

INSTITUT UNIVERSITAIRE DES SCIENCES - IUS

Faculté des Sciences et Technologie - FST

Niveau L3 Sciences Informatiques

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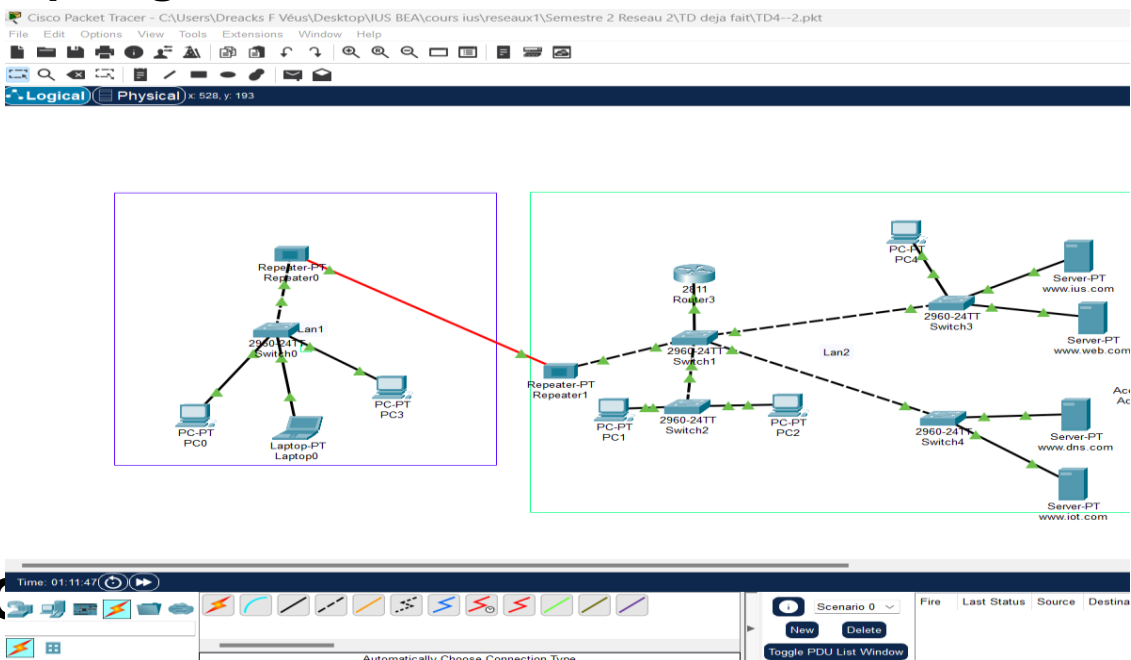
Soumis au chargé de cours Ismael SAINT AMOUR

Date: Dimanche 30 Mars 2025

Dans ce TD, nous allons configurer NAT sur un routeur Cisco dans Packet Tracer pour permettre aux hôtes de communiquer avec l'extérieur tout en utilisant des adresses privées, et la configuration d'un réseau IoT dans Cisco Packet Tracer. L'objectif est d'intégrer des dispositifs IoT, comme des capteurs, des caméras ou des thermostats, et de les connecter à un réseau pour qu'ils puissent communiquer et échanger des informations.

Configuration de NAT

Topologie du réseau :



www.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::260:3EFF:FE9E:39C3

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

☐ Top

Configuration du serveur DHCP sur le routeur Cisco

Router3

Physical Config **CLI** Attributes

IOS Command Line Interface

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

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 2811 (MPC860) processor (revision 0x200) with 60416K/5120K bytes of memory
Processor board ID JAD05190MTZ (4292891495)
2 FastEthernet interface(s)
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]: no

Press RETURN to get started!

```
Router>enable
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(config)#ip dhcp excluded-address 192.168.2.1 192.168.1.2
Router(config)#
```

Copy Paste

Vérifications des ip

PC1

Physical Config **Desktop** Programming Attributes

IP Configuration X

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::201:97FF:FE5A:166C

Default Gateway:

DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

Activer les services DNS

www.dns.com

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: web.com Type: A Record

Address: 192.168.1.8

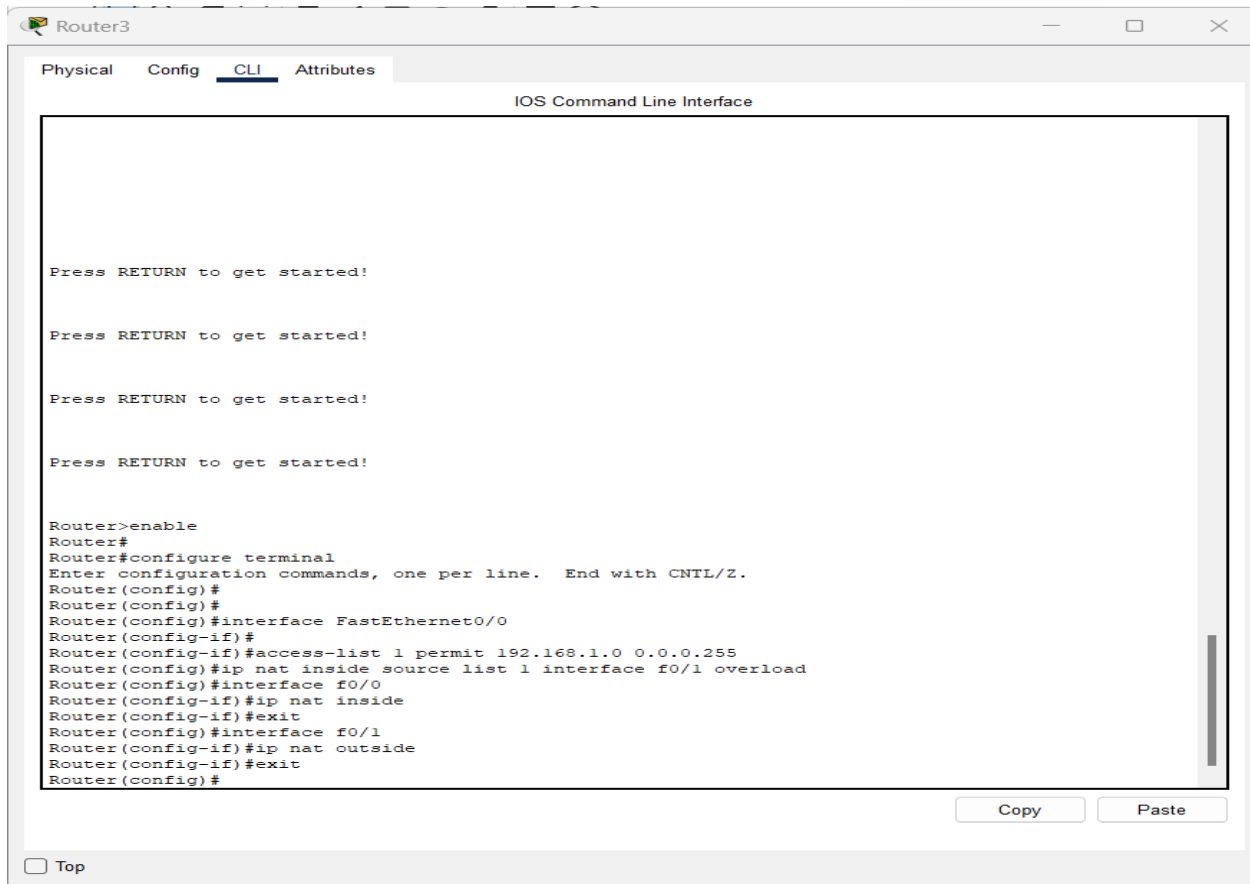
Add Save Remove

No.	Name	Type	Detail
0	dns.com	A Record	192.168.1.2
1	iot.com	A Record	192.168.1.3
2	ius.com	A Record	192.168.1.9
3	web.com	A Record	192.168.1.8

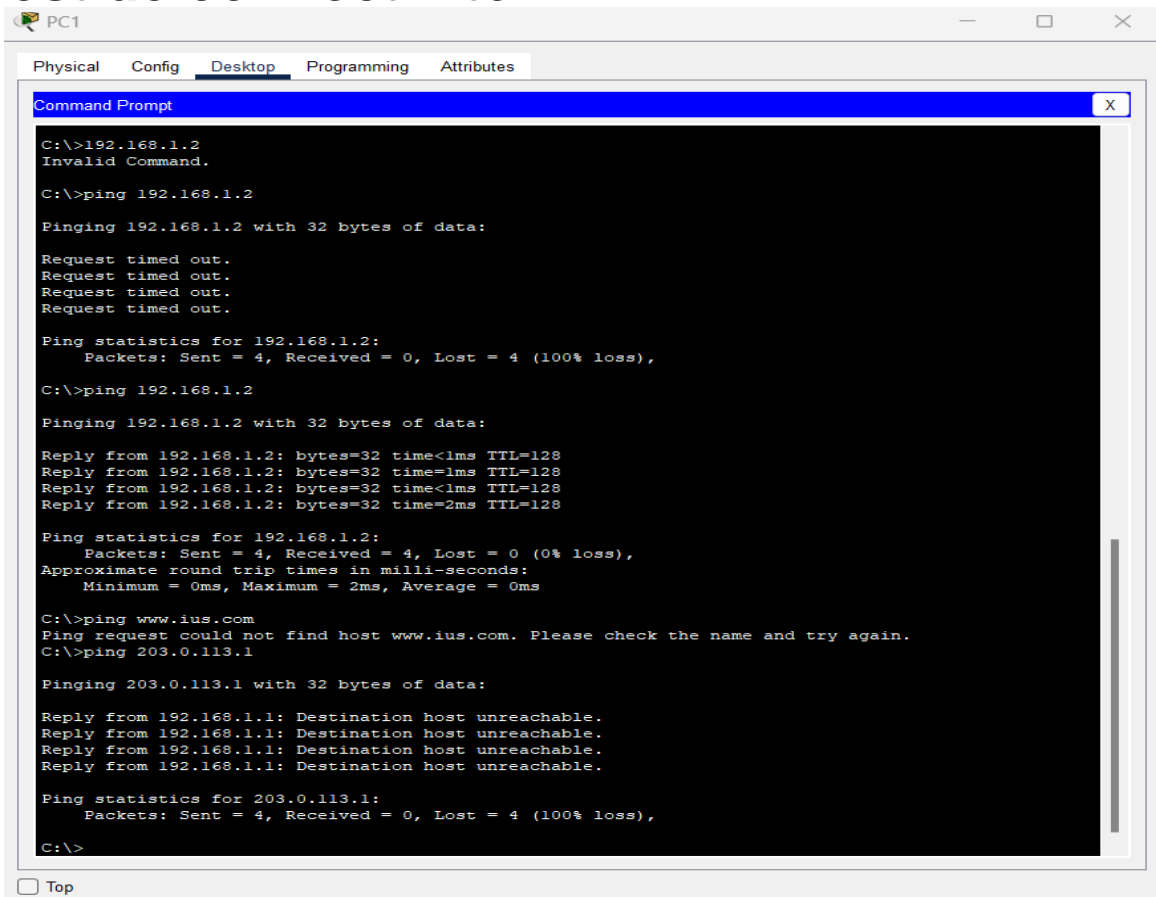
DNS Cache

☐ Top

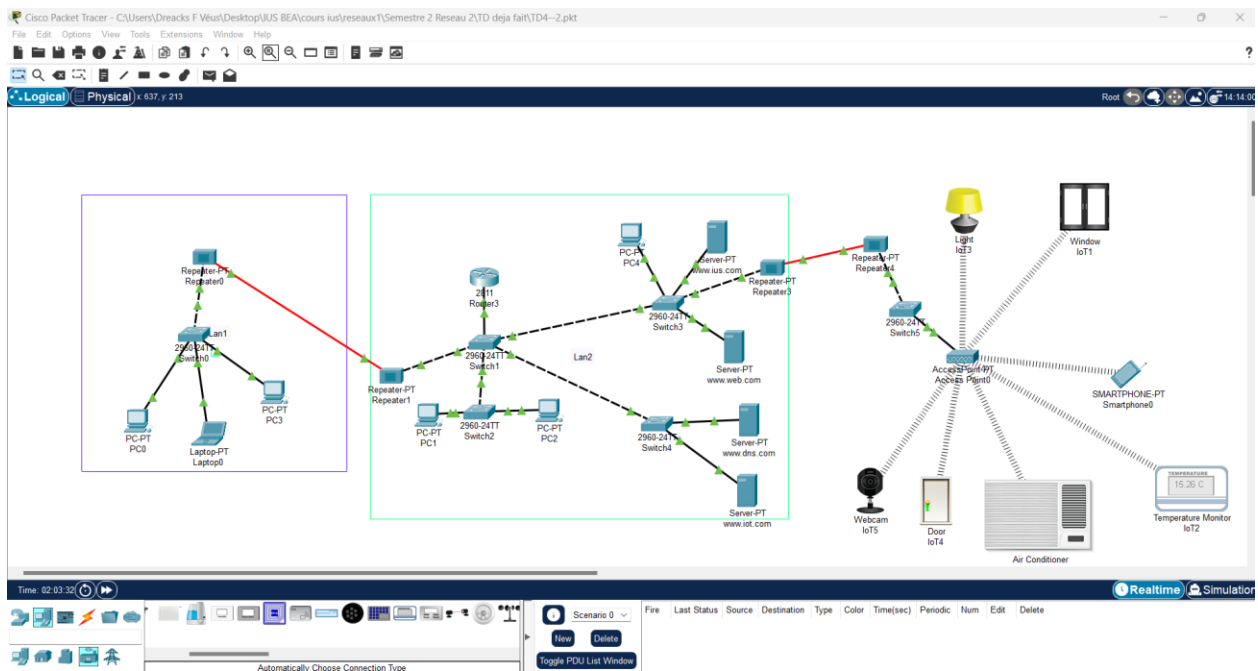
Configuration de NAT sur le routeur Cisco



Test de connectivité



Reproduisez cette topologie en configurant le réseau IoT (Internet des Objets).



Configuration du point Accès

Access Point0

Physical Config Attributes

GLOBAL

Settings

INTERFACE

Port 0

Port 1

Port 1

Port Status ☒ On

SSID Default

2.4 GHz Channel 6

Coverage Range (meters) 140.00

Authentication

☒ Disabled ☐ WEP ☐ WPA-PSK ☐ WPA2-PSK

WEP Key

PSK Pass Phrase

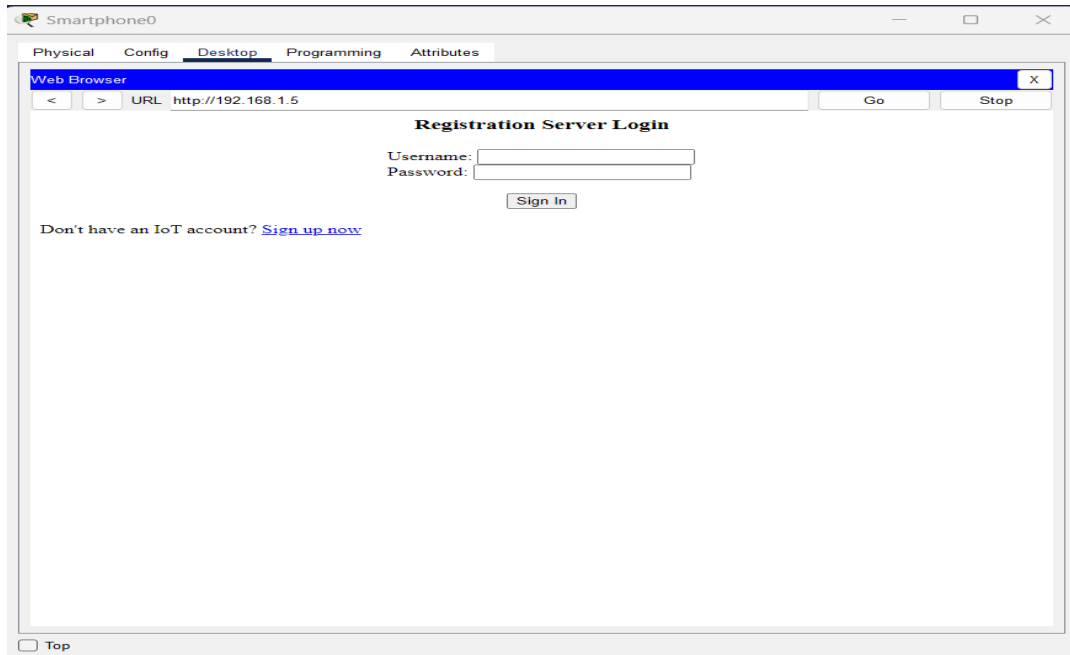
User ID

Password

Encryption Type Disabled

Top

Registration au server et configuration des IOTs



The screenshot shows a web browser window titled "Smartphone0" with tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes". The "Desktop" tab is active, displaying a "Web Browser" window. The browser's address bar shows the URL "http://192.168.1.5". The page content is a "Registration Server Login" form. It includes fields for "Username:" and "Password:", a "Sign In" button, and a link for users without an account: "Don't have an IoT account? [Sign up now](#)".

Physical Config **Desktop** Programming Attributes

Web Browser

< > URL http://192.168.1.5 Go Stop

Registration Server Login

Username:

Password:

Don't have an IoT account? [Sign up now](#)

☐ Top

IoT0

SpecificationsPhysicalConfigAttributes

GLOBAL

Settings

Algorithm Settings

Files

INTERFACE

Wireless0

Bluetooth

Global Settings

Display NameIoT0

Serial NumberPTT081093FB-

InterfacesWireless0

Gateway/DNS IPv4

☒ DHCP

☐ Static

Default Gateway192.168.1.1

DNS Server192.168.1.2

Gateway/DNS IPv6

☒ Automatic

☐ Static

Default Gateway

DNS Server

IoT Server

☐ None

☐ Home Gateway

☒ Remote Server

Server Address192.168.1.5

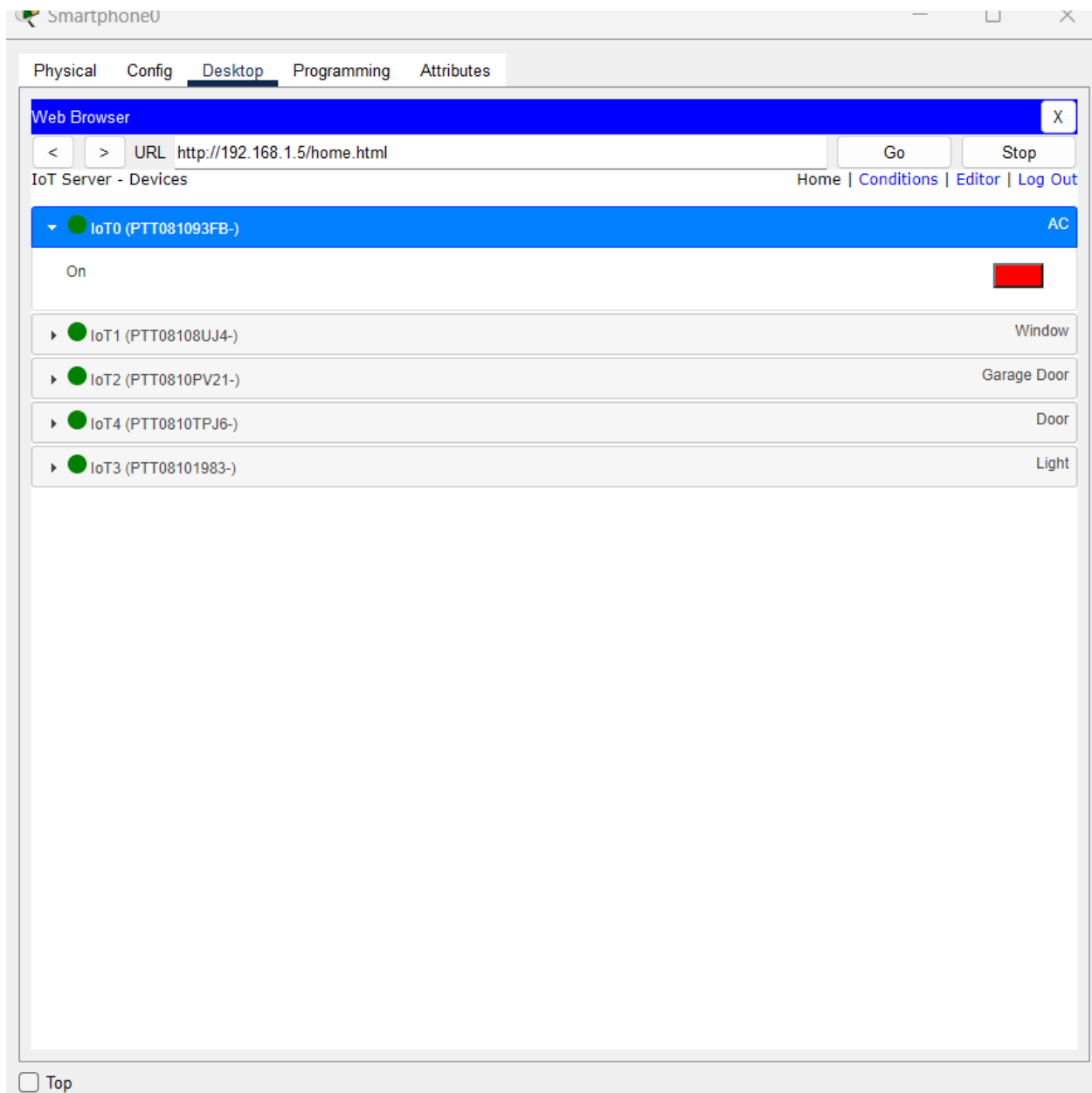
User Nameadm

Passwordadm1234

Refresh

☐ Top

Advanced



Conclusion

Ce TD m'aide à configurer NAT sur un routeur Cisco dans Packet Tracer pour permettre aux hôtes de communiquer avec l'extérieur tout en utilisant des adresses privées, et la configuration d'un réseau IoT dans Cisco Packet Tracer.