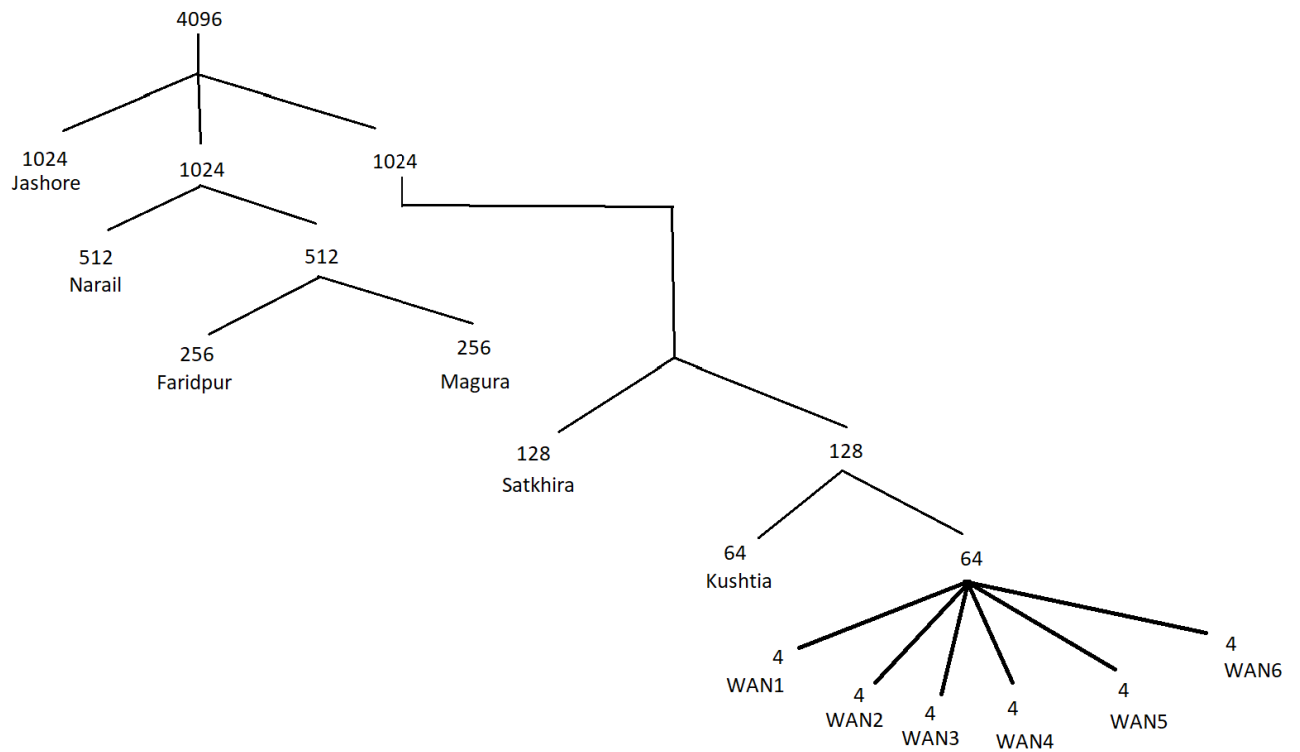


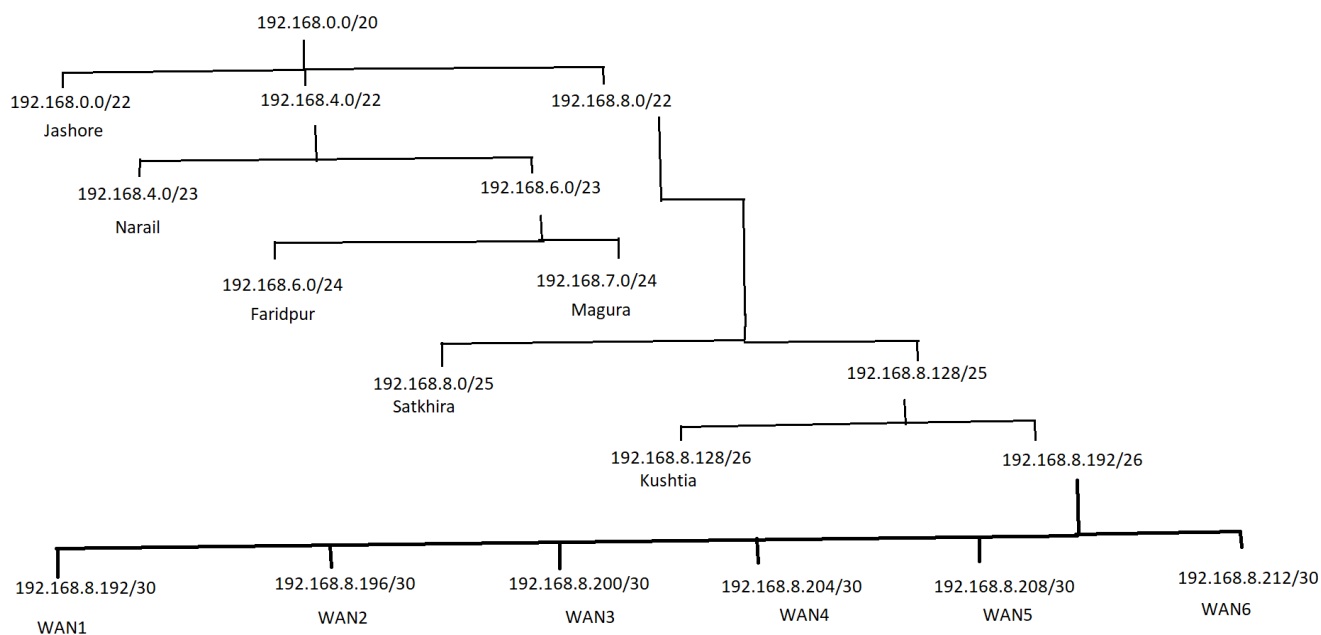
VLSM

Assume an IP Address: 192.168.0.0/20

Host Bits: 12



#	Host	IP	GIV E	Host Bits	Network Bits	Range	Subnet MASK
Jashore	560	1024	1024	10	22	192.168.0.0- 192.168.3.255	255.255.252.0
Narail	350	352	512	9	23	192.168.4.0- 192.168.5.255	255.255.254.0
Faridpur	210	212	256	8	24	192.168.6.0- 192.168.6.255	255.255.255.0
Magura	128	130	256	8	24	192.168.7.0- 192.168.7.255	255.255.255.0
Satkhira	80	82	128	7	25	192.168.8.0- 192.168.8.127	255.255.255.128
Kushtia	40	42	64	6	26	192.168.8.128- 192.168.8.191	255.255.255.192
WAN1	2	4	4	2	30	192.168.8.192- 192.168.8.195	255.255.255.252
WAN2	2	4	4	2	30	192.168.8.196- 192.168.8.199	255.255.255.252
WAN3	2	4	4	2	30	192.168.8.200- 192.168.8.203	255.255.255.252
WAN4	2	4	4	2	30	192.168.8.204- 192.168.8.207	255.255.255.252
WAN5	2	4	4	2	30	192.168.8.208- 192.168.8.211	255.255.255.252
WAN6	2	4	4	2	30	192.168.8.212- 192.168.8.215	255.255.255.252



IP ADDRESS TABLE

DEVICE	INTERFACE	IPV4 ADDRESS	SUBNET MASK	DEFAULT GATEWAY
Magura Router	F0/0	192.168.7.1	255.255.255.0	N/A
	Se3/0	192.168.8.201	255.255.255.252	N/A
	Se2/0	192.168.8.193	255.255.255.252	N/A
	Se6/0	192.168.8.197	255.255.255.252	N/A
Jashore Router	F0/0	192.168.0.1	255.255.252.0	N/A
	Se3/0	192.168.8.206	255.255.255.252	N/A

	Se2/0	192.168.8.198	255.255.255.252	N/A
Kushtia Router	F0/0	192.168.8.129	255.255.255.192	N/A
	Se3/0	192.168.8.205	255.255.255.252	N/A
	Se2/0	192.168.8.194	255.255.255.252	N/A
Satkhira Router	F0/0	192.168.8.1	255.255.255.128	N/A
	Se2/0	192.168.8.202	255.255.255.252	N/A
	Se6/0	192.168.8.213	255.255.255.252	N/A
	Se3/0	192.168.8.209	255.255.255.252	N/A
Faridpur Router	F0/0	192.168.6.1	255.255.255.0	N/A
	Se2/0	192.168.8.214	255.255.255.252	N/A
Narail Router	F0/0	192.168.4.1	255.255.254.0	N/A
	Se2/0	192.168.8.210	255.255.255.252	N/A
PC Kushtia	NIC	192.168.8.132	255.255.255.0	192.168.8.129
PC Magura 1	NIC	192.168.7.2	255.255.255.0	192.168.7.1
PC Magura 2	NIC	192.168.7.3	255.255.255.0	192.168.7.1
PC Jashore	NIC	192.168.0.2	255.255.255.0	192.168.0.1
PC Satkhira	NIC	DHCP Assigned	DHCP Assigned	DHCP Assigned
PC Narail	NIC	DHCP Assigned	DHCP Assigned	DHCP Assigned
PC Faridpur 1	NIC	DHCP Assigned	DHCP Assigned	DHCP Assigned
PC Faridpur 2	NIC	DHCP Assigned	DHCP Assigned	DHCP Assigned
DNS Server	NIC	192.168.8.130	255.255.255.0	192.168.8.129

DHCP Server	NIC	192.168.8.131	255.255.255.0	192.168.8.129
Email Server	NIC	DHCP Assigned	DHCP Assigned	DHCP Assigned
Web Server	NIC	192.168.8.133	255.255.255.0	192.168.8.129

CONFIGURATION COMMANDS

MAGURA ROUTER COMMANDS

Router>en

Router#config t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#int s2/0

Router(config-if)#ip address 192.168.8.193 255.255.255.252

Router(config-if)#no shut

%LINK-5-CHANGED: Interface Serial2/0, changed state to down

Router(config-if)#exit

Router(config)#int s6/0

Router(config-if)#ip address 192.168.8.197 255.255.255.252

Router(config-if)#no shut

%LINK-5-CHANGED: Interface Serial6/0, changed state to down

Router(config-if)#exit

```
Router(config)#int s3/0
```

```
Router(config-if)#ip address 192.168.8.201 255.255.255.252
```

```
Router(config-if)#no shut
```

```
%LINK-5-CHANGED: Interface Serial3/0, changed state to down
```

```
Router(config-if)#exit
```

```
Router(config)#
```

```
Router>en
```

```
Router#config t
```

```
Enter configuration commands, one per line. End with CNTL/Z.
```

```
Router(config)#int f0/0
```

```
Router(config-if)#ip address 192.168.7.1 255.255.255.0
```

```
Router(config-if)#no shut
```

```
Router(config-if)#
```

```
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
```

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
```

DEFAULT ROUTE TO JASHORE

```
Router(config)#ip route 0.0.0.0 0.0.0.0 s6/0
```

```
Router(config)#exit
```

```
Router#
```

```
%SYS-5-CONFIG_I: Configured from console by console
```

```
Router#show ip route
```

```
Codes: C - connected, S - static, I - IGRP, 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, E - EGP

i - IS-IS, 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

Gateway of last resort is 0.0.0.0 to network 0.0.0.0

C 192.168.7.0/24 is directly connected, FastEthernet0/0

192.168.8.0/24 is variably subnetted, 4 subnets, 2 masks

S 192.168.8.128/26 [1/0] via 192.168.8.194

C 192.168.8.192/30 is directly connected, Serial2/0

C 192.168.8.196/30 is directly connected, Serial6/0

C 192.168.8.200/30 is directly connected, Serial3/0

S* 0.0.0.0/0 is directly connected, Serial6/0

[DEFAULT ROUTE IS VISIBLE IN ROUTING TABLE]

Router#config t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#ip route 0.0.0.0 0.0.0.0 s2/0 5

Router(config)#exit

Router#

%SYS-5-CONFIG_I: Configured from console by console

Router#show run

ip route 0.0.0.0 0.0.0.0 Serial6/0

ip route 0.0.0.0 0.0.0.0 Serial2/0 5

SHUT DOWN PRIMARY ROUTE

```
Router#config t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Router(config)#int s6/0
```

```
Router(config-if)#shut
```

```
Router(config-if)#
```

%LINK-5-CHANGED: Interface Serial6/0, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial6/0, changed state to down

STATIC ROUTING

```
Router>en
```

```
Router#config t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Router(config)#ip route 192.168.8.128 255.255.255.192 192.168.8.194
```

```
Router(config)#ip route 192.168.0.0 255.255.252.0 192.168.8.194
```

```
Router(config)#ip route 192.168.8.0 255.255.255.128 192.168.8.202
```

```
Router(config)#ip route 192.168.4.0 255.255.254.0 192.168.8.202
```

```
Router(config)#ip route 192.168.6.0 255.255.255.0 192.168.8.202
```

```
Router(config)#
```

RIP

```
Router>en
```

```
Router#config t
```

Enter configuration commands, one per line. End with CNTL/Z.


```
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#redistribute static
Router(config-router)#end
Router#
```

KUSHTIA ROUTER COMMANDS

```
Router>en
```

```
Router#config t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Router(config)#int s2/0
```

```
Router(config-if)#ip address 192.168.8.194 255.255.255.252
```

```
Router(config-if)#no shut
```

```
Router(config-if)#
```

%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

```
Router#config t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Router(config)#int s3/0
```

```
Router(config-if)#ip address 192.168.8.205 255.255.255.252
```

```
Router(config-if)#no shut
```

%LINK-5-CHANGED: Interface Serial3/0, changed state to down

```
Router(config-if)#
```

%LINK-5-CHANGED: Interface Serial3/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up

Router#config t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#int f0/0

Router(config-if)#ip address 192.168.8.129 255.255.255.192

Router(config-if)#no shut

STATIC ROUTING

Router>en

Router#config t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#ip route 192.168.0.0 255.255.252.0 192.168.8.206

Router(config)#ip route 192.168.7.0 255.255.255.0 192.168.8.193

Router(config)#ip route 192.168.8.0 255.255.255.128 192.168.8.193

Router(config)#ip route 192.168.4.0 255.255.254.0 192.168.8.193

Router(config)#ip route 192.168.6.0 255.255.255.0 192.168.8.193

Router(config)#

Router(config-if)#

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

JASHORE ROUTER COMMANDS

Router>en

Router#config t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#int s2/0

Router(config-if)#ip address 192.168.8.198 255.255.255.252

```
Router(config-if)#no shut
```

```
Router(config-if)#
```

```
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
```

```
Router(config-if)#int s3/0
```

```
Router(config-if)#ip address 192.168.8.206 255.255.255.252
```

```
Router(config-if)#no shut
```

```
Router(config-if)#
```

```
%LINK-5-CHANGED: Interface Serial3/0, changed state to up
```

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up
```

```
Router>en
```

```
Router#config t
```

```
Enter configuration commands, one per line. End with CNTL/Z.
```

```
Router(config)#int f0/0
```

```
Router(config-if)#ip address 192.168.0.1 255.255.252.0
```

```
Router(config-if)#no shut
```

```
Router(config-if)#
```

```
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
```

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
```

STATIC ROUTING

```
Router>en
```

```
Router#config t
```

```
Router(config)#ip route 192.168.8.128 255.255.255.192 192.168.8.205
```

```
Router(config)#ip route 192.168.7.0 255.255.255.0 192.168.8.205
```

```
Router(config)#ip route 192.168.8.0 255.255.255.128 192.168.8.205
```

```
Router(config)#ip route 192.168.4.0 255.255.254.0 192.168.8.205
```

```
Router(config)#ip route 192.168.6.0 255.255.255.0 192.168.8.205
```

```
Router(config)#
```

SATKHIRA ROUTER COMMANDS

```
Router>en
```

```
Router#config t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Router(config)#int s2/0
```

```
Router(config-if)#ip address 192.168.8.202 255.255.255.252
```

```
Router(config-if)#no shut
```

```
Router(config-if)#
```

```
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
```

```
Router(config-if)#exit
```

```
Router(config)#int s3/0
```

```
Router(config-if)#ip address 192.168.8.209 255.255.255.252
```

```
Router(config-if)#no shut
```

```
%LINK-5-CHANGED: Interface Serial3/0, changed state to down
```

```
Router(config-if)#
```

```
Router(config-if)#exit
```

```
Router(config)#int s6/0
```

```
Router(config-if)#ip address 192.168.8.213 255.255.255.252
```

```
Router(config-if)#no shut
```

```
%LINK-5-CHANGED: Interface Serial6/0, changed state to down
```

```
Router(config-if)#
```

Router>en

Router#config t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#int f0/0

Router(config-if)#ip address 192.168.8.1 255.255.255.128

Router(config-if)#no shut

Router(config-if)#

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

DHCP

Router>en

Router#config t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#int f0/0

Router(config-if)#ip helper-address 192.168.8.131

Router(config-if)#exit

RIP

Router(config)#router rip

Router(config-router)#version 2

Router(config-router)#no auto-summary

Router(config-router)#network 192.168.8.200

Router(config-router)#network 192.168.8.208

```
Router(config-router)#network 192.168.8.212
Router(config-router)#network 192.168.8.0
Router(config-router)#passive-interface f0/0
Router(config-router)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Router#
Router#
```

NARAIL ROUTER COMMANDS

```
Router>en
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int s2/0
Router(config-if)#ip address 192.168.8.210 255.255.255.252
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
Router>en
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
```

```
Router(config)#int f0/0
```

```
Router(config-if)#ip address 192.168.4.1 255.255.254.0
```

```
Router(config-if)#no shut
```

```
Router(config-if)#
```

```
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
```

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
```

DHCP

```
Router>en
```

```
Router#config t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Router(config)#int f0/0
```

```
Router(config-if)#ip helper-address 192.168.8.131
```

```
Router(config-if)#exit
```

```
Router(config)#
```

RIP

```
Router>en
```

```
Router#config t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Router(config)#router rip
```

```
Router(config-router)#version 2
```

```
Router(config-router)#no auto-summary
```

```
Router(config-router)#network 192.168.8.208
```

```
Router(config-router)#network 192.168.4.0
```

```
Router(config-router)#passive-interface f0/0

Router(config-router)#end

Router#

%SYS-5-CONFIG_I: Configured from console by console

Router#copy run start

Destination filename [startup-config]?

Building configuration...

[OK]

Router#

Router#
```

FARIDPUR ROUTER COMMANDS

```
Router>en

Router#config t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#int s2/0

Router(config-if)#ip address 192.168.8.214 255.255.255.252

Router(config-if)#no shut

Router(config-if)#

%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Router>en

Router#config t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#int f0/0

Router(config-if)#ip address 192.168.6.1 255.255.255.0
```



```
Router(config-if)#no shut
```

```
Router(config-if)#
```

```
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
```

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
```

DHCP

```
Router>en
```

```
Router#config t
```

```
Enter configuration commands, one per line. End with CNTL/Z.
```

```
Router(config)#int f0/0
```

```
Router(config-if)#ip helper-address 192.168.8.131
```

```
Router(config-if)#exit
```

```
Router(config)#
```

RIP

```
Router>en
```

```
Router#config t
```

```
Enter configuration commands, one per line. End with CNTL/Z.
```

```
Router(config)#router rip
```

```
Router(config-router)#version 2
```

```
Router(config-router)#no auto-summary
```

```
Router(config-router)#network 192.168.8.212
```

```
Router(config-router)#network 192.168.6.0
```

```
Router(config-router)#passive-interface f0/0
```

Router(config-router)#end

Router#

%SYS-5-CONFIG_I: Configured from console by console

Router#copy run start

Destination filename [startup-config]?

Building configuration...

[OK]

Router#