

Team Rainbow

Group No- 32

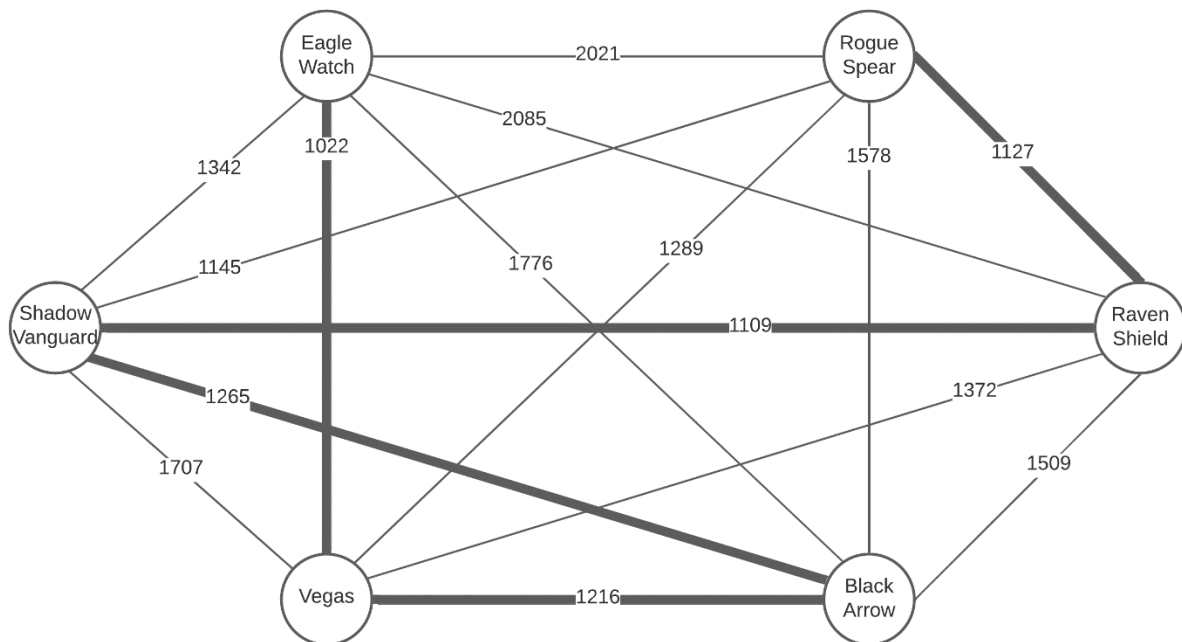
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Topology:



Dijkstra Algorithm on
distance given on the
table

IP Addressing Table –

Host	Device	Interface	Ip Address	Subnet Mask	Default Gateway	DNS Server
Eagle Watch	PC0	Fa0	192.160.0.1	255.255.248.0	192.160.0.7	
Eagle Watch	PC1	Fa0	192.160.0.3	255.255.248.0	192.160.0.7	
Eagle Watch	email server (Eagle Watch)	Fa0	192.160.0.5	255.255.248.0	192.160.0.7	
Eagle Watch	Eagle_watch_router	Fa0/0	192.160.0.7	255.255.248.0	N/A	
Eagle Watch	Eagle_watch_router	Se0/1/0	192.160.17.129	255.255.255.248	N/A	
Rogue Spear	PC7	Fa0	192.160.8.1	255.255.252.0	192.168.8.7	
Rogue Spear	PC8	Fa0	192.160.8.3	255.255.252.0	192.168.8.7	
Rogue Spear	email server (Rogue Spear)	Fa0	192.160.8.5	255.255.252.0	192.168.8.7	
Rogue Spear	Rogue_Spear_router	Fa0/0	192.160.8.7	255.255.252.0	N/A	
Rogue Spear	Rogue_Spear_router	Se0/1/0	192.160.17.137	255.255.255.248	N/A	
Raven Shield	PC5	Fa0	DHCP assigned	255.255.254.0	10.20.0.1	
Raven Shield	PC6	Fa0	DHCP assigned	255.255.254.0	10.20.0.1	
Raven Shield	Printer1	Fa0	DHCP assigned	255.255.254.0	10.20.0.1	
Raven Shield	DHCP (Raven Shield)	Fa0	10.20.0.3	255.255.254.0	10.20.0.1	
Raven Shield	Raven_Shield_Router	Fa0/0	10.20.0.1	255.255.254.0	N/A	

Raven Shield	Raven_Shield_Router	Se0/0/0	192.160.17.169	255.255.255.248	N/A	
Raven Shield	Raven_Shield_Router	Se0/1/0	192.160.17.139	255.255.255.248	N/A	
Raven Shield	Raven_Shield_Router	Se0/1/1	192.160.17.155	255.255.255.248	N/A	
Black Arrow	PC9	Fa0	DHCP assigned	255.255.255.128	10.0.0.1	
Black Arrow	PC10	Fa0	DHCP assigned	255.255.255.128	10.0.0.1	
Black Arrow	Printer0	Fa0	DHCP assigned	255.255.255.128	10.0.0.1	
Black Arrow	DHCP (Black Arrow)	Fa0	10.0.0.3	255.255.255.128	10.0.0.1	
Black Arrow	Black_Arrow_router	Fa0/0	10.0.0.1	255.255.255.128	N/A	
Black Arrow	Black_Arrow_router	Se0/0/0	192.160.17.171	255.255.255.248	N/A	
Black Arrow	Black_Arrow_router	Se0/1/0	192.160.17.145	255.255.255.248	N/A	
Black Arrow	Black_Arrow_router	Se0/1/1	192.160.17.163	255.255.255.248	N/A	
Vegas	PC2	Fa0	DHCP assigned	255.255.255.0	172.16.0.1	
Vegas	Laptop3	Fa0	DHCP assigned	255.255.255.0	172.16.0.1	
Vegas	DHCP(Vegas)	Fa0	172.16.0.3	255.255.255.0	172.16.0.1	
Vegas	DNS server	Fa0	172.16.0.7	255.255.255.0	172.16.0.1	
Vegas	Webserver	Fa0	172.16.0.5	255.255.255.0	172.16.0.1	
Vegas	Vegas_router	Fa0/0	172.16.0.1	255.255.255.0	N/A	
Vegas	Vegas_router	Se0/1/0	192.160.17.131	255.255.255.248	N/A	
Vegas	Vegas_router	Se0/1/1	192.160.17.147	255.255.255.248	N/A	
Shadow Vanguard	PC4	Fa0	DHCP assigned	255.255.254.0	192.168.8.1	

Shadow Vanguard	Laptop2	Fa0	DHCP assigned	255.255.254.0	192.168.8.1	
Shadow Vanguard	DHCP (Shadow Vanguard)	Fa0	192.168.8.3	255.255.254.0	192.168.8.1	
Shadow Vanguard	Shadow_Vanguard_router	Fa0/0	192.168.8.1	255.255.254.0	N/A	
Shadow Vanguard	Shadow_Vanguard_router	Se0/1/0	192.160.17.161	255.255.255.248	N/A	
Shadow Vanguard	Shadow_Vanguard_router	Se0/1/1	192.160.17.153	255.255.255.248	N/A	

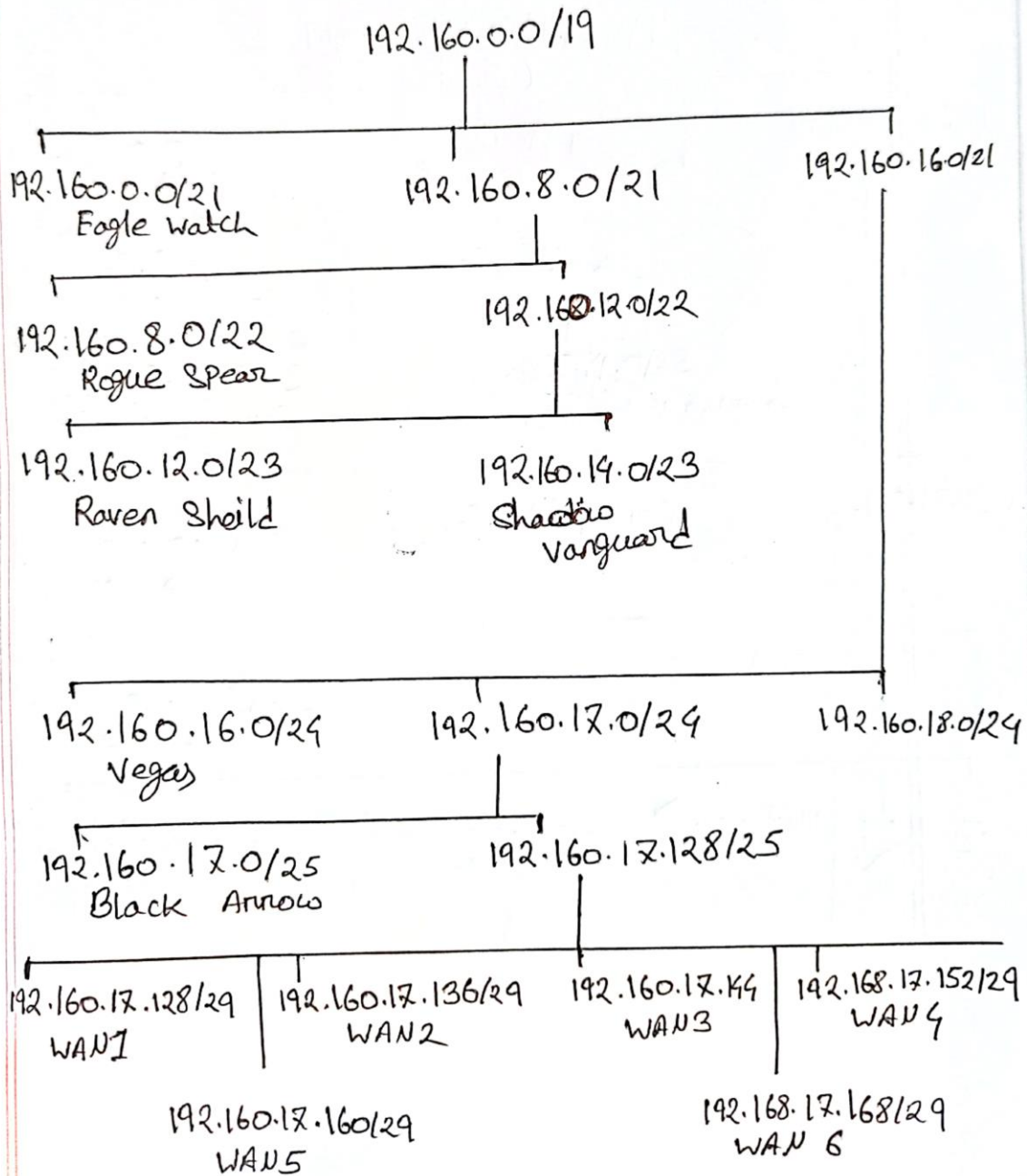
VLSM Table:

VLSM for Team Rainbow

P110.0.0.0/24

#	HOST	IPS	Given	H.B	N.B
Eagle Watch	$950 \times 2 = 1900$	$1900 + 2 = 1902$	4096 2048	12 11	21
Rogue Spear	$452 \times 2 = 904$	$904 + 2 = 906$	1024	10	22
Raven shield	$238 \times 2 = 476$	$476 + 2 = 478$	512	9	23
Shadow Vanguard	$160 \times 2 = 320$	320 $320 + 2 = 322$	512	9	23
vegas	$82 \times 2 = 164$	$164 + 2 = 168$	256	8	24
Black Arrow	$54 \times 2 = 108$	$108 + 2 = 110$	128	7	25
WAN 1	$2 \times 2 = 4$	$4 + 2 = 6$	8	3	29
WAN 2	$2 \times 2 = 4$	$4 + 2 = 6$	8	3	29
WAN 3	$2 \times 2 = 4$	$4 + 2 = 6$	8	3	29
WAN 4	$2 \times 2 = 4$	$4 + 2 = 6$	8	3	29
WAN 5	$2 \times 2 = 4$	$4 + 2 = 6$	8	3	29
WAN 6	$2 \times 2 = 4$	$4 + 2 = 6$	8	3	29

Network Address = 192.160.0.0/19



CLI Commands:

Static Routing:

Eagle_watch_router----->

Eagle_watch_router>enable

Eagle_watch_router#configure terminal

Eagle_watch_router(config)#ip route 172.16.0.0 255.255.255.0 192.160.17.131

Eagle_watch_router(config)#ip route 10.0.0.0 255.255.255.128 192.160.17.131

Eagle_watch_router(config)#ip route 192.168.8.0 255.255.254.0 192.160.17.131

Eagle_watch_router(config)#ip route 10.20.0.0 255.255.254.0 192.160.17.131

Eagle_watch_router(config)#ip route 192.160.8.0 255.255.252.0 192.160.17.131

Eagle_watch_router(config)#

Vegas_router----->

Vegas_router>enable

Vegas_router#configure terminal

Vegas_router(config)#ip route 192.160.0.0 255.255.248.0 192.160.17.129

Vegas_router(config)#ip route 10.0.0.0 255.255.255.128 192.160.17.145

Vegas_router(config)#ip route 192.168.8.0 255.255.254.0 192.160.17.145

Vegas_router(config)#ip route 10.20.0.0 255.255.254.0 192.160.17.145

Vegas_router(config)#ip route 192.160.8.0 255.255.252.0 192.160.17.145

Vegas_router(config)#

Black_Arrow_router----->

Black_Arrow_router>enable

Black_Arrow_router#configure terminal

```
Black_Arrow_router(config)#ip route 192.160.0.0 255.255.248.0 192.160.17.147
Black_Arrow_router(config)#ip route 172.16.0.0 255.255.255.0 192.160.17.147
Black_Arrow_router(config)#ip route 192.168.8.0 255.255.254.0 192.160.17.161
Black_Arrow_router(config)#ip route 10.20.0.0 255.255.254.0 192.160.17.161
Black_Arrow_router(config)#ip route 192.160.8.0 255.255.252.0 192.160.17.161
Black_Arrow_router(config)#
```

Dynamic Routing:

```
Rogue_Spear_router----->
Rogue_Spear_router>enable
Rogue_Spear_router#configure terminal
Rogue_Spear_router(config)#router rip
Rogue_Spear_router(config-router)#version 2
Rogue_Spear_router(config-router)#no auto-summary
Rogue_Spear_router(config-router)#network 192.160.8.0
Rogue_Spear_router(config-router)#network 192.168.17.136
Rogue_Spear_router(config-router)#end
Rogue_Spear_router#copy run start
```

```
Raven_Shield_router----->
Raven_Shield_router>enable
Raven_Shield_router#configure terminal
Raven_Shield_router(config)#router rip
Raven_Shield_router(config-router)#version 2
Raven_Shield_router(config-router)#no auto-summary
Raven_Shield_router(config-router)#network 192.168.17.136
```



```
Raven_Shield_router(config-router)#network 10.20.0.0
Raven_Shield_router(config-router)#network 192.160.17.152
Raven_Shield_router(config-router)#end
Raven_Shield_router#copy run start
```

```
Shadow_Vanguard_router----->
Shadow_Vanguard_router(>enable
Shadow_Vanguard_router#configure terminal
Shadow_Vanguard_router(config)#router rip
Shadow_Vanguard_router(config-router)#version 2
Shadow_Vanguard_router(config-router)#no auto-summary
Shadow_Vanguard_router(config-router)#network 192.160.17.152
Shadow_Vanguard_router(config-router)#network 192.168.8.0
Shadow_Vanguard_router(config-router)#network 192.160.17.160
Shadow_Vanguard_router(config-router)#end
Shadow_Vanguard_router#copy run start
```

Connection Between Static and Dynamic Routing:

```
Black_Arrow_router>enable
Black_Arrow_router#configure terminal
Black_Arrow_router(config)#router rip
Black_Arrow_router(config-router)#redistribute static
Black_Arrow_router(config-router)#redistribute connected
Black_Arrow_router(config-router)#
```

Floating Routing:

```
Black_Arrow_router>enable
```

```
Black_Arrow_router#configure terminal
```

```
Black_Arrow_router(config)#ip route 192.168.8.0 255.255.254.0 192.160.17.169  
130
```

```
Black_Arrow_router(config)#
```

DHCP configuration: We turned off all the other services except DHCP in the DHCP server. Then we created a pool (Ex- #ip dhcp pool DHCP). Then we copied the default gateway of the router's fa0/0/0 and pasted it to the default gateway in the DHCP. (Ex-#default-router 172.16.0.2). We have connected the DNS server with the DHCP (Ex-#dns-server 172.16.0.7). Then we set the start IP address and the subnet mask. We did the same task for all of the four DHCP servers