Network Working Group
Request for Comments: 870

J. Reynolds
J. Postel
ISI

Obsoletes RFCs: 820,
790, 776, 770, 762, 758, 755,
750, 739, 604, 503, 433, 349
Obsoletes IENs: 127, 117, 93

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ASSIGNED NUMBERS

This Network Working Group Request for Comments documents the currently assigned values from several series of numbers used in network protocol implementations. This RFC will be updated periodically, and in any case current information can be obtained from Joyce Reynolds. The assignment of numbers is also handled by Joyce. If you are developing a protocol or application that will require the use of a link, socket, port, protocol, or network number please contact Joyce to receive a number assignment.

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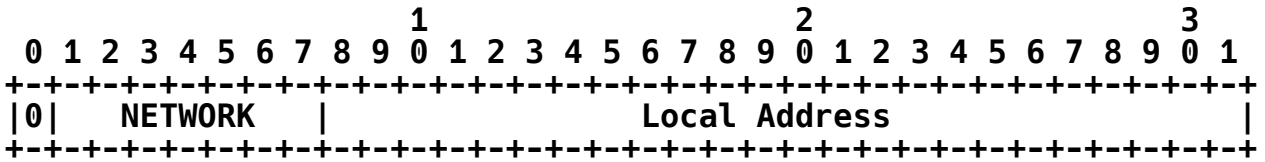
Most of the protocols mentioned here are documented in the RFC series of notes. The more prominent and more generally used are documented in the "Internet Protocol Transition Workbook" [16] or in the old "ARPANET Protocol Handbook" [17] prepared by the NIC. Some of the items listed are undocumented. Further information on protocols can be found in the memo "Official Protocols" [52].

In all cases the name and mailbox of the responsible individual is indicated. In the lists that follow, a bracketed entry, e.g., [16,iii], at the right hand margin of the page indicates a reference for the listed protocol, where the number cites the document and the "iii" cites the person.

ASSIGNED NETWORK NUMBERS

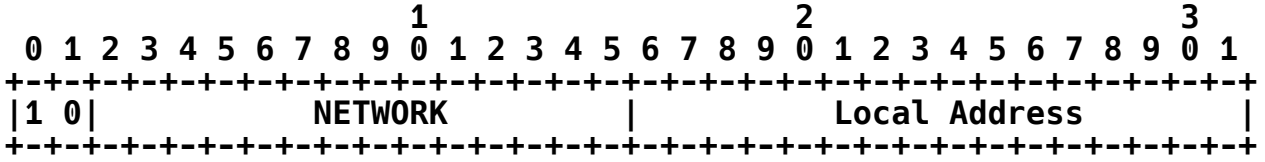
The network numbers listed here are used as internet addresses by the Internet Protocol (IP) [16,47]. The IP uses a 32-bit address field and divides that address into a network part and a "rest" or local address part. The division takes 3 forms or classes.

The first type of address, or class A, has a 7-bit network number and a 24-bit local address. The highest-order bit is set to 0. This allows 128 class A networks.



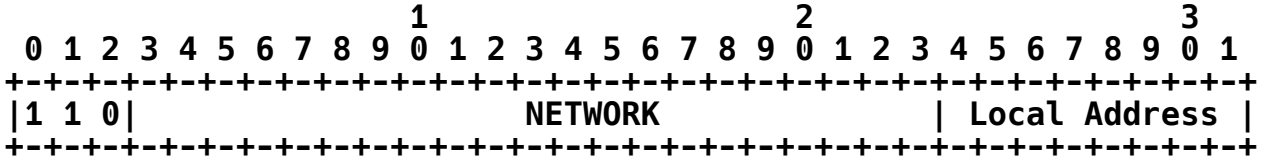
Class A Address

The second type of address, class B, has a 14-bit network number and a 16-bit local address. The two highest-order bits are set to 1-0. This allows 16,384 class B networks.



Class B Address

The third type of address, class C, has a 21-bit network number and a 8-bit local address. The three highest-order bits are set to 1-1-0. This allows 2,097,152 class C networks.



Class C Address

Note: No addresses are allowed with the three highest-order bits set to 1-1-1. These addresses (sometimes called "class D") are reserved.

One commonly used notation for internet host addresses divides the 32-bit address into four 8-bit fields and specifies the value of each field as a decimal number with the fields separated by periods. This is called the "dotted decimal" notation. For example, the internet address of ISIF in dotted decimal is 010.002.000.052, or 10.2.0.52.

The dotted decimal notation will be used in the listing of assigned network numbers. The class A networks will have nnn.rrr.rrr.rrr, the class B networks will have nnn.nnn.rrr.rrr, and the class C networks will have nnn.nnn.nnn.rrr, where nnn represents part or all of a network number and rrr represents part or all of a local address.

There are three catagories of users of Internet Addresses: Research, Defense, and Commercial. To reflect the allocation of network identifiers among the categories, a one-character code is placed to the left of the network number (in the column marked by an asterisk): R for Research and Development, D for DoD, and C for Commercial.

Numbers assigned for commercial use of IP family protocols, but not for interworking with the ARPA or DoD Internets are marked with an astrisk preceeding the number.

For various reasons, the assigned numbers of networks are sometimes changed. To ease the transition the old number will be listed as well. These "old number" entries will be marked with a "T" following the number and preceeding the name, and the network name will be the suffixed "-TEMP".

Assigned Network Numbers

Class A Networks

*	Internet Address	Name	Network	References
	000.rrr.rrr.rrr		Reserved	[JBP]
R	003.rrr.rrr.rrr T	RCC-NET-TEMP	BBN RCC Network	[SGC]
R	004.rrr.rrr.rrr	SATNET	Atlantic Satellite Network	[DM11]
D	005.rrr.rrr.rrr T	DEMO-PR-1-TEMP	Demo-1 Packet Radio Network	[LCS]
D	006.rrr.rrr.rrr T	YPG-NET-TEMP	Yuma Proving Grounds	[2,BXA]
D	007.rrr.rrr.rrr T	EDN-TEMP	DCEC EDN	[EC5]
R	008.rrr.rrr.rrr T	BBN-NET-TEMP	BBN Network	[JSG5]
D	009.rrr.rrr.rrr T	BRAGG-PR-TEMP	Ft. Bragg Packet Radio Net	[JEM]
R	010.rrr.rrr.rrr	ARPANET	ARPANET	[2,17,REK2]
C	012.rrr.rrr.rrr	ATT	ATT, Bell Labs	[MH12]
C	014.rrr.rrr.rrr	PDN	Public Data Network	[REK2]
R	018.rrr.rrr.rrr T	MIT-TEMP	MIT Network	[11,51,DDC2]
R	023.rrr.rrr.rrr	MITRE	MITRE Cablenet	[54,APS]
D	024.rrr.rrr.rrr	MINET	MINET	[2,DHH]
R	025.rrr.rrr.rrr	RSRE-EXP	RSRE Experimental	[NM]
D	026.rrr.rrr.rrr	MILNET	MILNET	[HH6]
R	027.rrr.rrr.rrr T	NOSC-LCCN-TEMP	NOSC / LCCN	[RH6]
R	028.rrr.rrr.rrr	WIDEBAND	Wide Band Satellite Net	[CJW2]
R	032.rrr.rrr.rrr	UCL-TAC	UCL TAC	[PK]
R	035.rrr.rrr.rrr T	RSRE-NULL-TEMP	RSRE Null Network	[NM]
R	036.rrr.rrr.rrr T	SU-NET-TEMP	Stanford University Network	[JCM]
R	039.rrr.rrr.rrr T	SRINET-TEMP	SRI Local Network	[GEOF]
R	041.rrr.rrr.rrr	BBN-TEST-A	BBN-GATE-TEST-A	[RH6]
R	044.rrr.rrr.rrr	AMPRNET	Amateur Radio Experiment Net	[HM]
R	045.rrr.rrr.rrr T	C3-PR-TEMP	Testbed Development PRNET	[BG5]
R	046.rrr.rrr.rrr T	Berkeley-TEMP	Berkeley Ethernet	[DAM1]
R	047.rrr.rrr.rrr T	SAC-PR-TEMP	SAC Packet Radio Network	[BG5]
R	048.rrr.rrr.rrr	NDRE-TIU	NDRE-TIU	[PS3]
R	050.rrr.rrr.rrr	NTA-RING	NDRE-RING	[PS3]
	001.rrr.rrr.rrr-002.rrr.rrr.rrr		Unassigned	[JBP]
	011.rrr.rrr.rrr		Unassigned	[JBP]
	013.rrr.rrr.rrr		Unassigned	[JBP]
	015.rrr.rrr.rrr-017.rrr.rrr.rrr		Unassigned	[JBP]
	019.rrr.rrr.rrr-022.rrr.rrr.rrr		Unassigned	[JBP]
	029.rrr.rrr.rrr-031.rrr.rrr.rrr		Unassigned	[JBP]
	033.rrr.rrr.rrr-034.rrr.rrr.rrr		Unassigned	[JBP]
	037.rrr.rrr.rrr-038.rrr.rrr.rrr		Unassigned	[JBP]
	040.rrr.rrr.rrr		Unassigned	[JBP]
	042.rrr.rrr.rrr-043.rrr.rrr.rrr		Unassigned	[JBP]
	049.rrr.rrr.rrr		Unassigned	[JBP]
	051.rrr.rrr.rrr-126.rrr.rrr.rrr		Unassigned	[JBP]
	127.rrr.rrr.rrr		Reserved	[JBP]

Class B Networks

*	Internet Address	Name	Network	References
	128.000.rrr.rrr		Reserved	[JBP]
R	128.001.rrr.rrr	BBN-TEST-B	BBN-GATE-TEST-B	[RH6]
R	128.002.rrr.rrr	CMU-NET	CMU-Ethernet	[HDW2]
R	128.003.rrr.rrr	LBL-CSAM	LBL-CSAM-RESEARCH	[MO1]<--***
R	128.004.rrr.rrr	DCNET	LINKABIT DCNET	[DLM1]
R	128.005.rrr.rrr	FORDNET	FORD DCNET	[DLM1]
R	128.006.rrr.rrr	RUTGERS	RUTGERS	[CLH3]
R	128.007.rrr.rrr	DFVLR	DFVLR DCNET Network	[HDC1]
R	128.008.rrr.rrr	UMDNET	Univ of Maryland DCNET	[DLM1]
R	128.009.rrr.rrr	ISI-NET	USC-ISI Local Network	[CMR]
R	128.010.rrr.rrr	PURDUE-CS	Purdue Computer Science	[CAK]
R	128.011.rrr.rrr	BBN-CRONUS	BBN DOS Project	[29,WIM]
R	128.012.rrr.rrr	SU-NET	Stanford University Net	[JCM]
D	128.013.rrr.rrr	MATNET	Mobile Access Terminal Net	[DM11]
R	128.014.rrr.rrr	BBN-SAT-TEST	BBN SATNET Test Net	[DM11]
R	128.015.rrr.rrr	S1NET	LLL-S1-NET	[EAK1]
R	128.016.rrr.rrr	UCLNET	University College London	[PK]
D	128.017.rrr.rrr	MATNET-ALT	Mobile Access Terminal Alt	[DM11]
R	128.018.rrr.rrr	SRINET	SRI Local Network	[GEOF]
D	128.019.rrr.rrr	EDN	DCEC EDN	[EC5]
D	128.020.rrr.rrr	BRLNET	BRLNET	[2,MJM2]
R	128.021.rrr.rrr	SF-PR-1	SF-1 Packet Radio Network	[JEM]
R	128.022.rrr.rrr	SF-PR-2	SF-2 Packet Radio Network	[JEM]
R	128.023.rrr.rrr	BBN-PR	BBN Packet Radio Network	[JAW3]
R	128.024.rrr.rrr	ROCKWELL-PR	Rockwell Packet Radio Net	[EHP]
D	128.025.rrr.rrr	BRAGG-PR	Ft. Bragg Packet Radio Net	[JEM]
D	128.026.rrr.rrr	SAC-PR	SAC Packet Radio Network	[BG5]
D	128.027.rrr.rrr	DEMO-PR-1	Demo-1 Packet Radio Network	[LCS]
D	128.028.rrr.rrr	C3-PR	Testbed Development PR NET	[BG5]
	128.029.rrr.rrr		Unassigned	[JBP]
R	128.030.rrr.rrr	MIT-NET	MIT Local Network	[DDC2]
R	128.031.rrr.rrr	MIT-RES	MIT Research Network	[DDC2]
R	128.032.rrr.rrr	UCB-ETHER	UC Berkeley Ethernet	[DAM1]
R	128.033.rrr.rrr	BBN-NET	BBN Network	[JSG5]
R	128.034.rrr.rrr	NOSC-LCCN	NOSC / LCCN	[RH6]
R	128.035.rrr.rrr	CISLTESTNET1	Honeywell	[25,26,RK1]
R	128.036.rrr.rrr	YALE-NET	YALE NET	[61,JO5]
D	128.037.rrr.rrr	YPG-NET	Yuma Proving Grounds	[2,BXA]
D	128.038.rrr.rrr	NSWC-NET	NSWC Local Host Net	[RLH2]
	128.039.rrr.rrr-191.254.rrr.rrr		Unassigned	[JBP]
	191.255.rrr.rrr		Reserved	[JBP]

Class C Networks

*	Internet Address	Name	Network	References
	192.000.000.rrr		Reserved	[JBP]
R	192.000.001.rrr	BBN-TEST-C	BBN-GATE-TEST-C	[RH6]
	192.000.002.rrr-192.000.255.rrr		Unassigned	[JBP]
R	192.001.000.rrr-192.004.255.rrr		BBN local networks	[SGC]
R	192.005.001.rrr	CISLHYPERNET	Honeywell	[RK1]
R	192.005.002.rrr	WISC	Univ of Wisconsin Madison	[RS23]
C	192.005.003.rrr	HP-DESIGN-AIDS	HP Design Aids	[NXK]
C	192.005.004.rrr	HP-TCG-UNIX	Hewlett Packard TCG Unix	[NXK]
	192.005.005.rrr		Unassigned	[JBP]
	192.005.006.rrr		Unassigned	[JBP]
R	192.005.007.rrr	CIT-CS-NET	Caltech-CS-Net	[60,DSW]
R	192.005.008.rrr	WASHINGTON	University of Washington	[JAR4]
R	192.005.009.rrr	AERONET	Aerospace Labnet	[1,LCN]
R	192.005.010.rrr	ECLNET	USC-ECL-CAMPUS-NET	[MXB]
R	192.005.011.rrr	CSS-RING	SEISMIC-RESEARCH-NET	[RR2]
R	192.005.012.rrr	UTAH-NET	UTAH-COMPUTER-SCIENCE-NET	[RF1]
R	192.005.013.rrr	CCNET	Compion Network	[61,FAS]
R	192.005.014.rrr	RAND-NET	RAND Network	[61,JDG]
R	192.005.015.rrr	NYU-NET	NYU Network	[EF5]
R	192.005.016.rrr	LANL-LAND	Los Alamos Dev LAN	[61,JC11]
R	192.005.017.rrr	NRL-NET	Naval Research Lab	[AP]
R	192.005.018.rrr	IPTO-NET	ARPA-IPTO Office Net	[REK2]
R	192.005.019.rrr	UCIICS	UCI-ICS Res Net	[MXR]
R	192.005.020.rrr	CISLTTYNET	Honeywell	[RK1]
D	192.005.021.rrr	BRLNET1	BRLNET1	[2,MJM2]
D	192.005.022.rrr	BRLNET2	BRLNET2	[2,MJM2]
D	192.005.023.rrr	BRLNET3	BRLNET3	[2,MJM2]
D	192.005.024.rrr	BRLNET4	BRLNET4	[2,MJM2]
D	192.005.025.rrr	BRLNET5	BRLNET5	[2,MJM2]
D	192.005.026.rrr	NSRDCOA-NET	NSRDC Office Auto Net	[TC4]
D	192.005.027.rrr	DTNSRDC-NET	DTNSRDC-NET	[TC4]
R	192.005.028.rrr	RSRE-NULL	RSRE-NULL	[NM]
R	192.005.029.rrr	RSRE-ACC	RSRE-ACC	[NM]
R	192.005.030.rrr	RSRE-PR	RSRE-PR	[NM]
R	192.005.031.rrr	SIEMENS-NET	Siemens Research Network	[PXN]
R	192.005.032.rrr	CISLTESTNET2	Honeywell	[25,26,RK1]
R	192.005.033.rrr	CISLTESTNET3	Honeywell	[25,26,RK1]
R	192.005.034.rrr	CISLTESTNET4	Honeywell	[25,26,RK1]
R	192.005.035.rrr	RIACS	USRA	[61,RLB1]
R	192.005.036.rrr	CORNELL-CS	CORNELL CS Research	[61,DK2]
R	192.005.037.rrr	UR-CS-NET	U of R CS 3Mb Net	[31,LB1]
R	192.005.038.rrr	SRI-C3ETHER	SRI-AITAD C3ETHERNET	[61,BG5]
R	192.005.039.rrr	UDEL-EECIS	Udel EECIS LAN	[58,CC2]
R	192.005.040.rrr	PUCC-NET-A	PURDUE Comp Cntr Net	[JXS]

D	192.005.041.rrr	WISLAN	WIS Research LAN [54,JRM1]
D	192.005.042.rrr	AFDSC-HYPER	AFDSC Hypernet [MCSJ]
R	192.005.043.rrr	CUCSNET	Columbia CS Net [61,LH2]
	192.005.044.rrr-192.005.255.rrr		Unassigned [JBP]
C*	192.006.000.rrr-192.006.255.rrr		Hewlett Packard [AXG]
C*	192.007.000.rrr-192.007.255.rrr		Computer Consoles, Inc. [RA11]
C*	192.008.000.rrr-192.008.255.rrr		Spartacus Computers, Inc. [SXM]
	192.009.000.rrr-223.255.254.rrr		Unassigned [JBP]
	223.255.255.rrr		Reserved [JBP]

Other Reserved Internet Addresses

*	Internet Address	Name	Network	References
	224.000.000.000-255.255.255.255		Reserved	[JBP]

Network Totals

Assigned for the Internet

Class	A	B	C	Total
Research	10	27	1055	1092
Defense	2	10	9	21
Commercial	2	0	2	4
Total	14	37	1066	1117

Allocated for Internet and Other Uses

Class	A	B	C	Total
Research	10	27	1055	1092
Defense	2	10	9	21
Commercial	2	0	770	772
Total	14	37	1834	1885

Maximum Allowed

Class	A	B	C	Total
Research	8	1024	65536	66568
Defense	24	3072	458752	461848
Commercial	94	12286	1572862	1585242
Total	126	16382	2097150	2113658

ASSIGNED INTERNET VERSION NUMBERS

In the Internet Protocol (IP) [16,47] there is a field to identify the version of the internetwork general protocol. This field is 4 bits in size.

Assigned Internet Version Numbers

Decimal	Octal	Version	References
0	0	Reserved	[JBP]
1-3	1-3	Unassigned	[JBP]
4	4	Internet Protocol	[16,47,JBP]
5	5	ST Datagram Mode	[18,JWF]
6-14	6-16	Unassigned	[JBP]
15	17	Reserved	[JBP]

ASSIGNED INTERNET PROTOCOL NUMBERS

In the Internet Protocol (IP) [16,47] there is a field, called Protocol, to identify the the next level protocol. This is an 8 bit field.

Assigned Internet Protocol Numbers

Decimal	Octal	Protocol	References
0	0	Reserved	[JBP]
1	1	ICMP	[16,40,JBP]
2	2	Unassigned	[JBP]
3	3	Gateway-to-Gateway	[24,MB]
4	4	Unassigned	[JBP]
5	5	Stream (ST)	[18,JWF]
6	6	Transmission Control (TCP)	[16,48,JBP]
7	7	UCL	[PK]
8	10	Exterior Gateway Protocol (EGP)	[53,RH6]
9	11	Unassigned	[JBP]
10	12	BBN RCC Monitoring	[SGC]
11	13	NVP	[12,SC3]
12	14	PUP	[6,EAT3]
13-14	15-16	Unassigned	[JBP]
15	17	Cross Net Debugger (XNET)	[23,JFH2]
16	20	Chaos Stream	[NC3]
17	21	User Datagram (UDP)	[16,46,JBP]
18	22	Multiplexing	[13,JBP]
19	23	DCN Measurement Subsystems	[DLM1]
20	24	Host Monitoring (HMP)	[28,RH6]
21	25	Packet Radio Measurement	[ZSU]

22	26	XEROX NS IDP	[62,LLG]
23	27	Trunk-1	[BML]
24	30	Trunk-2	[BML]
25	31	Leaf-1	[BML]
26	32	Leaf-2	[BML]
27-60	33-74	Unassigned	[JBP]
61	75	any host internal protocol	[JBP]
62	76	CFTP	[19,HCF2]
63	77	any local network	[JBP]
64	100	SATNET and Backroom EXPAK	[DM11]
65	101	MIT Subnet Support	[NC3]
66	102	MIT VAX Remote Disk Protocol	[MBG]
67	103	Internet Pluribus Packet Core	[DM11]
68	104	Unassigned	[JBP]
69	105	SATNET Monitoring	[DM11]
70	106	Unassigned	[JBP]
71	107	Internet Packet Core Utility	[DM11]
72-75	110-113	Unassigned	[JBP]
76	114	Backroom SATNET Monitoring	[DM11]
77	115	Unassigned	[JBP]
78	116	WIDEBAND Monitoring	[DM11]
79	117	WIDEBAND EXPAK	[DM11]
80-254	120-376	Unassigned	[JBP]
255	377	Reserved	[JBP]

ASSIGNED PORT NUMBERS

Ports are used in the TCP [16,48] to name the ends of logical connections which carry long term conversations. For the purpose of providing services to unknown callers, a service contact port is defined. This list specifies the port used by the server process as its contact port. The contact port is sometimes called the "well-known port".

To the extent possible, these same port assignments are used with the UDP [16,46].

The assigned ports use a small portion of the possible port numbers. The assigned ports have all except the low order eight bits cleared to zero. The low order eight bits are specified here.

Port Assignments:

Decimal	Octal	Description	References
0	0	Reserved	[JBP]
1-4	1-4	Unassigned	[JBP]
5	5	Remote Job Entry	[8,17,JBP]
7	7	Echo	[38,JBP]
9	11	Discard	[37,JBP]
11	13	Active Users	[34,JBP]
13	15	Daytime	[36,JBP]
15	17	Who is up or NETSTAT	[JBP]
17	21	Quote of the Day	[43,JBP]
19	23	Character Generator	[35,JBP]
20	24	File Transfer (Default Data)	[16,39,JBP]
21	25	File Transfer (Control)	[16,39,JBP]
23	27	Telnet	[50,JBP]
25	31	SMTP	[16,45,JBP]
27	33	NSW User System FE	[14,RHT]
29	35	MSG ICP	[32,RHT]
31	37	MSG Authentication	[32,RHT]
33	41	Unassigned	[JBP]
35	43	Any Printer Server	[JBP]
37	45	Time	[49,JBP]
39	47	Unassigned	[JBP]
41	51	Graphics	[17,57,JBP]
42	52	Host Name Server	[16,42,JBP]
43	53	NICNAME (WhoIs)	[16,22,JAKE]
44	54	MPM FLAGS Protocol	[JBP]
45	55	Message Processing Module (receive)	[41,JBP]
46	56	MPM (default send)	[41,JBP]
47	57	NI FTP	[59,SK]

49	61	Login Host Protocol	[PXD]
51	63	IMP Logical Address Maintenance	[30,AGM]
53	65	Domain Name Server	[PM1]
55	67	ISI Graphics Language	[5,RB6]
57	71	Any Private Terminal Access	[JBP]
59	73	Any Private File Service	[JBP]
61	75	NIMAIL	[3,SK]
63	77	Unassigned	[JBP]
65	101	Unassigned	[JBP]
67	103	Datacomputer at CCA	[10,JZS]
69	105	Trivial File Transfer	[16,55,KRS]
71	107	NETRJS	[7,17,RTB]
72	110	NETRJS	[7,17,RTB]
73	111	NETRJS	[7,17,RTB]
74	112	NETRJS	[7,17,RTB]
75	113	Any Private Dial Out Service	[JBP]
77	115	Any Private RJE Service	[JBP]
79	117	Finger (Name)	[17,20,KLH]
81	121	HOSTS2 Name Server	[EAK1]
83	123	MIT ML Device	[DPR]
85	125	MIT ML Device	[DPR]
87	127	any terminal link	[JBP]
89	131	SU/MIT Telnet Gateway	[MRC]
91	133	MIT Dover Spooler	[EBM]
93	135	Device Control Protocol	[DCT]
95	137	SUPDUP	[15,MRC]
97	141	Datacomputer Status	[10,JZS]
99	143	Metagram Relay	[GEOF]
101	145	NIC Host Name Server	[16,21,JAKE]
103	147	Unassigned	[JBP]
105	151	CSNET Mailbox Name Server (Program)	[56,MHS1]
107	153	Remote Telnet Service	[44,JBP]
109-129	155-201	Unassigned	[JBP]
131	203	Datacomputer	[10,JZS]
132-223	204-337	Reserved	[JBP]
224-241	340-361	Unassigned	[JBP]
243	363	Survey Measurement	[4,AV]
245	365	LINK	[9,RDB2]
247-255	367-377	Unassigned	[JBP]

ASSIGNED AUTONOMOUS SYSTEM NUMBERS

The Exterior Gateway Protocol (EGP) [53] specifies that groups of gateways may form autonomous systems. The EGP provides a 16-bit field for identifying such systems. The values of this field are registered here.

Autonomous System Numbers:

Decimal	Description	References
0	Reserved	[JBP]
1	The BBN Gateways	[MB]
2	The DCN Gateways	[DLM1]
3	The MIT Gateways	[LM8]
4-65534	Unassigned	[JBP]
65535	Reserved	[JBP]

ASSIGNED ARPANET LINK NUMBERS

The word "link" here refers to a field in the original ARPANET Host/IMP interface leader. The link was originally defined as an 8-bit field. Later specifications defined this field as the "Message-ID" with a length of 12 bits. The name link now refers to the high order 8 bits of this 12-bit message-id field. The low order 4 bits of the message-id field are to be zero unless explicitly specified otherwise for the particular protocol used on that link. The Host/IMP interface is defined in BBN Report 1822 [2].

Link Assignments:

Decimal	Octal	Description	References
0	0	Reserved	[JBP]
1-149	1-225	Unassigned	[JBP]
150	226	Xerox NS IP	[62,LLG]
151	227	Unassigned	[JBP]
152	230	PARC Universal Protocol	[6,EAT3]
153	231	TIP Status Reporting	[JGH]
154	232	TIP Accounting	[JGH]
155	233	Internet Protocol (regular)	[16,47,JBP]
156-158	234-236	Internet Protocol (experimental)	[16,47,JBP]
159-195	237-303	Unassigned	[JBP]
196-255	304-377	Experimental Protocols	[JBP]
248-255	370-377	Network Maintenance	[JGH]

ETHERNET NUMBERS OF INTEREST

Many of the networks of all classes are Ethernets (10Mb) or Experimental Ethernets (3Mb). These systems use a message "type" field in much the same way the ARPANET uses the "link" field.

Assignments:

Ethernet		Exp. Ethernet		Description	References
decimal	Hex	decimal	octal		
512	02,00	512	1000	XEROX PUP	[6,EAT3]
1536	06,00	1536	3000	XEROX NS IDP	[62,LLG]
2048	08,00	513	1001	DOD IP	[16,47,JBP]
2054	08,06	-	-	Address Res	[33,DCP1]

ASSIGNED PUBLIC DATA NETWORK NUMBERS

One of the Internet Class A Networks is the international system of Public Data Networks. This section lists the mapping between the Internet Addresses and the Public Data Network Addresses (X.121).

Assignments:

Internet	Public Data Net	Description	References
014.000.000.000		Reserved	[JBP]
014.000.000.001	3110-317-00035 00	PURDUE-TN	[CAK]
014.000.000.002	3110-608-00027 00	UWISC-TN	[CAK]
014.000.000.003	3110-302-00024 00	UDEL-TN	[CAK]
014.000.000.004	2342-192-00149 23	UCL-VTEST	[PK]
014.000.000.005	2342-192-00300 23	UCL-TG	[PK]
014.000.000.006	2342-192-00300 25	UK-SATNET	[PK]
014.000.000.007	3110-608-00024 00	UWISC-IBM	[MHS1]
014.000.000.008	3110-213-00045 00	RAND-TN	[MO2]
014.000.000.009	2342-192-00300 23	UCL-CS	[PK]
014.000.000.010	3110-617-00025 00	BBN-VAN-GW	[JD21]
014.000.000.011-014.255.255.254		Unassigned	[JBP]
014.255.255.255		Reserved	[JBP]

The standard for transmission of IP datagrams over the Public Data Network is specified in [27].

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APPENDIX A

This appendix summarizes the agreements reached by the DDN/PMO and DARPA at a September 1982 meeting concerning the allocation and assignment of the various numbers associated with DoD Protocol Standards and the DARPA Experimental Standards.

Recommended policy is summarized for each type of number assignment of concern:

Network Identifiers used by the Internet Protocol

It is recommended that the available number spaces for class A, B, and C network addresses be allocated among R&D, DoD and commercial uses, and that assignments of these addresses be the responsibility respectively of DARPA, DCA PCCO/DDN and the National Bureau of Standards. The recommended allocations are given below.

Class A (highest-order bit 0)

```
R&D allocation:          8 nets
DoD allocation:         24 nets
Commercial allocation:  94 nets
Reserved Addresses:  0,127
```

Class B (highest-order bits 1-0)

```
R&D allocation:          1024 nets
DoD allocation:          3072 nets
Commercial allocation:  12286 nets
Reserved Addresses:  0,16383
```

Class C (highest-order bits 1-1-0)

```
R&D allocation:           65536 nets
DoD allocation:          458725 nets
Commercial allocation:  1572862 nets
Reserved Addresses:  0,2097151
```

Class D (highest-order bits 1-1-1)

All addresses in this class are reserved for future use, possibly in support of multicast services. They should be allocated to R&D use for the present.

Within the R&D community, it will be the policy that network identifiers will only be granted to applicants who show evidence that they are acquiring standard Bolt Beranek and Newman gateway software or have implemented or are acquiring a gateway meeting the Exterior Gateway Protocol requirements. Acquisition of the Berkeley BSD 4.2 UNIX software might be considered evidence of the latter.

Experimental networks which later become operational need not be renumbered. Rather, the identifiers could be moved from R&D to DoD or Commercial status. Thus, network identifiers may change state among R&D, DoD and commercial, but the number of identifiers allocated to each use should remain within the limits indicated above. To make possible this fluid assignment, it is recommended that the network identifier spaces not be allocated by simple partition but rather by specific assignment.

Protocol Identifiers

In general, all assignments will be made by the R&D community, but any numbers which become R&D, DoD, national or international standards will be marked as such in this RFC.

Protocol identifiers 0 and 255 are reserved.

95 protocol identifiers are allocated for assignment to DoD standards, 32 for R&D use, and 127 for Commercial, national or international standards.

Port Numbers

A recommendation for allocation and assignment of port numbers is to be developed jointly by representatives of the ICCB and PSTP.

ARPANET Link Numbers

All unnecessary link number usage will be eliminated by joint effort of the ICCB, PSTP and BBN.

BBN will give consideration to the use of link numbers to promote interoperability among various ARPANET interfaces and report to the ICCB, PSTP and DDN/PMO. Examples of possible interoperability issues are:

(i) interoperability of 1822 and X.25 interfaces
(ii) interoperability of SIP and other interfaces
(iii) logical addressing or other special services

IP Version Numbers

These numbers will be assigned only by the R&D community for the purpose of exploring alternatives in internet protocol service expansion, such as inclusion of stream protocol (ST) services.

TCP, IP and Telnet Option Identifiers

These numbers will be assigned by the R&D community. Any permanent or experimental assignments will be identified in the documents specifying those protcols.

Implementation:

This policy recommendation has not been fully implemented as yet. Currently, Joyce Reynolds is acting coordinator for all number assignments.