

DATA COMMUNICATIONS AND NETWORKING - COURSEWORK.

SOURCE CODE.

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LAB 3.

PC1

```
ip 192.168.1.10/24 192.168.1.254
```

```
save
```

PC2

```
ip 192.168.1.20/24 192.168.1.254
```

```
save
```

PC3

```
ip 200.0.0.1/24 200.0.0.254
```

```
save
```

R1

```
conf t
```

```
interface fa0/0
```

```
ip address 192.168.1.254 255.255.255.0
```

```
no shutdown
```

```
exit
```

```
interface fa0/1
```

```
ip address 10.0.0.1 255.255.255.0
```

```
no shutdown
```

```
exit
```

```
ip route 10.0.2.0 255.255.255.0 10.0.0.2
```

```
ip route 200.0.0.0 255.255.255.0 10.0.0.2
```

```
or
```

```
ip route 0.0.0.0 0.0.0.0 10.0.0.2
```

```
router RIP
```

```
version 2
```

```
network 192.168.1.0
```

```
network 10.0.0.0
```

```
do write
```

```
exit
```

```
-----
```

```
R2
```

```
conf t
```

```
interface fa0/0
```

```
ip address 10.0.0.2 255.255.255.0
```

```
no shutdown
```

```
exit
```

```
interface fa0/1
```

```
ip address 10.0.2.1 255.255.255.0
```

no shutdown

exit

ip route 192.168.1.0 255.255.255.0 10.0.0.1

ip route 200.0.0.0 255.255.255.0 10.0.2.2

router RIP

version 2

network 10.0.0.0

do write

exit

R3

conf t

interface fa0/0

ip address 10.0.2.2 255.255.255.0

no shutdown

exit

interface fa0/1

ip address 200.0.0.254 255.255.255.0

no shutdown

exit

ip route 192.168.1.0 255.255.255.0 10.0.2.1

ip route 10.0.0.0 255.255.255.0 10.0.2.1

or

```
ip route 0.0.0.0 0.0.0.0 10.0.2.1
```

```
router RIP
```

```
version 2
```

```
network 10.0.0.0
```

```
network 200.0.0.0
```

```
do write
```

```
exit
```

Part 2.

R1

conf t

no ip routing

interface range fa1/0 – 15

no shutdown

switchport

PART 3.

R1

conf t

int s1/1

ip add 10.10.10.1 255.255.255.252

no shutdown

exit

int s1/2

ip add 10.10.10.25 255.255.255.252

no shutdown

exit

int s1/0

ip add 10.10.10.5 255.255.255.252

no shutdown

exit

int f0/0

ip add 192.168.1.254 255.255.255.0

no shutdown

exit

router ospf 1

network 192.168.1.0 255.255.255.0 area 0

network 10.10.10.0 255.255.255.252 area 0

network 10.10.10.24 255.255.255.252 area 0

network 10.10.10.4 255.255.255.252 area 0

```
router eigrp 1
network 192.168.1.0 255.255.255.0
network 10.10.10.0 255.255.255.252
network 10.10.10.24 255.255.255.252
network 10.10.10.4 255.255.255.252
```

R2

```
conf t
int s1/1
ip add 10.10.10.21 255.255.255.252
no shutdown
exit
int s1/2
ip add 10.10.10.13 255.255.255.252
no shutdown
exit
int s1/0
ip add 10.10.10.6 255.255.255.252
no shutdown
exit
int f0/0
ip add 128.1.255.254 255.255.0.0
no shutdown
exit
int f0/1
ip add 192.255.255.254 255.0.0.0
no shutdown
```


exit

router ospf 2

network 128.1.0.0 255.255.0.0 area 0

network 192.0.0.0 255.0.0.0 area 0

network 10.10.10.12 255.255.255.252 area 0

network 10.10.10.4 255.255.255.252 area 0

network 10.10.10.20 255.255.255.252 area 0

router eigrp 1

network 128.1.0.0 255.255.0.0

network 192.0.0.0 255.0.0.0

network 10.10.10.12 255.255.255.252

network 10.10.10.4 255.255.255.252

network 10.10.10.20 255.255.255.252

R3

conf t

int s1/1

ip add 10.10.10.17 255.255.255.252

no shutdown

exit

int s1/2

ip add 10.10.10.14 255.255.255.252

no shutdown

exit

int s1/0

```
ip add 10.10.10.10 255.255.255.252
```

```
no shutdown
```

```
exit
```

```
int f0/0
```

```
ip add 192.168.223.254 255.255.0.0
```

```
no shutdown
```

```
exit
```

```
router ospf 3
```

```
network 10.10.10.16 255.255.255.252 area 0
```

```
network 10.10.10.8 255.255.255.252 area 0
```

```
network 10.10.10.12 255.255.255.252 area 0
```

```
network 192.168.192.0 255.255.192.0 area 0
```

```
router eigrp 1
```

```
network 10.10.10.16 255.255.255.252
```

```
network 10.10.10.8 255.255.255.252
```

```
network 10.10.10.12 255.255.255.252
```

```
network 192.168.192.0 255.255.192.0
```

```
R4
```

```
-----
```

```
conf t
```

```
int s1/1
```

```
ip add 10.10.10.22 255.255.255.252
```

```
no shutdown
```

```
exit
```

```
int s1/2
```

```
ip add 10.10.10.26 255.255.255.252
```

```
no shutdown
```

```
exit
```

```
int s1/0
```

```
ip add 10.10.10.18 255.255.255.252
```

```
no shutdown
```

```
exit
```

```
int s1/3
```

```
ip add 10.10.10.30 255.255.255.252
```

```
no shutdown
```

```
exit
```

```
int f0/0
```

```
ip add 192.168.3.126 255.255.255.128
```

```
no shutdown
```

```
exit
```

```
int f0/1
```

```
ip add 192.168.3.254 255.255.255.128
```

```
no shutdown
```

```
exit
```

```
router ospf 4
```

```
network 10.10.10.24 255.255.255.252 area 0
```

```
network 10.10.10.20 255.255.255.252 area 0
```

```
network 10.10.10.28 255.255.255.252 area 0
```

```
network 10.10.10.16 255.255.255.252 area 0
```

```
network 192.168.3.0 255.255.255.128 area 0
```

```
network 192.168.3.128 255.255.255.128 area 0
```

```
router eigrp 1
```

```
network 10.10.10.24 255.255.255.252
network 10.10.10.20 255.255.255.252
network 10.10.10.28 255.255.255.252
network 10.10.10.16 255.255.255.252
network 192.168.3.0 255.255.255.128
network 192.168.3.128 255.255.255.128
```

R5

```
conf t
int s1/1
ip add 10.10.10.9 255.255.255.252
no shutdown
exit
int s1/3
ip add 10.10.10.29 255.255.255.252
no shutdown
exit
int s1/0
ip add 10.10.10.2 255.255.255.252
no shutdown
exit
int f0/0
ip add 192.168.2.254 255.255.255.0
no shutdown
exit

router ospf 5
```

```
network 10.10.10.0 255.255.255.252 area 0
network 10.10.10.8 255.255.255.252 area 0
network 10.10.10.28 255.255.255.252 area 0
network 192.168.2.0 255.255.255.0 area 0
```

```
router eigrp 1
network 10.10.10.0 255.255.255.252
network 10.10.10.8 255.255.255.252
network 10.10.10.28 255.255.255.252
network 192.168.2.0 255.255.255.0
```

PART 4.

JUNIPER

root

password

cli

configure

set interfaces em1 unit 0 family inet 192.168.1.2/30

set interfaces em0 unit 0 family inet 192.168.1.5/30

set protocols ospf area 0.0.0.0 interface em0

set protocols ospf area 0.0.0.0 interface em1

commit

R1

conf t

int f0/0

ip address 192.168.1.1 255.255.255.252

no shutdown

exit

int f0/1

ip address 10.11.15.254 255.255.240.0

```
no shutdown
```

```
exit
```

```
router ospf 1
```

```
network 192.168.1.0 255.255.255.252 area 0
```

```
network 10.11.0.0 255.255.240.0 area 0
```

```
R2
```

```
-----
```

```
conf t
```

```
int f0/0
```

```
ip address 128.1.3.254 255.255.255.0
```

```
no shutdown
```

```
exit
```

```
int f0/1
```

```
ip address 192.168.1.6 255.255.255.252
```

```
no shutdown
```

```
exit
```

```
router ospf 1
```

```
network 192.168.1.4 255.255.255.252 area 0
```

```
network 128.1.3.0 255.255.255.0 area 0
```

```
Ubuntu (sample)
```

```
-----
```

```
use ifconfig to find the name (ex: eth0, esp0s3)
```

```
sudo ifconfig eth0 10.0.0.100 netmask 255.255.255.0
```