

# Лабораторная работа №3 (Опциональное)

## • Настройка на коммутаторах протокола RAgP агрегирования каналов технологии EtherChannel

### ◦ L2-SW-1

```
L2-SW-1(config)#spanning-tree vlan 1 root primary
```

```
L2-SW-1(config)#int range g0/0-1
```

```
L2-SW-1(config-if-range)#shut
```

```
L2-SW-1(config-if-range)#channel-group 1 mode desirable
```

```
L2-SW-1(config-if-range)#no shut
```

```
L2-SW-1(config)#int range g0/2-3
```

```
L2-SW-1(config-if-range)#shut
```

```
L2-SW-1(config-if-range)#channel-group 2 mode desirable
```

```
L2-SW-1(config-if-range)#no shut
```

```
L2-SW-1(config)#int range g1/0-1
```

```
L2-SW-1(config-if-range)#shut
```

```
L2-SW-1(config-if-range)#channel-group 3 mode desirable
```

```
L2-SW-1(config-if-range)#no shut
```

```
L2-SW-1(config)#int range g1/2-3,g2/0
```

```
L2-SW-1(config-if-range)#shut
```

```
L2-SW-1(config-if-range)#channel-group 4 mode desirable
```

```
L2-SW-1(config-if-range)#no shut
```

```
L2-SW-1#sh int stats
```

```
Port-channel4
```

Switching path	Pkts In	Chars In	Pkts Out	Chars Out
Processor	814	75358	0	0
Route cache	0	0	0	0
Total	814	75358	0	0

```
Port-channel3
```

Switching path	Pkts In	Chars In	Pkts Out	Chars Out
Processor	615	48806	0	0
Route cache	0	0	0	0
Total	615	48806	0	0

```
Port-channel2
```

Switching path	Pkts In	Chars In	Pkts Out	Chars Out
Processor	1018	69320	0	0
Route cache	0	0	0	0

	Total	1018	69320	0	0
--	-------	------	-------	---	---

Port-channel1

Switching path	Pkts In	Chars In	Pkts Out	Chars Out
Processor	651	54957	0	0
Route cache	0	0	0	0
Total	651	54957	0	0

L2-SW-1#sh sp

VLAN0001

Spanning tree enabled protocol ieee

Root ID Priority 24577

Address 0c69.79be.0000

This bridge is the root

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID Priority 24577 (priority 24576 sys-id-ext 1)

Address 0c69.79be.0000

Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Aging Time 300 sec

Interface	Role	Sts	Cost	Prio.Nbr	Type
-----	----	---	-----	-----	-----
Po1	Desg	FWD	3	128.65	Shr
Po2	Desg	FWD	3	128.66	Shr
Po3	Desg	FWD	3	128.67	Shr
Po4	Desg	FWD	4	128.68	Shr

## ◦ L2-SW-2

L2-SW-2(config)#spanning-tree vlan 1 root secondary

L2-SW-2(config)#int range g0/0-2

L2-SW-2(config-if-range)#shut

L2-SW-2(config-if-range)#channel-group 4 mode auto

L2-SW-2(config-if-range)#no shut

L2-SW-2(config)#int range g0/3,g1/0

L2-SW-2(config-if-range)#shut

L2-SW-2(config-if-range)#channel-group 5 mode desirable

L2-SW-2(config-if-range)#no shut

L2-SW-2(config)#int range g1/1-2

L2-SW-2(config-if-range)#shut

L2-SW-2(config-if-range)#channel-group 6 mode desirable

L2-SW-2(config-if-range)#no shut

L2-SW-2(config)#int range g1/3,g2/0

```
L2-SW-2 (config-if-range) #shut
L2-SW-2 (config-if-range) #channel-group 7 mode desirable
L2-SW-2 (config-if-range) #no shut
```

```
L2-SW-2#sh int stats
```

```
Port-channel7
```

Switching path	Pkts In	Chars In	Pkts Out	Chars Out
Processor	1040	78494	0	0
Route cache	0	0	0	0
Total	1040	78494	0	0

```
Port-channel6
```

Switching path	Pkts In	Chars In	Pkts Out	Chars Out
Processor	1413	98648	0	0
Route cache	0	0	0	0
Total	1413	98648	0	0

```
Port-channel5
```

Switching path	Pkts In	Chars In	Pkts Out	Chars Out
Processor	1014	77379	0	0
Route cache	0	0	0	0
Total	1014	77379	0	0

```
Port-channel4
```

Switching path	Pkts In	Chars In	Pkts Out	Chars Out
Processor	1954	139927	0	0
Route cache	0	0	0	0
Total	1954	139927	0	0

```
L2-SW-2#sh sp
```

```
VLAN0001
```

```
Spanning tree enabled protocol ieee
```

```
Root ID      Priority      24577
Address      0c69.79be.0000
Cost         4
Port         65 (Port-channel4)
Hello Time    2 sec    Max Age 20 sec    Forward Delay 15 sec
```

```
Bridge ID    Priority      28673 (priority 28672 sys-id-ext 1)
Address      0c6c.13ea.0000
Hello Time    2 sec    Max Age 20 sec    Forward Delay 15 sec
Aging Time    300 sec
```

Interface	Role	Sts	Cost	Prio.Nbr	Type
Po4	Root	FWD	4	128.65	Shr
Po5	Altn	BLK	100	128.66	Shr
Po6	Altn	BLK	3	128.67	Shr
Po7	Altn	BLK	3	128.68	Shr

## ○ L2-SW-3

```
L2-SW-3(config)#int range g0/0-1
L2-SW-3(config-if-range)#shut
L2-SW-3(config-if-range)#channel-group 1 mode auto
L2-SW-3(config-if-range)#no shut
```

```
L2-SW-3(config)#int range g0/2-3
L2-SW-3(config-if-range)#shut
L2-SW-3(config-if-range)#channel-group 7 mode auto
L2-SW-3(config-if-range)#no shut
```

```
L2-SW-3#sh int stats
```

```
Port-channel7
```

Switching path	Pkts In	Chars In	Pkts Out	Chars Out
Processor	1326	97401	0	0
Route cache	0	0	0	0
Total	1326	97401	0	0

```
Port-channel11
```

Switching path	Pkts In	Chars In	Pkts Out	Chars Out
Processor	1782	119550	0	0
Route cache	0	0	0	0
Total	1782	119550	0	0

```
L2-SW-3#sh sp
```

```
VLAN0001
```

```
Spanning tree enabled protocol ieee
```

```
Root ID    Priority    24577
```

```
Address    0c69.79be.0000
```

```
Cost       3
```

```
Port       65 (Port-channel11)
```

```
Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
```

```
Bridge ID  Priority    32769 (priority 32768 sys-id-ext 1)
```

```
Address    0cc1.9de2.0000
```

```
Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
```

```
Aging Time 300 sec
```

Interface	Role	Sts	Cost	Prio.Nbr	Type
Gi1/0	Desg	FWD	4	128.5	Shr
Gi1/1	Desg	FWD	4	128.6	Shr
Po1	Root	FWD	3	128.65	Shr
Po7	Desg	FWD	3	128.66	Shr

## ○ L2-SW-4

```
L2-SW-4(config)#int range g0/0-1
L2-SW-4(config-if-range)#shut
L2-SW-4(config-if-range)#channel-group 2 mode auto
L2-SW-4(config-if-range)#no shut
```

```
L2-SW-4(config)#int range g0/2-3
L2-SW-4(config-if-range)#shut
L2-SW-4(config-if-range)#channel-group 6 mode auto
L2-SW-4(config-if-range)#no shut
```

```
L2-SW-4#sh int stats
```

```
Port-channel6
```

Switching path	Pkts In	Chars In	Pkts Out	Chars Out
Processor	727	62878	0	0
Route cache	0	0	0	0
Total	727	62878	0	0

```
Port-channel2
```

Switching path	Pkts In	Chars In	Pkts Out	Chars Out
Processor	1257	90291	0	0
Route cache	0	0	0	0
Total	1257	90291	0	0

```
L2-SW-4#sh sp
```

```
VLAN0001
```

```
Spanning tree enabled protocol ieee
```

```
Root ID      Priority      24577
```

```
Address      0c69.79be.0000
```

```
Cost          3
```

```
Port          65 (Port-channel2)
```

```
Hello Time    2 sec  Max Age 20 sec  Forward Delay 15 sec
```

```
Bridge ID     Priority      32769 (priority 32768 sys-id-ext 1)
```

```
Address      0c1d.ee4d.0000
```

```
Hello Time    2 sec  Max Age 20 sec  Forward Delay 15 sec
```

```
Aging Time    300 sec
```

Interface	Role	Sts	Cost	Prio.Nbr	Type
Gi1/0	Desg	FWD	4	128.5	Shr
Gi1/1	Desg	FWD	4	128.6	Shr
Po2	Root	FWD	3	128.65	Shr
Po6	Desg	FWD	3	128.66	Shr

## ○ L2-SW-5

```
L2-SW-5(config)#int range g0/0-1
L2-SW-5(config-if-range)#shut
L2-SW-5(config-if-range)#channel-group 3 mode auto
L2-SW-5(config-if-range)#no shut
```

```
L2-SW-5(config)#int range g0/2-3
L2-SW-5(config-if-range)#shut
L2-SW-5(config-if-range)#channel-group 5 mode auto
L2-SW-5(config-if-range)#no shut
```

```
L2-SW-5#sh int stats
```

```
Port-channel5
```

Switching path	Pkts In	Chars In	Pkts Out	Chars Out
Processor	1179	87652	0	0
Route cache	0	0	0	0
Total	1179	87652	0	0

```
Port-channel3
```

Switching path	Pkts In	Chars In	Pkts Out	Chars Out
Processor	1666	112550	0	0
Route cache	0	0	0	0
Total	1666	112550	0	0

```
L2-SW-5#sh sp
```

```
VLAN0001
```

```
Spanning tree enabled protocol ieee
```

```
Root ID    Priority    24577
```

```
Address    0c69.79be.0000
```

```
Cost       3
```

```
Port       65 (Port-channel3)
```

```
Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
```

```
Bridge ID  Priority    32769 (priority 32768 sys-id-ext 1)
```

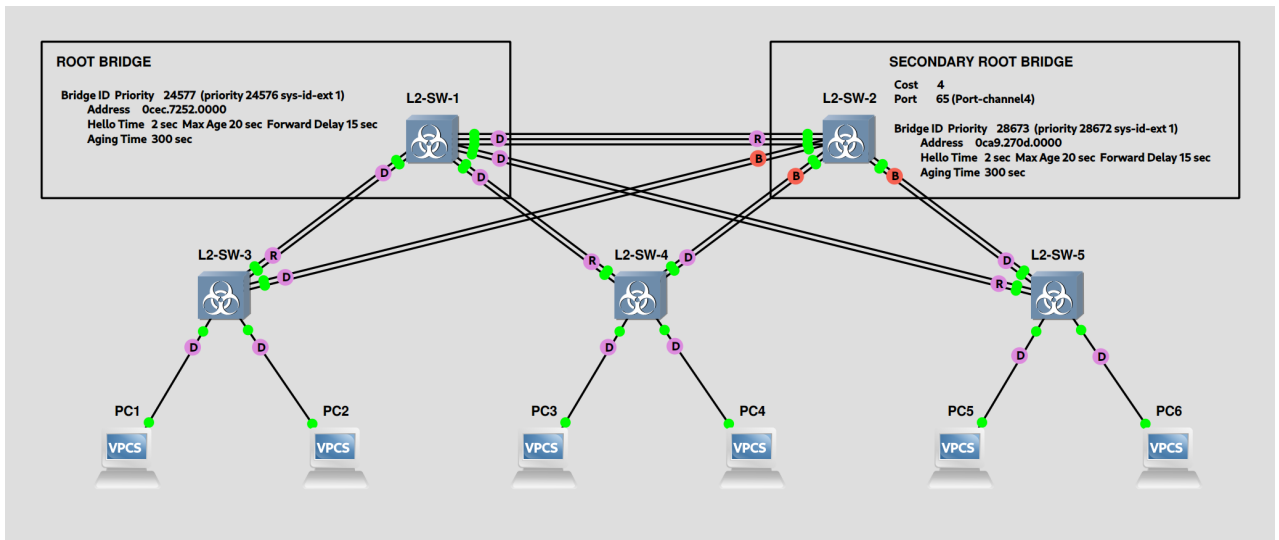
```
Address    0cec.adfb.0000
```

```
Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
```

```
Aging Time 300 sec
```

Interface	Role	Sts	Cost	Prio.Nbr	Type
Gi1/0	Desg	FWD	4	128.5	Shr
Gi1/1	Desg	FWD	4	128.6	Shr
Po3	Root	FWD	3	128.65	Shr
Po5	Desg	FWD	3	128.66	Shr

## ○ Схема сети



## • Проверка доступности персональных компьютеров

### ○ PC1

#### ■ To PC2

```
PC1> ping 192.168.1.2
```

```
84 bytes from 192.168.1.2 icmp_seq=1 ttl=64 time=0.794 ms
84 bytes from 192.168.1.2 icmp_seq=2 ttl=64 time=5.586 ms
84 bytes from 192.168.1.2 icmp_seq=3 ttl=64 time=3.123 ms
84 bytes from 192.168.1.2 icmp_seq=4 ttl=64 time=0.864 ms
84 bytes from 192.168.1.2 icmp_seq=5 ttl=64 time=3.115 ms
```

#### ■ To PC3

```
PC1> ping 192.168.2.1
```

```
84 bytes from 192.168.2.1 icmp_seq=1 ttl=64 time=14.879 ms
84 bytes from 192.168.2.1 icmp_seq=2 ttl=64 time=7.953 ms
84 bytes from 192.168.2.1 icmp_seq=3 ttl=64 time=2.063 ms
84 bytes from 192.168.2.1 icmp_seq=4 ttl=64 time=4.729 ms
84 bytes from 192.168.2.1 icmp_seq=5 ttl=64 time=7.395 ms
```

#### ■ To PC4

```
PC1> ping 192.168.2.2
```

```
84 bytes from 192.168.2.2 icmp_seq=1 ttl=64 time=13.727 ms
```

```
84 bytes from 192.168.2.2 icmp_seq=2 ttl=64 time=7.796 ms
84 bytes from 192.168.2.2 icmp_seq=3 ttl=64 time=6.983 ms
84 bytes from 192.168.2.2 icmp_seq=4 ttl=64 time=16.224 ms
84 bytes from 192.168.2.2 icmp_seq=5 ttl=64 time=6.783 ms
```

## ■ To PC5

```
PC1> ping 192.168.3.1
```

```
192.168.3.1 icmp_seq=1 timeout
84 bytes from 192.168.3.1 icmp_seq=2 ttl=64 time=8.101 ms
84 bytes from 192.168.3.1 icmp_seq=3 ttl=64 time=7.470 ms
84 bytes from 192.168.3.1 icmp_seq=4 ttl=64 time=6.371 ms
84 bytes from 192.168.3.1 icmp_seq=5 ttl=64 time=3.748 ms
```

## ■ To PC6

```
PC1> ping 192.168.3.2
```

```
84 bytes from 192.168.3.2 icmp_seq=1 ttl=64 time=6.621 ms
84 bytes from 192.168.3.2 icmp_seq=2 ttl=64 time=4.077 ms
84 bytes from 192.168.3.2 icmp_seq=3 ttl=64 time=7.611 ms
84 bytes from 192.168.3.2 icmp_seq=4 ttl=64 time=8.118 ms
84 bytes from 192.168.3.2 icmp_seq=5 ttl=64 time=7.424 ms
```

# ○ PC2

## ■ To PC3

```
PC2> ping 192.168.2.1
```

```
84 bytes from 192.168.2.1 icmp_seq=1 ttl=64 time=10.735 ms
84 bytes from 192.168.2.1 icmp_seq=2 ttl=64 time=6.577 ms
84 bytes from 192.168.2.1 icmp_seq=3 ttl=64 time=1.581 ms
84 bytes from 192.168.2.1 icmp_seq=4 ttl=64 time=2.579 ms
84 bytes from 192.168.2.1 icmp_seq=5 ttl=64 time=8.135 ms
```

## ■ To PC4

```
PC2> ping 192.168.2.2
```

```
192.168.2.2 icmp_seq=1 timeout
192.168.2.2 icmp_seq=2 timeout
84 bytes from 192.168.2.2 icmp_seq=3 ttl=64 time=9.647 ms
84 bytes from 192.168.2.2 icmp_seq=4 ttl=64 time=6.994 ms
```



```
84 bytes from 192.168.2.2 icmp_seq=5 ttl=64 time=13.802 ms
```

- To PC5

```
PC2> ping 192.168.3.1
```

```
84 bytes from 192.168.3.1 icmp_seq=1 ttl=64 time=12.516 ms
84 bytes from 192.168.3.1 icmp_seq=2 ttl=64 time=3.640 ms
84 bytes from 192.168.3.1 icmp_seq=3 ttl=64 time=5.990 ms
84 bytes from 192.168.3.1 icmp_seq=4 ttl=64 time=1.794 ms
84 bytes from 192.168.3.1 icmp_seq=5 ttl=64 time=1.809 ms
```

- To PC6

```
PC2> ping 192.168.3.2
```

```
84 bytes from 192.168.3.2 icmp_seq=1 ttl=64 time=9.537 ms
84 bytes from 192.168.3.2 icmp_seq=2 ttl=64 time=6.911 ms
84 bytes from 192.168.3.2 icmp_seq=3 ttl=64 time=10.082 ms
84 bytes from 192.168.3.2 icmp_seq=4 ttl=64 time=2.143 ms
84 bytes from 192.168.3.2 icmp_seq=5 ttl=64 time=14.853 ms
```

- **PC3**

- To PC4

```
PC3> ping 192.168.2.2
```

```
84 bytes from 192.168.2.2 icmp_seq=1 ttl=64 time=15.066 ms
84 bytes from 192.168.2.2 icmp_seq=2 ttl=64 time=0.921 ms
84 bytes from 192.168.2.2 icmp_seq=3 ttl=64 time=0.898 ms
84 bytes from 192.168.2.2 icmp_seq=4 ttl=64 time=4.422 ms
84 bytes from 192.168.2.2 icmp_seq=5 ttl=64 time=0.861 ms
```

- To PC5

```
PC3> ping 192.168.3.1
```

```
84 bytes from 192.168.3.1 icmp_seq=1 ttl=64 time=10.641 ms
84 bytes from 192.168.3.1 icmp_seq=2 ttl=64 time=7.579 ms
84 bytes from 192.168.3.1 icmp_seq=3 ttl=64 time=3.973 ms
84 bytes from 192.168.3.1 icmp_seq=4 ttl=64 time=6.985 ms
84 bytes from 192.168.3.1 icmp_seq=5 ttl=64 time=9.267 ms
```

- To PC6

```
PC3> ping 192.168.3.2
```

```
84 bytes from 192.168.3.2 icmp_seq=1 ttl=64 time=8.747 ms
84 bytes from 192.168.3.2 icmp_seq=2 ttl=64 time=6.979 ms
84 bytes from 192.168.3.2 icmp_seq=3 ttl=64 time=8.474 ms
84 bytes from 192.168.3.2 icmp_seq=4 ttl=64 time=1.608 ms
84 bytes from 192.168.3.2 icmp_seq=5 ttl=64 time=6.077 ms
```

- **PC4**

- To PC5

```
PC4> ping 192.168.3.1
```

```
84 bytes from 192.168.3.1 icmp_seq=1 ttl=64 time=8.996 ms
84 bytes from 192.168.3.1 icmp_seq=2 ttl=64 time=1.624 ms
84 bytes from 192.168.3.1 icmp_seq=3 ttl=64 time=9.724 ms
84 bytes from 192.168.3.1 icmp_seq=4 ttl=64 time=8.465 ms
84 bytes from 192.168.3.1 icmp_seq=5 ttl=64 time=7.749 ms
```

- To PC6

```
PC4> ping 192.168.3.2
```

```
84 bytes from 192.168.3.2 icmp_seq=1 ttl=64 time=8.396 ms
84 bytes from 192.168.3.2 icmp_seq=2 ttl=64 time=6.053 ms
84 bytes from 192.168.3.2 icmp_seq=3 ttl=64 time=8.330 ms
84 bytes from 192.168.3.2 icmp_seq=4 ttl=64 time=6.849 ms
84 bytes from 192.168.3.2 icmp_seq=5 ttl=64 time=7.993 ms
```

- **PC5**

- To PC6

```
PC5> ping 192.168.3.2
```

```
84 bytes from 192.168.3.2 icmp_seq=1 ttl=64 time=1.954 ms
84 bytes from 192.168.3.2 icmp_seq=2 ttl=64 time=8.329 ms
84 bytes from 192.168.3.2 icmp_seq=3 ttl=64 time=6.727 ms
84 bytes from 192.168.3.2 icmp_seq=4 ttl=64 time=6.815 ms
84 bytes from 192.168.3.2 icmp_seq=5 ttl=64 time=2.312 ms
```

## • Show Running Command Outputs

---

### ◦ L2-SW-1

```
Current configuration : 5715 bytes
!
! Last configuration change at 18:05:18 UTC Fri Aug 23 2024
!
version 15.0
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
service compress-config
!
hostname L2-SW-1
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
!
!
!
vtp domain CISCO-vIOS
vtp mode transparent
!
!
!
ip cef
no ipv6 cef
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
spanning-tree vlan 1 priority 24576
!
vlan internal allocation policy ascending
!
vlan 100
    name VLAN100
!
vlan 200,300
!
!
!
interface Port-channel4
    switchport
```

```
!  
interface Port-channel3  
    switchport  
!  
interface Port-channel2  
    switchport  
!  
interface Port-channel1  
    switchport  
!  
interface GigabitEthernet0/0  
    media-type rj45  
    negotiation auto  
    channel-group 1 mode desirable  
!  
interface GigabitEthernet0/1  
    media-type rj45  
    negotiation auto  
    channel-group 1 mode desirable  
!  
interface GigabitEthernet0/2  
    media-type rj45  
    negotiation auto  
    channel-group 2 mode desirable  
!  
interface GigabitEthernet0/3  
    media-type rj45  
    negotiation auto  
    channel-group 2 mode desirable  
!  
interface GigabitEthernet1/0  
    media-type rj45  
    negotiation auto  
    channel-group 3 mode desirable  
!  
interface GigabitEthernet1/1  
    media-type rj45  
    negotiation auto  
    channel-group 3 mode desirable  
!  
interface GigabitEthernet1/2  
    media-type rj45  
    negotiation auto  
    channel-group 4 mode desirable  
!  
interface GigabitEthernet1/3  
    media-type rj45  
    negotiation auto  
    channel-group 4 mode desirable  
!  
interface GigabitEthernet2/0  
    media-type rj45
```

```
negotiation auto
channel-group 4 mode desirable
!
ip forward-protocol nd
!
no ip http server
no ip http secure-server
!
!
!
line con 0
line aux 0
line vty 0 4
line vty 5 15
!
!
end
```

## ◦ L2-SW-2

```
Current configuration : 5715 bytes
!
! Last configuration change at 18:05:21 UTC Fri Aug 23 2024
!
version 15.0
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
service compress-config
!
hostname L2-SW-2
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
!
!
!
vtp domain CISCO-vIOS
vtp mode transparent
!
!
!
ip cef
no ipv6 cef
!
!
```

```
!  
spanning-tree mode pvst  
spanning-tree extend system-id  
spanning-tree vlan 1 priority 28672  
!  
vlan internal allocation policy ascending  
!  
vlan 100  
    name VLAN100  
!  
vlan 200,300  
!  
!  
!  
interface Port-channel7  
    switchport  
!  
interface Port-channel6  
    switchport  
!  
interface Port-channel5  
    switchport  
!  
interface Port-channel4  
    switchport  
!  
interface GigabitEthernet0/0  
    media-type rj45  
    negotiation auto  
    channel-group 4 mode auto  
!  
interface GigabitEthernet0/1  
    media-type rj45  
    negotiation auto  
    channel-group 4 mode auto  
!  
interface GigabitEthernet0/2  
    media-type rj45  
    negotiation auto  
    channel-group 4 mode auto  
!  
interface GigabitEthernet0/3  
    media-type rj45  
    negotiation auto  
    channel-group 5 mode desirable  
!  
interface GigabitEthernet1/0  
    media-type rj45  
    negotiation auto  
    channel-group 5 mode desirable  
!  
interface GigabitEthernet1/1
```

```

media-type rj45
negotiation auto
channel-group 6 mode desirable
!
interface GigabitEthernet1/2
media-type rj45
negotiation auto
channel-group 6 mode desirable
!
interface GigabitEthernet1/3
media-type rj45
negotiation auto
channel-group 7 mode desirable
!
interface GigabitEthernet2/0
media-type rj45
negotiation auto
channel-group 7 mode desirable
!
ip forward-protocol nd
!
no ip http server
no ip http secure-server
!
!
!
line con 0
line aux 0
line vty 0 4
line vty 5 15
!
!
end

```

## - L2-SW-3**

```

Current configuration : 5223 bytes
!
! Last configuration change at 18:05:24 UTC Fri Aug 23 2024
!
version 15.0
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
service compress-config
!
hostname L2-SW-3
!
boot-start-marker
boot-end-marker

```

```
!  
!  
!  
no aaa new-model  
!  
!  
!  
vtp domain CISCO-vIOS  
vtp mode transparent  
!  
!  
!  
ip cef  
no ipv6 cef  
!  
!  
spanning-tree mode pvst  
spanning-tree extend system-id  
!  
vlan internal allocation policy ascending  
!  
vlan 100  
    name VLAN100  
!  
vlan 200,300  
!  
!  
!  
interface Port-channel7  
    switchport  
!  
interface Port-channel1  
    switchport  
!  
interface GigabitEthernet0/0  
    media-type rj45  
    negotiation auto  
    channel-group 1 mode auto  
!  
interface GigabitEthernet0/1  
    media-type rj45  
    negotiation auto  
    channel-group 1 mode auto  
!  
interface GigabitEthernet0/2  
    media-type rj45  
    negotiation auto  
    channel-group 7 mode auto  
!  
interface GigabitEthernet0/3  
    media-type rj45  
    negotiation auto
```



```

    channel-group 7 mode auto
!
interface GigabitEthernet1/0
    media-type rj45
    negotiation auto
!
interface GigabitEthernet1/1
    media-type rj45
    negotiation auto
!
ip forward-protocol nd
!
no ip http server
no ip http secure-server
!
!
!
line con 0
line aux 0
line vty 0 4
line vty 5 15
!
!
end

```

## - L2-SW-4**

```

Current configuration : 5223 bytes
!
! Last configuration change at 18:05:26 UTC Fri Aug 23 2024
!
version 15.0
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
service compress-config
!
hostname L2-SW-4
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
!
!
!
vtp domain CISCO-vIOS
vtp mode transparent

```

```
!  
!  
!  
ip cef  
no ipv6 cef  
!  
!  
spanning-tree mode pvst  
spanning-tree extend system-id  
!  
vlan internal allocation policy ascending  
!  
vlan 100  
    name VLAN100  
!  
vlan 200,300  
!  
!  
!  
interface Port-channel6  
    switchport  
!  
interface Port-channel2  
    switchport  
!  
interface GigabitEthernet0/0  
    media-type rj45  
    negotiation auto  
    channel-group 2 mode auto  
!  
interface GigabitEthernet0/1  
    media-type rj45  
    negotiation auto  
    channel-group 2 mode auto  
!  
interface GigabitEthernet0/2  
    media-type rj45  
    negotiation auto  
    channel-group 6 mode auto  
!  
interface GigabitEthernet0/3  
    media-type rj45  
    negotiation auto  
    channel-group 6 mode auto  
!  
interface GigabitEthernet1/0  
    media-type rj45  
    negotiation auto  
!  
interface GigabitEthernet1/1  
    media-type rj45  
    negotiation auto
```

```
!  
ip forward-protocol nd  
!  
no ip http server  
no ip http secure-server  
!  
!  
!  
line con 0  
line aux 0  
line vty 0 4  
line vty 5 15  
!  
!  
end
```

## ◦ L2-SW-5

```
Current configuration : 5223 bytes  
!  
! Last configuration change at 18:05:27 UTC Fri Aug 23 2024  
!  
version 15.0  
service timestamps debug datetime msec  
service timestamps log datetime msec  
no service password-encryption  
service compress-config  
!  
hostname L2-SW-5  
!  
boot-start-marker  
boot-end-marker  
!  
!  
!  
no aaa new-model  
!  
!  
!  
vtp domain CISCO-vIOS  
vtp mode transparent  
!  
!  
!  
ip cef  
no ipv6 cef  
!  
!  
spanning-tree mode pvst  
spanning-tree extend system-id
```

```
!  
vlan internal allocation policy ascending  
!  
vlan 100  
    name VLAN100  
!  
vlan 200,300  
!  
!  
!  
interface Port-channel5  
    switchport  
!  
interface Port-channel3  
    switchport  
!  
interface GigabitEthernet0/0  
    media-type rj45  
    negotiation auto  
    channel-group 3 mode auto  
!  
interface GigabitEthernet0/1  
    media-type rj45  
    negotiation auto  
    channel-group 3 mode auto  
!  
interface GigabitEthernet0/2  
    media-type rj45  
    negotiation auto  
    channel-group 5 mode auto  
!  
interface GigabitEthernet0/3  
    media-type rj45  
    negotiation auto  
    channel-group 5 mode auto  
!  
interface GigabitEthernet1/0  
    media-type rj45  
    negotiation auto  
!  
interface GigabitEthernet1/1  
    media-type rj45  
    negotiation auto  
!  
ip forward-protocol nd  
!  
no ip http server  
no ip http secure-server  
!  
!  
!  
line con 0
```

```
line aux 0
line vty 0 4
line vty 5 15
!
!
end
```