



AMRITA VISHWA VIDHYAPEETHAM
AMRITA SCHOOL OF ENGINEERING

IMPLEMENTATION OF NETWORK VIRTUALIZATION FOR

DISASTER RECOVERY

TEAM MEMBERS

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INTRODUCTION

In the world filled with numerous cybercrimes, it is imperative for all organizations to be prepared to face disasters that could affect their systems at any time.

There are many options to safeguard your systems against the various threats, the best one being virtualization. It helps reduce the time required to get your systems up and running after they've been hit by a disaster.



PROBLEM STATEMENT

A virtualization disaster recovery plan is a plan that outlines the steps that should be taken to recover a virtualized IT infrastructure in the event of a disaster. The goal of such a plan is to minimize downtime and ensure that critical systems and services are quickly restored to operation.

WHY NETWORKING IS IMPORTANT



01
Resource Sharing



02
Communication



03
Data Security



04
Productivity

PLAN FOR VIRTUALIZED DISASTER RECOVERY

- **Identifying Your Critical Virtual Machines**
- **Defining a Backup and Recovery Strategy**
- **Ensuring Proper Connectivity Between the Primary Site and the Disaster Recovery Site**
- **Testing the Disaster Recovery Process Thoroughly**
- **Implementing Automation for Various Tasks**

NETWORK REQUIREMENTS



SWITCHES-1
PC-1
ROUTER-1
SERVER-2



SWITCHES-1
PC-1
ROUTER-1
SERVER-2

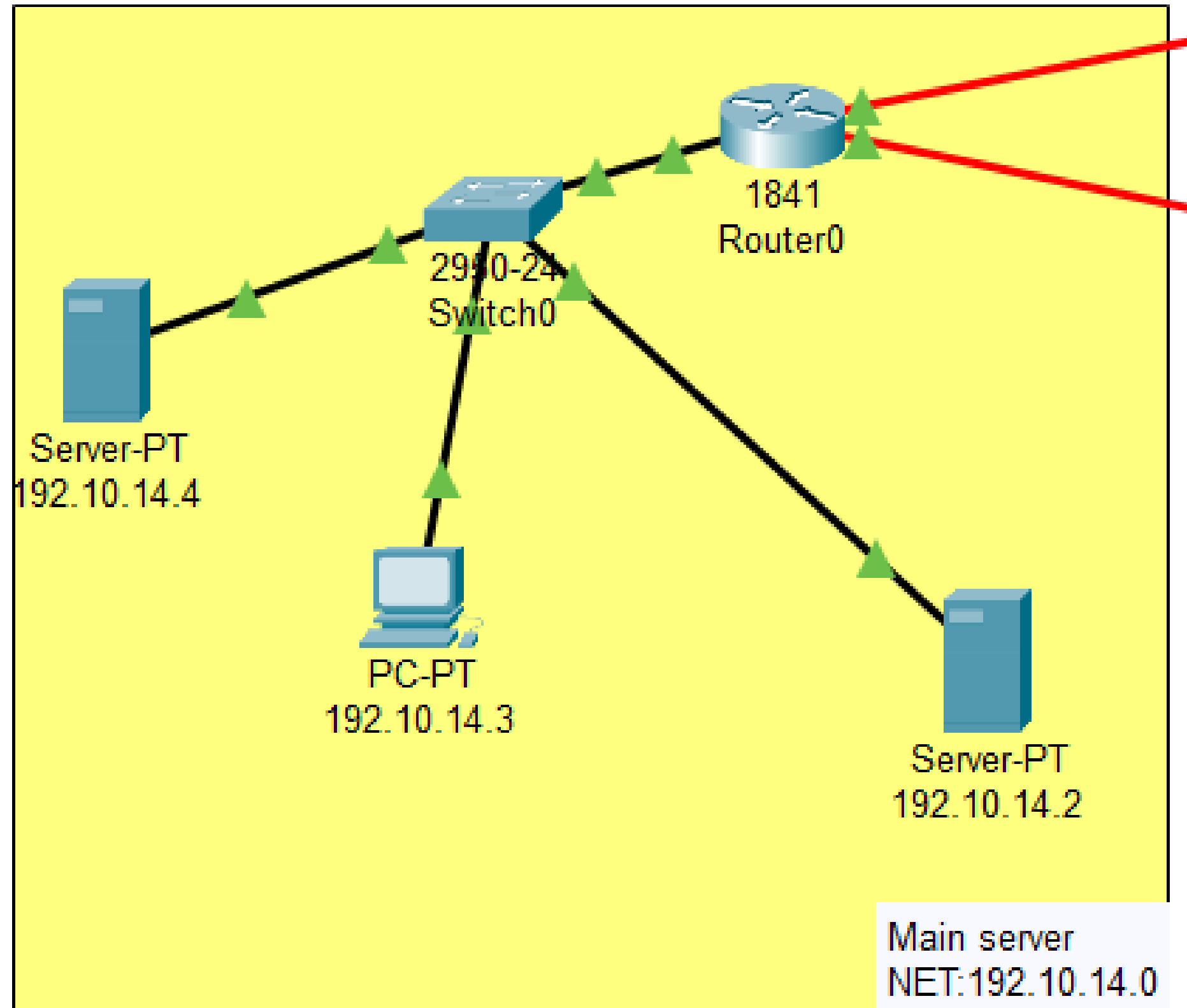


SWITCHES-1
PC-2
ROUTER-1

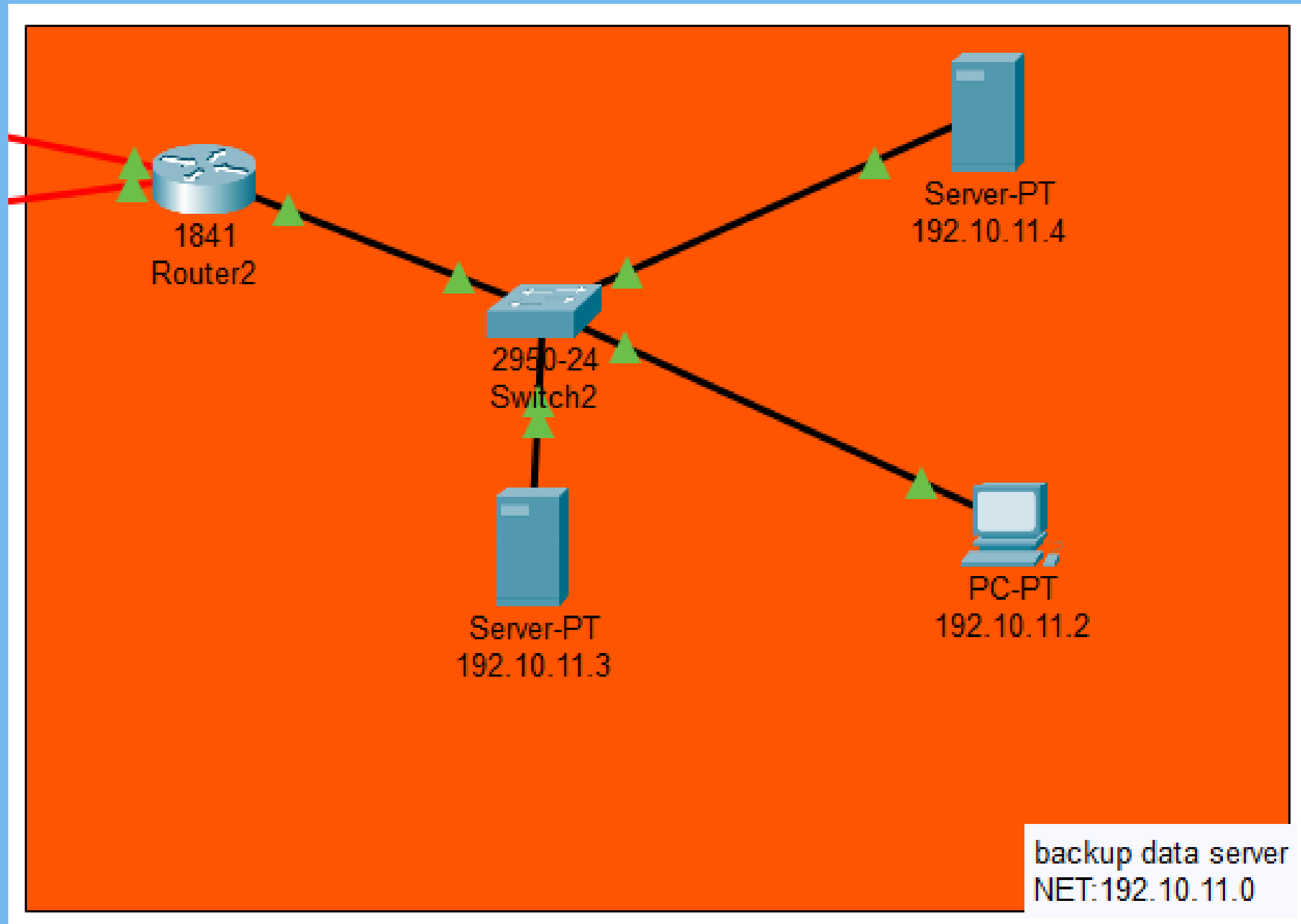


SWITCHES-1
PC-2
ROUTER-1

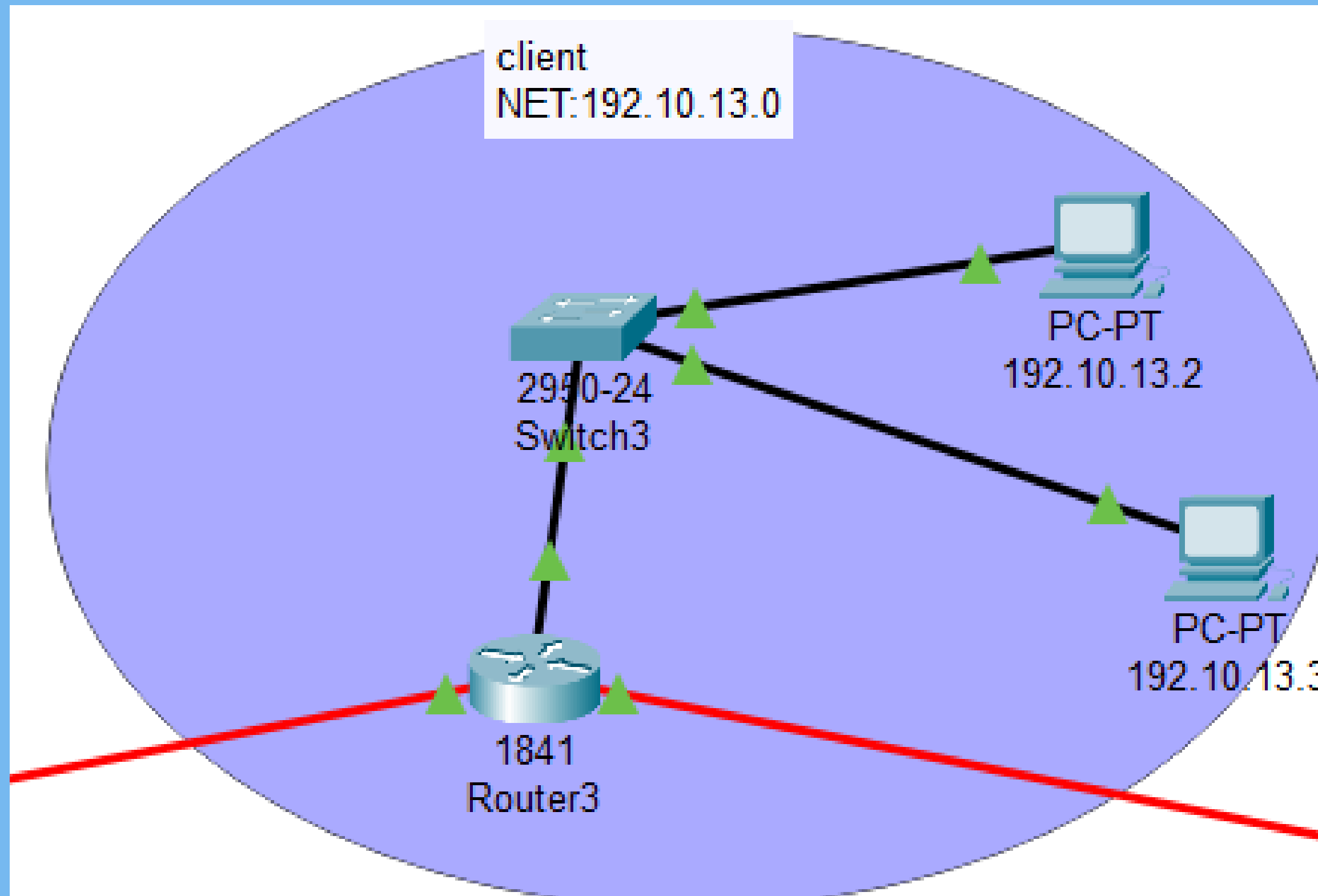
MAIN SERVER



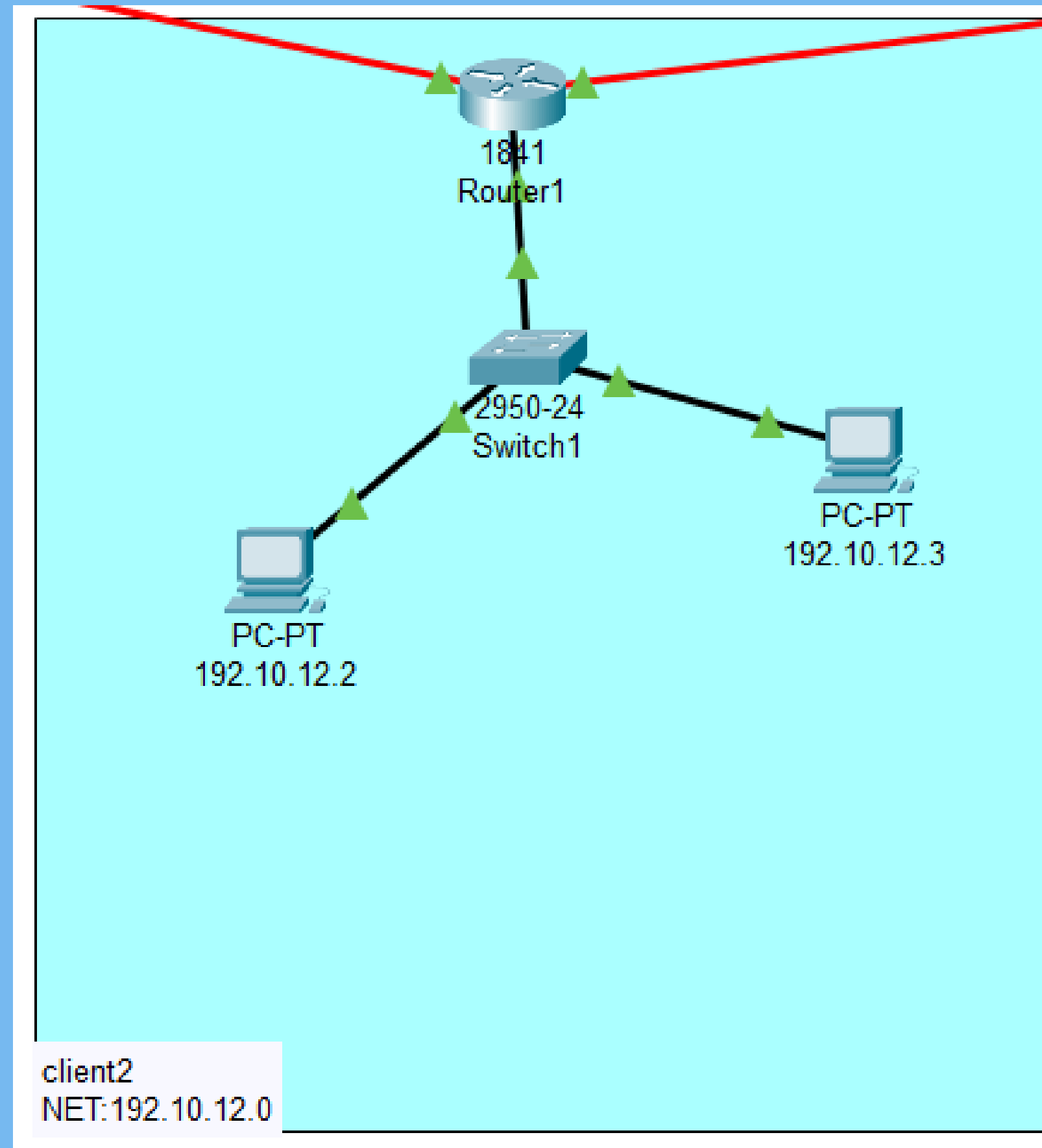
BACKUP SERVER



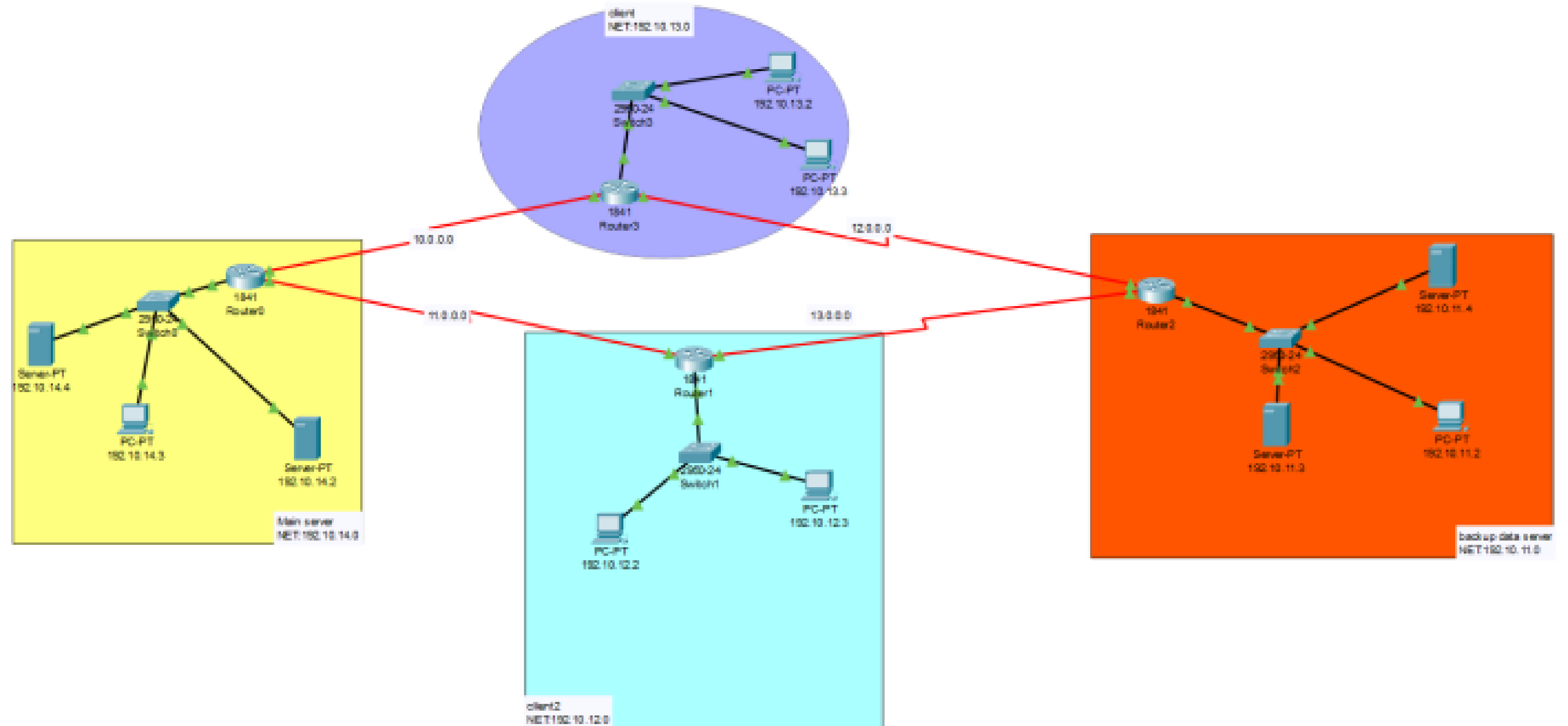
CLIENT 1



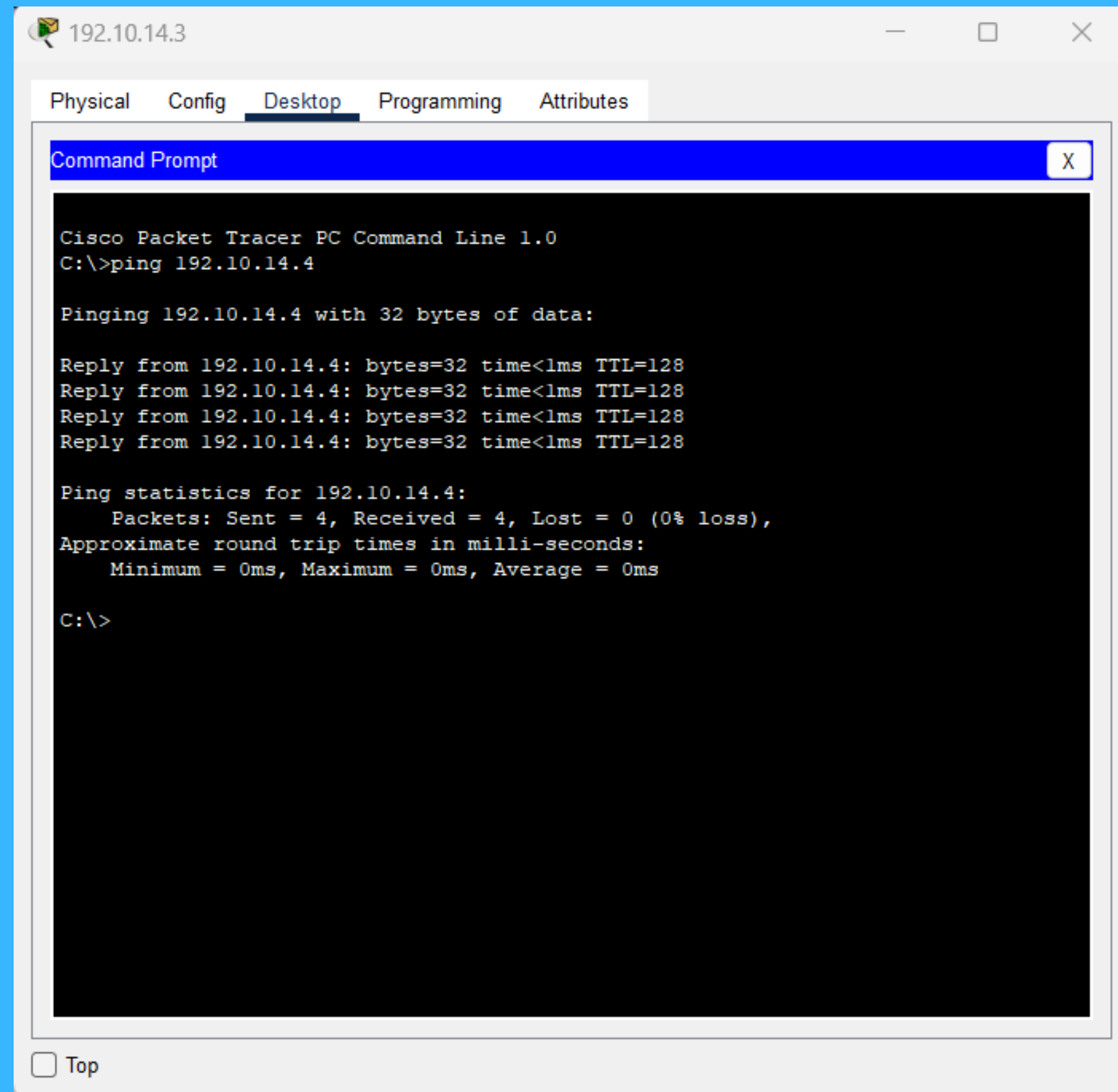
CLIENT 2



FINAL SIMULATION



Ping Test for DNS Server



The screenshot shows a Cisco Packet Tracer PC Command Line window for a device with IP 192.10.14.3. The 'Desktop' tab is selected, and a 'Command Prompt' window is open. The command prompt shows the execution of the 'ping 192.10.14.4' command, which successfully pings the destination IP. The output displays four successful replies with 32 bytes of data, a time of less than 1ms, and a TTL of 128. Ping statistics for 192.10.14.4 show 4 packets sent, 4 received, and 0% loss, with round trip times of 0ms.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.10.14.4

Pinging 192.10.14.4 with 32 bytes of data:

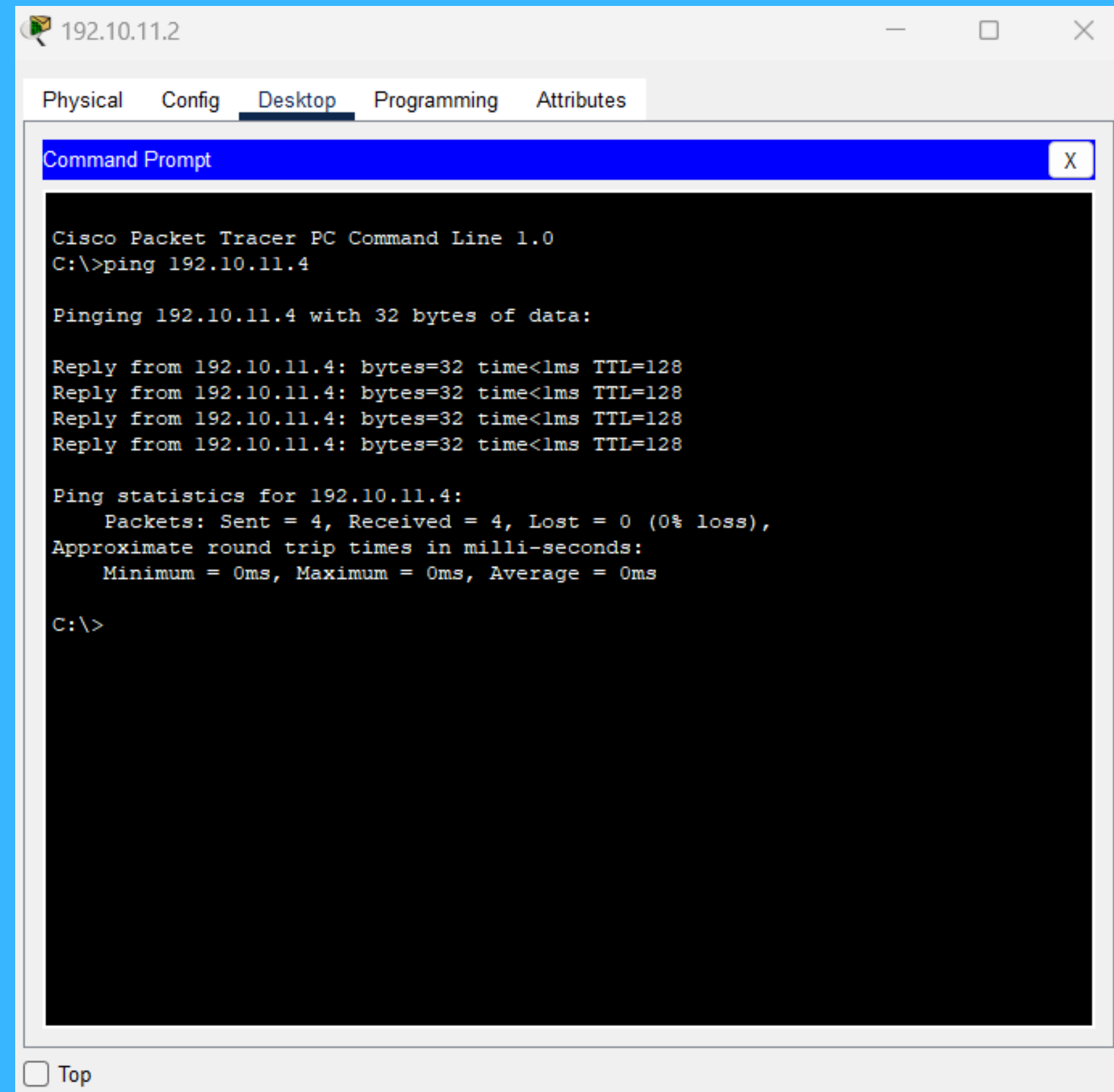
Reply from 192.10.14.4: bytes=32 time<1ms TTL=128
Reply from 192.10.14.4: bytes=32 time<1ms TTL=128
Reply from 192.10.14.4: bytes=32 time<1ms TTL=128
Reply from 192.10.14.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.10.14.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

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Ping Test for WEB Server



The screenshot shows a Cisco Packet Tracer PC Command Line window for a device with IP 192.10.11.2. The window has tabs for Physical, Config, Desktop, Programming, and Attributes, with Desktop selected. The Command Prompt shows the execution of the command 'ping 192.10.11.4'. The output indicates that the ping was successful, with 4 packets sent and received, 0% loss, and a round trip time of 0ms. The window also features a 'Top' button at the bottom left.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.10.11.4

Pinging 192.10.11.4 with 32 bytes of data:

Reply from 192.10.11.4: bytes=32 time<1ms TTL=128
Reply from 192.10.11.4: bytes=32 time<1ms TTL=128
Reply from 192.10.11.4: bytes=32 time<1ms TTL=128
Reply from 192.10.11.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.10.11.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

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CONCLUSION:

Virtualization can be an effective tool for disaster recovery because it allows an organization to quickly and easily spin up virtual copies of their servers and applications in the event of a disaster. This can help minimize downtime and keep the business running smoothly. In addition, virtualization allows for the creation of backup copies of servers and applications, which can be used to restore the system in the event of a disaster. Overall, virtualization can provide a cost-effective and flexible solution for disaster recovery, making it an attractive option for many organizations.

One of the key benefits of using virtualization for disaster recovery is that it allows organizations to easily replicate their entire IT infrastructure in a virtual environment. This means that if a disaster strikes and physical resources are lost or damaged, the virtual infrastructure can be quickly brought online to take its place. This can help to ensure that essential business functions are maintained and that there is minimal disruption to operations.

THE END