ICT & Infra S3 Automation & Orchestration, week

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Introduction

I am doing this internship individually in order to practice more about the BPG protocol. Therefore, in this practice I will learn in a more exhaustive way what this protocol is, how it is used, in which cases it is used and finally how to configure it in a virtual and controlled environment.

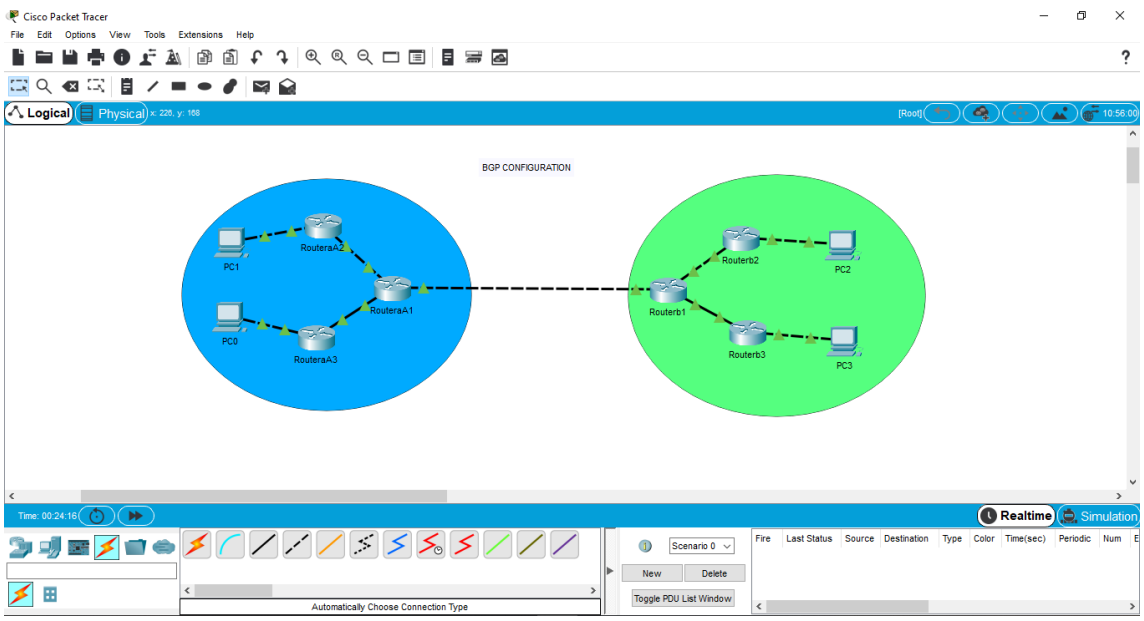
Assignment 1. Create a virtual network in which the BPG protocol is used and configure it

Difficulty: ★★★★★.

During week 4 in Fontys we learned about the BGP protocol and as I found this protocol interesting, I decided to do a practice on my own to be able to go deeper into it. Therefore, I have created a virtual infrastructure in the cisco packet tracer simulator.

Solution:

First in the simulator create a new network and deploy all the components needed as shown in the picture.



The next step is to configure all routers:

RouterA1:

```
RouterA1(config)# interface loopback 0
RouterA1(config-if)# ip address 1.1.1.1 255.255.255.255
RouterA1(config-if)# no shutdown
RouterA1(config-if)# exit
RouterA1(config)# interface gigabitEthernet 0/0
RouterA1(config-if)# ip address 10.0.0.1 255.255.255.0
RouterA1(config-if)# no shutdown
RouterA1(config-if)# exit
RouterA1(config)# interface gigabitEthernet 0/1
RouterA1(config-if)# ip address 20.0.0.1 255.255.255.0
RouterA1(config-if)# no shutdown
RouterA1(config)# interface gigabitEthernet 0/2
RouterA1(config-if)# ip address 30.0.0.1 255.255.255.0
RouterA1(config-if)# no shutdown
```

Router B1:

```
RouterB1(config)# interface loopback 0
RouterB1(config-if)# ip address 2.2.2.2 255.255.255.255
RouterB1(config-if)# no shutdown
RouterB1(config-if)# exit
RouterB1(config)# interface gigabitEthernet 0/0
RouterB1(config-if)# ip address 10.0.0.2 255.255.255.0
RouterB1(config-if)# no shutdown
RouterB1(config-if)# exit
RouterB1(config)# interface gigabitEthernet 0/1
RouterB1(config-if)# ip address 40.0.0.1 255.255.255.0
RouterB1(config-if)# no shutdown
RouterB1(config-if)# exit
RouterB1(config)# interface gigabitEthernet 0/2
RouterB1(config-if)# ip address 50.0.0.1 255.255.255.0
RouterB1(config-if)# no shutdown
```

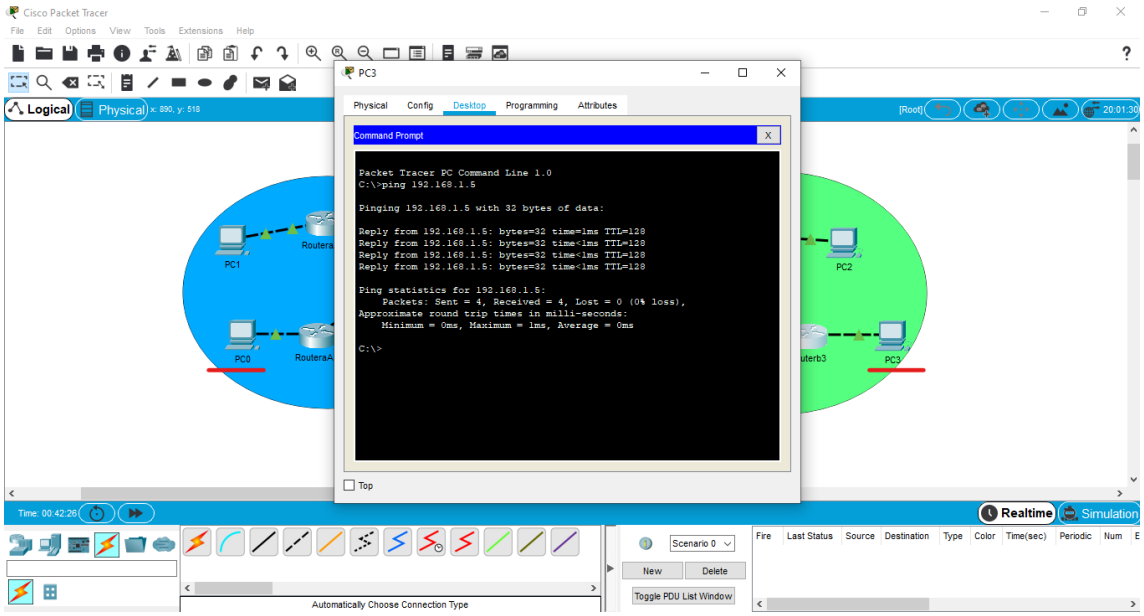
Router A2 – A3 – B2 – B3:

```
RouterA2(config)# interface gigabitEthernet 0/1
RouterA2(config-if)# ip address 20.0.0.2 255.255.255.0
RouterA2(config-if)# no shutdown
```

Configure BGP:

```
RouterA1(config)# router bgp 64600
RouterA1(config-router)# neighbor 10.0.0.2 remote-as 64700
RouterA1(config-router)# neighbor 20.0.0.2 remote-as 64600
RouterA1(config-router)# neighbor 30.0.0.2 remote-as 64600
RouterA1(config-router)# neighbor 20.0.0.2 route-reflector-client
RouterA1(config-router)# neighbor 30.0.0.2 route-reflector-client
RouterA1(config-router)# network 20.0.0.0 mask 255.255.255.0
RouterA1(config-router)# network 30.0.0.0 mask 255.255.255.0
```

Check that the connection works between 2 PCs:



Output of the ping: