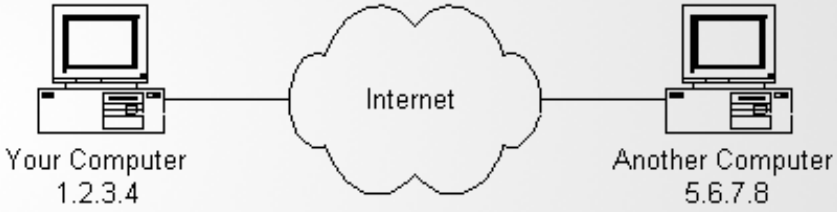
The Internet & The Web

The Internet

The Internet

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

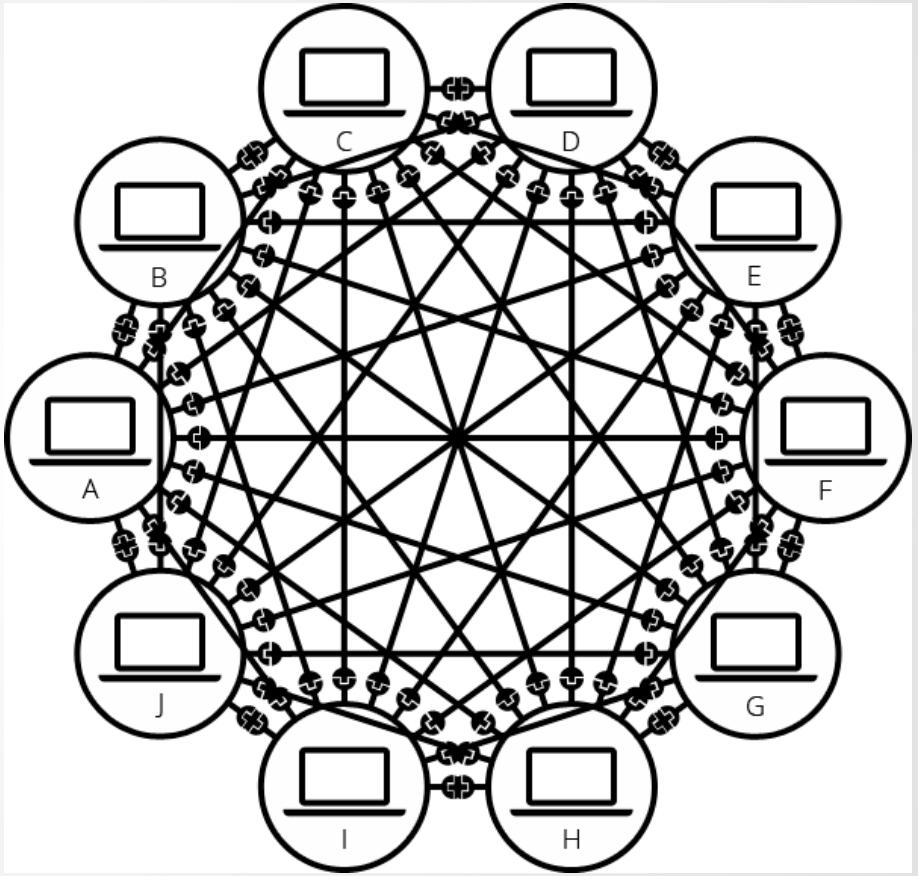


Why a network of networks?

Connecting one computer to another is simple.

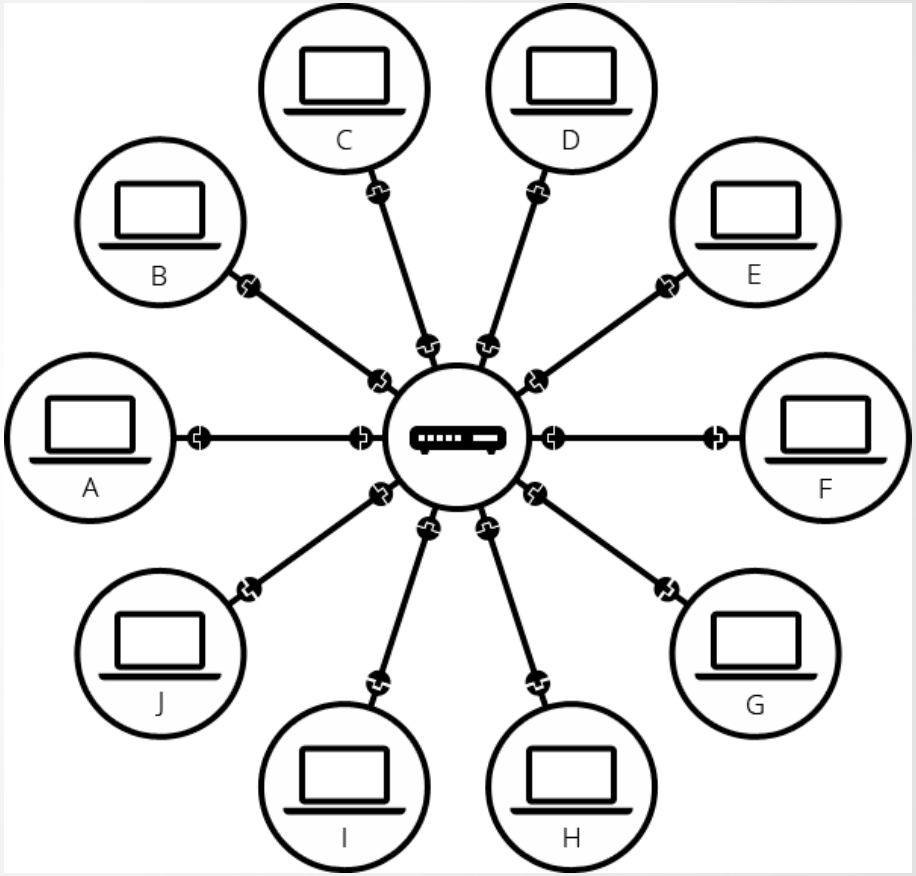
Why a network of networks?

Connecting ten computers to each other is not simple.



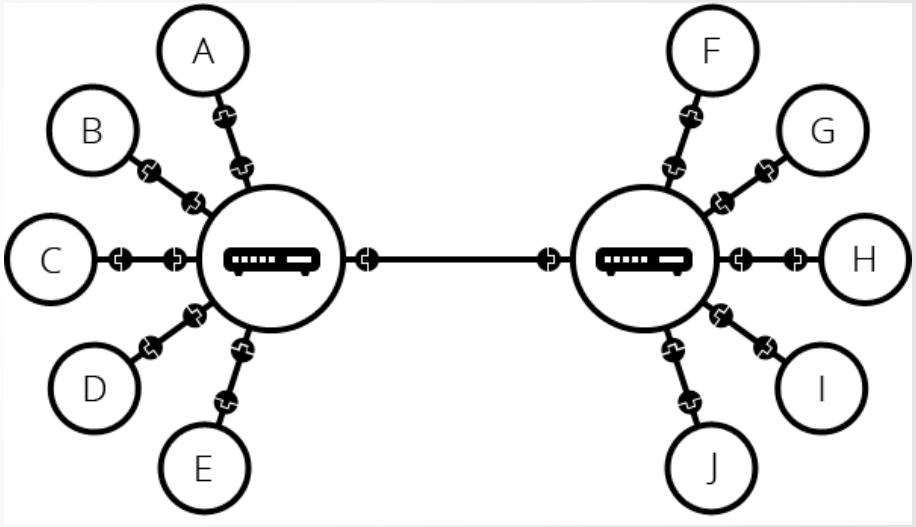
Why a network of networks?

But maybe we can make it simpler.



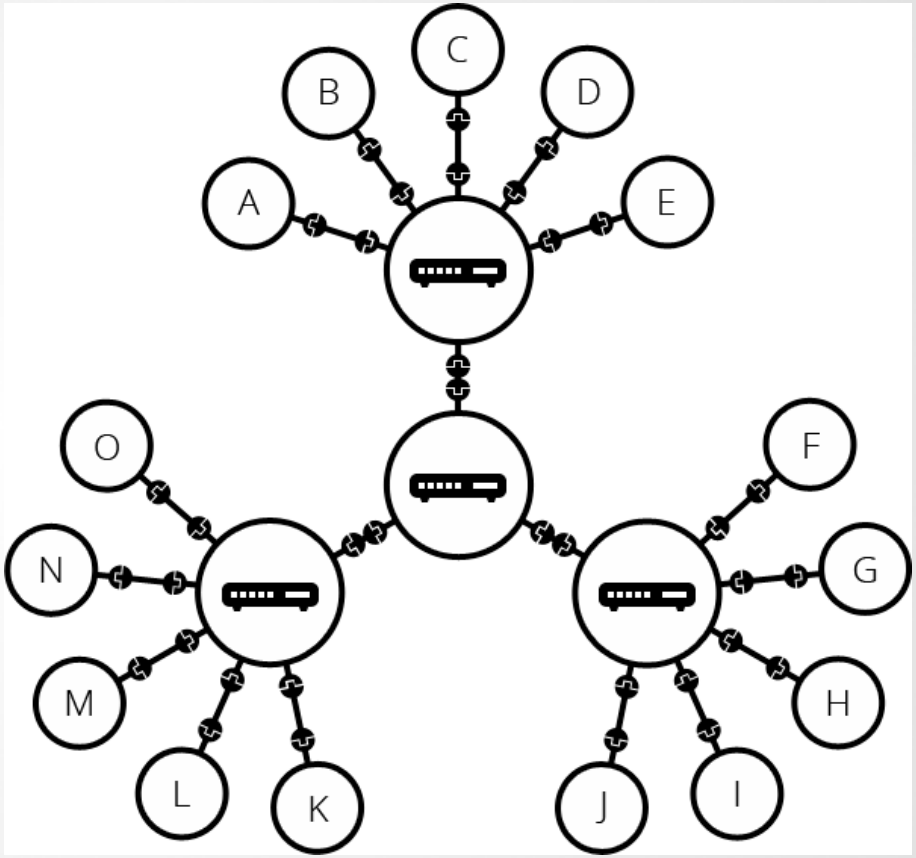
Why a network of networks?

Individual networks can be connected to each other.



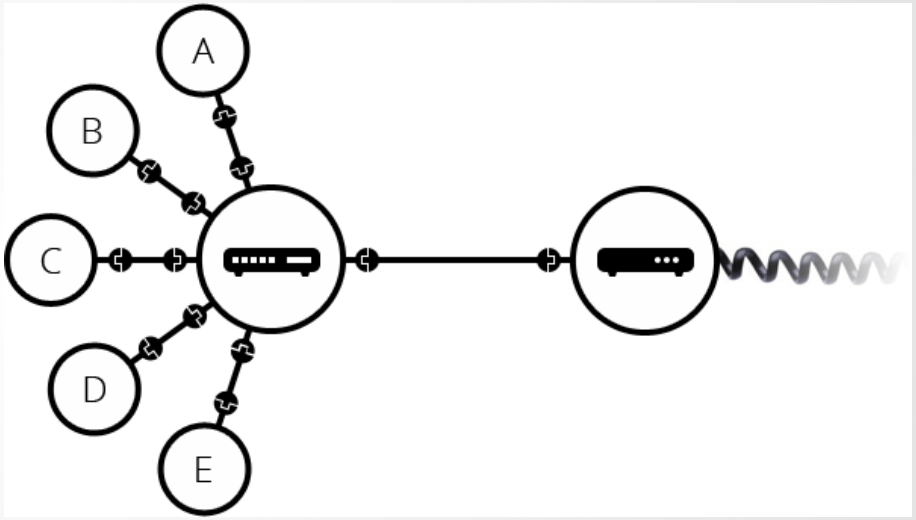
Why a network of networks?

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



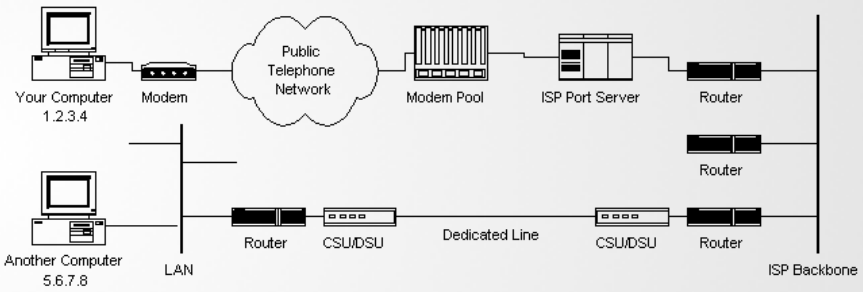
Why a network of networks?

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

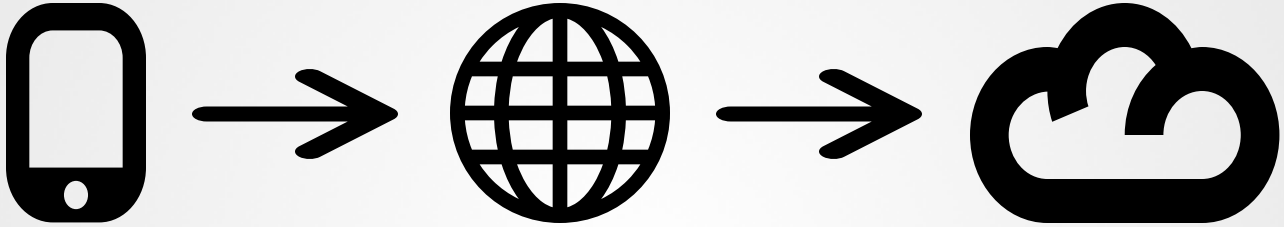


Why a network of networks?

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

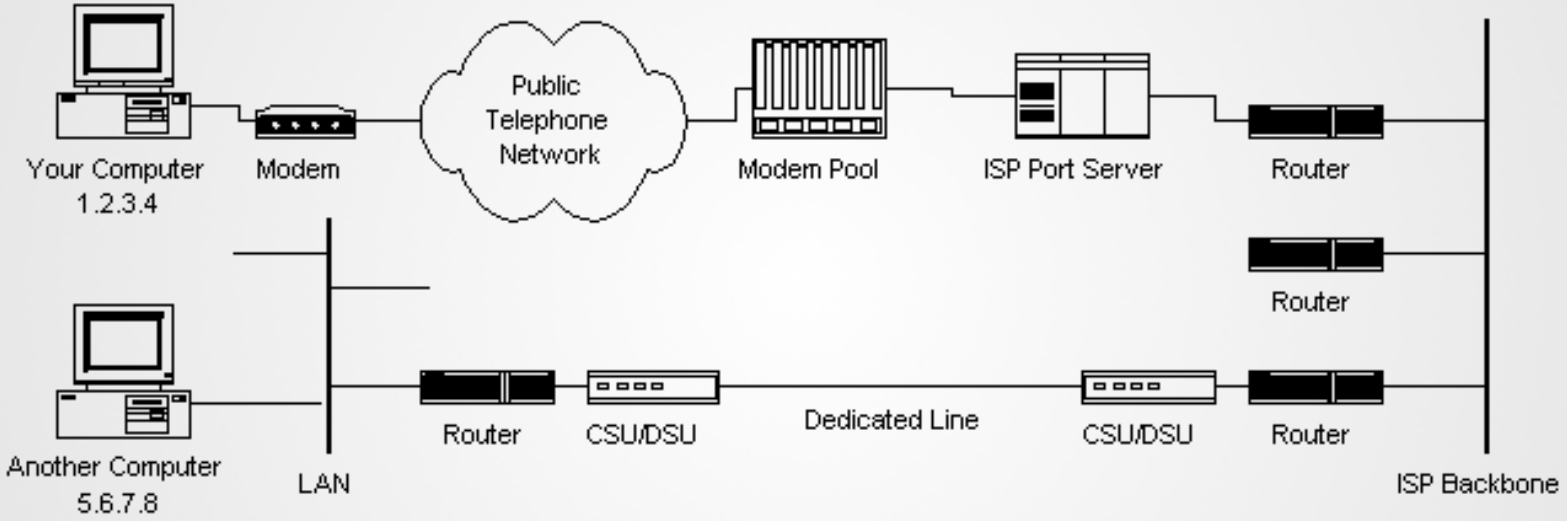


Networking Infrastructure



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

Two Routing Examples

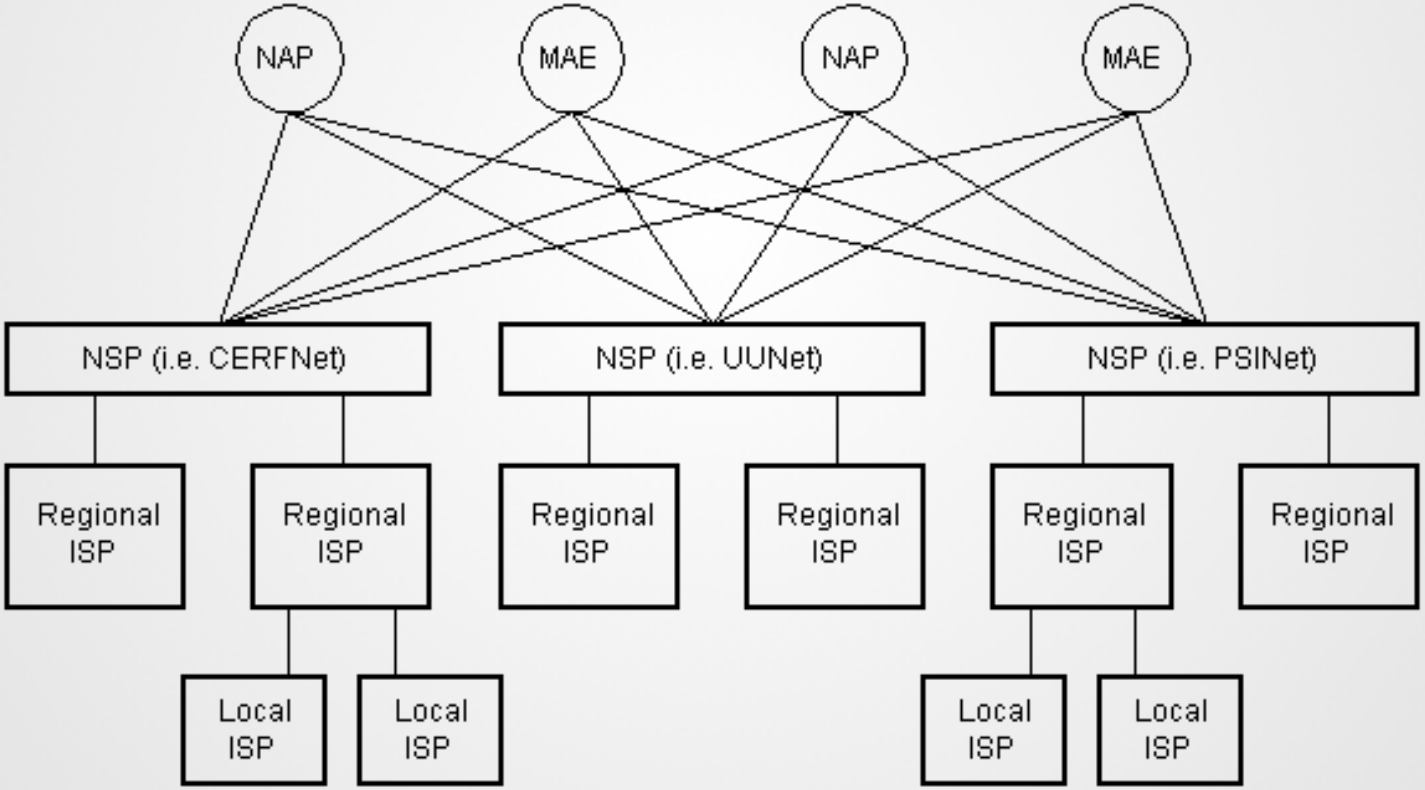


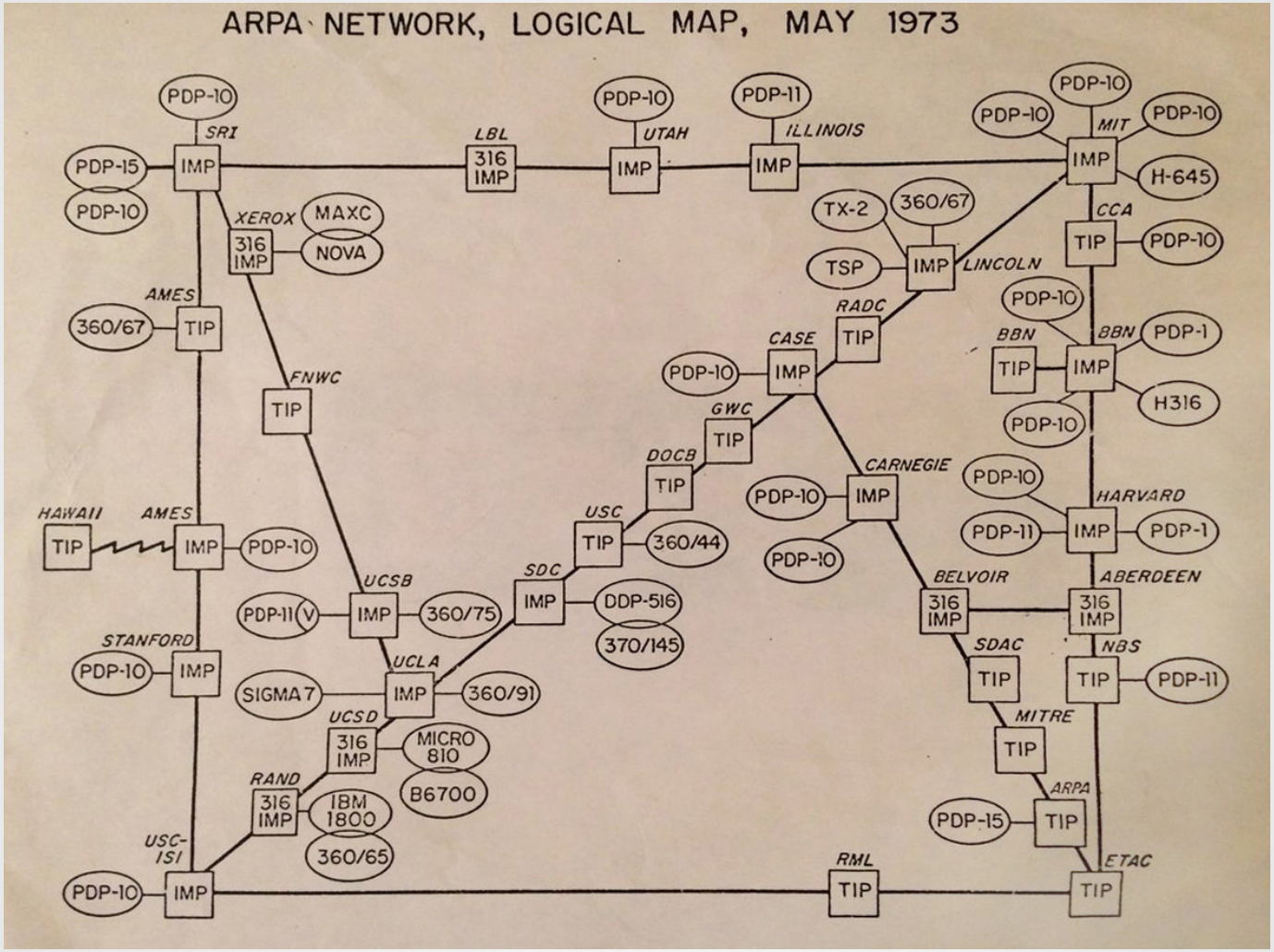
traceroute

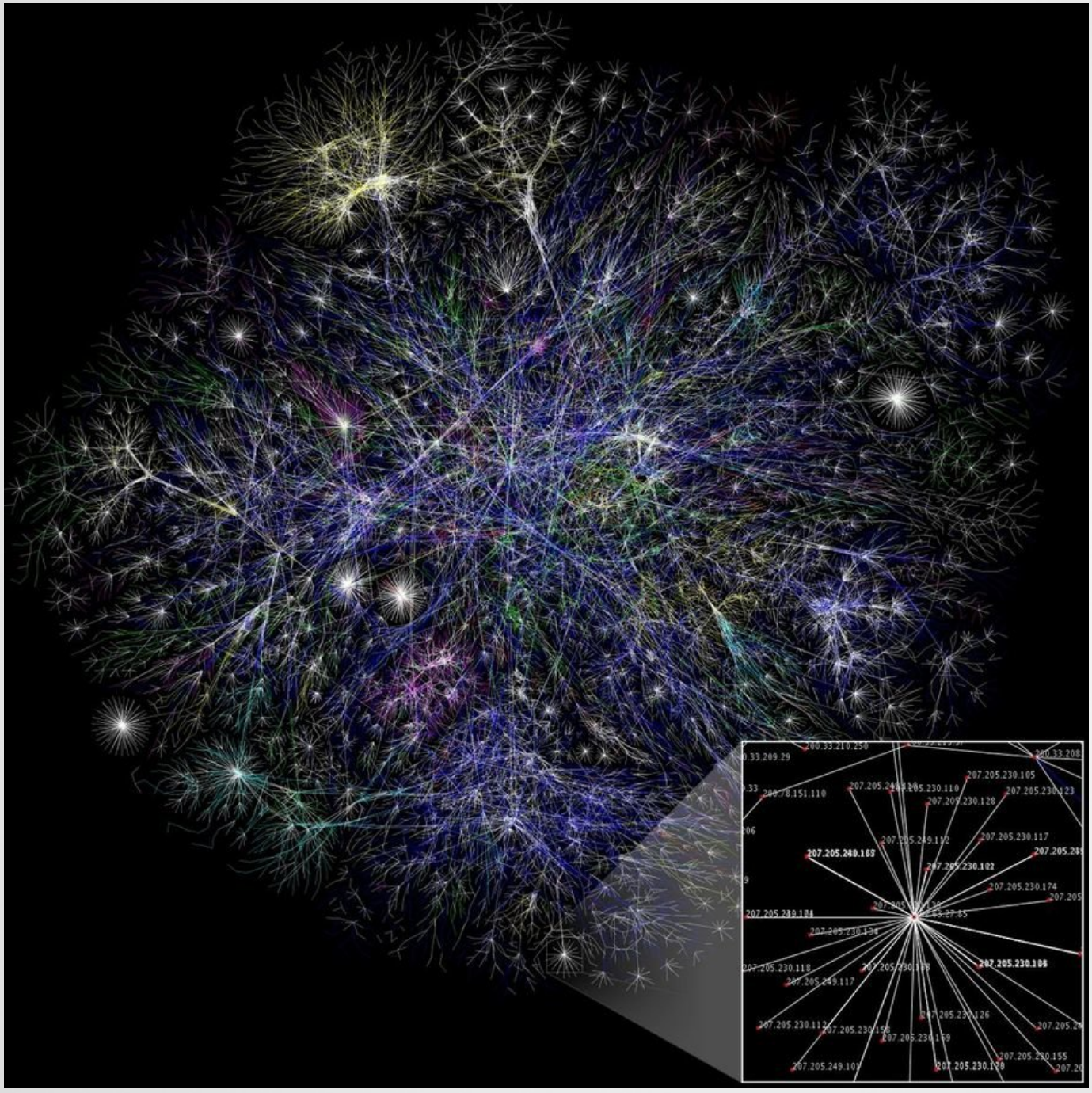
Network Service Providers

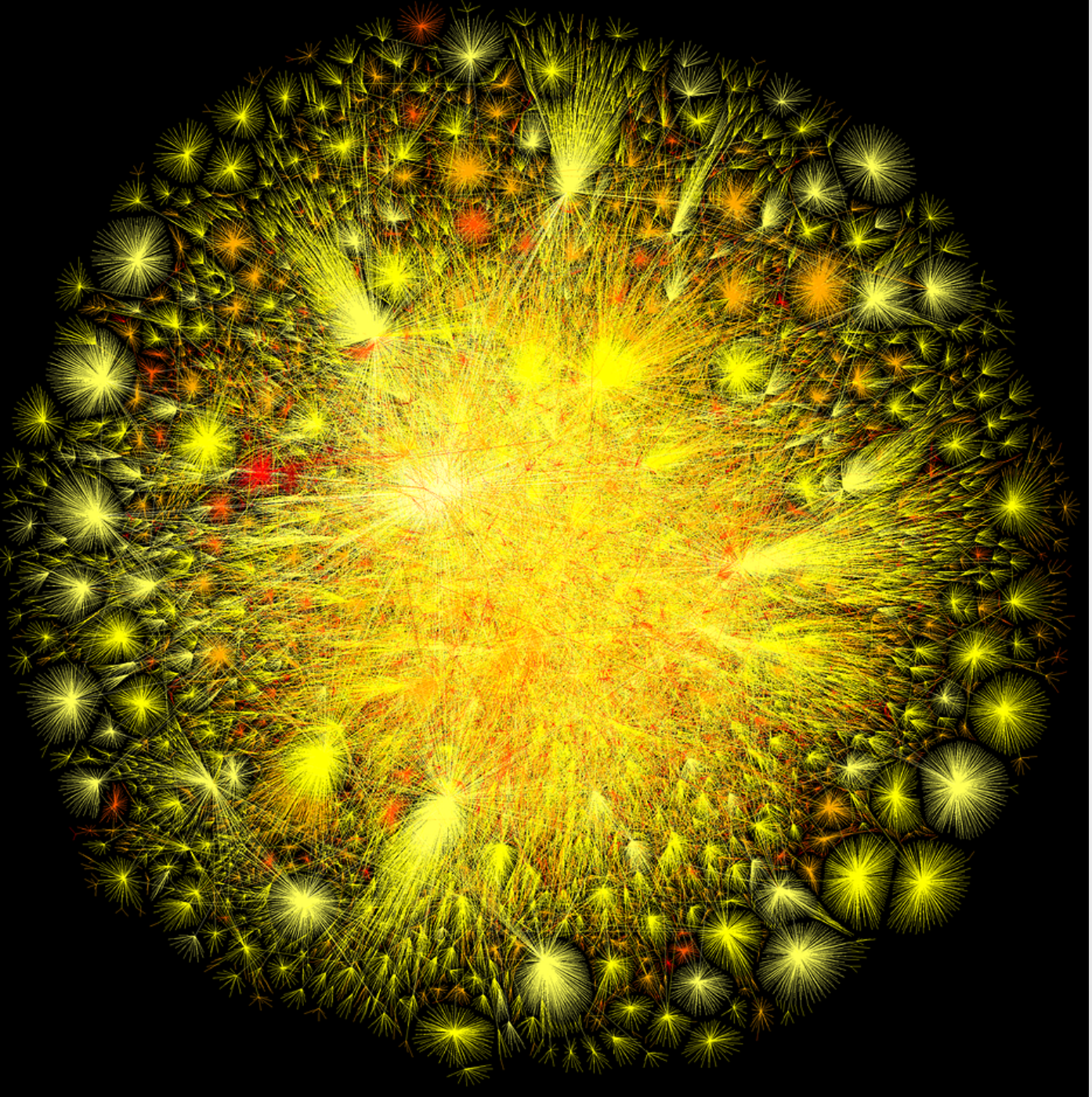
Data hops from network to network until it reaches its destination

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



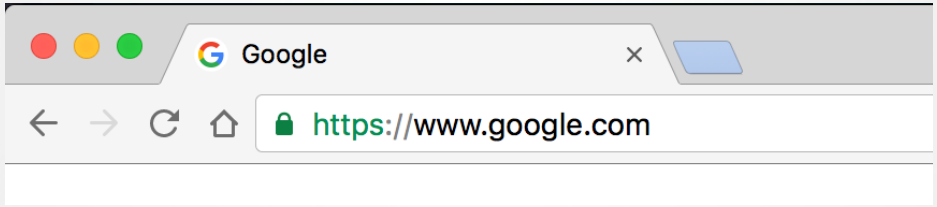






Internet Routing

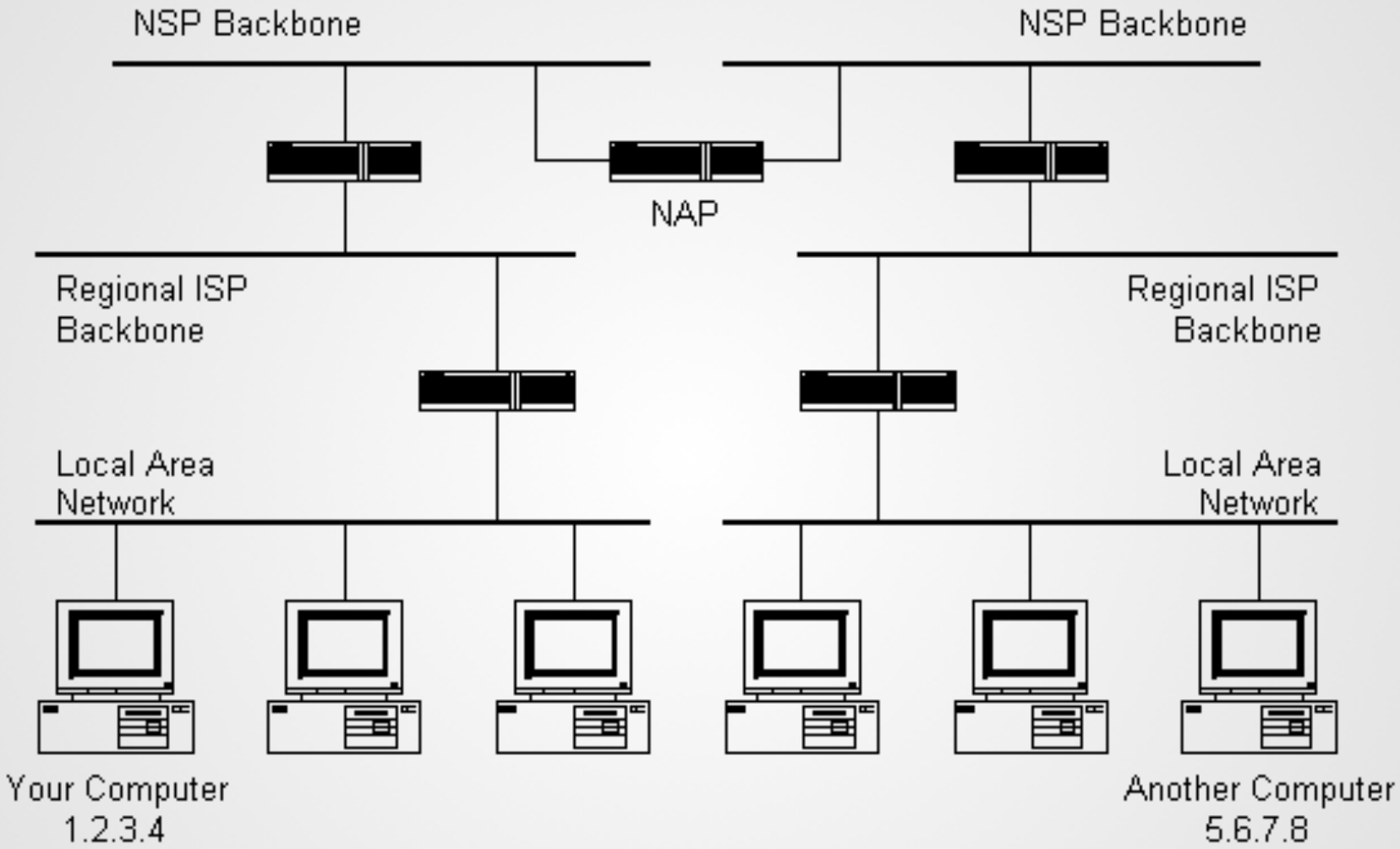
How does a browser or server know which IP address corresponds to a domain?



DOMAIN NAME SERVICE (DNS)

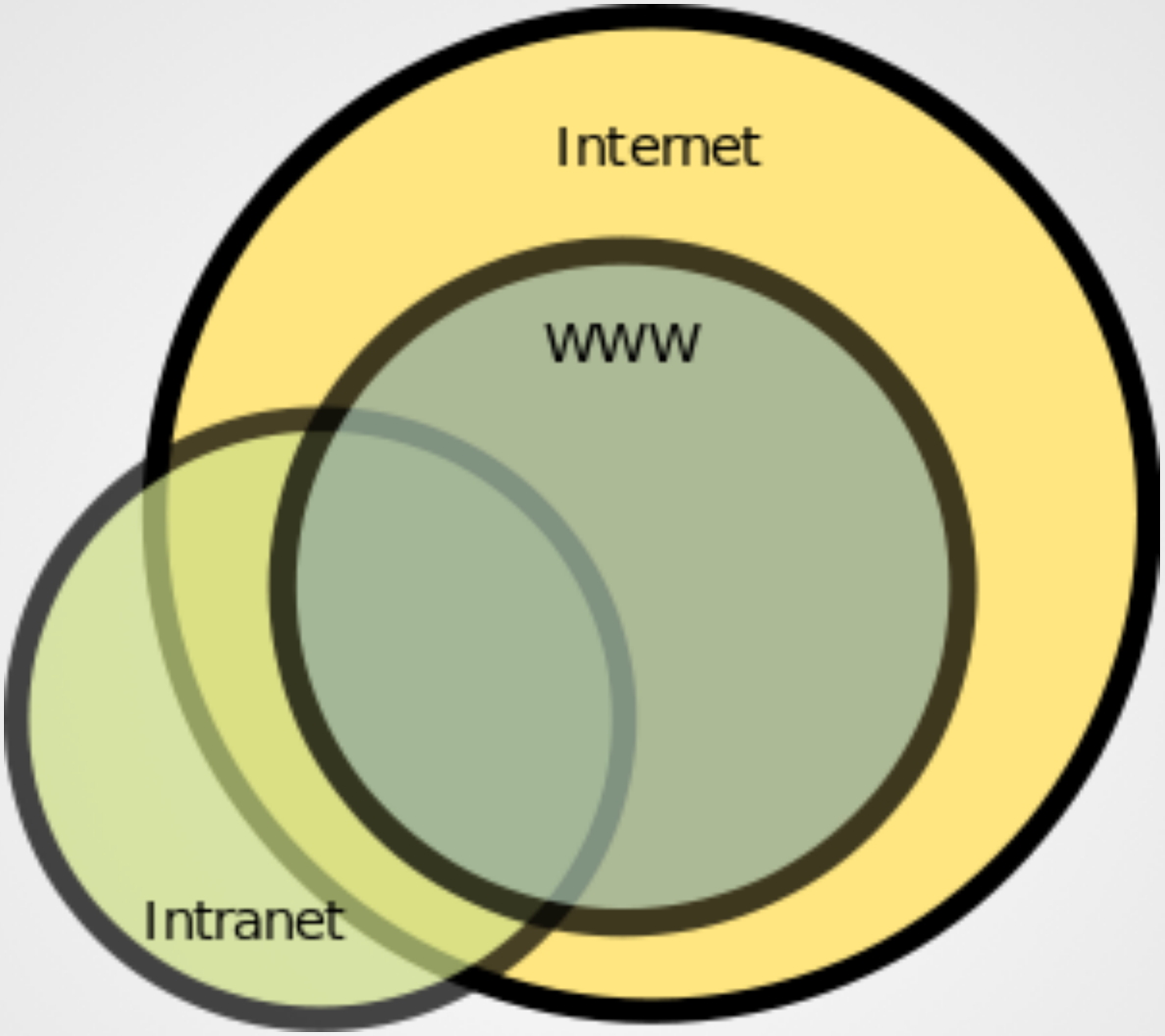
FUNCTIONS SIMILAR TO AN NSP

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

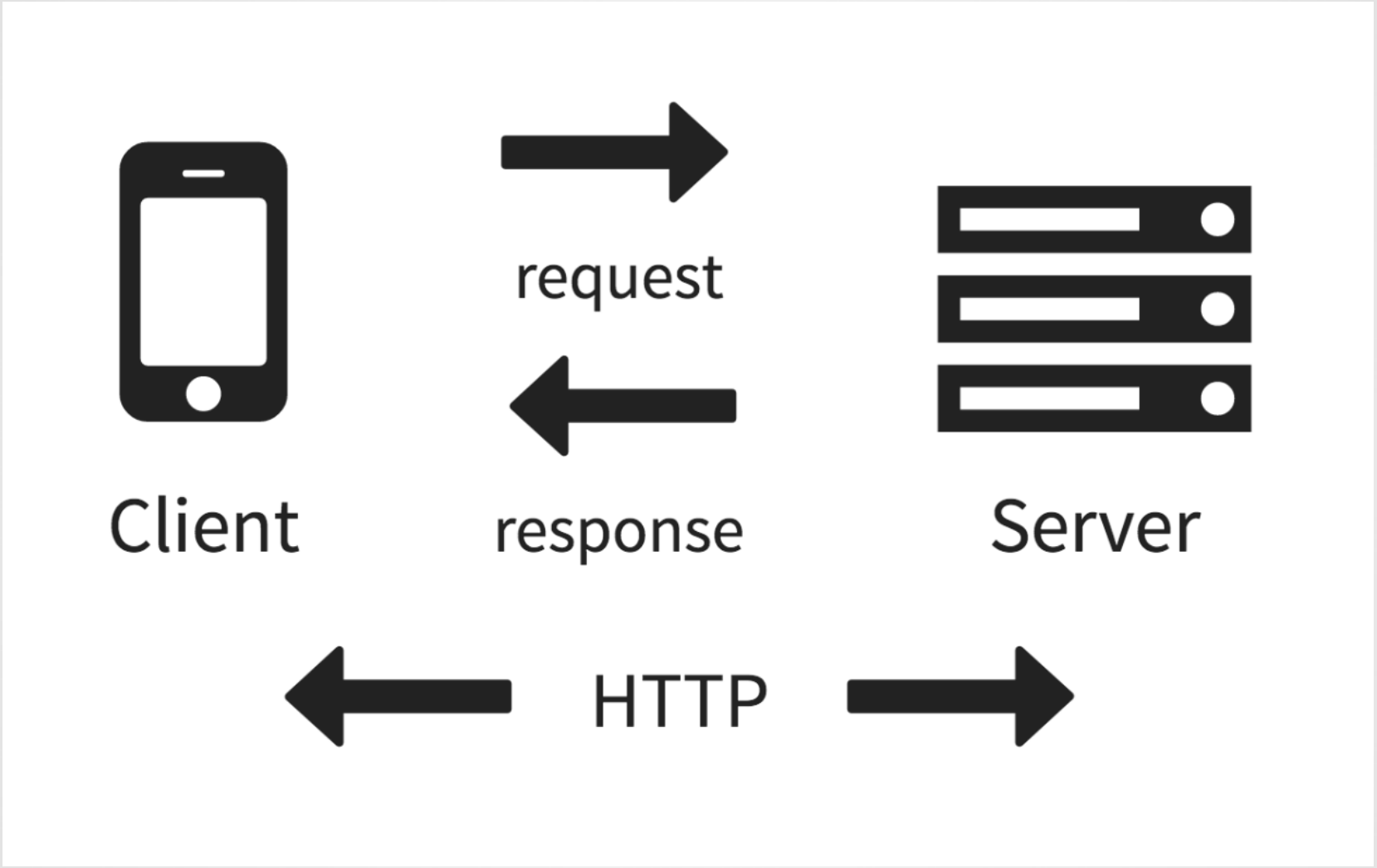

YOU RE
WELCOME
INTERNET.

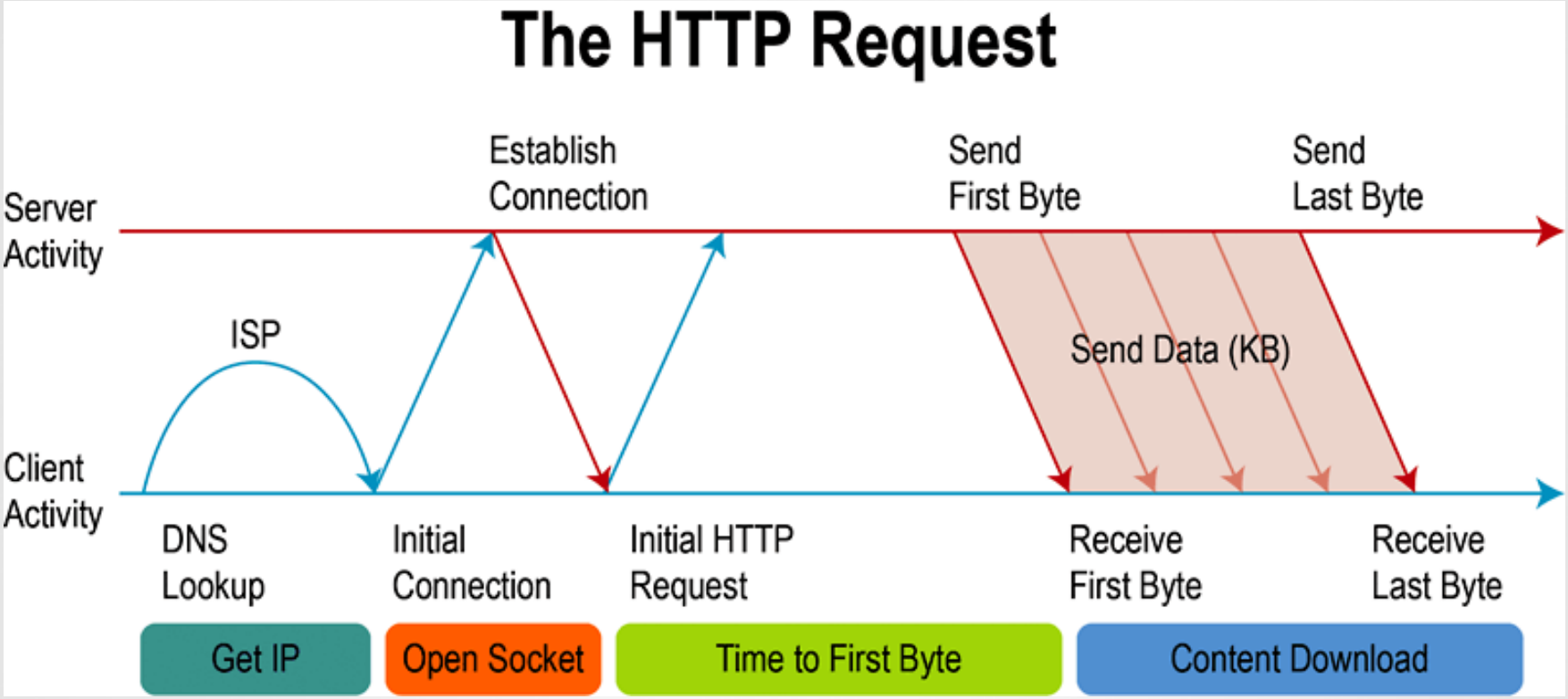


The Internet is the network and infrastructure that allows global communication.

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


request
Client
response
Server
HTTP



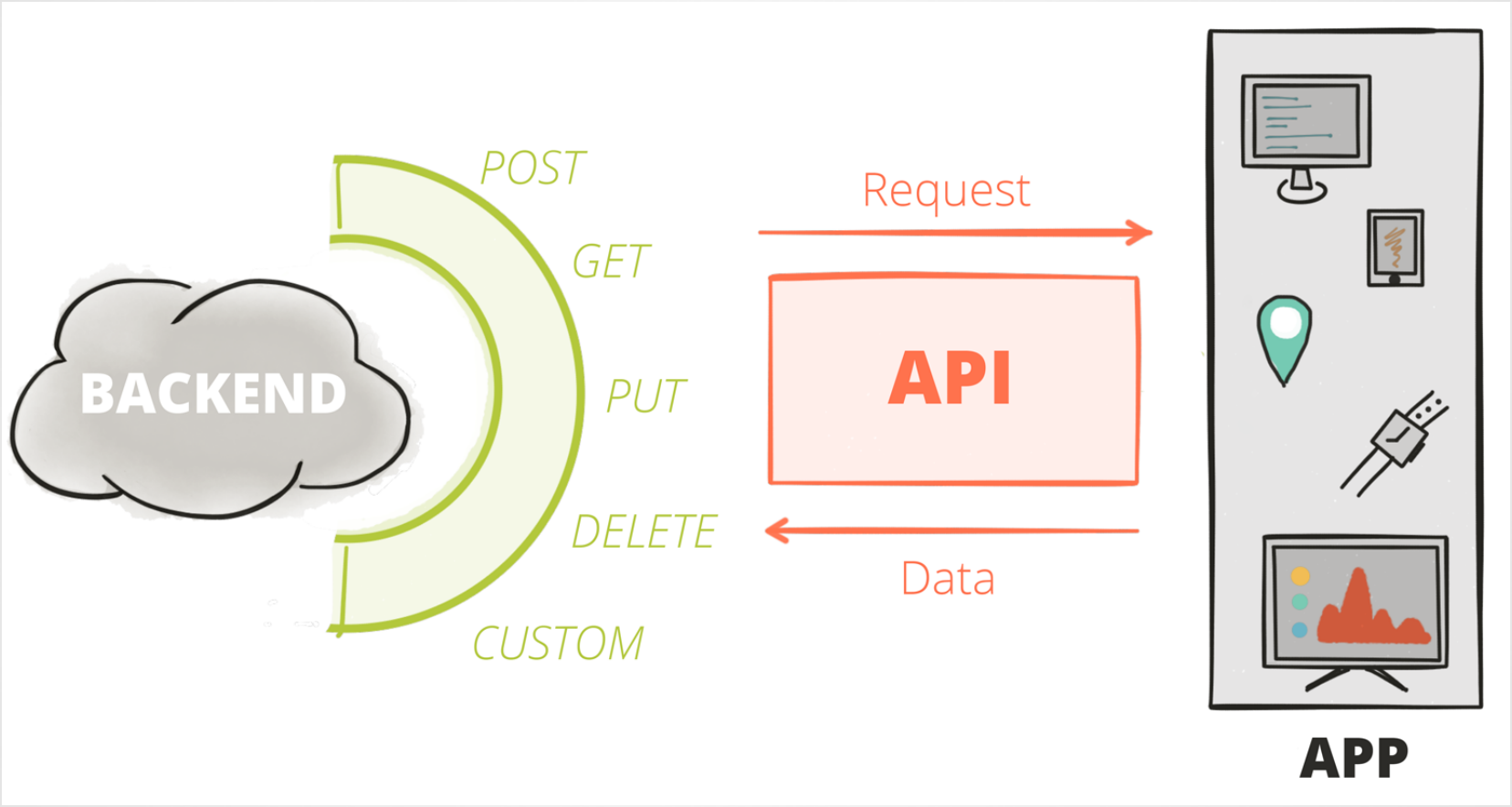
HTTP is what's known as an application protocol. This means that it is a method by which applications communicate on the Internet

Other common application protocols:

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

What's an API?

Application Programming Interface



Example