

VLSM TREE:

Name	Hosts needed	Hosts available	Unused hosts	Network address	Slash	Mask	Usable range	Broadcast
Kamrangirchor	1250	2046	796	11.37.0.0	/21	255.255.248.0	11.37.0.1 – 11.37.7.254	11.37.7.255
Motijheel	680	1022	342	11.37.8.0	/22	255.255.252.0	11.37.8.1 – 11.37.11.254	11.37.11.255
Gulshan	430	510	80	11.37.12.0	/23	255.255.254.0	11.37.12.1 – 11.37.13.254	11.37.13.255
Dhanmondi	220	254	34	11.37.14.0	/24	255.255.255.0	11.37.14.1 – 11.37.14.254	11.37.14.255
Mirpur	180	254	74	11.37.15.0	/24	255.255.255.0	11.37.15.1 – 11.37.15.254	11.37.15.255
Secretariat	95	126	31	11.37.16.0	/25	255.255.255.128	11.37.16.1 – 11.37.16.126	11.37.16.127

IP ADDRESS TABLE:

Device	Interface	IP address	Subnet mask	Notes
Secretariat (R0)	G0/0/0	11.37.16.1	255.255.255.128	Secretariat LAN gateway
Secretariat (R0)	S0/1/0	11.37.100.1	255.255.255.252	To Gulshan
Secretariat (R0)	S0/1/1	11.37.100.5	255.255.255.252	To Motijheel
Secretariat (R0)	S0/2/0	11.37.100.21	255.255.255.252	To Dhanmondi
Gulshan (R1)	G0/0/0	11.37.12.1	255.255.254.0	Gulshan LAN gateway
Gulshan (R1)	S0/1/0	11.37.100.2	255.255.255.252	To Secretariat
Gulshan (R1)	S0/1/1	11.37.100.9	255.255.255.252	To Kamrangirchor
Kamrangirchor (R4)	G0/0/0	11.37.0.1	255.255.248.0	Kamrangirchor LAN gateway
Kamrangirchor (R4)	S0/1/0	11.37.100.10	255.255.255.252	To Gulshan
Dhanmondi (R5)	G0/0/0	11.37.14.1	255.255.255.0	Dhanmondi LAN gateway
Dhanmondi (R5)	G0/0/1	10.1.1.2	255.255.255.0	To Motijheel (assumption)
Dhanmondi (R5)	S0/1/0	11.37.100.22	255.255.255.252	To Secretariat
Dhanmondi (R5)	S0/1/1	11.37.100.17	255.255.255.252	To Mirpur
Mirpur (R2)	G0/0/0	11.37.15.1	255.255.255.0	Mirpur LAN gateway
Mirpur (R2)	S0/1/0	11.37.100.18	255.255.255.252	To Dhanmondi
Motijheel (R3)	G0/0/0	11.37.8.1	255.255.252.0	Motijheel LAN gateway

Motijheel (R3)	G0/0/1	10.1.1.1	255.255.255.0	To Dhanmondi (assumption)
Motijheel (R3)	S0/1/0	11.37.100.6	255.255.255.252	To Secretariat

Device	Interface	IP address	Subnet mask	Default gateway	DNS
Server0 (DNS/Web/Email/DHCP)	Fa0	11.37.16.10	255.255.255.128	11.37.16.1	11.37.16.10

Example PC IPs:

Area	Addressing method	Example PC IP	Subnet mask	Default gateway	DNS
Secretariat	Static	11.37.16.20	255.255.255.128	11.37.16.1	11.37.16.10
Gulshan	Static	11.37.12.10	255.255.254.0	11.37.12.1	11.37.16.10
Kamrangirchor	Static	11.37.0.10	255.255.248.0	11.37.0.1	11.37.16.10
Motijheel	Static	11.37.8.10	255.255.252.0	11.37.8.1	11.37.16.10
Mirpur	DHCP	(Auto)	(Auto)	(Auto)	(Auto)
Dhanmondi	DHCP	(Auto)	(Auto)	(Auto)	(Auto)

Commands List for configuration:

```
-----  
! R0 secretariat  
-----
```

```
enable  
conf t  
hostname secretariat
```

```
! sec LAN  
interface g0/0/0  
ip address 11.37.16.1 255.255.255.128  
no shutdown  
exit
```

```
! sec-gul WAN  
interface s0/1/0  
ip address 11.37.100.1 255.255.255.252  
clock rate 64000  
no shutdown  
exit
```

```
! sec-mot WAN  
interface s0/1/1  
ip address 11.37.100.5 255.255.255.252  
clock rate 64000  
no shutdown  
exit
```

```
! sec->gul static  
ip route 11.37.12.0 255.255.254.0 11.37.100.2
```

```
! RIP v2  
router rip  
version 2  
no auto-summary  
network 11.0.0.0  
passive-interface g0/0/0  
exit  
end  
wr
```

```
! email ACL  
conf t  
ip access-list extended EMAIL_ONLY  
deny tcp 11.37.14.0 0.0.0.255 host 11.37.16.10 eq 25  
deny tcp 11.37.14.0 0.0.0.255 host 11.37.16.10 eq 110  
deny tcp 11.37.15.0 0.0.0.255 host 11.37.16.10 eq 25
```

```
deny tcp 11.37.15.0 0.0.0.255 host 11.37.16.10 eq 110
deny tcp 11.37.8.0 0.0.3.255 host 11.37.16.10 eq 25
deny tcp 11.37.8.0 0.0.3.255 host 11.37.16.10 eq 110
permit ip any any
exit
interface g0/0/0
ip access-group EMAIL_ONLY in
exit
end
wr
```

! R1 gulshan

```
enable
conf t
hostname gulshan
```

```
! gul LAN
interface g0/0/0
ip address 11.37.12.1 255.255.254.0
no shutdown
exit
```

```
! gul-sec WAN
interface s0/1/0
ip address 11.37.100.2 255.255.255.252
no shutdown
exit
```

```
! gul-kam WAN
interface s0/1/1
ip address 11.37.100.9 255.255.255.252
clock rate 64000
no shutdown
exit
```

```
! gul->sec static
ip route 11.37.16.0 255.255.255.128 11.37.100.1
```

```
! gul->kam static
ip route 11.37.0.0 255.255.248.0 Serial0/1/1
```

```
! RIP v2
router rip
version 2
no auto-summary
```

```
network 11.0.0.0
passive-interface g0/0/0
exit
end
wr
```

```
-----
! R4 kamrangirchor
-----
```

```
enable
conf t
hostname kamrangirchor
```

```
! kam LAN
interface g0/0/0
ip address 11.37.0.1 255.255.248.0
no shutdown
exit
```

```
! kam-gul WAN
interface s0/1/0
ip address 11.37.100.10 255.255.255.252
no shutdown
exit
```

```
! kam->gul static
ip route 11.37.12.0 255.255.254.0 Serial0/1/0
```

```
! RIP v2
router rip
version 2
no auto-summary
network 11.0.0.0
passive-interface g0/0/0
exit
end
wr
```

```
-----
! R3 motijhil
-----
```

```
enable
conf t
hostname motijhil
```

```
! mot LAN
```

```
interface g0/0/0
ip address 11.37.8.1 255.255.252.0
no shutdown
exit
```

```
! mot-sec WAN
interface s0/1/0
ip address 11.37.100.6 255.255.255.252
no shutdown
exit
```

```
! RIP v2
router rip
version 2
no auto-summary
network 11.0.0.0
passive-interface g0/0/0
exit
end
wr
```

```
! floating backup
conf t
ip route 11.37.16.0 255.255.255.128 10.1.1.2 200
end
wr
```

```
-----
! R5 dhanmondi
-----
```

```
enable
conf t
hostname dhanmondi
```

```
! dhan LAN
interface g0/0/0
ip address 11.37.14.1 255.255.255.0
no shutdown
ip helper-address 11.37.16.10
exit
```

```
! dhan-mir WAN
interface s0/1/1
ip address 11.37.100.17 255.255.255.252
clock rate 64000
no shutdown
exit
```

```
! RIP v2
router rip
version 2
no auto-summary
network 11.0.0.0
passive-interface g0/0/0
exit
end
wr
```

! R2 mirpur

```
enable
conf t
hostname mirpur
```

```
! mir LAN
interface g0/0/0
ip address 11.37.15.1 255.255.255.0
no shutdown
exit
```

```
! mir-dhan WAN
interface s0/1/0
ip address 11.37.100.18 255.255.255.252
no shutdown
exit
```

```
! RIP v2
router rip
version 2
no auto-summary
network 11.0.0.0
passive-interface g0/0/0
exit
end
wr
```