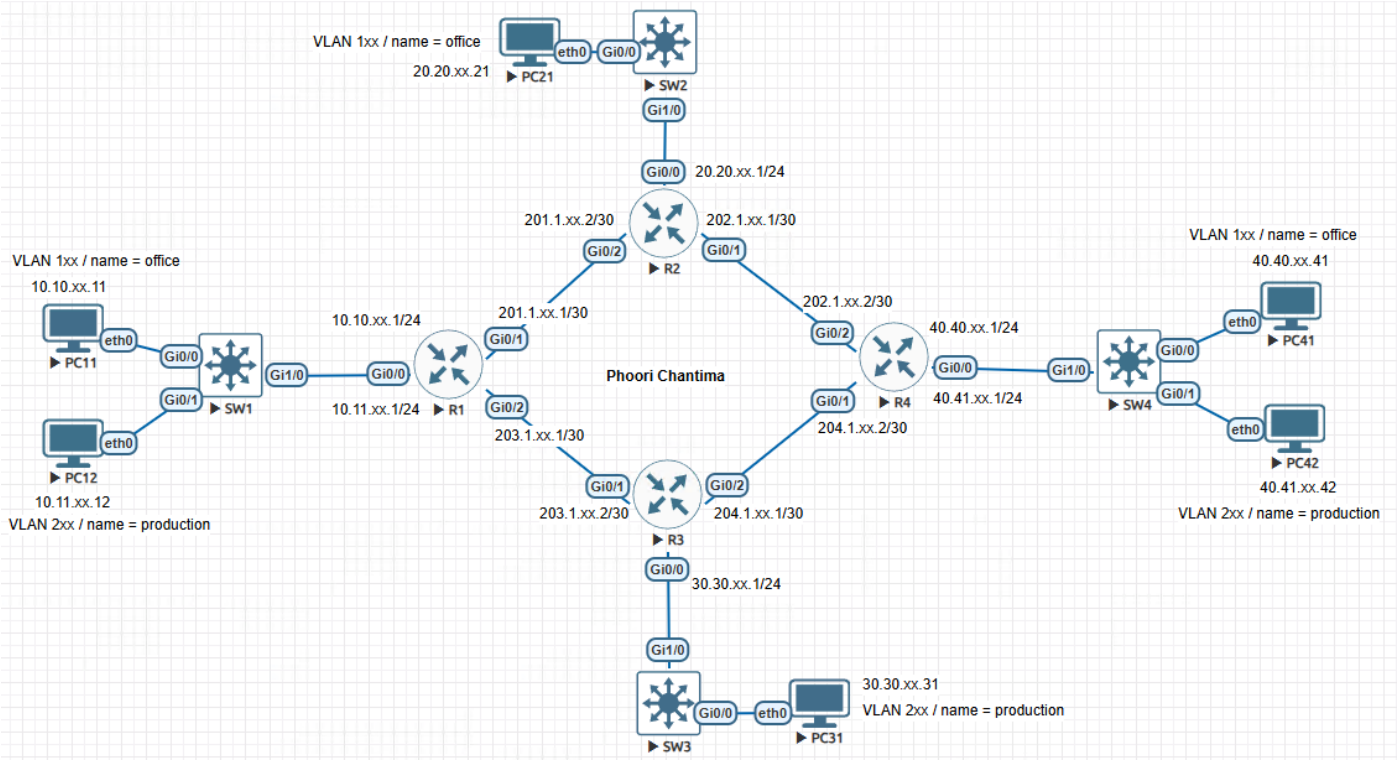
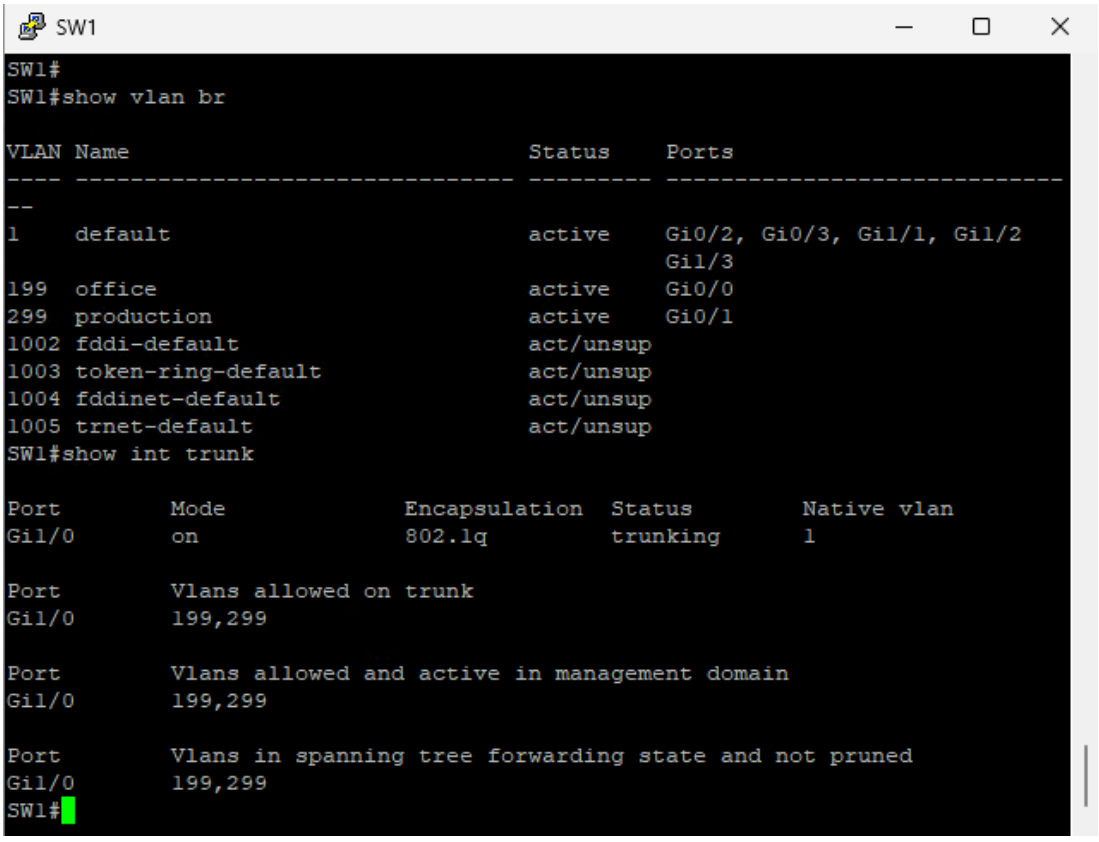
Phoori Chantima CE6641 66xxxxxxxx

1. **เชื่อมต่อโครงสร้างเครือข่าย โดยใช้โปรแกรมจำลอง EVE-NG**

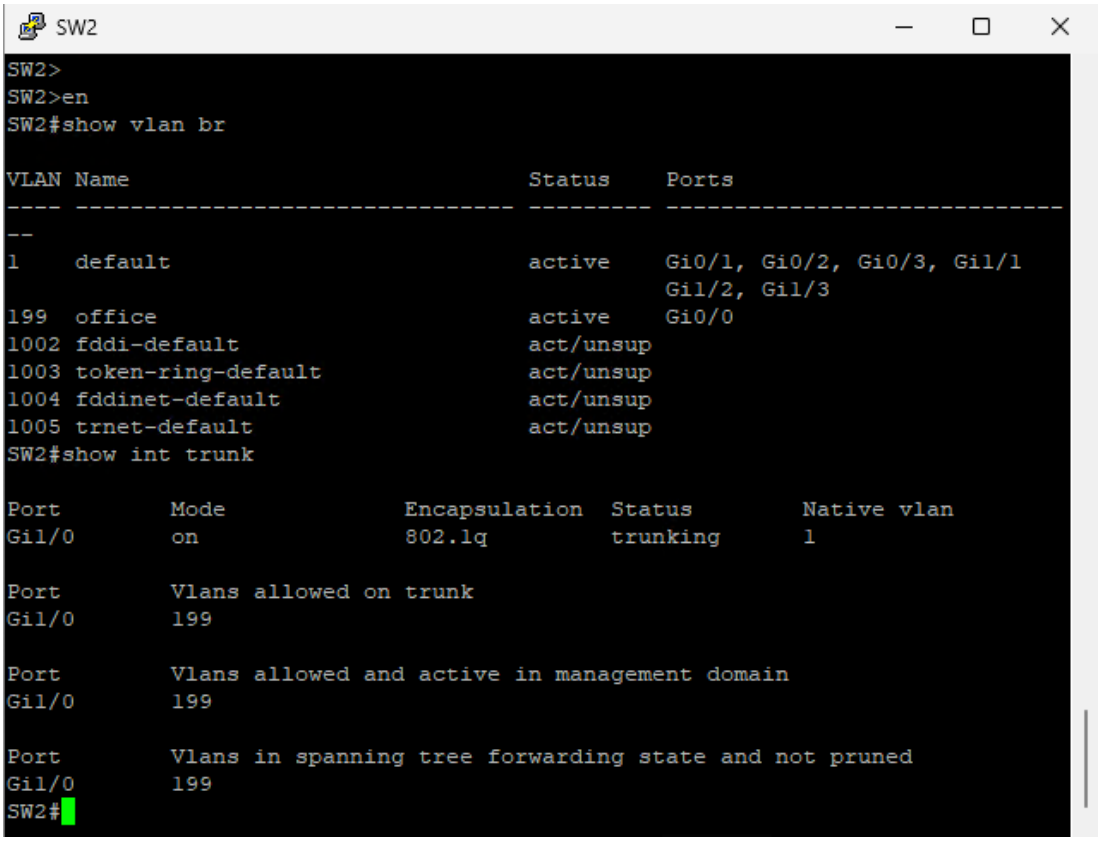


2. **การตั้งค่า VLAN**

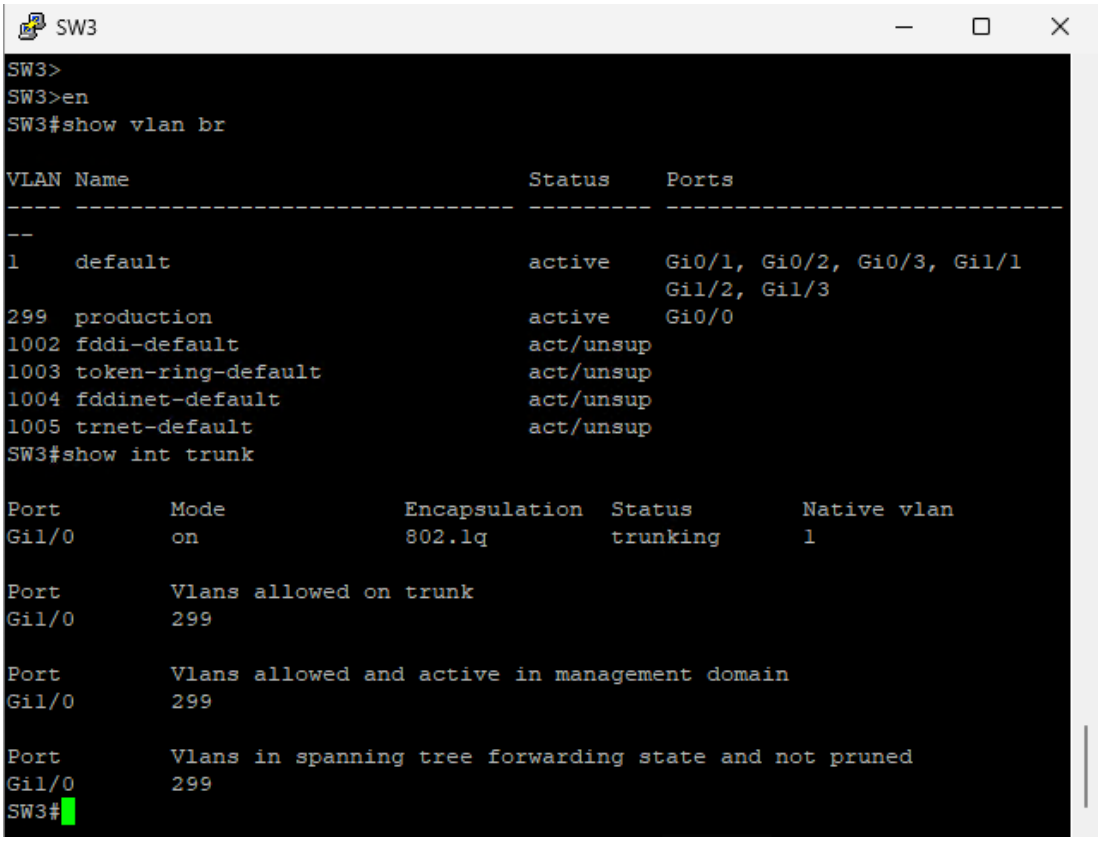
SW1 show vlan br / show int trunk



SW2 show vlan br / show int trunk



SW3 show vlan br / show int trunk



SW4 show vlan br / show int trunk

SW4

```
SW4#
SW4#show vlan br

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
--
1    default                           active    Gi0/2, Gi0/3, Gi1/1, Gi1/2
                                                 Gi1/3
199  office                            active    Gi0/0
299  production                        active    Gi0/1
1002 fddi-default                      act/unsup
1003 token-ring-default                act/unsup
1004 fddinet-default                   act/unsup
1005 trnet-default                     act/unsup
SW4#show int trunk

Port        Mode             Encapsulation  Status        Native vlan
Gi1/0       on               802.1q         trunking      1

Port        Vlans allowed on trunk
Gi1/0       199,299

Port        Vlans allowed and active in management domain
Gi1/0       199,299

Port        Vlans in spanning tree forwarding state and not pruned
Gi1/0       199,299
SW4#
```

3. ตั้งค่า **Inter-VLAN Routing**

R1

R1

```
R1#ping 10.10.99.11
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.10.99.11, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 2/5/8 ms
R1#ping 10.11.99.12
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.11.99.12, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 2/4/9 ms
```

R2

R2

```
R2#
R2#
R2#ping 20.20.99.21
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.20.99.21, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 2/3/6 ms
```

R3

R3

```
R3#ping 30.30.99.31
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 30.30.99.31, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 3/4/9 ms
```

R4

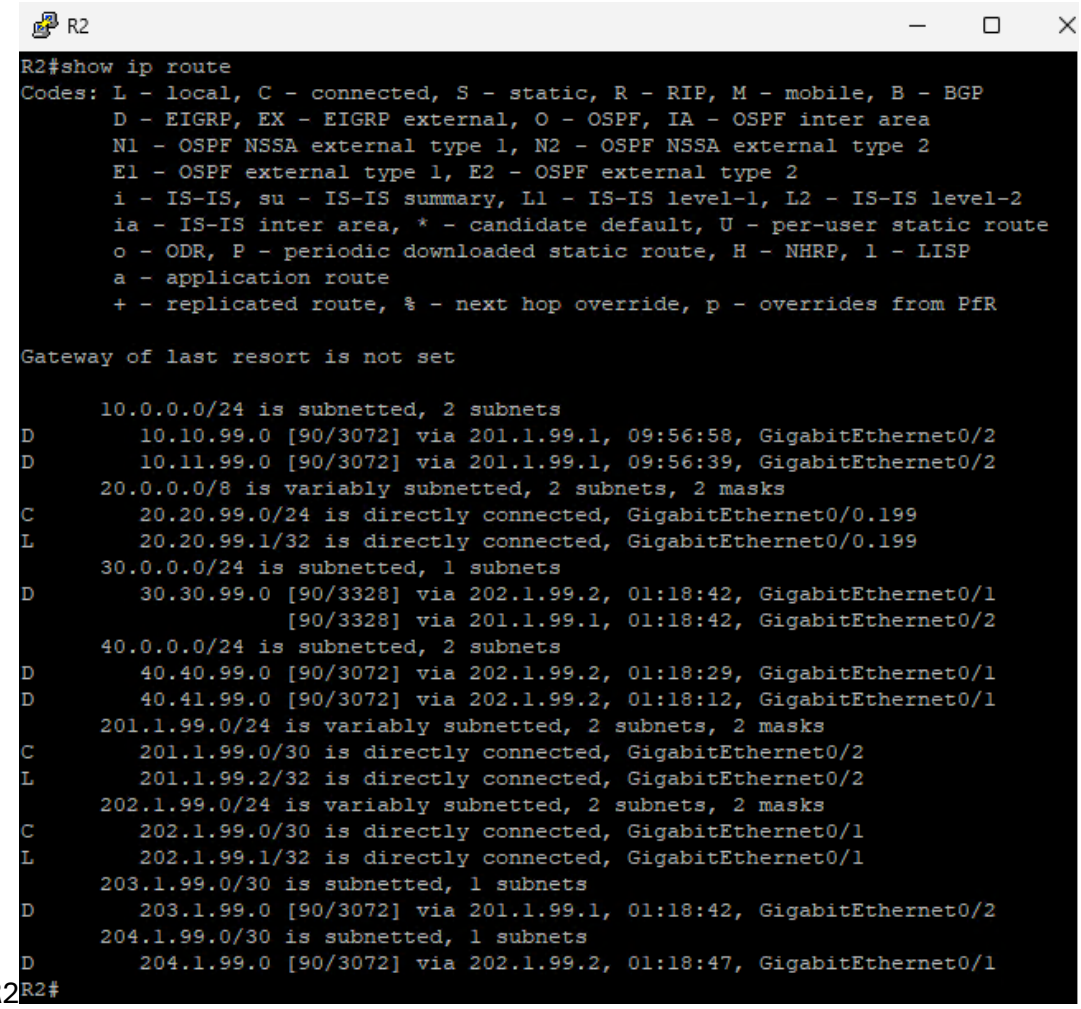
```
R4#ping 40.40.99.41
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 40.40.99.41, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 2/3/6 ms
R4#ping 40.41.99.42
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 40.41.99.42, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 3/4/6 ms
```

4. การกำหนด **Dynamic Routing**

R1

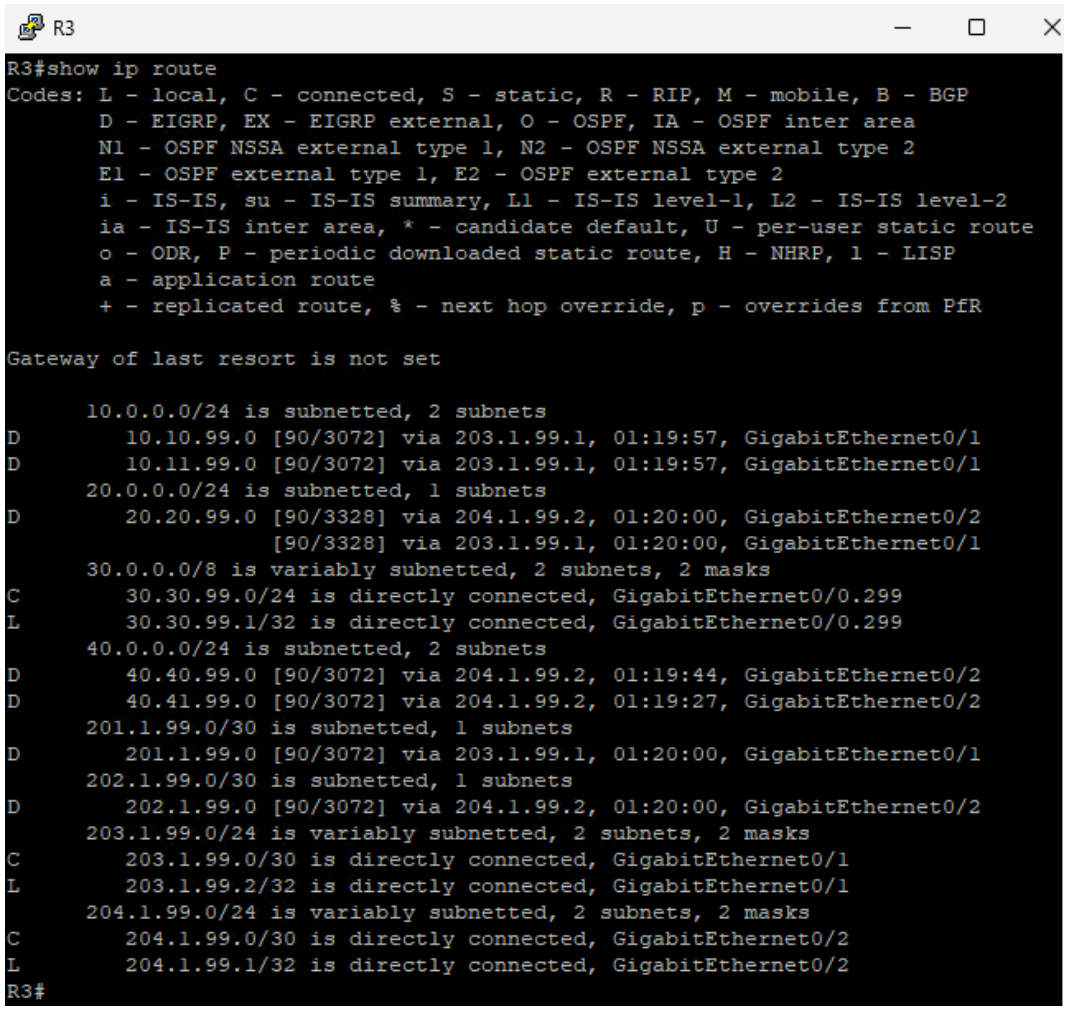
```
R1#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       a - application route
       + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

      10.0.0.0/8 is variably subnetted, 6 subnets, 2 masks
C        10.10.10.0/24 is directly connected, GigabitEthernet0/0
L        10.10.10.1/32 is directly connected, GigabitEthernet0/0
C        10.10.99.0/24 is directly connected, GigabitEthernet0/0.199
L        10.10.99.1/32 is directly connected, GigabitEthernet0/0.199
C        10.11.99.0/24 is directly connected, GigabitEthernet0/0.299
L        10.11.99.1/32 is directly connected, GigabitEthernet0/0.299
      20.0.0.0/24 is subnetted, 1 subnets
D        20.20.99.0 [90/3072] via 201.1.99.2, 09:52:06, GigabitEthernet0/1
      30.0.0.0/24 is subnetted, 1 subnets
D        30.30.99.0 [90/3072] via 203.1.99.2, 01:29:46, GigabitEthernet0/2
      40.0.0.0/24 is subnetted, 2 subnets
D        40.40.99.0 [90/3328] via 203.1.99.2, 01:15:08, GigabitEthernet0/2
                    [90/3328] via 201.1.99.2, 01:15:08, GigabitEthernet0/1
D        40.41.99.0 [90/3328] via 203.1.99.2, 01:14:51, GigabitEthernet0/2
                    [90/3328] via 201.1.99.2, 01:14:51, GigabitEthernet0/1
      201.1.99.0/24 is variably subnetted, 2 subnets, 2 masks
C        201.1.99.0/30 is directly connected, GigabitEthernet0/1
L        201.1.99.1/32 is directly connected, GigabitEthernet0/1
      202.1.99.0/30 is subnetted, 1 subnets
D        202.1.99.0 [90/3072] via 201.1.99.2, 01:15:25, GigabitEthernet0/1
      203.1.99.0/24 is variably subnetted, 2 subnets, 2 masks
C        203.1.99.0/30 is directly connected, GigabitEthernet0/2
L        203.1.99.1/32 is directly connected, GigabitEthernet0/2
      204.1.99.0/30 is subnetted, 1 subnets
D        204.1.99.0 [90/3072] via 203.1.99.2, 01:15:27, GigabitEthernet0/2
R1#
```

R2



```
R2#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       a - application route
       + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

      10.0.0.0/24 is subnetted, 2 subnets
D        10.10.99.0 [90/3072] via 201.1.99.1, 09:56:58, GigabitEthernet0/2
D        10.11.99.0 [90/3072] via 201.1.99.1, 09:56:39, GigabitEthernet0/2
      20.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C        20.20.99.0/24 is directly connected, GigabitEthernet0/0.199
L        20.20.99.1/32 is directly connected, GigabitEthernet0/0.199
      30.0.0.0/24 is subnetted, 1 subnets
D        30.30.99.0 [90/3328] via 202.1.99.2, 01:18:42, GigabitEthernet0/1
                    [90/3328] via 201.1.99.1, 01:18:42, GigabitEthernet0/2
      40.0.0.0/24 is subnetted, 2 subnets
D        40.40.99.0 [90/3072] via 202.1.99.2, 01:18:29, GigabitEthernet0/1
D        40.41.99.0 [90/3072] via 202.1.99.2, 01:18:12, GigabitEthernet0/1
      201.1.99.0/24 is variably subnetted, 2 subnets, 2 masks
C        201.1.99.0/30 is directly connected, GigabitEthernet0/2
L        201.1.99.2/32 is directly connected, GigabitEthernet0/2
      202.1.99.0/24 is variably subnetted, 2 subnets, 2 masks
C        202.1.99.0/30 is directly connected, GigabitEthernet0/1
L        202.1.99.1/32 is directly connected, GigabitEthernet0/1
      203.1.99.0/30 is subnetted, 1 subnets
D        203.1.99.0 [90/3072] via 201.1.99.1, 01:18:42, GigabitEthernet0/2
      204.1.99.0/30 is subnetted, 1 subnets
D        204.1.99.0 [90/3072] via 202.1.99.2, 01:18:47, GigabitEthernet0/1
R2#
```

R3



```
R3#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       a - application route
       + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

      10.0.0.0/24 is subnetted, 2 subnets
D        10.10.99.0 [90/3072] via 203.1.99.1, 01:19:57, GigabitEthernet0/1
D        10.11.99.0 [90/3072] via 203.1.99.1, 01:19:57, GigabitEthernet0/1
      20.0.0.0/24 is subnetted, 1 subnets
D        20.20.99.0 [90/3328] via 204.1.99.2, 01:20:00, GigabitEthernet0/2
                    [90/3328] via 203.1.99.1, 01:20:00, GigabitEthernet0/1
      30.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C        30.30.99.0/24 is directly connected, GigabitEthernet0/0.299
L        30.30.99.1/32 is directly connected, GigabitEthernet0/0.299
      40.0.0.0/24 is subnetted, 2 subnets
D        40.40.99.0 [90/3072] via 204.1.99.2, 01:19:44, GigabitEthernet0/2
D        40.41.99.0 [90/3072] via 204.1.99.2, 01:19:27, GigabitEthernet0/2
      201.1.99.0/30 is subnetted, 1 subnets
D        201.1.99.0 [90/3072] via 203.1.99.1, 01:20:00, GigabitEthernet0/1
      202.1.99.0/30 is subnetted, 1 subnets
D        202.1.99.0 [90/3072] via 204.1.99.2, 01:20:00, GigabitEthernet0/2
      203.1.99.0/24 is variably subnetted, 2 subnets, 2 masks
C        203.1.99.0/30 is directly connected, GigabitEthernet0/1
L        203.1.99.2/32 is directly connected, GigabitEthernet0/1
      204.1.99.0/24 is variably subnetted, 2 subnets, 2 masks
C        204.1.99.0/30 is directly connected, GigabitEthernet0/2
L        204.1.99.1/32 is directly connected, GigabitEthernet0/2
R3#
```

R4

```
R4#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       a - application route
       + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

      10.0.0.0/24 is subnetted, 2 subnets
D        10.10.99.0 [90/3328] via 204.1.99.1, 01:21:38, GigabitEthernet0/1
                    [90/3328] via 202.1.99.1, 01:21:38, GigabitEthernet0/2
D        10.11.99.0 [90/3328] via 204.1.99.1, 01:21:38, GigabitEthernet0/1
                    [90/3328] via 202.1.99.1, 01:21:38, GigabitEthernet0/2
      20.0.0.0/24 is subnetted, 1 subnets
D        20.20.99.0 [90/3072] via 202.1.99.1, 01:22:15, GigabitEthernet0/2
      30.0.0.0/24 is subnetted, 1 subnets
D        30.30.99.0 [90/3072] via 204.1.99.1, 01:21:38, GigabitEthernet0/1
      40.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
C        40.40.99.0/24 is directly connected, GigabitEthernet0/0.199
L        40.40.99.1/32 is directly connected, GigabitEthernet0/0.199
C        40.41.99.0/24 is directly connected, GigabitEthernet0/0.299
L        40.41.99.1/32 is directly connected, GigabitEthernet0/0.299
      201.1.99.0/30 is subnetted, 1 subnets
D        201.1.99.0 [90/3072] via 202.1.99.1, 01:21:38, GigabitEthernet0/2
      202.1.99.0/24 is variably subnetted, 2 subnets, 2 masks
C        202.1.99.0/30 is directly connected, GigabitEthernet0/2
L        202.1.99.2/32 is directly connected, GigabitEthernet0/2
      203.1.99.0/30 is subnetted, 1 subnets
D        203.1.99.0 [90/3072] via 204.1.99.1, 01:21:38, GigabitEthernet0/1
      204.1.99.0/24 is variably subnetted, 2 subnets, 2 masks
C        204.1.99.0/30 is directly connected, GigabitEthernet0/1
L        204.1.99.2/32 is directly connected, GigabitEthernet0/1
R4#
```

R4

5. การกำหนด **IP Address PCs**

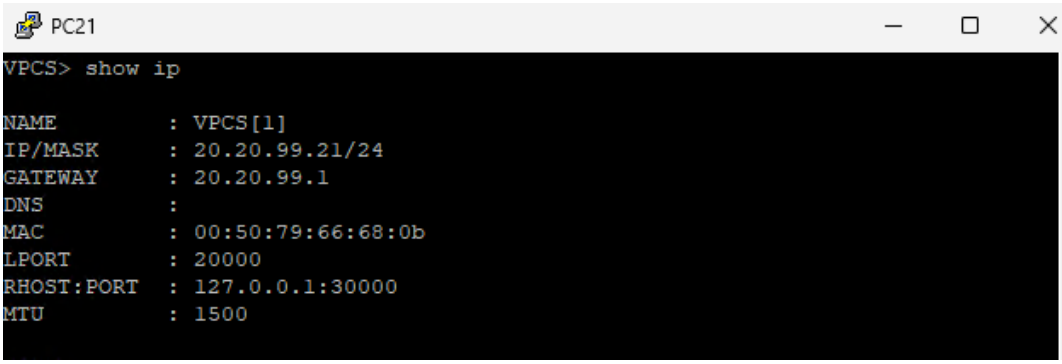
PC11

```
VPCS> show ip

NAME        : VPCS[1]
IP/MASK     : 10.10.99.11/25
GATEWAY     : 10.10.99.1
DNS         :
MAC         : 00:50:79:66:68:09
LPORT       : 20000
RHOST:PORT  : 127.0.0.1:30000
MTU         : 1500
```

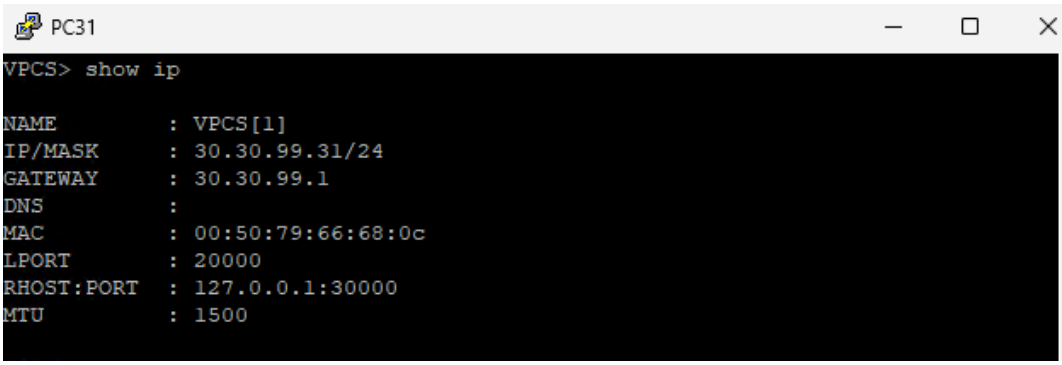
PC12

```
VPCS> show ip

NAME        : VPCS[1]
IP/MASK     : 10.11.99.12/24
GATEWAY     : 10.11.99.1
DNS         :
MAC         : 00:50:79:66:68:0a
LPORT       : 20000
RHOST:PORT  : 127.0.0.1:30000
MTU         : 1500
```

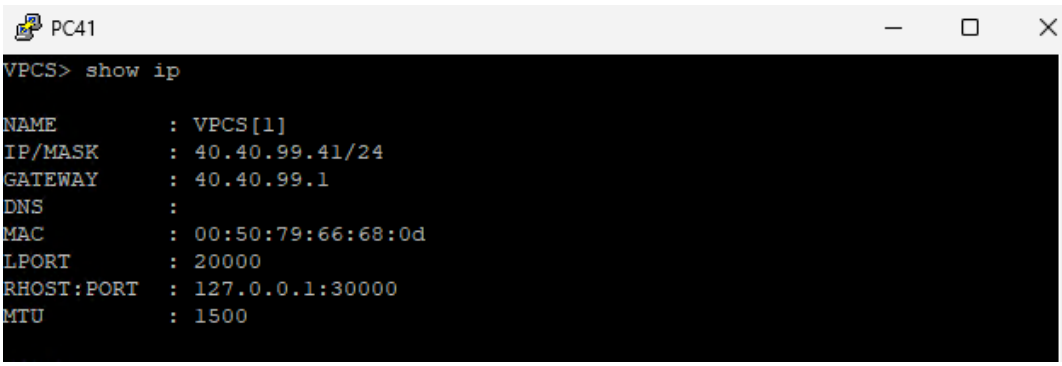
PC21



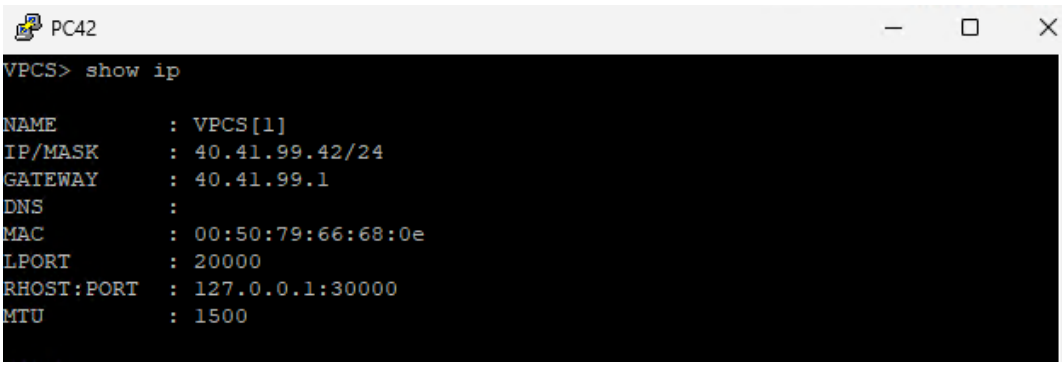
PC31



PC41

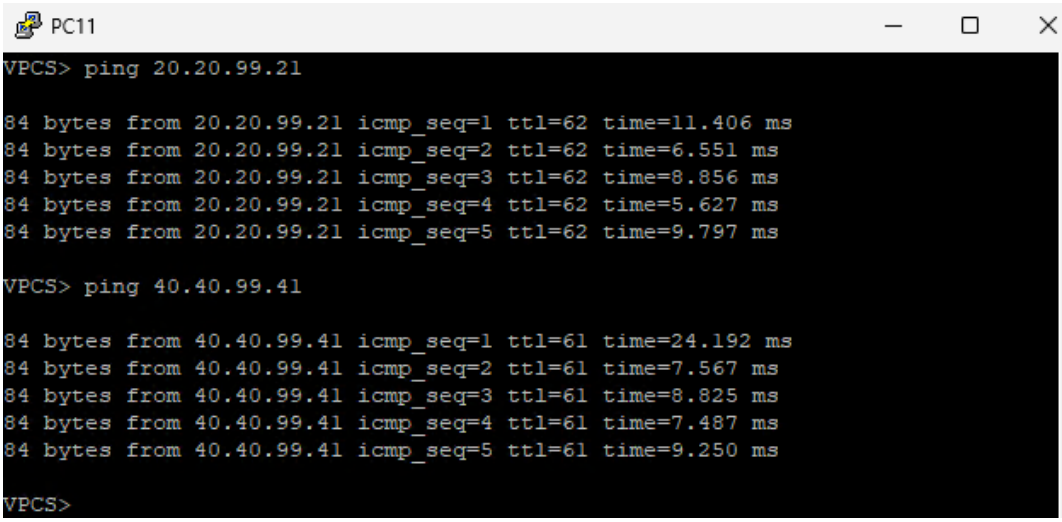


PC42

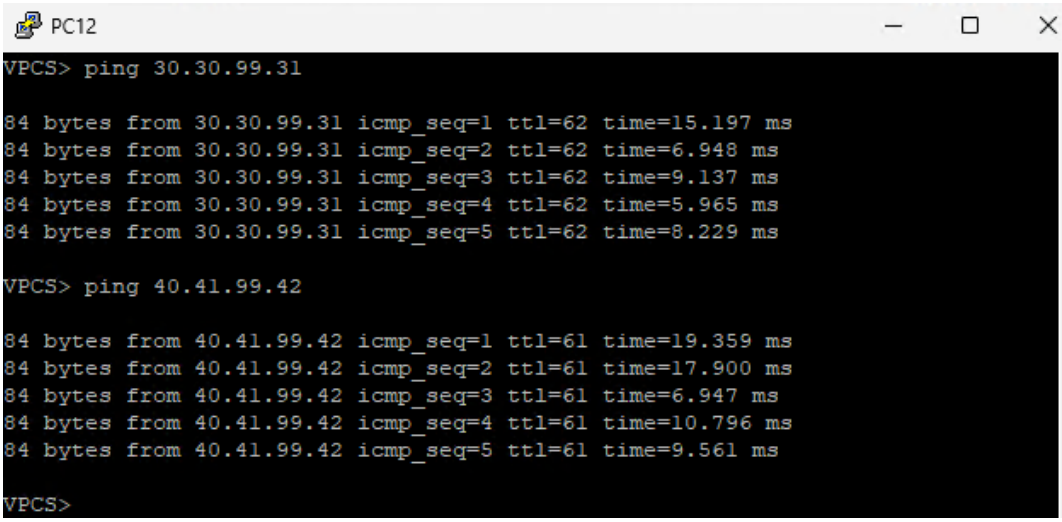


6. การทดสอบการเชื่อมต่อเครือข่าย

PC11


PC11
VPCS> ping 20.20.99.21
84 bytes from 20.20.99.21 icmp_seq=1 ttl=62 time=11.406 ms
84 bytes from 20.20.99.21 icmp_seq=2 ttl=62 time=6.551 ms
84 bytes from 20.20.99.21 icmp_seq=3 ttl=62 time=8.856 ms
84 bytes from 20.20.99.21 icmp_seq=4 ttl=62 time=5.627 ms
84 bytes from 20.20.99.21 icmp_seq=5 ttl=62 time=9.797 ms
VPCS> ping 40.40.99.41
84 bytes from 40.40.99.41 icmp_seq=1 ttl=61 time=24.192 ms
84 bytes from 40.40.99.41 icmp_seq=2 ttl=61 time=7.567 ms
84 bytes from 40.40.99.41 icmp_seq=3 ttl=61 time=8.825 ms
84 bytes from 40.40.99.41 icmp_seq=4 ttl=61 time=7.487 ms
84 bytes from 40.40.99.41 icmp_seq=5 ttl=61 time=9.250 ms
VPCS>

PC12


PC12
VPCS> ping 30.30.99.31
84 bytes from 30.30.99.31 icmp_seq=1 ttl=62 time=15.197 ms
84 bytes from 30.30.99.31 icmp_seq=2 ttl=62 time=6.948 ms
84 bytes from 30.30.99.31 icmp_seq=3 ttl=62 time=9.137 ms
84 bytes from 30.30.99.31 icmp_seq=4 ttl=62 time=5.965 ms
84 bytes from 30.30.99.31 icmp_seq=5 ttl=62 time=8.229 ms
VPCS> ping 40.41.99.42
84 bytes from 40.41.99.42 icmp_seq=1 ttl=61 time=19.359 ms
84 bytes from 40.41.99.42 icmp_seq=2 ttl=61 time=17.900 ms
84 bytes from 40.41.99.42 icmp_seq=3 ttl=61 time=6.947 ms
84 bytes from 40.41.99.42 icmp_seq=4 ttl=61 time=10.796 ms
84 bytes from 40.41.99.42 icmp_seq=5 ttl=61 time=9.561 ms
VPCS>