How does the Internet Work?

### The answer to all the questions can be found in the listed videos. I suggest reading through all the questions first so that you know what answers you’re looking for, then watching videos that sound like they will answer the question you’re trying to answer. **Answers must be in complete sentences to receive credit.**

Internet Infrastructure as Fast as Possible - <https://youtu.be/n71TUnTNdw8>

DNS as Fast as Possible - <https://youtu.be/Rck3BALhI5c>

Internet vs Web as Fast as Possible - <https://youtu.be/laepk9KrAZY>

Internet Protocol - IPv4 vs IPv6 as Fast as Possible - <https://youtu.be/aor29pGhlFE>

Routers vs. Switches vs. Access Points - And More - <https://youtu.be/Vc16CCAAz7Q>

What is TCP/IP? - <https://youtu.be/PpsEaqJV_A0>

HTML5 as Fast as Possible - <https://youtu.be/IsXEVQRaTX8>

Bits vs Bytes as Fast as Possible - <https://youtu.be/Dnd28lQHquU>

How Do URLs Work? - <https://youtu.be/OvF_pnJ6zrY>

# Questions:

1. What is the difference between bits and bytes and what are they used for?

Bits are often used to measure data transfer speeds. Bytes are used to measure data storage.

1. Why is HTML5 the new standard?

HTML5 is the new standard because it adds many different exciting features and capabilities to HTML. The goals of this new standard are to improve the language with support for the latest multimedia and some other features. It keeps the language easily readable and understood by computers and devices as well as web browsers.

1. What is the difference between the Internet and the Web?

The internet is a network of networks. It connects millions of different computers together on a global scale. This forms a network that computers can communicate with other computers as long as they are both connected to the internet. The web is a way of accessing information using the internet. It is used to share information and it built on top of the internet. The web uses HTTP which is one of the languages spoken over the internet, used to transmit data.

1. What is the role of an ISP?

ISP stands for Internet Service Providers. They serve large companies by providing connections (direct connections) from the company’s network to the internet. Email, access to software tools, and security service are all provided by ISP.

1. What is a modem?

A modem is a device that’s combined for demodulation and modulation.

1. What is a browser?

A browser is a program used to navigate the web with a graphical user interface that displays HTML files.

1. What is the difference between guided and unguided media?

Guided media uses a conductor or a physical path to transmit different signals, but unguided media broadcasts the signals through the air. Unguided media is also called wireless or unbounded transmission media.

1. Summarize how the internet was developed.

The internet was created by three individuals as well as a research conference. In 1957, the Soviet Union was able to launch the first satellite. This triggered Dwight Eisenhower, the US president, to create the ARPA agency to regain the technological lead. Roberts led development of the network, based on a new idea invented by Paul Baran. Roberts connected the TX-2 computer to the Q-32 with a low speed dial-up telephone line creating the first computer network ever built. He published his plan in 1967. The original ARPAnet grew into the Internet. In October 1972.

1. What is a web server and what purpose does it serve?

A web server is a program which uses HTTP which stands for Hypertext Transfer Protocol. It serves the files that form web pages to users in response to their different requests. These requests are forwarded by their computers’ HTTP clients.

1. What is a router and what purpose does it serve?

A router is a device used in networking that forwards data packets between computer networks. Routers also perform the traffic directing functions on the internet.

1. What are packets and what purpose do they serve?

A packet is the unit of data that’s routed between an origin and a destination on the internet. They carry the data in the protocols that the internet uses.

1. What are IP addresses and what purpose do they serve?

IP address stands for Internet Protocol address. It is a numerical label that’s assigned to every device that’s connected to a computer network. It serves two main functions. The first one is host or network interface identification and the second is location addressing.

1. What is Intranet and what purpose does it serve?

Intranet is a network that’s used only by the employees of an organization. The purpose of it is to share the information of the company and computes resources among employees.

1. What is bandwidth?

Bandwidth is the range of frequencies within a given band that’s used for transmitting a signal.

1. What is a firewall?

A firewall is a part of a computer system or network that is designed to prevent or block unauthorized access while allowing outward communication.

1. What is the “backbone” (Internet backbone service providers) and what purpose does it serve?

The internet backbone is the principal data routes between large interconnected computer networks. They keep and maintain online information in a secure way.

1. What is the purpose of a domain name?

Domain names are used to identify one or more than one IP address.

1. Match the parts of the URL to its name:

Parts of the URL are a scheme, a host, a path, and a query string. A scheme identifies the protocol to be used to access the resource on the Internet. A host name identifies the host that holds the resource. A path identifies the specific resource in the host that the web client wants to be able to access. A query string follow the path component and provides a string of information that the resource will be able to use for some purpose.

1. What is a static IP address?

A static IP address is a number that is assigned to a computer by an ISP that is its permanent address on the internet.

1. What is a dynamic IP address?

A dynamic IP address is a temporary IP address that is assigned to a device or a node when it’s connected to a network.

1. What is the difference between IPv4 and IPv6?

IPv4 is written in decimal as four numbers separated by periods. IPv6 addresses are written in hexadecimal and separated by colons.

1. What is the function of a DNS?

DNS stands for Domain Name System. The main function of DNS is to translate domain names into IP Addresses. This way, computers can understand.

1. What does HTTP stand for and how is it used?

HTTP stands for Hypertext Transfer Protocol. It is used to provide secure communication over a computer network, and is widely used on the internet.

1. What does HTTPS stand for and how is it used?

HTTPS stands for Hypertext Transfer Protocol Secure. It is used for secure communication over a digital network, this is most often on the internet.

1. What does FTP stand for and how is it used?

FTP stands for File Transfer Protocol. It’s a standard for transferring files over the internet.

1. What does SMTP stand for and how is it used?

SMTP stands for Simple Mail Transfer Protocol. It is used for sending e-mail over the internet. It sends a message to the mail server, and the server uses it to relay the message to the correct receiving mail server.

1. What does TCP/IP stand for and how is it used?

TCP/IP stands for Transmission Control Protocol/Internet Protocol. It’s a set of networking protocols that allows two or more computers to communicate.