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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>
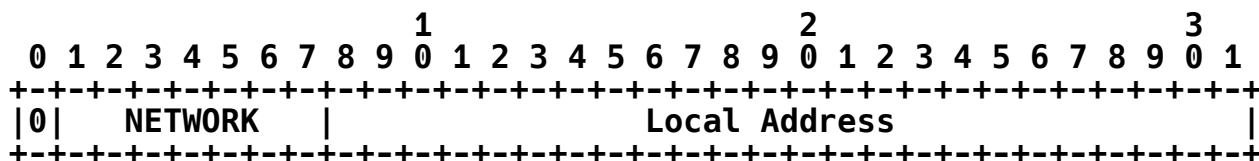> ARPA mail: JKREYNOLDS@USC-ISIB.ARPA

Most of the protocols mentioned here are documented in the RFC series
of notes. The more prominent and more generally used are documented
in the "Internet Protocol Transition Workbook" [39] or in the old
"ARPANET Protocol Handbook" [40] prepared by the NIC. Some of the
items listed are undocumented. Further information on protocols can
be found in the memo "Official ARPA-Internet Protocols" [104].

In all cases the name and mailbox of the responsible individual is
indicated. In the lists that follow, a 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 service.
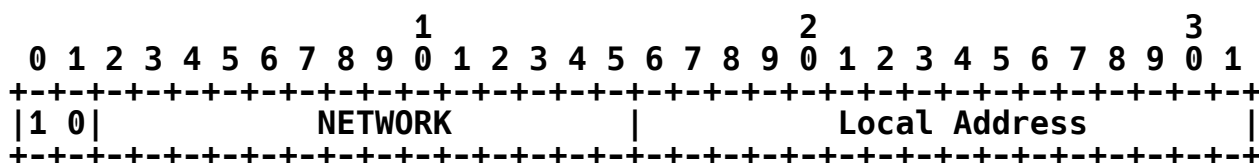
ASSIGNED NETWORK NUMBERS

The network numbers listed here are used as internet addresses by the
Internet Protocol (IP) [39,92]. 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.

```
                   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
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|0|   NETWORK   |                Local Address                  |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```
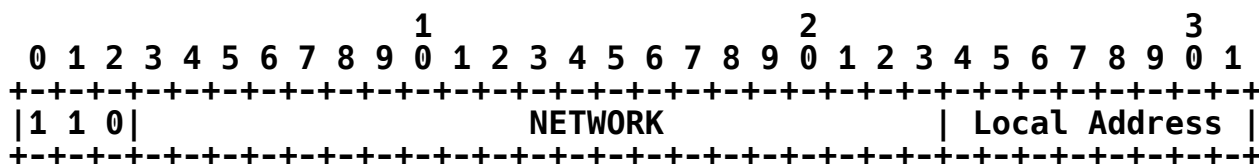
Class A Address

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.

```
                   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 0|         NETWORK         |           Local Address         |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

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.

```
                   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 0|               NETWORK               | Local Address |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

Class C Address

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

One commonly used notation for internet host addresses divides the
32-bit address into four 8-bit fields and specifies the value of each
field as a decimal number with the fields separated by periods. This
is called the "dotted decimal" notation. For example, the internet
address of USC-ISIB.ARPA 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. When such usage is called for, the address zero is to be
    interpreted as meaning "this", as in "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. Or, the
        address 0.0.0.37 could be interpreted as meaning host 37 on this
        network.

    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,BXA]
    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               [10,40,SA2]
    D 011.rrr.rrr.rrr     DODIIS        DoD INTEL INFO SYS          [AY7]
    C 012.rrr.rrr.rrr     ATT           ATT, Bell Labs             [MH12]
    C 014.rrr.rrr.rrr     PDN           Public Data Network        [REK4]
    R 018.rrr.rrr.rrr T MIT-TEMP        MIT Network          [20,103,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]
    D 024.rrr.rrr.rrr     MINET         MINET                   [10,DHH]
    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 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                   [JBP]
      009.rrr.rrr.rrr                 Unassigned                   [JBP]
      013.rrr.rrr.rrr                 Unassigned                   [JBP]
      015.rrr.rrr.rrr-017.rrr.rrr.rrr Unassigned                   [JBP]
      019.rrr.rrr.rrr-020.rrr.rrr.rrr Unassigned                   [JBP]
      033.rrr.rrr.rrr-035.rrr.rrr.rrr Unassigned                   [JBP]
      037.rrr.rrr.rrr-038.rrr.rrr.rrr Unassigned                   [JBP]
      040.rrr.rrr.rrr                 Unassigned                   [JBP]
      042.rrr.rrr.rrr-043.rrr.rrr.rrr Unassigned                   [JBP]
      045.rrr.rrr.rrr-126.rrr.rrr.rrr Unassigned                   [JBP]
      127.rrr.rrr.rrr                 Reserved                     [JBP]
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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	[69,DLM1]
R	128.005.rrr.rrr	FORDNET	FORD DCNET	[69,DLM1]
R	128.006.rrr.rrr	RUTGERS	RUTGERS	[CLH3]
R	128.007.rrr.rrr	DFVLR	DFVLR DCNET Network	[HDC1]
R	128.008.rrr.rrr	UMDNET	Univ of Maryland DCNET	[69,DLM1]
R	128.009.rrr.rrr	ISI-NET	USC-ISI Local Network	[CMR]
R	128.010.rrr.rrr	PURDUE-CS-NET	Purdue Computer Science	[CAK]
R	128.011.rrr.rrr	BBN-CRONUS	BBN DOS Project	[64,WIM]
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	[111,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	[52,53,JLM23]
R	128.036.rrr.rrr	YALE-NET	YALE NET	[128,JO5]
D	128.037.rrr.rrr	YPG-NET	Yuma Proving Grounds	[10,BXA]
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	[69,128,PGM]
R	128.043.rrr.rrr	DRENET	Canada REF ARPANET	[10,JR17]

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   D 128.044.rrr.rrr   WSMR-NET       White Sands Network       [TBS]
   C 128.045.rrr.rrr   DEC-WRL-NET    DEC WRL Network       [128,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         [128,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             [128,MDC]
   R 128.053.rrr.rrr   SAC-PR-2       SAC PRNET Number 2        [BG5]
   R 128.054.rrr.rrr   UCSD           UC San Diego Network  [128,GH29]
   R*128.055.rrr.rrr   MFENET         LLNL MFE Network       [109,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    [128,RXB]
   R 128.059.rrr.rrr   CU-NET         Columbia University    [128,LH2]
   D 128.060.rrr.rrr   NRL-LAN        NRL Lab Area Net          [WF3]
   R*128.061.rrr.rrr   GATECH         Georgia Tech           [128,SXA]
   R 128.062.rrr.rrr   MCC-NET        MCC Corporate Net      [128,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   SCRC-ETHERNET  SCRC ETHERNET          [128,CH2]
   R 128.082.rrr.rrr   UMICH          UOFMICHIGAN              [8,HWB]
   R 128.083.rrr.rrr   UTAUSTIN       U. Texas Austin       [128,JSQ1]
   R 128.084.rrr.rrr   CORNELL-NET    Cornell Backbone Net   [128,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      [128,SGC]
   C*128.090.rrr.rrr   PQS            PERQ SYSTEMS CORP      [128,DXS]
   R 128.091.rrr.rrr   UPENN          UPenn Campus Network   [128,IXW]
   R 128.092.rrr.rrr   INTELLINET     INTELLICORP NET       [128,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    [128,RA17]
   C*128.096.rrr.rrr   BELLCORE-NET   BELLCORE-NET             [PK28]
   R 128.097.rrr.rrr   UCLANET        UCLA Network             [BJL5]
     128.098.rrr.rrr-191.254.rrr.rrr Unassigned                [JBP]
     191.255.rrr.rrr                 Reserved                  [JBP]
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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	[128,PK28]
R	192.005.001.rrr	CISLHYPERNET	Honeywell	[JLM23]
R	192.005.002.rrr	WISC	Univ of Wisconsin Madison	[RS23]
C	192.005.003.rrr	HP-DESIGN-AIDS	HP Design Aids	[NXK]
C	192.005.004.rrr	HP-TCG-UNIX	Hewlett Packard TCG Unix	[NXK]
R	192.005.005.rrr	DEC-MRNET	DEC Marlboro Ethernet	[119,KWP]
R	192.005.006.rrr	DEC-MRRAD	DEC Marlboro Developmt	[119,KWP]
R	192.005.007.rrr	CIT-CS-NET	Caltech-CS-Net	[126,DSW]
R	192.005.008.rrr	WASHINGTON	University of Washington	[JAR4]
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	UTAH-COMPUTER-SCIENCE-NET	[GW22]
R	192.005.013.rrr	GSWDNET	Compion Network	[128,FAS]
R	192.005.014.rrr	RAND-NET	RAND Network	[128,JDG]
R	192.005.015.rrr	NYU-NET	NYU Network	[EF5]
R	192.005.016.rrr	LANLLAND	Los Alamos Dev LAN	[128,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	[TC4]
D	192.005.027.rrr	DTNSRDC-NET	DTNSRDC-NET	[TC4]
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]

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     R 192.005.032.rrr     CISLTESTNET2   Honeywell           [52,53,JLM23]
     R 192.005.033.rrr     CISLTESTNET3   Honeywell           [32,33,JLM23]
     R 192.005.034.rrr     CISLTESTNET4   Honeywell           [32,33,JLM23]
     R 192.005.035.rrr     RIACS          USRA                  [113,RLB1]
     R 192.005.036.rrr     CORNELL-CS     CORNELL CS Research   [128,DK2]
     R 192.005.037.rrr     UR-CS-NET      U of R CS 3Mb Net      [67,LB1]
     R 192.005.038.rrr     SRI-C3ETHER    SRI-AITAD C3ETHERNET  [128,BG5]
     R 192.005.039.rrr     UDEL-EECIS     Udel EECIS LAN        [120,CC2]
     R 192.005.040.rrr     PUCC-NET-A     PURDUE Comp Cntr Net     [JRS8]
     D 192.005.041.rrr     WISLAN         WIS Research LAN      [111,JRM1]
     D 192.005.042.rrr     AFDSC-HYPER    AFDSC Hypernet           [MCA1]
     R 192.005.043.rrr     CUCSNET        Columbia CS Net       [128,LH2]
     R 192.005.044.rrr     Farber-PC-Net  Farber PC Network        [DJF]
     R 192.005.045.rrr     AIDS-NET       AI&DS Network         [128,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-EN   Purdue CS Ethernet    [128,CAK]
     R 192.005.049.rrr     UCSF           Univ of Calif, San Fran[120,TF6]
     R 192.005.050.rrr     CTH-CS-NET     Chalmers CSN Net      [120,UXB]
     R 192.005.051.rrr     Theorynet      Cornell Theory Center [128,AB13]
     R 192.005.052.rrr     NLM-ETHER      NLM-LHNCBC-ETHERNET    [92,JA1]
     R 192.005.053.rrr     UR-CS-ETHER    U of R CS 10Mb Net     [67,LB1]
     R 192.005.054.rrr     AERO-A6        Aerospace              [2,LCN]
     R 192.005.055.rrr     UCLA-CECS      UCLA-CECS Network     [128,RBW]
     C 192.005.056.rrr     TARTAN-NET     Tartan Labs              [SXB]
     R 192.005.057.rrr     UDEL-CC        UDEL Comp Center      [120,RR18]
     R 192.005.058.rrr     CSNET-PDN      CSNET X.25 Network     [60,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]
     R 192.005.064.rrr     AMES-NAS-NET   NASA ARC NAS LAN      [119,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  [120,GIH]
     R 192.005.068.rrr     AERO-130       AEROSPACE-130            [LCN]
     R 192.005.069.rrr     UIUC-NET       Univ of IL at Urbana  [128,AKC]
     G 192.005.070.rrr     CELAN          COINS Exper. LAN         [MXM]
     R 192.005.071.rrr     SAC-ETHER      SAC C3 Ethernet       [128,BG5]
     R*192.005.072.rrr-192.005.087.rrr U Chicago                  [TXN]
     R 192.005.088.rrr     YALE-EE-NET    YALE-EE-NET           [128,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          [36,55,GG11]
     R 192.005.092.rrr     BRAGG-ETHER    SRI Bragg Ether       [121,GIH]
     R 192.005.093.rrr     SRI-DEMO       SRI Ether Demo        [121,GIH]
     R*192.005.094.rrr     SDCRDCF-10MB   SDC R&D primary net   [128,DJV1]
     R*192.005.095.rrr     SDCRDCF-3MB    SDC R&D old net        [67,DJV1]
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     R*192.005.096.rrr    UBC-CS-NET     UBC Comp Sci Net      [128,PXB]
     R*192.005.097.rrr    UCLA-CS-LNI    UCLA CS LNI Network      [RBW]
     R*192.005.098.rrr    UCLA-PIC       UCLA PIC Network      [128,RBW]
     R 192.005.099.rrr    SPACENET       S-1 Workstation Net.  [128,TW11]
     R*192.005.100.rrr    HCSC-NET       Honeywell CSC Net      [128,RL2]
     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     [128,BJN1]
     R 192.005.105.rrr    CCA-POND       CCA Ethernet1 (POND)   [128,AL6]
     C*192.005.106.rrr    BITSTREAM      Bitstream Type Foundry [128,PXA]
     R*192.005.107.rrr    PASC-ETHER     IBM PASC Ethernet      [128,GXL]
     R*192.005.108.rrr    PASC-BB        IBM PASC Broadband      [56,GXL]
     R*192.005.109.rrr    CWR-JCC-T      ARJCC TOPS-20 NET     [128,JAG3]
     R*192.005.110.rrr    CWR-JCC-L      ARJCC LOCAL NET       [128,JAG3]
     R*192.005.111.rrr    CWR-QUAD       Campus QUAD NET       [128,JAG3]
     R*192.005.112.rrr    CWR-CAISR      CAISR LOCAL NET       [128,JAG3]
     R*192.005.113.rrr    CWR-CES        CES LOCAL NET            [JAG3]
     C*192.005.114.rrr    I2-RING-1      INTERMETRICS PRONET    [128,NXH]
     C*192.005.115.rrr    I2-ETHER-1     INTERMETRICS ETHER     [128,NXH]
     R 192.005.116.rrr    BRAGGNET-1     BRAGG/ADDCOMPE        [128,BG25]
     R 192.005.117.rrr    BRAGGNET-2     BRAGG/ADDCOMPE        [128,BG25]
     R 192.005.118.rrr    BRAGGNET-3     BRAGG/ADDCOMPE        [128,BG25]
     R 192.005.119.rrr    BRAGGNET-4     BRAGG/ADDCOMPE        [128,BG25]
     R 192.005.120.rrr    BRAGGNET-5     BRAGG/ADDCOMPE        [128,BG25]
     R 192.005.121.rrr    BRAGGNET-6     BRAGG/ADDCOMPE        [128,BG25]
     R 192.005.122.rrr    BRAGGNET-7     BRAGG/ADDCOMPE        [128,BG25]
     R 192.005.123.rrr    BRAGGNET-8     BRAGG/ADDCOMPE        [128,BG25]
     R 192.005.124.rrr    BRAGGNET-9     BRAGG/ADDCOMPE        [128,BG25]
     R 192.005.125.rrr    BRAGGNET-10    BRAGG/ADDCOMPE        [128,BG25]
     R 192.005.126.rrr    BRAGGNET-11    BRAGG/ADDCOMPE        [128,BG25]
     R 192.005.127.rrr    BRAGGNET-12    BRAGG/ADDCOMPE        [128,BG25]
     R 192.005.128.rrr    BRAGGNET-13    BRAGG/ADDCOMPE        [128,BG25]
     R 192.005.129.rrr    BRAGGNET-14    BRAGG/ADDCOMPE        [128,BG25]
     R 192.005.130.rrr    BRAGGNET-15    BRAGG/ADDCOMPE        [128,BG25]
     R 192.005.131.rrr    BRAGGNET-16    BRAGG/ADDCOMPE        [128,BG25]
     R 192.005.132.rrr    BRAGGNET-17    BRAGG/ADDCOMPE        [128,BG25]
     R*192.005.133.rrr    PERCEPT-AI     Perceptronics, AI Div.
                                     [KXC]
        192.005.134.rrr-192.005.255.rrr Unassigned                [JBP]
     C*192.006.000.rrr-192.006.255.rrr Hewlett Packard            [AXG]
     C*192.007.000.rrr-192.007.255.rrr Computer Consoles, Inc.   [RA11]
     C*192.008.000.rrr-192.008.255.rrr Spartacus Computers, Inc.  [SXM]
     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          [128,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]
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   C*192.012.000.rrr   CADMUS-ETHERNET CADMUS-NET              [MS9]
   C*192.012.001.rrr   CADMUS-EXP-1    CADMUS-NET-EXP-1        [MS9]
   C*192.012.002.rrr   CADMUS-EXP-2    CADMUS-NET-EXP-2        [MS9]
   C*192.012.003.rrr   FLAIR           Fairchild AI Lab Net  [128,AMS1]
   C*192.012.004.rrr   SCG-NET         Hughes SCG Net         [122,MXP]
   R 192.012.005.rrr   AIC-LISPMS      SRI-AIC-LispMachNet    [128,PM4]
   R 192.012.006.rrr   NPS-C2          NPS-C2                 [128,AW9]
   R 192.012.007.rrr   NYU-CS-ETHER    NYU CompSci Ethernet   [128,LOU]
   D 192.012.008.rrr   PICANET1        Picatinny Arsenal LAN1[128,RFD1]
   R 192.012.009.rrr   CADRE-NET       Decision Systems Lab     [SM6]
   R 192.012.010.rrr   CORNELL-ENG     Cornell-Engineering    [128,BN9]
   R 192.012.011.rrr   MIT-TEST        MIT Gateway TEST NET   [128,NC3]
   R 192.012.012.rrr   WISC-ETHER      Wisconsin Ether Net    [128,CBP]
   R 192.012.013.rrr   JHU-NET1        JHU-NET1              [128,MO14]
   R 192.012.014.rrr   JHU-NET2        JHU-NET2              [128,MO14]
   R 192.012.015.rrr   BROOKNET        BNL Brooknet III       [128,GC]
   R 192.012.016.rrr   PRMNET          SRI-SURAN-EN          [128,BP17]
   G 192.012.017.rrr   LLL-TIS-NET     LLL-TIS-NET       [119,123,GP10]
   R 192.012.018.rrr   CIT-CS-10NET    Caltech 10Meg EtherNet[126,AD22]
   R 192.012.019.rrr   CIT-NET         Caltech Campus Net    [126,AD22]
   R 192.012.020.rrr   CIT-SUN-NET     Caltech Sun Net       [126,AD22]
   R 192.012.021.rrr   CIT-PHYSCOMP    Caltech Phys Comp Net [126,AD22]
   R 192.012.022.rrr   UTCSRES         UTCS Net Research     [128,JSQ1]
   R 192.012.023.rrr   UTCSTTY         UTCS TTY Kludgenet    [128,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  [106,CP10]
   R 192.012.027.rrr   UR-LASER        UR Laser Energetics    [128,WXL]
   R*192.012.028.rrr   RIACS-X-NET     RIACS-Experimental-Net  [DG28]
   D 192.012.029.rrr   RF-EVANS        ADDCOMPE DC3 LAN1     [120,MB31]
   D 192.012.030.rrr   RF-HEX-A        ADDCOMPE DC3 LAN2     [120,MB31]
   D 192.012.031.rrr   USNA-ENET       USNA Engineering Net   [120,TXS]
   R*192.012.032.rrr   CMU-VINEYARD    CMU File Cluster Net   [128,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     [128,RXB]
   R 192.012.044.rrr   NRTC-NET        Northrop Research Net [128,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.     [128,MSM1]
   G 192.012.049.rrr   AMES-ED-NET     Code ED IP Net       [128,MSM1]
   G 192.012.050.rrr   AMES-DB-NET     Ames DBridge Net     [128,MSM1]
   R 192.012.051.rrr   THINK-CHAOS     TMC Chaos            [128,BJN1]
   R*192.012.052.rrr   NEURO-NET       NEURO-NET             [128,JXB]
   R*192.012.053.rrr   PU-LCA          Princeton U. LCA      [128,CXH]
   R 192.012.054.rrr   WISC-MADISON    Univ Wisc - MACC      [128,JXD]
   R 192.012.055.rrr   HAZ-LPR-BETA    Hazeltine LPR Net     [128,KXK]
   R 192.012.056.rrr   UTAH-AP-NET     Utah-Appolo-Ring-Net    [JL15]
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     R 192.012.057.rrr   MCC-CAD-NET    MCC AI Subnet          [128,CBD]
     R 192.012.058.rrr   MCC-PP-NET     MCC CAD Subnet         [128,CBD]
     R 192.012.059.rrr   MCC-DB-NET     MCC DB Subnet          [128,CBD]
     R 192.012.060.rrr   MCC-HI-NET     MCC HI Subnet          [128,CBD]
     R 192.012.061.rrr   MCC-SW-NET     MCC SW Subnet          [128,CBD]
     R 192.012.062.rrr   DREA-ENET      DREA Lispm & Vaxen     [128,GLH5]
     R 192.012.063.rrr   CYPRESS        CYPRESS Serial Net        [CAK]
     D 192.012.064.rrr   LOGNET         Logistics Net GW        [62,JXR]
     D 192.012.065.rrr   HELNET1        HELNET1                [128,MJM2]
     D 192.012.066.rrr   HELNET2        HELNET2                [128,MJM2]
     D 192.012.067.rrr   HELNET3        HELNET3                   [MJM2]
     G 192.012.068.rrr   ORNL-MSRNET    ORNL Local Area Net      [62,HD]
     R 192.012.069.rrr   UA-CS-NET      UNIV. OF ARIZ-CS DEPT   [128,BXM]
     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    [128,RXJ]
     R*192.012.075.rrr   PASC-RING      IBM PASC TOKEN RING       [GXL]
     R*192.012.076.rrr   UQ-NET         UNIV. OF QLD NETWORK    [128,AXH]
     C*192.012.077.rrr   PRIME          PRIME COMPUTER, INC.      [FXS]
     C*192.012.078.rrr   GENNET         GENENTECH NET           [128,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        [128,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  [128,KXS]
     G 192.012.102.rrr   AMES-NAS-HY    AMES NAS HY NET          [MF31]
     R*192.012.103 rrr-192.012.118.rrr Colorado State Univ Nets  [RXB1]
     G 192.012.119.rrr   ICST           ICST Network           [128,JCN2]
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   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     [128,MSM1]
   D 192.012.124.rrr     ETL-LAN        ETL LOCAL AREA NET   [128,WWS]
   D 192.012.125.rrr     CRDC-NET1      CRDC-NET1            [128,JXY]
   D 192.012.126.rrr     CRDC-NET2      CRDC-NET2            [128,JXY]
   R 192.012.127.rrr     LL-MI-NET      LL-Machine Intell.   [128,GAA]
   R 192.012.128.rrr     AITAC-ADMIN    SRI-AITAC ADMIN NET  [128,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    [128,KMC3]
   R 192.012.132.rrr     LLL-MON        LLL Open Labnet-1  [128,BANDY]
   R 192.012.133.rrr     LLL-TUES       LLL Open Labnet-2  [128,BANDY]
   R 192.012.134.rrr     LLL-WED        LLL Open Labnet-3  [128,BANDY]
   R 192.012.135.rrr     LLL-THU        LLL Open Labnet-4  [128,BANDY]
   R 192.012.136.rrr     LLL-FRI        LLL Open Labnet-5  [128,BANDY]
   R 192.012.137.rrr     LLL-SAT        LLL Open Labnet-6  [128,BANDY]
   R 192.012.138.rrr     LLL-SUN        LLL Open Labnet-7  [128,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        [128,PXD]
   C*192.012.145 rrr-192.012.154.rrr RCA-CADNET            [128,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]
   D 192.012.173.rrr     JTELS-BEN1-GW  JUMPS Teleprocessing     [RR26]
   R*192.012.174 rrr-192.012.183.rrr TORONTO              [128,BXD]
     192.012.184 rrr-192.012.255.rrr Unassigned                 [JBP]
   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             [128,JC11]
     192.016.050.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          [128,MH12]
     192.021.000.rrr-223.255.254.rrr Unassigned                 [JBP]
     223.255.255.rrr                  Reserved                   [JBP]
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Other Reserved Internet Addresses

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

Network Totals

Assigned for the ARPA-Internet and the DDN-Internet

Class	A	B	C	Total
Research	7	63	911	981
Defense	8	15	536	559
Government	0	2	59	61
Commercial	2	1	4	7
Total	17	81	1510	1608

Allocated for Internet and Independent Uses

Class	A	B	C	Total
Research	7	68	1764	1838
Defense	8	15	536	559
Government	1	3	64	68
Commercial	2	5	2357	2364
Total	18	91	4721	4829

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) [39,92] 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	[37,85,JBP]
5	ST	ST Datagram Mode	[40,JWF]
6-14		Unassigned	[JBP]
15		Reserved	[JBP]

ASSIGNED PROTOCOL NUMBERS

In the Internet Protocol (IP) [39,92] 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	[84,JBP]
2		Unassigned	[JBP]
3	GGP	Gateway-to-Gateway	[51,MB]
4		Unassigned	[JBP]
5	ST	Stream	[43,JWF]
6	TCP	Transmission Control	[39,93,JBP]
7	UCL	UCL	[PK]
8	EGP	Exterior Gateway Protocol	[108,DLM1]
9	IGP	any private interior gateway	[JBP]
10	BBN-RCC-MON	BBN RCC Monitoring	[SGC]
11	NVP-II	Network Voice Protocol	[21,SC3]
12	PUP	PUP	[15,HGM]
13	ARGUS	ARGUS	[RWS4]
14	EMCON	EMCON	[BN7]
15	XNET	Cross Net Debugger	[49,JFH2]
16	CHAOS	Chaos	[NC3]
17	UDP	User Datagram	[39,91,JBP]
18	MUX	Multiplexing	[22,JBP]
19	DCN-MEAS	DCN Measurement Subsystems	[DLM1]
20	HMP	Host Monitoring	[6,RH6]
21	PRM	Packet Radio Measurement	[ZSU]
22	XNS-IDP	XEROX NS IDP	[129,LLG]
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	[125,RH6]
28	IRTP	Internet Reliable Transaction	[68,TXM]
29	ISO-TP4	ISO Transport Protocol Class 4	[57,RC7]
30-60		Unassigned	[JBP]
61		any host internal protocol	[JBP]
62	CFTP	CFTP	[44,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]

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       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]
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ASSIGNED PORT NUMBERS

Ports are used in the TCP [39,93] 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 [39,91].

To the extent possible, these same port assignments are used with the
ISO-TP4 [57].

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	[17,40,JBP]
7	ECHO	Echo	[82,JBP]
9	DISCARD	Discard	[80,JBP]
11	USERS	Active Users	[76,JBP]
13	DAYTIME	Daytime	[79,JBP]
15	NETSTAT	Who is up or NETSTAT	[JBP]
17	QUOTE	Quote of the Day	[87,JBP]
19	CHARGEN	Character Generator	[78,JBP]
20	FTP-DATA	File Transfer [Default Data]	[39,83,JBP]
21	FTP	File Transfer [Control]	[39,83,JBP]
23	TELNET	Telnet	[99,JBP]
25	SMTP	Simple Mail Transfer	[39,89,JBP]
27	NSW-FE	NSW User System FE	[23,RHT]
29	MSG-ICP	MSG ICP	[74,RHT]
31	MSG-AUTH	MSG Authentication	[74,RHT]
33	DSP	Display Support Protocol	[MLC]
35		any private printer server	[JBP]
37	TIME	Time	[95,JBP]
39	RLP	Resource Location Protocol	[1,MA]
41	GRAPHICS	Graphics	[40,115,JBP]
42	NAMESERVER	Host Name Server	[39,86,JBP]
43	NICNAME	Who Is	[39,48,JAKE]
44	MPM-FLAGS	MPM FLAGS Protocol	[JBP]

```
45        MPM        Message Processing Module [recv]     [85,JBP]
46        MPM-SND    MPM [default send]                   [91,JBP]
47        NI-FTP     NI FTP                              [122,SK]
49        LOGIN      Login Host Protocol                   [PHD1]
51        LA-MAINT   IMP Logical Address Maintenance     [66,AGM]
53        DOMAIN     Domain Name Server               [81,71,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          [35,WJC2]
68        BOOTPC     Bootstrap Protocol Client          [35,WJC2]
69        TFTP       Trivial File Transfer           [39,102,DDC1]
71        NETRJS-1   Remote Job Service               [16,40,RTB]
72        NETRJS-2   Remote Job Service               [16,40,RTB]
73        NETRJS-3   Remote Job Service               [16,40,RTB]
74        NETRJS-4   Remote Job Service               [16,40,RTB]
75                   any private dial out service          [JBP]
77                   any private RJE service               [JBP]
79        FINGER     Finger                           [40,46,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                              [26,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             [39,47,JAKE]
103                  Unassigned                            [JBP]
105       CSNET-NS   Mailbox Name Nameserver           [113,MHS1]
107       RTELNET    Remote Telnet Service               [88,JBP]
109       POP-2      Post Office Protocol - Version 2    [19,JKR1]
111       SUNRPC     SUN Remote Procedure Call             [DXG]
113       AUTH       Authentication Service             [116,MCSJ]
115       SFTP       Simple File Transfer Protocol       [60,MKL1]
117       UUCP-PATH  UUCP Path Service                   [38,MAE]
119       UNTP       USENET News Transfer Protocol       [61,PL4]
121       ERPC       HYDRA Expedited Remote Procedure Call[118,JXO]
123       NTP        Network Time Protocol               [70,DLM1]
125       LOCUS-MAP  Locus PC-Interface Net Map Server   [124,BXG]
127       LOCUS-CON  Locus PC-Interface Conn Server      [124,BXG]
129                  Unassigned                            [JBP]
```

```
        131                 Unassigned                             [JBP]
        133-223             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) [108,105] 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	[BIM,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	[HDC1]
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                                         [GP10]
        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]
  53-65534   Unassigned                                          [JBP]
     65535   Reserved                                            [JBP]
```

DOMAIN SYSTEM PARAMETERS

The Internet Domain Naming System (DOMAIN) includes several
parameters. These are documented in RFC 883 [72]. 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	[72,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 [65]. 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]
        2-255   Unassigned   [JBP]
        256   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	[129,LLG]
151	Unassigned	[JBP]
152	PARC Universal Protocol	[15,HGM]
153	TIP Status Reporting	[JGH]
154	TIP Accounting	[JGH]
155	Internet Protocol [regular]	[39,92,JBP]
156-158	Internet Protocol [experimental]	[39,92,JBP]
159	Figleaf Link	[JBW1]
160-194	Unassigned	[JBP]
195	ISO-IP	[58,RXM]
196-247	Experimental Protocols	[JBP]
248-255	Network Maintenance	[JGH]

IEEE 802 SAP NUMBERS OF INTEREST

Some of the networks of all classes are IEEE 802 Networks. These
systems may use a Service Access Point field in much the same way the
ARPANET uses the "link" field. For further information and SAP
number assignments, please contact: Mr. Maris Graube, Chairman, IEEE
802, Route 1, 244 H, Forest Grove, Oregon, 97116.

Assignments:

Service Access Point		Description	References
decimal	binary		
127	01111111	ISO DIS 8473	[JXJ]
96	01100000	DOD IP	[39,91,JBP]

The IEEE 802.3 header does not have a type field to indicate what
protocol is used at the next level. As a work around for this
problem, one can put the Ethernet type field value in the IEEE 802.3
header's length field and use the following test to determine the
appropriate processing on receipt.

If the value in the length field of the IEEE 802.3 header is greater
than the Ethernet maximum packet length, then interpret the value as
an Ethernet type field. Otherwise, interpret the packet as an IEEE
802.3 packet.

The proposed standard for transmission of IP datagrams over IEEE
802.3 networks is specified in RFC 948 [127].

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 number, contact the XEROX Corporation, Office
Products Division, Network Systems Administration Office, 333 Coyote
Hill Road, Palo Alto, California, 94304.

Assignments:

Ethernet		Exp. Ethernet		Description	References
decimal	Hex	decimal	octal		
512	0200	512	1000	XEROX PUP	[1,HGM]
513	0201	-	-	PUP Addr. Trans.	[HGM]
1536	0600	1536	3000	XEROX NS IDP	[128,HGM]
2048	0800	513	1001	DOD IP	[39,91,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	[74,JBP]
2055	0807	-	-	XNS Compatability	[HGM]
2076	081C	-	-	Symbolics Private	[DCP1]
32771	8003	-	-	Cronus VLN	[116,DT15]
32772	8004	-	-	Cronus Direct	[116,DT15]
32774	8006	-	-	Nestar	[HGM]
32784	8010	-	-	Excelan	[HGM]
32821	8035	-	-	Reverse ARP	[42,JCM]
36864	9000	-	-	Loopback	[HGM]

The standard for transmission of IP datagrams over Ethernets and
Experimental Ethernets is specified in RFC 894 [54] and RFC 895 [76]
respectively.

ASSIGNED ADDRESS RESOLUTION PROTOCOL PARAMETERS

The Address Resolution Protocol (ARP) specified in RFC 826 [75] 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   Proton ProNET Token Ring   [JBP]
          5   Chaos   [GXP]

    Protocol Type (pro)

        Use the same codes as listed in the section called "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).

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	[HDC1]
014.000.000.017	3110-213-00032 00	ISI-VAN-GW	[JD21]
014.000.000.018	2624-522-80900 52	DFVLR5-X25	[HDC1]
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]
014.000.000.022-014.255.255.254		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 [60].

                        ASSIGNED TELNET OPTIONS

    The Telnet Protocol has a number of options that may be negotiated.
    These options are listed here. "Official ARPA-Internet
    Protocols" [104] provides more detailed information.

Options	Name	References
0	Binary Transmission	[97,JBP]
1	Echo	[98,JBP]
2	Reconnection	[7,JBP]
3	Suppress Go Ahead	[101,JBP]
4	Approx Message Size Negotiation	[40,JBP]
5	Status	[100,JBP]
6	Timing Mark	[102,JBP]
7	Remote Controlled Trans and Echo	[94,JBP]
8	Output Line Width	[5,JBP]
9	Output Page Size	[6,JBP]
10	Output Carriage-Return Disposition	[27,JBP]
11	Output Horizontal Tab Stops	[31,JBP]
12	Output Horizontal Tab Disposition	[30,JBP]
13	Output Formfeed Disposition	[28,JBP]
14	Output Vertical Tabstops	[33,JBP]
15	Output Vertical Tab Disposition	[32,JBP]
16	Output Linefeed Disposition	[29,JBP]
17	Extended ASCII	[123,JBP]
18	Logout	[24,MRC]
19	Byte Macro	[34,JBP]
20	Data Entry Terminal	[37,JBP]
22	SUPDUP	[26,25,MRC]
22	SUPDUP Output	[45,MRC]
23	Send Location	[59,EAK1]
24	Terminal Type	[114,MHS1]
25	End of Record	[89,JBP]
26	TACACS User Identification	[3,BA4]
27	Output Marking	[110,SXS]
28	Terminal Location Number	[73,RN6]
255	Extended-Options-List	[96,JBP]

OFFICIAL MACHINE NAMES

These are the Official Machine Names as they appear in the NIC Host
Table. Their use is described in RFC 810 [41].

    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
         IRIS
         IRIS-1400
         IS-1
         IS-68010
         LMI
         LSI-11
         LSI-11/2
         LSI-11/23
         LSI-11/73
         M-6800
         M68000
         MASSCOMP

     MC500
     MC68000
     MICROVAX
     MICROVAX-I
     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
     SEQUENT-BALANCE-8000
     SGI-IRIS
     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
        SUN-68000
        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
        WANG-PC002
        WANG-VS100
        WANG-VS400
        XEROX-1100
        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 810 [41].

```
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
       TOPS-10
       TOPS-20
       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 810 [41].

```
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
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
GGP                 - Gateway Gateway Protocol
GRAPHICS            - Graphics Protocol
HMP                 - Host Monitoring Protocol
HOST2-NS            - Host2 Name Server
HOSTNAME            - Hostname Protocol
ICMP                - Internet Control Message 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
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           - MP Flags Protocol
        MSG-AUTH            - MSG Authentication Protocol
        MSG-ICP             - MSG ICP Protocol
        MUX                 - Multiplexing Protocol
        NAMESERVER          - Host Name Server
        NETED               - Network Standard Text Editor
        NETRJS              - Remote Job Service
        NI-FTP              - NI File Transfer Protocol
        NI-MAIL             - NI Mail Protocol
        NICNAME             - Who Is 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
        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
        UNTP                - USENET News Transfer 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 [114]. The maximum length of a name is 40 characters.

```
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
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
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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)

   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
   4.2 UNIX software might be considered evidence of the latter.

Experimental networks which later become operational need not be
renumbered. Rather, the identifiers could be moved from 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.