Network programming

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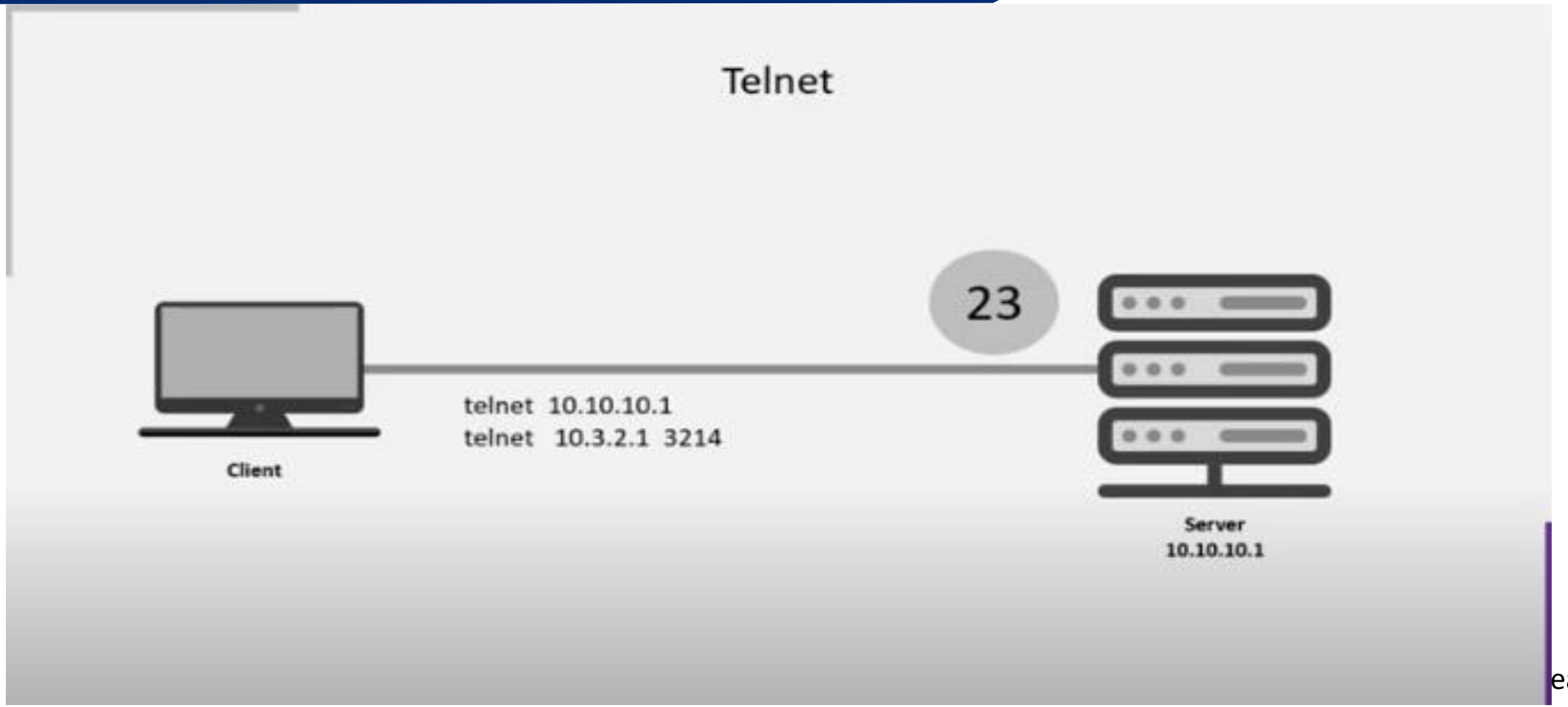
Telnet vs SSH

❑telnet



eapps

❑telnet

❑ **Telnet :** Telnet is a network protocol that allows a user to communicate with a remote device.

- ❑ It is a virtual terminal protocol used mostly by network administrators to remotely access and manage devices.
- ❑ Administrator can access the device by "telnetting" to the IP address or hostname of a remote device.
- ❑ To use telnet, you must have a software (Telnet client) installed.
- ❑ On a remote device, a Telnet server must be installed and running. Telnet uses TCP port 23.
- ❑ One of the greatest disadvantages of this protocol is that all data, including usernames and passwords, is sent in clear text, which is a potential security risk

https://myaccount.google.com/lesssecureapps

❑telnet

- This is the main reason why Telnet is rarely used today and is being replaced by a much secure protocol called SSH.

- you can start a Telnet session by typing the telnet IP_ADDRESS or HOSTNAME command

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❑SSH

1.SSH (Secure Shell) : SSH is a network protocol used to remotely access and manage a device.

1.The key difference between Telnet and SSH is that SSH uses encryption, which means that all data transmitted over a network is secure from eavesdropping.

1. □ Like Telnet, a user accessing a remote device must have an SSH client installed.

1. □ On a remote device, an SSH server must be installed and running.

1. □ SSH uses TCP port 22 by default.

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SSH

- SSH relies on public key cryptography for its encryption.
- Here is an example of creating an SSH session using Putty, a free SSH client: NOTE - SSH is the most common way to remotely access a Cisco device.

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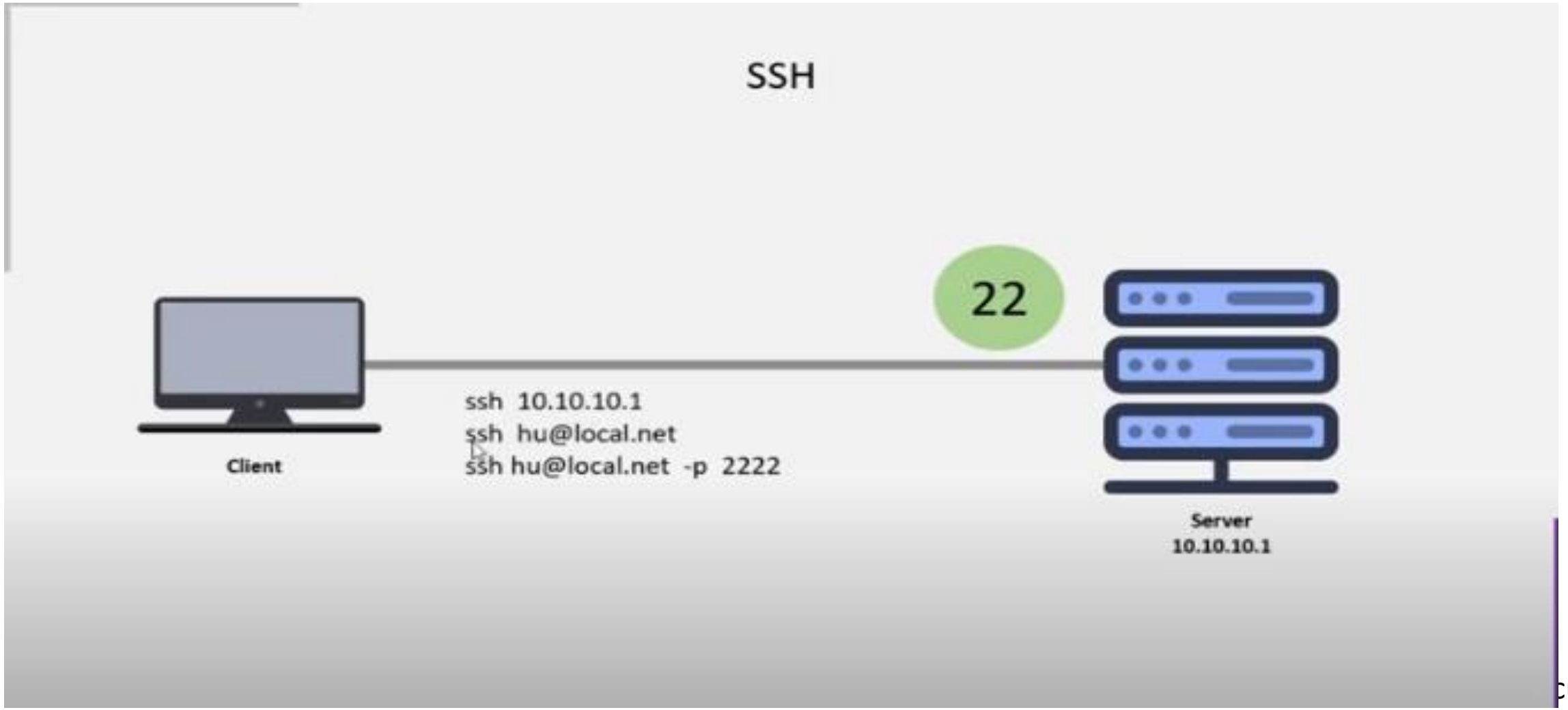
❑SSH


SSH
22
Client
ssh 10.10.10.1
ssh hu@local.net
ssh hu@local.net -p 2222
Server
10.10.10.1


172.XX.X.X
172.XX.X.X
172.XX.X.X
172.XX.X.X
172.XX.X.X
PRIVATE
IP ADDRESS
PUBLIC
IP ADDRESS
172.31.255.255

How To Check Public IP Address

An IP address is used to identify a computer in a network. There are mainly two types of IP addresses:

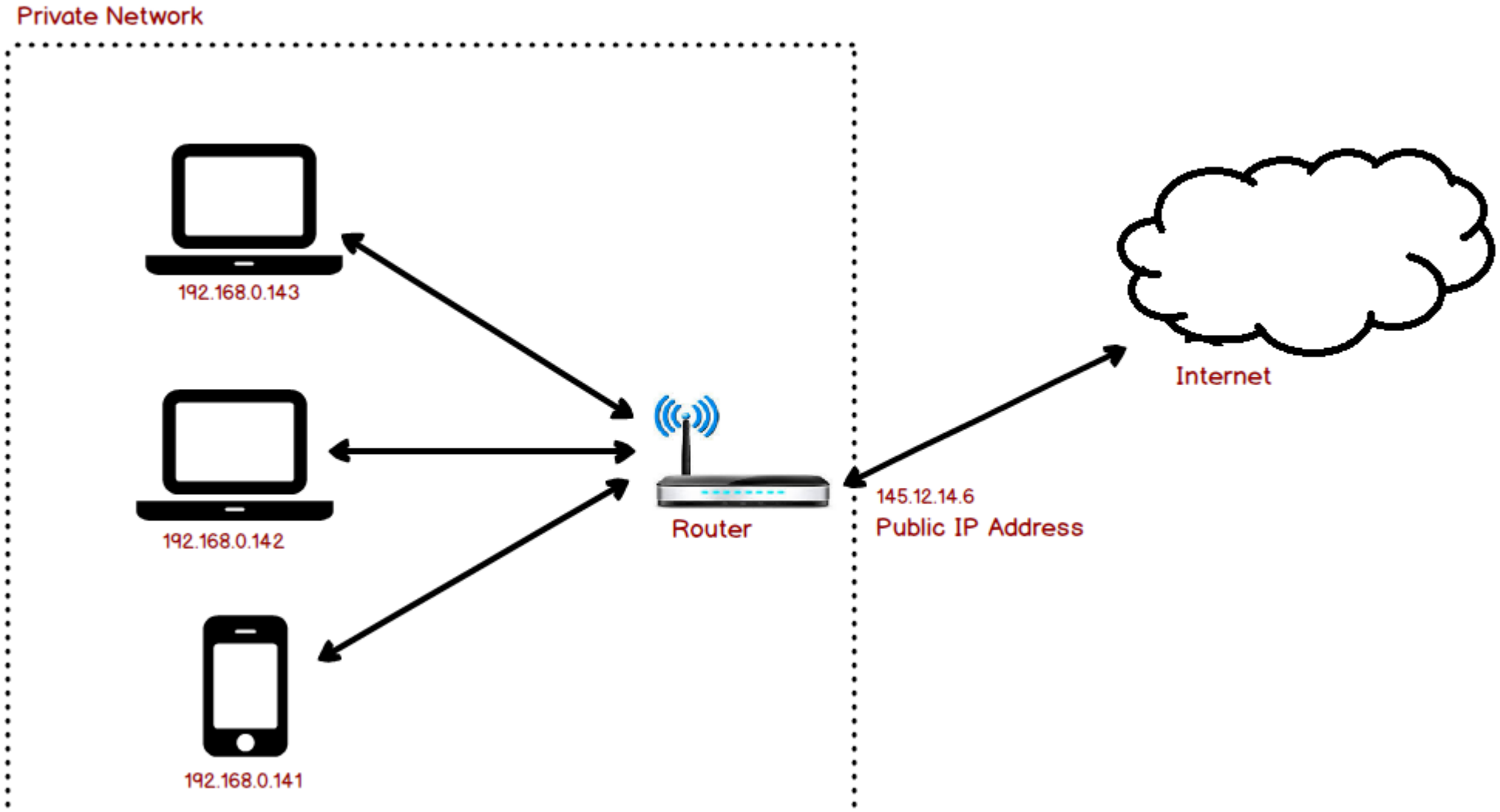
1. Local Network (LAN) IP address or Local IP address or Private IP address or Internal IP address.
2. The Public IP address or External IP address.

The private IP is the one that is used within a local area network. This IP is used to identify the computer within the LAN. This private IP can’t be accessed directly from the Internet.

How To Check Public IP Address

The Public or External IP address is the one which is provided by your Internet Service Provider (ISP). Multiple computers can have a single public IP if a network is set up using the technique called NAT (Network Address Translation). Since public IP is normally not provided free of cost, people use a mixture of private IP addresses that connect to a single public IP address to run the Internet on every network computer in a private network.

How To Check Public IP Address

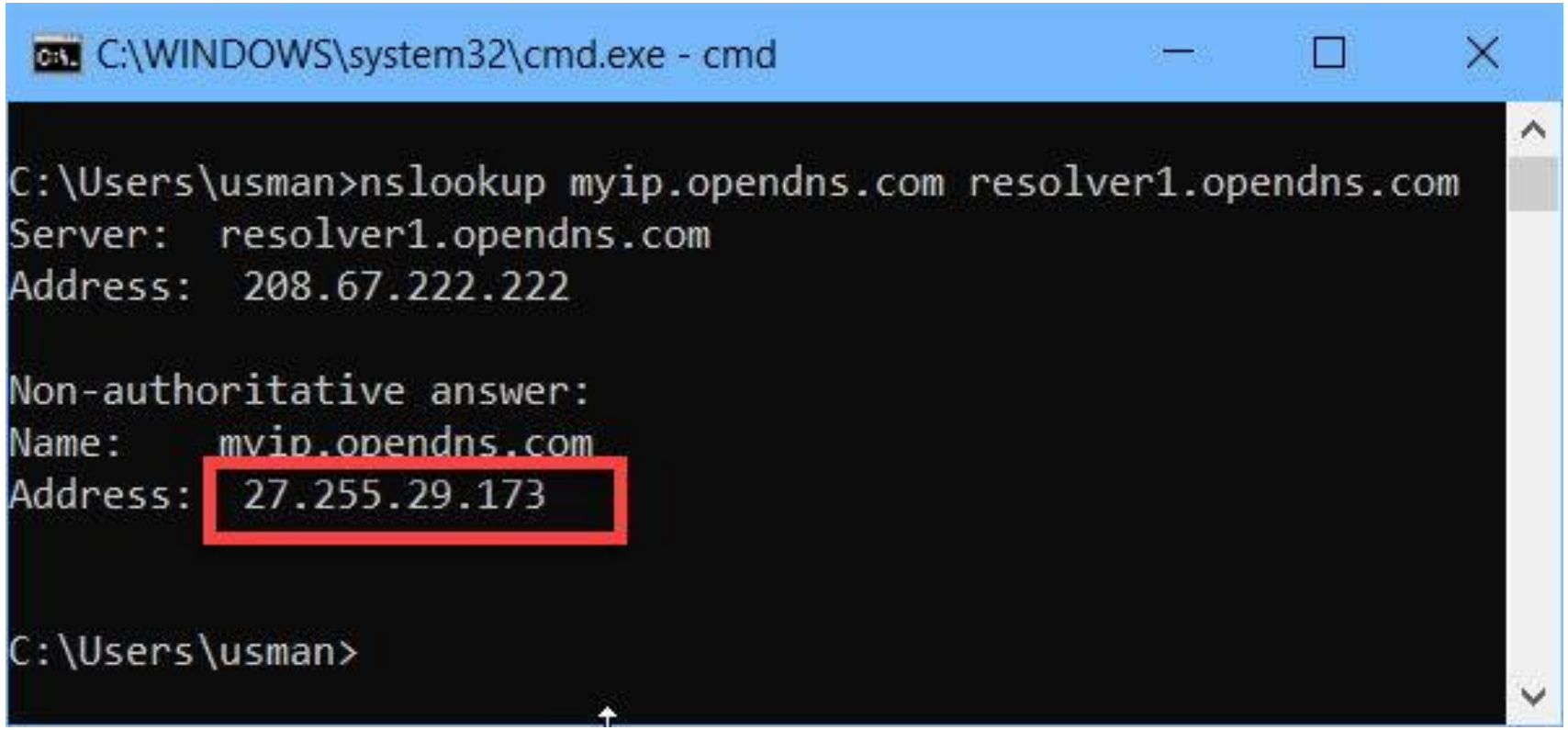


Get my external IP address from command-line

- Let’s see how we can get the public IP information using command-line in Windows. Please note that you need to be connected to the Internet for using the below-mentioned commands and services.
  - If you have a home network, you can run these commands on one device even if multiple devices are connected to the Internet. They all should have the same public IP.
  - We can get the external IP information using the command nslookup and the OpenDNS service. Just run the following command on your command prompt and you will get your external IP address

Get my external IP address from command-line

nslookup myip.opendns.com resolver1.opendns.com



Get my external IP address from command-line

❑ **PowerShell**

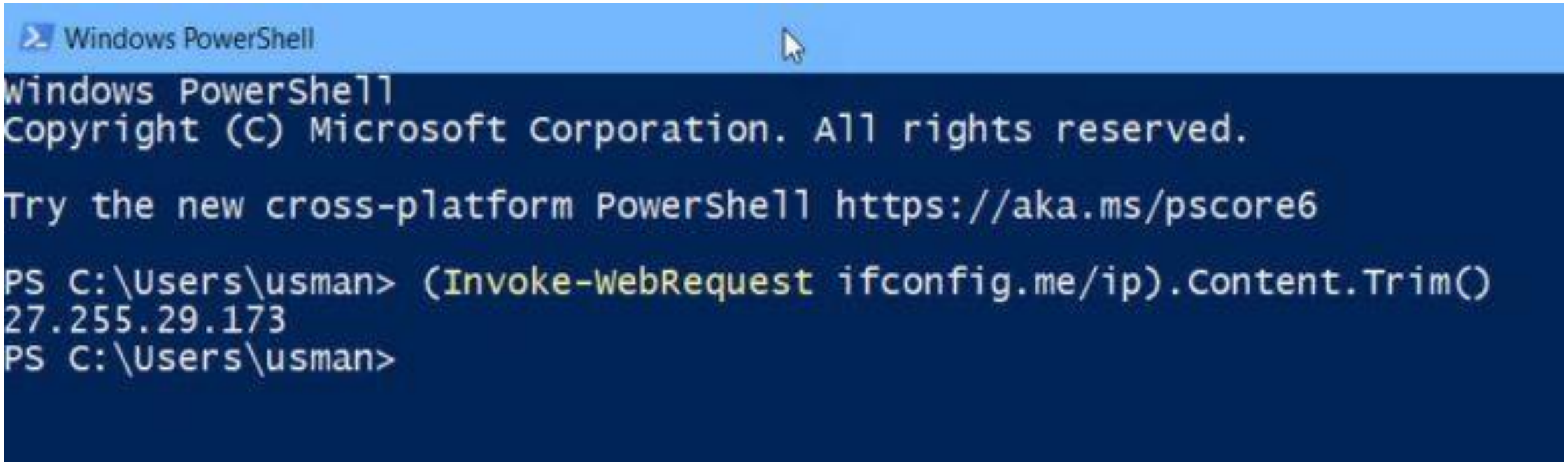
You can also use PowerShell command to get the external IP without using any third-party IP lookup tool.

Open PowerShell by going to Run –> powershell

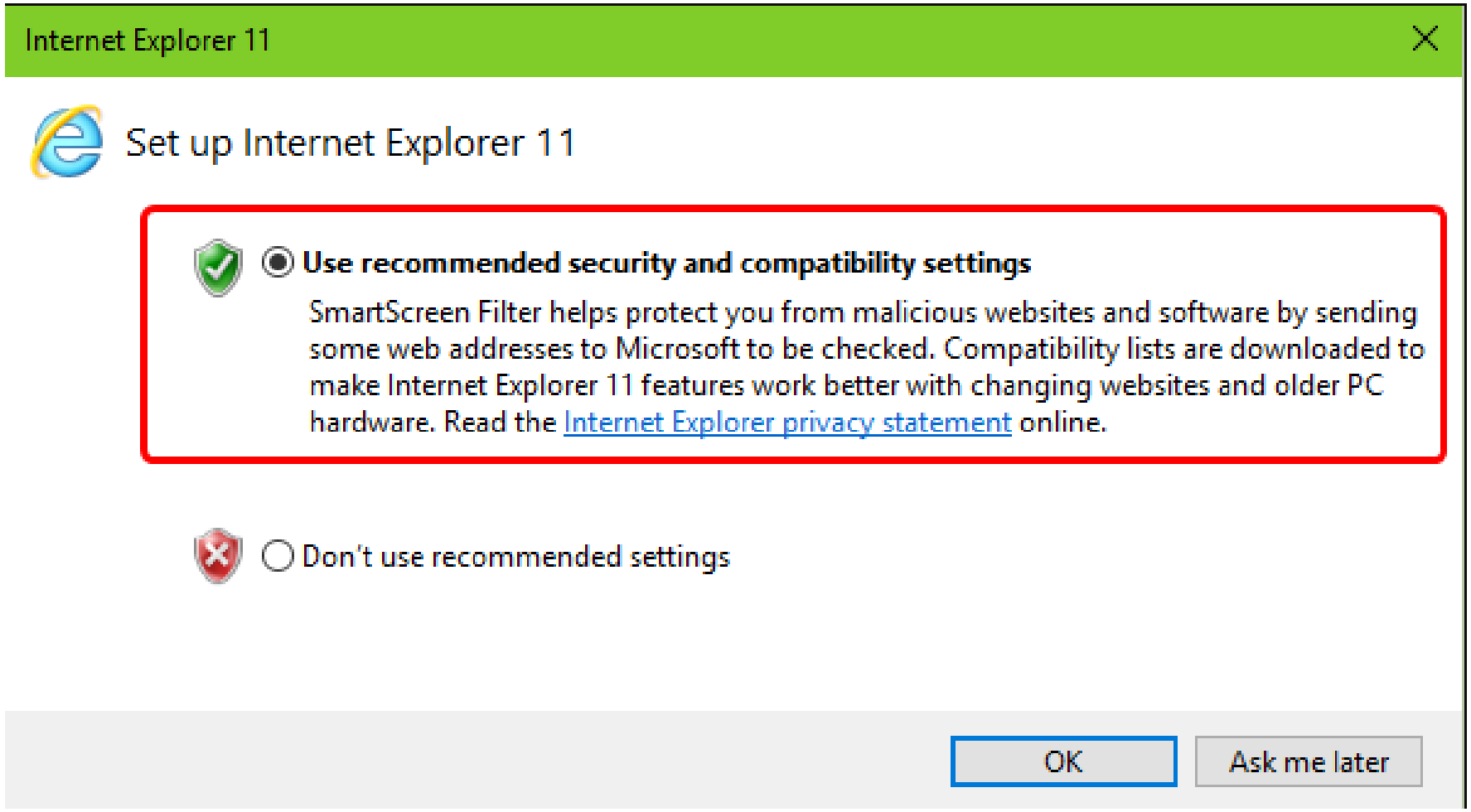
Run the following command:

(Invoke-WebRequest ifconfig.me/ip).Content.Trim()

Get my external IP address from command-line



Get my external IP address from command-line



Get my external IP address with python

```
import requests


f = requests.request('GET', 'http://myip.dnsomatic.com')
ip = f.text
print(ip)
```

Get my external IP address with python

```
from requests import  get
public_ip=get('http://myip.dnsomatic.com').text

print(public_ip)
```


At the
End


Any questions?