



Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	s0/0/1	10.1.0.6	255.255.255.252	N/A
	g0/0	10.1.0.9	255.255.255.252	N/A
R2	s0/0/0	10.1.0.5	255.255.255.252	N/A
	s0/0/1	209.166.60.2	255.255.255.252	N/A
	g0/0	10.1.0.1	255.255.255.252	N/A
	Tunnel 1	172.16.0.1	255.255.255.252	N/A
ISP	s0/0/0	209.166.60.1	255.255.255.0	N/A
	s0/0/1	209.166.70.1	255.255.255.0	N/A
	g0/0	209.166.50.1	255.255.255.0	N/A
R4	s0/0/0	209.166.70.2	255.255.255.252	N/A
	g0/0	10.0.0.1	255.255.255.248	N/A
	Tunnnel 1	172.16.0.2	255.255.255.252	N/A
R5	g0/0	10.0.0.2	255.255.255.248	N/A
	g0/1	192.168.1.2	255.255.255.0	N/A
	g0/1.30	192.168.30.2	255.255.255.0	helper-address 10.0.0.1
	g0/1.40	192.168.40.2	255.255.255.0	helper-address 10.0.0.1
R6	g0/0	10.0.0.3	255.255.255.248	N/A
	g0/1	192.168.1.3	255.255.255.0	N/A
	g0/1.30	192.168.30.3	255.255.255.0	helper-address 10.0.0.1
	g0/1.40	192.168.40.3	255.255.255.0	helper-address 10.0.0.1
S1	VLAN 1	10.1.0.2	255.255.255.252	N/A
	VLAN 10	192.168.10.1	255.255.255.0	helper-address 10.1.0.1
	VLAN 20	192.168.20.1	255.255.255.0	helper-address 10.1.0.1
S5	VLAN 30	192.168.30.11	255.255.255.0	helper-address 10.1.0.1
	VLAN 40	192.168.30.11	255.255.255.0	helper-address 10.1.0.1
S6	VLAN 30	192.168.40.12	255.255.255.0	helper-address 10.1.0.1
	VLAN 40	192.168.40.12	255.255.255.0	helper-address 10.1.0.1
PC6	NIC	209.166.50.2	255.255.255.252	209.166.50.1
Server0	NIC	10.1.0.10	255.255.255.252	10.1.0.9
	NIC	209.140.50.8	external	

<https://docs.google.com/spreadsheets/d/19jWj6lfjKoUKcpHvzmfCFuyEKymg-ga0uqhHlPqxzK8/edit#gid=0>

CiscoFinallab\_v2.2\_with\_command.pkt будет работать если прописать статические маршруты (ip route 0.0.0.0 0.0.0.0 int)  
На оборудовании будет работать

Вставка в PuTTY: выделить текст, Ctrl+C, вставить в PuTTY - MOUSE3 (колесико)  
Копирование из PuTTY: выделить текст, MOUSE2 (правая кнопка), вставить не в PuTTY - MOUSE3 (колесико)

```
sh run
sh ip dhcp binding
sh standby brief
```

```
show etherchannel summary
```

```
=====
```

R1:

```
en
conf t
hostname R1
```

```
// IP, VLAN and OSPF
```

```
int g0/0
ip address 10.1.0.9 255.255.255.252
no shut
```

```
int s0/0/1
ip address 10.1.0.6 255.255.255.252
no shutdown
exit
```

```
router ospf 1
network 10.1.0.8 0.0.0.3 area 1
network 10.1.0.4 0.0.0.3 area 1
```

```
passive-interface g0/0
```

```
=====
```

R2:

```
en
conf t
hostname R2
```

```
// IP, PPP, GRE
```

```
int s0/0/1
encapsulation ppp
ppp authentication chap
username ISP password cisco
```

```
int Tunnel1
tunnel mode gre ip
ip address 172.16.0.1 255.255.255.252
tunnel source s0/0/1
```

```

tunnel destination 209.166.70.2

router ospf 1
network 172.16.0.0 0.0.0.3 area 1
passive-interface s0/0/1

// IP, VLAN and OSPF

int s0/0/0
ip address 10.1.0.5 255.255.255.252
no shut

int g0/0
ip address 10.1.0.1 255.255.255.252
no shut

int s0/0/1
ip address 209.166.60.2 255.255.255.252
no shut

exit

ip route 192.168.10.0 255.255.255.0 g0/0
ip route 192.168.20.0 255.255.255.0 g0/0

router ospf 1
network 10.1.0.4 0.0.0.3 area 1
network 10.1.0.0 0.0.0.3 area 1
passive-interface g0/0
redistribute static

ip route 0.0.0.0 0.0.0.0 s0/0/1
default-information originate

// DHCP

ip dhcp pool POOL_FOR_A
network 192.168.10.0 255.255.255.0
default-router 192.168.10.1
exit

ip dhcp excluded-address 192.168.10.1 192.168.10.100
ip dhcp pool POOL_FOR_B

network 192.168.20.0 255.255.255.0
default-router 192.168.20.1
exit

ip dhcp excluded-address 192.168.20.1 192.168.20.100

// NAT, PAT

int s0/0/0
ip nat inside

int s0/0/1
ip nat outside

ip nat inside source static 10.1.0.10 209.140.50.8

int g0/0

```

```
ip nat inside

access-list 1 permit 192.168.0.0 0.0.255.255
access-list 1 permit 10.1.0.10 0.0.0.0

ip nat inside source list 1 interface s0/0/1 overload
```

```
=====
ISP:
```

```
en
conf t
hostname ISP
```

```
// IP, PPP, GRE
```

```
int g0/0
ip address 209.166.50.1 255.255.255.0
no shut
```

```
int s0/0/0
ip address 209.166.60.1 255.255.255.0
no shut
```

```
int s0/0/1
ip address 209.166.70.1 255.255.255.0
no shut
```

```
ip route 209.140.50.8 255.255.255.255 s0/0/0
```

```
int s0/0/0
encapsulation ppp
ppp authentication chap
```

```
int s0/0/1
encapsulation ppp
ppp authentication chap
```

```
username R2 password cisco
username R4 password cisco
```

```
=====
R4:
```

```
en
conf t
hostname R4
```

```
// IP, PPP, GRE
```

```
int s0/0/0
encapsulation ppp
ppp authentication chap
username ISP password cisco
```

```
int Tunnel1
tunnel mode gre ip
ip address 172.16.0.2 255.255.255.252
tunnel source s0/0/0
tunnel destination 209.166.60.2
```

```
router ospf 1
network 172.16.0.0 0.0.0.3 area 1
passive-interface s0/0/0
```

```
// IP, OSPF
```

```
int g0/0
ip address 10.0.0.1 255.255.255.248
no shut

int s0/0/0
ip address 209.166.70.2 255.255.255.252
no shut
```

```
router ospf 1
network 10.0.0.0 0.0.0.7 area 0

ip route 0.0.0.0 0.0.0.0 s0/0/0

default-information originate
```

```
// PAT
```

```
int g0/0
ip nat inside
int s0/0/0
ip nat outside

access-list 1 permit 192.168.0.0 0.0.255.255
ip nat inside source list 1 interface s0/0/0 overload
```

```
// DHCP
```

```
ip dhcp pool POOL_FOR_C
network 192.168.30.0 255.255.255.0
default-router 192.168.30.1
exit

ip dhcp excluded-address 192.168.30.1 192.168.30.100

ip dhcp pool POOL_FOR_D
network 192.168.40.0 255.255.255.0
default-router 192.168.40.1
exit

ip dhcp excluded-address 192.168.40.1 192.168.40.100
```

```
=====
R5:
```

```
en
conf t
hostname R5
```

```
// IP, VLAN and OSPF
```

```
int g0/0
ip address 10.0.0.2 255.255.255.248
```

```

no shut

int g0/1
ip address 192.168.1.2 255.255.255.0

standby version 2
standby 1 ip 192.168.1.254
standby 1 priority 150
standby 1 preempt

no shut

int g0/1.30
encapsulation dot1Q 30
ip address 192.168.30.2 255.255.255.0
ip helper-address 10.0.0.1

standby version 2
standby 3 ip 192.168.30.1
standby 3 priority 105
standby 3 preempt

no shut

int g0/1.40
encapsulation dot1Q 40
ip address 192.168.40.2 255.255.255.0
ip helper-address 10.0.0.1

standby version 2
standby 4 ip 192.168.40.1
standby 4 priority 105
standby 4 preempt

no shut

end
// maybe
conf t
ip route 0.0.0.0 0.0.0.0 g0/0
// maybe

// IP, OSPF

router ospf 1
network 192.168.1.0 0.0.0.255 area 0
network 192.168.30.0 0.0.0.255 area 0
network 192.168.40.0 0.0.0.255 area 0
network 10.0.0.0 0.0.0.7 area 0
passive-interface g0/1

```

```

=====
R6:

```

```

en
conf t
hostname R6

```

```

// IP, VLAN and OSPF

```

```

int g0/0
ip address 10.0.0.3 255.255.255.248

```

```

no shut

int g0/1
ip address 192.168.1.3 255.255.255.0

standby version 2
standby 1 ip 192.168.1.254

no shut

int g0/1.30
encapsulation dot1Q 30
ip address 192.168.30.3 255.255.255.0
ip helper-address 10.0.0.1

standby version 2
standby 3 ip 192.168.30.1
standby 3 priority 100

no shut
exit

int g0/1.40
encapsulation dot1Q 40
ip address 192.168.40.3 255.255.255.0
ip helper-address 10.0.0.1

standby version 2
standby 4 ip 192.168.40.1
standby 4 priority 100

no shut

end
// maybe
conf t
ip route 0.0.0.0 0.0.0.0 g0/0
// maybe

// IP, OSPF

router ospf 1
network 192.168.1.0 0.0.0.255 area 0
network 192.168.30.0 0.0.0.255 area 0
network 192.168.40.0 0.0.0.255 area 0
network 10.0.0.0 0.0.0.7 area 0

passive-interface g0/1

=====
S1:

en
conf t
hostname S1

sdm prefer lanbase-routing
no ip domain-lookup
end
copy run start

reload

```



```

en
conf t
// IP, VLAN and OSPF

ip routing

int vlan 1
no shut

vlan 10
vlan 20

int f0/5
switchport mode access
switchport access vlan 10

int f0/6
switchport mode access
switchport access vlan 20

int vlan 10
ip address 192.168.10.1 255.255.255.0

int vlan 20
ip address 192.168.20.1 255.255.255.0

int vlan 1
ip address 10.1.0.2 255.255.255.252

ip route 0.0.0.0 0.0.0.0 10.1.0.1

// DHCP

int vlan 10
ip helper-address 10.1.0.1

int vlan 20
ip helper-address 10.1.0.1

=====
S5:

en
conf t
hostname S5

// IP, VLAN, EtherChannel, HSRP
// S5,S6

int range f0/10-11
switchport mode trunk
switchport trunk native vlan 1
channel-group 2 mode active
no shut

int port-channel 2
switchport mode trunk
no shut

int f0/1

```

```
switchport mode trunk
no shut

int range f0/5
switchport access vlan 30
switchport mode access
no shut

int range f0/6
switchport access vlan 40
switchport mode access
no shut

int vlan 30
ip address 192.168.30.11 255.255.255.0
ip helper-address 10.0.0.1

int vlan 40
ip address 192.168.40.11 255.255.255.0
ip helper-address 10.0.0.1
end
```

=====

S6:

```
en
conf t
hostname S6
```

// IP, VLAN, EtherChannel, HSRP

```
int range f0/10-11
switchport mode trunk
switchport trunk native vlan 1
channel-group 2 mode active
no shut

int port-channel 2
switchport mode trunk
no shut

int f0/1
switchport mode trunk
no shut

int range f0/5
switchport access vlan 30
switchport mode access
no shut

int range f0/6
switchport access vlan 40
switchport mode access
no shut

int vlan 30
ip address 192.168.30.12 255.255.255.0
ip helper-address 10.0.0.1

int vlan 40
ip address 192.168.40.12 255.255.255.0
ip helper-address 10.0.0.1
```

end

=====  
Server 0

```
sudo ifconfig enp2s0 10.1.0.10/30  
sudo route add default gw 10.1.0.9
```

=====  
PC-6

```
sudo ifconfig enp2s0 209.166.50.2/30  
sudo route add default gw 209.166.50.1
```

=====