Not in record

1. Peer to peer connection

AIM:

To set up a Peer-to-Peer connection using Cisco Packet Tracer.

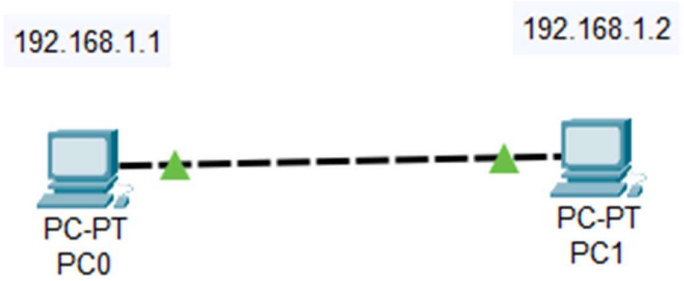
REQUIREMENTS:

- Two windows PC
- Copper cross-over cables
- Power supply
- Cisco Packet Tracer 6.0.1

PROCEDURE:

1. Open the CISCO PACKET TRACER Software.
2. Draw the 2 windows PC using End Device Icons.
3. Make the Connections using Copper cross-over cables.
4. Enter the IP Address to Each Machine.
5. Check the connection with each other PC's, using Command prompt
6. Open the command prompt of 1st PC and just type ping IP address (of the 2nd PC)
7. Open the command prompt of 2nd PC and just type ping IP address (of the 1st PC)
8. If you receive replies from both the PC's, your connection is successful.
9. Also, check the connections using Add Simple PDU(P).

DIAGRAM:



RESULT:

Thus, the Peer-to-Peer connection is established, the communications among the machines is verified and manipulated successfully.

2. Bus topology

AIM:

To setup Bus Topology using Cisco Packet Tracer.

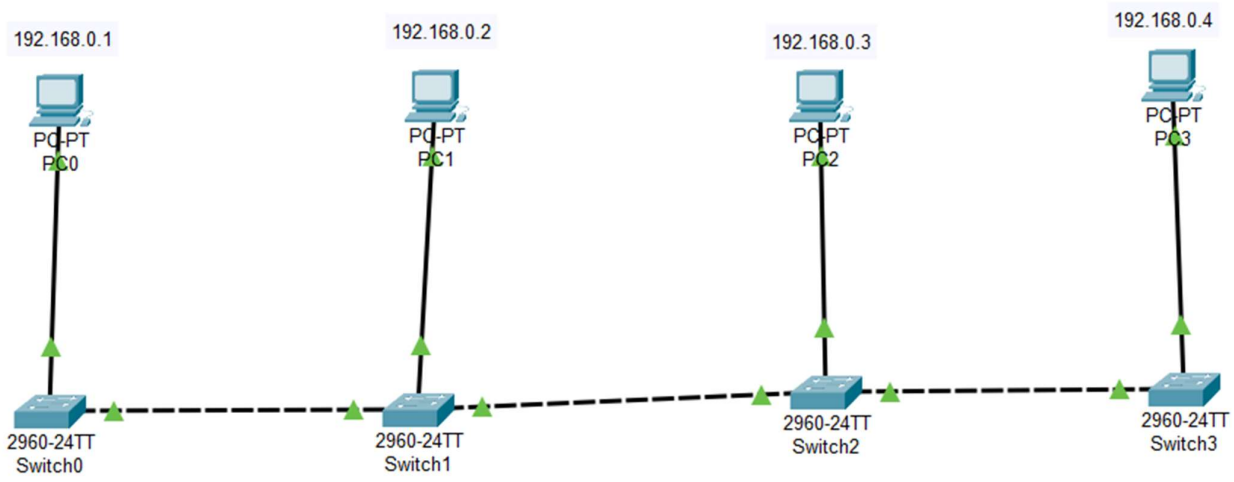
REQUIREMENTS:

- Four windows PC
- Four switches
- Copper straight-through cables
- Copper cross-over cables
- Power supply
- Cisco Packet Tracer 6.0.1

PROCEDURE:

1. Open the CISCO PACKET TRACER Software.
2. Draw the 4 windows PC using End Device Icons.
3. Draw four 24-port switch using switch icon lists.
4. Connect PC and Switch using copper straight-through Ethernet Cables.
5. Connect Switch to Switch using copper cross-over cables.
6. Enter the IP Address to Each Machine.
7. Check the connections using Add Simple PDU(P).

DIAGRAM:



RESULT:

Thus, the Bus Topology connection is established, the communications among the machines is verified and manipulated successfully.

3. Mesh topology

AIM:

To setup Mesh Topology using Cisco Packet Tracer.

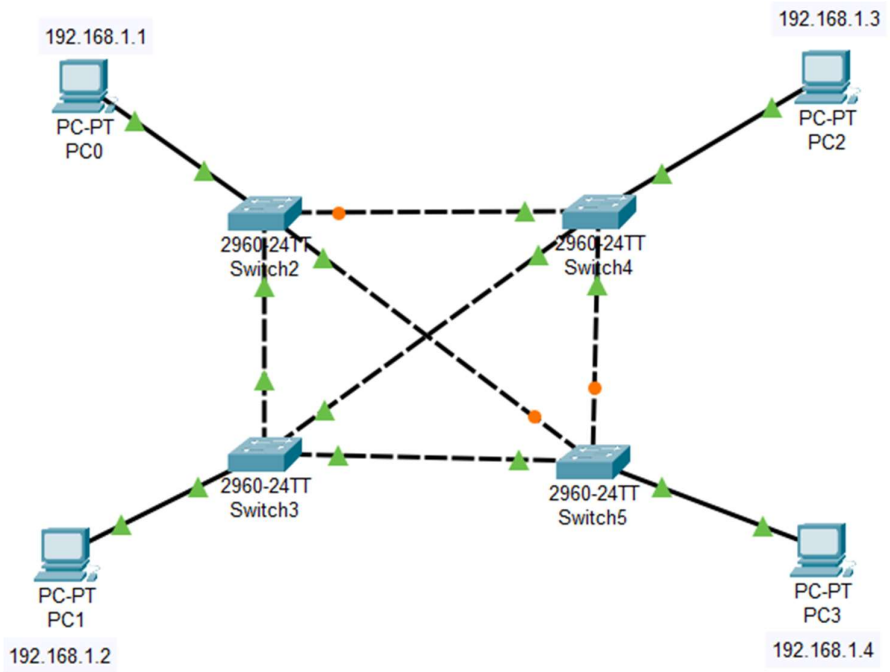
REQUIREMENTS:

- Four windows PC
- Four switch
- Copper straight-through cables
- Copper cross-over cables
- Power supply
- Cisco Packet Tracer 6.0.1

PROCEDURE:

1. Open the CISCO PACKET TRACER Software.
2. Draw the 4 windows PC using End Device Icons.
3. Draw four 24-port switch using switch icon lists.
4. Connect PC and Switch using copper straight-through Ethernet Cables.
5. Connect Switch to Switch using copper cross-over cables.
6. Enter the IP Address to Each Machine.
7. Check the connections using Add Simple PDU(P).

DIAGRAM:



RESULT:

Thus, the Mesh Topology connection is established, the communications among the machines is verified and manipulated successfully.

4. Star topology

AIM:

To setup Star Topology using Cisco Packet Tracer.

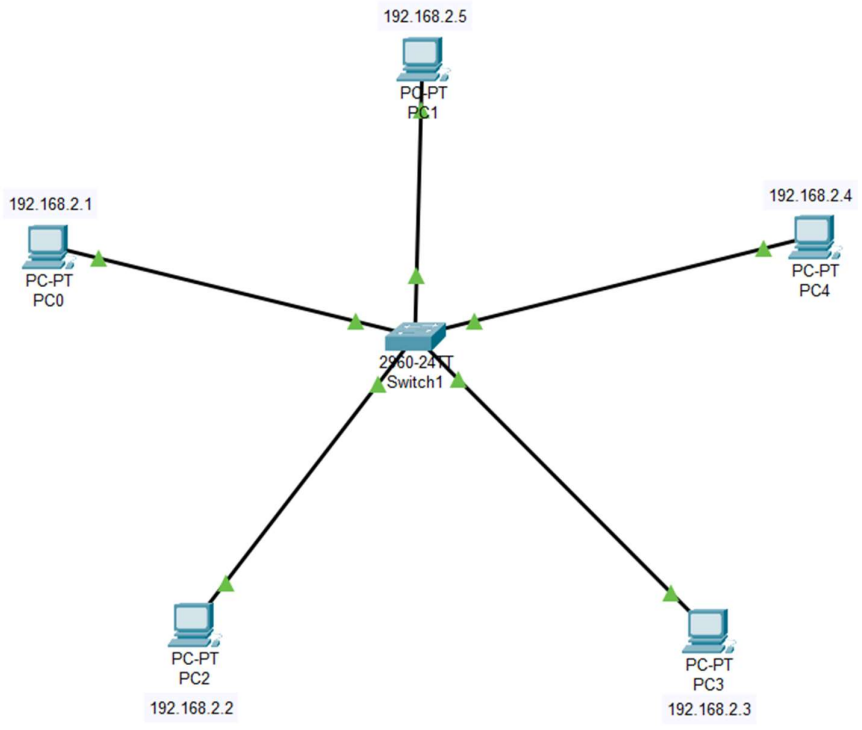
REQUIREMENTS:

- Five windows PC
- One switch
- Copper straight-through cables
- Power supply
- Cisco Packet Tracer 6.0.1

PROCEDURE:

1. Open the CISCO PACKET TRACER Software.
2. Draw the 5 windows PC using End Device Icons.
3. Draw the switch using switch icon lists.
4. Connect PC and Switch using copper straight-through Ethernet Cables.
5. Enter the IP Address to Each Machine.
6. Check the connections using Add Simple PDU(P).

DIAGRAM:



RESULT:

Thus, the Star Topology connection is established, the communications among the machines is verified and manipulated successfully.

5. Lan using Hub

AIM:

To setup a Local Area Network using Cisco Packet Tracer.

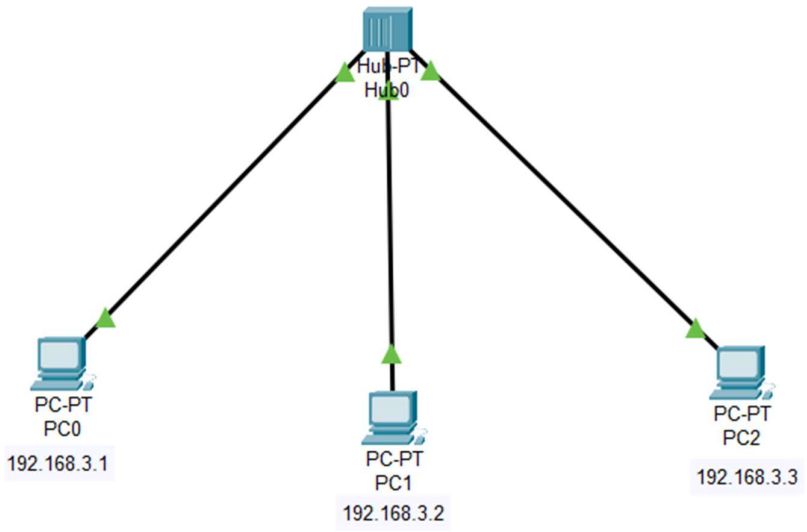
REQUIREMENTS:

- Three windows PC
- One Hub
- Copper straight-through cables
- Power supply
- Cisco Packet Tracer 6.0.1

PROCEDURE:

1. Open the CISCO PACKET TRACER Software.
2. Draw the 3 windows PC using End Device Icons.
3. Draw the Hub using Hub icon lists.
4. Make the connection using copper straight-through Ethernet Cables.
5. Enter the IP Address to Each Machine.
6. Check the connections between using Add Simple PDU(P).

DIAGRAM:



RESULT:

Thus, the LAN connection is established, the communications among the machines is verified and manipulated successfully.

In Record

6. LAN using switch (Exp-2 in rec)

AIM:

To setup a Local Area Network using Cisco Packet Tracer.

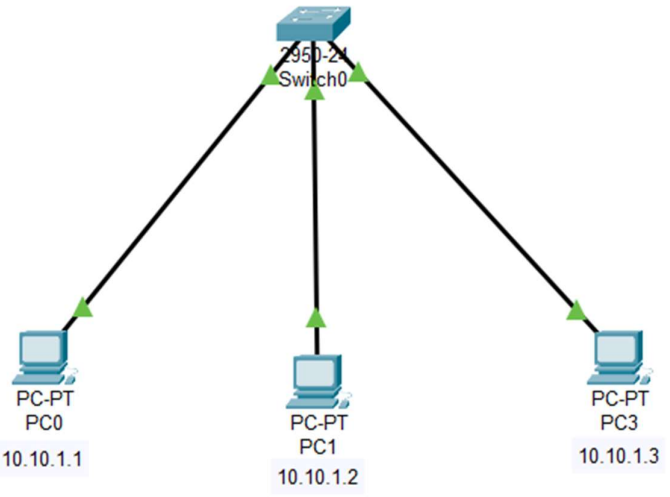
REQUIREMENTS:

- Three windows PC
- One Switch
- Copper straight-through cables
- Power supply
- Cisco Packet Tracer 6.0.1

PROCEDURE:

1. Open the CISCO PACKET TRACER Software.
2. Draw the 3 windows PC using End Device Icons.
3. Draw the 24-port switch using switch icon lists.
4. Make the connection using copper straight-through Ethernet Cables.
5. Enter the IP Address to Each Machine.
6. Check the connections between using Add Simple PDU(P).

DIAGRAM:



RESULT:

Thus, the LAN connection is established, the communications among the machines is verified and manipulated successfully.

7. Connect 2 LANs using router. (Exp-7 in rec)

AIM:

To establish connection between two LANs by extending routing connection using router.

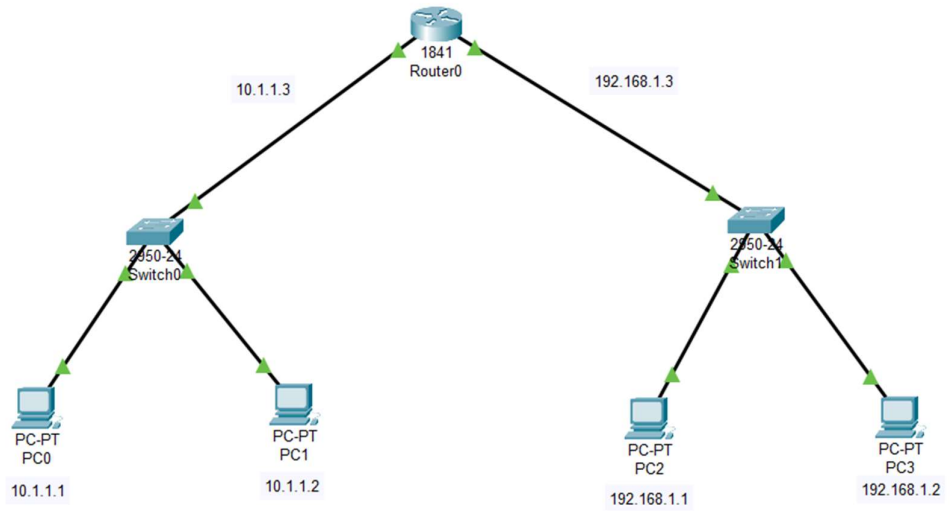
REQUIREMENTS:

- Four windows PC or Four Linux PC.
- Two Switch
- Copper straight-through cables
- Power supply
- Cisco Packet Tracer 6.0.1
- Cisco Router (Model 1841)

PROCEDURE:

1. Open the CISCO PACKET TRACER software.
2. Draw the 4 PC using End Device Icons.
3. Draw the 2 CISCO 24 Port Switch using Switch icon lists.
4. Draw the Cisco Routers using Router icon lists.
5. Make the Connections using copper Straight-Through Ethernet Cables.
6. Enter the IP Address to Each Machine.
7. Configure Router R0.
8. Check the LAN network connectivity using Add Simple PDU(P).

DIAGRAM:



RESULT:

Thus, the two LANs are connected using router with static routes and the communications between LANs is checked successfully.

8. Static routing (Exp-6 in rec)

AIM:

To implement Static Routing using Cisco Packet Tracer.

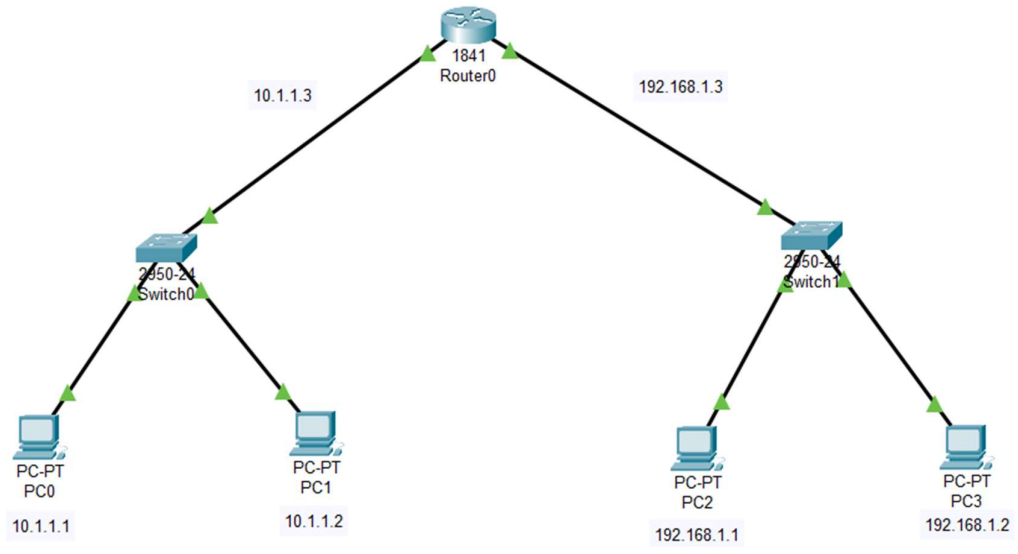
REQUIREMENTS:

- Four windows PC or Four Linux PC.
- Two Switch
- Copper straight-through cables
- Power supply
- Cisco Packet Tracer 6.0.1
- Cisco Router (Model 1841)

PROCEDURE:

1. Open the CISCO PACKET TRACER software.
2. Draw the 4 PC using End Device Icons.
3. Draw the 2 CISCO 24 Port Switch using Switch icon lists.
4. Draw the Cisco Routers using Router icon lists.
5. Make the Connections using copper Straight-Through Ethernet Cables.
6. Enter the IP Address to Each Machine.
7. Configure Router R0.
8. Check the LAN network connectivity using Add Simple PDU(P).

DIAGRAM:



RESULT:

Thus, the Implementation of static routing is executed and the output is verified.

9. RIP protocol (Exp-10 in rec)

AIM:

To configure RIP protocol in Cisco Packet Tracer and verify its working.

REQUIREMENTS:

- Two Windows PC
- Two Router
- Copper cross-over cables
- Serial DCE cable
- Power supply
- Cisco Packet Tracer 6.0.1

PROCEDURE:

1. Open the CISCO PACKET TRACER software.
2. Draw the 2 PC using End Device Icons.
3. Draw the 2 Cisco Routers using Router icon lists.
4. Make the connection between PC's and Routers using Copper cross-over cables.
5. Connect router to router using serial DCE cable.
6. Enter the IP Address to Each Machine.
7. Configure Router R0 and Router R1.
8. Configure RIPv2 on the routers.

   Router 1

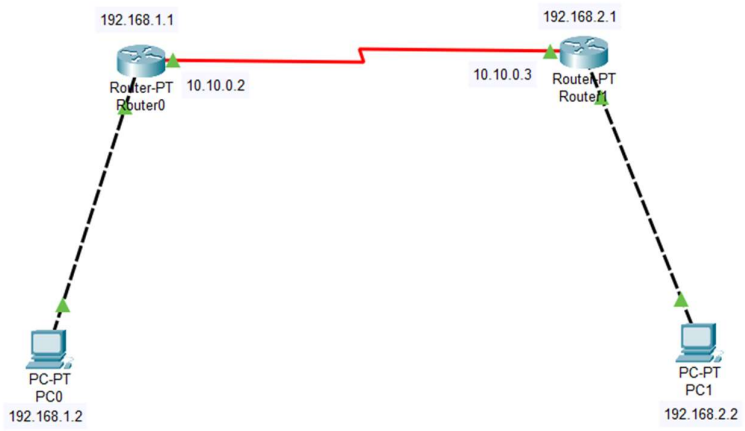
   R1(config)#
   R1(config)#router rip
   R1(config-router)#version 2
   R1(config-router)#network 192.168.1.0
   R1(config-router)#network 10.10.0.0

   Router 2

   R2(config)#
   R2(config)#router rip
   R2(config-router)#version 2
   R2(config-router)#network 192.168.2.0
   R2(config-router)#network 10.10.0.0
9. Now verify RIP configuration by using the command,

   R1#
   R1#show ip route
10. Ping PC2 from PC1 to further confirm that connectivity is really established between the two subnets.
11. We can also check the connection by using Add Simple PDU(P).

DIAGRAM:



RESULT:

Thus, RIP Protocol is implemented and verified.

10. EIGRP protocol (Exp-11 in rec)

AIM:

To configure EIGRP protocol in Cisco Packet Tracer and verify it's working.

REQUIREMENTS:

- Two Windows PC
- Two Router
- Copper cross-over cables
- Power supply
- Cisco Packet Tracer 6.0.1

PROCEDURE:

1. Open the CISCO PACKET TRACER software.
2. Draw the 2 PC using End Device Icons.
3. Draw the 2 Cisco Routers using Router icon lists.
4. Make the connection between PC's and Routers using Copper cross-over cables.
5. Connect router to router using Copper cross-over cable.
6. Enter the IP Address to Each Machine.
7. Configure Router R0 and Router R1.
8. Configure EIGRP on the routers.

   Router 1:

   ```
   R1(config)#
   R1(config)#router eigrp 1
   R1(config-router)#network 10.0.0.0
   R1(config-router)#network 20.0.0.0
   ```

   Router 2:

   ```
   R2(config)#
   R2(config)#router eigrp 1
   R2(config-router)#network 30.0.0.0
   R2(config-router)#network 20.0.0.0
   ```

9. Now verify EIGRP configuration
   - Verify EIGRP neighborhood relationship of the routers.

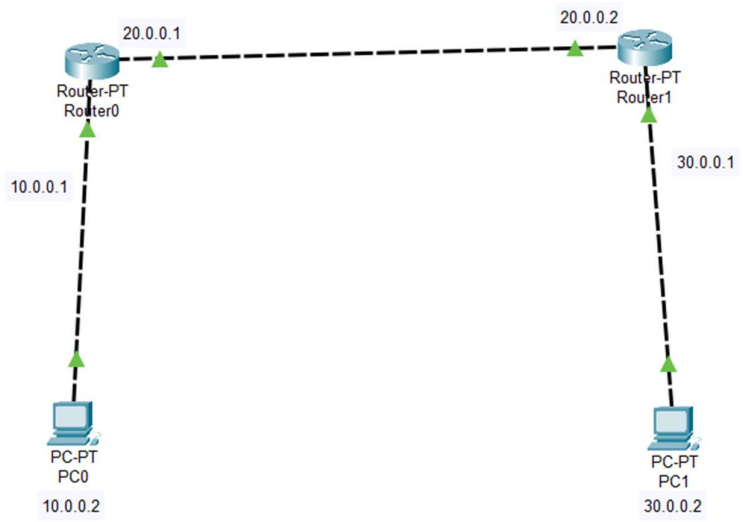
     ```
     R1#
     R1#show ip eigrp neighbors
     ```

   - Verify whether R1 has received a route to reach the 30.0.0.0/8 network by using the command,

     ```
     R1#
     R1#show ip route eigrp
     ```

10. Ping PC2 from PC1. Ping should be successful.
11. We can also check the connection by using Add Simple PDU(P).

DIAGRAM:



RESULT:

Thus, EIGRP Protocol is implemented and verified.

11. OSPF protocol (Exp-12 in rec)

AIM:

To configure OSPF protocol in Cisco Packet Tracer and verify it's working.

REQUIREMENTS:

- Two Windows PC
- Two Router
- Copper cross-over cables
- Serial DCE cable
- Power supply
- Cisco Packet Tracer 6.0.1

PROCEDURE:

1. Open the CISCO PACKET TRACER software.
2. Draw the 2 PC using End Device Icons.
3. Draw the 2 Cisco Routers using Router icon lists.
4. Make the connection between PC's and Routers using Copper cross-over cables.
5. Connect router to router using serial DCE cable.
6. Enter the IP Address to Each Machine.
7. Configure Router R0 and Router R1.
8. Configure OSPF on the routers.

   Router 1

   ```
   R1(config)#
   R1(config)#router ospf 1
   R1(config-router)#network 10.0.0.0  0.255.255.255  area 0
   R1(config-router)#network 20.0.0.0  0.255.255.255  area 0
   ```

   Router 2

   ```
   R2(config)#
   R2(config)#router ospf  2
   R2(config-router)#network 30.0.0.0  0.255.255.255 area 0
   R2(config-router)#network 20.0.0.0  0.255.255.255 area 0
   ```

9. Now verify OSPF configuration
   - Verify OSPF neighborhood relationship of the routers.

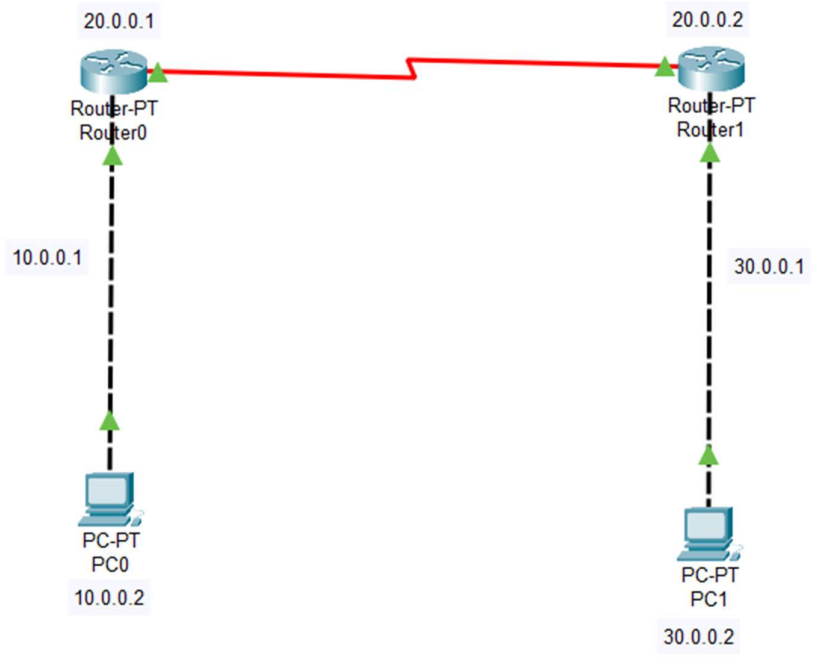
     ```
     R1#
     R1#show ip ospf neighbor
     ```

   - Verify whether R1 has received a route to reach the 30.0.0.0/8 network by using the command,

     ```
     R1#
     R1#show ip route ospf
     ```

10. Ping PC2 from PC1. Ping should be successful.
11. We can also check the connection by using Add Simple PDU(P).

DIAGRAM:



RESULT:

Thus, OSPF Protocol is implemented and verified.

12. Familiarizing network Commands (Exp-1 in rec)

AIM:

To familiarize with windows network commands and their outputs.

HOW TO EXECUTE:

1. Open the Command prompt by typing “CMD” in the Run Dialogue
2. Once the Command prompt opens type the commands

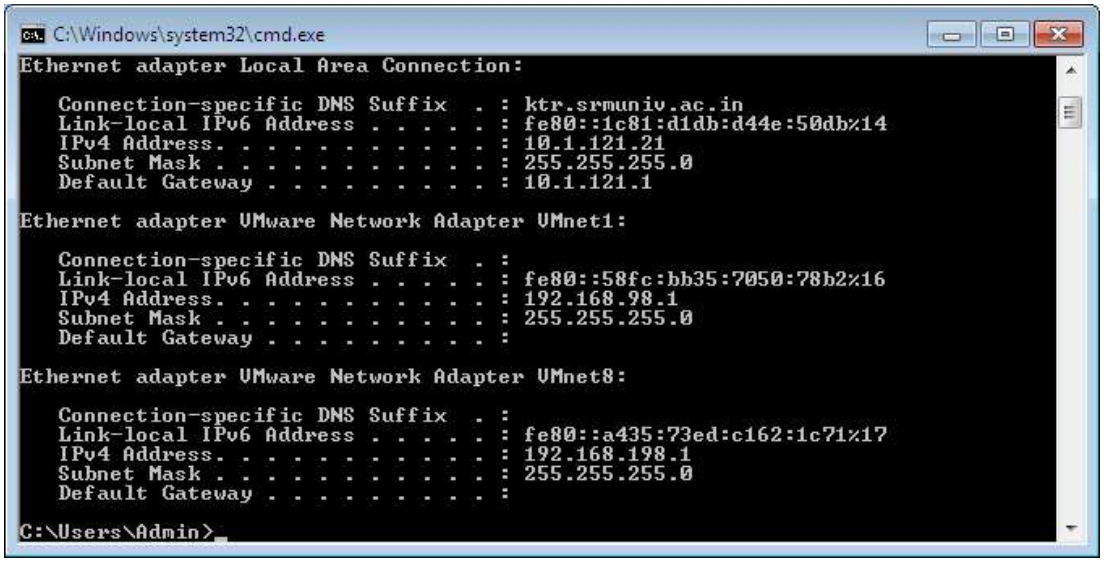
COMMAND DESCRIPTION

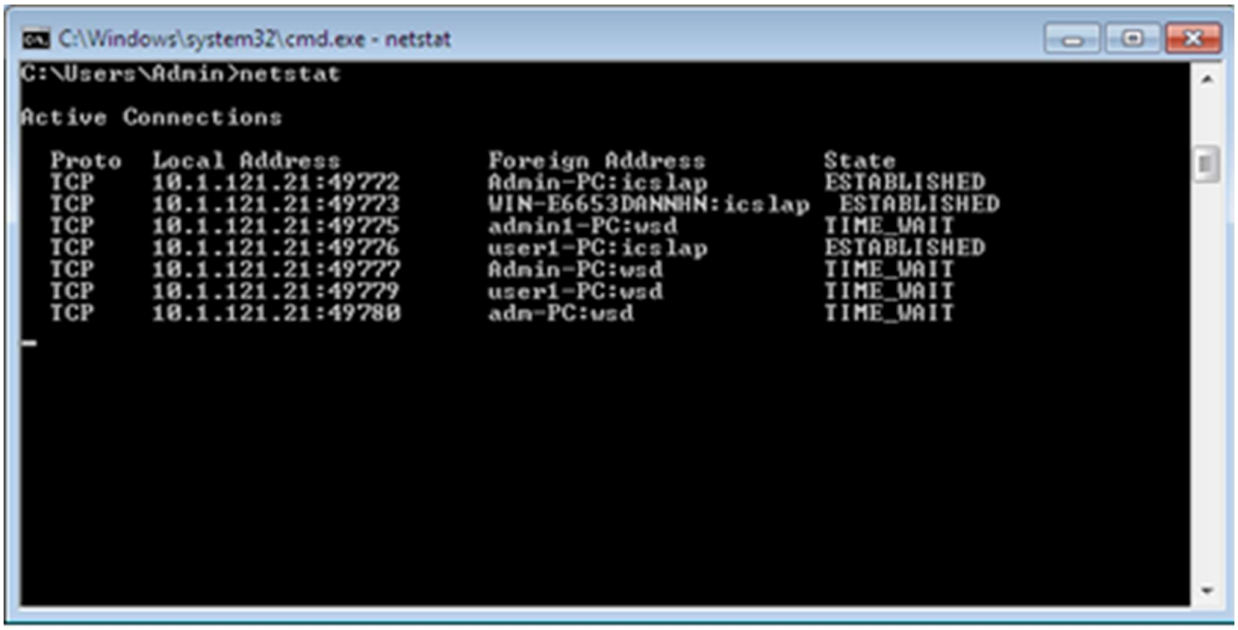
S.no	Command	Use
1.	ipconfig	This command can be utilized to verify a network connection as well as verify your network settings
2.	Netstat	Displays active e TCP connections, ports on which the computer is listening, Ethernet statistics, the IP routingtable etc.
3.	Tracert	The tracert command is used to visually see a networkpacket being sent and received and the amount of hops required for that packet to get to its destination.
4.	Ping	Helps in determining TCP/IP networks ip address as well as determine issues with the network and assists inresolving them.
5.	Pathping	Provides information about network latency and network loss at intermediate hops between a source and destination pathping sends.
6.	Nslookup	Displays information that you can use to diagnose Domain Name System (DNS) infrastructure

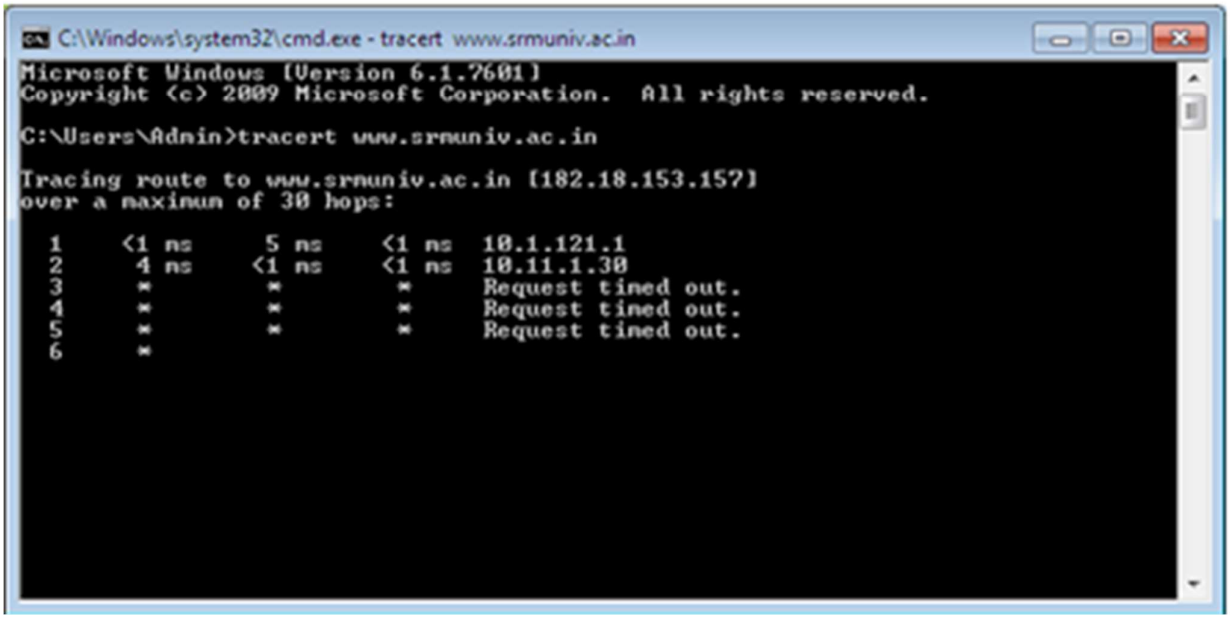
7.	Nbtstat	MS_DOS utility that displays protocol statistics & current TCP/IP connections using NBT
8.	getmac	DOS command used to show both local & remote MACaddresses when run with no parameters (i.egetmac) it displays MAC addresses for the local system. When runwith the /s parameter (eg. Getmac /s \\too> it displays MAC address for the remote computer.

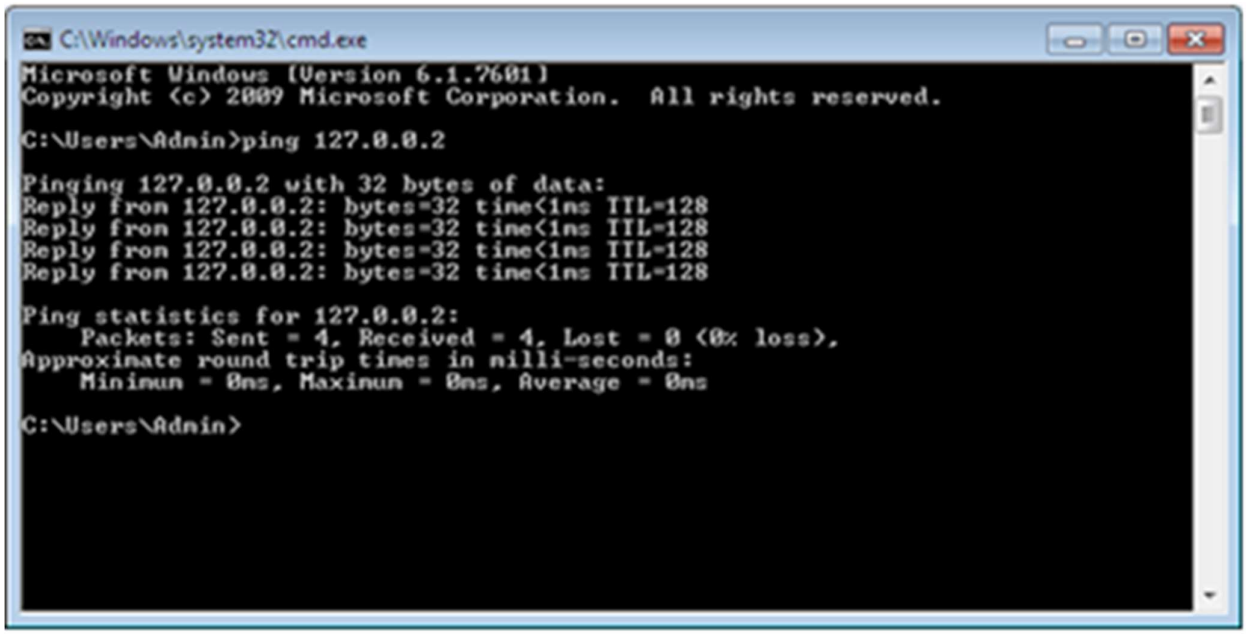
Output:

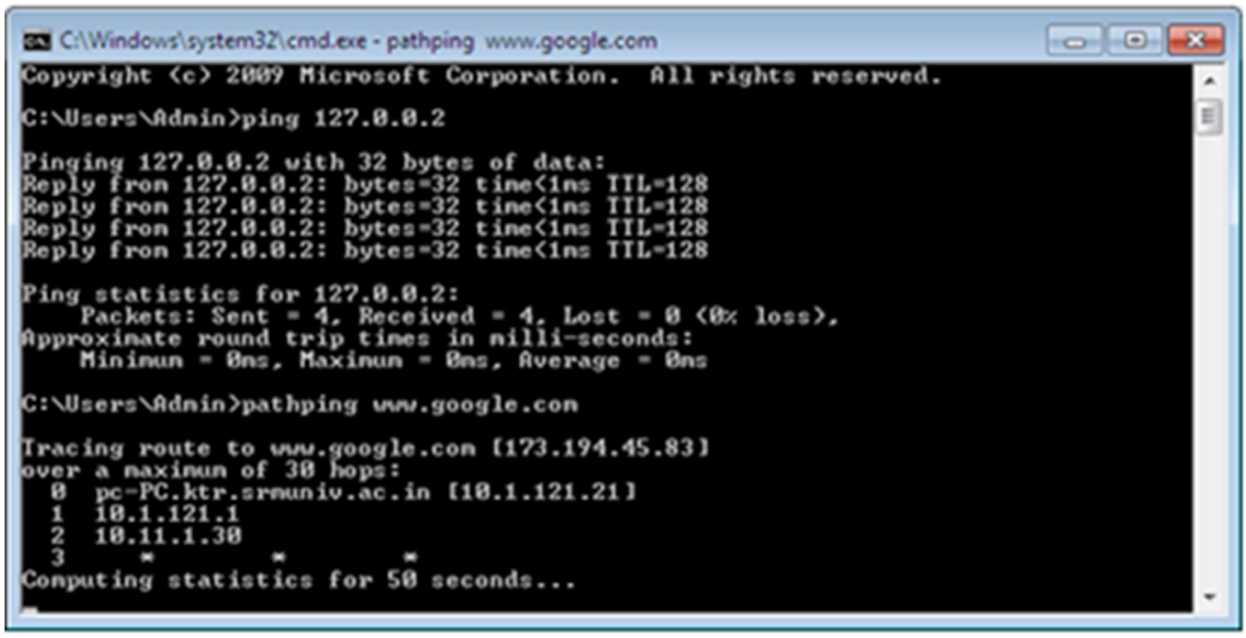
ipconfig

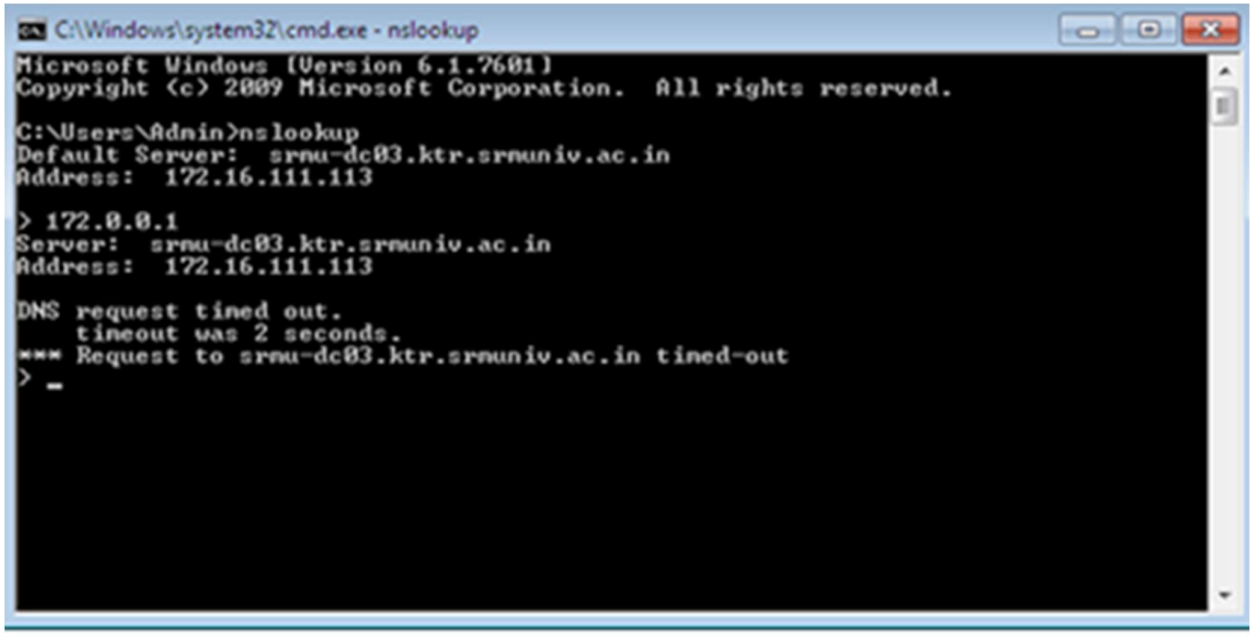


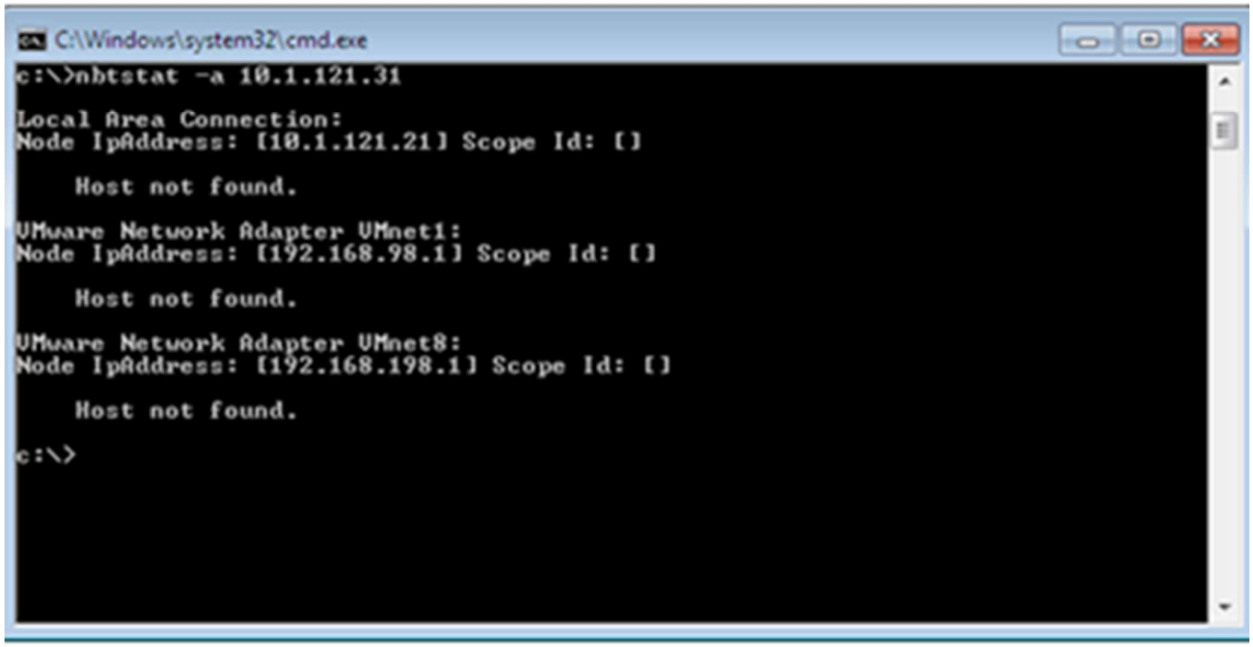

C:\Windows\system32\cmd.exe - netstat
C:\Users\Admin>netstat
Active Connections
Proto Local Address Foreign Address State
TCP 10.1.121.21:49772 Admin-PC:icslap ESTABLISHED
TCP 10.1.121.21:49773 WIN-E6653DANNHN:icslap ESTABLISHED
TCP 10.1.121.21:49775 admin1-PC:wsd TIME_WAIT
TCP 10.1.121.21:49776 user1-PC:icslap ESTABLISHED
TCP 10.1.121.21:49777 Admin-PC:wsd TIME_WAIT
TCP 10.1.121.21:49779 user1-PC:wsd TIME_WAIT
TCP 10.1.121.21:49780 adm-PC:wsd TIME_WAIT

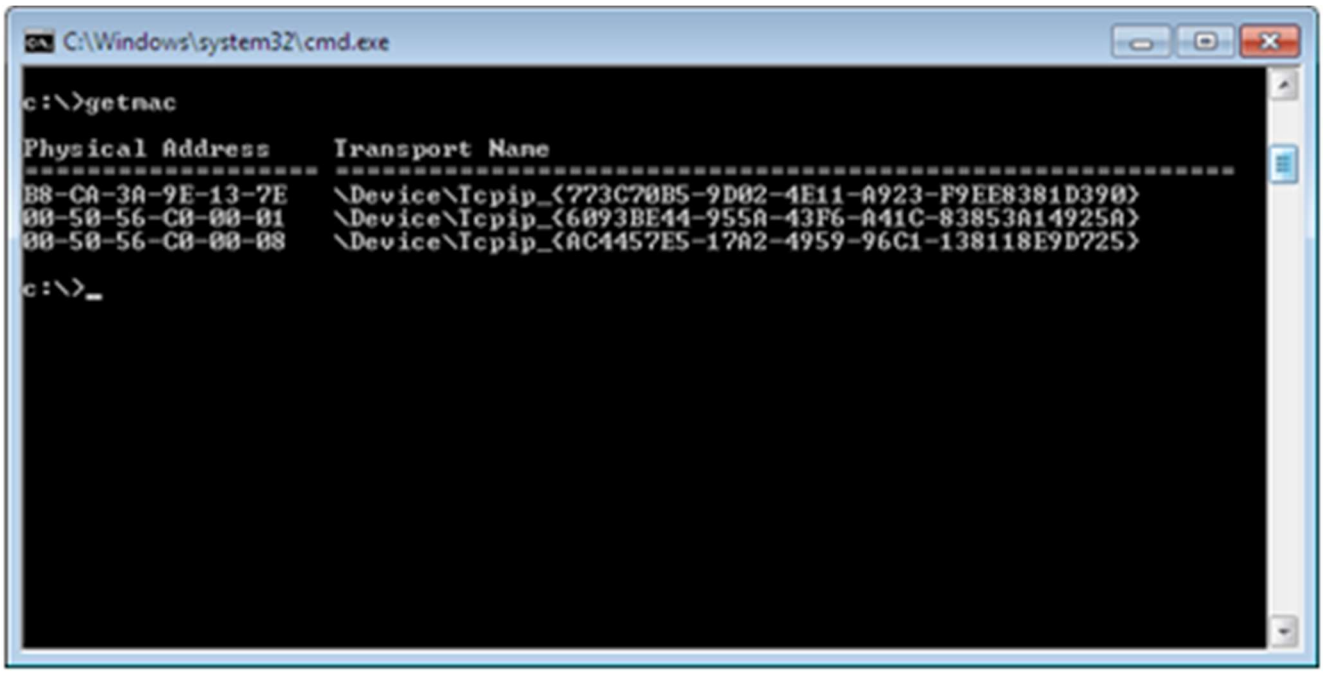

C:\Windows\system32\cmd.exe - tracert www.srmuniv.ac.in
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.
C:\Users\Admin>tracert www.srmuniv.ac.in
Tracing route to www.srmuniv.ac.in [182.18.153.157]
over a maximum of 30 hops:
1 <1 ms 5 ms <1 ms 10.1.121.1
2 4 ms <1 ms <1 ms 10.11.1.30
3 * * * Request timed out.
4 * * * Request timed out.
5 * * * Request timed out.
6 *


C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.
C:\Users\Admin>ping 127.0.0.2
Pinging 127.0.0.2 with 32 bytes of data:
Reply from 127.0.0.2: bytes=32 time<1ms TTL=128
Reply from 127.0.0.2: bytes=32 time<1ms TTL=128
Reply from 127.0.0.2: bytes=32 time<1ms TTL=128
Reply from 127.0.0.2: bytes=32 time<1ms TTL=128
Ping statistics for 127.0.0.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\Users\Admin>


C:\Windows\system32\cmd.exe - pathping www.google.com
Copyright (c) 2009 Microsoft Corporation. All rights reserved.
C:\Users\Admin>ping 127.0.0.2
Pinging 127.0.0.2 with 32 bytes of data:
Reply from 127.0.0.2: bytes=32 time<1ms TTL=128
Reply from 127.0.0.2: bytes=32 time<1ms TTL=128
Reply from 127.0.0.2: bytes=32 time<1ms TTL=128
Reply from 127.0.0.2: bytes=32 time<1ms TTL=128
Ping statistics for 127.0.0.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\Users\Admin>pathping www.google.com
Tracing route to www.google.com [173.194.45.83]
over a maximum of 30 hops:
0 pc-PC.ktr.srmuniv.ac.in [10.1.121.21]
1 10.1.121.1
2 10.11.1.30
3 * * *
Computing statistics for 50 seconds...


C:\Windows\system32\cmd.exe - nslookup
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.
C:\Users\Admin>nslookup
Default Server: srmu-dc03.ktr.srmuniv.ac.in
Address: 172.16.111.113
> 172.0.0.1
Server: srmu-dc03.ktr.srmuniv.ac.in
Address: 172.16.111.113
DNS request timed out.
timeout was 2 seconds.
*** Request to srmu-dc03.ktr.srmuniv.ac.in timed-out
>


C:\Windows\system32\cmd.exe
c:\>nbtstat -a 10.1.121.31
Local Area Connection:
Node IpAddress: [10.1.121.21] Scope Id: []
Host not found.
VMware Network Adapter VMnet1:
Node IpAddress: [192.168.98.1] Scope Id: []
Host not found.
VMware Network Adapter VMnet8:
Node IpAddress: [192.168.198.1] Scope Id: []
Host not found.
c:\>



RESULT:

Thus, the various network commands are executed and the output is verified.