



SIO1-SISR Challenge Module A



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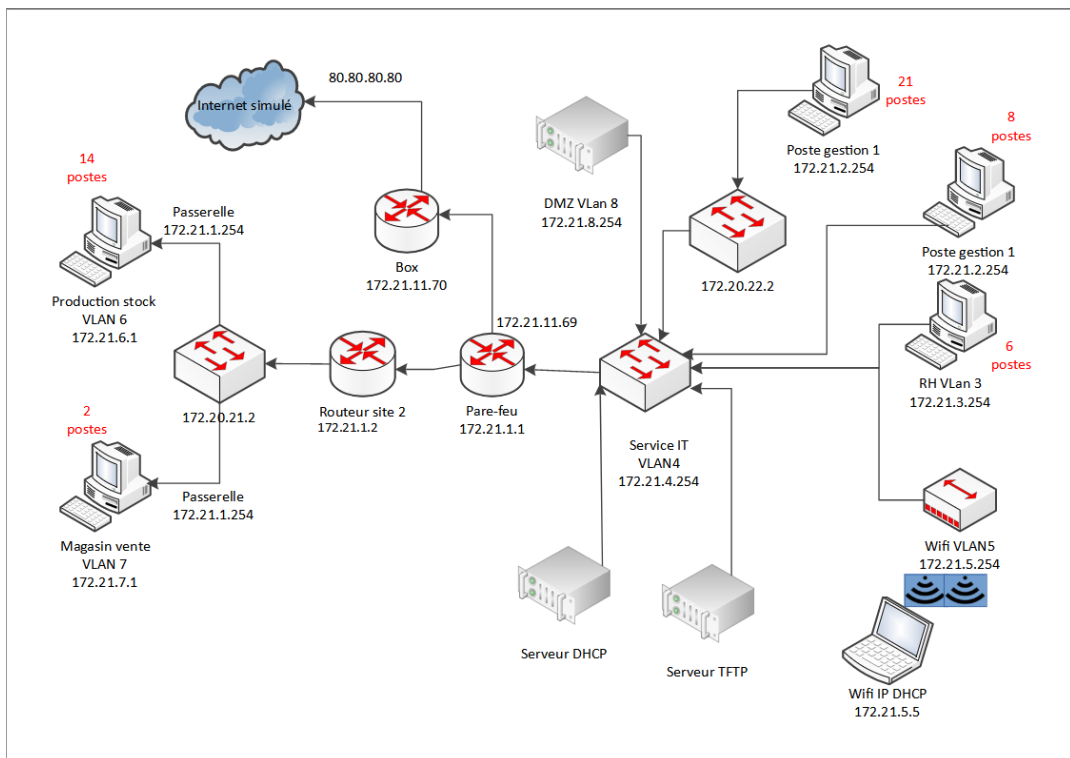
Introduction

Dans ce challenge nous avons imaginé l'existence d'une entreprise fictive, spécialisée dans la création et l'édition de logiciels de gestion éducatif.

Cette entreprise se nomme « Lospae IT ». Elle permet aux professeurs qui le souhaitent, d'accéder à un logiciel qui permet d'éditer les notes de chaque élève en fonction des critères choisis par l'enseignant.

L'objectif de ce challenge était de créer un réseau en deux sites distincts, proposant des services différents, une liaison inter-routeurs, la mise en place d'une DMZ (Demilitarized zone), un accès à un internet simulé pour l'ensemble du réseau et un réseau wifi ouvert au public.

Voici le schéma logique de notre réseau :



Cette documentation présente l'ensemble du procédé nécessaire à la mise en place de ce réseau d'entreprise.

Site 1 :

Vlan 2 (gestion), vlan 5 (wifi) : Commutateur aruba (172.20.22.2).

	1	3	5	7	9	11	13	15	17	19	21	23
Aruba	1	1	1	1	1	1	1	1	1	1	1	1
HP 2530	1	1	1	1	1	1	1	1	1	1	1	1
	2	4	6	8	10	12	14	16	18	20	22	24

```
A2-HP2530# conf
A2-HP2530(config)# vlan 2
A2-HP2530(vlan-2)# name gestion
A2-HP2530(vlan-2)# untagged 2-21
A2-HP2530(vlan-2)# tagged 23-24
A2-HP2530(vlan-2)# exit
A2-HP2530(config)# vlan 5
A2-HP2530(vlan-5)# name wifi
A2-HP2530(vlan-5)# untagged 22
A2-HP2530(vlan-5)# tagged 23-24
A2-HP2530(vlan-5)# exit
A2-HP2530(config)# sh vlan
```

Status and Counters - VLAN Information

Maximum VLANs to support : 256

Primary VLAN : DEFAULT_VLAN

Management VLAN :

VLAN ID	Name	Status	Voice	Jumbo
1	DEFAULT_VLAN	Port-based	No	No
2	gestion	Port-based	No	No
5	wifi	Port-based	No	No

```
A2-HP2530(config)# sh vlan 2
```

Status and Counters - VLAN Information - VLAN 2

VLAN ID : 2

Name : gestion

Status : Port-based

Voice : No

Jumbo : No

Port Information Mode Unknown VLAN Status

2	Untagged Learn	Down
3	Untagged Learn	Down
4	Untagged Learn	Down
5	Untagged Learn	Down

6	Untagged Learn	Down
7	Untagged Learn	Down
8	Untagged Learn	Down
9	Untagged Learn	Down
10	Untagged Learn	Down
11	Untagged Learn	Down
12	Untagged Learn	Down
13	Untagged Learn	Down
14	Untagged Learn	Down
15	Untagged Learn	Down
16	Untagged Learn	Down
17	Untagged Learn	Down
18	Untagged Learn	Down
19	Untagged Learn	Down
20	Untagged Learn	Down
21	Untagged Learn	Down
23	Tagged Learn	Down
24	Tagged Learn	Down

A2-HP2530(config)# sh vlan 5

Status and Counters - VLAN Information - VLAN 5

VLAN ID : 5
 Name : wifi
 Status : Port-based
 Voice : No
 Jumbo : No

Port Information	Mode	Unknown VLAN	Status
22	Untagged Learn		Down
23	Tagged Learn		Down
24	Tagged Learn		Down

Vlan 2 (gestion 3-11), vlan 3 (RH 11-17), Vlan 4 (service IT 18-19), Vlan 5 (wifi 20-22), Vlan 8 (DMZ 2) : Commutateur aruba (172.20.21.4).

Aruba HP 2530	1	3	5	7	9	11	13	15	17	19	21	23
	1	1	1	1	1	1	1	1	1	1	1	1
	2	4	6	8	10	12	14	16	18	20	22	24

```
A1-2610(vlan-1)# tagged 23-24
A1-2610(vlan-1)# vlan 2
A1-2610(vlan-2)# name gestion
A1-2610(vlan-2)# untagged 3-11
A1-2610(vlan-2)# tagged 23-24
A1-2610(vlan-2)# vlan 3
A1-2610(vlan-3)# name rh
A1-2610(vlan-3)# tagged 23-24
A1-2610(vlan-3)# untagged 11-18
A1-2610(vlan-3)# vlan 4
A1-2610(vlan-4)# tagged 23-24
A1-2610(vlan-4)# name serviceIT
A1-2610(vlan-4)# untagged 18-19
A1-2610(vlan-4)# vlan 5
A1-2610(vlan-5)# name wifi
A1-2610(vlan-5)# tagged 23-24
A1-2610(vlan-5)# untagged 20-22
A1-2610(vlan-5)# exit
A1-2610(config)# vlan 8
A1-2610(vlan-8)# tagged 23-24
A1-2610(vlan-8)# untagged 2
A1-2610(vlan-8)# exit
A1-2610(config)# exit
A1-2610# sh vlan
```

Status and Counters - VLAN Information

Maximum VLANs to support : 8

Primary VLAN : DMZ

Management VLAN :

VLAN ID	Name	Status	Voice	Jumbo
1	default	Port-based	No	No
2	gestion	Port-based	No	No
3	rh	Port-based	No	No

```

4      serviceIT      | Port-based No   No
5      wifi           | Port-based No   No
8      DMZ            | Port-based No   No

```

A1-2610# sh vlan 8

Status and Counters - VLAN Information - Ports - VLAN 8

VLAN ID : 8

Name : DMZ

Status : Port-based

Voice : No

Jumbo : No

Port Information Mode Unknown VLAN Status

```

-----
2          Untagged Learn    Down
23         Tagged   Learn    Down
24         Tagged   Learn    Down

```

A1-2610# exit

A1-2610> en

A1-2610# sh vlan 2

Status and Counters - VLAN Information - Ports - VLAN 2

VLAN ID : 2

Name : gestion

Status : Port-based

Voice : No

Jumbo : No

Port Information Mode Unknown VLAN Status

```

-----
3          Untagged Learn    Down
4          Untagged Learn    Down
5          Untagged Learn    Down
6          Untagged Learn    Down
7          Untagged Learn    Down
8          Untagged Learn    Down
9          Untagged Learn    Down
10         Untagged Learn    Down
23         Tagged   Learn    Down
24         Tagged   Learn    Down

```

A1-2610# sh vlan 3

Status and Counters - VLAN Information - Ports - VLAN 3

```
VLAN ID : 3
Name : rh
Status : Port-based
Voice : No
Jumbo : No
```

Port	Information Mode	Unknown	VLAN	Status
11	Untagged	Learn		Down
12	Untagged	Learn		Down
13	Untagged	Learn		Down
14	Untagged	Learn		Down
15	Untagged	Learn		Down
16	Untagged	Learn		Down
17	Untagged	Learn		Down
23	Tagged	Learn		Down
24	Tagged	Learn		Down

```
A1-2610# sh vlan 4
```

```
Status and Counters - VLAN Information - Ports - VLAN 4
```

```
VLAN ID : 4
Name : serviceIT
Status : Port-based
Voice : No
Jumbo : No
```

Port	Information Mode	Unknown	VLAN	Status
18	Untagged	Learn		Down
19	Untagged	Learn		Down
23	Tagged	Learn		Down
24	Tagged	Learn		Down

```
A1-2610(config)# vlan 8
A1-2610(vlan-8)# name DMZ
A1-2610(vlan-8)# EXIT
A1-2610(config)# exit
```

```
A1-2610# sh vlan wifi
```

```
Status and Counters - VLAN Information - Ports - VLAN 5
```

```
VLAN ID : 5
```

Name : wifi
Status : Port-based
Voice : No
Jumbo : No

Port	Information	Mode	Unknown	VLAN	Status
20		Untagged	Learn		Down
21		Untagged	Learn		Down
22		Untagged	Learn		Down
23		Tagged	Learn		Down
24		Tagged	Learn		Down

Routage site 1 :

Nous avons effectué le routage pour les deux Vlan du site 1.

```
A2-RT-891F(config)#int gi8.2
A2-RT-891F(config-subif)#ip address 172.21.2.254 255.255.255.0
A2-RT-891F(config-subif)#exit
A2-RT-891F(config)#int gi8.3
A2-RT-891F(config-subif)#ip address 172.21.3.254 255.255.255.0
A2-RT-891F(config-subif)#exit
A2-RT-891F(config)#int gi8.4
A2-RT-891F(config-subif)#ip address 172.21.4.254 255.255.255.0
% 172.21.4.0 overlaps with GigabitEthernet8.5
A2-RT-891F(config-subif)#exit
A2-RT-891F(config)#int gi8.5
A2-RT-891F(config-subif)#ip address 172.21.5.254 255.255.255.0
A2-RT-891F(config-subif)#exit
A2-RT-891F(config)# int gi8.8
A2-RT-891F(config-subif)#ip address 172.21.8.254 255.255.255.0
A2-RT-891F(config-subif)#exit
A1-RT-891F#conf t
A1-RT-891F(config)#interface gi8
A1-RT-891F(config-subif)#ip address 172.21.1.254 255.255.255.0
A1-RT-891F#no shut
A1-RT-891F#conf t
A1-RT-891F(config)#interface gi8.2
A1-RT-891F(config-subif)#encapsulation dot1q 2
A1-RT-891F(config-subif)#ip address 172.21.2.254 255.255.255.0
A1-RT-891F(config-subif)#exit
A1-RT-891F(config)#interface gi8.3
A1-RT-891F(config-subif)#encapsulation dot1q 3
```

```

A1-RT-891F(config-subif)#ip address 172.21.3.254 255.255.255.0
A1-RT-891F(config-subif)#exit
A1-RT-891F(config)#interface gi8.4
A1-RT-891F(config-subif)#encapsulation dot1q 4
A1-RT-891F(config-subif)#ip address 172.21.4.254 255.255.255.0
A1-RT-891F(config-subif)#exit
A1-RT-891F(config)#interface gi8.5
A1-RT-891F(config-subif)#encapsulation dot1q 5
A1-RT-891F(config-subif)#ip address 172.21.5.254 255.255.255.0
A1-RT-891F(config-subif)#exit
A1-RT-891F(config)#interface gi8.8
A1-RT-891F(config-subif)#encapsulation dot1q 8
A1-RT-891F(config-subif)#ip address 172.21.8.254 255.255.255.0
A1-RT-891F(config-subif)#exit

```

```

A2-RT-891F#conf
A2-RT-891F#configure
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line. End with CNTL/Z.
A2-RT-891F(config)#int vlan1
A2-RT-891F(config-if)#int vlan8
A2-RT-891F(config-if)#
*Mar 17 14:43:10.547: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan8,
changed state to downexit
A2-RT-891F(config)#int vlan1
A2-RT-891F(config-if)#ip address 54.54.1.1 255.255.255.0
A2-RT-891F(config-if)#exit
A2-RT-891F(config)#exit

```

```
A2-RT-891F#show ip int brief
```

```

*Mar 17 14:59:34.175: %LINK-3-UPDOWN: Interface FastEthernet0, changed state to up
*Mar 17 14:59:35.175: %LINEPROTO-5-UPDOWN: Line protocol on Interface
FastEthernet0, changed state to up

```

Interface Protocol	IP-Address	OK?	Method	Status
Async3	unassigned	YES	unset	down
BRI0	unassigned	YES	NVRAM	administratively down
BRI0:1	unassigned	YES	unset	administratively down
BRI0:2	unassigned	YES	unset	administratively down
FastEthernet0	172.21.1.1	YES	manual	up
GigabitEthernet0	unassigned	YES	unset	administratively down
GigabitEthernet1	unassigned	YES	unset	down
GigabitEthernet2	unassigned	YES	unset	down
GigabitEthernet3	unassigned	YES	unset	administratively down
GigabitEthernet4	unassigned	YES	unset	administratively down

GigabitEthernet5	unassigned	YES	unset	administratively	down	down
GigabitEthernet6	unassigned	YES	unset	administratively	down	down
GigabitEthernet7	unassigned	YES	unset	administratively	down	down
GigabitEthernet8	unassigned	YES	NVRAM	up		up
GigabitEthernet8.2	172.21.2.254	YES	manual	up		up
GigabitEthernet8.3	172.21.3.254	YES	manual	up		up
GigabitEthernet8.4	172.21.4.254	YES	manual	up		up
GigabitEthernet8.5	172.21.5.254	YES	manual	up		up
GigabitEthernet8.8	172.21.8.254	YES	manual	up		up
Vlan1	54.54.1.1	YES	manual	down		down
Vlan8	unassigned	YES	unset	down		down

```
A2-RT-891F# sh 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, H - NHRP, l - LISP
       a - application route
       + - replicated route, % - next hop override, p - overrides from PfR

172.21.0.0/16 is variably subnetted, 12 subnets, 2 masks
C       172.21.1.0/24 is directly connected, FastEthernet0
L       172.21.1.1/32 is directly connected, FastEthernet0
C       172.21.2.0/24 is directly connected, GigabitEthernet8.2
L       172.21.2.254/32 is directly connected, GigabitEthernet8.2
C       172.21.3.0/24 is directly connected, GigabitEthernet8.3
L       172.21.3.254/32 is directly connected, GigabitEthernet8.3
C       172.21.4.0/24 is directly connected, GigabitEthernet8.4
L       172.21.4.254/32 is directly connected, GigabitEthernet8.4
C       172.21.5.0/24 is directly connected, GigabitEthernet8.5
L       172.21.5.254/32 is directly connected, GigabitEthernet8.5
C       172.21.8.0/24 is directly connected, GigabitEthernet8.8
L       172.21.8.254/32 is directly connected, GigabitEthernet8.8
```

Test routage site 1 :

```
sio@debian11:~$ ping 172.21.2.254
PING 172.21.2.254 (172.21.2.254) 56(84) bytes of data.
From 172.21.2.1 icmp_seq=1 Destination Host Unreachable
From 172.21.2.1 icmp_seq=2 Destination Host Unreachable
From 172.21.2.1 icmp_seq=3 Destination Host Unreachable
64 bytes from 172.21.2.254: icmp_seq=5 ttl=255 time=2.73 ms
64 bytes from 172.21.2.254: icmp_seq=6 ttl=255 time=2.50 ms
64 bytes from 172.21.2.254: icmp_seq=7 ttl=255 time=1.30 ms
64 bytes from 172.21.2.254: icmp_seq=8 ttl=255 time=0.999 ms
```

Site 2 :

VLAN 6 (production) et 7 (ventes) : Commutateur aruba
(172.20.21.2).

Aruba HP 2530	1	3	5	7	9	11	13	15	17	19	21	23
	1	1	1	1	1	1	1	1	1	1	1	1
	1	1	1	1	1	1	1	1	1	1	1	1
	2	4	6	8	10	12	14	16	18	20	22	24

```
A1-HP2530# conf t
A1-HP2530(config)# vlan 6
A1-HP2530(vlan-6)# name production
A1-HP2530(vlan-6)# untagged 2-15
A1-HP2530(vlan-6)# tagged 24
A1-HP2530(vlan-6)# tagged 23
A1-HP2530(vlan-6)# exit
A1-HP2530(config)# vlan 7
A1-HP2530(vlan-7)# name vente
A1-HP2530(vlan-7)# untagged 16-17
A1-HP2530(vlan-7)# tagged 24
A1-HP2530(vlan-7)# tagged 23
A1-HP2530(vlan-7)# exit
A1-HP2530(config)# sh vlan 6

Status and Counters - VLAN Information - VLAN 6
VLAN ID : 6
Name : production
Status : Port-based
```

Voice : No

Jumbo : No

Port Information Mode Unknown VLAN Status

2	Untagged Learn	Down
3	Untagged Learn	Down
4	Untagged Learn	Down
5	Untagged Learn	Down
6	Untagged Learn	Down
7	Untagged Learn	Down
8	Untagged Learn	Down
9	Untagged Learn	Down
10	Untagged Learn	Down
11	Untagged Learn	Down
12	Untagged Learn	Down
13	Untagged Learn	Down
14	Untagged Learn	Down
15	Untagged Learn	Down
23	Tagged Learn	Down
24	Tagged Learn	Up

A1-HP2530(config)# sh vlan 7

Status and Counters - VLAN Information - VLAN 7

VLAN ID : 7

Name : vente

Status : Port-based

Voice : No

Jumbo : No

Port Information Mode Unknown VLAN Status

16	Untagged Learn	Down
17	Untagged Learn	Down
23	Tagged Learn	Down
24	Tagged Learn	Up

Routing site 2 :

Nous avons effectué le routage pour les deux Vlan du site 2.

```
A1-RT-891F#conf t
A1-RT-891F(config)#interface gi8
A1-RT-891F(config-subif)#ip address 172.21.1.254 255.255.255.0
A1-RT-891F#no shut
A1-RT-891F#conf t
A1-RT-891F(config)#interface gi8.6
A1-RT-891F(config-subif)#encapsulation dot1q 6
A1-RT-891F(config-subif)#ip address 172.21.6.254 255.255.255.0
A1-RT-891F(config-subif)#exit
A1-RT-891F(config)#interface gi8.7
A1-RT-891F(config-subif)#encapsulation dot1q 7
A1-RT-891F(config-subif)#ip address 172.21.7.254 255.255.255.0
A1-RT-891F(config-subif)#no shut
A1-RT-891F(config-subif)#exit
A1-RT-891F(config)#exit
A1-RT-891F#show ip interface brief
GigabitEthernet8          172.21.1.254      YES manual up
GigabitEthernet8.6       172.21.6.254      YES manual up
GigabitEthernet8.7       172.21.7.254      YES manual up
NVI0                      unassigned        YES unset up
Vlan1                    unassigned        YES unset administratively down down
A1-RT-891F#show ip route

172.21.0.0/16 is variably subnetted, 6 subnets, 2 masks
C    172.21.1.0/24 is directly connected, GigabitEthernet8
L    172.21.1.254/32 is directly connected, GigabitEthernet8
C    172.21.6.0/24 is directly connected, GigabitEthernet8.6
L    172.21.6.254/32 is directly connected, GigabitEthernet8.6
C    172.21.7.0/24 is directly connected, GigabitEthernet8.7
L    172.21.7.254/32 is directly connected, GigabitEthernet8.7
```

Test routage site 2 :

```
sio@debian11:~$ ping 172.21.1.254
PING 172.21.1.254 (172.21.1.254) 56(84) bytes of data.
64 bytes from 172.21.1.254: icmp_seq=1 ttl=255 time=1.79 ms
64 bytes from 172.21.1.254: icmp_seq=2 ttl=255 time=1.06 ms
64 bytes from 172.21.1.254: icmp_seq=3 ttl=255 time=0.998 ms
64 bytes from 172.21.1.254: icmp_seq=4 ttl=255 time=0.859 ms
^C
--- 172.21.1.254 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3006ms
rtt min/avg/max/mdev = 0.859/1.175/1.789/0.361 ms
```

```
sio@debian11:~$ ping 172.21.1.254
PING 172.21.1.254 (172.21.1.254) 56(84) bytes of data.
64 bytes from 172.21.1.254: icmp_seq=1 ttl=255 time=2.59 ms
64 bytes from 172.21.1.254: icmp_seq=2 ttl=255 time=2.61 ms
^C
--- 172.21.1.254 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1003ms
rtt min/avg/max/mdev = 2.586/2.598/2.610/0.012 ms
sio@debian11:~$ ^C
```

Connexion inter-routeur :

Ajout des routes par défaut sur le routeur du site 2 :

```
A1-RT-891F#conf t
A1-RT-891F(config)#ip route 0.0.0.0 0.0.0.0 172.21.1.1
A1-RT-891F(config)#exit

S*    0.0.0.0/0 [1/0] via 172.21.1.1
      172.21.0.0/16 is variably subnetted, 6 subnets, 2 masks
C      172.21.1.0/24 is directly connected, FastEthernet0
L      172.21.1.2/32 is directly connected, FastEthernet0
C      172.21.6.0/24 is directly connected, GigabitEthernet8.6
L      172.21.6.254/32 is directly connected, GigabitEthernet8.6
C      172.21.7.0/24 is directly connected, GigabitEthernet8.7
L      172.21.7.254/32 is directly connected, GigabitEthernet8.7
```

Test de connexion vers le routeur « parefeu » :

```
sio@debian11:~$ ping 172.21.1.1
PING 172.21.1.1 (172.21.1.1) 56(84) bytes of data.
64 bytes from 172.21.1.1: icmp_seq=117 ttl=254 time=2.33 ms
64 bytes from 172.21.1.1: icmp_seq=118 ttl=254 time=3.90 ms
64 bytes from 172.21.1.1: icmp_seq=119 ttl=254 time=1.90 ms
64 bytes from 172.21.1.1: icmp_seq=120 ttl=254 time=1.64 ms
64 bytes from 172.21.1.1: icmp_seq=121 ttl=254 time=1.66 ms
64 bytes from 172.21.1.1: icmp_seq=122 ttl=254 time=1.73 ms
64 bytes from 172.21.1.1: icmp_seq=123 ttl=254 time=1.99 ms
64 bytes from 172.21.1.1: icmp_seq=124 ttl=254 time=2.21 ms
^C
```

Configuration du serveur DHCP :

```
A2-RT-891F(config)#ip dhcp pool DMZ
```

```
A2-RT-891F(dhcp-config)#network 172.21.8.0 255.255.255.0
```

```
A2-RT-891F(dhcp-config)#default-router 172.21.1.1
```

```
A2-RT-891F(dhcp-config)#exit
```

```
A2-RT-891F(config)#ip dhcp
```

```
A2-RT-891F(config)#ip dhcp pool gestion
```

```
A2-RT-891F(dhcp-config)#network 172.21.2.0 255.255.255.0
```

```
A2-RT-891F(dhcp-config)#default-router 172.21.1.1
```

```
A2-RT-891F(dhcp-config)#exit
```

```
A2-RT-891F(config)#ip dhcp pool RH
```

```
A2-RT-891F(dhcp-config)#network 172.21.3.0 255.255.255.0
```

```
A2-RT-891F(dhcp-config)#default-router 172.21.1.1
```

```
A2-RT-891F(dhcp-config)#exit
```

```
A2-RT-891F(config)#ip dhcp pool wifi
```

```
A2-RT-891F(dhcp-config)#network 172.21.5.1 255.255.255.0
```

```
A2-RT-891F(dhcp-config)#default-router 172.21.1.1
```

```
A2-RT-891F(config)#ip dhcp pool service_IT
```

```
A2-RT-891F(dhcp-config)#network 172.21.4.1 255.255.255.0
```

```
A2-RT-891F(dhcp-config)#default-router 172.21.1.1
```

```
A2-RT-891F(dhcp-config)#exit
```

```
A2-RT-891F(config)#ip dhcp pool production
```

```
A2-RT-891F(dhcp-config)#network 172.21.6.1 255.255.255.0
```

```
A2-RT-891F(dhcp-config)#default-router 172.21.1.1
```

```
A2-RT-891F(dhcp-config)#exit
```

```
A2-RT-891F(config)#ip dhcp pool magasin
```

```
A2-RT-891F(dhcp-config)#network 172.21.7.1 255.255.255.0
```

```
A2-RT-891F(dhcp-config)#default-router 172.21.1.1
```

```
A2-RT-891F(dhcp-config)#exit
```

```
A2-RT-891F#show ip dhcp binding
```

```
*Mar 18 09:45:09.146: %SYS-5-CONFIG_I: Configured from console by console show ip dhcp binding
```

```
Bindings from all pools not associated with VRF:
```

IP address	Client-ID/ Hardware address/ User name	Lease expiration	Type
172.21.3.1	0108.0027.9fb5.6f	Mar 19 2025 09:35 AM	Automatic
172.21.3.3	0100.155d.0102.02	Mar 19 2025 09:36 AM	Automatic

```
A2-RT-891F#conf t
```

```
A2-RT-891F(config)#ip dhcp pool wifi
```

```
A2-RT-891F(dhcp-config)#default-router 172.21.1.1
```

```
A2-RT-891F(dhcp-config)#exit
```

```
A2-RT-891F(config)#ip dhcp pool service_IT
```

```
A2-RT-891F(dhcp-config)#default-router 172.21.1.1
```

```
A2-RT-891F(dhcp-config)#exit
```

```
A2-RT-891F(config)#ip dhcp pool production
```

```
A2-RT-891F(dhcp-config)#default-router 172.21.1.1
```

```
A2-RT-891F(dhcp-config)#exit
```

```
A2-RT-891F(config)#ip dhcp pool magasin
```

```
A2-RT-891F(dhcp-config)#network 172.21.7.1 255.255.255.0
```

```
A2-RT-891F(dhcp-config)#default-router 172.21.1.1
```

```
A2-RT-891F(dhcp-config)#exit
```

```
A2-RT-891F#show
```

```
*Mar 18 09:48:09.974: %SYS-5-CONFIG_I: Configured from console by console ip dhcp bind
```

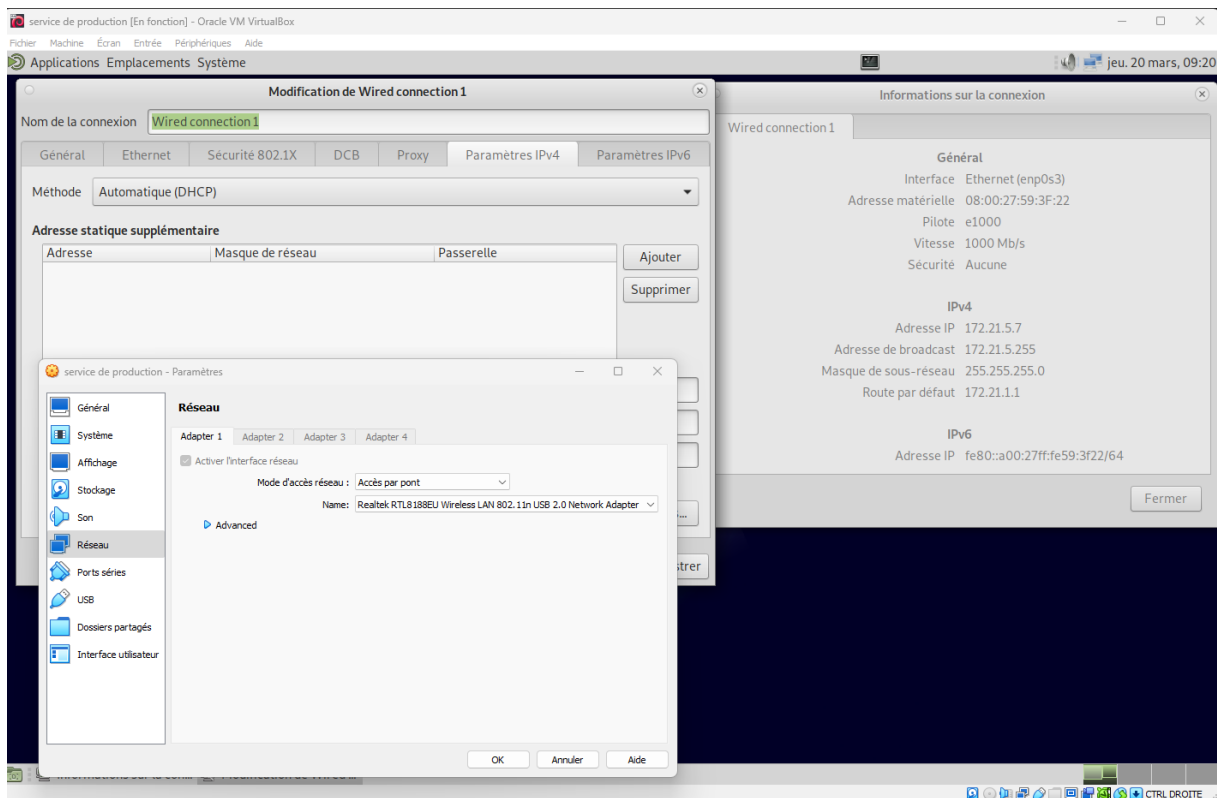
```
Bindings from all pools not associated with VRF:
```

IP address	Client-ID/ Hardware address/ User name	Lease expiration	Type
172.21.3.1	0108.0027.9fb5.6f	Mar 19 2025 09:35 AM	Automatic
172.21.3.3	0100.155d.0102.02	Mar 19 2025 09:36 AM	Automatic

```
A2-RT-891F#show ip dhcp bind
```

```
Bindings from all pools not associated with VRF:
```

IP address	Client-ID/ Hardware address/ User name	Lease expiration	Type
172.21.2.1	0100.155d.0102.02	Mar 19 2025 09:56 AM	Automatic



Configuration du serveur TFTP :

Pour la mise en place du serveur TFTP il faut être dans le réseau 172.20.0.0.

Sauvegarde de la configuration du routeur site 1 (parefeu) :

```
A2-RT-891F#copy running-config tftp
```

```
Address or name of remote host []? 172.20.1.2
```

```
Destination filename [a2-rt-891f-config]?
```

```
!!
```

```
2980 bytes copied in 0.356 secs (8371 bytes/sec)
```

La configuration du routeur est la suivante :

```
! Last configuration change at 14:02:42 UTC Wed Mar 19 2025
```

```
!
```

```
version 15.6
```

```
service timestamps debug datetime msec
```

```
service timestamps log datetime msec
```

```
no service password-encryption
```

```
!
```

```
hostname A2-RT-891F
```

```
!
```

```
boot-start-marker
```

```
boot-end-marker
```

```
!  
enable secret 5 $1$Vr/K$C1cf5hudIA19J.zjyMDL./  
enable password chopin  
!  
no aaa new-model  
ethernet lmi ce  
!  
ip dhcp pool ma_poule  
  network 172.21.3.0 255.255.255.0  
  default-router 172.21.1.1  
  dns-server 8.8.8.8  
!  
ip dhcp pool DMZ  
  network 172.21.8.0 255.255.255.0  
  default-router 172.21.1.1  
!  
ip dhcp pool gestion  
  network 172.21.2.0 255.255.255.0  
  default-router 172.21.1.1  
!  
ip dhcp pool wifi  
  network 172.21.5.0 255.255.255.0  
  default-router 172.21.1.1  
!  
ip dhcp pool service_IT  
  network 172.21.4.0 255.255.255.0  
  default-router 172.21.1.1  
!  
ip dhcp pool production  
  network 172.21.6.0 255.255.255.0  
  default-router 172.21.1.1  
!  
ip dhcp pool magasin  
  network 172.21.7.0 255.255.255.0  
  default-router 172.21.1.1  
!  
ip cef  
no ipv6 cef  
!  
multilink bundle-name authenticated  
!  
license udi pid C891F-K9 sn FCZ2529RA3A
```

```
!  
interface BRI0  
  no ip address  
  encapsulation hdlc  
  shutdown  
  isdn termination multidrop  
!  
interface FastEthernet0  
  ip address 172.21.1.1 255.255.255.0  
  duplex auto  
  speed auto  
!  
interface GigabitEthernet0  
  no ip address  
  shutdown  
!  
interface GigabitEthernet1  
  no ip address  
!  
interface GigabitEthernet2  
  no ip address  
!  
interface GigabitEthernet3  
  no ip address  
  shutdown  
!  
interface GigabitEthernet4  
  no ip address  
  shutdown  
!  
interface GigabitEthernet5  
  switchport access vlan 25  
  no ip address  
!  
interface GigabitEthernet6  
  no ip address  
  shutdown  
!  
interface GigabitEthernet7  
  no ip address  
!  
interface GigabitEthernet8
```

```
no ip address
duplex auto
speed auto
!
interface GigabitEthernet8.2
 encapsulation dot1Q 2
 ip address 172.21.2.254 255.255.255.0
!
interface GigabitEthernet8.3
 encapsulation dot1Q 3
 ip address 172.21.3.254 255.255.255.0
!
interface GigabitEthernet8.4
 encapsulation dot1Q 4
 ip address 172.21.4.254 255.255.255.0
!
interface GigabitEthernet8.5
 encapsulation dot1Q 5
 ip address 172.21.5.254 255.255.255.0
!
interface GigabitEthernet8.8
 encapsulation dot1Q 8
 ip address 172.21.8.254 255.255.255.0
!
interface Vlan1
 ip address 172.21.11.69 255.255.255.0
!
interface Vlan8
 no ip address
!
interface Vlan25
 ip address 172.20.1.25 255.255.255.0
!
interface Async3
 no ip address
 encapsulation slip
!
ip forward-protocol nd
no ip http server
no ip http secure-server
!
!
```

```

ip route 0.0.0.0 0.0.0.0 172.21.11.70
ip route 172.21.6.0 255.255.255.0 172.21.1.2
ip route 172.21.7.0 255.255.255.0 172.21.1.2
!
control-plane
!
mgcp behavior rsip-range tgcp-only
mgcp behavior comedia-role none
mgcp behavior comedia-check-media-src disable
mgcp behavior comedia-sdp-force disable
!
mgcp profile default
!
line con 0
  no modem enable
line aux 0
line 3
  modem InOut
  speed 115200
  flowcontrol hardware
line vty 0 4
  password Chopin54
  login
  transport input none
!
scheduler allocate 20000 1000
!
end

```

Cette sauvegarde nous permet de charger une configuration déjà existante en cas de changement de routeur afin d'optimiser le temps d'installation.

Nous avons également effectué la sauvegarde des commutateurs dans le même objectif :

```

A1-HP2530# copy running-config tftp 172.20.1.2 hpconf2
TFTP download in progress.
; J9085A Configuration Editor; Created on release #R.11.30

hostname "A1-2610"
mirror-port 1
snmp-server community "public" Unrestricted
vlan 1
  name "default"
  untagged 1,25-28
  ip address 172.20.21.4 255.255.0.0

```

```

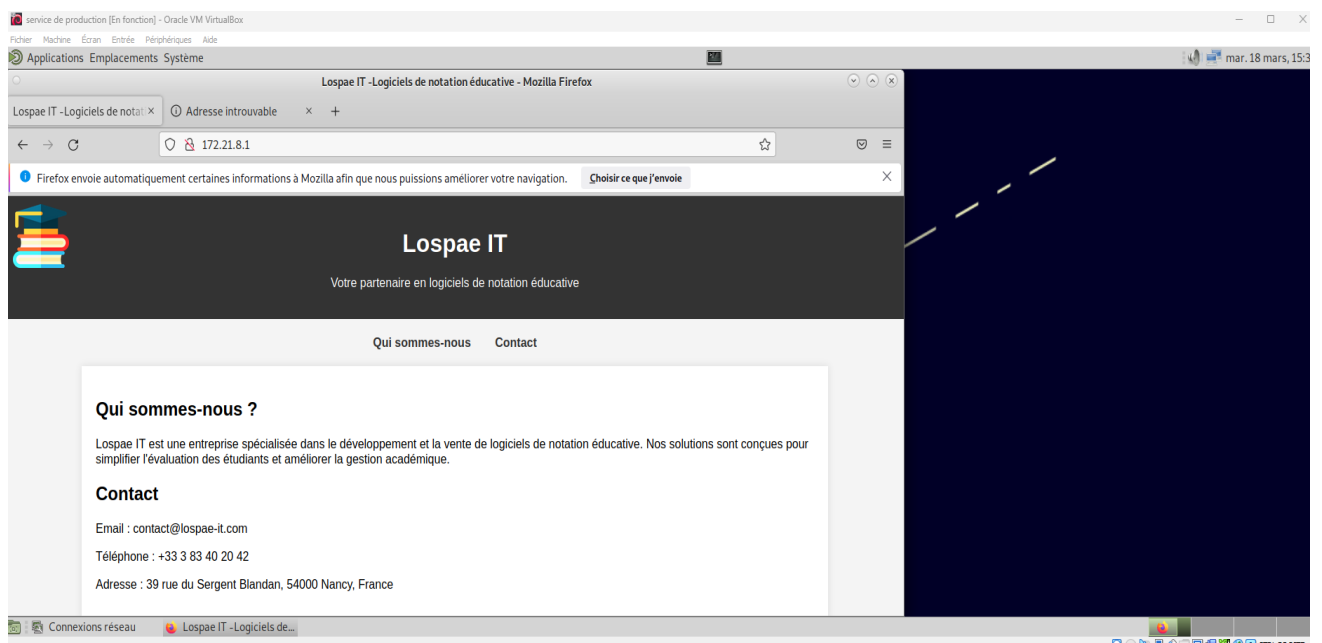
    tagged 23-24
    no untagged 2-22
    exit
vlan 2
    name "gestion"
    untagged 3-10
    tagged 23-24
    exit
vlan 3
    name "rh"
    untagged 11-17
    tagged 23-24
    exit
vlan 4
    name "serviceIT"
    untagged 18-19
    tagged 23-24
    exit
vlan 5
    name "wifi"
    untagged 20-22
    tagged 23-24
    exit
vlan 8
    name "DMZ"
    untagged 2
    tagged 23-24
    exit
interface 20
    monitor
    exit
password manager

hostname "A1-HP2530"
snmp-server community "public"
vlan 1
    name "DEFAULT_VLAN"
    no untagged 2-17
    untagged 1,18-28
    ip address 172.20.21.2 255.255.0.0
    exit
vlan 6

```

```
name "production"
untagged 2-15
tagged 23-24
no ip address
exit
vlan 7
name "vente"
untagged 16-17
tagged 23-24
no ip address
exit
password manager
```

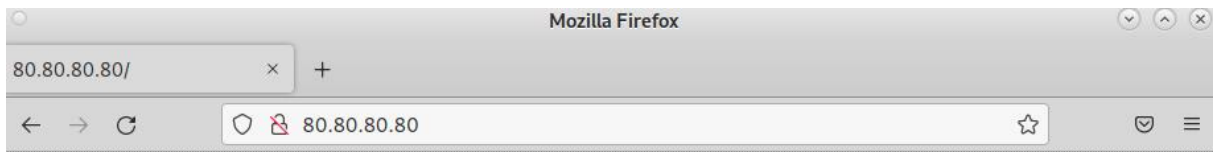
Mise en place de la DMZ :



Pour la mise en place, le NAT doit être mis en place et on doit configurer les routes par défaut, la DMZ est reliée au vlan 8 dans le commutateur 172.20.21.4.

Nous arrivons à accéder au site de l'entreprise depuis les clients des différents services comme le prouve la capture d'écran.

Mise en place de l'accès à l'internet simulé :



80.80.80.80



SIO

L'accès à un internet simulé passe par la liaison de deux routeurs (routeur « parefeu » et routeur « box »).

[Ajout des ip routes pour donner aux réseaux le chemin d'accès vers l'internet simulé :](#)

```
A1-RT-1801(config)#ip route 172.21.2.0 255.255.255.0
A1-RT-1801(config)#ip route 172.21.3.0 255.255.255.0
A1-RT-1801(config)#ip route 172.21.4.0 255.255.255.0
A1-RT-1801(config)#ip route 172.21.5.0 255.255.255.0
A1-RT-1801(config)#ip route 172.21.6.0 255.255.255.0
A1-RT-1801(config)#ip route 172.21.7.0 255.255.255.0
A1-RT-1801(config)#ip route 172.21.8.0 255.255.255.0
```

Ajout des access list qui donne l'accord aux réseaux d'accéder à l'internet simulé:

```
A1-RT-1801(config)#access-list 1 permit 172.21.3.0 0.0.255.255
A1-RT-1801(config)#access-list 1 permit 172.21.2.0 0.0.255.255
A1-RT-1801(config)#access-list 1 permit 172.21.4.0 0.0.255.255
A1-RT-1801(config)#access-list 1 permit 172.21.5.0 0.0.255.255
A1-RT-1801(config)#access-list 1 permit 172.21.6.0 0.0.255.255
A1-RT-1801(config)#access-list 1 permit 172.21.7.0 0.0.255.255
A1-RT-1801(config)#access-list 1 permit 172.21.8.0 0.0.255.255
```

Configuration du routeur pour l'accès à l'internet simulé :

```
A1-RT-1801(config)#ip nat inside source list 1 interface fa0 overload
A1-RT-1801(config)#in fa0
A1-RT-1801(config-if)#ip nat outside
A1-RT-1801(config-if)#exit
A1-RT-1801(config)#int vlan 1
A1-RT-1801(config-if)#ip nat inside
A1-RT-1801#sh 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, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is 54.54.1.250 to network 0.0.0.0
```

```
S*   0.0.0.0/0 [1/0] via 54.54.1.250
     54.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C     54.54.1.0/24 is directly connected, FastEthernet0
L     54.54.1.1/32 is directly connected, FastEthernet0
     172.21.0.0/16 is variably subnetted, 9 subnets, 2 masks
S     172.21.2.0/24 [1/0] via 172.21.11.69
S     172.21.3.0/24 [1/0] via 172.21.11.69
S     172.21.4.0/24 [1/0] via 172.21.11.69
S     172.21.5.0/24 [1/0] via 172.21.11.69
S     172.21.6.0/24 [1/0] via 172.21.11.69
S     172.21.7.0/24 [1/0] via 172.21.11.69
S     172.21.8.0/24 [1/0] via 172.21.11.69
C     172.21.11.0/24 is directly connected, Vlan1
L     172.21.11.70/32 is directly connected, Vlan1
```