

## **Computers & the Internet**

Literally, Internet is worldwide network of computers. It consists of servers as main support. These work 24/7 hooked up to a cluster of cables exchanging information back and forth. People requesting information from the Internet are called "clients". A client computer consistently requests a particular packet of information from a server. Clients and servers communicate with each other through multitudes of straightforward "languages" called Internet Protocols (IP). There are layers of protocols. At the lowest level, IP (OSI Layer 3) defines the data grams or packets that carry blocks of data from one node to another. Then, TCP (Transmission Control Protocol) and UDP (User Datagram Protocol) exist at the next layer up (OSI layer 4); these are the protocols by which data is transmitted. Third sits on top of TCP and UDP and occupy layers 5, 6, and 7 of the OSI model. These identify the specific messages and data formats sent and understood by the applications running at each end of the communication. Examples of these protocols are HTTP, FTP, and SMTP. Last is another protocol (in layer 2 of the OSI model) below IP which is seldom discussed.

If an individual connects to the Internet through an Internet Service Provider (ISP), a temporary IP address is routinely assigned for the duration of the dial-in session. Packets of computer information are sent from computer to computer using numerical addresses (a series of four numbers connected by dots) called IP addresses. It instructs a computer regarding directions. On the other hand, the processor may possibly have a permanent IP address or obtain a temporary one from a DHCP (Dynamic Host Configuration Protocol) server if the connection is via a local area network (LAN). Generally, a computer must have a unique IP address to be able to connect

to the Internet. Similar manner the commercial Internet providers connect via Internet exchange points, research networks tend to interconnect into large sub networks such as GEANT, GLORIAD, Abilene Network and JANET. The Internet Corporation for Assigned Names and Numbers (ICANN) is the authority that coordinates the assignment of unique identifiers on the Internet, including domain names, IP addresses, protocol port as well as parameter numbers.

Usually, the terms Internet and World Wide Web (WWW) are incorrectly interchanged. The WWW known also as Web is a way of accessing information over the medium of the Internet. HTTP protocol is used by Web exclusively. The mentioned protocol is one of the languages utilizes over the Internet to transmit data. Browsers such as Internet Explorer or Netscape are used to access Web pages (or documents) related via hyperlinks. In summary, the Internet is the actual network while WWW is merely an available service of the first.

To view resources through WWW, alternatives are: URL is typed into a Web browser or by the use of a hypertext link. The first phase is for the server-name part of the URL to be resolved into an IP address by the global, distributed Internet database known as the Domain name system (DNS). The browser then establishes a TCP connection with the server at that IP address. The next step is for HTTP request to be sent to the Web server, requesting the resource. In a typical Web page, HTML text is initially requested and parsed by the browser, which makes additional requests for graphics and other files that form part of the page in quick succession. The Web browser then renders the page as described by the HTML, CSS and other files received, incorporating the images and other resources as necessary.

To access the Internet and WWW, the following are required: running computer with an up-to-date operating system, modem, telephone line, Internet connected LAN and connection software.

A modem is unnecessary when LAN is available.

## Sources

“About the World Wide Web.” 2001. <<http://www.w3.org/WWW/>>

“Internet.” Wikipedia. April 2007. <["http://en.wikipedia.org/wiki/Internet"](http://en.wikipedia.org/wiki/Internet)>

“What is the Internet & WWW?” <[http://members.aol.com/shobansen4/internet\\_www.html](http://members.aol.com/shobansen4/internet_www.html)>

“What is the World Wide Web and where did it come from?” CNN Online.

<<http://www.cnn.com/feedback/help/basic/web.html>>

Sadera, Anthony. “How does the Internet work?” 1996.

<<http://www.fuzzylu.com/docs/p02.htm>>

Shuler, Rus, “How Does the Internet Work?” 2005.

<[http://www.theshulers.com/whitepapers/internet\\_whitepaper/index.html](http://www.theshulers.com/whitepapers/internet_whitepaper/index.html)>

Tyson, Jeff. “How Internet Infrastructure Works.”

<<http://computer.howstuffworks.com/internet-infrastructure.htm>>