

## What is TCP/IP?

When you connect to the internet and then to a particular website, there is a complex communications process that takes place in the background. Have you ever wondered how this works? Allow me to provide a simple explanation of how internet communications are handled by a protocol called TCP/IP.

TCP/IP stands for Transmission Control Protocol / Internet Protocol. TCP/IP is a set of rules that govern how web browsers and internet servers that host websites connect to the world wide web. It also forms the basis for how web browsers and internet servers communicate with one another and send the HTML files for a website to the your computer. Also, your email client software uses TCP/IP to connect to the internet and retrieve your messages from an email server.

When using the internet, whether it be the world wide web or a local intranet in an office, you are either using TCP, IP, or both. TCP is used for communication between applications. When you are using an application and need to connect to another application, your computer uses TCP to send a request to communicate with the other application. Once the request is accepted by the other application, a permanent connection is established between the two applications, which enables an exchange of information or data to take place. The connection created by TCP is continuous; it does not terminate until the connection is turned off by one of the two applications.

IP, on the other hand, is a different sort of protocol. IP is a temporary communication that takes place between two computers in order to send data or information. For example, when you connect to a website, you send a request to the host computer to send the files for that website to your web browser. The host computer then replies to your request by sending the full website to you. Once this exchange is complete, the connection terminates. So, with IP, there is no permanent connection between each of the two devices.

So, how do TCP and IP work together to make surfing the internet possible? TCP takes care of the communication between your web browser and the software that establishes the connection to the internet. This connection between your browser and the internet is permanent. If this connection were to suddenly cease, you would no longer be able to connect to a website.

IP is then used by your web browser to communicate with the computer that is hosting the website you are trying to access. When you attempt to connect to a certain website, you use IP to request that the host send the contents of that website back to your computer. The host computer then complies with the request by using TCP to compartmentalize the website into smaller packets that are then transmitted back to your computer.

To summarize, you use TCP to establish a permanent connection between your web browser and the software that connects you to the internet, and that connection does not cease until you close the software program that is maintaining the connection. You use IP to fetch the website from the host computer, and once the host has finished using TCP to break the website down into smaller parts (packets) so that it can be sent back to your computer using IP, the information is then sent to your computer and the IP connection ends. When you exit that website and connect to a different site, the process starts all over again, and is repeated every time you connect to a new website.

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