



IUS
INSTITUT
UNIVERSITAIRE
DES SCIENCES

**FACULTÉ DES SCIENCES ET DES TECHNOLOGIES
(FST)**

Troisième année

RAPPORT

Sur le Travail de Laboratoire N° 4

COURS

Réseaux II

Professeur

Ismaël SAINT AMOUR

PRÉPARÉ PAR

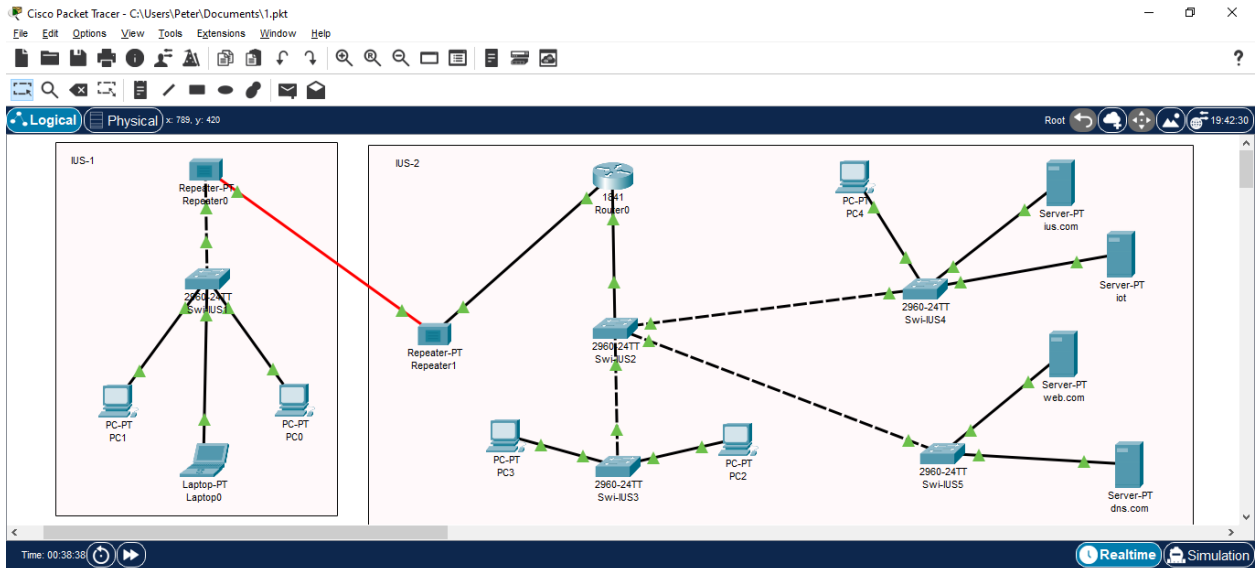
Peterson CHERY

SEMESTRE

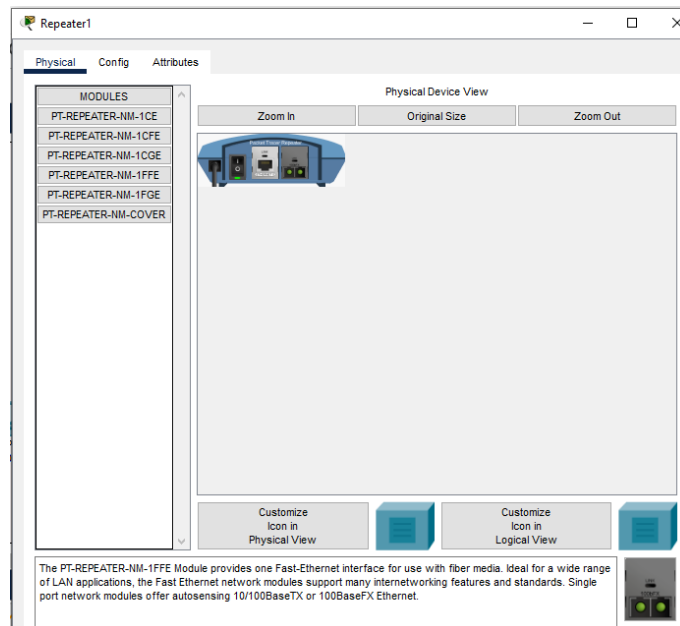
II

Le 06/04/2025

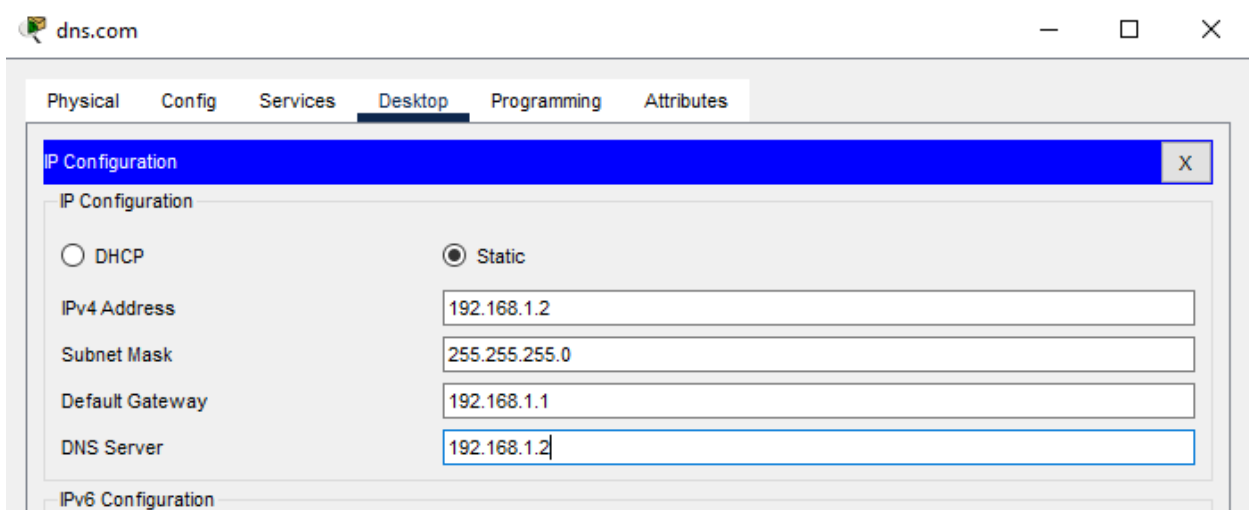
1. Reproduction de cette topologie en configurant le NAT du réseau



- Configuration du répéteur :



- Configuration du serveur dns.com Manuellement :



- Configuration du routeur entant que serveur DHCP et le Nat du Réseau :

```
Router0
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R1
R1(config)#int f0/0
R1(config-if)#ip address 192.168.1.1 255.255.255.0
R1(config-if)#no sh

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)#int f0/1
R1(config-if)#ip address 192.168.2.1 255.255.255.0
R1(config-if)#no sh

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

R1(config-if)#exit
R1(config)#show arp

% Invalid input detected at '^' marker.

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

R1#show arp
Protocol Address Age (min) Hardware Addr Type Interface
Internet 192.168.1.1 - 0001.C78A.8A01 ARPA FastEthernet0/0
R1#enable
```

```
Router2
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip dhcp pool Network1
Router(dhcp-config)#network 192.168.1.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.1.1
Router(dhcp-config)#dns-server 192.168.1.2
Router(dhcp-config)#ip dhcp excluded-address 192.168.1.1 192.168.1.1
Router(dhcp-config)#ip dhcp excluded-address 192.168.2.1 192.168.2.1
Router(config)#
Router>en
Router#show arp
Protocol Address Age (min) Hardware Addr Type Interface
Internet 192.168.1.1 - 0001.C78A.8A01 ARPA FastEthernet0/0
R1#enable
```

```
Router2
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip dhcp pool Network1
Router(dhcp-config)#network 192.168.1.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.1.1
Router(dhcp-config)#dns-server 192.168.1.2
Router(dhcp-config)#ip dhcp excluded-address 192.168.1.1 192.168.1.1
Router(dhcp-config)#ip dhcp excluded-address 192.168.2.1 192.168.2.1
Router(config)#configure terminal
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
Router(config)#interface FastEthernet0/1
Router(config-if)#ip address 203.0.113.1 255.255.255.252
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#access-list 1 permit 192.168.1.0 0.0.0.255
Router(config)#ip nat inside source list 1 interface FastEthernet0/1 overload
Router(config)#interface FastEthernet0/0
Router(config-if)#ip nat inside
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#ip nat outside
Router(config-if)#exit
Router(config)#%DHCPD-4-PING_CONFLICT: DHCP address conflict: server pinged 192.168.1.2.
```

- Les Adresses IP automatique des dispositifs :

PC3

Physical Config **Desktop** Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address: 192.168.1.3

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.1

DNS Server: 192.168.1.2

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::202:17FF:FEA1:D628

Default Gateway:

DNS Server:

PC0

Physical Config **Desktop** Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address: 192.168.1.4

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.1

DNS Server: 192.168.1.2

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::200:CFF:FEAD:9730

Default Gateway:

DNS Server:

PC1

Physical Config Desktop Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address 192.168.1.5

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.1

DNS Server 192.168.1.2

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::240:BFF:FE91:2AAD

Default Gateway

DNS Server

802.1X

PC4

Physical Config Desktop Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address 192.168.1.6

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.1

DNS Server 192.168.1.2

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::201:C7FF:FE19:A4DD

Default Gateway

DNS Server

802.1X

web.com

Physical Config Services Desktop Programming Attributes

IP Configuration X

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address 192.168.1.7

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.1

DNS Server 192.168.1.2

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::260:2FFF:FE68:58C2

Default Gateway

DNS Server

iot

Physical Config Services Desktop Programming Attributes

IP Configuration X

IP Configuration

☒ DHCP ☐ Static

IPv4 Address 192.168.1.8

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.1

DNS Server 192.168.1.2

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::201:C7FF:FE11:28E8

Default Gateway

DNS Server

802.1X

ius.com

Physical Config Services Desktop Programming Attributes

IP Configuration X

IP Configuration

☒ DHCP ☐ Static

IPv4 Address 192.168.1.9

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.1

DNS Server 192.168.1.2

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

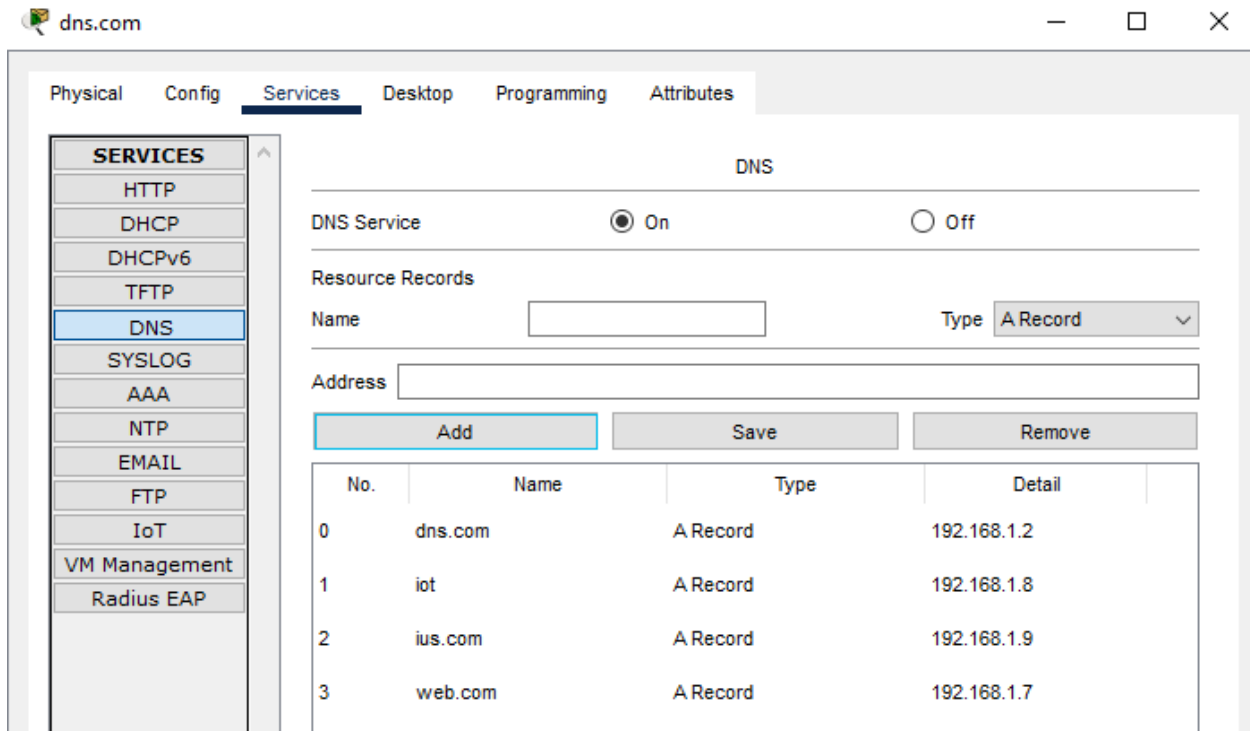
Link Local Address FE80::20A:41FF:FEC8:595

Default Gateway

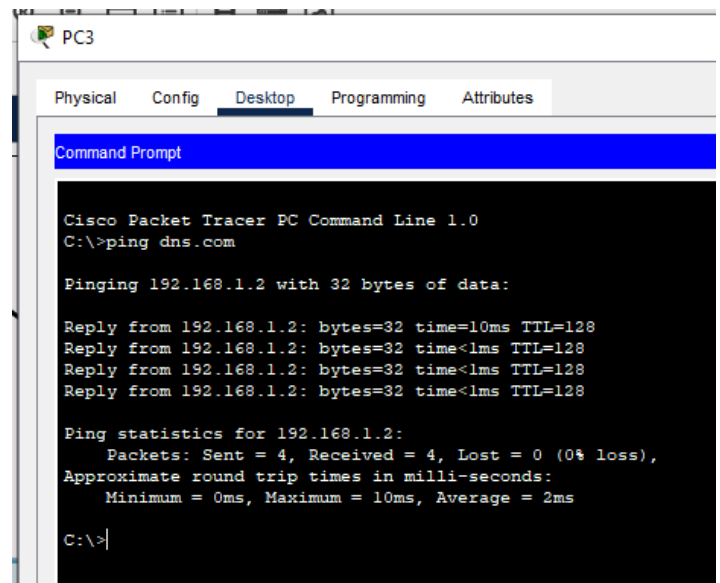
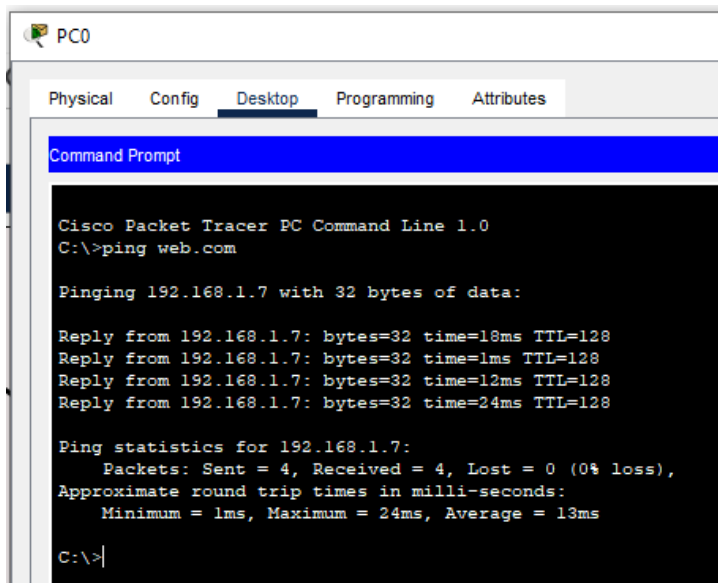
DNS Server

802.1X

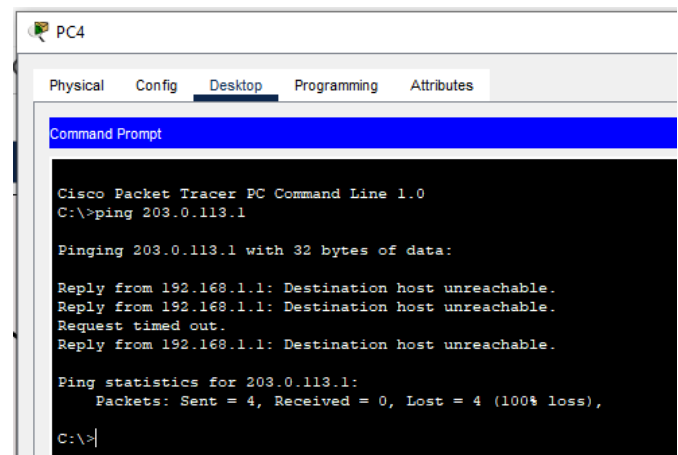
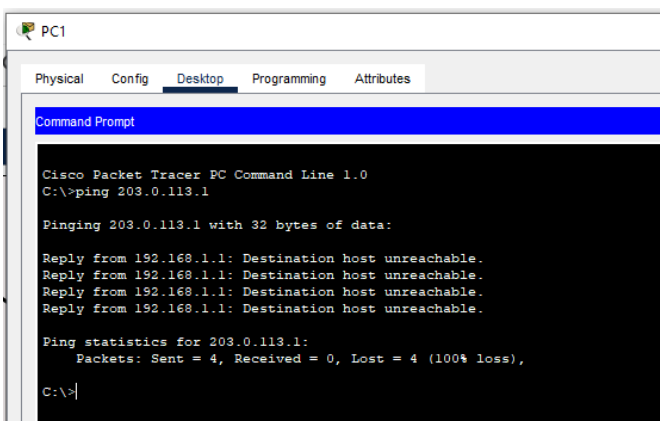
- Adressage des autres serveurs dans le serveur dns.com



- Testez la connectivité des dispositifs :



- Testez le Nat :



Laptop0

Physical Config Desktop Programming Attributes

Command Prompt

```

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 203.0.113.1

Pinging 203.0.113.1 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Reply from 192.168.1.1: Destination host unreachable.

Ping statistics for 203.0.113.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 203.0.113.1

Pinging 203.0.113.1 with 32 bytes of data:

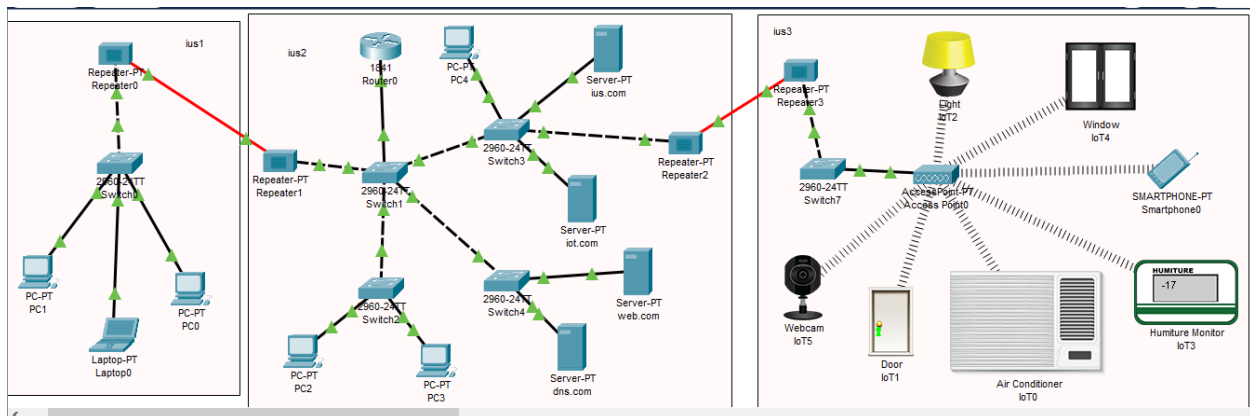
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.

Ping statistics for 203.0.113.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>

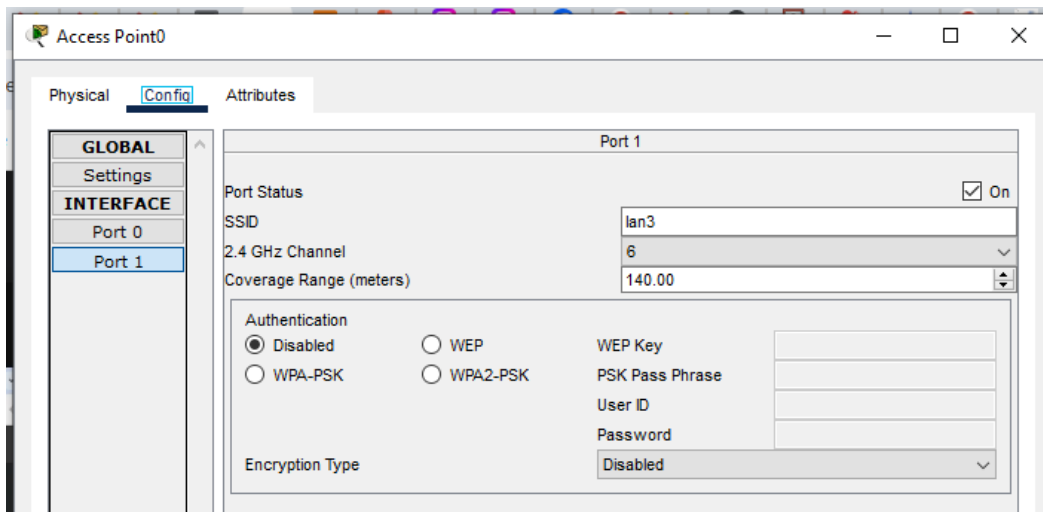
```

2. Reproduction de cette topologie en configurant le réseau IoT (Internet des Objets).

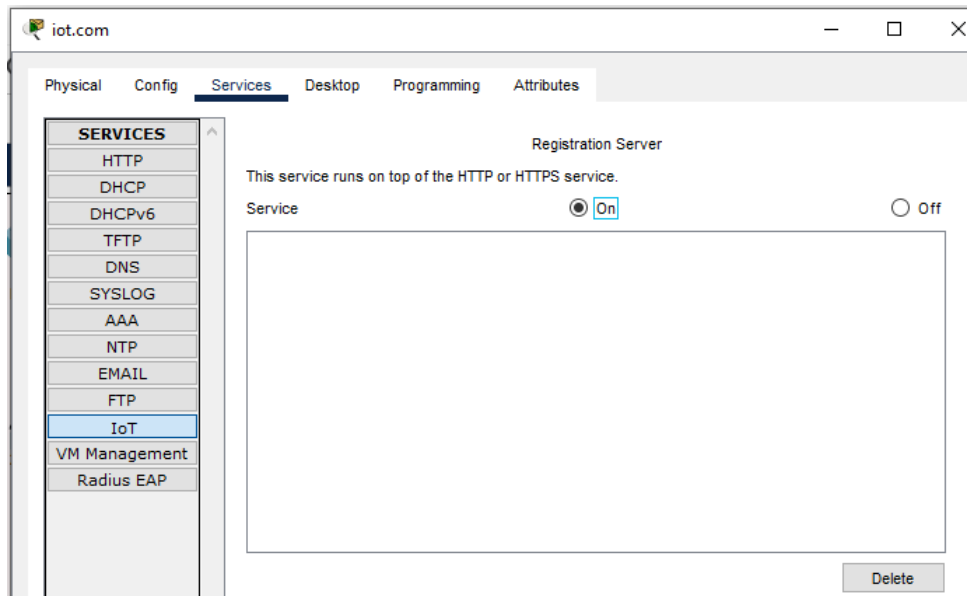


• Configuration du Point d'accès :

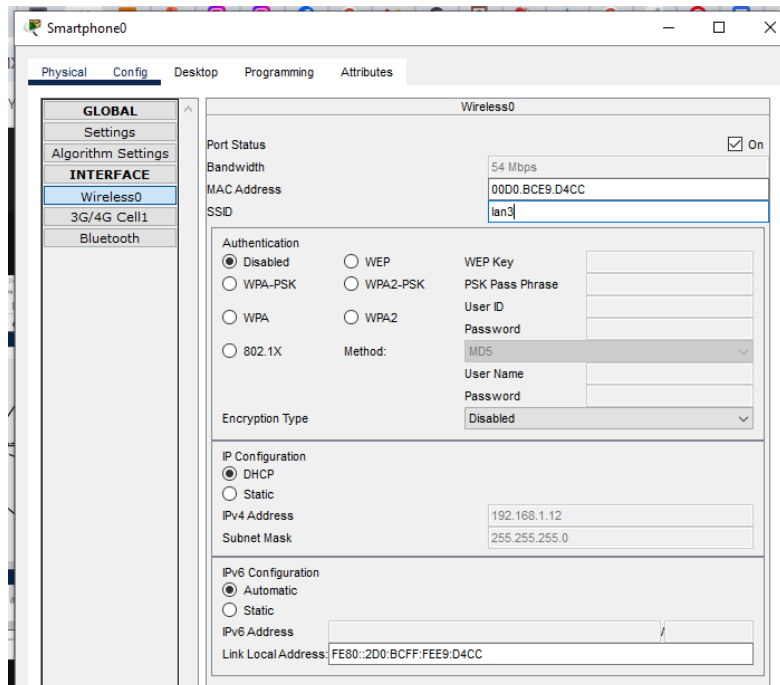




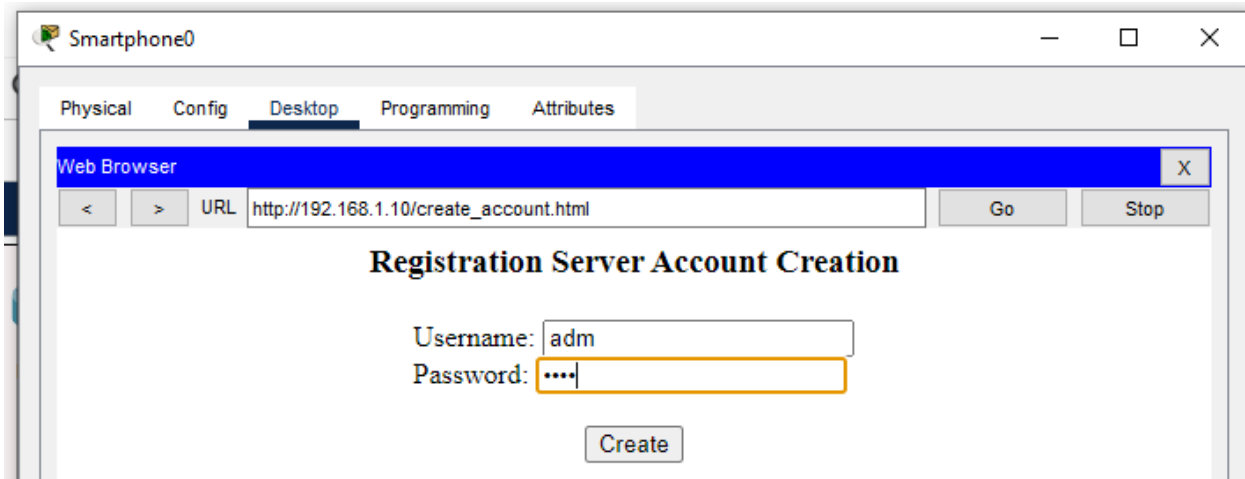
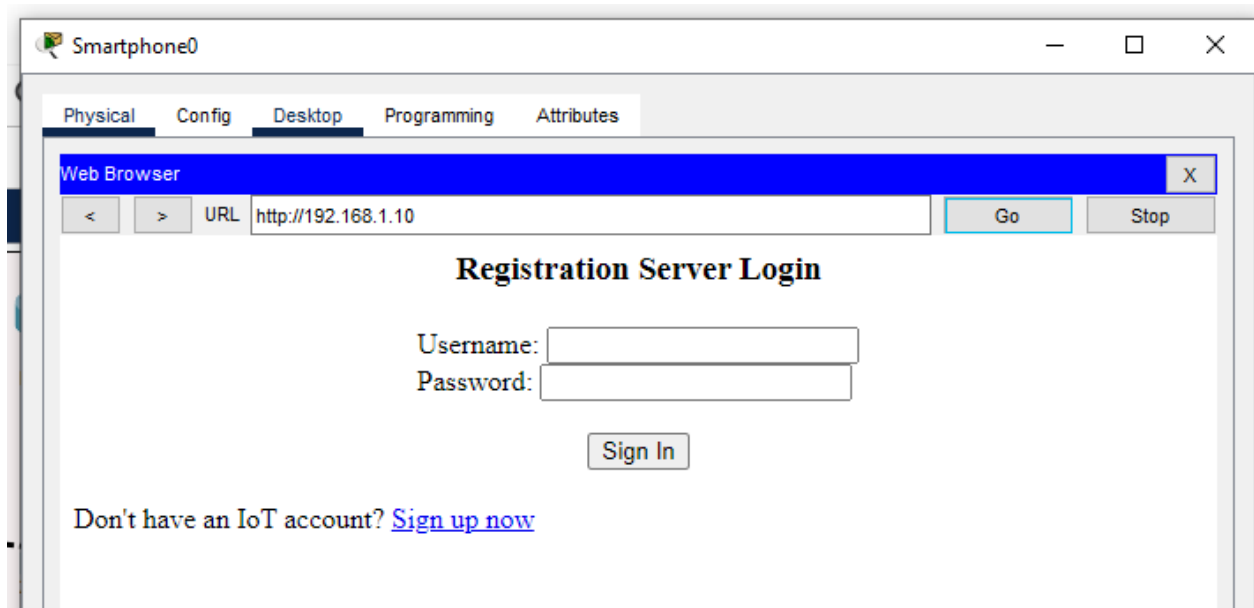
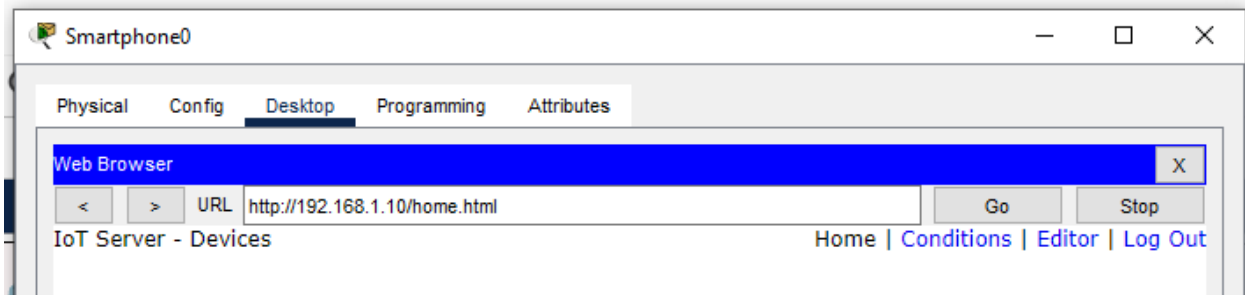
- **Activation du serveur Iot :**



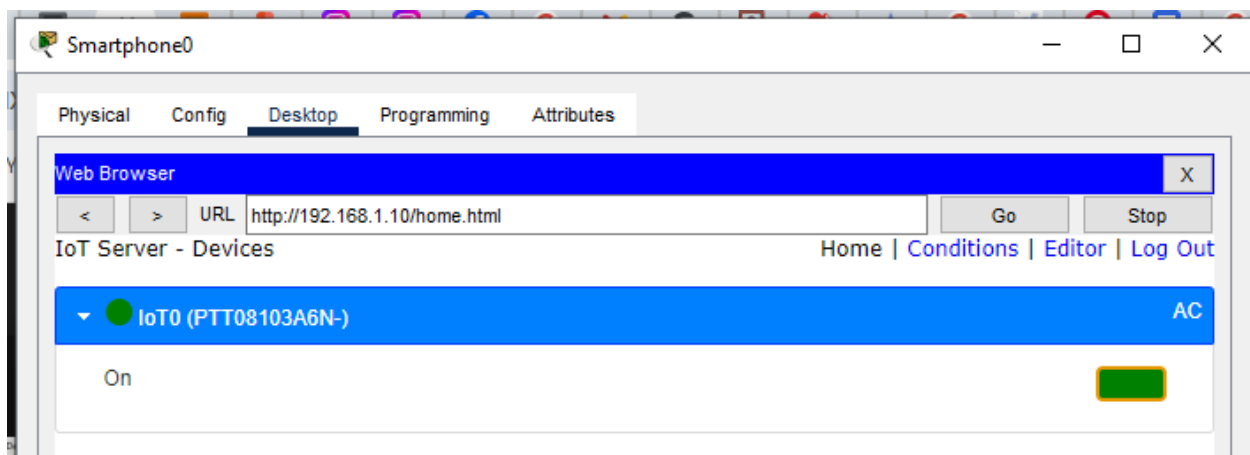
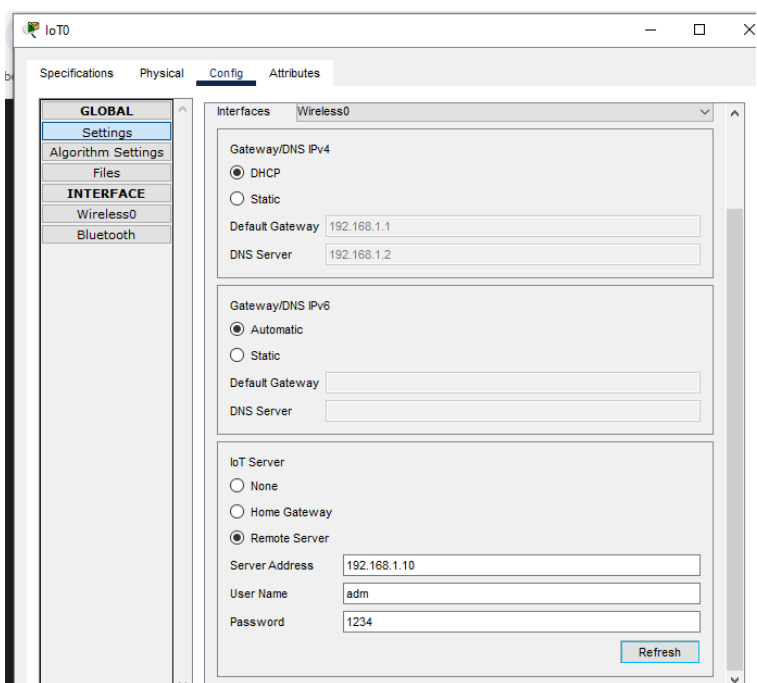
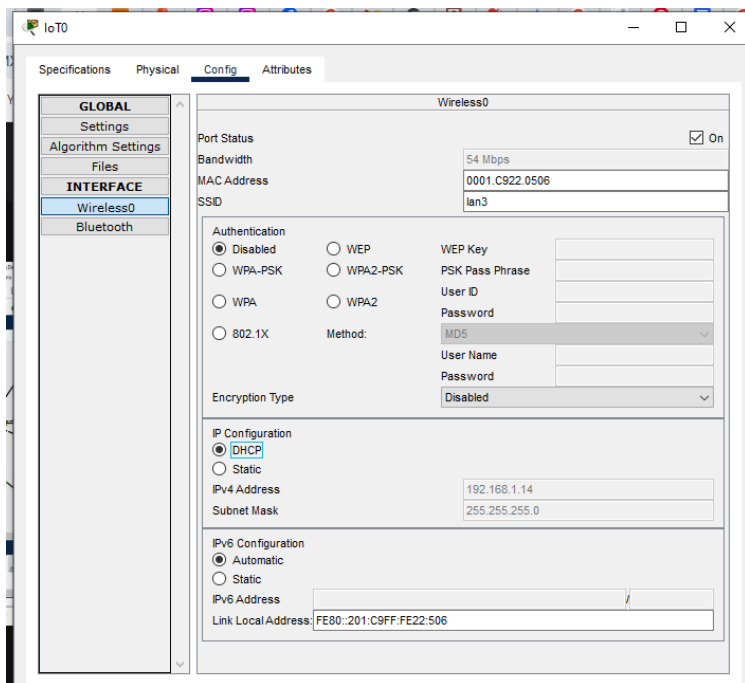
- **Activation du Smartphone :**



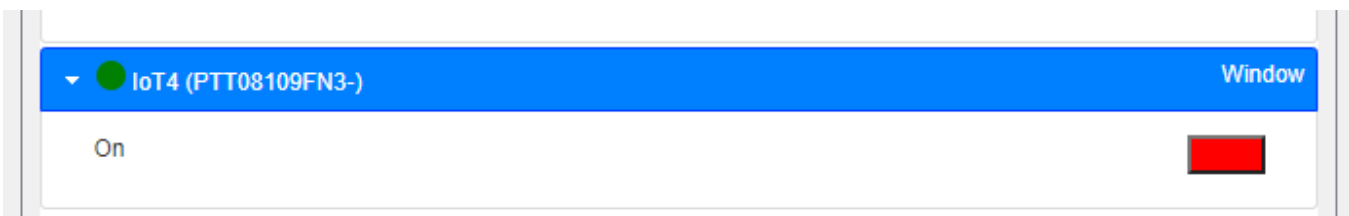
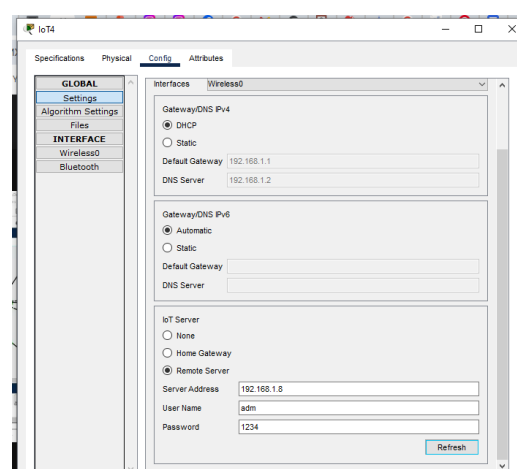
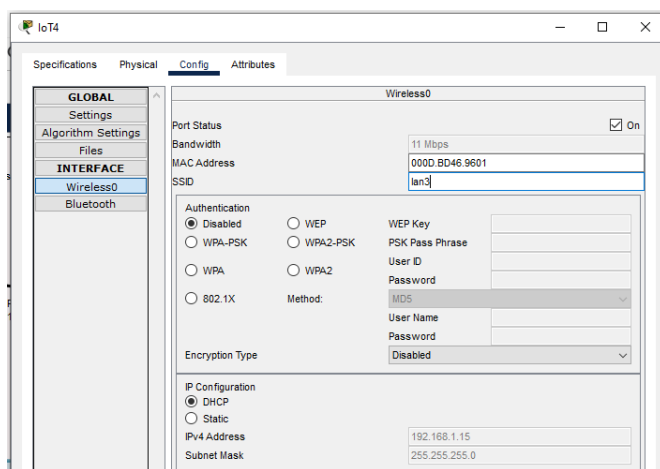
- L'enregistrement du serveur sur le Smartphone :

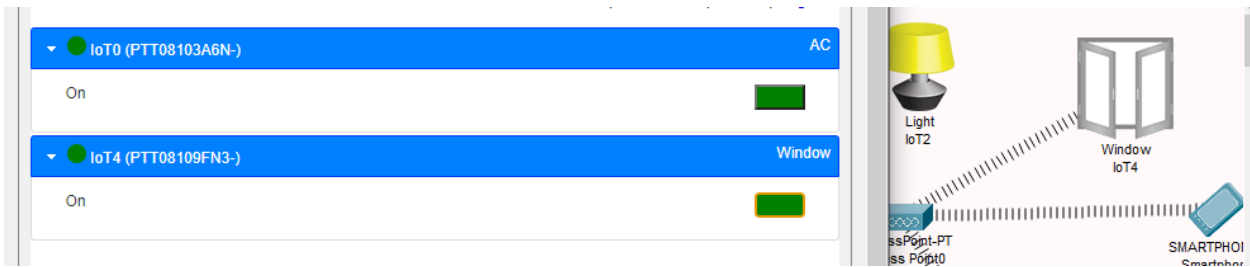


- Configuration et Activation de L'Air Conditionné :

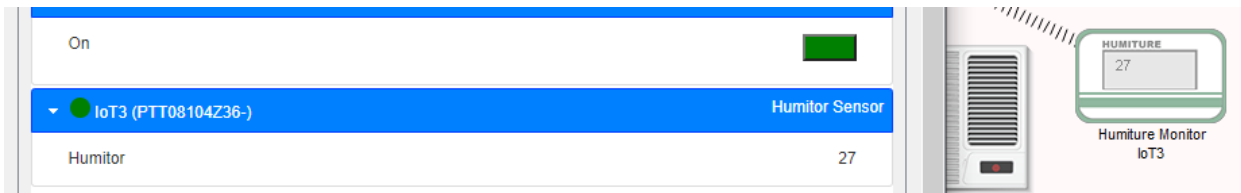
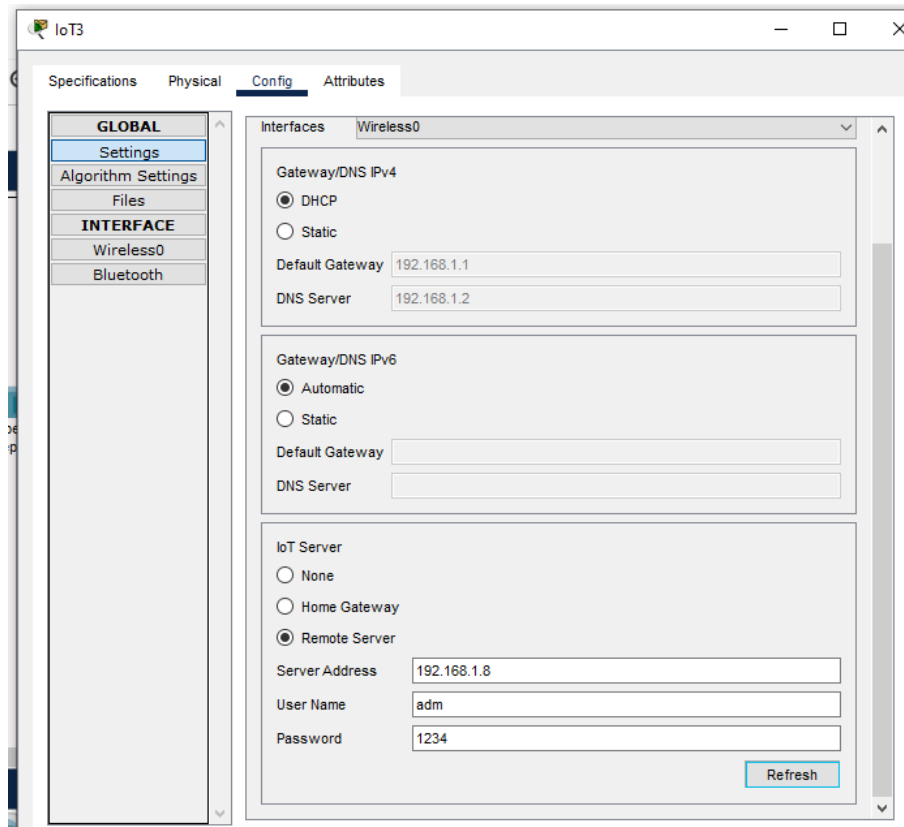


- Configuration et Activation de la fenêtre :

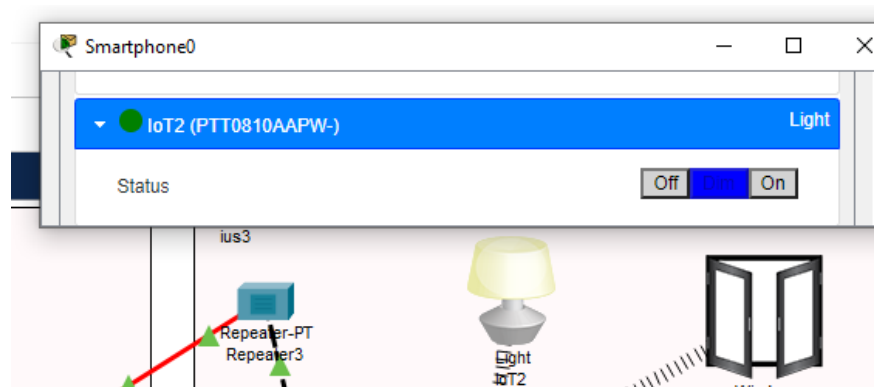
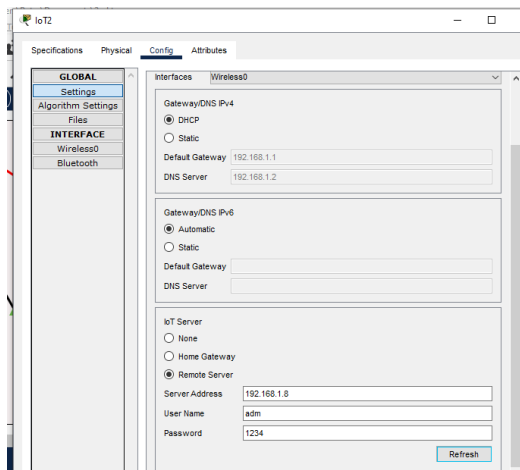




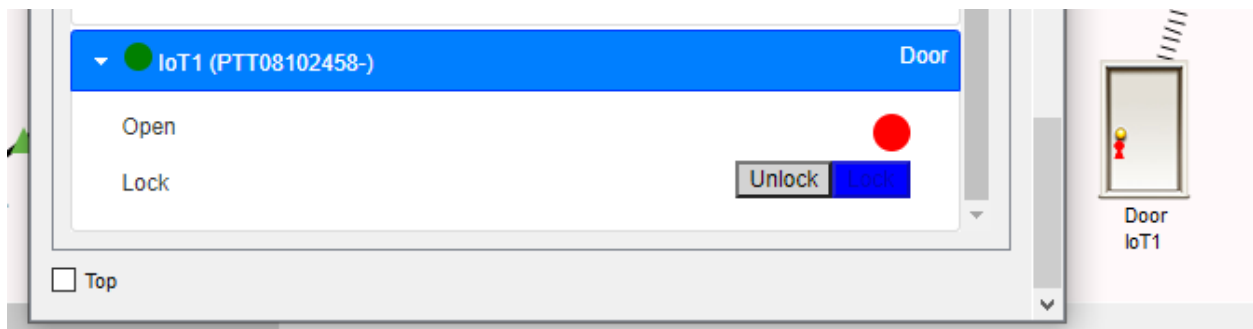
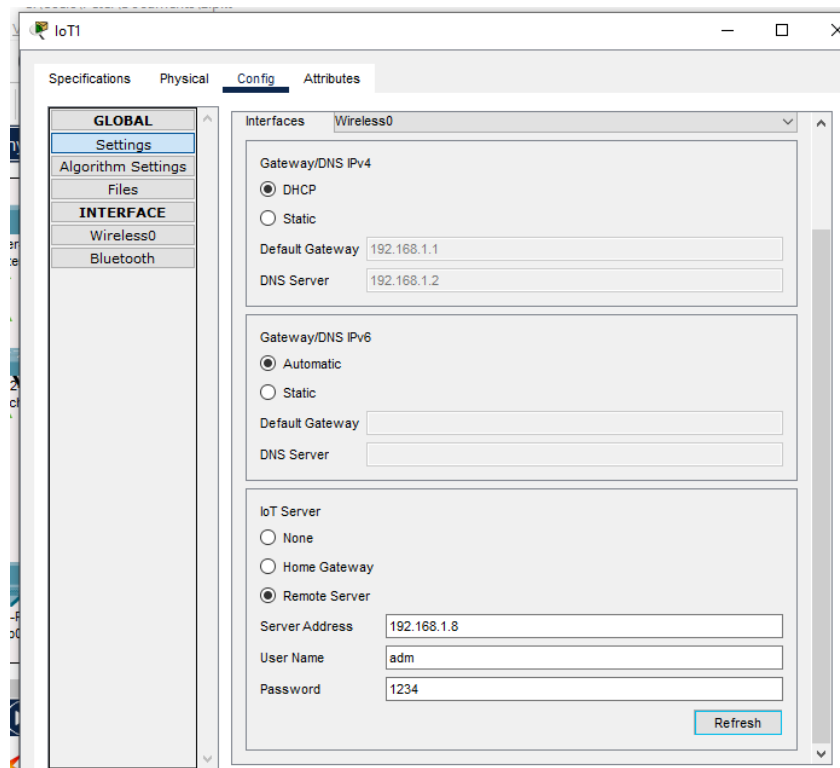
- **Configuration et Activation du Monitor :**



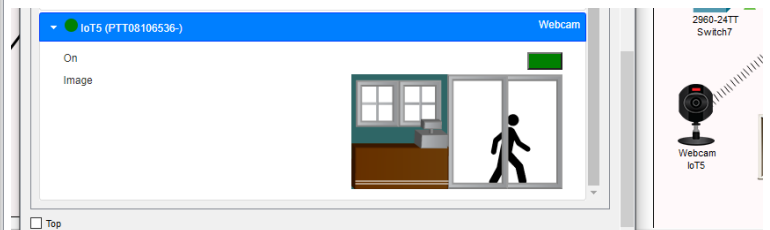
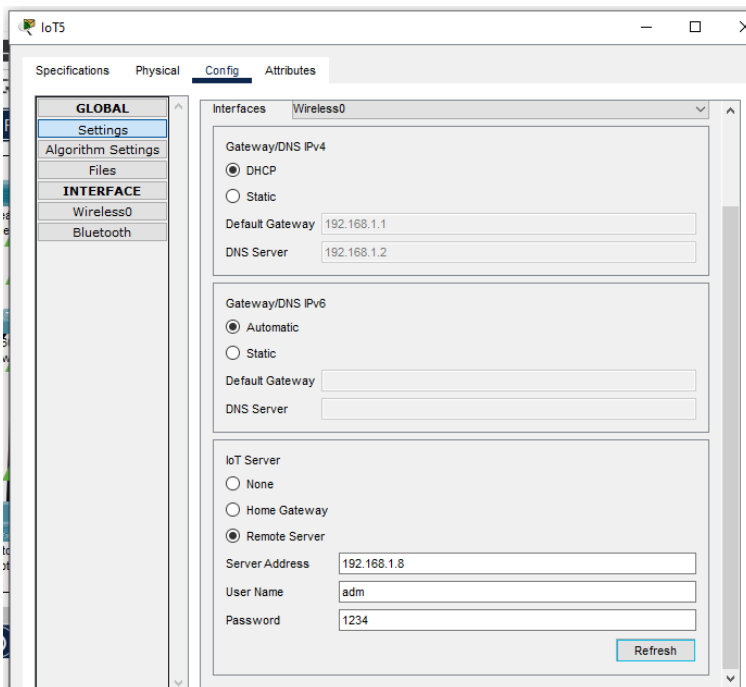
- **Configuration et Activation de la Lumière :**



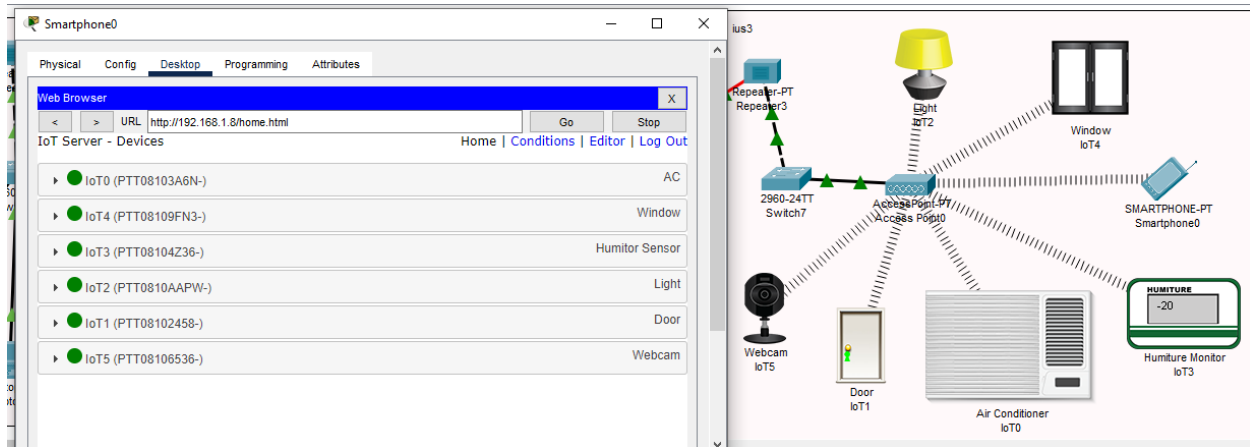
- Configuration et Activation de la porte :



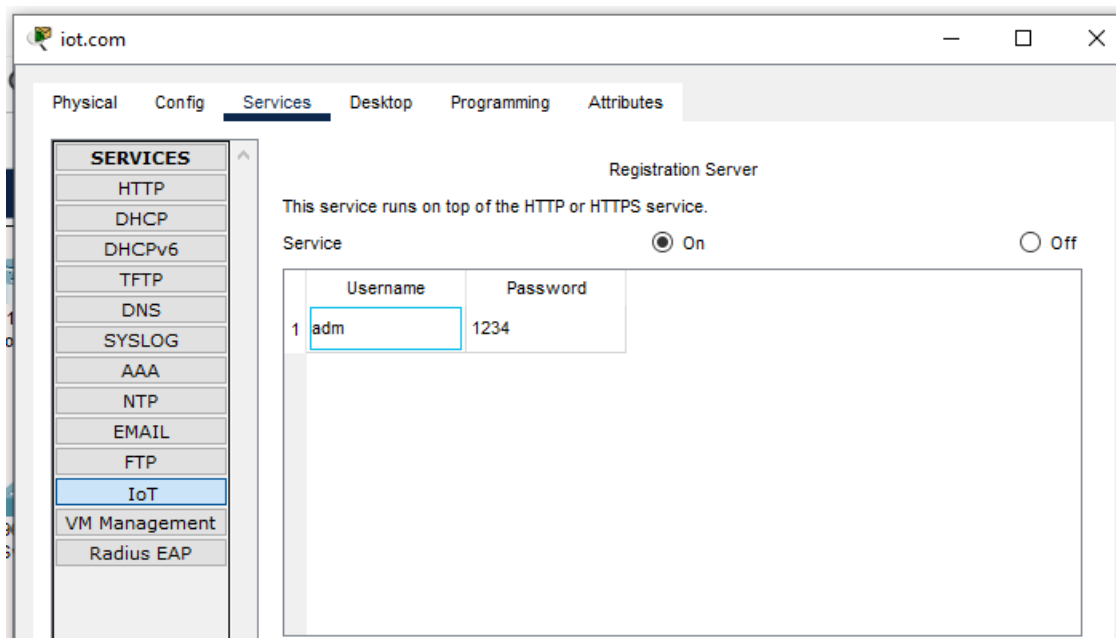
- Configuration et Activation du Camera :



- **Connexion des objets :**



- **Le compte que j'ai créé dans le smartphone est enregistré dans le serveur iot.com**



CONCLUSION :

J'ai appris les compétences nécessaires pour Configurer le NAT du réseau et le réseau IoT (Internet des Objets).