ADDRESSING TABLE

Device	Interface	IP Address	Subnet Mask	Default Gateway
CA (10.7.0.0/26)	S0/0/0	10.7.0.237	255.255.255.252	N/A
	S0/0/1	10.7.0.234	255.255.255.252	N/A
	G0/0	10.7.0.1	255.255.255.192	N/A
FL (10.7.0.64/26)	Se0/0/0	10.7.0.229	255.255.255.252	N/A
	Se0/0/1	10.7.0.226	255.255.255.252	N/A
	G0/0	10.7.0.65	255.255.255.192	N/A
NV (10.7.0.128/26)	Se0/0/0	10.7.0.233	255.255.255.252	N/A
	Se0/0/1	10.7.0.230	255.255.255.252	N/A
	G0/0	10.7.0.129	255.255.255.192	N/A
NY (10.7.1.0/27)	S0/0/0	10.7.0.217	255.255.255.252	N/A
	S0/0/1	10.7.0.238	255.255.255.252	N/A
	G0/0	10.7.1.1	255.255.255.224	N/A
	G0/1	10.7.0.209	255.255.255.248	N/A
TX (10.7.1.32/27)	S0/0/0	10.7.0.218	255.255.255.252	N/A
	S0/0/1	10.7.0.221	255.255.255.252	N/A
	G0/0	10.7.1.33	255.255.255.224	N/A
AZ (10.7.0.192/28)	S0/0/0	10.7.0.222	255.255.255.252	N/A
	S0/0/1	10.7.0.225	255.255.255.252	N/A
	G0/0	10.7.0.193	255.255.255.240	N/A
DNS Server	NIC	10.7.0.210	255.255.255.248	10.7.0.209
Web Server	NIC	10.7.0.211	255.255.255.248	10.7.0.209
Email Server	NIC	10.7.0.212	255.255.255.248	10.7.0.209
PC0	NIC	10.7.1.2	255.255.255.224	10.7.1.1
PC3	NIC	10.7.1.34	255.255.255.224	10.7.1.33
PC5	NIC	DHCP Assigned		DHCP Assigned
PC6	NIC	DHCP Assigned		DHCP Assigned
PC11	NIC	DHCP Assigned		DHCP Assigned
PC15	NIC	DHCP Assigned		DHCP Assigned
DHCP Server CA	NIC	10.7.0.2	255.255.255.192	10.7.0.1
DHCP Server FL	NIC	10.7.0.66	255.255.255.192	10.7.0.65
DHCP Server NV	NIC	10.7.0.130	255.255.255.192	10.7.0.129

DHCP Server AZ	NIC	10.7.0.194	255.255.255.240	10.7.0.193

VLSM Tree
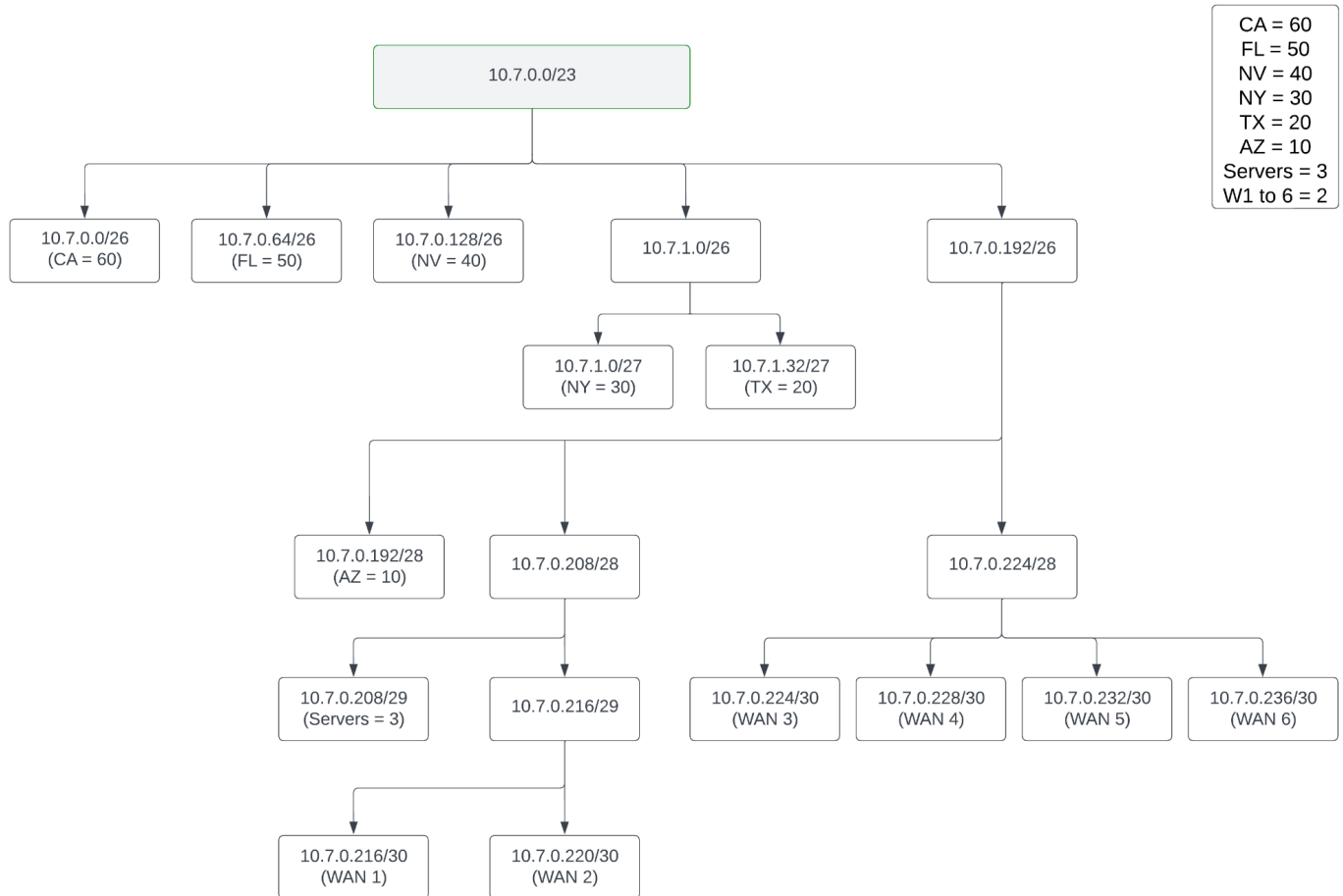
CA = 60
FL = 50
NV = 40
NY = 30
TX = 20
AZ = 10
Servers = 3
W1 to 6 = 2

```
                              10.7.0.0/23

   10.7.0.0/26      10.7.0.64/26    10.7.0.128/26    10.7.1.0/26      10.7.0.192/26
   (CA = 60)        (FL = 50)       (NV = 40)

                                            10.7.1.0/27    10.7.1.32/27
                                            (NY = 30)      (TX = 20)

              10.7.0.192/28    10.7.0.208/28                    10.7.0.224/28
              (AZ = 10)

                      10.7.0.208/29   10.7.0.216/29        10.7.0.224/30  10.7.0.228/30  10.7.0.232/30  10.7.0.236/30
                      (Servers = 3)                        (WAN 3)        (WAN 4)        (WAN 5)        (WAN 6)

                              10.7.0.216/30   10.7.0.220/30
                              (WAN 1)         (WAN 2)
```

COMMANDS

BASIC ROUTER CONFIG:

NY:

Router>en

Router#conf ter

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

Router(config)#hostname NY

NY(config)#no ip domain-lookup

NY(config)#enable secret class

NY(config)#banner motd &

Enter TEXT message. End with the character '&'.

****

!!!AUTHORIZED ACCESS ONLY!!!

****

&

NY(config)#line console 0

NY(config-line)#password cisco

NY(config-line)#login

NY(config-line)#exit

NY(config)#line vty 0 4

NY(config-line)#password cisco

NY(config-line)#login

NY(config-line)#exit

NY(config)#interface gigabit 0/0

NY(config-if)#ip address 10.7.1.1 255.255.255.224

NY(config-if)#no shut

NY(config-if)#

%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed

state to up

NY(config-if)#interface gigabit 0/1

NY(config-if)#ip address 10.7.0.209 255.255.255.248

NY(config-if)#no shut

NY(config-if)#

%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

NY(config-if)#interface s0/0/0

NY(config-if)#ip address 10.7.0.217 255.255.255.252

NY(config-if)#clock rate 64000

NY(config-if)#no shut

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

NY(config-if)#interface s0/0/1

NY(config-if)#ip address 10.7.0.238 255.255.255.252

NY(config-if)#clock rate 64000

NY(config-if)#no shut

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

NY(config-if)#end

NY#copy run start

TX:

Router>en

Router#conf t

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

Router(config)#hostname TX

TX(config)#no ip domain-lookup

TX(config)#enable secret class

TX(config)#banner motd &

Enter TEXT message. End with the character '&'.

****

!!!AUTHORIZED ACCESS ONLY!!!

****

&

TX(config)#line console 0

TX(config-line)#password cisco

TX(config-line)#login

TX(config-line)#exit

TX(config)#line vty 0 4

TX(config-line)#password cisco

TX(config-line)#login

TX(config-line)#exit

TX(config)#interface g0/0

TX(config-if)#ip address 10.7.1.33 255.255.255.224

TX(config-if)#no shutdown

TX(config-if)#

%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed
state to up

TX(config)#interface s0/0/0

TX(config-if)#ip address 10.7.0.218 255.255.255.252

TX(config-if)#clock rate 64000

This command applies only to DCE interfaces

TX(config-if)#no shutdown

TX(config-if)#

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

TX(config)#interface s0/0/1

TX(config-if)#no ip address 10.7.0.218 255.255.255.252

TX(config-if)#ip address 10.7.0.221 255.255.255.252

TX(config-if)#clock rate 64000

TX(config-if)#no shutdown

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

TX(config-if)#end

TX#

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

TX#copy run start

Destination filename [startup-config]?

Building configuration...

[OK]

AZ:

Router>enable

Router#erase startup-config

Router#reload

Would you like to enter the initial configuration dialog? [yes/no]: no

Router>enable

Router#config t

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

Router(config)#conf t

%Invalid hex value

Router(config)#hostname AZ

AZ(config)#no ip domain-lookup

AZ(config)#enable secret class

AZ(config)#banner motd &

Enter TEXT message. End with the character '&'.

****

!!!AUTHORIZED ACCESS ONLY!!!

****

&

AZ(config)#line console 0

AZ(config-line)#password cisco

AZ(config-line)#login

AZ(config-line)#exit

AZ(config)#line vty 0 4

AZ(config-line)#password cisco

AZ(config-line)#login

AZ(config-line)#exit

```
AZ(config)#interface g0/0
AZ(config-if)#ip address 10.7.0.193 255.255.255.240
AZ(config-if)#no shut
AZ(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed
state to up
AZ(config-if)#interface s0/0/0
AZ(config-if)#ip address 10.7.0.222 255.255.255.252
AZ(config-if)#clock rate 64000
This command applies only to DCE interfaces
AZ(config-if)#no shut
AZ(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up
AZ(config)#interface s0/0/1
AZ(config-if)#ip address 17.7.0.225 255.255.255.252
AZ(config-if)#clock rate 64000
AZ(config-if)#no shut
%LINK-5-CHANGED: Interface Serial0/0/1, changed state to down
AZ(config-if)#end
AZ#
%SYS-5-CONFIG_I: Configured from console by console
AZ#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
```

CA:

```
Router>enable
Router#erase startup-config
Router#reload
```

Would you like to enter the initial configuration dialog? [yes/no]: no

Router>enable

Router#conf t

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

Router(config)#hostname CA

CA(config)#no ip domain-lookup

CA(config)#enable secret class

CA(config)#banner motd &

Enter TEXT message. End with the character '&'.

****

!!!AUTHORIZED ACCESS ONLY!!!

****

&

CA(config)#line console 0

CA(config-line)#password cisco

CA(config-line)#login

CA(config-line)#exit

CA(config)#line vty 0 4

CA(config-line)#password cisco

CA(config-line)#login

CA(config-line)#exit

CA(config)#interface g0/0

CA(config-if)#ip address 10.7.0.1 255.255.255.192

CA(config-if)#no shut

CA(config-if)#

%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed

state to up

CA(config-if)#interface s0/0/0

CA(config-if)#ip address 10.7.0.237 255.255.255.252

CA(config-if)#clock rate 64000

This command applies only to DCE interfaces

CA(config-if)#no shut

CA(config-if)#

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

CA(config-if)#

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

CA(config-if)#interface s0/0/1

CA(config-if)#ip address 10.7.0.234 255.255.255.252

CA(config-if)#clock rate 64000

CA(config-if)#no shut

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

CA(config-if)#end

CA#

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

CA#copy run start

Destination filename [startup-config]?

Building configuration...

[OK]

CA#

FL:

Router>enable

Router#erase startup-config

Router#reload

Would you like to enter the initial configuration dialog? [yes/no]: no

Router>enable

Router#conf t

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

Router(config)#hostname FL

FL(config)#no ip domain-lookup

FL(config)#enable secret class

FL(config)#banner motd &

Enter TEXT message. End with the character '&'.

Router>enable

Router#erase startup-config

Router#reload

Would you like to enter the initial configuration dialog? [yes/no]: no

FL(config)#enable

% Incomplete command.

FL(config)#banner motd &

Enter TEXT message. End with the character '&'.

****

!!!AUTHORIZED ACCESS ONLY!!!

****

&

FL(config)#line console 0

FL(config-line)#password cisco

FL(config-line)#login

FL(config-line)#exit

FL(config)#line vty 0 4

FL(config-line)#password cisco

FL(config-line)#login

FL(config-line)#exit

FL(config)#interface g0/0

FL(config-if)#ip address 10.7.0.65 255.255.255.192

FL(config-if)#no shut

FL(config-if)#

%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed
state to up

FL(config-if)#interface s0/0/0

FL(config-if)#ip address 10.7.0.229 255.255.255.252

FL(config-if)#clock rate 64000

This command applies only to DCE interfaces

FL(config-if)#no shut

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

FL(config-if)#

FL(config-if)#interface s0/0/1

FL(config-if)#ip address 10.7.0.226 255.255.255.252

FL(config-if)#clock rate 64000

This command applies only to DCE interfaces

FL(config-if)#no shut

FL(config-if)#

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

FL(config-if)#

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

FL(config-if)#end

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

FL#copy run start

Destination filename [startup-config]?

Building configuration...

[OK]

NV:

Router>enable

Router#erase startup-config

Router#reload

Would you like to enter the initial configuration dialog? [yes/no]: no

Router>en

Router#conf t

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

Router(config)#hostname NV

NV(config)#no ip domain-lookup

NV(config)#enable secret class

NV(config)#banner motd &

Enter TEXT message. End with the character '&'.

****

!!!AUTHORIZED ACCESS ONLY!!!

****

&

NV(config)#line console 0

NV(config-line)#password cisco

NV(config-line)#login

NV(config-line)#exit

NV(config)#line vty 0 4

NV(config-line)#password cisco

NV(config-line)#login

NV(config-line)#exit

NV(config)#interface g0/0

NV(config-if)#ip address 10.7.0.129 255.255.255.192

NV(config-if)#no shut

NV(config-if)#

%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed

state to up

NV(config-if)#interface s0/0/0

NV(config-if)#ip address 10.7.0.233 255.255.255.252

NV(config-if)#clock rate 64000

This command applies only to DCE interfaces

NV(config-if)#no shut

NV(config-if)#

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

NV(config)#interface s0/0/1

NV(config-if)#ip address 10.7.0.230 255.255.255.252

NV(config-if)#clock rate 64000

NV(config-if)#no shut

NV(config-if)#

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

NV(config-if)#end

NV#

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

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

NV#copy run start

Destination filename [startup-config]?

Building configuration...

[OK]

STATIC & FLOATING ROUTING:

NY:

NY#conf t

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

NY(config)#ip route 10.7.1.32 255.255.255.224 s0/0/0

%Default route without gateway, if not a point-to-point interface, may impact performance

NY(config)#ip route 10.7.0.0 255.255.255.192 s0/0/0

%Default route without gateway, if not a point-to-point interface, may impact performance

NY(config)#ip route 10.7.0.0 255.255.255.192 s0/0/1 50

NY(config)#ip route 10.7.0.192 255.255.255.240 s0/0/0

%Default route without gateway, if not a point-to-point interface, may impact performance

NY(config)#ip route 10.7.0.64 255.255.255.192 s0/0/0

%Default route without gateway, if not a point-to-point interface, may impact performance

NY(config)#ip route 10.7.0.128 255.255.255.192 s0/0/0

%Default route without gateway, if not a point-to-point interface, may impact performance

TX:

TX#conf t

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

TX(config)#ip route 10.7.1.0 255.255.255.224 s0/0/0

%Default route without gateway, if not a point-to-point interface, may impact performance

TX(config)#ip route 10.7.0.208 255.255.255.248 s0/0/0

%Default route without gateway, if not a point-to-point interface, may impact performance

TX(config)#ip route 10.7.0.192 255.255.255.240 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

TX(config)#ip route 10.7.0.64 255.255.255.192 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

TX(config)#ip route 10.7.0.128 255.255.255.192 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

TX(config)#ip route 10.7.0.0 255.255.255.192 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

TX(config)#ip route 10.7.0.0 255.255.255.192 s0/0/0 100

AZ:

AZ#conf t

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

AZ(config)#ip route 10.7.1.0 255.255.255.224 s0/0/0

%Default route without gateway, if not a point-to-point interface, may impact performance

AZ(config)#ip route 10.7.0.208 255.255.255.248 s0/0/0

%Default route without gateway, if not a point-to-point interface, may impact performance

AZ(config)#ip route 10.7.1.32 255.255.255.224 s0/0/0

%Default route without gateway, if not a point-to-point interface, may impact performance

AZ(config)#ip route 10.7.0.64 255.255.255.224 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

AZ(config)#ip route 10.7.0.128 255.255.255.192 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

AZ(config)#ip route 10.7.0.0 255.255.255.192 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

AZ(config)#ip route 10.7.0.0 255.255.255.192 s0/0/0 150

FL:

FL#conf t

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

FL(config)#ip route 10.7.0.208 255.255.255.248 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

FL(config)#ip route 10.7.1.0 255.255.255.224 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

FL(config)#ip route 10.7.1.32 255.255.255.224 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

FL(config)#ip route 10.7.0.192 255.255.255.240 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

FL(config)#ip route 10.7.0.128 255.255.255.192 s0/0/0

%Default route without gateway, if not a point-to-point interface, may impact performance

FL(config)#ip route 10.7.0.0 255.255.255.192 s0/0/0

%Default route without gateway, if not a point-to-point interface, may impact performance

FL(config)#ip route 10.7.0.0 255.255.255.192 s0/0/1 200

NV:

NV#conf t

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

NV(config)#ip route 10.7.0.208 255.255.255.248 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

NV(config)#ip route 10.7.1.0 255.255.255.224 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

NV(config)#ip route 10.7.1.32 255.255.255.224 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

NV(config)#ip route 10.7.0.192 255.255.255.240 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

NV(config)#ip route 10.7.0.64 255.255.255.192 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

NV(config)#ip route 10.7.0.0 255.255.255.192 s0/0/0

%Default route without gateway, if not a point-to-point interface, may impact performance

NV(config)#ip route 10.7.0.0 255.255.255.192 s0/0/1 250

CA:

CA#conf t

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

CA(config)#ip route 10.7.0.128 255.255.255.192 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

CA(config)#ip route 10.7.0.64 255.255.255.192 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

CA(config)#ip route 10.7.0.192 255.255.255.240 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

CA(config)#ip route 10.7.1.32 255.255.255.224 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

CA(config)#ip route 10.7.1.0 255.255.255.224 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

CA(config)#ip route 10.7.0.208 255.255.255.248 s0/0/1

%Default route without gateway, if not a point-to-point interface, may impact performance

CA(config)#ip route 10.7.0.128 255.255.255.192 s0/0/0 250

DYNAMIC ROUTING:

CA:

CA#conf t

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

CA(config)#router rip

CA(config-router)#version 2

CA(config-router)#no auto-summary

CA(config-router)#network 10.7.0.236

CA(config-router)#network 10.7.0.232

CA(config-router)#network 10.7.0.0

CA(config-router)#passive-interface g0/0

CA(config-router)#end

CA#

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

CA#copy run start

Destination filename [startup-config]?

Building configuration...

[OK]

NV:

NV#conf t

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

NV(config)#router rip

NV(config-router)#version 2

NV(config-router)#no auto-summary

NV(config-router)#network 10.7.0.228

NV(config-router)#network 10.7.0.128

NV(config-router)#network 10.7.0.232

NV(config-router)#passive-interface g0/0

NV(config-router)#end

NV#

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

NV#copy run start

Destination filename [startup-config]?

Building configuration...

[OK]