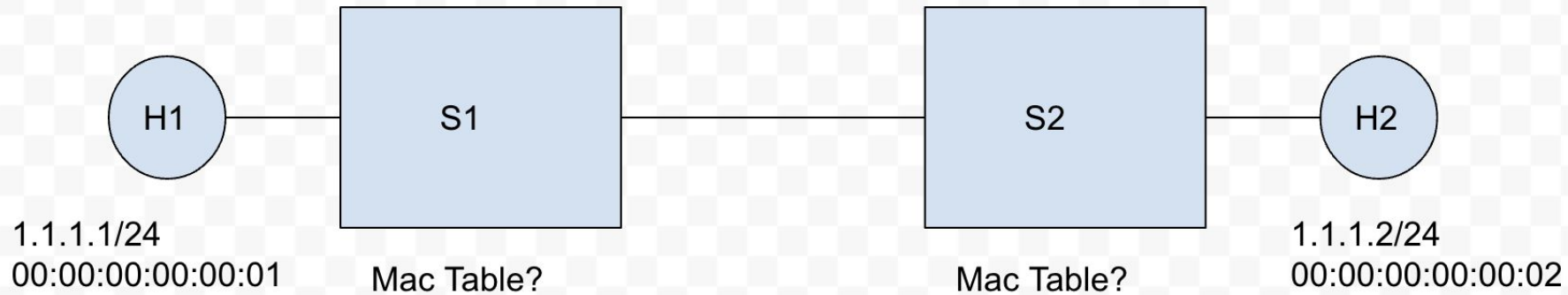
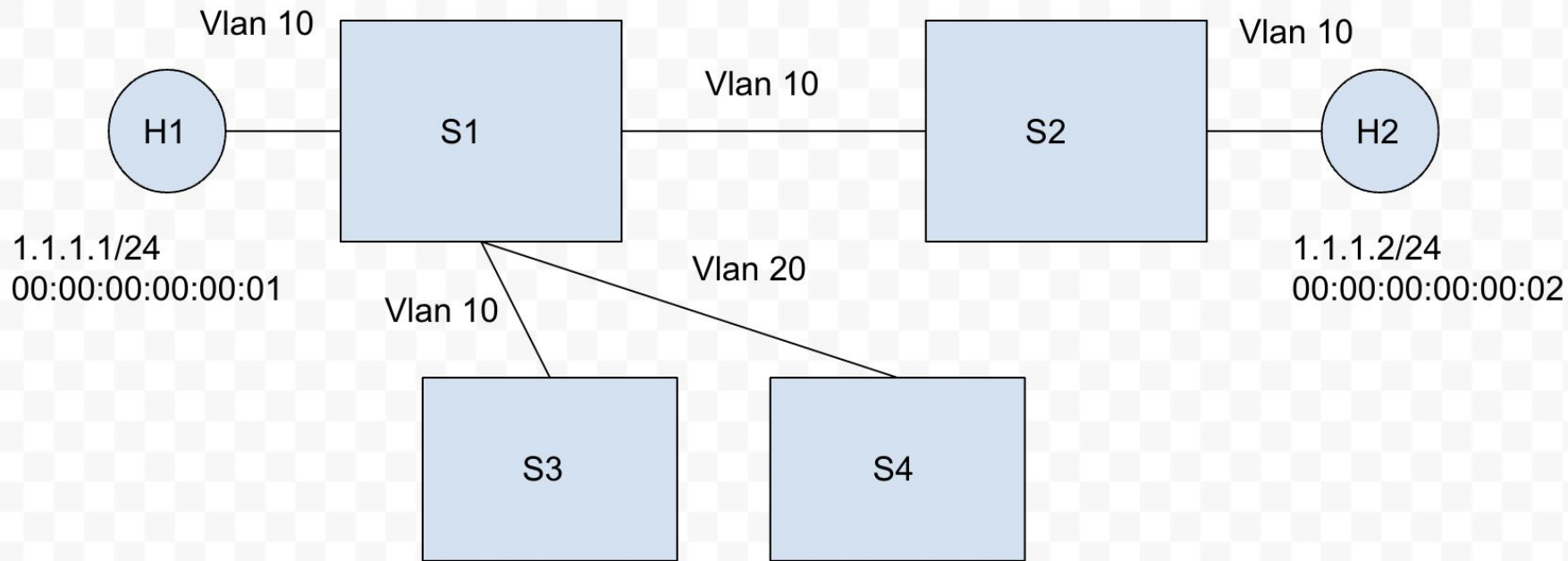
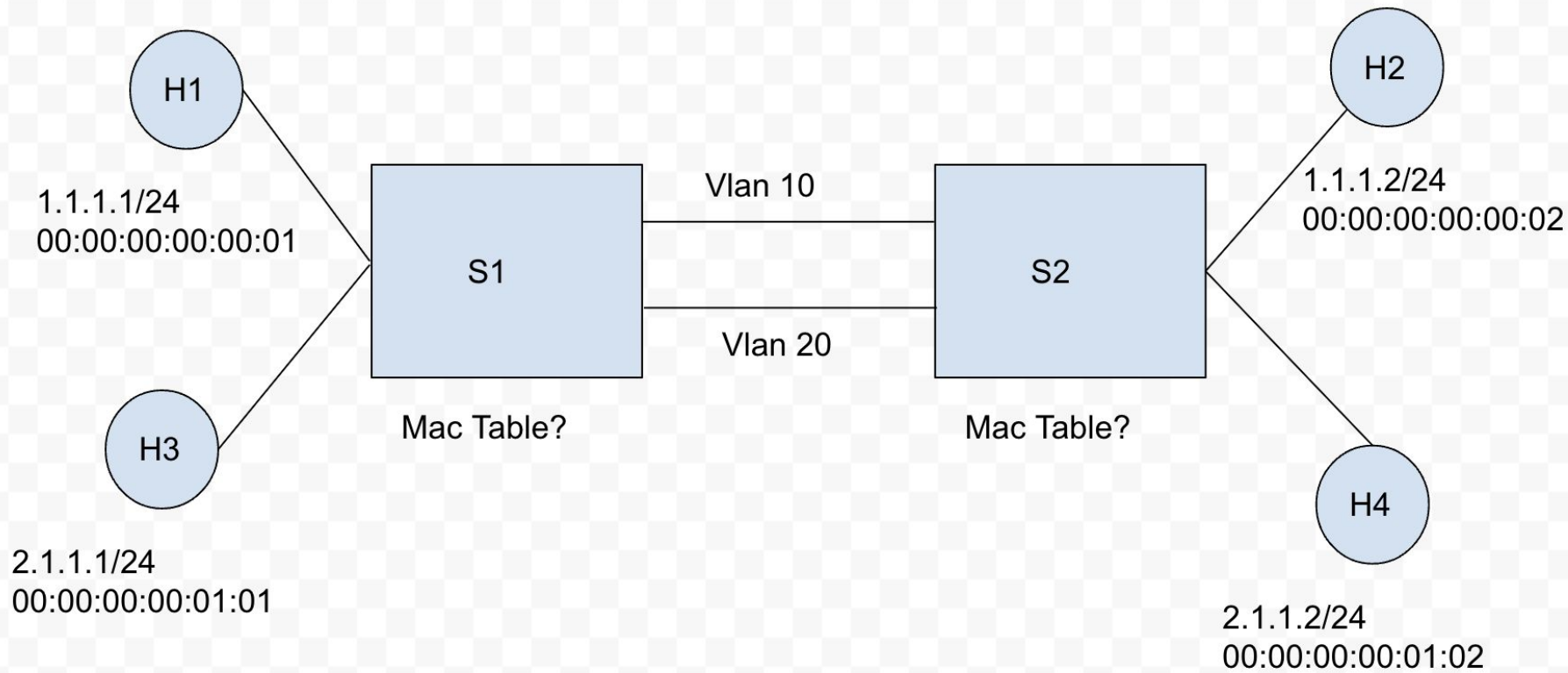
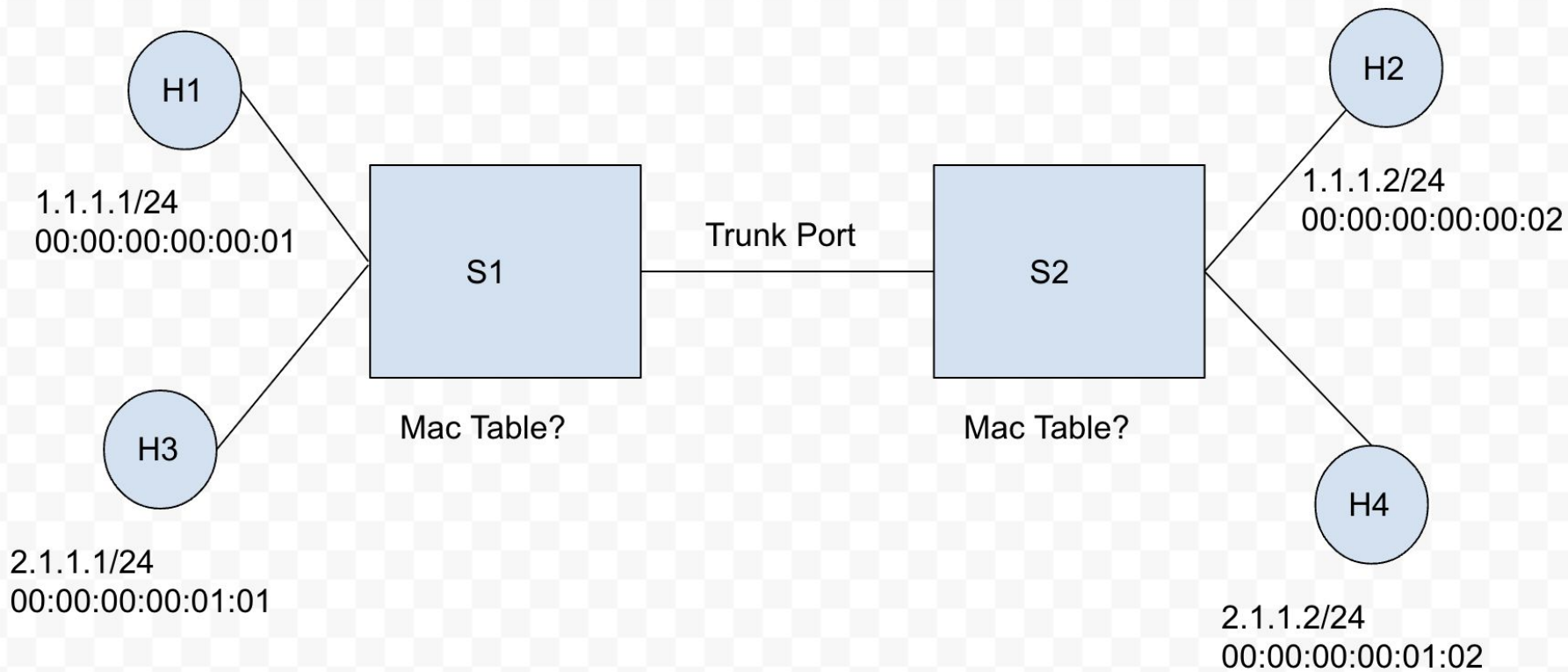


Switching Scenarios:



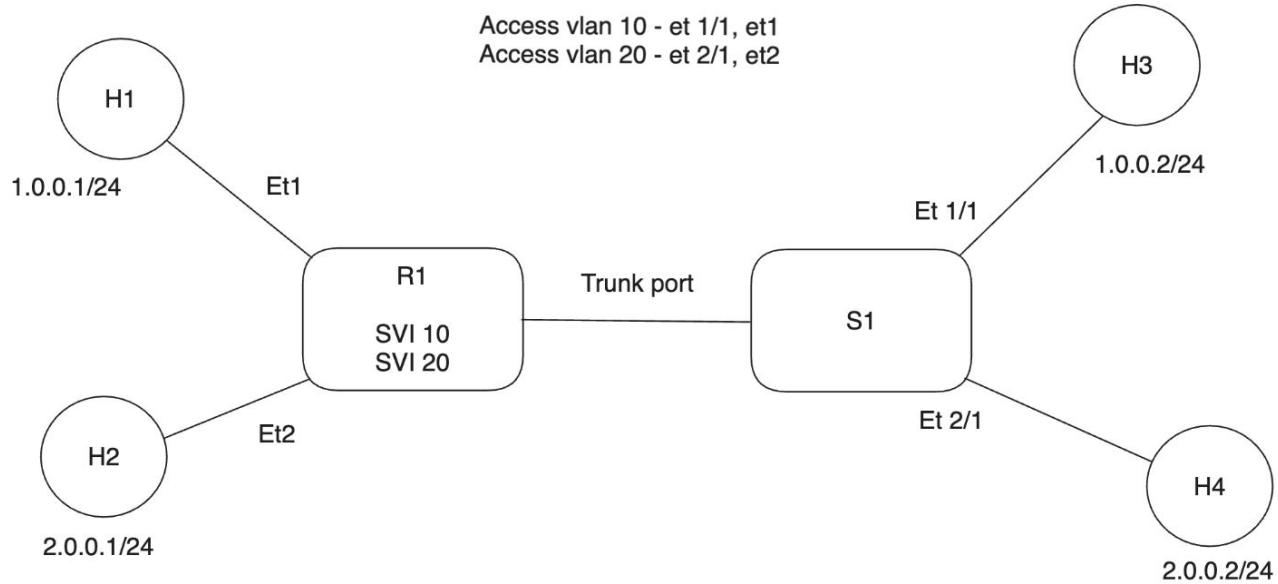






1. SMAC learning, MAC address table output
2. ARP
3. Unknown Unicast, Broadcast
4. STP

Routing Scenarios:

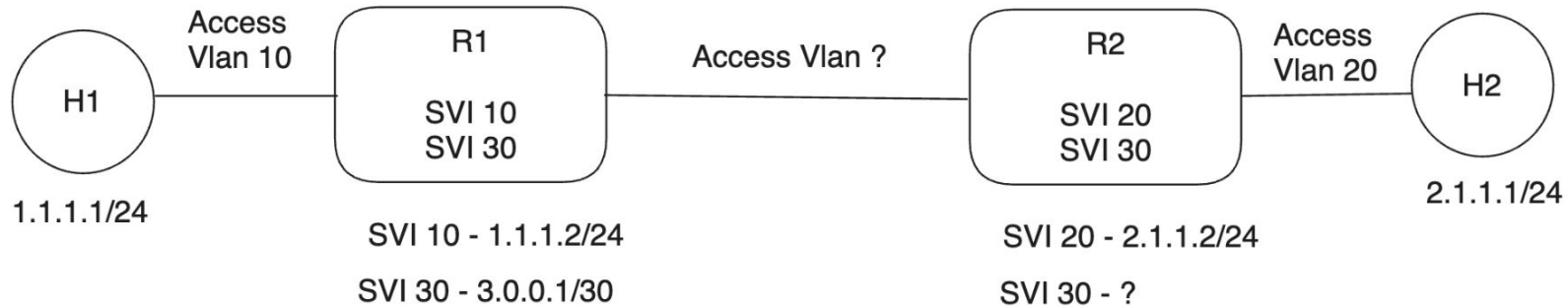


(1) What IP addresses will you configure for SVI 10 and 20 in R1 for the inter-vlan communication to work?

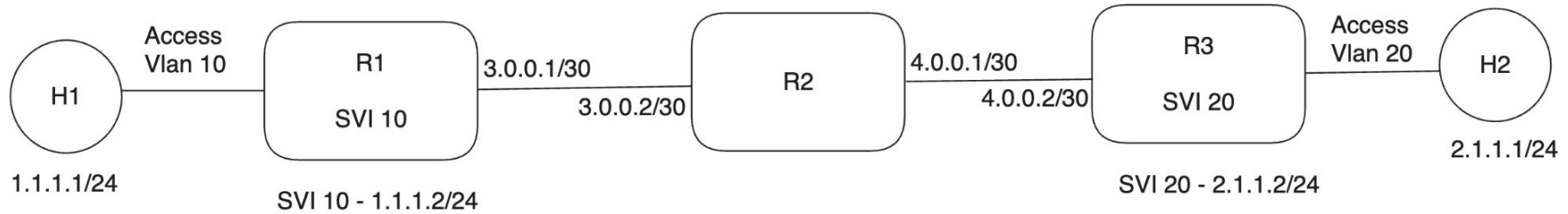
(2) What will be the following entries in R1:

1. Mac Address Table
2. ARP Table
3. Routing Table

(3) What all entries does switch 2 populate when the hosts communicate with each other?



What configurations do you need to establish a bi-directional communication between H1 and H2



Where and what static routes are needed in this topology for bidirectional ping to work between H1 and H2

What configs are need if you need to achieve the same with OSPF?

Multi-Chassis Link Aggregation (MLAG):

1) What is MLAG?

Multichassis Link Aggregation (MLAG) is the open-standard (and thus, Arista) term for linking a port-channel or Link Aggregation Group (LAG) to multiple switches instead of just one.

2) Why MLAG?

With a traditional network design, interconnecting three switches at Layer 2 (L2) results in a loop. Loops are bad, so Spanning Tree Protocol (STP) blocks the interface on the link farthest from the root.

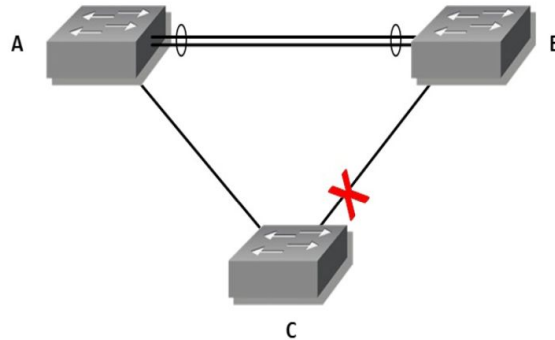
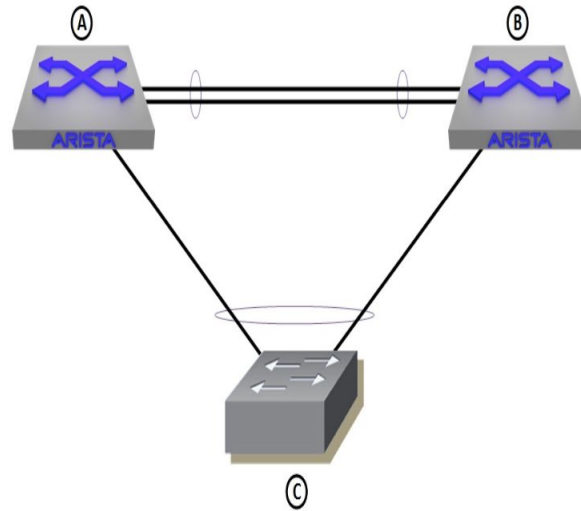


Figure 18-1. Traditional STP-blocked network loop

With MLAG, two Arista switches fool the third switch (or any other Link Aggregation Control Protocol [LACP]–capable device) into thinking that it is connected to a single device.



3) How to configure MLAG

To bring up MLAG peering:

On S1: (Complete the configs on S2)

```
switch1(config)# vlan 4094  
switch1(config-vlan-4094)# trunk group mpeer
```

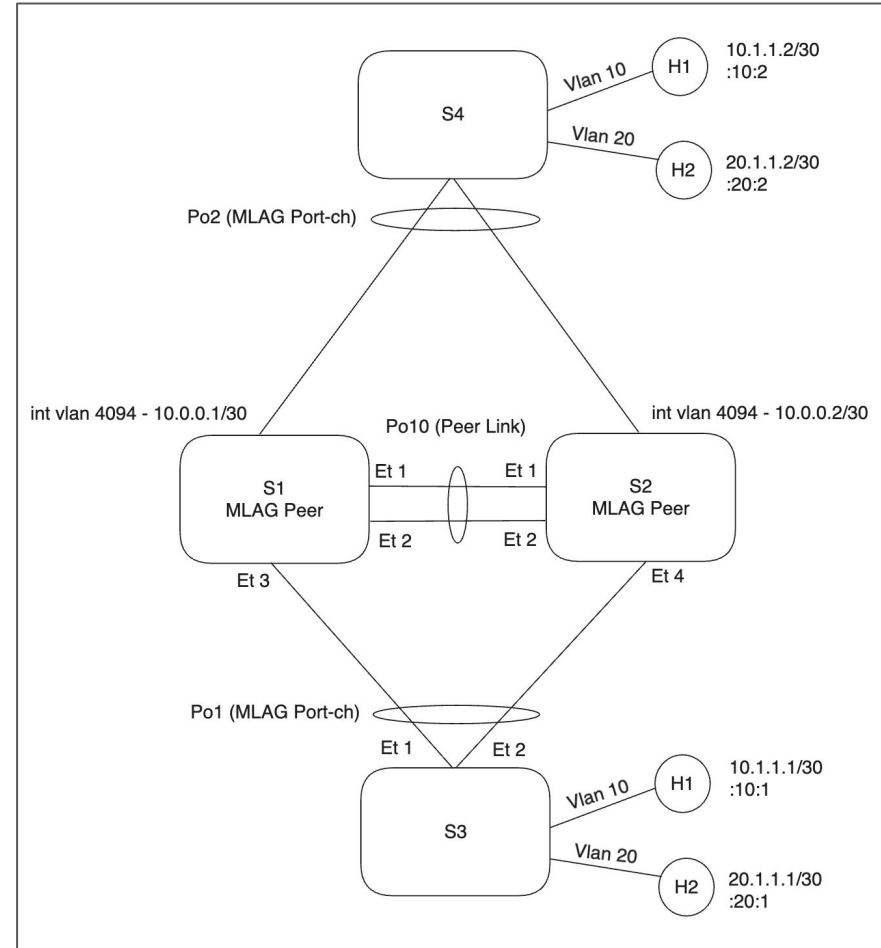
```
switch1(config)# interface ethernet 1-2  
switch1(config-if-et1-2)# channel-group 10 mode active
```

```
switch1(config-if-et1-2)# interface port-channel 10  
switch1(config-if-po10)# switchport mode trunk  
switch1(config-if-po10)# switchport trunk group mpeer
```

```
switch1(config)# interface vlan 4094  
switch1(config-if-vl4094)# ip address 10.0.0.1/30  
switch1(config-if-vl4094)# no autostate
```

```
switch1(config)# spanning-tree mode rapid-pvst  
switch1(config)# no spanning-tree vlan-id 4094
```

```
switch1(config)# mlag configuration  
switch1(config-mlag)#local-interface vlan 4094  
switch1(config-mlag)# peer-address 10.0.0.2  
switch1(config-mlag)# peer-link port-channel 10  
switch1(config-mlag)# domain-id mlagDomain (should match  
on both the mlag peer)
```



To bring up MLAG port-ch between S1 and S3:

On S1:

```
switch1(config)# interface ethernet 3
switch1(config-if-et3)# channel-group 1 mode active
```

```
switch1(config)#sh run int po1
interface Port-Channel1
 switchport mode trunk
 mlag 1
```

On S2:

```
switch1(config)# interface ethernet 4
switch1(config-if-et3)# channel-group 1 mode active
```

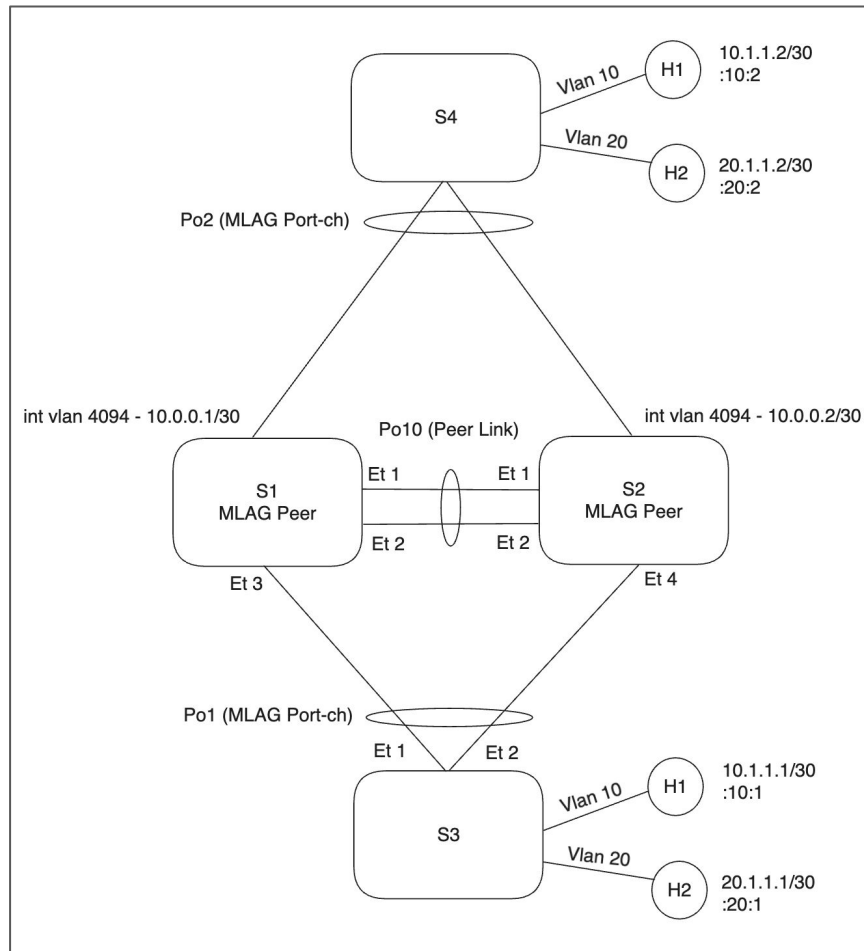
```
switch1(config)#sh run int po1
interface Port-Channel1
 switchport mode trunk
 mlag 1
```

On S3:

```
switch3(config)# interface ethernet 1-2
switch3(config-if-et1-2)# channel-group 1 mode active
```

```
switch3(config)#sh run int po1
interface Port-Channel1
 switchport mode trunk
```

Now try to configure on S1, S2 and S4 to bring up Po2



4) Commands needed to debug

switch1# show mlag

MLAG Configuration:

domain-id : mlagDomain
local-interface : Vlan4094
peer-address : 10.0.0.2
peer-link : Port-Channel10

MLAG Status:

state : **Active**
peer-link status : **Up**
local-int status : **Up**
system-id : 02:1c:FF:00:15:38

MLAG Ports:

Disabled : 0
Configured : 0
Inactive : 0
Active-partial : 0
Active-full : 1

switch1> show mlag interfaces detail

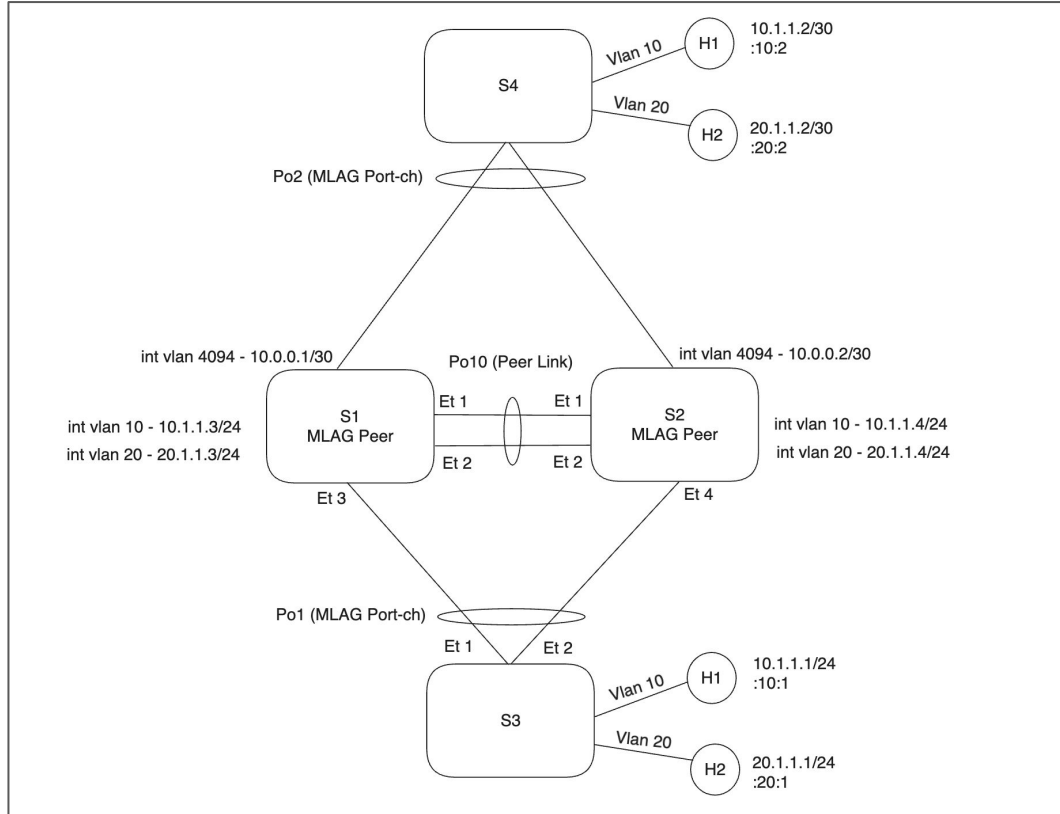
		local	remote					
mlag	state	local	remote	oper	config	last change	changes	

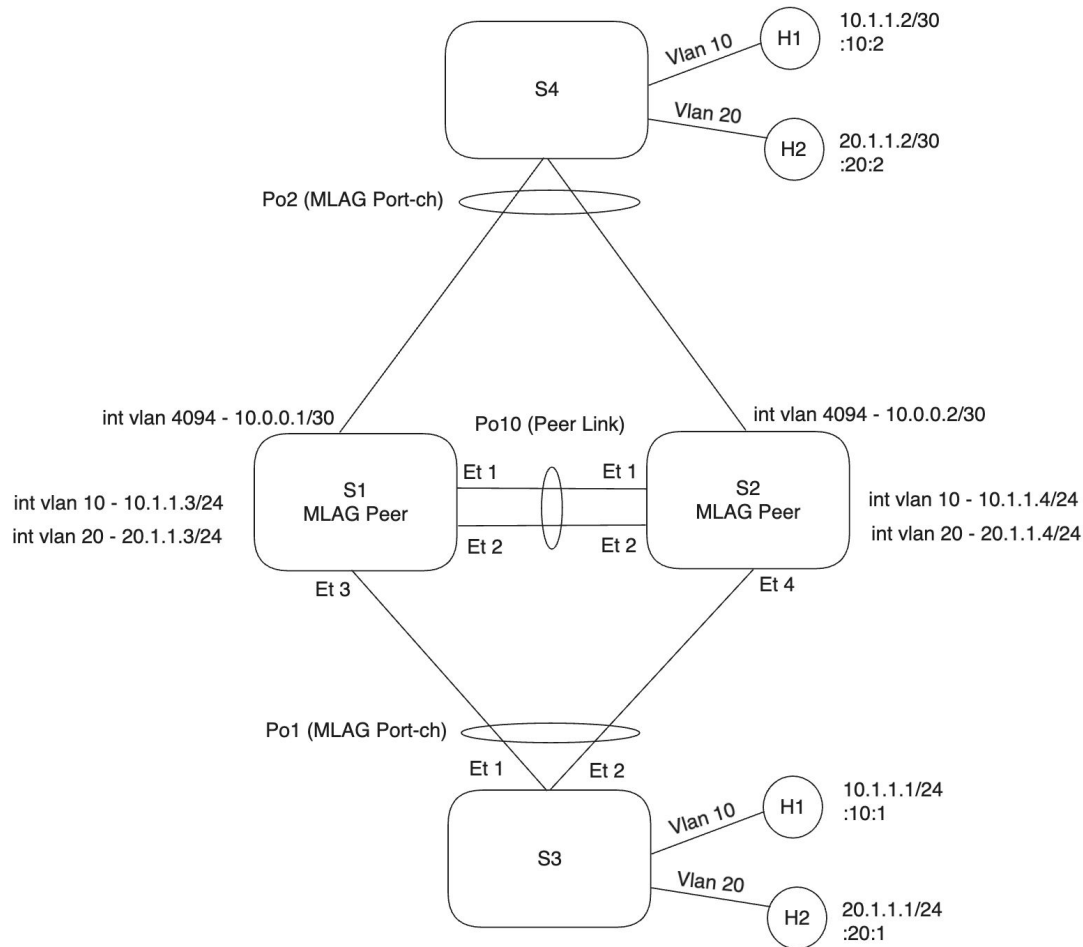
4	active-full	Po1	Po1	up/up	ena/ena	6 days, 1:19:26 ago	5	

Other commands:

sh mlag detail
sh spanning-tree
sh spanning-tree vlan 4094
sh vlan
sh int vlan 4094
sh port-ch

VARP (Virtual-ARP): What problem do you see in this topology wrt gateway for the hosts?





On S1:

ip virtual-router mac-address **aa:aa:aa:aa:aa:aa**

interface Vlan 10
ip address 10.1.1.3/24
ip virtual-router address 10.1.1.10/24

interface Vlan 20
ip address 10.1.1.3/24
ip virtual-router address 20.1.1.10/24

On S2:

ip virtual-router mac-address ?

interface Vlan 10
ip address 10.1.1.4/24
ip virtual-router address ?

interface Vlan 20
ip address 10.1.1.4/24
ip virtual-router address ?

The arp request initiated by s1 to host connected in s3 will be with it's physical IP address

switch# show ip virtual-router

IP virtual router is configured with MAC address: 24cd.5a29.cc31

Interface	IP Address	Virtual IP Address	Status	Protocol
Vlan15	10.1.1.3/24	10.1.1.15	up	up
Vlan20	10.12.1.6/24	10.1.1.51	up	up

switch#