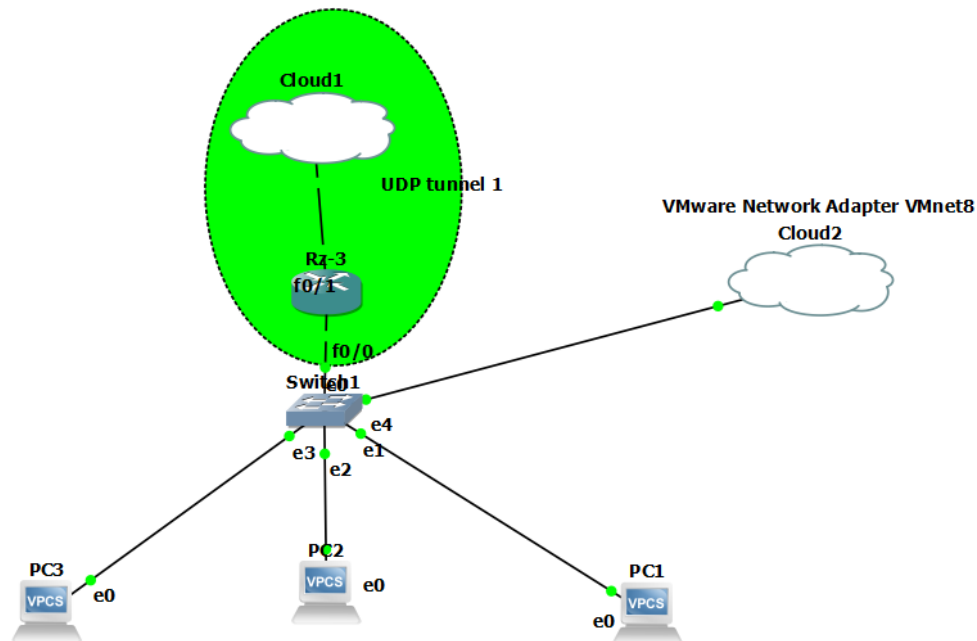# Département Base de Donnée

- **Topologie :**

- **Configuration Routeur :**

```
Rz-3#show running
Building configuration...

Current configuration : 2644 bytes
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname Rz-3
!
boot-start-marker
boot-end-marker
!
!
no aaa new-model
memory-size iomem 5
no ip icmp rate-limit unreachable
ip cef
!
!
no ip dhcp use vrf connected
ip dhcp excluded-address 10.10.40.1 10.10.40.20
!
ip dhcp pool LAN-DB
   network 10.10.40.0 255.255.254.0
   default-router 10.10.40.1
   dns-server 8.8.8.8
!
ip dhcp pool LAN-40
   default-router 10.10.40.1
   dns-server 8.8.8.8
!
!
 --More--
```

```
!
ip dns server
!
no ip http server
no ip http secure-server
ip nat inside source list 100 interface FastEthernet0/1 overload
!
access-list 10 permit 10.10.40.0 0.0.1.255
access-list 10 permit 10.10.40.0 0.0.0.255
access-list 100 permit ip 10.10.40.0 0.0.1.255 any
access-list 100 deny   ip any 172.16.0.0 0.0.0.3
access-list 100 deny   ip any 201.201.201.0 0.0.0.3
no cdp log mismatch duplex
!
!
!
control-plane
!
!
!
!
!
!
!
!
!
!
line con 0
 exec-timeout 0 0
 privilege level 15
 logging synchronous
line aux 0
 exec-timeout 0 0
 privilege level 15
 logging synchronous
line vty 0 4
```

```
 shutdown
 clock rate 2000000
!
interface FastEthernet0/1
 ip address 200.0.0.10 255.255.255.252
 ip nat outside
 ip virtual-reassembly
 duplex auto
 speed auto
!
interface Serial0/1
 no ip address
 shutdown
 clock rate 2000000
!
interface Serial0/2
 no ip address
 shutdown
 clock rate 2000000
!
interface Serial0/3
 no ip address
 shutdown
 clock rate 2000000
!
router ospf 1
 router-id 13.13.13.13
 log-adjacency-changes
 network 8.8.8.8 0.0.0.0 area 0
 network 10.10.40.0 0.0.1.255 area 3
 network 172.16.0.0 0.0.0.3 area 0
!
ip forward-protocol nd
ip route 0.0.0.0 0.0.0.0 FastEthernet0/1
ip route 0.0.0.0 0.0.0.0 192.168.137.2
 --More--
```

```
!
interface Loopback1
 ip address 8.8.8.8 255.255.255.255
!
interface Tunnel0
 ip address 172.16.0.2 255.255.255.252
 tunnel source FastEthernet0/1
 tunnel destination 200.0.0.9
!
interface FastEthernet0/0
 ip address 10.10.40.1 255.255.254.0
 ip nat inside
 ip virtual-reassembly
 duplex auto
 speed auto
!
interface Serial0/0
 no ip address
 shutdown
 clock rate 2000000
!
interface FastEthernet0/1
 ip address 200.0.0.10 255.255.255.252
 ip nat outside
 ip virtual-reassembly
 duplex auto
 speed auto
!
interface Serial0/1
 no ip address
 shutdown
 clock rate 2000000
!
interface Serial0/2
 no ip address
 shutdown
```

- **Configuration OSPF :**

```
Rz-3#show ip ospf database

          OSPF Router with ID (13.13.13.13) (Process ID 1)

               Router Link States (Area 0)

Link ID          ADV Router       Age        Seq#        Checksum Link count
13.13.13.13      13.13.13.13      688         0x80000002 0x0062E8 2

               Summary Net Link States (Area 0)

Link ID          ADV Router       Age        Seq#        Checksum
10.10.40.0       13.13.13.13      690         0x80000001 0x00AC17

               Router Link States (Area 3)

Link ID          ADV Router       Age        Seq#        Checksum Link count
13.13.13.13      13.13.13.13      694         0x80000001 0x00B3D0 1

               Summary Net Link States (Area 3)

Link ID          ADV Router       Age        Seq#        Checksum
8.8.8.8          13.13.13.13      690         0x80000001 0x009A4D
172.16.0.0       13.13.13.13      680         0x80000001 0x00F8C3
Rz-3#
```

- **Configuration PAT :**

```
Rz-3#show ip nat statistics
Total active translations: 0 (0 static, 0 dynamic; 0 extended)
Outside interfaces:
  FastEthernet0/1
Inside interfaces:
  FastEthernet0/0
Hits: 8  Misses: 0
CEF Translated packets: 0, CEF Punted packets: 0
Expired translations: 1
Dynamic mappings:
-- Inside Source
[Id: 1] access-list 100 interface FastEthernet0/1 refcount 0
Appl doors: 0
Normal doors: 0
Queued Packets: 0
Rz-3#
```

- **Configuration DHCP :**

```
Rz-3#show ip dhcp binding
Bindings from all pools not associated with VRF:
IP address         Client-ID/              Lease expiration        Type
                   Hardware address/
                   User name
10.10.40.22        0100.5079.6668.00       Mar 01 2002 12:15 AM    Automatic
Rz-3#show ip dhcp pool

Pool LAN-DB :
 Utilization mark (high/low)    : 100 / 0
 Subnet size (first/next)       : 0 / 0
 Total addresses                : 510
 Leased addresses               : 1
 Pending event                  : none
 1 subnet is currently in the pool :
 Current index       IP address range                     Leased addresses
 10.10.40.23         10.10.40.1        - 10.10.41.254      1

Pool LAN-40 :
 Utilization mark (high/low)    : 100 / 0
 Subnet size (first/next)       : 0 / 0
 Total addresses                : 0
 Leased addresses               : 0
 Pending event                  : none
 0 subnet is currently in the pool
Rz-3#
```

- **Les routes :**

```
Rz-3#show ip route
Codes: 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

Gateway of last resort is 0.0.0.0 to network 0.0.0.0

     201.201.201.0/30 is subnetted, 1 subnets
S       201.201.201.0 is directly connected, Tunnel0
     200.0.0.0/30 is subnetted, 1 subnets
C       200.0.0.8 is directly connected, FastEthernet0/1
     172.16.0.0/30 is subnetted, 1 subnets
C       172.16.0.0 is directly connected, Tunnel0
     8.0.0.0/32 is subnetted, 1 subnets
C       8.8.8.8 is directly connected, Loopback1
     10.0.0.0/23 is subnetted, 1 subnets
C       10.10.40.0 is directly connected, FastEthernet0/0
S*   0.0.0.0/0 is directly connected, FastEthernet0/1
Rz-3#
```

- **Teste de la connectivité :**

```
Rz-3#ping 8.8.8.8

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 8.8.8.8, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms
Rz-3#
```

- **Teste sur PC :**

```
Welcome to Virtual PC Simulator, version 0.6.2
Dedicated to Daling.
Build time: Apr 10 2019 02:42:20
Copyright (c) 2007-2014, Paul Meng (mirnshi@gmail.com)
All rights reserved.

VPCS is free software, distributed under the terms of the "BSD" licence.
Source code and license can be found at vpcs.sf.net.
For more information, please visit wiki.freecode.com.cn.

Press '?' to get help.

Executing the startup file


PC2> show ip

NAME        : PC2[1]
IP/MASK     : 0.0.0.0/0
GATEWAY     : 0.0.0.0
DNS         :
MAC         : 00:50:79:66:68:01
LPORT       : 10016
RHOST:PORT  : 127.0.0.1:10017
MTU:        : 1500

PC2> ip dhcp
DDORA IP 10.10.40.21/23 GW 10.10.40.1

PC2>
```

- **Configuration IP :**

```
maram@maram-virtual-machine:~/Desktop$ ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: ens33: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 00:0c:29:31:1c:8f brd ff:ff:ff:ff:ff:ff
    altname enp2s1
    inet 10.10.40.50/23 scope global ens33
       valid_lft forever preferred_lft forever
    inet6 fe80::20c:29ff:fe31:1c8f/64 scope link
       valid_lft forever preferred_lft forever
```

- **Statu Serveur Base de donnée :**

```
maram@maram-virtual-machine:~/Desktop$ sudo systemctl status mysql
● mysql.service - MySQL Community Server
     Loaded: loaded (/lib/systemd/system/mysql.service; enabled; vendor p>
     Active: active (running) since Thu 2026-01-01 19:03:42 CET; 5min ago
    Process: 3461 ExecStartPre=/usr/share/mysql/mysql-systemd-start pre (>
   Main PID: 3469 (mysqld)
     Status: "Server is operational"
      Tasks: 37 (limit: 2204)
     Memory: 238.1M
        CPU: 2.947s
     CGroup: /system.slice/mysql.service
             └─3469 /usr/sbin/mysqld

19:03:42 01 نفج ا> maram-virtual-machine systemd[1]: Starting MySQL Commun>
19:03:42 01 نفج ا> maram-virtual-machine systemd[1]: Started MySQL Communi>
lines 1-14/14 (END)
```

- **Base de Donnée :**

```
maram@maram-virtual-machine:~/Desktop$ sudo mysql
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.44-0ubuntu0.22.04.1 (Ubuntu)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> SHOW DATABASES;
+--------------------+
| Database           |
+--------------------+
| entreprise         |
| entreprise_bd      |
| entreprise_db      |
| information_schema |
| jasser             |
| ma_base_de_donnees |
| mabase             |
| maram_mohamed      |
| mydatabase         |
| mysql              |
| performance_schema |
| sys                |
| test_connexion     |
| testdb             |
+--------------------+
14 rows in set (0.05 sec)
```

```
mysql> SELECT User, Host FROM mysql.user;
+------------------+-------------+
| User             | Host        |
+------------------+-------------+
| clientuser       | %           |
| jasser           | %           |
| web_reader       | 10.10.0.100 |
| debian-sys-maint | localhost   |
| mysql.infoschema | localhost   |
| mysql.session    | localhost   |
| mysql.sys        | localhost   |
| root             | localhost   |
+------------------+-------------+
8 rows in set (0.00 sec)

mysql> USE ^C
mysql> USE entreprise_bd
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> SHOW TABLES;
+-----------------------+
| Tables_in_entreprise_bd |
+-----------------------+
| employe               |
| employes              |
+-----------------------+
2 rows in set (0.00 sec)

mysql> SELECT * FROM employes
```

- **Fichier NETPLAN :**

```
  GNU nano 6.2
network:
  version: 2
  renderer: networkd
  ethernets:
    ens37:
      dhcp4: no
      dhcp6: no
      addresses:
        - 10.10.40.50/23
      routes:
        - to: default
          via: 10.10.40.1
      nameservers:
        addresses:
          - 8.8.8.8
          - 8.8.4.4
```

- **Script Shell :**

```
  GNU nano 6.2                    check_system.sh *
#!/bin/bash

echo "======================================="
echo "  RAPPORT DE CONFIGURATION SYSTÈME"
echo "======================================="
echo ""

echo "--- RÉSEAU ---"
echo "IP Address:"
ip addr show ens33
echo ""
echo "Routes:"
ip route
echo ""
echo "DNS:"
cat /etc/resolv.conf
echo ""

echo "--- MYSQL STATUS ---"
sudo systemctl status mysql --no-pager

^G Help        ^O Write Out   ^W Where Is    ^K Cut         ^T Execute
^X Exit        ^R Read File   ^\ Replace     ^U Paste       ^J Justify
```

- **VPN :**

```
!
ip tcp synwait-time 5
!
!
crypto isakmp policy 10
 encr aes
 authentication pre-share
 group 2
crypto isakmp key MySecretKey123 address 200.0.0.9
!
!
crypto ipsec transform-set TS-GRE esp-aes esp-sha-hmac
 mode transport
!
crypto map CMAP-BACKBONE 10 ipsec-isakmp
 set peer 200.0.0.9
 set transform-set TS-GRE
 match address ACL-VPN-BACKBONE
!
!
```