IUS
INSTITUT UNIVERSITAIRE DES SCIENCES

FACULTÉ DES SCIENCES ET DES TECHNOLOGIES

(FST)

<u>Troisième année</u>

RAPPORT

Sur le Travail de Laboratoire N°<u>8</u>

COURS

Réseaux I

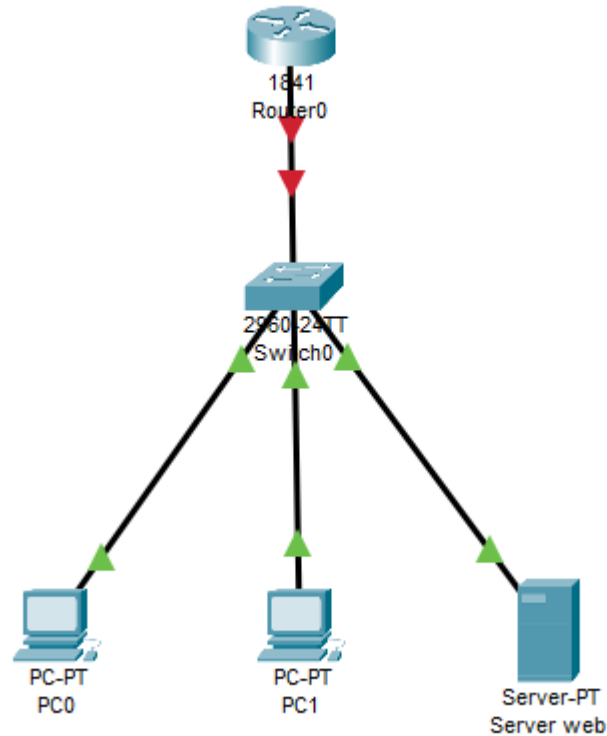# Professeur

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PRÉPARÉ PAR

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SEMESTRE

I

28/02/2025

1. **Configurez un pare-feu et un VPN site-à-site.**

- **Configuration du Routeur**

```
Router>enable
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname R
R(config)#interface FastEthernet0/0
R(config-if)# ip address 192.168.1.1 255.255.255.0
R(config-if)#no shut down

R(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

R(config-if)#exit
R(config)#
```

- **Configuration du commutateur**

```
Switch>en
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)# switchport mode access
                ^
% Invalid input detected at '^' marker.

Switch(config)# switchport mode access?
% Unrecognized command
Switch(config)# switchport mode access
                ^
% Invalid input detected at '^' marker.

Switch(config)# switchport mode access
                ^
% Invalid input detected at '^' marker.

Switch(config)# switchport voice vlan 1
                ^
% Invalid input detected at '^' marker.

Switch(config)# switchport voice vlan 1?
% Unrecognized command
Switch(config)# switchport voice vlan 1?
% Unrecognized command
Switch(config)#interface FastEthernet0/1
Switch(config-if)# switchport mode access
Switch(config-if)#switchport voice vlan 1
Switch(config-if)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#
```
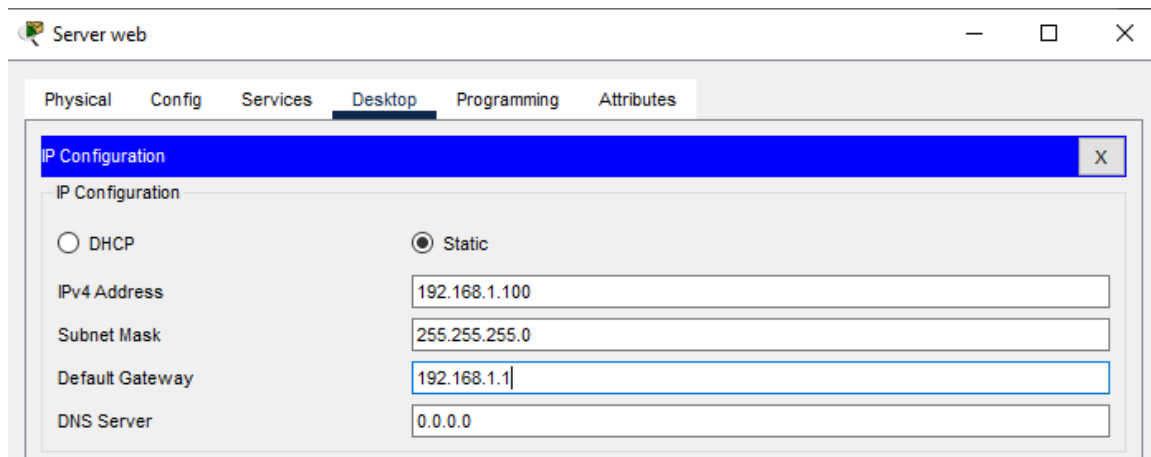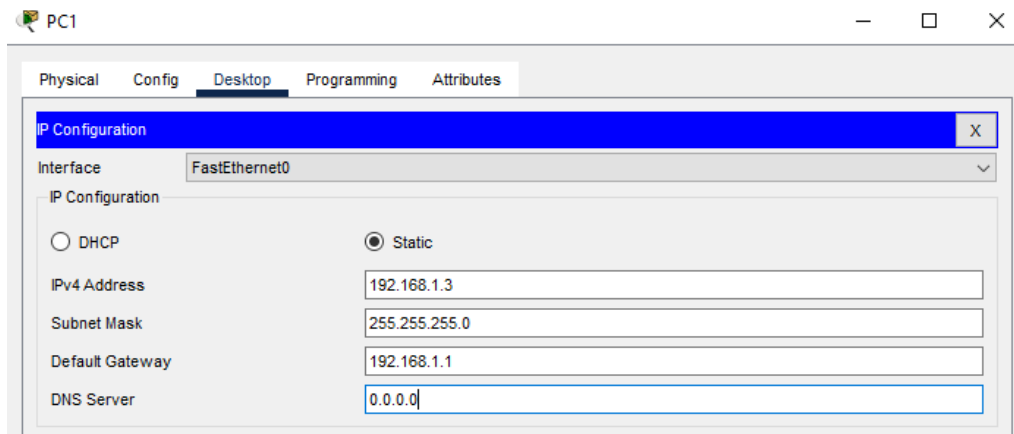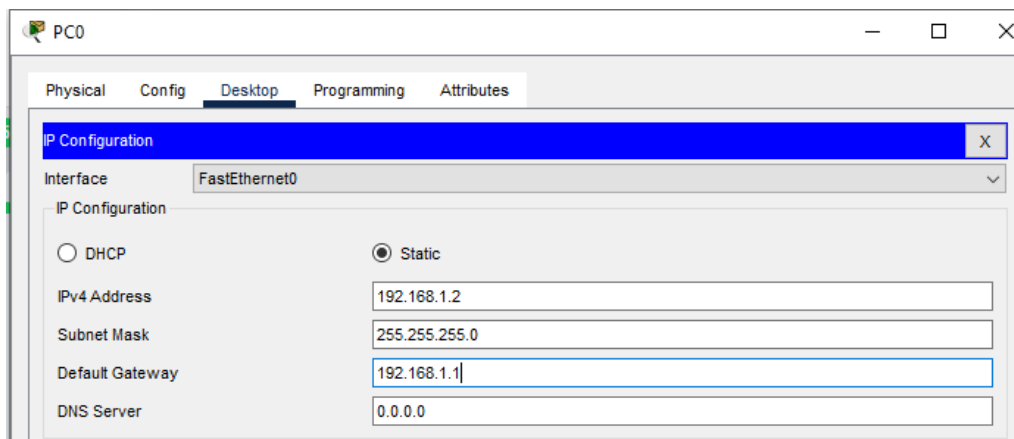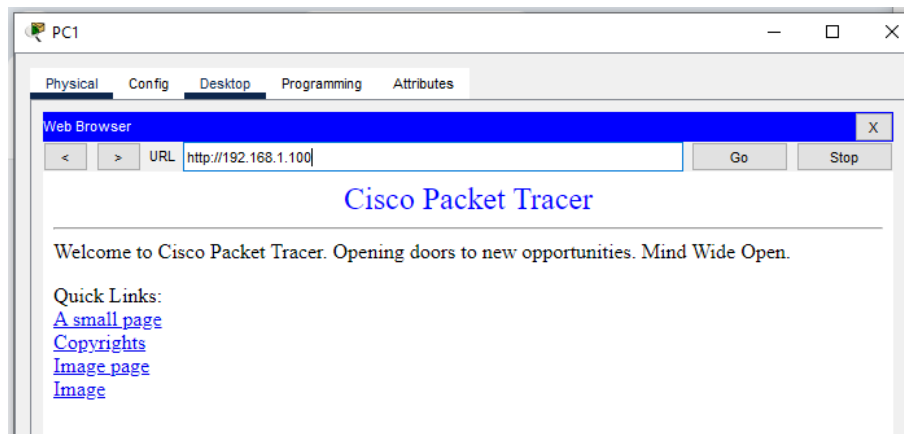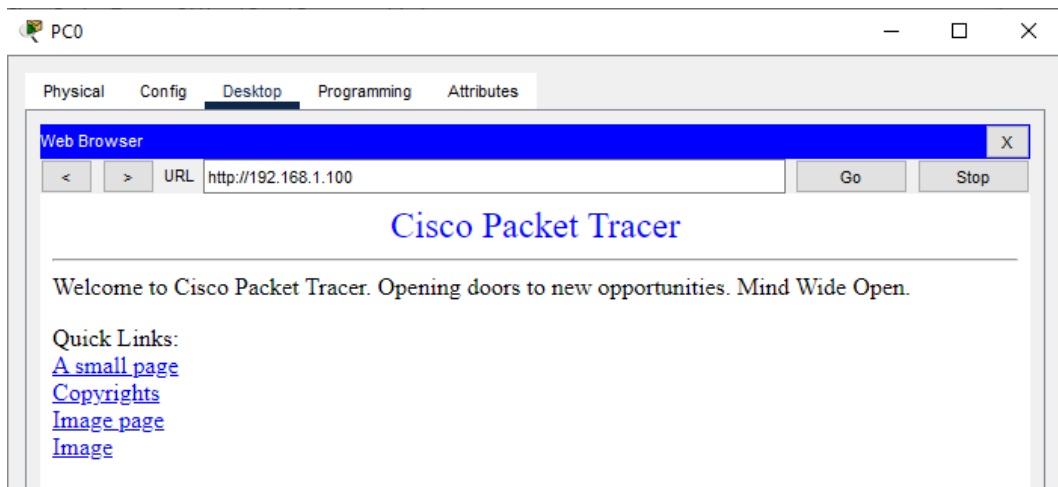
- **Configuration des dispositifs**

- **Vérification de la connectivité**
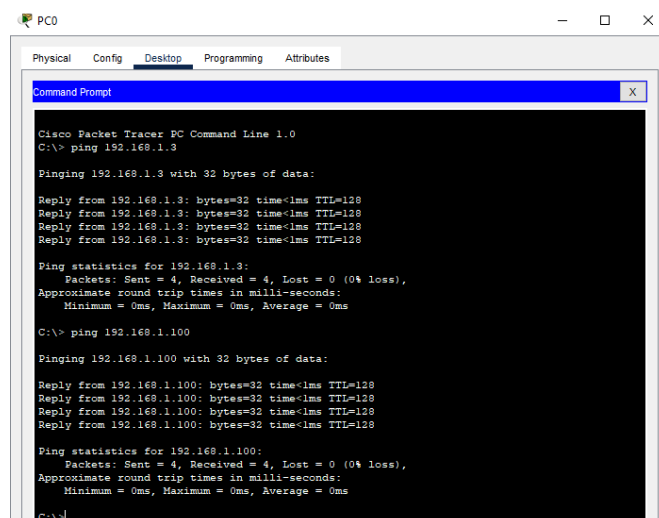
- **Configuration ACL**

```
R>en
R#access-list 100 deny tcp host 192.168.1.3 host 192.168.1.100 eq 80
             ^
% Invalid input detected at '^' marker.

R#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R(config)#access-list 100 deny tcp host 192.168.1.3 host 192.168.1.100 eq 80
R(config)# access-list 100 permit ip any any
R(config)#interface FastEthernet0/0
R(config-if)# ip access-group 100 in
R(config-if)# exit
R(config)#
```

PC0 — □ ✕

| Physical | Config | Desktop | Programming | Attributes |

Web Browser   X

| < | > | URL | http://192.168.1.100 | | Go | Stop |

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PC1 — □ ✕

| Physical | Config | Desktop | Programming | Attributes |

Web Browser   X

| < | > | URL | http://192.168.1.100 | | Go | Stop |

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Image

- **Bloquer le Trafic HTTPS et ICMP**

```
R>en
R#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R(config)# access-list 100 deny tcp any any eq 443
R(config)# access-list 100 deny icmp any any
R(config)# interface FastEthernet0/0
R(config-if)# ip access-group 100 in
R(config-if)# exit
R(config)# write memory
              ^
% Invalid input detected at '^' marker.

R(config)#exit
R#
%SYS-5-CONFIG_I: Configured from console by console

R#write memory
Building configuration...
[OK]
R#
```

2. Configuration d'un VPN Site-à-Site
- ### Configuration R1 (site 1) et R2 (site 2)

```
Router>enable
Router# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)# interface FastEthernet0/0
Router(config-if)# ip address 192.168.1.1 255.255.255.0
Router(config-if)# no shutdown

Router(config-if)# exit
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

Router(config)# interface FastEthernet0/1
Router(config-if)# ip address 10.0.0.1 255.255.255.252
Router(config-if)# no shutdown

Router(config-if)# exit
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

Router(config)# ip route 192.168.2.0 255.255.255.0 10.0.0.2
Router(config)# exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router# write memory
Building configuration...
[OK]
Router#
```

```
Router>enable
Router# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)# interface FastEthernet0/0
Router(config-if)# ip address 192.168.2.1 255.255.255.0
Router(config-if)# no shutdown

Router(config-if)# exit
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config)# interface FastEthernet0/1
Router(config-if)# ip address 10.0.0.2 255.255.255.252
Router(config-if)# no shutdown

Router(config-if)# exit
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

Router(config)# ip route 192.168.1.0 255.255.255.0 10.0.0.1
Router(config)# exit
Router# write memory
%SYS-5-CONFIG_I: Configured from console by console

Building configuration...
[OK]
Router#
```

- ### Configuration du VPN IPsec

```
Router>enable
Router# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)# access-list 100 permit ip 192.168.1.0 0.0.0.255 192.168.2.0 0.0.0.255
Router(config)# crypto isakmp policy 10
Router(config-isakmp)# encryption aes 256
Router(config-isakmp)# hash sha
Router(config-isakmp)# authentication pre-share
Router(config-isakmp)# group 2
Router(config-isakmp)# lifetime 86400
Router(config-isakmp)# exit
Router(config)# crypto isakmp key VPN_SECRET address 10.0.0.2
Router(config)# crypto ipsec transform-set VPN-SET esp-aes 256 esp-sha-hmac
Router(config)# mode tunnel
                        ^
% Invalid input detected at '^' marker.

Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#crypto map VPN-MAP 10 ipsec-isakmp
       ^
% Invalid input detected at '^' marker.

Router# set peer 10.0.0.2
        ^
% Invalid input detected at '^' marker.

Router# set transform-set VPN-SET
        ^
% Invalid input detected at '^' marker.

Router# match address 100
        ^
```
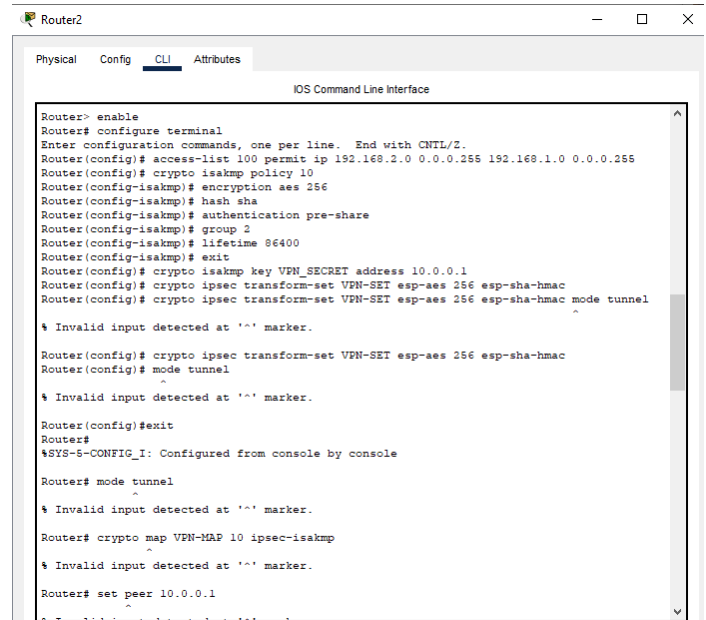
Router2 — Physical | Config | CLI | Attributes

IOS Command Line Interface

```
Router> enable
Router# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)# access-list 100 permit ip 192.168.2.0 0.0.0.255 192.168.1.0 0.0.0.255
Router(config)# crypto isakmp policy 10
Router(config-isakmp)# encryption aes 256
Router(config-isakmp)# hash sha
Router(config-isakmp)# authentication pre-share
Router(config-isakmp)# group 2
Router(config-isakmp)# lifetime 86400
Router(config-isakmp)# exit
Router(config)# crypto isakmp key VPN_SECRET address 10.0.0.1
Router(config)# crypto ipsec transform-set VPN-SET esp-aes 256 esp-sha-hmac
Router(config)# crypto ipsec transform-set VPN-SET esp-aes 256 esp-sha-hmac mode tunnel
                                                                              ^
% Invalid input detected at '^' marker.

Router(config)# crypto ipsec transform-set VPN-SET esp-aes 256 esp-sha-hmac
Router(config)# mode tunnel
                     ^
% Invalid input detected at '^' marker.

Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router# mode tunnel
             ^
% Invalid input detected at '^' marker.

Router# crypto map VPN-MAP 10 ipsec-isakmp
        ^
% Invalid input detected at '^' marker.

Router# set peer 10.0.0.1
```
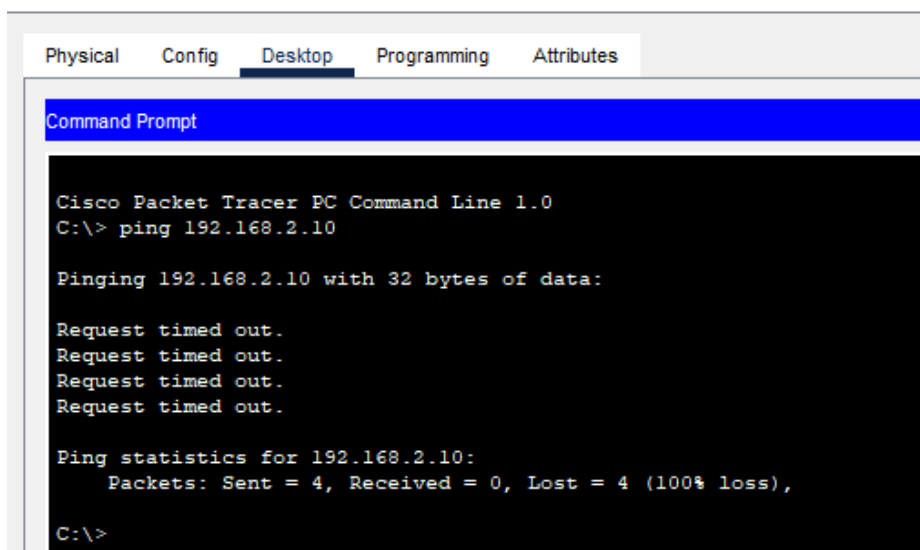
- ### Vérification du VPN

PC2 — Physical | Config | Desktop | Programming | Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\> ping 192.168.2.10

Pinging 192.168.2.10 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.2.10:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

```
Router>show crypto isakmp sa
                      ^
% Invalid input detected at '^' marker.

Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#show crypto isakmp sa
                    ^
% Invalid input detected at '^' marker.

Router(config)#
```

```
Router(config)# show crypto ipsec sa
                   ^
% Invalid input detected at '^' marker.

Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router# show crypto ipsec sa

No SAs found
Router#
```

CONCLUSION :

J'ai appris les compétences nécessaires pour Configurer un Pare-feu et un VPN Site-à-Site sur Cisco Packet Tracer.