

IP Address Table

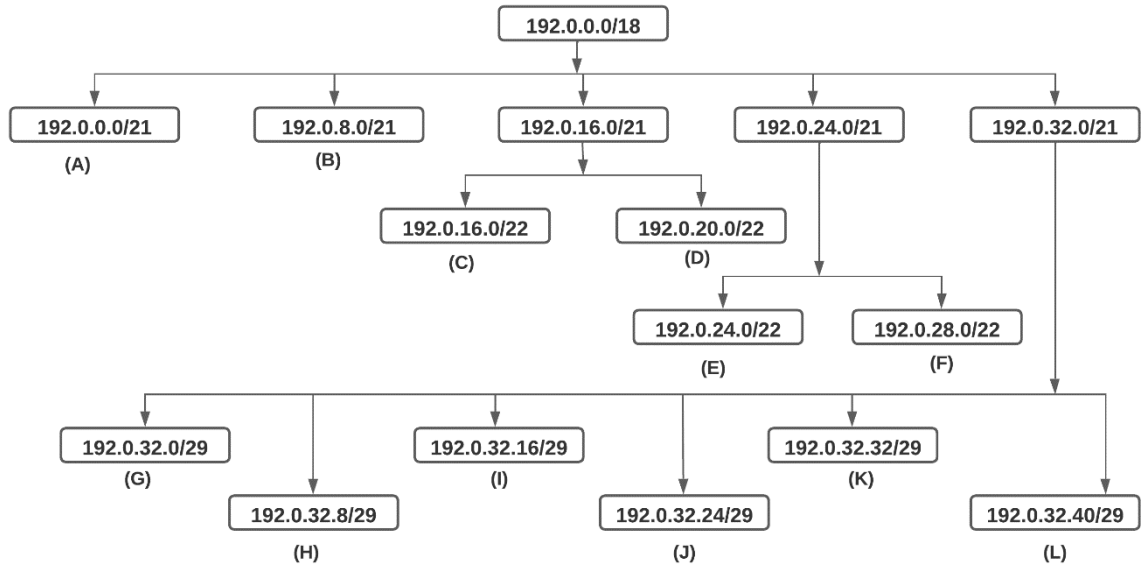
DEVICE	INTERFACE	IP ADDRESS	SUBNET MASK	DEFAULT GATEWAY
BREEZE	s0/0	192.0.32.25	255.255.255.248	N/A
	s1/0	192.0.32.33	255.255.255.248	N/A
	f3/0	192.0.24.1	255.255.252.0	N/A
FRACTURE	f0/0	192.0.32.41	255.255.255.248	N/A
	f3/0	192.0.8.1	255.255.248.0	N/A
ICEBOX	s0/0	192.0.32.26	255.255.255.248	N/A
	f1/0	192.0.32.17	255.255.255.248	N/A
	f3/0	192.0.20.1	255.255.252.0	N/A
ASCENT	s0/0	192.0.32.42	255.255.255.248	N/A
	s1/0	192.0.32.18	255.255.255.248	N/A
	s4/0	192.0.32.10	255.255.255.248	N/A
	s5/0	192.0.32.34	255.255.255.248	N/A
	f3/0	192.0.16.1	255.255.252.0	N/A
HEAVEN	s0/0	192.0.32.2	255.255.255.248	N/A
	s4/0	192.0.32.9	255.255.255.248	N/A
	f3/0	192.0.0.1	255.255.248.0	N/A
BIND	s1/0	192.0.32.1	255.255.255.248	N/A
	f3/0	192.0.28.1	255.255.252.0	N/A
PC1	N/A	192.0.24.4	255.255.252.0	192.0.24.1

PC2	N/A	192.0.20.3	255.255.252.0	192.0.20.1
PC3	N/A	192.0.8.3	255.255.248.0	192.0.8.1
PC4	N/A	192.0.8.2	255.255.248.0	192.0.8.1
PC5	N/A	192.0.0.6	255.255.248.0	192.0.0.1
PC6	N/A	192.0.0.5	255.255.248.0	192.0.0.1
PC7	N/A	192.0.16.4	255.255.252.0	192.0.16.1
PC8	N/A	192.0.16.3	255.255.252.0	192.0.16.1
PC9	N/A	192.0.28.4	255.255.252.0	192.0.28.1
PC10	N/A	192.0.28.3	255.255.252.0	192.0.28.1
LAPTOP1	N/A	192.0.24.3	255.255.252.0	192.0.24.1
LAPTOP2	N/A	192.0.20.4	255.255.252.0	192.0.20.1
DHCP Br	N/A	192.0.24.2	255.255.252.0	192.0.24.1
DHCP I	N/A	192.0.20.2	255.255.252.0	192.0.20.1
DHCP A	N/A	192.0.16.2	255.255.252.0	192.0.16.1
DHCP Bi	N/A	192.0.28.2	255.255.252.0	192.0.28.1
EMAIL SERVER (FRACTURE)	N/A	192.0.8.4	255.255.248.0	192.0.8.1
EMAIL SERVER (HEAVEN)	N/A	192.0.0.3	255.255.248.0	192.0.0.1
Web Server	N/A	192.0.0.4	255.255.248.0	192.0.0.1
DNS Server	N/A	192.0.0.2	255.255.248.0	192.0.0.1

VLSM Table

Host Name	Hosts required	Need to assign	Double of assigned	Given IP block size	Host Bit	Network Bit
Heaven (A)	780	782	1564	2048	11	21
Ascent(B)	674	676	1352	2048	11	21
Fracture (C)	484	486	972	1024	10	22
Breeze(D)	441	443	886	1024	10	22
Icebox(E)	359	361	722	1024	10	22
Bind(F)	293	295	590	1024	10	22
WAN1	2	4	8	8	3	29
WAN2	2	4	8	8	3	29
WAN3	2	4	8	8	3	29
WAN4	2	4	8	8	3	29
WAN5	2	4	8	8	3	29
WAN6	2	4	8	8	3	29

VLSM TREE



Dijkstra Algorithm

(The Valorant Lore of the Lone Pheonix)

	Heaven	Ascent	Fracture	Breeze	Icebox	Bind
Heaven	0 _{Heaven}	896 _{Heaven}	960 _{Heaven}	651 _{Heaven}	97 _{Heaven}	317 _{Heaven}
Icebox		461 _{Icebox}	844 _{Icebox}	488 _{Icebox}	97 _{Heaven}	317 _{Heaven}
Bind		461 _{Icebox}	501 _{Bind}	488 _{Icebox}		317 _{Heaven}
Ascent		461 _{Icebox}	501 _{Bind}	488 _{Icebox}		
Breeze			501 _{Bind}	488 _{Icebox}		
Fracture			501 _{Bind}			

Shortest paths: (Heaven as the Root)

Heaven → Heaven =0

Heaven → Icebox =97

Heaven → Bind =317

Heaven → Icebox → Ascent = 461

Heaven → Icebox → Breeze = 488

Heaven → Bind → Fracture = 501

COMMANDS

Breeze:

```
en
```

```
conf t
```

```
int f3/0
```

```
ip address 192.0.24.1 255.255.252.0
```

```
no shutdown
```

```
int s0/0
```

```
ip address 192.0.32.25 255.255.255.248
```

```
no shutdown
```

```
int s1/0
```

```
ip address 192.0.32.33 255.255.255.248
```

```
no shutdown
```

```
show ip interface brief
```

```
Breeze>en
```

```
Breeze#conf t
```

```
Breeze(config)#ip route 192.0.20.0 255.255.252.0 s0/0
```

```
Breeze(config)#ip route 192.0.16.0 255.255.252.0 s0/0
```

```
Breeze(config)#ip route 192.0.8.0 255.255.248.0 s1/0
```

```
Breeze(config)#ip route 192.0.8.0 255.255.248.0 s0/0 5
```

```
Breeze(config)#ip route 192.0.0.0 255.255.248.0 s0/0
```

```
Breeze(config)#ip route 192.0.32.0 255.255.252.0 s0/0
```

Haven:

en

conf t

hostname Haven

int f3/0

ip address 192.0.0.1 255.255.248.0

no shutdown

int s4/0

ip address 192.0.32.9 255.255.255.248

no shutdown

int s0/0

ip address 192.0.32.2 255.255.255.248

no shutdown

en

config t

router rip

version 2

no auto-summary

network 192.0.32.0

network 192.0.32.8

network 192.0.0.0

passive-interface f3/0

exit

end

copy run start

Fracture:

en

conf t

hostname Fracture

int f3/0

ip address 192.0.8.1 255.255.248.0

no shutdown

int s0/0

ip address 192.0.32.41 255.255.255.248

no shutdown

en

config t

router rip

version 2

no auto-summary

network 192.0.32.40

network 192.0.8.0

passive-interface f3/0

exit

end

copy run start

Icebox :

```
en
conf t
hostname Icebox
int f3/0
ip address 192.0.20.1 255.255.252.0
no shutdown
int s0/0
ip address 192.0.32.26 255.255.255.248
no shutdown
int s1/0
ip address 192.0.32.17 255.255.255.248
no shutdown
```

```
Icebox>en
Icebox#conf t
Icebox(config)#ip route 192.0.24.0 255.255.252.0 s0/0
Icebox(config)#ip route 192.0.16.0 255.255.252.0 s1/0
```

Ascent:

```
Router>
Router>en
Router#conf t
Router(config)#hostname Ascent
```

```
Ascent(config)#int f3/0
Ascent(config-if)#ip address 192.0.16.1 255.255.252.0
Ascent(config-if)#no shutdown
Ascent(config-if)#int s1/0
Ascent(config-if)#ip address 192.0.32.18 255.255.255.248
Ascent(config-if)#no shutdown
Ascent(config-if)#int s0/0
Ascent(config-if)#ip address 192.0.32.42 255.255.255.248
Ascent(config-if)#no shutdown
Ascent(config-if)#int s5/0
Ascent(config-if)#ip address 192.0.32.34 255.255.255.248
Ascent(config-if)#no shutdown
Ascent(config-if)#int s4/0
Ascent(config-if)#ip address 192.0.32.10 255.255.255.248
Ascent(config-if)#no shutdown
Ascent(config-if)#exit
Ascent(config)#ip route 192.0.28.0 255.255.252.0 s4/0
Ascent(config)#ip route 192.0.24.0 255.255.252.0 s5/0
Ascent(config)#ip route 192.0.20.0 255.255.252.0 s1/0
```

Bind:

```
Router>en
Router#conf t
Router(config)#hostname Bind
Bind(config)#int f3/0
Bind(config-if)#ip address 192.0.28.1 255.255.252.0
Bind(config-if)#no shutdown
```

Bind(config-if)#int s1/0

Bind(config-if)#ip address 192.0.32.1 255.255.255.248

Bind(config-if)#no shutdown

en

config t

router rip

version 2

no auto-summary

network 192.0.32.0

network 192.0.28.0

passive-interface f3/0

exit

end

copy run start