## 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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   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" [33] or in the old
   "ARPANET Protocol Handbook" [34] 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" [89].

   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, 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) [33,77].  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-ISIF.ARPA in dotted decimal is 010.002.000.052, or
10.2.0.52.

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

There are 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 need 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 | [DM11] |
| D | 006.rrr.rrr.rrr T | YPG-NET-TEMP | Yuma Proving Grounds | [7,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 | [7,34,REK2] |
| D | 011.rrr.rrr.rrr | DODIIS | DoD INTEL INFO SYS | [AY7] |
| C | 012.rrr.rrr.rrr | ATT | ATT, Bell Labs | [MH13] |
| C | 014.rrr.rrr.rrr | PDN | Public Data Network | [REK4] |
| R | 018.rrr.rrr.rrr T | MIT-TEMP | MIT Network | [15,88,DDC2] |
| 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 | [7,DHH] |
| 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] |
| R | 032.rrr.rrr.rrr | UCL-TAC | UCL TAC | [PK] |
| R | 036.rrr.rrr.rrr T | SU-NET-TEMP | Stanford University Network | [JCM] |
| R | 039.rrr.rrr.rrr T | SRINET-TEMP | SRI Local Network | [GEOF] |
| R | 041.rrr.rrr.rrr | BBN-TEST-A | BBN-GATE-TEST-A | [RH6] |
| R | 044.rrr.rrr.rrr | AMPRNET | Amateur Radio Experiment Net | [HM] |
|   | 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-021.rrr.rrr.rrr | | Unassigned | [JBP] |
|   | 025.rrr.rrr.rrr | | Unassigned | [JBP] |
|   | 029.rrr.rrr.rrr-031.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] |

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 | [59,DLM1] |
| R | 128.005.rrr.rrr  | FORDNET | FORD DCNET | [59,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 | [59,DLM1] |
| R | 128.009.rrr.rrr  | ISI-NET | USC-ISI Local Network | [CMR] |
| R | 128.010.rrr.rrr  | PURDUE-CS | Purdue Computer Science | [CAK] |
| R | 128.011.rrr.rrr  | BBN-CRONUS | BBN DOS Project | [55,WIM] |
| R | 128.012.rrr.rrr  | SU-NET | Stanford University Net | [JCM] |
| D | 128.013.rrr.rrr  | MATNET | Mobile Access Terminal Net | [DM11] |
| R | 128.014.rrr.rrr  | BBN-SAT-TEST | BBN SATNET Test Net | [DM11] |
| R | 128.015.rrr.rrr  | S1NET | LLL-S1-NET | [EAK1] |
| R | 128.016.rrr.rrr  | UCLNET | University College London | [PK] |
| D | 128.017.rrr.rrr  | MATNET-ALT | Mobile Access Terminal Alt | [DM11] |
| R | 128.018.rrr.rrr  | SRINET | SRI Local Network | [GEOF] |
| D | 128.019.rrr.rrr  | EDN | DCEC EDN | [EC5] |
| D | 128.020.rrr.rrr  | BRLNET | BRLNET | [7,MJM2] |
| R | 128.021.rrr.rrr  | SF-PR-1 | SF-1 Packet Radio Network | [JEM] |
| R | 128.022.rrr.rrr  | SF-PR-2 | SF-2 Packet Radio Network | [JEM] |
| R | 128.023.rrr.rrr  | BBN-PR | BBN Packet Radio Network | [JAW3] |
| R | 128.024.rrr.rrr  | ROCKWELL-PR | Rockwell Packet Radio Net | [EHP] |
| D | 128.025.rrr.rrr  | BRAGG-PR | Ft. Bragg Packet Radio Net | [JEM] |
| D | 128.026.rrr.rrr  | SAC-PR | SAC Packet Radio Network | [BG5] |
| D | 128.027.rrr.rrr  | DEMO-PR-1 | Demo-1 Packet Radio Network | [LCS] |
| D | 128.028.rrr.rrr  | C3-PR | Testbed Development PR NET | [BG5] |
| R | 128.029.rrr.rrr  | MITRE | MITRE Cablenet | [94,APS] |
| R | 128.030.rrr.rrr  | MIT-NET | MIT Local Network | [DDC2] |
| R | 128.031.rrr.rrr  | MIT-RES | MIT Research Network | [DDC2] |
| R | 128.032.rrr.rrr  | UCB-ETHER | UC Berkeley Ethernet | [DAM1] |
| R | 128.033.rrr.rrr  | BBN-NET | BBN Network | [JSG5] |
| R | 128.034.rrr.rrr  | NOSC-LCCN | NOSC / LCCN | [RH6] |
| R | 128.035.rrr.rrr  | CISLTESTNET1 | Honeywell | [46,47,RK1] |
| R | 128.036.rrr.rrr  | YALE-NET | YALE NET | [108,JO5] |
| D | 128.037.rrr.rrr  | YPG-NET | Yuma Proving Grounds | [7,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 | [59,108,PGM] |
| R | 128.043.rrr.rrr  | CRANET | Canada REF ARPANET | [7,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       [108,RKJ2]
        128.046.rrr.rrr    Unassigned     Unassigned                 [JBP]
      D 128.047.rrr.rrr    TACTNET        Tactical Packet Net      [6,KTP]
      C*128.048.rrr.rrr    UCDLA-NET      UCDLA MELVYL Network     [7,CXL]
      R 128.049.rrr.rrr    NOSC-ETHER     NOSC Ethernet         [108,RLB3]
      G 128.050.rrr.rrr    COINS Network 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             [108,MDC]
      R 128.053.rrr.rrr    SAC-PR-2       SAC PRNET Number 2         [BG5]
      R 128.054.rrr.rrr    UCSD           UC San Diego Network  [108,GH29]
        128.055.rrr.rrr-128.063.rrr.rrr Unassigned                 [JBP]
      R 128.064.rrr.rrr-128.079.rrr.rrr Net Dynamics Exp           [ZSU]
        128.080.rrr.rrr-191.254.rrr.rrr Unassigned                 [JBP]
        191.255.rrr.rrr                   Reserved                  [JBP]
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   **Class C Networks**

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      * 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-192.003.255.rrr BBN local networks         [SGC]
      R*192.004.000.rrr-192.004.255.rrr Bellcore-Net           [108,PXK]
      R 192.005.001.rrr    CISLHYPERNET   Honeywell                 [RK1]
      R 192.005.002.rrr    WISC           Univ of Wisconsin Madison [RS23]
      C 192.005.003.rrr    HP-DESIGN-AIDS HP Design Aids            [NXK]
      C 192.005.004.rrr    HP-TCG-UNIX    Hewlett Packard TCG Unix  [NXK]
      R 192.005.005.rrr    DEC-MRNET      DEC Marlboro Ethernet [101,KWP]
      R 192.005.006.rrr    DEC-MRRAD      DEC Marlboro Developmt [101,KWP]
      R 192.005.007.rrr    CIT-CS-NET     Caltech-CS-Net        [107,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  [RF1]
      R 192.005.013.rrr    GSWDNET        Compion Network       [108,FAS]
      R 192.005.014.rrr    RAND-NET       RAND Network          [108,JDG]
      R 192.005.015.rrr    NYU-NET        NYU Network               [EF5]
      R 192.005.016.rrr    LANL-LAND      Los Alamos Dev LAN   [108,JC11]
      R 192.005.017.rrr    NRL-NET        Naval Research Lab         [AP]
      R 192.005.018.rrr    IPTO-NET       ARPA-IPTO Office Net     [REK2]
      R 192.005.019.rrr    UCIICS         UCI-ICS Res Net           [MTR]
      R 192.005.020.rrr    CISLTTYNET     Honeywell                 [RK1]
      D 192.005.021.rrr    BRLNET1        BRLNET1                [7,MJM2]
      D 192.005.022.rrr    BRLNET2        BRLNET2                [7,MJM2]
      D 192.005.023.rrr    BRLNET3        BRLNET3                [7,MJM2]
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    D 192.005.024.rrr    BRLNET4       BRLNET4                  [7,MJM2]
    D 192.005.025.rrr    BRLNET5       BRLNET5                  [7,MJM2]
    D 192.005.026.rrr    NSRDCOA-NET   NSRDC Office Auto Net       [TC4]
    D 192.005.027.rrr    DTNSRDC-NET   DTNSRDC-NET                [TC4]
    R 192.005.028.rrr    RSRE-NULL     RSRE-NULL                   [NM]
    R 192.005.029.rrr    RSRE-ACC      RSRE-ACC                    [NM]
    R 192.005.030.rrr    RSRE-PR       RSRE-PR                     [NM]
    R*192.005.031.rrr    SIEMENS-NET   Siemens Research Network   [PXN]
    R 192.005.032.rrr    CISLTESTNET2  Honeywell             [46,47,RK1]
    R 192.005.033.rrr    CISLTESTNET3  Honeywell             [27,28,RK1]
    R 192.005.034.rrr    CISLTESTNET4  Honeywell             [27,28,RK1]
    R 192.005.035.rrr    RIACS         USRA                  [108,RLB1]
    R 192.005.036.rrr    CORNELL-CS    CORNELL CS Research    [108,DK2]
    R 192.005.037.rrr    UR-CS-NET     U of R CS 3Mb Net       [58,LB1]
    R 192.005.038.rrr    SRI-C3ETHER   SRI-AITAD C3ETHERNET   [108,BG5]
    R 192.005.039.rrr    UDEL-EECIS    Udel EECIS LAN         [102,CC2]
    R 192.005.040.rrr    PUCC-NET-A    PURDUE Comp Cntr Net      [JRS8]
    D 192.005.041.rrr    WISLAN        WIS Research LAN        [94,JRM1]
    D 192.005.042.rrr    AFDSC-HYPER   AFDSC Hypernet            [MCSJ]
    R 192.005.043.rrr    CUCSNET       Columbia CS Net        [108,LH2]
    R 192.005.044.rrr    Farber-PC-Net Farber PC Network          [DJF]
    R 192.005.045.rrr    AIDS-NET      AI&DS Network           [108,HA]
    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-IL  Purdue CS IL Ethernet  [108,CAK]
    R 192.005.049.rrr    UCSF          Univ of Calif, San Fran[102,TF6]
    R 192.005.050.rrr    CTH-CS-NET    Chalmers CSN Net       [102,UXB]
    R 192.005.051.rrr    Theorynet     Cornell Theory Center [108,AB13]
    R 192.005.052.rrr    NLM-ETHER     NLM-LHNCBC-ETHERNET     [77,JA1]
    R 192.005.053.rrr    UR-CS-ETHER   U of R CS 10Mb Net      [58,LB1]
    R 192.005.054.rrr    AERO-A6       Aerospace                [2,LCN]
    R*192.005.055.rrr    UCLA-CECS     UCLA-CECS Network      [108,RBW]
    C 192.005.056.rrr    TARTAN-NET    Tartan Labs                [SXB]
    R 192.005.057.rrr    UDEL-CC       UDEL Comp Center       [102,RR18]
    R 192.005.058.rrr    CSNET-PDN     CSNET X.25 Network      [52,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       [101,MF31]
    R 192.005.065.rrr    NPRDC-Ether   NPRDC TRCF Ethernet        [LRB]
    R 192.005.066.rrr    HARV-NET      Harvard Comp Sci Net      [SXB1]
    R 192.005.067.rrr    CECOM-ETHER   CECOM ADDCOMPE ETHER   [102,GIH]
    R 192.005.068.rrr    AERO-130      AEROSPACE-130              [LCN]
    R 192.005.069.rrr    UIUC-NET      Univ of IL at Urbana   [108,AXC]
    G 192.005.070.rrr    CELAN         COINS Exper. LAN           [MXM]
    R 192.005.071.rrr    SAC-ETHER     SAC C3 Ethernet        [108,BG5]
    R*192.005.072.rrr-192.005.087.rrr U Chicago                  [TXN]
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     R 192.005.088.rrr    YALE-EE-NET     YALE-EE-NET           [108,AG22]
     R 192.005.089.rrr    UTEXAS-NET      U. Texas Austin Net   [108,JSQ1]
     R 192.005.090.rrr    HARV-ETHER      Harvard CS Ethernet        [SXB1]
     R 192.005.091.rrr    PURDUE-ECN1     Purdue ECN          [30,49,GG11]
     R 192.005.092.rrr    BRAGG-ETHER     SRI Bragg Ether        [103,GIH]
     R 192.005.093.rrr    SRI-DEMO        SRI Ether Demo         [103,GIH]
     R*192.005.094.rrr    SDCRDCF-10MB    SDC R&D primary net   [108,DJV1]
     R*192.005.095.rrr    SDCRDCF-3MB     SDC R&D old net        [58,DJV1]
     R*192.005.096.rrr    UBC-CS-NET      UBC Comp Sci Net       [108,PXB]
     R*192.005.097.rrr    UCLA-CS-LNI     UCLA CS LNI Network        [RBW]
     R*192.005.098.rrr    UCLA-PIC        UCLA PIC Network       [108,RBW]
     R 192.005.099.rrr    SPACENET        S-1 Workstation Network[108,TXW]
     R 192.005.100.rrr    PURDUE-ECN2     Purdue ECN          [30,49,GG11]
     R 192.005.101.rrr    PUCC-GW-NET     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    TMC-INET        Thinking Machines     [108,BJN1]
     R 192.005.105.rrr    CCA-POND        CCA Ethernet1 (POND)   [108,AL6]
     C*192.005.106.rrr    BITSTREAM       Bitstream Type Foundry [108,PXA]
     R*192.005.107.rrr    PASC-ETHER      IBM PASC Ethernet      [108,GXL]
     R*192.005.108.rrr    PASC-BB         IBM PASC Broadband     [50,GXL]
       192.005.109.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 Microsystem, Inc.        [WNJ]
     C*192.010.000.rrr-192.010.040.rrr Symbolics, Inc.              [CH2]
     R 192.010.041.rrr    SCRC-ETHERNET SCRC ETHERNET           [108,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]
     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  [108,AMS1]
     C*192.012.004.rrr    SCG-NET         Hughes SCG Net         [108,MXP]
     R 192.012.005.rrr    AIC-LISPMS      SRI-AIC-LispMachNet    [108,PM4]
     R 192.012.006.rrr    NPS-C2          NPS-C2                 [108,AW9]
     R 192.012.007.rrr    NYU-CS-ETHER    NYU CompSci Ethernet   [108,LOU]
     D 192.012.008.rrr    PICANET1        Picatinny Arsenal LAN1[108,RFD1]
     R 192.012.009.rrr    CADRE-NET       Decision Systems Lab       [SM6]
     R 192.012.010.rrr    CORNELL-ENG     Cornell-Engineering    [108,BN9]
     R 192.012.011.rrr    MIT-36          MIT Building 36       [108,RH60]
     R 192.012.012.rrr    WISC-ETHER      Wisconsin Ether Net    [108,CBP]
     R 192.012.013.rrr    JHU-NET1        JHU-NET1              [108,M014]
     R 192.012.014.rrr    JHU-NET2        JHU-NET2              [108,M014]
     R 192.012.015.rrr    BROOKNET        BNL Brooknet III       [108,GC]
     R 192.012.016.rrr    PRMNET          SRI-SURAN-EN          [108,BP17]
     G 192.012.017.rrr    LLL-TIS-NET     LLL-TIS-NET       [101,105,GP10]
```

```
    R 192.012.018.rrr    CIT-CS-10NET   Caltech 10Meg EtherNet[107,AD22]
    R 192.012.019.rrr    CIT-NET        Caltech Campus Net    [107,AD22]
    R 192.012.020.rrr    CIT-SUN-NET    Caltech Sun Net       [107,AD22]
    R 192.012.021.rrr    CIT-PHYSCOMP   Caltech Phys Comp Net [107,AD22]
    R 192.012.022.rrr    UTCSRES        UTCS Net Research     [108,JSQ1]
    R 192.012.023.rrr    UTCSTTY        UTCS TTY Kludgenet    [108,JSQ1]
    R 192.012.024.rrr    MICANET        MITRE (Experimental)      [JN2]
    R 192.012.025.rrr    CSS-GRAMINAE   CSS Workstation Net    [53,RR2]
    R 192.012.026.rrr    BBN-NETR       Net-R Testbed at BBN  [91,CP10]
    R 192.012.027.rrr    UR-LASER       UR Laser Energetics   [108,WXL]
      192.012.028.rrr-192.012.255.rrr Unassigned                 [JBP]
    D 192.013.000.rrr-192.014.255.rrr DODIIS Subnetworks         [AY5]
      192.015.000.rrr-223.255.254.rrr Unassigned                 [JBP]
      223.255.255.rrr                 Reserved                   [JBP]
```

   Other Reserved Internet Addresses

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

Network Totals

Assigned for the ARPA-Internet and the DDN-Internet

| Class | A | B | C | Total |
|-------|---|---|---|-------|
| Research | 6 | 53 | 854 | 913 |
| Defense | 5 | 12 | 523 | 540 |
| Government | 0 | 2 | 2 | 4 |
| Commercial | 2 | 1 | 3 | 6 |
| Total | 13 | 68 | 1382 | 1463 |

Allocated for Internet and Independent Uses

| Class | A | B | C | Total |
|-------|---|---|---|-------|
| Research | 6 | 53 | 1139 | 1198 |
| Defense | 5 | 12 | 523 | 540 |
| Government | 0 | 2 | 2 | 4 |
| Commercial | 2 | 2 | 1545 | 1549 |
| Total | 13 | 69 | 3209 | 3291 |

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) [33,77] 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 | [31,71,JBP] |
| 5 | ST | ST Datagram Mode | [34,JWF] |
| 6-14 | | Unassigned | [JBP] |
| 15 | | Reserved | [JBP] |

ASSIGNED PROTOCOL NUMBERS

In the Internet Protocol (IP) [33,77] 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 | [69,JBP] |
| 2 | | Unassigned | [JBP] |
| 3 | GGP | Gateway-to-Gateway | [45,MB] |
| 4 | | Unassigned | [JBP] |
| 5 | ST | Stream | [37,JWF] |
| 6 | TCP | Transmission Control | [33,78,JBP] |
| 7 | UCL | UCL | [PK] |
| 8 | EGP | Exterior Gateway Protocol | [93,DLM1] |
| 9 | IGP | any private interior gateway | [JBP] |
| 10 | BBN-RCC-MON | BBN RCC Monitoring | [SGC] |
| 11 | NVP-II | Network Voice Protocol | [16,SC3] |
| 12 | PUP | PUP | [11,HGM] |
| 13 | ARGUS | ARGUS | [RWS4] |
| 14 | EMCON | EMCON | [BN7] |
| 15 | XNET | Cross Net Debugger | [43,JFH2] |
| 16 | CHAOS | Chaos | [NC3] |
| 17 | UDP | User Datagram | [33,76,JBP] |
| 18 | MUX | Multiplexing | [17,JBP] |
| 19 | DCN-MEAS | DCN Measurement Subsystems | [DLM1] |
| 20 | HMP | Host Monitoring | [4,RH6] |
| 21 | PRM | Packet Radio Measurement | [ZSU] |
| 22 | XNS-IDP | XEROX NS IDP | [109,LLG] |
| 23 | TRUNK-1 | Trunk-1 | [BML] |
| 24 | TRUNK-2 | Trunk-2 | [BML] |
| 25 | LEAF-1 | Leaf-1 | [BML] |
| 26 | LEAF-2 | Leaf-2 | [BML] |
| 27 | RDP | Reliable Data Protocol | [106,RH6] |
| 28-60 | | Unassigned | [JBP] |
| 61 | | any host internal protocol | [JBP] |
| 62 | CFTP | CFTP | [38,HCF2] |
| 63 | | any local network | [JBP] |
| 64 | SAT-EXPAK | SATNET and Backroom EXPAK | [DM11] |
| 65 | MIT-SUBNET | MIT Subnet Support | [NC3] |
| 66 | RVD | MIT Remote Virtual Disk Protocol | [MBG] |
| 67 | IPPC | Internet Pluribus Packet Core | [DM11] |
| 68 | | any distributed file system | [JBP] |
| 69 | SAT-MON | SATNET Monitoring | [DM11] |

```
        70                      Unassigned                      [JBP]
        71      IPCV            Internet Packet Core Utility    [DM11]
     72-75                      Unassigned                      [JBP]
        76      BR-SAT-MON      Backroom SATNET Monitoring      [DM11]
        77                      Unassigned                      [JBP]
        78      WB-MON          WIDEBAND Monitoring             [DM11]
        79      WB-EXPAK        WIDEBAND EXPAK                  [DM11]
    80-254                      Unassigned                      [JBP]
       255                      Reserved                        [JBP]
```

### ASSIGNED PORT NUMBERS

Ports are used in the TCP [33,78] 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 [33,76].

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 | [13,34,JBP] |
| 7 | ECHO | Echo | [67,JBP] |
| 9 | DISCARD | Discard | [66,JBP] |
| 11 | USERS | Active Users | [62,JBP] |
| 13 | DAYTIME | Daytime | [65,JBP] |
| 15 | NETSTAT | Who is up or NETSTAT | [JBP] |
| 17 | QUOTE | Quote of the Day | [72,JBP] |
| 19 | CHARGEN | Character Generator | [64,JBP] |
| 20 | FTP | File Transfer [Default Data] | [33,68,JBP] |
| 21 | FTP | File Transfer [Control] | [33,68,JBP] |
| 23 | TELNET | Telnet | [84,JBP] |
| 25 | SMTP | Simple Mail Transfer | [33,74,JBP] |
| 27 | NSW-FE | NSW User System FE | [18,RHT] |
| 29 | MSG-ICP | MSG ICP | [60,RHT] |
| 31 | MSG-AUTH | MSG Authentication | [60,RHT] |
| 33 | | Unassigned | [JBP] |
| 35 | | any printer server | [JBP] |
| 37 | TIME | Time | [80,JBP] |
| 39 | RLP | Resource Location Protocol | [1,MA] |
| 41 | GRAPHICS | Graphics | [34,98,JBP] |
| 42 | NAMESERVER | Host Name Server | [33,71,JBP] |
| 43 | NICNAME | Who Is | [33,42,JAKE] |
| 44 | MPM-FLAGS | MPM FLAGS Protocol | [JBP] |
| 45 | MPM | Message Processing Module [recv] | [70,JBP] |
| 46 | MPM | MPM [default send] | [76,JBP] |
| 47 | NI-FTP | NI FTP | [104,SK] |

```
   49          LOGIN       Login Host Protocol                    [PHD1]
   51          LA-MAINT    IMP Logical Address Maintenance      [57,AGM]
   53          DOMAIN      Domain Name Server                     [PM1]
   55          ISI-GL      ISI Graphics Language                [10,RB6]
   57                      any private terminal access            [JBP]
   59                      any private file service               [JBP]
   61          NI-MAIL     NI MAIL                               [8,SK]
   63          VIA-FTP     VIA Systems - FTP                      [DXD]
   65                      Unassigned                             [JBP]
   67                      Unassigned                             [JBP]
   69          TFTP        Trivial File Transfer              [33,87,KRS]
   71          NETRJS      Remote Job Service               [12,34,RTB]
   72          NETRJS      Remote Job Service               [12,34,RTB]
   73          NETRJS      Remote Job Service               [12,34,RTB]
   74          NETRJS      Remote Job Service               [12,34,RTB]
   75                      any private dial out service           [JBP]
   77                      any private RJE service                [JBP]
   79          FINGER      Finger                           [34,40,KLH]
   81                      HOSTS2 Name Server                     [EAK1]
   83          HOSTS2-NS   MIT ML Device                          [DPR]
   85          MIT-ML-DEV  MIT ML Device                          [DPR]
   87          MIT-ML-DEV  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                               [21,MRC]
   97          SWIFT-RVF   Swift Remote Vitural File Protocol     [MXR]
   99          METAGRAM    Metagram Relay                        [GEOF]
  101          HOSTNAME    NIC Host Name Server            [33,41,JAKE]
  103                      Unassigned                             [JBP]
  105          CSNET-NS    Mailbox Name Nameserver             [96,MHS1]
  107          RTELNET     Remote Telnet Service              [73,JBP]
  109          POP         Post Office Protocol              [110,JKR1]
  111          SUNRPC      SUN Remote Procedure Call              [DXG]
  113          AUTH        Authentication Service             [99,MCSJ]
  115          SFTP        Simple File Transfer Protocol       [54,MXL]
  116                      Unassigned                             [JBP]
  117          UUCP-PATH   UUCP Path Service                  [32,MAE]
  118-129                  Unassigned                             [JBP]
  131                      Unassigned                             [JBP]
  132-223                  Reserved                               [JBP]
  224-241                  Unassigned                             [JBP]
  243          SUR-MEAS    Survey Measurement                   [9,AV]
  245          LINK        LINK                               [14,RDB2]
  247-255                  Unassigned                             [JBP]
```

## ASSIGNED AUTONOMOUS SYSTEM NUMBERS

The Exterior Gateway Protocol (EGP) [93,90] 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 Gateways | [MB] |
| 2 | DCN-AS | [DLM1] |
| 3 | The MIT Gateways | [LM8] |
| 4 | ISI-AS | [JKR1] |
| 5 | Symbolics | [CH2] |
| 6 | HIS-Multics | [BIM,RK1] |
| 7 | UK-MOD | [RNM1] |
| 8 | RICE-AS | [PGM] |
| 9 | CMU-ROUTER | [MA] |
| 10 | CSNET-PDN-AS | [RDR4] |
| 11 | HARVARD | [SXB1] |
| 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 | [JW01] |
| 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 | [JN2] |
| 36-65534 | Unassigned | [JBP] |

         **65535    Reserved**                                            **[JBP]**

### ASSIGNED ARPANET LOGICAL ADDRESSES

The ARPANET facility for "logical addressing" is described in
RFC 878 [56].  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 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 [7].

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                      | [109,LLG]    |
| 151      | Unassigned                        | [JBP]        |
| 152      | PARC Universal Protocol           | [11,HGM]     |
| 153      | TIP Status Reporting              | [JGH]        |
| 154      | TIP Accounting                    | [JGH]        |
| 155      | Internet Protocol [regular]       | [33,77,JBP]  |
| 156-158  | Internet Protocol [experimental]  | [33,77,JBP]  |
| 159      | Figleaf Link                      | [JBW1]       |
| 160-195  | Unassigned                        | [JBP]        |
| 196-247  | Experimental Protocols            | [JBP]        |
| 248-255  | Network Maintenance               | [JGH]        |

### IEEE 802 SAP NUMBERS OF INTEREST

Many of the networks of all classes are IEEE 802 Networks.  These
systems 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, c/o Tektronix, P.O. Box 500, D/S 50-473, Beaverton,
Oregon, 97077.

Assignments:

| Service Access Point | | Description | References |
|---|---|---|---|
| decimal | binary | | |
| 96 | 01100000 | DOD IP | [33,76,JBP] |

### 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] |
| 1536 | 0600 | 1536 | 3000 | XEROX NS IDP | [109,LLG] |
| 2048 | 0800 | 513 | 1001 | DOD IP | [33,77,JBP] |
| 2049 | 0801 | - | - | X.75 Internet | [LLG] |
| 2050 | 0802 | - | - | NBS Internet | [LLG] |
| 2051 | 0803 | - | - | ECMA Internet | [LLG] |
| 2052 | 0804 | - | - | Chaosnet | [LLG] |
| 2053 | 0805 | - | - | X.25 Level 3 | [LLG] |
| 2054 | 0806 | - | - | ARP | [61,DCP1] |
| 2076 | 081C | - | - | Symbolics Private | [DCP1] |
| 32771 | 8003 | - | - | Cronus VLN | [100,DT15] |
| 32772 | 8004 | - | - | Cronus Direct | [100,DT15] |
| 32774 | 8006 | - | - | Nestar | [LLG] |
| 32784 | 8010 | - | - | Excelan | [---] |
| 32821 | 8035 | - | - | Reverse ARP | [36,JCM] |
| 36864 | 9000 | - | - | Loopback | [LLG] |

The standard for transmission of IP datagrams over Ethernets and
Experimental Ethernets is specified in RFC 894 [48] and RFC 895 [63]
respectively.

### ASSIGNED ADDRESS RESOLUTION PROTOCOL PARAMETERS

The Address Resolution Protocol (ARP) specified in RFC 826 [61] 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] |

Protocol Type (pro)

Use the same codes as listed in the section called "Ethernet
Numbers of Interest".

### 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     | [PG3] |
| 014.000.000.016 | 2628-153-90075 00 | DFVLR     | [HDC1] |
| 014.000.000.017 | 3110-213-00032 00 | ISI-VAN-GW | [JD21] |
| 014.000.000.018-014.255.255.254 | | 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 [52].

## ASSIGNED TELNET OPTIONS

The Telnet Protocol has a number of options that may be negotiated.
These options are listed here.  "Official ARPA-Internet
Protocols" [89] provides more detailed information.

| Options | Name | References |
|-------|------------------------|----------|
| 0 | Binary Transmission | [82,JBP] |
| 1 | Echo | [83,JBP] |
| 2 | Reconnection | [5,JBP] |
| 3 | Suppress Go Ahead | [86,JBP] |
| 4 | Approx Message Size Negotiation | [34,JBP] |
| 5 | Status | [85,JBP] |
| 6 | Timing Mark | [87,JBP] |
| 7 | Remote Controlled Trans and Echo | [79,JBP] |
| 8 | Output Line Width | [3,JBP] |
| 9 | Output Page Size | [4,JBP] |
| 10 | Output Carriage-Return Disposition | [22,JBP] |
| 11 | Output Horizontal Tab Stops | [26,JBP] |
| 12 | Output Horizontal Tab Disposition | [25,JBP] |
| 13 | Output Formfeed Disposition | [23,JBP] |
| 14 | Output Vertical Tabstops | [28,JBP] |
| 15 | Output Vertical Tab Disposition | [27,JBP] |
| 16 | Output Linefeed Disposition | [24,JBP] |
| 17 | Extended ASCII | [105,JBP] |
| 18 | Logout | [19,MRC] |
| 19 | Byte Macro | [29,JBP] |
| 20 | Data Entry Terminal | [31,JBP] |
| 22 | SUPDUP | [21,20,MRC] |
| 22 | SUPDUP Output | [39,MRC] |
| 23 | Send Location | [51,EAK1] |
| 24 | Terminal Type | [97,MHS1] |
| 25 | End of Record | [75,JBP] |
| 255 | Extended-Options-List | [81,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 [35].

ALTO
AMDAHL-V7
BURROUGHS-B/29
C/30
C/70
CADLINC
CADR
CDC-173
DEC-10
DEC-1050
DEC-1080
DEC-1090
DEC-1090B
DEC-1090T
DEC-2020T
DEC-2040
DEC-2040T
DEC-2050T
DEC-2060
DEC-2060T
DEC-FALCON
DPS8/70M
FOONLY-F2
FOONLY-F3
FOONLY-F4
H-316
H-60/68
H-68
H-68/80
H-89
HONEYWELL-DPS-8/70M
IBM-158
IBM-360/67
IBM-370/3033
IBM-4341
IBM-PC
IMSAI
K102
LSI-11
LSI-11/23
M6800
MAXC
MLC

        NAS-AS/5
        ONYX-09001
        ONYX-28000
        PDP-11
        PDP-11/34
        PDP-11/40
        PDP-11/44
        PDP-11/45
        PDP-11/50
        PDP-11/70
        PERQ
        PLURIBUS
        ROLM-1666
        SMI
        SUN-150
        SYMBOLICS-3600
        UNIVAC-1100
        VAX-11/730
        VAX-11/750
        VAX-11/780
        VAX-11/785
        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 [35].

ASP
AUGUST
BKY
CCP
DOS/360
ELF
EPOS
EXEC-8
GCOS
GPOS
ITS
INTERCOM
INTERLISP
KRONOS
MCP
MOS
MPX-RT
MULTICS
MVT
NOS
NOS/BE
OS/MVS
OS/MVT
RIG
RSX-11M
RT11
SCOPE
SIGNAL
SINTRAN
TENEX
TOPS-10
TOPS-20
TSS
UNIX
VM/370
VM/CMS
VMS
WAITS
XDE

### OFFICIAL PROTOCOL AND SERVICE NAMES

These are the Official Protocol Names.  Their use is described in
greater detail in RFC 810 [35].

```
ARGUS               - ARGUS Protocol
AUTH                - Authentication Service
BBN-RCC-MON         - BBN RCC Monitoring
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
ISI-GL              - ISI Graphics Language Protocol
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
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
     NVP-II              - Network Voice Protocol
     POP                 - Post Office Protocol
     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
     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 884 [97].

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
COMPUCOLOR-II
CONCEPT-100
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
        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.