CONFIGURING A ROUTER AS A DHCP SERVER

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Project Description

In this project, I am going to configure a router as a DHCP server.

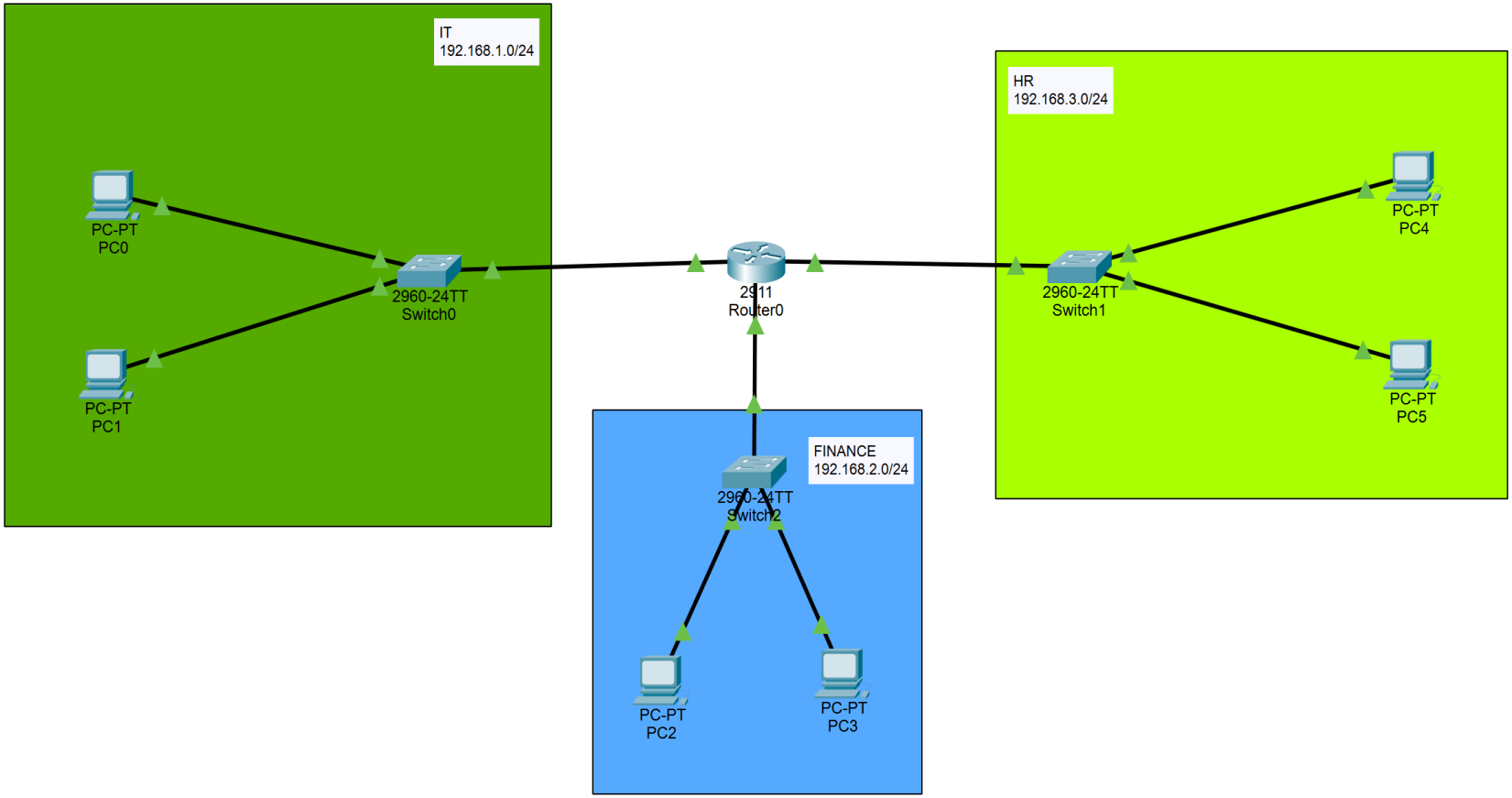
With this work, I learned and understood the basic functionality of a DHCP server and its importance in a network.

Our LAN is made up from 3 subnetworks: IT, FINANCE and HR.

Starting Configurations

IT department network's IP address will be 192.168.1.0/24, FINANCE department network's IP address will be 192.168.1.0/24 and HR network's IP address will be 192.168.3.0/24. The subnet mask for each one is 255.255.255.0.

Network’s structure



A screenshot of the network’s structure

Router’s setup and configuration

For this LAN to work, we now need to configure the router, which means that we need to turn on its interfaces and assign them an IP address. That will be the default gateway for the subnetwork they are connected to.

These are the commands that I have used to configure the router’s interfaces.

```
Router>enable

Router#configure terminal

Router(config)#int range gig0/0-2

Router(config-if-range)#no shutdown

Router(config)#int gig0/0

Router(config-if)#ip address 192.168.1.1 255.255.255.0

Router(config-if)#int gig0/1

Router(config-if)#ip address 192.168.2.1 255.255.255.0

Router(config-if)#int gig0/2

Router(config-if)#ip address 192.168.3.1 255.255.255.0

Router(config-if)#exit

Router(config)#do wr
```

Router's DHCP Configuration

These are the commands that I have used to enable the DHCP service on the router.

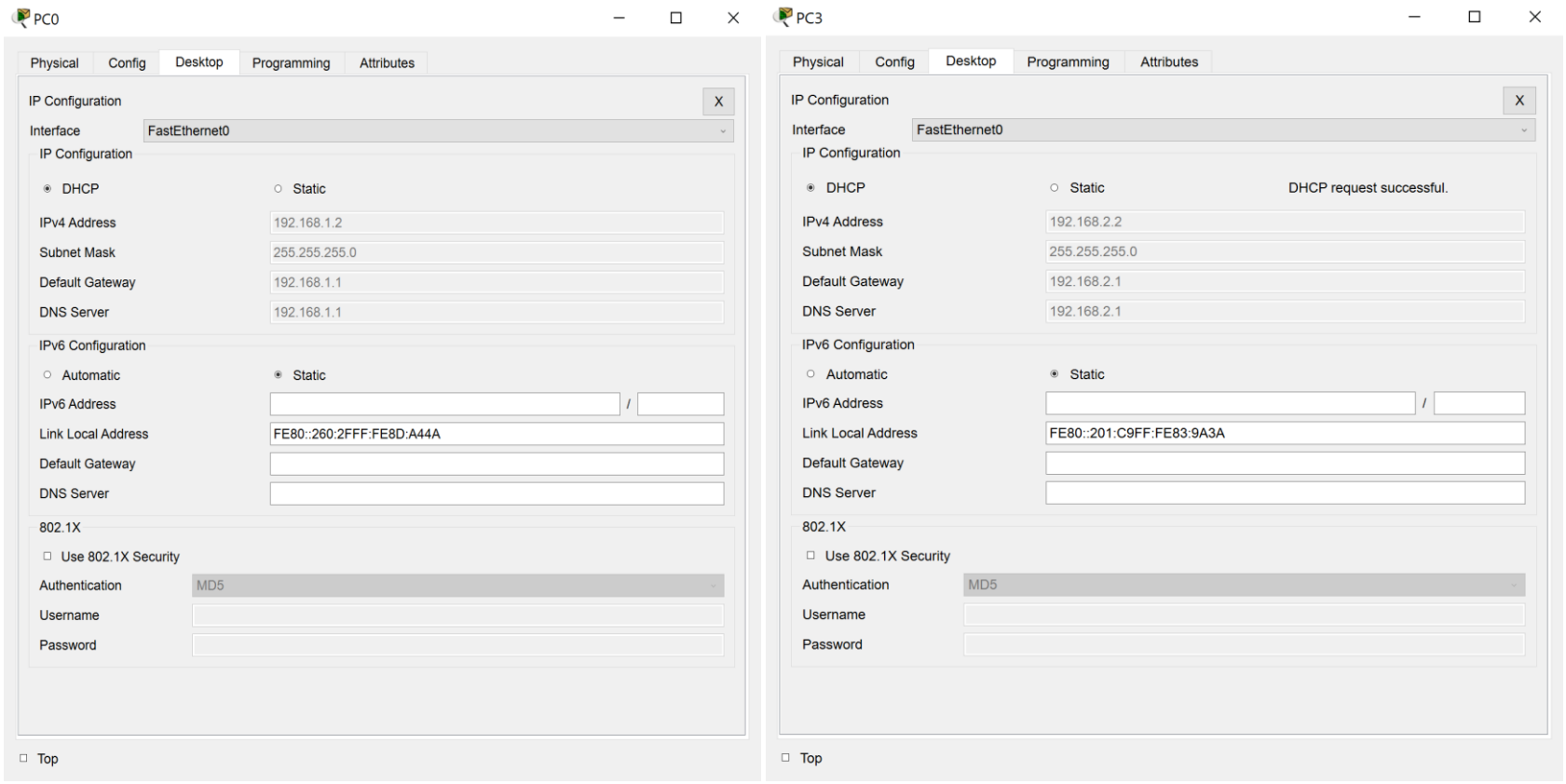
To enable the DHCP service, we need to use the **„service dhcp"** command.

Also, to exclude some IP addresses to be automatically assigned, so we want to manually assign them later, we can use the **„ip dhcp excluded-address `*IP addresses range*`"** command.

IT POOL	FINANCE	HR
Router(config)#service dhcp Router(config)#ip dhcp pool IT Router(dhcp-config)#network 192.168.1.0 255.255.255.0 Router(dhcp-config)#default-router 192.168.1.1 Router(dhcp-config)#dns-server 192.168.1.1 Router(dhcp-config)#exit Router(config)#do wr	Router(config)#ip dhcp pool FINANCE Router(dhcp-config)#network 192.168.2.0 255.255.255.0 Router(dhcp-config)#default-router 192.168.2.1 Router(dhcp-config)#dns-server 192.168.2.1 Router(dhcp-config)#exit Router(config)#do wr	Router(config)#ip dhcp pool HR Router(dhcp-config)#network 192.168.3.0 255.255.255.0 Router(dhcp-config)#default-router 192.168.3.1 Router(dhcp-config)#dns-server 192.168.3.1 Router(dhcp-config)#exit Router(config)#do wr

Working Test

To verify if the DHCP server was configurred correctly, we should see if the devices in this network can automatically get an IP address.



The PC's were automatically given an IP address, so the DHCP server is working as it should.