

Task 1:

star city:

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface FastEthernet0/0
```

```
Router(config-if)#ip address 192.10.38.3 255.255.255.0
```

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

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface s0/0/0
```

```
Router(config-if)#ip address 192.10.39.133 255.255.255.252
```

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

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface s0/1/1
```

```
Router(config-if)#ip address 192.10.39.129 255.255.255.252
```

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

Metropolis city:

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface FastEthernet0/1
```

```
Router(config-if)#ip address 192.10.36.3 255.255.254.0
```

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

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface s0/0/0
```

```
Router(config-if)#ip address 192.10.39.134 255.255.255.252
```

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

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface s0/0/1
```

```
Router(config-if)#ip address 192.10.39.137 255.255.255.252
```

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

Coast city:

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface FastEthernet0/1
```

```
Router(config-if)#ip address 192.10.39.3 255.255.255.128
```

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

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface s0/0/0
```

```
Router(config-if)#ip address 192.10.39.153 255.255.255.252
```

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

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface s0/0/1
```

```
Router(config-if)#ip address 192.10.39.138 255.255.255.252
```

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

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface s0/1/0
```

```
Router(config-if)#ip address 192.10.39.150 255.255.255.252
```

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

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface s0/1/1
```

```
Router(config-if)#ip address 192.10.39.130 255.255.255.252
```

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

Gotham city:

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface FastEthernet0/1
```

```
Router(config-if)#ip address 192.10.32.3 255.255.252.0
```

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

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface s0/0/1
```

```
Router(config-if)#ip address 192.10.39.145 255.255.255.252
```

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

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface s0/1/0
```

```
Router(config-if)#ip address 192.10.39.149 255.255.255.252
```

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

Amazonia city:

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface FastEthernet0/1
```

```
Router(config-if)#ip address 192.10.24.3 255.255.248.0
```

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

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface s0/0/0
```

```
Router(config-if)#ip address 192.10.39.141 255.255.255.252
```

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

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface s0/0/1
```

```
Router(config-if)#ip address 192.10.39.146 255.255.255.252
```

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

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#interface s0/1/0
```

```
Router(config-if)#ip address 192.10.39.154 255.255.255.252
```

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

Atlantis city:

Router#

Router#configure terminal

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

Router(config)#interface FastEthernet0/1

Router(config-if)#ip address 192.10.8.3 255.255.240.0

Router(config-if)#no shutdown

Router#

Router#configure terminal

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

Router(config)#interface s0/0/0

Router(config-if)#ip address 192.10.39.142 255.255.255.252

Router(config-if)#no shutdown

Task 2:

Router(config)#ip route 192.10.36.0 255.255.254.0 192.10.39.134

Router(config)#ip route 192.10.38.0 255.255.255.0 192.10.39.133

Router(config)#ip route 192.10.39.0 255.255.255.128 192.10.39.138

Router(config)#ip route 192.10.36.0 255.255.254.0 192.10.39.137

Router(config)#ip route 192.10.39.0 255.255.255.128 192.10.39.130

Router(config)#ip route 192.10.38.0 255.255.255.0 192.10.39.129

Task 3:

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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 192.10.8.0
```

```
Router(config-router)#network 192.10.39.140
```

```
Router(config-router)#network 192.10.24.0
```

```
Router(config-router)#do wr
```

Building configuration...

[OK]

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

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```



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 192.10.8.0
```

```
Router(config-router)#network 192.10.39.140
```

```
Router(config-router)#network 192.10.24.0
```

```
Router(config-router)#do wr
```

Building configuration...

[OK]

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

Task 4:

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

```
Router(config)#
```

```
Router(config)#ip route 192.10.36.0 255.255.254.0 192.10.39.150
```

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

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

Router(config)#

Router(config)#ip route 192.10.32.0 255.255.252.0 192.10.39.138

Router(config)#ip route 192.10.38.0 255.255.255.0 192.10.39.150

Router(config)#ip route 192.10.32.0 255.255.252.0 192.10.39.130

Router(config)#ip route 192.10.8.0 255.255.240.0 192.10.39.146

Router(config)#ip route 192.10.32.0 255.255.252.0 192.10.39.141

Task 5:

Router(config)#interface Serial0/0/0

Router(config-if)#ip address 192.10.39.153 255.255.255.252

Router(config-if)#ip address 192.10.39.153 255.255.255.252

Router(config-if)#ip address 192.10.39.153 255.255.255.252

Router(config-if)#no shutdown

Router(config)#interface Serial0/1/0

Router(config-if)#ip address 192.10.39.154 255.255.255.252

Router(config-if)#ip address 192.10.39.154 255.255.255.252

Router(config-if)#no shutdown

Router(config-if)#

%LINK-5-CHANGED: Interface Serial0/1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/1/0, changed state to up

Task 7:

```
ip route 0.0.0.0 0.0.0.0 se0/0/0
```

```
ip route 0.0.0.0 0.0.0.0 se0/0/1
```

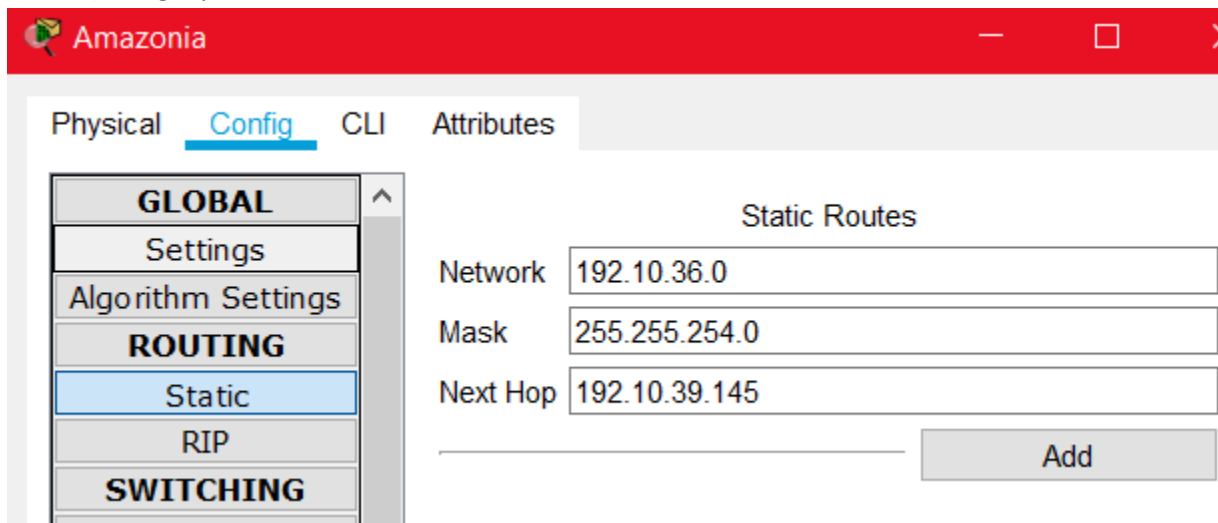
```
ip route 0.0.0.0 0.0.0.0 se0/1/0
```

```
ip route 0.0.0.0 0.0.0.0 se0/0/1
```

```
ip route 0.0.0.0 0.0.0.0 se0/1/1
```

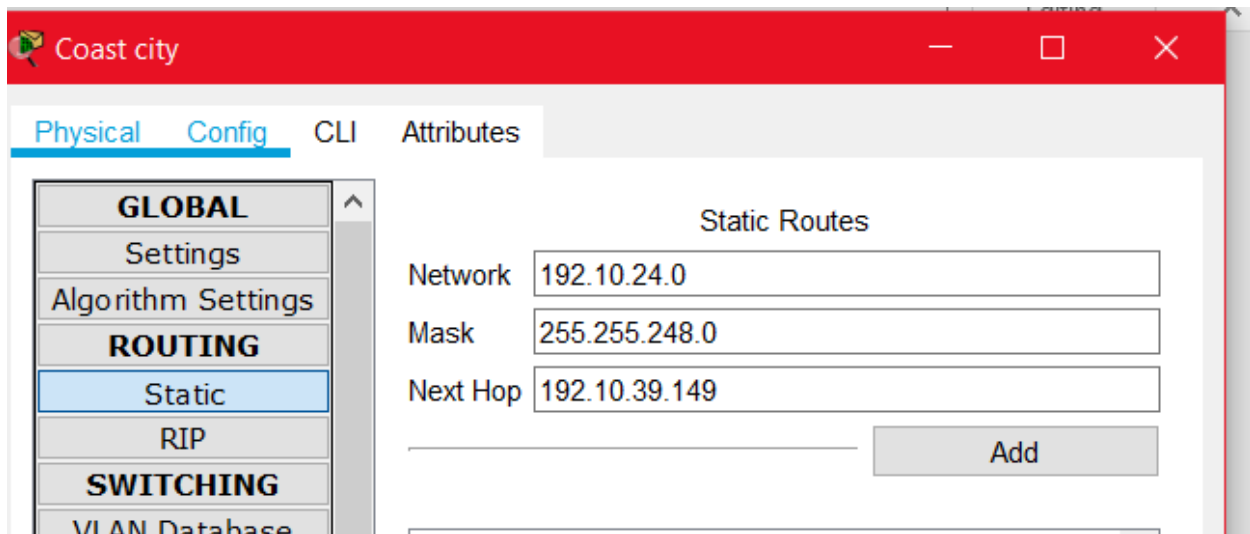
Router(config)#

```
Router(config)#ip route 192.10.39.0 255.255.255.128 192.10.39.145
```



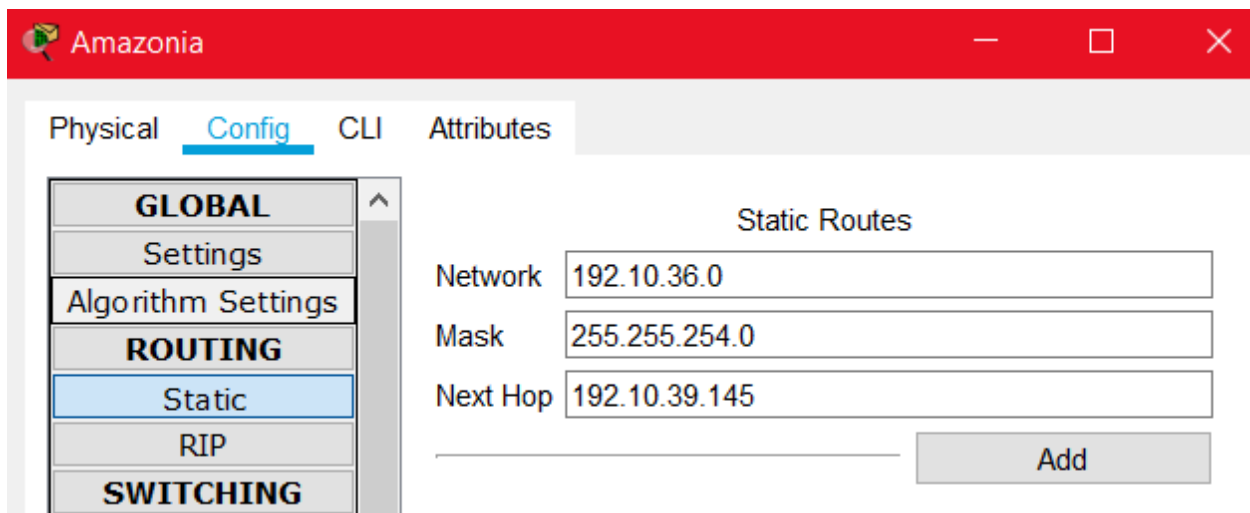
Router(config)#

```
Router(config)#ip route 192.10.24.0 255.255.248.0 192.10.39.149
```



```
Router(config)#
```

```
Router(config)#ip route 192.10.36.0 255.255.254.0 192.10.39.145
```



```
Router(config)#ip route 192.10.24.0 255.255.248.0 192.10.39.138
```

Metropolis

Physical Config CLI Attributes

Settings  
Algorithm Settings  
**ROUTING**  
Static  
RIP  
**SWITCHING**  
VLAN Database

Static Routes

Network 192.10.24.0  
Mask 255.255.248.0  
Next Hop 192.10.39.138

Add

Router(config)#ip route 192.10.38.0 255.255.255.0 192.10.39.145

Amazonia

Physical Config CLI Attributes

GLOBAL  
Settings  
Algorithm Settings  
**ROUTING**  
Static  
RIP  
**SWITCHING**  
VLAN Database

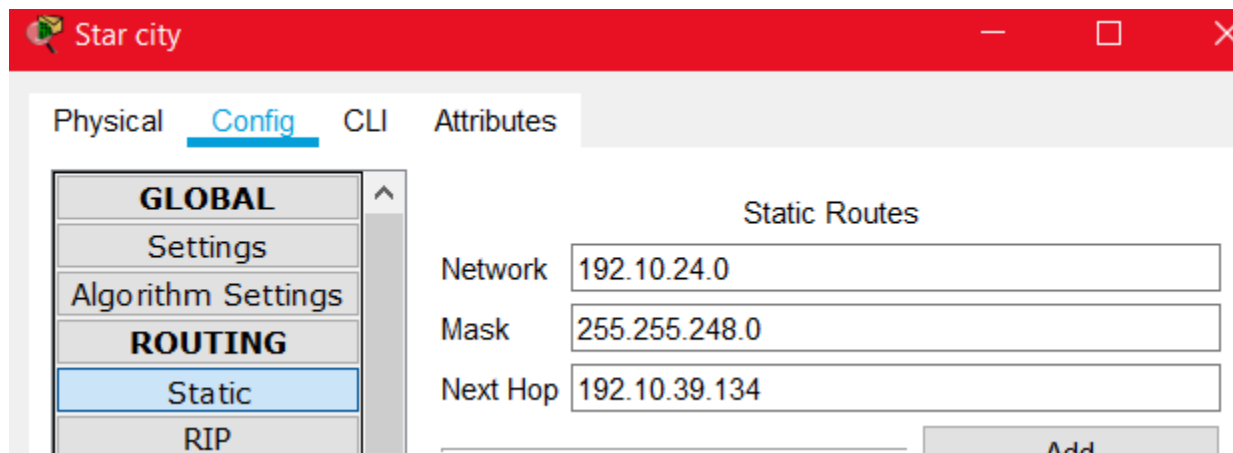
Static Routes

Network 192.10.38.0  
Mask 255.255.255.0  
Next Hop 192.10.39.145

Add

Router(config)#

Router(config)#ip route 192.10.24.0 255.255.248.0 192.10.39.134



Backup ROUTE AMAZONIA TO COAST CITY

```
Router(config)#ip route 192.10.39.0 255.255.255.128 192.10.39.153 11
```

COAST CITY TO AMAZONIA

```
Router(config)#ip route 192.10.24.0 255.255.248.0 192.10.39.154 11
```

Backup route from Amazonia to Metropolis

```
Router(config)#ip route 192.10.36.0 255.255.255.128 192.10.39.153 12
```

Backup route from Metropolis to Amazonia

```
Router(config)#ip route 192.10.24.0 255.255.248.0 192.10.39.138 12
```

Backup Route from Star City to Amazonia

```
Router(config)#ip route 192.10.24.0 255.255.248.0 192.10.39.130 13
```

Backup Route from Amazonia to Star City

```
Router(config)#ip route 192.10.38.0 255.255.255.0 192.10.39.153 13
```

Atlantis to Coast City Static Route

```
Router(config)#ip route 192.10.39.0 255.255.255.128 192.10.39.141
```

Coast city to atlantis static routing

Router(config)#ip route 192.10.8.0 255.255.248.0 192.10.39.149

Atlantis and Coast City Floating Static Route-

Router(config)#ip route 192.10.39.0 255.255.255.128 192.10.39.141 15

Coast City to Atlantis Floating Static Route-

Router(config)#ip route 192.10.8.0 255.255.248.0 192.10.39.149 15

Atlantis and Metropolis Floating static route

Router(config)#ip route 192.0.36.0 255.255.254.0 192.10.39.141

Metropolis to Atlantis Floating Static Route

Router(config)#ip route 192.10.8.0 255.255.248.0 192.10.39.138

Atlantis to Star city

Router(config)#ip route 192.10.38.0 255.255.255.0 192.10.39.141 17

Star City to Atlantis

Router(config)#ip route 192.10.8.0 255.255.248.0 192.10.39.134 17

# VLSM

192.10.8.0/19

| #                       | Host | IP   | Give | Host Bit | Network Bit |
|-------------------------|------|------|------|----------|-------------|
| Gotham<br>Atlantis      | 2048 | 2048 | 4096 | 12       | 20          |
| Amazonia                | 1024 | 1024 | 2048 | 11       | 21          |
| Gotham.                 | 512  | 512  | 1024 | 10       | 22          |
| Metropolis              | 256  | 256  | 512  | 9        | 23          |
| Metropolis<br>Star city | 128  | 128  | 256  | 8        | 24          |
| Coast City              | 64   | 64   | 128  | 7        | 25          |
| A                       | 2    | 4    | 4    | 2        | 30          |
| B                       | 2    | 4    | 4    | 2        | 30          |
| C                       | 2    | 4    | 4    | 2        | 30          |
| D                       | 2    | 4    | 4    | 2        | 30          |
| E                       | 2    | 4    | 4    | 2        | 30          |
| F                       | 2    | 4    | 4    | 2        | 30          |
| G                       | 2    | 4    | 4    | 2        | 30          |



8192 (a)

(b) 4096

4096 (c)

Atlantis

(d)

2048

(e)

2048

Amazonia

(f)

1024

(g)

1024

Gotham

(h)

512

(i)

512

Metropolis

(j)

256

(k)

256

Star city

(l)

128

(m)

128

Coast city

√(n)

↓(o)

↓(p)

↓(q)

↓(r)

↓(s)

↓(t)

↓(u)

↓(v)

↓(w)

↓(x)

↓(y)

↓(z)

↓(aa)

↓(ab)

↓(ac)

164

46

46

46

46

46

46

46

46

46

46

46

46

46

46

46

46

A

B

C

D

E

F

G

H

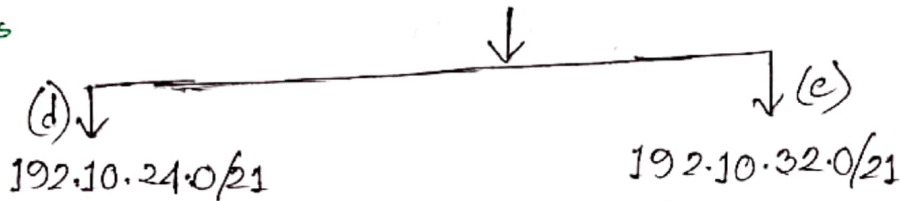
192.10.8.0/19 (a)



192.10.8.0/20

Atlantis

192.10.24.0/20



192.10.24.0/21

Amazonia

192.10.32.0/21



192.10.32.0/22

Gotham

192.10.36.0/22



192.10.36.0/23

Metropolis

192.10.38.0/23



192.10.38.0/24

Star city

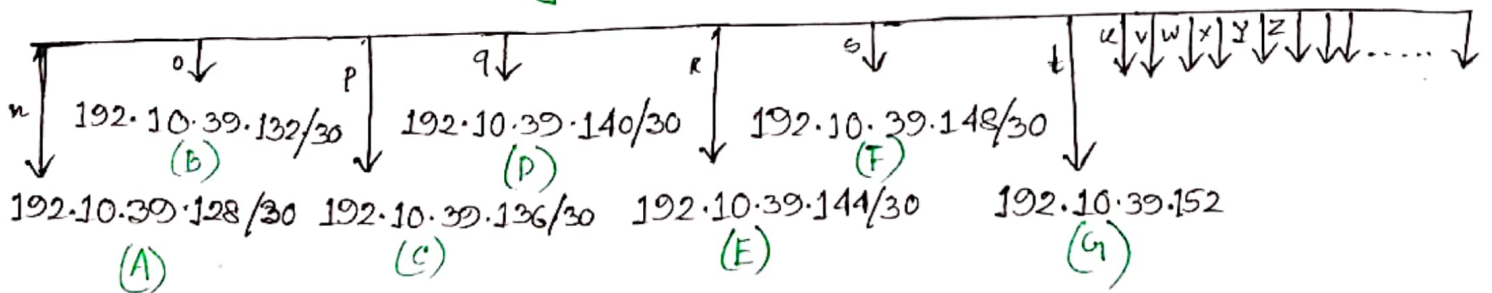
192.10.39.0/24



192.10.39.0/25

Coast city

192.10.39.128/25



# Ip Address Table

| Devices    | port     | Ip address    | Subnet mask     | Default Gateway |
|------------|----------|---------------|-----------------|-----------------|
| Star city  | Fa 0/0   | 192.10.38.3   | 255.255.255.0   |                 |
|            | se 0/0/0 | 192.10.39.133 | 255.255.255.252 |                 |
|            | se 0/1/1 | 192.10.39.129 | 255.255.255.252 |                 |
| Metropolis | Fa 0/1   | 192.10.36.3   | 255.255.254.0   |                 |
|            | se 0/0/0 | 192.10.39.134 | 255.255.255.252 |                 |
|            | se 0/0/1 | 192.10.39.137 | 255.255.255.252 |                 |
| Coast city | Fa 0/1   | 192.10.39.3   | 255.255.255.128 |                 |
|            | se 0/0/0 | 192.10.39.153 | 255.255.255.252 |                 |
|            | se 0/0/1 | 192.10.39.138 | 255.255.255.252 |                 |
|            | se 0/1/0 | 192.10.39.150 | 255.255.255.252 |                 |
|            | se 0/1/1 | 192.10.39.130 | 255.255.255.252 |                 |
| Gotham     | Fa 0/1   | 192.10.32.3   | 255.255.252.0   |                 |
|            | se 0/0/1 | 192.10.39.145 | 255.255.255.252 |                 |
|            | se 0/1/0 | 192.10.39.149 | 255.255.255.252 |                 |
| Amazonia   | Fa 0/1   | 192.10.24.3   | 255.255.248.0   |                 |
|            | se 0/0/0 | 192.10.39.141 | 255.255.255.252 |                 |
|            | se 0/0/1 | 192.10.39.146 | 255.255.255.252 |                 |
|            | se 0/1/0 | 192.10.39.154 | 255.255.255.252 |                 |
| Atlantis   | Fa 0/0   | 192.10.8.3    | 255.255.240.0   |                 |
|            | se 0/0/0 | 192.10.39.142 | 255.255.255.252 |                 |
| PC0        |          | 192.10.38.1   | 255.255.255.0   | 192.10.38.3     |
| PC1        |          | 192.10.38.2   | 255.255.255.0   | 192.10.38.3     |
| PC2        |          | 192.10.39.1   | 255.255.255.128 | 192.10.39.3     |
| PC3        |          | 192.10.39.2   | 255.255.255.128 | 192.10.39.3     |
| PC4        |          | 192.10.36.1   | 255.255.254.0   | 192.10.36.3     |
| PC5        |          | 192.10.36.2   | 255.255.254.0   | 192.10.36.3     |
| PC6        |          | 192.10.24.1   | 255.255.248.0   | 192.10.24.3     |
| PC7        |          | 192.10.24.2   | 255.255.248.0   | 192.10.24.3     |
| PC8        |          | 192.10.8.1    | 255.255.240.0   | 192.10.8.3      |
| PC9        |          | 192.10.8.2    | 255.255.240.0   | 192.10.8.3      |
| PC10       |          | 192.10.32.1   | 255.255.252.0   | 192.10.32.3     |
| PC11       |          | 192.10.32.2   | 255.255.252.0   | 192.10.32.3     |