



DSL (Digital Subscriber Line)

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Presentation Outline

- What is DSL?
- How does DSL work?
- DSL in real life.
- Comparison to other data transmission methods.
- Pros & Cons of DSL.



What is DSL?

BASIC THEORY

What is DSL?

- Digital subscriber line is a family of technologies that are used to transmit digital data over telephone lines.
- Users get a high speed bandwidth connection from a phone wall jack on an existing telephone network. DSL works within the frequencies that the telephone doesn't so you can use the Internet while making phone calls.
- Offered by companies such as AT&T (in the US) and Bell (in Canada).





How does DSL work?

BASIC THEORY

How does DSL work?

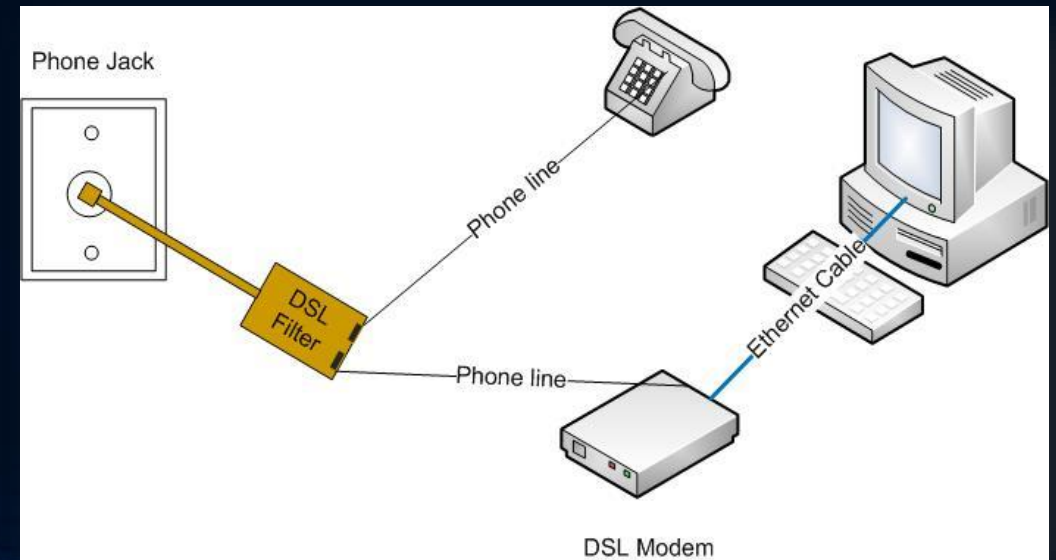
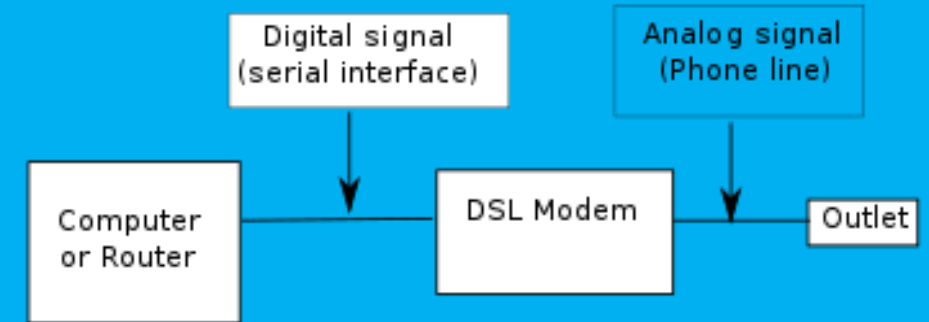
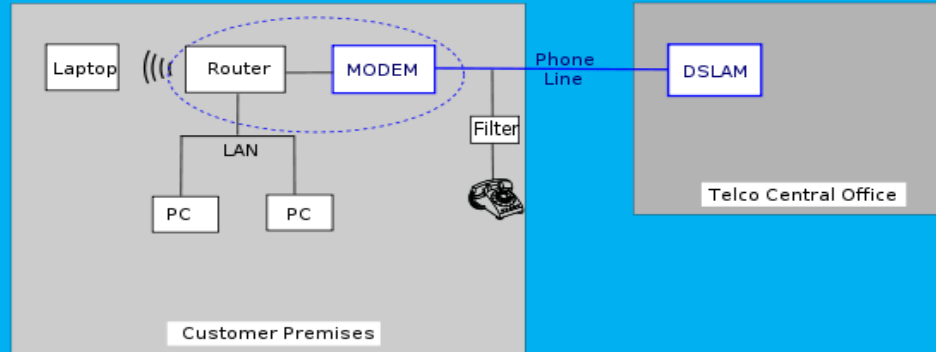
- Consider DSL Internet the big brother to dial-up. Many local phone services provide DSL offering High Speed Internet access delivered through existing telephone networks. Telephone wires carry hundreds of thousands of frequencies. Only a few thousand are for telephone communications so the telephone and DSL modem can work at the same time.
- Two main types of DSL technology:
 - *Symmetrical DSL (SDSL)*: offers equal bandwidth for upload and download speeds.
 - *Asymmetrical DSL (ADSL)*: most popular type of DSL connection. Most people download more information than they are uploading. Because of this, an asymmetrical connection has more downstream bandwidth and less upstream bandwidth.

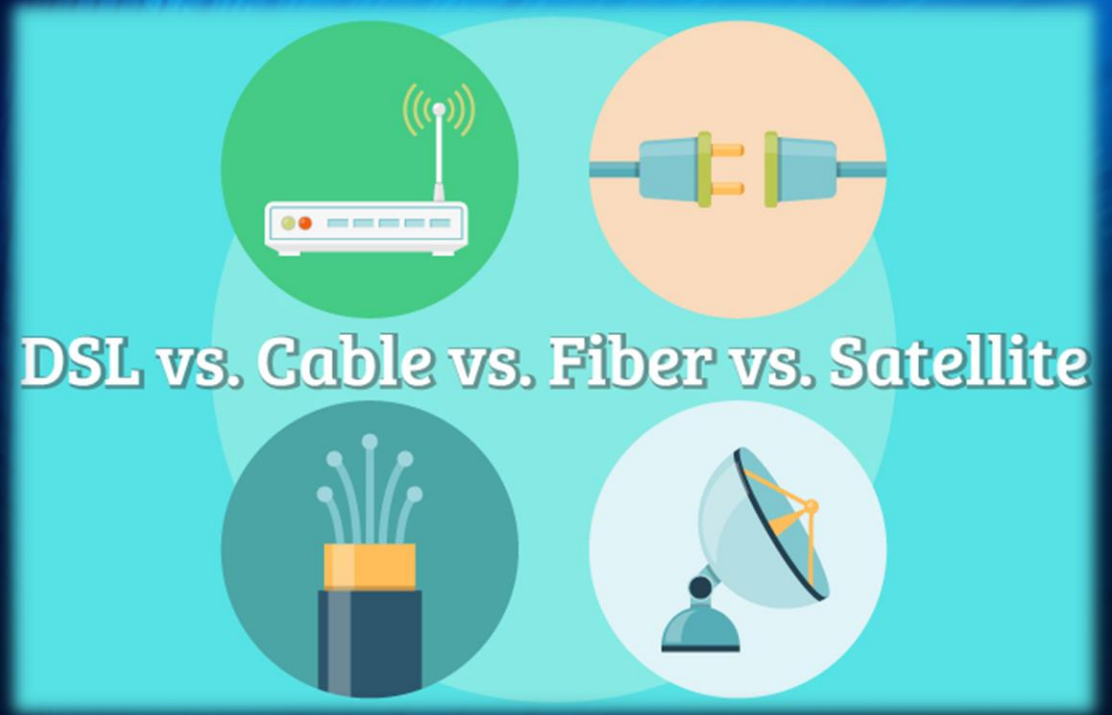
DSL in real life

WHERE IS IT USED?



Applications of DSL





Comparison to other transmission methods

WHICH METHOD IS BETTER?

Comparison to other transmission methods

Internet Type	Affordability	Speed	Reliability	Availability
DSL	Moderate	Moderate	Moderate	High
Fiber	Moderate to low	Very high	High	Low
Cable	Moderate	High	High	High
Satellite	Low	Low	Low	Very high

Fast facts

- Download speeds from 1 to 500 Mbps
- Upload speeds from 384 Kbps to 8 Mbps
- Prices from \$20 to \$300 per month

DSL

Fast facts

- Download speeds from 20 to 1,000 Mbps
- Upload speeds from 7 to 50 Mbps
- Prices from \$50 to \$500 per month

Cable

Fast facts

- Download speeds from 25 Mbps to 1 Gbps
- Upload speeds from 5 to 880 Mbps
- Prices from \$50 to \$650 per month

Fiber

Fast facts

- Download speeds from 1 to 100 Mbps
- Upload speeds from 1 to 4 Mbps
- Prices from \$50 to \$500 per month

Satellite



Pros & Cons of DSL

ADVANTAGES & DISADVANTAGES

Pros & Cons of DSL



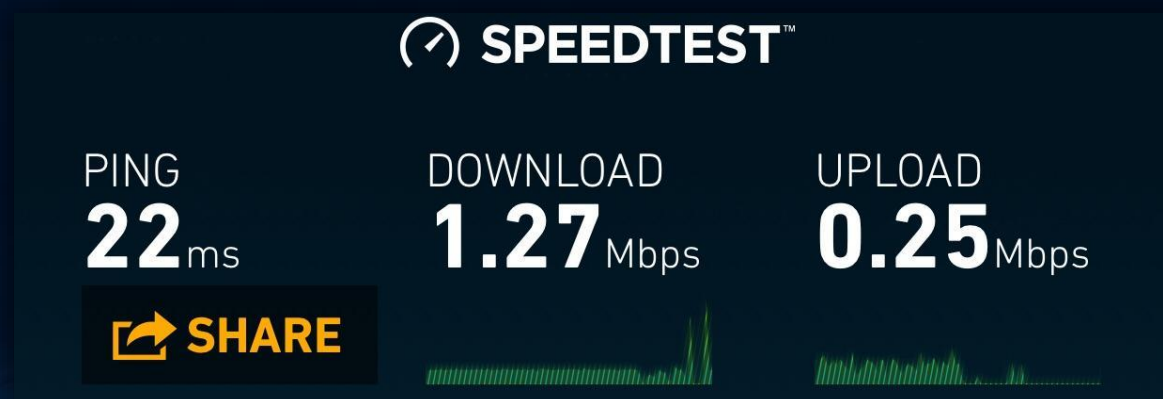
- PROS:

- Because it is built on existing phone lines, DSL is widely available.
- It costs less than satellite or broadband Internet connections.
- Each Internet subscriber has a dedicated circuit, just as they would with ordinary phone service. Several subscribers online at once don't put a heavier demand on DSL lines. With cable Internet, neighboring subscribers share a cable, so the connection can be slowed during peak Internet usage times.

Pros & Cons of DSL (continued)

- CONS:

- There are faster types of Internet connections, but these usually cost more.
- DSL connection is distance-sensitive, meaning the connection is better the closer you are to the central office. When you get farther away, the signal decreases and the speed slows.



Sources used...

- <https://www.attinternetservice.com/resources/what-is-dsl-internet/#:~:text=DSL%20stands%20for%20Digital%20Subscriber,Internet%20while%20making%20phone%20calls.>
- https://en.wikipedia.org/wiki/Digital_subscriber_line
- <https://www.business.org/services/internet/dsl-vs-cable-vs-fiber-vs-satellite/>