

Institut Universitaire des Sciences

Faculté des sciences de technologies

TD 4 Réseau 2

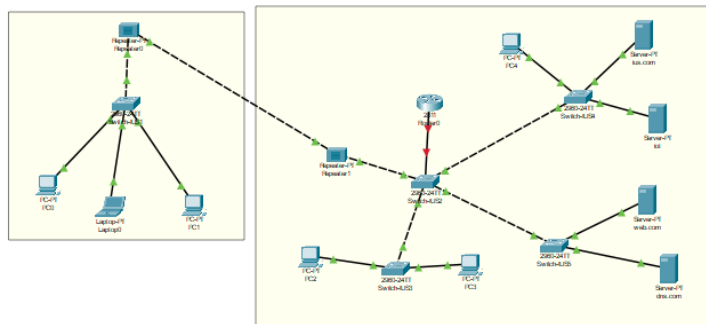
Préparé par :

Nom: Byron

Prénom: Pierre Durell Naguiby

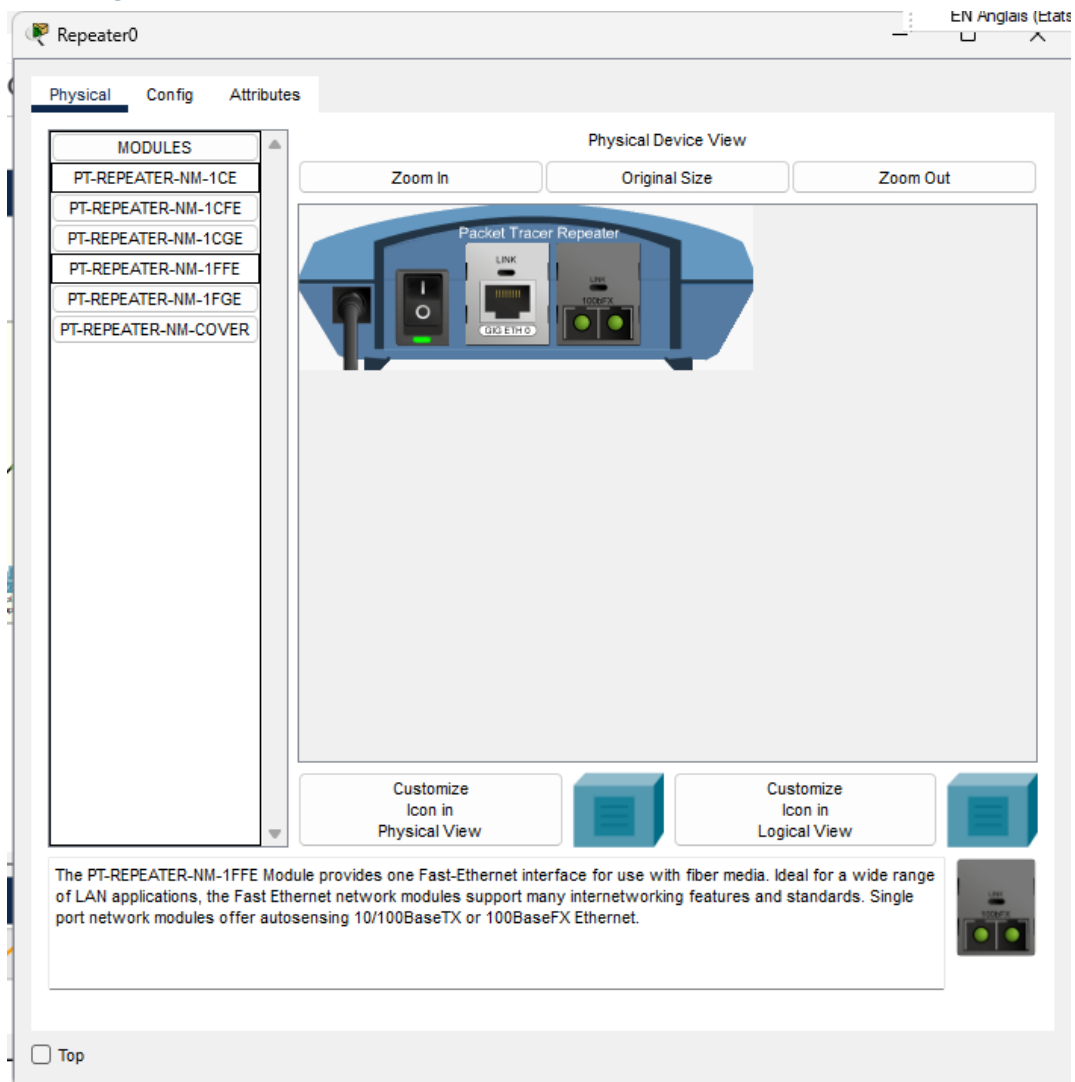
Niveau: L3 - Sciences Informatiques

1. Reproduisez cette topologie en configurant le NAT du réseau



imageTopologie1

Configuration nat



imageConfNat

DNS

dns.com

Physical Config Services **Desktop** Programming Attributes

IP Configuration X

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.1.2

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::2E0:8FFF:FE72:9258

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

☐ Top

imageConfServeurDNS

Configuration du serveur DHCP sur le routeur Cisco

```
Router>enable
Router#configure terminal
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(config)#ip dhcp excluded-address 192.168.2.1 192.168.1.2
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

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

Copy

Paste

imageConfServeurDNS

Vérifications des ip

PC3 EN Anglais (Stats)

Physical Config **Desktop** Programming Attributes

IP Configuration [X]

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::201:97FF:FE36:4BD4

Default Gateway:

DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

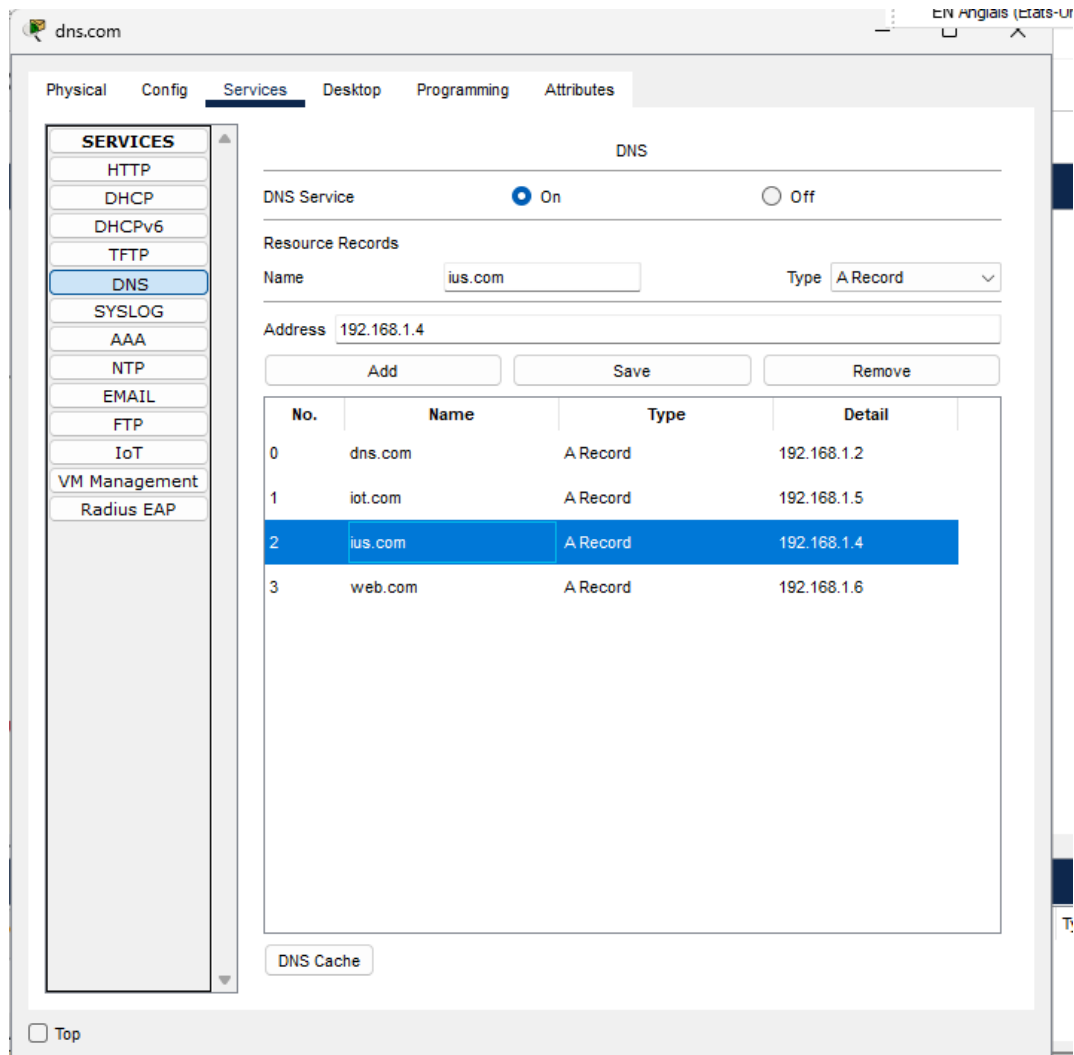
Username:

Password:

☐ Top

imageConfServeurDNS

Activé les services dns



The screenshot shows the dnsmasq web interface with the 'Services' tab selected. The 'DNS Service' is turned 'On'. Under 'Resource Records', a new record for 'ius.com' is being added with the address '192.168.1.4'. A table below lists existing records: dns.com (192.168.1.2), iot.com (192.168.1.5), ius.com (192.168.1.4), and web.com (192.168.1.6). The 'ius.com' record is highlighted in blue. The interface also includes a 'DNS Cache' button and a 'Top' link at the bottom.

Physical Config **Services** Desktop Programming Attributes

SERVICES

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS**
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

DNS

DNS Service ☒ On ☐ Off

Resource Records

Name Type

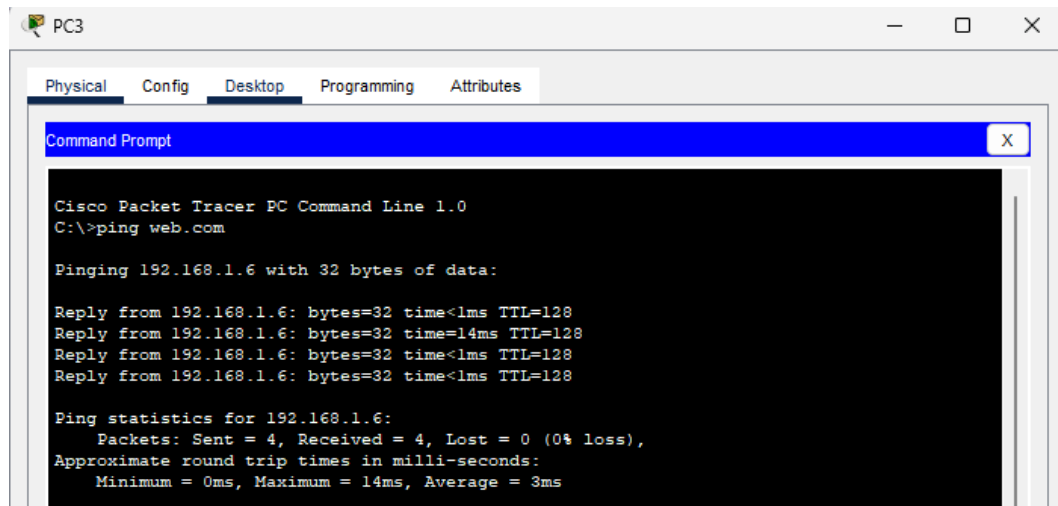
Address

No.	Name	Type	Detail
0	dns.com	A Record	192.168.1.2
1	iot.com	A Record	192.168.1.5
2	ius.com	A Record	192.168.1.4
3	web.com	A Record	192.168.1.6

☐ Top

imageConfServeurDNS

Test



imageTestPing

Configuration de NAT sur le routeur Cisco :

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

Copy

Paste

imageConfNat

Configuration de NAT dynamique (PAT) :

```
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)#
```

Copy

Paste

imageConfNatDyN

Test de connectivité

```
C:\>ping 203.0.113.1

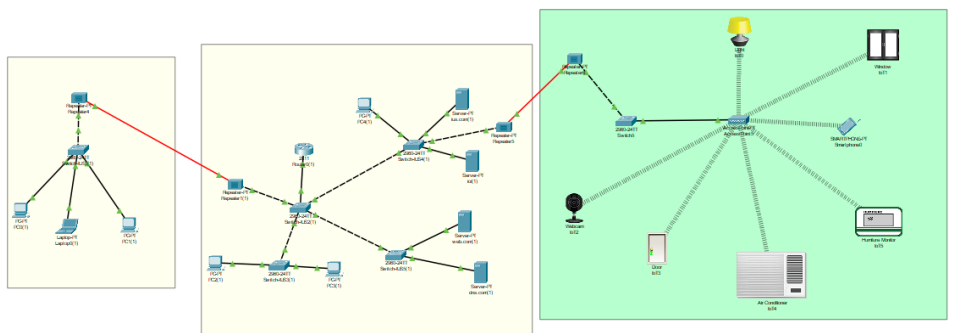
Pinging 203.0.113.1 with 32 bytes of data:

Reply from 192.168.1.1: Destination host unreachable.
Request timed out.
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. Reproduisez cette topologie en configurant le réseau IoT (Internet des Objets).



Topologie2

Access Point5

EN Anglais (Etat)

Physical **Config** Attributes

GLOBAL

Settings

INTERFACE

Port 0

Port 1

Port 1

Port Status ☒ On

SSID lan1

2.4 GHz Channel 6

Coverage Range (meters) 140,00

Authentication

☒ Disabled ☐ WEP ☐ WPA-PSK ☐ WPA2-PSK

WEP Key

PSK Pass Phrase

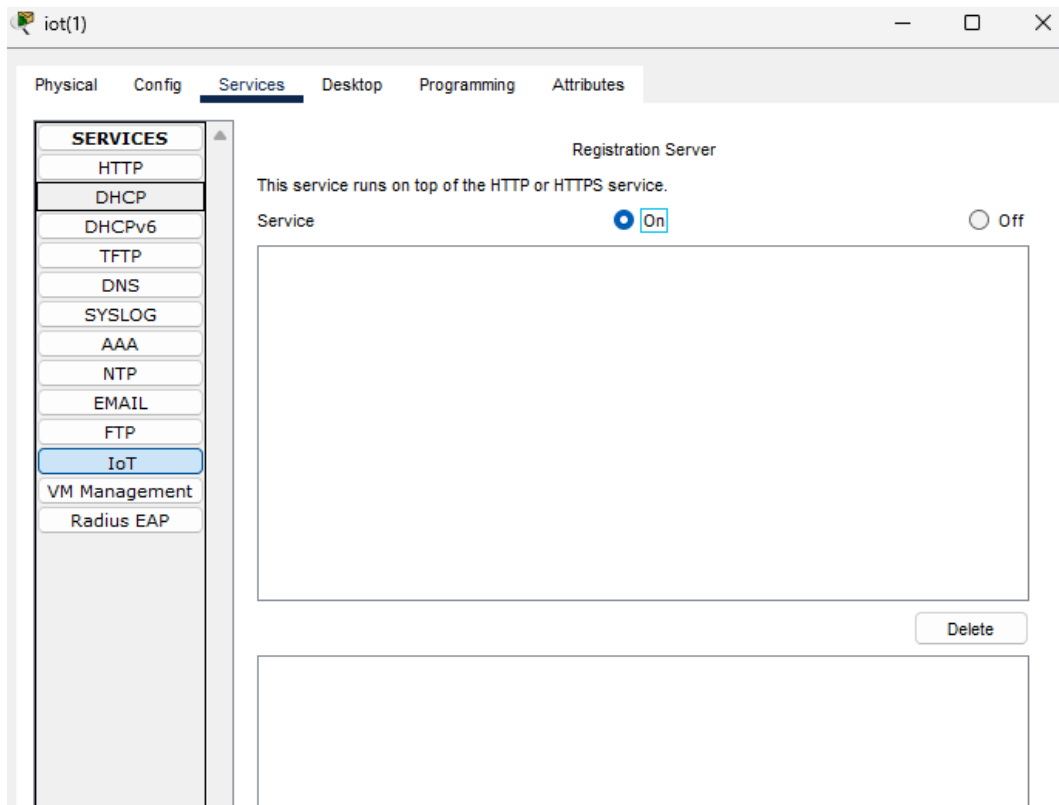
User ID

Password

Encryption Type Disabled

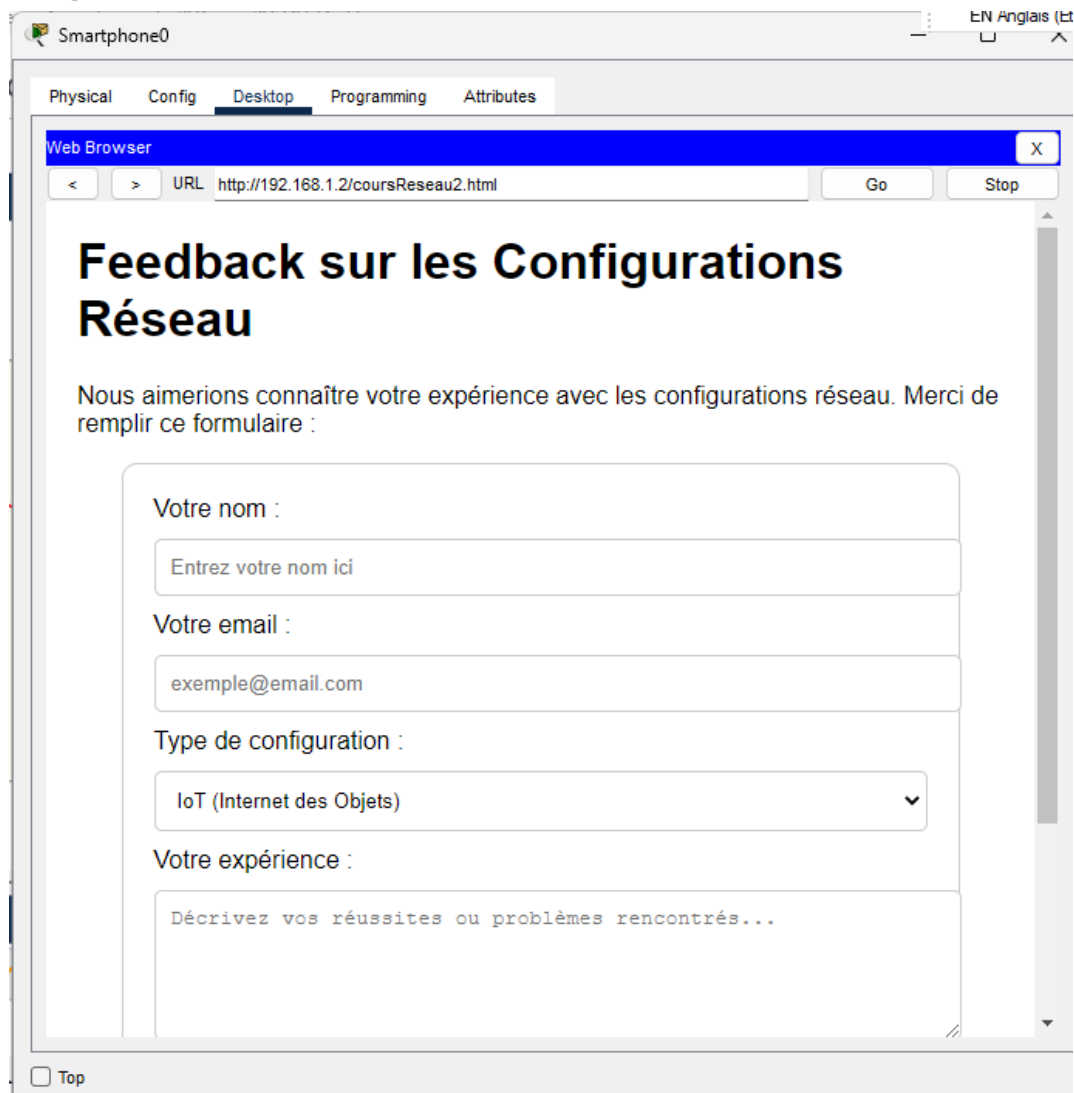
☐ Top

Activation des services IOT



imageConfTest

Registration au server



The image shows a web browser interface on a device labeled 'Smartphone0'. The browser has tabs for 'Physical', 'Config', 'Desktop', 'Programming', and 'Attributes', with 'Desktop' currently selected. The address bar shows the URL 'http://192.168.1.2/coursReseau2.html'. The page title is 'Feedback sur les Configurations Réseau'. The main content is a feedback form with the following fields:

- Votre nom :** A text input field with the placeholder 'Entrez votre nom ici'.
- Votre email :** A text input field with the placeholder 'exemple@email.com'.
- Type de configuration :** A dropdown menu with 'IoT (Internet des Objets)' selected.
- Votre expérience :** A text area with the placeholder 'Décrivez vos réussites ou problèmes rencontrés...'.

At the bottom left of the browser window, there is a 'Top' button.

imageConfTest

Configurer les IOT

IoT3

SpecificationsPhysicalConfigAttributes

GLOBAL

Settings

Algorithm Settings

Files

INTERFACE

Wireless0

Bluetooth

Interfaces

Wireless0

Gateway/DNS IPv4

☒ DHCP

☐ Static

Default Gateway

192.168.1.1

DNS Server

192.168.1.2

Gateway/DNS IPv6

☒ Automatic

☐ Static

Default Gateway

DNS Server

IoT Server

☐ None

☐ Home Gateway

☒ Remote Server

Server Address

192.168.1.4

User Name

admin

Password

admin1234

Connect

☐ Top

Advanced

IoT5

Specifications Physical **Config** Attributes

GLOBAL

Settings

Algorithm Settings

Files

INTERFACE

Wireless0

Bluetooth

Wireless0

Port Status ☒ On

Bandwidth 54 Mbps

MAC Address 000A.F3D3.9438

SSID lan1

Authentication

☒ Disabled ☐ WEP ☐ WPA-PSK ☐ WPA2-PSK ☐ WPA ☐ WPA2 ☐ 802.1X

Method:

WEP Key

PSK Pass Phrase

User ID

Password

User Name

Password

Encryption Type

IP Configuration

☒ DHCP ☐ Static

IPv4 Address

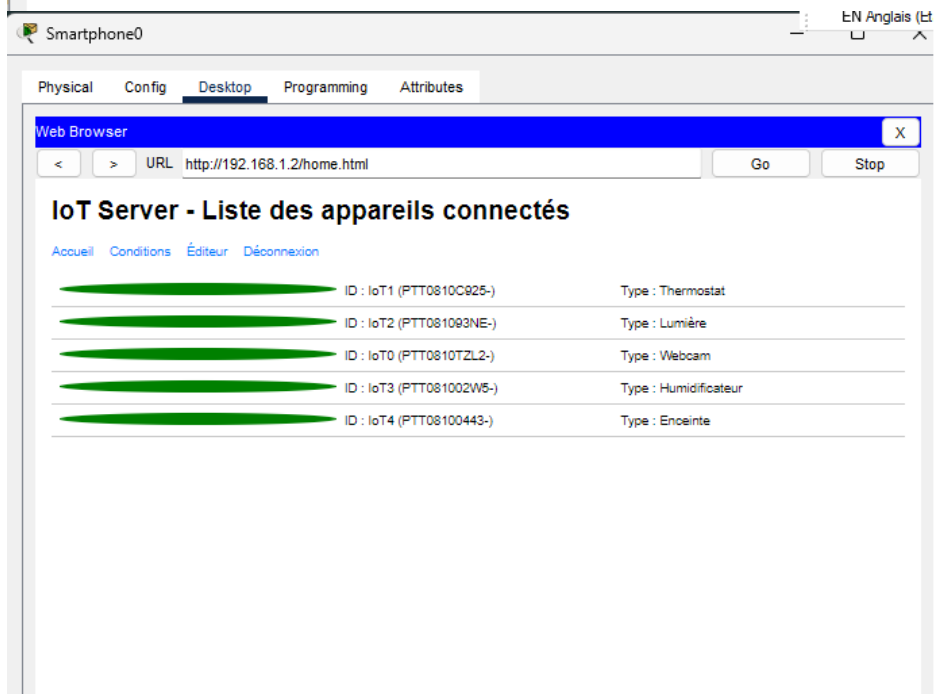
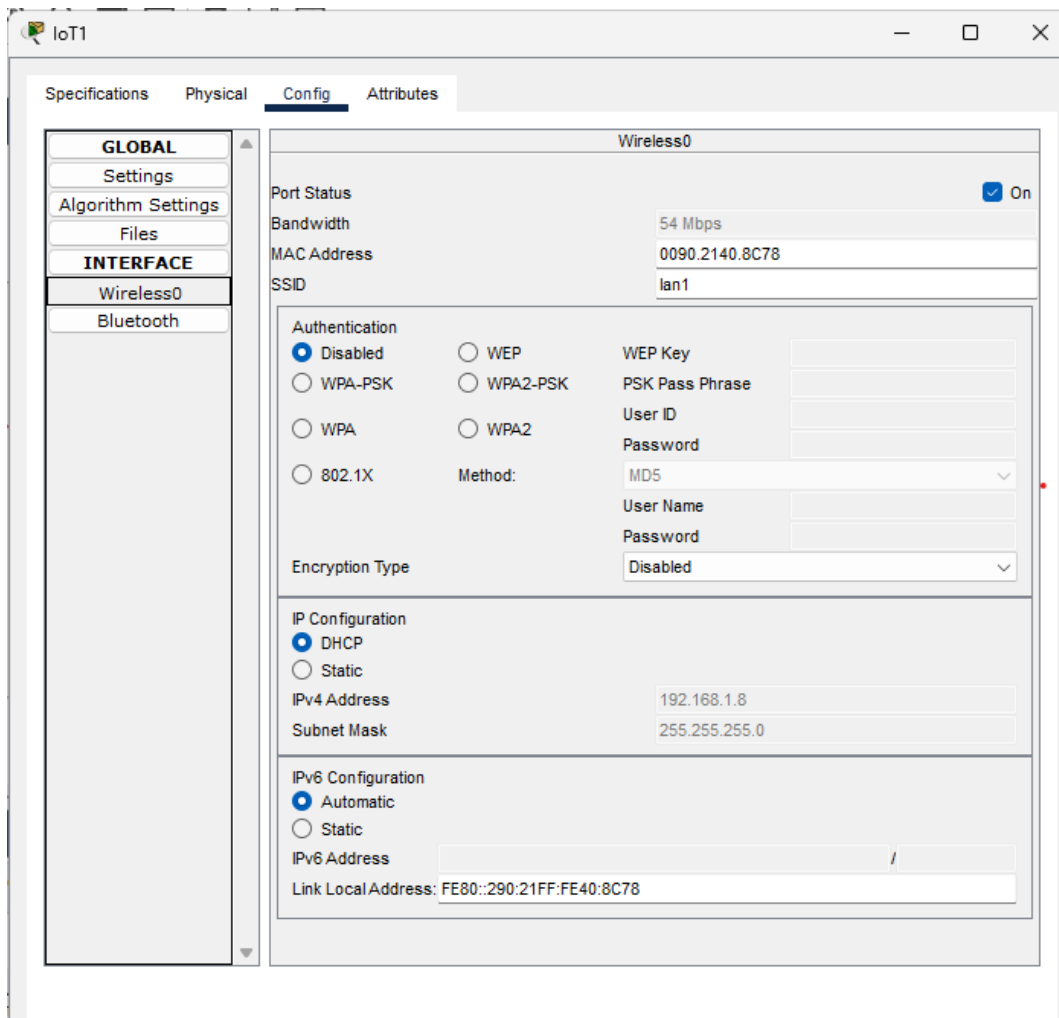
Subnet Mask

IPv6 Configuration

☒ Automatic ☐ Static

IPv6 Address

Link Local Address: FE80::20A:F3FF:FED3:9438



Conclusion

En conclusion, ce TD me permet de configurer et de simuler un réseau avec les protocoles NAT, DHCP et DNS, ainsi que les réseaux IoT.