

INSTITUT UNIVERSITAIRE DES SCIENCES - IUS

Faculté des Sciences et Technologie - FST

Niveau L3 Sciences Informatiques

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TD3- La configuration des protocoles Telnet, SSH, DNS et DHCP avec GNS3 ont pour objectif de vous permettre de maîtriser les concepts et les compétences pratiques liés à la configuration, à la gestion et au dépannage des réseaux.

Comprendre la différence entre Telnet (non sécurisé) et SSH (sécurisé).

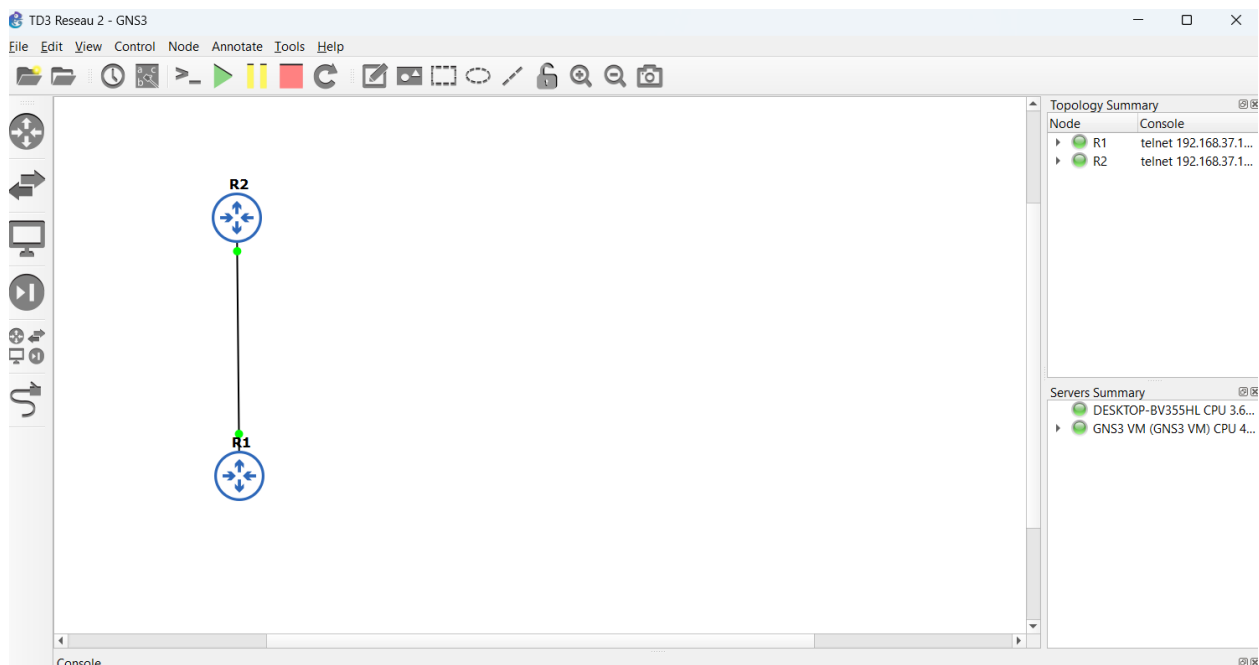
Configurer l'accès à distance à un routeur ou un commutateur via Telnet et SSH.

Configurer un serveur DNS et DHCP sur un routeur Cisco.

Tester l'attribution des adresses IP aux clients.

Configurer le protocole Telnet sur cette topologie

1. Reproduire cette topologie en configurant le protocole Telnet.



- Configurer les routeurs et telnet sur le routeur R1

```
R1
et0/0, changed state to down
*Mar 1 00:00:06.767: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet
et0/1, changed state to down
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface f0/0
R1(config-if)#ip address 192.168.1.1 255.255.255.0
R1(config-if)#no shut down
^
% Invalid input detected at '^' marker.

R1(config-if)#no shutdown
R1(config-if)#
*Mar 1 00:02:03.507: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state t
o up
*Mar 1 00:02:04.507: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet
et0/0, changed state to up
R1(config-if)#exit
R1(config)#line vty 0 10
R1(config-line)#password admin1234
R1(config-line)#login local
R1(config-line)#transport input telnet
R1(config-line)#exit
R1(config)#

R2
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#interface f0/0
R2(config-if)#ip address 192.168.1.2 255.255.255.0
R2(config-if)#no shutdown
R2(config-if)#ex
*Mar 1 00:03:21.375: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state t
o up
*Mar 1 00:03:22.375: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet
et0/0, changed state to up
R2(config-if)#exit
R2(config)#ping 192.168.1.1
^
% Invalid input detected at '^' marker.

R2(config)#exit
R2#
*Mar 1 00:15:25.247: %SYS-5-CONFIG_I: Configured from console by console
R2#ping 192.168.1.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 8/22/32 ms
R2#
```

- Accéder à R1 via telnet a partir du routeur 2

```
R1
*Mar 1 00:00:07.411: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet
et0/0, changed state to down
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface f0/0
R1(config-if)#ip address 192.168.1.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#exi
*Mar 1 00:01:52.671: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state t
o up
*Mar 1 00:01:53.671: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet
et0/0, changed state to up
R1(config-if)#exit
R1(config)#line vty 0 5
R1(config-line)#username admin
R1(config)#line vty 0 5
R1(config-line)#password admin1234
R1(config-line)#login
R1(config-line)#transport input telnet
R1(config-line)#exit
R1(config)#end
R1#
*Mar 1 00:05:06.979: %SYS-5-CONFIG_I: Configured from console by console
R1#

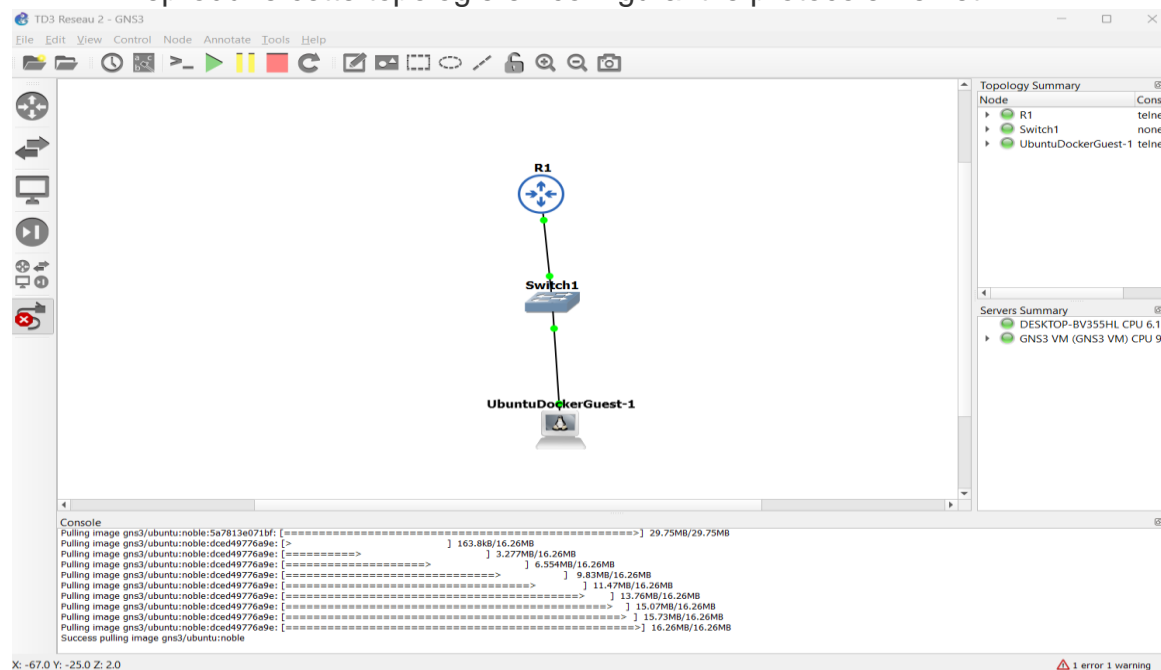
R2
R2(config-if)#no shutdown
R2(config-if)#exit
*Mar 1 00:03:20.131: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state t
o up
*Mar 1 00:03:21.131: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet
et0/0, changed state to up
R2(config-if)#exit
R2(config)#exit
R2#p
*Mar 1 00:05:40.263: %SYS-5-CONFIG_I: Configured from console by console
R2#ping 192.168.1.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 1/20/40 ms
R2#telnet 192.168.1.1
Trying 192.168.1.1 ... Open

User Access Verification

Password:
R1>
```

2. Reproduire cette topologie en configurant le protocole Telnet.



```

R1
, RELEASE SOFTWARE (fc2)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2010 by Cisco Systems, Inc.
Compiled Tue 17-Aug-10 12:08 by prod_rel_team
*Mar 1 00:00:02.899: %SNMP-5-COLDSTART: SNMP agent on host R1 is undergoing a c
old start
*Mar 1 00:00:02.939: %CRYPTO-6-ISAKMP_ON_OFF: ISAKMP is OFF
*Mar 1 00:00:02.943: %CRYPTO-6-GDOI_ON_OFF: GDOI is OFF
*Mar 1 00:00:03.131: %LINK-5-CHANGED: Interface FastEthernet0/0, changed state
to administratively down
*Mar 1 00:00:03.155: %LINK-5-CHANGED: Interface FastEthernet0/1, changed state
to administratively down
*Mar 1 00:00:04.131: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/0, changed state to down
*Mar 1 00:00:04.155: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/1, changed state to down
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface f0/0
R1(config-if)#ip address 192.168.1.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#exit
*Mar 1 00:05:09.007: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state t
o up
*Mar 1 00:05:10.007: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/0, changed state to up
R1(config-if)#exit
R1(config)#line vty 0 5
R1(config-line)#username admin
R1(config-line)#line vty 0 5
R1(config-line)#password admin1234
R1(config-line)#login
R1(config-line)#transport input telnet
R1(config-line)#exit
R1(config)#exit
R1#sh
*Mar 1 00:09:57.311: %SYS-5-CONFIG_I: Configured from console by console
R1#show ip interfaces brief
^
% Invalid input detected at '^' marker.

R1#show ip interface brief
Interface IP-Address OK? Method Status Prot
ocol
FastEthernet0/0 192.168.1.1 YES manual up up
FastEthernet0/1 unassigned YES unset administratively down down
R1#

```

```

root@UbuntuDockerGuest-1: ~
GNU nano 7.2 /etc/network/interfaces *
#
# This is a sample network config, please uncomment lines to configure the netw>
#
# Uncomment this line to load custom interface files
# source /etc/network/interfaces.d/*

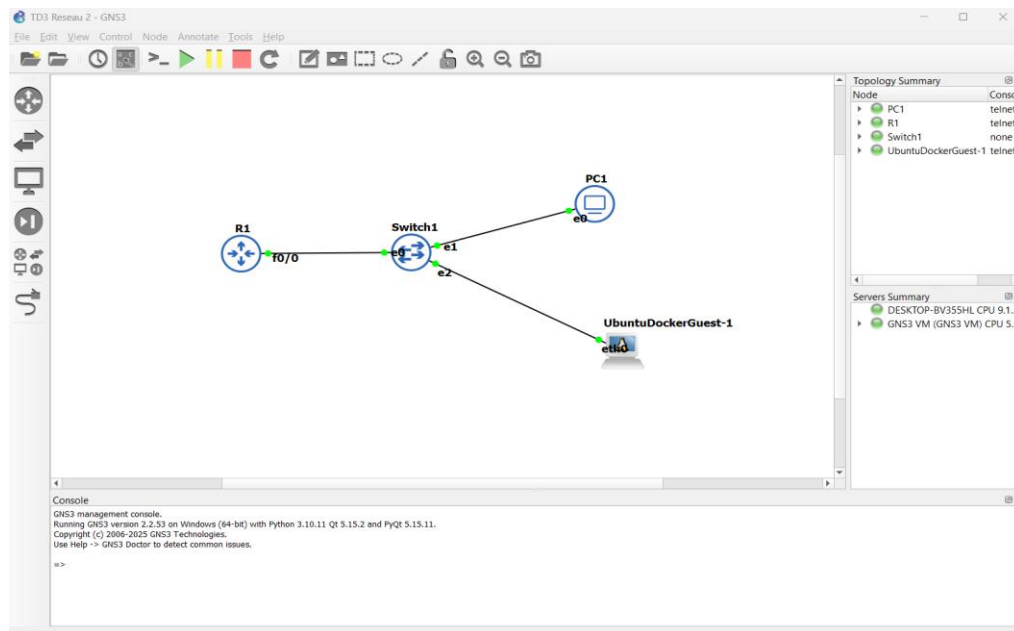
# Static config for eth0
auto eth0
iface eth0 inet static
    address 192.168.1.2
    netmask 255.255.255.0
    gateway 192.168.1.1
    up echo nameserver 0.0.0.0 > /etc/resolv.conf

# DHCP config for eth0
#auto eth0
#iface eth0 inet dhcp
#    hostname UbuntuDockerGuest-1

^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute   ^C Location
^X Exit      ^R Read File ^\ Replace   ^U Paste     ^J Justify   ^_ Go To Line

```

3. Reproduire cette topologie en configurant le protocole SSH.



Configurer le routeur avec le protocole Ssh

```
R1
*Mar 1 00:00:07.411: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to down
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface f0/0
R1(config-if)#ip address 192.168.1.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#exi
*Mar 1 00:01:52.671: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
```

```
R1
*Mar 1 00:03:00.291: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar 1 00:03:01.291: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R1(config-if)#exit
R1(config)#ip domain-name Beat.com
R1(config)#crypto key generate rsa
The name for the keys will be: R1.Beat.com
Choose the size of the key modulus in the range of 360 to 2048 for your General Purpose Keys. Choosing a key modulus greater than 512 may take a few minutes.
How many bits in the modulus [512]: 1024
% Generating 1024 bit RSA keys, keys will be non-exportable...[OK]
R1(config)#
*Mar 1 00:08:59.703: %SSH-5-ENABLED: SSH 1.99 has been enabled
R1(config)#line vty 0 5
R1(config-line)#transport input ssh
R1(config-line)#login local
R1(config-line)#exit
R1(config)#ip ssh version 2
R1(config)#ssh time-out 60
^
```

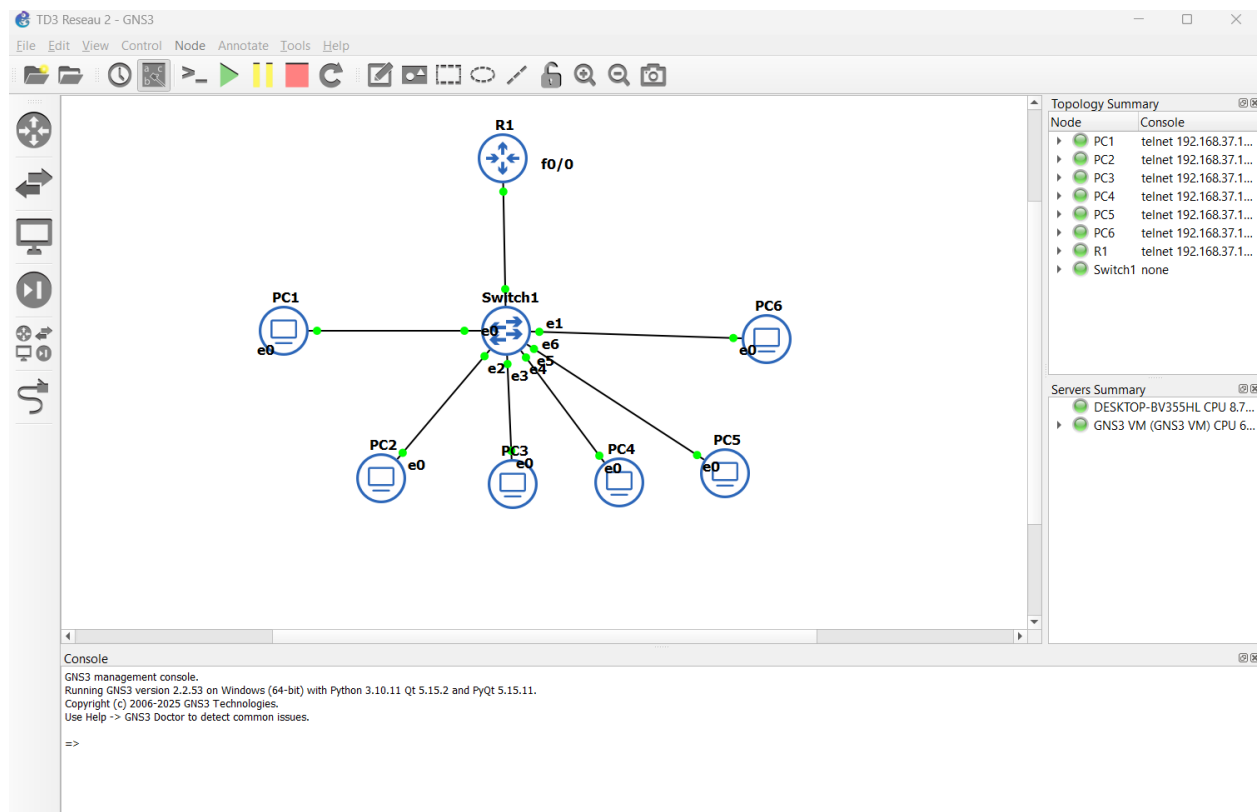
```
R2
R2(config-if)#exit
*Mar  1 00:17:51.611: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar  1 00:17:52.611: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R2(config-if)#exit
R2(config)#ssh admin@192.168.1.1
^
% Invalid input detected at '^' marker.

R2(config)#ssh admin@192.168.1.1
^
% Invalid input detected at '^' marker.

R2(config)#
R2#
*Mar  1 00:23:18.679: %SYS-5-CONFIG_I: Configured from console by console
R2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#ssh admin@192.168.1.1
^
% Invalid input detected at '^' marker.

R2(config)#
```

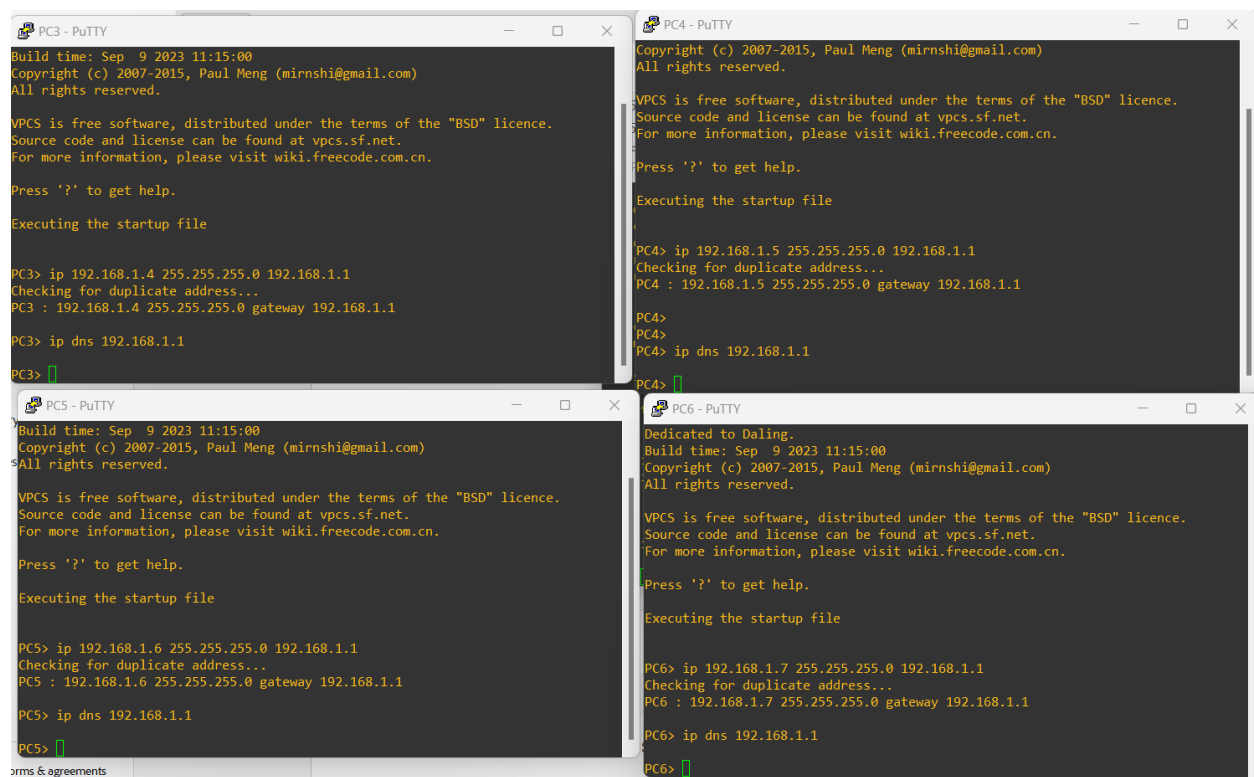
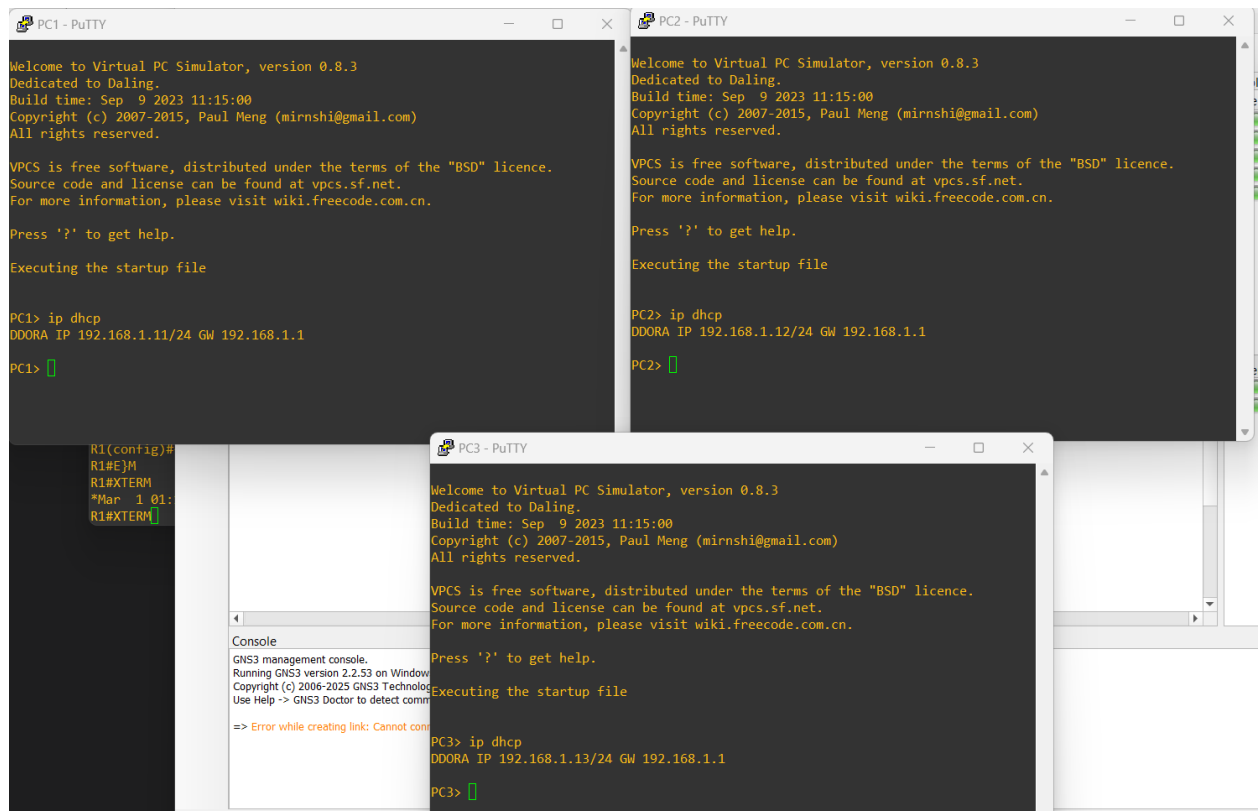
4. Reproduire cette topologie en configurant le serveur DNS.



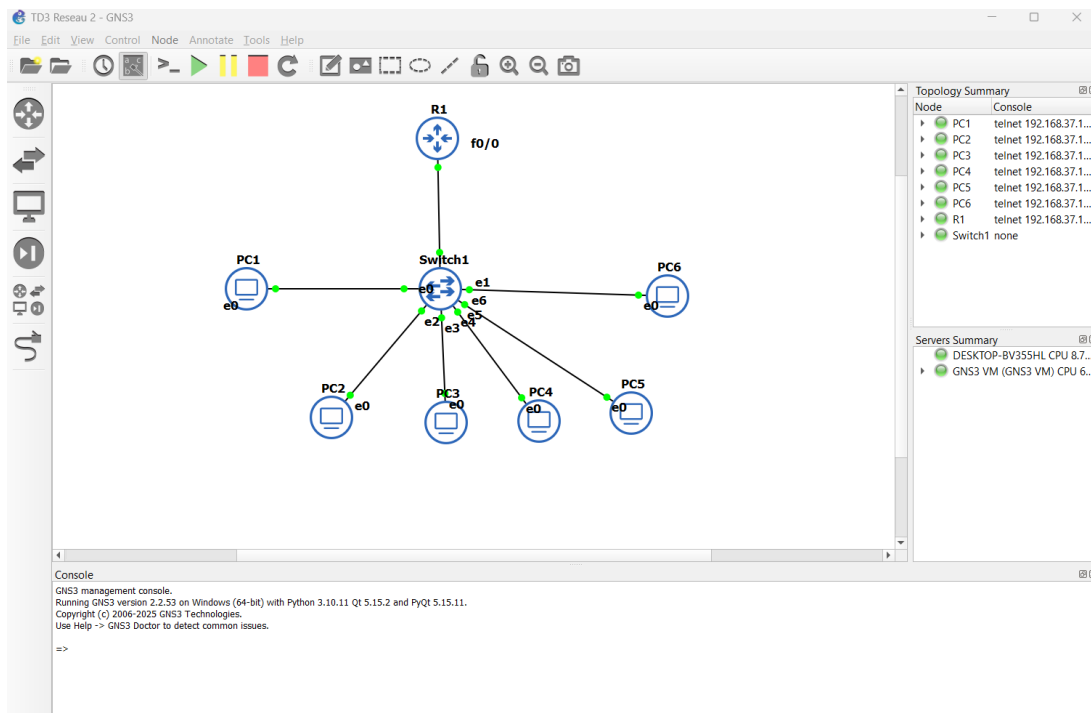
- Configurer le routeur et les PCs

```
R1
*Mar 1 00:00:07.411: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to down
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface f0/0
R1(config-if)#ip address 192.168.1.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#exi
*Mar 1 00:01:52.671: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar 1 00:01:53.671: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
```

```
R1
R1(config)#ssh time-out 60
^
% Invalid input detected at '^' marker.
R1(config)#ssh authentication-retries 5
^
% Invalid input detected at '^' marker.
R1(config)#end
R1#
*Mar 1 00:56:02.063: %SYS-5-CONFIG_I: Configured from console by console
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#ip dns server
R1(config)#ip host pc1.local 192.168.1.2
R1(config)#ip host pc2.local 192.168.1.3
R1(config)#ip host pc2.local 192.168.1.4
R1(config)#ip host pc2.local 192.168.1.5
R1(config)#ip host pc2.local 192.168.1.6
R1(config)#ip host pc2.local 192.168.1.7
R1(config)#ip host google.com 8.8.8.8
R1(config)#ip name-server 8.8.8.8
R1(config)#ip domain-lookup
R1(config)#
```

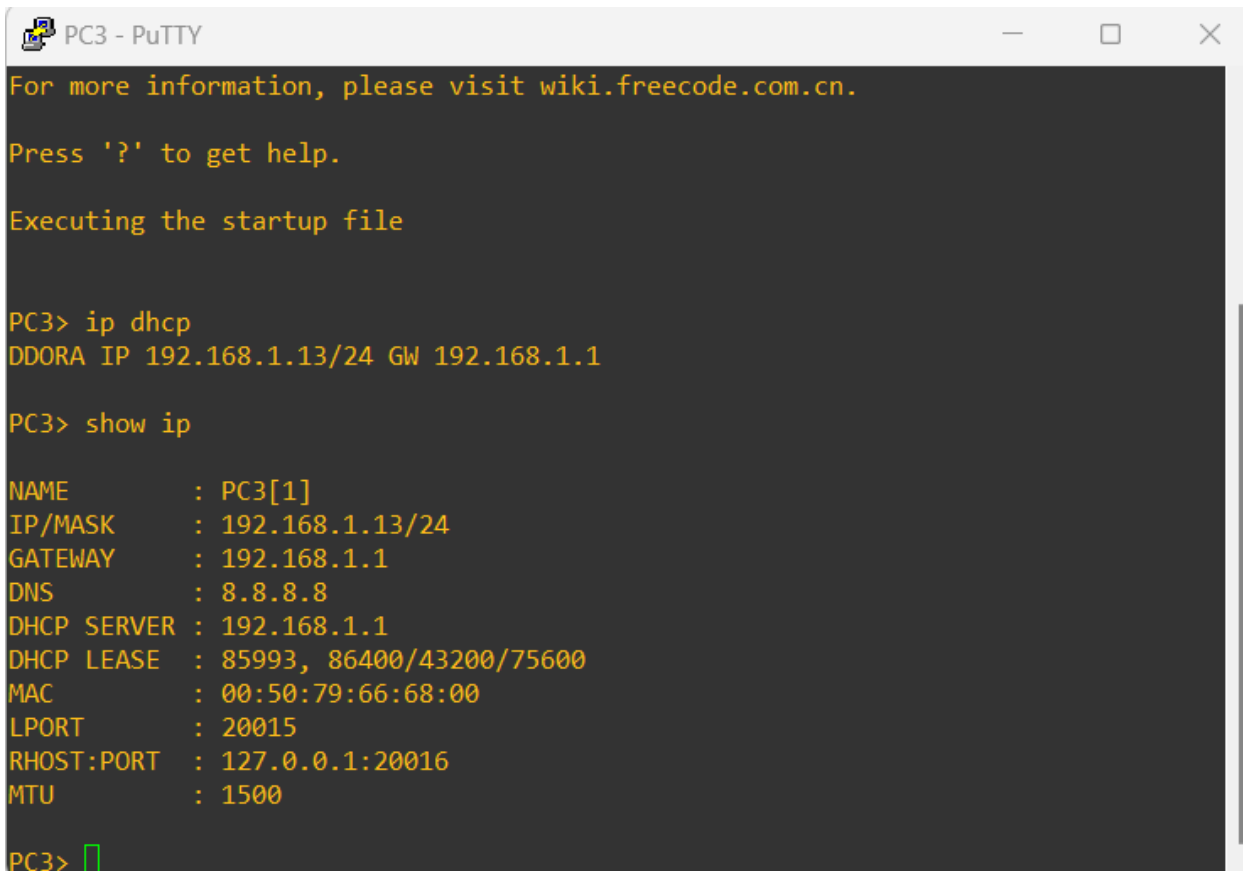


5-configuration un serveur DHCP



```
R1
Lookup timeout: 3 seconds
Lookup retries: 2
Domain name-servers:
    8.8.8.8
DNS Server settings:
    Forwarding of queries is enabled
    Forwarder timeout: 3 seconds
    Forwarder retries: 2
    Forwarder addresses:

R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#ip dhcp pool LAN_POOL
R1(dhcp-config)#network 192.168.1.0 255.255.255.0
R1(dhcp-config)#default-router 192.168.1.1
R1(dhcp-config)#dns-server 8.8.8.8
R1(dhcp-config)#exit
R1(config)#ip dhcp excluded-address 192.168.1.1 192.168.1.10
R1(config)#{
R1#E}M
R1#XTERM
*Mar  1 01:13:43.955: %SYS-5-CONFIG_I: Configured from console by console
R1#XTERM
```

```
PC3 - PuTTY
For more information, please visit wiki.freecode.com.cn.

Press '?' to get help.

Executing the startup file

PC3> ip dhcp
DDORA IP 192.168.1.13/24 GW 192.168.1.1

PC3> show ip

NAME       : PC3[1]
IP/MASK    : 192.168.1.13/24
GATEWAY    : 192.168.1.1
DNS        : 8.8.8.8
DHCP SERVER : 192.168.1.1
DHCP LEASE  : 85993, 86400/43200/75600
MAC        : 00:50:79:66:68:00
LPORT      : 20015
RHOST:PORT  : 127.0.0.1:20016
MTU        : 1500

PC3> █
```

Conclusion

Ce TD me vous permet de maîtriser les concepts et les compétences pratiques liés à la configuration, à la gestion et au dépannage des réseaux avec les protocoles Telnet, SSH, DNS et DHCP