

Network Types and Internet Connection Types



Vlad Catrinescu

Office Apps and Services MVP

@vladcatrinescu <https://VladTalksTech.com>



Overview



Network types

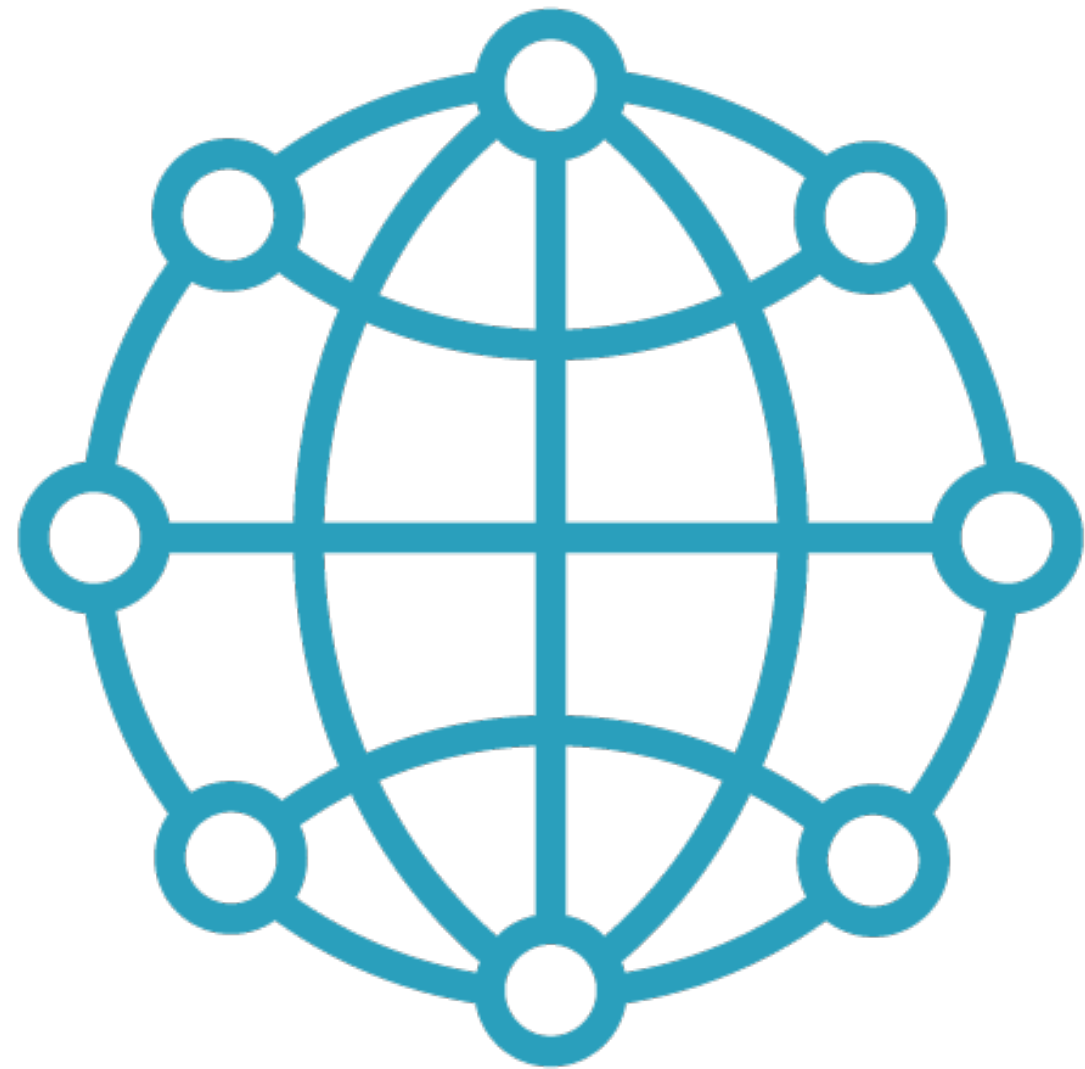
Internet connection types



Network Types



The Different Types of Computer Networks



Computer networks can be characterized by their size as well as their purpose

Most common types of networks

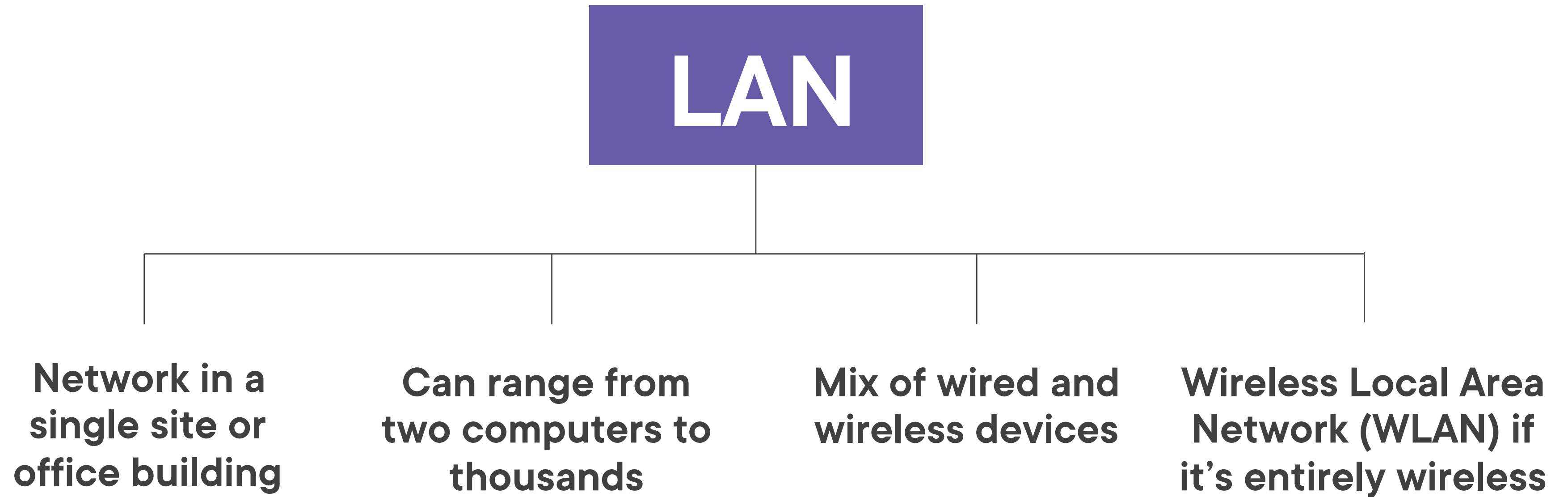
- **Personal Area Network**
- **Local Area Network**
- **Metropolitan Area Network**
- **Wide Area Network**



Personal Area Network



Local Area Network



Virtual Local Area Network



VLAN

**Partition a LAN
into logical groups**



Metropolitan Area Network

MAN

```
graph TD; MAN[MAN] --- Line1[ ]; Line1 --- Line2[ ]; Line2 --- Left[Computer Network across multiple buildings<br/>Ex: College campus]; Line2 --- Right[Used to connect several LANs together to form a bigger network];
```

**Computer Network across
multiple buildings**

Ex: College campus

**Used to connect several LANs
together to form a bigger
network**



Wide Area Network

WAN

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graph TD; WAN[WAN] --- Line1[ ]; Line1 --- Line2[ ]; Line2 --- Left[Covers an area wider than a LAN]; Line2 --- Right[Most Popular WAN: The Internet];
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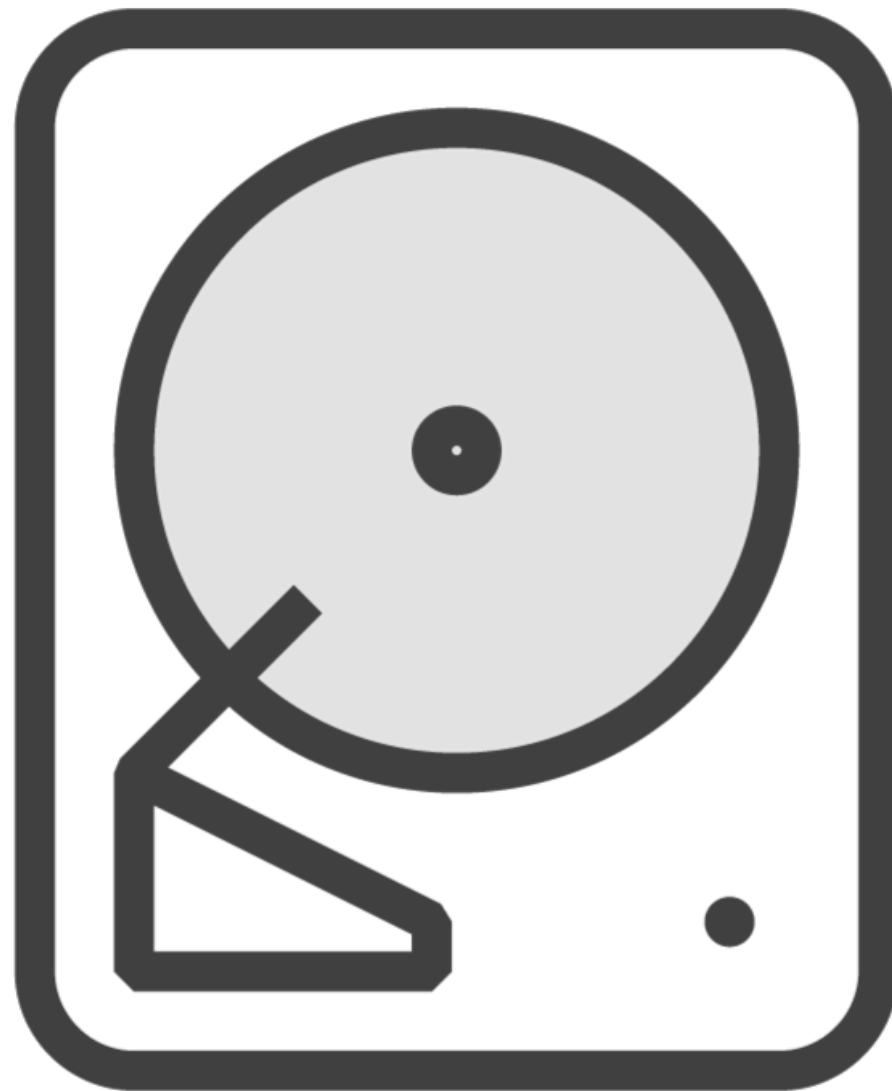
**Covers an area wider
than a LAN**

Multiple buildings
Different countries

**Most Popular WAN:
The Internet**



Storage Area Network (SAN)



Dedicated high-speed network

Delivers shared pools of storage devices

Servers can access storage as if it was internal



Internet Connection Types



Comparing Internet Options

**Connecting our network
to the Internet**



**Multiple options available
depending on:**

Proximity to an urban center

Maturity of local Internet
Service Providers (ISP)



DSL

Digital Subscriber Lines

- Uses existing wires
- ADSL: Asymmetric Digital Subscriber Lines

Speeds up to 100 Mbps

- Average consumer speed up to 7 Mbps

Internet speed will decrease as you increase distance from ISP

Not very popular today



Cable

Cable internet is currently the most popular Internet connection type

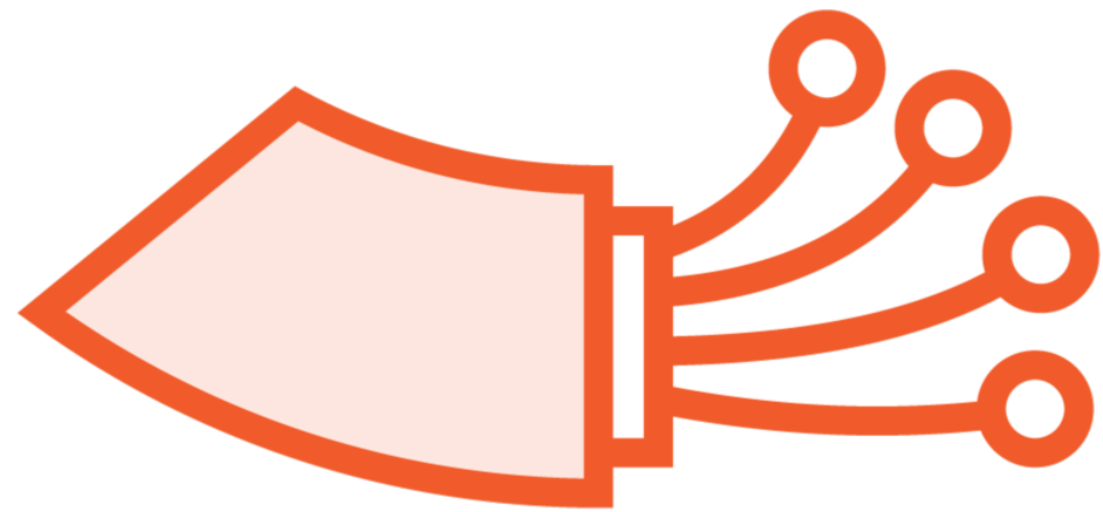
**Uses coax lines traditionally used for TV
Internet, TV, Phone**

**Uses a standard called DOCSIS
Data over Cable Service
Interface Specification**

**Speeds depending on ISP
I have 940 Mbps download speed over
cable!**



Fiber



Fiber directly to the house

Cables can be used for data/voice/video

1Gbps internet access speeds

– I have seen 2.5 Gbps



Satellite

Communication with a satellite

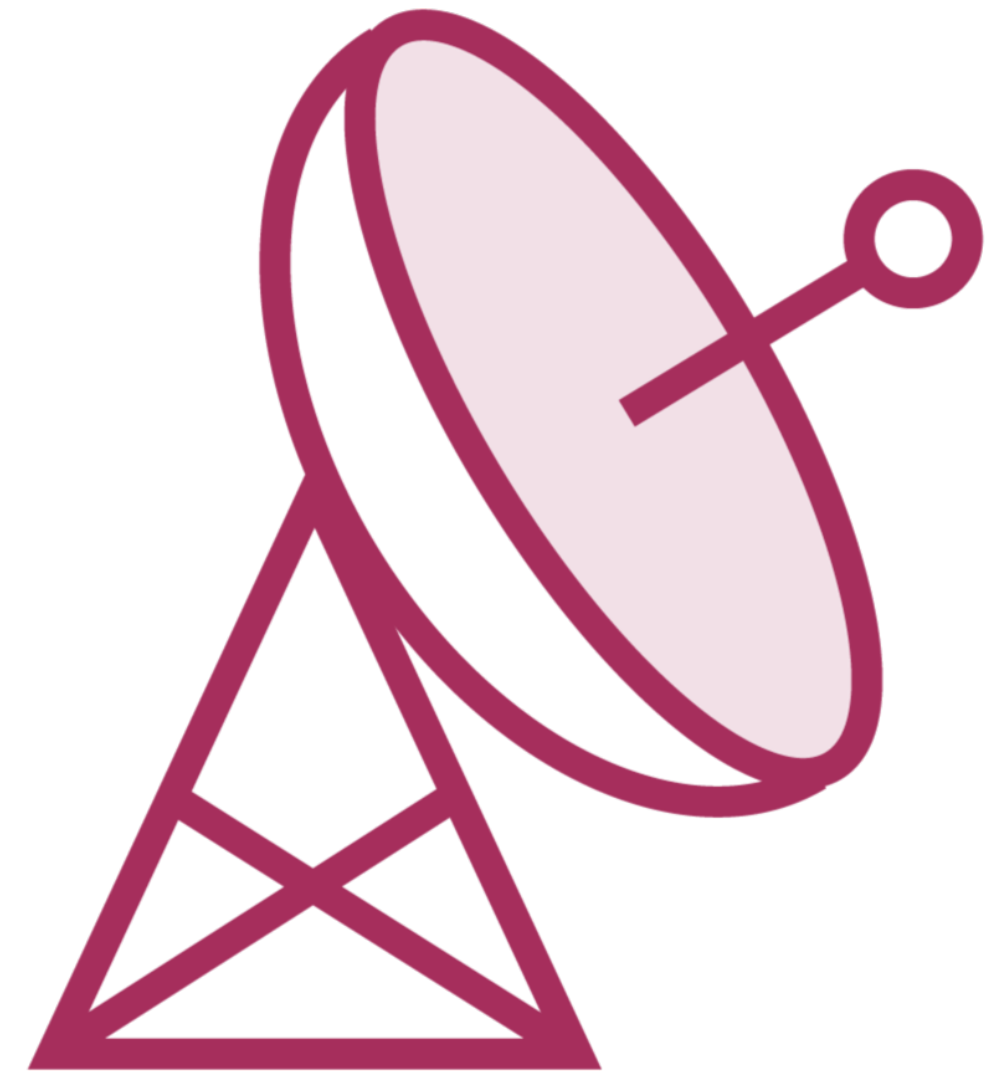
Remote sites

High cost compared to cabled options

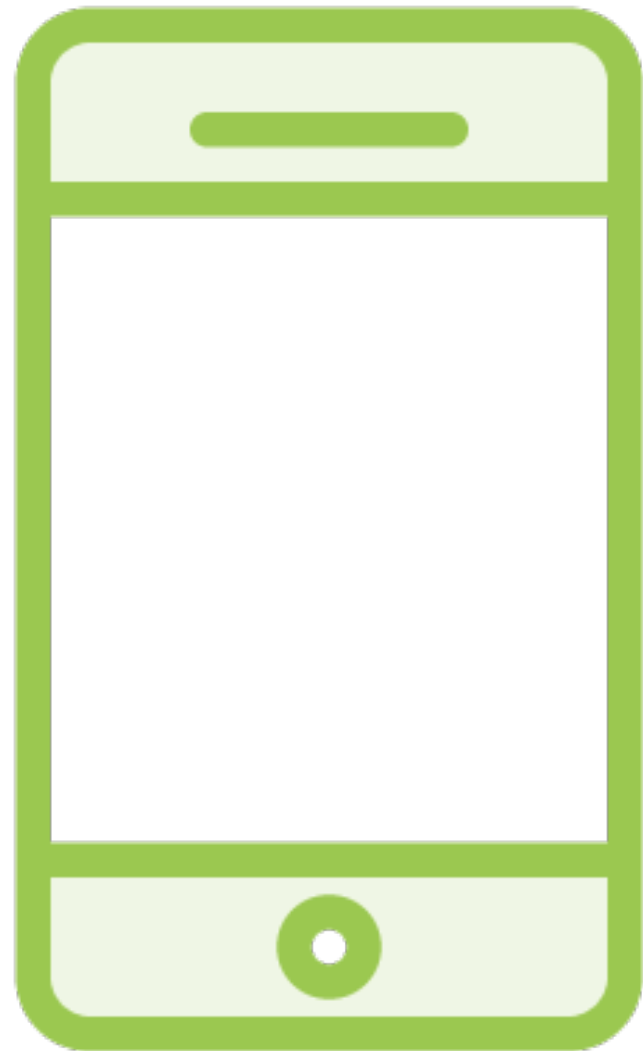
Lower speeds

Higher latency

Multiple companies/ISPs investing into satellite networks



Cellular



5G has made it possible to get fast home internet from cellular networks

Speeds up to 1Gbps

Technology was also there before

But performance was often not worth it



Wireless Internet Service Providers (WISP)

WISPs are very popular in rural regions

Where there are no wired internet options

WISP sets up towers at the highest point(s) in a rural area

Tower is connected by fiber to the WISP

Houses / Business have receivers to connect to the tower

Similar to satellite

Faster speed and lower latency compared to satellite



Conclusion



Network types

- Personal Area Network
- Local Area Network
- Metropolitan Area Network
- Wide Area Network
- Storage Area Network

Internet connection types

- DSL
- Cable
- Fiber
- Satellite
- Cellular
- Wireless Internet Service Providers



Up Next:

Protocols for Wireless Networking

