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Please describe the following figure, i.e., Figure 1, in English (>=400 words).



Figure 1. TCP/IP network model

To specify how computers transfer data from one device to another., TCP (the Transmission Control Protocol)/IP (the Internet Protocol) puts a lot of emphasis on accuracy, and it has several steps to ensure that data is correctly transmitted between the two computers. TCP/IP network model is split into four layers, link layer, internet layer, transport layer and application layer. Data goes through four individual layers before it is received on the other end. TCP/IP then goes through these layers in reverse order to reassemble the data and to present it to the recipient.

The link layer, also called the datalink layer, network interface layer, or physical layer, such as device driver and interface, is what handles the physical parts of sending and receiving data using the Ethernet cable, wireless network, network interface card, device driver in the computer, and so on. It accepts the data passed to it by the Network Interface layer and prefixes something called the Preamble, which is a well-known sequence of 64 bits used for synchronization purposes. When it finishes its work, it generates a signal to be submitted to the media (electrically-based cables in most cases). The Hardware layer also imposes the maximum transfer unit (MTU) used by the Internet layer to ensure that the Hardware layer does not get frames 3 that are too large or too small.

The Internet layer, such as the Internet Protocol (IP), the Internet Control Messaging Protocol (ICMP), and the Internet Group Management Protocol (IGMP), controls the movement of packets around the network. The IP is responsible for routing and fragmentation. The ICMP generates error messages, assists routing through redirection, may implement rudimentary flow control, supports the ping command, supports router discovery, and may generate timestamp and netmask queries and responses. The IGMP supports Internet Layer multicasting. Each of these protocols has two available versions: 4 and 6.

The Transport Layer such as the Transmission Control Protocol (TCP) and the User Datagram Protocol (UDP), is responsible for the end-to-end flow of data. It divides the data in packets, acknowledges the packets that it has received from the other device, and makes sure that the other device acknowledges the packets it receives.

The application layer such as the Hyper Text Transfer Protocol (HTTP), the File Transfer Protocol (FTP) and the Domain Name Service (DNS), is the group of applications that require network communication. This is what the user typically interacts with, such as email and messaging. Because the lower layers handle the details of communication, the applications don’t need to concern themselves with this.