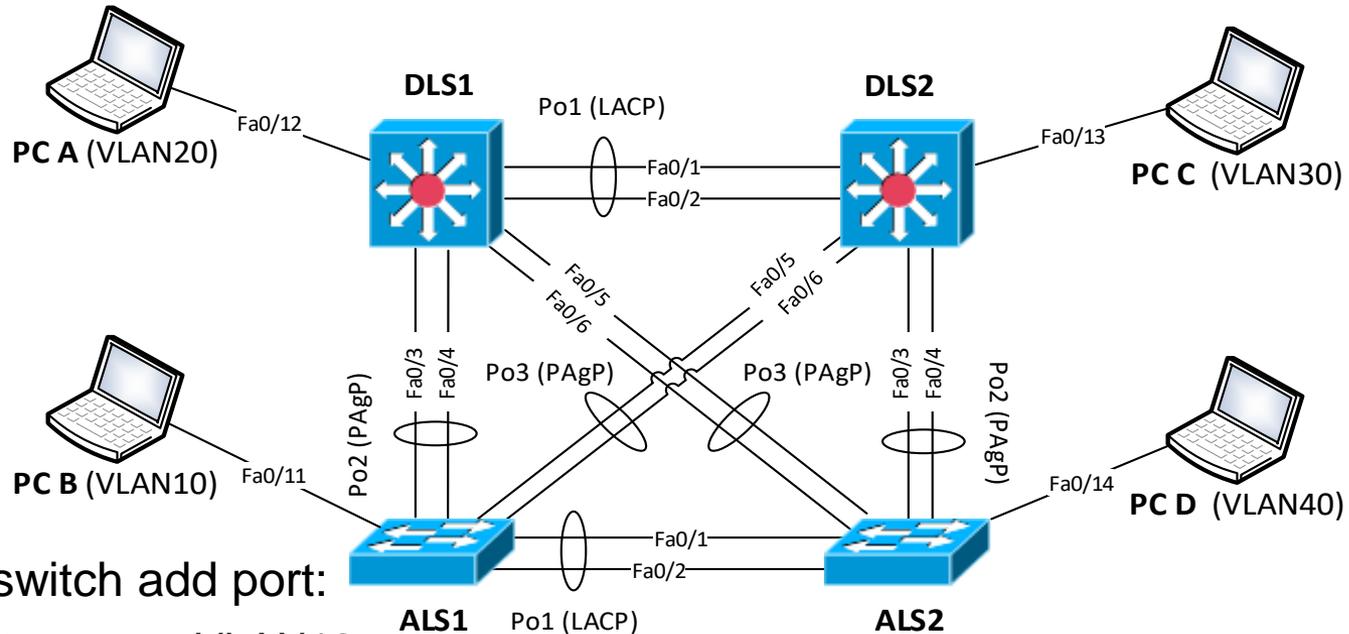
VTPv3 pri server

root sec VLAN 10,20,30
root pri VLAN 40,50,99

VTPv3 server



Lab 4.1: Enable Inter-VLAN Routing



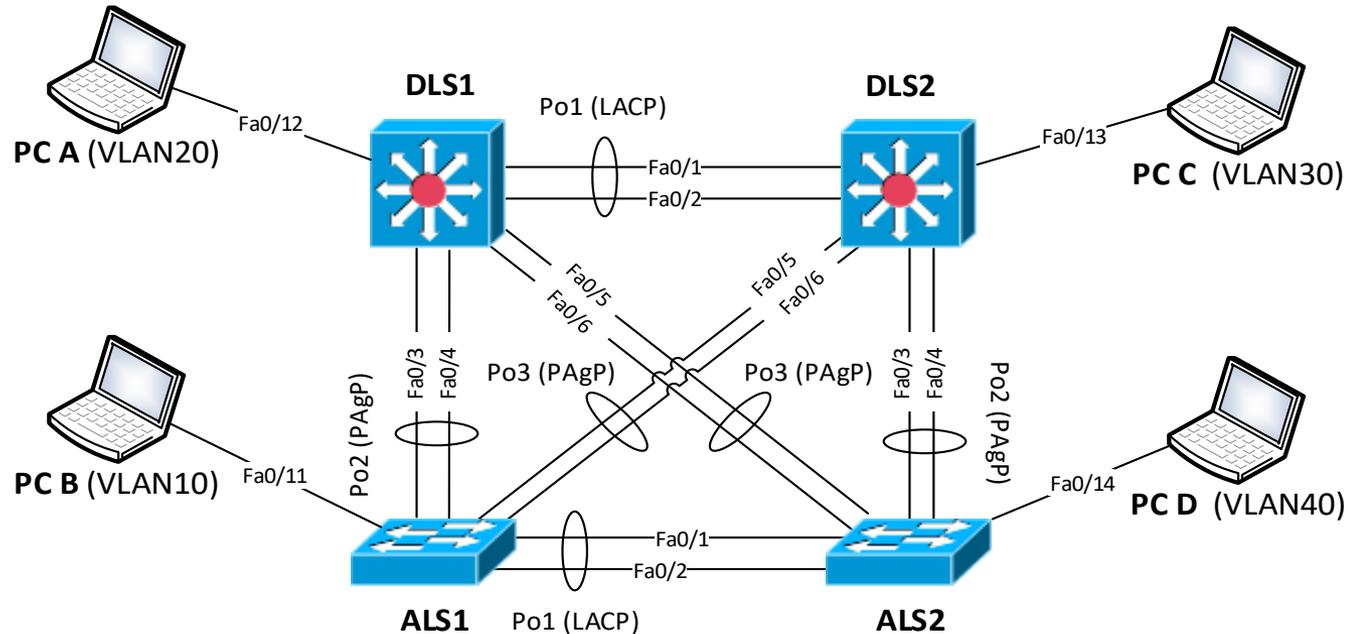
- On each switch add port:
 - Fa0/11 to access VLAN10
 - Fa0/12 to access VLAN20
 - Fa0/13 to access VLAN30
 - Fa0/14 to access VLAN40
 - Fa0/16-19 to suspended parking VLAN 999

- *LS*:
 - (conf-if) switchport host
 - (conf-if) sw access vlan X

- DLS*:
 - # show ip route
 - (conf)# ip routing
 - # show ip route

Lab 4.1: Configure SVI

VLAN	Address
VLAN10	10.0.10.0/24
VLAN20	10.0.20.0/24
VLAN30	10.0.30.0/24
VLAN40	10.0.40.0/24
VLAN50	10.0.50.0/24
VLAN99	10.0.99.0/24



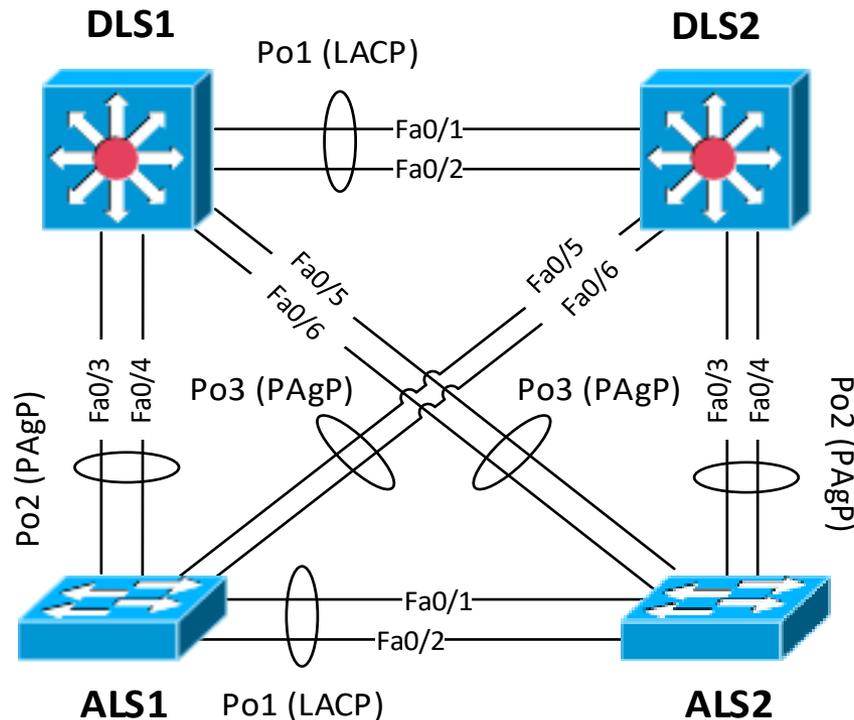
- Configure DLS* SVIs and hosts with appropriate first address from network range:

- (conf)# interface vlan 10
- (conf-if)# ip address 10.0.10.N
- (conf)# interface vlan 30
- (conf-if)# ip address 10.0.30.N
- (conf)# interface vlan 50
- (conf-if)# ip address 10.0.50.N

- (conf)# interface vlan 20
- (conf-if)# ip address 10.0.20.N
- (conf)# interface vlan 40
- (conf-if)# ip address 10.0.40.N
- (conf)# interface vlan 99
- (conf-if)# ip address 10.0.99.N

Lab 4.2: Routed Interface

- Disband interface Fa0/1 between DLS1-2 from Etherchannel and make it routed with 10.0.12.0/30
 - (conf)# interface Fa0/1
 - (conf-if)# no switchport
 - (conf-if)# ip addr 10.0.12.N 255.255.255.252
- Verify configuration
 - sh ip int bri
 - show ip route



Lab 4.3: Managing ALS

1) Allow secure Telnet access to *LS*

- (conf)# enable secret c
- (conf)# line vty
- (conf-line)# password c
- (conf-line)# login

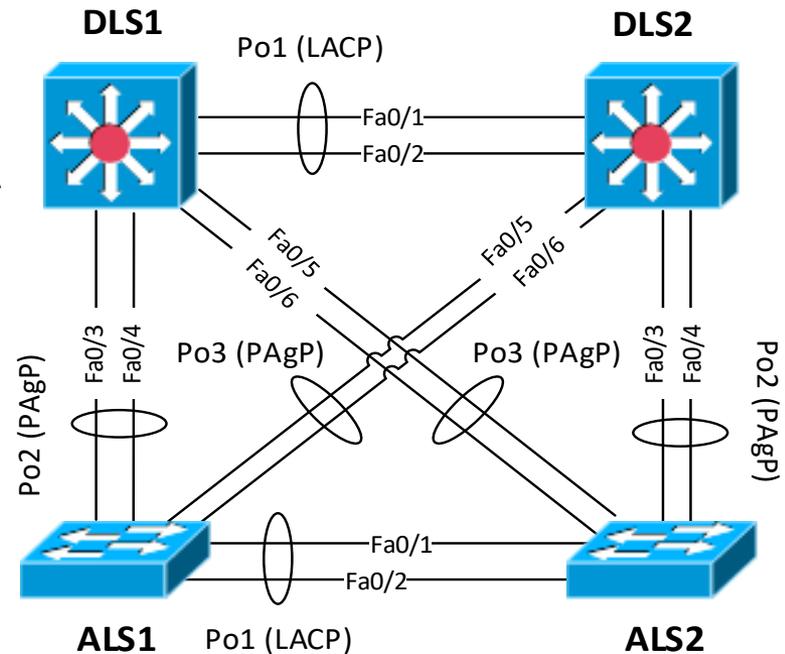
2) Allocate 3rd and 4th usable address to ALS* management interface:

- (conf)# interface VLAN 99
- (conf-if)#
ip address 10.0.99.X 255.255.255.0

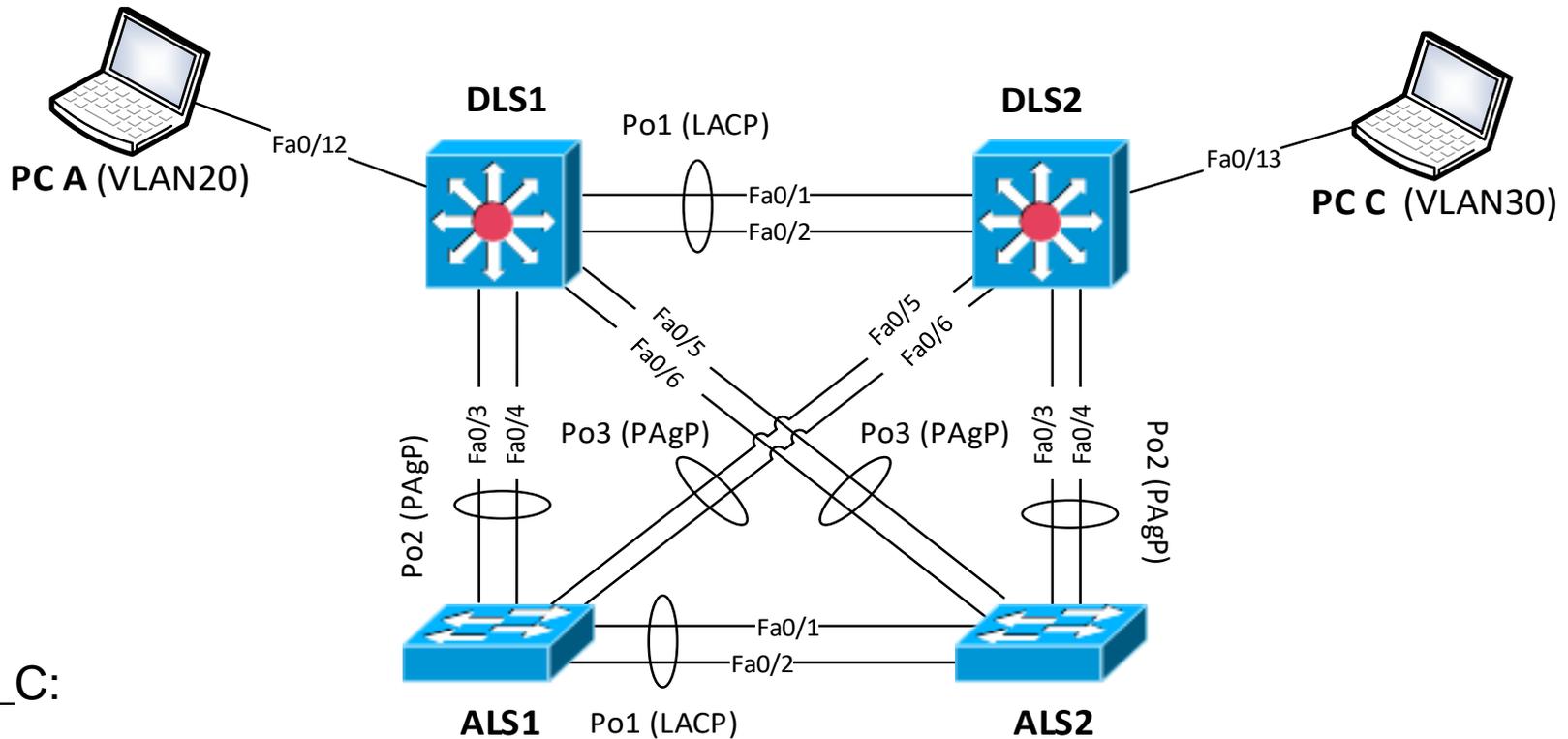
3) Try to telnet ALS* from DLS* using SVI 99 and SVI 10

4) Allow inter-VLAN communication on ALS* using DLS2 as gateway:

- (conf)# ip default-gateway

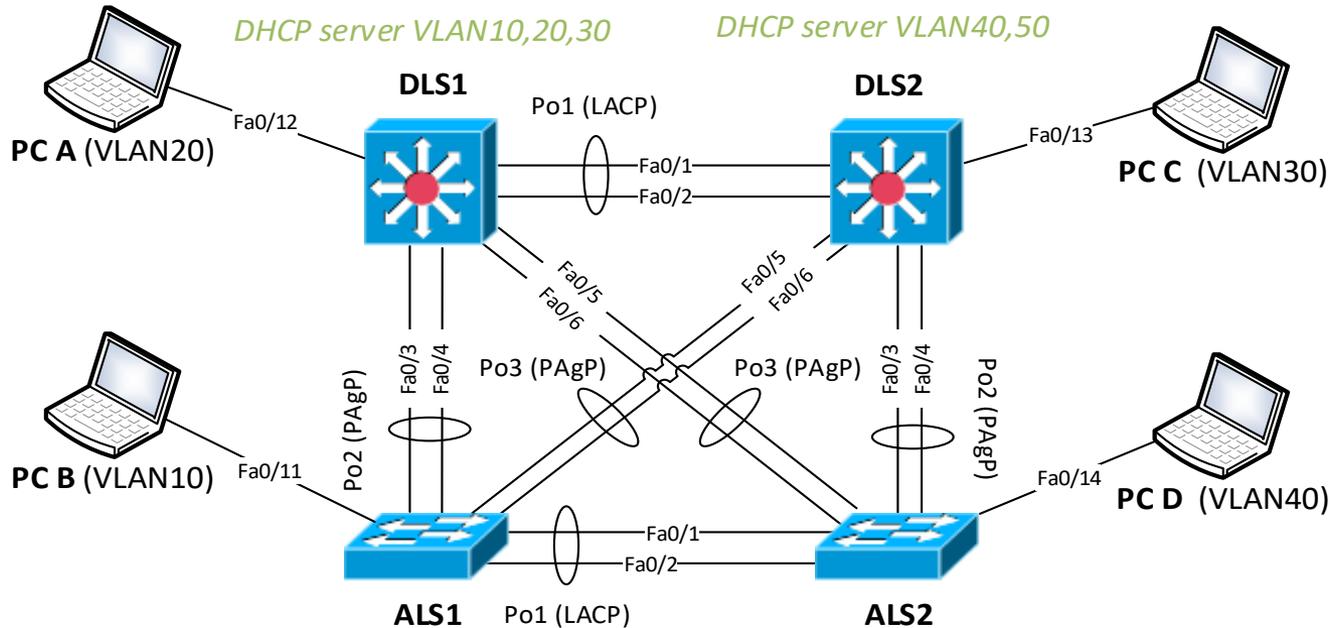


Lab 4.4: Observe CEF



- PC_C:
 - ping PC_A
- DLS1 and DLS2:
 - show ip arp
 - show ip cef PC_A [detail]
 - show adjacency nexthop [detail]

Lab 4.5: Benefit from DHCP



■ DLS1 as DHCP for VLAN10, 20, 30

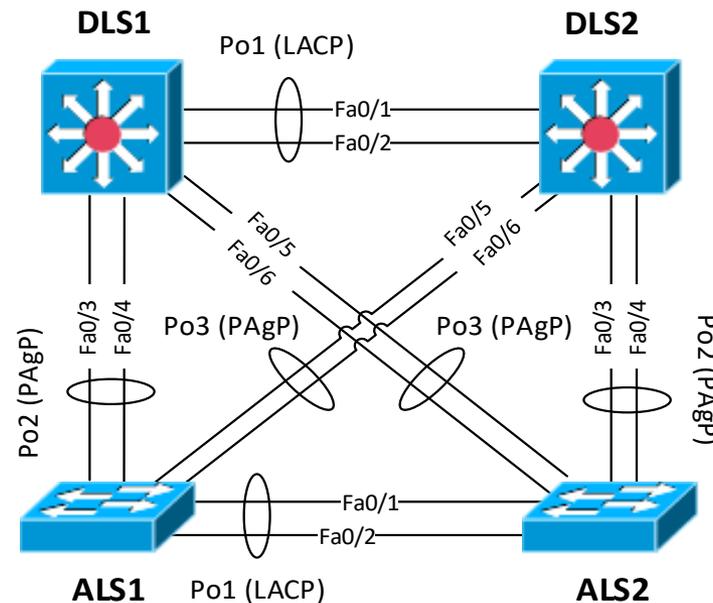
- `ip dhcp pool POOL10`
- `network 10.0.10.0 /24`
- `default-router 10.0.10.1`
- `ip dhcp pool POOL20`
- `network 10.0.20.0 /24`
- `default-router 10.0.20.1`
- `ip dhcp pool POOL30`
- `network 10.0.30.0 /24`
- `default-router 10.0.30.1`

■ DLS2 as DHCP for VLAN40, 50

- `ip dhcp pool POOL40`
- `network 10.0.40.0 /24`
- `default-router 10.0.40.2`
- `ip dhcp pool POOL50`
- `network 10.0.50.0 /24`
- `default-router 10.0.50.2`

Lab 4.6: Enable IPv6 Support on DLS*

- Verify IPv6 routing functionality on DLS*
 - (conf)# ipv6 unicast-routing
 - # show sdm prefer
- On devices without this support enable it:
 - (conf)# sdm prefer dual-ipv4-and-ipv6 default





Labs created by [Vladimír Veselý](#) for C2P practice.

The last update: 2016-10-27