Ports In A Computer System

ABHISHEK GAUTAM

Ports Provide As An Interface For Any Computer System To Establish Any Communications With Peripherals Or Soft wares. Each Port Is Designed To Identify A Single Specific Process. Each Port Has Some Associated Protocols With It Depending Upon The Type Of Communication It Is Establishing. This Document Gives A Brief About Some Of The Common Ports.

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NSIC Campus, STP Extension, 2nd Floor, Okhla Phase III Entry from Gate Number 2, Okhla Phase III

011 2656 9899

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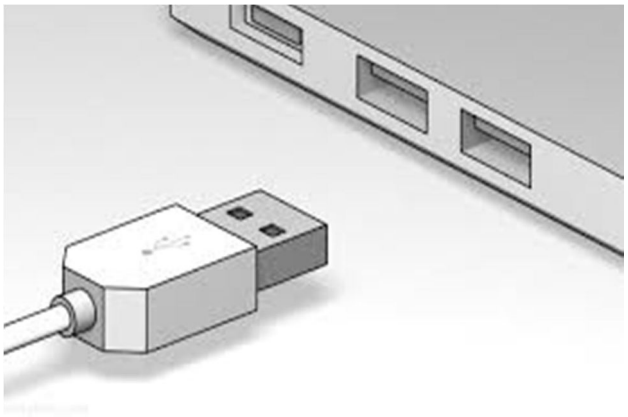
INTRODUCTION

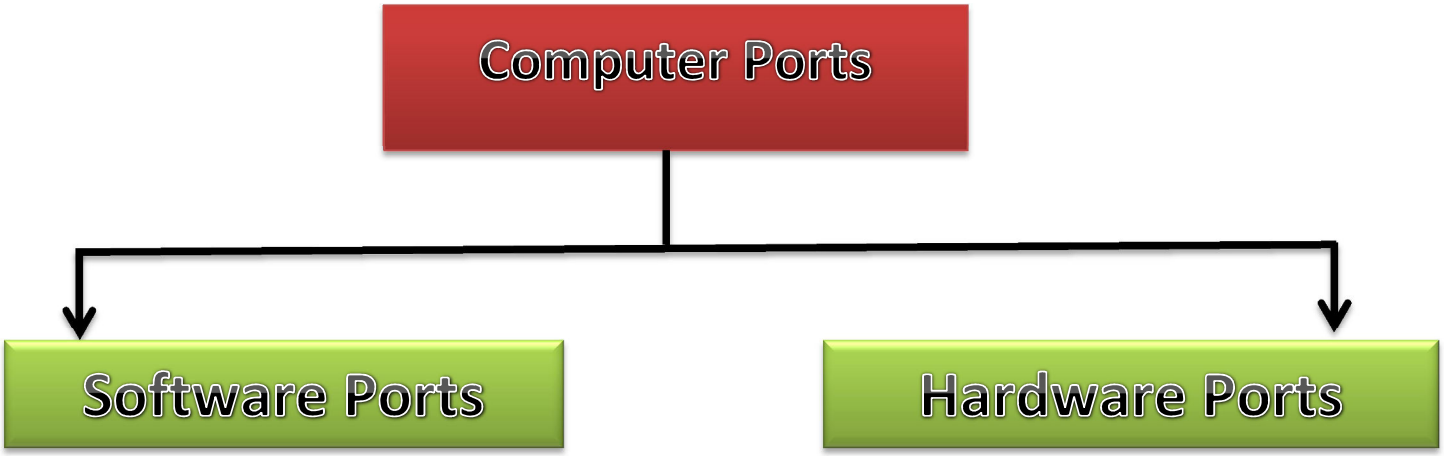
The ports acts like a gate in any communication established in any computer system. It can be regarded as an interface for the communication. The ports can be divided Into 2 subcategories as follows:

1> **Hardware Ports**
2> **Software Ports**

Most Importantly the universal fact common in each port is that "**EACH PORT IS ASSOCIATED WITH CERTAIN PROTOCOLS (FRAMEWORK)**" irrespective of the fact that it is software or hardware ports. To Establish Any Connection With the system the minimum requirements is these ports.



CLASSIFICATION OF PORTS



HARDWARE PORTS

We may have many uses while operating a system such as to connect a monitor, webcam, speakers, printers or other peripheral device. For resolving such problems comes in the picture the Hardware Ports Of a computer system.

This port serves as an interface between the computer and other computers or peripheral devices. It is regarded as the female part of the communication. When the peripheral and the ports are interconnected then a communication is established only when the protocols are met and then there is a flow of signals for communication purpose.

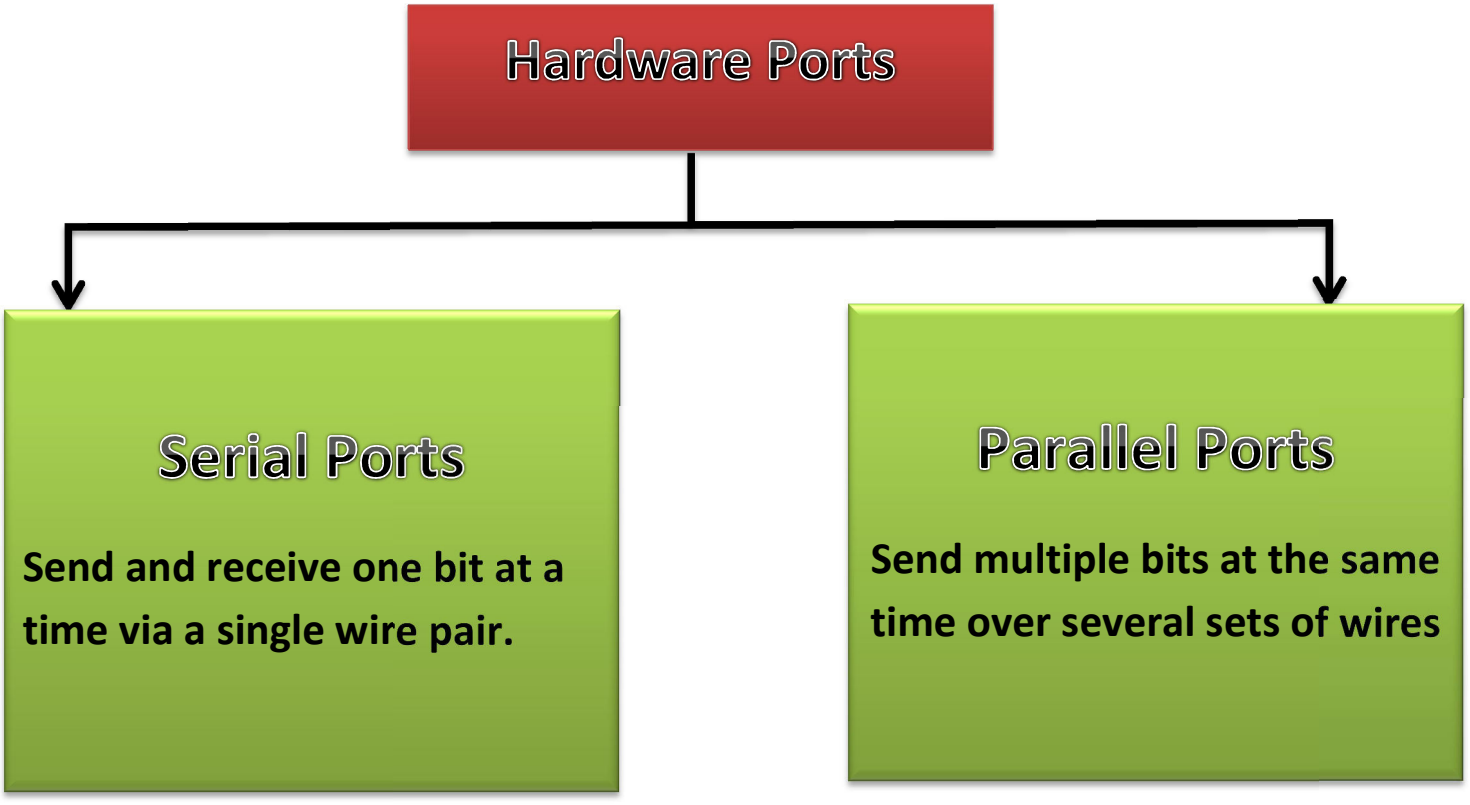
A port may come come in various shape and sizes such as

1>Circular(PS/2)

2>Rectangular(Firewire)

3>Square(TelephonePlug)

4>Trapezoidal(D-Sub)



SOFTWARE PORTS

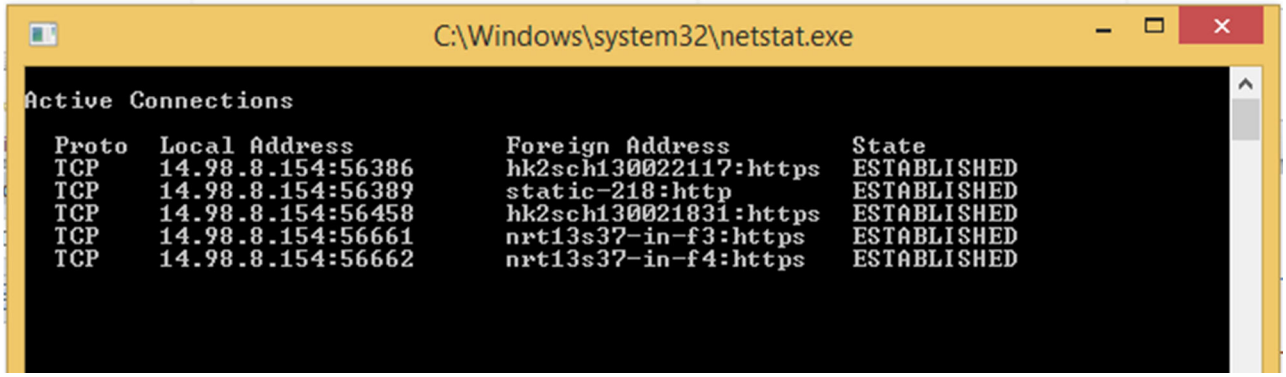
The concept of port numbers was established by the early developers of the **ARPANET** in informal co-operation of software authors and system administrators. A port is identified for each address and protocol by a 16-bit number, commonly known as the **port number.**

The transfer protocols such as the TCP(Transmission Control Protocol) and the UDP(User Datagram Protocol), specify a source and destination **PORT NUMBER** in their segment headers. A port number is a 16 bit unsigned interger ranging from **0 to 65535**.

** Port 0 cannot be used as it is reserved for TCP whereas for UDP a port zero can also be used which means simply NO PORT.

COMMON SOFTWARE PORTS

1) **Port Number 15- Netstat-** This tells us about the **NETWORK STATISTICS** of the network.



2) **Port Number 21- FTP-** The File Transfer Protocol (FTP) is a standard network protocol used to **Transfer computer files between a client and server on a computer network.**

3) **Port Number 23- TELNET-** Telnet is an application layer protocol used on the Internet or local area networks to **provide a bidirectional interactive text-oriented communication facility** using a virtual terminal connection.

4) **Port Number 22- Secure Shell (SSH)**- is a **cryptographic network protocol** for operating network services securely over an unsecured network. Example: Remote Login In Any Computer System

5) **Port Number 25-SMTP-** Simple Mail Transfer Protocol (SMTP) is an **Internet standard for electronic mail (email)** transmission.By Default it uses TCP port number 25

6) **Port Number 53- DNS-** The Domain Name System (DNS) is a **hierarchical decentralized naming system for computers, services, or any resource connected to the Internet or a private network**. It associates various information with domain names assigned to each of the participating entities.

7) **Port Number 80- HTTP-** The Hypertext Transfer Protocol (HTTP) is an application protocol for distributed, collaborative, hypermedia information systems. HTTP is the **foundation of data communication for the World Wide Web.** Hypertext is structured text that uses logical links (hyperlinks) between nodes containing text. HTTP is the protocol to Exchange or transfer hypertext.

8)Port Number 110-POP- In computing, the Post Office Protocol (POP) is an application-layer Internet standard **protocol used by local e-mail clients to retrieve e-mail from a remote server over a TCP/IP connection.**

9)Port Number 119- NNTP- The Network News Transfer Protocol (NNTP) is an application protocol **used for transporting Usenet news articles (netnews) between news servers and for reading and posting articles by end user client applications**

10) Port Number 123- NTP – Network Time Protocol- networking protocol **for clock synchronization between computer systems over packet-switched**, variable-latency data networks

11)Port Number 143- IMAP- In computing, the Internet Message Access Protocol (IMAP) is an **Internet standard protocol used by e-mail clients** to retrieve e-mail messages from a mail server over a TCP/IP connection.

12 Port Number 161 – SNMP- Simple Network Management Protocol (SNMP) is an Internet-standard protocol **for collecting and organizing information about managed devices on IP networks and for modifying that information to change device behavior**. Devices that typically support SNMP include routers, switches, servers, workstations, printers, modem racks and more.

13)Port Number 194- IRC- Internet Relay Chat Protocol (IRCP) is an **application layer protocol that facilitates communication in the form of text**. The chat process workson a client/server networking model. IRC clients are computer programs that a user can install on their system. These clients communicate with chat servers to transfer messages to other clients.

14)Port Number 443- HTTPS- HTTPS (also called HTTP over TLS, HTTP over SSL, and HTTP Secure) **is a protocol for secure communication over a computer network** which is

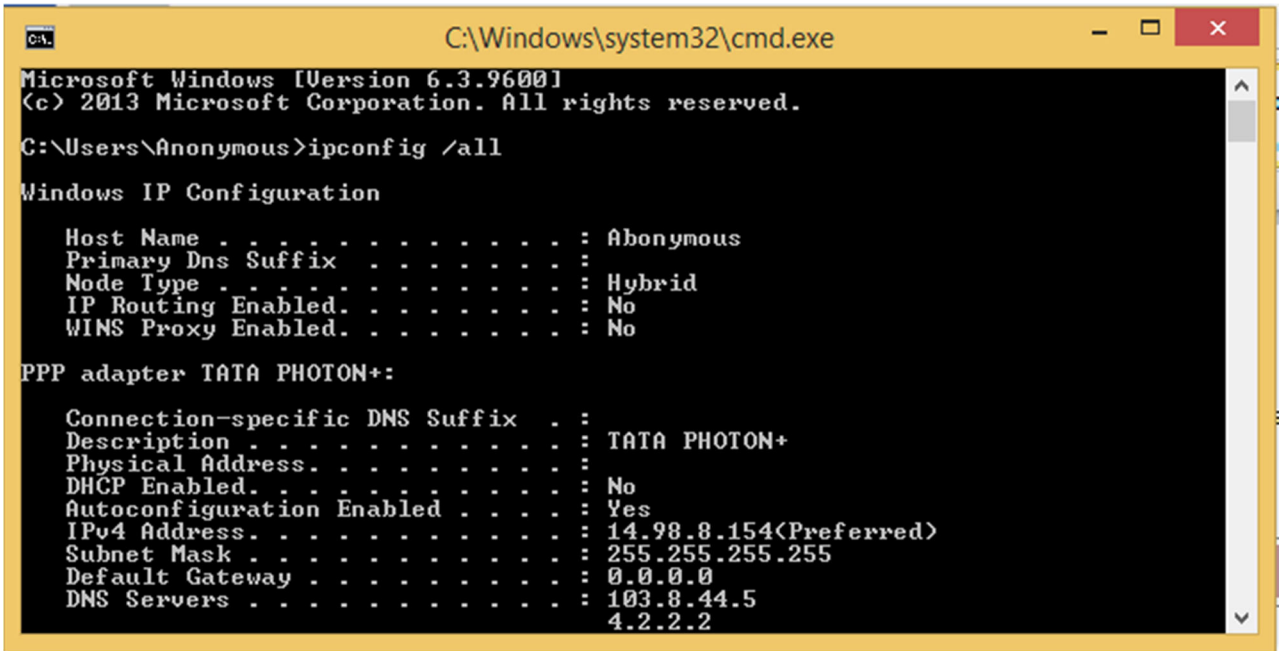
widely used on the Internet. HTTPS consists of communication over Hypertext Transfer Protocol (HTTP) within a connection encrypted by Transport Layer Security or its predecessor, Secure Sockets Layer. The main motivation for HTTPS is authentication of the visited website and protection of the privacy and integrity of the exchanged data.

15)Port Number 500- IKE-Internet Key Exchange- In computing, **Internet Key Exchange** (**IKE** or IKEv2) is the protocol **used to set up a security association (SA) in the IPsec protocol suite.**

16)Port Number 389- LDAP- The Lightweight Directory Access Protocol (**LDAP**) is a directory service protocol that runs on a layer above the TCP/IP stack. It provides a **mechanism used to connect to, search, and modify Internet directories**. The **LDAP** directory service is based on a client-server model.

17)Port Number 139- NETBIOS- **NetBIOS** (Network Basic Input/Output System) is a program that **allows applications on different computers to communicate within a local area network (LAN).** It was created by IBM for its early PC Network, was adoptedbyMicrosoft, and has since become a de facto industry standard.

18)Port Number 101- HOSTNAME- a **hostname** (archaically node name) is a label that is assigned to a device connected to a computer network and that is **used to identify the device in various forms of electronic communication, such as the World Wide Web**.



19)Port Number 68- DHCP- Dynamic Host Configuration Protocol (**DHCP**) is a client/server protocol that **automatically provides an Internet Protocol (IP) host with its IP address and other related configuration information such as the subnet mask and default gateway**.

20)PORT NUMBER 88- kerberos **Kerberos** is a **secure method for authenticating a request for a service in a computer network. Kerberos** was developed in the Athena Project a theMassachusetts Institute of Technology (MIT). The name is taken from Greek mythology; ker**beros** was a three-headed dog who guarded the gates of Hades.