

NAME : TOOBA

SHEHZAD

ID : 212121

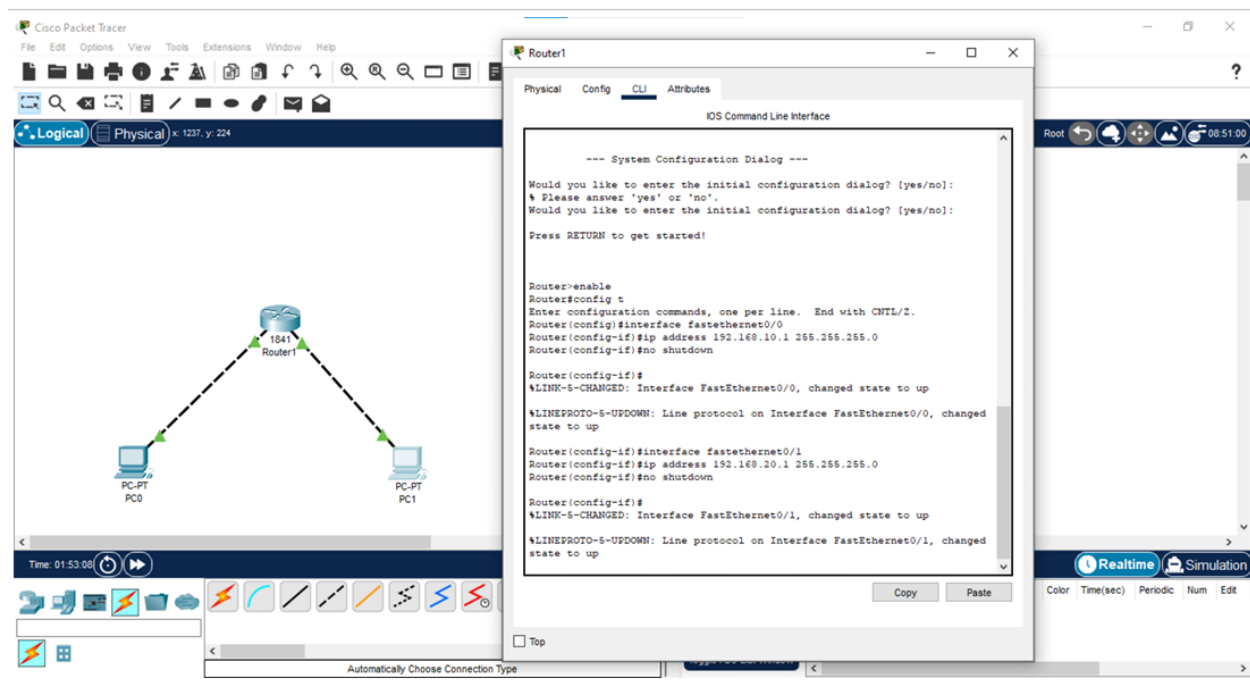
CLASS : BSIT-V

SECTION : 'A'

ASSIGNMENT # 2

Cisco Router: use packet tracer

A) Configuring IP addresses of an Interface



Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x: 643, y: 167

1941 Router1

PC-PT PC0 PC-PT PC1

Time: 02:28:01

Realtime Simulation

Router1

Physical Config CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/0

FastEthernet0/1

FastEthernet0/0

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0004.9AEA.EE01

IP Configuration

Pv4 Address 192.168.10.1

Subnet Mask 255.255.255.0

Tx Ring Limit 10

Equivalent IOS Commands

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
```

Top

Logfile HUI List Window

Automatically Choose Connection Type

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical x: 775, y: 416

Time: 02:27:00

Router1

FastEthernet0/1

Port Status: ☒ On

Bandwidth: ☐ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex: ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address: 0004.9AEA.EE02

IP Configuration

Pv4 Address: 192.168.20.1

Subnet Mask: 255.255.255.0

Tx Ring Limit: 10

Equivalent IOS Commands

```
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#
```

PC-PT PC0

PC-PT PC1

Root 01:52:30

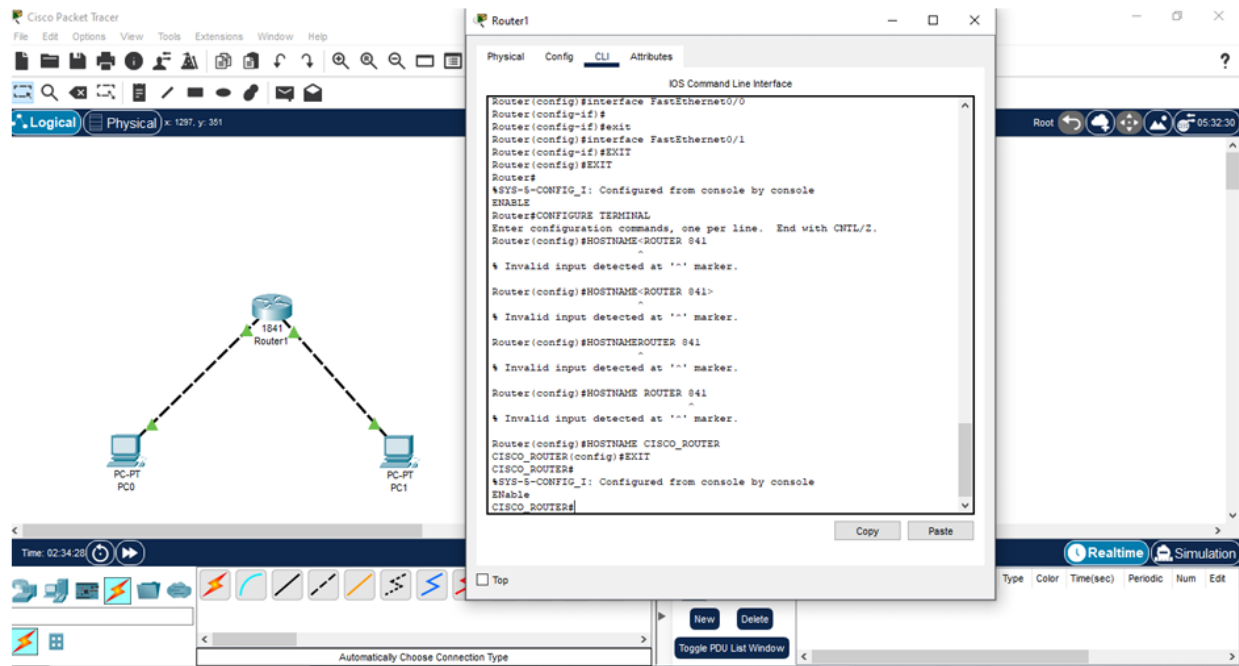
Realtime Simulation

Color Time(sec) Periodic Num Edit

Automatically Choose Connection Type

log File List Window

B) Changing the Device name



Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical + 370, y: 100

Router1

Physical Config CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/0

FastEthernet0/1

Global Settings

Display Name Router1

Hostname CISCO_ROUTER

NVRAM Erase Save

Startup Config Load... Export...

Running Config Export... Merge...

Equivalent IOS Commands

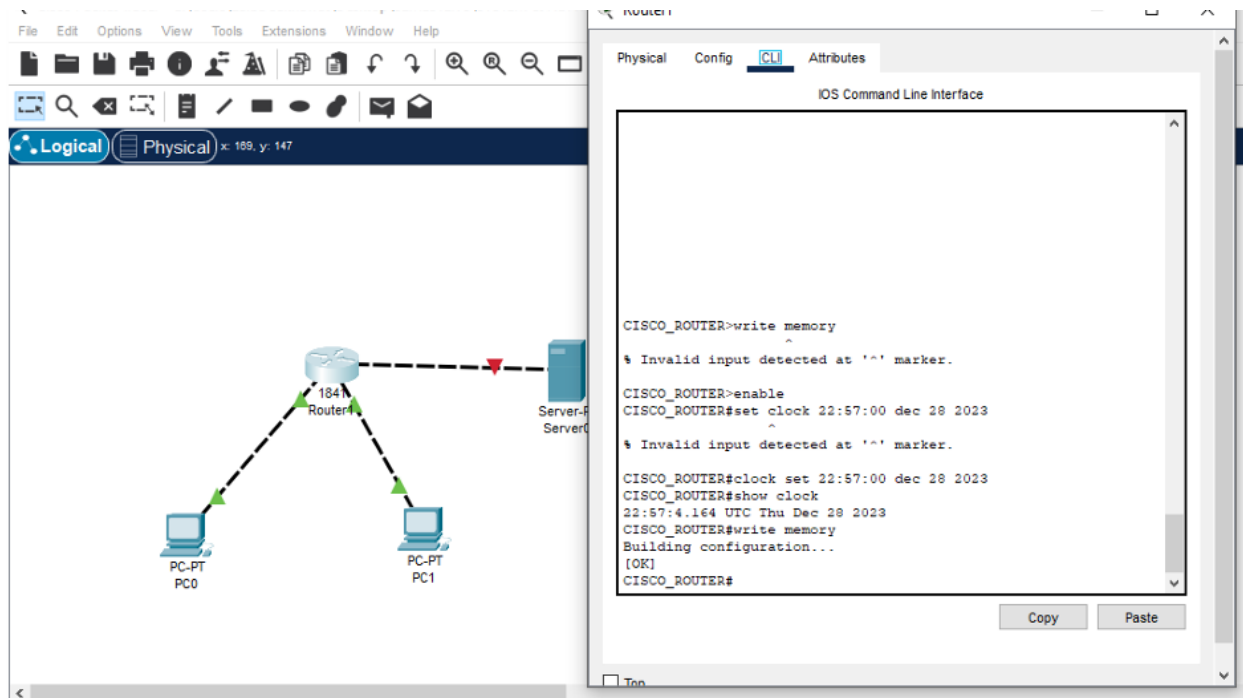
```
Invalid input detected at '^' marker.  
Router(config)#HOSTNAME ROUTER 841  
^  
Invalid input detected at '^' marker.  
Router(config)#HOSTNAME CISCO_ROUTER  
CISCO_ROUTER(config)#EXIT  
CISCO_ROUTER#  
%SYS-5-CONFIG_I: Configured from console by console  
Enable  
CISCO_ROUTER#  
CISCO_ROUTER#
```

Time: 02:35:44

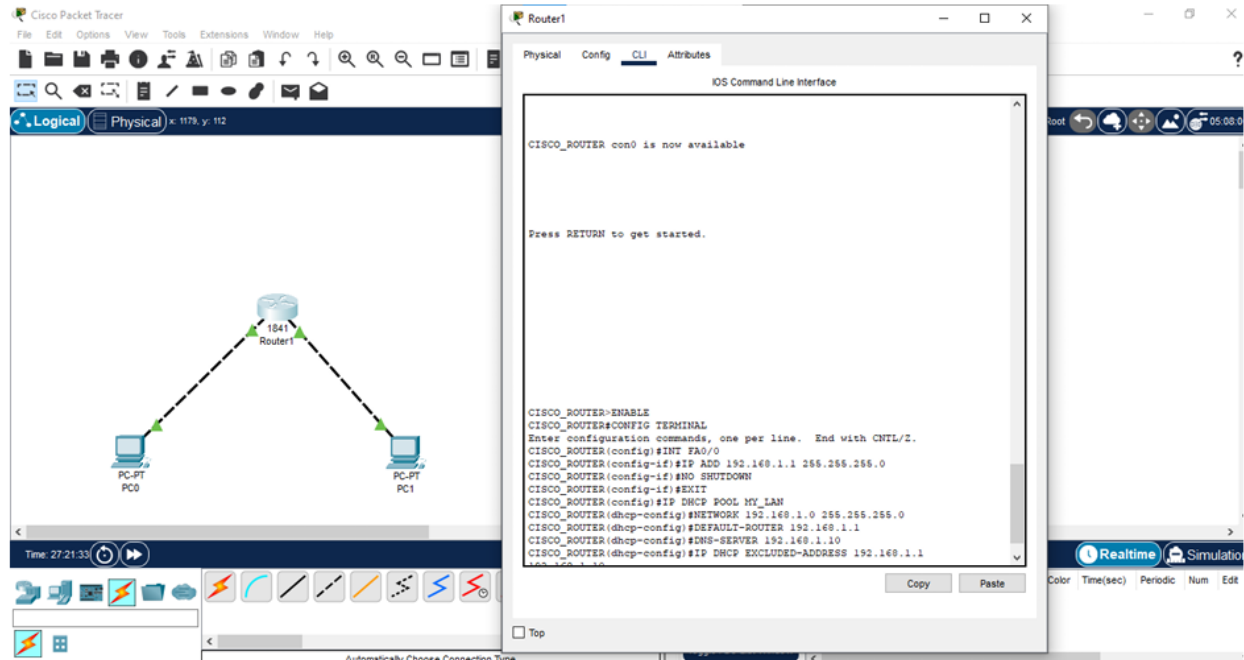
Realtime Simulation

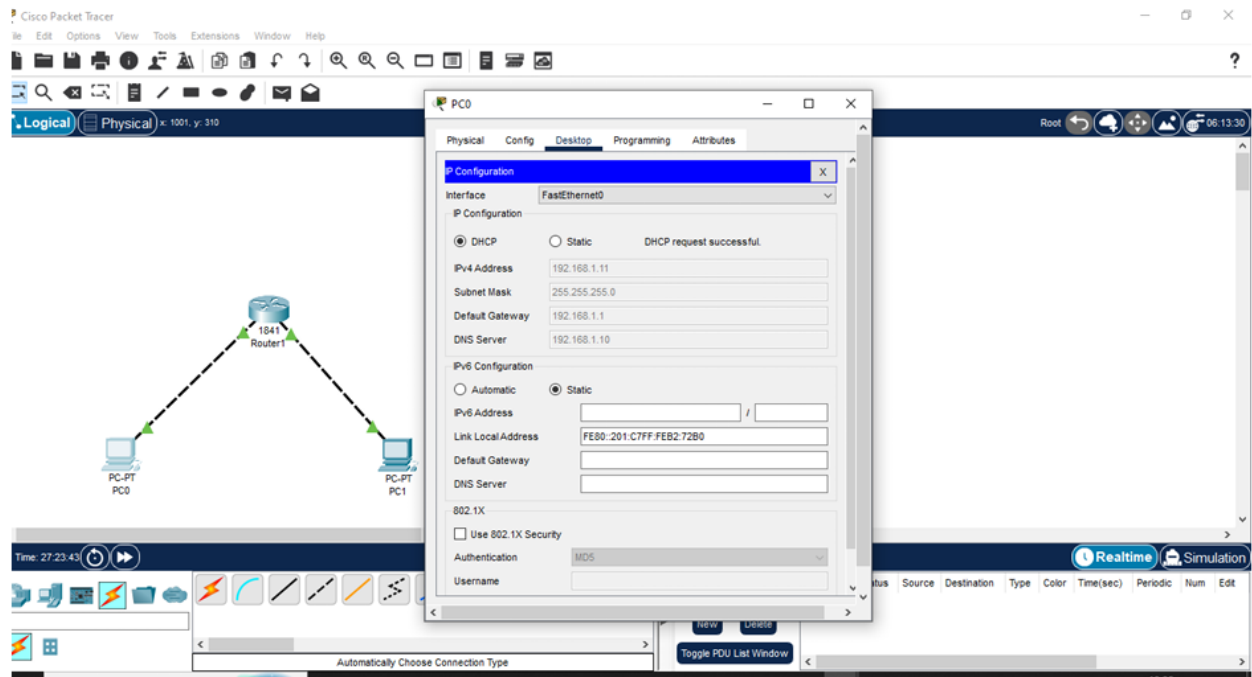
Type Color Time(sec) Periodic Num Edit

C) Setting the time of the device



D) Configuring a DHCP Server



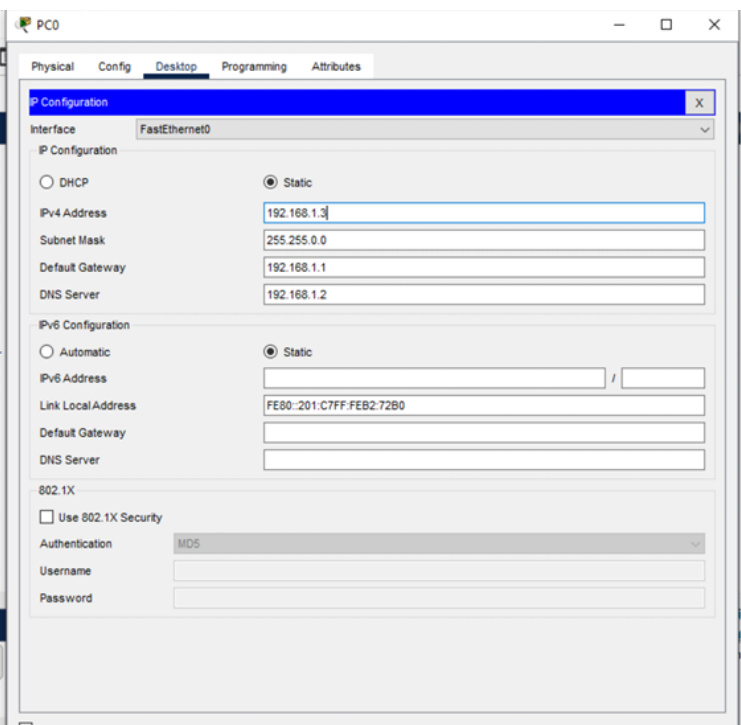


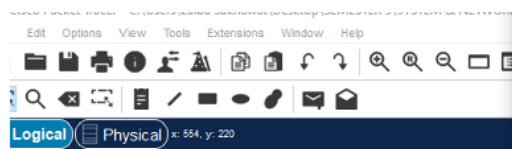
E) Configuring a DNS Server

The screenshot displays a network configuration interface. On the left, a network diagram shows a central router labeled '184 Router' connected to two PCs, 'PC-PT PC0' and 'PC-PT PC1', and a server labeled 'Server-PT Server0'. The router is connected to the server via a dashed line. The server is also connected to the router via a dashed line. The router is connected to the PCs via dashed lines. The server is connected to the router via a dashed line. The server is connected to the router via a dashed line.

On the right, the 'Server0' configuration window is open, showing the 'Desktop' tab. The 'IP Configuration' section is expanded, showing the following settings:

- IP Configuration**
 - ☐ DHCP
 - ☒ Static
 - IPv4 Address: 192.168.1.2
 - Subnet Mask: 255.255.255.0
 - Default Gateway: 192.168.1.1
 - DNS Server: 192.168.1.2
- IPv6 Configuration**
 - ☐ Automatic
 - ☒ Static
 - IPv6 Address: [Empty field] / [Empty field]
 - Link Local Address: FE80::201:64FF:FE0D:6BCB
 - Default Gateway: [Empty field]
 - DNS Server: [Empty field]
- 802.1X**
 - ☐ Use 802.1X Security
 - Authentication: MDS





PC1

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.1.4

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.1

DNS Server: 192.168.1.2

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::20C:CFFF:FEC4:C19

Default Gateway:

DNS Server:

802.1X

☒ Use 802.1X Security

Authentication: MD5

Username:

File Edit Options View Tools Extensions Window Help

Logical Physical x: 897, y: 419

```
graph TD; Router[1841 Router] --- PC0[PC-PT PC0]; Router --- PC1[PC-PT PC1]; Router --- Server0[Server-PT Server0];
```

Server0

Physical Config **Services** Desktop Programming Attributes

SERVICES

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS**
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

DNS

DNS Service ☒ On ☐ Off

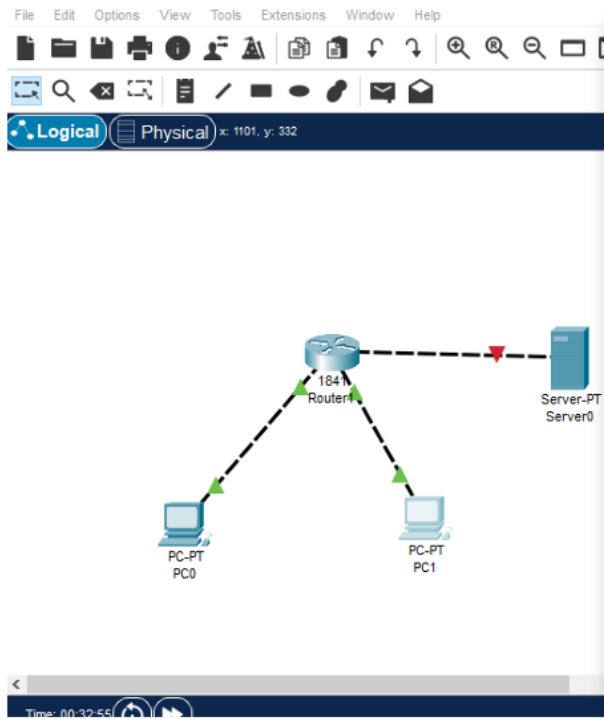
Resource Records

Name Type A Record

Address

Add Save Remove

No.	Name	Type	Detail
0	dns server	A Record	192.168.1.2
1	pc0	A Record	192.168.1.3
2	pc1	A Record	192.168.1.4



PC1

Physical Config Desktop Programming Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>pc0
Invalid Command.

C:\>ping pc0
Ping request could not find host pc0. Please check the name and
try again.
C:\>ping 192.168.1.4

Pinging 192.168.1.4 with 32 bytes of data:

Reply from 192.168.1.4: bytes=32 time=3ms TTL=128
Reply from 192.168.1.4: bytes=32 time=1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time=3ms TTL=128

Ping statistics for 192.168.1.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 3ms, Average = 1ms

C:\>
```

Tplink: Use the TP link emulator

A) Configuring IP addresses of an Interface

tp-link

TP-Link Wireless N Nano Router WR802N
Model No. TL-WR802N

Status

Quick Setup

Operation Mode

Network

Wireless

Guest Network

DHCP

Forwarding

Security

Parental Controls

Access Control

Advanced Routing

Bandwidth Control

IP & MAC Binding

Dynamic DNS

IPv6

System Tools

Logout

Status

Firmware Version: 0.9.1.3.16 v0001.0 Build 170421 Rel.74156n
Hardware Version: TL-WR802N v4 00000004

LAN

MAC Address: 30 B5 C2 E6 A0 90
IP Address: 192.168.0.1
Subnet Mask: 255.255.255.0

Wireless 2.4GHz

Operation Mode: Router
Wireless Radio: Enabled
Name(SSID): TP-Link_A090
Mode: 11bgn mixed
Channel: Auto(Channel 2)
Channel Width: Auto
MAC Address: 30 B5 C2 E6 A0 90

WAN

MAC Address: 30 B5 C2 E6 A0 90

App

Status Help

The Status page displays the Router's current status and configuration. All information is read-only.

LAN - The following parameters apply to the LAN port of the Router. You can configure them on the Network -> LAN page.

- MAC Address - The physical address of the Router, as seen from the LAN.
- IP Address - The LAN IP address of the Router.
- Subnet Mask - The subnet mask associated with LAN IP address.

Wireless - These are the current settings or information for Wireless. You can configure them in the Wireless -> Basic Settings page.

- Operation Mode - Indicates the mode which the device is working on.
- Wireless Radio - Indicates whether the wireless radio feature of the Router is enabled or disabled.
- Name(SSID) - The SSID of the Router.
- Mode - The current wireless mode which the Router works on.
- Channel - The current wireless channel in use.
- Channel Width - The bandwidth of the wireless channel.
- MAC Address - The physical address of the Router, as seen from the WLAN.

WAN - The following parameters apply to the WAN ports of the Router. You can configure them in the Network -> WAN page.

- MAC Address - The physical address of the WAN port, as seen from the Internet.
- IP Address - The current WAN (Internet) IP Address. This field will be blank or 0.0.0.0 if the IP Address is assigned dynamically and there is no connection to Internet.

Active Go to...



Status

Quick Setup

Operation Mode

Network

- WAN

- LAN

- MAC Clone

Wireless

Guest Network

DHCP

Forwarding

Security

Parental Controls

Access Control

Advanced Routing

Bandwidth Control

IP & MAC Binding

Dynamic DNS

IPv6

System Tools

Logout

WAN Settings

Connection Type: Static IP Detect

IP Address: 192.168.1.40

Subnet Mask: 255.255.255.0

Gateway: 192.168.0.1


Primary DNS Server: 8.8.8.8

Secondary DNS Server: 0.0.0.0 (optional)

隠す

Save

B) Changing the Device name



TP-Link Wireless N Nano Router WR802N
Model No. TL-WR802N

Status

Quick Setup

Operation Mode

Network

Wireless

- Basic Settings

- WPS

- Wireless Security

- Wireless MAC Filtering

- Wireless Advanced

- Wireless Statistics

Guest Network

DHCP

Forwarding

Security

Parental Controls

Access Control

Advanced Routing

Bandwidth Control

IP & MAC Binding

Dynamic DNS

IPv6

System Tools

Logout

Wireless Settings(2.4GHz)

Wireless: ☒ Enable ☐ Disable

Wireless Network Name: (Also called SSID)

Mode:

Channel:

Channel Width:

☒ Enable SSID Broadcast

Save

C) Setting the time of the device

tp-link

TP-Link Wireless N Nano Router WR802N
Model No. TL-WR802N

Status

Quick Setup

Operation Mode

Network

Wireless

Guest Network

DHCP

Forwarding

Security

Parental Controls

Access Control

Advanced Routing

Bandwidth Control

IP & MAC Binding

Dynamic DNS

IPv6

System Tools

- Time Settings

- Diagnostic

- Firmware Upgrade

- Factory Defaults

- Backup & Restore

Time Settings

Time Settings:

Time Zone:

(GMT+05:00) Islamabad, Karachi, Tashkent

Date:

2023

Year

12

Month

29

Day

Time

23

Hour

4

Minute

9

Second

Get from PC

NTP Server 1:

(optional)

NTP Server 2:

(optional)

Get GMT

(Only when the Internet connection is active).

Save

Daylight Saving:

Enable Daylight Saving:

☐

Start:

Mar

Last

Sun

01:00

End:


Oct

Last

Sun

02:00

D) Configuring a DHCP Server



TP-Link Wireless N Nano Router WR802N
Model No. TL-WR802N

Status

Quick Setup

Operation Mode

Network

Wireless

Guest Network

DHCP

- DHCP Settings

- DHCP Clients List

- Address Reservation

Forwarding

Security

Parental Controls

Access Control

Advanced Routing

Bandwidth Control

IP & MAC Binding

Dynamic DNS

IPv6

System Tools

Logout

DHCP Settings

DHCP Server: ☐ Disable ☒ Enable

Start IP Address:

End IP Address:

Lease Time: minutes (1~2880 minutes, the default value is 120)


Default Gateway: (optional)

Default Domain: (optional)

DNS Server: (optional)

Secondary DNS Server: (optional)

E) Configuring a DNS Server

 tp-link

TP-Link Wireless N Nano Router WR802N
Model No. TL-WR802N

Status

Quick Setup

Operation Mode

Network

- WAN
- LAN
- MAC Clone

Wireless

Guest Network

DHCP

Forwarding

Security

Parental Controls

Access Control

Advanced Routing

Bandwidth Control

IP & MAC Binding

Dynamic DNS

IPv6

System Tools

Logout

WAN Settings

Connection Type: Static IP ▼ Detect

IP Address: 192.168.1.40

Subnet Mask: 255.255.255.0

Gateway: 192.168.0.1

Primary DNS Server: 8.8.8.8

Secondary DNS Server: 0.0.0.0 (optional)

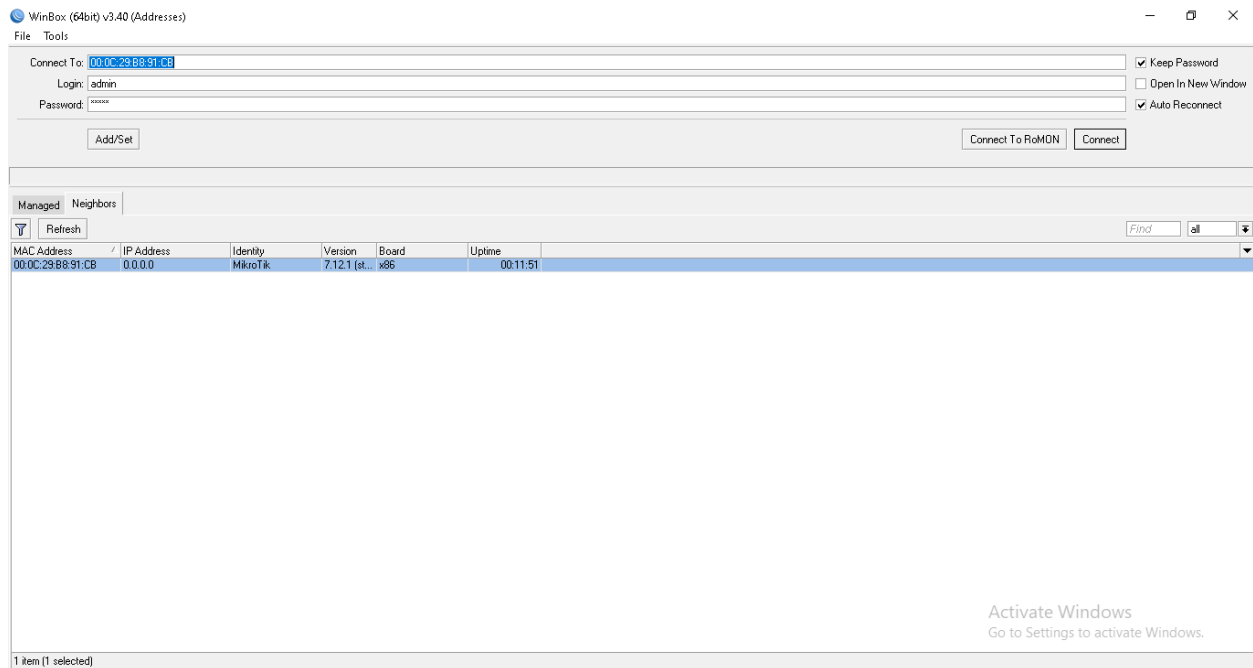
Save

Mikrotik: Use the RouterOS in virtualization

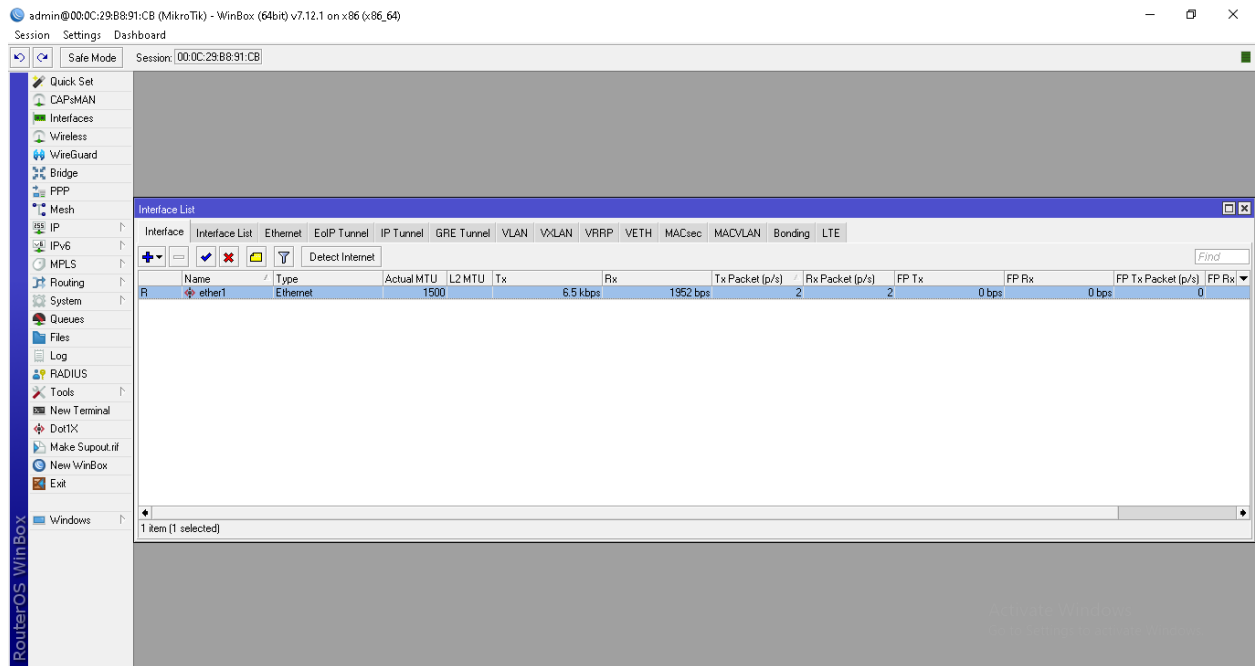
A) Configuring IP addresses of an Interface

Open WinBox

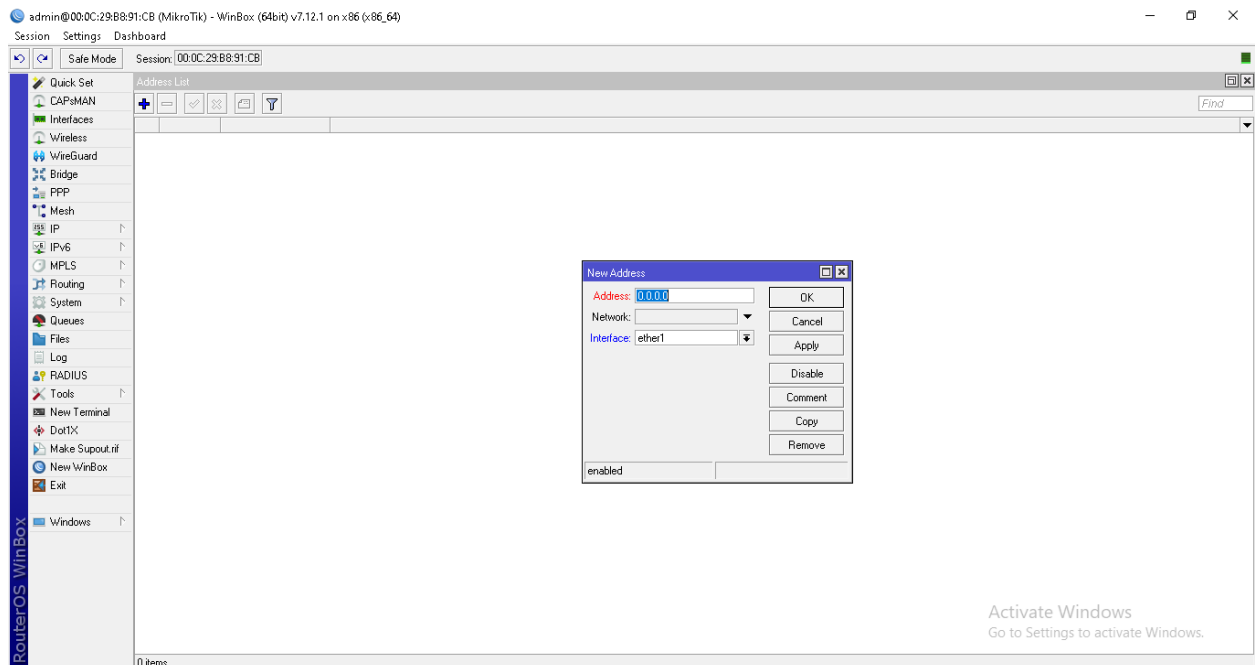
Enter your username and password then click on the "Connect" button.



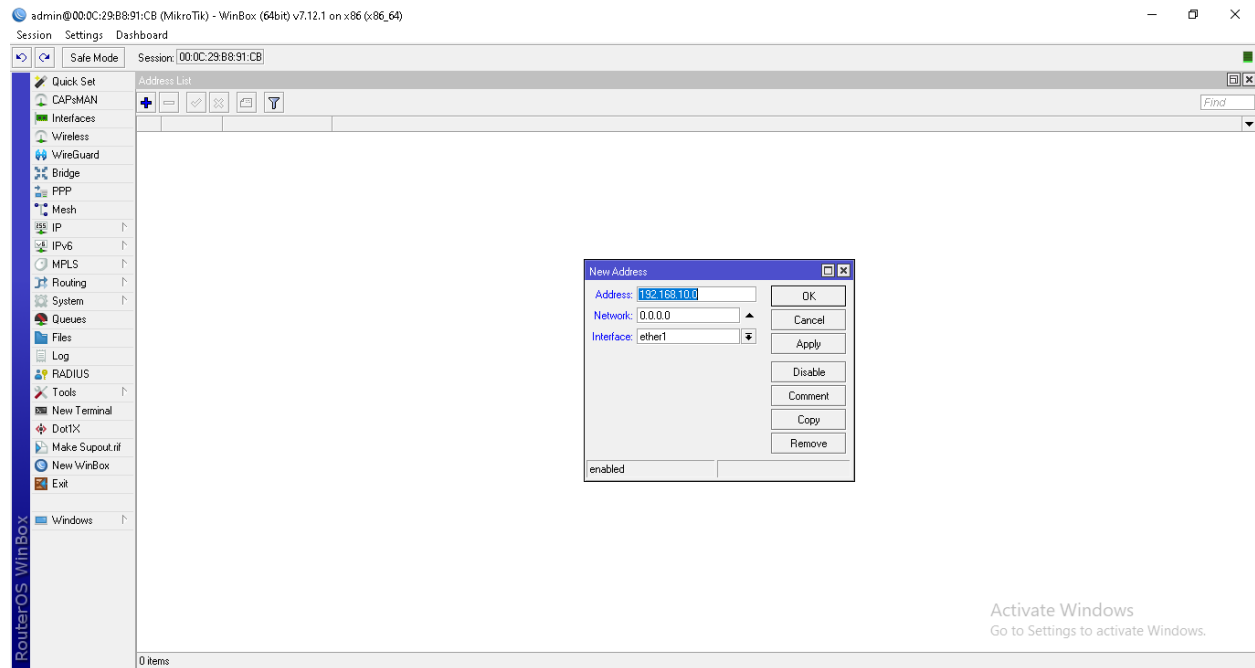
On the left hand side of WinBox Window , Click on “INTERFACES”



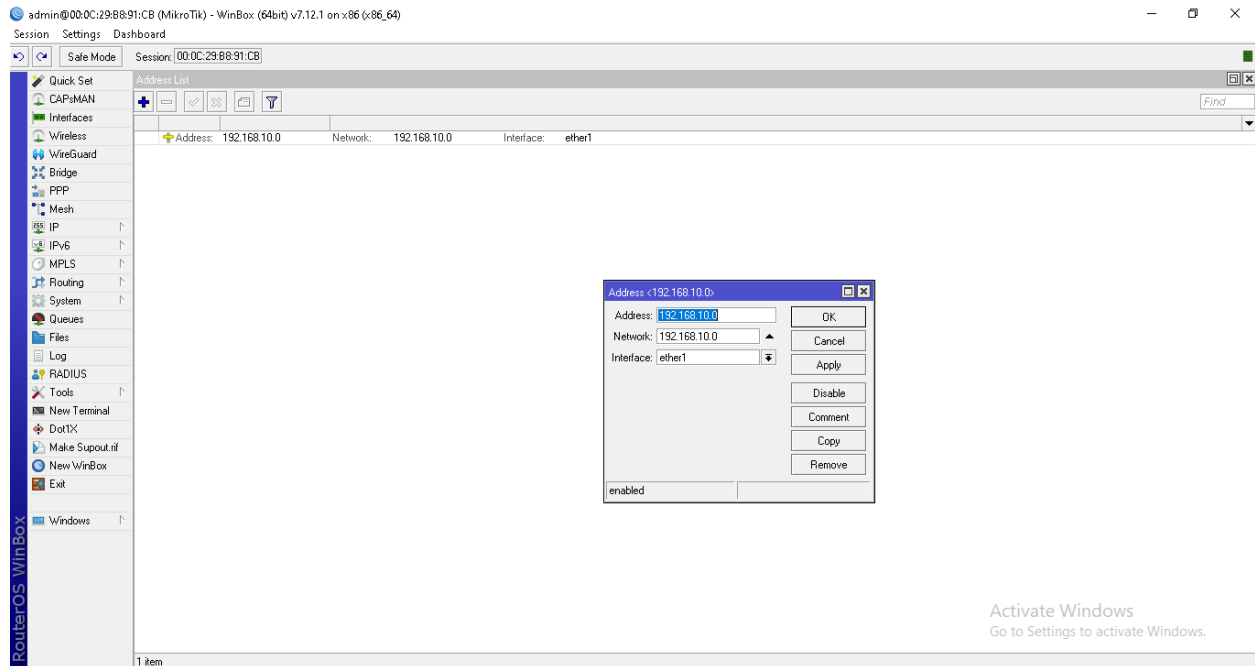
For Configuring the IP address , Click on IP , expand it , Then Click on Address



You can Set Up a new IP address and Choose the Interface “ether1”.

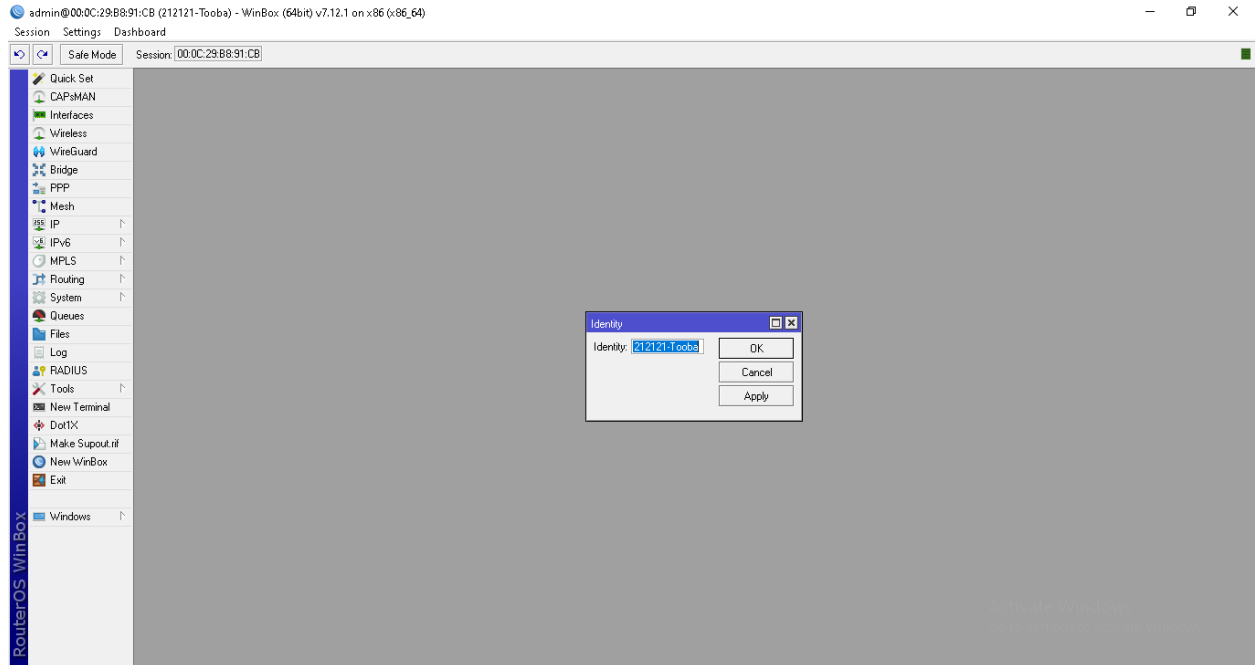


Then Click On “Apply” and then “OK”.



B) Changing the Device name

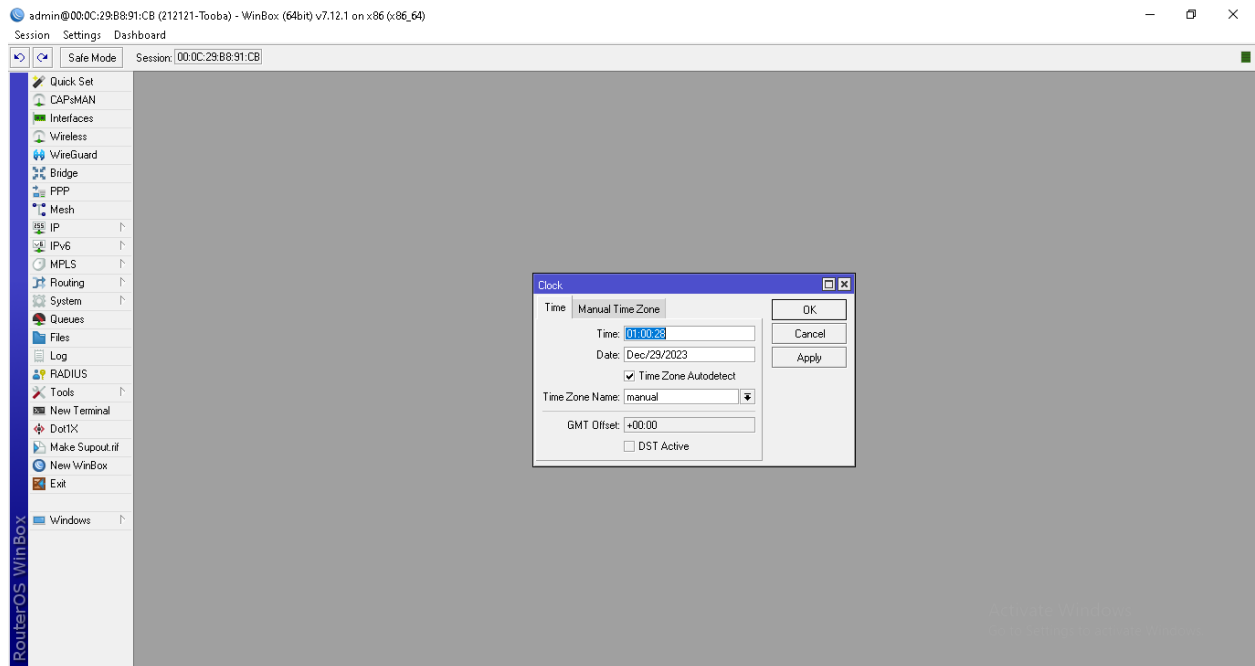
Go to “System” , expand the tab, then Click on “Identity”.



After setting up identity, Click on “Apply”, then Click on “OK”.

C) Setting the time of the device

Go to “System”, expand tab, choose “Clock”



It is a system Default Time and Date

You can set it manually, Click on “Time”, Add new, then Click on “Apply” and then “OK”.

- Quick Set
- CAFsMAN
- Interfaces
- Wireless
- WireGuard
- Bridge
- PPP
- Mesh
- IP
- IPv6
- MPLS
- Routing
- System
- Queues
- Files
- Log
- RADIUS
- Tools
- New Terminal
- Dot1X
- Make Supout.tif
- New WinBox
- Exit
- Windows

Clock

Time Manual Time Zone

Time: 10:07:28

Date: Dec/29/2023

☒ Time Zone Autodetect

Time Zone Name: UTC

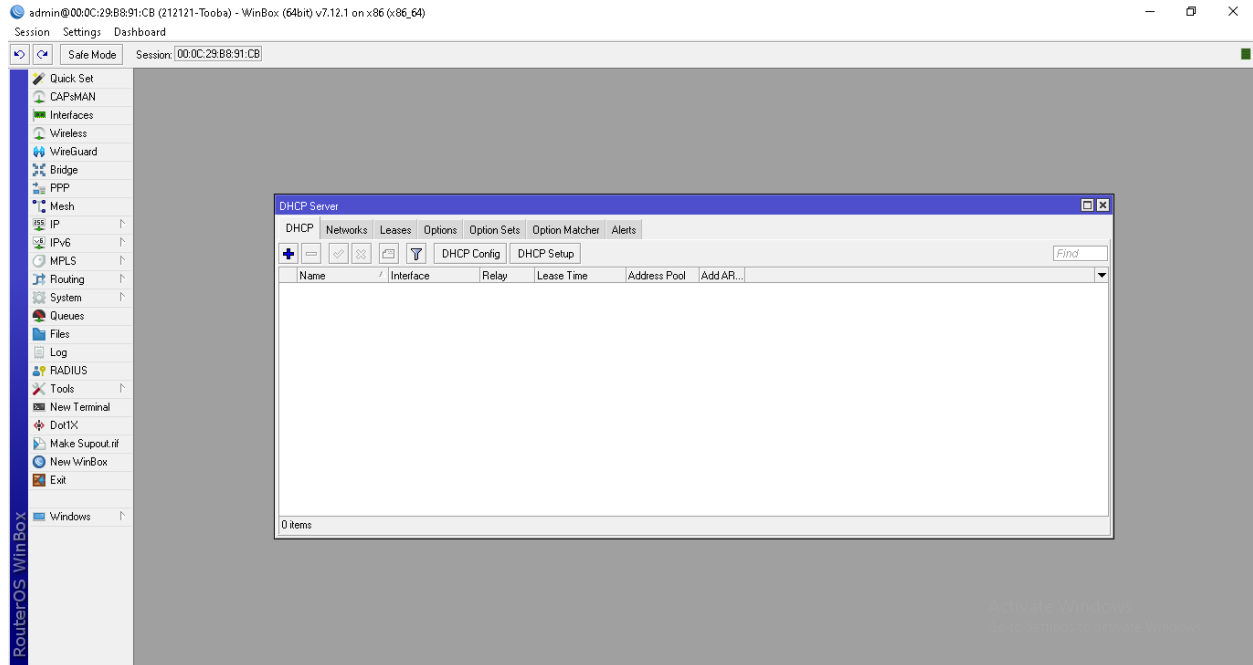
GMT Offset: +00:00

☐ DST Active

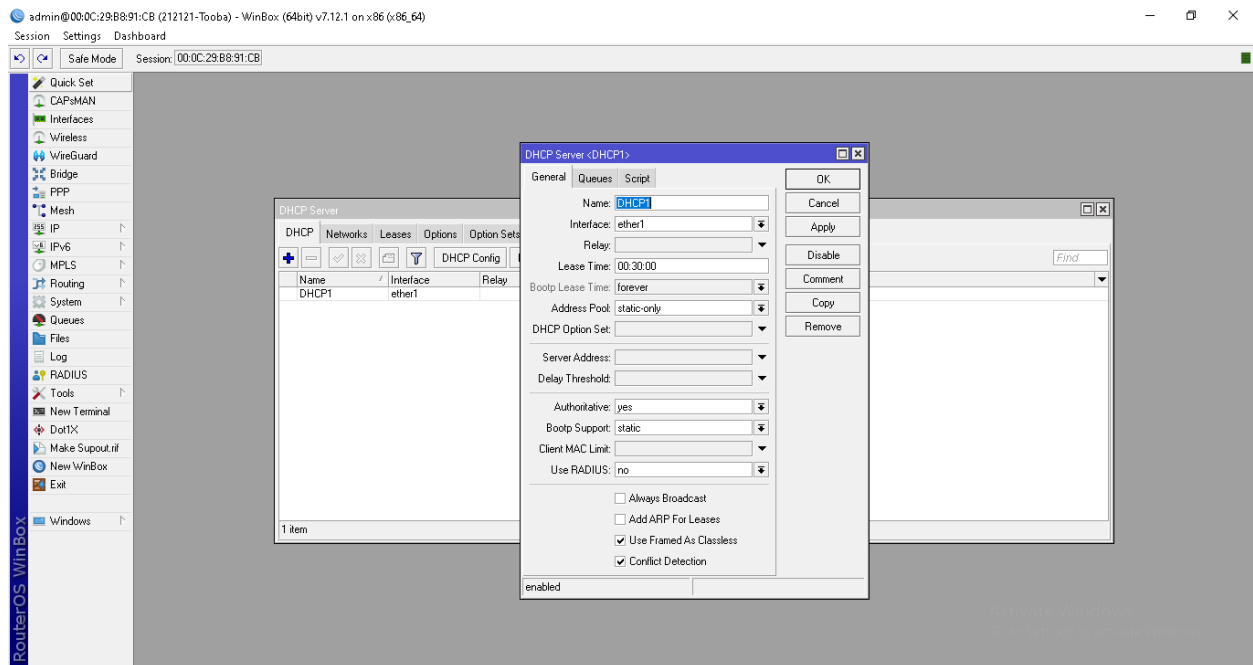
OK Cancel Apply

D) Configuring a DHCP Server

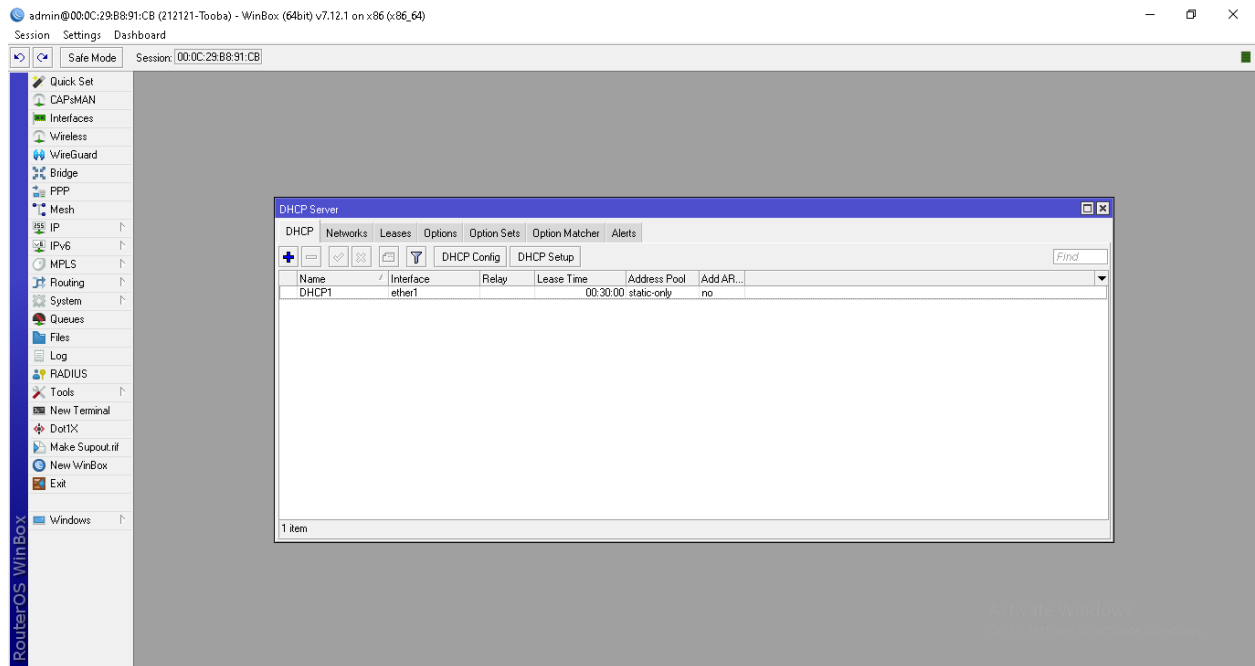
Click on “IP”, expand tab, Click on DHCP Server”.



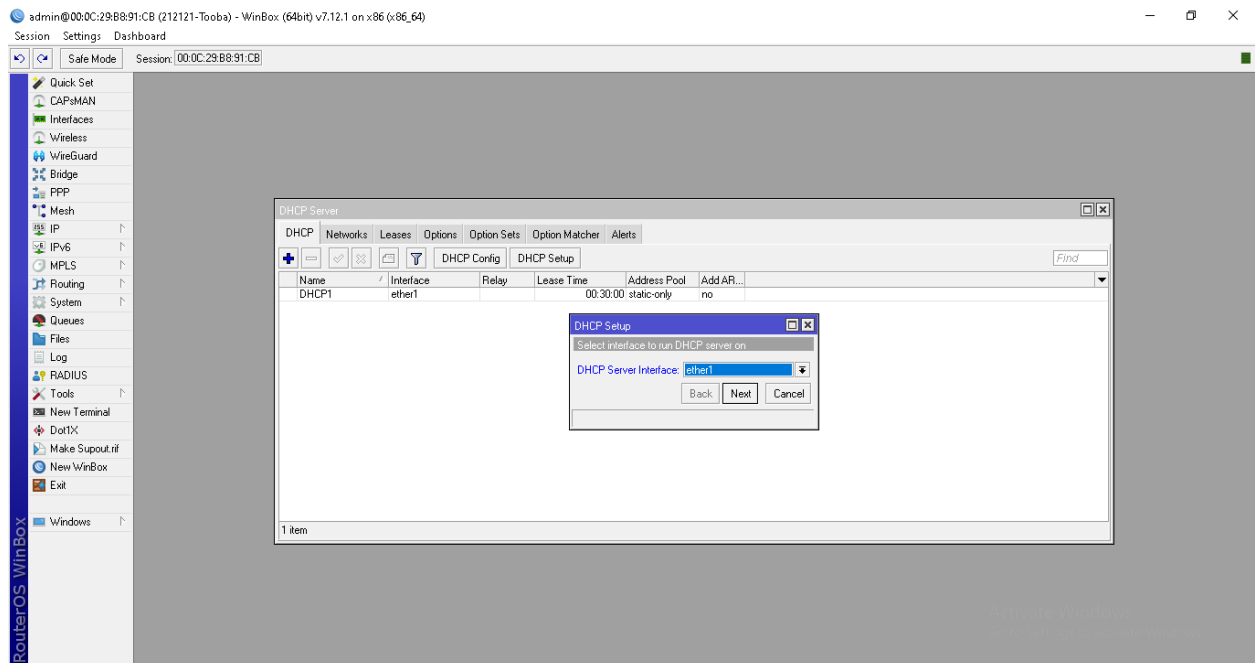
Click on “+” button , Enter name for DHCP server.

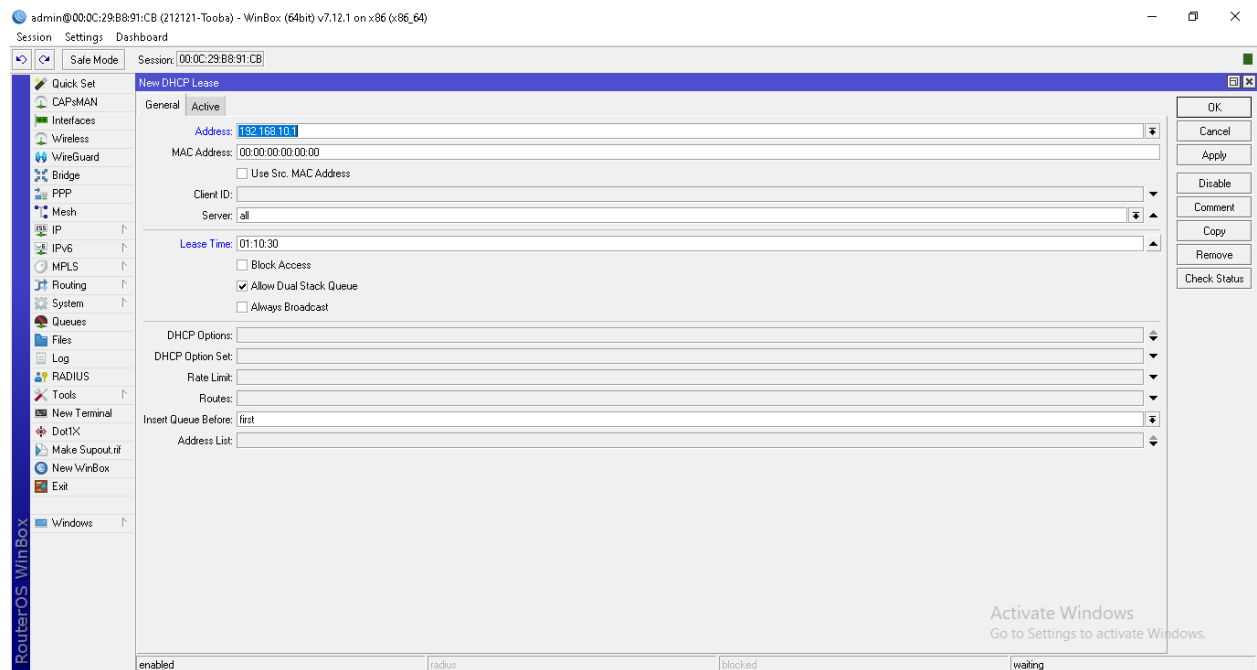
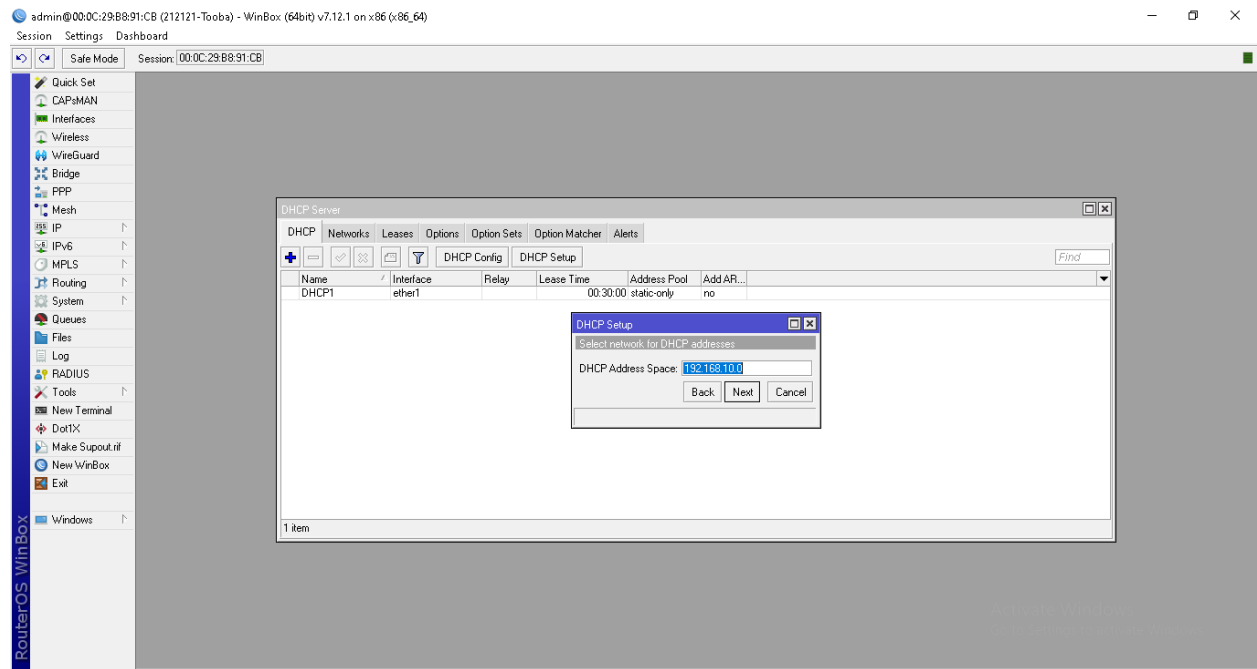


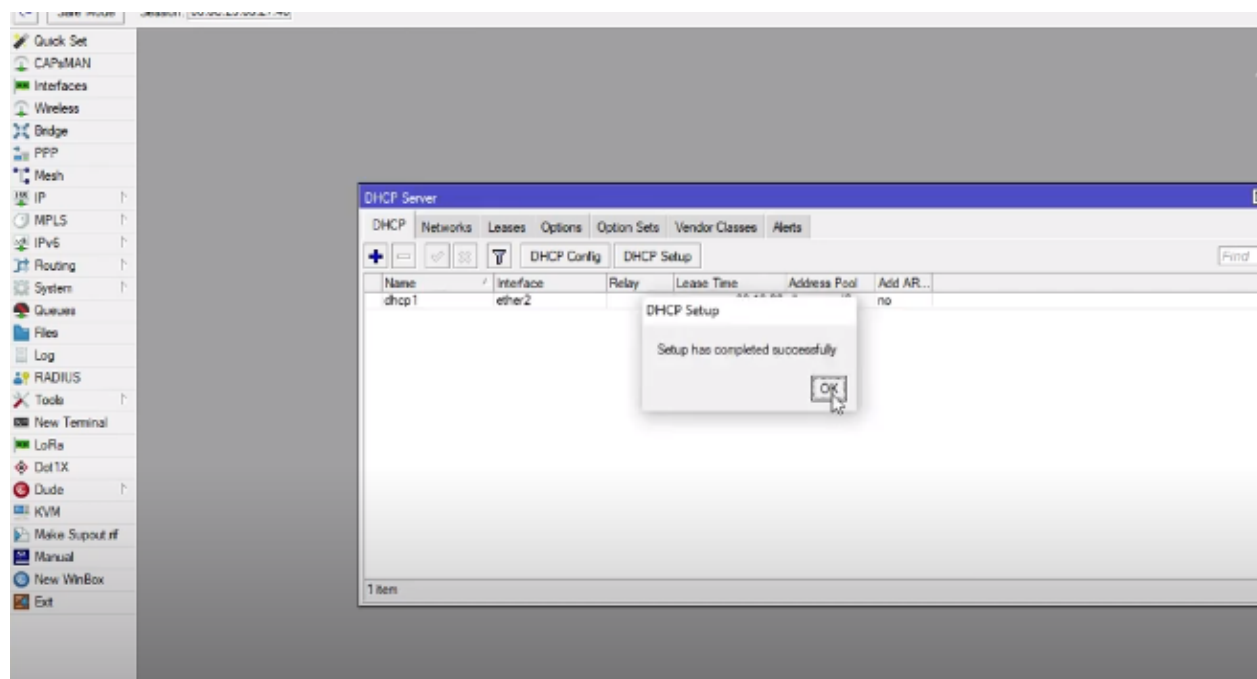
Then Click on “Apply” then “OK”.



On DHCP server window , Click on “DHCP Setup” And Click On “Next”

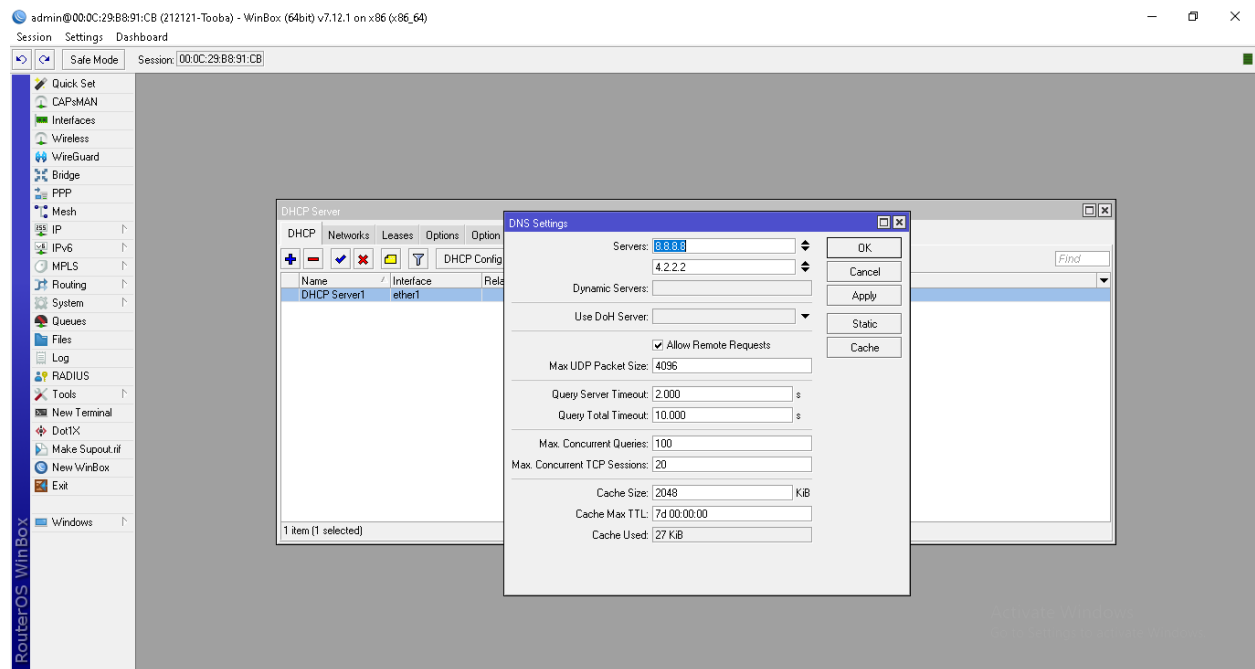






E) Configuring a DNS Server

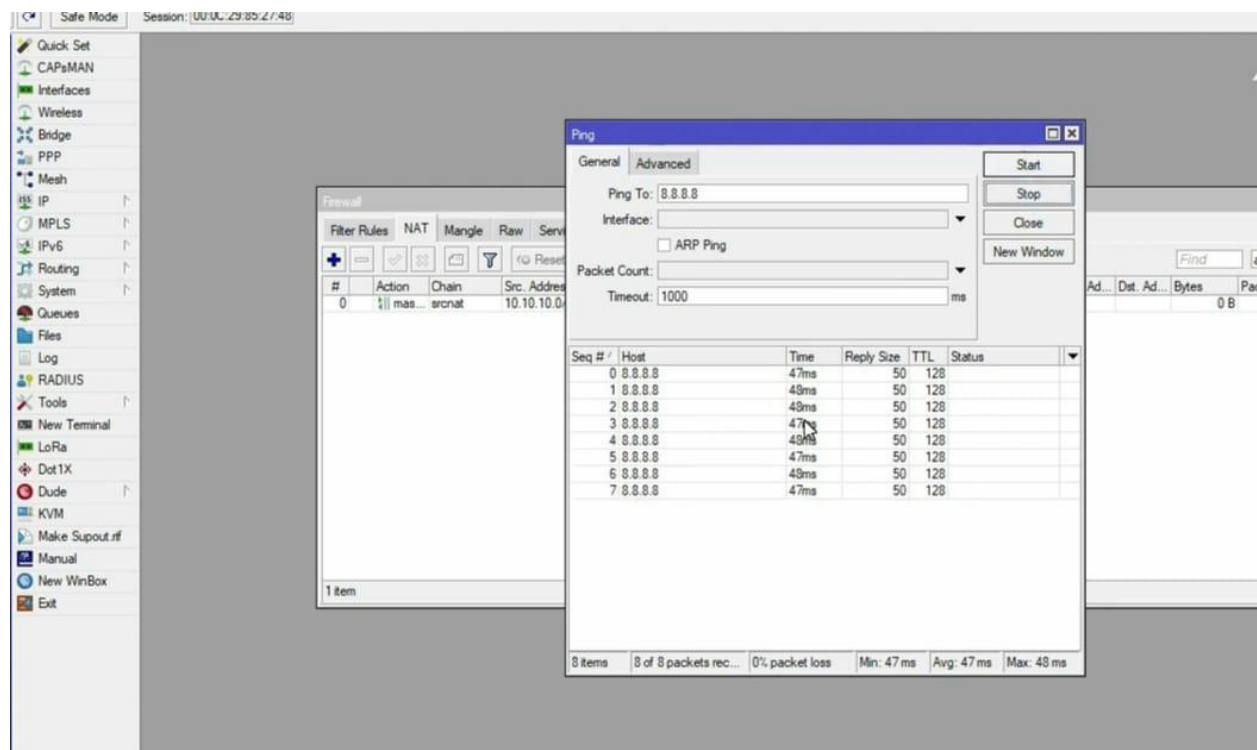
Click On the “IP” expand tab, then Click on “DNS”.
Here i am using the Google DNS server IP
Click On “Allow Remote Requests”.



Then Click on “Apply” then “OK”.
Now your MikroTik Router is a DNS Server.

Set up the firewall for blocking incoming DNS requests from the internet.

No go to “Tools” expand tab, Click On “Ping”
Enter Google DNS server IP then Click on “Start”.



It will start pinging.