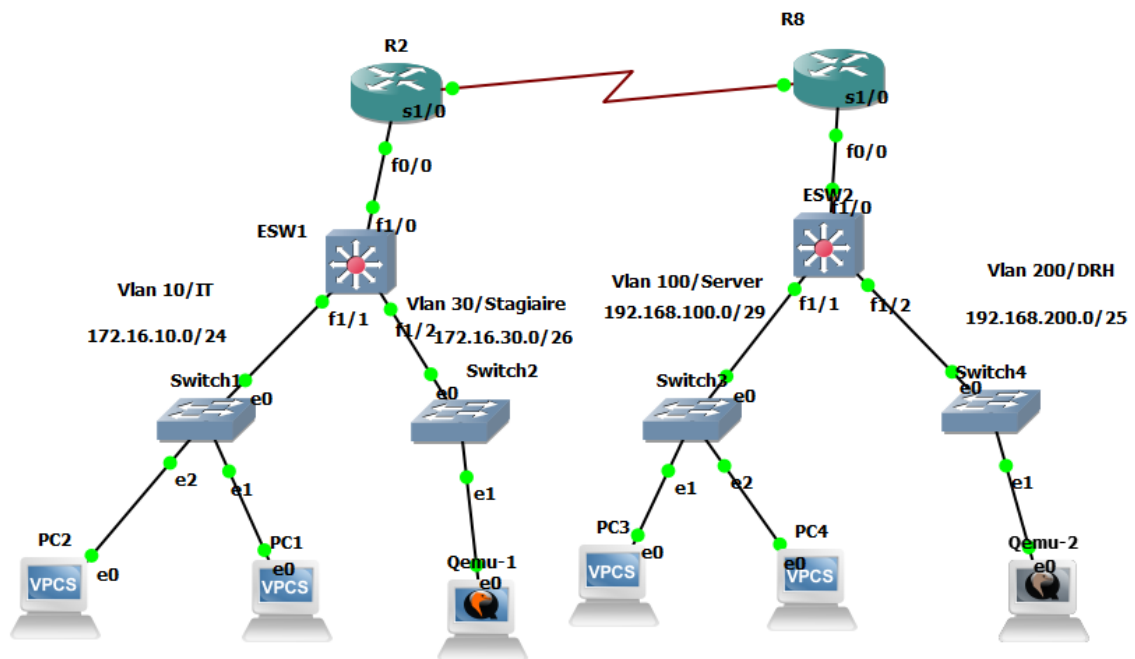


TP7 RESEAU(ACL,Wireshark,DHCP,Telnet):

I. Topologie réseau:



II. Configurations des appareils:

1)Les SwitchLevel3

A)le Switch1 Dakar:

Creation des VLAN:

```
ESW1#vlan database
ESW1(vlan)#vlan 10 name IT
VLAN 10 added:
    Name: IT

Sw1DakarL3#vlan database
Sw1DakarL3(vlan)#vlan 30 name stage
VLAN 30 added:
    Name: stage
Sw1DakarL3(vlan)#
```

Configuration des acces,des interfaces :

```

ESW1(config)#hostname Sw1DakarL3
Sw1DakarL3(config)#enable secret Switch0level3
Sw1DakarL3(config)#line console 0
Sw1DakarL3(config-line)#password Con0level3
Sw1DakarL3(config-line)#login
Sw1DakarL3(config-line)#exit
Sw1DakarL3(config)#line vty 0 15
Sw1DakarL3(config-line)#password Vty0level3
Sw1DakarL3(config-line)#login
Sw1DakarL3(config-line)#exit
Sw1DakarL3(config)#service password-encryption
Sw1DakarL3(config)#banner motd "Acces interdit au personnel non autorise"
Sw1DakarL3(config)#int f1/0
Sw1DakarL3(config-if)#no switchport
Sw1DakarL3(config-if)#ip add 10.10.1.
*Mar  1 00:04:05.411: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet
et1/0, changed state to up
Sw1DakarL3(config-if)#ip add 10.10.2.1 255.255.255.252
Sw1DakarL3(config-if)#description "fastEthernet 0/0"
Sw1DakarL3(config-if)#no sh
Sw1DakarL3(config-if)#exit
Sw1DakarL3(config)#int f1/1
Sw1DakarL3(config-if)#switchport mode access
Sw1DakarL3(config-if)#switchport access vlan 10
Sw1DakarL3(config-if)#no sh
Sw1DakarL3(config-if)#exit
Sw1DakarL3(config)#int f1/2
Sw1DakarL3(config-if)#switchport mode access
Sw1DakarL3(config-if)#switchport access vlan 30
Sw1DakarL3(config-if)#int vlan 10
Sw1DakarL3(config-if)#ip add 172.16.10.1 255.255.255.0
*Mar  1 00:12:09.859: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan10, changed state to up
Sw1DakarL3(config-if)#ip add 172.16.10.1 255.255.255.0
Sw1DakarL3(config-if)#description "IP VLAN 10"
Sw1DakarL3(config-if)#no sh
Sw1DakarL3(config-if)#exit
Sw1DakarL3(config)#int vlan 30
Sw1DakarL3(config-if)#int vlan
*Mar  1 00:12:48.663: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan30, changed state to up
Sw1DakarL3(config-if)#int vlan 30
Sw1DakarL3(config-if)# ip add 172.16.30.1 255.255.255.192
Sw1DakarL3(config-if)#description "IP VLAN 30"
Sw1DakarL3(config-if)#no sh
Sw1DakarL3(config-if)#exit

```

Configuration service DHCP :

```
Sw1DakarL3(config-if)#no sh
Sw1DakarL3(config-if)#exit
Sw1DakarL3(config)#service dhcp
Sw1DakarL3(config)#ip dhcp pool IT
Sw1DakarL3(dhcp-config)#network 172.16.10.0 255.255.255.0
Sw1DakarL3(dhcp-config)#default-router 172.16.10.1
Sw1DakarL3(dhcp-config)#exit
```

```
Sw1DakarL3(dhcp-config)#ip dhcp pool stage
Sw1DakarL3(dhcp-config)#network 172.16.30.0 255.255.255.192
Sw1DakarL3(dhcp-config)#default-router 172.16.30.1
Sw1DakarL3(dhcp-config)#exit
Sw1DakarL3(config)#ip dhcp excluded-
Sw1DakarL3(config)#ip dhcp excluded-address 172.16.10.1 172.16.10.5
Sw1DakarL3(config)#ip dhcp excluded-address 172.16.30.1 172.16.30.5
Sw1DakarL3(config)#exit
Sw1DakarL3#
*Mar  1 00:17:27.283: %SYS-5-CONFIG_I: Configured from console by console
```

Routage statique par default et passerelles :

```
Sw1DakarL3(config)#ip route 0.0.0.0 0.0.0.0 10.10.2.2
Sw1DakarL3(config)#ip default-gateway 172.16.30.1
Sw1DakarL3(config)#exit
```

```
Sw1DakarL3(config)#ip routing
```

A)le Switch2 St-Louis:

Creation des VLAN:

```
ESW2#vlan database
ESW2(vlan)#vlan 100 name server
VLAN 100 added:
    Name: server
ESW2(vlan)#vlan 200 name DRH
VLAN 200 added:
    Name: DRH
ESW2(vlan)#exit
APPLY completed.
Exiting...
```

Configuration des acces,des interfaces :

```

ESW2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
ESW2(config)#hostname S2stLouislevel3
S2stLouislevel3(config)#enable secret Switch2level3
S2stLouislevel3(config)#line console 0
S2stLouislevel3(config-line)#password Con0level3
S2stLouislevel3(config-line)#login
S2stLouislevel3(config-line)#exit
S2stLouislevel3(config)#line vty 0 15
S2stLouislevel3(config-line)#password Vtylevel3
S2stLouislevel3(config-line)#login
S2stLouislevel3(config-line)#exit
S2stLouislevel3(config)#service password-en
S2stLouislevel3(config)#service password-encryption
S2stLouislevel3(config)#banner motd "Acces interdit au personnel non autorise"
S2stLouislevel3(config)#int f1/0
S2stLouislevel3(config-if)#no switchport
S2stLouislevel3(config-if)#ip add 10.10.1
*Mar 1 01:14:56.491: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet
et1/0, changed state to up
S2stLouislevel3(config-if)#ip add 10.10.3.1 255.255.255.252
S2stLouislevel3(config-if)#description "FastEthernet 0/0"
S2stLouislevel3(config-if)#no sh
S2stLouislevel3(config-if)#exit
S2stLouislevel3(config)#int f1/1
S2stLouislevel3(config-if)#switchport mode acces
S2stLouislevel3(config-if)#switchport access vlan 100
S2stLouislevel3(config-if)#no sh
S2stLouislevel3(config-if)#exit
S2stLouislevel3(config)#int f1/2
S2stLouislevel3(config-if)#switchport mode acces
S2stLouislevel3(config-if)#switchport access vlan 200
S2stLouislevel3(config-if)#no sh
S2stLouislevel3(config-if)#exit
S2stLouislevel3(config)#int vlan 100
S2stLouislevel3(config-if)#ip add
*Mar 1 01:16:52.703: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan100, c
hanged state to up
S2stLouislevel3(config-if)#ip add 192.168.100.1 255.255.255.248
S2stLouislevel3(config-if)#description "IP VLAN 100"
S2stLouislevel3(config-if)#no sh
S2stLouislevel3(config-if)#exit

```

```

S2stLouislevel3(config)#int vlan 200
S2stLouislevel3(config-if)#ip add
*Mar 1 01:18:20.799: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan200
hanged state to up
S2stLouislevel3(config-if)#ip add 192.168.200.1 255.255.255.128
S2stLouislevel3(config-if)#description "IP VLAN 200"
S2stLouislevel3(config-if)#no sh
S2stLouislevel3(config-if)#exit

```

Configuration service DHCP :

```
S2stLouislevel3(config)#service dhcp
S2stLouislevel3(config)#ip dhcp pool server
S2stLouislevel3(dhcp-config)#network 192.168.100.0 255.255.255.248
S2stLouislevel3(dhcp-config)#default-router 192.168.100.1
S2stLouislevel3(dhcp-config)#exit
S2stLouislevel3(config)#ip dhcp pool DRH
S2stLouislevel3(dhcp-config)#network 192.168.200.0 255.255.255.128
S2stLouislevel3(dhcp-config)#default-router 192.168.200.1
S2stLouislevel3(dhcp-config)#exit
S2stLouislevel3(config)#ip dhcp excluded-address 192.168.100.1 192.168.100.5
S2stLouislevel3(config)#ip dhcp excluded-address 192.168.200.1 192.168.200.5
S2stLouislevel3(config)#exit
S2stLouislevel3#
*Mar 1 01:23:08.459: %SYS-5-CONFIG_I: Configured from console by console
```

Routage statique par défaut, routage inter-vlan et passerelle par défaut :

```
S2stLouislevel3(config)#ip route 0.0.0.0 0.0.0.0 10.10.3.2
S2stLouislevel3(config)#ip default-gateway 192.168.100.1
S2stLouislevel3(config)#ip routing
```

2)Les Routeurs :

A)Le routeur DAKAR :

Configuration des acces et creations des users pour l'authentification

```
R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#hostname Dakar
Dakar(config)#enable secret R1Dakarsec
Dakar(config)#line console 0
Dakar(config-line)#password Con0rldakar
Dakar(config-line)#login local
Dakar(config-line)#exit
Dakar(config)#line vty 0 15
Dakar(config-line)#password Vtyrldakar
Dakar(config-line)#login local
Dakar(config-line)#exec-timeout 5 0
Dakar(config-line)#exit
Dakar(config)#security passwords min-length 8
Dakar(config)#username khadim password khadimrassoul
Dakar(config)#exit
Dakar#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Dakar(config)#int f0/0
Dakar(config-if)#ip add 10.10.2.2 255.255.255.252
Dakar(config-if)#description "FastEthernet 0/0"
Dakar(config-if)#no sh
Dakar(config-if)#exit
Dakar(config)#int f0/0
Dakar(config-if)#int s1/0
Dakar(config-if)#ip add 10.10.1.1 255.255.255.252
Dakar(config-if)#description "Serial 1/0"
Dakar(config-if)#no sh
Dakar(config-if)#exit
Dakar(config)#exit
```

Configuration du Routage :


```
Dakar(config)#ip route 192.168.0.0 255.255.0.0 10.10.1.2
```

```
Dakar(config)#ip route 0.0.0.0 0.0.0.0 10.10.2.1
```

```
Dakar#show ip route
```

```
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP  
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area  
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2  
E1 - OSPF external type 1, E2 - OSPF external type 2  
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2  
ia - IS-IS inter area, * - candidate default, U - per-user static route  
o - ODR, P - periodic downloaded static route, + - replicated route
```

```
Gateway of last resort is 10.10.2.1 to network 0.0.0.0
```

```
S*    0.0.0.0/0 [1/0] via 10.10.2.1  
      10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks  
C      10.10.1.0/30 is directly connected, Serial1/0  
L      10.10.1.1/32 is directly connected, Serial1/0  
C      10.10.2.0/30 is directly connected, FastEthernet0/0  
L      10.10.2.2/32 is directly connected, FastEthernet0/0  
S      192.168.0.0/16 [1/0] via 10.10.1.2
```

A)Le routeur St-Louis :

Configuration des accès et créations des users pour l'authentification :

```
R8#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R8(config)#hostname St-Louis
St-Louis(config)#enable secret R1louissec
St-Louis(config)#line console 0
St-Louis(config-line)#password Con0r1louis
St-Louis(config-line)#login local
St-Louis(config-line)#exit
St-Louis(config)#line vty 0 15
St-Louis(config-line)#password Vtyr1louis
St-Louis(config-line)#login local
St-Louis(config-line)#exec-timeout 5 0
St-Louis(config-line)#exit
St-Louis(config)#security passwords min-length 8
St-Louis(config)#username djiby password djiby1234
St-Louis(config)#exit
St-Louis#conf t
Enter configuration commands, one per line. End with CNTL/Z.
St-Louis(config)#int f0/0
St-Louis(config-if)#ip add 10.10.3.2 255.255.255.252
St-Louis(config-if)#description "FastEthernet 0/0"
St-Louis(config-if)#no sh
St-Louis(config-if)#exit
St-Louis(config)#int f0/0
St-Louis(config-if)#int s1/0
St-Louis(config-if)#ip add 10.10.1.2 255.255.255.252
St-Louis(config-if)#description "Serial 1/0"
St-Louis(config-if)#no sh
St-Louis(config-if)#exit
St-Louis(config)#exit
St-Louis#
```

Configuration du Routage :

```
Dakar(config)#ip route 192.168.0.0 255.255.0.0 10.10.1.2
```

```
Dakar(config)#ip route 0.0.0.0 0.0.0.0 10.10.2.1
```

```
Dakar#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, + - replicated route

Gateway of last resort is 10.10.2.1 to network 0.0.0.0

S*    0.0.0.0/0 [1/0] via 10.10.2.1
      10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
C      10.10.1.0/30 is directly connected, Serial1/0
L      10.10.1.1/32 is directly connected, Serial1/0
C      10.10.2.0/30 is directly connected, FastEthernet0/0
L      10.10.2.2/32 is directly connected, FastEthernet0/0
S      192.168.0.0/16 [1/0] via 10.10.1.2
```

Configuration des ACL :

Nous allons configurer une ACL sur le routeur 2 pour empêcher les connexions venant du VLAN 30 sur le réseau du Routeur 2

```
St-Louis#conf t
Enter configuration commands, one per line. End with CNTL/Z.
St-Louis(config)#access-list 1 deny 172.16.30.0 0.0.0.63
St-Louis(config)#access-list 1 permit any
St-Louis(config)#int s1/0
St-Louis(config-if)#ip access
St-Louis(config-if)#ip access-group 1 in
St-Louis(config-if)#exit
St-Louis(config)#exit
St-Louis#conf t
*Mar 17 00:27:47.075: %SYS-5-CONFIG_I: Configured from console by djiby on console
St-Louis#show access-list
Standard IP access list 1
 10 deny   172.16.30.0, wildcard bits 0.0.0.63
 20 permit any
```

3) Configuration des autres appareils :

Configuration des IP :

Les VPCS :

PC1 :

```
PC1> ip dhcp
DDORA IP 172.16.10.6/24 GW 172.16.10.1

PC1> show ip

NAME       : PC1[1]
IP/MASK    : 172.16.10.6/24
GATEWAY    : 172.16.10.1
DNS        :
DHCP SERVER : 172.16.10.1
DHCP LEASE  : 85723, 86400/43200/75600
MAC        : 00:50:79:66:68:00
LPORT      : 10052
RHOST:PORT  : 127.0.0.1:10053
MTU        : 1500
```

PC2 :

```
PC2> ip dhcp
DDORA IP 172.16.10.7/24 GW 172.16.10.1

PC2> show ip

NAME       : PC2[1]
IP/MASK    : 172.16.10.7/24
GATEWAY    : 172.16.10.1
DNS        :
DHCP SERVER : 172.16.10.1
DHCP LEASE  : 85844, 86400/43200/75600
MAC        : 00:50:79:66:68:01
LPORT      : 10048
RHOST:PORT  : 127.0.0.1:10049
MTU:       : 1500
```

PC3 :

```
PC3> ip dhcp
DORA IP 192.168.100.6/29 GW 192.168.100.1

PC3> show ip

NAME       : PC3[1]
IP/MASK    : 192.168.100.6/29
GATEWAY    : 192.168.100.1
DNS        :
DHCP SERVER : 192.168.100.1
DHCP LEASE  : 86395, 86400/43200/75600
MAC        : 00:50:79:66:68:02
LPORT      : 10054
RHOST:PORT  : 127.0.0.1:10055
MTU:       : 1500
```

Configuration des QEMU :

QEMU1DAKAR :

```
tc@box:~$ sudo ifconfig
eth0      Link encap:Ethernet  HWaddr 0C:2B:77:5F:93:00
          inet addr:172.16.30.6  Bcast:172.16.30.63  Mask:255.255.255.192
          inet6 addr: fe80::e2b:77ff:fe5f:9300/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:3 errors:0 dropped:0 overruns:0 frame:0
          TX packets:8 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:744 (744.0 B)  TX bytes:1130 (1.1 KiB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)
```

QEMU2 :

```
tc@box:~$ sudo ifconfig
eth0      Link encap:Ethernet  HWaddr 0C:2B:77:EF:04:00
          inet addr:192.168.200.6  Bcast:192.168.200.127  Mask:255.255.255.128
          inet6 addr: fe80::e2b:77ff:feef:400/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:3 errors:0 dropped:0 overruns:0 frame:0
          TX packets:8 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:744 (744.0 B)  TX bytes:1130 (1.1 KiB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)
```

III. Test de connectivité :

1)Au sein d'un même réseau :

A)Au sein d'un même réseau(Dakar) :

PC1 vers les autres appareils :

Vers PC2 :

```
PC1> ping 172.16.10.7
84 bytes from 172.16.10.7 icmp_seq=1 ttl=64 time=0.369 ms
84 bytes from 172.16.10.7 icmp_seq=2 ttl=64 time=22.771 ms
84 bytes from 172.16.10.7 icmp_seq=3 ttl=64 time=0.503 ms
84 bytes from 172.16.10.7 icmp_seq=4 ttl=64 time=0.445 ms
84 bytes from 172.16.10.7 icmp_seq=5 ttl=64 time=0.453 ms
```

Vers Qemu1 Dakar :

```
PC1> ping 172.16.30.6
84 bytes from 172.16.30.6 icmp_seq=1 ttl=63 time=31.078 ms
84 bytes from 172.16.30.6 icmp_seq=2 ttl=63 time=11.933 ms
84 bytes from 172.16.30.6 icmp_seq=3 ttl=63 time=55.209 ms
84 bytes from 172.16.30.6 icmp_seq=4 ttl=63 time=23.770 ms
84 bytes from 172.16.30.6 icmp_seq=5 ttl=63 time=13.144 ms
```

Vers R1DAKAR :

```
PC1> ping 10.10.2.2
84 bytes from 10.10.2.2 icmp_seq=1 ttl=254 time=25.148 ms
84 bytes from 10.10.2.2 icmp_seq=2 ttl=254 time=38.196 ms
84 bytes from 10.10.2.2 icmp_seq=3 ttl=254 time=36.105 ms
84 bytes from 10.10.2.2 icmp_seq=4 ttl=254 time=17.129 ms
84 bytes from 10.10.2.2 icmp_seq=5 ttl=254 time=23.160 ms
```

PC2 vers les autres appareils :

Vers PC1 :

```
PC2> ping 172.16.10.6
84 bytes from 172.16.10.6 icmp_seq=1 ttl=64 time=0.412 ms
84 bytes from 172.16.10.6 icmp_seq=2 ttl=64 time=0.446 ms
84 bytes from 172.16.10.6 icmp_seq=3 ttl=64 time=0.676 ms
84 bytes from 172.16.10.6 icmp_seq=4 ttl=64 time=0.440 ms
84 bytes from 172.16.10.6 icmp_seq=5 ttl=64 time=0.439 ms
```

Vers Qemu1 Dakar :

```
PC2> ping 172.16.30.6
84 bytes from 172.16.30.6 icmp_seq=1 ttl=63 time=32.195 ms
84 bytes from 172.16.30.6 icmp_seq=2 ttl=63 time=16.515 ms
84 bytes from 172.16.30.6 icmp_seq=3 ttl=63 time=12.121 ms
84 bytes from 172.16.30.6 icmp_seq=4 ttl=63 time=37.698 ms
84 bytes from 172.16.30.6 icmp_seq=5 ttl=63 time=20.038 ms
```

Vers R1DAKAR :

```
PC2> ping 10.10.2.2
84 bytes from 10.10.2.2 icmp_seq=1 ttl=254 time=55.522 ms
84 bytes from 10.10.2.2 icmp_seq=2 ttl=254 time=33.681 ms
84 bytes from 10.10.2.2 icmp_seq=3 ttl=254 time=14.221 ms
84 bytes from 10.10.2.2 icmp_seq=4 ttl=254 time=31.046 ms
84 bytes from 10.10.2.2 icmp_seq=5 ttl=254 time=33.031 ms
```

Qemu1 vers les autres appareils :

Vers PC1 :

```
tc@box:~$ ping 172.16.10.6
PING 172.16.10.6 (172.16.10.6): 56 data bytes
64 bytes from 172.16.10.6: seq=0 ttl=63 time=3084.578 ms
64 bytes from 172.16.10.6: seq=1 ttl=63 time=2111.275 ms
64 bytes from 172.16.10.6: seq=2 ttl=63 time=1142.549 ms
64 bytes from 172.16.10.6: seq=3 ttl=63 time=177.419 ms
64 bytes from 172.16.10.6: seq=4 ttl=63 time=37.662 ms
^C
--- 172.16.10.6 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max = 37.662/1310.696/3084.578 ms
```

Vers PC2 :

```
tc@box:~$ ping 172.16.10.7
PING 172.16.10.7 (172.16.10.7): 56 data bytes
64 bytes from 172.16.10.7: seq=0 ttl=63 time=3080.535 ms
64 bytes from 172.16.10.7: seq=1 ttl=63 time=2103.749 ms
64 bytes from 172.16.10.7: seq=2 ttl=63 time=1121.798 ms
64 bytes from 172.16.10.7: seq=3 ttl=63 time=133.228 ms
64 bytes from 172.16.10.7: seq=4 ttl=63 time=29.319 ms
64 bytes from 172.16.10.7: seq=5 ttl=63 time=79.750 ms
^C
--- 172.16.10.7 ping statistics ---
6 packets transmitted, 6 packets received, 0% packet loss
round-trip min/avg/max = 29.319/1091.396/3080.535 ms
```

Vers R1DAKAR :

```
tc@box:~$ ping 10.10.2.2
PING 10.10.2.2 (10.10.2.2): 56 data bytes
64 bytes from 10.10.2.2: seq=0 ttl=254 time=57.914 ms
64 bytes from 10.10.2.2: seq=1 ttl=254 time=38.313 ms
64 bytes from 10.10.2.2: seq=2 ttl=254 time=104.104 ms
64 bytes from 10.10.2.2: seq=3 ttl=254 time=109.545 ms
64 bytes from 10.10.2.2: seq=4 ttl=254 time=60.281 ms
64 bytes from 10.10.2.2: seq=5 ttl=254 time=60.551 ms
^C
--- 10.10.2.2 ping statistics ---
6 packets transmitted, 6 packets received, 0% packet loss
round-trip min/avg/max = 38.313/71.784/109.545 ms
```

Au sein d'un même réseau(St-Louis) :

PC3 vers les autres appareils :

Vers Qemu2 St-Louis :

```
PC3> ip dhcp
DDORA IP 192.168.100.6/29 GW 192.168.100.1

PC3> ping 192.168.200.6
84 bytes from 192.168.200.6 icmp_seq=1 ttl=63 time=53.295 ms
84 bytes from 192.168.200.6 icmp_seq=2 ttl=63 time=12.285 ms
84 bytes from 192.168.200.6 icmp_seq=3 ttl=63 time=20.334 ms
84 bytes from 192.168.200.6 icmp_seq=4 ttl=63 time=20.328 ms
84 bytes from 192.168.200.6 icmp_seq=5 ttl=63 time=22.325 ms
```

Vers R1 ST-LOUIS :

```
PC3> ping 10.10.3.2
84 bytes from 10.10.3.2 icmp_seq=1 ttl=254 time=22.223 ms
84 bytes from 10.10.3.2 icmp_seq=2 ttl=254 time=22.269 ms
84 bytes from 10.10.3.2 icmp_seq=3 ttl=254 time=21.290 ms
84 bytes from 10.10.3.2 icmp_seq=4 ttl=254 time=21.365 ms
84 bytes from 10.10.3.2 icmp_seq=5 ttl=254 time=21.316 ms
```

Qemu2 vers les autres appareils :

Vers PC3 :

```
tc@box:~$ ping 192.168.100.6
PING 192.168.100.6 (192.168.100.6): 56 data bytes
64 bytes from 192.168.100.6: seq=0 ttl=63 time=3028.794 ms
64 bytes from 192.168.100.6: seq=1 ttl=63 time=2047.508 ms
64 bytes from 192.168.100.6: seq=2 ttl=63 time=1047.547 ms
64 bytes from 192.168.100.6: seq=3 ttl=63 time=43.334 ms
64 bytes from 192.168.100.6: seq=4 ttl=63 time=26.060 ms
64 bytes from 192.168.100.6: seq=5 ttl=63 time=20.309 ms
^C
--- 192.168.100.6 ping statistics ---
6 packets transmitted, 6 packets received, 0% packet loss
round-trip min/avg/max = 20.309/1035.592/3028.794 ms
```

Vers R2 ST-LOUIS :

```
tc@box:~$ ping 10.10.3.2
PING 10.10.3.2 (10.10.3.2): 56 data bytes
64 bytes from 10.10.3.2: seq=0 ttl=254 time=108.581 ms
64 bytes from 10.10.3.2: seq=1 ttl=254 time=22.665 ms
64 bytes from 10.10.3.2: seq=2 ttl=254 time=19.361 ms
64 bytes from 10.10.3.2: seq=3 ttl=254 time=15.812 ms
64 bytes from 10.10.3.2: seq=4 ttl=254 time=23.312 ms
64 bytes from 10.10.3.2: seq=5 ttl=254 time=18.305 ms
^C
--- 10.10.3.2 ping statistics ---
6 packets transmitted, 6 packets received, 0% packet loss
round-trip min/avg/max = 15.812/34.672/108.581 ms
```

2) Entre réseaux distants :

A) Du réseau du routeur R1Dakar au R2St-Louis :

Du PC1 vers l'autre reseau :

PC1 vers PC3 :

```
PC1> ping 192.168.100.6
84 bytes from 192.168.100.6 icmp_seq=1 ttl=60 time=54.168 ms
84 bytes from 192.168.100.6 icmp_seq=2 ttl=60 time=49.822 ms
84 bytes from 192.168.100.6 icmp_seq=3 ttl=60 time=49.206 ms
84 bytes from 192.168.100.6 icmp_seq=4 ttl=60 time=51.197 ms
84 bytes from 192.168.100.6 icmp_seq=5 ttl=60 time=49.220 ms
```

PC1 vers Qemu2 St-Louis :

```
PC1> ping 192.168.200.6
84 bytes from 192.168.200.6 icmp_seq=1 ttl=60 time=89.160 ms
84 bytes from 192.168.200.6 icmp_seq=2 ttl=60 time=60.241 ms
84 bytes from 192.168.200.6 icmp_seq=3 ttl=60 time=52.262 ms
84 bytes from 192.168.200.6 icmp_seq=4 ttl=60 time=59.503 ms
84 bytes from 192.168.200.6 icmp_seq=5 ttl=60 time=66.574 ms
```

PC2 vers l'autre Reseau :

PC2 vers PC3 :

```
PC2> ping 192.168.100.6
84 bytes from 192.168.100.6 icmp_seq=1 ttl=60 time=55.217 ms
84 bytes from 192.168.100.6 icmp_seq=2 ttl=60 time=64.384 ms
84 bytes from 192.168.100.6 icmp_seq=3 ttl=60 time=46.407 ms
84 bytes from 192.168.100.6 icmp_seq=4 ttl=60 time=57.302 ms
84 bytes from 192.168.100.6 icmp_seq=5 ttl=60 time=49.229 ms
```

PC2 vers Qemu2 St-Louis :

```
PC2> ping 192.168.200.6
84 bytes from 192.168.200.6 icmp_seq=1 ttl=60 time=41.231 ms
84 bytes from 192.168.200.6 icmp_seq=2 ttl=60 time=37.305 ms
84 bytes from 192.168.200.6 icmp_seq=3 ttl=60 time=78.227 ms
84 bytes from 192.168.200.6 icmp_seq=4 ttl=60 time=59.286 ms
84 bytes from 192.168.200.6 icmp_seq=5 ttl=60 time=48.794 ms
```

NB : Puis qu'on a configuré un ACL sur le routeur R2, alors tous les hôtes du Vlan20 ne pourront pas accéder au réseau interne du routeur 2 en particulier le Qemu1

B) Du réseau du routeur R2St-Louis au R1Dakar

:

Du PC3 vers l'autre reseau :

PC3 vers PC1 :


```
PC3> ping 172.16.10.6
84 bytes from 172.16.10.6 icmp_seq=1 ttl=60 time=71.637 ms
84 bytes from 172.16.10.6 icmp_seq=2 ttl=60 time=228.890 ms
84 bytes from 172.16.10.6 icmp_seq=3 ttl=60 time=202.064 ms
84 bytes from 172.16.10.6 icmp_seq=4 ttl=60 time=144.796 ms
84 bytes from 172.16.10.6 icmp_seq=5 ttl=60 time=223.524 ms
```

PC3 vers PC2 :

```
PC3> ping 172.16.10.7
84 bytes from 172.16.10.7 icmp_seq=1 ttl=60 time=111.051 ms
84 bytes from 172.16.10.7 icmp_seq=2 ttl=60 time=143.581 ms
84 bytes from 172.16.10.7 icmp_seq=3 ttl=60 time=100.583 ms
84 bytes from 172.16.10.7 icmp_seq=4 ttl=60 time=94.285 ms
84 bytes from 172.16.10.7 icmp_seq=5 ttl=60 time=128.938 ms
```

Qemu2 St-Louis vers l'autre reseau :

Qemu2 vers PC2 :

```
root@box:/home# ping 172.16.10.6
PING 172.16.10.6 (172.16.10.6): 56 data bytes
64 bytes from 172.16.10.6: seq=0 ttl=60 time=3063.767 ms
64 bytes from 172.16.10.6: seq=1 ttl=60 time=2084.795 ms
64 bytes from 172.16.10.6: seq=2 ttl=60 time=1092.443 ms
64 bytes from 172.16.10.6: seq=3 ttl=60 time=93.090 ms
64 bytes from 172.16.10.6: seq=4 ttl=60 time=63.393 ms
64 bytes from 172.16.10.6: seq=5 ttl=60 time=61.155 ms
^C
--- 172.16.10.6 ping statistics ---
6 packets transmitted, 6 packets received, 0% packet loss
round-trip min/avg/max = 61.155/1076.440/3063.767 ms
```

Qemu2 vers PC2 :

```
root@box:/home# ping 172.16.10.7
PING 172.16.10.7 (172.16.10.7): 56 data bytes
64 bytes from 172.16.10.7: seq=0 ttl=60 time=3041.961 ms
64 bytes from 172.16.10.7: seq=1 ttl=60 time=2044.600 ms
64 bytes from 172.16.10.7: seq=2 ttl=60 time=1051.114 ms
64 bytes from 172.16.10.7: seq=3 ttl=60 time=71.231 ms
64 bytes from 172.16.10.7: seq=4 ttl=60 time=56.208 ms
64 bytes from 172.16.10.7: seq=5 ttl=60 time=98.171 ms
^C
--- 172.16.10.7 ping statistics ---
6 packets transmitted, 6 packets received, 0% packet loss
round-trip min/avg/max = 56.208/1060.547/3041.961 ms
```

IV. Connexion Par Telnet et capture de paquets :

1)Pour le Qemu1 :

a)Sur le switch Dakar :

```
tc@box:~$ telnet 10.10.2.1
Entering character mode
Escape character is '^]'.

Acces interdit au personnel non autorise

User Access Verification

Password:

*****
This is a normal Router with a SW module inside (NM-16ESW)
It has been preconfigured with hard coded speed and duplex

To create vlans use the command "vlan database" from exec mode
After creating all desired vlans use "exit" to apply the config

To view existing vlans use the command "show vlan-switch brief"

Warning: You are using an old IOS image for this router.
Please update the IOS to enable the "macro" command!
*****

Sw1DakarL3>en
Password:
Sw1DakarL3#exit
Connection closed by foreign host
```

Capture et recuperation de mot de passe :

143	97.134348	172.16.30.6	10.10.2.1	TCP	54	53043 → 23 [ACK] Seq=68 Ack=717 Win=6720 Len=0
145	98.345654	172.16.30.6	10.10.2.1	TELNET	55	Telnet Data ...
146	98.347653	10.10.2.1	172.16.30.6	TELNET	60	Telnet Data ...
147	98.352649	172.16.30.6	10.10.2.1	TCP	54	53043 → 23 [ACK] Seq=69 Ack=718 Win=6720 Len=0
148	98.617498	172.16.30.6	10.10.2.1	TELNET	55	Telnet Data ...
149	98.622495	10.10.2.1	172.16.30.6	TELNET	60	Telnet Data ...
150	98.625493	172.16.30.6	10.10.2.1	TCP	54	53043 → 23 [ACK] Seq=70 Ack=719 Win=6720 Len=0
151	98.837372	172.16.30.6	10.10.2.1	TELNET	55	Telnet Data ...
152	98.842371	10.10.2.1	172.16.30.6	TELNET	60	Telnet Data ...
153	98.845370	172.16.30.6	10.10.2.1	TCP	54	53043 → 23 [ACK] Seq=71 Ack=720 Win=6720 Len=0
154	99.008274	172.16.30.6	10.10.2.1	TELNET	55	Telnet Data ...
155	99.012272	10.10.2.1	172.16.30.6	TELNET	60	Telnet Data ...

.....Acces interdit au personnel non autorise

User Access Verification

Password:P.....linux..Vty0level3

.

This is a normal Router with a SW module inside (NM-16ESW)
It has been preconfigured with hard coded speed and duplex

To create vlans use the command "vlan database" from exec mode
After creating all desired vlans use "exit" to apply the config

To view existing vlans use the command "show vlan-switch brief"

Warning: You are using an old IOS image for this router.
Please update the IOS to enable the "macro" command!

Sw1DakarL3>eenn

.

Password: Switch0level3

.

Sw1DakarL3#eexx..ppiinnngg 119922..116688..11..

.

b) Sur le routeur Dakar :

```
tc@box:~$ telnet 10.10.2.2
Entering character mode
Escape character is '^]'.

User Access Verification

Username: khadim
Password:
Dakar>en
Password:
Dakar#ping 10.10.1.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.10.1.2, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 8/13/20 ms
Dakar#Connection closed by foreign host
tc@box:~$
```

Capture de paquets et recuperation de login et mot de passe :

No.	Time	Source	Destination	Protocol	Length	Info
201	133.246657	10.10.2.2	172.16.30.6	TCP	60	23 → 35849 [ACK] Seq=79 Ack=51 Win=4078 Len=0
203	133.467530	10.10.2.2	172.16.30.6	TCP	60	23 → 35849 [ACK] Seq=79 Ack=53 Win=4076 Len=0
205	133.687404	10.10.2.2	172.16.30.6	TCP	60	23 → 35849 [ACK] Seq=79 Ack=54 Win=4075 Len=0
207	133.900282	10.10.2.2	172.16.30.6	TCP	60	23 → 35849 [ACK] Seq=79 Ack=55 Win=4074 Len=0
209	134.251088	10.10.2.2	172.16.30.6	TCP	60	23 → 35849 [ACK] Seq=79 Ack=57 Win=4072 Len=0
210	136.990511	10.10.2.2	172.16.30.6	TELNET	85	Telnet Data ...
214	137.926976	10.10.2.2	172.16.30.6	TELNET	60	Telnet Data ...
217	138.146849	10.10.2.2	172.16.30.6	TELNET	60	Telnet Data ...
220	138.388710	10.10.2.2	172.16.30.6	TELNET	60	Telnet Data ...
223	138.597591	10.10.2.2	172.16.30.6	TELNET	60	Telnet Data ...
226	138.751502	10.10.2.2	172.16.30.6	TELNET	60	Telnet Data ...

Wireshark · Follow TCP Stream (tcp.stream eq 2) · -

```

.....
User Access Verification
Username: .....P.....linux..kxhaaddiimm
.
Password: khadimrassoul
.
Dakar>cc.. .eenn
.
Password: R1Dkarsec
.
Password: R1Dakarsec
.
Dakar#ppiinnngg 1100..1100..22.. .11..22
.
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.10.1.2, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 8/13/20 ms
Dakar#

```

1)Pour le Qemu2 :

a)Sur le switch St-Louis :

```

tc@box:~$ telnet 10.10.3.1

Entering character mode
Escape character is '^]'.

Acces interdit au personnel non autorise

User Access Verification

Password:

*****
This is a normal Router with a SW module inside (NM-16ESW)
It has been preconfigured with hard coded speed and duplex

To create vlans use the command "vlan database" from exec mode
After creating all desired vlans use "exit" to apply the config

To view existing vlans use the command "show vlan-switch brief"

Warning: You are using an old IOS image for this router.
Please update the IOS to enable the "macro" command!
*****

S2stLouislevel3>en
Password:
S2stLouislevel3#exit
Connection closed by foreign host

```

Capture et récupération de mot de passe :

176	158.561153	192.168.200.6	10.10.3.2	TELNET	55 telnet data ...
178	159.092848	192.168.200.6	10.10.3.2	TELNET	55 Telnet Data ...
180	159.586567	192.168.200.6	10.10.3.2	TELNET	55 Telnet Data ...
183	159.909380	192.168.200.6	10.10.3.2	TELNET	55 Telnet Data ...
185	160.279169	192.168.200.6	10.10.3.2	TELNET	55 Telnet Data ...
187	162.206065	192.168.200.6	10.10.3.2	TELNET	55 Telnet Data ...
189	164.138957	192.168.200.6	10.10.3.2	TELNET	55 Telnet Data ...
192	164.411801	192.168.200.6	10.10.3.2	TELNET	55 Telnet Data ...
194	164.794581	192.168.200.6	10.10.3.2	TELNET	55 Telnet Data ...

```

.....Acces interdit au personnel non autorise

User Access Verification

Password: .....P.....linux..Vtylevel3
.

*****
This is a normal Router with a SW module inside (NM-16ESW)
It has been preconfigured with hard coded speed and duplex

To create vlans use the command "vlan database" from exec mode
After creating all desired vlans use "exit" to apply the config

To view existing vlans use the command "show vlan-switch brief"

Warning: You are using an old IOS image for this router.
Please update the IOS to enable the "macro" command!
*****

S2stLouislevel3>eenn
.
Password: Switch2level3

```

b) Sur le routeur Dakar :

```

tc@box:~$ telnet 10.10.3.2
Entering character mode
Escape character is '^]'.

User Access Verification

Username: djiby
Password:
St-Louis>en
Password:

```


Capture de paquets et récupération de login et mot de passe :

106	-6.704158	192.168.200.6	10.10.3.1	TELNET	56 Telnet Data ...
107	-6.693164	10.10.3.1	192.168.200.6	TELNET	72 Telnet Data ...
109	-6.007558	192.168.200.6	10.10.3.1	TELNET	55 Telnet Data ...
110	-6.000560	10.10.3.1	192.168.200.6	TELNET	60 Telnet Data ...
112	-5.779688	192.168.200.6	10.10.3.1	TELNET	55 Telnet Data ...
113	-5.769693	10.10.3.1	192.168.200.6	TELNET	60 Telnet Data ...
115	-5.609785	192.168.200.6	10.10.3.1	TELNET	55 Telnet Data ...
116	-5.604788	10.10.3.1	192.168.200.6	TELNET	60 Telnet Data ...
118	-5.293966	192.168.200.6	10.10.3.1	TELNET	55 Telnet Data ...
119	-5.285971	10.10.3.1	192.168.200.6	TELNET	60 Telnet Data ...
121	-4.955711	192.168.200.6	10.10.3.1	TELNET	55 Telnet Data ...

Wireshark · Follow TCP Stream (tcp.stream eq 0) · -

```
.....
User Access Verification
Username: .....P.....linux..ddjjiibby
.
Password: djiby1234
.
St-Louis>eenn
.
Password: Switch2level3
.
```