

IP Sockets In C

Network socket

network in 1971, "the socket is specified as a 32-bit number with even sockets identifying receiving sockets and odd sockets identifying sending sockets." Today

A network socket is a software structure within a network node of a computer network that serves as an endpoint for sending and receiving data across the network. The structure and properties of a socket are defined by an application programming interface (API) for the networking architecture. Sockets are created only during the lifetime of a process of an application running in the node.

Because of the standardization of the TCP/IP protocols in the development of the Internet, the term network socket is most commonly used in the context of the Internet protocol suite, and is therefore often also referred to as Internet socket. In this context, a socket is externally identified to other hosts by its socket address, which is the triad of transport protocol, IP address, and port number.

The term socket is also used for the software endpoint of node-internal inter-process communication (IPC), which often uses the same API as a network socket.

Berkeley sockets

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A Berkeley (BSD) socket is an application programming interface (API) for Internet domain sockets and Unix domain sockets, used for inter-process communication (IPC). It is commonly implemented as a library of linkable modules. It originated with the 4.2BSD Unix operating system, which was released in 1983.

A socket is an abstract representation (handle) for the local endpoint of a network communication path. The Berkeley sockets API represents it as a file descriptor in the Unix philosophy that provides a common interface for input and output to streams of data.

Berkeley sockets evolved with little modification from a de facto standard into a component of the POSIX specification. The term POSIX sockets is essentially synonymous with Berkeley sockets, but they are also known as BSD sockets, acknowledging the first implementation in the Berkeley Software Distribution.

Winsock

been significant interest in implementing protocols other than TCP/IP. Windows Sockets code and design are based on BSD sockets, but provides additional

In computing, the Windows Sockets API (WSA), later shortened to Winsock, is an application programming interface (API) that defines how Windows network application software should access network services, especially TCP/IP. It defines a standard interface between a Windows TCP/IP client application (such as an FTP client or a web browser) and the underlying TCP/IP protocol stack. The nomenclature is based on the Berkeley sockets API used in BSD for communications between programs.

IP code

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The IP code or Ingress Protection code indicates how well a device is protected against water and dust. It is defined by the International Electrotechnical Commission (IEC) under the international standard IEC 60529 which classifies and provides a guideline to the degree of protection provided by mechanical casings and electrical enclosures against intrusion, dust, accidental contact, and water. It is published in the European Union by the European Committee for Electrotechnical Standardization (CENELEC) as EN 60529.

The standard aims to provide users more detailed information than vague marketing terms such as waterproof. For example, a cellular phone rated at IP67 is "dust resistant" and can be "immersed in 1 meter of freshwater for up to 30 minutes". Similarly, an electrical socket rated IP22 is protected against insertion of fingers and will not become unsafe during a specified test in which it is exposed to vertically or nearly vertically dripping water. IP22 or IP2X are typical minimum requirements for the design of electrical accessories for indoor use.

The digits indicate conformity with the conditions summarized in the tables below. The digit 0 is used where no protection is provided. The digit is replaced with the letter X when insufficient data has been gathered to assign a protection level. The device can become less capable; however, it cannot become unsafe.

There are no hyphens in a standard IP code. IPX-8 (for example) is thus an invalid IP code.

Netstat

In computing, netstat is a command-line network utility that displays open network sockets, routing tables, and a number of network interface (network

In computing, netstat is a command-line network utility that displays open network sockets, routing tables, and a number of network interface (network interface controller or software-defined network interface) and network protocol statistics. It is available on Unix, Plan 9, Inferno, and Unix-like operating systems including macOS, Linux, Solaris and BSD. It is also available on IBM OS/2 and on Microsoft Windows NT-based operating systems including Windows XP, Windows Vista, Windows 7, Windows 8 and Windows 10.

It is used for finding problems in the network and to determine the amount of traffic on the network as a performance measurement. On Linux this program is mostly obsolete, although still included in many distributions.

On Linux, netstat (part of "net-tools") is superseded by ss (part of iproute2). The replacement for netstat -r is ip route, the replacement for netstat -i is ip -s link, and the replacement for netstat -g is ip maddr, all of which are recommended instead.

LwIP

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lwIP is used by many manufacturers of embedded systems, including Intel/Altera, Analog Devices, Xilinx, TI, ST and Freescale.

Hex key

(sockets). Hex keys are formed from a single piece of hard hexagonal steel rod, having blunt ends that fit snugly into similarly shaped screw sockets.

A hex key (also, hex wrench, Allen key and Allen wrench, Unbrako or Inbus) is a simple driver for bolts or screws that have heads with internal hexagonal recesses (sockets).

Hex keys are formed from a single piece of hard hexagonal steel rod, having blunt ends that fit snugly into similarly shaped screw sockets. The rods are bent to 90°, forming two arms of unequal length resembling an "L". The tool is usually held and twisted by its long arm, creating a relatively large torque at the tip of the short arm; it can also be held by its short arm to access screws in difficult-to-reach locations and to turn screws faster at the expense of torque.

Hex keys are designated with a socket size and are manufactured with tight tolerances. As such, they are commonly sold in kits that include a variety of sizes. Key length typically increases with size but not necessarily proportionally so. Variants on this design have the short end inserted in a transverse handle, which may contain multiple keys of varying sizes that can be folded into the handle when not in use.

While often used in generic terms for "hex key", the "Allen" name is a registered trademark (circa 1910) of the Allen Manufacturing Company (now Apex Tool Group) of Hartford, Connecticut; regardless, "Allen key" and "Allen wrench" are often seen as generic trademarks.

Transport Layer Security

Internet Hall of Fame for "inventing secure sockets and implementing the first secure sockets layer, named SNP, in 1993." Netscape developed the original SSL

Transport Layer Security (TLS) is a cryptographic protocol designed to provide communications security over a computer network, such as the Internet. The protocol is widely used in applications such as email, instant messaging, and voice over IP, but its use in securing HTTPS remains the most publicly visible.

The TLS protocol aims primarily to provide security, including privacy (confidentiality), integrity, and authenticity through the use of cryptography, such as the use of certificates, between two or more communicating computer applications. It runs in the presentation layer and is itself composed of two layers: the TLS record and the TLS handshake protocols.

The closely related Datagram Transport Layer Security (DTLS) is a communications protocol that provides security to datagram-based applications. In technical writing, references to "(D)TLS" are often seen when it applies to both versions.

TLS is a proposed Internet Engineering Task Force (IETF) standard, first defined in 1999, and the current version is TLS 1.3, defined in August 2018. TLS builds on the now-deprecated SSL (Secure Sockets Layer) specifications (1994, 1995, 1996) developed by Netscape Communications for adding the HTTPS protocol to their Netscape Navigator web browser.

Voice over IP

Secure Sockets Layer (SSL). "XMPP Federation". Google Talkabout. 2006. Retrieved May 11, 2012. Booth, C (2010). "Chapter 2: IP Phones, Software VoIP, and

Voice over Internet Protocol (VoIP), also known as IP telephony, is a set of technologies used primarily for voice communication sessions over Internet Protocol (IP) networks, such as the Internet. VoIP enables voice calls to be transmitted as data packets, facilitating various methods of voice communication, including traditional applications like Skype, Microsoft Teams, Google Voice, and VoIP phones. Regular telephones can also be used for VoIP by connecting them to the Internet via analog telephone adapters (ATAs), which convert traditional telephone signals into digital data packets that can be transmitted over IP networks.

The broader terms Internet telephony, broadband telephony, and broadband phone service specifically refer to the delivery of voice and other communication services, such as fax, SMS, and voice messaging, over the Internet, in contrast to the traditional public switched telephone network (PSTN), commonly known as plain old telephone service (POTS).

VoIP technology has evolved to integrate with mobile telephony, including Voice over LTE (VoLTE) and Voice over NR (Vo5G), enabling seamless voice communication over mobile data networks. These advancements have extended VoIP's role beyond its traditional use in Internet-based applications. It has become a key component of modern mobile infrastructure, as 4G and 5G networks rely entirely on this technology for voice transmission.

List of technology terms

Hardware Headphones I/O IEEE Internet Internetworking Internet Protocol (IP) iOS IP Address International Organization for Standardization (ISO) Optical disc

This is an alphabetical list of notable technology terms. It includes terms with notable applications in computing, networking, and other technological fields.

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