

Network Working Group  
Request for Comments: 990

J. Reynolds  
J. Postel  
ISI  
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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

## 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.

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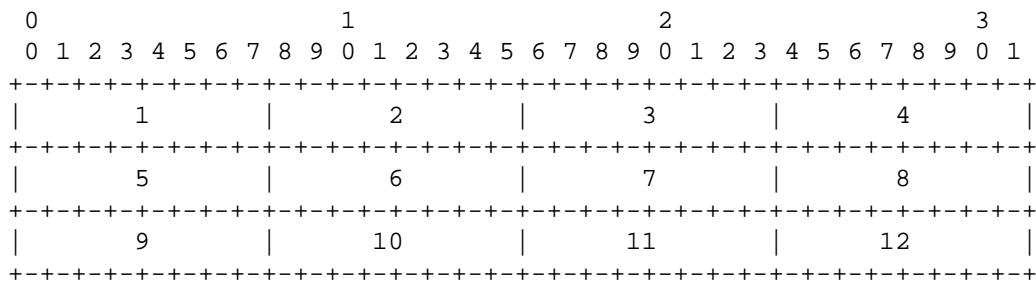
ARPA mail: JKREYNOLDS@ISI.EDU

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, Menlo 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.

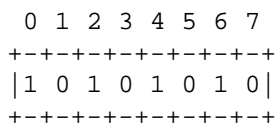
The convention in the documentation of Internet Protocols is to express numbers in decimal and to picture data in "big-endian" order [131]. That is, fields are described left to right, with the most significant octet on the left and the least significant octet on the right.

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

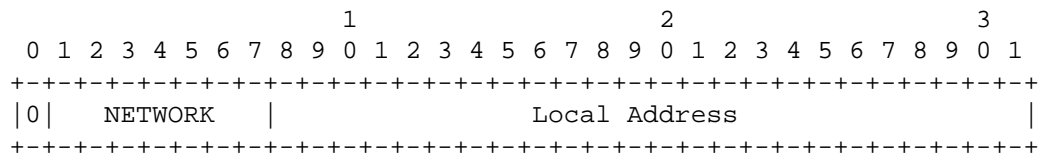
Similarly, whenever a multi-octet field represents a numeric quantity

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

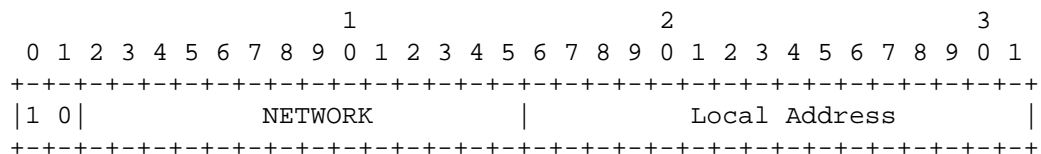
The network numbers listed here are used as internet addresses by the Internet Protocol (IP) [46,101]. The IP uses a 32-bit address field and divides that address into a network part and a "rest" or local address part. The division takes 3 forms or classes.

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.



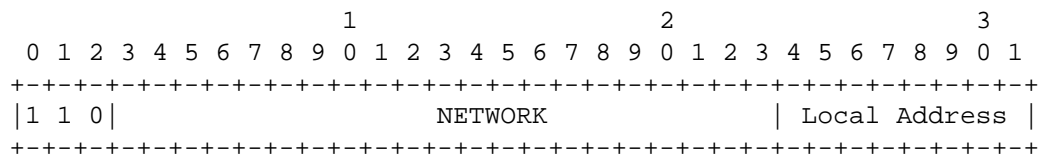
## Class A Address

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.

```

              1              2              3
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-----+-----+-----+-----+-----+-----+-----+-----+
| 1 1 1 0 |                               multicast address      |
+-----+-----+-----+-----+-----+-----+-----+-----+

```

#### 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 categories 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 or 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	SlNET	LLL-Sl-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]



## Network Numbers

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]

## Network Numbers

R 128.105.rrr.rrr	WISC-CS	Univ. of Wisconsin	[129,CBP]
D 128.106.rrr.rrr	SRI-PSO-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]

## Network Numbers

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]

## Network Numbers

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 192.005.015.rrr	T 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]

## Network Numbers

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	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]

## Network Numbers

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]

## Network Numbers

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]



## Network Numbers

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-RES-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]



## Network Numbers

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-Appollo-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]

## Network Numbers

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 Lisp & 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	CSUNRELEETHER	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]

## Network Numbers

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]

## Network Numbers

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]

## Network Numbers

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]

## Network Numbers

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		[ <a href="#">44</a> ,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	[ <a href="#">101</a> ,JBP]
5	ST	ST Datagram Mode	[ <a href="#">51</a> ,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]

## Protocol Numbers

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]

## Port Numbers

123	NTP	Network Time Protocol	[ <a href="#">78</a> ,DLM1]
125	LOCUS-MAP	Locus PC-Interface Net Map Server	[ <a href="#">134</a> ,BXG]
127	LOCUS-CON	Locus PC-Interface Conn Server	[ <a href="#">134</a> ,BXG]
129	PWDGEN	Password Generator Protocol	[ <a href="#">136</a> ,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	[ <a href="#">13</a> ,AV]
245	LINK	LINK	[ <a href="#">18</a> ,RDB2]
247-255		Unassigned	[JBP]

## Autonomous System Numbers

## 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]

## Autonomous System Numbers

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]

## Autonomous System Numbers

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 an 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	Internet			
binary	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 send 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).

Header

```
...-----+-----+-----+
MAC Header|      Length      |      802.{3/4/5} MAC
...-----+-----+-----+

+-----+-----+-----+
| Dsap=K1| Ssap=K1| control|      802.2 SAP
+-----+-----+-----+

+-----+-----+-----+-----+
|protocol id or org code =K2|   Ether Type   |      802.2 SNAP
+-----+-----+-----+-----+
```

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	[PXX]
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).

## Public Data Network Numbers

## 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

## Machine Names

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 SYSMANT
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



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

## Protocol Names

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

## Terminal Type Names

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

## Terminal Type Names

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

## Terminal Type Names

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

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## 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.