Network Working Group
Request for Comments: 990

Obsoletes RFCs: 960, 943, 923, 900,
870, 820, 790, 776, 770, 762, 758,
755, 750, 739, 604, 503, 433, 349
Obsoletes IENs: 127, 117, 93

J. Reynolds
J. Postel
ISI

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ASSIGNED NUMBERS

Status of this Memo

This memo is an official status report on the numbers used in protocols in the ARPA-Internet community. Distribution of this memo is unlimited.

Introduction

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, network number, etc., please contact Joyce to receive a number assignment.

Joyce K. Reynolds
USC - Information Sciences Institute
4676 Admiralty Way
Marina del Rey, California 90292-6695

Phone: (213) 822-1511

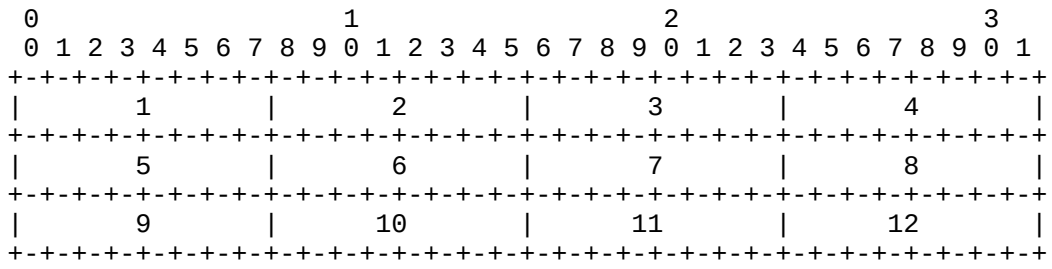
ARPA mail: JKREYNOLDS@ISI.EDU

Most of the protocols mentioned here are documented in the RFC series of notes. Some of the items listed are undocumented. Further information on protocols can be found in the memo "Official ARPA-Internet Protocols" [114]. The more prominent and more generally used are documented in the "DDN Protocol Handbook" [46] prepared by the NIC. Other collections of older or obsolete protocols are contained in the "Internet Protocol Transition Workbook [47], or in the "ARPANET Protocol Handbook" [48]. For further information on ordering the complete 1985 DDN Protocol Handbook, write: SRI International, DDN Network Information Center, Room EJ291, 333 Ravenswood Avenue, Meno Park, California, 94025. Or call: 1-800-235-3155.

In the entries below the name and mailbox of the responsible individual is indicated. The bracketed entry, e.g., [nn,iii], at the right hand margin of the page indicates a reference for the listed protocol, where the number ("nn") cites the document and the letters ("iii") cites the person. Whenever possible, the letters are a NIC Ident as used in the WhoIs (NICNAME) service.

The convention in the documentation of Internet Protocols is to express numbers in decimal and to picture data in "big-endian" order [131]. That is, fields are described left to right, with the most significant octet on the left and the least significant octet on the right.

The order of transmission of the header and data described in this document is resolved to the octet level. Whenever a diagram shows a group of octets, the order of transmission of those octets is the normal order in which they are read in English. For example, in the following diagram the octets are transmitted in the order they are numbered.



Transmission Order of Bytes

Whenever an octet represents a numeric quantity the left most bit in the diagram is the high order or most significant bit. That is, the bit labeled 0 is the most significant bit. For example, the following diagram represents the value 170 (decimal).

Significance of Bits

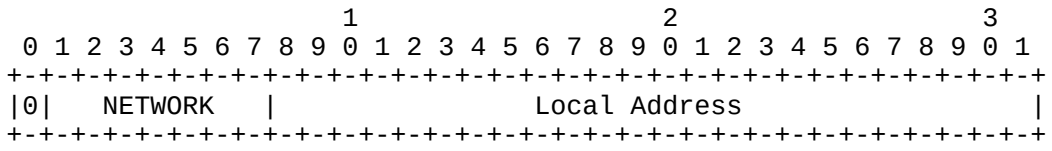
Similarly, whenever a multi-octet field represents a numeric quantity

the left most bit of the whole field is the most significant bit. When a multi-octet quantity is transmitted the most significant octet is transmitted first.

ASSIGNED NETWORK NUMBERS

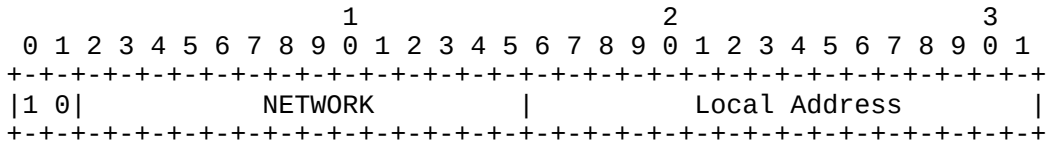
The network numbers listed here are used as internet addresses by the Internet Protocol (IP) [46,101]. The IP uses a 32-bit address field and divides that address into a network part and a "rest" or local address part. The division takes 3 forms or classes.

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.



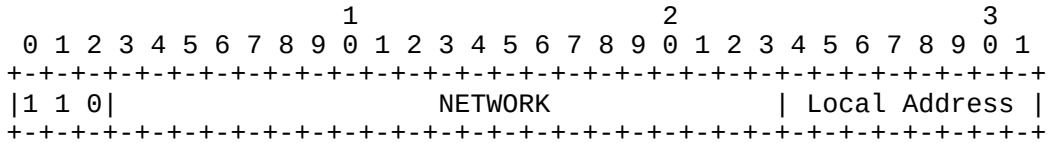
Class A Address

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.



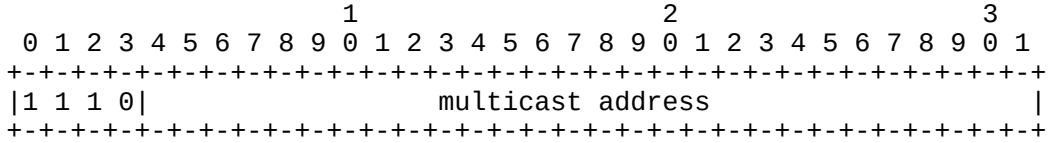
Class B Address

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

The fourth type of address, class D, is used as a multicast address [44]. The four highest-order bits are set to 1-1-1-0.



Class D Address

Note: No addresses are allowed with the four highest-order bits set to 1-1-1-1. These addresses, called "class E", 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 B.ISI.EDU in dotted decimal is 010.003.000.052, or 10.3.0.52.

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 four catagories of users of Internet Addresses: Research, Defense, Government (Non-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: R for Research, D for Defense, G for Government, and C for Commercial (see Appendix A for further details on this division of the network identification).

Network numbers are assigned for networks that are connected to the ARPA-Internet and DDN-Internet, and for independent networks that use the IP family protocols (these are usually commercial). These independent networks are marked with an asterisk preceding the number.

The administrators of independent networks must apply separately for permission to interconnect their network with either the ARPA-Internet of the DDN-Internet. Independent networks should not be listed in the working tables of either the ARPA-Internet or DDN-Internet hosts or gateways.

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

Special Addresses:

In certain contexts, it is useful to have fixed addresses with functional significance rather than as identifiers of specific hosts.

The address zero is to be interpreted as meaning "this", as in "this network".

For example, the address 0.0.0.37 could be interpreted as meaning host 37 on this network.

The address of all ones are to be interpreted as meaning "all", as in "all hosts".

For example, the address 128.9.255.255 could be interpreted as meaning all hosts on the network 128.9.

The class A network number 127 is assigned the "loopback" function, that is, a datagram sent by a higher level protocol to a network 127 address should loop back inside the host. No datagram "sent" to a network 127 address should ever appear on any network anywhere.

Assigned Network Numbers

Class A Networks

*	Internet Address	Name	Network	References
	000.rrr.rrr.rrr		Reserved	[JBP]
R	004.rrr.rrr.rrr	SATNET	Atlantic Satellite Network	[SHB]
D	006.rrr.rrr.rrr T	YPG-NET-TEMP	Yuma Proving Grounds	[10,BWA]
D	007.rrr.rrr.rrr T	EDN-TEMP	DCEC EDN	[EC5]
R	008.rrr.rrr.rrr T	BBN-NET-TEMP	BBN Network	[JSG5]
R	010.rrr.rrr.rrr	ARPANET	ARPANET	[10,SA2]
D	011.rrr.rrr.rrr	DODIIS	DoD INTEL INFO SYS	[AY7]
C	012.rrr.rrr.rrr	ATT	ATT, Bell Labs	[MH12]
C	013.rrr.rrr.rrr	XEROX-NET	XEROX Internet	[129,JNL1]
C	014.rrr.rrr.rrr	PDN	Public Data Network	[REK4]
R*	015.rrr.rrr.rrr	HP-INTERNET	Hewlett-Packard-Internet	[BXR]
R	018.rrr.rrr.rrr T	MIT-TEMP	MIT Network	[23,113,DDC1]
D	021.rrr.rrr.rrr	DDN-RVN	DDN-RVN	[MLC]
D	022.rrr.rrr.rrr	DISNET	DISNET	[FLM2]
D	023.rrr.rrr.rrr	DDN-TC-NET	DDN-TestCell-Network	[DH17]
R	025.rrr.rrr.rrr	RSRE-EXP	RSRE	[RNM1]
D	026.rrr.rrr.rrr	MILNET	MILNET	[FLM2]
R	027.rrr.rrr.rrr T	NOSC-LCCN-TEMP	NOSC / LCCN	[RH6]
R	028.rrr.rrr.rrr	WIDEBAND	Wide Band Satellite Net	[CJW2]
D	029.rrr.rrr.rrr T	MILX25-TEMP	MILNET X.25 Temp	[MLC]
D	030.rrr.rrr.rrr T	ARPAX25-TEMP	ARPA X.25 Temp	[MLC]
G	031.rrr.rrr.rrr	UCDLA-NET	UCDLA-CATALOG-NET	[CXL]
R	032.rrr.rrr.rrr	UCL-TAC	UCL TAC	[PK]
R	035.rrr.rrr.rrr	MERIT	MERIT COMPUTER NETWK	[HWB]
R	036.rrr.rrr.rrr T	SU-NET-TEMP	Stanford University Network	[PA5]
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]
	001.rrr.rrr.rrr-003.rrr.rrr.rrr		Unassigned	[JBP]
	005.rrr.rrr.rrr	Unassigned	Unassigned	[JBP]
	009.rrr.rrr.rrr	Unassigned	Unassigned	[JBP]
	016.rrr.rrr.rrr-017.rrr.rrr.rrr		Unassigned	[JBP]
	019.rrr.rrr.rrr-020.rrr.rrr.rrr		Unassigned	[JBP]
	024.rrr.rrr.rrr	Unassigned	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	Unassigned	[JBP]
	042.rrr.rrr.rrr-043.rrr.rrr.rrr		Unassigned	[JBP]
	045.rrr.rrr.rrr-126.rrr.rrr.rrr		Unassigned	[JBP]
R	127.rrr.rrr.rrr		Loopback	[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	[JS38]
R	128.004.rrr.rrr	DCNET	LINKABIT DCNET	[78,DLM1]
R	128.005.rrr.rrr	FORDNET	FORD DCNET	[78,DLM1]
R	128.006.rrr.rrr	RUTGERS	RUTGERS	[CLH3]
R	128.007.rrr.rrr	DFVLR	DFVLR DCNET Network	[GB7]
R	128.008.rrr.rrr	UMDNET	Univ of Maryland DCNET	[78,DLM1]
R	128.009.rrr.rrr	ISI-NET	USC-ISI Local Network	[CMR]
R	128.010.rrr.rrr	PURDUE-CS-EN	Purdue Computer Science	[CAK]
R	128.011.rrr.rrr	BBN-CRONUS	BBN DOS Project	[72,WXM]
R	128.012.rrr.rrr	SU-NET	Stanford University Net	[LB3]
D	128.013.rrr.rrr	MATNET	Mobile Access Terminal Net	[SHB]
R	128.014.rrr.rrr	BBN-SAT-TEST	BBN SATNET Test Net	[SHB]
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	[SHB]
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	[10,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-TEMP	Testbed Development PR NET	[BG5]
R	128.029.rrr.rrr	MITRE	MITRE Cablenet	[121,TML]
R	128.030.rrr.rrr	MIT-NET	MIT Local Network	[DDC1]
R	128.031.rrr.rrr	MIT-RES	MIT Research Network	[DDC1]
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	[60,61,JLM23]
R	128.036.rrr.rrr	YALE-NET	YALE NET	[129,JO5]
D	128.037.rrr.rrr	YPG-NET	Yuma Proving Grounds	[10,BWA]
D	128.038.rrr.rrr	NSWC-NET	NSWC Local Host Net	[RLH2]
R	128.039.rrr.rrr	NTANET	NDRE-TIU	[PS3]
R	128.040.rrr.rrr	UCL-NET-A	UCL	[RC7]
R	128.041.rrr.rrr	UCL-NET-B	UCL	[RC7]
R	128.042.rrr.rrr	RICE-NET	Rice University	[129,PGM]

R	128.043.rrr.rrr	DRENET	Canada REF ARPANET [10,JR17]
D	128.044.rrr.rrr	WSMR-NET	White Sands Network [CAS1]
C	128.045.rrr.rrr	DEC-WRL-NET	DEC WRL Network [129,RKJ2]
R	128.046.rrr.rrr	PURDUE-NET	Purdue Campus Network [CAK]
D	128.047.rrr.rrr	TACTNET	Tactical Packet Net [9,KTP]
G	128.048.rrr.rrr	UCDLA-NET-B	UCDLA-Network-B [10,CXL]
R	128.049.rrr.rrr	NOSC-ETHER	NOSC Ethernet [129,RLB3]
G	128.050.rrr.rrr	COINS	COINS On-Line Intel Net [RLS6]
G	128.051.rrr.rrr	COINSTNET	COINS TEST NETWORK [RLS6]
R	128.052.rrr.rrr	MIT-AI-NET	MIT AI NET [129,MDC]
R	128.053.rrr.rrr	SAC-PR-2	SAC PRNET Number 2 [BG5]
R	128.054.rrr.rrr	UCSD	UC San Diego Network [129,GH29]
R*	128.055.rrr.rrr	MFENET	LLNL MFE Network [119,DRP]
D	128.056.rrr.rrr	USNA-NET	US Naval Academy Network [TXS]
D	128.057.rrr.rrr	DEMO-PR-2	Demo-2 Packet Radio Net [LCS]
C*	128.058.rrr.rrr	SPAR	Schlumberger PA Net [129,RXB]
R	128.059.rrr.rrr	CU-NET	Columbia University [129,LH2]
D	128.060.rrr.rrr	NRL-LAN	NRL Lab Area Net [WF3]
R*	128.061.rrr.rrr	GATECH	Georgia Tech [129,GXS]
R	128.062.rrr.rrr	MCC-NET	MCC Corporate Net [129,CBD]
R	128.063.rrr.rrr	BRL-SUBNET	BRL-SUBNET-EXP [RBN1]
R	128.064.rrr.rrr-128.079.rrr.rrr		Net Dynamics Exp [ZSU]
D	128.080.rrr.rrr	CECOMNET	CECOM EPR NET [PFS2]
R	128.081.rrr.rrr	SYMBOLICS	SYMBOLICS [129,CH2]
	128.082.rrr.rrr	Unassigned	Unassigned [JBP]
R	128.083.rrr.rrr	UTAUSTIN	U. Texas Austin [129,JSQ1]
R	128.084.rrr.rrr	CORNELL-NET	Cornell Backbone Net [129,BN9]
C*	128.085.rrr.rrr	DRILL-NET	Teleco Drilltech Net [DBJ]
R	128.086.rrr.rrr	MRC	UK.CO.GEC.RL.MRC [RHC3]
R	128.087.rrr.rrr	HIRST	UK.CO.GEC.RL.HRC [RHC3]
R*	128.088.rrr.rrr	HP-NET	HEWLETT-PACKARD-NET [AXG]
R	128.089.rrr.rrr	BBN-ENET-TEMP	BBN ETHER NETWORK [129,SGC]
C*	128.090.rrr.rrr	PQS	PERQ SYSTEMS CORP [129,DXS]
R	128.091.rrr.rrr	UPENN	UPenn Campus Network [129,IW5]
R	128.092.rrr.rrr	INTELLINET	INTELLICORP NET [129,DAVE]
R*	128.093.rrr.rrr	INRIA-ROCQU	INRIA Rocquencourt [MXA1]
R*	128.094.rrr.rrr	SYSNET	AT&T SYSNETWORK [EXY]
R	128.095.rrr.rrr	WASHINGTON	Comp Sci Ether Net [129,RA17]
C*	128.096.rrr.rrr	BELLCORE-NET	BELLCORE-NET [PK28]
R	128.097.rrr.rrr	UCLANET	UCLA Network [BJL5]
R	128.098.rrr.rrr	RSRE-EN2	RSRE-EXP-NET-2 [JXW]
C	128.099.rrr.rrr	NORTHROP-NET	Northrop Net [129,RSM1]
R*	128.100.rrr.rrr	TORONTO	U. of Toronto Net [129,BXD]
R	128.101.rrr.rrr	UMN	Univ. of Minn. [SSB]
G	128.102.rrr.rrr	AMES-NET	Ames Backbone Net. [129,MSM1]
R	128.103.rrr.rrr	HARV-FIBER	Harvard FiberOp Ether [129,SB28]
R	128.104.rrr.rrr	WISC-HERD	Univ. of Wisconsin [129,EJN1]

R 128.105.rrr.rrr	WISC-CS	Univ. of Wisconsin	[129,CBP]
D 128.106.rrr.rrr	SRI-PSON-1	ADEA/SRI Ft. Lewis	[ERK3]
D 128.107.rrr.rrr	LEWIS-PRNET1	ADEA/SRI Ft. Lewis	[ERK3]
D 128.108.rrr.rrr	LEWIS-PRNET2	ADEA/SRI Ft. Lewis	[ERK3]
R 128.109.rrr.rrr	TUCC-MCNC	TUCC-MCNC NC Net	[JXR]
R 128.110.rrr.rrr	UTAH-NET	UTAH-CAMPUS-NET	[JL15]
R 128.111.rrr.rrr	UCSB	U of CA, Santa Barbara	[PXH]
R 128.112.rrr.rrr	PRINCETON	Princeton University	[LXR]
R 128.113.rrr.rrr	RPINET	RPI-LOCALNET	[MS9]
R 128.114.rrr.rrr	UCSC	U.C. Santa Cruz Net	[129,JXH]
R 128.115.rrr.rrr	LLL-LABNET	LLNL Open Labnet	[BANDY]
R 128.116.rrr.rrr	USAN	UNIV SATELLITE NET	[129,BXI]
R 128.117.rrr.rrr	UCAR	UNIV CORP ATM RSCH	[129,BXI]
R 128.118.rrr.rrr	PENN-STATE	Penn State Network	[SXS1]
R 128.119.rrr.rrr	UMASS-CS	UMass COINS Dept LAN	[129,GXW]
R 128.120.rrr.rrr	UCDAVIS	U.C. Davis Network	[129,RXH]
R 128.121.rrr.rrr	JVNC-NET	John von Neumann Ctr Net	[FXH]
R 128.122.rrr.rrr	NYU-NET	NYU Campus Network	[BJR2]
R*128.123.rrr.rrr	NMSU	N M State Univ	[129,MXS3]
R 128.124.rrr.rrr T	NTA-TEMP	NTARE BF-TO-PDP11	[TM10]
R 128.125.rrr.rrr	USCNET	USC Campus Network	[129,MAB4]
R 128.126.rrr.rrr	SDC-PRC	SDC Paoli R&D Center	[129,MXS2]
C*128.127.rrr.rrr	FTP-SOFTWARE	FTP Software Net	[JLR4]
R 128.128.rrr.rrr	WHOINET	WHOI Campus Net	[ARM5]
C*128.129.rrr.rrr	CGI	Carnegie Group	[RXA]
R*128.130.rrr.rrr	TUNET-T	TU Wien Terminal Net	[129,GXP1]
R*128.131.rrr.rrr	TUNET-F	TU Wien File Net	[129,GXP1]
G*128.132.rrr.rrr	RADC-LONS	RADC-LONS Net	[129,GXG]
G*128.133.rrr.rrr	AFSC-LONS	AFSC-LONS Net	[129,GXG]
R 128.134.rrr.rrr	SDN	System Dev Net	[21,22,HXC]
R 128.135.rrr.rrr	U-CHICAGO	UNIVERSITYOFCHICAGO	[129,MC17]
R 128.136.rrr.rrr	TEK-ALLNET	Teknowledge-Net	[129,TE2]
C*128.137.rrr.rrr	GENNET1	Genentech Corp Net	[129,SXM1]
R 128.138.rrr.rrr	COLORADO	U Colorado Boulder	[129,RXJ1]
R 128.139.rrr.rrr	ILAN	Israel Academic Net	[129,DB35]
R 128.140.rrr.rrr	EMORY-INET	Emory Internet	[129,SA29]
R*128.141.rrr.rrr	CERN-ETHER	DD Main Ethernet	[129,BXS]
R*128.142.rrr.rrr	CERN-TOKEN	DD Main IBM Token Ring	[129,BXS]
R*128.143.rrr.rrr	VIRGINIA	Univ. of Virginia	[129,JXJ1]
R*128.144.rrr.rrr	ARC-CALGARY	Alta Research Calgary	[DXK]
R 128.145.rrr.rrr	NYSERNET	NYSERNET	[MXF]
R 128.146.rrr.rrr	OHIO-STATE	Ohio State Univ	[RSD2]
R 128.147.rrr.rrr	U-PGH-NET	Univ. Pittsburgh Net	[SM6]
R 128.148.rrr.rrr	BROWN-UNIV	Brown University Net	[MXR1]
G 128.149.rrr.rrr	JPL-NET	JPL Central Net	[MSM1]
G 128.150.rrr.rrr	NSF-LAN	NSF-LAN	[FW17]
R 128.151.rrr.rrr	UR-NET	Univ. of Rochester	[TXM1]

C*	128.152.rrr.rrr	HAC-VLSI	Hughes Aircraft VLSI Net [PXH1]
R	128.153.rrr.rrr	CLARKSON	Clarkson University [JXH]
G	128.154.rrr.rrr	GSFC-NET	GSFC Central Net [MSM1]
G	128.155.rrr.rrr	LARC-NET	LARC Central Net [MSM1]
G	128.156.rrr.rrr	LERC-NET	LERC Central Net [MSM1]
G	128.157.rrr.rrr	JSC-NET	JSC Central Net [MSM1]
G	128.158.rrr.rrr	MSFC-NET	MSFC Central Net [MSM1]
G	128.159.rrr.rrr	KSC-NET	KSC Central Net [MSM1]
G	128.160.rrr.rrr	NSTL-NET	NSTL Central Net [MSM1]
G	128.161.rrr.rrr	NSN-NET	NASA Science Net [MSM1]
C	128.162.rrr.rrr	CRAY-NET	Cray Research [DXB]
R	128.163.rrr.rrr	UKY-NET	U. of Kentucky Net [GXB]
R	128.164.rrr.rrr	GWU-GATE	George Washington U. [TXT]
G	128.165.rrr.rrr	LANL-INET	LANL Inter-Network [JC11]
D*	128.166.rrr.rrr	BAC-NET	Boeing Aerospace Corp Net [JXJ2]
R	128.167.rrr.rrr	SURA	SURAnet [JXH1]
C	128.168.rrr.rrr	GOLDHILL	Gold-Hill-Computers [GXM]
R	128.169.rrr.rrr	UTK	Univ Tenn-Knoxville [JXC]
R	128.170.rrr.rrr	SDC-CAM	SDC Camarillo R&D Net [DSR]
	128.171.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-192.001.004.rrr		BBN local networks	[SGC]
R	192.001.005.rrr	BBN-ENET2	BBN-ENET2	[SGC]
R	192.001.006.rrr		BBN local network	[SGC]
R	192.001.007.rrr	BBN-ENET	BBN-ENET	[SGC]
R	192.001.008.rrr		BBN local network	[SGC]
R	192.001.009.rrr	BBN-ENET3	BBN-ENET3	[SGC]
R	192.001.010.rrr	BBN-NETR	BBN-NETR	[SGC]
R	192.001.011.rrr	BBN-SPC-ENET	BBN-SPC-ENET	[SGC]
R	192.001.012.rrr-192.003.255.rrr		BBN local networks	[SGC]
R*	192.004.000.rrr-192.004.255.rrr		BELLCORE-NET	[129,PK28]
R	192.005.001.rrr	CISLHYPERNET	Honeywell	[JLM23]
R*	192.005.002.rrr	UF-NET-A	UF-CIS Dept Ether	[AXW]
C	192.005.003.rrr	HP-DESIGN-AIDS	HP Design Aids	[AXG]
C	192.005.004.rrr	HP-TCG-UNIX	Hewlett Packard TCG Unix	[AXG]
R	192.005.005.rrr	DEC-MRNET	DEC Marlboro Ethernet	[129,KWP]
R	192.005.006.rrr	DEC-MRRAD	DEC Marlboro Developmt	[129,KWP]
R	192.005.007.rrr	CIT-CS-NET	Caltech-CS-Net	[137,DSW]
	192.005.008.rrr	Unassigned	Unassigned	[JBP]

R	192.005.009.rrr	AERONET	Aerospace Labnet [2,LCN]
R	192.005.010.rrr	ECLNET	USC-ECL-CAMPUS-NET [MAB4]
R	192.005.011.rrr	CSS-RING	SEISMIC-RESEARCH-NET [RR2]
R	192.005.012.rrr	UTAH-NET-C	UTAH-COMPUTER-SCIENCE-NET [GW22]
R	192.005.013.rrr	GSWDNET	Compion Network [129,FAS]
R	192.005.014.rrr	RAND-NET	RAND Network [129,JDG]
R T	192.005.015.rrr	NYU-NET-TEMP	NYU Network [EF5]
R	192.005.016.rrr	LANLLAND	Los Alamos Dev LAN [129,JC11]
R	192.005.017.rrr	NRL-NET	Naval Research Lab [AP]
R	192.005.018.rrr	IPTO-NET	ARPA-IPTO Office Net [SA2]
R	192.005.019.rrr	UCIICS	UCI-ICS Res Net [MTR]
R	192.005.020.rrr	CISLTTYNET	Honeywell [JLM23]
D	192.005.021.rrr	BRLNET1	BRLNET1 [10,MJM2]
D	192.005.022.rrr	BRLNET2	BRLNET2 [10,MJM2]
D	192.005.023.rrr	BRLNET3	BRLNET3 [10,MJM2]
D	192.005.024.rrr	BRLNET4	BRLNET4 [10,MJM2]
D	192.005.025.rrr	BRLNET5	BRLNET5 [10,MJM2]
D	192.005.026.rrr	NSRDCOA-NET	NSRDC Office Auto Net [TXC]
D	192.005.027.rrr	DTNSRDC-NET	DTNSRDC-NET [TXC]
R	192.005.028.rrr	RSRE-NULL	RSRE-NULL [RNM1]
R	192.005.029.rrr	RSRE-ACC	RSRE-ACC [RNM1]
R	192.005.030.rrr	RSRE-PR	RSRE-PR [RNM1]
R*	192.005.031.rrr	SIEMENS-NET	Siemens Research Network [PXN]
R	192.005.032.rrr	CISLTESTNET2	Honeywell [60,61,JLM23]
R	192.005.033.rrr	CISLTESTNET3	Honeywell [60,61,JLM23]
R	192.005.034.rrr	CISLTESTNET4	Honeywell [60,61,JLM23]
R	192.005.035.rrr	RIACS	USRA [129,RLB1]
R	192.005.036.rrr	CORNELL-CS	CORNELL CS Research [129,DK2]
R	192.005.037.rrr	UR-CS-NET	U of R CS 3Mb Net [129,LB1]
R	192.005.038.rrr	SRI-C3ETHER	SRI-AITAD C3ETHERNET [129,BG5]
R	192.005.039.rrr	UDEL-EECIS	Udel EECIS LAN [129,CC2]
R	192.005.040.rrr	PUCC-NET-A	PURDUE Comp Cntr Net [JRS8]
D	192.005.041.rrr	WISLAN	WIS Research LAN [129,JRM1]
D	192.005.042.rrr	HYPER-1ISG	AFDSC Hypernet [MCA1]
R	192.005.043.rrr	CUCSNET	Columbia CS Net [129,LH2]
R	192.005.044.rrr	FARBER-PC-NET	Farber PC Network [DJF]
R	192.005.045.rrr	AIDS-NET	AI&DS Network [129,KFD]
R	192.005.046.rrr	NTA-RING	NDRE-RING [PS3]
R	192.005.047.rrr	NSRDC	NSRDC [PXM]
R	192.005.048.rrr	PURDUE-CS-NET	Purdue CS Ethernet [129,CAK]
R	192.005.049.rrr	UCSF	Univ of Calif, San Fran [129,TF6]
R	192.005.050.rrr	CTH-CS-NET	Chalmers CSN Net [129,UXB]
R	192.005.051.rrr	THEORYNET	Cornell Theory Center [129,AB13]
R	192.005.052.rrr	NLM-ETHER	NLM-LHNCBC-ETHERNET [129,JA1]
R	192.005.053.rrr	UR-CS-ETHER	U of R CS 10Mb Net [129,LB1]
R	192.005.054.rrr	AERO-A6	Aerospace [2,LCN]
R	192.005.055.rrr	UCLA-CECS	UCLA-CECS Network [129,RBW]

C 192.005.056.rrr	TARTAN-NET	Tartan Labs	[SXB]
R 192.005.057.rrr	UDEL-CC	UDEL Comp Center	[129,RR18]
R 192.005.058.rrr	CSNET-PDN	CSNET X.25 Network	[68,RDR4]
R*192.005.059.rrr	INRIA-SM90	Inria GIP SM-90	[MXS]
R*192.005.060.rrr	SM90-X1	Inria SM-90 exp. 1	[MXS]
R*192.005.061.rrr	SM90-X2	Inria SM-90 exp. 2	[MXS]
R*192.005.062.rrr	LITP-SM90	LITP SM-90	[MXS]
192.005.063.rrr	Unassigned	Unassigned	[JBP]
R 192.005.064.rrr	AMES-NAS-NET	NASA ARC NAS LAN	[129,MF31]
R 192.005.065.rrr	NPRDC-Ether	NPRDC TRCF Ethernet	[LRB]
R 192.005.066.rrr	HARV-NET	Harvard Comp Sci Net	[SB28]
R 192.005.067.rrr	CECOM-ETHER	CECOM ADDCOMPE ETHER	[129,GIH]
R 192.005.068.rrr	AERO-130	AEROSPACE-130	[LCN]
R 192.005.069.rrr	UIUC-NET	Univ of IL at Urbana	[129,AKC]
G 192.005.070.rrr	CELAN	COINS Exper. LAN	[MXM]
R 192.005.071.rrr	SAC-ETHER	SAC C3 Ethernet	[129,BG5]
R*192.005.072.rrr	U CHICAGO	U Chicago	[TXN]
R 192.005.073.rrr	U CHICAGO	U Chicago	[TXN]
R*192.005.074.rrr-192.005.087.rrr		U Chicago	[TXN]
R 192.005.088.rrr	YALE-EE-NET	YALE-EE-NET	[129,AG22]
R 192.005.089.rrr	HARV-APPOLLO	Harvard University	[4,SB28]
R 192.005.090.rrr	HARV-ETHER	Harvard CS Ethernet	[SB28]
R 192.005.091.rrr	PURDUE-ECN1	Purdue ECN	[42,63,GG11]
R 192.005.092.rrr	BRAGG-ETHER	SRI Bragg Ether	[129,GIH]
R 192.005.093.rrr	SRI-DEMO	SRI Ether Demo	[129,GIH]
R*192.005.094.rrr	SDCRDCF-10MB	SDC R&D primary net	[129,DJV1]
R*192.005.095.rrr	SDCRDCF-3MB	SDC R&D old net	[129,DJV1]
R*192.005.096.rrr	UBC-CS-NET	UBC Comp Sci Net	[129,PXB]
R*192.005.097.rrr	UCLA-CS-LNI	UCLA CS LNI Network	[RBW]
R*192.005.098.rrr	UCLA-PIC	UCLA PIC Network	[129,RBW]
R 192.005.099.rrr	SPACENET	S-1 Workstation Net.	[129,TXW]
R*192.005.100.rrr	HCSC-NET	Honeywell CSC Net	[129,TRG4]
R 192.005.101.rrr	PUCC-NET-B	Purdue Gateway Network	[JRS8]
R 192.005.102.rrr	PUCC-RHF-NET	PUCC RHF Based Net	[JRS8]
C*192.005.103.rrr	TYM-NTD-NET	Tymnet NTD Ethernet	[SMF]
R 192.005.104.rrr	THINK-INET	Thinking Machines	[129,BJN1]
R 192.005.105.rrr	CCA-POND	CCA Ethernet1 (POND)	[129,AL6]
C*192.005.106.rrr	BITSTREAM	Bitstream Type Foundry	[129,PXA]
R*192.005.107.rrr	PASC-ETHER	IBM PASC Ethernet	[129,GXL]
R*192.005.108.rrr	PASC-BB	IBM PASC Broadband	[63,GXL]
R*192.005.109.rrr	CWR-JCC-T	ARJCC TOPS-20 NET	[129,JAG3]
R*192.005.110.rrr	CWR-JCC-L	ARJCC LOCAL NET	[129,JAG3]
R*192.005.111.rrr	CWR-QUAD	Campus QUAD NET	[129,JAG3]
R*192.005.112.rrr	CWR-CAISR	CAISR LOCAL NET	[129,JAG3]
R*192.005.113.rrr	CWR-CES	CES LOCAL NET	[JAG3]
C*192.005.114.rrr	I2-RING-1	INTERMETRICS PRONET	[129,NXH]
C*192.005.115.rrr	I2-ETHER-1	INTERMETRICS ETHER	[129,NXH]

R 192.005.116.rrr	BRAGGNET-1	BRAGG/ADDCOMPE	[129,BG25]
R 192.005.117.rrr	BRAGGNET-2	BRAGG/ADDCOMPE	[129,BG25]
R 192.005.118.rrr	BRAGGNET-3	BRAGG/ADDCOMPE	[129,BG25]
R 192.005.119.rrr	BRAGGNET-4	BRAGG/ADDCOMPE	[129,BG25]
R 192.005.120.rrr	BRAGGNET-5	BRAGG/ADDCOMPE	[129,BG25]
R 192.005.121.rrr	BRAGGNET-6	BRAGG/ADDCOMPE	[129,BG25]
R 192.005.122.rrr	BRAGGNET-7	BRAGG/ADDCOMPE	[129,BG25]
R 192.005.123.rrr	BRAGGNET-8	BRAGG/ADDCOMPE	[129,BG25]
R 192.005.124.rrr	BRAGGNET-9	BRAGG/ADDCOMPE	[129,BG25]
R 192.005.125.rrr	BRAGGNET-10	BRAGG/ADDCOMPE	[129,BG25]
R 192.005.126.rrr	BRAGGNET-11	BRAGG/ADDCOMPE	[129,BG25]
R 192.005.127.rrr	BRAGGNET-12	BRAGG/ADDCOMPE	[129,BG25]
R 192.005.128.rrr	BRAGGNET-13	BRAGG/ADDCOMPE	[129,BG25]
R 192.005.129.rrr	BRAGGNET-14	BRAGG/ADDCOMPE	[129,BG25]
R 192.005.130.rrr	BRAGGNET-15	BRAGG/ADDCOMPE	[129,BG25]
R 192.005.131.rrr	BRAGGNET-16	BRAGG/ADDCOMPE	[129,BG25]
R 192.005.132.rrr	BRAGGNET-17	BRAGG/ADDCOMPE	[129,BG25]
R*192.005.133.rrr	PERCEPT-AI	Perceptronics	[KXC]
C*192.005.134.rrr	I2-ETHER-2	Intermetrics	[129,NH2]
R 192.005.135.rrr	LL-SPEECH-NET	LL Speech Net	[129,RH60]
R 192.005.136.rrr	LL43-LEX-BACK	Lincoln G43-LEX-BACK	[129,BC65]
R 192.005.137.rrr	LL43-LEX-SUNA	Lincoln G43-LEX-SUNA	[129,BC65]
R 192.005.138.rrr	LL43-LEX-SUNB	Lincoln G43-LEX-SUNB	[129,BC65]
R 192.005.139.rrr	LL43-LEX-APO	Lincoln G43-LEX-APO	[129,BC65]
R 192.005.140.rrr	LL43-TB-BACK	Lincoln G43-TB-BACK	[129,BC65]
R 192.005.141.rrr	LL43-TB-APO	Lincoln G43-TB-APO	[129,BC65]
R*192.005.142.rrr	CCVR	CCVR Network	[129,RXD]
R 192.005.143.rrr	NWU	NORTHWESTERN	[AXS]
R 192.005.144.rrr	CRE-NET	CANADA-CRC-ETHERNET	[JR17]
R 192.005.145.rrr	ECRC-SL	ECRC-SL Net	[PXD]
R 192.005.146.rrr	CPW-PSC	Pittsburgh SC Center	[MXL]
R 192.005.147.rrr	ALV-ETHER	MMDAALVVAX	[LXR]
R 192.005.148.rrr	DISE	Dist Sys Eval Envir	[RHS4]
R 192.005.149.rrr	RDL-ETHER	RDL	[129,MXS1]
G*192.005.150.rrr	SP-ACE-NET	Sperry Space Sys Net	[129,JXM]
R 192.005.151.rrr	PENN-STATE-1	Penn State Network	[SXS1]
R 192.005.152.rrr	PENN-STATE-2	Penn State Network	[SXS1]
R 192.005.153.rrr	PENN-STATE-3	Penn State Network	[SXS1]
R 192.005.154.rrr	PENN-STATE-4	Penn State Network	[SXS1]
R 192.005.155.rrr	PENN-STATE-5	Penn State Network	[SXS1]
R 192.005.156.rrr	PENN-STATE-6	Penn State Network	[SXS1]
R 192.005.157.rrr	PENN-STATE-7	Penn State Network	[SXS1]
R 192.005.158.rrr	PENN-STATE-8	Penn State Network	[SXS1]
R 192.005.159.rrr	PENN-STATE-9	Penn State Network	[SXS1]
R 192.005.160.rrr	PENN-STATE-10	Penn State Network	[SXS1]
R 192.005.161.rrr	PENN-STATE-11	Penn State Network	[SXS1]
R 192.005.162.rrr	PENN-STATE-12	Penn State Network	[SXS1]

C*192.005.163.rrr	I2-SPDNET-1	I2 SPD Ethernet	[129,NH2]
C 192.005.164.rrr	GTEECN	GTE Eng Net	[129,JXE]
R 192.005.165.rrr	SDC-CAM-1	SDC Camarillo R&D Net	[DSR]
R*192.005.166.rrr	CRC-WDC-NET	CRC Washington DC	[GEOF]
R 192.005.167.rrr	MCC-AI-NET	MCC AI Subnet	[129,CBD]
R 192.005.168.rrr	MCC-CAD2-NET	MCC CAD2 Subnet	[129,CBD]
R 192.005.169.rrr	MCC-PKG-NET	MCC PKG Subnet	[129,CBD]
G 192.005.170.rrr	ANLNET1	Argonne Network	[129,LW26]
G 192.005.171.rrr	ANLNET2	Argonne Network	[129,LW26]
G 192.005.172.rrr	ANLNET3	Argonne Network	[129,LW26]
G 192.005.173.rrr	ANLNET4	Argonne Network	[129,LW26]
G 192.005.174.rrr	ANLNET5	Argonne Network	[129,LW26]
G 192.005.175.rrr	ANLNET6	Argonne Network	[129,LW26]
G 192.005.176.rrr	ANLNET7	Argonne Network	[129,LW26]
G 192.005.177.rrr	ANLNET8	Argonne Network	[129,LW26]
G 192.005.178.rrr	ANLNET9	Argonne Network	[129,LW26]
G 192.005.179.rrr	ANLNET10	Argonne Network	[129,LW26]
G 192.005.180.rrr	ANLNET11	Argonne Network	[129,LW26]
G 192.005.181.rrr	ANLNET12	Argonne Network	[129,LW26]
G 192.005.182.rrr	ANLNET13	Argonne Network	[129,LW26]
G 192.005.183.rrr	ANLNET14	Argonne Network	[129,LW26]
G 192.005.184.rrr	ANLNET15	Argonne Network	[129,LW26]
G 192.005.185.rrr	ANLNET16	Argonne Network	[129,LW26]
G 192.005.186.rrr	ANLNET17	Argonne Network	[129,LW26]
G 192.005.187.rrr	ANLNET18	Argonne Network	[129,LW26]
G 192.005.188.rrr	ANLNET19	Argonne Network	[129,LW26]
G 192.005.189.rrr	ANLNET20	Argonne Network	[129,LW26]
G 192.005.190.rrr	ANLNET21	Argonne Network	[129,LW26]
G 192.005.191.rrr	ANLNET22	Argonne Network	[129,LW26]
G 192.005.192.rrr	ANLNET23	Argonne Network	[129,LW26]
G 192.005.193.rrr	ANLNET24	Argonne Network	[129,LW26]
G 192.005.194.rrr	ANLNET25	Argonne Network	[129,LW26]
G 192.005.195.rrr	ANLNET26	Argonne Network	[129,LW26]
G 192.005.196.rrr	ANLNET27	Argonne Network	[129,LW26]
G 192.005.197.rrr	ANLNET28	Argonne Network	[129,LW26]
G 192.005.198.rrr	ANLNET29	Argonne Network	[129,LW26]
G 192.005.199.rrr	ANLNET30	Argonne Network	[129,LW26]
G 192.005.200.rrr	ANLNET31	Argonne Network	[129,LW26]
G 192.005.201.rrr	ANLNET32	Argonne Network	[129,LW26]
R 192.005.202.rrr	FMC-CEL	FMC-CEL Host Net	[129,BXL1]
R*192.005.203.rrr	OKSTATE-CS	Okla. St. CS Network	[129,MXV]
R 192.005.204.rrr	SKL-ENET	Canada_SKL_ethernet	[JR17]
R*192.005.205.rrr	ARC-CALGARY	Alta Research Calgary	[DXK]
R 192.005.206.rrr	BU-MATHNET	BU-MATHNET	[BS24]
R 192.005.207.rrr	BU-CHEMNET	BU-CHEMNET	[BS24]
R 192.005.208.rrr	BU-CLANNET	BU-CLANNET	[BS24]
D 192.005.209.rrr	SSDF-CDCNET	CDC-DDN-DEVELOPMENT	[RXE]

G 192.005.210.rrr	ECSNET	Embedded Comp Sys Net	[CAL7]
R 192.005.211.rrr	INTEL-IWARP	Intel iWarp Net	[129,BT5]
R 192.005.212.rrr T	EMORY-INET4	Emory Internet 4	[SA29]
R 192.005.213.rrr	HARRIS	Harris-GSSNet	[DXT1]
C*192.005.214.rrr	DECUACNET	Decuac Network	[129,FXA]
R 192.005.215.rrr	MASONNET	GMU Network	[129,TH15]
R*192.005.216.rrr	NTT-NET	NTT Research Lab Net	[129,YXS]
R 192.005.217.rrr	YALE-ZOO-NET	Yale Apollo Ed Net	[RC77]
R 192.005.218.rrr	ARINC-GW-NET	Yale Apollo Ed Net	[YXN]
R 192.005.219.rrr	CLEMSON	Clemson Univ Comp Center	[DXB]
C*192.005.220.rrr	SCCNET	SPACECOM IP Network	[MXO]
C*192.005.221.rrr	CSC-LONS	CSC-LONS Network	[129,GXG]
C*192.005.222.rrr	CSC-OIS	CSC-OIS Network	[129,GXG]
R*192.005.223.rrr	HWELL-RE	HWELL-RESD-ENGRG	[129,PXP]
D*192.005.224.rrr	HAIC-NET	Hughes AI Center Net	[129,DXK]
C*192.005.225.rrr-192.005.236.rrr		GE CALMA BLOCK	[129,TXR]
C*192.005.237.rrr	PRIME-AI	Prime AI CAD/CAM	[112,NXS]
C*192.005.238.rrr	PALLADIAN-1	Palladian-IN1	[CSTACY]
C*192.005.239.rrr	PALLADIAN-2	Palladian-RING	[CSTACY]
C*192.005.240.rrr	PALLADIAN-3	Palladian-IN2	[CSTACY]
R 192.005.241.rrr	USC-CYPRESS	USC Cypress Network	[27,DXE]
C*192.005.242.rrr	MOT-ASIC	Motorola Chandler LAN	[GXW1]
C*192.005.243.rrr	MOT-MESA	Motorola Mesa LAN	[GXW1]
C*192.005.244.rrr	MOT-DOVER	Motorola Dover LAN	[GXW1]
C*192.005.245.rrr	MOT-PRICE	Motorola Prince Road LAN	[GXW1]
C*192.005.246.rrr	MOT-PICO	Motorola Pico LAN	[GXW1]
C*192.005.247.rrr	MOT-52ND	Motorola Semi MIS LAN	[GXW1]
C*192.005.248.rrr	MOT-AUSTIN	Motorola Austin LAN	[GXW1]
C*192.005.249.rrr	MOT-OAKHILL	Motorola Oakhill LAN	[GXW1]
C*192.005.250.rrr	MOT-TELAVIV	Motorola Tel Aviv LAN	[GXW1]
C*192.005.251.rrr	MOT-GENEVA	Motorola Geneva LAN	[GXW1]
C*192.005.252.rrr	MOT-TOKYO	Motorola Tokyo LAN	[GXW1]
C*192.005.253.rrr	MOT-HONGKONG	Motorola Hongkong LAN	[GXW1]
R*192.005.254.rrr	ANSA	ANSA Project	[129,DXO]
192.005.255.rrr	Unassigned	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]
C*192.009.000.rrr-192.009.255.rrr		SUN Microsystems, Inc.	[BN4]
C*192.010.000.rrr-192.010.040.rrr		Symbolics, Inc.	[CH2]
R 192.010.041.rrr T	SCRC-ETHERNET	SCRC ETHERNET	[129,CH2]
C*192.010.042.rrr-192.010.255.rrr		Symbolics, Inc.	[CH2]
C*192.011.000.rrr-192.011.255.rrr		ATT, Bell Labs	[MH12]
192.012.000.rrr	Unassigned	Unassigned	[JBP]
192.012.001.rrr	Unassigned	Unassigned	[JBP]
192.012.002.rrr	Unassigned	Unassigned	[JBP]
C*192.012.003.rrr	FLAIR	Fairchild AI Lab Net	[129,AMS1]

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C*192.012.004.rrr   SCG-NET       Hughes SCG Net          [132,MXP]
R 192.012.005.rrr   AIC-LISPMS    SRI-AIC-LispMachNet     [129,PM4]
R 192.012.006.rrr   NPS-C2        NPS-C2                  [129,AW9]
R 192.012.007.rrr T NYU-CS-ETHER  NYU CompSci Ethernet    [129,LOU]
D 192.012.008.rrr   PICANET1      Picatinny Arsenal LAN1[129,RFD1]
R 192.012.009.rrr T CADRE-NET     Decision Systems Lab        [SM6]
R 192.012.010.rrr   CORNELL-ENG   Cornell-Engineering     [129,BN9]
R 192.012.011.rrr   MIT-TEST      MIT Gateway TEST NET    [129,NC3]
  192.012.012.rrr   Unassigned    Unassigned                  [JBP]
R 192.012.013.rrr   JHU-NET1      JHU-NET1               [129,MO14]
R 192.012.014.rrr   JHU-NET2      JHU-NET2               [129,MO14]
R 192.012.015.rrr   BROOKNET      BNL Brooknet III         [129,GC]
R 192.012.016.rrr   PRMNET        SRI-SURAN-EN           [129,BP17]
G 192.012.017.rrr   LLL-TIS-NET   LLL-TIS-NET        [129,132,NAL]
R 192.012.018.rrr   CIT-CS-10NET  Caltech 10Meg EtherNet[137,AD22]
R 192.012.019.rrr   CIT-NET       Caltech Campus Net      [137,AD22]
R 192.012.020.rrr   CIT-SUN-NET   Caltech Sun Net         [137,AD22]
R 192.012.021.rrr   CIT-PHYSCOMP  Caltech Phys Comp Net   [137,AD22]
R 192.012.022.rrr   UTCSRES       UTCS Net Research       [129,JSQ1]
R 192.012.023.rrr   UTCSTTY       UTCS TTY Kludgenet      [129,JSQ1]
R 192.012.024.rrr   MICANET       MITRE (Experimental)        [WDL]
R 192.012.025.rrr   CSS-GRAMINAE  CSS Workstation Net      [62,RR2]
R 192.012.026.rrr   NOSC-NETR     Net-R Testbed at BBN    [116,CP10]
R 192.012.027.rrr   UR-LASER      UR Laser Energetics     [129,WXL]
R*192.012.028.rrr   RIACS-X-NET   RIACS-Experimental-Net     [DG28]
D 192.012.029.rrr   RF-EVANS      ADDCOMPE DC3 LAN1       [129,MB31]
D 192.012.030.rrr   RF-HEX-A      ADDCOMPE DC3 LAN2       [129,MB31]
D 192.012.031.rrr   USNA-ENET     USNA Engineering Net    [129,TXS]
R*192.012.032.rrr   CMU-VINEYARD  CMU File Cluster Net    [129,MXK]
R 192.012.033.rrr   SRI-CSL-NET   SRI-CSL 10MB Ethernet       [GEOF]
C*192.012.034.rrr-192.012.043.rrr Schlumberger PA Net     [129,RXB]
R 192.012.044.rrr T NRTC-NET      Northrop Research Net  [129,RSM1]
R 192.012.045.rrr   ACC-SB-IMP-NET ACC Santa Barbara IMP     [AB20]
R 192.012.046.rrr   ACC-SB-ETHER  ACC Santa Barbara Ethernet[AB20]
R 192.012.047.rrr   UMN-UCC-NET   Univ. of Minnesota         [RG12]
G 192.012.048.rrr   AMES-ED-EXPNET Code ED Exp. Net.     [129,MSM1]
G 192.012.049.rrr   AMES-ED-NET   Code ED IP Net          [129,MSM1]
G 192.012.050.rrr   AMES-DB-NET   Ames DBridge Net        [129,MSM1]
R 192.012.051.rrr   THINK-CHAOS   TMC Chaos               [129,BJN1]
R*192.012.052.rrr   NEURO-NET     NEURO-NET                [129,JXB]
R*192.012.053.rrr   PU-LCA        Princeton U. LCA         [129,CXH]
R 192.012.054.rrr   AERO-A3       Aerospace                   [AWS3]
R 192.012.055.rrr   HAZ-LPR-BETA  Hazeltine LPR Net       [129,KXK]
R 192.012.056.rrr   UTAH-AP-NET   Utah-Appolo-Ring-Net        [JL15]
R 192.012.057.rrr   MCC-CAD-NET   MCC CAD Subnet          [129,CBD]
R 192.012.058.rrr   MCC-PP-NET    MCC AI Subnet           [129,CBD]
R 192.012.059.rrr   MCC-DB-NET    MCC DB Subnet           [129,CBD]
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R 192.012.060.rrr	MCC-HI-NET	MCC HI Subnet	[129,CBD]
R 192.012.061.rrr	MCC-SW-NET	MCC SW Subnet	[129,CBD]
R 192.012.062.rrr	DREA-ENET	DREA Lispm & Vaxen	[129,GLH5]
R 192.012.063.rrr	CYPRESS	CYPRESS Serial Net	[CAK]
D 192.012.064.rrr	LOGNET	Logistics Net GW	[10,JR15]
D 192.012.065.rrr	HELNET1	HELNET1	[129,MJM2]
D 192.012.066.rrr	HELNET2	HELNET2	[129,MJM2]
D 192.012.067.rrr	HELNET3	HELNET3	[MJM2]
G 192.012.068.rrr	ORNL-MSRNET	ORNL Local Area Net	[10,HD]
R 192.012.069.rrr	UA-CS-NET	UNIV. OF ARIZ-CS DEPT	[129,BM40]
R 192.012.070.rrr	NPRDC-IPD	NPRDC-IPD REMOTE ETHERNET	[LRB]
R 192.012.071.rrr	NPRDC-ISG	NPRDC-ISG REMOTE ETHERNET	[LRB]
R 192.012.072.rrr	ULCC	UK.AC.ULCC	[RHC3]
R 192.012.073.rrr	BTRL	UK.CO.BT-RESEARCH-LABS	[RHC3]
R*192.012.074.rrr	APPLE-ETHER	APPLE COMPUTER ETHER	[129,RXJ]
R*192.012.075.rrr	PASC-RING	IBM PASC TOKEN RING	[GXL]
R*192.012.076.rrr	UQ-NET	UNIV. OF QLD NETWORK	[129,AXH]
C*192.012.077.rrr	PRIME	PRIME COMPUTER, INC.	[FXS]
C*192.012.078.rrr	GENNET	GENENTECH NET	[129,SXM]
C*192.012.079.rrr	SLI	SOFTWARE LEVERAGE INC.	[MXG]
R 192.012.080.rrr	CAEN	UMICH-CAEN	[HWB]
R 192.012.081.rrr	YALE-RING-NET	YALE RESEARCH RING	[RC77]
C 192.012.082.rrr	CU-CC-NET	Columbia CC Net	[129,BC14]
G 192.012.083.rrr	UCDLA-EXNET	UCDLA EXPERIMENTAL NET	[CXL]
G 192.012.084.rrr	UCDLA-PCNET	UCDLA PERSONAL NET	[CXL]
G 192.012.085.rrr	UCDLA-OPNET	UCDLA OPTICAL DISK	[CXL]
G 192.012.086.rrr	UCDLA-RADNET	UCDLA PACKET RADIO	[CXL]
G 192.012.087.rrr	UCDLA-CSLNET	UCDLA STATE LIBRARY	[CXL]
R*192.012.088.rrr	RUTGERS-NWK	RUTGERS, NEWARK	[DXB]
R 192.012.089.rrr	SBCS-CSDEPT-1	SB Computer Science	[JXS]
R 192.012.090.rrr	SBCS-CSDEPT-2	SB Computer Science	[JXS]
R 192.012.091.rrr	RPICSNET0	RPICS-LOCALNET-0	[MS9]
R 192.012.092.rrr	RPICSNET1	RPICS-LOCALNET-1	[MS9]
R 192.012.093.rrr	RPICSNET2	RPICS-LOCALNET-2	[MS9]
R 192.012.094.rrr	RPICSNET3	RPICS-LOCALNET-3	[MS9]
R 192.012.095.rrr	RPICSNET4	RPICS-LOCALNET-4	[MS9]
R 192.012.096.rrr	RPICSNET5	RPICS-LOCALNET-5	[MS9]
R 192.012.097.rrr	RPICSNET6	RPICS-LOCALNET-6	[MS9]
R 192.012.098.rrr	RPICSNET7	RPICS-LOCALNET-7	[MS9]
R 192.012.099.rrr	RPICSNET8	RPICS-LOCALNET-8	[MS9]
R 192.012.100.rrr	RPICSNET9	RPICS-LOCALNET-9	[MS9]
R*192.012.101.rrr	OSU-CGRG	OSU Computer Graphics	[129,KXS]
G 192.012.102.rrr	AMES-NAS-HY	AMES NAS HY NET	[MF31]
R 192.012.103.rrr	CSU-USCETHER	Colorado State Univ Nets	[RXB1]
R 192.012.104.rrr	CSUNRELETHER	Colorado State Univ Nets	[RXB1]
R 192.012.105.rrr	CSU-ASYNC	Colorado State Univ Nets	[RXB1]
R 192.012.106.rrr	CSU-LANCE	Colorado State Univ Nets	[RXB1]

R 192.012.107.rrr	CSU-ATMOS	Colorado State Univ Nets	[RXB1]
R 192.012.108.rrr	CSU-UCC-ETHER	Colorado State Univ Nets	[RXB1]
R*192.012.109 rrr-192.012.118.rrr		Colorado State Univ Nets	[RXB1]
G 192.012.119.rrr	ICST	ICST Network	[129,JCN2]
D 192.012.120.rrr	MITRE-B-NET	MITRE BEDFORD ETHER	[BSW]
R*192.012.121.rrr	FSUCS	FSU COMPUTER SCIENCE 1	[TXB]
R*192.012.122.rrr	FSUCS2	FSU COMPUTER SCIENCE 2	[TXB]
G 192.012.123.rrr	AMES-CCF-NET	AMES CCF NETWORK	[129,MSM1]
D 192.012.124.rrr	ETL-LAN	ETL LOCAL AREA NET	[129,WWS]
D 192.012.125.rrr	CRDC-NET1	CRDC-NET1	[129,JXY]
D 192.012.126.rrr	CRDC-NET2	CRDC-NET2	[129,JXY]
R 192.012.127.rrr	LL-MI-NET	LL-Machine Intell.	[129,GAA]
R 192.012.128.rrr	AITAC-ADMIN	SRI-AITAC ADMIN NET	[129,DVC]
C*192.012.129.rrr	SYM-CAN	Symbolics/Canada	[MXH]
R 192.012.130.rrr	SDC-SM	SDC Santa Monica	[CAS]
R 192.012.131.rrr	SAC-ADMIN	SRI-SAC ADMIN NET	[129,KMC3]
R 192.012.132.rrr	LLL-MON	LLL Open Labnet-1	[129,BANDY]
R 192.012.133.rrr	LLL-TUE	LLL Open Labnet-2	[129,BANDY]
R 192.012.134.rrr	LLL-WED	LLL Open Labnet-3	[129,BANDY]
R 192.012.135.rrr	LLL-THU	LLL Open Labnet-4	[129,BANDY]
R 192.012.136.rrr	LLL-FRI	LLL Open Labnet-5	[129,BANDY]
R 192.012.137.rrr	LLL-SAT	LLL Open Labnet-6	[129,BANDY]
R 192.012.138.rrr	LLL-SUN	LLL Open Labnet-7	[129,BANDY]
D 192.012.139.rrr	JTELS-BEN-GW	JUMPS Teleprocessing	[RR26]
R*192.012.140.rrr	INFERENCE	INFERENCE	[DXT]
R 192.012.141.rrr	CSS-ETHER	CSS Workstation Net 2	[RA11]
C*192.012.142.rrr	SENTRY	Sentry Adv. Prod. Net	[LXL]
C*192.012.143.rrr	VHSIC-NET	Sentry VHSIC Test	[LXL]
R 192.012.144.rrr	ECRCNET	ECRC Internet	[129,PXD]
C*192.012.145 rrr-192.012.154.rrr		RCA-CADNET	[129,RXG]
C*192.012.155 rrr-192.012.170.rrr		MTCS-CUST	[SXF]
D 192.012.171.rrr	PICANET2	Picatinny Arsenal 2	[RFD1]
R 192.012.172.rrr	ROCKWELLENET	ROCKWELL ETHERNET	[NG]
R 192.012.173.rrr	AERO-D8	Aerospace	[AWS3]
R*192.012.174 rrr-192.012.183.rrr		TORONTO	[129,BXD]
R 192.012.184.rrr	DSPO-NET	BRL Hyper Proj Net	[BT5]
R 192.012.185.rrr	BU-NET	BU COMPUTING	[BS24]
R 192.012.186.rrr	BU-ACCNET	BU ACADEMIC	[BS24]
R 192.012.187.rrr	BU-BROADB	BU BROADBAND	[BS24]
R 192.012.188.rrr	BU-SCINET	BU SCIENCE	[BS24]
R 192.012.189.rrr	BU-ENGNET	BU ENGINEERING	[BS24]
R 192.012.190.rrr	BU-DSGNET	BU DIST SYS	[BS24]
R 192.012.191.rrr	BU-MEDNET	BU MED SCHOOL	[BS24]
R 192.012.192.rrr	CNUCE-LAN1	CNR Pisa Ethernet	[ABB2]
R 192.012.193.rrr	CNUCE-LAN2	CNR Pisa Ethernet	[ABB2]
R 192.012.194.rrr	CNUCE-LAN3	CNR Pisa Ethernet	[ABB2]
R 192.012.195.rrr	SDC-PRC	SDC Paoli R&D Center	[MXS2]

D 192.012.196.rrr	JHUAPL-NET	JHU APL Net	[129,SAK3]
D 192.012.197.rrr	ACATT-ETHER1	ADEA/CECOM Adv Tech	[129,ERK3]
D 192.012.198.rrr	ACATT-ETHER2	ADEA/CECOM Adv Tech	[129,ERK3]
D 192.012.199.rrr	LEWIS-ETHER1	ADEA/SRI Ft. Lewis	[129,ERK3]
D 192.012.200.rrr	SRI-PSON-10	ADEA/SRI Ft. Lewis	[129,ERK3]
D 192.012.201.rrr	SRI-PSON-11	ADEA/SRI Ft. Lewis	[129,ERK3]
D 192.012.202.rrr	SRI-PSON-12	ADEA/SRI Ft. Lewis	[129,ERK3]
D 192.012.203.rrr	SRI-PSON-13	ADEA/SRI Ft. Lewis	[129,ERK3]
D 192.012.204.rrr	SRI-PSON-14	ADEA/SRI Ft. Lewis	[129,ERK3]
R 192.012.205.rrr	OHIO-STATE1	Ohio State Univ.	[RSD2]
R 192.012.206.rrr	INDIANA	Indiana-Bloomington	[BXS1]
R 192.012.207.rrr	SUPERCOMP	SDSC-Supercomputer	[SIP]
R 192.012.208.rrr	TEK-NET	Teknowledge-Net	[TE2]
R 192.012.209.rrr	NSF	NSF Internal Net	[FXW]
R*192.012.210.rrr	NORTHEASTERN	Northeastern Univ.	[CXJ]
R 192.012.211.rrr	JVNC	NSF/JVNC Net	[HXH]
R 192.012.212.rrr	RAND-NET2	RAND-NET2	[JDG]
R 192.012.213.rrr	RAND-NET3	RAND-NET3	[JDG]
R*192.012.214.rrr	BUFFALO-CS	SUNY/Buffalo-CS-Ether	[129,JRL8]
R 192.012.215.rrr	XDRENET	DRE X.25 COMPONENT	[JR17]
R 192.012.216.rrr	STEVENS-TECH	Stevens Inst of Tech	[129,RXM]
R 192.012.217.rrr T	EMORY-INET1	Emory Internet	[129,SA29]
R 192.012.218.rrr T	EMORY-INET2	Emory Internet	[129,SA29]
R 192.012.219.rrr T	EMORY-INET3	Emory Internet	[129,SA29]
R 192.012.220 rrr-192.012.234.rrr		UWISC-IPNET	[129,EJN1]
R*192.012.235.rrr	IDA-NET	Comp Sc Linkoping S	[MXA2]
R 192.012.236.rrr	CITNET	CIT Campus Net	[129,CXB]
R*192.012.237.rrr	HCSC-APOLLO	Honeywell CSC Apollo	[4,TRG4]
R*192.012.238.rrr	CU-BOULDER	CU Boulder Campus	[129,DXW]
R*192.012.239.rrr	CU-ACS	CU ACS Net	[129,DXW]
R*192.012.240.rrr	CU-ENGINEER	CU Engineering Net	[129,DXW]
R*192.012.241.rrr	CU-SUNNET	CU Sun Net	[129,DXW]
R*192.012.242.rrr	CU-CER	CU CER Net	[129,DXW]
R*192.012.243.rrr	CU-OT	CU Office Tower	[129,DXW]
R*192.012.244.rrr	CU-ENTERPRISE	CU ECE Sun Net	[129,DXW]
R*192.012.245.rrr	CU-LASP	CU LASP Net	[129,DXW]
R*192.012.246.rrr	CU-JILA	CU JILA Net	[129,DXW]
R*192.012.247.rrr	CU-PHYSICS	CU Physics Net	[129,DXW]
R*192.012.248.rrr	CU-PSYCHOLOGY	CU Psychology Net	[129,DXW]
R*192.012.249.rrr	CU-MCDB	CU MCDB Net	[129,DXW]
R*192.012.250.rrr	CU-AI	CU AI Consortium	[129,DXW]
R*192.012.251.rrr	CU-CHEMISTRY	CU Chemistry Net	[129,DXW]
R 192.012.252.rrr	LL-VENET1	Linclon Labs Venet1	[129,BC65]
R 192.012.253.rrr	LL-VENET2	Linclon Labs Venet2	[129,BC65]
R 192.012.254.rrr	LL-APOLLO	Linclon Labs Apollo	[129,BC65]
R 192.012.255.rrr	LL-ENET	Linclon Labs Enet	[129,BC65]
D 192.013.000.rrr-192.014.255.rrr		DODIIS Subnetworks	[AY5]

C*192.015.000.rrr-192.015.255.rrr		NBINET	[WW2]
G 192.016.000.rrr-192.016.049.rrr		LANLLAN	[129,JC11]
R 192.016.050.rrr-192.016.071.rrr		RPI-LOCALNETS	[129,MS9]
R 192.016.072.rrr	UTCHPC	U.T. System CHPC	[129,WCB3]
R 192.016.073.rrr	UTDALLAS	U.T. Dallas	[129,WCB3]
R 192.016.074.rrr	UTABRC	U.T. Austin BRC	[129,WCB3]
C*192.016.075.rrr-192.016.122.rrr		CSC-BLOCK	[129,GXG]
R*192.016.123.rrr-192.016.154.rrr		Swedish Network	[BXE]
R*192.016.155.rrr-192.016.166.rrr		CERN-Block	[BXS]
R 192.016.167.rrr	YALE-HP-NET	YALE-HP-NET	[RC77]
D 192.016.168.rrr	PICANET3	Picatinny 3	[RFD1]
D 192.016.169.rrr	NRL-HUBNET	Experimental Hubnet	[MPM]
C 192.016.170.rrr	TWG-DEMO-NET	TWG Net for Demos	[JXS1]
R 192.016.171.rrr	MACOM	M/A-COM Net	[JXA]
192.016.172.rrr-192.016.255.rrr		Unassigned	[JBP]
R*192.017.000.rrr-192.017.255.rrr		NIBELUNG	[MXA]
C*192.018.000.rrr-192.018.255.rrr		SUN Microsystems, Inc.	[BN4]
C*192.019.000.rrr-192.019.255.rrr		SYSNET-2	[EXY]
C*192.020.000.rrr-192.020.255.rrr		ATT-MD-NET	[129,MH12]
C*192.021.000.rrr-192.021.255.rrr		FORMATIVE	[SXB]
C*192.022.000.rrr-192.022.255.rrr		APPLICON	[AXS1]
C*192.023.000.rrr-192.023.255.rrr		FACTNET	[JXB]
C*192.024.000.rrr-192.024.255.rrr		CHROMATICS	[RXB2]
R*192.025.000.rrr-192.024.255.rrr		Hewlett Packard	[SXI]
D*192.026.000.rrr	ACSAD	ACSAD Network	[SXH]
R 192.026.001.rrr	MCC-DB1-NET	MCC DB1 Network	[CBD]
R 192.026.002.rrr	MCC-DB2-NET	MCC DB2 Network	[CBD]
R 192.026.003.rrr	MCC-DB3-NET	MCC DB3 Network	[CBD]
R 192.026.004.rrr	MCC-DB4-NET	MCC DB4 Network	[CBD]
R 192.026.005.rrr	MCC-DB5-NET	MCC DB5 Network	[CBD]
R 192.026.006.rrr	MCC-DB6-NET	MCC DB6 Network	[CBD]
R 192.026.007.rrr	SPAWAR	SPARWAR Systems Command	[JK7]
192.026.008.rrr	Unassigned	Unassigned	[JBP]
R*192.026.009.rrr	ICOT	ICOT Local Network	[SXT]
R 192.026.010.rrr	GALLAUDET	GALLAUDET UNIVERSITY	[KXC]
D 192.026.011.rrr	NRL-HUBNET1	Experimental Hubnet 1	[MPM]
D 192.026.012.rrr	NRL-HUBNET2	Experimental Hubnet 2	[MPM]
D 192.026.013.rrr	NRL-HUBNET3	Experimental Hubnet 3	[MPM]
D 192.026.014.rrr	NRL-HUBNET4	Experimental Hubnet 4	[MPM]
D 192.026.015.rrr	NRL-HUBNET5	Experimental Hubnet 5	[MPM]
D 192.026.016.rrr	NRL-HUBNET6	Experimental Hubnet 6	[MPM]
D 192.026.017.rrr	NRL-HUBNET7	Experimental Hubnet 7	[MPM]
D 192.026.018.rrr	NRL-HUBNET8	Experimental Hubnet 8	[MPM]
D 192.026.019.rrr	NRL-HUBNET9	Experimental Hubnet 9	[MPM]
R*192.026.020.rrr	NJIT-NET	NJIT-SUPERCOMPUTER	[BXC]
R 192.026.021.rrr	SDC-PRC-SW	SDC/PAOLI SOFT TECH	[MXS2]
R 192.026.022.rrr	SDC-PRC-LBS	SDC/PAOLI ARTIF INT	[MXS2]

R	192.026.023.rrr	SDC-PRC-SA	SDC/PAOLI SYS ARCH	[MXS2]
R	192.026.024.rrr	SDC-PRC-CR	SDC/PAOLI COMP RES	[MXS2]
R	192.026.025.rrr	LUCID	Lucid Network	[BXM]
	192.026.026.rrr-192.026.255.rrr		Unassigned	[JBP]
C*	192.027.000.rrr-192.027.255.rrr		Hughes Aircraft VLSI	[PXH1]
	192.028.000.rrr-223.255.254.rrr		Unassigned	[JBP]
	223.255.255.rrr		Reserved	[JBP]

Other Reserved Internet Addresses

*	Internet Address	Name	Network	References
	224.000.000.000-239.255.255.255		Multicast	[44,JBP]
	240.000.000.000-255.255.255.255		Reserved	[JBP]

Network Totals

Assigned for the ARPA-Internet and the DDN-Internet

Class	A	B	C	Total
Research	13	92	775	880
Defense	9	19	45	73
Government	1	15	97	113
Commercial	3	4	5	12
Total	26	130	922	1078

Allocated for Internet and Independent Uses

Class	A	B	C	Total
Research	14	105	1681	1800
Defense	9	20	47	76
Government	1	17	98	116
Commercial	3	12	3974	3989
Total	27	154	5800	5981

Maximum Allowed

Class	A	B	C	Total
Research	8	1024	65536	66568
Defense	24	3072	458752	461848
Government	24	3072	458752	461848
Commercial	74	9214	1114137	1123394
Total	126	16382	2097150	2113658

ASSIGNED VERSION NUMBERS

In the Internet Protocol (IP) [46,101] 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	Keyword	Version	References
0		Reserved	[JBP]
1-3		Unassigned	[JBP]
4	IP	Internet Protocol	[101,JBP]
5	ST	ST Datagram Mode	[51,JWF]
6-14		Unassigned	[JBP]
15		Reserved	[JBP]

ASSIGNED PROTOCOL NUMBERS

In the Internet Protocol (IP) [46,101] there is a field, called Protocol, to identify the the next level protocol. This is an 8 bit field.

Assigned Internet Protocol Numbers

Decimal	Keyword	Protocol	References
0		Reserved	[JBP]
1	ICMP	Internet Control Message	[92,JBP]
2	IGMP	Internet Group Management	[44,JBP]
3	GGP	Gateway-to-Gateway	[59,MB]
4		Unassigned	[JBP]
5	ST	Stream	[51,JWF]
6	TCP	Transmission Control	[102,JBP]
7	UCL	UCL	[PK]
8	EGP	Exterior Gateway Protocol	[118,DLM1]
9	IGP	any private interior gateway	[JBP]
10	BBN-RCC-MON	BBN RCC Monitoring	[SGC]
11	NVP-II	Network Voice Protocol	[25,SC3]
12	PUP	PUP	[15,HGM]
13	ARGUS	ARGUS	[RWS4]
14	EMCON	EMCON	[BN7]
15	XNET	Cross Net Debugger	[57,JFH2]
16	CHAOS	Chaos	[NC3]
17	UDP	User Datagram	[100,JBP]
18	MUX	Multiplexing	[26,JBP]
19	DCN-MEAS	DCN Measurement Subsystems	[DLM1]
20	HMP	Host Monitoring	[58,RH6]
21	PRM	Packet Radio Measurement	[ZSU]
22	XNS-IDP	XEROX NS IDP	[139,HGM]
23	TRUNK-1	Trunk-1	[SA2]
24	TRUNK-2	Trunk-2	[SA2]
25	LEAF-1	Leaf-1	[SA2]
26	LEAF-2	Leaf-2	[SA2]
27	RDP	Reliable Data Protocol	[135,RH6]
28	IRTP	Internet Reliable Transaction	[76,TXM]
29	ISO-TP4	ISO Transport Protocol Class 4	[64,RC7]
30	NETBLT	Bulk Data Transfer Protocol	[24,DDC1]
31-60		Unassigned	[JBP]
61		any host internal protocol	[JBP]
62	CFTP	CFTP	[52,HCF2]
63		any local network	[JBP]
64	SAT-EXPAK	SATNET and Backroom EXPAK	[SHB]
65	MIT-SUBNET	MIT Subnet Support	[NC3]

66	RVD	MIT Remote Virtual Disk Protocol	[MBG]
67	IPPC	Internet Pluribus Packet Core	[SHB]
68		any distributed file system	[JBP]
69	SAT-MON	SATNET Monitoring	[SHB]
70		Unassigned	[JBP]
71	IPCV	Internet Packet Core Utility	[SHB]
72-75		Unassigned	[JBP]
76	BR-SAT-MON	Backroom SATNET Monitoring	[SHB]
77		Unassigned	[JBP]
78	WB-MON	WIDEBAND Monitoring	[SHB]
79	WB-EXPAK	WIDEBAND EXPAK	[SHB]
80-254		Unassigned	[JBP]
255		Reserved	[JBP]

ASSIGNED PORT NUMBERS

Ports are used in the TCP [46,102] 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 [46,100].

To the extent possible, these same port assignments are used with the ISO-TP4 [64].

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	Keyword	Description	References
0		Reserved	[JBP]
1-4		Unassigned	[JBP]
5	RJE	Remote Job Entry	[17,JBP]
7	ECHO	Echo	[90,JBP]
9	DISCARD	Discard	[88,JBP]
11	USERS	Active Users	[84,JBP]
13	DAYTIME	Daytime	[87,JBP]
15	NETSTAT	Who is up or NETSTAT	[JBP]
17	QUOTE	Quote of the Day	[95,JBP]
19	CHARGEN	Character Generator	[86,JBP]
20	FTP-DATA	File Transfer [Default Data]	[91,JBP]
21	FTP	File Transfer [Control]	[91,JBP]
23	TELNET	Telnet	[108,JBP]
25	SMTP	Simple Mail Transfer	[97,JBP]
27	NSW-FE	NSW User System FE	[29,RHT]
29	MSG-ICP	MSG ICP	[82,RHT]
31	MSG-AUTH	MSG Authentication	[82,RHT]
33	DSP	Display Support Protocol	[MLC]
35		any private printer server	[JBP]
37	TIME	Time	[104,JBP]
39	RLP	Resource Location Protocol	[1,MA]
41	GRAPHICS	Graphics	[125,JBP]
42	NAMESERVER	Host Name Server	[94,JBP]
43	NICNAME	Who Is	[56,JAKE]

44	MPM-FLAGS	MPM FLAGS Protocol	[JBP]
45	MPM	Message Processing Module [recv]	[93,JBP]
46	MPM-SND	MPM [default send]	[93,JBP]
47	NI-FTP	NI FTP	[132,SK]
49	LOGIN	Login Host Protocol	[PHD1]
51	LA-MAINT	IMP Logical Address Maintenance	[75,AGM]
53	DOMAIN	Domain Name Server	[79,80,PM1]
55	ISI-GL	ISI Graphics Language	[14,RB6]
57		any private terminal access	[JBP]
59		any private file service	[JBP]
61	NI-MAIL	NI MAIL	[12,SK]
63	VIA-FTP	VIA Systems - FTP	[DXD]
65	TACACS-DS	TACACS-Database Service	[11,RHT]
67	BOOTPS	Bootstrap Protocol Server	[41,WJC2]
68	BOOTPC	Bootstrap Protocol Client	[41,WJC2]
69	TFTP	Trivial File Transfer	[122,DDC1]
71	NETRJS-1	Remote Job Service	[16,RTB]
72	NETRJS-2	Remote Job Service	[16,RTB]
73	NETRJS-3	Remote Job Service	[16,RTB]
74	NETRJS-4	Remote Job Service	[16,RTB]
75		any private dial out service	[JBP]
77		any private RJE service	[JBP]
79	FINGER	Finger	[54,KLH]
81	HOSTS2-NS	HOSTS2 Name Server	[EAK1]
83	MIT-ML-DEV	MIT ML Device	[DPR]
85	MIT-ML-DEV	MIT ML Device	[DPR]
87		any private terminal link	[JBP]
89	SU-MIT-TG	SU/MIT Telnet Gateway	[MRC]
91	MIT-DOV	MIT Dover Spooler	[EBM]
93	DCP	Device Control Protocol	[DT15]
95	SUPDUP	SUPDUP	[32,MRC]
97	SWIFT-RVF	Swift Remote Vitural File Protocol	[MXR]
98	TACNEWS	TAC News	[FRAN]
99	METAGRAM	Metagram Relay	[GEOF]
101	HOSTNAME	NIC Host Name Server	[55,JAKE]
102	ISO-TSAP	ISO-TSAP	[20,MTR]
103	X400	X400	[HCF2]
104	X400-SND	X400-SND	[HCF2]
105	CSNET-NS	Mailbox Name Nameserver	[123,MHS1]
107	RTELNET	Remote Telnet Service	[96,JBP]
109	POP-2	Post Office Protocol - Version 2	[19,JKR1]
111	SUNRPC	SUN Remote Procedure Call	[DXG]
113	AUTH	Authentication Service	[126,MCSJ]
115	SFTP	Simple File Transfer Protocol	[71,MKL1]
117	UUCP-PATH	UUCP Path Service	[45,MAE]
119	NNTP	Network News Transfer Protocol	[66,PL4]
121	ERPC	HYDRA Expedited Remote Procedure Call	[128,JXO]

123	NTP	Network Time Protocol	[78,DLM1]
125	LOCUS-MAP	Locus PC-Interface Net Map Server	[134,BXG]
127	LOCUS-CON	Locus PC-Interface Conn Server	[134,BXG]
129	PWDGEN	Password Generator Protocol	[136,FJW]
130	CISCO-FNA	CISCO FNATIVE	[WXB]
131	CISCO-TNA	CISCO TNATIVE	[WXB]
132	CISCO-SYS	CISCO SYSMAINT	[WXB]
133-159		Unassigned	[JBP]
160-223		Reserved	[JBP]
224-241		Unassigned	[JBP]
243	SUR-MEAS	Survey Measurement	[13,AV]
245	LINK	LINK	[18,RDB2]
247-255		Unassigned	[JBP]

ASSIGNED AUTONOMOUS SYSTEM NUMBERS

The Exterior Gateway Protocol (EGP) [115,118] 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	Name	References
0	Reserved	[JBP]
1	The BBN Core Gateways	[MB]
2	DCN-AS	[DLM1]
3	The MIT Gateways	[LM8]
4	ISI-AS	[JKR1]
5	Symbolics	[CH2]
6	HIS-Multics	[JLM23]
7	UK-MOD	[RNM1]
8	RICE-AS	[PGM]
9	CMU-ROUTER	[MA]
10	CSNET-PDN-AS	[RDR4]
11	HARVARD	[SB28]
12	NYU-DOMAIN	[EF5]
13	BRL-AS	[RBN1]
14	COLUMBIA-GW	[BC14]
15	NET DYNAMICS EXP	[ZSU]
16	LBL	[WG]
17	PURDUE-CS	[KCS1]
18	UTEXAS	[JSQ1]
19	CSS-DOMAIN	[RR2]
20	UR	[LB16]
21	RAND	[JDG]
22	NOSC	[RLB3]
23	RIACS-AS	[DG28]
24	AMES-NAS-GW	[MF31]
25	UCB	[MK17]
26	CORNELL	[BN9]
27	UMDNET	[JWO1]
28	DFVLR-SYS	[GB7]
29	YALE-AS	[JG46]
30	SRI-AICNET	[PM4]
31	CIT-CS	[AD22]
32	STANFORD	[PA5]
33	DEC-WRL-AS	[RKJ2]
34	UDEL-EECIS	[NMM]
35	MICATON	[WDL]

36	EGP-TESTOR	[BP17]
37	NSWC	[MXP1]
38	UIUC	[AKC]
39	NRL-ITD	[AP]
40	MIT-TEST	[NC3]
41	AMES	[MSM1]
42	THINK-AS	[BJN1]
43	BNL-AS	[GC]
44	S1-DOMAIN	[LWR]
45	LLL-TIS-AS	[NAL]
46	RUTGERS	[RM8]
47	USC-OBERON	[DRS4]
48	NRL-AS	[WF3]
49	ICST-AS	[JCN2]
50	ORNL-MSRNET	[THD]
51	USAREUR-EM-AS	[WXD]
52	UCLA	[BXL]
53	NORTHROP-AS	[RSM1]
54	COA-FIN-NET	[RR26]
55	UPENN-CIS	[IW5]
56	OPTIMIS-P	[JXL]
57	UMN-REI-UC	[HWB]
58	DREA-AS	[GLH5]
59	WISC-MADISON-AS	[EJN1]
60	DARPA-BFLY	[MB]
61	DEC-MARLBORO-AS	[WM3]
62	TEKVAXC	[TE2]
63	LL-MI	[RTL]
64	MITRE-B-AS	[BSW]
65	LOGNET-AS	[JR15]
66	ETL-AI	[MMM3]
67	SDC-PRC-AS	[MXS2]
68	LANL-INET-AS	[JC11]
69	WHARTON-AS	[HK2]
70	NLM-GW	[JA1]
71	SU-TEST	[KSL]
72	SPAR-AS	[RXB]
73	WASHINGTON-AS	[RA17]
74	XDRENET-AS	[JR17]
75	ANL-AS	[LW26]
76	SDC-CAM-AS	[DSR]
77	JHUAPL-AS	[SAK3]
78	SSDF-CDC-GW	[RE22]
79	DSPO-HC-AS	[BT5]
80	GE-CRD	[JC106]
81	TUCC-MCNC	[JXR]
82	TWG-DEMO-AS	[JXS1]

83	PICANET-AS	[RFD1]
84	DTNSRDC-AS1	[RWT2]
85	AERO-NET	[LCN]
86	SURANET-AS	[JXH1]
87-65534	Unassigned	[JBP]
65535	Reserved	[JBP]

DOMAIN SYSTEM PARAMETERS

The Internet Domain Naming System (DOMAIN) includes several parameters. These are documented in RFC 883 [80]. The CLASS parameter is listed here. The per CLASS parameters are defined in separate RFCs as indicated.

Domain System Parameters:

Decimal	Name	References
0	Reserved	[PM1]
1	Internet	[80,PM1]
2	Unassigned	[PM1]
3	Chaos	[PM1]
4-65534	Unassigned	[PM1]
65535	Reserved	[PM1]

ASSIGNED ARPANET LOGICAL ADDRESSES

The ARPANET facility for "logical addressing" is described in RFC 878 [74]. A portion of the possible logical addresses are reserved for standard uses.

There are 49,152 possible logical host addresses. Of these, 256 are reserved for assignment to well-known functions. Assignments for well-known functions are made by Joyce Reynolds. Assignments for other logical host addresses are made by the NIC.

Logical Address Assignments:

Decimal	Description	References
0	Reserved	[JBP]
1	The BBN Core Gateways	[MB]
2-254	Unassigned	[JBP]
255	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 Host/IMP interface is defined in BBN Report 1822 [10].

The low-order 4 bits of the message-id field are called the sub-link. Unless explicitly specified otherwise for a particular protocol, there is no sender to receiver significance to the sub-link. The sender may use the sub-link in any way he chooses (it is returned in the RFNM by the destination IMP), the receiver should ignore the sub-link.

Link Assignments:

Decimal	Description	References
0	Reserved	[JBP]
1-149	Unassigned	[JBP]
150	Xerox NS IDP	[139,HGM]
151	Unassigned	[JBP]
152	PARC Universal Protocol	[15,HGM]
153	TIP Status Reporting	[JGH]
154	TIP Accounting	[JGH]
155	Internet Protocol [regular]	[101,JBP]
156-158	Internet Protocol [experimental]	[101,JBP]
159	Figleaf Link	[JBW1]
160-194	Unassigned	[JBP]
195	ISO-IP	[65,RXM]
196-247	Experimental Protocols	[JBP]
248-255	Network Maintenance	[JGH]

IEEE 802 NUMBERS OF INTEREST

Some of the networks of all classes are IEEE 802 Networks. These systems may use a Link Service Access Point (LSAP) field in much the same way the ARPANET uses the "link" field, further, there is a extension of the LSAP header called the Sub-Network Access Protocol (SNAP).

The IEEE likes to describe numbers in binary in bit transmission order, which is the opposite of the big-endian order used throughout the Internet protocol documentation.

Assignments:

Link Service Access Point			Description	References
IEEE binary	Internet binary	decimal		
00000000	00000000	0	Null LSAP	[IEEE]
11000000	00000011	3	Group LLC Sublayer Mgt	[IEEE]
01000000	00000010	4	Indiv LLC Sublayer Mgt	[IEEE]
01100000	00000110	6	DOD IP	[101,JBP]
01110000	00001110	14	PROWAY-LAN	[IEEE]
01110010	01001110	78	EIA-RS 511	[IEEE]
01110001	10001110	142	PROWAY-LAN	[IEEE]
01010101	10101010	170	SNAP	[IEEE]
01111111	11111110	254	ISO DIS 8473	[65,JXJ]
11111111	11111111	255	Global DSAP	[IEEE]

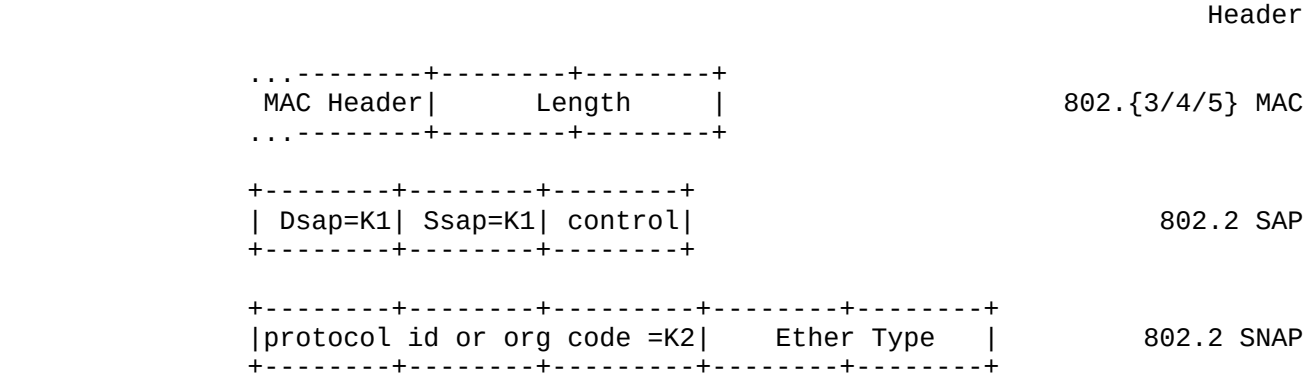
These numbers (and others) are assigned by the IEEE Standards Office. The address is: IEEE Standards Office, 345 East 47th Street, New York, N.Y. 10017, Attn: Vince Condello. Phone: (212) 705-7092.

At an ad hoc special session on "IEEE 802 Networks and ARP" held during the TCP Vendors Workshop (August 1986), an approach to a consistent way to sent DOD-IP datagrams and other IP related protocols on 802 networks was developed.

Due to some evolution of the IEEE 802.2 standards and the need to provide for a standard way to do additional DOD-IP related protocols (such as Address Resolution Protocol (ARP)) on IEEE 802 networks, the following new policy is established, which will replace the old policy (see RFC-960 and RFC-948 [138]).

The new policy is for DDN and ARPA-Internet community to use IEEE 802.2 encapsulation on 802.3, 802.4, and 802.5 networks by using the

SNAP with an organization code indicating that the following 16 bits specify the Ethertype code (where IP = 2048 (0800 hex), see Ethernet Numbers of Interest).



The values of K1 and K2 must be assigned by the IEEE. There is already assigned a value of K1 that indicates that the 5-octet SNAP header follows. There may be a value of K2 that is already assigned that indicates that the last two octets of the SNAP header holds the EtherType.

The total length of the SAP Header and the SNAP header is 8-octets, making the 802.2 protocol overhead come out on a nice octet boundary.

K1 is 170. The IEEE like to talk about things in bit transmission order and specifies this value as 01010101. In big-endian order, as used in Internet specifications, this becomes 10101010 binary, or AA hex, or 170 decimal.

We believe that K2 is 0 (zero). This must be further investigated. As an interim measure use K2 = 0.

The use of the IP LSAP (K1 = 6) is to be phased out as quickly as possible.

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.

If you need an Ethernet type number, contact the XEROX Corporation, 2300 Geng Road, Palo Alto, California 94303, ATTN: Ms. Pam Cance [PXC].

Assignments:

Ethernet		Exp. Ethernet		Description	References
decimal	Hex	decimal	octal		
512	0200	512	1000	XEROX PUP	[15,HGM]
513	0201	-	-	PUP Addr. Trans.	[HGM]
1536	0600	1536	3000	XEROX NS IDP	[139,HGM]
2048	0800	513	1001	DOD IP	[101,JBP]
2049	0801	-	-	X.75 Internet	[HGM]
2050	0802	-	-	NBS Internet	[HGM]
2051	0803	-	-	ECMA Internet	[HGM]
2052	0804	-	-	Chaosnet	[HGM]
2053	0805	-	-	X.25 Level 3	[HGM]
2054	0806	-	-	ARP	[83,JBP]
2055	0807	-	-	XNS Compatability	[HGM]
2076	081C	-	-	Symbolics Private	[DCP1]
32771	8003	-	-	Cronus VLN	[127,DT15]
32772	8004	-	-	Cronus Direct	[127,DT15]
32774	8006	-	-	Nestar	[HGM]
32784	8010	-	-	Excelan	[HGM]
32821	8035	-	-	Reverse ARP	[50,JCM]
36864	9000	-	-	Loopback	[HGM]

The standard for transmission of IP datagrams over Ethernets and Experimental Ethernets is specified in RFC 894 [99] and RFC 895 [85] respectively.

NOTE: Ethernet 48-bit address blocks are now assigned by the IEEE Standards Office (see section "IEEE 802 Numbers of Interest").

ASSIGNED ADDRESS RESOLUTION PROTOCOL PARAMETERS

The Address Resolution Protocol (ARP) specified in RFC 826 [83] has several parameters. The assigned values for these parameters are listed here.

Assignments:

Operation Code (op)

1 REQUEST
2 REPLY

Hardware Type (hrd)

Type	Description	References
1	Ethernet (10Mb)	[JBP]
2	Experimental Ethernet (3Mb)	[JBP]
3	Amateur Radio AX.25	[PXK]
4	Proteon ProNET Token Ring	[JBP]
5	Chaos	[GXP]
6	IEEE 802 Networks	[JBP]

Protocol Type (pro)

Use the same codes as listed in the section "Ethernet Numbers of Interest" (all hardware types use this code set for the protocol type).

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).

The numbers below are assigned for networks that are connected to the ARPA-Internet and DDN-Internet, and for independent networks. These independent networks are marked with an asterisk preceding the number.

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	2405-015-50300 00	CHALMERS	[UXB]
	014.000.000.012	3110-713-00165 00	RICE	[PAM6]
	014.000.000.013	3110-415-00261 00	DECWRL	[PAM6]
	014.000.000.014	3110-408-00051 00	IBM-SJ	[SA1]
	014.000.000.015	2041-117-01000 00	SHAPE	[JFW]
	014.000.000.016	2628-153-90075 00	DFVLR4-X25	[GB7]
	014.000.000.017	3110-213-00032 00	ISI-VAN-GW	[JD21]
	014.000.000.018	2624-522-80900 52	DFVLR5-X25	[GB7]
	014.000.000.019	2041-170-10000 00	SHAPE-X25	[JFW]
	014.000.000.020	5052-737-20000 50	UQNET	[AXH]
	014.000.000.021	3020-801-00057 50	DMC-CRC1	[JR17]
	014.000.000.022	2624-522-80902 77	DFVLRVAX-X25	[GB7]
*	014.000.000.023	2624-589-00908 01	ECRC-X25	[PXD]
	014.000.000.024-014.255.255.254		Unassigned	[JBP]
	014.255.255.255		Reserved	[JBP]

The standard for transmission of IP datagrams over the Public Data Network is specified in RFC 877 [68].

ASSIGNED TELNET OPTIONS

The Telnet Protocol has a number of options that may be negotiated. These options are listed here. "Official ARPA-Internet Protocols" [114] provides more detailed information.

Options	Name	References
0	Binary Transmission	[106,JBP]
1	Echo	[107,JBP]
2	Reconnection	[7,JBP]
3	Suppress Go Ahead	[110,JBP]
4	Approx Message Size Negotiation	[130,JBP]
5	Status	[109,JBP]
6	Timing Mark	[111,JBP]
7	Remote Controlled Trans and Echo	[103,JBP]
8	Output Line Width	[5,JBP]
9	Output Page Size	[6,JBP]
10	Output Carriage-Return Disposition	[33,JBP]
11	Output Horizontal Tab Stops	[37,JBP]
12	Output Horizontal Tab Disposition	[36,JBP]
13	Output Formfeed Disposition	[34,JBP]
14	Output Vertical Tabstops	[39,JBP]
15	Output Vertical Tab Disposition	[38,JBP]
16	Output Linefeed Disposition	[35,JBP]
17	Extended ASCII	[133,JBP]
18	Logout	[30,MRC]
19	Byte Macro	[40,JBP]
20	Data Entry Terminal	[43,JBP]
22	SUPDUP	[31,32,MRC]
22	SUPDUP Output	[53,MRC]
23	Send Location	[67,EAK1]
24	Terminal Type	[124,MHS1]
25	End of Record	[98,JBP]
26	TACACS User Identification	[3,BA4]
27	Output Marking	[120,SXS]
28	Terminal Location Number	[81,RN6]
255	Extended-Options-List	[105,JBP]

OFFICIAL MACHINE NAMES

These are the Official Machine Names as they appear in the NIC Host Table. Their use is described in RFC 952 [49].

An Official Machine Name or CPU Type may be up to 40 characters taken from the set of uppercase letters, digits, and the two punctuation characters hyphen and slash. It must start with a letter, and end with a letter or digit.

ALTO
AMDAHL-V7
APOLLO
ATT-3B20
BBN-C/60
BURROUGHS-B/29
BURROUGHS-B/4800
BUTTERFLY
C/30
C/70
CADLINC
CADR
CDC-170
CDC-170/750
CDC-173
CELERITY-1200
COMTEN-3690
CP8040
CTIWS-117
DANDELION
DEC-10
DEC-1050
DEC-1077
DEC-1080
DEC-1090
DEC-1090B
DEC-1090T
DEC-2020T
DEC-2040
DEC-2040T
DEC-2050T
DEC-2060
DEC-2060T
DEC-2065
DEC-FALCON
DEC-KS10
DORADO

```
   DPS8/70M
   ELXSI-6400
   FOONLY-F2
   FOONLY-F3
   FOONLY-F4
   GOULD
   GOULD-6050
   GOULD-6080
   GOULD-9050
   GOULD-9080
   H-316
   H-60/68
   H-68
   H-68/80
   H-89
   HONEYWELL-DPS-6
   HONEYWELL-DPS-8/70
   HP3000
   HP3000/64
   IBM-158
   IBM-360/67
   IBM-370/3033
   IBM-3081
   IBM-3084QX
   IBM-3101
   IBM-4331
   IBM-4341
   IBM-4361
   IBM-4381
   IBM-4956
   IBM-PC
   IBM-PC/AT
   IBM-PC/XT
   IBM-SERIES/1
   IMAGEN
   IMAGEN-8/300
   IMSAI
   INTEGRATED-SOLUTIONS
   INTEGRATED-SOLUTIONS-68K
   INTEGRATED-SOLUTIONS-CREATOR
   INTEGRATED-SOLUTIONS-CREATOR-8
   INTEL-IPSC
   IS-1
   IS-68010
   LMI
   LSI-11
   LSI-11/2
```

LSI-11/23
LSI-11/73
M68000
MASSCOMP
MC500
MC68000
MICROVAX
MICROVAX-I
MICROVAX-II
MV/8000
NAS3-5
NCR-COMTEN-3690
NOW
ONYX-Z8000
PDP-11
PDP-11/3
PDP-11/23
PDP-11/24
PDP-11/34
PDP-11/40
PDP-11/44
PDP-11/45
PDP-11/50
PDP-11/70
PDP-11/73
PE-7/32
PE-3205
PERQ
PLEXUS-P/60
PLI
PLURIBUS
PYRAMID-90
PYRAMID-90MX
PYRAMID-90X
RIDGE
RIDGE-32
RIDGE-32C
ROLM-1666
S1-MKIIA
SMI
SEQUENT-BALANCE-8000
SIEMENS
SILICON-GRAPHICS
SILICON-GRAPHICS-IRIS
SPERRY-DCP/10
SUN
SUN-2

SUN-2/50
SUN-2/100
SUN-2/120
SUN-2/140
SUN-2/150
SUN-2/160
SUN-2/170
SUN-3/160
SUN-3/75
SUN-50
SUN-100
SUN-120
SUN-130
SUN-150
SUN-170
SYMBOLICS-3600
SYMBOLICS-3670
TANDEM-TXP
TEK-6130
TI-EXPLORER
TP-4000
TRS-80
UNIVAC-1100
UNIVAC-1100/60
UNIVAC-1100/62
UNIVAC-1100/63
UNIVAC-1100/64
UNIVAC-1100/70
UNIVAC-1160
VAX-11/725
VAX-11/730
VAX-11/750
VAX-11/780
VAX-11/785
VAX-11/790
VAX-11/8600
VAX-8600
VAX-8650
WANG-PC002
WANG-VS100
WANG-VS400
XEROX-1108
XEROX-8010

OFFICIAL SYSTEM NAMES

These are the Official System Names as they appear in the NIC Host Table. Their use is described in RFC 952 [49].

An Official System Names or Operating System Type may be up to 40 characters taken from the set of uppercase letters, digits, and the two punctuation characters hyphen and slash. It must start with a letter, and end with a letter or digit.

AEGIS
APOLLO
BS-2000
CEDAR
CGW
CHRYSALIS
CMOS
CMS
COS
CPIX
CTOS
DCN
DDNOS
DOMAIN
EDX
ELF
EMBOS
EMMOS
EPOS
FOONEX
FUZZ
GCOS
GPOS
HDOS
IMAGEN
INTERCOM
IMPRESS
INTERLISP
IOS
ITS
LISP
LISPM
LOCUS
MINOS
MOS
MPE5
MSDOS

MULTICS
MVS
MVS/SP
NEXUS
NMS
NONSTOP
NOS-2
OS/DDP
OS4
OS86
OSX
PCDOS
PERQ/OS
PLI
PSDOS/MIT
RMX/RDOS
ROS
RSX11M
SATOPS
SCS
SIMP
SWIFT
TAC
TANDEM
TENEX
TOPS10
TOPS20
TP3010
TRSDOS
ULTRIX
UNIX
UT2D
V
VM
VM/370
VM/CMS
VM/SP
VMS
VMS/EUNICE
VRTX
WAITS
WANG
XDE
XENIX

OFFICIAL PROTOCOL AND SERVICE NAMES

These are the Official Protocol Names. Their use is described in greater detail in RFC 952 [49].

An Official Protocol Name or Service Type may be up to 20 characters taken from the set of uppercase letters, digits, and the punctuation character hyphen. It must start with a letter, and end with a letter or digit.

ARGUS	- ARGUS Protocol
AUTH	- Authentication Service
BBN-RCC-MON	- BBN RCC Monitoring
BOOTPC	- Bootstrap Protocol Client
BOOTPS	- Bootstrap Protocol Server
BR-SAT-MON	- Backroom SATNET Monitoring
CFTP	- CFTP
CHAOS	- CHAOS Protocol
CHARGEN	- Character Generator Protocol
CISCO-FNA	- CISCO FNATIVE
CISCO-TNA	- CISCO TNATIVE
CISCO-SYS	- CISCO SYSMAINT
CLOCK	- DCNET Time Server Protocol
CSNET-NS	- CSNET Mailbox Nameserver Protocol
DAYTIME	- Daytime Protocol
DCN-MEAS	- DCN Measurement Subsystems Protocol
DCP	- Device Control Protocol
DISCARD	- Discard Protocol
DOMAIN	- Domain Name Server
ECHO	- Echo Protocol
EGP	- Exterior Gateway Protocol
EMCON	- Emission Control Protocol
FINGER	- Finger Protocol
FTP	- File Transfer Protocol
FTP-DATA	- File Transfer Protocol Data
GGP	- Gateway Gateway Protocol
GRAPHICS	- Graphics Protocol
HMP	- Host Monitoring Protocol
HOST2-NS	- Host2 Name Server
HOSTNAME	- Hostname Protocol
ICMP	- Internet Control Message Protocol
IGMP	- Internet Group Multicast Protocol
IGP	- Interior Gateway Protocol
IP	- Internet Protocol
IPCU	- Internet Packet Core Utility
IPPC	- Internet Pluribus Packet Core
IRTP	- Internet Reliable Transaction Protocol

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   ISI-GL              - ISI Graphics Language Protocol
   ISO-TP4             - ISO Transport Protocol Class 4
   ISO-TSAP            - ISO TSAP
   LA-MAINT            - IMP Logical Address Maintenance
   LEAF-1              - Leaf-1 Protocol
   LEAF-2              - Leaf-2 Protocol
   LINK                - Link Protocol
   LOGIN               - Login Host Protocol
   METAGRAM            - Metagram Relay
   MIT-ML-DEV          - MIT ML Device
   MIT-SUBNET          - MIT Subnet Support
   MIT-DOV             - MIT Dover Spooler
   MPM                 - Internet Message Protocol (Multimedia Mail)
   MPM-FLAGS           - MPM Flags Protocol
   MPM-SND             - MPM Send Protocol
   MSG-AUTH            - MSG Authentication Protocol
   MSG-ICP             - MSG ICP Protocol
   MUX                 - Multiplexing Protocol
   NAMESERVER          - Host Name Server
   NETBLT              - Bulk Data Transfer Protocol
   NETED               - Network Standard Text Editor
   NETRJS              - Remote Job Service
   NI-FTP              - NI File Transfer Protocol
   NI-MAIL             - NI Mail Protocol
   NICNAME             - Who Is Protocol
   NNTP                - Network News Transfer Protocol
   NSW-FE              - NSW User System Front End
   NTP                 - Network Time Protocol
   NVP-II              - Network Voice Protocol
   POP2                - Post Office Protocol - Version 2
   PRM                 - Packet Radio Measurement
   PUP                 - PUP Protocol
   PWDGEN              - Password Generator Protocol
   QUOTE               - Quote of the Day Protocol
   RDP                 - Reliable Data Protocol
   RJE                 - Remote Job Entry
   RLP                 - Resource Location Protocol
   RTELNET             - Remote Telnet Service
   RVD                 - Remote Virtual Disk Protocol
   SAT-EXPAK           - Satnet and Backroom EXPAK
   SAT-MON             - SATNET Monitoring
   SFTP                - Simple File Transfer Protocol
   SMTP                - Simple Mail Transfer Protocol
   ST                  - Stream Protocol
   SU-MIT-TG           - SU/MIT Telnet Gateway Protocol
   SUNRPC              - SUN Remote Procedure Call
   SUPDUP              - SUPDUP Protocol
```

SUR-MEAS	- Survey Measurement
SWIFT-RVF	- Remote Virtual File Protocol
TACACS-DS	- TACACS-Database Service
TACNEWS	- TAC News
TCP	- Transmission Control Protocol
TELNET	- Telnet Protocol
TFTP	- Trivial File Transfer Protocol
TIME	- Time Server Protocol
TRUNK-1	- Trunk-1 Protocol
TRUNK-2	- Trunk-2 Protocol
UCL	- University College London Protocol
UDP	- User Datagram Protocol
USERS	- Active Users Protocol
UUCP-PATH	- UUCP Path Service
VIA-FTP	- VIA Systems-File Transfer Protocol
WB-EXPAK	- Wideband EXPAK
WB-MON	- Wideband Monitoring
XNET	- Cross Net Debugger
XNS-IDP	- Xerox NS IDP

OFFICIAL TERMINAL TYPE NAMES

These are the Official Terminal Type Names. Their use is described in RFC 930 [124].

An Official Terminal Type Names may be up to 40 characters taken from the set of uppercase letters, digits, and the two punctuation characters hyphen and slash. It must start with a letter, and end with a letter or digit.

ADDS-CONSUL-980
ADDS-REGENT-100
ADDS-REGENT-20
ADDS-REGENT-200
ADDS-REGENT-25
ADDS-REGENT-40
ADDS-REGENT-60
AMPEX-DIALOGUE-80
ANDERSON-JACOBSON-630
ANDERSON-JACOBSON-832
ANDERSON-JACOBSON-841
ANN-ARBOR-AMBASSADOR
ARDS
BITGRAPH
BUSSIPLEXER
CALCOMP-565
CDC-456
CDI-1030
CDI-1203
CLNZ
COMPUCOLOR-II
CONCEPT-100
CONCEPT-104
CONCEPT-108
DATA-100
DATA-GENERAL-6053
DATAGRAPHIX-132A
DATAMEDIA-1520
DATAMEDIA-1521
DATAMEDIA-2500
DATAMEDIA-3025
DATAMEDIA-3025A
DATAMEDIA-3045
DATAMEDIA-3045A
DATAMEDIA-DT80/1
DATAPOINT-2200
DATAPOINT-3000

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   DATAPOINT-3300
   DATAPOINT-3360
   DEC-DECWRITER-I
   DEC-DECWRITER-II
   DEC-GT40
   DEC-GT40A
   DEC-GT42
   DEC-LA120
   DEC-LA30
   DEC-LA36
   DEC-LA38
   DEC-VT05
   DEC-VT100
   DEC-VT132
   DEC-VT50
   DEC-VT50H
   DEC-VT52
   DELTA-DATA-5000
   DELTA-TELTERM-2
   DIABLO-1620
   DIABLO-1640
   DIGILOG-333
   DTC-300S
   EDT-1200
   EXECUPORT-4000
   EXECUPORT-4080
   GENERAL-TERMINAL-100A
   GSI
   HAZELTINE-1500
   HAZELTINE-1510
   HAZELTINE-1520
   HAZELTINE-2000
   HP-2621
   HP-2621A
   HP-2621P
   HP-2626
   HP-2626A
   HP-2626P
   HP-2640
   HP-2640A
   HP-2640B
   HP-2645
   HP-2645A
   HP-2648
   HP-2648A
   HP-2649
   HP-2649A
```

IBM-3101
IBM-3101-10
IBM-3275-2
IBM-3276-2
IBM-3276-3
IBM-3276-4
IBM-3277-2
IBM-3278-2
IBM-3278-3
IBM-3278-4
IBM-3278-5
IBM-3279-2
IBM-3279-3
IMLAC
INFOTON-100
INFOTONKAS
ISC-8001
LSI-ADM-3
LSI-ADM-31
LSI-ADM-3A
LSI-ADM-42
MEMOREX-1240
MICROBEE
MICROTERM-ACT-IV
MICROTERM-ACT-V
MICROTERM-MIME-1
MICROTERM-MIME-2
NETRONICS
NETWORK-VIRTUAL-TERMINAL
OMRON-8025AG
PERKIN-ELMER-1100
PERKIN-ELMER-1200
PERQ
PLASMA-PANEL
QUME-SPRINT-5
SOROC
SOROC-120
SOUTHWEST-TECHNICAL-PRODUCTS-CT82
SUPERBEE
SUPERBEE-III-M
TEC
TEKTRONIX-4010
TEKTRONIX-4012
TEKTRONIX-4013
TEKTRONIX-4014
TEKTRONIX-4023
TEKTRONIX-4024

TEKTRONIX-4025
TEKTRONIX-4027
TELERAY-1061
TELERAY-3700
TELERAY-3800
TELETEC-DATASCREEN
TELETERM-1030
TELETYPE-33
TELETYPE-35
TELETYPE-37
TELETYPE-38
TELETYPE-43
TELEVIDEO-912
TELEVIDEO-920
TELEVIDEO-920B
TELEVIDEO-920C
TELEVIDEO-950
TERMINET-1200
TERMINET-300
TI-700
TI-733
TI-735
TI-743
TI-745
TYCOM
UNIVAC-DCT-500
VIDEO-SYSTEMS-1200
VIDEO-SYSTEMS-5000
VISUAL-200
XEROX-1720
ZENITH-H19
ZENTEC-30

DOCUMENTS

[1] Accetta, M., "Resource Location Protocol", RFC 887, Carnegie-Mellon University, December 1983.

[2] Aerospace, Internal Report, ATM-83(3920-01)-3, 1982.

[3] Anderson, B., "TACACS User Identification Telnet Option", RFC 927, BBN, December 1984.

[4] Apollo Computer, Inc., "Domain TCP/IP Reference", Order No. 003247, Chelmsford, Ma.

[5] "Telnet Output Line Width Option", NIC 20196, in: DDN Protocol Handbook, NIC 50005, December 1985.

[6] "Telnet Output Page Size Option", NIC 20197, in: DDN Protocol Handbook, NIC 50005, December 1985.

[7] "Telnet Reconnection Option", NIC 15391, in: DDN Protocol Handbook, NIC 50005, December 1985.

[8] Aupperle, E. M., "Merit's Evolution - Statistically Speaking", IEEE Transaction on Computers, Vol. C-32, No. 10, October 1983, pp. 881-902.

[9] BBN Proposal No. P83-COM-40, "Packet Switched Overlay to Tactical Multichannel/Satellite Systems".

[10] BBN, "Specifications for the Interconnection of a Host and an IMP", Report 1822, Bolt Beranek and Newman, Cambridge, Massachusetts, revised, December 1981.

[11] BBN, "User Manual for TAC User Database Tool", Bolt Beranek and Newman, September 1984.

[12] Bennett, C., "A Simple NIFTP-Based Mail System", IEN 169, University College, London, January 1981.

[13] Bhushan, A., "A Report on the Survey Project", RFC 530, NIC 17375, June 1973.

[14] Bisbey, R., D. Hollingworth, and B. Britt, "Graphics Language (version 2.1)", ISI/TM-80-18, Information Sciences Institute, July 1980.

[15] Boggs, D., J. Shoch, E. Taft, and R. Metcalfe, "PUP: An Internetwork Architecture", XEROX Palo Alto Research Center, CSL-79-10, July 1979; also in IEEE Transactions on Communication, Volume COM-28, Number 4, April 1980.

[16] Braden, R., "NETRJS Protocol", RFC 740, NIC 42423, November 1977.

[17] Bressler, B., "Remote Job Entry Protocol", RFC 407, NIC 12112, October 1972.

[18] Bressler, R., "Inter-Entity Communication -- An Experiment", RFC 441, NIC 13773, January 1973.

[19] Butler, M., J. Postel, D. Chase, J. Goldberger, and J. K. Reynolds, "Post Office Protocol - Version 2", RFC 937, Information Sciences Institute, February 1985.

[20] Cass, D. E., and M. T. Rose, "ISO Transport Services on Top of the TCP", RFC 983, NTRC, April 1986.

[21] Chon, K., et al., "SDN: A Computer Network for Korean Research Community", Proc. of the Pacific Computer Communications Symposium, October 1985, pp. 567-570, Seoul, Korea.

[22] Chon, K., et al., "System Development Network", Proc. of TENCON, April 1984, pp. 133-135, Singapore.

[23] Clark, D., "Revision of DSP Specification", Local Network Note 9, Laboratory for Computer Science, MIT, June 1977.

[24] Clark, D., M. Lambert, and L. Zhang, "NETBLT: A Bulk Data Transfer Protocol", RFC 969, MIT Laboratory for Computer Science, December 1985.

[25] Cohen, D., "Specifications for the Network Voice Protocol", RFC 741, ISI/RR 7539, Information Sciences Institute, March 1976.

[26] Cohen, D. and J. Postel, "Multiplexing Protocol", IEN 90, Information Sciences Institute, May 1979.

[27] Comer, D., and T. Narten, "The Cypress Multifunction Packet Switch", Technical Report CSD-TR-575, Computer Science Dept., Purdue University, West LaFayette, IN.

[28] Communications Interface Solutions Company, "CISCO Project Summary", CISCO, Document: PS70-86-021.3C, Gaithersburg, MD.

[29] COMPASS, "Semi-Annual Technical Report", CADD-7603-0411, Massachusetts Computer Associates, 4 March 1976. Also as, "National Software Works, Status Report No. 1," RADC-TR-76-276, Volume 1, September 1976. And COMPASS. "Second Semi-Annual Report," CADD-7608-1611, Massachusetts Computer Associates, August 1976.

[30] Crispin, M., "Telnet Logout Option", Stanford University-AI, RFC 727, April 1977.

[31] Crispin, M., "Telnet SUPDUP Option", Stanford University-AI, RFC 736, October 1977.

[32] Crispin, M., "SUPDUP Protocol", RFC 734, NIC 41953, October 1977.

[33] Crocker, D., "Telnet Output Carriage-Return Disposition Option", RFC 652, October 1974.

[34] Crocker, D., "Telnet Output Formfeed Disposition Option", RFC 655, October 1974.

[35] Crocker, D., "Telnet Output Linefeed Disposition", RFC 658, October 1974.

[36] Crocker, D., "Telnet Output Horizontal Tab Disposition Option", RFC 654, October 1974.

[37] Crocker, D., "Telnet Output Horizontal Tabstops Option", RFC 653, October 1974.

[38] Crocker, D., "Telnet Output Vertical Tab Disposition Option", RFC 657, October 1974.

[39] Crocker, D., "Telnet Output Vertical Tabstops Option", RFC 656, October 1974.

[40] Crocker, D. H. and R. H. Gumpertz, "Revised Telnet Byte Marco Option", RFC 735, November 1977.

[41] Croft, B., and J. Gilmore, "BOOTSTRAP Protocol (BOOTP)", RFC 951, Stanford and SUN Microsytems, September 1985.

[42] Croft, W. J., "Unix Networking at Purdue", USENIX Conference, 1980.

[43] Day, J., "Telnet Data Entry Terminal Option", RFC 732, September 1977.

[44] Deering, S. E., "Host Extensions for IP Multicasting", RFC 988, Stanford University, December 1985.

[45] Elvy, M., and R. Nedved, "Network Mail Path Service", RFC 915, Harvard and CMU, July 1986.

[46] Feinler, E., editor, "DDN Protocol Handbook", Network Information Center, SRI International, December 1985.

[47] Feinler, E., editor, "Internet Protocol Transition Workbook", Network Information Center, SRI International, March 1982.

[48] Feinler, E. and J. Postel, eds., "ARPANET Protocol Handbook", NIC 7104, for the Defense Communications Agency by SRI International, Menlo Park, California, Revised January 1978.

[49] Harrenstien, K., M. Stahl, E. Feinler, "DoD Internet Host Table Specification", RFC 952, SRI International, October 1985.

[50] Finlayson, R., T. Mann, J. Mogul, and M. Theimer, "A Reverse Address Resolution Protocol", RFC 903, Stanford University, June 1984.

[51] Forgie, J., "ST - A Proposed Internet Stream Protocol", IEN 119, MIT Lincoln Laboratory, September 1979.

[52] Forsdick, H., "CFTP", Network Message, Bolt Beranek and Newman, January 1982.

[53] Greenberg, B., "Telnet SUPDUP-OUTPUT Option", RFC 749, MIT-Multics, September 1978.

[54] Harrenstien, K., "Name/Finger", RFC 742, NIC 42758, SRI International, December 1977.

[55] Harrenstien, K., V. White, and E. Feinler, "Hostnames Server", RFC 811, SRI International, March 1982.

[56] Harrenstien, K., and V. White, "Nicname/Whois", RFC 812, SRI International, March 1982.

[57] Haverty, J., "XNET Formats for Internet Protocol Version 4", IEN 158, October 1980.

[58] Hinden, R. M., "A Host Monitoring Protocol", RFC 869, Bolt Beranek and Newman, December 1983.

[59] Hinden, R., and A. Sheltzer, "The DARPA Internet Gateway", RFC 823, September 1982.

[60] Honeywell CISL, Internal Document, "AFSDSC Hyperchannel RPQ Project Plan".

[61] Honeywell CISL, Internal Document, "Multics MR11 PFS".

[62] Hwang, K., W. J. Croft and G. H. Goble, "A Unix-Based Local Computer Network with Load Balancing", IEEE Computer, April 1982.

[63] IBM Corporation, "Technical Reference Manual for the IBM PC Network", 6322505, IBM, Boca Raton, Florida, 1984.

[64] International Standards Organization, "ISO Transport Protocol Specification - ISO DP 8073", RFC 905, April 1984.

[65] International Standards Organization, "Protocol for Providing the Connectionless-Mode Network Services", RFC 926, ISO, December 1984.

[66] Kantor, Brian, and Phil Lapsley, "Network News Transfer Protocol", RFC 977, UC San Diego & UC Berkeley, February 1986.

[67] Killian, E., "Telnet Send-Location Option", RFC 779, April 1981.

[68] Korb, J. T., "A Standard for the Transmission of IP Datagrams Over Public Data Networks", RFC 877, Purdue University, September 1983.

[69] Leach, P., et al., "The Architecture of an Integrated Local Network", Apollo Computer, Inc., Chelmsford, MA.

[70] Leffler, S. J., et al., "4.2bsd Network Implementation Notes", University of California, Berkeley, July 1983.

[71] Lottor, M. K., "Simple File Transfer Protocol", RFC 913, MIT, September 1984.

[72] Macgregor, W., and D. Tappan, "The CRONUS Virtual Local Network", RFC 824, Bolt Beranek and Newman, August 1982.

[73] Malis, A., "The ARPANET 1822L Host Access Protocol", RFC 878, BBN-CC, Cambridge, December 1983.

[74] Malis, A., "Logical Addressing Implementation Specification", BBN Report 5256, pp 31-36, May 1983.

[75] Metcalfe, R. M. and D. R. Boggs, "Ethernet: Distributed Packet Switching for Local Computer Networks", Communications of the ACM, 19 (7), pp 395-402, July 1976.

[76] Miller, T., "Internet Reliable Transaction Protocol", RFC 938, ACC, February 1985.

[77] Mills, D., "DCN Local Network Protocols", RFC 891, Linkabit, December 1983.

[78] Mills, D., "Network Time Protocol", RFC 958, M/A-COM Linkabit, September 1985.

[79] Mockapetris, P., "Domain Names - Concepts and Facilities", RFC 882, ISI, November 1983.

[80] Mockapetris, P., "Domain Names - Implementation and Specification", RFC 883, ISI, November 1983.

[81] Nedved, R., "Telnet Terminal Location Number Option", RFC 946, Carnegie-Mellon University, May 1985.

[82] NSW Protocol Committee, "MSG: The Interprocess Communication Facility for the National Software Works", CADD-7612-2411, Massachusetts Computer Associates, BBN 3237, Bolt Beranek and Newman, Revised December 1976.

[83] Plummer, D., "An Ethernet Address Resolution Protocol or Converting Network Protocol Addresses to 48-bit Ethernet Addresses for Transmission on Ethernet Hardware", RFC 826, MIT-LCS, November 1982.

[84] Postel, J., "Active Users", RFC 866, Information Sciences Institute, May 1983.

[85] Postel, J., "A Standard for the Transmission of IP Datagrams over Experimental Ethernet Networks, RFC 895, Information Sciences Institute, April 1984.

[86] Postel, J., "Character Generator Protocol", RFC 864, Information Sciences Institute, May 1983.

[87] Postel, J., "Daytime Protocol", RFC 867, Information Sciences Institute, May 1983.

[88] Postel, J., "Discard Protocol", RFC 863, Information Sciences Institute, May 1983.

[89] Postel, J., "The Domain Names Plan and Schedule", RFC 881, ISI, November 1983.

[90] Postel, J., "Echo Protocol", RFC 862, Information Sciences Institute, May 1983.

[91] Postel, J., and J. Reynolds, "File Transfer Protocol", RFC 959, Information Sciences Institute, October 1985.

[92] Postel, J., "Internet Control Message Protocol - DARPA Internet Program Protocol Specification", RFC 792, Information Sciences Institute, September 1981.

[93] Postel, J., "Internet Message Protocol", RFC 759, IEN 113, Information Sciences Institute, August 1980.

[94] Postel, J., "Name Server", IEN 116, Information Sciences Institute, August 1979.

[95] Postel, J., "Quote of the Day Protocol", RFC 865, Information Sciences Institute, May 1983.

[96] Postel, J., "Remote Telnet Service", RFC 818, Information Sciences Institute, November 1982.

[97] Postel, J., "Simple Mail Transfer Protocol", RFC 821, Information Sciences Institute, August 1982.

[98] Postel, J., "Telnet End of Record Option", RFC 885, Information Sciences Institute, December 1983.

[99] Hornig, C., "A Standard for the Transmission of IP Datagrams over Ethernet Networks, RFC 894, Symbolics, April 1984.

[100] Postel, J., "User Datagram Protocol", RFC 768 Information Sciences Institute, August 1980.

[101] Postel, J., ed., "Internet Protocol - DARPA Internet Program Protocol Specification", RFC 791, Information Sciences Institute, September 1981.

[102] Postel, J., ed., "Transmission Control Protocol - DARPA Internet Program Protocol Specification", RFC 793, Information Sciences Institute, September 1981.

[103] Postel, J. and D. Crocker, "Remote Controlled Transmission and Echoing Telnet Option", RFC 726, March 1977.

[104] Postel, J., and K. Harrenstien, "Time Protocol", RFC 868, Information Sciences Institute, May 1983.

[105] Postel, J. and J. Reynolds, "Telnet Extended Options - List Option", RFC 861, Information Sciences Institute, May 1983.

[106] Postel, J. and J. Reynolds, "Telnet Binary Transmission", RFC 856, Information Sciences Institute, May 1983.

[107] Postel, J. and J. Reynolds, "Telnet Echo Option", RFC 857, Information Sciences Institute, May 1983.

[108] Postel, J., and J. Reynolds, "Telnet Protocol Specification", RFC 854, Information Sciences Institute, May 1983.

[109] Postel, J. and J. Reynolds, "Telnet Status Option", RFC 859, Information Sciences Institute, May 1983.

[110] Postel, J. and J. Reynolds, "Telnet Suppress Go Ahead Option", RFC 858, Information Sciences Institute, May 1983.

[111] Postel, J. and J. Reynolds, "Telnet Timing Mark Option", RFC 860, Information Sciences Institute, May 1983.

[112] Prime, "Medusa, The Prime Ethernet", PRIME/WS/AI/86/2, July 1986, Framingham, MA.

[113] Reed, D., "Protocols for the LCS Network", Local Network Note 3, Laboratory for Computer Science, MIT, November 1976.

[114] Reynolds, J. and J. Postel, "Official ARPA-Internet Protocols", RFC 991, Information Sciences Institute, November 1986.

[115] Rosen, E., "Exterior Gateway Protocol" RFC 827, Bolt Beranek and Newman, October 1982.

[116] Saltzer, J. H., "Design of a Ten-megabit/sec Token Ring Network", MIT Laboratory for Computer Science Technical Report.

[117] Scott, W. S., "2.9bsd/TIS Network Implementation", Lawrence Livermore National Laboratory, September 1984.

[118] Seamonson, L. J., and E. C. Rosen, "STUB" Exterior Gateway Protocol", RFC 888, BBN Communications Corporation, January 1984.

[119] Shuttleworth, B., "A Documentary of MFENet, a National Computer Network", UCRL-52317, Lawrence Livermore Labs, Livermore, California, June 1977.

[120] Silverman, S., "Output Marking Telnet Option", RFC 933, MITRE, January 1985.

[121] Skelton, A., S. Holmgren, and D. Wood, "The MITRE Cablenet Project", IEN 96, April 1979.

[122] Sollins, K., "The TFTP Protocol (Revision 2)", RFC 783, MIT/LCS, June 1981.

[123] Solomon, M., L. Landweber, and D. Neuhengen, "The CSNET Name Server", Computer Networks, v.6, n.3, pp. 161-172, July 1982.

[124] Solomon, M., and E. Wimmers, "Telnet Terminal Type Option", RFC 930, Supercedes RFC 884, University of Wisconsin, Madison, January 1985.

[125] Sproull, R., and E. Thomas, "A Networks Graphics Protocol", NIC 24308, August 1974.

[126] StJohns, M., "Authentication Service", RFC 931, TPSC, January 1985.

[127] Tappan, D. C., "The CRONUS Virtual Local Network", RFC 824, Bolt Beranek and Newman, August 1982.

[128] Taylor, J., "ERPC Functional Specification", Version 1.04, HYDRA Computer Systems, Inc., July 1984.

[129] "The Ethernet, A Local Area Network: Data Link Layer and Physical Layer Specification", AA-K759B-TK, Digital Equipment Corporation, Maynard, MA. Also as: "The Ethernet - A Local Area Network", Version 1.0, Digital Equipment Corporation, Intel Corporation, Xerox Corporation, September 1980. And: "The Ethernet, A Local Area Network: Data Link Layer and Physical Layer Specifications", Digital, Intel and Xerox, November 1982. And: XEROX, "The Ethernet, A Local Area Network: Data Link Layer and Physical Layer Specification", X3T51/80-50, Xerox Corporation, Stamford, CT., October 1980.

[130] "Telnet Output Approximate Message Size Option", NIC 15393, in: DDN Protocol Handbook, NIC 50005, December 1985.

[131] Cohen, D., "On Holy Wars and a Plea for Peace", IEEE Computer Magazine, October 1981.

[132] The High Level Protocol Group, "A Network Independent File Transfer Protocol", INWG Protocol Note 86, December 1977.

[133] Tovar, "Telnet Extended ASCII Option", RFC 698, Stanford University-AI, July 1975.

[134] Uttal, J, J. Rothschild, and C. Kline, "Transparent Integration of UNIX and MS-DOS", Locus Computing Corporation.

[135] Velten, D., R. Hinden, and J. Sax, "Reliable Data Protocol", RFC 908, BBN Communications Corporation, July 1984.

[136] Wancho, F., "Password Generator Protocol", RFC 972, WSMR, January 1986.

[137] Whelan, D., "The Caltech Computer Science Department Network", 5052:D F:82, Caltech Computer Science Department, 1982.

[138] Winston, I., "Two Methods for the Transmission of IP Datagrams Over IEEE 802.3 Networks", RFC 948, University Of Pennsylvania, June 1985.

[139] XEROX, "Internet Transport Protocols", XSIS 028112, Xerox Corporation, Stamford, Connecticut, December 1981.

PEOPLE

[AB13]	Alison Brown	CORNELL	alison@CORNELL.EDU
[AB20]	Art Berggreen	ACC	ART@ACC.ARPA
[ABB2]	A. Blasco Bonito	CNUCE	Blasco@CNUCE-VM.ARPA
[AD22]	Arlene DesJardins	CIT	arlene@VLSI.CALTECH.EDU
[AG22]	Alfred Ganz	YALE	GANZ@YALE.ARPA
[AGM]	Andy Malis	BBN	Malis@CCS.BBN.COM
[AKC]	Albert Cheng	UIUC	acheng@UIUC.EDU
[AL6]	Alexis Layton	CCA	alex@CCA-UNIX.ARPA
[AP]	Alan Parker	NRL	parker@NRL-CSS.ARPA
[ARM5]	Andrew R. Maffei	WHOI	mit-erl!aqua!arm@EDDIE.MIT.EDU
[AV]	Al Vezza	MIT	AV@XX.LCS.MIT.EDU
[AW34]	Albert Wong	NPS	Wong@NPS-CS.ARPA
[AWS3]	Andy Sills	AEROSPACE	Sills@AEROSPACE.ARPA
[AXG]	Atul Garg	HP	---none---
[AXH]	Arthur Hartwig	UQNET	---none---
[AXS]	Albert Steiner	NWU	---none---
[AXS1]	Anthony Schoener	Applicon	---none---
[AXW]	Andy Wilcox	UFL	ajw%ufl.csnet@csnet-relay
[AY5]	Akiharu Yasuda	DODIIS	dia@PAXRV-NES.ARPA
[BA4]	Brian Anderson	BBN	baanders@CCQ.BBN.COM
[BANDY]	Andrew S. Beals	LLNL	bandy@LLL-CRG.ARPA
[BC14]	Robert Cattani	COLUMBIA	Cattani@CS.COLUMBIA.EDU
[BC65]	Bill Chiarchiaro	LL	wjc@LL-VLSI.ARPA
[BG5]	Bob Gilligan	SRI	Gilligan@SRI-SPAM.ARPA
[BG25]	Bryan L. Gorman	SRI	GORMAN@BRAGGVAX.ARPA
[BJL5]	Barry J. Lustig	UCLA	barry@LOCUS.UCLA.EDU
[BJN1]	Bruce Nemnich	TMC	BJN@THINK.COM
[BJR2]	Bill Russell	NYU	Russell@NYU.ARPA
[BM40]	Bill Mitchell	U OF ARIZ	WHM@ARIZONA.EDU
[BN4]	Bill Nowicki	SUN	Nowicki@SUN.COM
[BN7]	Bich T. Nguyen	SRI	btn@SRI-TSC.ARPA
[BN9]	Bill Nesheim	CORNELL	bill@CORNELL.EDU
[BP17]	Bobbi Phillips	SRI	bobbi@SRI-TSC.ARPA
[BS24]	Barry Shein	BU	BZS%BU-CS@RELAY.CS.NET
[BSW]	Barbara Seber-Wagner	MITRE	bnsw@MITRE-BEDFORD.ARPA
[BT5]	Bob Tomlinson	LANL	dspo!tomlin@LANL.ARPA
[BWA]	Bobby W. Allen	YUMA	Allen@YUMA.ARPA
[BXC]	Bill Cheswick	NJIT	bellcore!argus!bc@MOUTON.ARPA
[BXD]	Brian Down	TORONTO	bdown%TORONTO@RELAY.CS.NET
[BXE]	Bjorn Eriksen	SWEDEN	enea!ber@SEISMO.CSS.GOV
[BXI]	Basil Irwin	UCAR	irwin%ncar@RELAY.CS.NET
[BXL]	Barry Greenberg	LOCUS	---none---
[BXL1]	Bil Lewis	FMC	---none---
[BXM]	Burton Murray	LUCID	---none---
[BXR]	Bert Raphael	HP	---none---

[BXS]	Ben M. Segal	CERN	---none---
[BXS1]	Barbara Sweeny	INDIANA	BSweeny@IUBACS.BITNET@WISCVM.WISC.EDU
[BXT1]	Bill Teel	INTEL	---none---
[CAK]	Chris Kent	PURDUE	CAK@PURDUE.EDU
[CAL7]	Charles A. Leach	OKC	CAL@OKC-UNIX
[CAS]	Carl Sunshine	SDC	Sunshine@ISI.EDU
[CAS1]	Claude S. Steffey	WSMR	csteffey@WSMRCAS1.ARPA
[CBD]	Clive B. Dawson	MCC	AI.CLIVE@MCC.COM
[CBP]	Brian Pinkerton	WISCONSON	Brian@RSCH.WISC.EDU
[CJC3]	Chase Cotton	UDEL	Cotton@HUEY.UDEL.EDU
[CH2]	Charles Hornig	SYMBOLICS	CAH@MC.LCS.MIT.EDU
[CJW2]	Cliff Weinstein	LL	cjw@LL-SST.ARPA
[CLH3]	Charles Hedrick	RUTGERS	Hedrick@RED.RUTGERS.EDU
[CMR]	Craig Rogers	ISI	Rogers@ISI.EDU
[CP10]	Craig Partridge	BBN	craig@UNIX.BBN.COM
[CSTACY]	Christopher Stacy	Palladian	CStacy@AI.AI.MIT.EDU
[CXJ]	Chris Johnson	NU	johnson%northeastern.csnet@RELAY.CS.NET
[CXL]	Clifford A. Lynch	BERKELEY	ucdla%ucbtopaz.cc@UCBARPA.BERKELEY.EDU
[CXR]	Charles Ray	CIT	---none---
[DAM1]	David A. Mosher	BERKELEY	Mosher@UCBARPA.BERKELEY.EDU
[DAVE]	David Roode	IntelliCorp	Roode@SUMEX-AIM.STANFORD.EDU
[DB35]	Danny Branis	HUJ	danny%ISRAEL.CSNET@RELAY.CS.NET
[DBJ]	David B. Johnson	DRILLTECH	DBJ@RICE.EDU
[DCP1]	David Plummer	MIT	DCP@SYMBOLICS.ARPA
[DDC1]	David Clark	MIT	DClark@MIT-MULTICS.ARPA
[DT15]	Dan Tappan	BBN	Tappan@G.BBN.COM
[DG28]	David L. Gehrt	RIACS	Dave@RIACS.ARPA
[DH17]	Douglas Hirsch	BBN	hirsch@CCS.BBN.COM
[DHH]	Doug Hunt	BBN	DHunt@CCJ.BBN.COM
[DJF]	David J. Farber	UDEL	Farber@HUEY.UDEL.EDU
[DJV1]	Darrel J. Van Buer	SDC	vanbuer@USC-ECL.USC.EDU
[DK2]	Dean B. Krafft	CORNELL	Dean@CORNELL.EDU
[DLM1]	David Mills	LINKABIT	Mills@D.ISI.EDU
[DPR]	David Reed	MIT-LCS	Reed@MIT-MULTICS.ARPA
[DRP]	Don Provan	LLNL	Provan@LLL-MFE.ARPA
[DRS4]	Dennis R. Smith	USC	Smith@USC-ECLC.USC.EDU
[DSR]	Dale Russell	SDC	SWG.Dale@ISI.EDU
[DSW]	Dan Whelan	CALTECH	Dan@CIT-20.CALTECH.EDU
[DVC]	Don Cone	SRI	CONE@SRI-SPAM.ARPA
[DXB]	David Bloom	RUTGERS	andromeda!bloom@RUTGERS.EDU
[DXB1]	Dave Bullard	CLEMSON	dave%clemson.bitnet@WISCVM.WISC.EDU
[DXB2]	Dave Borman	CRAY	dab@UMN-REI-UC.ARPA

[DXD]	Dennis J.W. Dube	VIA SYSTEMS	---none---
[DXE]	Deborah Estrin	USC	Estrin@USC-CSEB.USC.EDU
[DXG]	David Goldberg	SMI	sun!dg@UCBARPA.BERKELEY.EDU
[DXK]	Doug Konkin	ARC	doug%noah.arc.cdn%ubc.csnet@RELAY.CS.NET
[DXK1]	David M. Keirsey	HUGHES	KEIRSEY@USC-ECL.ARPA
[DXO]	David Oliver	ANSA	ANSA%ALVEY.UK@CS.UCL.AC.UK
[DXS]	Don Scelza	PERQ	---none---
[DXT]	Dave Taylor	INFERENCE	---none---
[DXT1]	Doug A. Thomae	HARRIS	---none---
[DXW]	David C. M. Wood	CU	---none---
[EAK1]	Earl Killian	LLL	EAK@S1-C.ARPA
[EBM]	Eliot Moss	MIT	EBM@XX.LCS.MIT.EDU
[EC5]	Ed Cain	DCEC	cain@EDN-UNIX.ARPA
[EF5]	Ed Franceschini	NYU	Franceschini@NYU.ARPA
[EHP]	Ed Perry	SRI	Perry@SRI-KL.ARPA
[EJN1]	Eric J. Norman	WISC	EJNorman@UNIX.MACC.WISC.EDU
[ERK3]	Edward Kozel	SRI	Kozel@SRI-SPAM.ARPA
[EXY]	Elaine Yamin	ATT	---none---
[FAS]	Fred Segovich	GSWD	fred@GSWD-VMS.ARPA
[FJW]	Frank J. Wancho	WSMR	WANCHO@SIMTEL20.ARPA
[FLM2]	F. Lee Maybaum	MILNET	Maybaum@DDN1.ARPA
[FRAN]	Francine Perillo	SRI	Perillo@NIC.SRI.COM
[FW17]	Frederic Wendling	NSF	---none---
[FXA]	Frederick M. Avolio	DECUAC	Avolio@DECUAC.DEC.COM
[FXH]	Felix Hou	JVNC	Hou%pucc.bitnet@WISCVM.WISC.EDU
[FXS]	Frank Solensky	PRIME	---none---
[GAA]	Glenn A. Adams, Jr.	MIT/LL	glenn@LL-XN.ARPA
[GB7]	Gerd Beling	DFVLR	GBELING@ISI.EDU
[GBR]	G. Brendan Reilly	WHARTON	Reilly@WHARTON.ARPA
[GC]	Graham Campbell	BNL	gc@BNL.ARPA
[GEOF]	Geoff Goodfellow	SRI	Geoff@SRI-CSL.ARPA
[GH29]	Gregory Hidley	UCSD	hidley@UCSD.EDU
[GIH]	Glenn I. Hastie II	SRI	Hastie@SRI-SPAM.ARPA
[GLH5]	Gavin L. Hamphill	DREA	Hemphill@DREA-XX.ARPA
[GW22]	Grant Weiler	UTAH	Weiler@UTAH-20.ARPA
[GXB]	George Broomell	UKY	UKT101%UKCC.BITNET@WISCVM.WISC.EDU
[GXG]	Gary Gagnon	CSC	---none---
[GXL]	Guillermo A. Loyola	IBM	Loyola%ibm-sj@RELAY.CS.NET
[GXM]	Gaylord Miyata	Goldhill	Miyata%oz.ai.mit.edu@XX.LCS.MIT.EDU
[GXP]	Gill Pratt	MIT	gill%mit-ccc@MC.LCS.MIT.EDU
[GXP1]	Gottfried Petschl	TUNET	---none---
[GXS]	Fene Spafford	GATECH	spaf@GATECH.EDU
[GXW]	Gary Wallace	UMASS	gary%umass.csnet@RELAY.CS.NET
[GXW1]	George Ward	Motorola	---none---

[HCF2]	Harry Forsdick	BBN	Forsdick@A.BBN.COM
[HDW2]	Howard Wactlar	CMU	Wactlar@CMU-CS-A.EDU
[HGM]	Hallam Murray	XEROX	Murray.PA@XEROX.COM
[HM]	Hank Magnuski	---	JOSE.PA@XEROX.COM
[HWB]	Hans-Werner Braun	MICHIGAN	HWB@GW.UMICH.EDU
[HXC]	Haesoon Cho	KAIST	hscho%kaist.csnet@RELAY.CS.NET
[HXH]	Harry G. Heard	JVNC	---none---
[IEEE]	Vince Condello	IEEE	---none---
[IW5]	Ira Winston	UPENN	Ira%upenn.csnet@RELAY.CS.NET
[JA1]	Jules P. Aronson	NLM	Aronson@NLM-MCS.ARPA
[JAG3]	Jeff Gumpf	CWRU	G.Gumpf@CS.COLUMBIA.EDU
[JAKE]	Jake Feinler	SRI	Feinler@SRI-NIC.ARPA
[JAR4]	Jim Rees	WASHINGTON	JIM@WASHINGTON.ARPA
[JBP]	Jon Postel	ISI	Postel@ISI.EDU
[JBW1]	Joseph Walters, Jr.	BBN	JWalters@CCX.BBN.COM
[JC11]	Jim Clifford	LANL	jrc@LANL.ARPA
[JC106]	Joel Conklin	GE	Conklin@GE-CRD.ARPA
[JCN2]	John C. Nunn	NBS	NUNN@NBS-VMS.ARPA
[JD21]	Jonathan Dreyer	BBN	JDreyer@CCV.BBN.COM
[JDG]	Jim Guyton	RAND	guyton@RAND-UNIX.ARPA
[JEM]	Jim Mathis	SRI	Mathis@SRI-KL.ARPA
[JFH2]	Jack Haverty	BBN	Haverty@CCV.BBN.COM
[JFW]	Jon F. Wilkes	STC	Wilkes@STC.ARPA
[JGH]	Jim Herman	BBN	Herman@CCJ.BBN.COM
[JG46]	Jonathan Goodman	YALE	Goodman@YALE.ARPA
[JHH8]	Jim Haynes	UCSC	UCSCC!HAYNES@UCBVAX.BERKELEY.EDU
[JK7]	Jim Koda	ISI	Koda@ISI.EDU
[JKR1]	Joyce K. Reynolds	ISI	JKREYNOLDS@ISI.EDU
[JL15]	Jay Lepreau	UTAH	Lepreau@UTAH-CS.ARPA
[JLM23]	John L. Mills	HONEYWELL	Mills@CISL-SERVICE-MULTICS.ARPA
[JLR4]	John Romkey	FTPSW	Romkey@BORAX.LCS.MIT.EDU
[JNL1]	John Larson	XEROX	jlarson.pa@XEROX.COM
[JO5]	John O'Donnell	YALE	ODonnell@YALE.ARPA
[JR15]	John Rhodes	LOGNET	JRhodes@LOGNET2.ARPA
[JR17]	John L. Robinson	CANADA	Robinson@DMC-CRC.ARPA
[JRL8]	John LoVerso	SUNY	LoVerso%buffalo@RELAY.CS.NET
[JRM1]	John Mullen	MITRE	Mullen@MITRE.ORG
[JRS8]	Jeffrey R. Schwab	PURDUE	jrs@PURDUE.EDU
[JS38]	Joseph Sventek	LBL	JSSventek@LBL.ARPA
[JSG5]	Jon Goodridge	BBN	jsg@CCM.BBN.COM
[JSQ1]	John S. Quarterman	UT	jsq@SALLY.UTEXAS.EDU
[JW1]	Jill Westcott	BBN	Westcott@A.BBN.COM
[JWF]	Jim Forgie	LL	jwf@LL-EN.ARPA
[JWO1]	James W. O'Toole	UMD	james@MIMSY.UMD.EDU
[JXA]	Jim Adams	MACOM	---none---

[JXB]	John Blair	NEOCM	cbosgd!neoucom!johnb@UCBARPA.BERKELEY.EDU
[JXB1]	Jay C. Bergeron	FACTRON	---none---
[JXC]	Jeffrey D. Case	UTK	jdcase01%utkvx3.bitne@WISCVM.WISC.EDU
[JXE]	Jan Ellison	GTE	---none---
[JSD4]	Jean Darling	WISC-MADI	Darling@RSCH.WISC.EDU
[JXH]	Jeffrey Honig	CLARKSON	$JCH%CLVM.BITNET@UCBVAX.BERKELEY.EDU
[JXH1]	Jack Hahn	UMDC	hahn%umdc.bitnet@WISCVM.WISC.EDU
[JXJ]	Jackie Jones	NBS	---none---
[JXJ1]	James Jokl	UVA	---none---
[JXJ2]	Jeffrey Jongeward	BAC	ssc-vax!root@BEAVER.CS.WASHINGTON.EDU
[JXM]	Jim McClurg	Sperry	---none---
[JXO]	Jack O'Neil	ENCORE	---none---
[JXR]	Joe Ragland	TUCC	---none---
[JXS]	J. Simonetti	SUNY	joes@SBCS.ARPA
[JXS1]	Jery Scott	TWG	---none---
[JXW]	John Wray	RSRE	JCW2%RSRE@CS.UCL.AC.UK
[JXY]	Joe Yancone	USARMY	Yancone@CRDC.ARPA
[KCS1]	Kevin C. Smallwood	PURDUE	kcs@PURDUE.EDU
[KFD]	Ken Dove	AIDS	kfd@AIDS-UNIX.ARPA
[KLH]	Ken Harrenstien	SRI	KLH@NIC.SRI.COM
[KMC3]	Kenneth M. Crepea	SRI	Crepea@SRI-SPAM.ARPA
[KO11]	Kevin O'Keefe	HAZELTINE	Hazeltine@ISI.EDU
[KRS]	Karen Sollins	MIT	Sollins@XX.LCS.MIT.EDU
[KSL]	Kirk Lougheed	SU	Lougheed@SIERRA.STANFORD.EDU
[KTP]	Kenneth T. Pogran	BBN	Pogran@CCQ.BBN.COM
[KWP]	Kevin W. Paetzold	DEC	Paetzold@MARLBORO.DEC.COM
[KXC]	Ken Chen	Perceptronics	---none---
[KXC1]	Kevin B. Casey	Gallaudet	kbcasey%gallua.bitnet@WISCVM.WISC.EDU
[KXS]	Kathy Simpson	OSU	---none---
[LB3]	Len Bosack	STANFORD	Bosack@SU-SCORE.STANFORD.EDU
[LB16]	Liudvikas Bukys	ROCHESTER	Bukys@ROCHESTER.ARPA
[LCN]	Lou Nelson	AEROSPACE	Lou@AEROSPACE.ARPA
[LCS]	Lou Schreier	SRI	Schreier@D.ISI.EDU
[LH2]	Lincoln Hu	COLUMBIA	Hu@CS.COLUMBIA.EDU
[LOU]	Lou Salkind	NYU	Salkind@NYU.ARPA
[LM8]	Liza Martin	MIT-LCS	Martin@XX.LCS.MIT.EDU
[LRB]	Larry Bierma	NPRDC	Bierma@NPRDC.ARPA
[LW26]	Linda Winkler	ARGONNE	B32357%ANLVM.BITNET@WISCVM.WISC.EDU
[LWR]	Larry Robinson	LLNL	lwr@S1-C.ARPA
[LXL]	Len Lattanzi	SENTRY	---none---
[LXR]	Lawrence Rogers	Princeton	---none---

[LXR1]	Louis Romero	MMAERO	MMAERO@ISI.EDU
[MA]	Mike Accetta	CMU	MIKE.ACCETTA@CMU-CS-A.EDU
[MAB4]	Mark Brown	USC	Mark@USC-ECLB.USC.EDU
[MAE]	Marc A. Elvy	HARVARD	elvy@HARVARD.EDU
[MBG]	Michael Greenwald	MIT-LCS	Greenwald@MIT-MULTICS.ARPA
[MB]	Michael Brescia	BBN	Brescia@CCV.BBN.COM
[MB31]	Michael Bereschinsky	USARMY	Bereschinsky@D.ISI.EDU
[MC17]	Matt Crawford	UCHICAGO	Crawford@ANL-MCS.ARPA
[MCA1]	Mary C. Akers	FISG	MCAkers@TPSC-T.ARPA
[MCSJ]	Mike StJohns	TPSC	StJohns@MIT-MULTICS.ARPA
[MDC]	Martin D. Connor	MIT AI	Marty@HT.AI.MIT.EDU
[MF31]	Martin J. Fouts	NASA-AMES	fouts@ARC.NASA.GOV
[MH12]	Mark Horton	ATT	mark@UCBARPA.BERKELEY.EDU
[MJM2]	Mike Muuss	BRL	Mike@BRL.MIL
[MK17]	Mike Karels	BERKELEY	Karels@UCBARPA.BERKELEY.EDU
[MKL1]	Mark Lottor	MIT	MKL@NIC.SRI.COM
[MLC]	Mike Corrigan	DDN	Corrigan@DDN1.ARPA
[MMM3]	Michael McDonnell	USAETL	Mike@ETL.ARPA
[MO2]	Michael O'Brien	RAND	OBrien@RAND-UNIX.ARPA
[MO14]	Michele Olivant	JHU	Olivant@HAWAII-EMH.ARPA
[MPM]	M. Preston Mullen	NRL	mullen@NRL-CSS.ARPA
[MRC]	Mark Crispin	STANFORD	Admin.MRC@SU-SCORE.STANFORD.EDU
[MS9]	Martin Schoffstall	RPI	schoff%rpi@RELAY.CS.NET
[MS56]	Marvin Solomon	WISC	Solomon@WISC.EDU
[MSM1]	Milo S. Medin	AMES	medin@ARC.NASA.GOV
[MTR]	Marshall Rose	NRTC	MRose@NRTC.ARPA
[MXA]	Melanie Anderson	UIUC	Melanie@UIUC.EDU
[MXA1]	M. Aziza	INRIA	---none---
[MXA2]	Mats Andersson	Sweden	---none---
[MXC]	Mike O'Connor	SPACECOM	oconnor@TRANTOR.UMD.EDU
[MXF]	Mark Fedor	NYSER	Fedor@TCGOULD.TN.CORNELL.EDU
[MXG]	Mike Gilbert	SLI	Software-Leverage@USC-ECLB.USC.EDU
[MXH]	Martin Hayman	Symbolics	---none---
[MXK]	Michael Kazar	CMU	Mike.Kazar@CMU-CS-K.EDU
[MXL]	Michael Levine	CMU	Levine@A.PSY.SMU.EDU
[MXM]	Marc M. Meilleur	COINS	COINS@ISI.EDU
[MXP]	Michael K. Peterson	HUGHES	scgvaxd!mkp@CSVAX.CALTECH.EDU
[MXP1]	Mark C. Powers	NSWC	mpowers@NSWC-G.ARPA
[MXR]	Mark A. Rosenstein	MIT	mark@BORAX.LCS.MIT.EDU
[MXR1]	Mike Russell	BROWN	---none---
[MXS]	Marc Shapiro	INRIA	Marc.Shapiro@C.CS.CMU.EDU
[MXS1]	Marina Simonians	RDL	---none---
[MXS2]	Mark Starner	SDC	burdvax!starner@PURDUE.EDU
[MXS3]	Mark St. Paul	NMSU	stpaul%nmsu.csnet@RELAY.CS.NET
[MXV]	Mark Vasoll	OKSTATE	vasoll%a.cs.okstate.edu@RELAY.CS.NET

[NAL]	Neil Lann	LLL	NAL@LLL-TIS-B.ARPA
[NC3]	J. Noel Chiappa	MIT	JNC@XX.LCS.MIT.EDU
[NG]	Neil Gower	ROCKWELL	GOWER@D.ISI.EDU
[NH2]	Nat Howard	IM	nrh@DDNT.ARPA
[NMM]	Mike Minnich	UDELEE	MMinnich@HUEY.UDEL.EDU
[NXS]	Nayel el-Shafei	HP	Shafei%oz.ai.mit.edu@XX.LCS.MIT.EDU
[PA5]	Philip Almquist	STANFORD	Almquist@SU-SCORE.STANFORD.EDU
[PAM6]	Paul McNabb	RICE	pam@PURDUE.EDU
[PFS2]	Paul Sass	CECOM	Sass@D.ISI.EDU
[PGM]	Paul G. Milazzo	RICE	Milazzo@RICE.EDU
[PHD1]	Pieter Ditmars	BBN	pditmars@CCX.BBN.COM
[PK]	Peter Kirstein	UCL	Kirstein@ISI.EDU
[PK28]	Philip R. Karn, Jr.	BCR	Karn@BELLCORE-CS-GW.ARPA
[PL4]	Phil Lapsley	BERKELEY	phil@UCBARPA.BERKELEY.EDU
[PM1]	Paul Mockapetris	ISI	Mockapetris@ISI.EDU
[PM4]	Paul Martin	SRI	PMartin@SRI-AI.ARPA
[PS27]	Paal Spilling	NTA	Spilling@D.ISI.EDU
[PXA]	Phillip G. Apley	BITSTREAM	PGA@MIT-OZ.ARPA
[PXB]	Pat Boyle	UBC	boyle.ubc@RELAY.CS.NET
[PXC]	Pam Cance	XEROX	cance.osbunorth@XEROX.COM
[PXD]	Pete Delaney	ECRC	pete%ecrcvax@RELAY.CS.NET
[PXH]	Paul Hyder	UCSB	UCSBCSL!ENGRVAX!HYDER@UCBVAX.BERKELEY.EDU
[PXH1]	Peter Ho	HAC	---none---
[PXM]	Pat Marques	NSRDC	marques@DTRC.ARPA
[PXN]	Peter Nellessen	SIEMENS	crtvax!pn@CMU-CS-SPICE.EDU
[PXP]	Paul Patton	HONEYWELL	---none---
[RA11]	Rick Adams	CCI	Rick@SEISMO.CSS.GOV
[RA17]	Bob Albrightson	WASHINGTON	BOB@WASHINGTON.ARPA
[RB9]	Richard Bisbey	ISI	Bisbey@ISI.EDU
[RBN1]	Ronald Natalie, Jr.	BRL	ron@TGR.BRL.MIL
[RBW]	Richard B. Wales	UCLA	WALES@LOCUS.UCLA.EDU
[RHC3]	Robert Cole	UCL	robert@CS.UCL.AC.UK
[RC77]	Robert Carey	YALE	CAREY@YALE.ARPA
[RDB2]	Robert Bressler	BBN	Bressler@CCW.BBN.COM
[RDR4]	Dennis Rockwell	BBN	DRockwell@SH.CS.NET
[RE22]	Rand Enas	CDC	CDC-DDN@DDN2.ARPA
[RFD1]	Robert F. Donnelly	ARDC	donnelly@ARDEC.ARPA
[RG12]	Roger L. Gulbranson	UMINN	ROGERG@UMN-UCC-VA.ARPA
[RH6]	Robert Hinden	BBN	Hinden@CCV.BBN.COM
[RH60]	Roger Hale	MIT	Roger@LL-SST.ARPA
[RHC3]	Robert Cole	UCL	Robert@CS.UCL.AC.UK
[RHS4]	Richard H. Sweed	RADC	Sweed@RADC-20.ARPA
[RHT]	Robert Thomas	BBN	BThomas@F.BBN.COM
[RKJ2]	Richard Johnsson	DEC	johnsson@DECWRL.DEC.COM
[RLB3]	Ronald L. Broersma	NOSC	Ron@NOSC.MIL
[RLH2]	Ronald L. Hartung	NSWC	ron@NSWC-WO.ARPA

[RLS6]	Ronald L. Smith	COINS	COINS@ISI.EDU
[RM8]	Roy Marantz	RUTGERS	Marantz@RUTGERS.EDU
[RN6]	Rudy Nedved	CMU	Rudy.Nedved@CMU-CS-A.EDU
[RNM1]	Neil MacKenzie	RSRE	CLE%RSRE@CS.UCL.AC.UK
[RR2]	Raleigh Romine	TELEDYNE	romine@SEISMO.CSS.GOV
[RR18]	Ron Reisor	UDEL	ron@HUEY.UDEL.EDU
[RR26]	William R. Reilly	USARMY	RREILLY@JPL-MILVAX.ARPA
[RSD2]	Robert S. Dixon	OHIO	---none---
[RSM1]	Robert S. Miles	NRTC	RSMILES@USC-ECL.USC.EDU
[RTL]	Richard Lacoss	MITLL	Lacoss@LL-XN.ARPA
[RWS4]	Robert W. Scheifler	ARGUS	RWS@XX.LCS.MIT.EDU
[RWT2]	Robert W. Tinker	DTNS	tinker@DTIX.ARPA
[RXA]	Rex Aschenbrenner	CGI	Rex%CGIVB%CGI.CSNET@RELAY.CS.NET
[RXB]	Rafael Bracho	SPAR	RXB@SRI-KL.ARPA
[RXB1]	Randolph Bentson	CSU	Bentson%ColoState@RELAY.CS.NET
[RXB2]	Robert Bybee	CHROMATICS	---none---
[RXD]	Regine Dussaulx	CCVR	---none---
[RXE]	R. Enas	CDC	CDC-DDN@DDN2.ARPA
[RXG]	Richard Gopstein	RCA	Gopstein@RUTGERS.EDU
[RXH]	Russell Hobby	UCDAVIS	ucdavis!deneb!ccruss@UCBVAX.BERKELEY.EDU
[RXJ]	Ronald Johnson	APPLE	rlj%apple@RELAY.CS.NET
[RXJ1]	Richard A. Jones	UColoB	Jones_R%Colorado.bitnet@WISCVM.ARPA
[RXM]	Robert Myhill	BBN	Myhill@CCS.BBN.COM
[RXM1]	Robert McQueen	SIT	SIT.MCQUEEN@CU20B.COLUMBIA.EDU
[SA1]	Sten Andler	ARPA	andler.ibm-sj@RAND-RELAY.ARPA
[SA2]	Saul Amarel	ARPA	Amarel@ISI.EDU
[SA29]	Susan Ament	EMORY	OSSSA@EMORY.ARPA
[SAK3]	Steven A. Kahn	JHAPL	Steve@APLVAX.ARPA
[SB28]	Scott Bradner	HARVARD	sob@HARVARD.EDU
[SC3]	Steve Casner	ISI	Casner@ISI.EDU
[SGC]	Steve Chipman	BBN	Chipman@F.BBN.COM
[SHB]	Steven Blumenthal	BBN	BLUMENTHAL@VAX.BBN.COM
[SIP]	Serge Polevitzky	SDSC	SERGE@NOSC-F4.MIL
[SK8]	Steve Kille	UCL	Steve@CS.UCL.AC.UK
[SM6]	Sean McLinden	DSL	McLinden@PITTSBURGH.EDU
[SMF]	Steven M. Feldman	TYMNET	ARPAVAX.feldman@UCBARPA.BERKELEY.EDU
[SSB]	Scott S. Bertilson	UMN	arpaadm@UMN-REI-UC.ARPA
[SXB]	Steve Byrne	TARTAN	Byrne@CMU-CS-C.EDU
[SXB1]	Scott A. Baird	FORMATIVE	---none---
[SXF]	Steve Fogel	MTCS	SFogel!mtcs!mtxinu@UCBARPA.BERKELEY.EDU
[SXH]	Steven L. Howell	NSWCWO	---none---
[SXI]	Slawomir Ilnicki	HP	---none---
[SXM]	Scott Marcus	SPARTACUS	---none---

[SXM1]	Scooter Morris	GENENTECH	scooter@CGL.UCSF.EDU
[SXS]	Steve Silverman	MITRE	Blankert@MITRE-GATEWAY.ORG
[SXS1]	Steven J. Schroeder	PENNSTATE	SJS%PSUVM.BITNET@WISCVM.WISC.EDU
[SXT]	S. Takagi	ICOT	takagi%icot.jp@RELAY.CS.NET
[TE2]	Timothy Eldredge	TEK	G.ELDRE@SU-SCORE.ARPA
[TF6]	Thomas Ferrin	UCSF	Ferrin@CGL.UCSF.EDU
[TH15]	Tracy Holt	GMU	Holt%gmuvax.bitnet@WISCVM.WISC.EDU
[THD]	Thomas Dunigan	ORNL	dunigan@ORNL-MSR.ARPA
[TM10]	Tracy Mallory	BBN	TMallory@CCV.BBN.COM
[TML]	T. Michael Louden	MITRE	Louden@MITRE-GW.ORG
[TRG4]	Tim Gielbelhaus	HONEYWELL	Giebelhaus@HI-MULTICS.ARPA
[TXB]	Ted Baker	FSU	baker@WASHINGTON.ARPA
[TXC]	Tony Cincotta	DTNSRDC	tony@NALCON.ARPA
[TXM]	Trudy Miller	ACC	Trudy@ACC.ARPA
[TXM1]	Theodore Mead	ROCHESTER	UR-TUT!MEAD@ROCHESTER.ARPA
[TXN]	Todd Nugent	U CHICAGO	Nugent@ANL-MCS.ARPA
[TXR]	Tim Radzykewycz	GE	calma!radzy@UCBVAX.BERKELEY.EDU
[TXT]	Terry Terbush	GWU	tlt%gwuvm.bitnet@WISCVM.WISC.EDU
[TXW]	Tom Wadlow	LLL	TAW@S1-C.ARPA
[UXB]	Ulf Bilting	CHALMERS	bilting@PURDUE.EDU
[WCB3]	William C. Bard	UTexas	bard@NGP.CC.UTEXAS.EDU
[WDL]	Walter Lazear	MITRE	Lazear@MITRE.ORG
[WF3]	William E. Fink	NRLRCD	bill@NRL.ARPA
[WG]	Wayne Graves	LBL	WLGraves@LBL.ARPA
[WJC2]	Bill Croft	STANFORD	Croft@SUMEX-AIM.ARPA
[WM3]	William Melohn	DEC	Melohn@MARLBORO.DEC.COM
[WPJ]	William Jones	USRA	Jones@AMES-VMSB.ARPA
[WW2]	Wally Wedel	NBI	wedel@NGP.UTEXAS.EDU
[WWS]	Bill Seemuller	USARMY	bill@ETL.ARPA
[WXB]	William L. Biagi	CISCO	---none---
[WXL]	William Lampeter	UR	bill@ROCHESTER.ARPA
[WXM]	William Macgregor	BBN	macg@BBN.COM
[YXN]	Yen Nguyen	ARINC	Yen@ARINC-GW.ARPA
[YXS]	Yaski Saito	NTT	NTT-20!yaski@SU-SHASTA.ARPA
[ZSU]	Zaw-Sing Su	SRI	ZSu@SRI-TSC.ARPA

APPENDIX A

Network Numbers

The network numbers in class A, B, and C network addresses are allocated among Research, Defense, Government (Non-Defense) and Commercial uses.

Class A (highest-order bit 0)

Research allocation:	8
Defense allocation:	24
Government allocation:	24
Commercial allocation:	94
Reserved Addresses:	(0, 127)
Total	128

Class B (highest-order bits 1-0)

Research allocation:	1024
Defense allocation:	3072
Government allocation:	3072
Commercial allocation:	12286
Reserved Addresses:	(0, 16383)
Total	16384

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

Research allocation:	65536
Defense allocation:	458725
Government allocation:	458725
Commercial allocation:	1572862
Reserved Addresses:	(0, 2097151)
Total	2097152

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

All addresses in this class are used for multicast addresses.

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

All addresses in this class are reserved for future use.

Within the Research community, 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 4.3 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 Research to Defense, Government or Commercial status. Thus, network identifiers may change state among Research, Defense, Government and Commercial, but the number of identifiers allocated to each use must remain within the limits indicated above. To make possible this fluid assignment, the network identifier spaces are not allocated by simple partition, but rather by specific assignment.

Protocol Identifiers

These assignments are shared by the four communities.

Port Numbers

These assignments are shared by the four communities.

ARPANET Link Numbers

These assignments are shared by the four communities.

IP Version Numbers

These assignments are shared by the four communities.

TCP, IP and Telnet Option Identifiers

These assignments are shared by the four communities.

Implementation:

Joyce Reynolds is the coordinator for all number assignments.