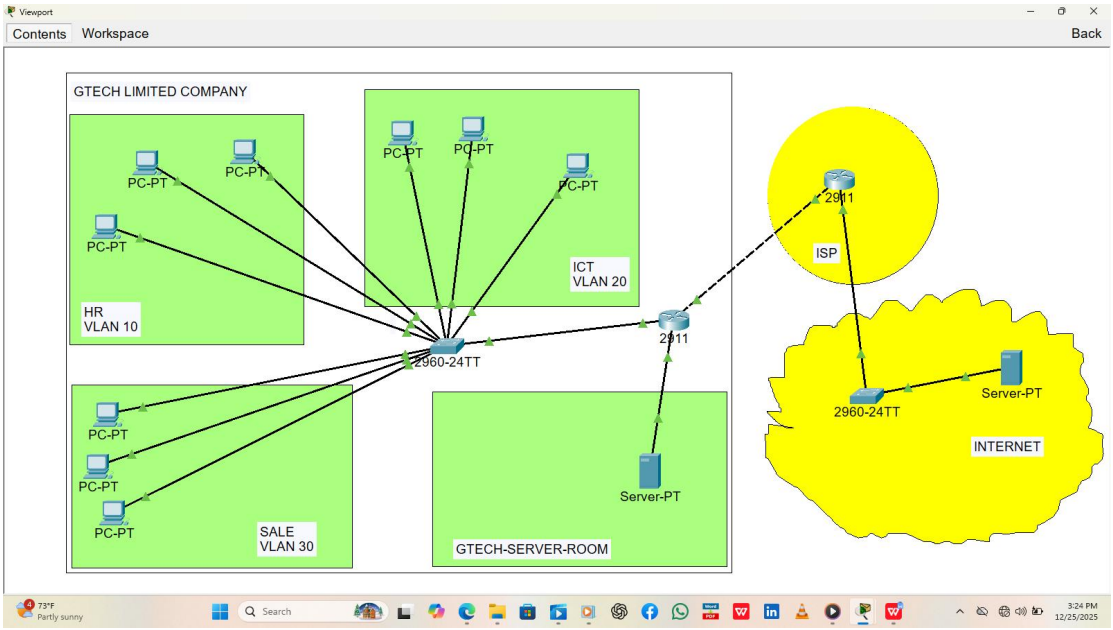
SMALL NETWORK DESIGN- EXPANDED

A week after we designed them this network, they did purchase the server so that it acts as a dhcp server. Point to point address between router and server is 10.0.0.0/30

New topology will be;

NETWORK TOPOLOGY



We already have the configurations, so the focus here will just be on pool creation on the server, removing the dhcp pools on the router and configuring the helper-address

OBJECTIVE

- Helper-address configuration
- Dhcp pool creation on the server
- Removing dhcp pools on the router

TECHNOLOGY USED

- Relay agent
- DHCP
- NAT(STATIC)

VERIFICATION

- Ensuring previous configurations are not affected.

REMOVING DHCP POOLS ON THE ROUTER

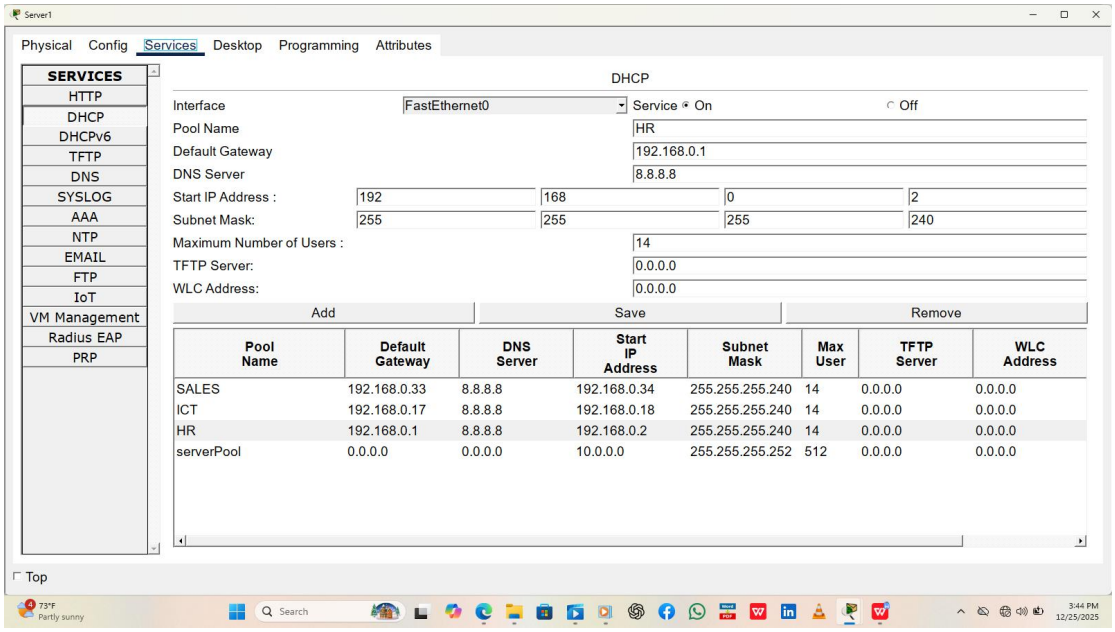
Commands
No ip dhcp pool HR
No ip dhcp pool ICT
No ip dhcp pool SALES
Do wr

On the server let us create the pools, but before that let us configure ip address on the router going to the server
Int gig0/2
Ip add 10.0.0.1 255.255.255.252
Ex
The server interface will have 10.0.0.2 255.255.255.252 as the ip address,now we have the server address let us configure the Relay Agent

RELAY AGENT

Int gig0/0.10
Ip helper-address 10.0.0.2
Ex
Int gig0/0.20
Ip helper-address 10.0.0.2
Ex
Int gig0/0.30
Ip helper-address 10.0.0.2
Ex
Do wr

POOL CONFIGURATION

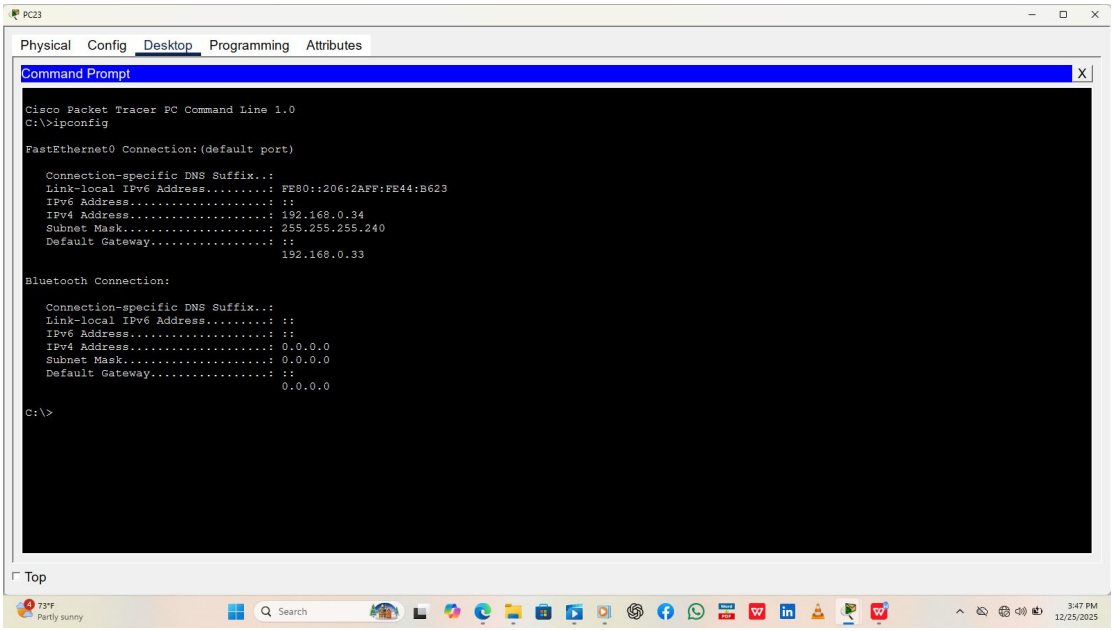


Let us go to our hosts and see if they got their ip address from our server
The command is

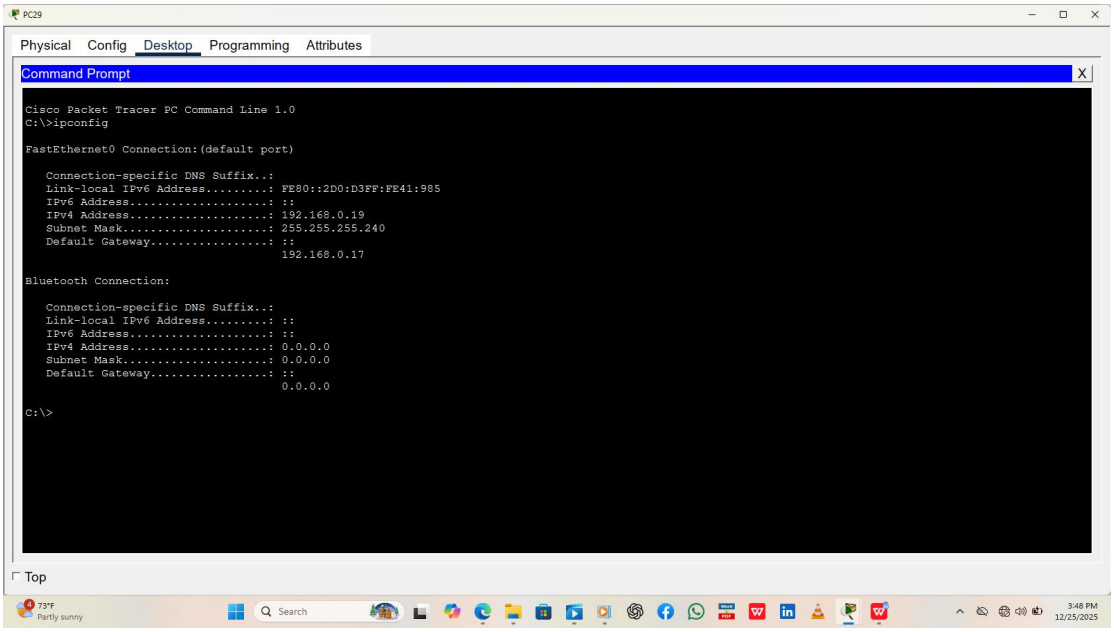
Ipconfig

OUTPUT

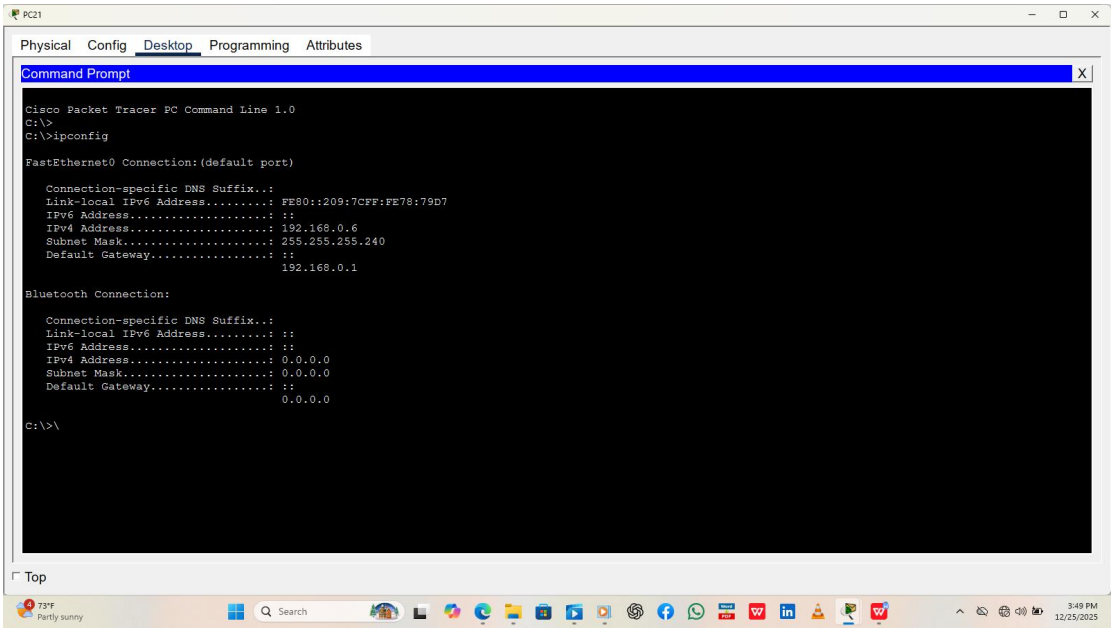
VLAN 30



VLAN 20

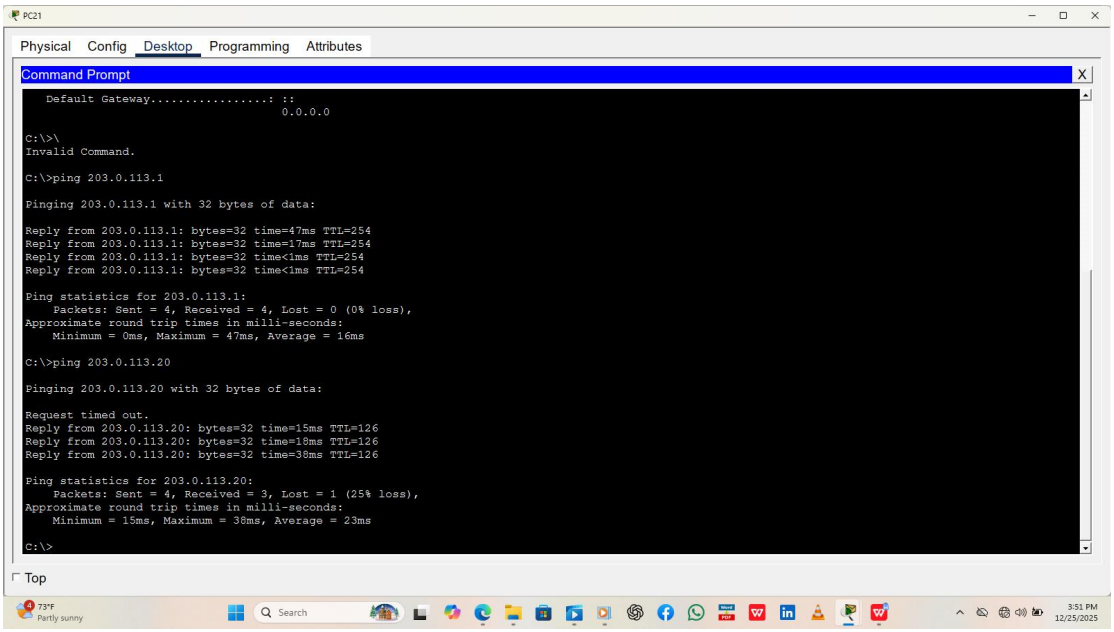


VLAN 10



We can see everything is just fine,
Let us try to reach the ISP or the External server
From any pc
Ping 203.0.113.1

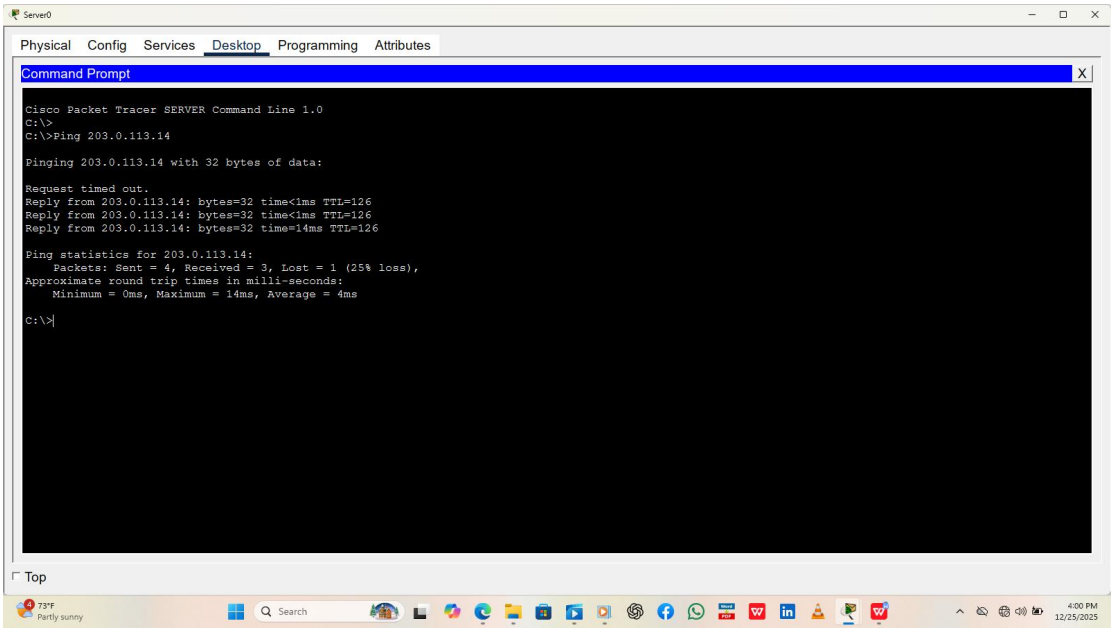
OUTPUT



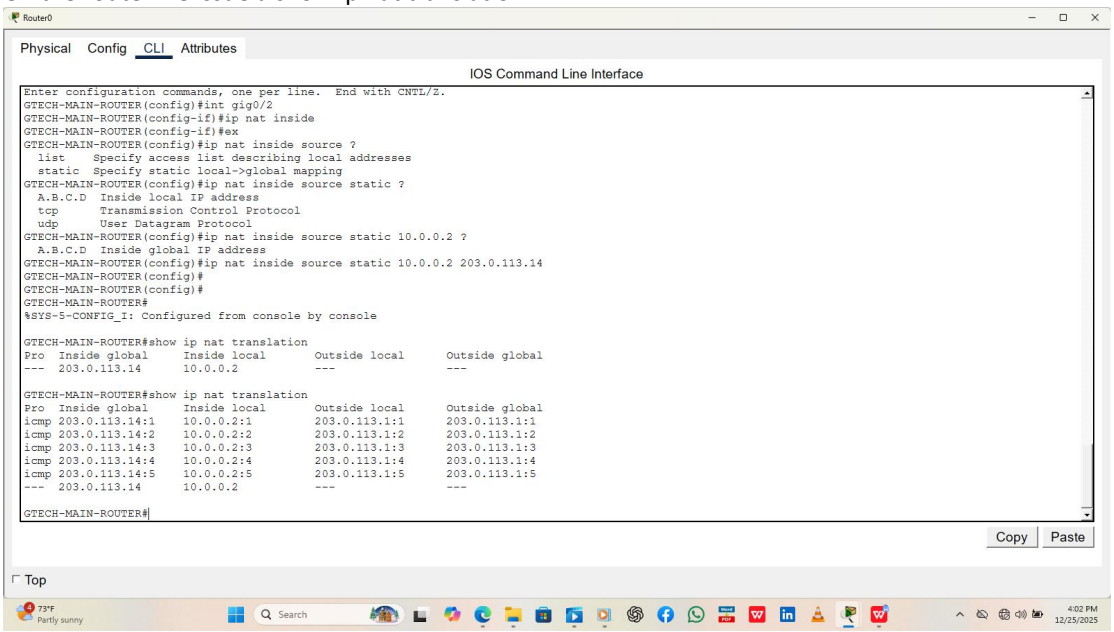
We are still good. Now they want the internal server to be able to receive incoming connection from the outside, we configure static NAT
We go on our router to configure the static NAT
Int gig0/2
Ip nat inside
Ex
Ip nat inside source static 10.0.0.2 203.0.113.14

We have give the server to be using the last ip address in from our subnet 203.0.113.0/28
Let us try to see if the external server can reach our server
Ping 203.0.113.14

OUTPUT



Let us try to see if the ISP can reach our server
Ping 203.0.113.14
Let us verify our NAT
On the router we issue a show ip nat translation



We are good, this is all they wanted for now but again maybe in a month we will come to expand this further;thus putting each vlan in its own switch later redundancy.
For now we end it here.