

Institut Universitaire des Sciences (IUS)
FACULTÉ DES SCIENCES ET DES TECHNOLOGIES (FST)

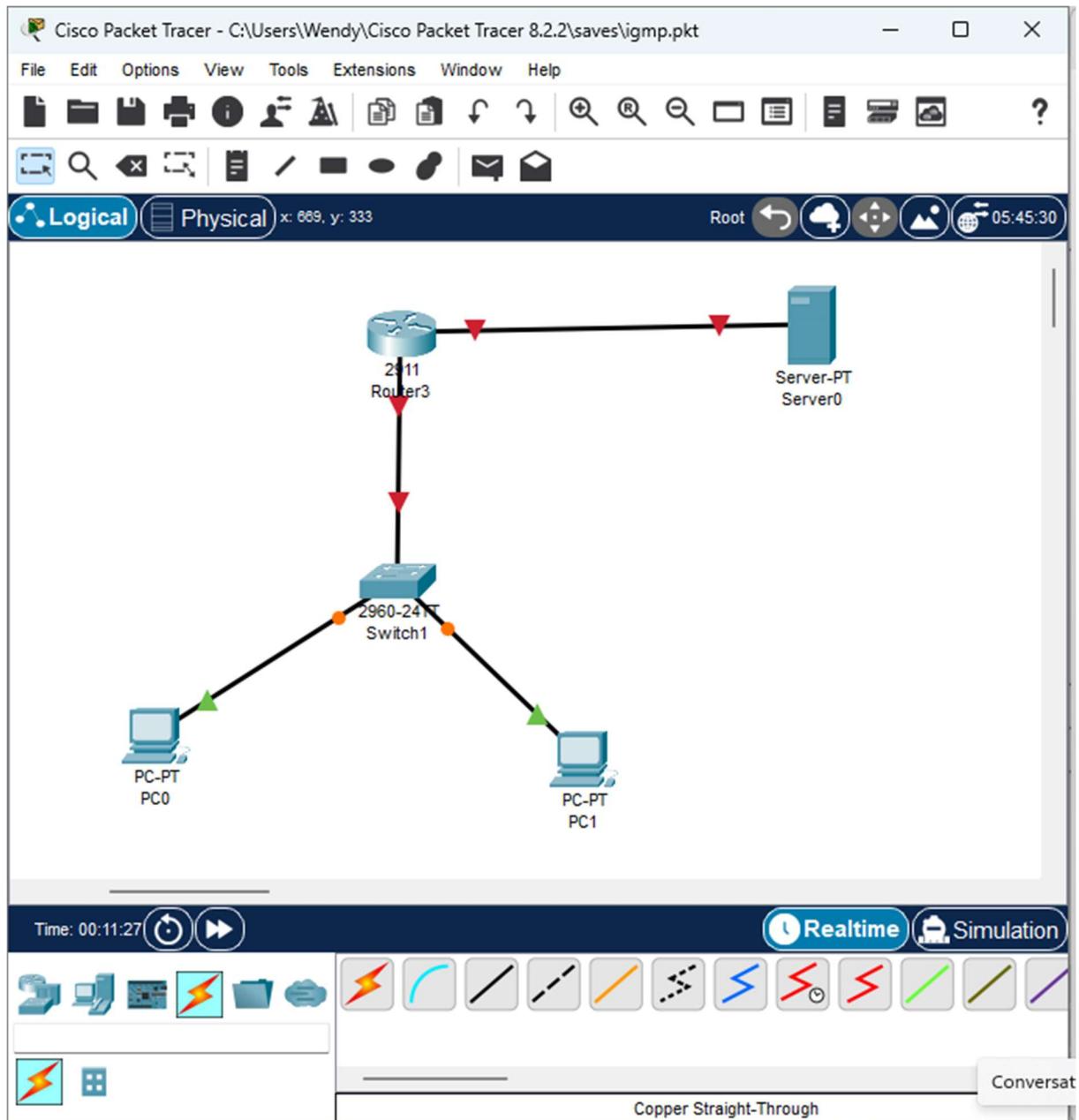
RAPPORT
SUR LE LAB 6

Cours : Réseaux 1

Étudiant : Wendy Colas
Niveau : L3

2025

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



Router0

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R1
R1(config)#inteface FastEthernet0/0
^
% Invalid input detected at '^' marker.

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)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
exit
R1(config)#interface FatsEthernet0/1
^
% Invalid input detected at '^' marker.

R1(config)#interface FastEthernet0/1
R1(config-if)#ip address 192.168.2.1
% Incomplete command.
R1(config-if)#ip address 192.168.2.1 255.255.255.0
R1(config-if)#no shutdown

R1(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
exit
R1(config)#exit
R1#
%SYS-5-CONFIG_I: Configured from console by console
```

Top

Copy Paste

Router0

Physical Config CLI Attributes

IOS Command Line Interface

```
% Invalid input detected at '^' marker.

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)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
exit
R1(config)#interface FastEthernet0/1
^
% Invalid input detected at '^' marker.

R1(config)#interface FastEthernet0/1
R1(config-if)#ip address 192.168.2.1
% Incomplete command.
R1(config-if)#ip address 192.168.2.1 255.255.255.0
R1(config-if)#no shutdown

R1(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
exit
R1(config)#exit
R1#
%SYS-5-CONFIG_I: Configured from console by console

R1#show ip interface brief
Interface          IP-Address      OK? Method Status           Protocol
FastEthernet0/0    192.168.1.1    YES manual up            down
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  192.168.2.1      -          00D0.58E6.A902  ARPA   FastEthernet0/1

R1#
```

Top

Copy Paste

Switch0

Physical Config CLI Attributes

IOS Command Line Interface

```
Switch>enable
Switch#config t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname S1
S1(config)#interface vlan 1
S1(config-if)#ip address 192.168.2.2 255.255.255.0
S1(config-if)#no shutdown

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

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up
exit
S1(config)#ip default-gateway 192.168.2.1
S1(config)#exit
S1#
%SYS-5-CONFIG_I: Configured from console by console

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
```

Top

Copy Paste

Switch0

Physical Config CLI Attributes

IOS Command Line Interface

```
S1(config)#exit
S1#
%SYS-5-CONFIG_I: Configured from console by console

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
FastEthernet0/22   unassigned      YES manual down    down
FastEthernet0/23   unassigned      YES manual down    down
FastEthernet0/24   unassigned      YES manual down    down
GigabitEthernet0/1 unassigned      YES manual down    down
GigabitEthernet0/2 unassigned      YES manual down    down
Vlan1             192.168.2.2   YES manual up       up

S1#show arp
Protocol  Address          Age (min)  Hardware Addr  Type  Interface
Internet  192.168.2.2     -          00D0.979E.0755  ARPA  Vlan1
S1#
```

Top

Copy Paste

PC0

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

DHCP Static

IPv4 Address: 192.168.2.3

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.2.1

DNS Server: 0.0.0.0

IPv6 Configuration

Automatic Static

IPv6 Address: /

Link LocalAddress: FE80::290:2BFF:FECC:175E

Default Gateway:

DNS Server:

802.1X

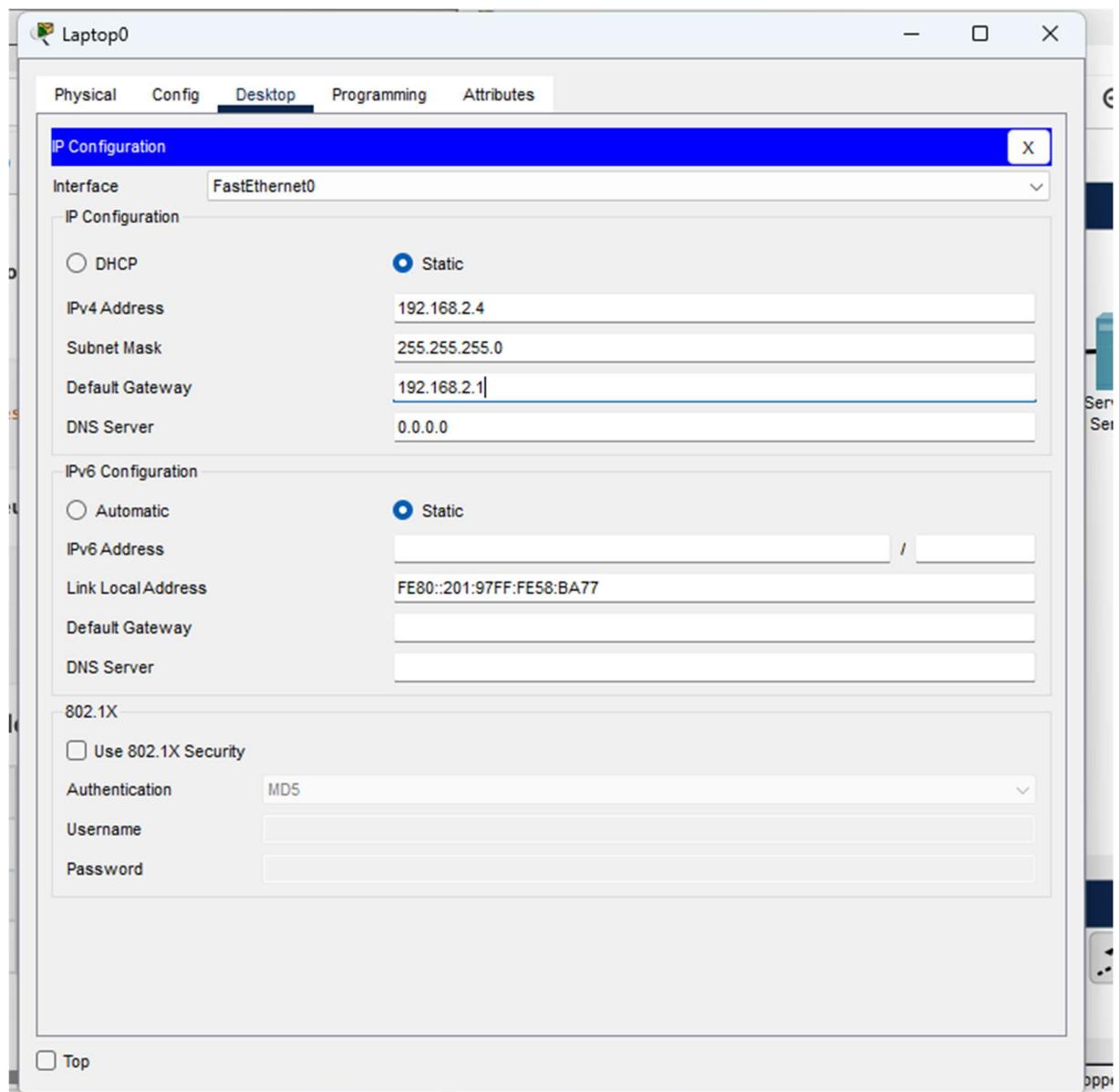
Use 802.1X Security

Authentication: MD5

Username:

Password:

Top



Server0

Physical Config Services Desktop Programming Attributes

IP Configuration

IP Configuration

DHCP Static

IPv4 Address: 192.168.1.10

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.1

DNS Server: 0.0.0.0

IPv6 Configuration

Automatic Static

IPv6 Address: /

Link Local Address: FE80::290:21FF:FE50:4961

Default Gateway:

DNS Server:

802.1X

Use 802.1X Security

Authentication: MD5

Username:

Password:

Top

Client

Physical Config Desktop **Programming** Attributes

Configure Mail X

User Information

Your Name: colas

Email Address: colas@ius.com

Server Information

Incoming Mail Server: 192.168.2.10

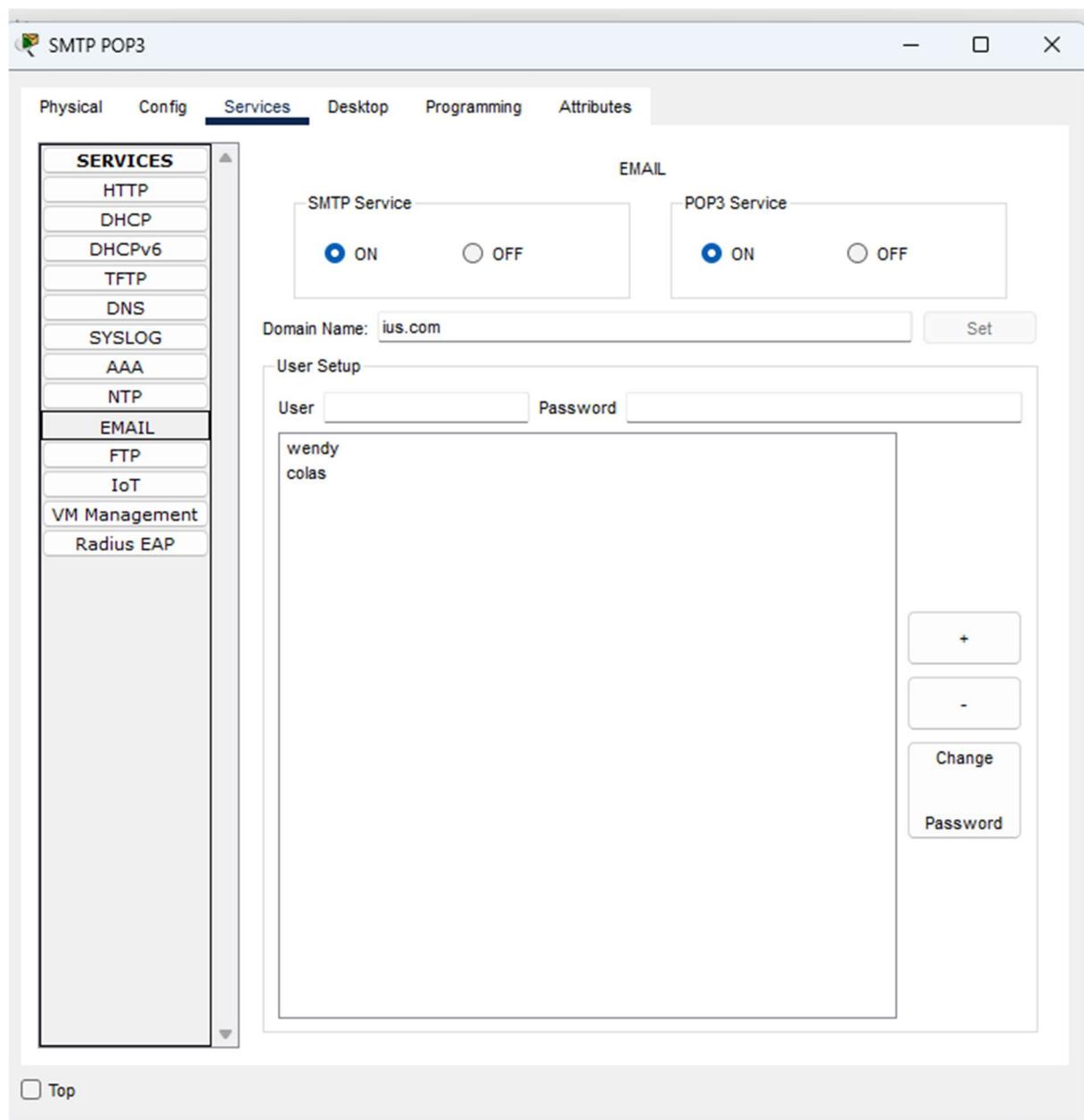
Outgoing Mail Server: 192.168.2.10

Logon Information

User Name: colas

Password: *****

Top



Adm

Physical Config Desktop Programming Attributes

Configure Mail

X

User Information

Your Name: wendy

Email Address: wendy@ius.com

Server Information

Incoming Mail Server: 192.168.2.10

Outgoing Mail Server: 192.168.2.10

Logon Information

User Name: wendy

Password: *****

Save Remove Clear Reset

Client

Physical Config Desktop Programming Attributes

MAIL BROWSER X

Mails

Compose Reply Receive Delete Configure Mail

	From	Subject	Received
1	wendy@ius.com	Test SMTP/POP3	ven. févr. 28 2025 10:59:58

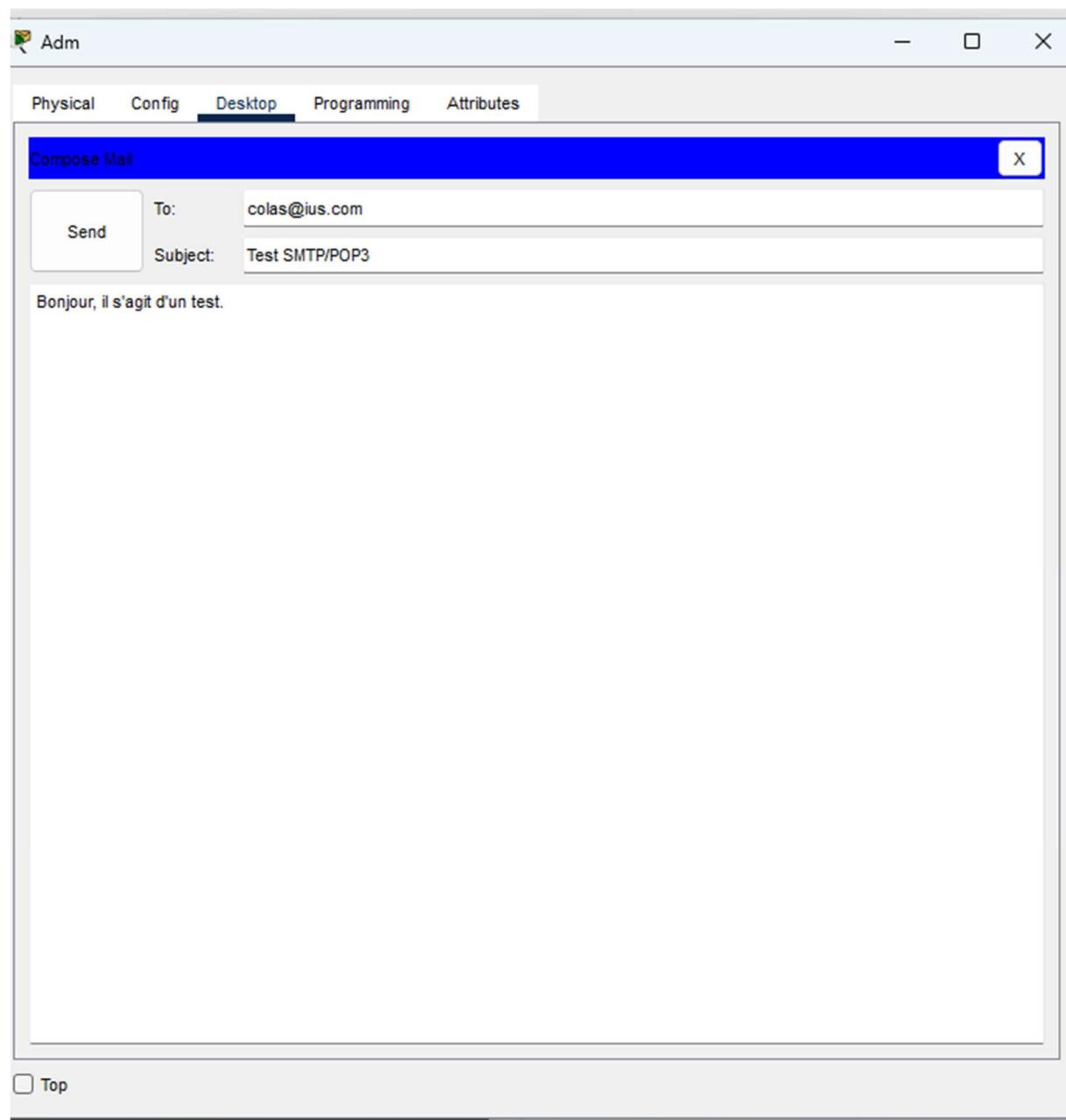
Test SMTP/POP3
wendy@ius.com
Sent : ven. févr. 28 2025 10:59:58

Bonjour, il s'agit d'un test.

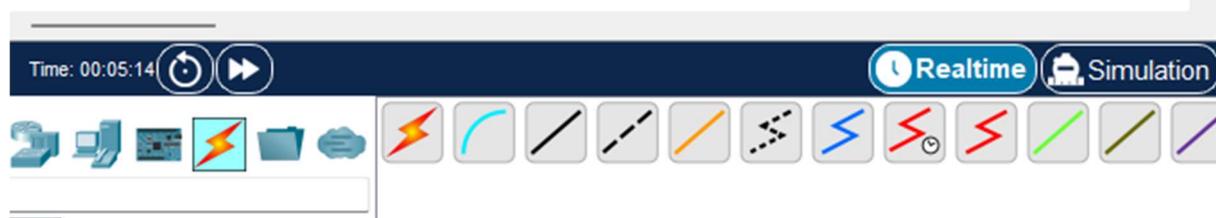
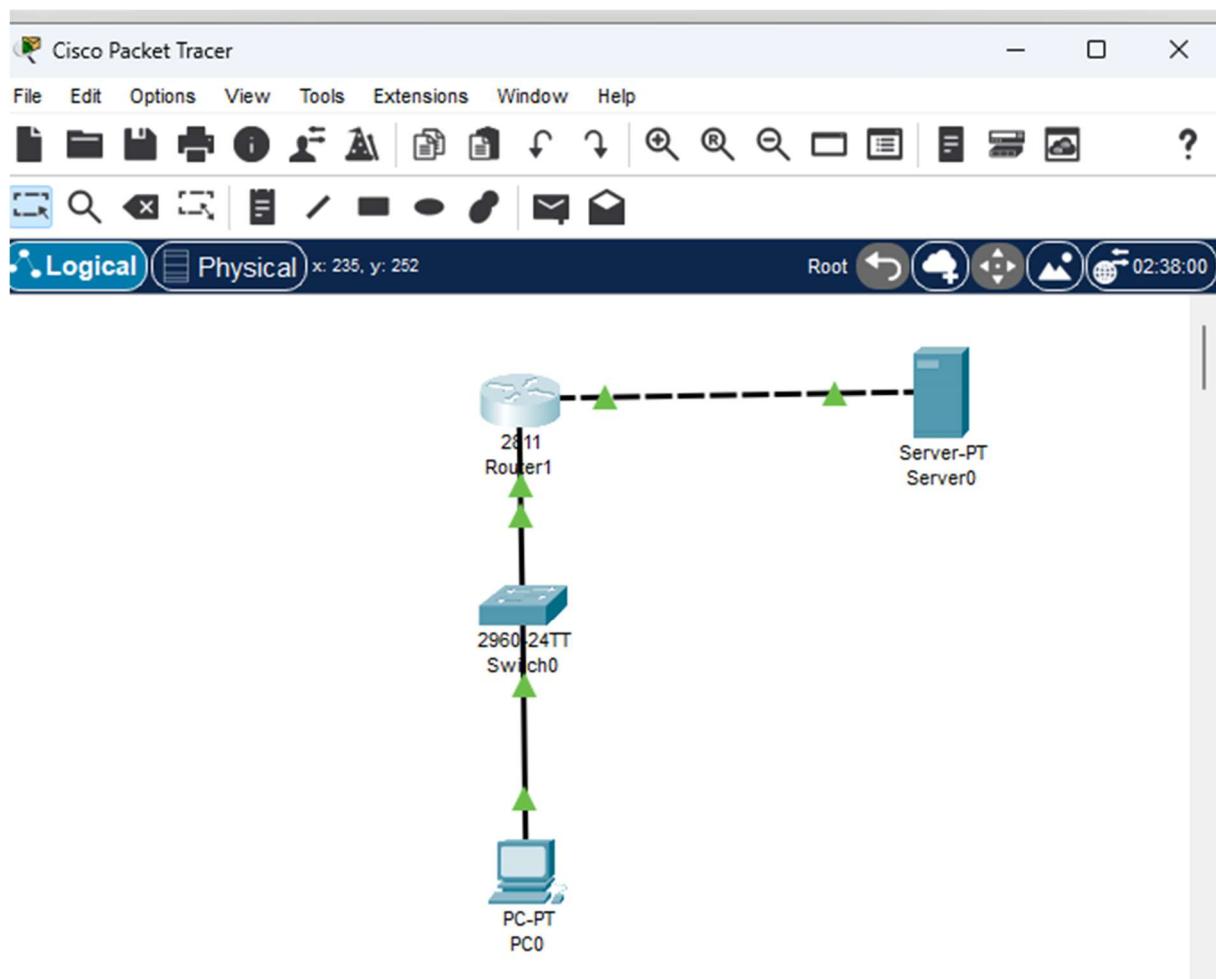
Receiving mail from POP3 Server 192.168.2.10
Receive Mail Success.

Cancel Send/Receive

Top



- Ou



Router1

Physical Config **CLI** Attributes

IOS Command Line Interface

```
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)

--- System Configuration Dialog ---

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

Press RETURN to get started!

Router>en
Router#conf t
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)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

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

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

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
exit
R1(config)#

Copy Paste
```

Switch0

Physical Config CLI Attributes

IOS Command Line Interface

```
* 1 26    WS-C2960-24TT-L  15.0(2)SE4      C2960-LANBASEK9-M

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

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

Switch>en
Switch#conf t
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)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up
exit
S1(config)#ip default-gateway 192.168.1.1
S1(config)#

 Top
```

Copy Paste

PC0

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

DHCP Static

IPv4 Address: 192.168.1.3

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.1

DNS Server: 0.0.0.0

IPv6 Configuration

Automatic Static

IPv6 Address: /

Link Local Address: FE80::201:42FF:FE66:D8CE

Default Gateway:

DNS Server:

802.1X

Use 802.1X Security

Authentication: MD5

Username:

Password:

Top

Server0

Physical Config Services Desktop Programming Attributes

IP Configuration

IP Configuration

DHCP Static

IPv4 Address: 192.168.2.2

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.2.1

DNS Server: 0.0.0.0

IPv6 Configuration

Automatic Static

IPv6 Address: FE80::260:70FF:FE85:D202

Link Local Address: FE80::260:70FF:FE85:D202

Default Gateway:

DNS Server:

802.1X

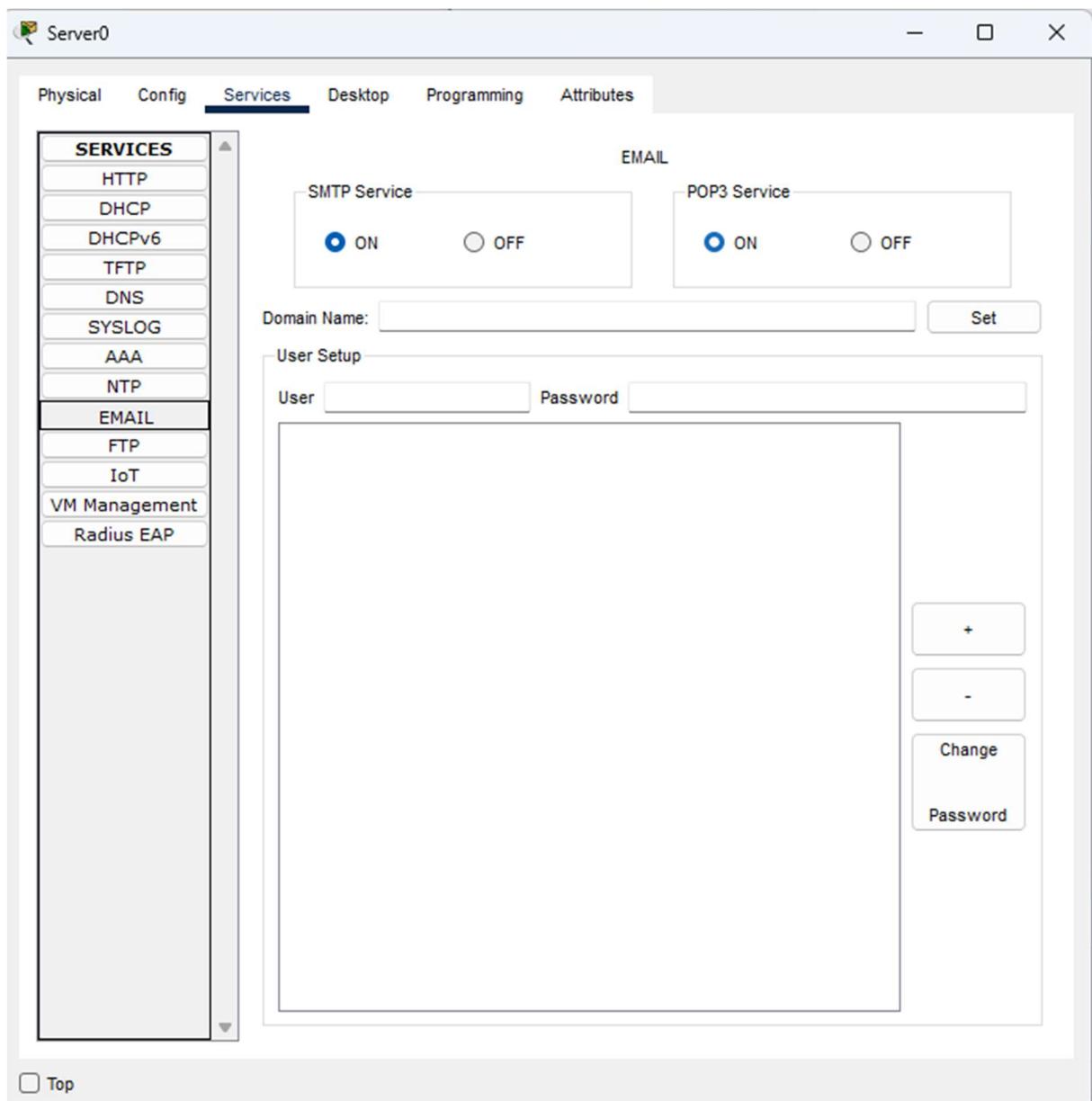
Use 802.1X Security

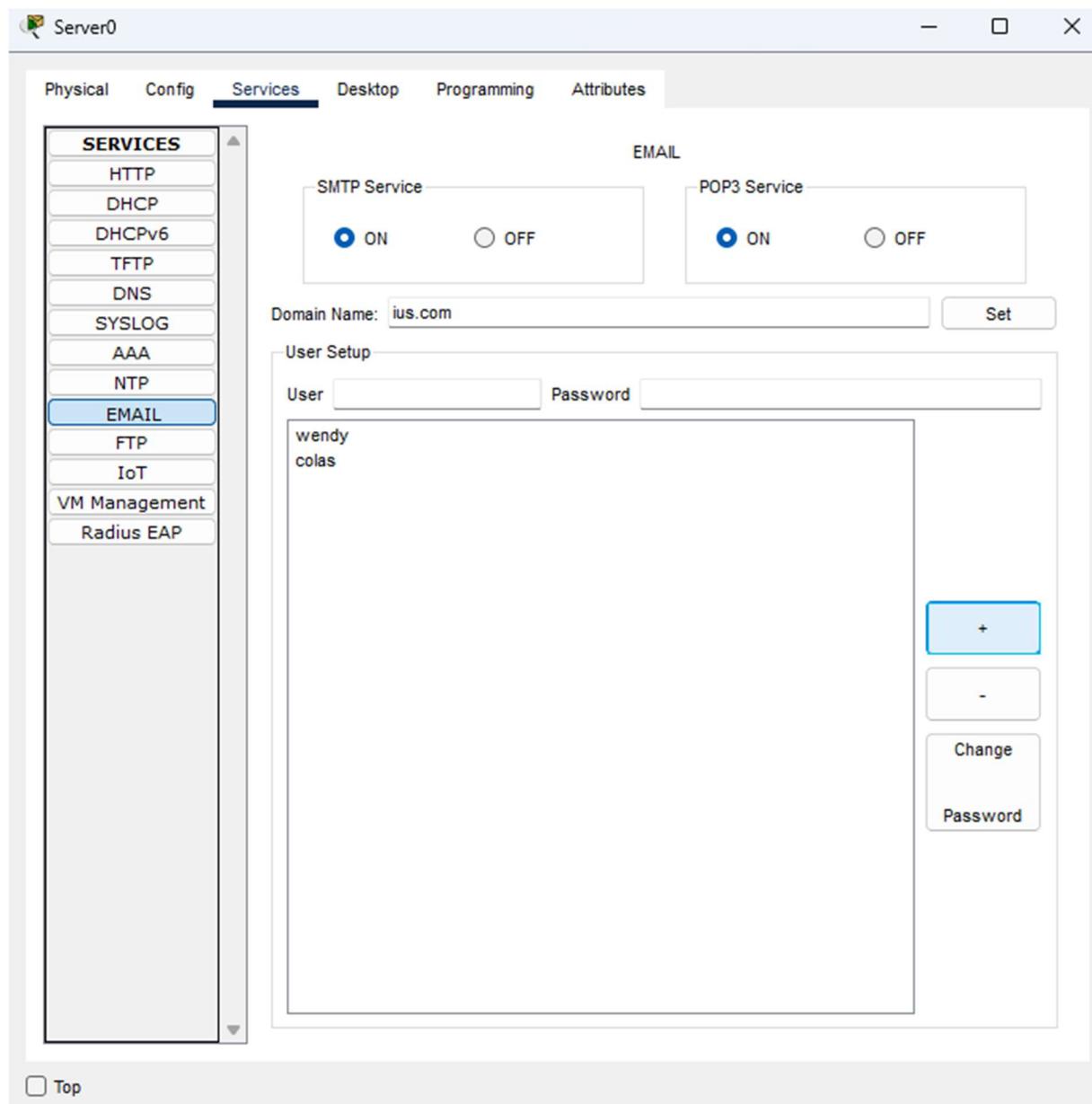
Authentication: MD5

Username:

Password:

Top





Top

Router1

Physical Config CLI Attributes

IOS Command Line Interface

```
*LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
exit
R1(config)#access-list 110 permit tcp any any eq smtp
R1(config)#exit
R1#
*SYS-5-CONFIG_I: Configured from console by console

R1#line vty 0 4
^
* Invalid input detected at '^' marker.

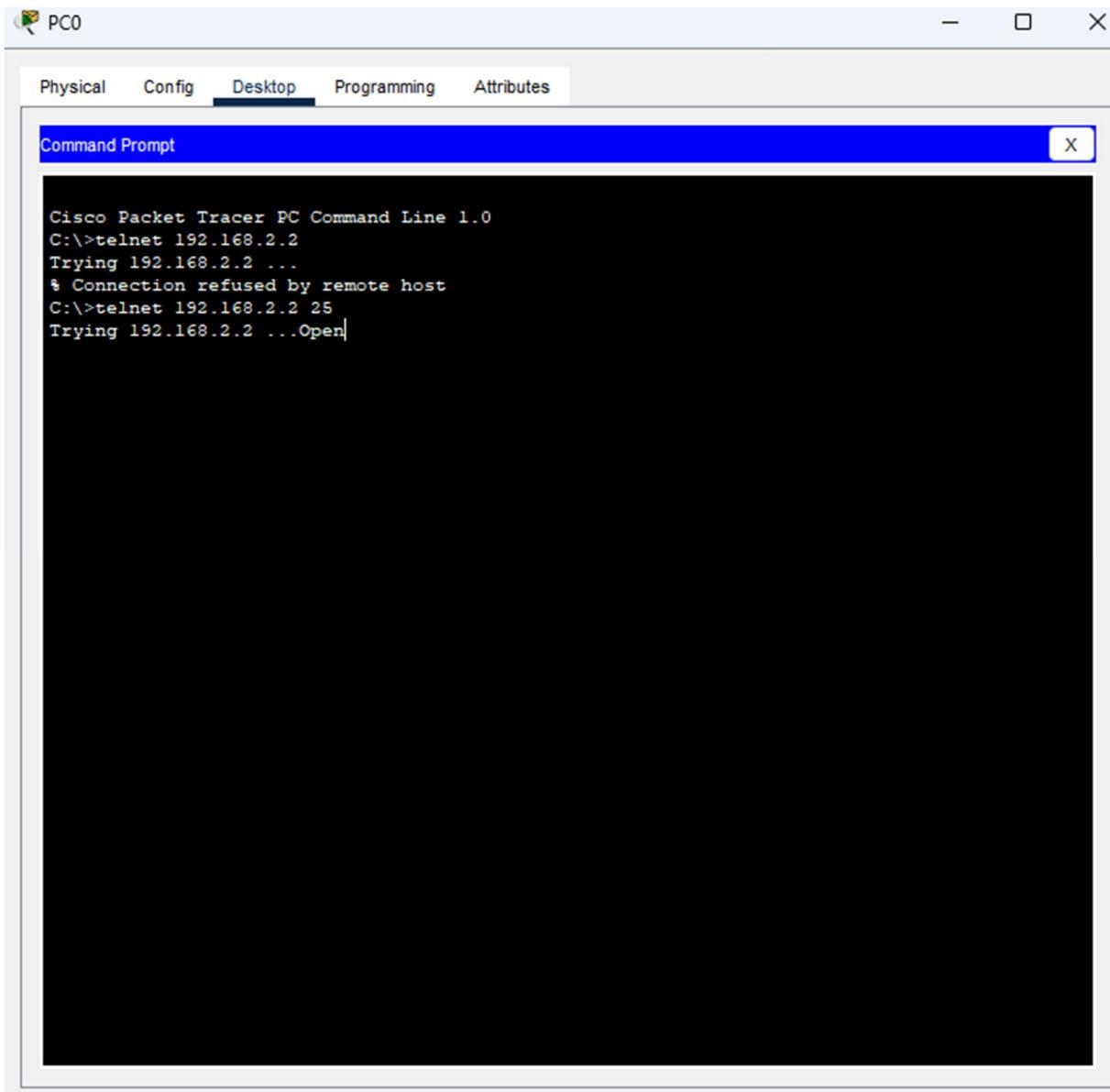
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#line vty 0 4
R1(config-line)#login
* Login disabled on line 322, until 'password' is set
* Login disabled on line 323, until 'password' is set
* Login disabled on line 324, until 'password' is set
* Login disabled on line 325, until 'password' is set
* Login disabled on line 326, until 'password' is set
R1(config-line)#password wendy
R1(config-line)#login
R1(config-line)#enable secret wendy
^
* Invalid input detected at '^' marker.

R1(config-line)#enable secret wendy
R1(config)#exit
R1#
*SYS-5-CONFIG_I: Configured from console by console

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

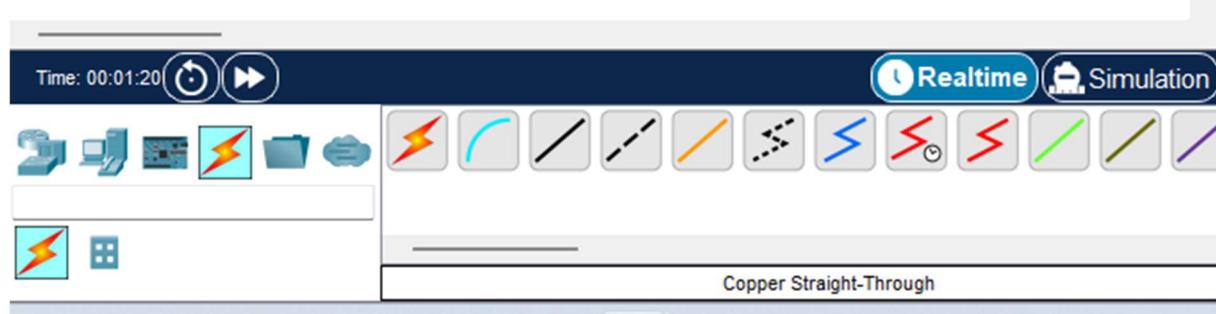
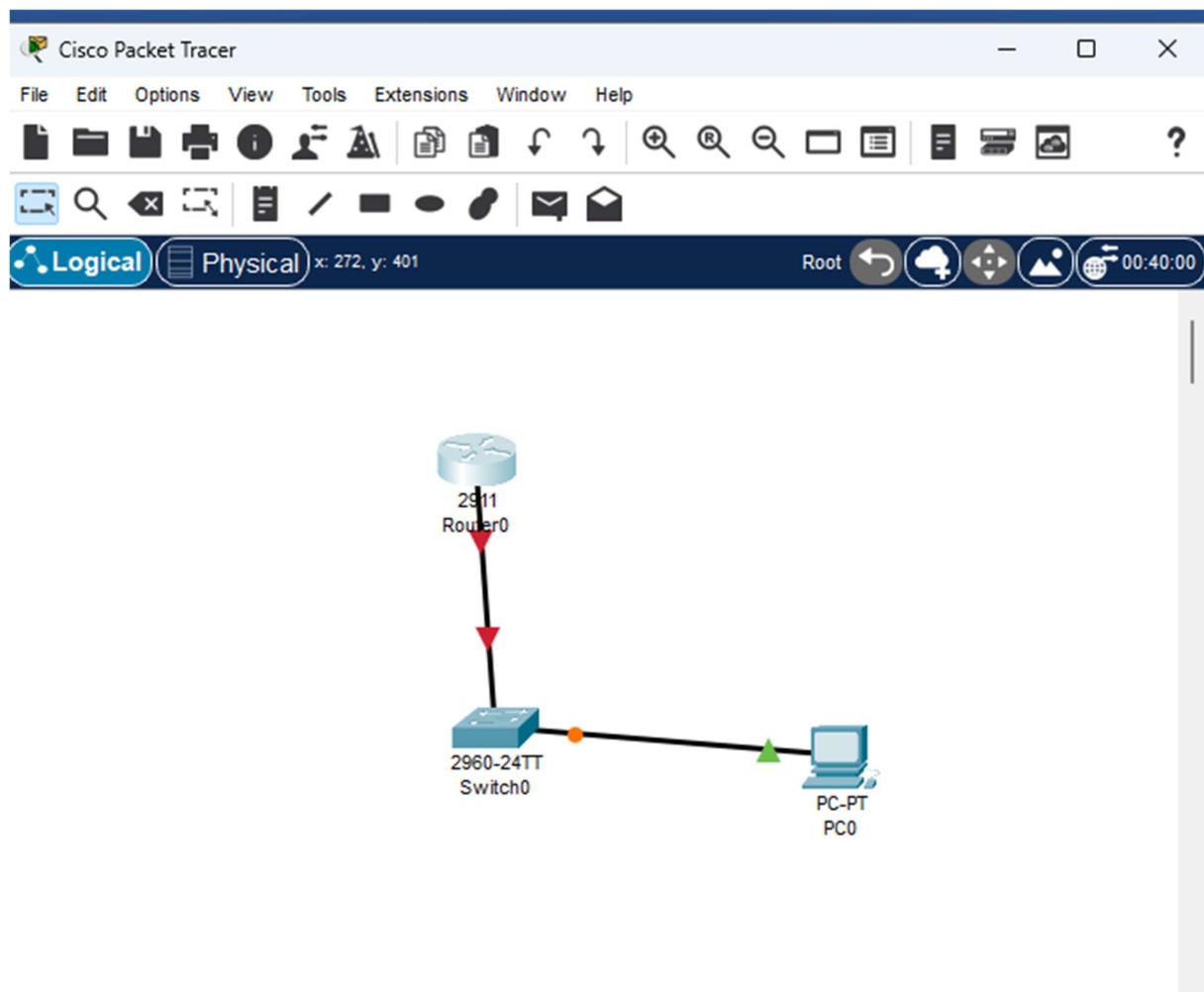
Top

Copy Paste



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

- ICMP



Router0

Physical Config CLI Attributes

IOS Command Line Interface

```
A summary of U.S. laws governing Cisco cryptographic products may be found at:  
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html  
  
If you require further assistance please contact us by sending email to  
export@cisco.com.  
  
Cisco CISCO2911/K9 (revision 1.0) with 491520K/32768K bytes of memory.  
Processor board ID FTX152400KS  
3 Gigabit Ethernet interfaces  
DRAM configuration is 64 bits wide with parity disabled.  
255K bytes of non-volatile configuration memory.  
249856K bytes of ATA System CompactFlash 0 (Read/Write)  
  
--- System Configuration Dialog ---  
  
Would you like to enter the initial configuration dialog? [yes/no]:  
Press RETURN to get started!  
  
  
Router>en  
Router#conf t  
Enter configuration commands, one per line. End with CNTL/Z.  
Router(config)#hostname R1  
R1(config)#interface GigabitEthernet0/0  
R1(config-if)#ip address 192.168.1.1 255.255.255.0  
R1(config-if)#no shutdown  
  
R1(config-if)#  
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up  
exit  
R1(config)#
```

Top

Copy Paste

Switch0

Physical Config **CLI** Attributes

IOS Command Line Interface

```
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 GigabitEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

Switch>en
Switch#conf t
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)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up
exit
S1(config)#ip default-gateway 192.168.1.1
S1(config)#exit
S1#
%SYS-5-CONFIG_I: Configured from console by console
```

Top

Copy Paste

PC0

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

DHCP Static

IPv4 Address: 192.168.1.3

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.1

DNS Server: 0.0.0.0

IPv6 Configuration

Automatic Static

IPv6 Address: /

Link LocalAddress: FE80::260:47FF:FE7E:544D

Default Gateway: /

DNS Server: /

802.1X

Use 802.1X Security

Authentication: MD5

Username: /

Password: /

Top

Router0

Physical Config **CLI** Attributes

IOS Command Line Interface
249856K bytes of ATA System CompactFlash 0 (Read/Write)

```
--- System Configuration Dialog ---  
Would you like to enter the initial configuration dialog? [yes/no]:  
Press RETURN to get started!  
  
Router>en  
Router#conf t  
Enter configuration commands, one per line. End with CNTL/Z.  
Router(config)#hostname R1  
R1(config)#interface GigabitEthernet0/0  
R1(config-if)#ip address 192.168.1.1 255.255.255.0  
R1(config-if)#no shutdown  
  
R1(config-if)#  
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up  
exit  
R1(config)#access-list 100 deny icmp any any  
R1(config)#access-list 100 permit ip any any  
R1(config)#interface GigabitEthernet0/0  
R1(config-if)#ip access-group 100 in  
R1(config-if)#exit  
R1(config)#exit  
R1#  
%SYS-5-CONFIG_I: Configured from console by console  
  
R1#write memory  
Building configuration...  
[OK]  
R1#
```

Copy

Paste

PC0

Physical Config Desktop Programming Attributes

Command Prompt X

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 8.8.8.8

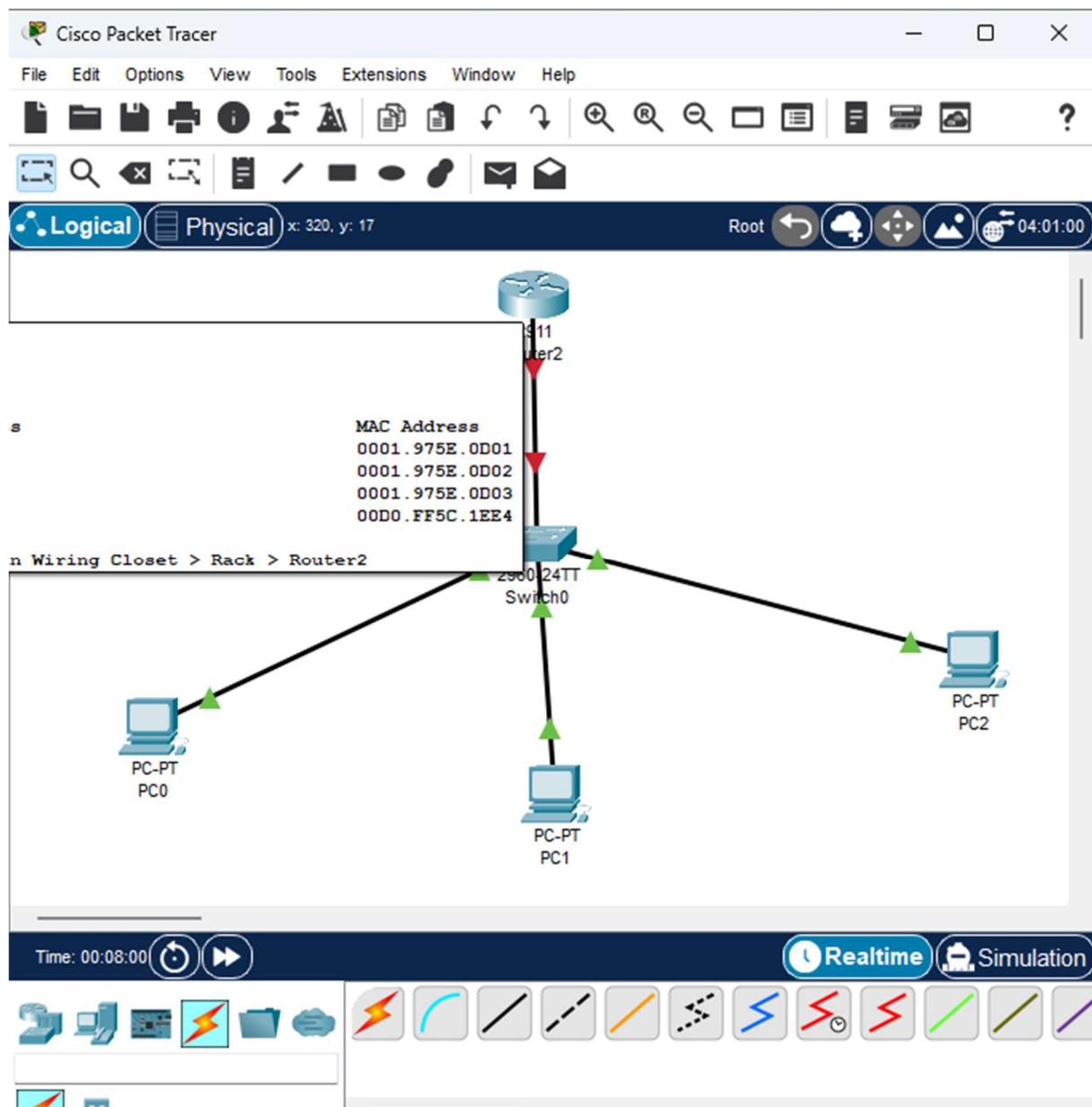
Pinging 8.8.8.8 with 32 bytes of data:

Reply from 192.168.1.1: Destination host unreachable.

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

Top

- IGMP



```
IOS Command Line Interface
249856K bytes of ATA System CompactFlash 0 (Read/Write)

--- System Configuration Dialog ---

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

Press RETURN to get started!

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface GigabitEthernet0/0
Router(config-if)#ip address 192.168.1.254 255.255.255.0
Router(config-if)#ip pim sparse-dense-mode
^
% Invalid input detected at '^' marker.

Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#ip address 10.0.0.1 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
exit
Router(config)#

Copy Paste
```

Conclusion

Au cours de ce travail, j'ai pu maîtriser la configuration des protocoles SMTP et POP3 pour l'envoie et la réception des emails et également le protocole ICMP.

Cependant, je ne suis pas parvenu à configurer le protocole IGMP responsable de la multidiffusion car lorsque je rentre les commandes suivantes : « ip multicast-routing » ou une variante « ip multicast-routing distributed » ou encore « ip pim sparse-dense-mode » on me dit « Invalid input... ».

À partir de mes recherches, il y avait trois causes possibles :

- Soit j'utilisais une version ancienne de Cisco Packet Tracer, tel n'est pas le cas car j'utilise la dernière version ;
- Soit le type de routeur que j'utilisais n'était pas adapté, tel n'est pas le cas non plus car j'ai essayé avec tous les routeurs disponibles sur cisco packet tracer ;

- Soit la version IOS du routeur est ancienne et qu'elle ne prend pas en charge IGMP et PIM, je ne suis pas parvenu à mettre à jour l'ios pour vérifier cette hypothèse.