Institut Universitaire des Sciences

Faculté des sciences et de technologies
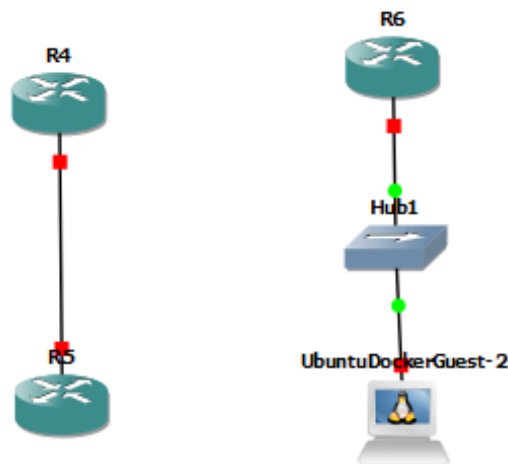
TD 3 Réseau 2

Préparé par :

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1. Reproduisez cette topologie en configurant le protocole Telnet.

- Topologie

- configuration

```
R7#en
R7#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R7(config)#interface f0/0
R7(config-if)#ip address 192.168.1.1 255.255.255.0
R7(config-if)#no shutdown
R7(config-if)#exit
R7(config)#
*Mar  1 00:14:36.771: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar  1 00:14:37.771: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R7(config)#line vty 0 4
R7(config-line)#password
% Incomplete command.

R7(config-line)#password 1234
R7(config-line)#login
R7(config-line)#transport input telnet
R7(config-line)#exit
R7(config)#
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 192.168.1.2 255.255.255.0
R4(config-if)#no shutdown
R4(config-if)#exit
*Mar  1 00:08:35.783: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar  1 00:08:36.783: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R4(config-if)#exit
R4(config)#line vty 0 4
R4(config-line)#password 1234
R4(config-line)#login
R4(config-line)#transport input telnet
R4(config-line)#exit
R4(config)#exit
R4#
*Mar  1 00:09:05.791: %SYS-5-CONFIG_I: Configured from console by console
R4#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 = 68/97/168 ms
R4#
```

New template   ?   ✕

Appliances from server

Select one or more appliances to install. Update will request the server to download appliances from our online registry.

EN Anglais (États-Unis)

Filter

Appliance name	Emulator	Vendor
Raspian	Qemu	Raspberry Pi Foundation
ReactOS	Qemu	ReactOS Project
RHEL	Qemu	Red Hat
RockyLinux	Qemu	Rocky Enterprise Software Foundation
Security Onion	Qemu	Security Onion Solutions, LLC
Sophos iView	Qemu	Sophos
SteelHead	Qemu	Riverbed Technology
TacacsGUI	Qemu	TacacsGUI
Tiny Core Linux	Qemu	Team Tiny Core
Toolbox	Docker	Ubuntu
TrueNAS	Qemu	iXsystems
Ubuntu Cloud Guest	Qemu	Canonical Inc.
Ubuntu Desktop Guest	Qemu	Canonical Inc.
Ubuntu Docker Guest	Docker	Canonical
vRIN	Qemu	Andras Dosztal
webterm	Docker	webterm
Windows	Qemu	Microsoft
Windows Server	Qemu	Microsoft
Windows XP	Qemu	Microsoft
Windows-11-Dev-Env	Qemu	Microsoft
WordPress	Docker	Turnkey Linux
Zentyal Server	Qemu	Zentyal S.L.

▸ Routers
▸ Switches

Update from online registry   < Back   **Install**   Cancel

```
R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#interface f0/0
R2(config-if)#ip address 192.168.1.1 255.255.255.0
R2(config-if)#no shutdown
R2(config-if)#exit
*Mar 26 14:32:58.143: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar 26 14:32:59.143: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R2(config-if)#exit
R2(config)#line vty 0 4
R2(config-line)#password 1234
R2(config-line)#login
R2(config-line)#transport input telnet
R2(config-line)#exit
R2(config)#exit
R2#w
*Mar 26 14:34:10.151: %SYS-5-CONFIG_I: Configured from console by console
R2#write memory
Building configuration...
[OK]
R2#telnet 192.168.1.1
Trying 192.168.1.1 ... Open


User Access Verification

Password:
R2>enable
% No password set
R2>
```

```
  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-1

                               [ Read 19 lines ]
^G Help      ^O Write Out  ^W Where Is   ^K Cut        ^T Execute    M-U Undo     M-A Set Mark
^X Exit      ^R Read File  ^\ Replace    ^U Paste      ^J Justify    M-E Redo     M-6 Copy
```
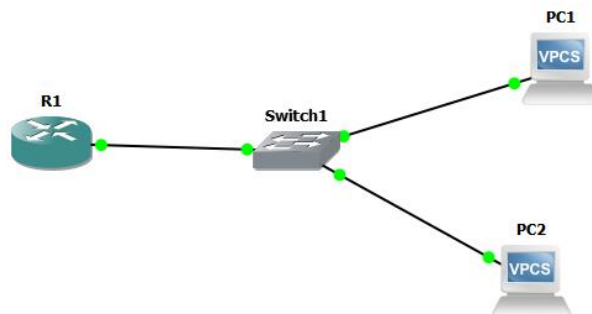
2. Reproduisez cette topologie en configurant le protocole SSH.

- Topologie

- configuration

```
R1(config)#ssh time-out 60
                ^
% Invalid input detected at '^' marker.

R1(config)#ssh authentification-retries 5
                ^
% Invalid input detected at '^' marker.

R1(config)#crypto key generate rsa
% You already have RSA keys defined named R1.example.com.
% Do you really want to replace them? [yes/no]: yes
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]:
*Mar  1 00:42:44.999: %SSH-5-DISABLED: SSH 1.5 has been disabled
768
% Generating 768 bit RSA keys, keys will be non-exportable...[OK]

R1(config)#
*Mar  1 00:43:05.387: %SSH-5-ENABLED: SSH 1.99 has been enabled
R1(config)#ssh time-out 60
                ^
% Invalid input detected at '^' marker.

R1(config)#ip ssh version 2
R1(config)#ssh time-out 60
                ^
% Invalid input detected at '^' marker.

R1(config)#ssh authentification-retries 5
                ^
% Invalid input detected at '^' marker.

R1(config)#end
R1#
*Mar  1 00:43:45.855: %SYS-5-CONFIG_I: Configured from console by console
R1#
```
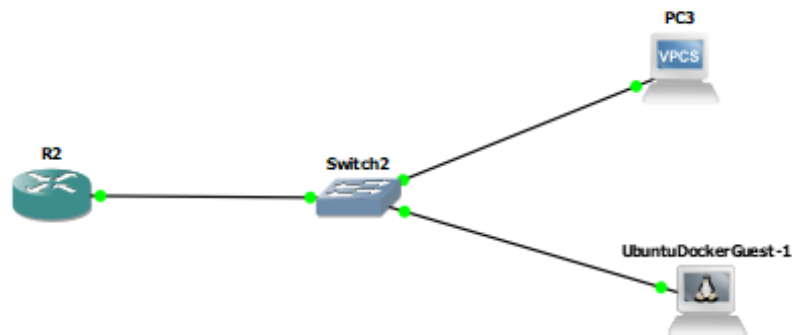
3. Reproduisez cette topologie en configurant le protocole SSH.

- Topologie

- configuration

```
R2#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#interface FastEthernet0/0
R2(config-if)#ip address 192.168.1.1 255.255.255.0
R2(config-if)#no shutdown
R2(config-if)#
*Mar 24 15:19:51.307: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state t
o up
*Mar 24 15:19:52.307: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/0, changed state to up
R2(config-if)#exit
R2(config)#line vty 0 4
R2(config-line)#password 1234
R2(config-line)#login
R2(config-line)#transport input telnet
R2(config-line)#exit
R2(config)#show running-config | include line vty
                 ^
% Invalid input detected at '^' marker.

R2(config)#exit
R2#show running-config | include line vty
*Mar 24 15:28:46.839: %SYS-5-CONFIG_I: Configured from console by console
R2#show running-config | include line vty
line vty 0 4
R2#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#interface FastEthernet0/0
R2(config-if)#ip address 192.168.1.1 255.255.255.0
R2(config-if)#no shutdown
R2(config-if)#exit
R2(config)#ip domain-name example.com
R2(config)#crypto key generate rsa
The name for the keys will be: R2.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.
```

EN Anglais (

```
root@UbuntuDockerGuest-1:~# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet6 fe80::42:ebff:feb0:400  prefixlen 64  scopeid 0x20<link>
        ether 02:42:eb:b0:04:00  txqueuelen 1000  (Ethernet)
        RX packets 61  bytes 19453 (19.4 KB)
        RX errors 0  dropped 5  overruns 0  frame 0
        TX packets 15  bytes 1146 (1.1 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: 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

root@UbuntuDockerGuest-1:~# nano /etc/network/interfaces
root@UbuntuDockerGuest-1:~# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet6 fe80::42:ebff:feb0:400  prefixlen 64  scopeid 0x20<link>
        ether 02:42:eb:b0:04:00  txqueuelen 1000  (Ethernet)
        RX packets 62  bytes 19815 (19.8 KB)
        RX errors 0  dropped 5  overruns 0  frame 0
        TX packets 15  bytes 1146 (1.1 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: 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
```
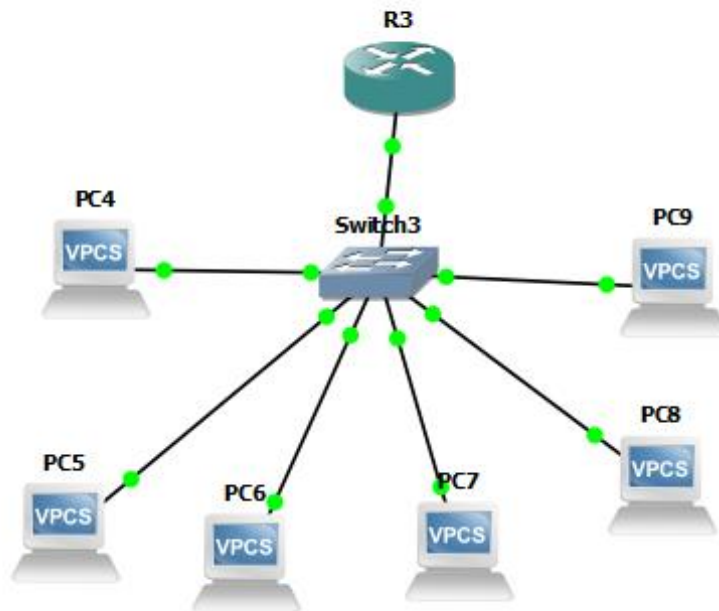
4. Reproduisez cette topologie en configurant le Serveur DNS.

- Topologie

- configuration

```
to administratively down
R3#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#interface f0/0
R3(config-if)#ip address 192.168.1.1 255.255.255.0
R3(config-if)#no shutdown
R3(config-if)#exit
R3(config)#
*Mar 25 14:02:55.235: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar 25 14:02:56.235: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R3(config)#ip dns server
R3(config)#ip host pc4.local 192.168.1.2
R3(config)#ip host pc5.local 192.168.1.3
R3(config)#ip host pc6.local 192.168.1.4
R3(config)#ip host pc7.local 192.168.1.5
R3(config)#ip host pc8.local 192.168.1.6
R3(config)#ip host pc9.local 192.168.1.8
R3(config)#ip host google.com 8.8.8.8
R3(config)#ip name-server 8.8.8.8
R3(config)#ip domain-lookup
R3(config)#
R3(config)#ping 192.168.1.1
                 ^
% Invalid input detected at '^' marker.

R3(config)#show ip dns view
              ^
% Invalid input detected at '^' marker.

R3(config)#exit
R3#show ip dns view
*Mar 25 14:09:52.227: %SYS-5-CONFIG_I: Configured from console by console
R3#show ip dns view
DNS View default parameters:
Logging is off
DNS Resolver settings:
  Domain lookup is enabled
  Default domain name:
  Domain search list:
```

```
R3#show ip dns view
*Mar 25 14:09:52.227: %SYS-5-CONFIG_I: Configured from console by console
R3#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:
```

```
PC9> ip 192.168.1.8 255.255.255.0 192.168.1.1
Checking for duplicate address...
PC9 : 192.168.1.8 255.255.255.0 gateway 192.168.1.1

PC9> ip dns 192.168.1.1

PC9> ping pc4.local
pc4.local resolved to 192.168.1.2

84 bytes from 192.168.1.2 icmp_seq=1 ttl=64 time=0.269 ms
84 bytes from 192.168.1.2 icmp_seq=2 ttl=64 time=0.230 ms
84 bytes from 192.168.1.2 icmp_seq=3 ttl=64 time=0.366 ms
84 bytes from 192.168.1.2 icmp_seq=4 ttl=64 time=0.207 ms
84 bytes from 192.168.1.2 icmp_seq=5 ttl=64 time=0.212 ms
```
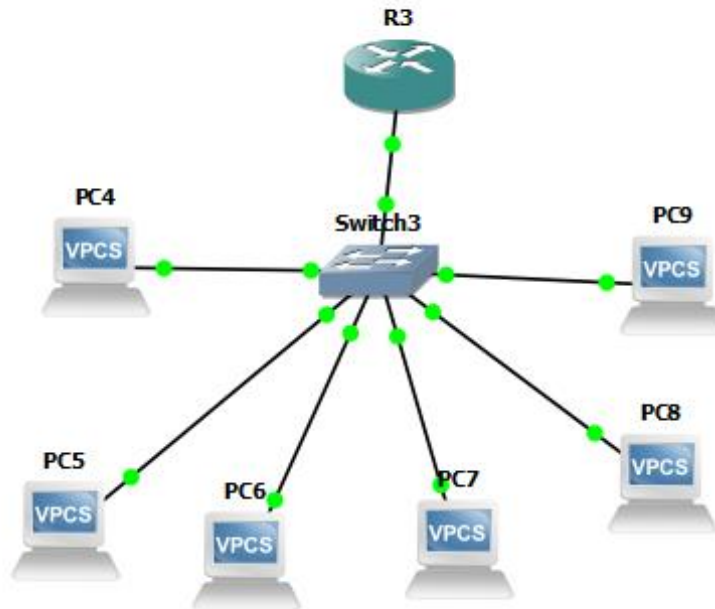
- Test
```
PC9>
```

5. Reproduisez cette topologie en configurant le serveur DHCP.

- Topologie

- configuration

```
R3#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
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 dhcp pool LAN_POOL
R3(dhcp-config)#network 192.168.1.0 255.255.255.0
R3(dhcp-config)#default-router 192.168.1.1
R3(dhcp-config)#dns-server 8.8.8.8
R3(dhcp-config)#exit
R3(config)#ip dhcp excluded-address 192.168.1.1 192.168.1.10
R3(config)#
```

- Test

```
PC9> ping 192.168.1.1

84 bytes from 192.168.1.1 icmp_seq=1 ttl=255 time=15.220 ms
84 bytes from 192.168.1.1 icmp_seq=2 ttl=255 time=2.593 ms
84 bytes from 192.168.1.1 icmp_seq=3 ttl=255 time=1.503 ms
84 bytes from 192.168.1.1 icmp_seq=4 ttl=255 time=19.052 ms
84 bytes from 192.168.1.1 icmp_seq=5 ttl=255 time=13.457 ms

PC9> ping 192.168.1.4

84 bytes from 192.168.1.4 icmp_seq=1 ttl=64 time=8.501 ms
84 bytes from 192.168.1.4 icmp_seq=2 ttl=64 time=0.301 ms
84 bytes from 192.168.1.4 icmp_seq=3 ttl=64 time=0.202 ms
84 bytes from 192.168.1.4 icmp_seq=4 ttl=64 time=0.251 ms
84 bytes from 192.168.1.4 icmp_seq=5 ttl=64 time=0.233 ms

PC9>
```

Conclusion

En conclusion, ce TD me permet de configurer et de simuler les protocoles réseaux essentiels tels que Telnet, SSH, DNS et DHCP.