How Do Computers Talk to Each Other on the Internet?

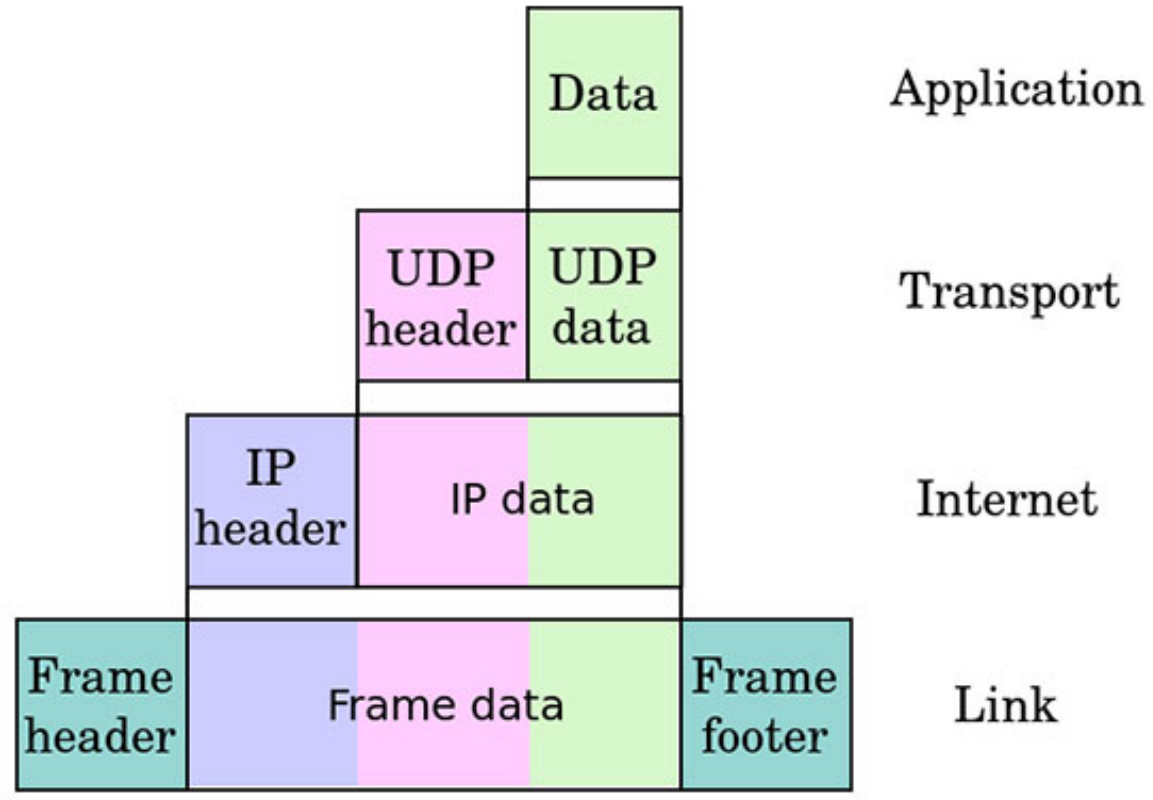
TCP/IP is a set of communications protocols that allow computers to communicate on the Internet.

Its name refers to the two most important protocols in the suite — the Transmission Control Protocol (TCP) and the Internet Protocol (IP). TCP/IP specifies how devices connect to the Internet and how data transmits between those devices.

TCP/IP was originally developed by Vint Cerf and Bob Kahn, while under contract at the U.S. Department of Defense. It’s the de facto standard way that local and wide networks communicate. It allows computers to connect to one another and for applications to send data back and forth.

There are four different abstraction layers within TCP/IP, and each one has its own set of of protocols. Those layers are:

- **The link layer** — This is the lowest layer in the TCP/P stack and it’s a group of methods that operate on a host’s link. It’s commonly Ethernet.
- **The Internet layer** (IP) — This is the layer that connects local networks to one another
- **The transport layer** (TCP) — This is the layer that controls host-to-host communication
- **The application layer** — The application layer is the set of protocols that specify data communications on a process-to-process level. For instance, HTTP is an application protocol that is the foundation of the World Wide Web.



[1]

While this might sound confusing, it’s actually a (very) basic explanation of how the communication is sent over the Internet.

In a network, TCP is what applications use to communicate with one another. For instance, your web browser talks to network software using TCP. IP is the communication that takes place between computers. So IP is what sends packets between computer. It can also route packets to a correct destination.

TCP will break down the data communicated between applications into packets so that they can be sent over IP to another computer. TCP also reassembles those packets once they are delivered by IP.

For more information on TCP/IP, you can visit W3Schools TCP/IP page [2]. For historical context around TCP/IP, check out Gary Kessler’s webpage [3] on the subject.

Read More [4]

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