

Assignment 5: OSPF & EIGRP

Name : Pritesh Gandhi

Commands

Switch Commands

<u>Commands</u>	<u>Description</u>
vtp mode client	Set the switch mode to vtp client
vtp domain INETLAB	Set the vtp domain to INETLAB
Vtp password cisco	Set password to vtp database
show vtp status	Display the vtp configuration
Interface [port]	Go into interface configuration mode
Switchport mode trunk	Set the port mode to trunk for enabling VLAN traffic over it
switchport trunk allowed vlan [vlan_number]	Specifying which VLAN are allowed to send the frames over the trunk port
switchport mode access	Set the port mode to access for enabling VLAN access
switchport access vlan [vlan_num]	Assign VLAN to the port for sending frames of that VLAN over the network
Vlan [vlan_num]	Create a vlan
Name [vlan_name]	Assign a name to the vlan
Show vlan	Displays all the vlans & the ports assigned to them
Int vlan [vlan_num]	Create a layer 3 vlan interface
ip address [ip_addr][mask]	Assign an IP address to the interface
Spanning-tree portfast	Enable portfast on the interface
Show spanning-tree int [port] portfast	Displays the vlans allowed on the port for portfast
No switchport	By default, a port on layer 3 switch acts as a layer2 switch so to make it into layer 2 physical port, use this command

Router Commands

Router eigrp [Autonomous System number]	Enable eigrp on the router. Assign an autonomous system number which will be used for configuration throughout the network
network [network addr] [wildcard mask]	Specify the network to be advertised throughout the network dynamically
router ospf [process id]	Enable the ospf protocol on the router with specific process id
network [network addr] [wildcard mask] area [area num]	Specify the network to be advertised on the network using ospf with the area to which it belongs
show int [port num]	Displays the port configuration(which helps for redistribution)
redistribute ospf [process id] metric [bandwidth][delay] [reliability] [load] [MTU]	Enable redistribution of OSPF route to EIGRP route which requires all the metric values : bandwidth, delay in 10 microseconds, reliability, load, MTU(which we can get from above command)
Redistribute eigrp [AS] metric-type [type]	Enable redistribution of EIGRP route to OSPF route which requires Autonomous System number of EIGRP & type of metric (1 or 2)
Show ip ospf neighbor	Displays the adjacent routers with info : priority,state(DR/BDR),interface address connected to current router
Show ip route	Displays all the routes to which the router can communicate with metric value, feasible distance

show ip [protocol name] topology	Displays the routes available to all the networks with successor(current best path) and feasible successor(next best path).
[no] ip domain-lookup	Enable or disable the domain-lookup
Interface [port].[subinterface num]	Create a sub-interface on the physical port
encapsulation dot1Q [vlan num]	Enable encapsulation with IEEE 802.1Q protocol for specific VLAN
ip address [ip_addr][mask]	Assign an ip address to the port
Interface [port]	Go to configuration mode for the specified port

Results:

PC :

The screenshot shows a Packet Tracer PC window titled 'PC100'. It has four tabs: 'Physical', 'Config', 'Desktop', and 'Software/Services'. The 'Desktop' tab is active, displaying a 'Command Prompt' window. The Command Prompt shows the following text:

```

Packet Tracer PC Command Line 1.0
PC>ipconfig

FastEthernet0 Connection:(default port)

    Link-local IPv6 Address.....: FE80::202:16FF:FEB3:A9AD
    IP Address.....: 192.168.100.131
    Subnet Mask.....: 255.255.255.224
    Default Gateway.....: 192.168.100.130

PC>ping 192.168.200.91

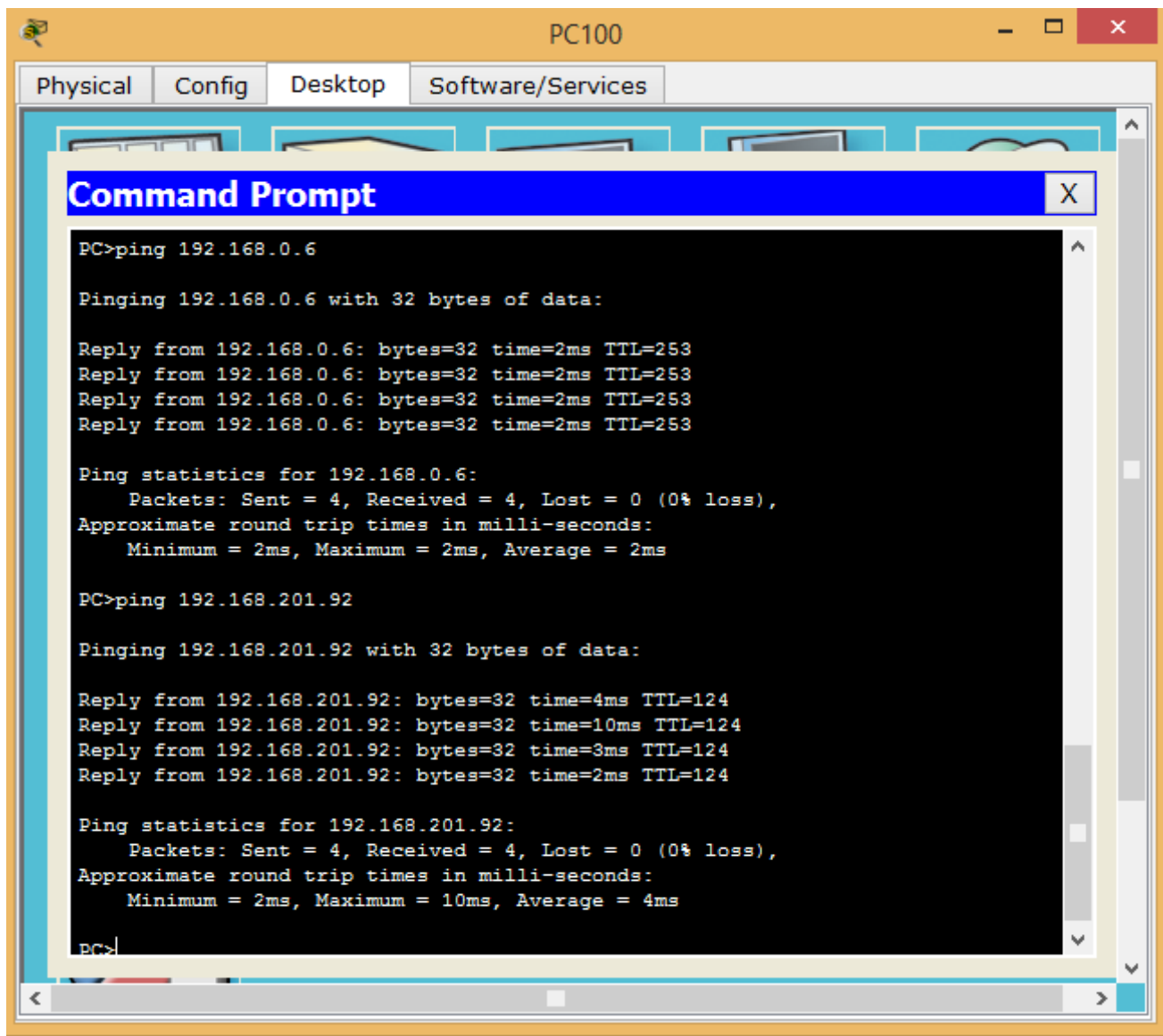
Pinging 192.168.200.91 with 32 bytes of data:

Request timed out.
Reply from 192.168.200.91: bytes=32 time=2ms TTL=124
Reply from 192.168.200.91: bytes=32 time=2ms TTL=124
Reply from 192.168.200.91: bytes=32 time=3ms TTL=124

Ping statistics for 192.168.200.91:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 3ms, Average = 2ms

PC>

```



Router-Dallas :

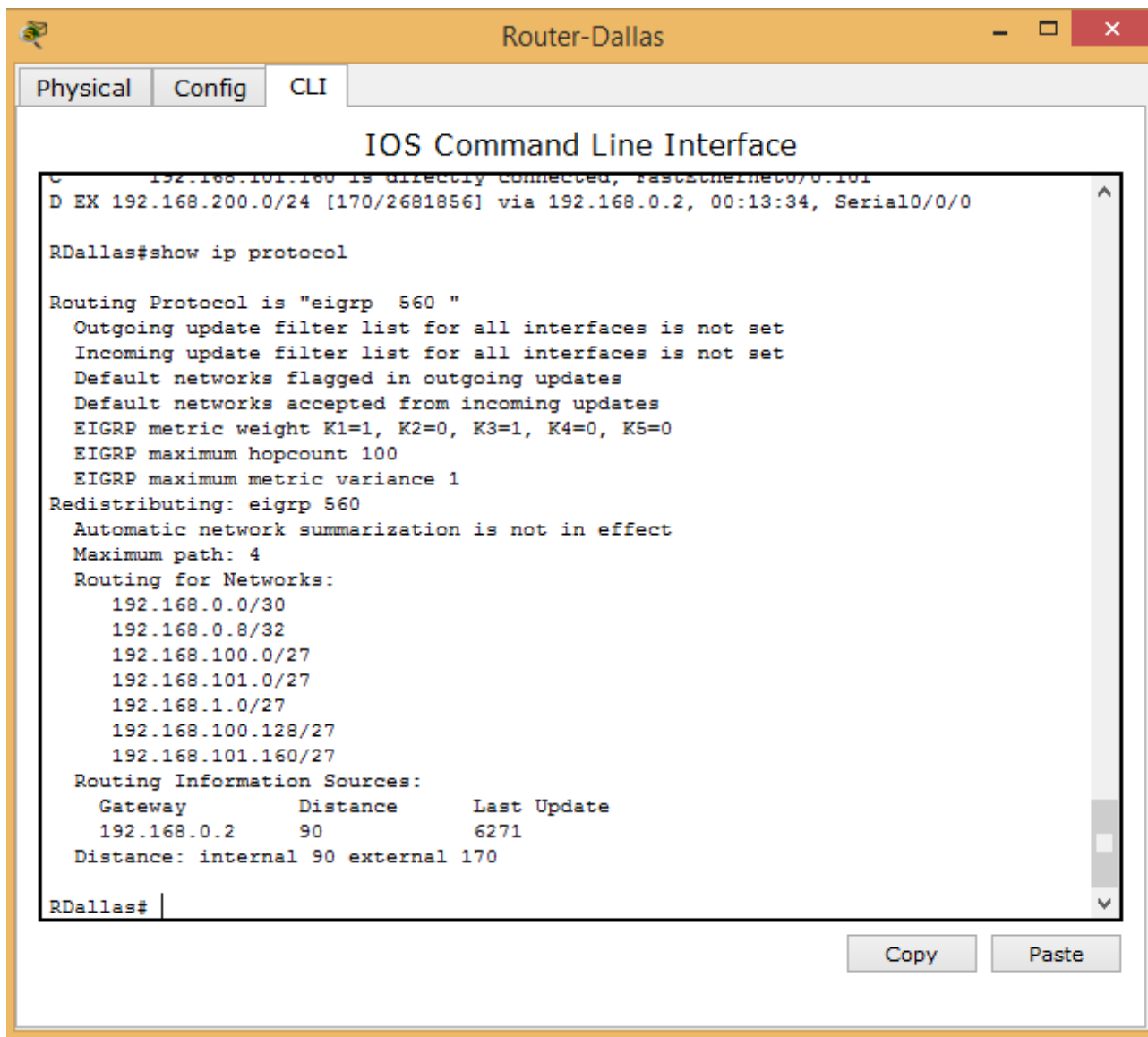
Router-Dallas

Physical Config CLI

IOS Command Line Interface

```
RDallas#show ip int brief
Interface                IP-Address      OK? Method Status      Protocol
FastEthernet0/0          192.168.1.1     YES manual up          up
FastEthernet0/0.100      192.168.100.130 YES manual up          up
FastEthernet0/0.101      192.168.101.162 YES manual up          up
FastEthernet0/1          unassigned      YES unset  administratively down down
Serial10/0/0              192.168.0.1     YES manual up          up
Serial10/0/1              unassigned      YES unset  administratively down down
Serial10/1/0              unassigned      YES unset  administratively down down
Serial10/1/1              unassigned      YES unset  administratively down down
Loopback11                192.168.0.10    YES manual up          up
Vlan1                     unassigned      YES unset  administratively down down
RDallas#
RDallas#
RDallas#
RDallas#
RDallas#
RDallas#
RDallas#
```

Copy Paste



IOS Command Line Interface

```
!  
end
```

```
RDallas#show ip route
```

```
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP  
        D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area  
        N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2  
        E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP  
        i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area  
        * - candidate default, U - per-user static route, o - ODR  
        P - periodic downloaded static route
```

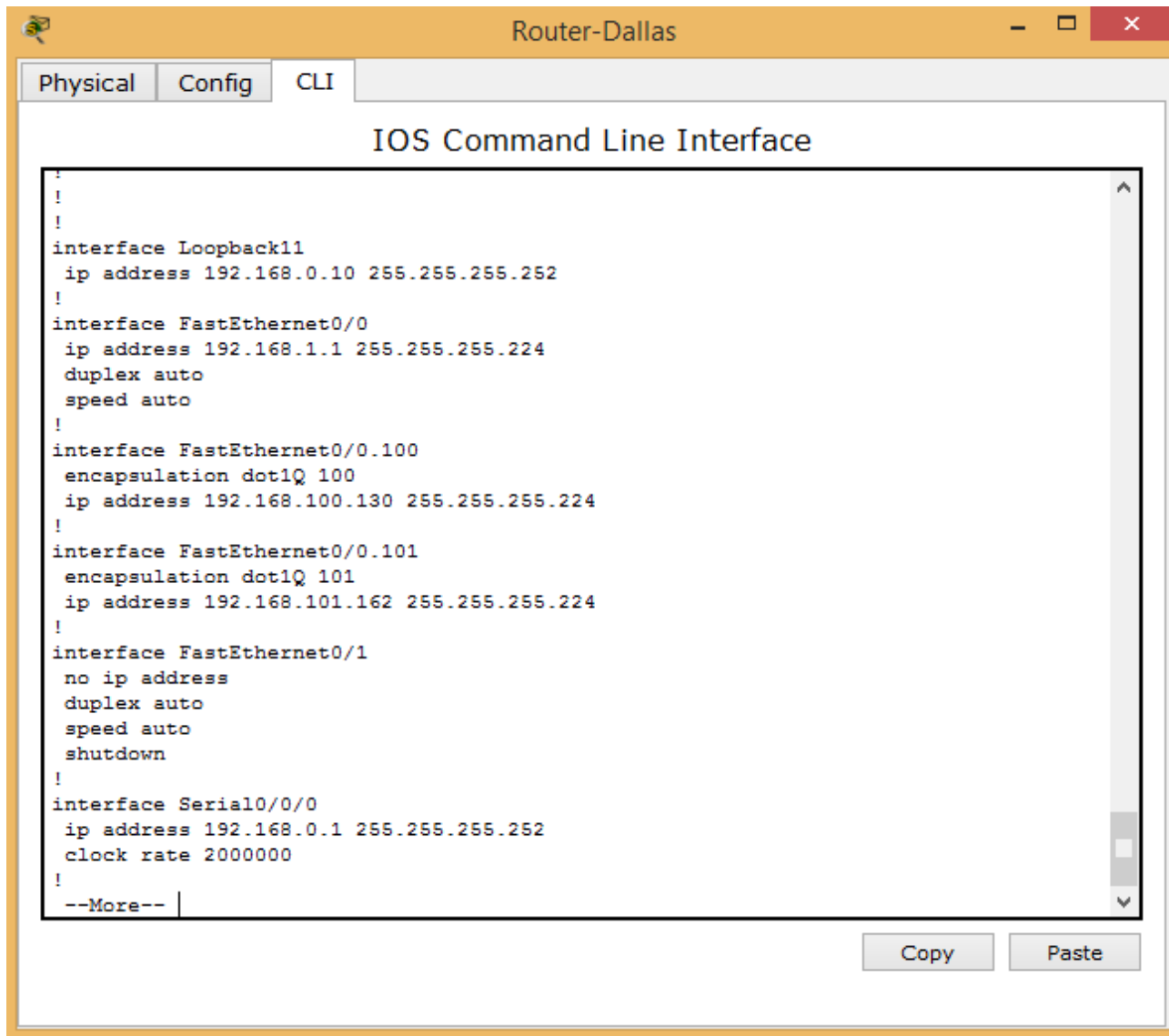
```
Gateway of last resort is not set
```

```
    192.168.0.0/30 is subnetted, 3 subnets  
C      192.168.0.0 is directly connected, Serial0/0/0  
D EX   192.168.0.4 [170/2681856] via 192.168.0.2, 00:14:22, Serial0/0/0  
C      192.168.0.8 is directly connected, Loopback11  
    192.168.1.0/27 is subnetted, 1 subnets  
C      192.168.1.0 is directly connected, FastEthernet0/0  
D EX   192.168.2.0/24 [170/2681856] via 192.168.0.2, 00:13:34, Serial0/0/0  
    192.168.100.0/27 is subnetted, 1 subnets  
C      192.168.100.128 is directly connected, FastEthernet0/0.100  
    192.168.101.0/27 is subnetted, 1 subnets  
C      192.168.101.160 is directly connected, FastEthernet0/0.101  
D EX   192.168.200.0/24 [170/2681856] via 192.168.0.2, 00:13:34, Serial0/0/0
```


```
RDallas#show ip route
```

Copy

Pa



Router-New York

 Router-NewYork

Physical Config CLI

IOS Command Line Interface

```
RNewYork#show ip protocol

Routing Protocol is "eigrp 560 "
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Default networks flagged in outgoing updates
  Default networks accepted from incoming updates
  EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
  EIGRP maximum hopcount 100
  EIGRP maximum metric variance 1
  Redistributing: eigrp 560, ospf 1
    Automatic network summarization is not in effect
  Maximum path: 4
  Routing for Networks:
    192.168.0.0/30
  Routing Information Sources:
    Gateway         Distance      Last Update
    192.168.0.1      90           6271
  Distance: internal 90 external 170

Routing Protocol is "ospf 1"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Router ID 192.168.0.5
  It is an autonomous system boundary router
  Redistributing External Routes from,
    eigrp 560
  Number of areas in this router is 1. 1 normal 0 stub 0 nssa
  Maximum path: 4
  Routing for Networks:
    192.168.0.4 0.0.0.3 area 0
  Routing Information Sources:
    Gateway         Distance      Last Update
    192.168.0.5      110          00:17:50
    192.168.0.9      110          00:17:16
    192.168.201.1    110          00:17:16
  Distance: (default is 110)

RNewYork#
```

Copy Paste

Router-NewYork

PhysicalConfigCLI

IOS Command Line Interface

RNewYork#show ip int brief

Interface	IP-Address	OK?	Method	Status
FastEthernet0/0	unassigned	YES	unset	administratively down
FastEthernet0/1	unassigned	YES	unset	administratively down
Serial0/0/0	192.168.0.2	YES	manual	up
Serial0/0/1	192.168.0.5	YES	manual	up
Serial0/1/0	unassigned	YES	unset	administratively down
Serial0/1/1	unassigned	YES	unset	administratively down
Vlan1	unassigned	YES	unset	administratively down

RNewYork#

RNewYork#

RNewYork#

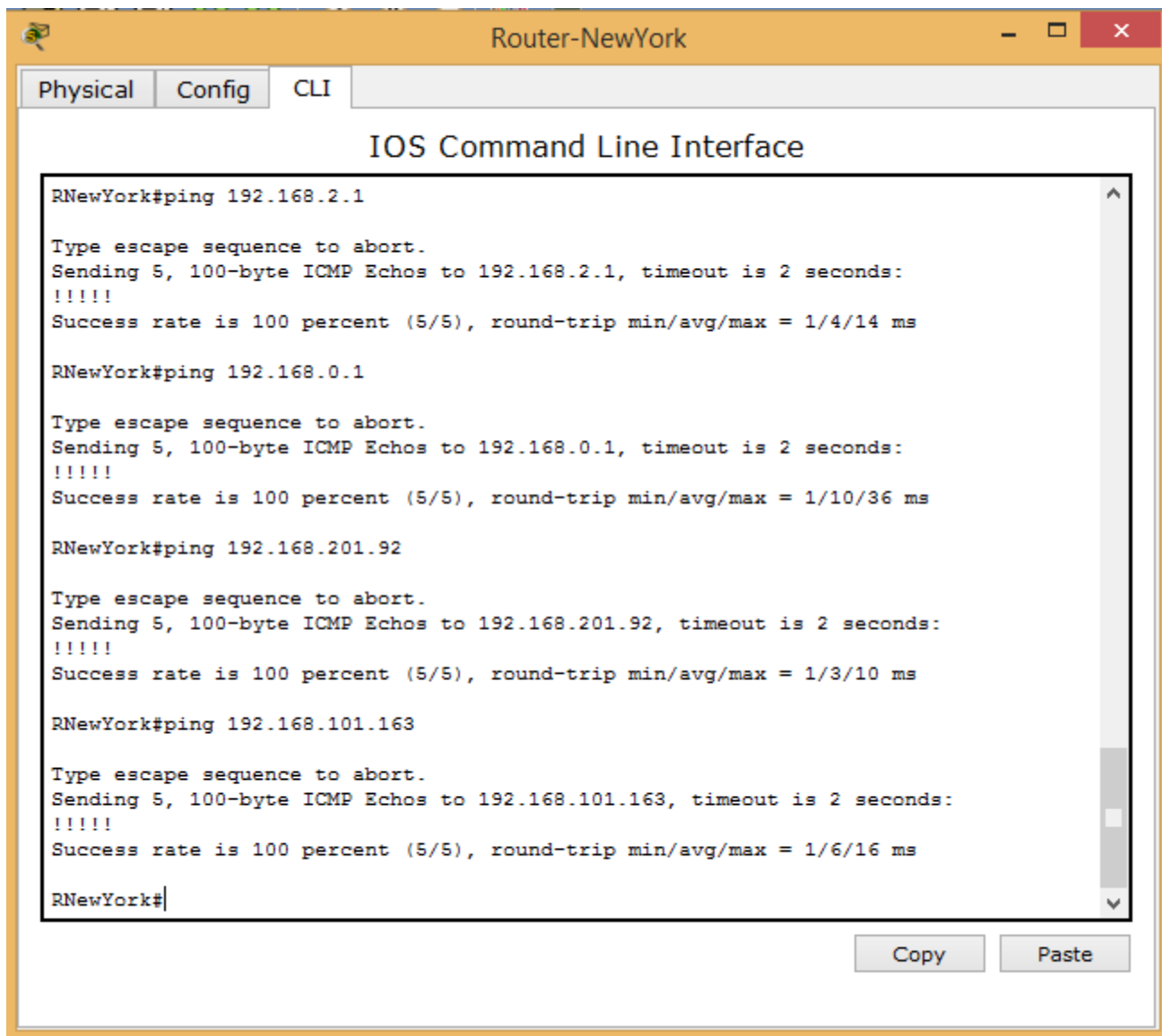
RNewYork#

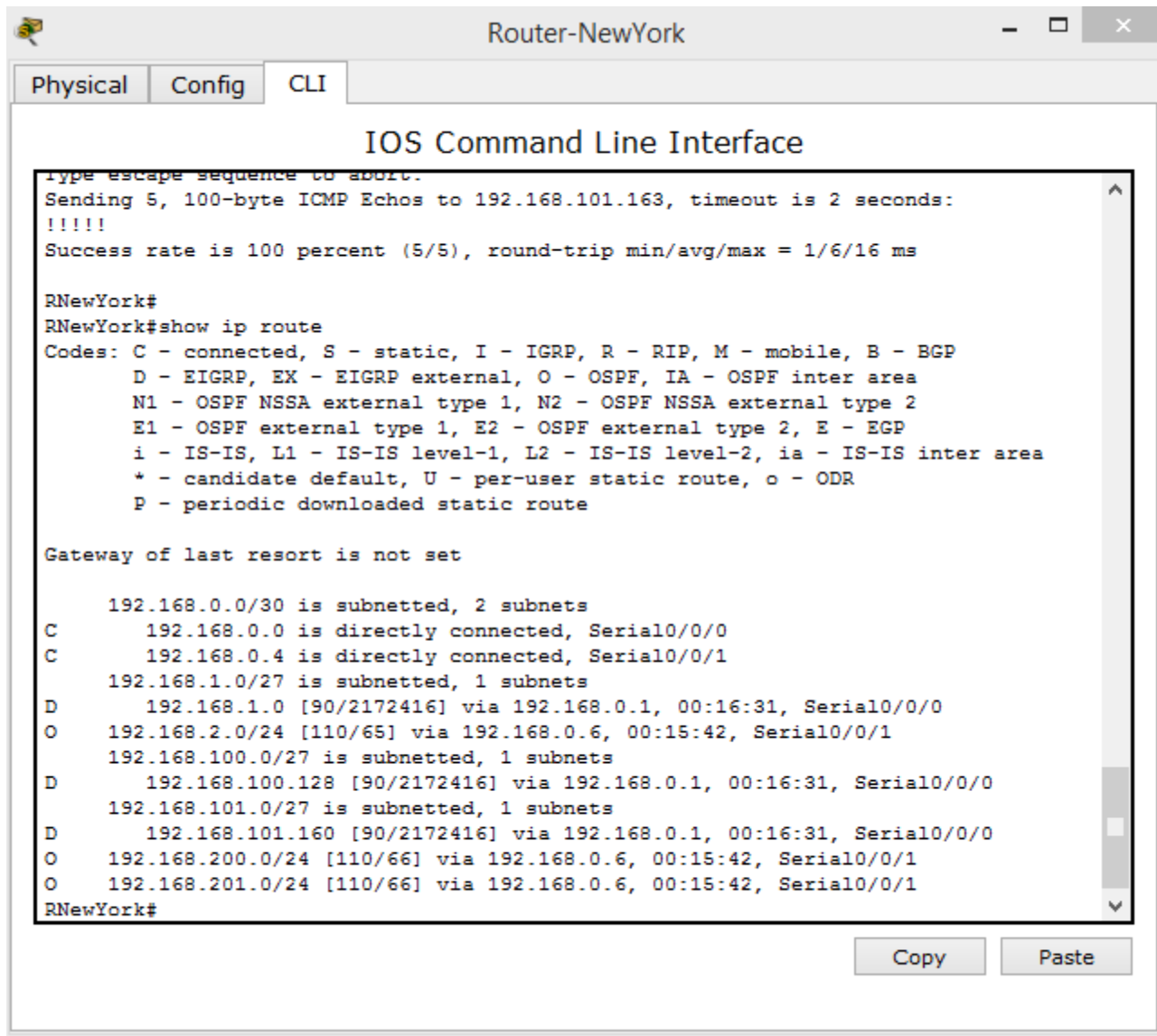
RNewYork#

RNewYork#

Copy

Paste



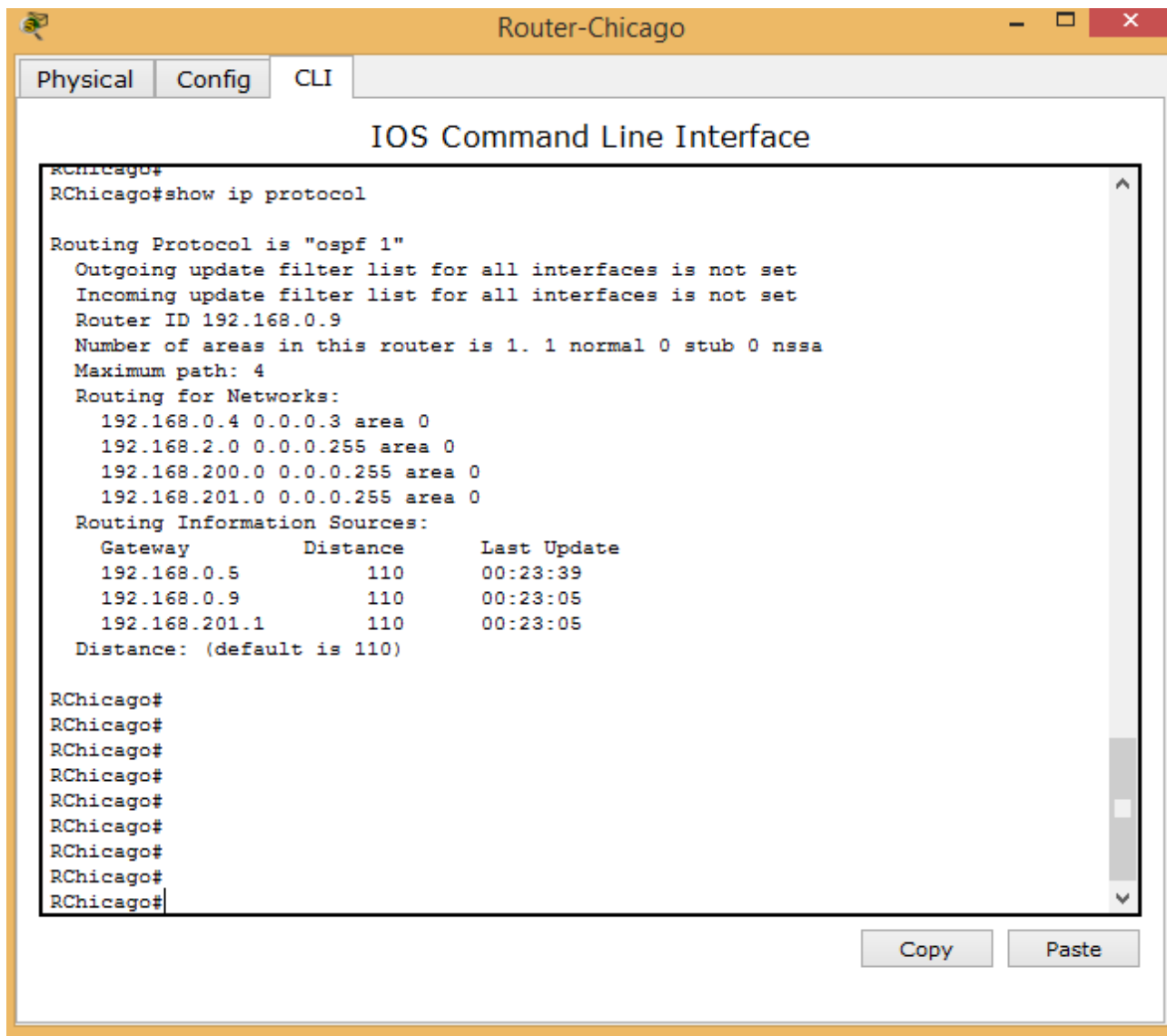


Router-Chicago:

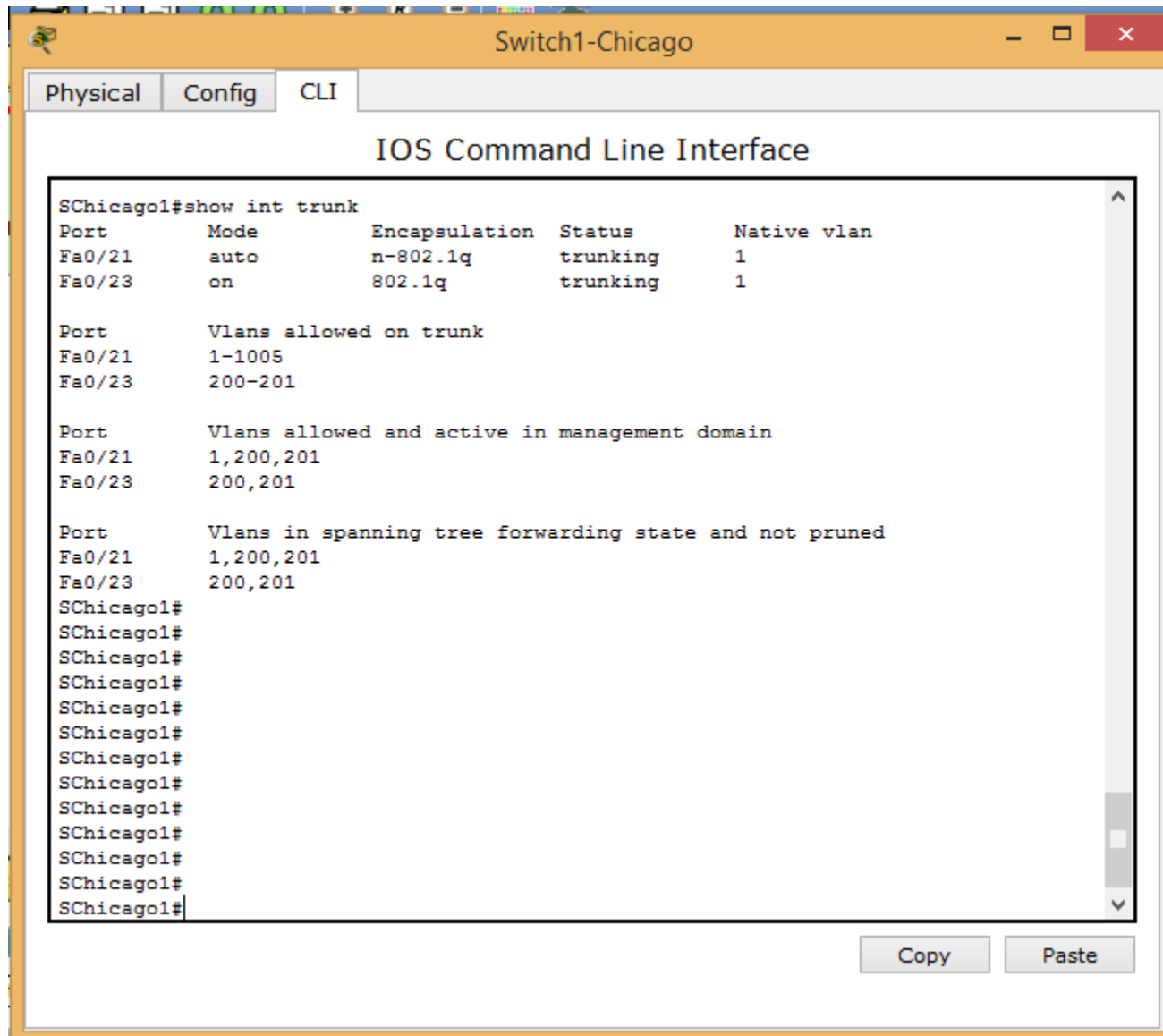
The screenshot shows a window titled "Router-Chicago" with three tabs: "Physical", "Config", and "CLI". The "CLI" tab is active, displaying the "IOS Command Line Interface". The command "RChicago# show ip int brief" has been entered, and the output is displayed in a table format. The table has five columns: "Interface", "IP-Address", "OK?", "Method Status", and "Protocol". The output lists several interfaces, including FastEthernet0/0, FastEthernet0/1, Serial0/0/0, Serial0/0/1, Serial0/1/0, Serial0/1/1, Loopback1, and Vlan1. The status of each interface is shown as either "up" or "administratively down".

Interface	IP-Address	OK?	Method Status	Protocol
FastEthernet0/0	192.168.2.1	YES	manual up	up
FastEthernet0/1	unassigned	YES	unset administratively down	down
Serial0/0/0	unassigned	YES	unset administratively down	down
Serial0/0/1	192.168.0.6	YES	manual up	up
Serial0/1/0	unassigned	YES	unset administratively down	down
Serial0/1/1	unassigned	YES	unset administratively down	down
Loopback1	192.168.0.9	YES	manual up	up
Vlan1	unassigned	YES	unset administratively down	down

Below the table, the command prompt "RChicago#" is repeated several times, indicating that the user has entered the command multiple times. At the bottom right of the window, there are "Copy" and "Paste" buttons.



Switch1-Chicago:





CLI

```
SChicagol#show vlan brief
```

VLAN	Name	Status	Ports
1	default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10, Fa0/13, Fa0/14 Fa0/15, Fa0/16, Fa0/17, Fa0/18 Fa0/19, Fa0/20, Fa0/22, Fa0/24 Gig0/1, Gig0/2
200	VLAN200	active	Fa0/11
201	VALN201	active	Fa0/12
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

[illegible]

Paste

Switch2-Chicago

Physical Config CLI

IOS Command Line Interface

```
SChicago2#show int trunk
Port      Mode      Encapsulation  Status        Native vlan
Fa0/22    auto      n-802.1q       trunking      1
Fa0/23    on        802.1q         trunking      1

Port      Vlans allowed on trunk
Fa0/22    1-1005
Fa0/23    200-201

Port      Vlans allowed and active in management domain
Fa0/22    1,200,201
Fa0/23    200,201

Port      Vlans in spanning tree forwarding state and not pruned
Fa0/22    1,200,201
Fa0/23    200,201
SChicago2#show vlan brief

VLAN Name                Status    Ports
-----
1    default              active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                           Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                           Fa0/9, Fa0/10, Fa0/13, Fa0/14
                                           Fa0/15, Fa0/16, Fa0/17, Fa0/18
                                           Fa0/19, Fa0/20, Fa0/21, Fa0/24
                                           Gig0/1, Gig0/2
200  VLAN200              active    Fa0/11
201  VALN201              active    Fa0/12
1002 fddi-default          active
1003 token-ring-default   active
1004 fddinet-default       active
1005 trnet-default         active
SChicago2#
SChicago2#
SChicago2#
SChicago2#
SChicago2#
SChicago2#
SChicago2#
```

[Copy](#) [Paste](#)

Switch-L3-Chicago:

