Internet & World Wide Web

The internet is a globally connected network system that transmit data via various types of media. The internet is a network of global exchanges – including private, public, business, academic and government networks – connected by guided, wireless and fiber-optic technologies.

The terms internet and World Wide Web are often used interchangeably, but they are not exactly the same thing; the internet refers to the global communication system, including hardware and infrastructure, while the web is one of the services communicated over the internet. Billions of internet users rely on multiple application and networking technologies, including:

Internet Protocol (IP): The internet's primary component and communications backbone. Because the internet is comprised of hardware and software layers, the IP communication standard is used to address schemes and identify unique connected devices. Prominent IP versions used for communications include Internet Protocol version 4 (IPv4) and Internet Protocol version 6 (IPv6).

Communications: The internet is the most cost-effective communications method in the world, in which the following services are instantly available:

- Email
- Web-enabled audio/video conferencing services
- Online movies and gaming
- Data transfer/file-sharing
- Instant messaging
- Social networking
- Online shopping
- Financial services

History of Internet

The first workable prototype of the Internet came in the late 1960s with the creation of ARPANET, or the Advanced Research Projects Agency Network. Originally funded by the U.S. Department of Defense, ARPANET used packet switching to allow multiple computers to communicate on a single network. The technology continued to grow in the 1970s after scientists Robert Kahn and Vinton Cerf developed Transmission Control Protocol and Internet Protocol, or TCP/IP, a communications model that set standards for how data could be transmitted between multiple networks. ARPANET adopted TCP/IP on January 1, 1983, and from there researchers began to assemble the "network of networks" that became the modern Internet. The online world then took on a more recognizable form in 1990, when computer scientist Tim Berners-Lee invented the World Wide Web. While it's often confused with the Internet itself, the web is actually just the most common means of accessing data online in the form of websites and hyperlinks. The web helped popularize the Internet among the public, and served as a crucial step in developing the vast trove of information that most of us now access on a daily basis.

World Wide Web

The **World Wide Web** (**WWW**), commonly known as **the Web**, is an information system where documents and other web resources are identified by Uniform Resource Locators (URLs, such as *https://www.example.com/*), which may be interlinked by hypertext, and are accessible over the Internet. The resources of the WWW may be accessed by users by a software application called a *web browser*. English scientist Tim Berners-Lee invented the World Wide Web in 1989. He wrote the first web browser in 1990 while employed at The European Organization for Nuclear Research (CERN) near Geneva, Switzerland. The browser was released outside CERN in 1991, first to other research institutions starting in January 1991 and then to the general public in August 1991. The World Wide Web has been central to the development of the Information Age and is the primary tool billions of people use to interact on the Internet. Web resources may be any type of downloaded media, but *web pages* are hypertext media that have been formatted in Hypertext Markup Language (HTML). Such formatting allows for embedded hyperlinks that contain URLs and permit users to navigate to other web resources. In addition to text, web pages may contain images, video, audio, and software components that are rendered in the user's web browser as coherent pages of multimedia content. The terms *Internet* and *World Wide Web* are often used without much distinction. However, the two terms do not mean the same thing. The Internet is a global system of interconnected computer networks. In contrast, the World Wide Web is a global collection of documents and other resources, linked by hyperlinks and URIs.

HTML

Hypertext Markup Language (**HTML**) is the standard **markup language for documents designed to be displayed in a web browser**. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript. Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. **HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.** In 1980, physicist Tim Berners-Lee, a contractor at CERN, proposed and prototyped ENQUIRE, a system for CERN researchers to use and share documents. The first publicly available description of HTML was a document called "HTML Tags", first mentioned on the Internet by Tim Berners-Lee in late 1991.

IP address

An **Internet Protocol address** (**IP address**) is a numerical label assigned to each device connected to a computer network that uses the Internet Protocol for communication.[1][2] An IP address serves two main functions: host or network interface identification and location addressing. Internet Protocol version 4 (IPv4) defines an IP address as a 32-bit number.[2] However, because of the growth of the Internet and the depletion of available IPv4 addresses, a new version of IP (IPv6), using 128 bits for the IP address, was developed in 1995,[3] and standardized in December 1998.[4] In July 2017, a final definition of the protocol was published. IP addresses are usually written and displayed in human-readable notations, such as *172.16.254.1* in IPv4, and *2001:db8:0:1234:0:567:8:1* in IPv6.