INSTITUTE UNIVERSITAIRE DES SCIENCES – IUS

Faculté des Sciences et technologies – FST

Laboratoire #6 Du cours de Reseau I

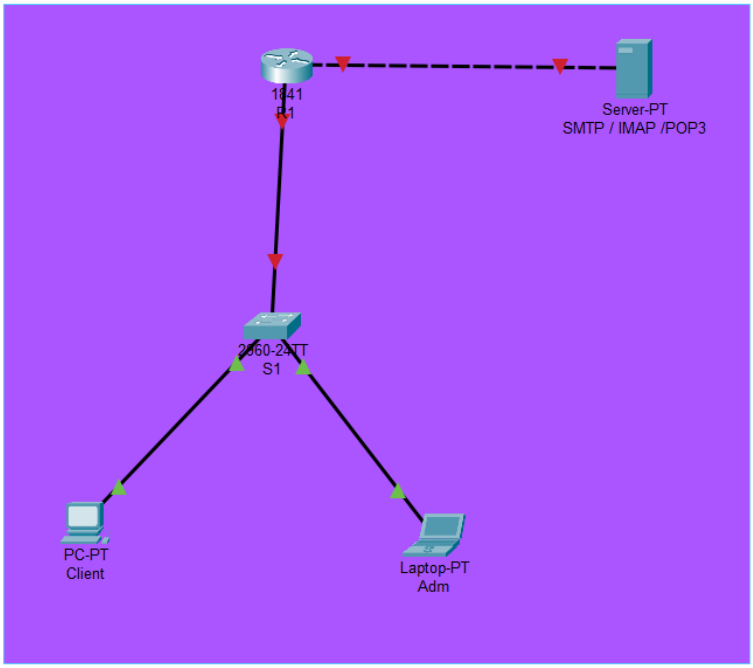
Soumis au Chargé de Cours **Ismaël SAINT – AMOUR**

Niveau **L3 FST**

Préparé par **Robaldo BADIO**

Date Le 25 / 02 / 2025

Topologie



1. **Configurer les protocoles SMTP, IMAP et POP3 afin d'assurer l'envoi, la réception et la gestion efficace des courriels.**

```
M860 processor: part number 0, mask 49
2 FastEthernet/IEEE 802.3 interface(s)
191K bytes of NVRAM.
63488K bytes of ATA CompactFlash (Read/Write)
Cisco IOS Software, 1841 Software (C1841-ADVIPSERVICESK9-M), Version 12.4(15)T1, RELEASE SOFTWARE
(fc2)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Wed 18-Jul-07 04:52 by pt_team


         --- System Configuration Dialog ---

Would you like to enter the initial configuration dialog? [yes/no]:

Press RETURN to get started!



Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname R1
R1(config)#interface FastEthernet0/0
R1(config-if)#ip address 192.168.1.1 255.255.255.0
R1(config-if)#no shutdown

R1(config-if)#exit
R1(config)#interface FastEthernet0/1
R1(config-if)#ip address 192.168.2.1 255.255.255.0
R1(config-if)#no shutdown

R1(config-if)#exit
R1(config)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

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

%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

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

Copy Paste

```
Device Name: R1
Device Model: 1841
Hostname: R1

Port              Link   VLAN   IP Address         IPv6 Address                          MAC Address
FastEthernet0/0   Up     --     192.168.1.1/24     <not set>                             00D0.9783.2601
FastEthernet0/1   Up     --     192.168.2.1/24     <not set>                             00D0.9783.2602
Vlan1             Down   1      <not set>          <not set>                             00E0.F793.995A

Physical Location: Intercity > Home City > Corporate Office > Main Wiring Closet > Rack > R1
```

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

R1(config)#exit
R1#
%SYS-5-CONFIG_I: Configured from console by console
show ip interface brief
Interface              IP-Address      OK? Method Status                Protocol
FastEthernet0/0        192.168.1.1     YES manual up                    up
FastEthernet0/1        192.168.2.1     YES manual up                    up
Vlan1                  unassigned      YES unset  administratively down down
R1#show arp
Protocol  Address          Age (min)  Hardware Addr   Type   Interface
Internet  192.168.1.1             -   00D0.9783.2601  ARPA   FastEthernet0/0
Internet  192.168.2.1             -   00D0.9783.2602  ARPA   FastEthernet0/1
R1#
```

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```
Cisco IOS Software, C2960 Software (C2960-LANBASEK9-M), Version 15.0(2)SE4, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2013 by Cisco Systems, Inc.
Compiled Wed 26-Jun-13 02:49 by mnguyen


Press RETURN to get started!


%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

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


Switch>enable
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#hostname S1
S1(config)#interface vlan 1
S1(config-if)#ip address 192.168.1.2 255.255.255.0
S1(config-if)#no shutdown

S1(config-if)#exit
S1(config)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up

S1(config)#enable
% Incomplete command.
S1(config)#configure terminal
                ^
% Invalid input detected at '^' marker.

S1(config)#hostname S2
S2(config)#interface vlan 1
S2(config-if)#ip address 192.168.2.2 255.255.255.0
S2(config-if)#no shutdown
S2(config-if)#exit
S2(config)#
S2(config)#
```

Copy

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S1

Physical Config CLI Attributes

IOS Command Line Interface

```
% Incomplete command.
S1(config)#configure terminal
                ^
% Invalid input detected at '^' marker.

S1(config)#hostname S2
S2(config)#interface vlan 1
S2(config-if)#ip address 192.168.2.2 255.255.255.0
S2(config-if)#no shutdown
S2(config-if)#exit
S2(config)#
S2(config)#ip default-gateway 192.168.1.1
S2(config)#hostname S1
S1(config)#ip default-gateway 192.168.1.1
S1(config)#exit
S1#show ip interface brief
Interface              IP-Address      OK? Method Status                Protocol
FastEthernet0/1        unassigned      YES manual up                    up
FastEthernet0/2        unassigned      YES manual up                    up
FastEthernet0/3        unassigned      YES manual up                    up
FastEthernet0/4        unassigned      YES manual down                  down
FastEthernet0/5        unassigned      YES manual down                  down
FastEthernet0/6        unassigned      YES manual down                  down
FastEthernet0/7        unassigned      YES manual down                  down
FastEthernet0/8        unassigned      YES manual down                  down
FastEthernet0/9        unassigned      YES manual down                  down
FastEthernet0/10       unassigned      YES manual down                  down
FastEthernet0/11       unassigned      YES manual down                  down
FastEthernet0/12       unassigned      YES manual down                  down
FastEthernet0/13       unassigned      YES manual down                  down
FastEthernet0/14       unassigned      YES manual down                  down
FastEthernet0/15       unassigned      YES manual down                  down
FastEthernet0/16       unassigned      YES manual down                  down
FastEthernet0/17       unassigned      YES manual down                  down
FastEthernet0/18       unassigned      YES manual down                  down
FastEthernet0/19       unassigned      YES manual down                  down
FastEthernet0/20       unassigned      YES manual down                  down
FastEthernet0/21       unassigned      YES manual down                  down

S1#how arp
%SYS-5-CONFIG_I: Configured from console by console
```

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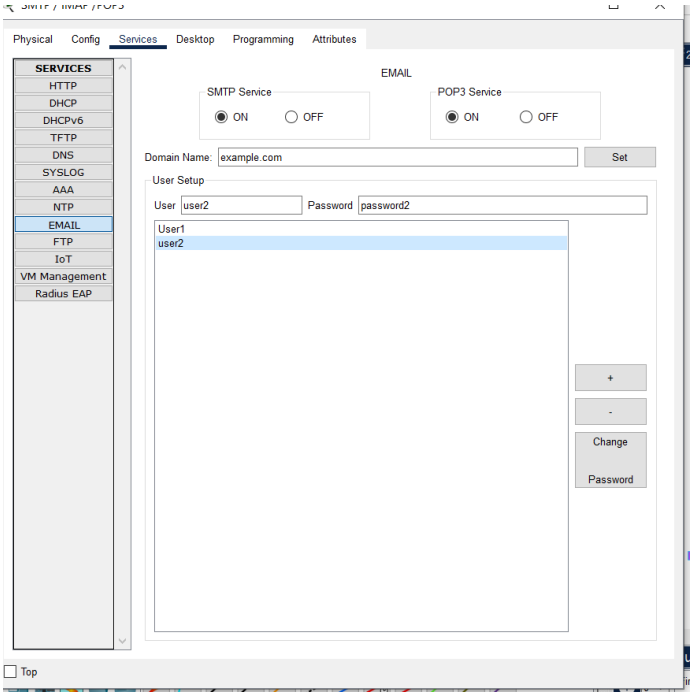
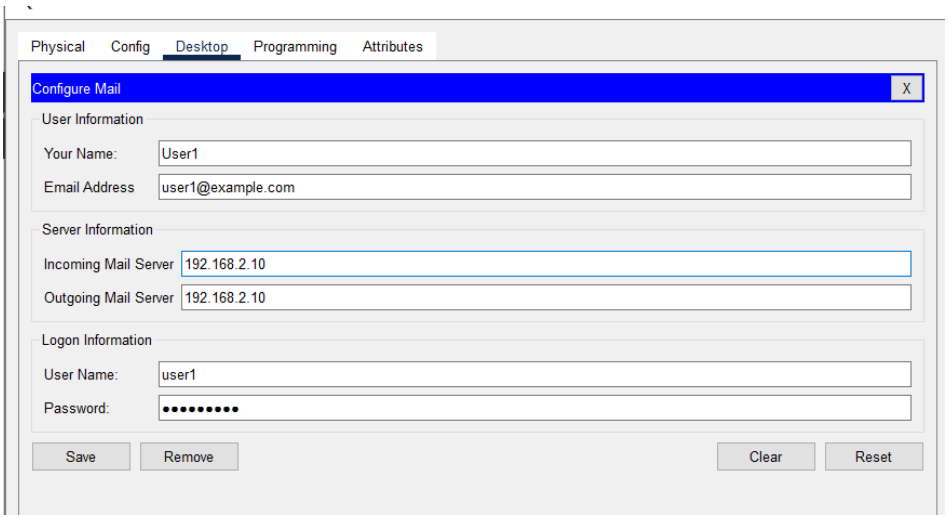
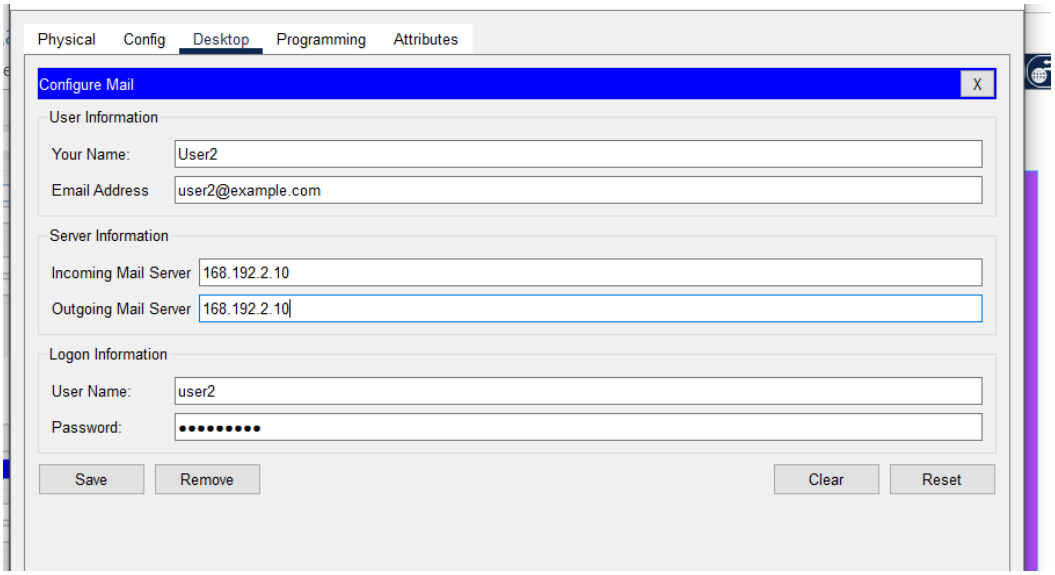
```
Device Name: Client
Device Model: PC-PT

Port            Link   IP Address         IPv6 Address                          MAC Address
FastEthernet0   Up     192.168.1.10/24    <not set>                             0007.ECB0.61AE
Bluetooth       Down   <not set>          <not set>                             0001.42E4.92D5

Gateway: 192.168.1.1
DNS Server: <not set>
Line Number:  <not set>

Physical Location: Intercity > Home City > Corporate Office > Client
```

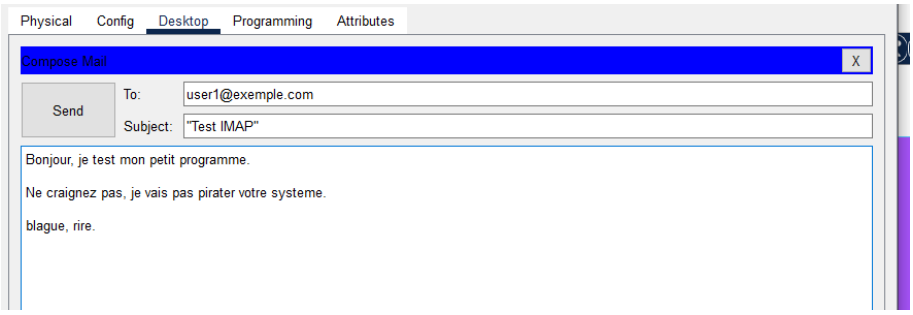
```
Device Name: Adm
Device Model: Laptop-PT

Port            Link   IP Address         IPv6 Address                          MAC Address
FastEthernet0   Up     192.168.2.11/24    <not set>                             0007.EC3B.EB3C
Bluetooth       Down   <not set>          <not set>                             0003.E450.8BC2

Gateway: 192.168.1.1
DNS Server: <not set>
Line Number:  <not set>

Physical Location: Intercity > Home City > Corporate Office > Adm
```

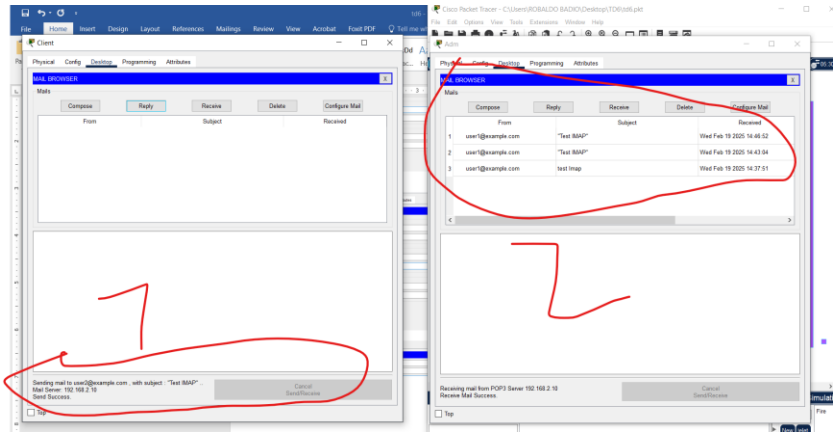
```
Device Name: SMTP / IMAP /POP3
Device Model: Server-PT

Port            Link   IP Address         IPv6 Address                          MAC Address
FastEthernet0   Up     192.168.2.10/24    <not set>                             0010.1124.8639

Gateway: 192.168.2.1
DNS Server: <not set>
Line Number:  <not set>

Physical Location: Intercity > Home City > Corporate Office > Main Wiring Closet > Rack > SMTP / IMAP /POP3
```


Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
EMAIL
SMTP Service
ON
OFF
POP3 Service
ON
OFF
Domain Name:
example.com
Set
User Setup
User
user2
Password
password2
User1
user2
+
-
Change
Password
Top


Physical
Config
Desktop
Programming
Attributes
Configure Mail
X
User Information
Your Name:
User1
Email Address
user1@example.com
Server Information
Incoming Mail Server
192.168.2.10
Outgoing Mail Server
192.168.2.10
Logon Information
User Name:
user1
Password:
Save
Remove
Clear
Reset


Physical
Config
Desktop
Programming
Attributes
Configure Mail
X
User Information
Your Name:
User2
Email Address
user2@example.com
Server Information
Incoming Mail Server
168.192.2.10
Outgoing Mail Server
168.192.2.10
Logon Information
User Name:
user2
Password:
Save
Remove
Clear
Reset


Physical
Config
Desktop
Programming
Attributes
Compose Mail
X
Send
To:
user1@exemple.com
Subject:
"Test IMAP"
Bonjour, je test mon petit programme.
Ne craignez pas, je vais pas pirater votre systeme.
blague, rire.



SMTP

```
R1>enable
R1#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#interface FastEthernet0/0
R1(config-if)#ip address 192.168.1.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#interface FastEthernet0/1
R1(config-if)#ip address 192.168.2.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#access-list 110 permit tcp any any eq smtp
R1(config)#line vty 0 4
R1(config-line)#login
% Login disabled on line 194, until 'password' is set
% Login disabled on line 195, until 'password' is set
% Login disabled on line 196, until 'password' is set
% Login disabled on line 197, until 'password' is set
% Login disabled on line 198, until 'password' is set
R1(config-line)#password cisco
R1(config-line)#login
R1(config-line)#enable secret cisco
R1(config)#exit
R1#write memory
%SYS-5-CONFIG_I: Configured from console by console

Building configuration...
[OK]
R1#
```

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Top

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:

Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time=2ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 0ms

C:\>
C:\>
C:\>
C:\> telnet 192.168.2.100 25
Trying 192.168.2.100 ...
% Connection timed out; remote host not responding
C:\>
```

R1

Physical Config CLI Attributes

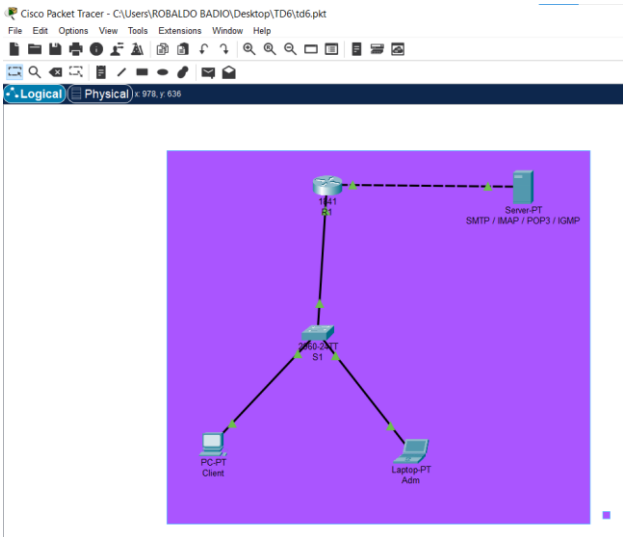
IOS Command Line Interface

```
R1>enable
Password:
Password:
R1#enable
R1#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)## Bloquer ICMP pour un rseau spcifique
           ^
% Invalid input detected at '^' marker.

R1(config)#access-list 100 deny icmp any any
R1(config)#access-list 100 permit ip any any
R1(config)## Appliquer l'ACL sur une interface
           ^
% Invalid input detected at '^' marker.

R1(config)#interface GigabitEthernet0/0
%Invalid interface type and number
R1(config)#ip access-group 100 in
                           ^
% Invalid input detected at '^' marker.

R1(config)#exit
R1#write memory
%SYS-5-CONFIG_I: Configured from console by console

Building configuration...
[OK]
R1#
```

```
C:\>ping 8.8.8.8

Pinging 8.8.8.8 with 32 bytes of data:

Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.

Ping statistics for 8.8.8.8:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

2. **Configurer les protocoles ICMP et IGMP sur les équipements réseau afin d'assurer lediagnostic, le contrôle des communications et la gestion efficace des flux multicast.**

On peut utiliser le même schéma pour la suite du TD.



Pour la Configuration de IGMP, il y a des commandes qui ne passent pas, Puisque j'utilise une version gratuite, c'est peut-être pour cette raison que ça n'a pas marché.

```
Press RETURN to get started!


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

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


R1>enable
Password:
Password:
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#interface GigabitEthernet0/0
%Invalid interface type and number
R1(config)#ip address 192.168.1.254 255.255.255.0
                ^
% Invalid input detected at '^' marker.

R1(config)#ip pim sparse-dense-mode
               ^
% Invalid input detected at '^' marker.

R1(config)#
```

Configurer un Groupe Multicast

```
R1>interface GigabitEthernet0/0
                ^
% Invalid input detected at '^' marker.

R1>ip igmp join-group 239.1.1.1
      ^
% Invalid input detected at '^' marker.

R1>exit
```

Vérifier IGMP

```
R1>show ip igmp groups
              ^
% Invalid input detected at '^' marker.

R1>
```

Tester le Multicast avec ping

Client

Physical | Config | Desktop | Programming | Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\> ping 239.1.1.1

Pinging 239.1.1.1 with 32 bytes of data:

Request timed out.
```

Filtrer IGMP avec une ACL

```
R1>show ip igmp groups
              ^
% Invalid input detected at '^' marker.

R1>
R1>access-list 10 permit 239.1.1.1
                ^
% Invalid input detected at '^' marker.

R1>interface GigabitEthernet0/0
              ^
% Invalid input detected at '^' marker.

R1>ip igmp access-group 10
      ^
% Invalid input detected at '^' marker.

R1>
```

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En Conclusion, Ce TD devrait me permettre de comprendre et de configurer le protocole SMTP, IMAP, POP3, IGMP pour l'envoi d'e-mails dans un environnement réseau simulé.

1. Configurer un serveur de messagerie pour prendre en charge SMTP et IMAP.
2. Configurer des clients pour envoyer des e-mails via SMTP et IMAP.
3. Tester la réception et la gestion des e-mails avec IMAP.
4. Comprendre le fonctionnement et les rôles du protocole ICMP.
5. Observer et analyser les messages ICMP à l'aide d'un outil comme Wireshark.
6. Configurer un réseau multicast sur un routeur et des commutateurs.
7. Observer et analyser les messages IGMP.
8. Tester le transfert de données multicast.

Au final, je peux dire que je n’ai pas abouti à tous les résultats souhaités. Je ne sais pas si c’est parce que j’utilise une version gratuite de Cisco qui en est la cause.