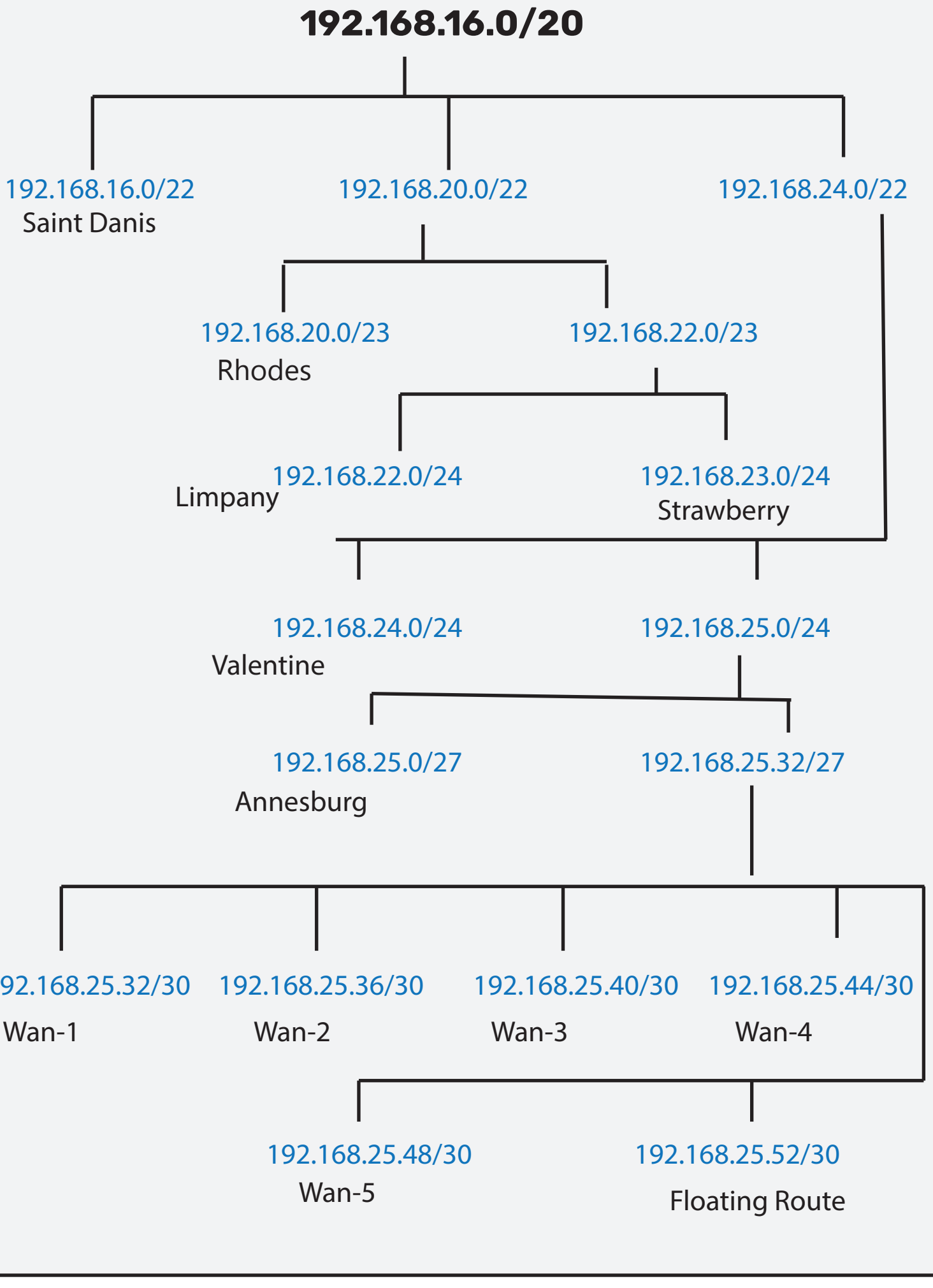
VLSM TREE


192.168.16.0/20
192.168.16.0/22
Saint Danis
192.168.20.0/22
192.168.24.0/22
192.168.20.0/23
Rhodes
192.168.22.0/23
192.168.22.0/24
Limpany
192.168.23.0/24
Strawberry
192.168.24.0/24
Valentine
192.168.25.0/24
192.168.25.0/27
Annesburg
192.168.25.32/27
192.168.25.32/30
Wan-1
192.168.25.36/30
Wan-2
192.168.25.40/30
Wan-3
192.168.25.44/30
Wan-4
192.168.25.48/30
Wan-5
192.168.25.52/30
Floating Route

IP ADDRESS TABLE

Device	Interface	IPV4 Address	Subnet Mask	Default Gateway
Saint Denis	F0/0	192.168.16.1/22	255.255.252.0	X
	S3/0	192.168.25.45/30	255.255.255.252	
	S6/0	192.168.25.41/30	255.255.255.252	
	S3/0	192.168.25.33/30	255.255.255.252	
Rhodes	F0/0	192.168.20.1/23	255.255.254.0	X
	S2/0	192.168.25.42/30	255.255.255.252	
	S3/0	192.168.25.53/30	255.255.225.252	
Limpany	F0/0	192.168.22.1/24	255.255.255.0	X
	S2/0	192.168.25.46/30	255.255.255.252	
	S3/0	192.168.25.54/30	255.255.255.252	
Strawberry	F0/0	192.168.23.1/24	255.255.255.0	X
	S3/0	192.168.25.37/30	255.255.255.252	
	S2/0	192.168.25.49/30	255.255.255.252	

Valentine	F0/0	192.168.24.1/24	255.255.255.0	X
	S2/0	192.168.25.38/30	255.255.255.252	
Annesburg	F0/0	192.168.25.1/27	255.255.255.224	X
	S3/0	192.168.25.34/30	255.255.255.252	
	S2/0	192.168.25.50/30	255.255.255.252	

Printer0	F0/0	192.168.20.2/23	255.255.254.0	192.168.20.1/23
PC2	F0/0	192.168.20.3/23	255.255.254.0	192.168.20.1/23
Rhodes Email	F0/0	192.168.20.4/23	255.255.254.0	192.168.20.1/23
Printer1	F0/0	192.168.16.2/22	255.255.252.0	192.168.16.1/22
PC3	F0/0	192.168.16.3/22	255.255.252.0	192.168.16.1/22
Saint Denis Email	F0/0	192.168.16.4/22	255.255.252.0	192.168.16.1/22
Strawberry web server	F0/0	192.168.23.4/24	255.255.255.0	192.168.23.1/24
Strawberry DNS	F0/0	192.168.23.3/24	255.255.252.0	192.168.23.1/24

Limpany Web	**F0/0**	**192.168.22.4/24**	**255.255.252.0**	**192.168.22.1/24**
Limpany DNS	**F0/0**	**192.168.22.3/24**	**255.255.252.0**	**192.168.22.1/24**

Limpany DHCP	**F0/0**	**192.168.22.2/24**	**255.255.255.0**	**192.168.22.1/24**
Strawberry DHCP	**F0/0**	**192.168.23.2/24**	**255.255.255.0**	**192.168.23.1/24**
Valentine DHCP	**F0/0**	**192.168.24.2/24**	**255.255.255.0**	**192.168.24.1/24**
Annesburg DHCP	**F0/0**	**192.168.25.2/27**	**255.255.255.224**	**192.168.25.1/27**

Router Configuration

Rhodes

```
Router>
Router>en
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Rhodes
Rhodes(config)#int f0/0
Rhodes(config-if)#ip address 192.168.20.1 255.255.254.0
Rhodes(config-if)#no shut

Rhodes(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Rhodes(config-if)#int s2/0
Rhodes(config-if)#ip address 192.168.25.42 255.255.255.252
Rhodes(config-if)#no shut

%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Rhodes(config)#int s3/0
Rhodes(config-if)#ip address 192.168.25.53 255.255.255.252
Rhodes(config-if)#no shut

%LINK-5-CHANGED: Interface Serial3/0, changed state to down

Rhodes(config-if)#exit
Rhodes(config)#exit
Rhodes#
%SYS-5-CONFIG_I: Configured from console by console
Rhodes#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
```

Saint Danis

```
Router>en
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Saint_Danis
Saint_Danis(config)#int f0/0
Saint_Danis(config-if)#ip address 192.168.16.1 255.255.252.0
Saint_Danis(config-if)#no shut
```

Saint_Danis(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Saint_Danis(config-if)#int s6/0
Saint_Danis(config-if)#ip address 192.168.25.41 255.255.255.252
Saint_Danis(config-if)#no shut

Saint_Danis(config-if)#
%LINK-5-CHANGED: Interface Serial6/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial6/0, changed state to up

Saint_Danis(config-if)#int s3/0
Saint_Danis(config-if)#ip address 192.168.25.33 255.255.255.252
Saint_Danis(config-if)#no shut

%LINK-5-CHANGED: Interface Serial3/0, changed state to down
Saint_Danis(config-if)#int s2/0
Saint_Danis(config-if)#ip address 192.168.25.45 255.255.255.252
Saint_Danis(config-if)#no shut

%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Saint_Danis(config-if)#exit
Saint_Danis(config)#exit
Saint_Danis#
%SYS-5-CONFIG_I: Configured from console by console

Saint_Danis#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]

Limpany

Router>en
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Limpany
Limpany(config)#int f0/0
Limpany(config-if)#ip address 192.168.22.1 255.255.255.0
Limpany(config-if)#no shut

Limpany(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Limpany(config-if)#int s2/0
Limpany(config-if)#ip address 192.168.25.46 255.255.255.252
Limpany(config-if)#no shut

Limpany(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
Limpany(config)#int s3/0
Limpany(config-if)#ip address 192.168.25.54 255.255.255.252
Limpany(config-if)#no shut

Limpany(config-if)#exit
Limpany(config)#exit
Limpany#
%SYS-5-CONFIG_I: Configured from console by console

Limpany#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
c
% Ambiguous command: "c"
Limpany#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]

Annesburg

Router>en
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Annesburg
Annesburg(config)#int f0/0
Annesburg(config-if)#ip address 192.168.25.1 255.255.255.224
Annesburg(config-if)#no shut

Annesburg(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Annesburg(config-if)#int s3/0
Annesburg(config-if)#ip address 192.168.25.34 255.255.255.252
Annesburg(config-if)#no shut

Annesburg(config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up

Annesburg(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up

Annesburg(config-if)#int s2/0
Annesburg(config-if)#ip address 192.168.25.50 255.255.255.252
Annesburg(config-if)#no shut

%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Annesburg(config-if)#exit
Annesburg(config)#exit
Annesburg#
%SYS-5-CONFIG_I: Configured from console by console

Annesburg#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Annesburg#

Strawberry

Router>en
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Strawberry
Router(config)#int f0/0
Router(config-if)#ip address 192.168.23.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#int s2/0
Router(config-if)#ip address 192.168.25.49 255.255.255.252
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Router(config-if)#

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

Router(config-if)#int s3/0
Router(config-if)#ip address 192.168.25.37 255.255.255.252
Router(config-if)#no shut

%LINK-5-CHANGED: Interface Serial3/0, changed state to down
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Router#

Valentine

Router>en
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Valentine
Valentine(config)#int f0/0
Valentine(config-if)#ip address 192.168.24.1 255.255.255.0
Valentine(config-if)#no shut

Valentine(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Valentine(config-if)#int s2/0
Valentine(config-if)#ip address 192.168.25.38 255.255.255.252
Valentine(config-if)#no shut

Valentine(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Valentine(config-if)#exit
Valentine(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

Valentine(config)#exit

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

Valentine#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Valentine#

Routing Configuration

Rhodes

Rhodes>en
Rhodes#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Rhodes(config)#ip route 192.168.16.0 255.255.252.0 192.168.25.41
Rhodes(config)#ip route 192.168.25.44 255.255.255.252 192.168.25.41
Rhodes(config)#ip route 192.168.22.0 255.255.255.0 192.168.25.41
Rhodes(config)#ip route 192.168.25.32 255.255.255.252 192.168.25.41
Rhodes(config)#ip route 192.168.25.0 255.255.255.224 192.168.25.41
Rhodes(config)#ip route 192.168.25.36 255.255.255.252 192.168.25.41
Rhodes(config)#ip route 192.168.24.0 255.255.255.0 192.168.25.41
Rhodes(config)#ip route 192.168.25.48 255.255.255.252 192.168.25.41
Rhodes(config)#ip route 192.168.23.0 255.255.255.0 192.168.25.41
Rhodes(config)#exit
Rhodes#
%SYS-5-CONFIG_I: Configured from console by console

Rhodes#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Rhodes#

Saint Danis

Saint_Danis>
Saint_Danis>en
Saint_Danis#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Saint_Danis(config)#ip route 192.168.20.0 255.255.254.0 192.168.25.45
%Invalid next hop address (it's this router)
Saint_Danis(config)#ip route 192.168.20.0 255.255.254.0 192.168.25.42
Saint_Danis(config)#ip route 192.168.22.0 255.255.255.0
%LINK-3-UPDOWN: Interface Serial2/0, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to down

%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

% Incomplete command.
Saint_Danis(config)#ip route 192.168.22.0 255.255.255.0 192.168.25.46
Saint_Danis(config)#ip route 192.168.25.0 255.255.255.224 192.168.25.34
Saint_Danis(config)#ip route 192.168.25.48 255.255.255.252 192.168.25.34
Saint_Danis(config)#ip route 192.168.23.0 255.255.255.0 192.168.25.34
Saint_Danis(config)#ip route 192.168.25.36 255.255.255.252 192.168.25.34
Saint_Danis(config)#ip route 192.168.24.0 255.255.255.0 192.168.25.34
Saint_Danis(config)#exit
Saint_Danis#
%SYS-5-CONFIG_I: Configured from console by console

Saint_Danis#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Saint_Danis#

Limpany

Limpany>en
Limpany#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Limpany(config)#ip route 192.168.16.0 255.255.252.0 192.168.25.45
Limpany(config)#ip route 192.168.25.40 255.255.255.252
% Incomplete command.
Limpany(config)#ip route 192.168.25.40 255.255.255.252 192.168.25.45
Limpany(config)#ip route 192.168.20.0 255.255.254.0 192.168.25.45
Limpany(config)#ip route 192.168.25.32 255.255.255.252 192.168.25.45
Limpany(config)#ip route 192.168.25.0 255.255.255.224 192.168.25.45
Limpany(config)#ip route 192.168.25.48 255.255.255.252 ip route 192.168.25
^
% Invalid input detected at '^' marker.
Limpany(config)#ip route 192.168.25.48 255.255.255.252 192.168.25.45
Limpany(config)#ip route 192.168.23.0 255.255.255.0 192.168.25.45
Limpany(config)#ip route 192.168.25.36 255.255.255.252 192.168.25.45
Limpany(config)#ip route 192.168.24.0 255.255.255.0 192.168.25.45
Limpany(config)#exit
Limpany#

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

Limpany#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Limpany#

Annesburg

Annesburg>en
Annesburg#config t
Enter configuration commands, one per line. End with CNTL/Z.
Annesburg(config)#ip route 192.168.25.44 255.255.255.252 192.168.25.33
Annesburg(config)#ip route 192.168.22.0 255.255.255.0 192.168.25.33
Annesburg(config)#ip route 192.168.25.40 255.255.255.252 192.168.25.33
Annesburg(config)#ip route 192.168.20.0 255.255.254.0 192.168.25.33
Annesburg(config)#ip route 192.168.16.0 255.255.252.0 192.168.25.33
Annesburg(config)#router rip
Annesburg(config-router)#version 2
Annesburg(config-router)#no auto-summary
Annesburg(config-router)#network 192.168.25.0
Annesburg(config-router)#network 192.168.25.48
Annesburg(config-router)#passive-interface f0/0
Annesburg(config-router)#default-information originate
Annesburg(config-router)#end
Annesburg#
%SYS-5-CONFIG_I: Configured from console by console

Annesburg#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Annesburg#

Strawberry

Strawberry>en
Strawberry#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Strawberry(config)#ip route 0.0.0.0 0.0.0.0 s2/0
Strawberry(config)#router rip
Strawberry(config-router)#version 2

```
Strawberry(config-router)#network 192.168.23.0
Strawberry(config-router)#network 192.168.25.48
Strawberry(config-router)#network 192.168.25.0

Strawberry(config)#end
Strawberry#
%SYS-5-CONFIG_I: Configured from console by console

Strawberry#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Strawberry#
```

Valentine

```
Valentine>en
Valentine#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Valentine(config)#router rip
Valentine(config-router)#version 2
Valentine(config-router)#network 192.168.24.0
Valentine(config-router)#network 192.168.25.36
Valentine(config-router)#passive-interface f0/0
Valentine(config-router)#end
Valentine#
%SYS-5-CONFIG_I: Configured from console by console

Valentine#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Valentine#
```

Floating

Rhodes

```
Rhodes#en
Rhodes#config t
Enter configuration commands, one per line. End with CNTL/Z.

Rhodes(config-if)#ip route 192.168.22.0 255.255.255.0 192.168.25.54 5
Rhodes(config)#exit
Rhodes#
```

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

Rhodes#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Rhodes#

Limpany

Limpany#en
Limpany #config t
Enter configuration commands, one per line. End with CNTL/Z.

Limpany (config-if)#ip route 192.168.20.0 255.255.254.0 192.168.25.53 5
Limpany (config)#exit
Limpany #
%SYS-5-CONFIG_I: Configured from console by console

Limpany #copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Limpany #