

# **The Internet & The Web**

# The Internet

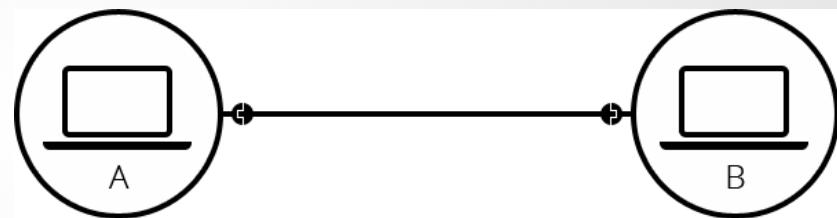
# The Internet

- Network of networks
- Individual devices on the network are assigned IP addresses



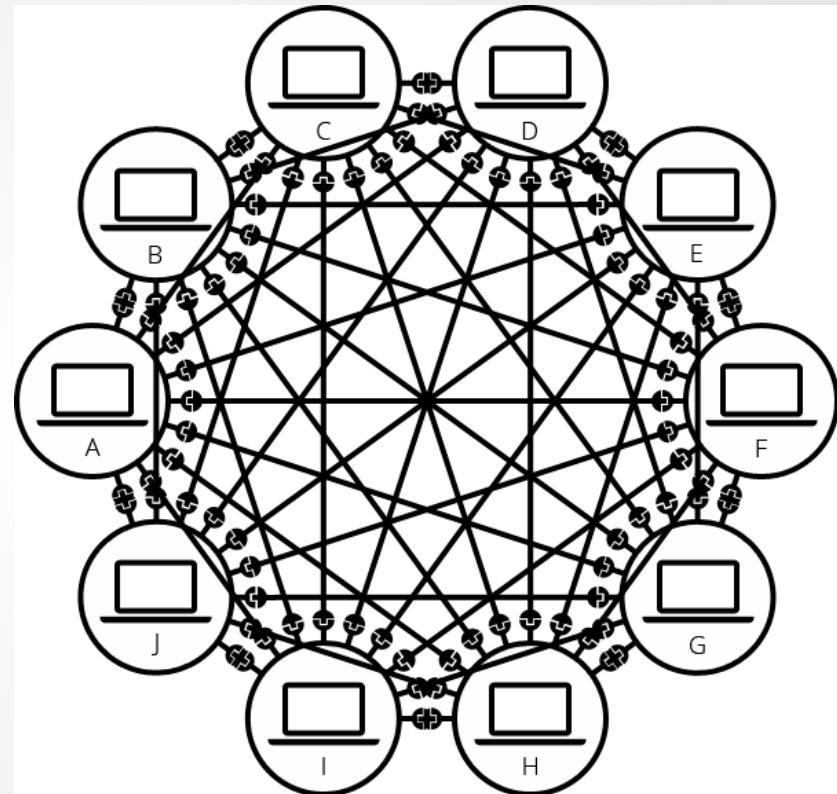
# Why a network of networks?

Connecting one computer to another is simple.



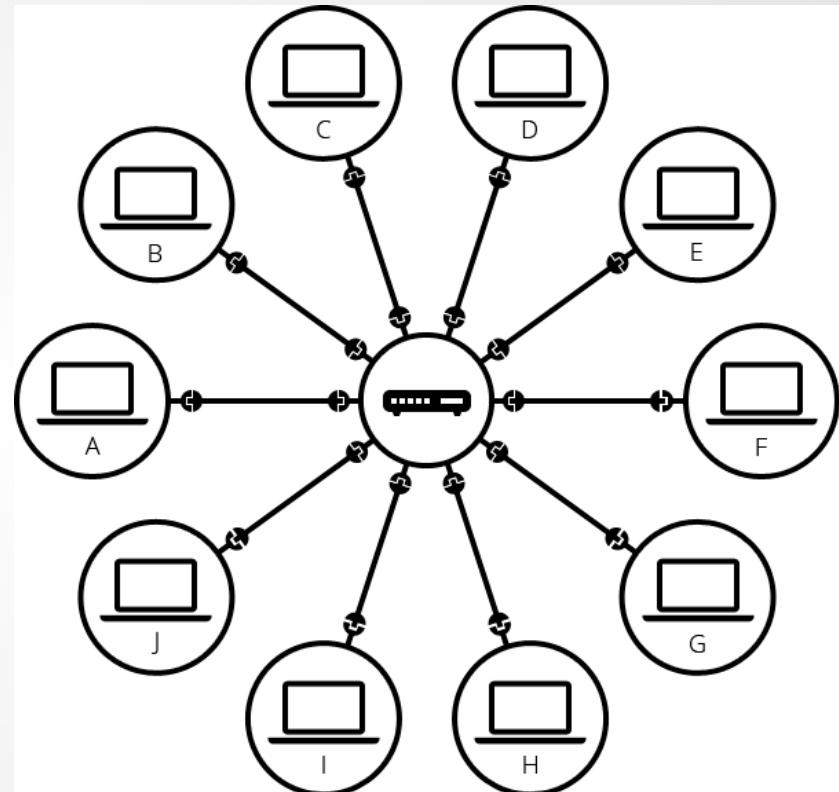
# Why a network of networks?

Connecting ten computers to each other is not simple.



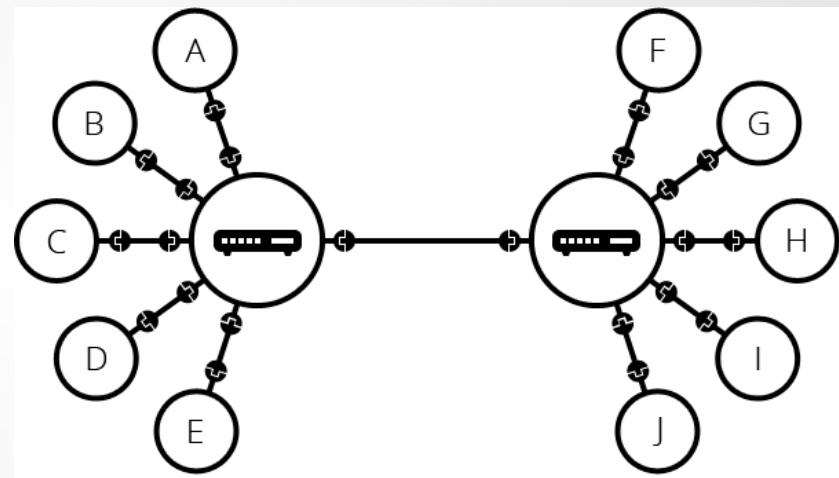
# Why a network of networks?

But maybe we can make it simpler.



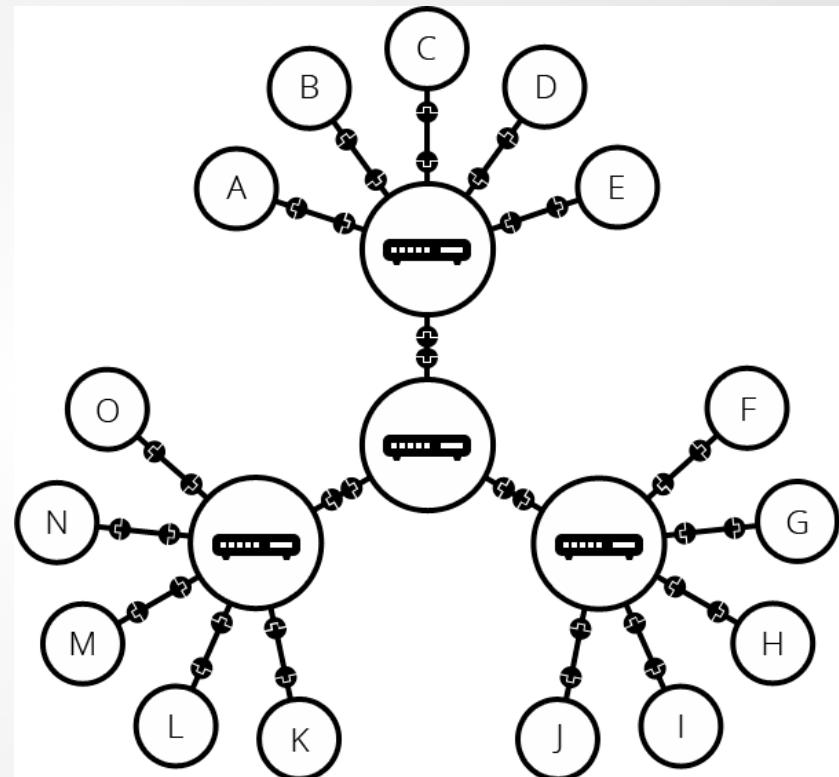
# Why a network of networks?

Individual networks can be connected to each other.



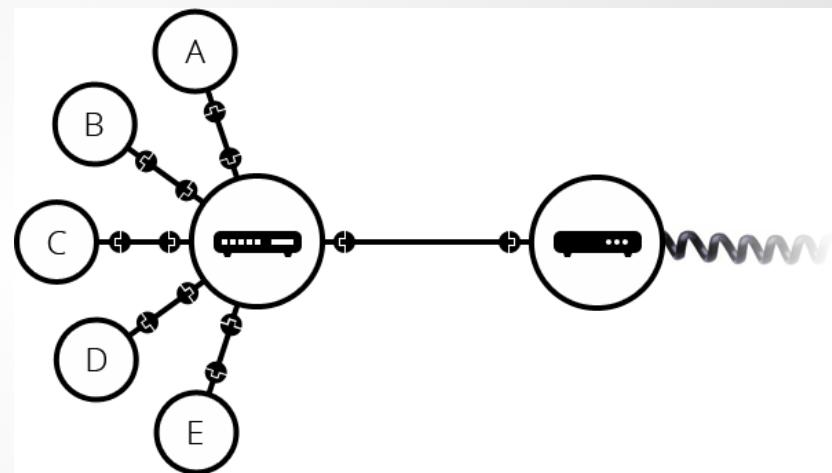
# Why a network of networks?

Like individual computers, networks can be connected to each other via a router.



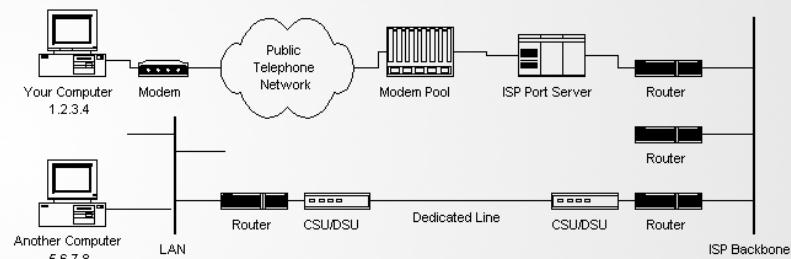
# Why a network of networks?

Somehow, the increasing complexity and number of connections needs to be managed.

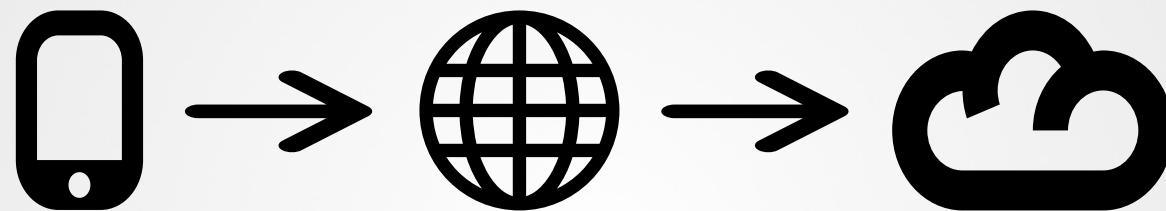


# Why a network of networks?

The infrastructure has to support the complications of sending data from network to network.

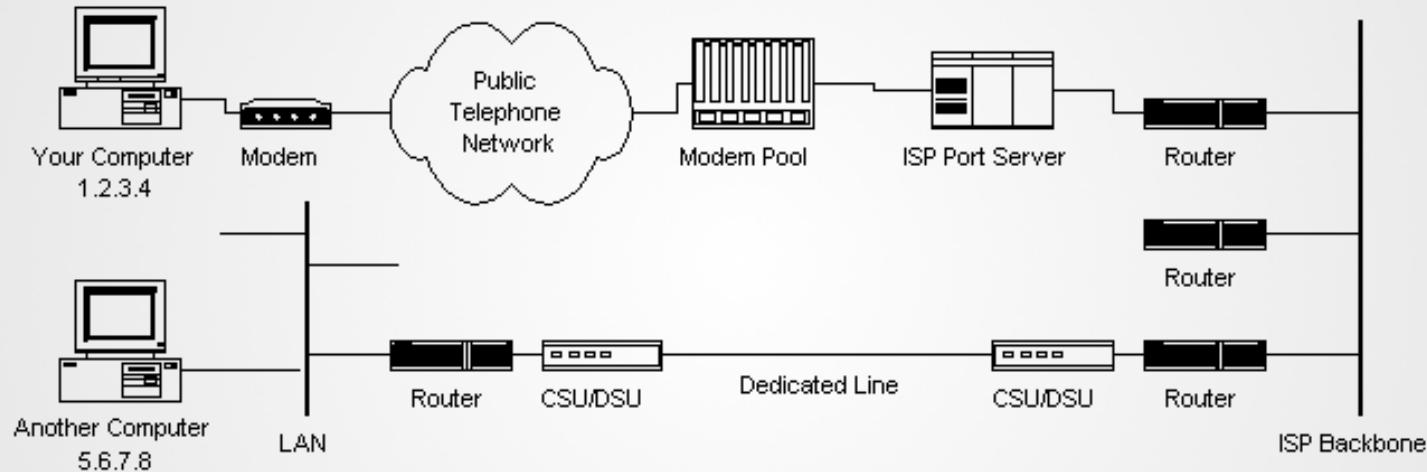


# Networking Infrastructure



Data is sent outward from the device &  
LAN through the ISP

# Two Routing Examples

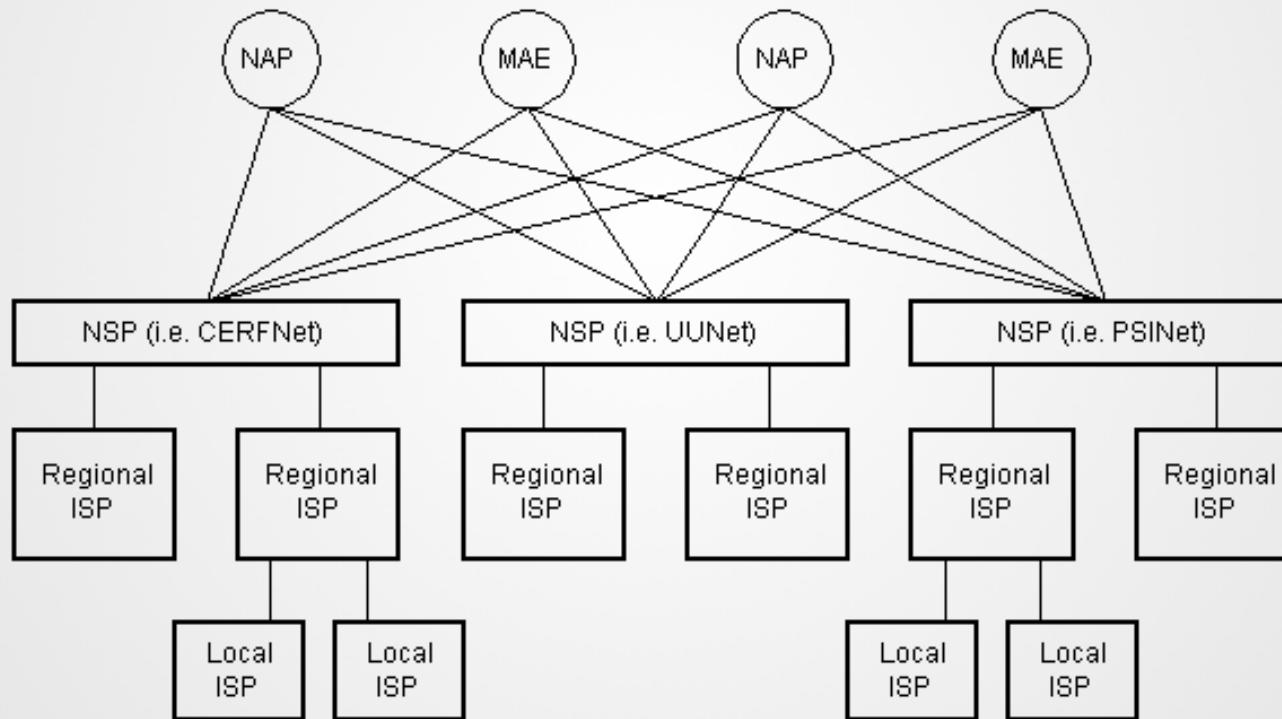


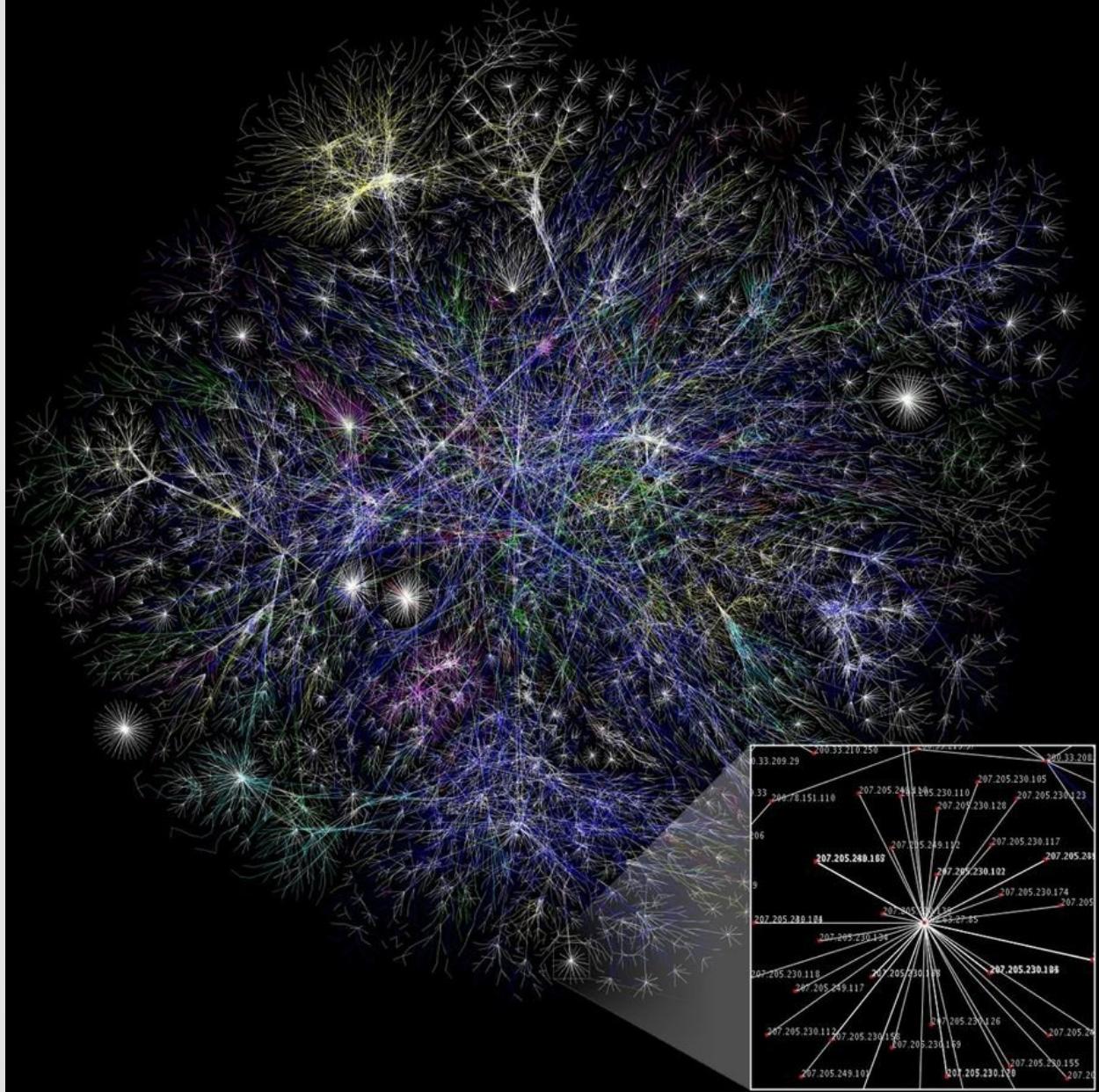
# traceroute

# **Network Service Providers**

Data hops from network to network until it reaches its destination

The large networks that make up the backbone of the Internet are known as **Network Service Providers**

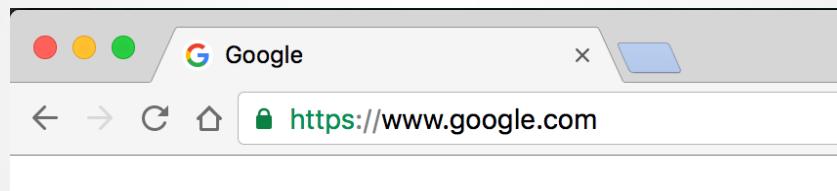




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# Internet Routing

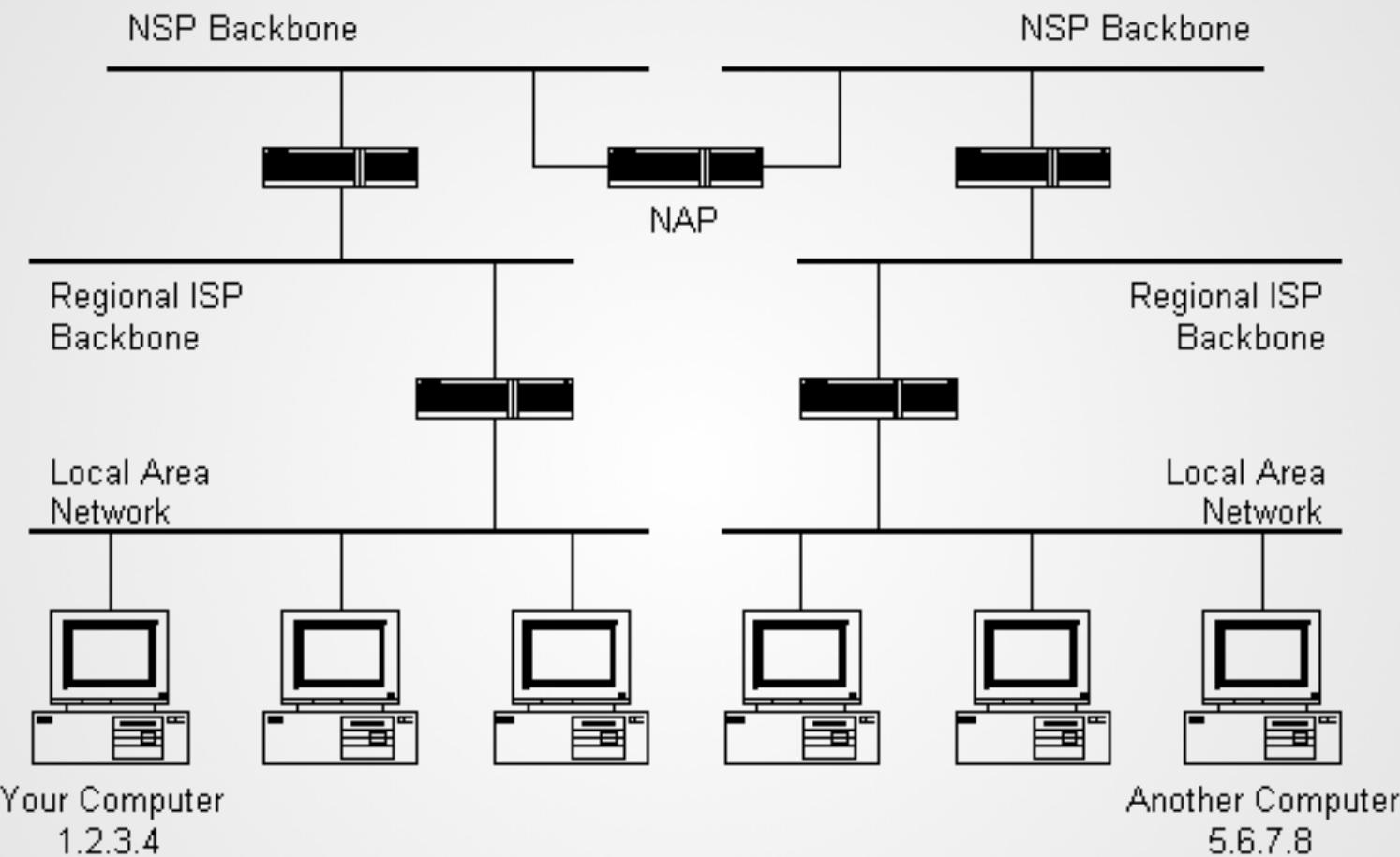
How does a browser or server know which IP address corresponds to a domain?



# **DOMAIN NAME SERVICE (DNS)**

## **FUNCTIONS SIMILAR TO AN NSP**

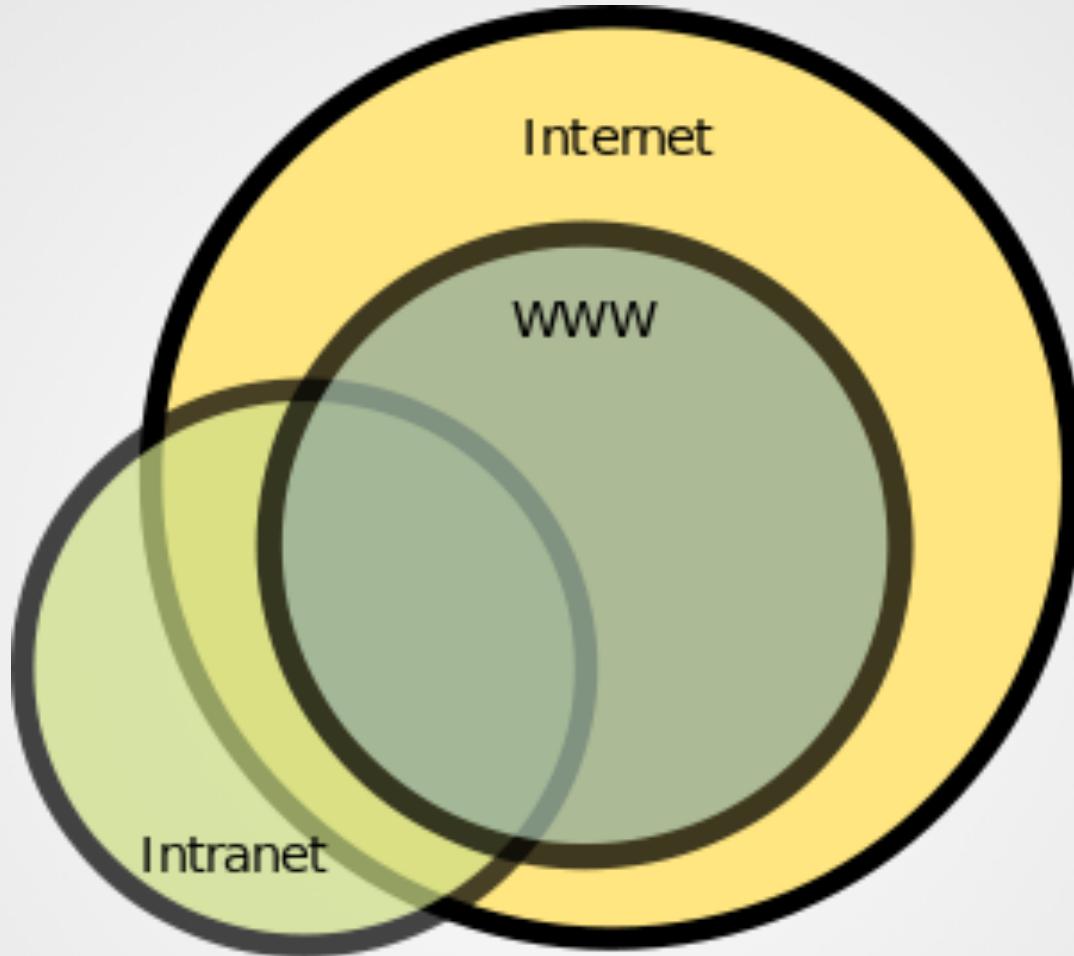
If an IP address cannot be found in the local environment, then the request travels "up" the hierarchy until it identifies a match



# The Internet vs The Web

A photograph of Al Gore, former Vice President of the United States, speaking at a podium. He is gesturing with his right hand, pointing his index finger towards the camera. He has short brown hair and is wearing a dark suit jacket over a light blue button-down shirt.

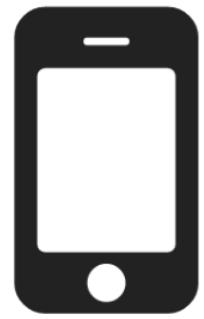
YOU'RE  
WELCOME  
INTERNET.



The Internet is the network and infrastructure that allows global communication.

The World Wide Web is a subset of the Internet that makes web browsing possible

The technology that makes this possible is known as Hyper Text Transfer Protocol (HTTP). HTTP is the protocol that clients (phones, PCs, etc) use to communicate and transfer web site data



Client



request



response



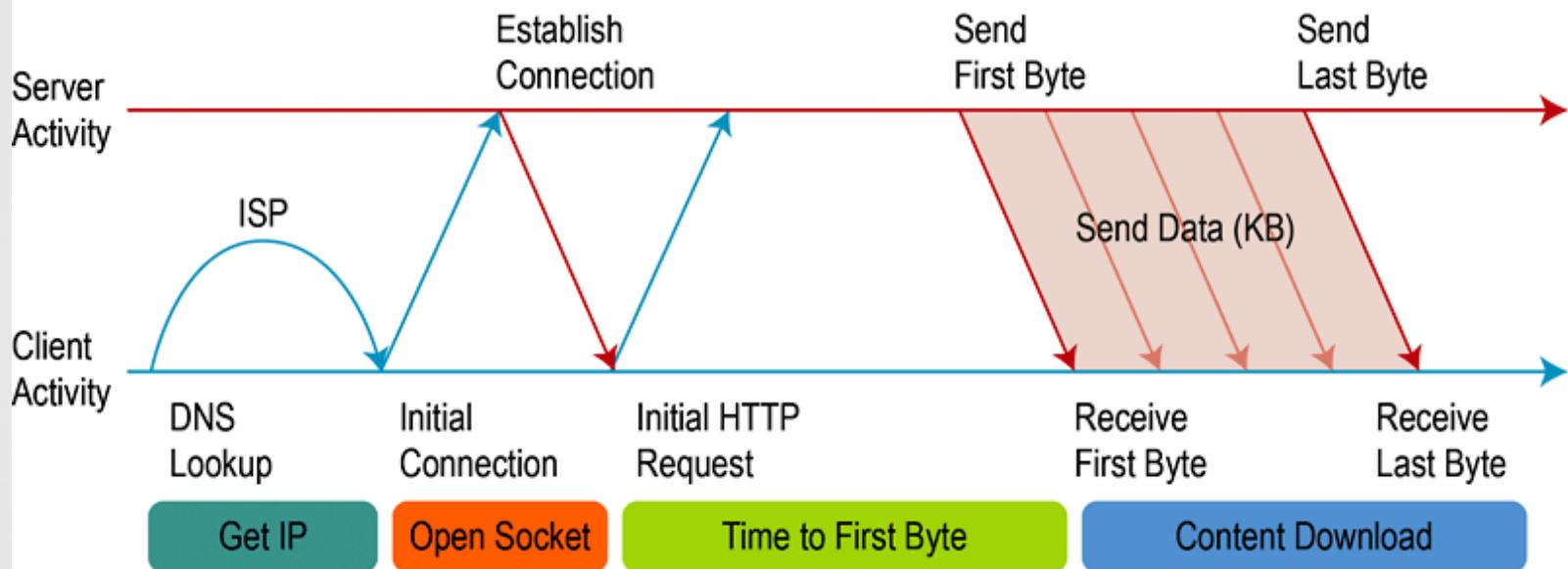
Server



HTTP



# The HTTP Request



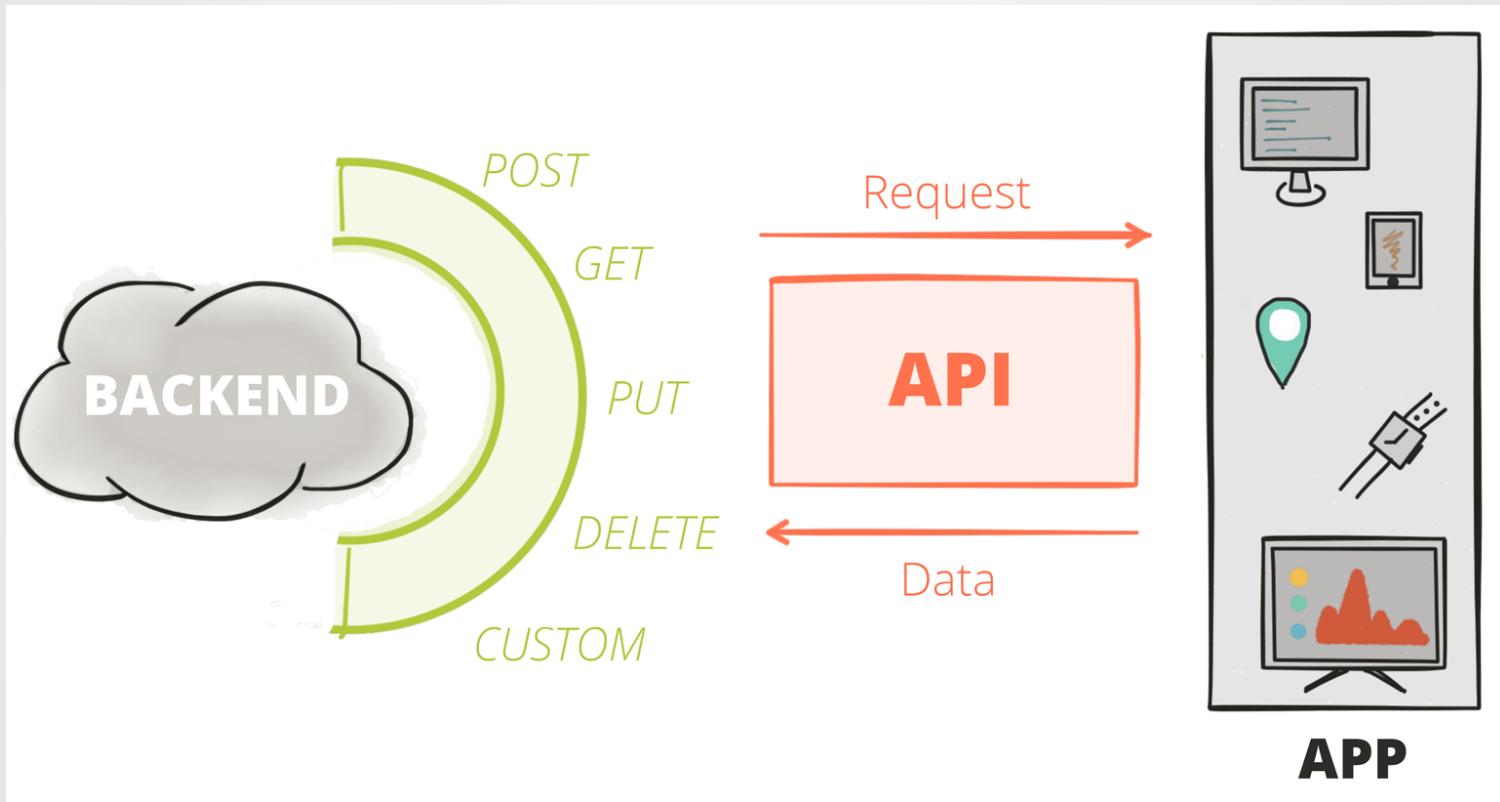
HTTP is what's known as an application protocol. This means that it is a method by which applications communicate on the Internet

Other common application protocols:

- Simple Mail Transfer Protocol (SMTP)
- File Transfer Protocol (FTP)

# What's an API?

# Application Programming Interface



# Example