Examen Primer Parcial

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I. EXAMEN PRACTICO

Lista de pasos realizados:

```
! RANDOM COMMANDS
enable
configure terminal
interface fx/x
no shutdown
exit
no shutdown
write memory
end

! PASSWORD
admin
firulais
12345678

! ======== VM ========
ip=148.204.56.10 mask=255.255.255.0 gateway=148.204.56.1

! ======== NETWORK A ========
! ==== Router 1 ====
interface f0/0 !--> Computadora MV
ip addr 148.204.56.1 255.255.255.0
interface f0/1 !--> Router2
ip addr 8.8.8.13 255.255.255.252
interface f1/0 !--> Router3
ip addr 8.8.8.17 255.255.255.252
router rip
version 2
no auto-summary
network 148.204.56.0
network 8.8.8.12
network 8.8.8.16

! ==== Router 2 ====
interface f0/0 !--> Router3
ip addr 8.8.8.9 255.255.255.252
interface f0/1 !--> Router1
ip addr 8.8.8.14 255.255.255.252
interface f1/0 !--> PC1
ip addr 148.204.59.1 255.255.255.0
router rip
version 2
no auto-summary
network 8.8.8.8
network 8.8.8.12
network 148.204.59.0

! ==== Router 3 ====
interface f0/0 !--> Router2
ip addr 8.8.8.10 255.255.255.252
interface f0/1 !--> PC2
ip addr 148.204.60.1 255.255.255.0
interface f1/0 !--> Router1
ip addr 8.8.8.18 255.255.255.252
router rip
version 2
no auto-summary
network 8.8.8.8
network 148.204.60.0
network 8.8.8.16


! ==== Config PC ====
```

```
ip 148.204.59.10 /24 148.204.59.1 !PC1
ip 148.204.60.10 /24 148.204.60.1 !PC2


! ======== NETWORK B ========
! ==== Router 4 ====
interface f0/0 !--> Computadora MV
ip addr 148.204.56.2 255.255.255.0
interface f1/0 !--> Router5
ip addr 8.8.8.5 255.255.255.252
interface f0/1 !--> Router6
ip addr 8.8.8.1 255.255.255.252
router rip
version 2
no auto-summary
network 148.204.56.0
network 8.8.8.4
network 8.8.8.0

! ==== Router 5 ====
interface f1/0 !--> Router4
ip addr 8.8.8.6 255.255.255.252
interface f0/1 !--> PC4
ip addr 148.204.58.1 255.255.255.0
router rip
version 2
no auto-summary
network 8.8.8.4
network 148.204.58.0

! ==== Router 6 ====
interface f0/1 !--> Router4
ip addr 8.8.8.2 255.255.255.252
interface f1/0 !--> PC3
ip addr 148.204.57.1 255.255.255.0
router rip
version 2
no auto-summary
network 8.8.8.0
network 148.204.57.0

! ==== Config PC ====
ip 148.204.57.10 /24 148.204.57.1 !PC3
ip 148.204.58.10 /24 148.204.58.1 !PC4




enable
configure terminal
username admin priv 0 password firulais
enable password firulais
enable secret 12345678
service password-encryption
line console 0
login local
exit
line vty 0 4
transport input ssh
password e
login
exit
hostname Rn
ip domain-name Rn.LOCAL
crypto key generate rsa
ip ssh time-out 10
ip ssh authentication-retries 3
ip ssh version 2
line vty 0 4
transport input ssh
login local
exit
exit
```
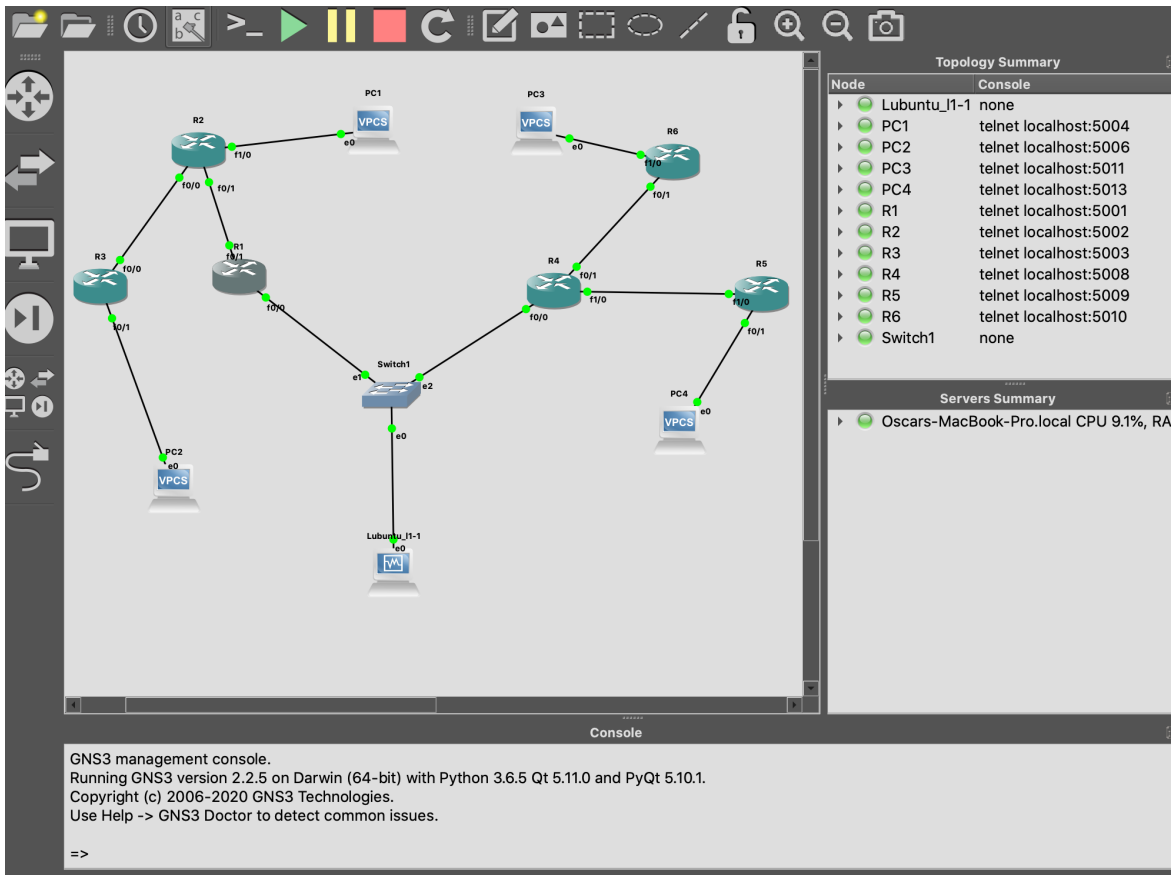
```
Router 1: 8.8.8.1
Router 2: 8.8.8.2
Router 3: 8.8.8.6


Router 4: 8.8.8.1
Router 5: 8.8.8.6
Router 6: 8.8.8.2
```

Evidencias

Script realizado:

```python
import pexpect
from pexpect import pxssh
import json

username = "admin"
password = "firulais"

Routers = {}


def get_info_from_ip(ip):
    child = pexpect.spawn(f"ssh -l {username} {ip}")
    child.sendline("yes")

    child = pxssh.pxssh()
    print("\nLogging in...")
    child.login(ip, username, password, auto_prompt_reset=False)
    print("Logged in")

    name = child.before[-3: -1].decode("UTF-8")

    if Routers.get(name, "NEW") != "NEW": return

    child.sendline("enable")
    child.expect("Password:")

    child.sendline("12345678")
    child.expect(f"{name}#")

    child.sendline("conf t")
    child.sendline("username pirata priv 15 password pirata")
    child.sendline("end")
    child.expect(f"{name}#")
```
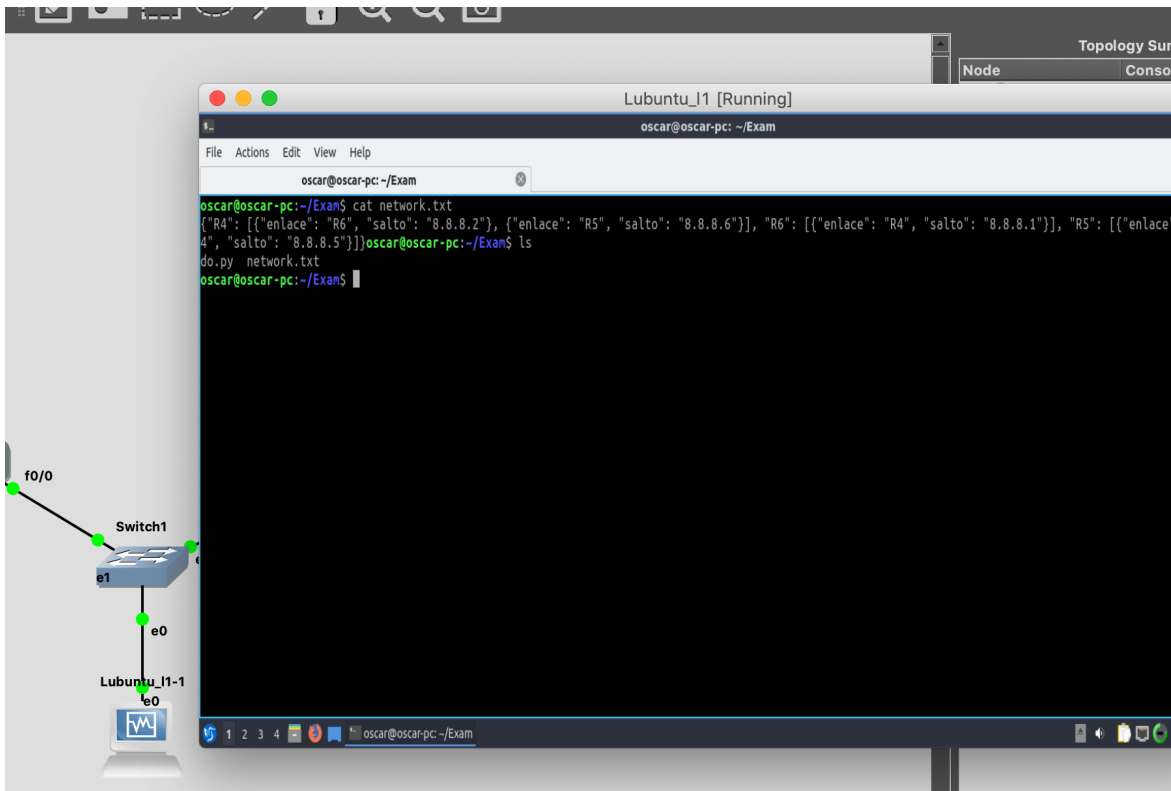
```python
child.sendline("show cdp neighbors")
child.expect(f"{name}#")

data = child.before
data = data.decode("UTF-8")
data = data.split("\n")
data = data[5: len(data) - 1]
connections = {}

for line in data:
    line = line.split()
    con_line = line[0].split(".")[0]
    interface = line[2]
    connections[interface] = con_line

print(name)
print(connections)

child.sendline("show ip route")
child.expect(f"{name}#")

data = child.before

data = data.decode("UTF-8")
data = data.split("\r\n")
data = [x.split() for x in data]

real_data = []
seen = []
for index, line in enumerate(data):
    if len(line) == 0 or line[0] != "is": continue

    interface = line[-1][-3:]
    real_ip = data[index -1][-1]

    if "NO" == connections.get(interface, "NO") or interface in seen:
        continue

    seen.append(interface)
    real_data.append({"enlace": connections.get(interface), "salto": real_ip})
```

```python
        Routers[name] = real_data
    print(Routers)

    for element in real_data:
        print(element)
        if Routers.get(element["enlace"], "NEW") != "NEW": continue
        get_info_from_ip(element["salto"])

get_info_from_ip("148.204.56.1")

print(Routers)

with open("network.txt", "w") as text_file:
    text_file.write(json.dumps(Routers))
```