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**Punë laboratori NR - 7**

***Departamenti i Elektronikës***

**Tema: Konfigurimi i GRE Tunnel ne Router CISCO, krijimi i nje Site-to-site VPN.**

**Punoi: Pranoi:**

Darien Cepani Ilda Fishti

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**Mjetet e punes:** Kompjuter Personal, Cisco Packet Tracer (3 Cisco Router 1841, 2 Serial Cable, 2 Crossover Cable, 2 PC)

**Qellimi**: Te behet konfigurimi i nje skeme me Router CISCO me protokollin GRE. Te implemendohen me kujdes dhe pa gabime komandat e konfigurimit te protokollit GRE ne Router dhe te krijohet nje Tunnel VPN te llojit Site-to-site.

**Zhvillimi i laboratorit**

**Hapi i pare -** Ndertoni skemen e konfigurimit te paraqitur si me poshte:

**Hapi i dyte -** Konfiguroni nderfaqet e pajisjeve sipas tabeles se dhene:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Device Name | Interface | IP Address | Network Add | Subnet Mask |
| R0 | FastEthernet 0/0 | 192.168.0.1 | 192.168.0.0 | 255.255.255.0 |
| Serial 0/0/0 | 10.0.0.1 | 10.0.0.0 | 255.255.255.252 |
| R1 | FastEthernet 0/0 | 192.168.1.1 | 192.168.1.0 | 255.255.255.0 |
| Serial0/0/1 | 10.0.0.13 | 10.0.0.12 | 255.255.255.252 |
| R2 | Serial 0/0/0 | 10.0.0.2 | 10.0.0.0 | 255.255.255.252 |
| Serial 0/0/1 | 10.0.0.14 | 10.0.0.12 | 255.255.255.252 |
| PC0 | FastEthernet 0 | 192.168.0.2 | 192.168.0.0 | 255.255.255.0 |
| PC1 | FastEthernet 0 | 192.168.1.2 | 192.168.1.0 | 255.255.255.0 |

**Hapi i trete -** Konfiguroni protokollin RIPv2 ne secilin Router. Rastin per R2 po e paraqesim me poshte:

***R2(config)#router rip***

***R2(config-router)#network 10.0.0.0***

***R2(config-router)#network 10.0.0.12***

***R2(config-router)#version 2***

***R2(config-router)#no auto-summary***

***R2(config-router)#exit***

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***R1#configure term***

***Enter configuration commands, one per line. End with CTRL/Z.***

***R1(config)#router rip***

***R1(config-router)#network 10.0.0.12***

***R1(config-router)#network 192.168.1.0***

***R1(config-router)#version 2***

***R1(config-router)#no auto***

***R1(config-router)#no auto-summary***

***R1(config-router)#exit***

***R1(config)#***

***R0#configure terminal***

***Enter configuration commands, one per line. End with CTRL/Z.***

***R0(config)#router rip***

***R0(config-router)#network 10.0.0.0***

***R0(config-router)#network 192.168.0.0***

***R0(config-router)#version 2***

***R0(config-router)#no***

***R0(config-router)#no au***

***R0(config-router)#no auto-summary***

***R0(config-router)#exit***

***R0(config)#***

**Hapi i katert -**  Shfaqni tabelen e secilit router

**R0#show ip route**

**Gateway of last resort is not set**

**10.0.0.0/30 is subnetted, 2 subnets**

**C 10.0.0.0 is directly connected, Serial0/0/0**

**R 10.0.0.12 [120/1] via 10.0.0.2, 00:00:04, Serial0/0/0**

**C 192.168.0.0/24 is directly connected, FastEthernet0/0**

**R 192.168.1.0/24 [120/2] via 10.0.0.2, 00:00:04, Serial0/0/0**

**R1#show ip route**

**Gateway of last resort is not set**

**10.0.0.0/30 is subnetted, 2 subnets**

**R 10.0.0.0 [120/1] via 10.0.0.14, 00:00:01, Serial0/0/1**

**C 10.0.0.12 is directly connected, Serial0/0/1**

**R 192.168.0.0/24 [120/2] via 10.0.0.14, 00:00:01, Serial0/0/1**

**C 192.168.1.0/24 is directly connected, FastEthernet0/0**

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**R2#show ip route**

**Gateway of last resort is not set**

**10.0.0.0/30 is subnetted, 2 subnets**

**C 10.0.0.0 is directly connected, Serial0/0/0**

**C 10.0.0.12 is directly connected, Serial0/0/1**

**R 192.168.0.0/24 [120/1] via 10.0.0.1, 00:00:09, Serial0/0/0**

**R 192.168.1.0/24 [120/1] via 10.0.0.13, 00:00:14, Serial0/0/1**

**Hapi i peste:** Konfiguroni GRE tunnel ne R0 dhe R1. Network address qe do te lidhe dy site te VPN do te jete: 172.16.16.64/26. Te dhenat per kete konfigurim jane:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Device Name | Interface | IP Address | Network Add | Subnet Mask |
| R0 | Tunnel0 | 172.16.16.65 | 172.16.16.64 | 255.255.255.192 |
| Serial 0/0/0 | 10.0.0.1 | 10.0.0.0 | 255.255.255.252 |
| R1 | Tunnel0 | 172.16.16.66 | 172.16.16.64 | 255.255.255.192 |
| Serial0/0/1 | 10.0.0.13 | 10.0.0.12 | 255.255.255.252 |

**Hapi i gjashte -**  Kryeni testimin e komunikimit mes siteve VPN:

**R0#ping 172.16.16.66**

**Type escape sequence to abort.**

**Sending 5, 100-byte ICMP Echos to 172.16.16.66, timeout is 2 seconds:**

**Success rate is 100 percent (5/5), round-trip min/avg/max = 0/2/7 ms**

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**R1#ping 172.16.16.65**

**Type escape sequence to abort.**

**Sending 5, 100-byte ICMP Echos to 172.16.16.65, timeout is 2 seconds:**

**Success rate is 100 percent (5/5), round-trip min/avg/max = 0/3/6 ms**

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**R2#ping 172.16.16.66**

**Type escape sequence to abort.**

**Sending 5, 100-byte ICMP Echos to 172.16.16.66, timeout is 2 seconds:**

**Success rate is 0 percent (0/5)**

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**R2#ping 172.16.16.65**

**Type escape sequence to abort.**

**Sending 5, 100-byte ICMP Echos to 172.16.16.65, timeout is 2 seconds:**

**Success rate is 0 percent (0/5)**

**Hapi i shtate -**  Rezultatet e punes se laboratorit:

Si perfundim, ne kete pune laboratori krijuam nje rrjet ku perdorem GRE Tunnel per te krijuar tunel VPN Site to Site. Pasi testuam dy routera me ping, pame qe ping ishte 100% I suksesshem dhe tregon se paketat dergoheshin pa problem nga R0 te R1. Kur benim ping nga R2, kishim 0% sukses sepse R2 fuknsionon si ure nga R0 dhe R1 por nuk ka akses mbi paketat e ketij tuneli VPN.

I - Tabela e vleresimit:

|  |  |  |
| --- | --- | --- |
| Kerkesa: | Piket: | Piket e mara nga nxenesi: |
| 1 | 10 |  |
| 2 | 10 |  |
| 3 | 10 |  |
| 4 | 10 |  |
| 5 | 30 |  |
| 6 | 20 |  |
| 7 | 10 |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Piket | 0 - 44 | 45 - 54 | 55 - 64 | 65 - 74 | 75 - 84 | 85 - 94 | 95 - 100 |
| Nota | 4 | 5 | 6 | 7 | 8 | 9 | 10 |