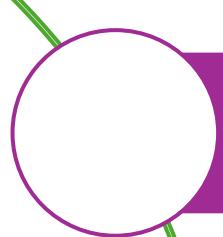


Networking Terminologies

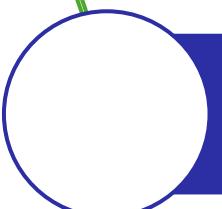
NAT, DHCP, VPN and Proxy



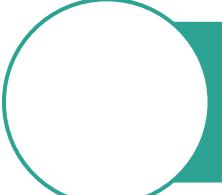
NAT



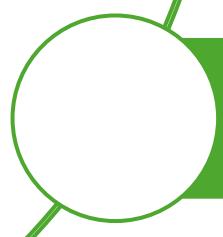
is the process where a network device, usually a firewall, assigns a **public address to a computer (or group of computers) inside a private network.**



The main use of NAT is to limit the number of public IP addresses an organization or company must use, for both economy and security purposes.

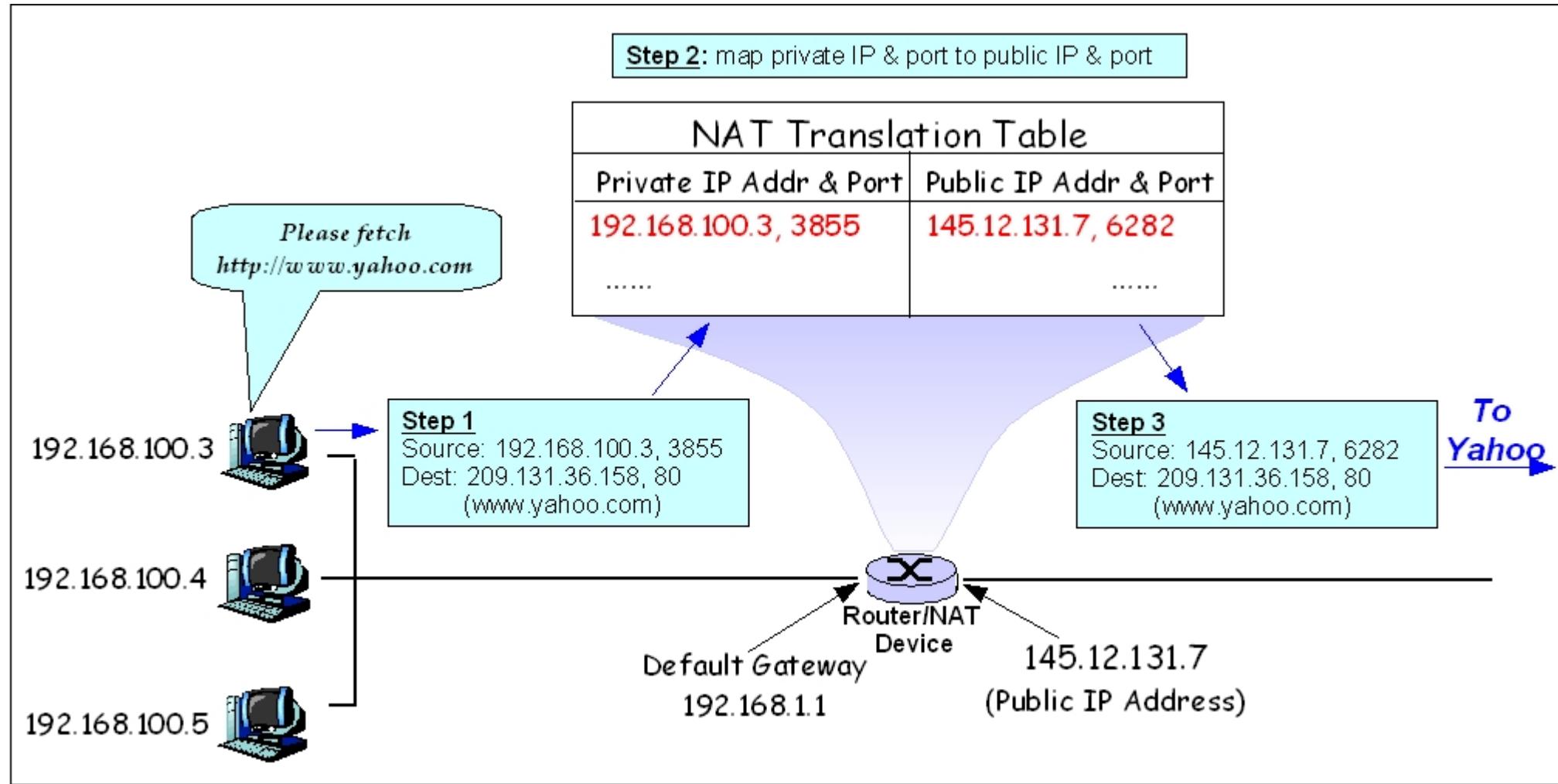


NAT is an Internet standard that enables a local-area network (LAN) to use one set of IP addresses for internal traffic and a second set of addresses for external traffic.



A **NAT** box located where the LAN meets the Internet makes all necessary IP address translations.

NAT



Dynamic Host Configuration Protocol(DHCP)

A **DHCP Server** is a network server that **automatically provides and assigns IP addresses**, default gateways and other network parameters to client devices.

Server relies on the standard protocol DHCP to respond to broadcast queries by clients.

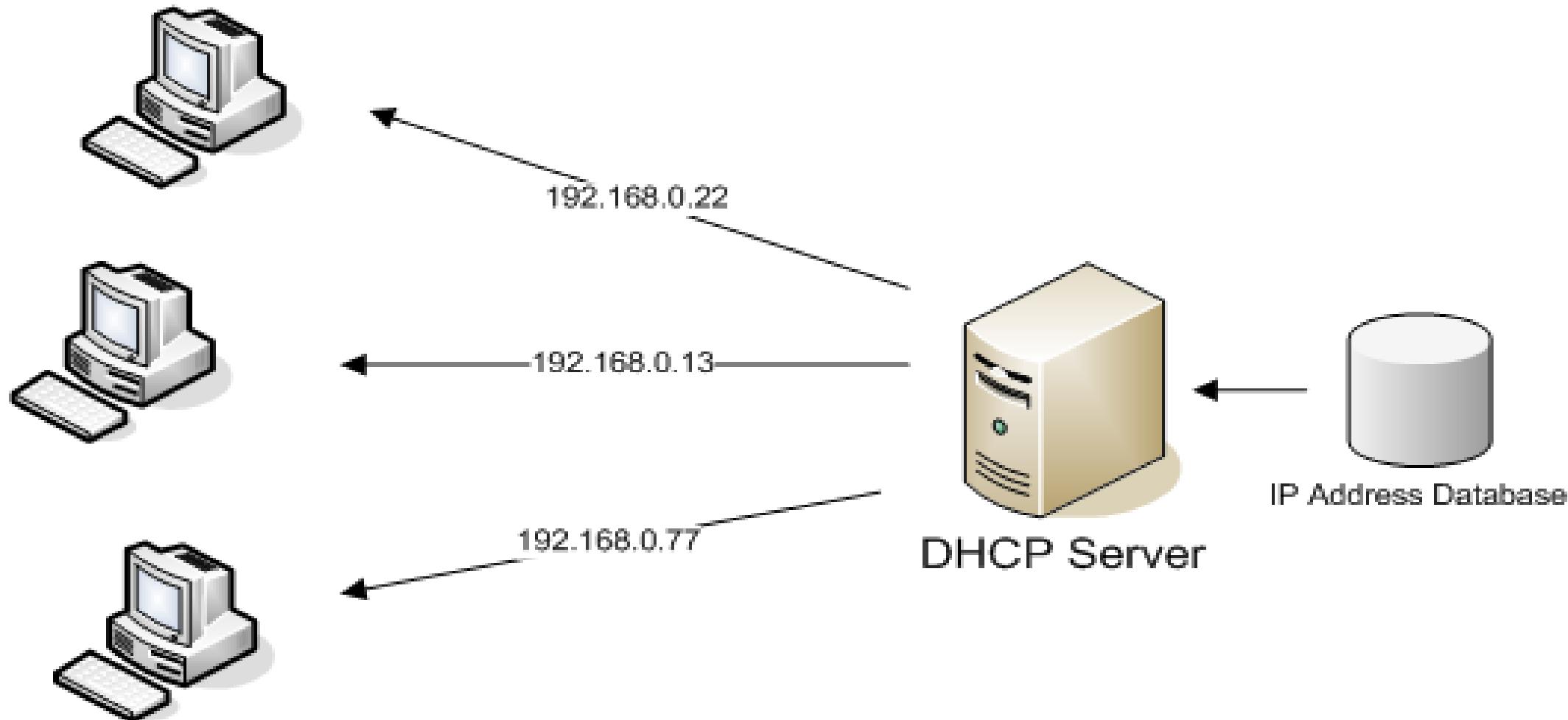
https://www.youtube.com/watch?v=e48bOm6_zHI

DHCP

DHCP is an application layer protocol which is used to provide:

- Subnet Mask (Option 1 – e.g., 255.255.255.0)
- Router Address (Option 3 – e.g., 192.168.1.1)
- DNS Address (Option 6 – e.g., 8.8.8.8)
- <https://www.youtube.com/watch?v=S43CFcpOZSI>

DHCP



DHCP

DHCP is based on a client-server model and based on discovery, offer, request, and ACK.

DHCP port number for server is 67 and for the client is 68.

- It is a Client server protocol which uses UDP services.
- IP address is assigned from a pool of addresses.
- More about DHCP-
<https://www.infoblox.com/glossary/dhcp-server/>

DHCP pool

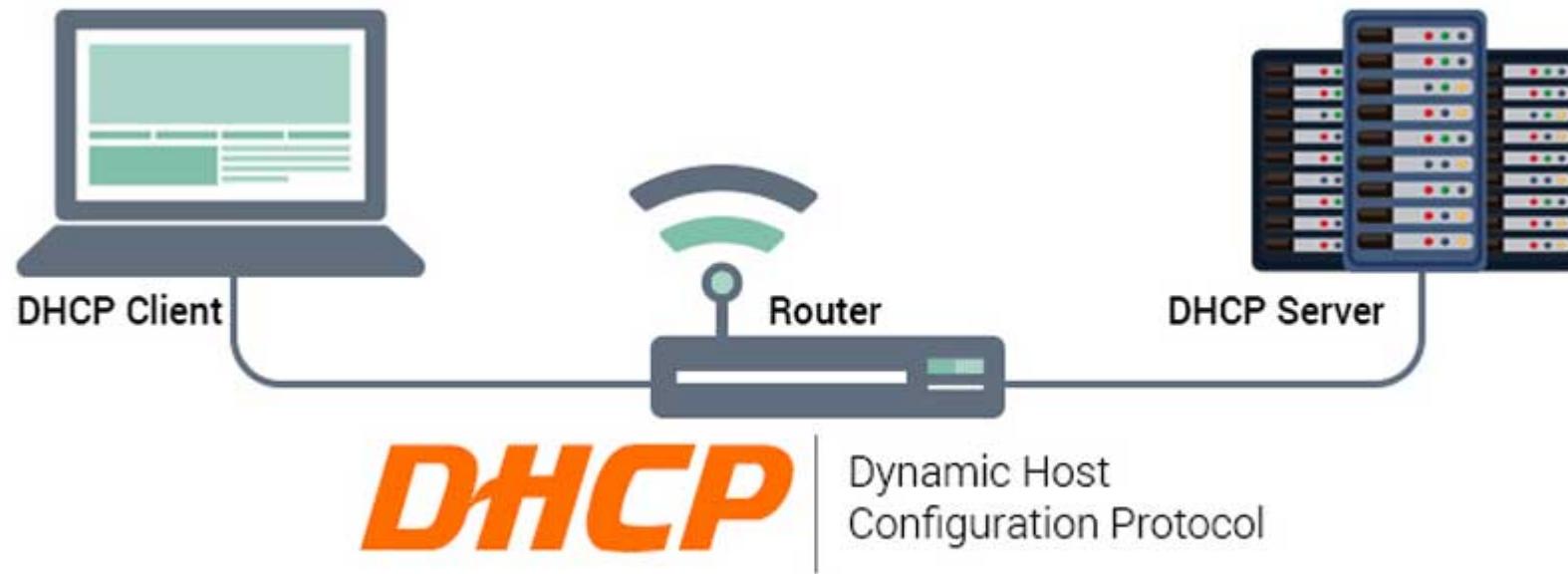
E.g. 2 pools

- CSE
- MEU

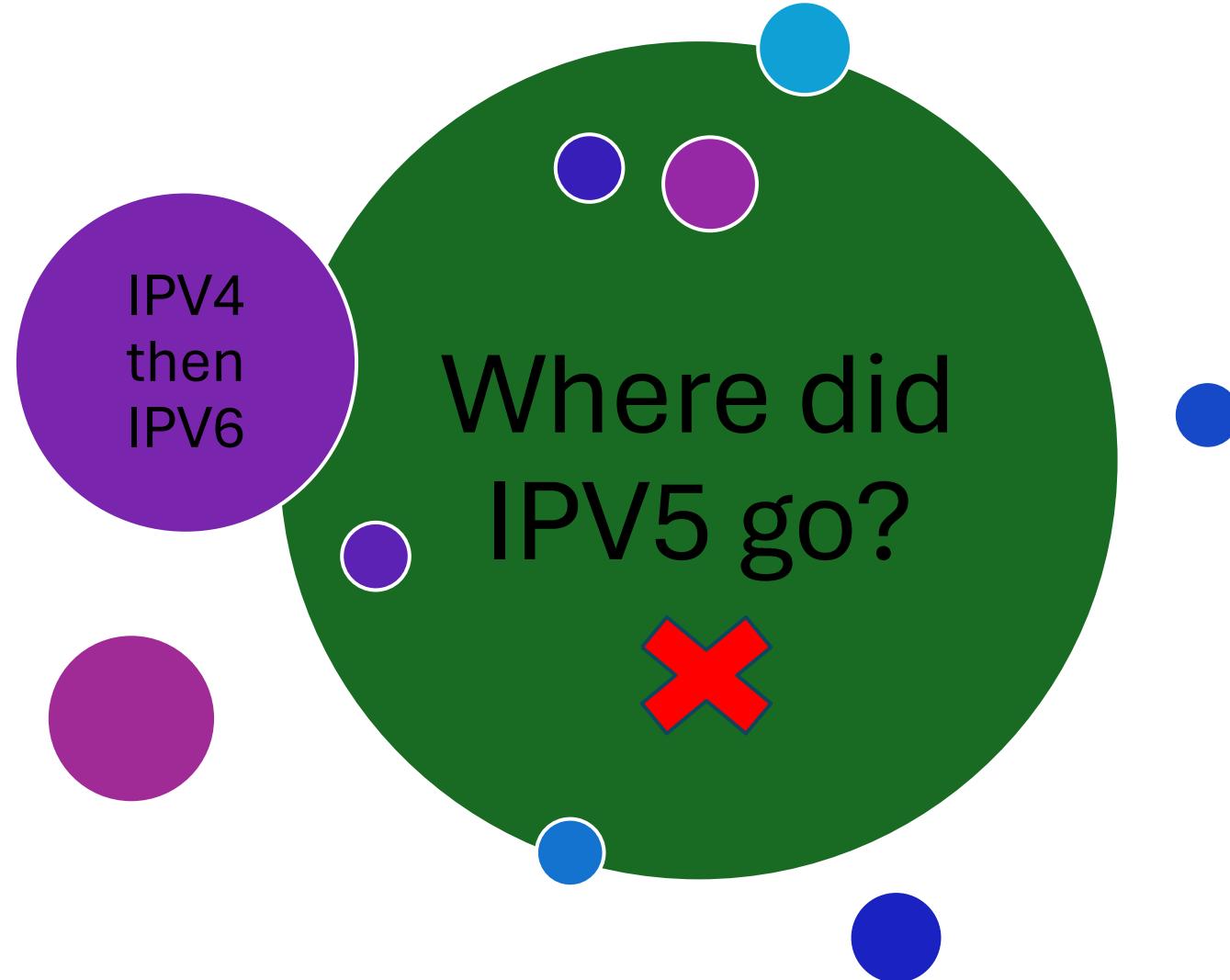
Each has been assigned a pool range

- CSE-192.168.10.1
- MEU-198.168.11.1

DHCP



Task



Network Terminologies-II

Proxy or Proxy Servers:

A proxy server is basically another computer which serves as a hub through which internet requests are processed.

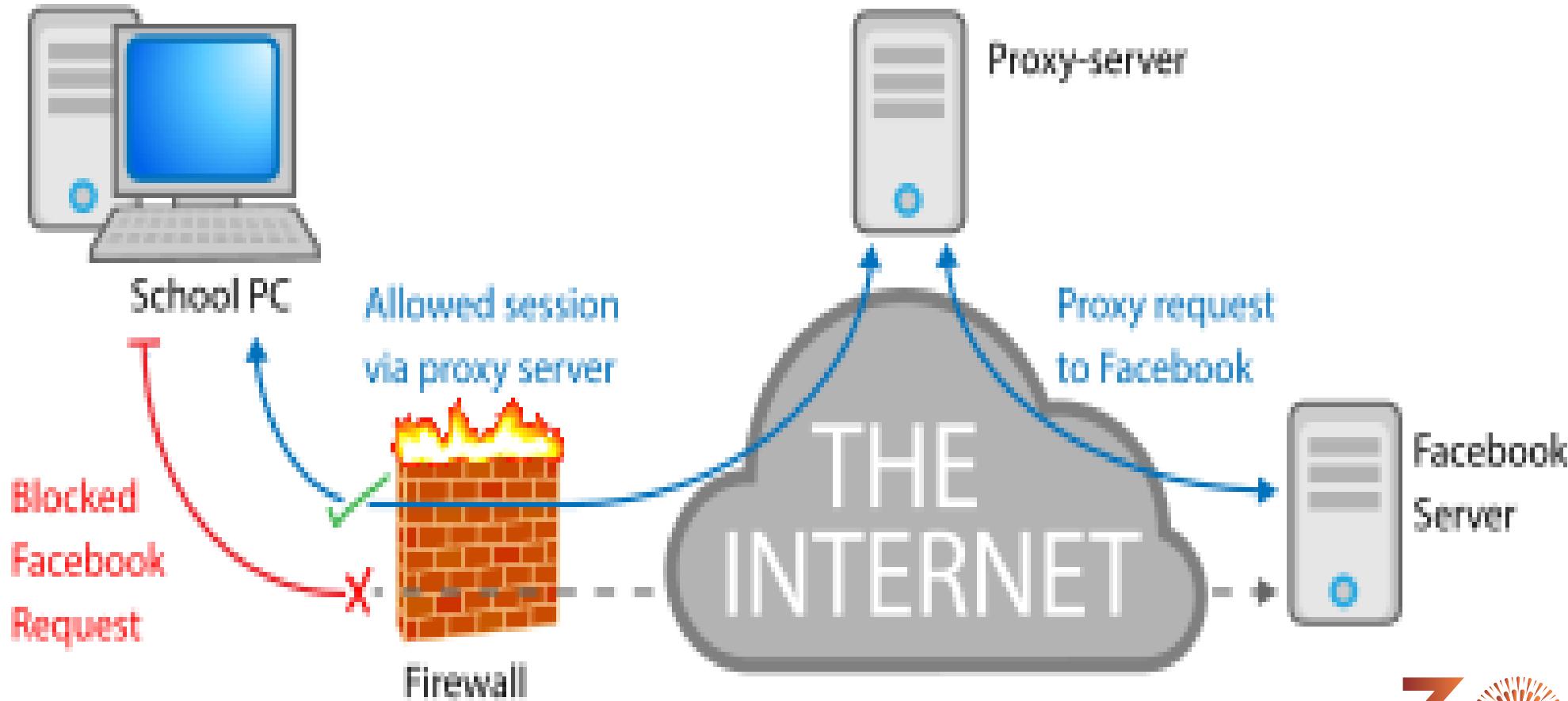
By connecting through one of these servers, your computer sends your requests to the server which then processes your request and returns what you were requesting.

OR

A proxy server is a computer that acts as a gateway between a local network and a larger-scale network such as the Internet.

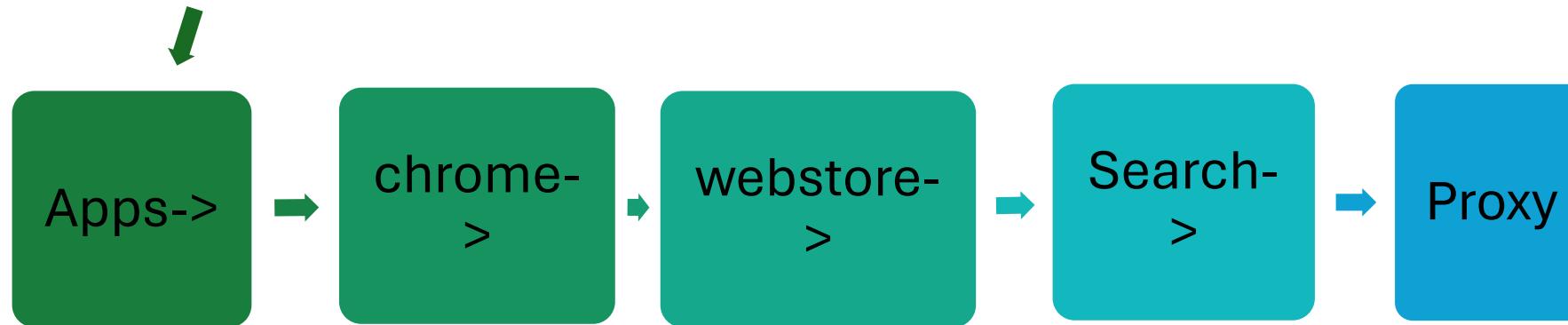


Proxy or Proxy Servers:



Proxy: Add extension

<https://chrome.google.com/webstore/category/extensions>



Task- proxy extension

Check on Google:

- What is my IP address??
- E.g. 192.168.30.40

Add extension of proxy to chrome
(e.g. Psiphon proxy, Anonymox)

Now check on Google:

- What is my IP address??
- E.g. 14.140.15.22

Is it same????

Proxy or Proxy Servers:

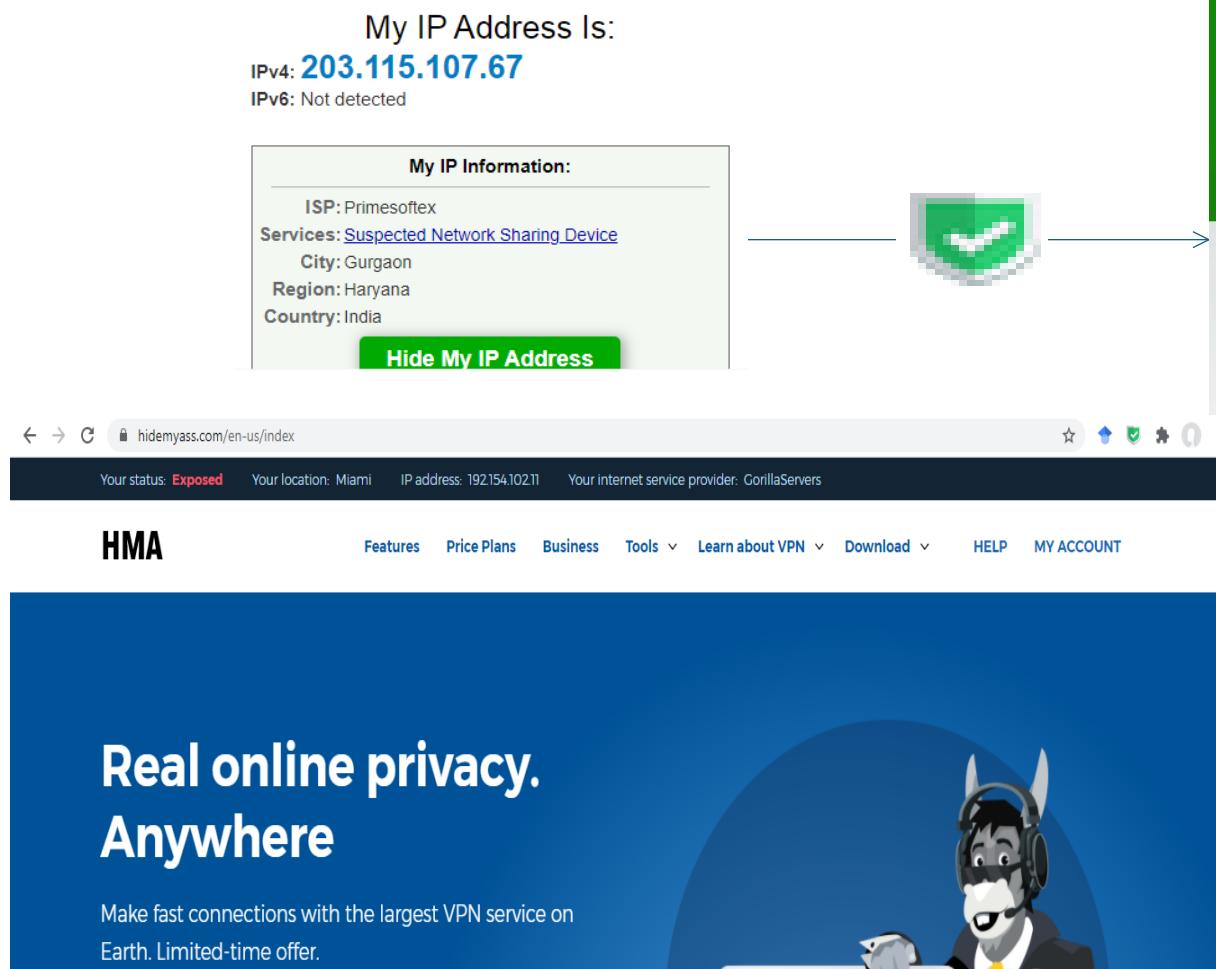
Advantages: Proxy servers provide increased performance and security.

E.g.:

- www.hidemyass.com
- www.proxy-list.org

https://www.youtube.com/watch?v=e48bOm6_zHI

Free Vpn Proxy



My IP Address Is:
IPv4: 203.115.107.67
 IPv6: Not detected

My IP Information:

- ISP: Primesoftex
- Services: [Suspected Network Sharing Device](#)
- City: Gurgaon
- Region: Haryana
- Country: India

Hide My IP Address

hidemyass.com/en-us/index

Your status: Exposed Your location: Miami IP address: 192.154.102.11 Your internet service provider: GorillaServers

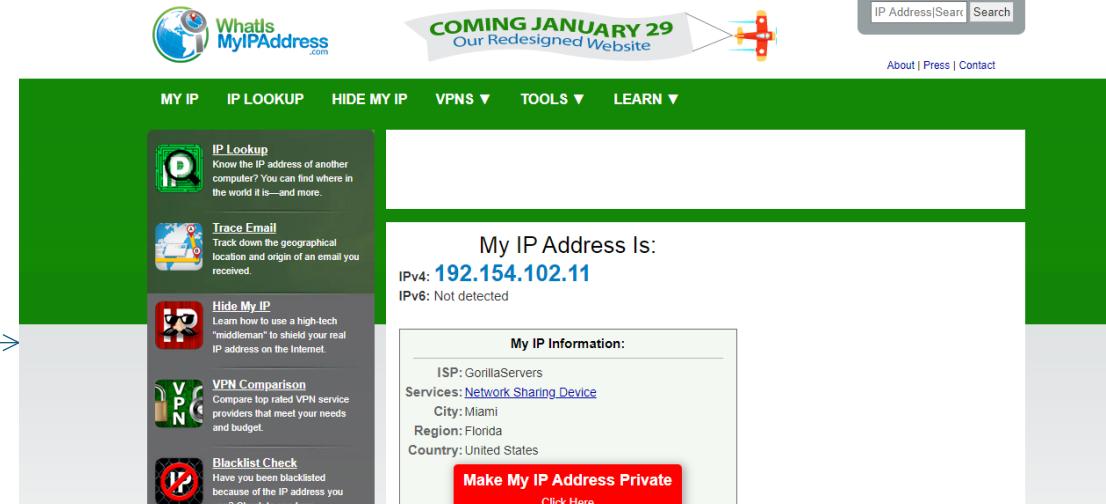
HMA

Features Price Plans Business Tools Learn about VPN Download HELP MY ACCOUNT

**Real online privacy.
Anywhere**

Make fast connections with the largest VPN service on Earth. Limited-time offer.

A shield icon with a checkmark inside is positioned between the first two screenshots.



What's MyIPAddress.com

COMING JANUARY 29 Our Redesigned Website

IP Address Search

MY IP IP LOOKUP HIDE MY IP VPNS TOOLS LEARN

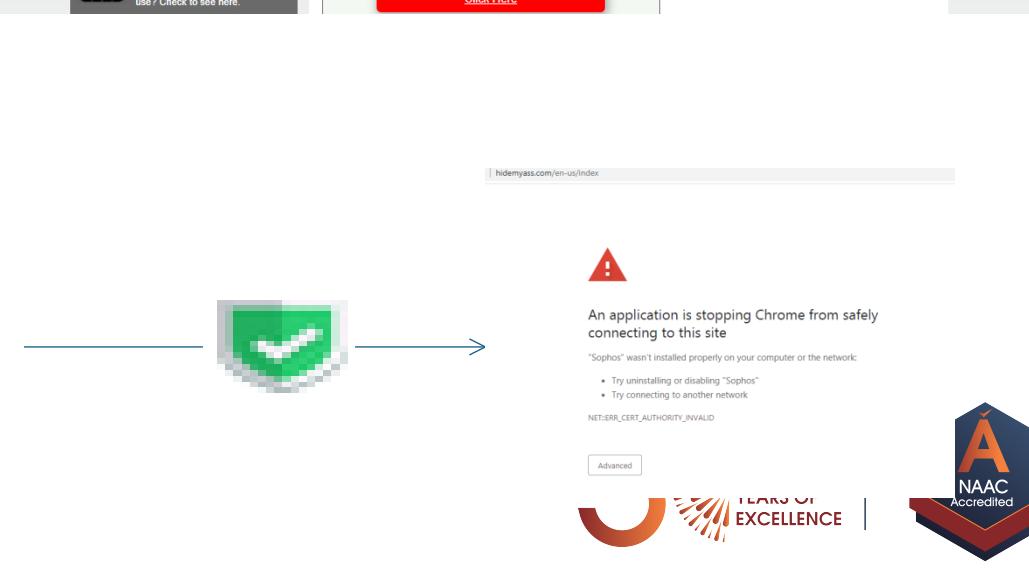
My IP Address Is:
IPv4: 192.154.102.11
 IPv6: Not detected

My IP Information:

- ISP: GorillaServers
- Services: [Network Sharing Device](#)
- City: Miami
- Region: Florida
- Country: United States

Make My IP Address Private Click Here

A shield icon with a checkmark inside is positioned between the second and third screenshots.



An application is stopping Chrome from safely connecting to this site

"Sophos" wasn't installed properly on your computer or the network:

- Try uninstalling or disabling "Sophos"
- Try connecting to another network

NET::ERR_CERT_AUTHORITY_INVALID

Advanced

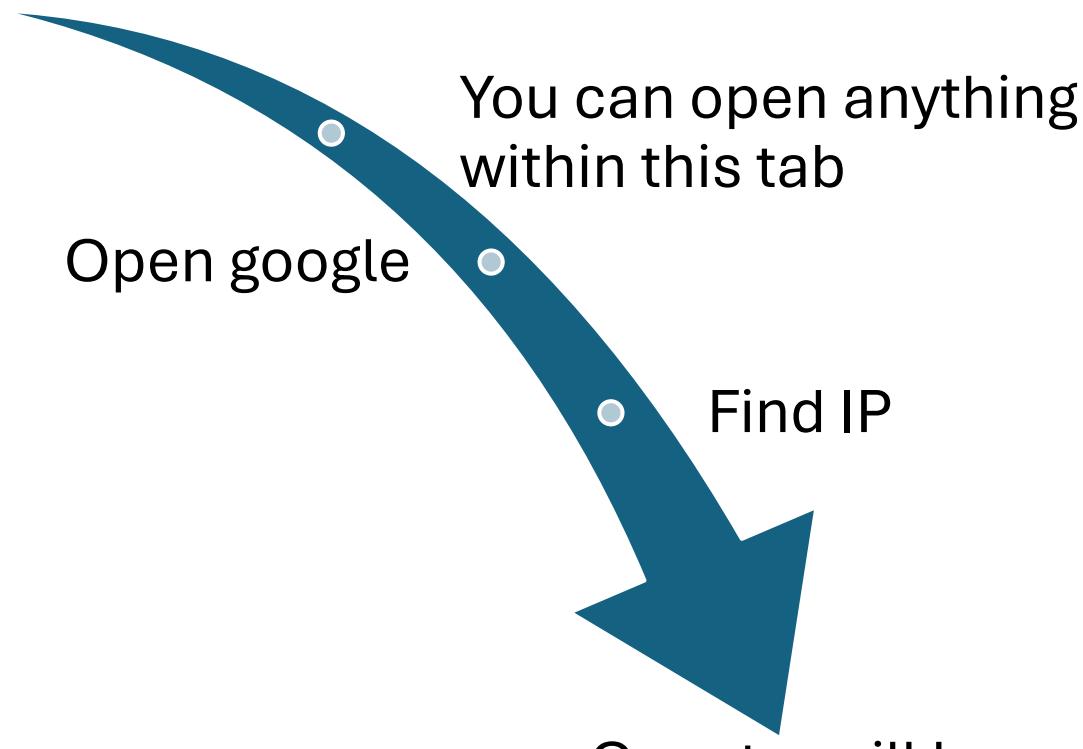
Years of Excellence

NAAC Accredited

A shield icon with a checkmark inside is positioned between the third and fourth screenshots.

Task

www.hidemyass.com (try at home)



VPN(Virtual Private Network)

VPN

- Extends across a public or shared network, and acts like a tunnel so you can exchange data securely and anonymously across the internet as if you were connected directly to a private network.

VPN

- Once you connect through a VPN, all your traffic becomes encrypted and your IP (Internet Protocol) address gets replaced with the address of the VPN server.

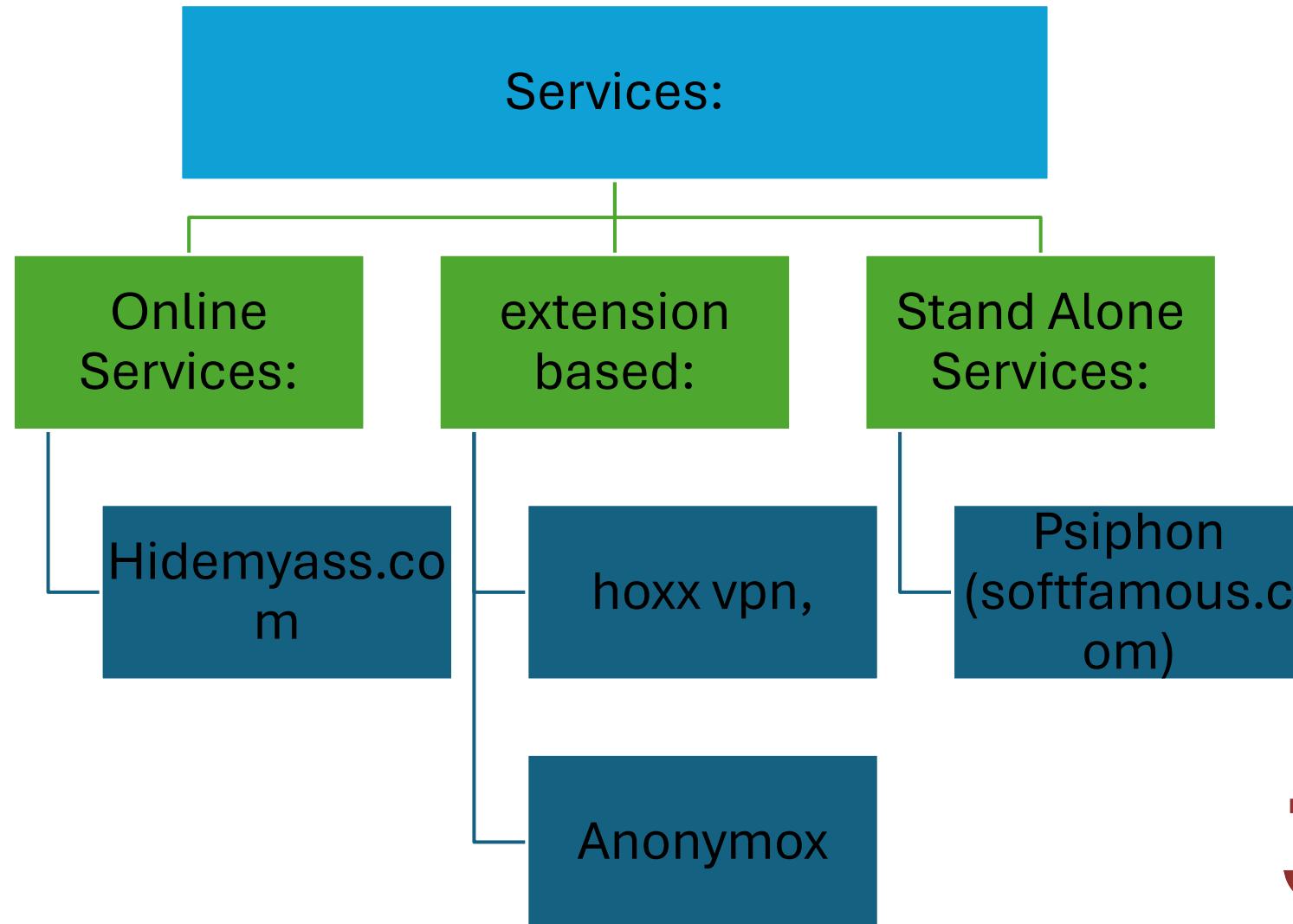
Quality

- Pick a quality VPN- benefit -that does not store information or interchanges logs.
- But why????

Eg:

- Vpngates.com
- open VPN
- You should select good quality VPN, because some VPN can leak your IPs

VPN



VPN vs Proxy

VPN	Proxy
VPN always requires an authentication	Proxy does not
VPN encrypts your entire data (e.g. URL etc.)	Proxy does not
e.g. VPN's are blocked in Dubai , Because VPN encrypts data. Dubai govt is not able to see that data, so have blocked.	Proxy's are not
VPNs are Paid Data Privacy as it encrypts (they say, they flush off logs, but actually they do not)	Proxy's are not

DNS (Domain Name System)

DNS

- is the phonebook of the Internet.

e.g.

- google.com ---> IP of google --> open's google

Web browsers interact through Internet Protocol (IP) addresses.

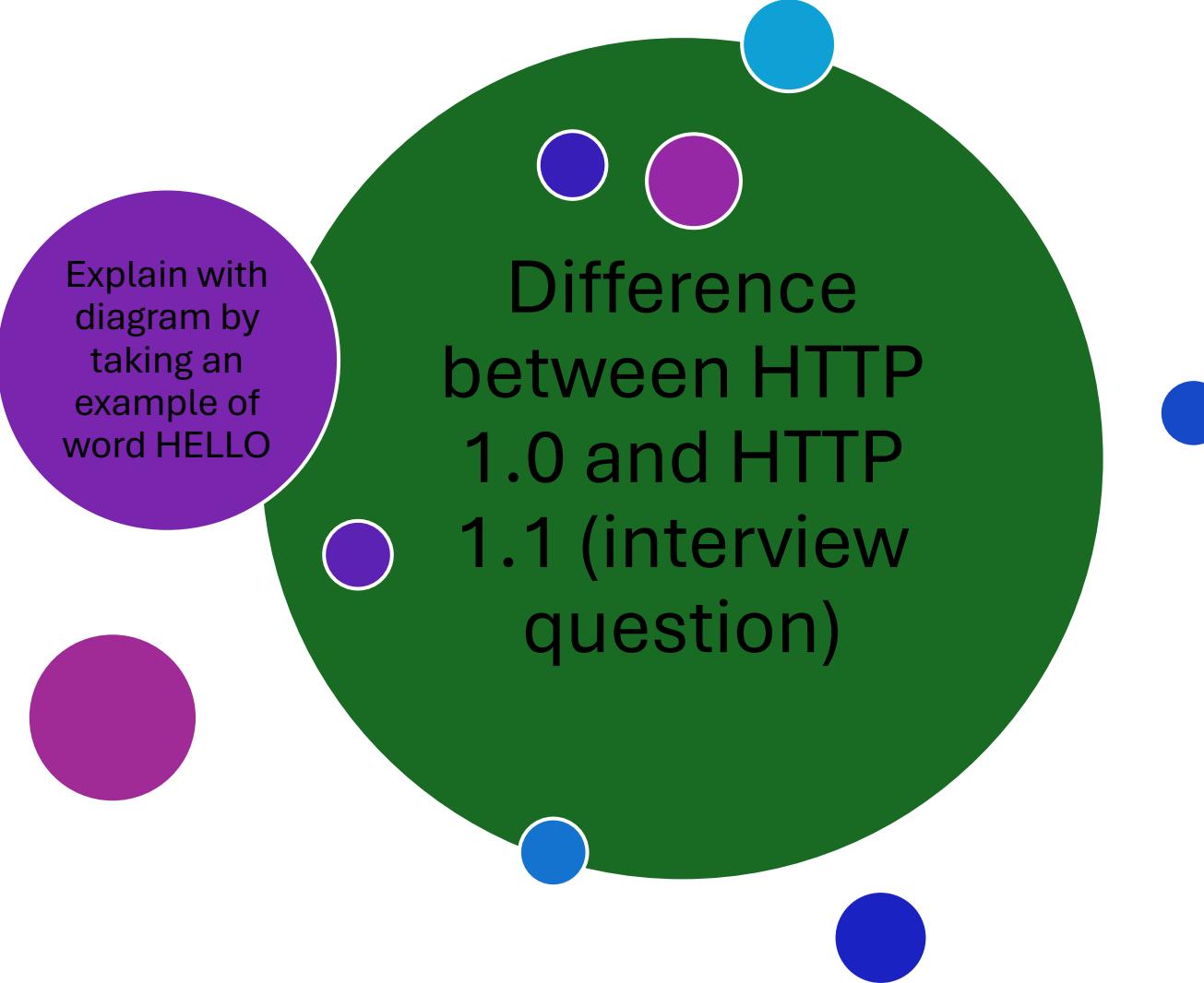
DNS translates domain names to IP addresses so browsers can load Internet resources.

How DNS works:

- <https://www.youtube.com/watch?v=mpQZVYPUdGU>



Network Protocols: In Class Task



Difference
between HTTP
1.0 and HTTP
1.1 (interview
question)

Explain with
diagram by
taking an
example of
word HELLO