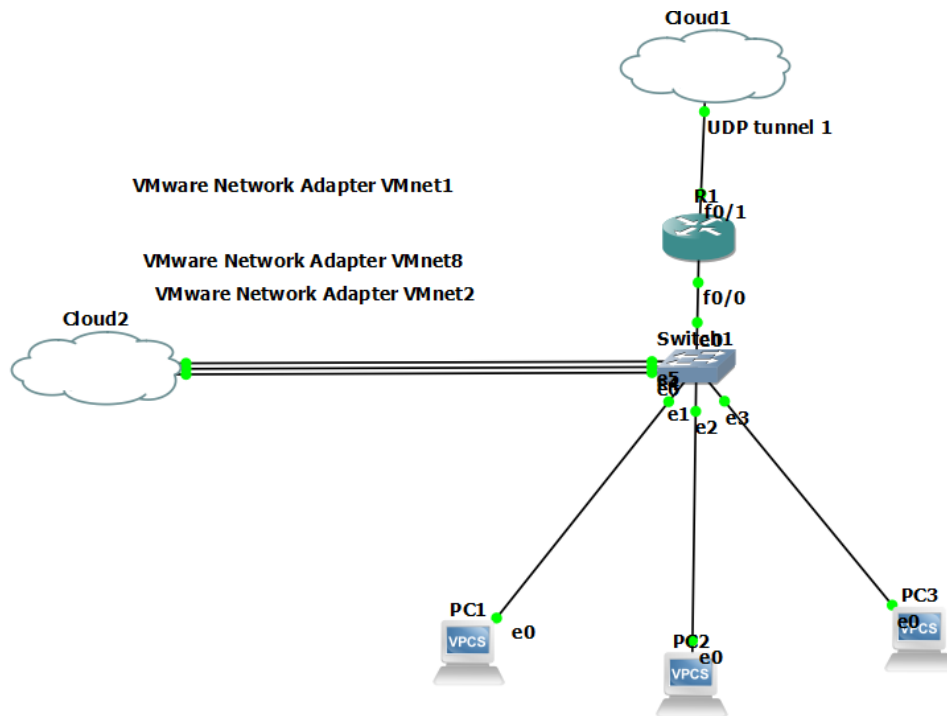
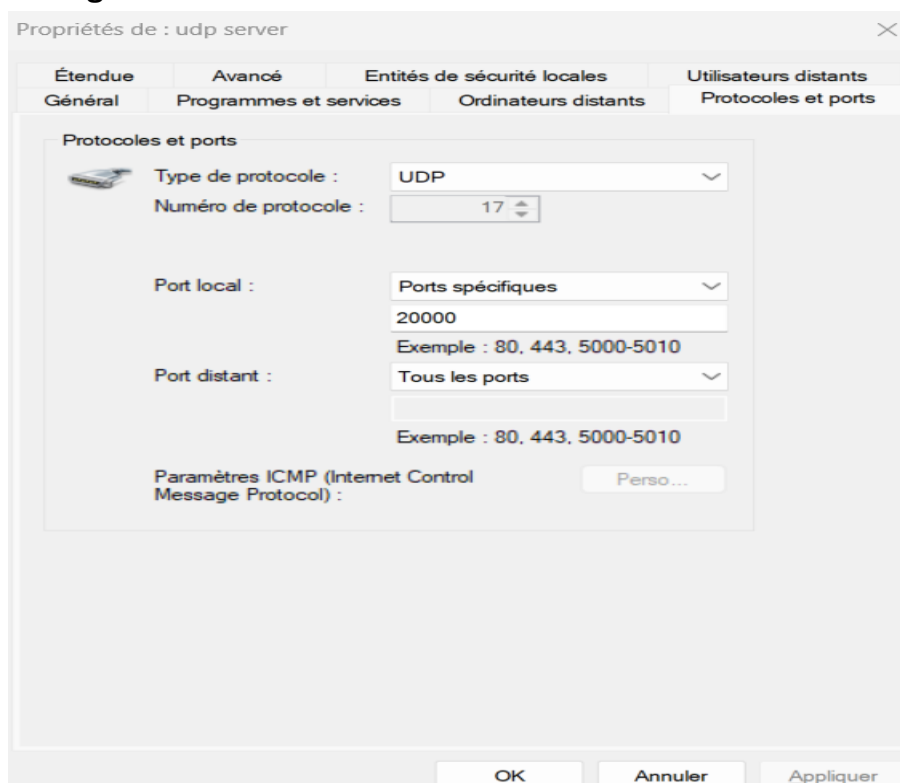


Département Collaboration

- Topologies :



- Configuration UDP :



- **Configuration du cloud :**

Node properties ? X

Cloud1 configuration

Ethernet interfaces TAP interfaces **UDP tunnels** Misc.

UDP tunnel settings

Name:

Local port:

Remote host:

Remote port:

UDP tunnels

Name	Local port	Remote host	Remote port
UDP tunnel 1	20000	192.168.43.30	30000

- **Configuration du cloud pour la connexion avec BackBone :**

Node properties ? X

Cloud1 configuration

Ethernet interfaces TAP interfaces **UDP tunnels** Misc.

UDP tunnel settings

Name:

Local port:

Remote host:

Remote port:

UDP tunnels

Name	Local port	Remote host	Remote port
UDP tunnel 1	20000	192.168.100.128	30000

- **Configuration du routeur collaboration pour ping avec la base de donnée :**

```

!
!=====
! || PAT CONFIGURATION           ||
!=====
!
! === ACL: Translate LAN traffic, NOT tunnel traffic ===
R1-Collab(config)# access-list 100 permit ip 10.10.42.0 0.0.0.255 any
R1-Collab(config)# access-list 100 deny ip any 172.16.0.0 0.0.255.255
R1-Collab(config)# access-list 100 deny ip any 10.11.0.0 0.0.255.255
!
! === Enable PAT (overload) ===
R1-Collab(config)# ip nat inside source list 100 interface FastEthernet0/1 overload
!
!=====
!
! === Static Routes to Your Backbone Networks ===
R1-Collab(config)# ip route 10.10.0.0 255.254.0.0 Tunnel0
R1-Collab(config)# ip route 10.11.0.0 255.255.0.0 Tunnel0
!
! === OSPF Configuration ===
R1-Collab(config)# router ospf 1
R1-Collab(config-router)# router-id 14.14.14.14
R1-Collab(config-router)# network 172.16.1.0 0.0.0.3 area 0
R1-Collab(config-router)# network 10.10.42.0 0.0.0.255 area 4
R1-Collab(config-router)# exit

```

10:15

- **Configuration NAT 1 :**

```
ss = Exec.
-Traceback= 0x621B993C 0x621BA5E0 0x62181CBC 0x62181F7C 0x621820A0 0x621820A0 0x62182F70 0x621B5DC0 0x6
21C1FB8 0x621AC3B0 0x621AD014 0x621ADF64 0x6190C5B0 0x61251300 0x6126D5C4 0x6239E54C
*Mar 1 00:07:29.335: %SYS-3-CPUYLD: Task ran for (2528)msecs, more than (2000)msecs (0/0),process = Ex
ec
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#interface FastEthernet0/1
R1(config-if)#ip address 200.200.200.23 255.255.255.0
R1(config-if)#ip address 200.200.200.23 255.255.255.0
R1(config-if)#ip nat outside
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#
*Mar 1 00:09:25.947: %LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to up
*Mar 1 00:09:26.947: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to
up
R1(config)#exit
R1#wri
*Mar 1 00:09:29.851: %SYS-5-CONFIG_I: Configured from console by console
R1#write memory
Building configuration...
[OK]
R1#access-list 10 permit 10.10.42.0 0.0.0.255
      ^
% Invalid input detected at '^' marker.

R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#access-list 10 permit 10.10.42.0 0.0.0.255
R1(config)#ip nat inside source list 10 interface FastEthernet0/1 overload
R1(config)#interface Tunnel0
R1(config-if)#
*Mar 1 00:11:28.143: %LINEPROTO-5-UPDOWN: Line protocol on Interface Tunnel0, changed state to down
R1(config-if)#ip address 172.16.0.2 255.255.255.252
R1(config-if)#tunnel source f0/1
```

- **Configuration NAT 2 :**

```
R1(config)#ip nat inside source list 10 interface FastEthernet0/1 overload
R1(config)#interface Tunnel0
R1(config-if)#
*Mar 1 00:11:28.143: %LINEPROTO-5-UPDOWN: Line protocol on Interface Tunnel0, changed state to down
R1(config-if)#ip address 172.16.0.2 255.255.255.252
R1(config-if)#tunnel source f0/1
R1(config-if)#tunnel destination 200.200.200.24
R1(config-if)#tunnel
*Mar 1 00:12:09.215: %LINEPROTO-5-UPDOWN: Line protocol on Interface Tunnel0, changed state to up
R1(config-if)#tunnel mode gre ip
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#ip route
% Incomplete command.

R1(config)#ip route 10.10.0.0 255.254.0.0 Tunnel0
R1(config)#ip route 10.11.0.0 255.255.0.0 Tunnel0
R1(config)#exit
R1#
*Mar 1 00:13:14.951: %SYS-5-CONFIG_I: Configured from console by console
R1#write memory
Building configuration...
[OK]
R1#show ip interface brief

```

Interface	IP-Address	OK?	Method	Status	Protocol
FastEthernet0/0	10.10.42.1	YES	NVRAM	up	up
FastEthernet0/1	200.200.200.23	YES	manual	up	up
NVI0	unassigned	NO	unset	up	up
Tunnel0	172.16.0.2	YES	manual	up	up

```
R1#ping 200.200.200.24

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 200.200.200.24, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 64/217/384 ms
R1#ping 172.16.0.2
```

- **Ping du backbone via adresse publique :**

```
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 200.200.200.24, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 64/217/384 ms
R1#ping 172.16.0.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.16.0.2, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms
R1#ping 172.16.0.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.16.0.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 212/300/360 ms
R1#ping 10.11.0.14

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.11.0.14, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 180/269/340 ms
R1#
```

- **Ping entre département collaboration et le backbone :**

```

.....
Success rate is 0 percent (0/5)
R1#ping 10.11.0.49

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.11.0.49, timeout is 2 seconds:
.....
Success rate is 0 percent (0/5)
R1#show ip interface brief
Interface      IP-Address      OK? Method Status      Prot
ocol
FastEthernet0/0 10.10.42.1      YES NVRAM  up          up
FastEthernet0/1 10.11.0.50      YES manual up          up

R1#ping 10.11.0.49

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.11.0.49, timeout is 2 seconds:
.....
Success rate is 0 percent (0/5)
R1#ping 10.11.0.49
*Mar  1 00:14:34.967: %OSPF-5-ADJCHG: Process 1, Nbr 5.5.5.5 on FastEthernet0/1
from LOADING to FULL, Loading Done
R1#ping 10.11.0.49

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.11.0.49, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 220/308/500 ms
R1#
*Mar  1 00:16:02.599: %OSPF-5-ADJCHG: Process 1, Nbr 5.5.5.5 on FastEthernet0/1
from LOADING to FULL, Loading Done
R1#
*Mar  1 00:16:11.699: %OSPF-5-ADJCHG: Process 1, Nbr 5.5.5.5 on FastEthernet0/1
from LOADING to FULL, Loading Done
R1#
*Mar  1 00:17:03.899: %OSPF-5-ADJCHG: Process 1, Nbr 5.5.5.5 on FastEthernet0/1
from FULL to DOWN, Neighbor Down: Dead timer expired
R1#

```

- **Ping avec le département base de données :**

The screenshot shows the GNS3 management console with a Virtual PC Simulator window open. The simulator displays the following text:

```

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 (wlrnshi@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

Checking for duplicate address...
PCI : 10.10.42.10 255.255.255.0 gateway 10.10.42.1

PCI> ip dhcp
0000
Can't find dhcp server

PCI> ping 10.10.40.23
84 bytes from 10.10.40.23 icmp_seq=1 ttl=60 time=326.091 ms
84 bytes from 10.10.40.23 icmp_seq=2 ttl=60 time=324.557 ms
84 bytes from 10.10.40.23 icmp_seq=3 ttl=60 time=185.619 ms
84 bytes from 10.10.40.23 icmp_seq=4 ttl=60 time=310.799 ms
84 bytes from 10.10.40.23 icmp_seq=5 ttl=60 time=215.697 ms

PCI>

```

The GNS3 interface also shows a topology summary on the right side, listing nodes like Cloud1, PC1, PC2, PC3, R1, Switch1, and Ubuntu64-bit(2)-1. The console at the bottom shows the GNS3 management console version 2.2.54 on Windows (64-bit) with Python 3.7.4.

- Script de Configuration Serveur NFS (install_nfs_server.sh) :

```
GNU nano 6.2
#!/bin/bash

echo "==== CONFIGURATION SERVEUR NFS ====="
echo " ♦ Installation du serveur NFS"
#apt update -y
#apt install -y nfs-kernel-server

echo "Groupe prop"
getent group nfsgrp || groupadd nfsgrp

echo "Création rep"
mkdir -p /nfs_share

echo "Les droits"
chown root:nfsgrp /nfs_share
chmod 2775 /nfs_share

echo "Configuration /etc/exports"
grep -q "/nfs_share" /etc/exports || \
echo "/nfs_share 10.10.42.0/24(rw,sync,no_subtree_check)" >> /etc/exports

echo "appliquer exportfs"
exportfs -ra
systemctl restart nfs-server
systemctl enable nfs-server
echo "le serveur nfs est pres yassine m3allen"
```

- Vérification du Partage NFS Monté (/nfs_share) :

```
server@server-virtual-machine:~$ cd /nfs_share
server@server-virtual-machine:/nfs_share$ ls -l
total 36
-rw-r--r-- 1 server      nfsgrp  13 15:22 28 ديسمير bnt.txt
-rw-r--r-- 1 server      nfsgrp  38 19:33 28 ديسمير dhriouaa.txt
-rw-r--r-- 1 server      nfsgrp  51 12:49 18 ديسمير file1.txt
-rw-r--r-- 1 server      nfsgrp  14 15:15 12 ديسمير file2.txt
-rw-r--r-- 1 server      nfsgrp  15 15:16 12 ديسمير file3.txt
-rw-r--r-- 1 server      nfsgrp  12 15:40 28 ديسمير l.txt
-rw-r--r-- 1 server      nfsgrp 167 15:47 28 ديسمير maram.txt
-rw-rw-r-- 1 server      nfsgrp   0 00:33 19 ديسمير tabarka.txt
-rw-rw-r-- 1 server      nfsgrp   5 19:59 17 ديسمير test.txt
-rw-r--r-- 1 node_exporter nfsgrp  73 10:20 19 ديسمير valid.txt
server@server-virtual-machine:/nfs_share$
```