

#### ETHERNET Structure

- 6 bytes Destination Ethernet Address (All 1 if broadcast, ...)
- 6 bytes Source Ethernet Address
- 2 bytes Length or Type Field
  - if IEEE 802.3 number of bytes  $\leq 1500$  (05DC)
  - if ethernet I or II is the packet type  $> 1500$  (05DC)
- 46 bytes until 1500 are data! Short packets filled until 46 bytes
- 4 bytes (Frame Check sequence: directly evaluated and managed by the hardware. Not accessible via software.)

## SAP CODES

Null LSAP	0x00
Individual LLC Sublayer Management Function	0x02
Group LLC Sublayer Management Function	0x03
IBM SNA Path Control (individual)	0x04
IBM SNA Path Control (group)	0x05
ARPANET Internet Protocol (IP)	0x06
SNA	0x08
SNA	0x0C
PROWAY (IEC955) Network Management & Initialization	0x0E
Texas Instruments	0x18
IEEE 802.1 Bridge Spanning Tree Protocol	0x42
EIA RS-511 Manufacturing Message Service	0x4E
ISO 8208 (X.25 over IEEE 802.2 Type 2 LLC)	0x7E
Xerox Network Systems (XNS)	0x80
Nestar	0x86
PROWAY (IEC 955) Active Station List Maintenance	0x8E
ARPANET Address Resolution Protocol (ARP)	0x98
Banyan VINES	0xBC
SubNetwork Access Protocol (SNAP)	0xAA
Novell NetWare	0xE0
IBM NetBIOS	0xF0
IBM LAN Management (individual)	0xF4
IBM LAN Management (group)	0xF5
IBM Remote Program Load (RPL)	0xF8
Ungermann-Bass	0xFA
ISO Network Layer Protocol	0xFE
Global LSAP	0xFF

## Ethernet types

0x0000	0x05DC	IEEE 802.3 Length Fields
0x0600	0x0600	Xerox XNS IDP
0x0800	0x0800	DOD IP
0x0801	0x0801	X.75 Internet
0x0802	0x0802	NBS Internet
0x0803	0x0803	ECMA Internet
0x0804	0x0804	CHAOSnet
0x0805	0x0805	X.25 Level 3
0x0806	0x0806	ARP (for IP and CHAOS)
0x0807	0x0807	Xerox XNS Compatibility
0x081C	0x081C	Symbolics Private
0x0888	0x088A	Xyplex
0x0900	0x0900	Ungermann-Bass network debugger
0x0A00	0x0A00	Xerox 802.3 PUP
0x0A01	0x0A01	Xerox 802.3 PUP Address Translation
0x0A02	0x0A02	Xerox PUP CAL Protocol (unused)
0x0BAD	0x0BAD	Banyan Systems, Inc.
0x1000	0x1000	Berkeley Trailer negotiation
0x1001	0x100F	Berkeley Trailer encapsulation for IP
0x1066	0x1066	VALIS Systems
0x1600	0x1600	VALID Systems

0x3C01	0x3C0D	3Com Corporation
0x3C10	0x3C14	3Com Corporation
0x4242	0x4242	PCS Basic Block Protocol
0x5208	0x5208	BBN Simnet Private
0x6000	0x6000	DEC Unassigned
0x6001	0x6001	DEC MOP Dump/Load Assistance
0x6002	0x6002	DEC MOP Remote Console
0x6003	0x6003	DEC DECnet Phase IV
0x6004	0x6004	DEC LAT
0x6005	0x6005	DEC DECnet Diagnostic Protocol: DECnet Customer Use
0x6007	0x6007	DEC DECnet LAVC
0x6008	0x6008	DEC Amber
0x6009	0x6009	DEC MUMPS
0x6010	0x6014	3Com Corporation
0x7000	0x7000	Ungermann-Bass download
0x7001	0x7001	Ungermann-Bass NIU
0x7002	0x7002	Ungermann-Bass diagnostic/loopback
0x7007	0x7007	OS/9 Microware
0x7020	0x7028	LRT (England)
0x7030	0x7030	Proteon
0x7034	0x7034	Cabletron
0x8003	0x8003	Cronus VLN
0x8004	0x8004	Cronus Direct
0x8005	0x8005	HP Probe protocol
0x8006	0x8006	Nestar
0x8008	0x8008	AT&T
0x8010	0x8010	Excelan
0x8013	0x8013	SGI diagnostic type (obsolete)
0x8014	0x8014	SGI network games (obsolete)
0x8015	0x8015	SGI reserved type (obsolete)
0x8016	0x8016	SGI bounce server (obsolete)
0x8019	0x8019	Apollo
0x802E	0x802E	Tymshare
0x802F	0x802F	Tigan, Inc.
0x8035	0x8035	Reverse ARP (RARP)
0x8036	0x8036	Aeonic Systems
0x8038	0x8038	DEC LANBridge
0x8039	0x8039	DEC DSM
0x803A	0x803A	DEC Aragon
0x803B	0x803B	DEC VAXELN
0x803C	0x803C	DEC NSMV
0x803D	0x803D	DEC Ethernet CSMA/CD Encryption Protocol
0x803E	0x803E	DEC DNA
0x803F	0x803F	DEC LAN Traffic Monitor
0x8040	0x8040	DEC NetBIOS
0x8041	0x8041	DEC MS/DOS
0x8042	0x8042	DEC Unassigned
0x8044	0x8044	Planning Research Corporation
0x8046	0x8046	AT&T
0x8047	0x8047	AT&T
0x8049	0x8049	ExperData (France)
0x805B	0x805B	VMTP (Versatile Message Transaction Protocol, RFC-1045, Stanford)
0x805C	0x805C	Stanford V Kernel production, Version 6.0
0x805D	0x805D	Evans & Sutherland
0x8060	0x8060	Little Machines
0x8062	0x8062	Counterpoint Computers
0x8065	0x8065	University of Massachusetts, Amherst
0x8066	0x8066	University of Massachusetts, Amherst

0x8067	0x8067	Veeco Integrated Automation
0x8068	0x8068	General Dynamics
0x8069	0x8069	AT&T
0x806A	0x806A	Autophon (Switzerland)
0x806C	0x806C	ComDesign
0x806D	0x806D	Compugraphic Corporation
0x806E	0x8077	Landmark Graphics Corporation
0x807A	0x807A	Matra (France)
0x807B	0x807B	Dansk Data Elektronik A/S (Denmark)
0x807C	0x807C	Merit Intermodal
0x807D	0x807D	VitaLink Communications
0x807E	0x807E	VitaLink Communications
0x807F	0x807F	VitaLink Communications
0x8080	0x8080	VitaLink Communications bridge
0x8081	0x8081	Counterpoint Computers
0x8082	0x8082	Counterpoint Computers
0x8083	0x8083	Counterpoint Computers
0x8088	0x8088	Xyplex
0x8089	0x8089	Xyplex
0x808A	0x808A	Xyplex
0x809B	0x809B	AppleTalk and Kinetics AppleTalk over Ethernet
0x809C	0x809C	Datability
0x809D	0x809D	Datability
0x809E	0x809E	Datability
0x809F	0x809F	Spider Systems, Ltd. (England)
0x80A3	0x80A3	Nixdorf Computer (West Germany)
0x80A4	0x80B3	Siemens Gammasonics, Inc.
0x80C0	0x80C0	Digital Communication Associates
0x80C1	0x80C1	Digital Communication Associates
0x80C2	0x80C2	Digital Communication Associates
0x80C3	0x80C3	Digital Communication Associates
0x80C6	0x80C6	Pacer Software
0x80C7	0x80C7	Applitek Corporation
0x80C8	0x80CC	Intergraph Corporation
0x80CD	0x80CD	Harris Corporation
0x80CE	0x80CE	Harris Corporation
0x80CF	0x80D2	Taylor Inst.
0x80D3	0x80D3	Rosemount Corporation
0x80D4	0x80D4	Rosemount Corporation
0x80D5	0x80D5	IBM SNA Services over Ethernet
0x80DD	0x80DD	Varian Associates
0x80DE	0x80DE	Integrated Solutions TRFS (Transparent Remote File System)
0x80DF	0x80DF	Integrated Solutions
0x80E0	0x80E3	Allen-Bradley
0x80E4	0x80F0	Datability
0x80F2	0x80F2	Retix
0x80F3	0x80F3	Kinetics, AppleTalk ARP (AARP)
0x80F4	0x80F4	Kinetics
0x80F5	0x80F5	Kinetics
0x80F7	0x80F7	Apollo Computer
0x80FF	0x8103	Wellfleet Communications
0x8107	0x8107	Symbolics Private
0x8108	0x8108	Symbolics Private
0x8109	0x8109	Symbolics Private
0x8130	0x8130	Waterloo Microsystems
0x8131	0x8131	VG Laboratory Systems
0x8137	0x8137	Novell (old) NetWare IPX
0x8138	0x8138	Novell
0x8139	0x813D	KTI

0x9000	0x9000	Loopback (Configuration Test Protocol)
0x9001	0x9001	Bridge Communications XNS Systems Management
0x9002	0x9002	Bridge Communications TCP/IP Systems Management
0x9003	0x9003	Bridge Communications
0xFF00	0xFF00	BBN VITAL LANBridge cache wakeup

## IP Protocols

0	Reserved	Reserved
1	ICMP	Internet Control Message
2	IGMP	Internet Group Management
3	GGP	Gateway-to-Gateway
4	IP	IP in IP (encapsulation)
5	ST	Stream
6	TCP	Transmission Control
7	UCL	UCL
8	EGP	Exterior Gateway Protocol
9	IGP	any private interior gateway
10	BBN-RCC-MON	BBN RCC Monitoring
11	NVP-II	Network Voice Protocol
12	PUP	PUP
13	ARGUS	ARGUS
14	EMCON	EMCON
15	XNET	Cross Net Debugger
16	CHAOS	Chaos
17	UDP	User Datagram
18	MUX	Multiplexing
19	DCN-MEAS	DCN Measurement Subsystems
20	HMP	Host Monitoring
21	PRM	Packet Radio Measurement
22	XNS-IDP	XEROX NS IDP
23	TRUNK-1	Trunk-1
24	TRUNK-2	Trunk-2
25	LEAF-1	Leaf-1
26	LEAF-2	Leaf-2
27	RDP	Reliable Data Protocol
28	IRTP	Internet Reliable Transaction
29	ISO-TP4	ISO Transport Protocol Class 4
30	NETBLT	Bulk Data Transfer Protocol
31	MFE-NSP	MFE Network Services Protocol
32	MERIT-INP	MERIT Internodal Protocol
33	SEP	Sequential Exchange Protocol
34	3PC	Third Party Connect Protocol
35	IDPR	Inter-Domain Policy Routing Protocol
36	XTP	XTP
37	DDP	Datagram Delivery Protocol
38	IDPR-CMTP	IDPR Control Message Transport Protocol
39	TP++	TP++ Transport Protocol
40	IL	IL Transport Protocol
41	SIP	Simple Internet Protocol
42	SDRP	Source Demand Routing Protocol
43	SIP-SR	SIP Source Route
44	SIP-FRAG	SIP Fragment
45	IDRP	Inter-Domain Routing Protocol
46	RSVP	Reservation Protocol
47	GRE	General Routing Encapsulation
48	MHRP	Mobile Host Routing Protocol

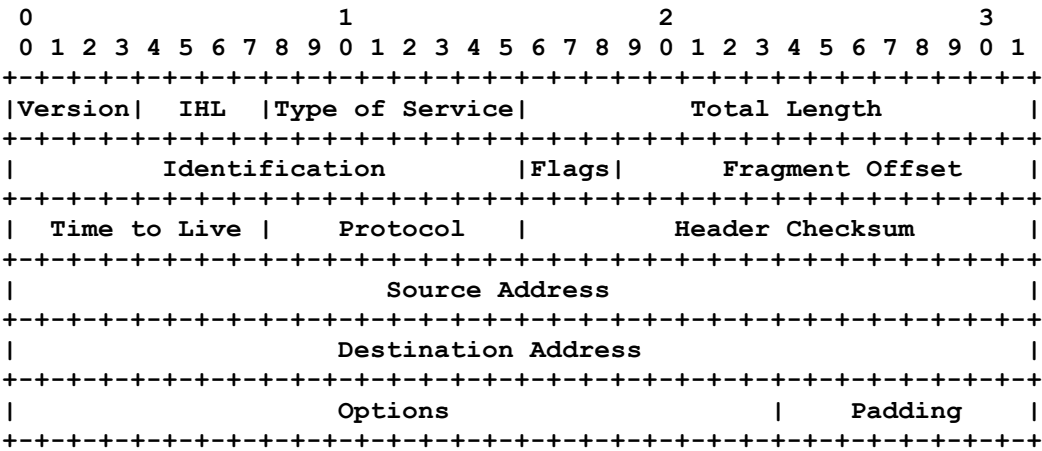
49	BNA	BNA
50	SIPP-ESP	SIPP Encap Security Payload
51	SIPP-AH	SIPP Authentication Header
52	I-NLSP	Integrated Net Layer Security TUBA
53	SWIPE	IP with Encryption
54	NHRP	NBMA Next Hop Resolution Protocol
61	any host	any host internal protocol
62	CFTP	CFTP
63	any net	local network
64	SAT-EXPAK	SATNET and Backroom EXPAK
65	KRYPTOLAN	Kryptolan
66	RVD	MIT Remote Virtual Disk Protocol
67	IPPC	Internet Pluribus Packet Core
68	any file	distributed file system
69	SAT-MON	SATNET Monitoring
70	VISA	VISA Protocol
71	IPCV	Internet Packet Core Utility
72	CPNX	Computer Protocol Network Executive
73	CPHB	Computer Protocol Heart Beat
74	WSN	Wang Span Network
75	PVP	Packet Video Protocol
76	BR-SAT-MON	Backroom SATNET Monitoring
77	SUN-ND	SUN ND PROTOCOL-Temporary
78	WB-MON	WIDEBAND Monitoring
79	WB-EXPAK	WIDEBAND EXPAK
80	ISO-IP	ISO Internet Protocol
81	VMTP	VMTP
82	SECURE-VMTP	SECURE-VMTP
83	VINES	VINES
84	TTP	TTP
85	NSFNET-IGP	NSFNET-IGP
86	DGP	Dissimilar Gateway Protocol
87	TCF	TCF
88	IGRP	IGRP
89	OSPFIGP	OSPFIGP
90	Sprite-RPC	Sprite RPC Protocol
91	LARP	Locus Address Resolution Protocol
92	MTP	Multicast Transport Protocol
93	AX.25	AX.25 Frames
94	IPIP	IP-within-IP Encapsulation Protocol
95	MICP	Mobile Internetworking Control Pro.
96	SCC-SP	Semaphore Communications Sec. Pro.
97	ETHERIP	Ethernet-within-IP Encapsulation
98	ENCAP	Encapsulation Header
99	any scheme	any private encryption scheme
100	GMTP	GMTP
255	Reserved	Reserved

### IP version numbers

0	Reserved
1	Unassigned
2	Unassigned
3	Unassigned
4	IP: Internet Protocol
5	ST: ST Datagram Mode
6	SIP: Simple Internet Protocol

7	TP/IX: The Next Internet
8	PIP: The P Internet Protocol
9	TUBA
10	Unassigned
11	Unassigned
12	Unassigned
13	Unassigned
14	Unassigned
15	Reserved

DOD IP (from the byte 14 of ETHERNET)  
RFC791, [www.protocols.com](http://www.protocols.com)



4	8	16	32 bits	
Ver.	IHL	Type of service	Total length	
Identification			Flags	Fragment offset
Time to live	Protocol		Header checksum	
Source address				
Destination address				
Option + Padding				
Data				

IP header structure

**Version**

Version field indicates the format of the Internet header.

**IHL**

Internet header length is the length of the Internet header in 32-bit words. Points to the beginning of the data. The minimum value for a correct header is 5.

**Type of service**

Indicates the quality of service desired. Networks may offer service precedence, meaning that they accept traffic only above a certain precedence at times of high load. There is a three-way trade-off between low delay, high reliability and high throughput.

**Bits 0-2: Precedence**



111 Network control.  
110 Internetwork control.  
101 CRITIC/ECP.  
100 Flash override.  
011 Flash.  
010 Immediate.  
001 Priority.  
000 Routine.

**Bit 3: Delay**

0 Normal delay.  
1 Low delay.

**Bit 4: Throughput**

0 Normal throughput.  
1 High throughput.

**Bit 5: Reliability**

0 Normal reliability.  
1 High reliability.

**Bits 6-7: Reserved for future use.**

**Total length**

Length of the datagram measured in bytes, including the Internet header and data. This field allows the length of a datagram to be up to 65,535 bytes, although such long datagrams are impractical for most hosts and networks. All hosts must be prepared to accept datagrams of up to 576 bytes, regardless of whether they arrive whole or in fragments. It is recommended that hosts send datagrams larger than 576 bytes only if the destination is prepared to accept the larger datagrams.

**Identification**

Identifying value assigned by the sender to aid in assembling the fragments of a datagram.

**Flags**

3 bits. Control flags:

Bit 0 is reserved and must be zero.

Bit 1: Don't fragment bit:

- 0 May fragment.
- 1 Don't fragment.

Bit 2: More fragments bit:

- 0 Last fragment.
- 1 More fragments.

### **Fragment offset**

13 bits. Indicates where this fragment belongs in the datagram. The fragment offset is measured in units of 8 bytes (64 bits). The first fragment has offset zero.

### **Time to live**

Indicates the maximum time the datagram is allowed to remain in the Internet system. If this field contains the value zero, the datagram must be destroyed. This field is modified in Internet header processing. The time is measured in units of seconds. However, since every module that processes a datagram must decrease the TTL by at least one (even if it processes the datagram in less than 1 second), the TTL must be thought of only as an upper limit on the time a datagram may exist. The intention is to cause undeliverable datagrams to be discarded and to bound the maximum datagram lifetime.

### **Protocol**

Indicates the next level protocol used in the data portion of the Internet datagram.

### **Header checksum**

A checksum on the header only. Since some header fields change, e.g., Time To Live, this is recomputed and verified at each point that the Internet header is processed.

### **Source address / destination address**

32 bits each. A distinction is made between names, addresses and routes. A *name* indicates an object to be sought. An *address* indicates the location of the object. A *route* indicates how to arrive at the object. The Internet protocol deals primarily with addresses. It is the task of higher level protocols (such as host-to-host or application) to make the mapping from names to addresses. The Internet module maps Internet addresses to local net addresses. It is the task of lower level procedures (such as local net or gateways) to make the mapping from local net addresses to routes.

### **Options**

Options may or may not appear in datagrams. They must be implemented by all IP modules (host and gateways). What is

optional is their transmission in any particular datagram, not their implementation. In some environments, the security option may be required in all datagrams.

The option field is variable in length. There may be zero or more options. There are two possible formats for an option:

- A single octet of option type.
- An option type octet, an option length octet and the actual option data octets.

The length octet includes the option type octet and the actual option data octets.

The option type octet has 3 fields:

1 bit: Copied flag. Indicates that this option is copied into all fragments during fragmentation:

- 0 Copied.
- 1 Not copied.

2 bits: Option class

- 0 Control.
- 1 Reserved for future use.
- 2 Debugging and measurement.
- 3 Reserved for future use.

5 bits: Option number.

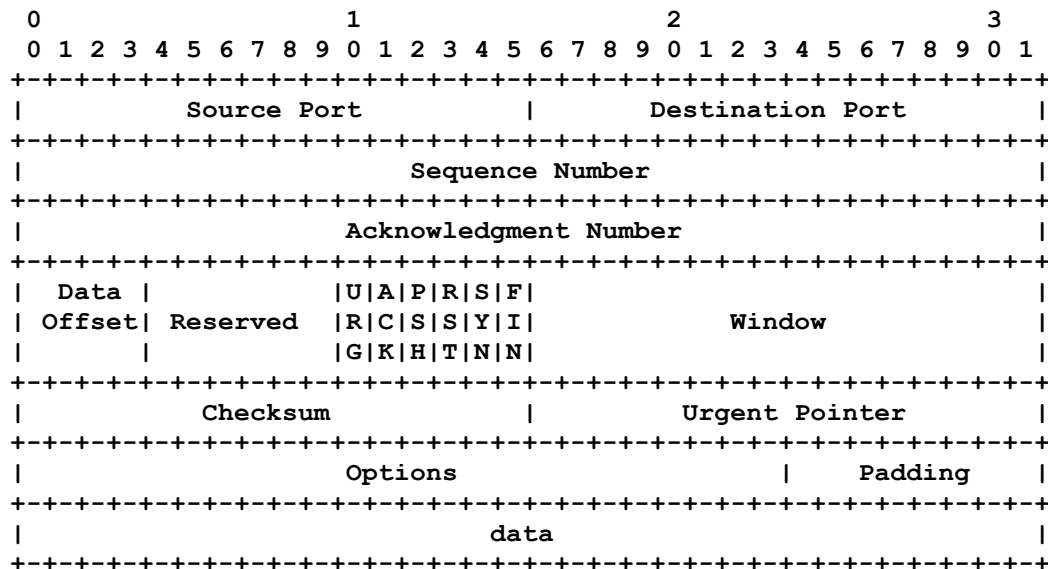
### **Data**

IP data or higher layer protocol header.

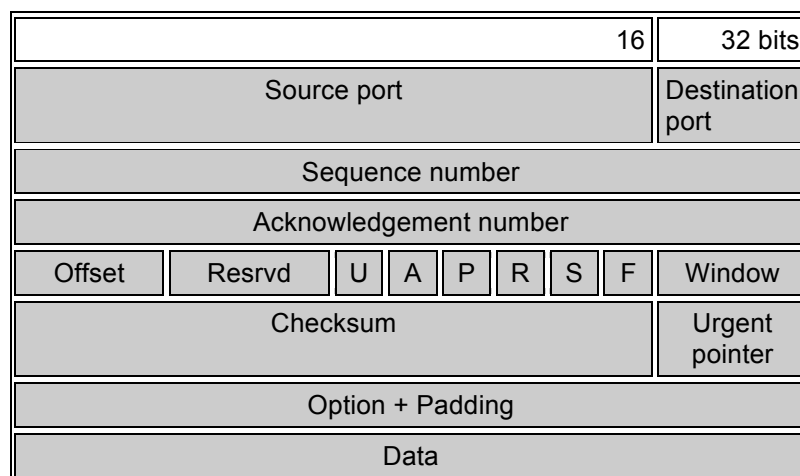
## TCP (data part of the IP packets)

RFC793, [www.protocols.com](http://www.protocols.com),

[http://en.wikipedia.org/wiki/Transmission\\_Control\\_Protocol](http://en.wikipedia.org/wiki/Transmission_Control_Protocol),



TCP Header Format



TCP header structure

### Source port

Source port number.

### Destination port

Destination port number.

### Sequence number

The sequence number of the first data octet in this segment (except when SYN is present). If SYN is present, the sequence number is the initial sequence number (ISN) and the first data octet is ISN+1.

**Acknowledgment number**

If the ACK control bit is set, this field contains the value of the next sequence number which the sender of the segment is expecting to receive. Once a connection is established, this value is always sent.

**Data offset**

4 bits. The number of 32-bit words in the TCP header, which indicates where the data begins. The TCP header (even one including options) has a length which is an integral number of 32 bits.

**Reserved**

6 bits. Reserved for future use. Must be zero.

**Control bits**

6 bits. The control bits may be (from right to left):

U (URG)	Urgent pointer field significant.
A (ACK)	Acknowledgment field significant.
P (PSH)	Push function.
R (RST)	Reset the connection.
S (SYN)	Synchronize sequence numbers.
F (FIN)	No more data from sender.

**Window**

16 bits. The number of data octets which the sender of this segment is willing to accept, beginning with the octet indicated in the acknowledgment field.

**Checksum**

16 bits. The checksum field is the 16 bit one's complement of the one's complement sum of all 16-bit words in the header and text. If a segment contains an odd number of header and text octets to be checksummed, the last octet is padded on the right with zeros to form a 16-bit word for checksum purposes. The pad is not transmitted as part of the segment. While computing the checksum, the checksum field itself is replaced with zeros.

**Urgent Pointer**

16 bits. This field communicates the current value of the urgent pointer as a positive offset from the sequence number in this segment. The urgent pointer points to the sequence number of the octet following the urgent data. This field can only be interpreted in segments for which the URG control bit has been set.

**Options**

Options may be transmitted at the end of the TCP header and always have a length which is a multiple of 8 bits. All options are included in the checksum. An option may begin on any octet boundary.

There are two possible formats for an option:

A single octet of option type.

An octet of option type, an octet of option length, and the actual option data octets.

The option length includes the option type and option length, as well as the option data octets.

The list of options may be shorter than that designated by the data offset field because the contents of the header beyond the End-of-Option option must be header padding i.e., zero.

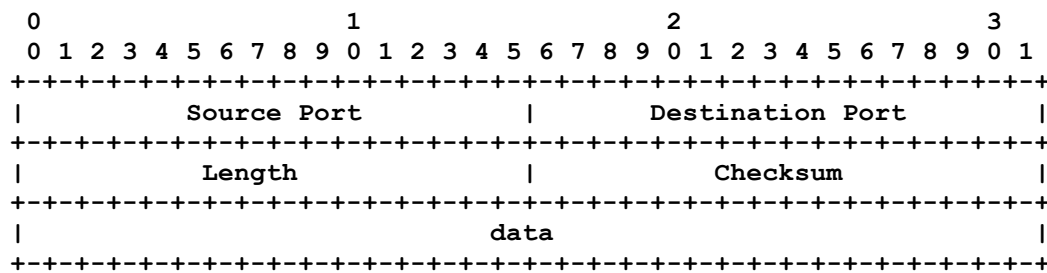
A TCP must implement all options.

**Data**

TCP data or higher layer protocol.

## UDP (data part of IP packets)

RFC768, [www.ietf.org/rfc/rfc768.txt](http://www.ietf.org/rfc/rfc768.txt)



TCP Header Format

The User Datagram Protocol (UDP), defined by IETF RFC768, provides a simple, but unreliable message service for transaction-oriented services. Each UDP header carries both a source port identifier and destination port identifier, allowing high-level protocols to target specific applications and services among hosts.

The UDP header structure is shown as follows:

16	32 bits
Source port	Destination port
Length	Checksum
Data	

UDP header structure

### Source port

Source port is an optional field. When used, it indicates the port of the sending process and may be assumed to be the port to which a reply should be addressed in the absence of any other information. If not used, a value of zero is inserted.

### Destination port

Destination port has a meaning within the context of a particular Internet destination address.

### Length

The length in octets of this user datagram, including this header and the data. The minimum value of the length is eight.

### Checksum

The 16-bit one's complement of the one's complement sum of a pseudo header of information from the IP header, the UDP header and the data, padded with zero octets at the end (if necessary) to make a multiple of two octets.

### Data

UDP data field.





## ARP/RARP (data part of Ethernet)

RFC826, [www.protocols.com](http://www.protocols.com)

TCP/IP uses the Address Resolution Protocol (ARP) and the Reverse Address Resolution Protocol (RARP) to initialize the use of Internet addressing on an Ethernet or other network that uses its own media access control (MAC). ARP allows a host to communicate with other hosts when only the Internet address of its neighbors is known. Before using IP, the host sends a broadcast ARP request containing the Internet address of the desired destination system.

The ARP/RARP header structure is shown in the illustration below.

16		32 bits
Hardware Type		Protocol Type
HLen (8)	PLen (8)	Operation
Sender Hardware Address		
Sender Protocol Address		
Target Hardware Address		
Target Protocol Address		

*ARP/RARP header structure*

### Hardware type

Specifies a hardware interface type for which the sender requires a response.

### Protocol type

Specifies the type of high-level protocol address the sender has supplied.

### HLen

Hardware address length.

### PLen

Protocol address length.

### Operation

The values are as follows:

- 1 ARP request.
- 2 ARP response.
- 3 RARP request.
- 4 RARP response.
- 5 Dynamic RARP request.
- 6 Dynamic RARP reply.
- 7 Dynamic RARP error.

- 8 InARP request.
- 9 InARP reply.

**Sender hardware address**

HLen bytes in length.

**Sender protocol address**

PLen bytes in length.

**Target hardware address**

HLen bytes in length.

**Target protocol address**

PLen bytes in length.

## **DHCP (data part of IP)**

RFC1531, [www.protocols.com](http://www.protocols.com)

The Dynamic Host Configuration Protocol (DHCP) provides Internet hosts with configuration parameters. DHCP is an extension of BOOTP. DHCP consists of two components: a protocol for delivering host-specific configuration parameters from a DHCP server to a host and a mechanism for allocation of network addresses to hosts. (Compliant with IETF RFC1531.)

The format of the header is shown in the following illustration:

8	16	24	32 bits
Op (1)	Htype (1)	Hlen (1)	Hops (1)
Xid (4 bytes)			
Secs (2 bytes)		Flags (2 bytes)	
Ciaddr (4 bytes)			
Yiaddr (4 bytes)			
Siaddr (4 bytes)			
Giaddr (4 bytes)			
Chaddr (16 bytes)			

*DHCP header structure*

### **Op**

The message operation code. Messages can be either BOOTREQUEST or BOOTREPLY.

### **Htype**

The hardware address type.

### **Hlen**

The hardware address length.

### **Xid**

The transaction ID.

### **Secs**

The seconds elapsed since the client began the address acquisition or renewal process.

### **Flags**

The flags.

### **Ciaddr**

The client IP address.

### **Yiaddr**

The "Your" (client) IP address.

**Siaddr**

The IP address of the next server to use in bootstrap.

**Giaddr**

The relay agent IP address used in booting via a relay agent.

**Chaddr**

The client hardware address.

IETF RFC792 defines the Internet Control Message Protocol (ICMP). ICMP messages generally contain information about routing difficulties with IP datagrams or simple exchanges such as time-stamp or echo transactions.

The ICMP header structure is shown as follows:

8	16	32 bits
Type	Code	Checksum
Identifier		Sequence number
Address mask		

*ICMP header structure*

Type	Code	Description
0		Echo reply.
3		Destination unreachable.
3	0	Net unreachable.
3	1	Host unreachable.
3	2	Protocol unreachable.
3	3	Port unreachable.
3	4	Fragmentation needed and DF set.
3	5	Source route failed.
4		Source quench.
5		Redirect.
5	0	Redirect datagrams for the network.
5	1	Redirect datagrams for the host.
5	2	Redirect datagrams for the type of service and network.
5	3	Redirect datagrams for the type of service and host.
8		Echo.
11		Time exceeded.
11	0	Time to live exceeded in transit.
11	1	Fragment reassemble time exceeded.
12		Parameter problem.
13		Timestamp.
14		Timestamp reply.
15		Information request.
16		Information reply.

### Checksum

The 16-bit one's complement of the one's complement sum of the ICMP message starting with the ICMP Type. For computing the checksum, the checksum field should be zero.

**Identifier**

An identifier to aid in matching requests/replies; may be zero.

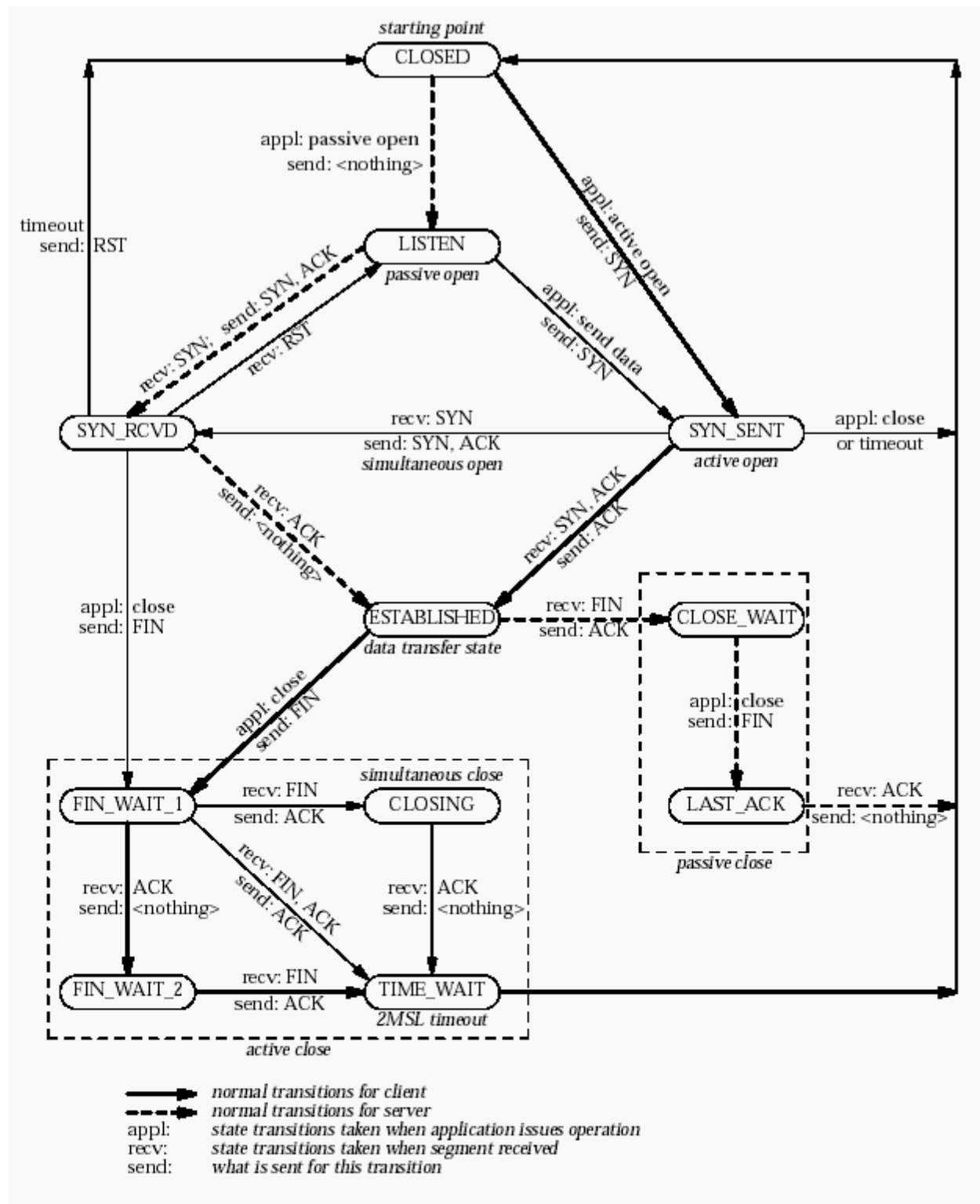
**Sequence number**

Sequence number to aid in matching requests/replies; may be zero.

**Address mask**

A 32-bit mask.

## TCP – state machine (RFC793)



A connection progresses through a series of states during its lifetime. The states are: LISTEN, SYN-SENT, SYNRECEIVED, ESTABLISHED, FIN-WAIT-1, FIN-WAIT-2, CLOSE-WAIT, CLOSING, LAST-ACK, TIME-WAIT, and the fictional state CLOSED. CLOSED is fictional because it represents the state when there is no TCB, and therefore, no connection. Briefly the meanings of the states are:

**LISTEN** represents waiting for a connection request from any remote TCP and port.

**SYN-SENT** represents waiting for a matching connection request after having sent a connection request.

**SYN-RECEIVED** represents waiting for a confirming connection request acknowledgment after having both received and sent a connection request.

**ESTABLISHED** represents an open connection, data received can be delivered to the user. The normal state for the data transfer phase of the connection.

**FIN-WAIT-1** represents waiting for a connection termination request from the remote TCP, or an acknowledgment of the connection termination request previously sent.

**FIN-WAIT-2** represents waiting for a connection termination request from the remote TCP.

**CLOSE-WAIT** represents waiting for a connection termination request from the local user.

**CLOSING** represents waiting for a connection termination request acknowledgment from the remote TCP.

**LAST-ACK** represents waiting for an acknowledgment of the connection termination request previously sent to the remote TCP (which includes an acknowledgment of its connection termination request).

**TIME-WAIT** represents waiting for enough time to pass to be sure the remote TCP received the acknowledgment of its connection termination request.

**CLOSED** represents no connection state at all.

A TCP connection progresses from one state to another in response to events. The events are:

- the user calls
  - OPEN, SEND, RECEIVE, CLOSE, ABORT, and STATUS;
- the incoming segments
  - particularly those containing the SYN, ACK, RST and FIN flags
- the timeouts.

The two transitions leading to the ESTABLISHED state correspond to the opening of a connection, and the two transitions leading from the ESTABLISHED state are for the termination of a connection. The ESTABLISHED state is where data transfer can occur between the two ends in both the directions.

If a connection is in the LISTEN state and a SYN segment arrives, the connection makes a transition to the SYN\_RCVD state and takes the action of replying with an ACK+SYN segment. The client does an active open which causes its end of the connection to send a SYN segment to the server and to move to the SYN\_SENT state. The arrival of the SYN+ACK segment causes the client to move to the ESTABLISHED state and to send an ack back to the server. When this ACK arrives the server finally moves to the ESTABLISHED state. In other words, we have just traced the THREE-WAY HANDSHAKE.

In the process of terminating a connection, the important thing to keep in mind is that the application process on both sides of the connection must independently close its half of the connection. Thus, on any one side there are three combinations of transition that get a connection from the ESTABLISHED state to the CLOSED state:

- This side closes first:

ESTABLISHED -> FIN\_WAIT\_1-> FIN\_WAIT\_2 -> TIME\_WAIT -> CLOSED.

- The other side closes first:

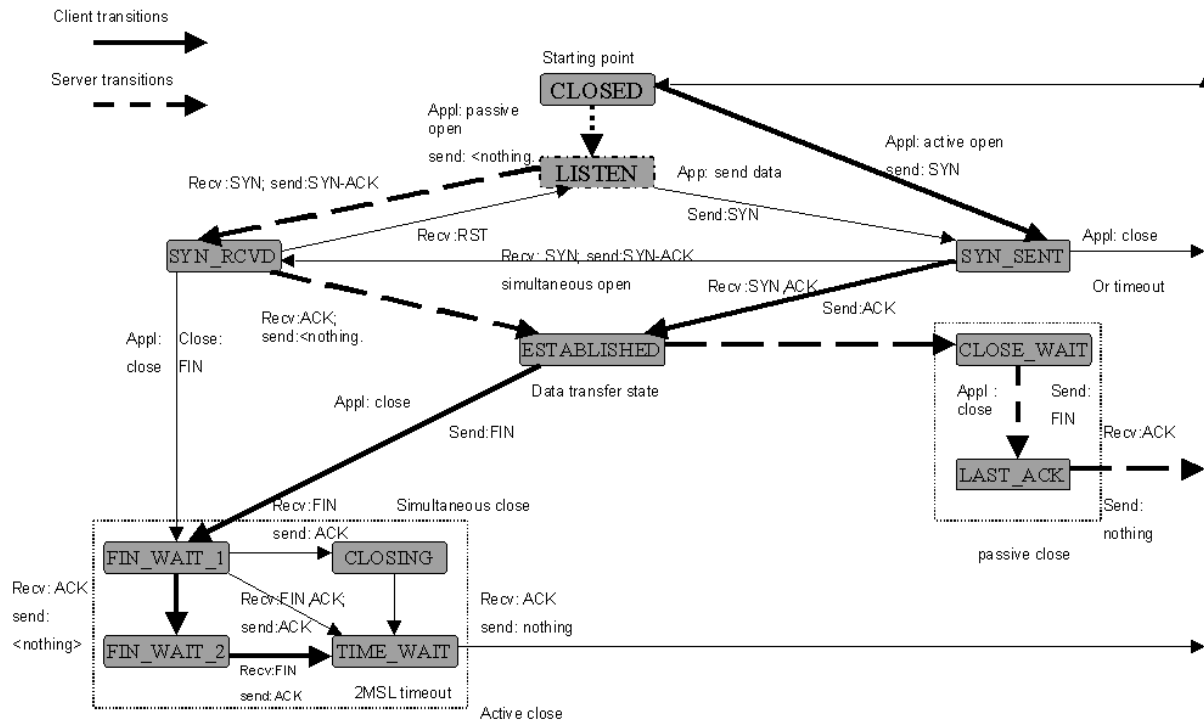
ESTABLISHED -> CLOSE\_WAIT -> LAST\_ACK -> CLOSED.

- Both sides close at the same time:

ESTABLISHED -> FIN\_WAIT\_1-> CLOSING ->TIME\_WAIT -> CLOSED.



The main thing to recognize about connection teardown is that a connection in the `TIME_WAIT` state cannot move to the `CLOSED` state until it has waited for two times the maximum amount of time an IP datagram might live in the Internet. The reason for this is that while the local side of the connection has sent an ACK in response to the other side's FIN segment, it does not know that the ACK was successfully delivered. As a consequence this other side might retransmit its FIN segment, and this second FIN segment might be delayed in the network. If the connection were allowed to move directly to the `CLOSED` state, then another pair of application processes might come along and open the same connection, and the delayed FIN segment from the earlier incarnation of the connection would immediately initiate the termination of the later incarnation of that connection.



## Well-known port numbers

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The port numbers in the range from 0 to 1023 are the *well-known ports*. They are used by system processes that provide widely-used types of network services. On [Unix-like](#) operating systems, a process must execute with [superuser](#) privileges to be able to bind a network [socket](#) to an [IP address](#) using one of the well-known ports.

Port	TCP	UDP	Description	Status
0		UDP	Reserved	Official
1	TCP	UDP	<a href="#">TCP Port Service Multiplexer</a> (TCPMUX)	Official
2	TCP	UDP	<a href="#">CompressNET</a> <sup>[2]</sup> Management Utility <sup>[3]</sup>	Official
3	TCP	UDP	<a href="#">CompressNET</a> <sup>[2]</sup> Compression Process <sup>[4]</sup>	Official
4	TCP	UDP	Unassigned	Official
5	TCP	UDP	<a href="#">Remote Job Entry</a>	Official
7	TCP	UDP	<a href="#">Echo Protocol</a>	Official
8	TCP	UDP	Unassigned	Official
9	TCP	UDP	<a href="#">Discard Protocol</a>	Official
10	TCP	UDP	Unassigned	Official
11	TCP	UDP	Active Users ( <a href="#">systat</a> service) <sup>[5][6]</sup>	Official
12	TCP	UDP	Unassigned	Official
13	TCP	UDP	<a href="#">Daytime Protocol</a> (RFC 867)	Official

Port	TCP	UDP	Description	Status
14	TCP	UDP	Unassigned	Official
15	TCP	UDP	Previously <a href="#">netstat</a> service <sup>[5]</sup>	Unofficial
16	TCP	UDP	Unassigned	Official
17	TCP	UDP	<a href="#">Quote of the Day</a>	Official
18	TCP	UDP	<a href="#">Message Send Protocol</a>	Official
19	TCP	UDP	<a href="#">Character Generator Protocol</a> (CHARGEN)	Official
20	TCP		<a href="#">FTP</a> —data transfer	Official
21	TCP		<a href="#">FTP</a> —control (command)	Official
22	TCP	UDP	<a href="#">Secure Shell</a> (SSH)—used for secure logins, <a href="#">file transfers</a> ( <a href="#">scp</a> , <a href="#">sftp</a> ) and port forwarding	Official
23	TCP		<a href="#">Telnet</a> protocol—unencrypted text communications	Official
24	TCP	UDP	Priv-mail : any private <a href="#">mail</a> system. <sup>[citation needed]</sup>	Official
25	TCP		<a href="#">Simple Mail Transfer Protocol</a> (SMTP)—used for e-mail routing between mail servers	Official
26	TCP	UDP	Unassigned	Official
27	TCP	UDP	NSW User System FE <sup>[citation needed]</sup>	Official
29	TCP	UDP	MSG ICP <sup>[citation needed]</sup>	Official

Port	TCP	UDP	Description	Status
33	TCP	UDP	Display Support Protocol <sup>[citation needed]</sup>	Official
34	TCP	UDP	Remote File (RF)—used to transfer files between machines <sup>[citation needed]</sup>	Unofficial
35	TCP	UDP	Any private <a href="#">printer server</a> protocol <sup>[citation needed]</sup>	Official
37	TCP	UDP	<a href="#">TIME</a> protocol	Official
39	TCP	UDP	Resource Location Protocol <sup>[7]</sup> (RLP)—used for determining the location of higher level <a href="#">services</a> from <a href="#">hosts</a> on a <a href="#">network</a>	Official
40	TCP	UDP	Unassigned	Official
42	TCP	UDP	<a href="#">ARPA Host Name Server Protocol</a>	Official
42	TCP	UDP	<a href="#">Windows Internet Name Service</a>	Unofficial
43	TCP		<a href="#">WHOIS</a> protocol	Official
47	TCP	UDP	NI FTP <sup>[7]</sup>	Official
49	TCP	UDP	<a href="#">TACACS</a> Login Host protocol <sup>[citation needed]</sup>	Official
50	TCP	UDP	Remote Mail Checking Protocol <sup>[8]</sup>	Official
51	TCP	UDP	IMP Logical Address Maintenance <sup>[citation needed]</sup>	Official
52	TCP	UDP	XNS ( <a href="#">Xerox Network Systems</a> ) Time Protocol	Official
53	TCP	UDP	<a href="#">Domain Name System</a> (DNS)	Official
54	TCP	UDP	XNS ( <a href="#">Xerox Network Systems</a> ) Clearinghouse	Official

Port	TCP	UDP	Description	Status
55	TCP	UDP	ISI Graphics Language (ISI-GL) <sup>[citation needed]</sup>	Official
56	TCP	UDP	XNS (Xerox Network Systems) Authentication	Official
56	TCP	UDP	Route Access Protocol (RAP) <sup>[9]</sup>	Unofficial
57	TCP		Mail Transfer Protocol (RFC 780)	Unofficial
58	TCP	UDP	XNS (Xerox Network Systems) Mail	Official
67		UDP	Bootstrap Protocol (BOOTP) Server; also used by Dynamic Host Configuration Protocol (DHCP)	Official
68		UDP	Bootstrap Protocol (BOOTP) Client; also used by Dynamic Host Configuration Protocol (DHCP)	Official
69		UDP	Trivial File Transfer Protocol (TFTP)	Official
70	TCP		Gopher protocol	Official
71	TCP		NETRJS protocol	Official
72	TCP		NETRJS protocol	Official
73	TCP		NETRJS protocol	Official
74	TCP		NETRJS protocol	Official
79	TCP		Finger protocol	Official
80	TCP	UDP	Hypertext Transfer Protocol (HTTP)	Official

Port	TCP	UDP	Description	Status
81	TCP		Torpark—Onion routing	Unofficial
82		UDP	Torpark—Control	Unofficial
88	TCP	UDP	Kerberos—authentication system <sup>[citation needed]</sup>	Official
90	TCP	UDP	dnsix (DoD Network Security for Information Exchange) Securit Attribute Token Map <sup>[citation needed]</sup>	Official
90	TCP	UDP	Pointcast	Unofficial
99	TCP		WIP Message protocol	Unofficial
101	TCP		NIC host name	Official
102	TCP		ISO-TSAP (Transport Service Access Point) Class 0 protocol <sup>[10]</sup>	Official
104	TCP	UDP	ACR/NEMA Digital Imaging and Communications in Medicine	Official
105	TCP	UDP	CCSO Nameserver Protocol (Qi/Ph)	Official
107	TCP		Remote TELNET Service <sup>[11]</sup> protocol	Official
108	TCP	UDP	SNA Gateway Access Server <sup>[12]</sup>	Official
109	TCP		Post Office Protocol v2 (POP2)	Official
110	TCP		Post Office Protocol v3 (POP3)	Official
111	TCP	UDP	ONC RPC (SunRPC)	Official
113	TCP		ident—Authentication Service/Identification Protocol, <sup>[13]</sup> used by IRC servers to	Official

Port	TCP	UDP	Description	Status
			identify users	
113		UDP	Authentication Service <sup>[13]</sup> (auth)	Official
115	TCP		Simple File Transfer Protocol (SFTP)	Official
117	TCP		UUCP Path Service	Official
118	TCP	UDP	SQL (Structured Query Language) Services	Official
119	TCP		Network News Transfer Protocol (NNTP)—retrieval of newsgroup messages	Official
123		UDP	Network Time Protocol (NTP)—used for time synchronization	Official
135	TCP	UDP	DCE endpoint resolution	Official
135	TCP	UDP	Microsoft EPMAP (End Point Mapper), also known as DCE/RPC Locator service, <sup>[14]</sup> used to remotely manage services including DHCP server, DNS server and WINS. Also used by DCOM	Unofficial
137	TCP	UDP	NetBIOS NetBIOS Name Service	Official
138	TCP	UDP	NetBIOS NetBIOS Datagram Service	Official
139	TCP	UDP	NetBIOS NetBIOS Session Service	Official
143	TCP		Internet Message Access Protocol (IMAP)—management of email messages	Official
152	TCP	UDP	Background File Transfer Program (BFTP) <sup>[15]</sup>	Official
153	TCP	UDP	SGMP, Simple Gateway Monitoring Protocol	Official
156	TCP	UDP	SQL Service	Official

Port	TCP	UDP	Description	Status
158	TCP	UDP	DMSP, Distributed Mail Service Protocol <sup>[16]</sup>	Unofficial
161		UDP	Simple Network Management Protocol (SNMP)	Official
162	TCP	UDP	Simple Network Management Protocol Trap (SNMPTRAP) <sup>[17]</sup>	Official
170	TCP		Print-srv, Network PostScript <sup>[citation needed]</sup>	Official
175	TCP		VMNET (IBM z/VM, z/OS & z/VSE - Network Job Entry(NJE)) <sup>[citation needed]</sup>	Official
177	TCP	UDP	X Display Manager Control Protocol (XDMCP)	Official
179	TCP		BGP (Border Gateway Protocol)	Official
194	TCP	UDP	Internet Relay Chat (IRC)	Official
199	TCP	UDP	SMUX, SNMP Unix Multiplexer	Official
201	TCP	UDP	AppleTalk Routing Maintenance	Official
209	TCP	UDP	The Quick Mail Transfer Protocol	Official
210	TCP	UDP	ANSI Z39.50	Official
213	TCP	UDP	Internetwork Packet Exchange (IPX)	Official
218	TCP	UDP	Message posting protocol (MPP)	Official
220	TCP	UDP	Internet Message Access Protocol (IMAP), version 3	Official
256	TCP	UDP	2DEV "2SP" Port <sup>[citation needed]</sup>	Unofficial



Port	TCP	UDP	Description	Status
259	TCP	UDP	ESRO, Efficient Short Remote Operations <sup>[citation needed]</sup>	Official
264	TCP	UDP	BGMP, Border Gateway Multicast Protocol	Official
280	TCP	UDP	http-mgmt	Official
308	TCP		Novastor Online Backup	Official
311	TCP		Mac OS X Server Admin (officially AppleShare IP Web administration) <sup>[citation needed]</sup>	Official
318	TCP	UDP	PKIX TSP, Time Stamp Protocol	Official
319		UDP	Precision time protocol event messages	Official
320		UDP	Precision time protocol general messages	Official
323	TCP	UDP	IMMP, Internet Message Mapping Protocol <sup>[citation needed]</sup>	Unofficial
350	TCP	UDP	MATIP-Type A, Mapping of Airline Traffic over Internet Protocol <sup>[citation needed]</sup>	Official
351	TCP	UDP	MATIP-Type B, Mapping of Airline Traffic over Internet Protocol <sup>[citation needed]</sup>	Official
366	TCP	UDP	ODMR, On-Demand Mail Relay <sup>[citation needed]</sup>	Official
369	TCP	UDP	Rpc2portmap <sup>[citation needed]</sup>	Official
370	TCP		codauth2—Coda authentication server <sup>[citation needed]</sup>	Official
370		UDP	codauth2—Coda authentication server <sup>[citation needed]</sup>	Official
370		UDP	securecast1—Outgoing packets to NAI's servers <sup>[18]</sup> <sup>[dead link]</sup>	Unofficial

Port	TCP	UDP	Description	Status
371	TCP	UDP	ClearCase albd <sup>[citation needed]</sup>	Official
383	TCP	UDP	HP data alarm manager <sup>[citation needed]</sup>	Official
384	TCP	UDP	A Remote Network Server System <sup>[citation needed]</sup>	Official
387	TCP	UDP	AURP, AppleTalk Update-based Routing Protocol <sup>[19]</sup>	Official
389	TCP	UDP	Lightweight Directory Access Protocol (LDAP)	Official
401	TCP	UDP	UPS Uninterruptible Power Supply <sup>[citation needed]</sup>	Official
402	TCP		Altiris, Altiris Deployment Client <sup>[citation needed]</sup>	Unofficial
411	TCP		Direct Connect Hub	Unofficial
412	TCP		Direct Connect Client-to-Client	Unofficial
427	TCP	UDP	Service Location Protocol (SLP)	Official
443	TCP		HTTPS (Hypertext Transfer Protocol over SSL/TLS)	Official
444	TCP	UDP	SNPP, Simple Network Paging Protocol (RFC 1568)	Official
445	TCP		Microsoft-DS Active Directory, Windows shares	Official
445	TCP		Microsoft-DS SMB file sharing	Official
464	TCP	UDP	Kerberos Change/Set password	Official
465	TCP		Cisco protocol <sup>[citation needed]</sup>	Unofficial

Port	TCP	UDP	Description	Status
465	TCP		SMTP over SSL	Unofficial
475	TCP	UDP	tcpnethaspsrv (Aladdin Knowledge Systems Hasp services, TCP/IP version) <sup>[citation needed]</sup>	Official
497	TCP		Dantz Retrospect	Official
500	TCP		Qmatic Qwin communication port <sup>[citation needed]</sup>	Unofficial
500		UDP	Internet Security Association and Key Management Protocol (ISAKMP)	Official
501	TCP		STMF, Simple Transportation Management Framework—DOT NTCIP 1101 <sup>[citation needed]</sup>	Unofficial
502	TCP	UDP	asa-appl-proto, Protocol <sup>[citation needed]</sup>	Unofficial
502	TCP	UDP	Modbus, Protocol	Unofficial
504	TCP	UDP	Citadel—multiservice protocol for dedicated clients for the Citadel groupware system	Official
510	TCP		First Class Protocol <sup>[citation needed]</sup>	Unofficial
512	TCP		Rexec, Remote Process Execution	Official
512		UDP	comsat, together with biff	Official
513	TCP		rlogin	Official
513		UDP	Who <sup>[citation needed]</sup>	Official
514	TCP		Shell—used to execute non-interactive commands on a remote system (Remote Shell, rsh, remsh)	Official

Port	TCP	UDP	Description	Status
514		UDP	<a href="#">Syslog</a> —used for system logging	Official
515	TCP		<a href="#">Line Printer Daemon</a> —print service	Official
517		UDP	Talk <sup>[citation needed]</sup>	Official
518		UDP	NTalk <sup>[citation needed]</sup>	Official
520	TCP		efs, extended file name server <sup>[citation needed]</sup>	Official
520		UDP	<a href="#">Routing Information Protocol (RIP)</a>	Official
524	TCP	UDP	<a href="#">NetWare Core Protocol (NCP)</a> is used for a variety things such as access to primary NetWare server resources, Time Synchronization, etc.	Official
525		UDP	Timed, <a href="#">Timeserver</a> <sup>[citation needed]</sup>	Official
530	TCP	UDP	<a href="#">RPC</a> <sup>[citation needed]</sup>	Official
531	TCP	UDP	<a href="#">AOL Instant Messenger</a>	Unofficial
532	TCP		netnews <sup>[citation needed]</sup>	Official
533		UDP	netwall, For Emergency Broadcasts <sup>[citation needed]</sup>	Official
540	TCP		<a href="#">UUCP</a> (Unix-to-Unix Copy Protocol)	Official
542	TCP	UDP	<a href="#">commerce</a> (Commerce Applications) <sup>[citation needed]</sup>	Official
543	TCP		klogin, <a href="#">Kerberos</a> login	Official
544	TCP		kshell, <a href="#">Kerberos</a> Remote shell	Official

Port	TCP	UDP	Description	Status
545	TCP		OSISoft PI (VMS), OSISoft PI Server Client Access	Unofficial
546	TCP	UDP	DHCPv6 client	Official
547	TCP	UDP	DHCPv6 server	Official
548	TCP		Apple Filing Protocol (AFP) over TCP	Official
550		UDP	new-rwho, new-who <sup>[citation needed]</sup>	Official
554	TCP	UDP	Real Time Streaming Protocol (RTSP)	Official
556	TCP		Remotefs, RFS, rfs_server	Official
560		UDP	rmonitor, Remote Monitor <sup>[citation needed]</sup>	Official
561		UDP	monitor <sup>[citation needed]</sup>	Official
563	TCP	UDP	NNTP protocol over TLS/SSL (NNTPS)	Official
587	TCP		e-mail message submission <sup>[20]</sup> (SMTP)	Official
591	TCP		FileMaker 6.0 (and later) Web Sharing (HTTP Alternate, also see port 80)	Official
593	TCP	UDP	HTTP RPC Ep Map, Remote procedure call over Hypertext Transfer Protocol, often used by Distributed Component Object Model services and Microsoft Exchange Server	Official
604	TCP		TUNNEL profile, <sup>[21]</sup> a protocol for BEEP peers to form an application layer tunnel	Official
623		UDP	ASF Remote Management and Control Protocol (ASF-RMCP) <sup>[citation needed]</sup>	Official

Port	TCP	UDP	Description	Status
631	TCP	UDP	<a href="#">Internet Printing Protocol (IPP)</a>	Official
631	TCP	UDP	<a href="#">Common Unix Printing System (CUPS)</a>	Unofficial
635	TCP	UDP	RLZ DBase <sup>[citation needed]</sup>	Official
636	TCP	UDP	<a href="#">Lightweight Directory Access Protocol</a> over <a href="#">TLS/SSL</a> (LDAPS)	Official
639	TCP	UDP	MSDP, <a href="#">Multicast Source Discovery Protocol</a>	Official
641	TCP	UDP	SupportSoft Nexus Remote Command (control/listening): A proxy gateway connecting remote control traffic <sup>[citation needed]</sup>	Official
646	TCP	UDP	LDP, <a href="#">Label Distribution Protocol</a> , a routing protocol used in <a href="#">MPLS</a> networks	Official
647	TCP		<a href="#">DHCP Failover</a> protocol <sup>[22]</sup>	Official
648	TCP		RRP (Registry Registrar Protocol) <sup>[23]</sup>	Official
651	TCP	UDP	IEEE-MMS <sup>[citation needed]</sup>	Official
652	TCP		DTCP, Dynamic Tunnel Configuration Protocol <sup>[citation needed]</sup>	Unofficial
653	TCP	UDP	SupportSoft Nexus Remote Command (data): A proxy gateway connecting remote control traffic <sup>[citation needed]</sup>	Official
654	TCP		Media Management System (MMS) Media Management Protocol (MMP) <sup>[24]</sup>	Official
657	TCP	UDP	<a href="#">IBM RMC</a> (Remote monitoring and Control) protocol, used by <a href="#">System p5 AIX Integrated Virtualization Manager (IVM)</a> <sup>[25]</sup> and <a href="#">Hardware Management Console</a> to connect managed <a href="#">logical partitions (LPAR)</a> to enable dynamic partition reconfiguration	Official

Port	TCP	UDP	Description	Status
660	TCP		Mac OS X Server administration	Official
665	TCP		sun-dr, Remote Dynamic Reconfiguration <sup>[citation needed]</sup>	Unofficial
666		UDP	Doom, first online first-person shooter	Official
674	TCP		ACAP (Application Configuration Access Protocol)	Official
691	TCP		MS Exchange Routing	Official
694	TCP	UDP	Linux-HA High availability Heartbeat	Official
695	TCP		IEEE-MMS-SSL (IEEE Media Management System over SSL) <sup>[26]</sup>	Official
698		UDP	OLSR (Optimized Link State Routing)	Official
700	TCP		EPP (Extensible Provisioning Protocol), a protocol for communication between domain name registries and registrars (RFC 5734)	Official
701	TCP		LMP (Link Management Protocol (Internet)), <sup>[27]</sup> a protocol that runs between a pair of nodes and is used to manage traffic engineering (TE) links	Official
702	TCP		IRIS <sup>[28][29]</sup> (Internet Registry Information Service) over BEEP (Blocks Extensible Exchange Protocol) <sup>[30]</sup> (RFC 3983)	Official
706	TCP		Secure Internet Live Conferencing (SILC)	Official
711	TCP		Cisco Tag Distribution Protocol <sup>[31][32][33]</sup> —being replaced by the MPLS Label Distribution Protocol <sup>[34]</sup>	Official
712	TCP		Topology Broadcast based on Reverse-Path Forwarding routing protocol (TBRPF) (RFC 3684)	Official

Port	TCP	UDP	Description	Status
712		UDP	Promise RAID Controller <sup>[citation needed]</sup>	Unofficial
720	TCP		SMQP, Simple Message Queue Protocol <sup>[citation needed]</sup>	Unofficial
749	TCP	UDP	<a href="#">Kerberos (protocol)</a> administration	Official
750		UDP	kerberos-iv, <a href="#">Kerberos</a> version IV	Official
751	TCP	UDP	kerberos_master, <a href="#">Kerberos</a> authentication	Unofficial
752		UDP	passwd_server, <a href="#">Kerberos</a> Password (kpasswd) server	Unofficial
753	TCP		Reverse Routing Header (rrh) <sup>[35]</sup>	Official
753		UDP	Reverse Routing Header (rrh)	Official
753		UDP	userreg_server, <a href="#">Kerberos</a> userreg server	Unofficial
754	TCP		tell send <sup>[citation needed]</sup>	Official
754	TCP		krb5_prop, <a href="#">Kerberos</a> v5 slave propagation	Unofficial
754		UDP	tell send <sup>[citation needed]</sup>	Official
760	TCP	UDP	krbupdate [kreg], <a href="#">Kerberos</a> registration	Unofficial
782	TCP		<a href="#">Conserver</a> serial-console management server	Unofficial
783	TCP		<a href="#">SpamAssassin</a> spamd daemon	Unofficial
808	TCP		Microsoft Net.TCP Port Sharing Service <sup>[citation needed]</sup>	Official



Port	TCP	UDP	Description	Status
829	TCP		CMP (Certificate Management Protocol) <sup>[citation needed]</sup>	Unofficial
843	TCP		Adobe Flash <sup>[36]</sup>	Unofficial
847	TCP		DHCP Failover protocol	Official
848	TCP	UDP	Group Domain Of Interpretation (GDOI) protocol <sup>[citation needed]</sup>	Official
860	TCP		iSCSI (RFC 3720)	Official
873	TCP		rsync file synchronisation protocol	Official USA only
888	TCP		cddbp, CD DataBase (CDDb) protocol (CDDBP)—unassigned but widespread use	Unofficial
901	TCP		Samba Web Administration Tool (SWAT)	Unofficial
901	TCP		VMware Virtual Infrastructure Client (UDP from server being managed to management console)	Unofficial
901		UDP	VMware Virtual Infrastructure Client (UDP from server being managed to management console)	Unofficial
902	TCP		ideafarm-door <sup>[citation needed]</sup>	Official
902	TCP		VMware Server Console (TCP from management console to server being Managed)	Unofficial
902		UDP	ideafarm-door <sup>[citation needed]</sup>	Official
902		UDP	VMware Server Console (UDP from server being managed to management console)	Unofficial

Port	TCP	UDP	Description	Status
903	TCP		VMware Remote Console <sup>[37]</sup>	Unofficial
904	TCP		VMware Server Alternate (if 902 is in use, i.e. SUSE linux)	Unofficial
911	TCP		Network Console on Acid (NCA)—local <code>tty</code> redirection over OpenSSH	Unofficial
944		UDP	Network File System (protocol) Service	Unofficial
953	TCP	UDP	Domain Name System (DNS) RNDC Service	Unofficial
973		UDP	Network File System (protocol) over IPv6 Service	Unofficial
981	TCP		SofaWare Technologies Remote HTTPS management for firewall devices running embedded Check Point FireWall-1 software	Unofficial
987	TCP		Microsoft This Secure Hypertext Transfer Protocol (HTTPS) port makes Windows SharePoint Services viewable through Remote Web Workplace <sup>[citation needed]</sup>	Unofficial
989	TCP	UDP	FTPS Protocol (data): FTP over TLS/SSL	Official
990	TCP	UDP	FTPS Protocol (control): FTP over TLS/SSL	Official
991	TCP	UDP	NAS (Netnews Administration System) <sup>[38]</sup>	Official
992	TCP	UDP	TELNET protocol over TLS/SSL	Official
993	TCP		Internet Message Access Protocol over SSL (IMAPS)	Official
995	TCP		Post Office Protocol 3 over TLS/SSL (POP3S)	Official
999	TCP		ScimoreDB Database System <sup>[citation needed]</sup>	Unofficial

Port	TCP	UDP	Description	Status
1002	TCP		Opware agent (aka cogbot) <sup>[citation needed]</sup>	Unofficial
1023	TCP	UDP	Reserved <sup>[1]</sup>	Official

## [\[edit\]](#)Registered ports



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The range of port numbers from 1024 to 49151 are the registered ports. They are assigned by IANA for specific service upon application by a requesting entity.<sup>[1]</sup> On most systems registered ports can be used by ordinary users.

Port	TCP	UDP	Description	Status
1024	TCP	UDP	Reserved <sup>[1]</sup>	Official
1025	TCP		NFS or IIS or Teradata	Unofficial
1026	TCP		Often used by Microsoft DCOM services	Unofficial
1029	TCP		Often used by Microsoft DCOM services	Unofficial
1058	TCP	UDP	nim, IBM AIX Network Installation Manager (NIM)	Official
1059	TCP	UDP	nimreg, IBM AIX Network Installation Manager (NIM)	Official
1080	TCP		SOCKS proxy	Official
1085	TCP	UDP	WebObjects	Official
1098	TCP	UDP	rmiactivation, RMI Activation	Official

Port	TCP	UDP	Description	Status
1099	TCP	UDP	rmiregistry, <a href="#">RMI</a> Registry	Official
1109		UDP	Reserved <sup>[1]</sup>	Official
1109	TCP		Reserved <sup>[1]</sup>	Official
1109	TCP		<a href="#">Kerberos</a> Post Office Protocol ( <a href="#">KPOP</a> )	Unofficial
1110		UDP	<a href="#">EasyBits</a> School network discovery protocol (for Intel's CMPC platform)	Unofficial
1140	TCP	UDP	<a href="#">AutoNOC</a> protocol	Official
1167		UDP	phone, conference calling	Unofficial
1169	TCP	UDP	Tripwire	Official
1176	TCP		<a href="#">Perceptive Automation</a> Indigo <a href="#">Home automation</a> server	Official
1182	TCP	UDP	<a href="#">AcceleNet</a> Intelligent Transfer Protocol	Official
1194	TCP	UDP	<a href="#">OpenVPN</a>	Official
1198	TCP	UDP	The <a href="#">cajo project</a> Free dynamic transparent distributed computing in Java	Official
1200	TCP		scol, protocol used by SCOL 3D virtual worlds server to answer world name resolution client request <sup>[39]</sup>	Official
1200		UDP	scol, protocol used by SCOL 3D virtual worlds server to answer world name resolution client request	Official
1200		UDP	<a href="#">Steam Friends</a> Applet	Unofficial

Port	TCP	UDP	Description	Status
1214	TCP		Kazaa	Official
1217	TCP		Uvora Online	Unofficial
1220	TCP		QuickTime Streaming Server administration	Official
1223	TCP	UDP	TGP, TrulyGlobal Protocol, also known as "The Gur Protocol" (named for Gur Kimchi of TrulyGlobal)	Official
1234		UDP	VLC media player Default port for UDP/RTP stream	Unofficial
1236	TCP		Symantec BindView Control UNIX Default port for TCP management server connections	Unofficial
1241	TCP	UDP	Nessus Security Scanner	Official
1270	TCP	UDP	Microsoft System Center Operations Manager (SCOM) (formerly Microsoft Operations Manager (MOM)) agent	Official
1293	TCP	UDP	IPSec (Internet Protocol Security)	Official
1301	TCP		Palmer Performance OBDNet	Unofficial
1309	TCP		Altera Quartus jtagd	Unofficial
1311	TCP		Dell OpenManage HTTPS	Official
1313	TCP		Xbiim (Canvii server)	Unofficial
1319	TCP		AMX ICSP	Official
1319		UDP	AMX ICSP	Official

Port	TCP	UDP	Description	Status
1337		UDP	Men and Mice DNS	Official
1337	TCP		Men and Mice DNS	Official
1337	TCP		<b>PowerFolder</b> P2P Encrypted File Synchronization Program	Unofficial
1337	TCP		<b>WASTE</b> Encrypted File Sharing Program	Unofficial
1344	TCP		Internet Content Adaptation Protocol	Official
1352	TCP		IBM Lotus Notes/Domino <sup>[40]</sup> (RPC) protocol	Official
1387	TCP	UDP	cadsi-lm, <b>LMS International</b> (formerly Computer Aided Design Software, Inc. (CADSI)) LM	Official
1414	TCP		IBM WebSphere MQ (formerly known as <b>MQSeries</b> )	Official
1417	TCP	UDP	Timbuktu Service 1 Port	Official
1418	TCP	UDP	Timbuktu Service 2 Port	Official
1419	TCP	UDP	Timbuktu Service 3 Port	Official
1420	TCP	UDP	Timbuktu Service 4 Port	Official
1431	TCP		<b>Reverse Gossip Transport Protocol (RGTP)</b> , used to access a General-purpose Reverse-Ordered Gossip Gathering System ( <b>GROGGS</b> ) <b>bulletin board</b> , such as that implemented on the <b>Cambridge University's Phoenix system</b>	Official
1433	TCP		MSSQL ( <b>Microsoft SQL Server database management system</b> ) Server	Official
1434	TCP	UDP	MSSQL ( <b>Microsoft SQL Server database management system</b> ) Monitor	Official

Port	TCP	UDP	Description	Status
1470	TCP		Solarwinds Kiwi Log Server	Official
1494	TCP		Citrix XenApp Independent Computing Architecture (ICA) thin client protocol	Official
1500	TCP		NetGuard GuardianPro firewall (NT4-based) Remote Management	Unofficial
1501		UDP	NetGuard GuardianPro firewall (NT4-based) Authentication Client	Unofficial
1503	TCP	UDP	Windows Live Messenger (Whiteboard and Application Sharing)	Unofficial
1512	TCP	UDP	Microsoft Windows Internet Name Service (WINS)	Official
1513	TCP	UDP	Garena Garena Gaming Client	Official
1521	TCP		nCube License Manager	Official
1521	TCP		Oracle database default listener, in future releases official port 2483	Unofficial
1524	TCP	UDP	ingreslock, ingres	Official
1526	TCP		Oracle database common alternative for listener	Unofficial
1527	TCP		Apache Derby Network Server default port	Unofficial
1533	TCP		IBM Sametime IM—Virtual Places Chat Microsoft SQL Server	Official
1534		UDP	Eclipse Target Communication Framework (TCF) agent discovery <sup>[41]</sup>	Unofficial
1547	TCP	UDP	Laplink	Official
1550	TCP	UDP	3m-image-lm Image Storage license manager 3M Company	Official

Port	TCP	UDP	Description	Status
1550			Gadu-Gadu (direct client-to-client)	Unofficial
1556	TCP		Jeex-RB (direct client-to-db.service)	Unofficial
1581		UDP	MIL STD 2045-47001 VMF	Official
1589		UDP	Cisco VQP (VLAN Query Protocol) / VMPS	Unofficial
1590	TCP		GE Smallworld Datastore Server (SWMFS/Smallworld Master Filesystem)	Unofficial
1627			iSketch	Unofficial
1645	TCP	UDP	radius auth, RADIUS authentication protocol (default for Cisco and Juniper Networks RADIUS servers)	Unofficial
1646	TCP	UDP	radius acct, RADIUS authentication protocol (default for Cisco and Juniper Networks RADIUS servers)	Unofficial
1666	TCP		Perforce	Unofficial
1677	TCP	UDP	Novell GroupWise clients in client/server access mode	Official
1688	TCP		Microsoft Key Management Service for KMS Windows Activation	Unofficial
1700		UDP	Cisco RADIUS Change of Authorization for TrustSec	Unofficial
1701		UDP	Layer 2 Forwarding Protocol (L2F) & Layer 2 Tunneling Protocol (L2TP)	Official
1707	TCP	UDP	Windward Studios	Official
1707		TCP	Romtoc Packet Protocol (L2F) & Layer 2 Tunneling Protocol (L2TP)	Unofficial



Port	TCP	UDP	Description	Status
1716	TCP		America's Army Massively multiplayer online game (MMO)	Unofficial
1719		UDP	H.323 Registration and alternate communication	Official
1720	TCP		H.323 Call signalling	Official
1723	TCP	UDP	Microsoft Point-to-Point Tunneling Protocol (PPTP)	Official
1725		UDP	Valve Steam Client	Unofficial
1755	TCP	UDP	Microsoft Media Services (MMS, ms-streaming)	Official
1761		UDP	cft-0	Official
1761	TCP		cft-0	Official
1761	TCP		Novell Zenworks Remote Control utility	Unofficial
1762–1768	TCP	UDP	cft-1 to cft-7	Official
1792	TCP	UDP	Moby	Unofficial
1801	TCP	UDP	Microsoft Message Queuing	Official
1812	TCP	UDP	radius, RADIUS authentication protocol	Official
1813	TCP	UDP	radacct, RADIUS accounting protocol	Official
1863	TCP		MSNP (Microsoft Notification Protocol), used by the .NET Messenger Service and a number of Instant Messaging clients	Official

Port	TCP	UDP	Description	Status
1883	TCP	UDP	<a href="#">MQ Telemetry Transport</a> (MQTT), formerly known as MQIsdp (MQSeries SCADA protocol)	Official
1886	TCP		<a href="#">Leonardo over IP</a> Pro2col Ltd	Unofficial
1900		UDP	Microsoft <a href="#">SSDP</a> Enables discovery of <a href="#">UPnP</a> devices	Official
1920	TCP		IBM Tivoli Monitoring Console (https)	Unofficial
1935	TCP		Adobe Systems Macromedia Flash Real Time Messaging Protocol (RTMP) "plain" protocol	Official
1947	TCP	UDP	SentinelSRM (hasplm), Aladdin HASP License Manager	Official
1967		UDP	Cisco IOS IP Service Level Agreements (IP SLAs) Control Protocol	Unofficial
1970	TCP	UDP	<a href="#">Netop Business Solutions</a> Netop Remote Control	Official
1971	TCP	UDP	<a href="#">Netop Business Solutions</a> Netop School	Official
1972	TCP	UDP	<a href="#">InterSystems Caché</a>	Official
1975–1977		UDP	Cisco <a href="#">TCO</a> ( <a href="#">Documentation</a> )	Official
1984	TCP		<a href="#">Big Brother</a> and related <a href="#">Xymon</a> (formerly <a href="#">Hobbit</a> ) System and Network Monitor	Official
1985		UDP	<a href="#">Cisco HSRP</a>	Official
1994	TCP	UDP	<a href="#">Cisco</a> STUN-SDLC (Serial Tunneling— <a href="#">Synchronous Data Link Control</a> ) protocol	Official
1997	TCP		Chizmo Networks Transfer Tool	Unofficial

Port	TCP	UDP	Description	Status
1998	TCP	UDP	Cisco X.25 over TCP (XOT) service	Official
2000	TCP	UDP	Cisco SCCP (Skinny)	Official
2001		UDP	CAPTAN Test Stand System	Unofficial
2002	TCP		Secure Access Control Server (ACS) for Windows	Unofficial
2030			Oracle Services for Microsoft Transaction Server	Unofficial
2031	TCP	UDP	mobrien-chat( <a href="http://chat.mobrien.com:2031">http://chat.mobrien.com:2031</a> )	Official
2041	TCP		Mail.Ru Agent communication protocol	Unofficial
2049		UDP	Network File System	Official
2049		UDP	shilp	Official
2053	TCP		knetd Kerberos de-multiplexor	Unofficial
2056		UDP	Civilization 4 multiplayer	Unofficial
2074	TCP	UDP	Vertel VMF SA (i.e. App.. SpeakFreely)	Official
2082	TCP		Infowave Mobility Server	Official
2082	TCP		CPanel default	Unofficial
2083	TCP		Secure Radius Service (radsec)	Official
2083	TCP		CPanel default SSL	Unofficial

Port	TCP	UDP	Description	Status
2086	TCP		GNUnet	Official
2086	TCP		WebHost Manager default	Unofficial
2087	TCP		WebHost Manager default SSL	Unofficial
2095	TCP		CPanel default Web mail	Unofficial
2096	TCP		CPanel default SSL Web mail	Unofficial
2102	TCP	UDP	zephyr-srv <a href="#">Project Athena</a> Zephyr Notification Service server	Official
2103	TCP	UDP	zephyr-clt <a href="#">Project Athena</a> Zephyr Notification Service serv-hm connection	Official
2104	TCP	UDP	zephyr-hm <a href="#">Project Athena</a> Zephyr Notification Service hostmanager	Official
2105	TCP	UDP	IBM MiniPay	Official
2105	TCP	UDP	eklogin <a href="#">Kerberos</a> encrypted remote login (rlogin)	Unofficial
2105	TCP	UDP	zephyr-hm-srv <a href="#">Project Athena</a> Zephyr Notification Service hm-serv connection (should use port 2102)	Unofficial
2121	TCP		FTP proxy	Unofficial
2144	TCP		Iron Mountain LiveVault Agent	Unofficial
2145	TCP		Iron Mountain LiveVault Agent	Unofficial
2156		UDP	Talari Reliable Protocol	Official
2160	TCP		<a href="#">APC</a> Agent	Official

Port	TCP	UDP	Description	Status
2161	TCP		APC Agent	Official
2181	TCP	UDP	EForward-document transport system	Official
2190		UDP	TiVoConnect Beacon	Unofficial
2200		UDP	Tuxanci game server <sup>[42]</sup>	Unofficial
2210		UDP	NOAAPORT Broadcast Network	Official
2210	TCP		NOAAPORT Broadcast Network	Official
2210	TCP		MikroTik Remote management for "The Dude"	Unofficial
2211		UDP	EMWIN	Official
2211	TCP		EMWIN	Official
2211	TCP		MikroTik Secure management for "The Dude"	Unofficial
2212		UDP	LeeCO POS Server Service	Official
2212	TCP		LeeCO POS Server Service	Official
2212	TCP		Port-A-Pour Remote WinBatch	Unofficial
2219	TCP	UDP	NetIQ NCAP Protocol	Official
2220	TCP	UDP	NetIQ End2End	Official
2221	TCP		ESET Anti-virus updates	Unofficial

Port	TCP	UDP	Description	Status
2222	TCP		<a href="#">DirectAdmin</a> default & <a href="#">ESET</a> Remote Administration	Unofficial
2223		UDP	Microsoft Office OS X antipiracy network monitor	Unofficial
2261	TCP	UDP	CoMotion Master	Official
2262	TCP	UDP	CoMotion Backup	Official
2301	TCP		HP System Management Redirect to port 2381	Unofficial
2302		UDP	<a href="#">ArmA</a> multiplayer (default for game)	Unofficial
2302		UDP	<a href="#">Halo: Combat Evolved</a> multiplayer	Unofficial
2303		UDP	<a href="#">ArmA</a> multiplayer (default for server reporting) ( <i>default port for game + 1</i> )	Unofficial
2305		UDP	<a href="#">ArmA</a> multiplayer (default for VoN) ( <i>default port for game + 3</i> )	Unofficial
2323	TCP		Philips TVs based on <a href="#">jointSPACE</a> <sup>[43]</sup>	Unofficial
2369	TCP		Default for <a href="#">BMC Software Control-M/Server</a> —Configuration Agent, though often changed during installation	Official
2370	TCP		Default for <a href="#">BMC Software Control-M/Server</a> —to allow the <a href="#">Control-M/Enterprise Manager</a> to connect to the <a href="#">Control-M/Server</a> , though often changed during installation	Official
2379	TCP		<a href="#">KGS Go Server</a>	Unofficial
2381	TCP		HP Insight Manager default for Web server	Unofficial
2401	TCP		<a href="#">CVS</a> version control system	Unofficial

Port	TCP	UDP	Description	Status
2404	TCP		IEC 60870-5 -104, used to send electric power telecontrol messages between two systems via directly connected data circuits	Official
2420		UDP	Westell Remote Access	Official
2427		UDP	Cisco MGCP	Official
2447	TCP	UDP	ovwdb—OpenView Network Node Manager (NNM) daemon	Official
2483	TCP	UDP	Oracle database listening for unsecure client connections to the listener, replaces port 1521	Official
2484	TCP	UDP	Oracle database listening for SSL client connections to the listener	Official
2500	TCP		THEÒSMESSENGER listening for TheòsMessenger client connections	Official
2501	TCP		TheosNet-Admin listening for TheòsMessenger client connections	Official
2518	TCP	UDP	Willy	Official
2525	TCP		SMTP alternate	Unofficial
2535	TCP		MADCAP	Official
2546	TCP	UDP	EVault—Data Protection Services	Unofficial
2593	TCP	UDP	RunUO—Ultima Online server	Unofficial
2598	TCP		new ICA (Citrix) —when Session Reliability is enabled, TCP port 2598 replaces port 1494	Unofficial
2599	TCP		SonicWALL Antispam traffic between Remote Analyzer (RA) and Control Center (CC)	Unofficial

Port	TCP	UDP	Description	Status
2610	TCP		Dark Ages	Unofficial
2612	TCP	UDP	QPasa from MQSoftware	Official
2638	TCP		Sybase database listener	Unofficial
2636	TCP		Solve Service	Official
2641	TCP	UDP	HDL Server from CNRI	Official
2642	TCP	UDP	Tragic	Official
2698	TCP	UDP	Citel / MCK IVPIP	Official
2700–2800	TCP		KnowShowGo P2P	Official
2710	TCP		XBT Bittorrent Tracker	Unofficial
2710		UDP	XBT Bittorrent Tracker experimental UDP tracker extension	Unofficial
2710	TCP		Knuddels.de	Unofficial
2735	TCP	UDP	NetIQ Monitor Console	Official
2809	TCP		corbaloc:iiop URL, per the CORBA 3.0.3 specification	Official
2809	TCP		IBM WebSphere Application Server (WAS) Bootstrap/rmi default	Unofficial
2809		UDP	corbaloc:iiop URL, per the CORBA 3.0.3 specification.	Official
2868	TCP	UDP	Norman Proprietary Event Protocol NPEP	Official



Port	TCP	UDP	Description	Status
2944		UDP	Megaco Text H.248	Unofficial
2945		UDP	Megaco Binary (ASN.1) H.248	Unofficial
2947	TCP		gpsd GPS daemon	Official
2948	TCP	UDP	WAP-push Multimedia Messaging Service (MMS)	Official
2949	TCP	UDP	WAP-pushsecure Multimedia Messaging Service (MMS)	Official
2967	TCP		Symantec AntiVirus Corporate Edition	Unofficial
3000	TCP		Miralix License server	Unofficial
3000	TCP		Cloud9 Integrated Development Environment server	Unofficial
3000		UDP	Distributed Interactive Simulation (DIS), modifiable default	Unofficial
3000	TCP		Ruby on Rails development default <sup>[44]</sup>	Unofficial
3001	TCP		Miralix Phone Monitor	Unofficial
3001	TCP		Opware server (Satellite)	Unofficial
3002	TCP		Miralix CSTA	Unofficial
3003	TCP		Miralix GreenBox API	Unofficial
3004	TCP		Miralix InfoLink	Unofficial
3005	TCP		Miralix TimeOut	Unofficial

Port	TCP	UDP	Description	Status
3006	TCP		Miralix SMS Client Connector	Unofficial
3007	TCP		Miralix OM Server	Unofficial
3008	TCP		Miralix Proxy	Unofficial
3017	TCP		Miralix IVR and Voicemail	Unofficial
3025	TCP		netpd.org	Unofficial
3030	TCP	UDP	NetPanzer	Unofficial
3050	TCP	UDP	gds_db (Interbase/Firebird)	Official
3051	TCP	UDP	Galaxy Server (Gateway Ticketing Systems)	Official
3052	TCP	UDP	APC PowerChute Network <sup>[45]</sup>	Official
3074	TCP	UDP	Xbox LIVE and/or Games for Windows - LIVE	Official
3100	TCP		HTTP used by Tatsoft as the default listen port	Unofficial
3101	TCP		BlackBerry Enterprise Server communication to cloud	Unofficial
3128	TCP		HTTP used by Web caches and the default for the Squid (software)	Unofficial
3128	TCP		HTTP used by Tatsoft as the default client connection	Unofficial
3225	TCP	UDP	FCIP (Fiber Channel over Internet Protocol)	Official
3233	TCP	UDP	WhiskerControl research control protocol	Official

Port	TCP	UDP	Description	Status
3235	TCP	UDP	Galaxy Network Service (Gateway Ticketing Systems)	Official
3260	TCP		iSCSI target	Official
3268	TCP	UDP	msft-gc, Microsoft Global Catalog (LDAP service which contains data from Active Directory forests)	Official
3269	TCP	UDP	msft-gc-ssl, Microsoft Global Catalog over SSL (similar to port 3268, LDAP over SSL)	Official
3283	TCP		Apple Remote Desktop reporting (officially <i>Net Assistant</i> , referring to an earlier product)	Official
3299	TCP		SAP-Router (routing application proxy for SAP R/3)	Unofficial
3300	TCP	UDP	Debate Gopher backend database system	Unofficial
3305	TCP	UDP	odette-ftp, Odette File Transfer Protocol (OFTP)	Official
3306	TCP	UDP	MySQL database system	Official
3313	TCP		Verisys - File Integrity Monitoring Software	Unofficial
3333	TCP		Network Caller ID server	Unofficial
3333	TCP		CruiseControl.rb <sup>[46]</sup>	Unofficial
3386	TCP	UDP	GTP' 3GPP GSM/UMTS CDR logging protocol	Official
3389	TCP	UDP	Microsoft Terminal Server (RDP) officially registered as Windows Based Terminal (WBT) - <a href="#">Link</a>	Official
3396	TCP	UDP	Novell NDPS Printer Agent	Official

Port	TCP	UDP	Description	Status
3412	TCP	UDP	xmlBlaster	Official
3455	TCP	UDP	[RSVP] Reservation Protocol	Official
3423	TCP		Xware xTrm Communication Protocol	Official
3424	TCP		Xware xTrm Communication Protocol over SSL	Official
3478	TCP	UDP	STUN, a protocol for NAT traversal <sup>[47]</sup>	Official
3478	TCP	UDP	TURN, a protocol for NAT traversal <sup>[48]</sup>	Official
3483		UDP	Slim Devices discovery protocol	Official
3483	TCP		Slim Devices SlimProto protocol	Official
3516	TCP	UDP	Smartcard Port	Official
3527		UDP	Microsoft Message Queuing	Official
3535	TCP		SMTP alternate	Unofficial
3537	TCP	UDP	ni-visa-remote	Unofficial
3544		UDP	Teredo tunneling	Official
3605		UDP	ComCam IO Port	Official
3606	TCP	UDP	Splitlock Server	Official
3632	TCP		distributed compiler	Official

Port	TCP	UDP	Description	Status
3689	TCP		Digital Audio Access Protocol (DAAP)—used by Apple’s iTunes and AirPort Express	Official
3690	TCP	UDP	Subversion (SVN) version control system	Official
3702	TCP	UDP	Web Services Dynamic Discovery (WS-Discovery), used by various components of Windows Vista	Official
3723	TCP	UDP	Used by many Battle.net Blizzard games (Diablo II, Warcraft II, Warcraft III, StarCraft)	Unofficial
3724	TCP		World of Warcraft Online gaming MMORPG	Official
3724	TCP		Club Penguin Disney online game for kids	Unofficial
3724		UDP	World of Warcraft Online gaming MMORPG	Official
3784	TCP	UDP	Ventrilo VoIP program used by Ventrilo	Unofficial
3785		UDP	Ventrilo VoIP program used by Ventrilo	Unofficial
3799		UDP	IETF RADIUS Change of Authorization	Unofficial
3800	TCP		Used by HGG programs	Unofficial
3880	TCP	UDP	IGRS	Official
3868	TCP	SCTP	Diameter base protocol (RFC 3588)	Official
3872	TCP		Oracle Management Remote Agent	Unofficial
3899	TCP		Remote Administrator	Unofficial

Port	TCP	UDP	Description	Status
3900	TCP		udt_os, <a href="#">IBM UniData</a> UDT OS <sup>[49]</sup>	Official
3945	TCP	UDP	EMCADS service, a <a href="#">Giritech</a> product used by G/On	Official
3978	TCP	UDP	<a href="#">OpenTTD</a> game (masterserver and content service)	Unofficial
3979	TCP	UDP	<a href="#">OpenTTD</a> game	Unofficial
3999	TCP	UDP	Norman distributed scanning service	Official
4000	TCP	UDP	<a href="#">Diablo II</a> game	Unofficial
4001	TCP		<a href="#">Microsoft Ants</a> game	Unofficial
4007	TCP		PrintBuzzer printer monitoring socket server	Unofficial
4018	TCP	UDP	protocol information and warnings	Official
4069		UDP	Minger Email Address Verification Protocol <sup>[50]</sup>	Official
4089	TCP	UDP	OpenCORE Remote Control Service	Official
4093	TCP	UDP	PxPlus Client server interface <a href="#">ProvideX</a>	Official
4096	TCP	UDP	<a href="#">Ascom Timeplex</a> BRE (Bridge Relay Element)	Official
4100			WatchGuard Authentication Applet—default	Unofficial
4111	TCP		<a href="#">Xgrid</a>	Official
4116	TCP	UDP	Smartcard-TLS	Official

Port	TCP	UDP	Description	Status
4125	TCP		Microsoft Remote Web Workplace administration	Unofficial
4172	TCP	UDP	Teradici <a href="#">PCoIP</a>	Official
4201	TCP		<a href="#">TinyMUD</a> and various derivatives	Unofficial
4226	TCP	UDP	<a href="#">Aleph One</a> (game)	Unofficial
4224	TCP		Cisco Audio Session Tunneling	Unofficial
4321	TCP		<a href="#">Referral Whois (RWhois) Protocol</a> <sup>[51]</sup>	Official
4323		UDP	Lincoln Electric's ArcLink/XT	Unofficial
4433-4436	TCP		Axence nVision	Unofficial
4500		UDP	<a href="#">IPSec NAT Traversal</a> (RFC 3947)	Official
4502-4534	TCP		Microsoft Silverlight connectable ports under non-elevated trust	Official
4534		UDP	<a href="#">Armagetron Advanced</a> default server port	Unofficial
4567	TCP		<a href="#">Sinatra</a> default server port in development mode (HTTP)	Unofficial
4569		UDP	<a href="#">Inter-Asterisk eXchange</a> (IAX2)	Official
4610-4640	TCP		<a href="#">QualiSystems</a> TestShell Suite Services	Unofficial
4662		UDP	OrbitNet Message Service	Official

Port	TCP	UDP	Description	Status
4662	TCP		OrbitNet Message Service	Official
4662	TCP		Default for older versions of eMule <sup>[52]</sup>	Unofficial
4664	TCP		Google Desktop Search	Unofficial
4672		UDP	Default for older versions of eMule <sup>[52]</sup>	Unofficial
4711	TCP		eMule optional web interface <sup>[52]</sup>	Unofficial
4711	TCP		McAfee Web Gateway 7 - Default GUI Port HTTP	Unofficial
4712	TCP		McAfee Web Gateway 7 - Default GUI Port HTTPS	Unofficial
4728	TCP		Computer Associates Desktop and Server Management (DMP)/Port Multiplexer <sup>[53]</sup>	Official
4747	TCP		Apprentice	Unofficial
4750	TCP		BladeLogic Agent	Unofficial
4840	TCP	UDP	OPC UA TCP Protocol for OPC Unified Architecture from OPC Foundation	Official
4843	TCP	UDP	OPC UA TCP Protocol over TLS/SSL for OPC Unified Architecture from OPC Foundation	Official
4847	TCP	UDP	Web Fresh Communication, Quadrion Software & Odorless Entertainment	Official
4894	TCP	UDP	LysKOM Protocol A	Official
4899	TCP	UDP	Radmin remote administration tool	Official



Port	TCP	UDP	Description	Status
4949	TCP		Munin Resource Monitoring Tool	Official
4950	TCP	UDP	Cylon Controls UC32 Communications Port	Official
4982	TCP	UDP	Solar Data Log (JK client app for PV solar inverters )	Unofficial
4993	TCP	UDP	Home FTP Server web Interface Default Port	Unofficial
5000	TCP		complex-main	Official
5000	TCP		UPnP—Windows network device interoperability	Unofficial
5000	TCP		VTun—VPN Software	Unofficial
5000		UDP	FlightGear multiplayer <sup>[54]</sup>	Unofficial
5000		UDP	VTun—VPN Software	Unofficial
5001	TCP		complex-link	Official
5001	TCP		Slingbox and Slingplayer	Unofficial
5001	TCP		Iperf (Tool for measuring TCP and UDP bandwidth performance)	Unofficial
5001		UDP	Iperf (Tool for measuring TCP and UDP bandwidth performance)	Unofficial
5002	TCP		SOLICARD ARX <sup>[55]</sup>	Unofficial
5003	TCP	UDP	FileMaker	Official
5004	TCP	UDP	RTP (Real-time Transport Protocol) media data (RFC 3551, RFC 4571)	Official
5004	DCCP		RTP (Real-time Transport Protocol) media data (RFC 3551, RFC 4571)	Official
5005	TCP	UDP	RTP (Real-time Transport Protocol) control protocol (RFC 3551, RFC 4571)	Official
5005	DCCP		RTP (Real-time Transport Protocol) control protocol (RFC 3551, RFC 4571)	Official
5029	TCP		Sonic Robo Blast 2 : Multiplayer	Unofficial
5031	TCP	UDP	AVM CAPI-over-TCP (ISDN over Ethernet tunneling)	Unofficial
5050	TCP		Yahoo! Messenger	Unofficial
5051	TCP		ita-agent Symantec Intruder Alert <sup>[56]</sup>	Official
5060	TCP	UDP	Session Initiation Protocol (SIP)	Official
5061	TCP		Session Initiation Protocol (SIP) over TLS	Official
5070	TCP		Binary Floor Control Protocol (BFCP), <sup>[57]</sup> published as RFC 4582, is a protocol that allows for an additional video channel (known as the content channel) alongside the main video channel in a video-conferencing call that uses SIP. Also used for Session Initiation Protocol (SIP) preferred port for PUBLISH on SIP Trunk to Cisco Unified Presence Server (CUPS)	Unofficial
5082	TCP	UDP	Qpur Communication Protocol	Official
5083	TCP	UDP	Qpur File Protocol	Official
5084	TCP	UDP	EPCglobal Low Level Reader Protocol (LLRP)	Official

Port	TCP	UDP	Description	Status
5085	TCP	UDP	<a href="#">EPCglobal</a> Low Level Reader Protocol (LLRP) over TLS	Official
5093		UDP	<a href="#">SafeNet, Inc</a> Sentinel LM, Sentinel RMS, License Manager, Client-to-Server	Official
5099	TCP	UDP	<a href="#">SafeNet, Inc</a> Sentinel LM, Sentinel RMS, License Manager, Server-to-Server	Official
5104	TCP		<a href="#">IBM Tivoli Framework</a> NetCOOL/Impact <sup>[58]</sup> HTTP Service	Unofficial
5106	TCP		A-Talk Common connection	Unofficial
5107	TCP		A-Talk Remote server connection	Unofficial
5108	TCP		VPOP3 Mail Server Webmail	Unofficial
5109	TCP	UDP	VPOP3 Mail Server Status	Unofficial
5110	TCP		<a href="#">ProRat</a> Server	Unofficial
5121	TCP		<a href="#">Neverwinter Nights</a>	Unofficial
5150	TCP	UDP	ATMP Ascend Tunnel Management Protocol <sup>[59]</sup>	Official
5150	TCP	UDP	<a href="#">Malware Cerberus RAT</a>	Unofficial
5151	TCP		<a href="#">ESRI</a> SDE Instance	Official
5151		UDP	<a href="#">ESRI</a> SDE Remote Start	Official
5154	TCP	UDP	<a href="#">BZFlag</a>	Official
5176	TCP		ConsoleWorks default UI interface	Unofficial
5190	TCP		ICQ and AOL Instant Messenger	Official
5222	TCP		<a href="#">Extensible Messaging and Presence Protocol</a> (XMPP) client connection <sup>[60][61]</sup>	Official
5223	TCP		<a href="#">Extensible Messaging and Presence Protocol</a> (XMPP) client connection over SSL	Unofficial
5228	TCP		<a href="#">HP</a> Virtual Room Service	Official
5228	TCP		<a href="#">Android Market</a>	Unofficial
5246		UDP	Control And Provisioning of Wireless Access Points (CAPWAP) CAPWAP control <sup>[62]</sup>	Official
5247		UDP	Control And Provisioning of Wireless Access Points (CAPWAP) CAPWAP data <sup>[62]</sup>	Official
5269	TCP		<a href="#">Extensible Messaging and Presence Protocol</a> (XMPP) server connection <sup>[60][61]</sup>	Official
5280	TCP		<a href="#">Extensible Messaging and Presence Protocol</a> (XMPP) XEP-0124: Bidirectional-streams Over Synchronous HTTP (BOSH)	Official
5281	TCP		<a href="#">Undo License Manager</a>	Official
5281	TCP		<a href="#">Extensible Messaging and Presence Protocol</a> (XMPP) XEP-0124: Bidirectional-streams Over Synchronous HTTP (BOSH) with SSL	Unofficial
5298	TCP	UDP	<a href="#">Extensible Messaging and Presence Protocol</a> (XMPP) XEP-0174: Serverless Messaging	Official
5310	TCP	UDP	<a href="#">Ginever.net</a> data communication port	Unofficial
5311	TCP	UDP	<a href="#">Ginever.net</a> data communication port	Unofficial
5312	TCP	UDP	<a href="#">Ginever.net</a> data communication port	Unofficial
5313	TCP	UDP	<a href="#">Ginever.net</a> data communication port	Unofficial
5314	TCP	UDP	<a href="#">Ginever.net</a> data communication port	Unofficial
5315	TCP	UDP	<a href="#">Ginever.net</a> data communication port	Unofficial
5349	TCP		<a href="#">STUN</a> , a protocol for NAT traversal (UDP is reserved) <sup>[47]</sup>	Official
5349	TCP		<a href="#">TURN</a> , a protocol for NAT traversal (UDP is reserved) <sup>[48]</sup>	Official

Port	TCP	UDP	Description	Status
5351	TCP	UDP	NAT Port Mapping Protocol—client-requested configuration for inbound connections through <a href="#">network address translators</a>	Official
5353		UDP	<a href="#">Multicast DNS</a> (mDNS)	Official
5355	TCP	UDP	LLMNR—Link-Local Multicast Name Resolution, allows <a href="#">hosts</a> to perform <a href="#">name resolution</a> for hosts on the same <a href="#">local link</a> (only provided by <a href="#">Windows Vista</a> and <a href="#">Server 2008</a> )	Official
5357	TCP	UDP	Web Services for Devices (WSDAPI) (only provided by <a href="#">Windows Vista</a> , <a href="#">Windows 7</a> and <a href="#">Server 2008</a> )	Unofficial
5358	TCP	UDP	WSDAPI Applications to Use a Secure Channel (only provided by <a href="#">Windows Vista</a> , <a href="#">Windows 7</a> and <a href="#">Server 2008</a> )	Unofficial
5402	TCP	UDP	mftp, Stratacache <a href="#">OmniCast</a> <a href="#">content delivery</a> system MFTP <a href="#">file sharing</a> protocol	Official
5405	TCP	UDP	<a href="#">NetSupport Manager</a>	Official
5412	TCP	UDP	IBM Rational Synergy ( <a href="#">Telelogic_Synergy</a> ) (Continuous CM) Message Router	Official
5421	TCP	UDP	<a href="#">NetSupport Manager</a>	Official
5432	TCP	UDP	<a href="#">PostgreSQL</a> database system	Official
5433	TCP		Bouwsoft file/webserver < <a href="http://www.bouwsoft.be">http://www.bouwsoft.be</a> >	Unofficial
5445		UDP	<a href="#">Cisco</a> Unified Video Advantage	Unofficial
5450	TCP		<a href="#">OSIsoft</a> PI Server Client Access	Unofficial
5457	TCP		<a href="#">OSIsoft</a> PI Asset Framework Client Access	Unofficial
5458	TCP		<a href="#">OSIsoft</a> PI Notifications Client Access	Unofficial
5495	TCP		<a href="#">Applix</a> TM1 Admin server	Unofficial
5498	TCP		<a href="#">Hotline</a> tracker server connection	Unofficial
5499		UDP	<a href="#">Hotline</a> tracker server discovery	Unofficial
5500	TCP		VNC remote desktop protocol—for incoming listening viewer, <a href="#">Hotline</a> control connection	Unofficial
5501	TCP		<a href="#">Hotline</a> file transfer connection	Unofficial
5517	TCP		<a href="#">Setiquest</a> Proxy server client for <a href="#">SETI@Home</a> project	Unofficial
5550	TCP		<a href="#">Hewlett-Packard</a> Data Protector	Unofficial
5555	TCP		<a href="#">Freeciv</a> versions up to 2.0, <a href="#">Hewlett-Packard</a> Data Protector, <a href="#">McAfee EndPoint Encryption</a> Database Server, <a href="#">SAP</a> , Default for Microsoft Dynamics CRM 4.0	Unofficial
5556	TCP	UDP	<a href="#">Freeciv</a>	Official
5591	TCP		Default for Tidal Enterprise Scheduler master-Socket used for communication between Agent-to-Master, though can be changed	Unofficial
5631	TCP		pcANYWHEREdata, <a href="#">Symantec pcAnywhere</a> (version 7.52 and later <sup>[63]</sup> ) <sup>[64]</sup> data	Official
5632		UDP	pcANYWHEREstat, <a href="#">Symantec pcAnywhere</a> (version 7.52 and later) status	Official
5656	TCP		IBM Sametime p2p file transfer	Unofficial
5666	TCP		<a href="#">NRPE</a> ( <a href="#">Nagios</a> )	Unofficial
5667	TCP		<a href="#">NSCA</a> ( <a href="#">Nagios</a> )	Unofficial
5678		UDP	Mikrotik RouterOS Neighbor Discovery Protocol (MNDP)	Unofficial
5721	TCP	UDP	Kaseya	Unofficial
5723	TCP		Operations Manager	Unofficial
5741	TCP	UDP	IDA Discover Port 1	Official

Port	TCP	UDP	Description	Status
5742	TCP	UDP	IDA Discover Port 2	Official
5800	TCP		VNC remote desktop protocol—for use over HTTP	Unofficial
5814	TCP	UDP	Hewlett-Packard Support Automation (HP OpenView Self-Healing Services)	Official
5850	TCP		COMIT SE (PCR)	Unofficial
5852	TCP		Adeona client: communications to OpenDHT	Unofficial
5900	TCP	UDP	Virtual Network Computing (VNC) remote desktop protocol (used by Apple Remote Desktop and others)	Official
5912	TCP		Default for Tidal Enterprise Scheduler agent-Socket used for communication between Master-to-Agent, though can be changed	Unofficial
5938	TCP	UDP	TeamViewer <sup>[65]</sup> remote desktop protocol	Unofficial
5984	TCP	UDP	CouchDB database server	Official
5999	TCP		CVSup <sup>[66]</sup> file update tool	Official
6000	TCP		X11—used between an X client and server over the network	Official
6001		UDP	X11—used between an X client and server over the network	Official
6005	TCP		Default for BMC Software Control-M/Server—Socket used for communication between Control-M processes—though often changed during installation	Official
6005	TCP		Default for Camfrog Chat & Cam Client <a href="http://www.camfrog.com">http://www.camfrog.com</a>	Unofficial
6050	TCP		Brightstor Arcserve Backup	Unofficial
6050	TCP		Nortel Software	Unofficial
6051	TCP		Brightstor Arcserve Backup	Unofficial
6072	TCP		iOperator Protocol Signal Port	Unofficial
6086	TCP		PDTP—FTP like file server in a P2P network	Official
6100	TCP		Vizrt System	Unofficial
6100	TCP		Ventrilo This is the authentication port that must be allowed outbound for version 3 of Ventrilo	Official
6101	TCP		Backup Exec Agent Browser	Unofficial
6110	TCP	UDP	softcm, HP Softbench CM	Official
6111	TCP	UDP	spc, HP Softbench Sub-Process Control	Official
6112		UDP	"dtspec"—a network daemon that accepts requests from clients to execute commands and launch applications remotely	Official
6112	TCP		"dtspec"—a network daemon that accepts requests from clients to execute commands and launch applications remotely	Official
6112	TCP		Blizzard's Battle.net gaming service, ArenaNet gaming service, Relic gaming service	Unofficial
6112	TCP		Club Penguin Disney online game for kids	Unofficial
6113	TCP		Club Penguin Disney online game for kids	Unofficial
6129	TCP		DameWare Remote Control	Official
6257		UDP	WinMX (see also 6699)	Unofficial
6260	TCP	UDP	planet M.U.L.E.	Unofficial
6262	TCP		Sybase Advantage Database Server	Unofficial
6343		UDP	SFlow, sFlow traffic monitoring	Official

Port	TCP	UDP	Description	Status
6346	TCP	UDP	gnutella-svc, gnutella (FrostWire, Limewire, Shareaza, etc.)	Official
6347	TCP	UDP	gnutella-rtr, Gnutella alternate	Official
6350	TCP	UDP	App Discovery and Access Protocol	Official
6389	TCP		EMC CLARiON	Unofficial
6432	TCP		PgBouncer - A connection pooler for PostgreSQL	Official
6444	TCP	UDP	Sun Grid Engine—Qmaster Service	Official
6445	TCP	UDP	Sun Grid Engine—Execution Service	Official
6502	TCP	UDP	Netop Business Solutions - NetOp Remote Control	Unofficial
6503		UDP	Netop Business Solutions - NetOp School	Unofficial
6522	TCP		Gobby (and other libobby-based software)	Unofficial
6523	TCP		Gobby 0.5 (and other libinfinity-based software)	Unofficial
6543		UDP	Paradigm Research & Development Jetnet <sup>[67]</sup> default	Unofficial
6566	TCP		SANE (Scanner Access Now Easy)—SANE network scanner daemon	Unofficial
6571			Windows Live FolderShare client	Unofficial
6600	TCP		Music Playing Daemon (MPD)	Unofficial
6619	TCP	UDP	odette-fts, Odette File Transfer Protocol (OFTP) over TLS/SSL	Official
6646		UDP	McAfee Network Agent	Unofficial
6660–6664	TCP		Internet Relay Chat (IRC)	Unofficial
6665–6669	TCP		Internet Relay Chat (IRC)	Official
6679	TCP	UDP	Osorno Automation Protocol (OSAUT)	Official
6679	TCP		IRC SSL (Secure Internet Relay Chat)—often used	Unofficial
6697	TCP		IRC SSL (Secure Internet Relay Chat)—often used	Unofficial
6699	TCP		WinMX (see also 6257)	Unofficial
6702	TCP		Default for Tidal Enterprise Scheduler client-Socket used for communication between Client-to-Master, though can be changed	Unofficial
6771		UDP	Polycom server broadcast	Unofficial
6789	TCP		Datalogger Support Software Campbell Scientific Loggernet Software	Unofficial
6881–6887	TCP	UDP	BitTorrent part of full range of ports used most often	Unofficial
6888	TCP	UDP	MUSE	Official
6888	TCP	UDP	BitTorrent part of full range of ports used most often	Unofficial
6889–6890	TCP	UDP	BitTorrent part of full range of ports used most often	Unofficial
6891–6900	TCP	UDP	BitTorrent part of full range of ports used most often	Unofficial
6891–6900	TCP	UDP	Windows Live Messenger (File transfer)	Unofficial
6901	TCP	UDP	Windows Live Messenger (Voice)	Unofficial
6901	TCP	UDP	BitTorrent part of full range of ports used most often	Unofficial

Port	TCP	UDP	Description	Status
6902–6968	TCP	UDP	<a href="#">BitTorrent</a> part of full range of ports used most often	Unofficial
6969	TCP	UDP	acmsoda	Official
6969	TCP		<a href="#">BitTorrent</a> tracker	Unofficial
6970–6999	TCP	UDP	<a href="#">BitTorrent</a> part of full range of ports used most often	Unofficial
7000	TCP		Default for <a href="#">Vuze's</a> built in <a href="#">HTTPS Bittorrent Tracker</a>	Unofficial
7001	TCP		Default for <a href="#">BEA WebLogic Server's</a> HTTP server, though often changed during installation	Unofficial
7002	TCP		Default for <a href="#">BEA WebLogic Server's</a> HTTPS server, though often changed during installation	Unofficial
7005	TCP		Default for <a href="#">BMC Software Control-M/Server</a> and Control-M/Agent for Agent-to-Server, though often changed during installation	Unofficial
7006	TCP		Default for <a href="#">BMC Software Control-M/Server</a> and Control-M/Agent for Server-to-Agent, though often changed during installation	Unofficial
7010	TCP		Default for Cisco AON AMC (AON Management Console) <sup>[68]</sup>	Unofficial
7022	TCP		Database mirroring endpoints	Unofficial
7023		UDP	Bryan Wilcutt T2-NMCS Protocol for SatCom Modems	Official
7025	TCP		Zimbra <a href="#">LMTP</a> [mailbox]—local mail delivery	Unofficial
7047	TCP		<a href="#">Zimbra</a> conversion server	Unofficial
7133	TCP		<a href="#">Enemy Territory: Quake Wars</a>	Unofficial
7144	TCP		Peercast	Unofficial
7145	TCP		Peercast	Unofficial
7171	TCP		<a href="#">Tibia</a>	Unofficial
7306	TCP		Zimbra mysql [mailbox]	Unofficial
7307	TCP		Zimbra mysql [logger]	Unofficial
7312		UDP	<a href="#">Sibelius</a> License Server	Unofficial
7400	TCP	UDP	RTPS (Real Time Publish Subscribe) <a href="#">DDS</a> Discovery	Official
7401	TCP	UDP	RTPS (Real Time Publish Subscribe) <a href="#">DDS</a> User-Traffic	Official
7402	TCP	UDP	RTPS (Real Time Publish Subscribe) <a href="#">DDS</a> Meta-Traffic	Official
7473	TCP	UDP	<a href="#">Rise: The Vieneo Province</a>	Official
7547	TCP	UDP	CPE WAN Management Protocol <a href="#">Technical Report 069</a>	Official
7615	TCP		ISL Online <sup>[69]</sup> communication protocol	Unofficial
7670	TCP		<a href="#">BrettspielWelt</a> BSW Boardgame Portal	Unofficial
7676	TCP		Aqumin AlphaVision Remote Command Interface	Unofficial
7700		UDP	P2P DC (RedHub)	Unofficial
7707		UDP	<a href="#">Killing Floor</a>	Unofficial
7708		UDP	<a href="#">Killing Floor</a>	Unofficial
7717		UDP	<a href="#">Killing Floor</a>	Unofficial
7777	TCP		iChat server file transfer proxy	Unofficial
7777	TCP		Oracle Cluster File System 2	Unofficial

Port	TCP	UDP	Description	Status
7777	TCP		Windows backdoor program tini.exe default	Unofficial
7777	TCP		Xivio.com Chat Server Interface	Unofficial
7777	TCP		<a href="#">Terraria</a> default server	Unofficial
7778	TCP		<a href="#">Bad Trip MUD</a>	Unofficial
7777-7788		UDP	Unreal Tournament series default server	Unofficial
7777-7788	TCP		Unreal Tournament series default server	Unofficial
7787-7788	TCP		GFI EventsManager 7 & 8	Official
7831	TCP		Default used by Smartlaunch Internet Cafe Administration <sup>[70]</sup> software	Unofficial
7880	TCP	UDP	PowerSchool Gradebook Server	Unofficial
7915	TCP		Default for YSFlight server <sup>[3]</sup>	Unofficial
7935	TCP		Fixed port used for Adobe Flash Debug Player to communicate with a debugger (Flash IDE, Flex Builder or fdb). <sup>[71]</sup>	Unofficial
7937-9936	TCP	UDP	EMC <sup>2</sup> (Legato) Networker or Sun Solcitice Backup	Official
8000		UDP	iRDMI (Intel Remote <a href="#">Desktop Management Interface</a> ) <sup>[72]</sup> —sometimes erroneously used instead of port 8080	Official
8000	TCP		iRDMI (Intel Remote <a href="#">Desktop Management Interface</a> ) <sup>[72]</sup> —sometimes erroneously used instead of port 8080	Official
8000	TCP		Commonly used for internet radio streams such as those using <a href="#">SHOUTcast</a>	Unofficial
8001	TCP		Commonly used for internet radio streams such as those using <a href="#">SHOUTcast</a>	Unofficial
8002	TCP		Cisco Systems Unified Call Manager Intercluster	Unofficial
8008	TCP		<a href="#">HTTP</a> Alternate	Official
8008	TCP		<a href="#">IBM HTTP Server</a> administration default	Unofficial
8009	TCP		ajp13— <a href="#">Apache JServ Protocol</a> AJP Connector	Unofficial
8010	TCP		<a href="#">XMPP</a> File transfers	Unofficial
8011-8013	TCP		<a href="#">HTTP/TCP</a> Symon Communications Event and Query Engine	Unofficial
8014	TCP		<a href="#">HTTP/TCP</a> Symon Communications Event and Query Engine	Unofficial
8014		UDP	<a href="#">Perseus SDR Receiver</a> default remote connection port	Unofficial
8020	TCP		<a href="#">360Works SuperContainer</a>	Unofficial
8074	TCP		<a href="#">Gadu-Gadu</a>	Unofficial
8075	TCP		<a href="#">Killing Floor</a>	Unofficial
8078	TCP	UDP	Default port for most Endless Online-based servers	Unofficial
8080	TCP		<a href="#">HTTP</a> alternate (http_alt)—commonly used for <a href="#">Web proxy</a> and <a href="#">caching</a> server, or for running a Web server as a non-root user	Official
8080	TCP		<a href="#">Apache Tomcat</a>	Unofficial
8080		UDP	<a href="#">FilePhile</a> Master/Relay	Unofficial
8081	TCP		<a href="#">HTTP</a> alternate, VibeStreamer, e.g. <a href="#">McAfee ePolicy Orchestrator (ePO)</a>	Unofficial
8086	TCP		<a href="#">HELM</a> Web Host Automation Windows Control Panel	Unofficial



Port	TCP	UDP	Description	Status
8086	TCP		Kaspersky AV Control Center	Unofficial
8087	TCP		Hosting Accelerator Control Panel	Unofficial
8087	TCP		Parallels Plesk Control Panel	Unofficial
8087		UDP	Kaspersky AV Control Center	Unofficial
8088	TCP		Asterisk (PBX) Web Configuration utility (GUI Addon)	Unofficial
8089	TCP		Splunk Daemon	Unofficial
8090	TCP		HTTP Alternate (http_alt_alt)—used as an alternative to port 8080	Unofficial
8100	TCP		Console Gateway License Verification	Unofficial
8116		UDP	Check Point Cluster Control Protocol	Unofficial
8118	TCP		Privoxy—advertisement-filtering Web proxy	Official
8123	TCP		Polipo Web proxy	Official
8192	TCP		Sophos Remote Management System	Unofficial
8193	TCP		Sophos Remote Management System	Unofficial
8194	TCP		Sophos Remote Management System	Unofficial
8200	TCP		GoToMyPC	Unofficial
8222	TCP		VMware Server Management User Interface <sup>[73]</sup> (insecure Web interface). <sup>[74]</sup> See also port 8333	Unofficial
8243	TCP	UDP	HTTPS listener for Apache Synapse <sup>[75]</sup>	Official
8280	TCP	UDP	HTTP listener for Apache Synapse <sup>[75]</sup>	Official
8291	TCP		Winbox—Default on a MikroTik RouterOS for a Windows application used to administer MikroTik RouterOS	Unofficial
8303		UDP	Teeworlds Server	Unofficial
8332	TCP		Bitcoin JSON-RPC server <sup>[76]</sup>	Unofficial
8333	TCP		Bitcoin <sup>[77]</sup>	Unofficial
8333	TCP		VMware Server Management User Interface <sup>[73]</sup> (secure Web interface). <sup>[74]</sup> See also port 8222	Unofficial
8400	TCP	UDP	cvp, Commvault Unified Data Management	Official
8442	TCP	UDP	CyBro A-bus, Cybrotech Ltd.	Official
8443	TCP		SW Soft Plesk Control Panel, Apache Tomcat SSL, Promise WebPAM SSL, McAfee ePolicy Orchestrator (ePO)	Unofficial
8484	TCP	UDP	MapleStory	Unofficial
8500	TCP	UDP	ColdFusion Macromedia/Adobe ColdFusion default and Duke Nukem 3D—default	Unofficial
8501	TCP		[4] DukesterX —default	Unofficial
8601	TCP		Wavestore CCTV protocol [5]	Unofficial
8602	TCP	UDP	Wavestore Notification protocol	Unofficial
8642	TCP		Lotus Traveller	Unofficial
8691	TCP		Ultra Fractal default server port for distributing calculations over network computers	Unofficial
8701		UDP	SoftPerfect Bandwidth Manager	Unofficial
8702		UDP	SoftPerfect Bandwidth Manager	Unofficial



Port	TCP	UDP	Description	Status
8767		UDP	TeamSpeak—default	Unofficial
8768		UDP	TeamSpeak—alternate	Unofficial
8840	TCP		Opera Unite server	Unofficial
8880		UDP	cddbp-alt, CD DataBase (CDDb) protocol (CDDbP) alternate	Official
8880	TCP		cddbp-alt, CD DataBase (CDDb) protocol (CDDbP) alternate	Official
8880	TCP		WebSphere Application Server SOAP connector default	Unofficial
8880	TCP		Win Media Streamer to Server SOAP connector default	Unofficial
8881	TCP		Atlasz Informatics Research Ltd [6] Secure Application Server	Unofficial
8882	TCP		Atlasz Informatics Research Ltd [7] Secure Application Server	Unofficial
8883	TCP	UDP	Secure MQ Telemetry Transport (MQTT over SSL)	Official
8887	TCP		HyperVM HTTP	Official
8888	TCP		HyperVM HTTPS	Official
8888	TCP		Freenet HTTP	Unofficial
8888	TCP	UDP	NewsEDGE server	Official
8888	TCP		Sun Answerbook dwhttpd server (deprecated by docs.sun.com)	Unofficial
8888	TCP		GNUp3d HTTP music streaming and Web interface	Unofficial
8888	TCP		LoLo Catcher HTTP Web interface (www.optiform.com)	Unofficial
8888	TCP		D2GS Admin Console Telnet administration console for D2GS servers (Diablo 2)	Unofficial
8888	TCP		Earthland Relams 2 Server (AU1_2)	Unofficial
8888	TCP		MAMP Server	Unofficial
8889	TCP		MAMP Server	Unofficial
8889	TCP		Earthland Relams 2 Server (AU1_1)	Unofficial
8983	TCP		Default for Apache Solr 1.4	Unofficial
9000	TCP		Buffalo LinkSystem Web access	Unofficial
9000	TCP		DBGp	Unofficial
9000	TCP		SqueezeCenter web server & streaming	Unofficial
9000		UDP	UDPCast	Unofficial
9001	TCP	UDP	ETL Service Manager <sup>[78]</sup>	Official
9001			Microsoft Sharepoint Authoring Environment	Unofficial
9001			cisco-xremote router configuration	Unofficial
9001			Tor network default	Unofficial
9001	TCP		DBGp Proxy	Unofficial
9009	TCP	UDP	Pichat Server—Peer to peer chat software	Official
9010	TCP		TISERVICEMANAGEMENT Numara Track-It!	Unofficial
9020	TCP		WiT WiT Services	Official
9025	TCP		WiT WiT Services	Official
9030	TCP		Tor often used	Unofficial
9043	TCP		WebSphere Application Server Administration Console secure	Unofficial
9050	TCP		Tor	Unofficial

Port	TCP	UDP	Description	Status
9051	TCP		Tor	Unofficial
9060	TCP		WebSphere Application Server Administration Console	Unofficial
9080		UDP	glrpc, Groove Collaboration software GLRPC	Official
9080	TCP		glrpc, Groove Collaboration software GLRPC	Official
9080	TCP		WebSphere Application Server HTTP Transport (port 1) default	Unofficial
9090	TCP		Webwasher, Secure Web, McAfee Web Gateway - Default Proxy Port	Unofficial
9090	TCP		Openfire Administration Console	Unofficial
9090	TCP		SqueezeCenter control (CLI)	Unofficial
9091	TCP		Openfire Administration Console (SSL Secured)	Unofficial
9091	TCP		Transmission (BitTorrent client) Web Interface	Unofficial
9100	TCP		PDL Data Stream	Official
9101	TCP	UDP	Bacula Director	Official
9102	TCP	UDP	Bacula File Daemon	Official
9103	TCP	UDP	Bacula Storage Daemon	Official
9105	TCP	UDP	Xadmin Control Daemon	Official
9106	TCP	UDP	Astergate Control Daemon	Official
9107	TCP		Astergate-FAX Control Daemon	Official
9110		UDP	SSMP Message protocol	Unofficial
9119	TCP	UDP	MXit Instant Messenger	Official
9191	TCP		Catamount Software - PocketMoney Sync	Unofficial
9293	TCP		Sony PlayStation RemotePlay	Unofficial
9300	TCP		IBM Cognos 8 SOAP Business Intelligence and Performance Management	Unofficial
9303		UDP	D-Link Shareport Share storage and MFP printers	Unofficial
9306	TCP		Sphinx Native API	Official
9312	TCP		Sphinx SphinxQL	Official
9418	TCP	UDP	git, Git pack transfer service	Official
9420	TCP		MooseFS distributed file system—master server to chunk servers	Unofficial
9421	TCP		MooseFS distributed file system—master server to clients	Unofficial
9422	TCP		MooseFS distributed file system—chunk servers to clients	Unofficial
9535	TCP	UDP	mngsuite, LANDesk Management Suite Remote Control	Official
9536	TCP	UDP	laes-bf, IP Fabrics Surveillance buffering function	Official
9561	TCP	UDP	Network Time System Server	Unofficial
9600		UDP	Omron FINS, OMRON FINS PLC communication	Official
9675	TCP	UDP	Spiceworks Desktop, IT Helpdesk Software	Unofficial
9676	TCP	UDP	Spiceworks Desktop, IT Helpdesk Software	Unofficial
9695		UDP	CCNx	Official
9800	TCP	UDP	WebDAV Source	Official
9800			WebCT e-learning portal	Unofficial
9875	TCP		Club Penguin Disney online game for kids	Unofficial

Port	TCP	UDP	Description	Status
9898		UDP	MonkeyCom	Official
9898	TCP		MonkeyCom	Official
9898	TCP		Tripwire—File Integrity Monitoring Software	Unofficial
9987		UDP	TeamSpeak 3 server default (voice) port (for the conflicting service see the IANA list)	Unofficial
9996	TCP	UDP	<a href="#">The Palace</a> "The Palace" Virtual Reality Chat software.—5	Official
9998	TCP	UDP	<a href="#">The Palace</a> "The Palace" Virtual Reality Chat software.—5	Official
9999			<a href="#">Hydranode</a> —edonkey2000 <a href="#">TELNET</a> control	Unofficial
9999	TCP		<a href="#">Lantronix</a> UDS-10/UDS100 <sup>[79]</sup> <a href="#">RS-485</a> to Ethernet Converter <a href="#">TELNET</a> control	Unofficial
9999			Urchin Web Analytics	Unofficial
10000			<a href="#">Webmin</a> —Web-based Linux admin tool	Unofficial
10000			<a href="#">BackupExec</a>	Unofficial
10000			Ericsson Account Manager (avim)	Unofficial
10001	TCP		<a href="#">Lantronix</a> UDS-10/UDS100 <sup>[80]</sup> <a href="#">RS-485</a> to Ethernet Converter default	Unofficial
10008	TCP	UDP	Octopus Multiplexer, primary port for the <a href="#">CROMP</a> protocol, which provides a <a href="#">platform-independent</a> means for communication of <a href="#">objects</a> across a <a href="#">network</a>	Official
10009	TCP	UDP	Cross Fire, a multiplayer online First Person Shooter	Unofficial
10010	TCP		<a href="#">Open Object REXX</a> (ooRexx) rxapi daemon	Official
10017			AIX, NeXT, HP-UX—rexid daemon control	Unofficial
10024	TCP		Zimbra smtp [mta]—to amavis from postfix	Unofficial
10025	TCP		Zimbra smtp [mta]—back to postfix from amavis	Unofficial
10050	TCP	UDP	<a href="#">Zabbix</a> -Agent	Official
10051	TCP	UDP	<a href="#">Zabbix</a> -Trapper	Official
10110	TCP	UDP	NMEA 0183 Navigational Data. Transport of NMEA 0183 sentences over TCP or UDP	Official
10113	TCP	UDP	<a href="#">NetIQ</a> Endpoint	Official
10114	TCP	UDP	<a href="#">NetIQ</a> Qcheck	Official
10115	TCP	UDP	<a href="#">NetIQ</a> Endpoint	Official
10116	TCP	UDP	<a href="#">NetIQ</a> VoIP Assessor	Official
10200	TCP		<a href="#">FRISK Software International</a> 's <i>fp-scand</i> virus scanning daemon for Unix platforms <sup>[81]</sup>	Unofficial
10200	TCP		<a href="#">FRISK Software International</a> 's <i>f-protd</i> virus scanning daemon for Unix platforms <sup>[82]</sup>	Unofficial
10201–10204	TCP		<a href="#">FRISK Software International</a> 's <i>f-protd</i> virus scanning daemon for Unix platforms <sup>[82]</sup>	Unofficial
10301	TCP		VoiceIP-ACS UMP default device provisioning endpoint	Unofficial
10302	TCP		VoiceIP-ACS UMP default device provisioning endpoint (SSL)	Unofficial
10308			Lock-on: Modern Air Combat	Unofficial
10480			SWAT 4 Dedicated Server	Unofficial
10823		UDP	Farming Simulator 2011 Default Server	Unofficial
10891	TCP		Jungle Disk (this port is opened by the Jungle Disk Monitor service on the	Unofficial

Port	TCP	UDP	Description	Status
			localhost)	
11001	TCP	UDP	metasys ( Johnson Controls Metasys java AC control environment )	Unofficial
11211			memcached	Unofficial
11235			Savage:Battle for Newerth Server Hosting	Unofficial
11294			Blood Quest Online Server	Unofficial
11371			OpenPGP HTTP key server	Official
11576			IPStor Server management communication	Unofficial
12010	TCP		ElevateDB default database port <sup>[83]</sup>	Unofficial
12011	TCP		Axence nVision	Unofficial
12012	TCP		Axence nVision	Unofficial
12012	TCP		Audition Online Dance Battle, Korea Server—Status/Version Check	Unofficial
12012		UDP	Audition Online Dance Battle, Korea Server—Status/Version Check	Unofficial
12013	TCP	UDP	Audition Online Dance Battle, Korea Server	Unofficial
12035		UDP	Linden Lab viewer to sim on SecondLife	Unofficial
12222		UDP	Light Weight Access Point Protocol (LWAPP) LWAPP data (RFC 5412)	Official
12223		UDP	Light Weight Access Point Protocol (LWAPP) LWAPP control (RFC 5412)	Official
12345			NetBus—remote administration tool (often Trojan horse). Also used by NetBuster. Little Fighter 2 (TCP).	Unofficial
12489	TCP		NSClient/NSClient++/NC_Net (Nagios)	Unofficial
12975	TCP		LogMeIn Hamachi (VPN tunnel software; also port 32976)—used to connect to Mediation Server (bibi.hamachi.cc); will attempt to use SSL (TCP port 443) if both 12975 & 32976 fail to connect	Unofficial
12998–12999		UDP	Takenaka RDI Mirror World on SecondLife	Unofficial
13000–13050		UDP	Linden Lab viewer to sim on SecondLife	Unofficial
13008	TCP	UDP	Cross Fire, a multiplayer online First Person Shooter	Unofficial
13075	TCP		Default <sup>[84]</sup> for BMC Software Control-M/Enterprise Manager Corba communication, though often changed during installation	Official
13195–13196	TCP	UDP	Ontolux Ontolux 2D	Unofficial
13337–13340	TCP	UDP	ÆtherNet peer-to-peer networking	Unofficial
13720	TCP	UDP	Symantec NetBackup—bprd (formerly VERITAS)	Official
13721	TCP	UDP	Symantec NetBackup—bpdbm (formerly VERITAS)	Official
13724	TCP	UDP	Symantec Network Utility—vnetd (formerly VERITAS)	Official
13782	TCP	UDP	Symantec NetBackup—bpcd (formerly VERITAS)	Official
13783	TCP	UDP	Symantec VOPIED protocol (formerly VERITAS)	Official
13785	TCP	UDP	Symantec NetBackup Database—nbdb (formerly VERITAS)	Official
13786	TCP	UDP	Symantec nomdb (formerly VERITAS)	Official
14439	TCP		APRS UI-View Amateur Radio <sup>[85]</sup> UI-WebServer	Unofficial
14567		UDP	Battlefield 1942 and mods	Unofficial

Port	TCP	UDP	Description	Status
15000	TCP		psyBNC	Unofficial
15000	TCP		Wesnoth	Unofficial
15000	TCP		Kaspersky Network Agent	Unofficial
15000	TCP		hydap, Hypack Hydrographic Software Packages Data Acquisition	Official
15000		UDP	hydap, Hypack Hydrographic Software Packages Data Acquisition	Official
15567		UDP	Battlefield Vietnam and mods	Unofficial
15345	TCP	UDP	XPilot Contact	Official
16000	TCP		shroudBNC	Unofficial
16080	TCP		Mac OS X Server Web (HTTP) service with performance cache <sup>[86]</sup>	Unofficial
16200	TCP		Oracle Universal Content Management Content Server	Unofficial
16250	TCP		Oracle Universal Content Management Inbound Refinery	Unofficial
16384		UDP	Iron Mountain Digital online backup	Unofficial
16567		UDP	Battlefield 2 and mods	Unofficial
17500	TCP		Dropbox LanSync Protocol (db-lsp); used to synchronize file catalogs between Dropbox clients on your local network.	Official
17500		UDP	Dropbox LanSync Discovery (db-lsp-disc); used to synchronize file catalogs between Dropbox clients on your local network; is transmitted to broadcast addresses.	Official
18010	TCP		Super Dancer Online Extreme(SDO-X)—CiB Net Station Malaysia Server	Unofficial
18104	TCP		RAD PDF Service	Official
18180	TCP		DART Reporting server	Unofficial
18200	TCP	UDP	Audition Online Dance Battle, AsiaSoft Thailand Server—Status/Version Check	Unofficial
18201	TCP	UDP	Audition Online Dance Battle, AsiaSoft Thailand Server	Unofficial
18206	TCP	UDP	Audition Online Dance Battle, AsiaSoft Thailand Server—FAM Database	Unofficial
18300	TCP	UDP	Audition Online Dance Battle, AsiaSoft SEA Server—Status/Version Check	Unofficial
18301	TCP	UDP	Audition Online Dance Battle, AsiaSoft SEA Server	Unofficial
18306	TCP	UDP	Audition Online Dance Battle, AsiaSoft SEA Server—FAM Database	Unofficial
18333	TCP		Bitcoin testnet <sup>[87]</sup>	Unofficial
18400	TCP	UDP	Audition Online Dance Battle, KAIZEN Brazil Server—Status/Version Check	Unofficial
18401	TCP	UDP	Audition Online Dance Battle, KAIZEN Brazil Server	Unofficial
18505	TCP	UDP	Audition Online Dance Battle, Nexon Server—Status/Version Check	Unofficial
18506	TCP	UDP	Audition Online Dance Battle, Nexon Server	Unofficial
18605	TCP	UDP	X-BEAT—Status/Version Check	Unofficial
18606	TCP	UDP	X-BEAT	Unofficial
19000	TCP	UDP	Audition Online Dance Battle, G10/alaplaya Server—Status/Version Check	Unofficial
19001	TCP	UDP	Audition Online Dance Battle, G10/alaplaya Server	Unofficial
19226	TCP		Panda Software AdminSecure Communication Agent	Unofficial
19283	TCP	UDP	K2 - KeyAuditor & KeyServer, Sassafras Software Inc. Software Asset Management tools	Official
19294	TCP		Google Talk Voice and Video connections <sup>[88]</sup>	Unofficial

Port	TCP	UDP	Description	Status
19295		UDP	Google Talk Voice and Video connections <sup>[88]</sup>	Unofficial
19302		UDP	Google Talk Voice and Video connections <sup>[88]</sup>	Unofficial
19315	TCP	UDP	KeyShadow for K2 - KeyAuditor & KeyServer, Sassafras Software Inc. Software Asset Management tools	Official
19540	TCP	UDP	Belkin Network USB Hub	Unofficial
19638	TCP		Ensim Control Panel	Unofficial
19771	TCP	UDP	Softros LAN Messenger	Unofficial
19812	TCP		4D database SQL Communication	Unofficial
19813	TCP		4D database Client Server Communication	Unofficial
19814	TCP		4D database DB4D Communication	Unofficial
19880	TCP		Softros LAN Messenger	Unofficial
19999			DNP - Secure (Distributed Network Protocol - Secure), a secure version of the protocol used in SCADA systems between communicating RTU's and IED's	Official
20000			DNP (Distributed Network Protocol), a protocol used in SCADA systems between communicating RTU's and IED's	Official
20000			Usermin, Web-based user tool	Unofficial
20014	TCP		DART Reporting server	Unofficial
20560	TCP	UDP	Killing Floor	Unofficial
20720	TCP		Symantec i3 Web GUI server	Unofficial
21001	TCP		AMLFILTER, AMLFilter Inc. amlf-admin default port	Unofficial
21011	TCP		AMLFILTER, AMLFilter Inc. amlf-engine-01 default http port	Unofficial
21012	TCP		AMLFILTER, AMLFilter Inc. amlf-engine-01 default https port	Unofficial
21021	TCP		AMLFILTER, AMLFilter Inc. amlf-engine-02 default http port	Unofficial
21022	TCP		AMLFILTER, AMLFilter Inc. amlf-engine-02 default https port	Unofficial
22136	TCP		FLIR Systems Camera Resource Protocol	Unofficial
22222	TCP		Davis Instruments, WeatherLink IP	Unofficial
22347	TCP	UDP	WibuKey, WIBU-SYSTEMS AG Software protection system	Official
22349	TCP		Wolfson Microelectronics, WISCEBridge Debug Protocol	Unofficial
22350	TCP	UDP	CodeMeter, WIBU-SYSTEMS AG Software protection system	Official
23073			Soldat Dedicated Server	Unofficial
23399			Skype Default Protocol	Unofficial
23513			Duke Nukem 3D#Source code Duke Nukem Ports	Unofficial
24444			NetBeans integrated development environment	Unofficial
24465	TCP	UDP	Tonido Directory Server for Tonido which is a Personal Web App and P2P platform	Official
24554	TCP	UDP	BINKP, Fidonet mail transfers over TCP/IP	Official
24800			Synergy: keyboard/mouse sharing software	Unofficial
24842			StepMania: Online: Dance Dance Revolution Simulator	Unofficial
25000	TCP		Teamware Office standard client connection	Official
25003	TCP		Teamware Office client notifier	Official



Port	TCP	UDP	Description	Status
25005	TCP		Teamware Office message transfer	Official
25007	TCP		Teamware Office MIME Connector	Official
25010	TCP		Teamware Office Agent server	Official
25565			Minecraft Dedicated Server	Unofficial
25565			MySQL Standard MySQL port	Unofficial
25826		UDP	collectd default port <sup>[89]</sup>	Unofficial
25888		UDP	Xfire (Firewall Report, UDP_IN) IP Address (206.220.40.146) resolves to gameservertracking.xfire.com. Use unknown.	Unofficial
25999	TCP		Xfire	Unofficial
26000		UDP	id Software's <i>Quake</i> server	Official
26000	TCP		id Software's <i>Quake</i> server	Official
26000	TCP		CCP's EVE Online Online gaming MMORPG	Unofficial
26900	TCP		CCP's EVE Online Online gaming MMORPG	Unofficial
26901	TCP		CCP's EVE Online Online gaming MMORPG	Unofficial
27000		UDP	(through 27006) id Software's <i>QuakeWorld</i> master server	Unofficial
27000-27009	TCP		FlexNet Publisher's License server (from the range of default ports)	Unofficial
27010			Source engine dedicated server port	Unofficial
27014			Source engine dedicated server port (rare)	Unofficial
27015			GoldSrc and Source engine dedicated server port	Unofficial
27016			Magicka server port	Unofficial
27017			mongoDB server port	Unofficial
27374			Sub7 default.	Unofficial
27500		UDP	(through 27900) id Software's <i>QuakeWorld</i>	Unofficial
27888		UDP	Kaillera server	Unofficial
27900-27901			Nintendo Wi-Fi Connection	Unofficial
27901		UDP	(through 27910) id Software's <i>Quake II</i> master server	Unofficial
27950		UDP	OpenArena outgoing	Unofficial
27960		UDP	(through 27969) Activision's <i>Enemy Territory</i> and id Software's <i>Quake III Arena</i> , <i>Quake III</i> and <i>Quake Live</i> and some ioquake3 derived games (OpenArena incoming)	Unofficial
28000			Bitfighter Common/default Bitfighter Server	Unofficial
28001			Starsiege: Tribes Common/default Tribes v.1 Server	Unofficial
28395	TCP		www.SmartSystemsLLC.com Used by Smart Sale 5.0	Unofficial
28785		UDP	Cube 2 Sauerbraten <sup>[90]</sup>	Unofficial
28786		UDP	Cube 2 Sauerbraten Port 2 <sup>[90]</sup>	Unofficial
28852	TCP	UDP	Killing Floor	Unofficial
28910			Nintendo Wi-Fi Connection	Unofficial
28960		UDP	Call of Duty; Call of Duty: United Offensive; Call of Duty 2; Call of Duty 4: Modern Warfare; Call of Duty: World at War (PC Version)	Unofficial

Port	TCP	UDP	Description	Status
29000			Perfect World International Used by the Perfect World International Client	Unofficial
29900–29901			Nintendo Wi-Fi Connection	Unofficial
29920			Nintendo Wi-Fi Connection	Unofficial
30000			Pokémon Netbattle	Unofficial
30301			BitTorrent	Unofficial
30564	TCP		Multiplicity: keyboard/mouse/clipboard sharing software	Unofficial
30718		UDP	Lantronix Discovery for Lantronix serial-to-ethernet devices	Unofficial
30777	TCP		ZangZing agent	Unofficial
31337	TCP		Back Orifice—remote administration tool (often Trojan horse)	Unofficial
31415			ThoughtSignal—Server Communication Service (often Informational)	Unofficial
31456	TCP		TetriNET IRC gateway on some servers	Unofficial
31457	TCP		TetriNET	Official
31458	TCP		TetriNET Used for game spectators	Unofficial
32123	TCP		x3Lobby Used by x3Lobby, an internet application.	Unofficial
32245	TCP		MMTSG-mutualed over MMT (encrypted transmission)	Unofficial
32769	TCP		FileNet RPC	Unofficial
32976	TCP		LogMeIn Hamachi (VPN tunnel software; also port 12975)—used to connect to Mediation Server (bibi.hamachi.cc); will attempt to use SSL (TCP port 443) if both 12975 & 32976 fail to connect	Unofficial
33434	TCP	UDP	traceroute	Official
34443			Linksys PSUS4 print server	Unofficial
34567	TCP		dhanalakshmi.org EDI service <sup>[91]</sup>	Official
36963		UDP	Any of the USGN online games, most notably Counter Strike 2D multiplayer (2D clone of popular CounterStrike computer game)	Unofficial
37659	TCP		Axence nVision	Unofficial
37777	TCP		Digital Video Recorder hardware	Unofficial
40000	TCP	UDP	SafetyNET p Real-time Industrial Ethernet protocol	Official
41823	TCP	UDP	Murealm Client	Unofficial
43047	TCP		TheòsMessenger second port for service TheòsMessenger	Official
43048	TCP		TheòsMessenger third port for service TheòsMessenger	Official
43594–43595	TCP		Jagex, RuneScape, FunOrb, etc.	Unofficial
47001	TCP		WinRM - Windows Remote Management Service <sup>[92]</sup>	Official
47808	TCP	UDP	BACnet Building Automation and Control Networks (47808 <sub>10</sub> = BAC0 <sub>16</sub> )	Official
49151	TCP	UDP	Reserved <sup>[1]</sup>	Official

**[edit]**