

Practica 3: Pexpect SSH / Telnet

Oscar Andrés Rosas Hernández *Instituto Politécnico Nacional, Escuela Superior de Cómputo, CDMX*

I. PRACTICA 3

Lista de pasos realizados:

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

! ==== Router 1 ====
interface FastEthernet 0/0 !--> Computadora MV
ip address 192.168.122.65 255.255.255.192

interface FastEthernet 2/0 !--> Router2
ip address 192.168.122.129 255.255.255.252

interface FastEthernet 1/0 !--> Router3
ip address 192.168.122.137 255.255.255.252

interface FastEthernet 0/1 !--> Router4
ip address 192.168.122.133 255.255.255.252

ip route 192.168.122.0 255.255.255.192 f1/0
show ip route

! ==== Router 2 ====
interface FastEthernet 2/0 !--> Router1
ip address 192.168.122.130 255.255.255.252

ip route 192.168.122.0 255.255.255.192 f2/0
ip route 192.168.122.64 255.255.255.192 f2/0

ip route 192.168.122.136 255.255.255.252 f2/0
ip route 192.168.122.132 255.255.255.252 f2/0
show ip route

! ==== Router 3 ====
interface FastEthernet 0/0 !--> Computadora MV
ip address 192.168.122.1 255.255.255.192

interface FastEthernet 1/0 !--> Router1
ip address 192.168.122.138 255.255.255.252

ip route 192.168.122.64 255.255.255.192 f1/0

ip route 192.168.122.128 255.255.255.252 f1/0
ip route 192.168.122.132 255.255.255.252 f1/0

! ==== Router 4 ====
interface FastEthernet 0/1 !--> Router1
ip address 192.168.122.134 255.255.255.252c

ip route 192.168.122.0 255.255.255.192 f0/1
ip route 192.168.122.64 255.255.255.192 f0/1

ip route 192.168.122.128 255.255.255.252 f0/1
ip route 192.168.122.136 255.255.255.252 f0/1

! ==== Config PC ====
ip 192.168.122.50 /26 192.168.122.1 !PC1
ip 192.168.122.100 /26 192.168.122.65 !MV
```

```
! ==== Config terminals ====
username admin priv 15 password admin01
enable password 1234
enable secret 12345678
service password-encryption

line console 0
logging synchronous
login local
exit

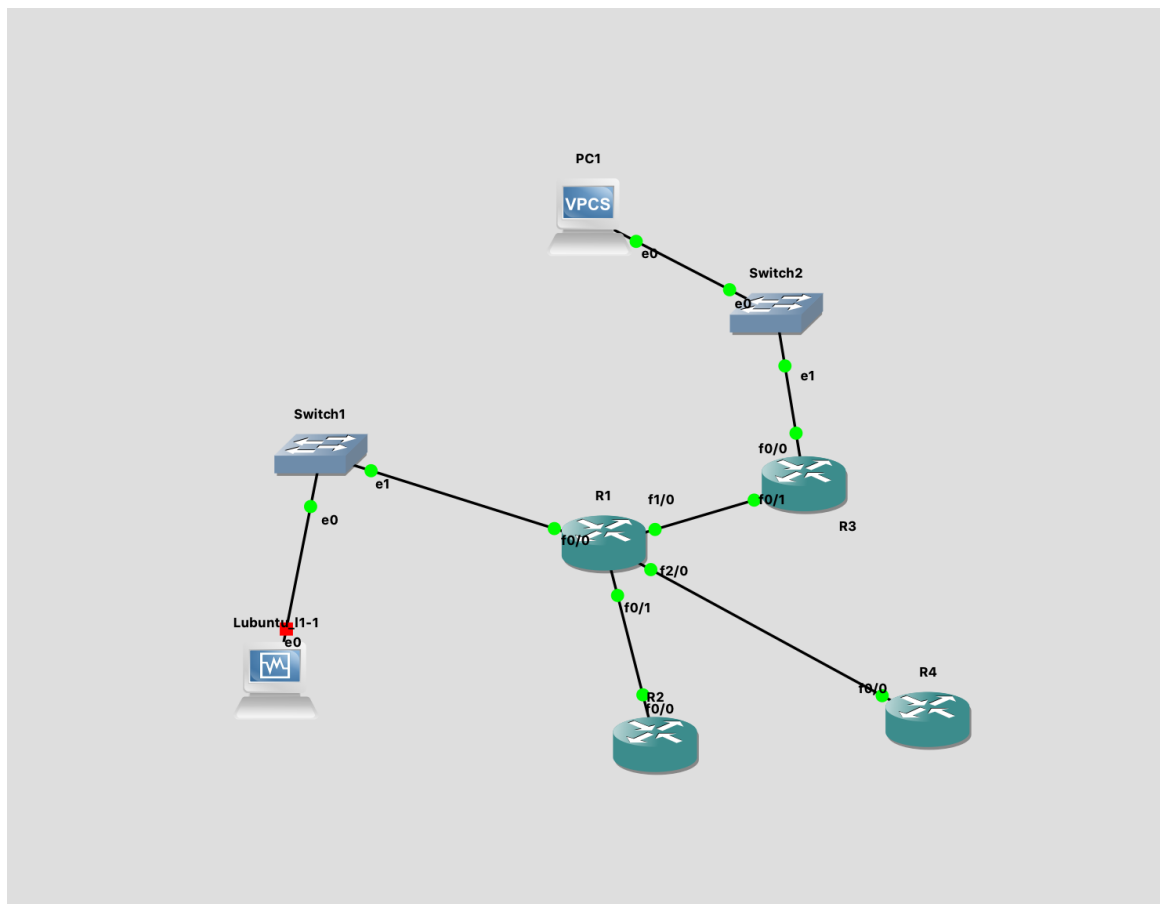
line vty 0 4
password 1234
login

! ==== ACCESS ====
telnet gateway_to_connect
password_to_router
enable
password_secret

ssh -l user gateway_to_connect
password_to_router
enable
password_secret

ssh -o KexAlgorithms=diffie-hellman-group1-sha1 -o Ciphers=aes256-cbc admin@192.168.122.65
```

Evidencias



```

soyoscarrh — R1 — telnet localhost 5002 — 118x30
*Mar 1 00:00:04.127: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
*Mar 1 00:00:04.199: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet2/0, changed state to up

User Access Verification

Username: admin
Password:
R1>show ip interface show
^
% Invalid input detected at '^' marker.

R1>show ip interface brief
^
% Invalid input detected at '^' marker.

R1>enable
Password:
Password:
Password:
% Bad secrets
R1>enable
Password:
R1#show ip interface brief
Interface      IP-Address      OK? Method Status          Protocol
FastEthernet0/0 192.168.122.65 YES NVRAM  up             up
FastEthernet0/1 192.168.122.129 YES NVRAM  up             up
FastEthernet1/0 192.168.122.137 YES NVRAM  up             up
FastEthernet2/0 192.168.122.133 YES NVRAM  up             up
R1#

```

```

soyoscarrh — R2 — telnet localhost 5003 — 124x29
*Mar 1 00:00:02.471: %LINEPROTO-5-UPDOWN: Line protocol on Interface VoIP-Null0, changed state
*Mar 1 00:00:02.731: %SYS-5-CONFIG_I: Configured from memory by console
*Mar 1 00:00:02.843: %LINEPROTO-5-UPDOWN: Line protocol on Interface IPv6-mpls, changed state
*Mar 1 00:00:02.971: %SYS-5-RESTART: System restarted --
Cisco IOS Software, 3600 Software (C3660-A3JK9S-M), Version 12.4(25d), RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2010 by Cisco Systems, Inc.
Compiled Wed 18-Aug-10 07:32 by prod_rel_team
*Mar 1 00:00:02.979: %SNMP-5-COLDSTART: SNMP agent on host R2 is undergoing a cold start
*Mar 1 00:00:03.003: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar 1 00:00:03.071: %LINK-5-CHANGED: Interface FastEthernet0/1, changed state to administrati
*Mar 1 00:00:04.003: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed :
*Mar 1 00:00:04.071: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed :

User Access Verification

Username: admin
Password:
R2>enable
Password:
R2#ip interface brief
^
% Invalid input detected at '^' marker.

R2#show ip interface brief
Interface      IP-Address      OK? Method Status          Protocol
FastEthernet0/0 192.168.122.130 YES NVRAM  up             up
FastEthernet0/1 unassigned      YES NVRAM  administratively down down
R2#

```

```

% Invalid input detected at '^' marker.

R3#show ip interface brief
Interface      IP-Address      OK? Method Status      Protocol
FastEthernet0/0 192.168.122.1   YES NVRAM   up          up
FastEthernet0/1 192.168.122.138 YES NVRAM   up          up
R3#

```

22.133 YES NVRAM

```

64 bytes from 192.168.122.133: icmp_seq=1 ttl=255 time=12.1 ms
64 bytes from 192.168.122.133: icmp_seq=2 ttl=255 time=9.57 ms
64 bytes from 192.168.122.133: icmp_seq=3 ttl=255 time=3.83 ms
^C
--- 192.168.122.133 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2003ms
rtt min/avg/max/mdev = 3.834/8.507/12.119/3.464 ms
oscar@oscar-pc:~$ ping 192.168.122.137
PING 192.168.122.137 (192.168.122.137) 56(84) bytes of data:
64 bytes from 192.168.122.137: icmp_seq=1 ttl=255 time=1.95 ms
64 bytes from 192.168.122.137: icmp_seq=2 ttl=255 time=4.85 ms
64 bytes from 192.168.122.137: icmp_seq=3 ttl=255 time=3.45 ms
^C
--- 192.168.122.137 ping statistics ---
4 packets transmitted, 3 received, 25% packet loss, time 3006ms
rtt min/avg/max/mdev = 1.954/3.418/4.848/1.181 ms
oscar@oscar-pc:~$

```

```

^C
--- 192.168.122.137 ping statistics ---
4 packets transmitted, 3 received, 25% packet loss, time 3006ms
rtt min/avg/max/mdev = 1.954/3.418/4.848/1.181 ms
oscar@oscar-pc:~$ telnet 192.168.122.133
Trying 192.168.122.133...
Connected to 192.168.122.133.
Escape character is '^]'.

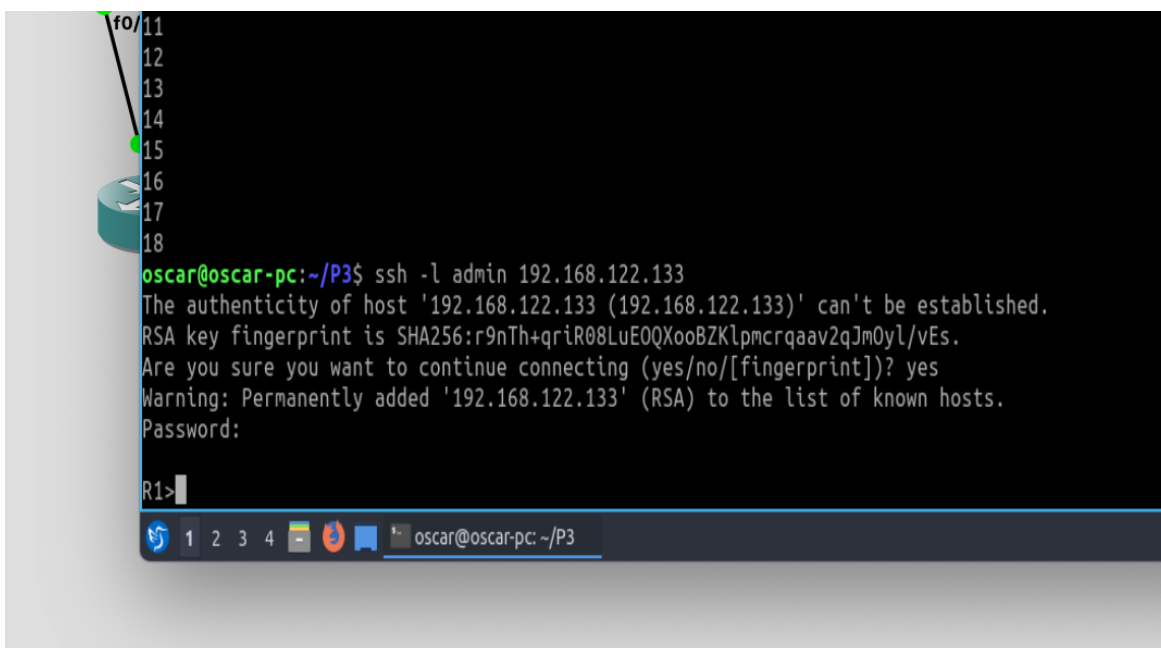
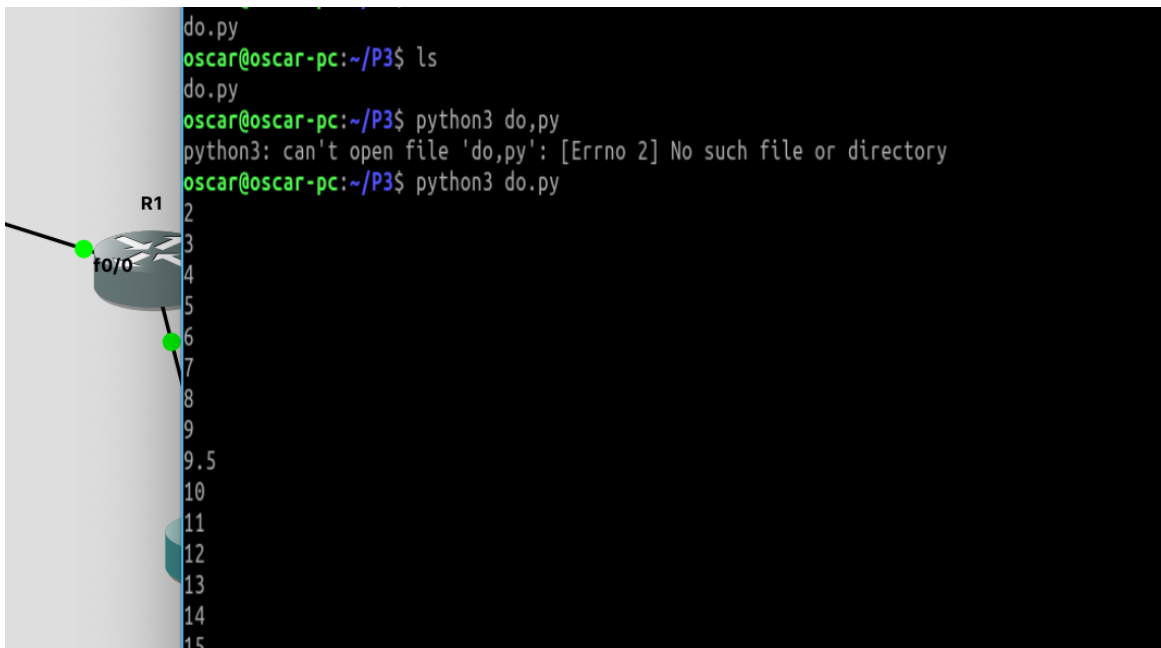
```

User Access Verification

```

Password:
R1>exit
Connection closed by foreign host.
oscar@oscar-pc:~$ ssh -l admin 192.168.122.133
ssh: connect to host 192.168.122.133 port 22: Connection refused
oscar@oscar-pc:~$

```



Script realizado:

```
import pexpect

devices = [('R1', '192.168.122.65'), ('R2', '192.168.122.130'),
           ('R3', '192.168.122.138'), ('R4', '192.168.122.134')]

password, secret = "1234", "12345678"

for name, ip in devices:
    print("\nentering into ", name)
    child = pexpect.spawn('telnet ' + ip)

    child.expect('Password:')
    child.sendline(password)
    print("1")

    child.expect(name)
    child.sendline("enable")
    print("2")

    child.expect('Password:')
    child.sendline(secret)
    print("3")

    child.expect(name)
    child.sendline("configure terminal")
    print("5")

    child.expect(name)
    child.sendline("hostname " + name)
    print("6")

    child.expect(name)
    child.sendline(f"ip domain-name {name}.LOCAL")
    print("7")

    child.expect(name)
    child.sendline(f"crypto key generate rsa")
    print("8")

    child.expect(":")
    child.sendline("yes")
    print("9")

    child.expect(":")
    child.sendline("2048")
    print("9.5")

    child.expect(name)
    child.sendline("ip ssh time-out 10")
    print("10")

    child.expect(name)
    child.sendline(f"ip ssh authentication-retries 3")
    print("11")

    child.expect(name)
    child.sendline(f"ip ssh version 2")
    print("12")

    child.expect(name)
    child.sendline(f"line vty 0 4 ")
    print("13")

    child.expect(name)
    child.sendline("transport input ssh telnet")
    print("14")

    child.expect(name)
    child.sendline("login local")
    print("15")

    child.expect(name)
    child.sendline("exit")
    print("16")
```

```
child.expect(name)
child.sendline("exit")
print("17")

child.expect(name)
child.sendline('exit')
print("18")
```