Institut Universitaire des Sciences (IUS)

Faculté des Sciences et Technologies

(FST)

RAPPORT

SUR LE TRAVAIL DE LABORATOIRE № 3

Cours : Reséau 2

Soumis au Chargé de cours : **Ismael SAINT AMOUR**

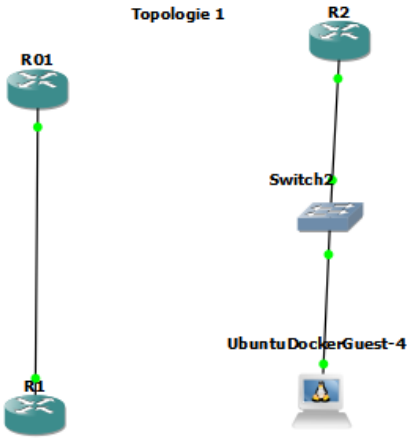
Niveau L3

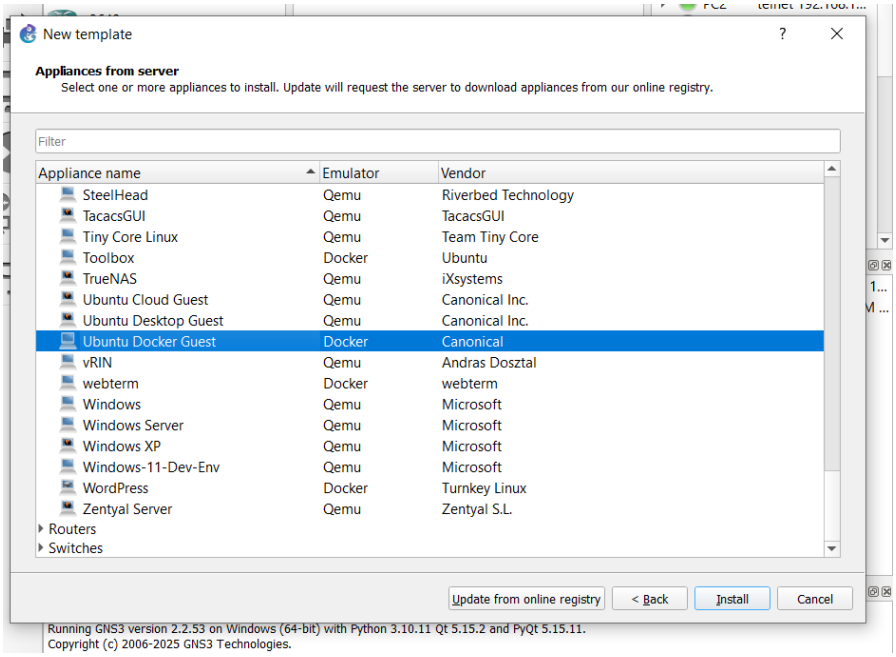
Préparé par : **Robaldo BADIO**

Date : Le 25 / 04 / 2025

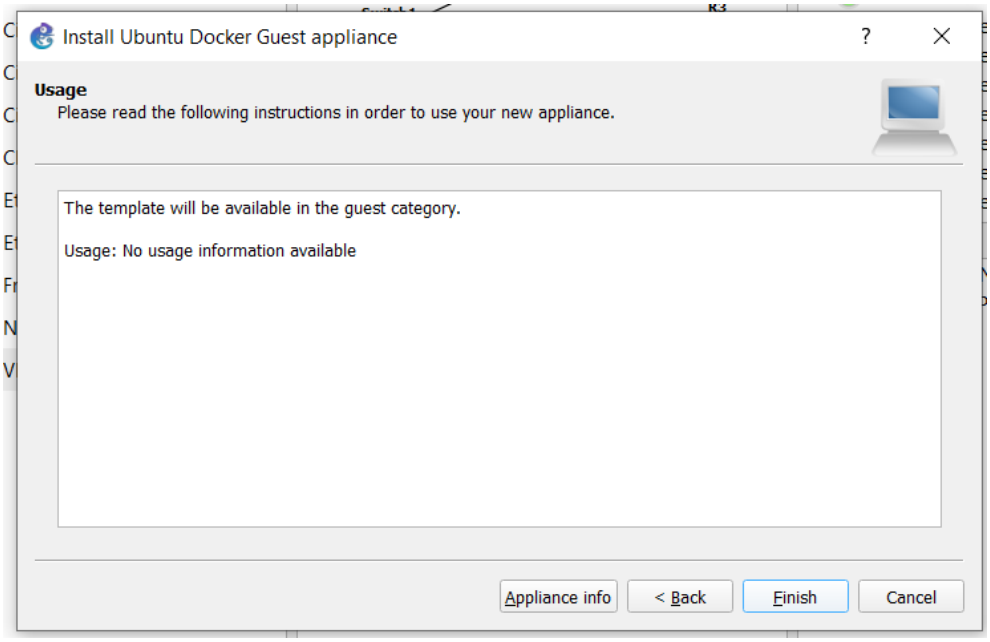
Exécution du TD

1. **Reproduisez cette topologie en configurant le protocole Telnet.**



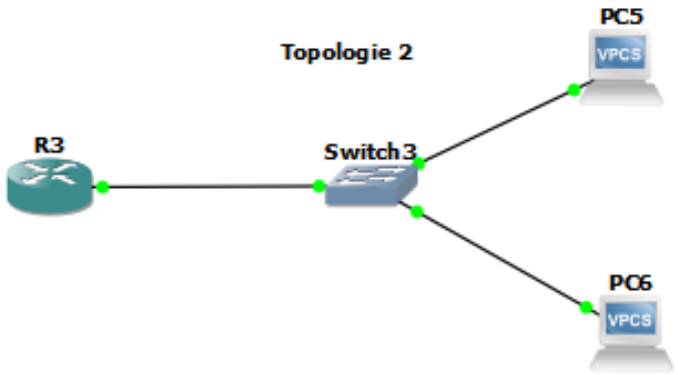


```
Copyright (c) 1986-2010 by Cisco Systems, Inc.
Compiled Tue 17-Aug-10 12:08 by prod_rel_team
*Mar  1 00:00:31.843: %SNMP-5-COLDSTART: SNMP agent on host R01 is undergoing a
cold start
*Mar  1 00:00:31.919: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/1, changed state to down
*Mar  1 00:00:31.923: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/0, changed state to down
*Mar  1 00:00:31.947: %CRYPTO-6-ISAKMP_ON_OFF: ISAKMP is OFF
*Mar  1 00:00:31.951: %CRYPTO-6-GDOI_ON_OFF: GDOI is OFF
R01#
R01#en
R01#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R01(config)#interface FastEthernet0/0
R01(config-if)#ip address 192.168.1.2 255.255.255.0
R01(config-if)#no shutdown
R01(config-if)#exit
*Mar  1 00:18:03.147: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar  1 00:18:04.147: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R01(config-if)#exit
R01(config)#
R01(config)#ping 192.168.1.1
             ^
% Invalid input detected at '^' marker.

R01(config)#exit
R01#
*Mar  1 00:26:51.551: %SYS-5-CONFIG_I: Configured from console by console
R01#en
R01#
R01#
R01#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 0 percent (0/5)
R01#en
R01#telnet 192.168.1.1
Trying 192.168.1.1 ...
% Connection timed out; remote host not responding

R01#show running-config | include line vty
line vty 0 4
R01#
```



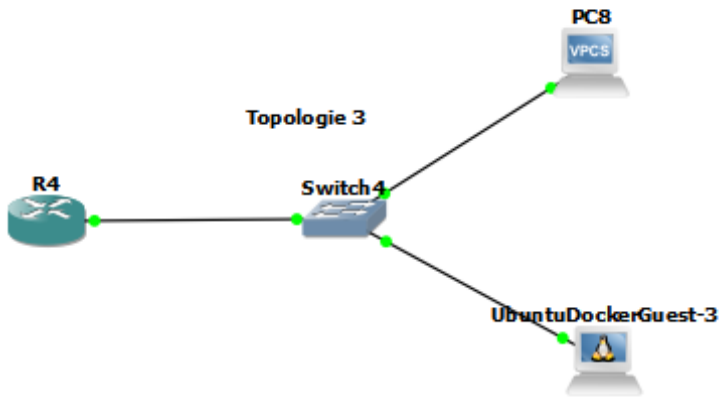
```
Press RETURN to get started!


*Mar  1 00:00:24.463: %SW_VLAN-4-IFS_FAILURE: VLAN manager encountered file oper
ation error: call = ifs_open/read / code = 3588 (No device available)
    / bytes transfered = 0
*Mar  1 00:00:24.503: %LINEPROTO-5-UPDOWN: Line protocol on Interface VoIP-Null0
, changed state to up
*Mar  1 00:00:24.507: %LINEPROTO-5-UPDOWN: Line protocol on Interface IPv6-mpls,
 changed state to up
*Mar  1 00:00:27.547: %SYS-5-CONFIG_I: Configured from memory by console
*Mar  1 00:00:29.367: %LINK-5-CHANGED: Interface FastEthernet0/0, changed state
to administratively down
*Mar  1 00:00:29.371: %LINK-5-CHANGED: Interface FastEthernet0/1, changed state
to administratively down
*Mar  1 00:00:30.739: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/0, changed state to down
*Mar  1 00:00:30.739: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/1, changed state to down
*Mar  1 00:00:33.035: %SYS-5-RESTART: System restarted --
Cisco IOS Software, 3700 Software (C3725-ADVENTERPRISEK9-M), Version 12.4(15)T14
, 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 00:00:33.063: %SNMP-5-COLDSTART: SNMP agent on host R1 is undergoing a c
old start
*Mar  1 00:00:33.155: %CRYPTO-6-ISAKMP_ON_OFF: ISAKMP is OFF
*Mar  1 00:00:33.159: %CRYPTO-6-GDOI_ON_OFF: GDOI is OFF
R1#
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#interface FastEthernet 0/0
R1(config-if)#ip address 192.168.1.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#exit
*Mar  1 00:16:25.127: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar  1 00:16:26.127: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R1(config-if)#exit
R1(config)#line vty 0 4
R1(config-line)#password 1234
R1(config-line)#login
R1(config-line)#transport input telnet
R1(config-line)#exit
R1(config)#
```

2. Reproduisez cette topologie en configurant le protocole SSH.



```
R3(config)#
R3(config)#interface FastEthernet0/0
R3(config-if)#ip address 192.168.1.1 255.255.255.0
R3(config-if)#no shutdown
R3(config-if)#exit
R3(config)#ip domain-name example.com
R3(config)#crypto key generate rsa 1024 bits
                                   ^
% Invalid input detected at '^' marker.

R3(config)#crypto key generate rsa
The name for the keys will be: R3.example.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]

R3(config)#
*Mar  1 01:10:22.803: %SSH-5-ENABLED: SSH 1.99 has been enabled
R3(config)#username admin secret 1234
R3(config)#line vty 0 4
R3(config-line)#transport input ssh
R3(config-line)#login local
R3(config-line)#exit
R3(config)#ip ssh version 2
R3(config)#ssh time-out 60
           ^
% Invalid input detected at '^' marker.

R3(config)#ssh authentification-retries 5
           ^
% Invalid input detected at '^' marker.

R3(config)#end
R3#
*Mar  1 01:11:35.699: %SYS-5-CONFIG_I: Configured from console by console
R3#
```

3. Reproduisez cette topologie en configurant le protocole SSH.

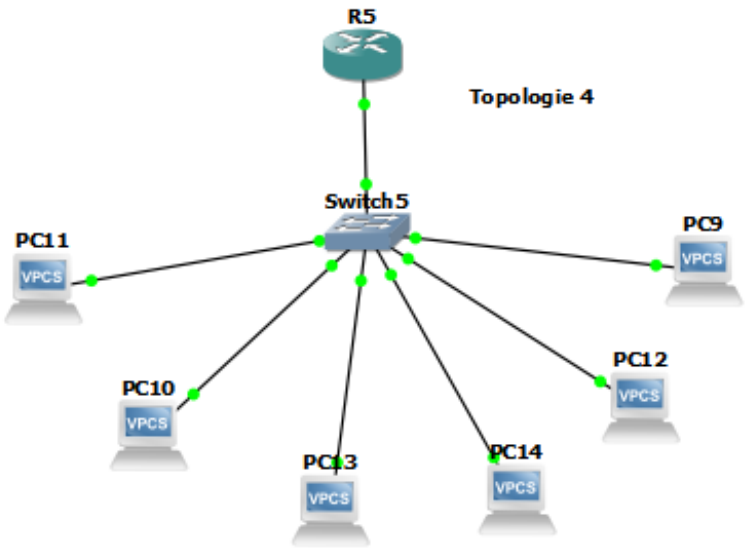


```
R4#en
R4#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R4(config)#interface FastEthernet0/0
R4(config-if)#ip address 192.168.1.1 255.255.255.0
R4(config-if)#no shutdown
R4(config-if)#
*Mar  1 01:16:29.391: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar  1 01:16:30.391: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to u
R4(config-if)#exit
R4(config)#ip domain-name example.com
R4(config)#crypto key generate rsa
The name for the keys will be: R4.example.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]

R4(config)#
*Mar  1 01:17:08.751: %SSH-5-ENABLED: SSH 1.99 has been enabled
R4(config)#username admin secret
% Incomplete command.

R4(config)#username admin secret 1234
R4(config)#line vty 0 4
R4(config-line)#transport input ssh
R4(config-line)#login local
R4(config-line)#exit
R4(config)#ip ssh version 2
R4(config)#ssh time-out 60
              ^
% Invalid input detected at '^' marker.

R4(config)#ssh authentification-retries 5
              ^
% Invalid input detected at '^' marker.

R4(config)#end
R4#
*Mar  1 01:18:37.595: %SYS-5-CONFIG_I: Configured from console by console
R4#
```

```
  GNU nano 7.2                                  /etc/network/interfaces
#
# This is a sample network config, please uncomment lines to configure the network
#

# Uncomment this line to load custom interface files
# source /etc/network/interfaces.d/*

# Static config for eth0
#auto eth0
#iface eth0 inet static
#       address 192.168.0.2
#       netmask 255.255.255.0
#       gateway 192.168.0.1
#       up echo nameserver 192.168.0.1 > /etc/resolv.conf

# DHCP config for eth0
#auto eth0
#iface eth0 inet dhcp
#       hostname UbuntuDockerGuest-3

                                [ Read 19 lines ]
^G Help       ^O Write Out  ^W Where Is   ^K Cut        ^T Execute    ^C Location   M-U Undo
^X Exit       ^R Read File  ^\ Replace    ^U Paste      ^J Justify    ^/ Go To Line M-E Redo
```

```
    TX packets 16  bytes 1216 (1.2 KB)
    TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
    inet 127.0.0.1  netmask 255.0.0.0
    inet6 ::1  prefixlen 128  scopeid 0x10<host>
    loop  txqueuelen 1000  (Local Loopback)
    RX packets 0  bytes 0 (0.0 B)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 0  bytes 0 (0.0 B)
    TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

t@UbuntuDockerGuest-3:~# nano /etc/network/interfaces
t@UbuntuDockerGuest-3:~# ifconfig
0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet6 fe80::42:70ff:fe0d:8700  prefixlen 64  scopeid 0x20<link>
    ether 02:42:70:0d:87:00  txqueuelen 1000  (Ethernet)
    RX packets 12  bytes 3437 (3.4 KB)
    RX errors 0  dropped 1  overruns 0  frame 0
    TX packets 16  bytes 1216 (1.2 KB)
    TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
    inet 127.0.0.1  netmask 255.0.0.0
    inet6 ::1  prefixlen 128  scopeid 0x10<host>
    loop  txqueuelen 1000  (Local Loopback)
    RX packets 0  bytes 0 (0.0 B)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 0  bytes 0 (0.0 B)
    TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

t@UbuntuDockerGuest-3:~# nano /etc/ssh/ssh_config
t@UbuntuDockerGuest-3:~# ssh -oKexAlgorithms=+diffie-hellman-group1-sha1 -oHostKeyAlgorithms=+ssh-rsa -
phers=+aes128-cbc admin@192.168.1.1
tname contains invalid characters
h: admin@192.168.1.1: command not found
t@UbuntuDockerGuest-3:~# show ip ssh
h: show: command not found
t@UbuntuDockerGuest-3:~# ssh admin@192.168.1.1
: connect to host 192.168.1.1 port 22: Network is unreachable
t@UbuntuDockerGuest-3:~# show ip ssh
h: show: command not found
t@UbuntuDockerGuest-3:~# show ssh
h: show: command not found
t@UbuntuDockerGuest-3:~#
```

4. Reproduisez cette topologie en configurant le serveur DNS.




```
.com.cn.

Press '?' to get help.

Executing the startup fi
le


PC11>
PC11> ip 192.168.1.11 255.255.255.0 192.168.1.1
Checking for duplicate address...
PC11 : 192.168.1.11 255.255.255.0 gateway 192.168.1.1

PC11> ip 192.168.1.11 255.255.255.0 192.168.1.1
Checking for duplicate address...
PC11 : 192.168.1.11 255.255.255.0 gateway 192.168.1.1

PC11>
```

```
.com.cn.

Press '?' to get help.

Executing the startup fi
le


PC14> ip 192.168.1.14 255.255.255.0 192.168.1.1
Checking for duplicate address...
PC14 : 192.168.1.14 255.255.255.0 gateway 192.168.1.1

PC14>
```

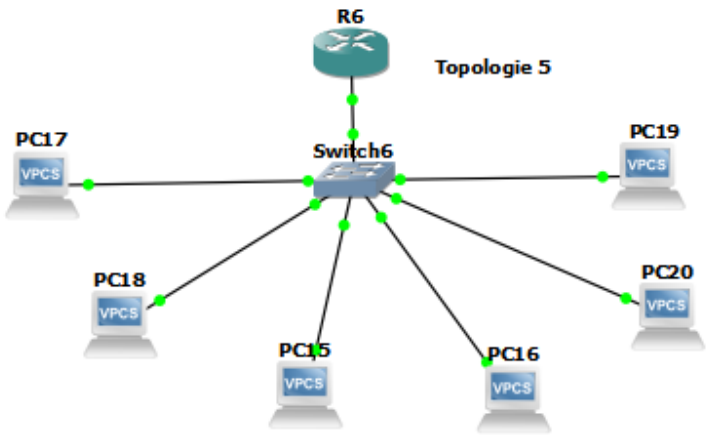
```
host (192.168.1.2) not reachable

PC11> ping PC10.local
PC10.local resolved to 192.168.1.10

84 bytes from 192.168.1.10 icmp_seq=1 ttl=64 time=0.346 ms
84 bytes from 192.168.1.10 icmp_seq=2 ttl=64 time=0.393 ms
84 bytes from 192.168.1.10 icmp_seq=3 ttl=64 time=0.611 ms
84 bytes from 192.168.1.10 icmp_seq=4 ttl=64 time=0.293 ms
84 bytes from 192.168.1.10 icmp_seq=5 ttl=64 time=0.505 ms

PC11> ping PC14.local
PC14.local resolved to 192.168.1.14

84 bytes from 192.168.1.14 icmp_seq=1 ttl=64 time=0.403 ms
84 bytes from 192.168.1.14 icmp_seq=2 ttl=64 time=0.486 ms
84 bytes from 192.168.1.14 icmp_seq=3 ttl=64 time=0.461 ms
84 bytes from 192.168.1.14 icmp_seq=4 ttl=64 time=0.490 ms
84 bytes from 192.168.1.14 icmp_seq=5 ttl=64 time=0.326 ms

PC11>
```

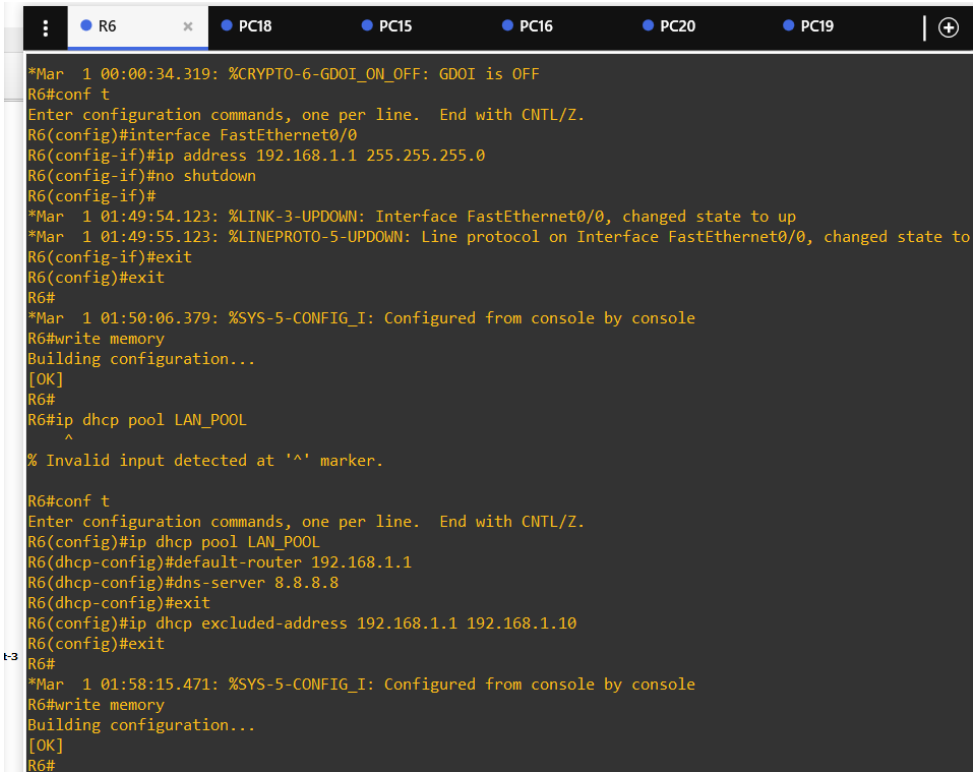


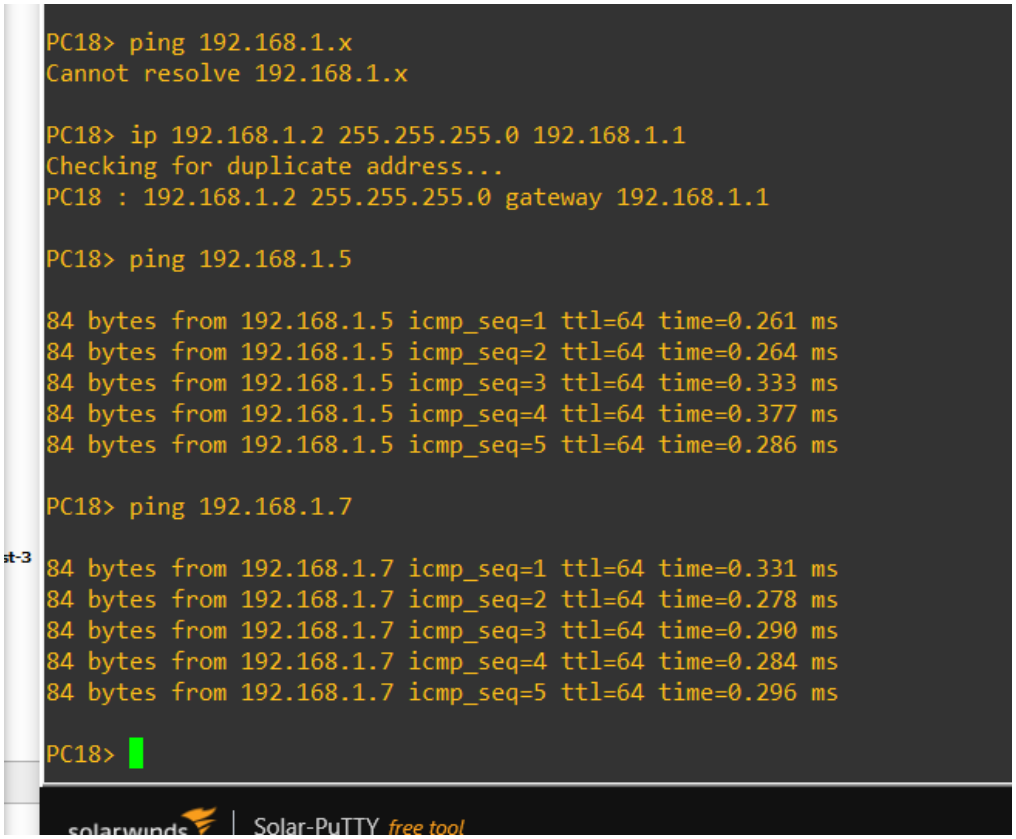
```
Executing the startup fi
le


PC9> ip 192.168.1.9 255.255.255.0 192.168.1.1
Checking for duplicate address...
PC9 : 192.168.1.9 255.255.255.0 gateway 192.168.1.1

PC9>
```

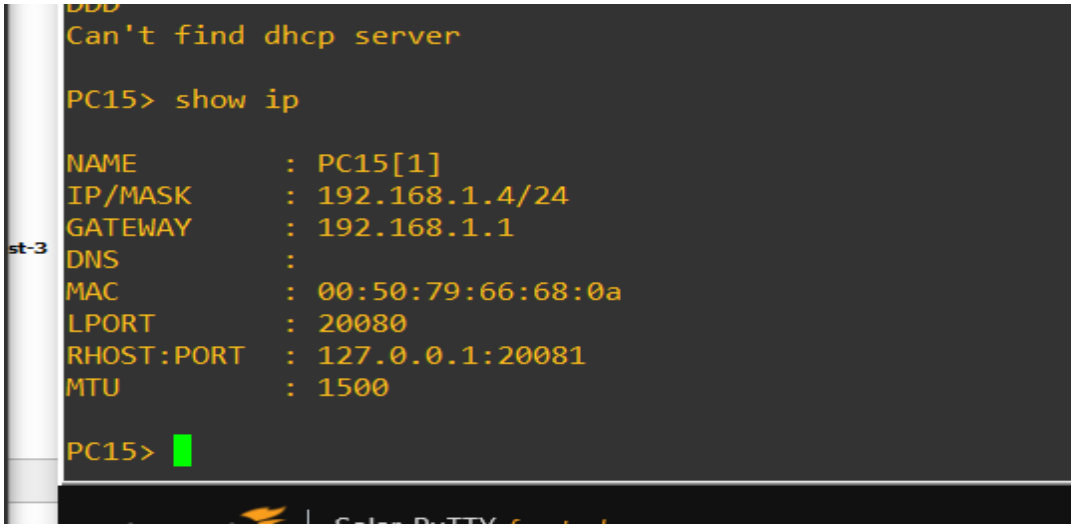
```
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/4/4 ms
R5#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R5(config)#ip dns server
R5(config)#ip host pc11.local 192.168.1.11
R5(config)#ip host pc10.local 192.168.1.10
R5(config)#ip host pc9.local 192.168.1.9
R5(config)#ip host pc12.local 192.168.1.12
R5(config)#ip host pc14.local 192.168.1.14
R5(config)#ip name-server 8.8.8.8
R5(config)#ip domain-lookup
R5(config)#exit
R5#
*Mar  1 01:44:04.967: %SYS-5-CONFIG_I: Configured from console by console
R5#write memory
Building configuration...
[OK]
R5#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 100 percent (5/5), round-trip min/avg/max = 1/3/4 ms
R5#show ip dns view
DNS View default parameters:
Logging is off
DNS Resolver settings:
  Domain lookup is enabled
  Default domain name:
  Domain search list:
  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:
```

5. Reproduisez cette topologie en configurant le serveur DHCP.




R6
PC18
PC15
PC16
PC20
PC19
*Mar 1 00:00:34.319: %CRYPTO-6-GDOI_ON_OFF: GDOI is OFF
R6#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R6(config)#interface FastEthernet0/0
R6(config-if)#ip address 192.168.1.1 255.255.255.0
R6(config-if)#no shutdown
R6(config-if)#
*Mar 1 01:49:54.123: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar 1 01:49:55.123: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to
R6(config-if)#exit
R6(config)#exit
R6#
*Mar 1 01:50:06.379: %SYS-5-CONFIG_I: Configured from console by console
R6#write memory
Building configuration...
[OK]
R6#
R6#ip dhcp pool LAN_POOL
^
% Invalid input detected at '^' marker.
R6#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R6(config)#ip dhcp pool LAN_POOL
R6(dhcp-config)#default-router 192.168.1.1
R6(dhcp-config)#dns-server 8.8.8.8
R6(dhcp-config)#exit
R6(config)#ip dhcp excluded-address 192.168.1.1 192.168.1.10
R6(config)#exit
R6#
*Mar 1 01:58:15.471: %SYS-5-CONFIG_I: Configured from console by console
R6#write memory
Building configuration...
[OK]
R6#


PC18> ping 192.168.1.x
Cannot resolve 192.168.1.x
PC18> ip 192.168.1.2 255.255.255.0 192.168.1.1
Checking for duplicate address...
PC18 : 192.168.1.2 255.255.255.0 gateway 192.168.1.1
PC18> ping 192.168.1.5
84 bytes from 192.168.1.5 icmp_seq=1 ttl=64 time=0.261 ms
84 bytes from 192.168.1.5 icmp_seq=2 ttl=64 time=0.264 ms
84 bytes from 192.168.1.5 icmp_seq=3 ttl=64 time=0.333 ms
84 bytes from 192.168.1.5 icmp_seq=4 ttl=64 time=0.377 ms
84 bytes from 192.168.1.5 icmp_seq=5 ttl=64 time=0.286 ms
PC18> ping 192.168.1.7
84 bytes from 192.168.1.7 icmp_seq=1 ttl=64 time=0.331 ms
84 bytes from 192.168.1.7 icmp_seq=2 ttl=64 time=0.278 ms
84 bytes from 192.168.1.7 icmp_seq=3 ttl=64 time=0.290 ms
84 bytes from 192.168.1.7 icmp_seq=4 ttl=64 time=0.284 ms
84 bytes from 192.168.1.7 icmp_seq=5 ttl=64 time=0.296 ms
PC18>
solarwinds
Solar-PuTTY free tool



En conclusion, je peux dire que ce td me permet de Configurer Telnet et SSH (qui offre plus de sécurité) afin d'accéder à distance aux équipements réseau. Et, le/les serveur DNS facilite la traduction des noms de domaine, tandis que le DHCP automatise l'attribution des adresses IP. Ces configurations simplifient la gestion et réduisent les erreurs des utilisateurs. Les tests assurent leur bon fonctionnement et renforcent la compréhension des réseaux. J'apprends à mieux gérer et sécuriser l'infrastructure réseau.