NAME : TOOBA SHEHZAD

ID : 212121

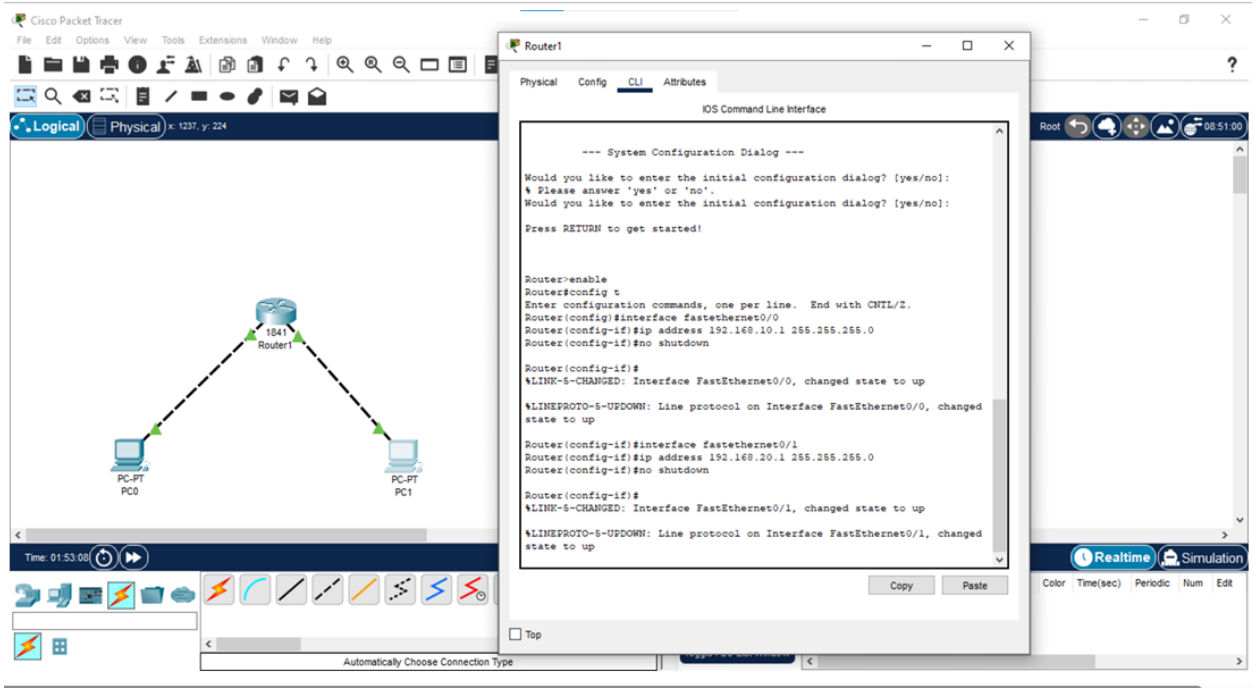
CLASS : BSIT-V

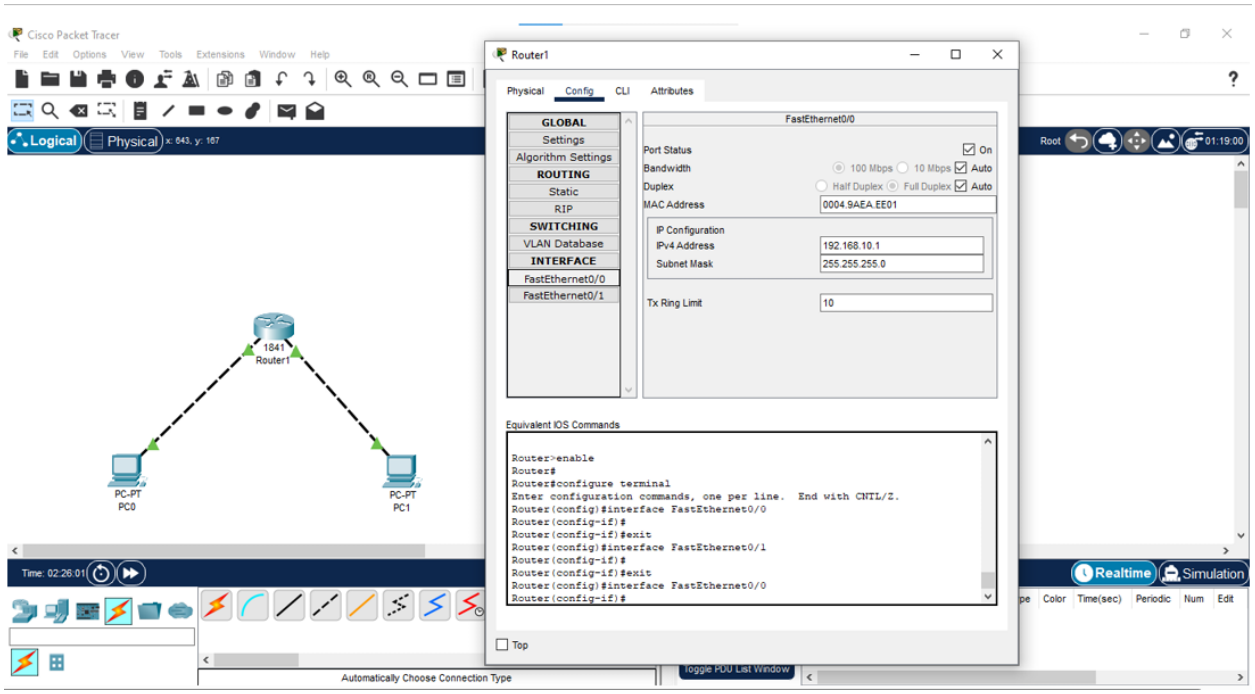
SECTION : ‘A’

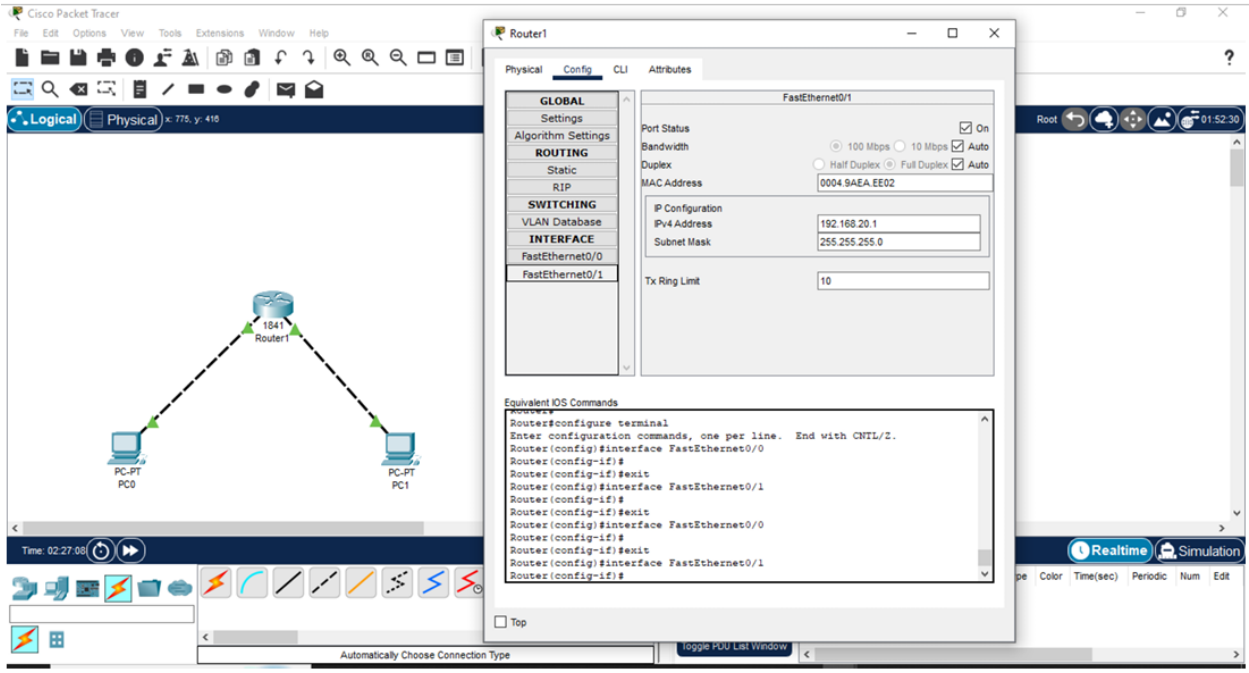
ASSIGNMENT # 2

Cisco Router: use packet tracer

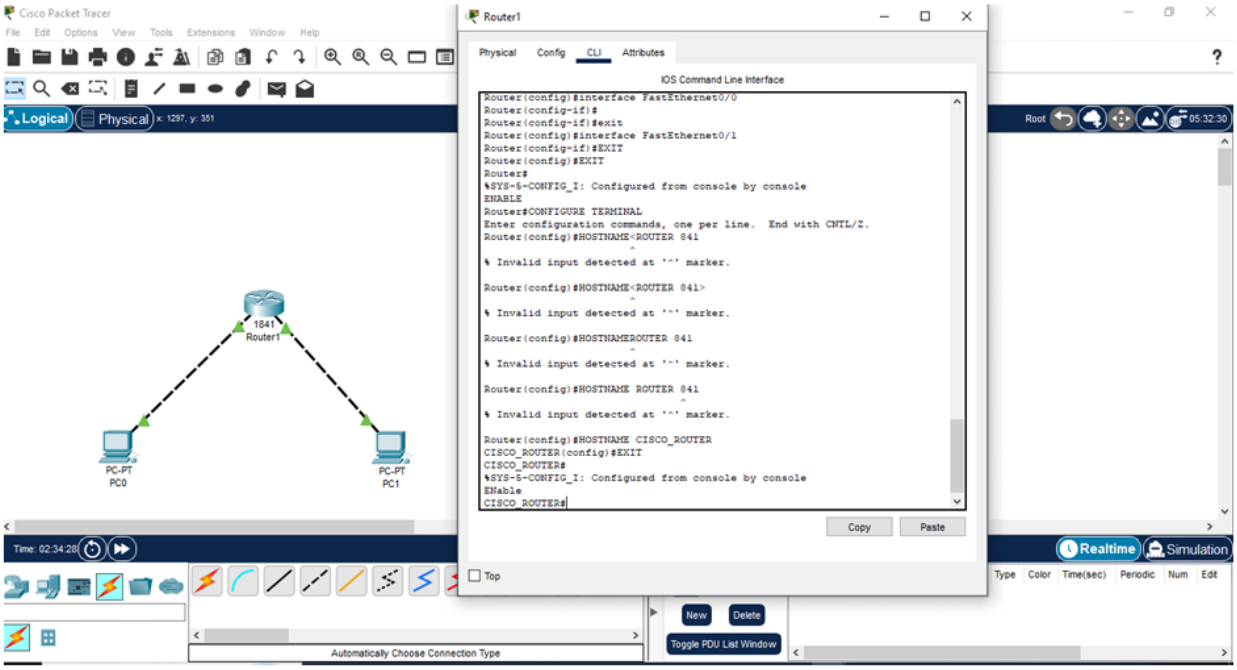
A) Configuring IP addresses of an Interface

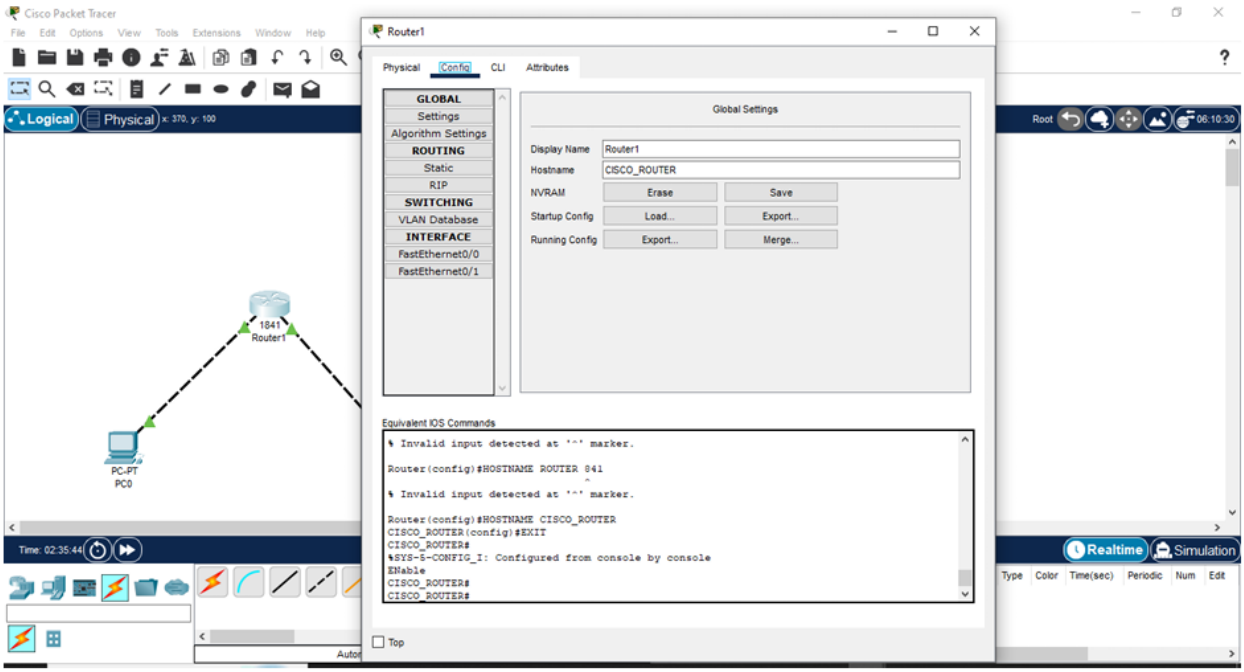



Cisco Packet Tracer
File Edit Options View Tools Extensions Window Help
Logical Physical x: 643, y: 167
Root 01:19:00
1841
Router1
PC-PT
PC0
PC-PT
PC1
Time: 02:26:01
Realtime Simulation
Automatically Choose Connection Type
Router1
Physical Config CLI Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
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
IPv4 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

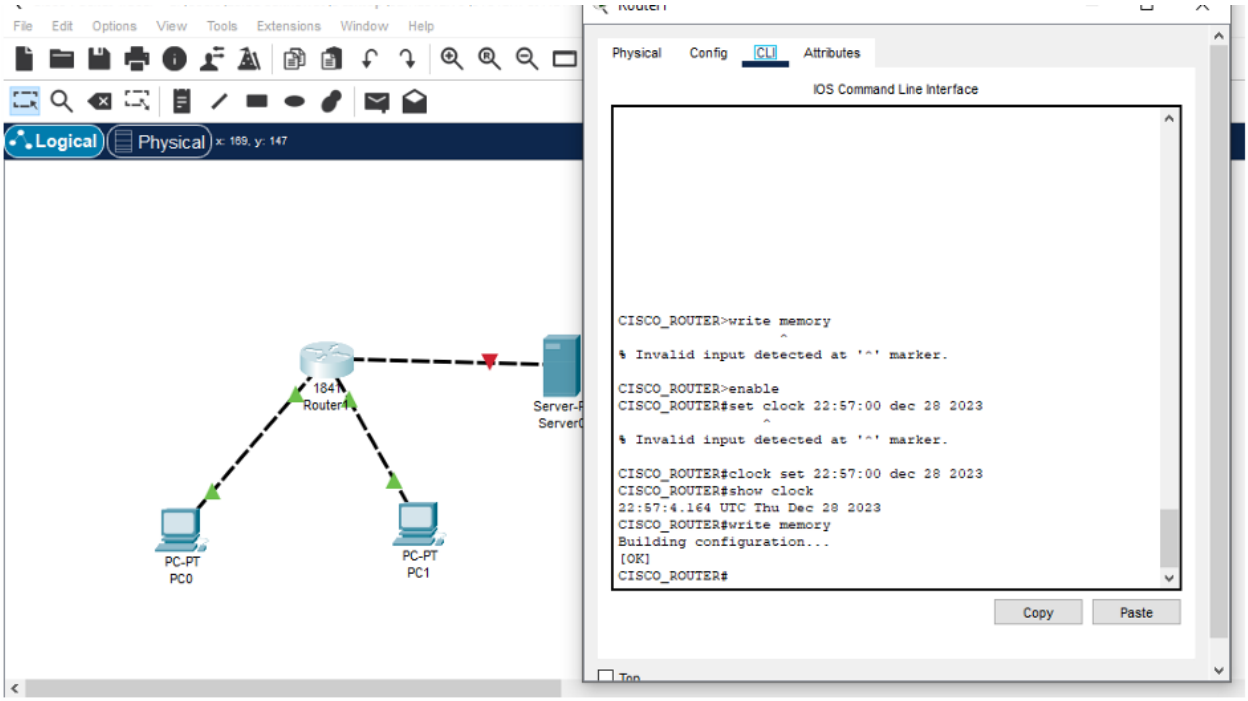

Cisco Packet Tracer
File Edit Options View Tools Extensions Window Help
Logical
Physical
x: 775, y: 416
Root
01:52:30
1841
Router1
PC-PT
PC0
PC-PT
PC1
Time: 02:27:08
Realtime
Simulation
Automatically Choose Connection Type
Toggle PDU List Window
Router1
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
FastEthernet0/0
FastEthernet0/1
FastEthernet0/1
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0004.9AEA.EE02
IP Configuration
IPv4 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)#
Top

B) Changing the Device name

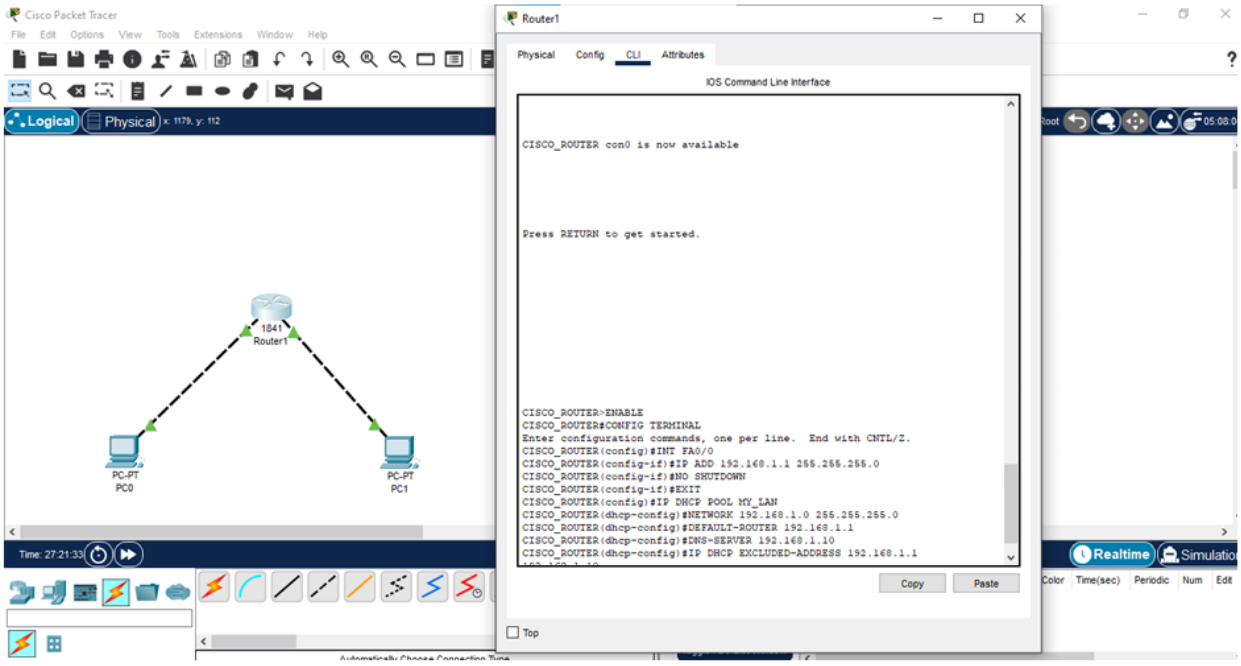


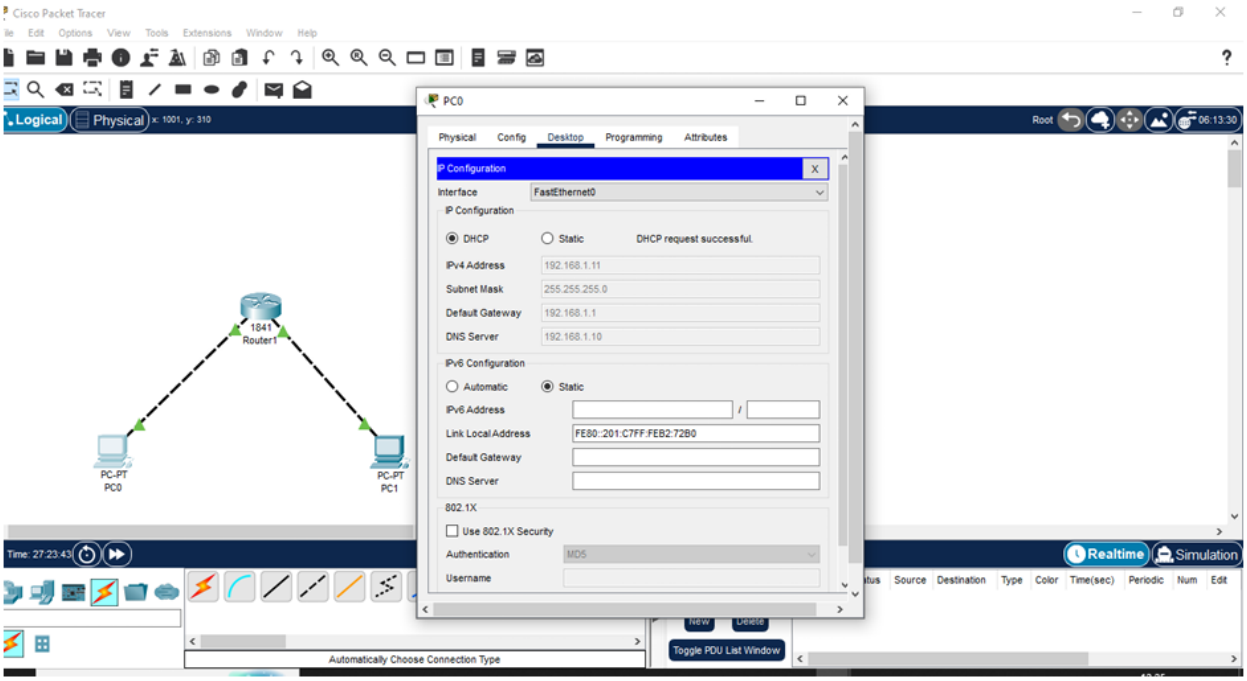

Cisco Packet Tracer
File Edit Options View Tools Extensions Window Help
Logical
Physical
Router1
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
FastEthernet0/0
FastEthernet0/1
Global Settings
Display Name
Router1
Hostname
CISCO_ROUTER
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#
Top
1841
Router1
PC-PT
PC0
Time: 02:35:44
Realtime
Simulation
Type
Color
Time(sec)
Periodic
Num
Edit

C) Setting the time of the device

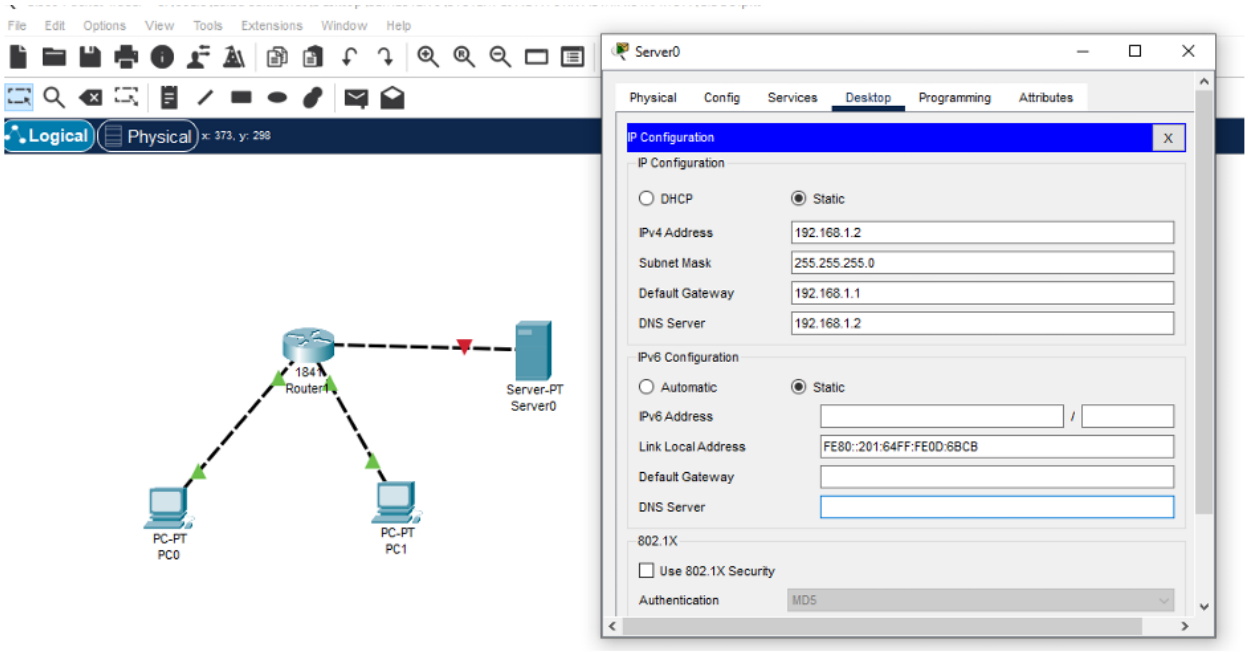


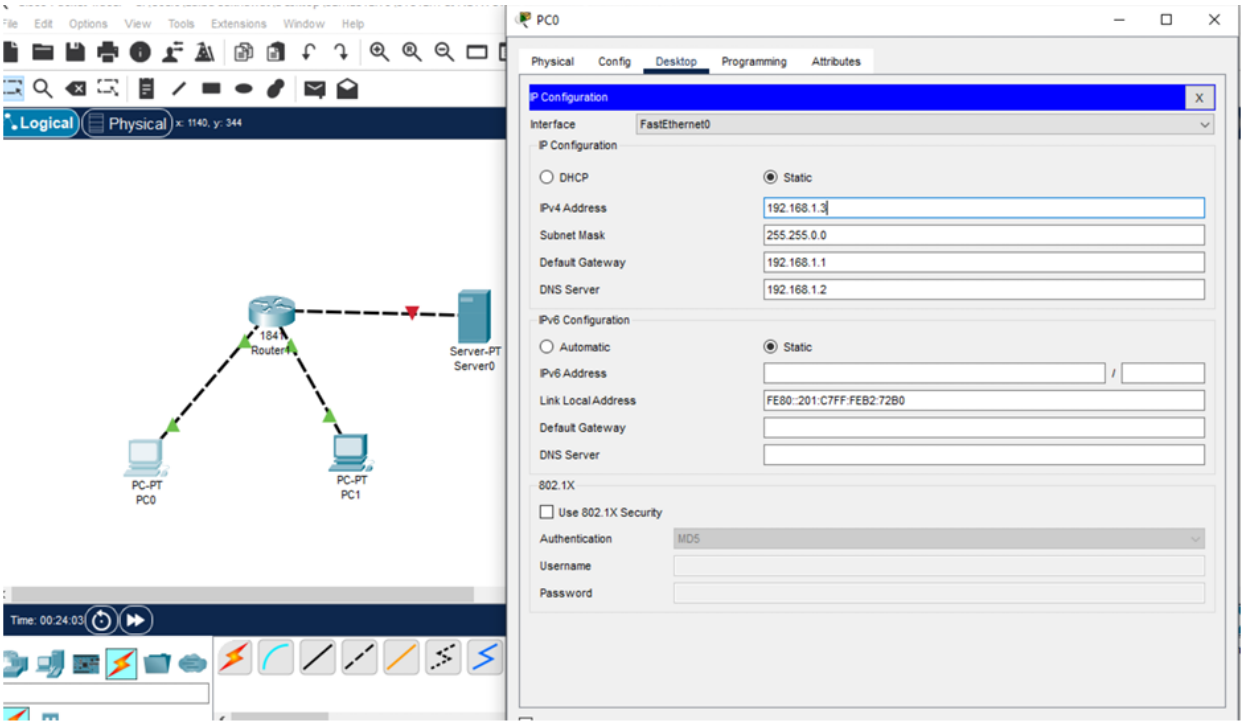
D) Configuring a DHCP Server

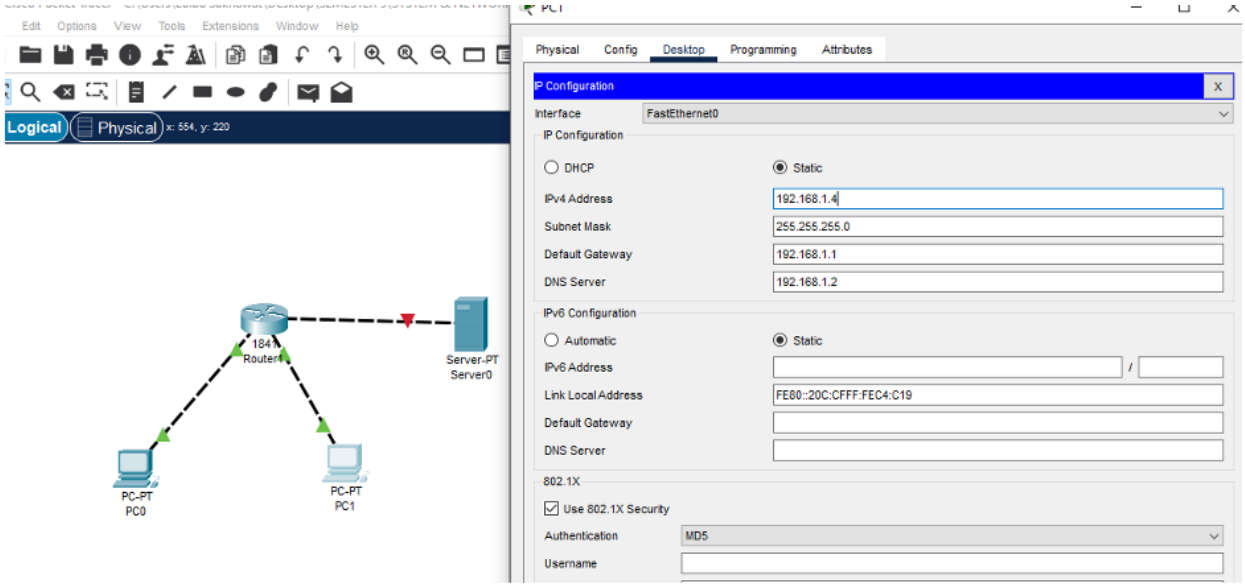


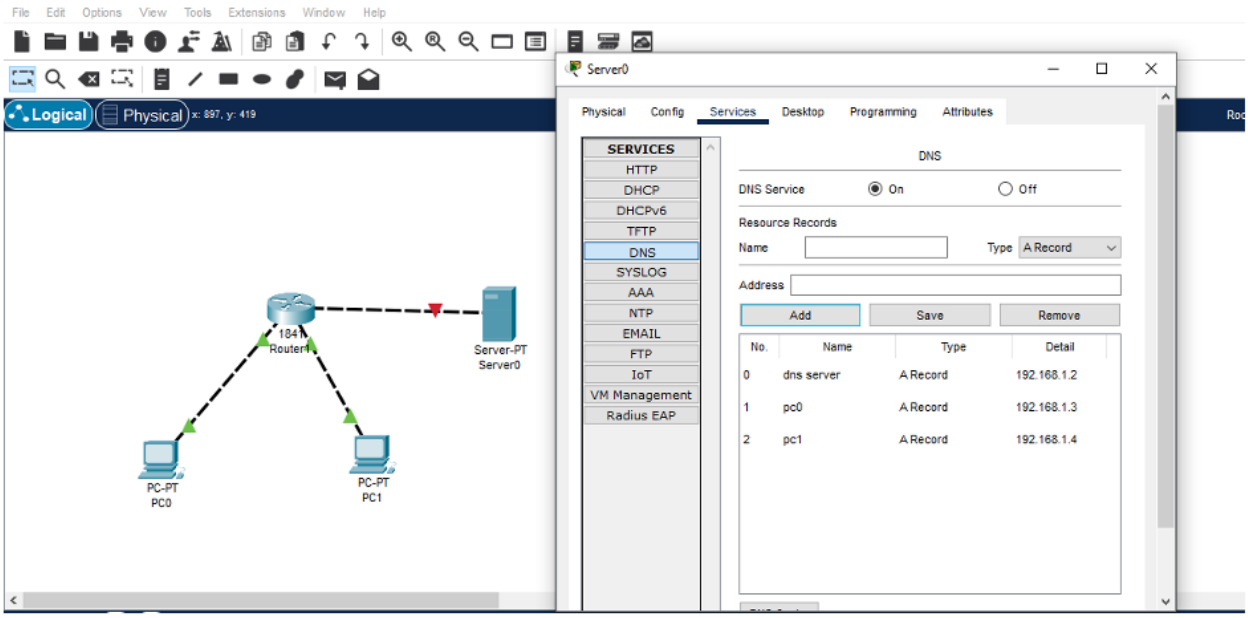

Cisco Packet Tracer
File Edit Options View Tools Extensions Window Help
Logical
Physical
x: 1001, y: 310
Root
06:13:30
1841
Router1
PC-PT
PC0
PC-PT
PC1
PC0
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
IP Configuration
DHCP
Static
DHCP request successful.
IPv4 Address
192.168.1.11
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.1
DNS Server
192.168.1.10
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::201:C7FF:FEB2:72B0
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Time: 27:23:43
Realtime
Simulation
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Automatically Choose Connection Type
Toggle PDU List Window

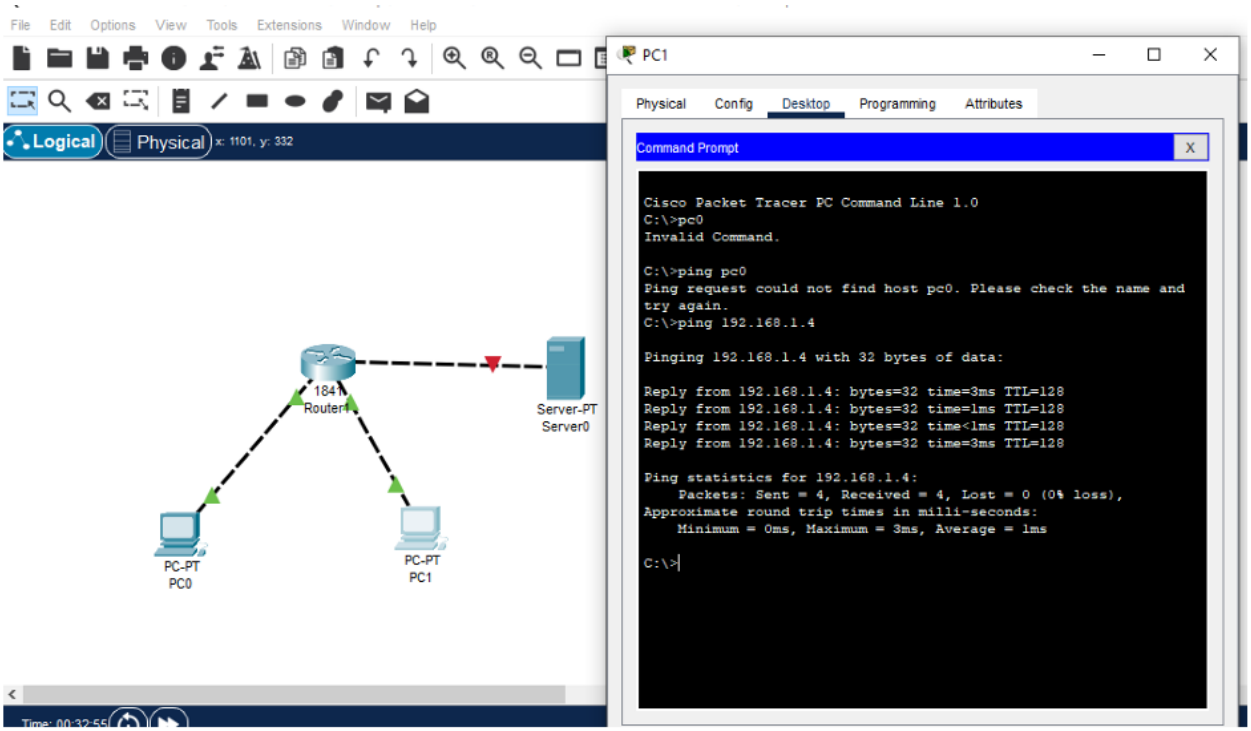
E) Configuring a DNS Server




File Edit Options View Tools Extensions Window Help
Logical
Physical
x: 1140, y: 344
184
Router0
Server-PT
Server0
PC-PT
PC0
PC-PT
PC1
Time: 00:24:03
PC0
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.3
Subnet Mask
255.255.0.0
Default Gateway
192.168.1.1
DNS Server
192.168.1.2
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::201:C7FF:FEB2:72B0
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

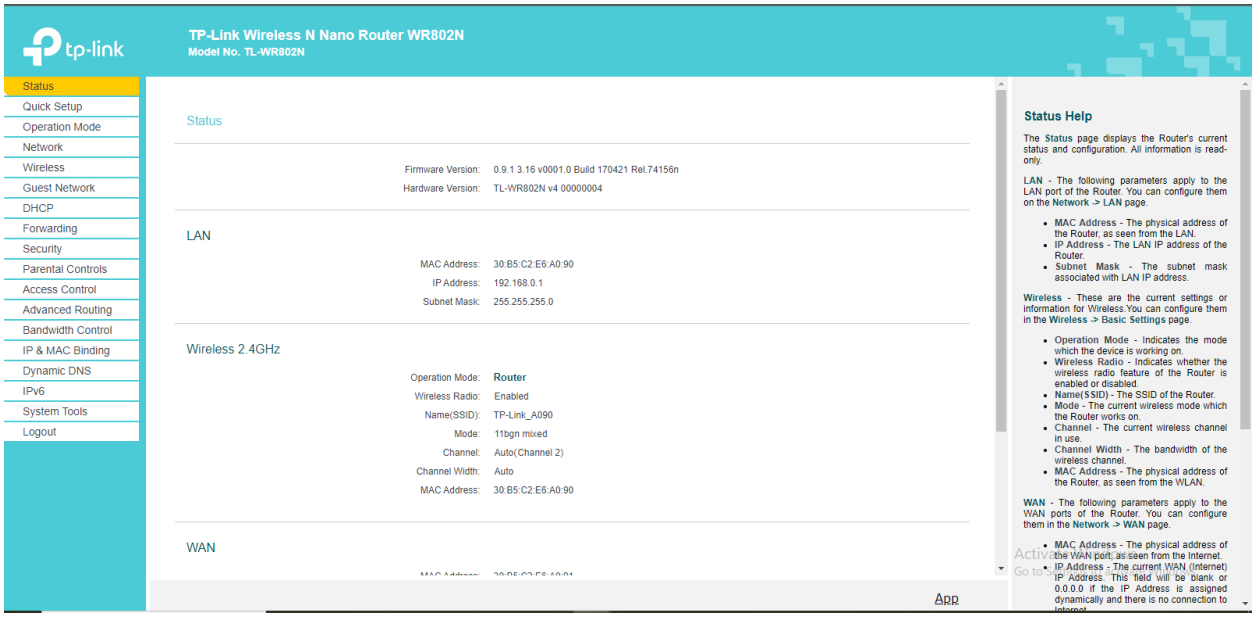

Edit Options View Tools Extensions Window Help
Logical
Physical
x: 554, y: 220
1841
Router0
Server-PT
Server0
PC-PT
PC0
PC-PT
PC1
PC1
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.4
Subnet Mask
255.255.255.0
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

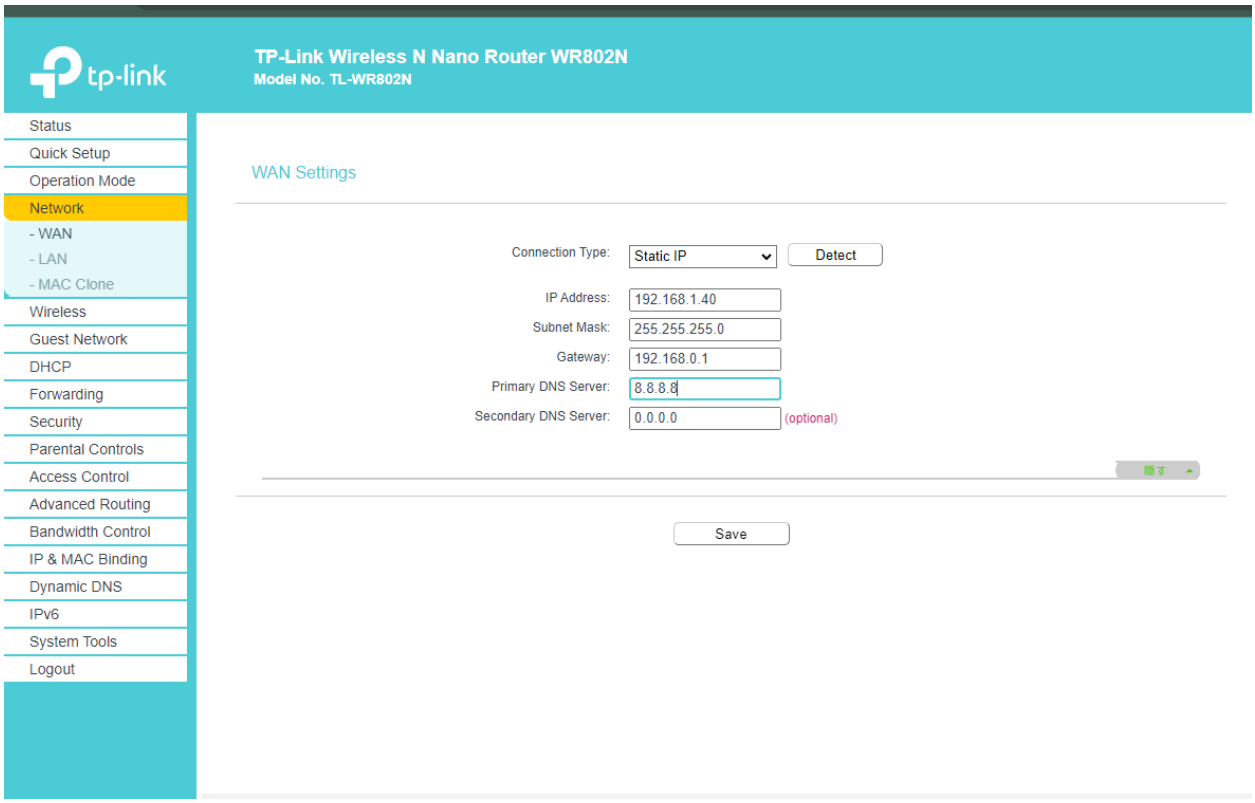

File Edit Options View Tools Extensions Window Help
Logical
Physical
x: 897, y: 419
1841
Router1
Server-PT
Server0
PC-PT
PC0
PC-PT
PC1
Server0
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
DNS
DNS Service
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


File Edit Options View Tools Extensions Window Help
Logical
Physical
x: 1101, y: 332
1841
Router1
Server-PT
Server0
PC-PT
PC0
PC-PT
PC1
Time: 00:32:55
PC1
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
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:\>

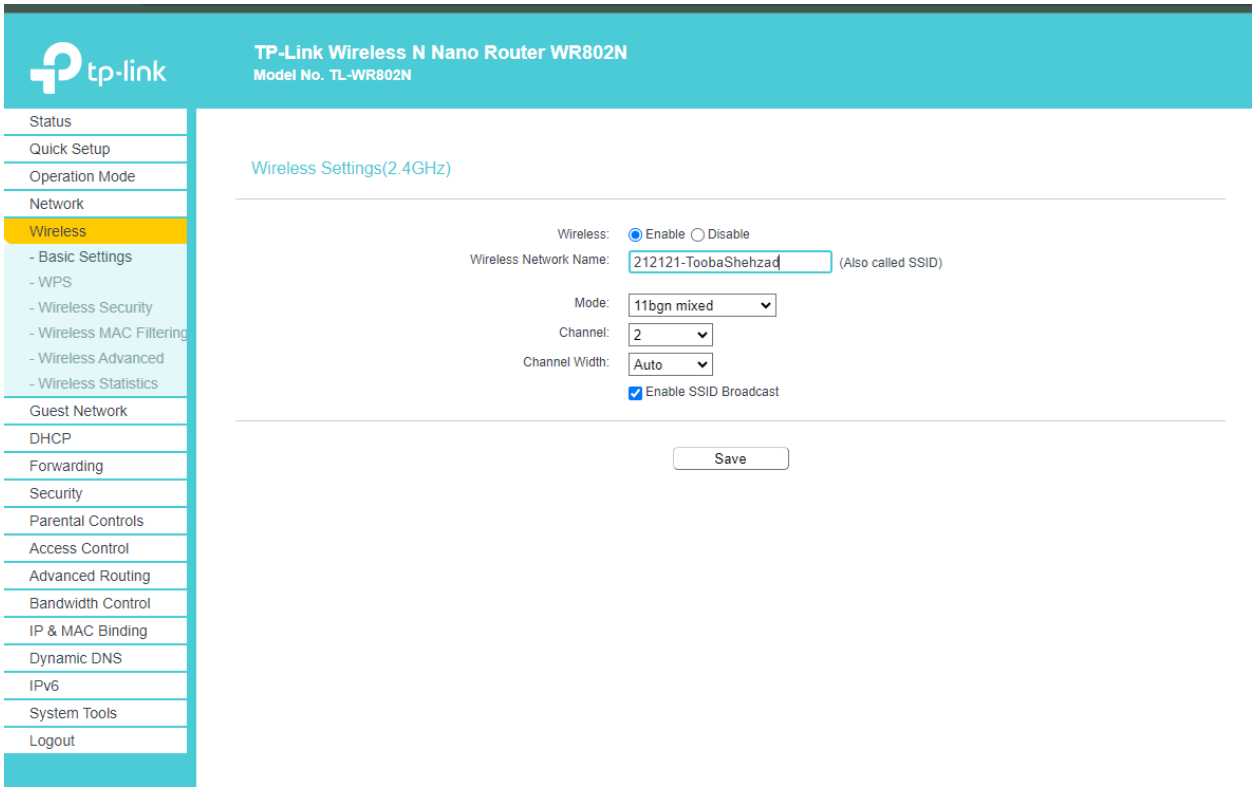
Tplink: Use the TP link emulator

A) Configuring IP addresses of an Interface

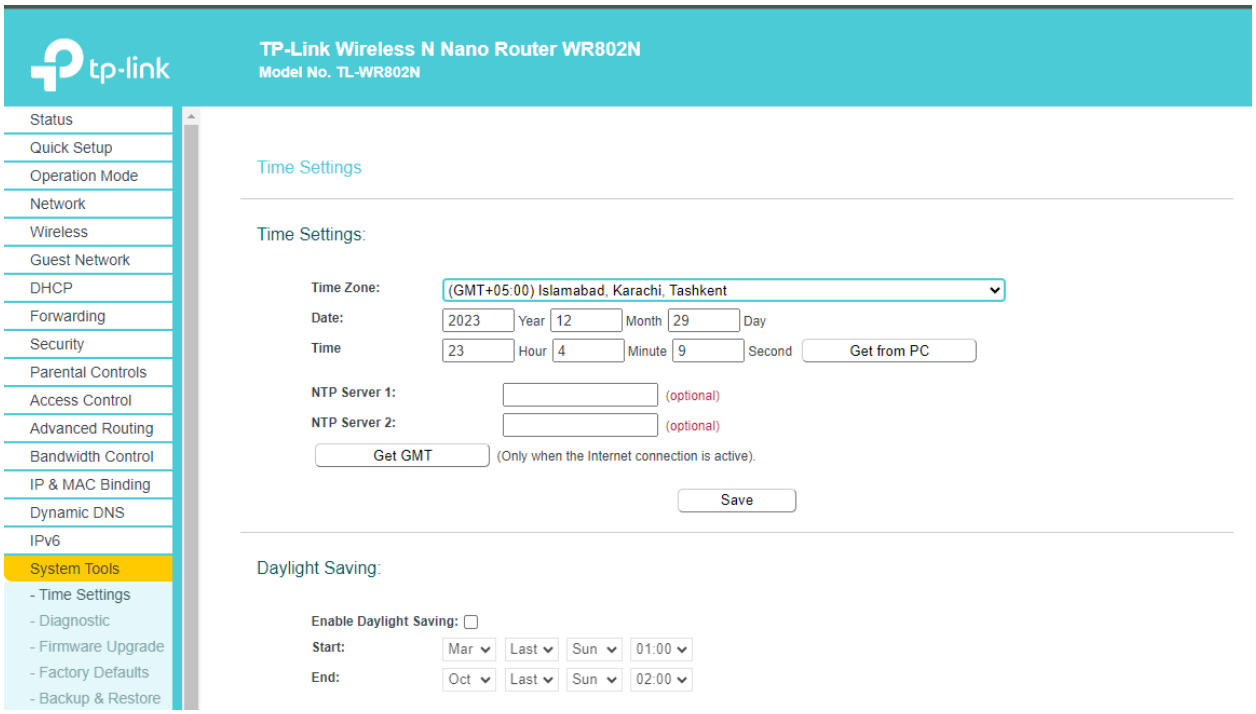



tp-link
TP-Link Wireless N Nano Router WR802N
Model No. TL-WR802N
Status
Quick Setup
Operation Mode
Network
- WAN
- LAN
- MAC Clone
Wireless
Guest Network
DHCP
Forwarding
Security
Parental Controls
Access Control
Advanced Routing
Bandwidth Control
IP & MAC Binding
Dynamic DNS
IPv6
System Tools
Logout
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

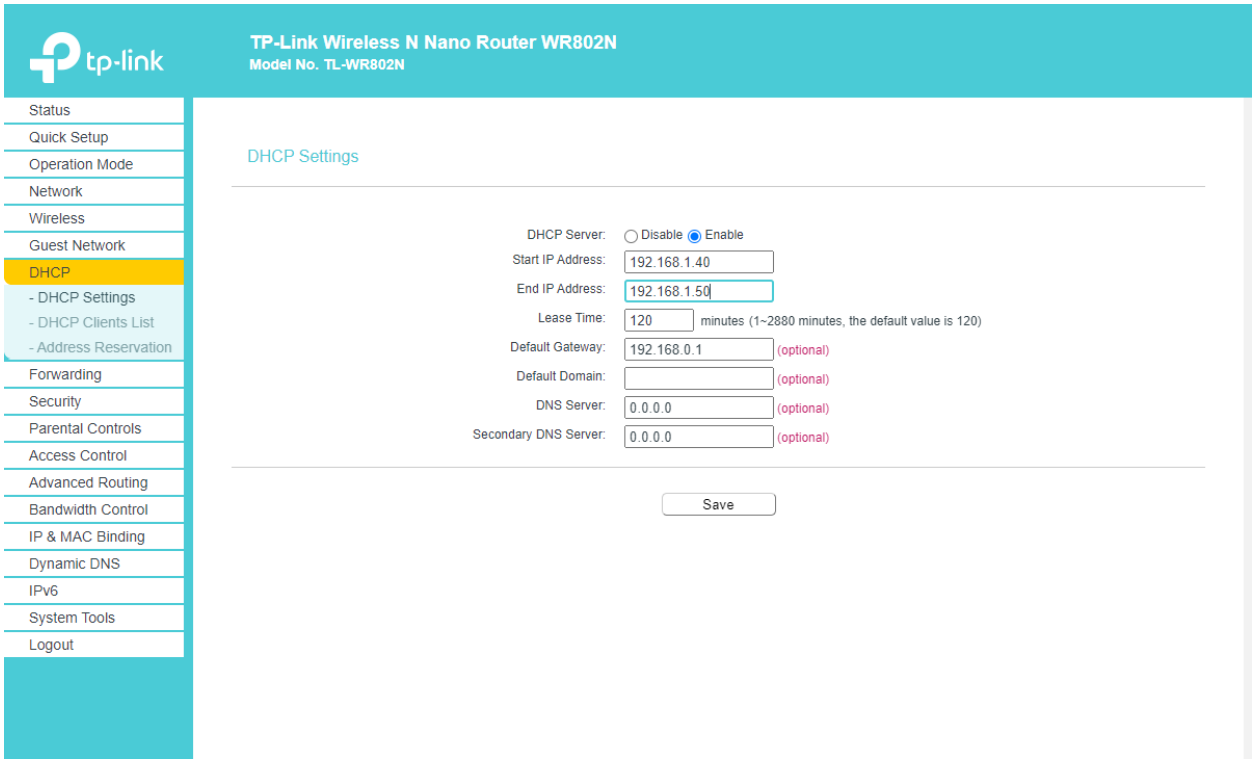
B) Changing the Device name



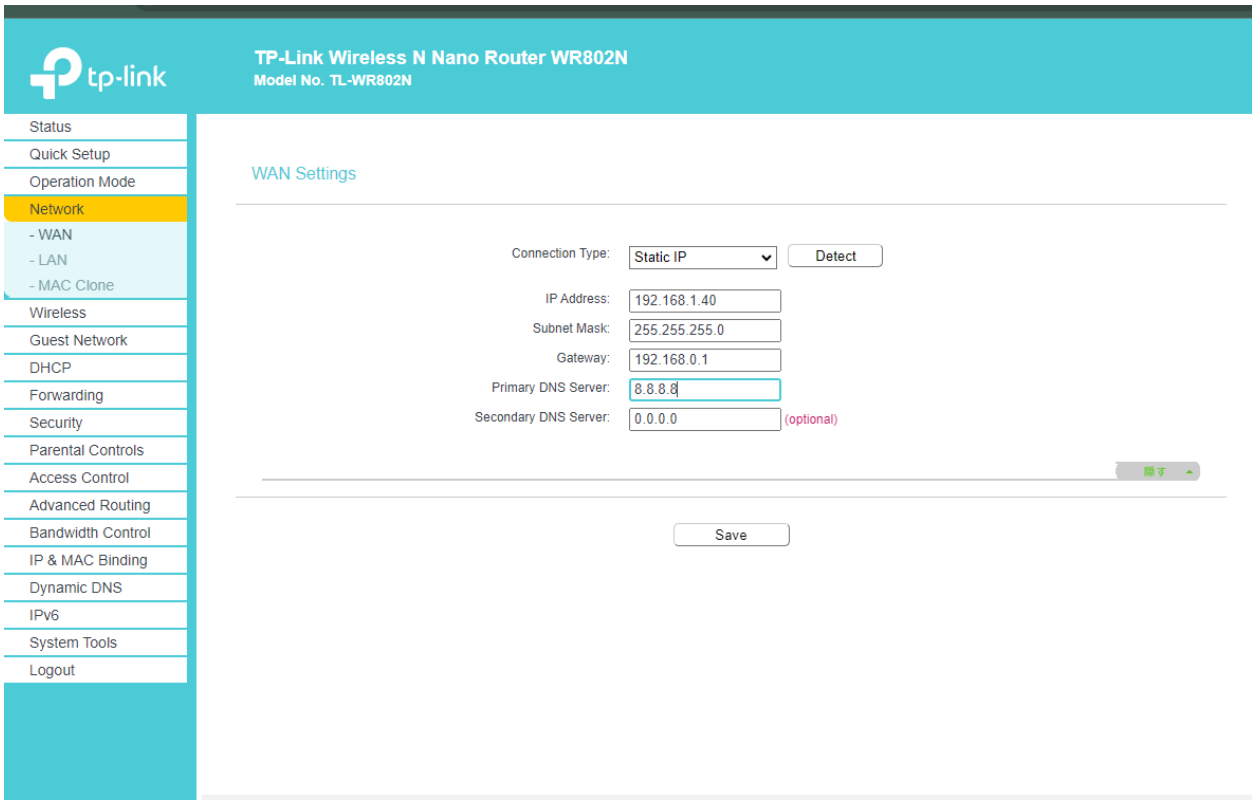
C) Setting the time of the device



D) Configuring a DHCP Server



E) Configuring a DNS Server

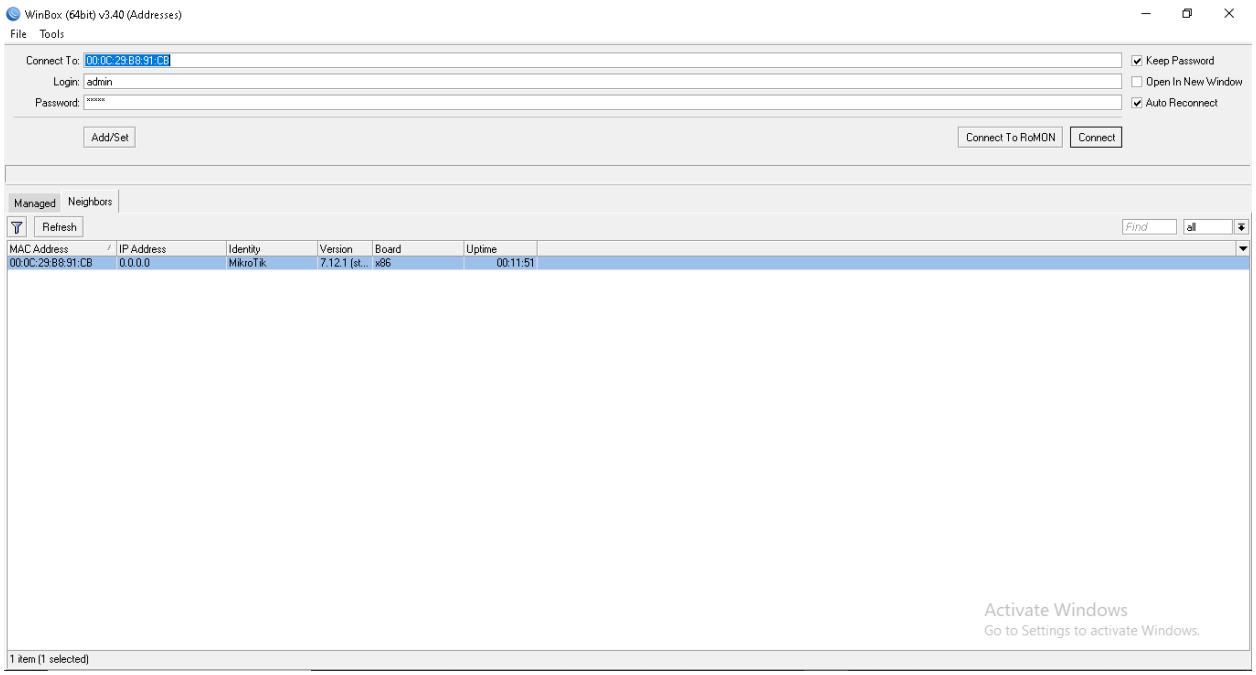


Mikrotik: Use the RouterOS in virtualization

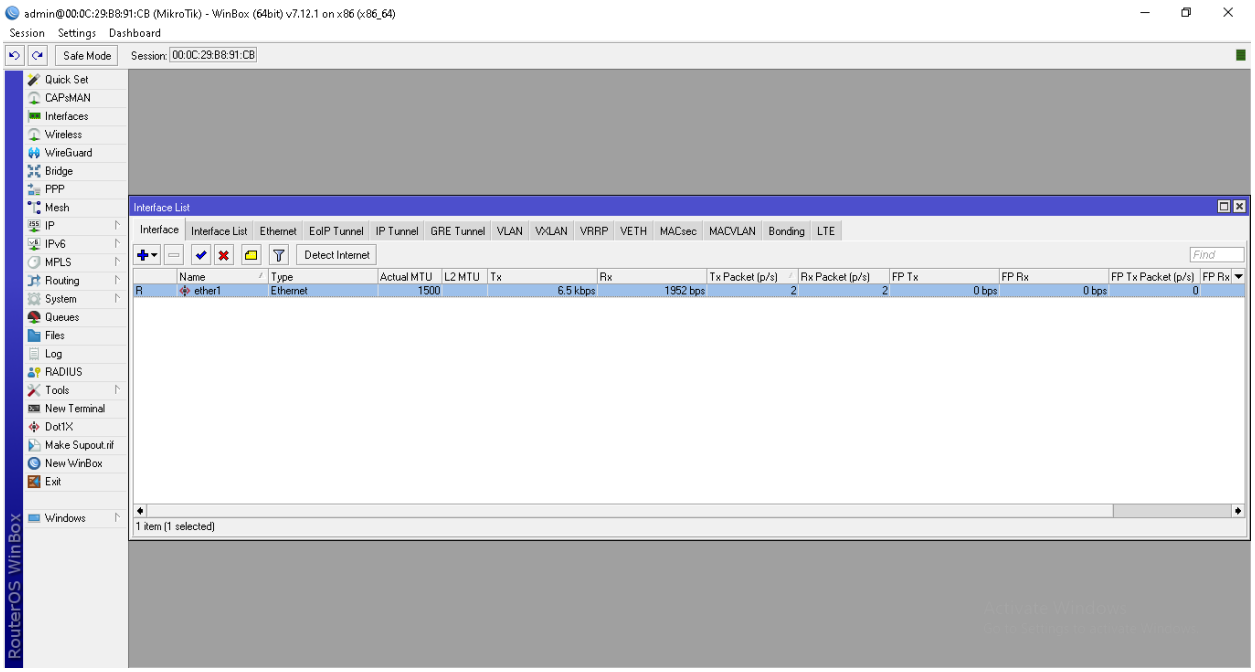
A) Configuring IP addresses of an Interface

Open WinBox

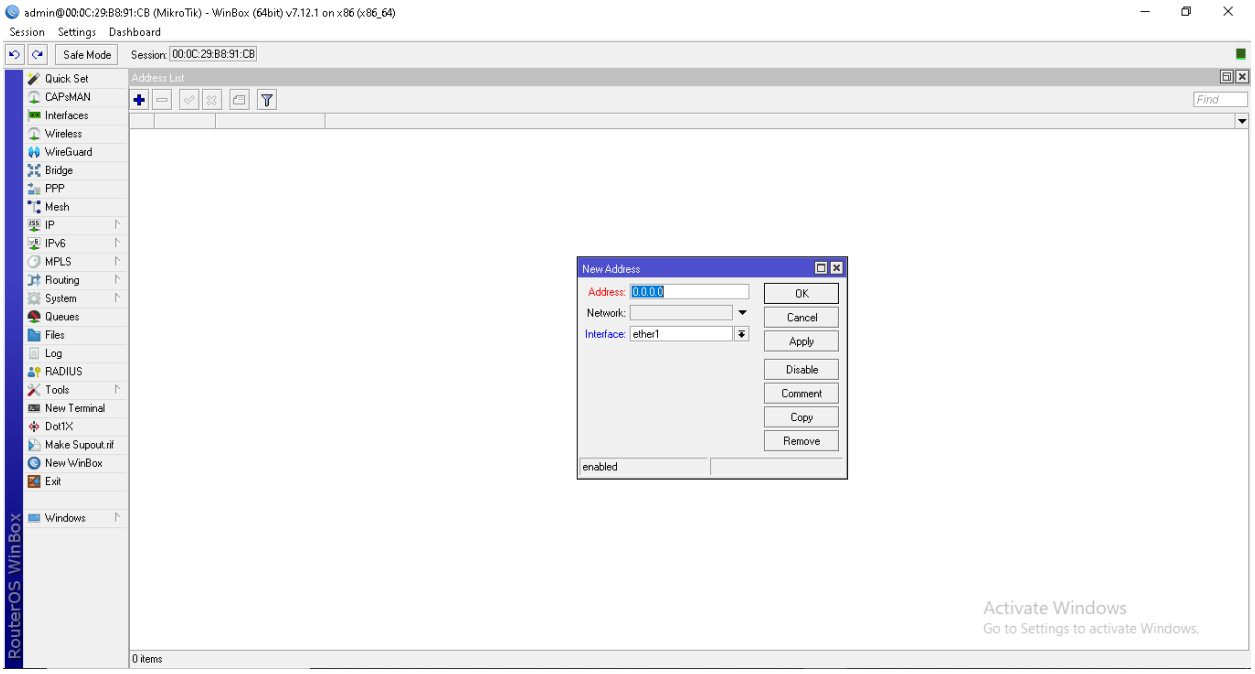
Enter your username and password then click on the "Connect" button.



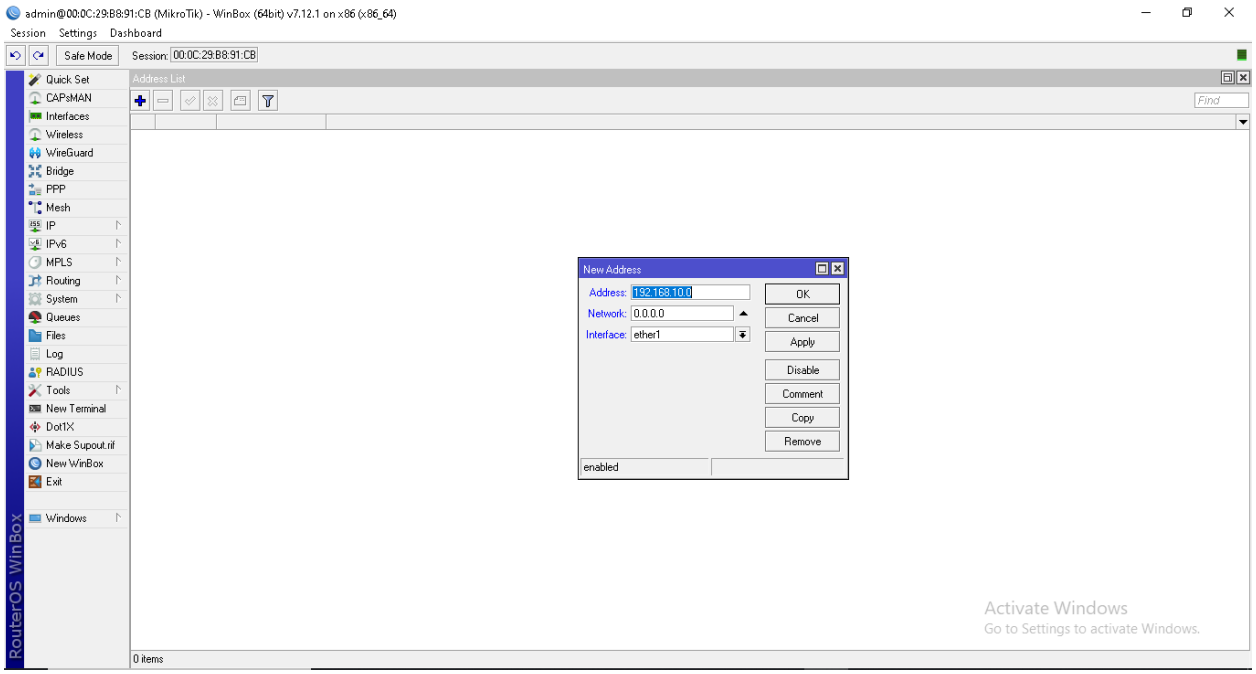
On the left hand side of WinBox Window , Click on “INTERFACES”



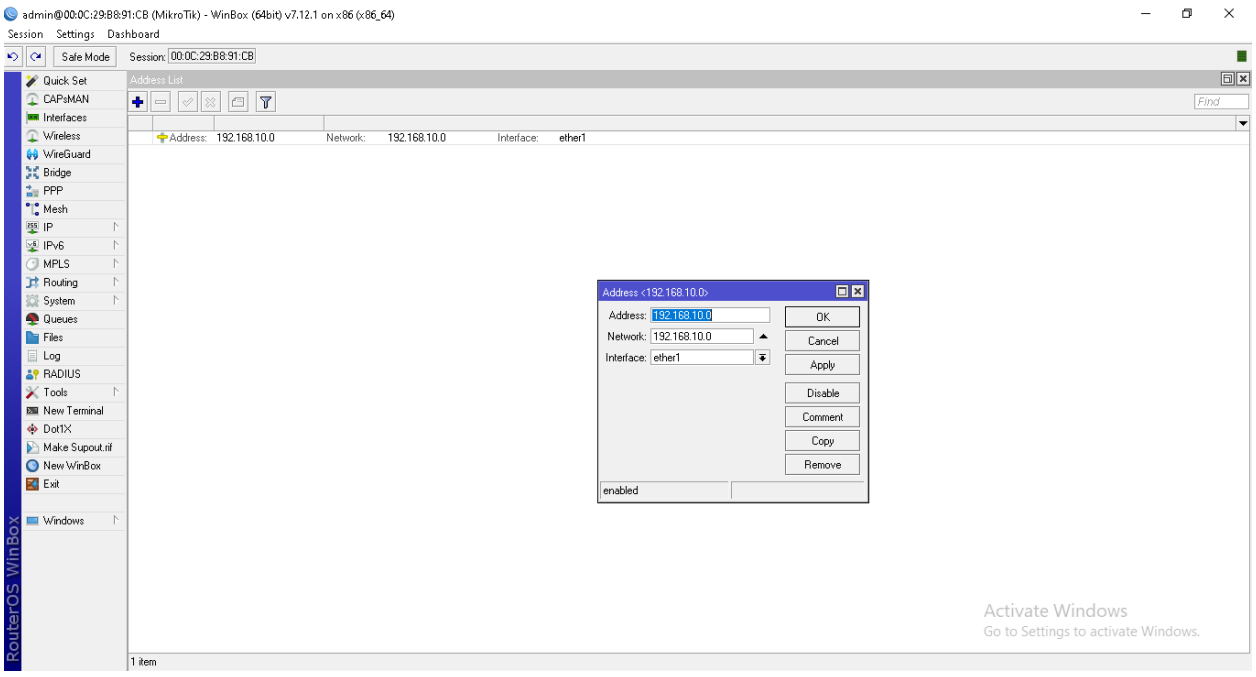
For Configuring the IP address , Click on IP , expand it , Then Click on Address



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

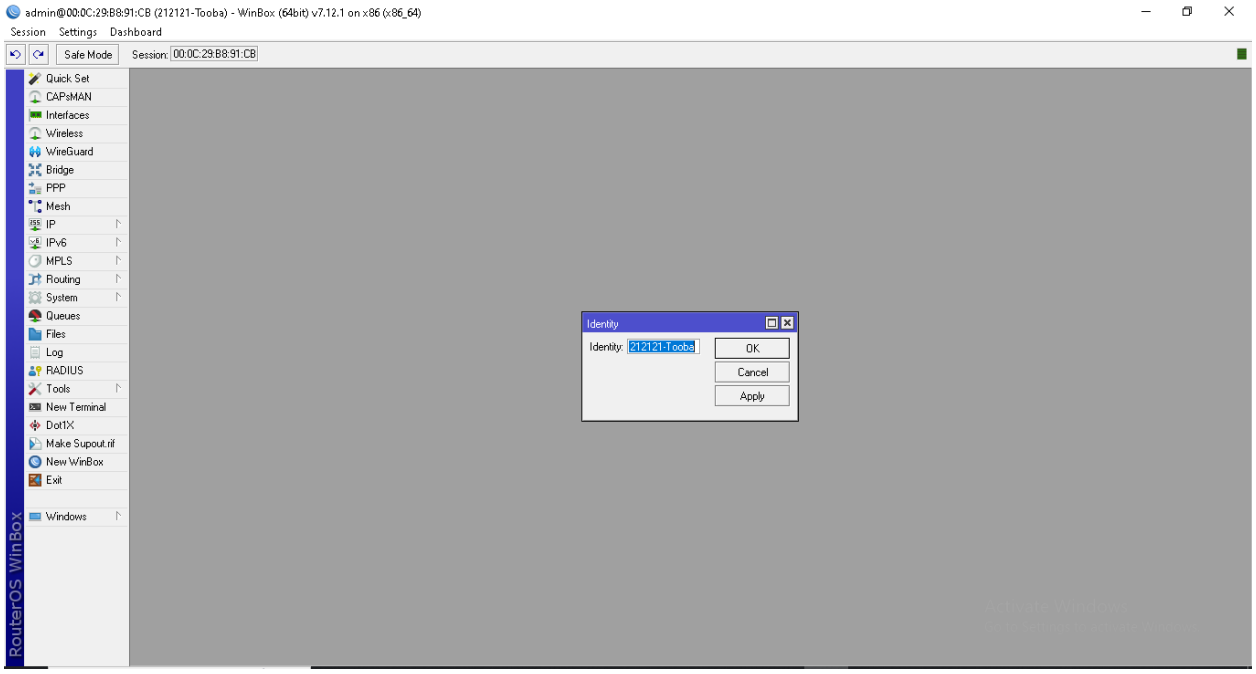


Then Click On “Apply” and then “OK”.



B) Changing the Device name

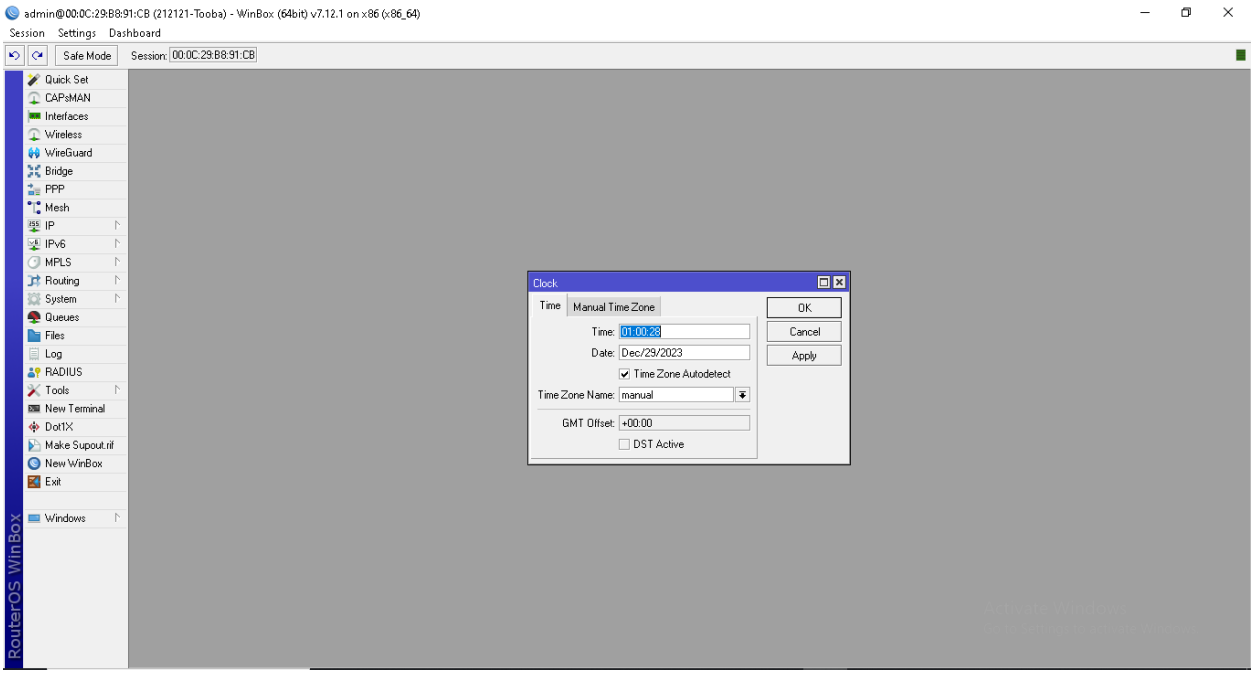
Go to “System” , expand the tab, then Click on “Identity”.



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

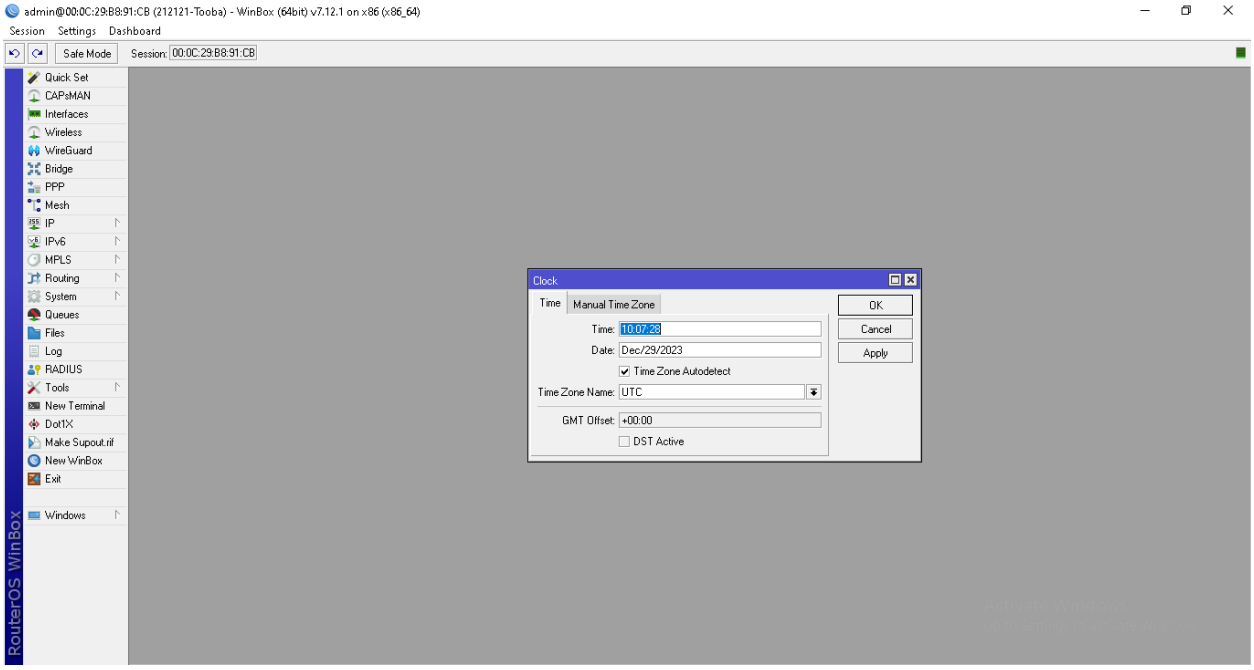
C) Setting the time of the device

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



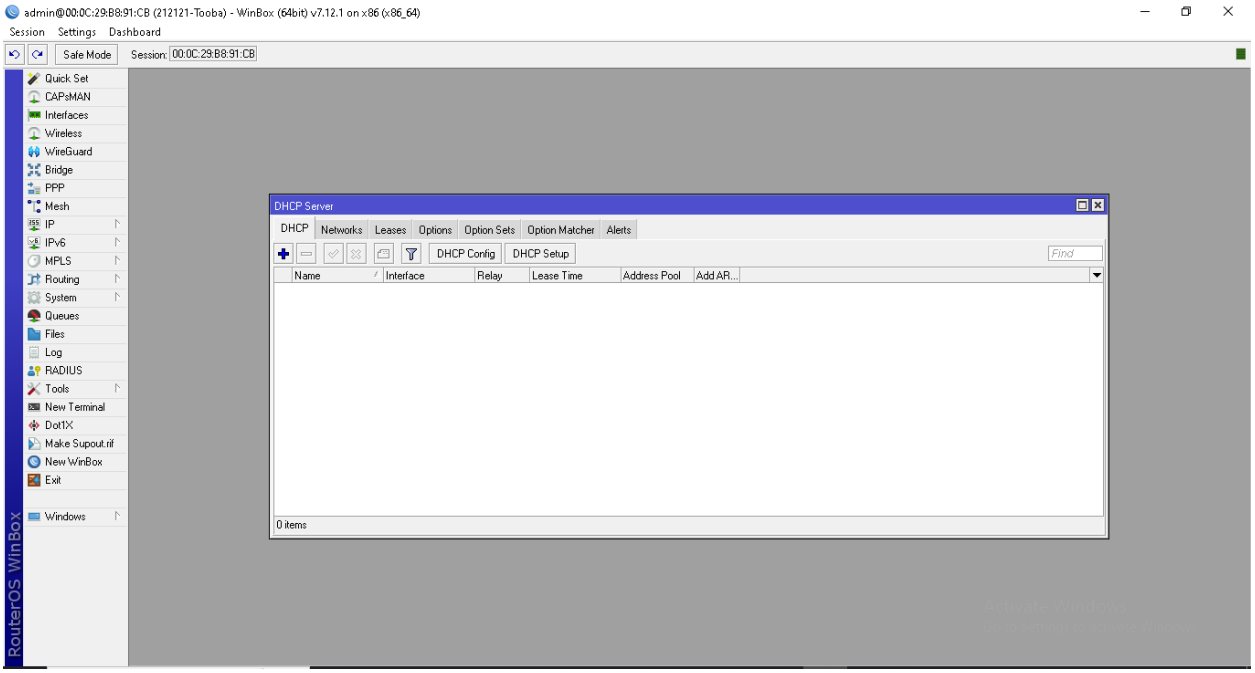
It is a system Default Time and Date

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

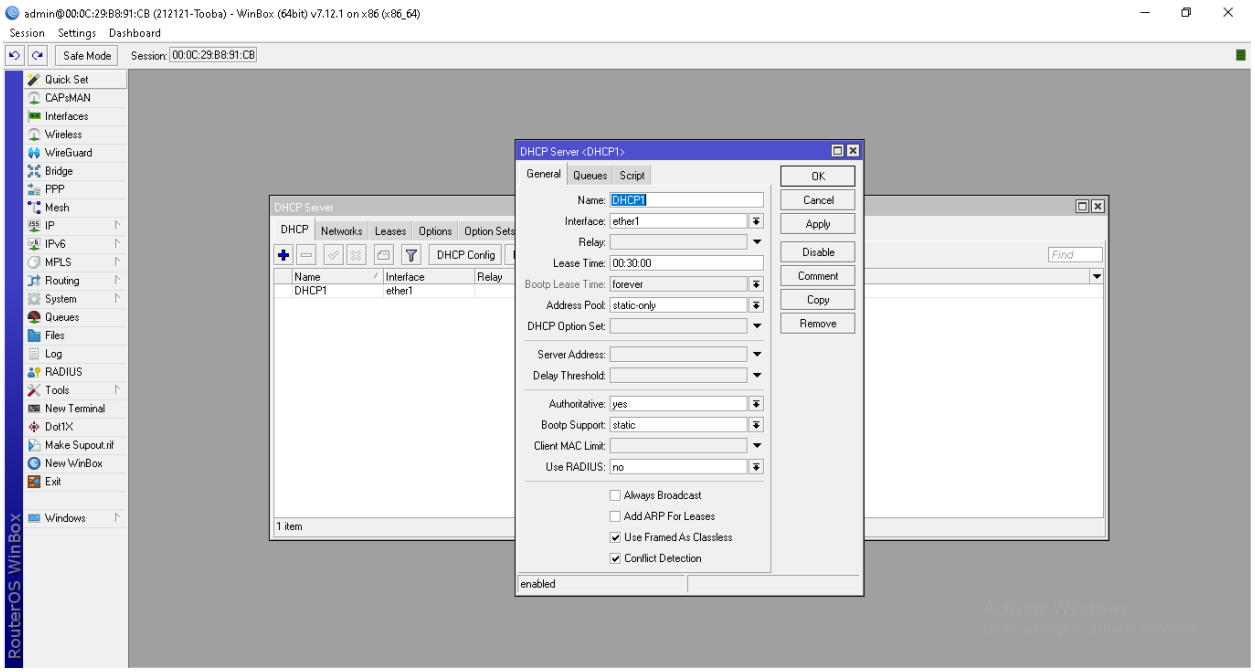

admin@00:0C:29:B8:91:CB (212121-Tooba) - WinBox (64bit) v7.12.1 on x86 (x86_64)
Session Settings Dashboard
Safe Mode
Session: 00:0C:29:B8:91:CB
Quick Set
CAPsMAN
Interfaces
Wireless
WireGuard
Bridge
PPP
Mesh
IP
IPv6
MPLS
Routing
System
Queues
Files
Log
RADIUS
Tools
New Terminal
Dot1X
Make Supout.rif
New WinBox
Exit
Windows
RouterOS WinBox
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
Activate Windows

D) Configuring a DHCP Server

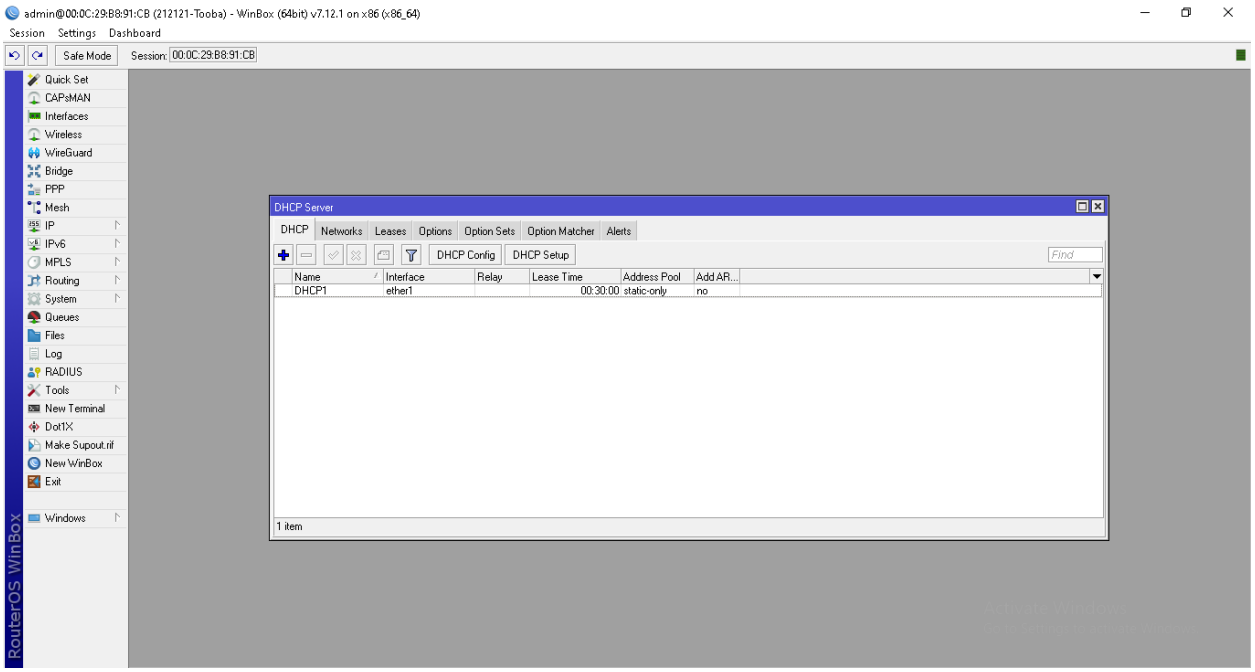
Click on “IP”,expand tab,Click on DHCP Server”.



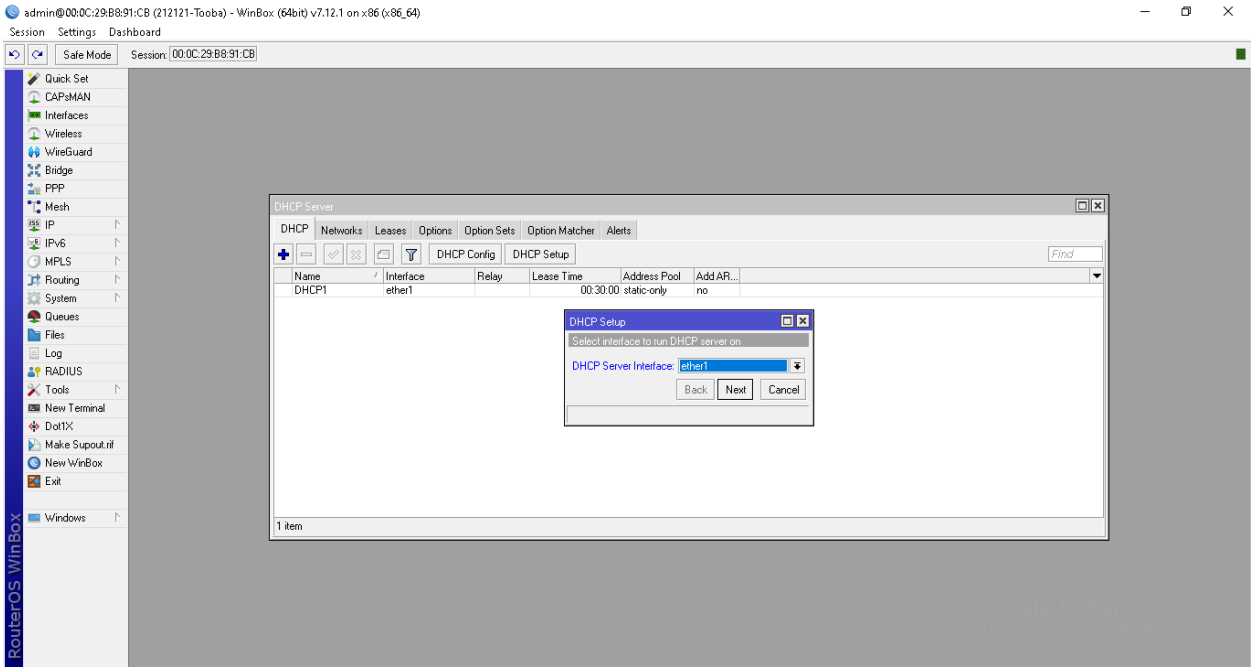
Click on “+” button , Enter name for DHCP server.

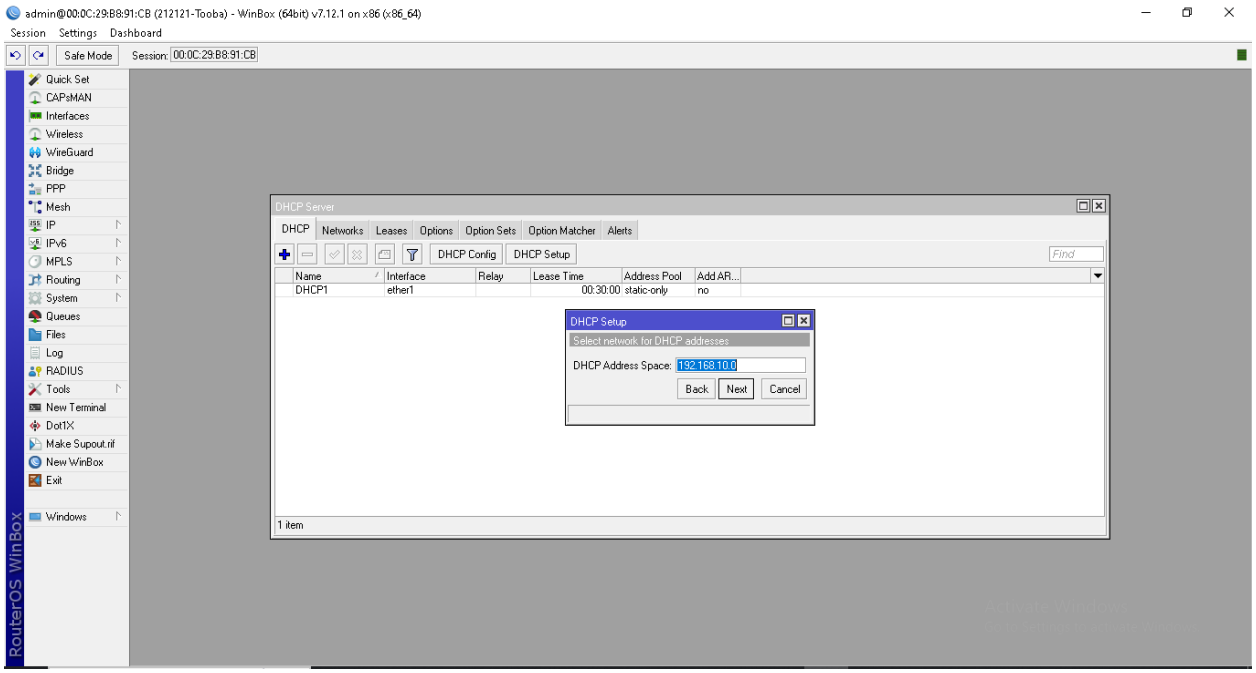


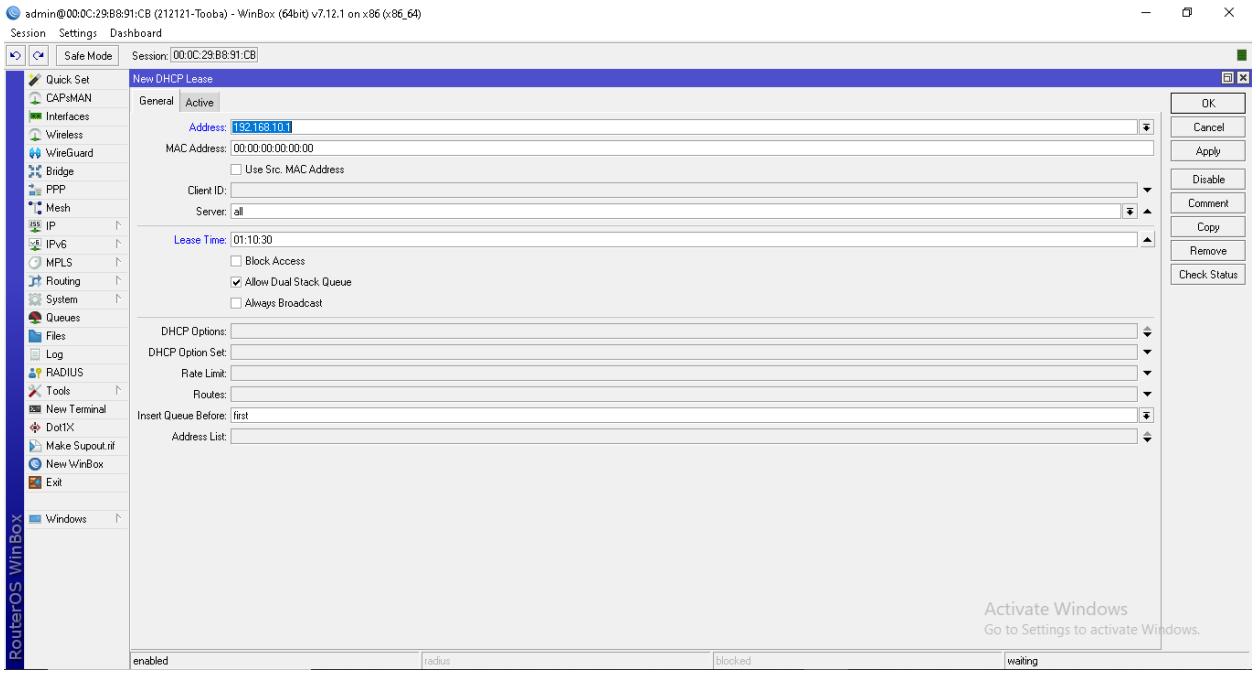
Then Click on “Apply”then “OK”.

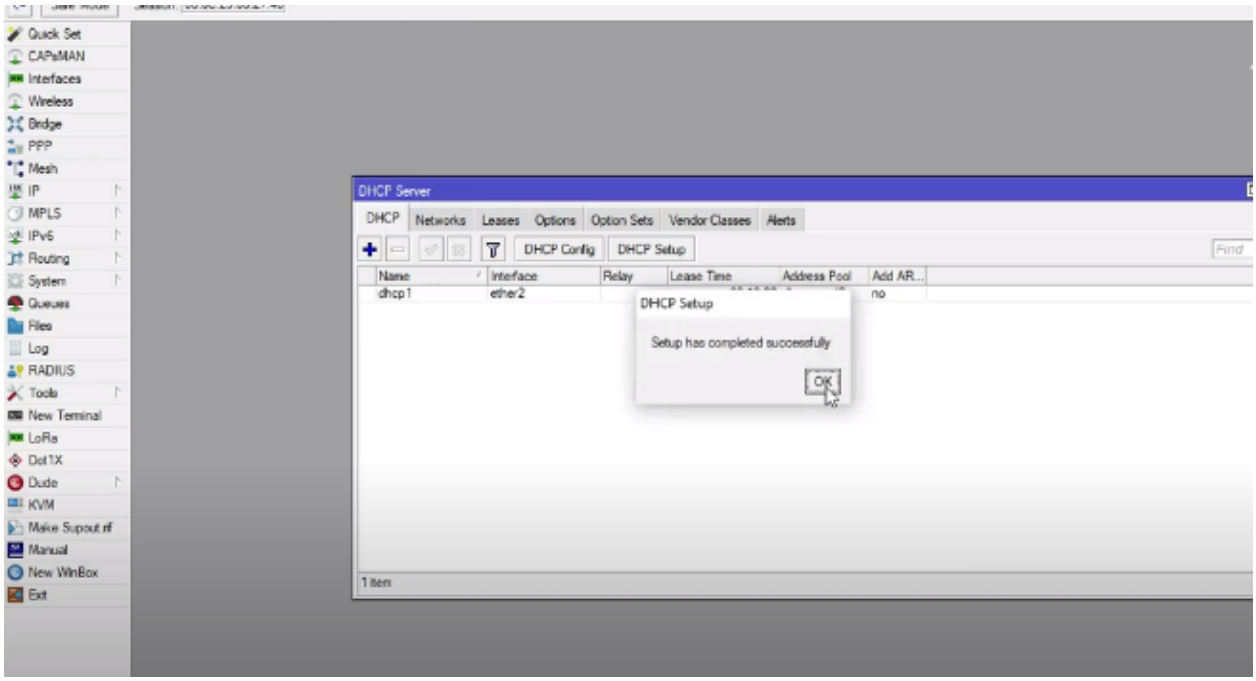


On DHCP server window , Click on “DHCP Setup” And Click On “Next”



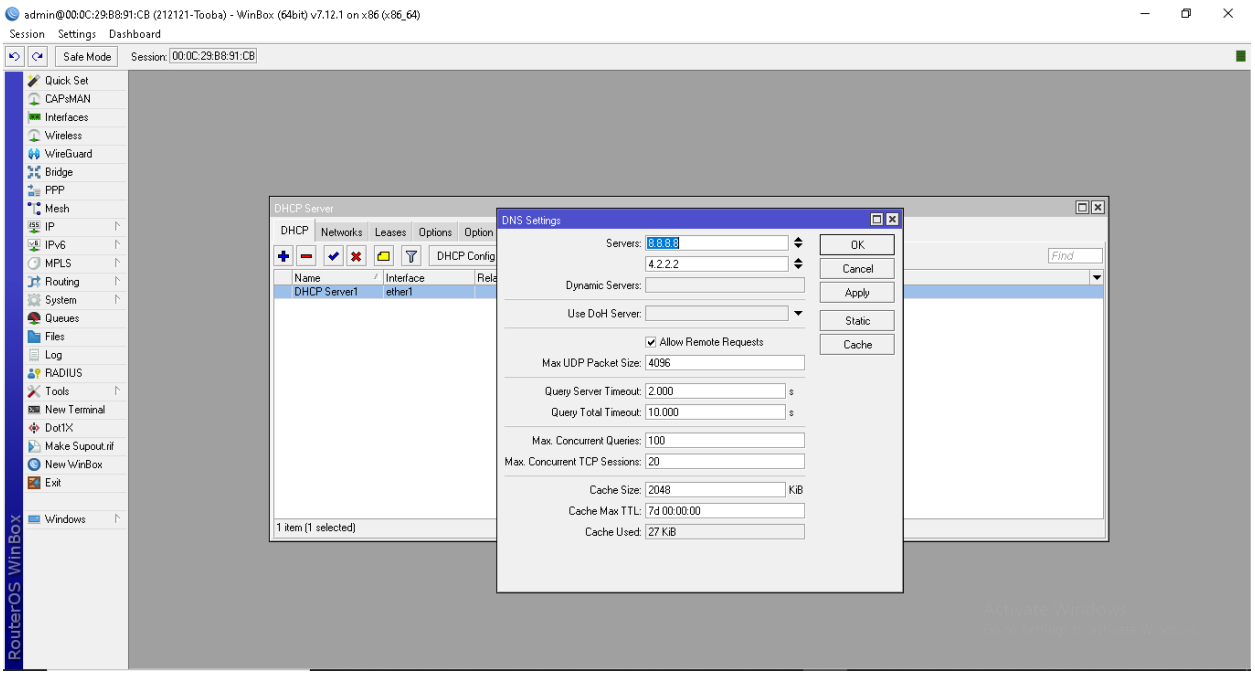

admin@00:0C:29:B8:91:CB (212121-Tooba) - WinBox (64bit) v7.12.1 on x86 (x86_64)
Session Settings Dashboard
Safe Mode
Session: 00:0C:29:B8:91:CB
Quick Set
CAPsMAN
Interfaces
Wireless
WireGuard
Bridge
PPP
Mesh
IP
IPv6
MPLS
Routing
System
Queues
Files
Log
RADIUS
Tools
New Terminal
Dot1X
Make Supout.rif
New WinBox
Exit
Windows
RouterOS WinBox
DHCP Server
DHCP
Networks
Leases
Options
Option Sets
Option Matcher
Alerts
DHCP Config
DHCP Setup
Find
Name
Interface
Relay
Lease Time
Address Pool
Add AR...
DHCP1
ether1
00:30:00
static-only
no
DHCP Setup
Select network for DHCP addresses
DHCP Address Space:
192.168.10.0
Back
Next
Cancel
1 item
Activate Windows


admin@00:0C:29:B8:91:CB (212121-Tooba) - WinBox (64bit) v7.12.1 on x86 (x86_64)
Session Settings Dashboard
Safe Mode
Session: 00:0C:29:B8:91:CB
Quick Set
CAPsMAN
Interfaces
Wireless
WireGuard
Bridge
PPP
Mesh
IP
IPv6
MPLS
Routing
System
Queues
Files
Log
RADIUS
Tools
New Terminal
Dot1X
Make Supout.rif
New WinBox
Exit
Windows
RouterOS WinBox
New DHCP Lease
General
Active
Address: 192.168.10.1
MAC Address: 00:00:00:00:00:00
Use Src. MAC Address
Client ID:
Server: all
Lease Time: 01:10:30
Block Access
Allow Dual Stack Queue
Always Broadcast
DHCP Options:
DHCP Option Set:
Rate Limit:
Routes:
Insert Queue Before: first
Address List:
OK
Cancel
Apply
Disable
Comment
Copy
Remove
Check Status
enabled
radius
blocked
waiting
Activate Windows
Go to Settings to activate Windows.


Quick Set
CAPsMAN
Interfaces
Wireless
Bridge
PPP
Mesh
IP
MPLS
IPv6
Routing
System
Queues
Files
Log
RADIUS
Tools
New Terminal
LoRa
Dot1X
Dude
KVM
Make Supout.rif
Manual
New WinBox
Exit
DHCP Server
DHCP
Networks
Leases
Options
Option Sets
Vendor Classes
Alerts
DHCP Config
DHCP Setup
Find
Name
Interface
Relay
Lease Time
Address Pool
Add AR...
dhcp1
ether2
no
DHCP Setup
Setup has completed successfully
OK
1 item

E) Configuring a DNS Server

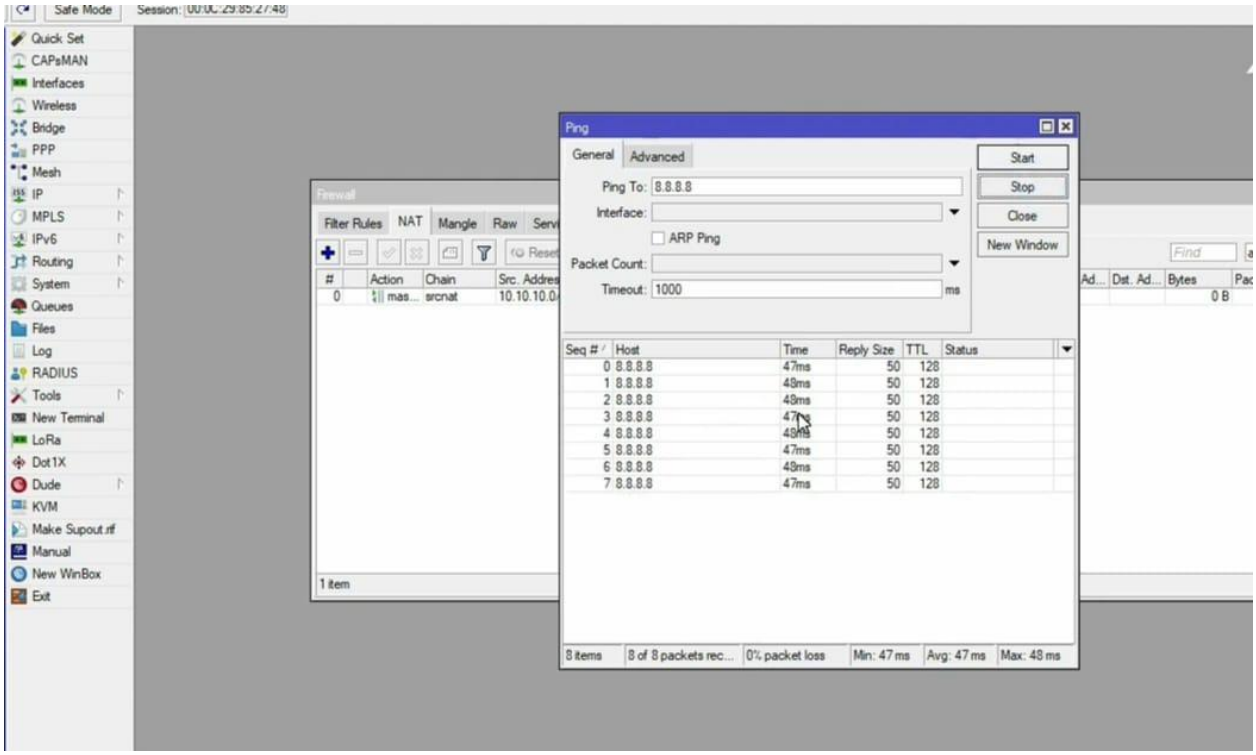
Click On the “IP”expand tab,then Click on “DNS”.
Here i am using the Google DNS server IP
Click On “Allow Remote Requests”.



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.