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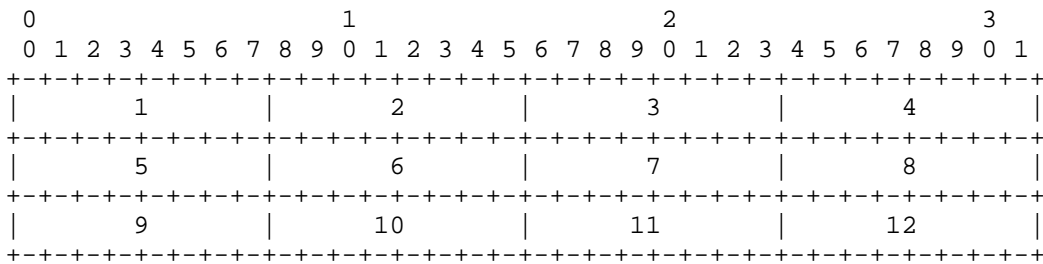
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   Most of the protocols mentioned here are documented in the RFC series
   of notes. Some of the items listed are undocumented. Further
   information on protocols can be found in the memo "Official
   ARPA-Internet Protocols" [114]. The more prominent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

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

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

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

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|       1       |       2       |       3       |       4       |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|       5       |       6       |       7       |       8       |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|       9       |      10       |      11       |      12       |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

                    Transmission Order of Bytes

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

```
                     0 1 2 3 4 5 6 7
                    +-+-+-+-+-+-+-+-+
                    |1 0 1 0 1 0 1 0|
                    +-+-+-+-+-+-+-+-+
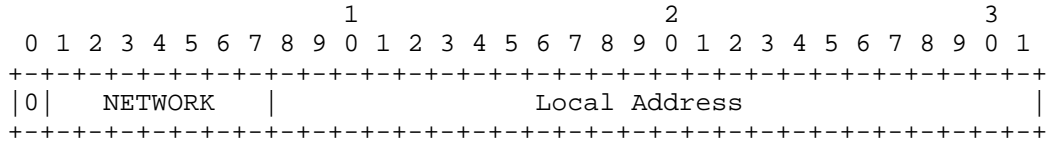```
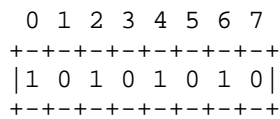
                       Significance of Bits

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

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

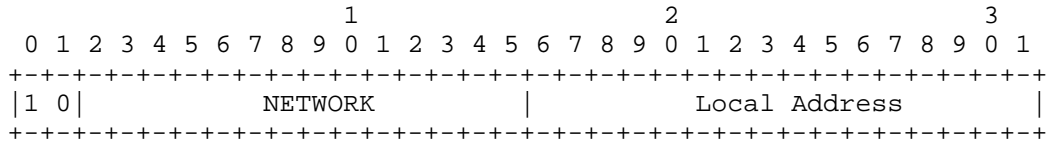                          ASSIGNED NETWORK NUMBERS

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

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

                        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 |
     +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
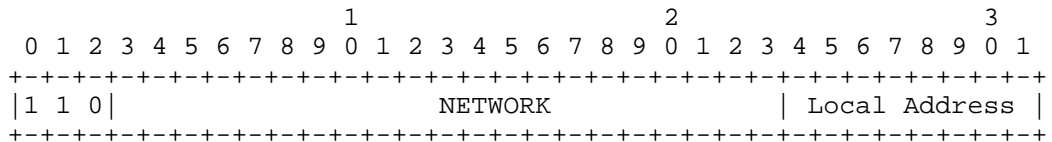
                            Class C Address

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

```
                        1                   2                   3
   0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
  +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
  |1 1 1 0|                 multicast address                    |
  +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```
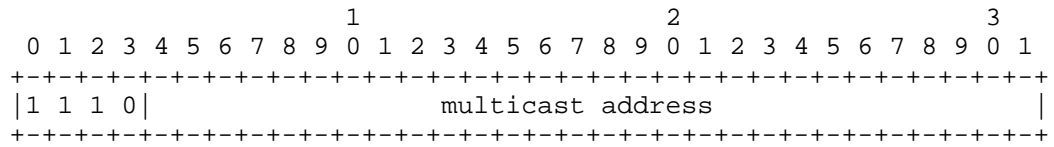
                       Class D Address

   Note: No addresses are allowed with the four highest-order bits
   set to 1-1-1-1. These addresses, called "class E", are reserved.

One commonly used notation for internet host addresses divides the
32-bit address into four 8-bit fields and specifies the value of each
field as a decimal number with the fields separated by periods. This
is called the "dotted decimal" notation. For example, the internet
address of B.ISI.EDU in dotted decimal is 010.003.000.052, or
10.3.0.52.

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

There are four catagories of users of Internet Addresses: Research,
Defense, Government (Non-Defense), and Commercial. To reflect the
allocation of network identifiers among the categories, a
one-character code is placed to the left of the network number: R for
Research, D for Defense, G for Government, and C for Commercial (see
Appendix A for further details on this division of the network
identification).

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

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

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

Special Addresses:

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

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

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

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

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

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

Assigned Network Numbers

Class A Networks

```
   *  Internet Address     Name          Network              References
   -  ----------------     ----          -------              ----------
      000.rrr.rrr.rrr                     Reserved                  [JBP]
   R  004.rrr.rrr.rrr     SATNET          Atlantic Satellite Network [SHB]
   D  006.rrr.rrr.rrr T YPG-NET-TEMP      Yuma Proving Grounds    [10,BWA]
   D  007.rrr.rrr.rrr T EDN-TEMP          DCEC EDN                  [EC5]
   R  008.rrr.rrr.rrr T BBN-NET-TEMP      BBN Network              [JSG5]
   R  010.rrr.rrr.rrr     ARPANET         ARPANET                 [10,SA2]
   D  011.rrr.rrr.rrr     DODIIS          DoD INTEL INFO SYS        [AY7]
   C  012.rrr.rrr.rrr     ATT             ATT, Bell Labs           [MH12]
   C  013.rrr.rrr.rrr     XEROX-NET       XEROX Internet         [129,JNL1]
   C  014.rrr.rrr.rrr     PDN             Public Data Network      [REK4]
   R*015.rrr.rrr.rrr       HP-INTERNET    Hewlett-Packard-Internet  [BXR]
   R  018.rrr.rrr.rrr T MIT-TEMP          MIT Network        [23,113,DDC1]
   D  021.rrr.rrr.rrr     DDN-RVN         DDN-RVN                   [MLC]
   D  022.rrr.rrr.rrr     DISNET          DISNET                   [FLM2]
   D  023.rrr.rrr.rrr     DDN-TC-NET      DDN-TestCell-Network     [DH17]
   R  025.rrr.rrr.rrr     RSRE-EXP        RSRE                     [RNM1]
   D  026.rrr.rrr.rrr     MILNET          MILNET                   [FLM2]
   R  027.rrr.rrr.rrr T NOSC-LCCN-TEMP    NOSC / LCCN               [RH6]
   R  028.rrr.rrr.rrr     WIDEBAND        Wide Band Satellite Net  [CJW2]
   D  029.rrr.rrr.rrr T MILX25-TEMP       MILNET X.25 Temp          [MLC]
   D  030.rrr.rrr.rrr T ARPAX25-TEMP      ARPA X.25 Temp            [MLC]
   G  031.rrr.rrr.rrr     UCDLA-NET       UCDLA-CATALOG-NET         [CXL]
   R  032.rrr.rrr.rrr     UCL-TAC         UCL TAC                    [PK]
   R  035.rrr.rrr.rrr     MERIT           MERIT COMPUTER NETWK      [HWB]
   R  036.rrr.rrr.rrr T SU-NET-TEMP       Stanford University Network[PA5]
   R  039.rrr.rrr.rrr T SRINET-TEMP       SRI Local Network        [GEOF]
   R  041.rrr.rrr.rrr     BBN-TEST-A      BBN-GATE-TEST-A           [RH6]
   R  044.rrr.rrr.rrr     AMPRNET         Amateur Radio Experiment Net[HM]
      001.rrr.rrr.rrr-003.rrr.rrr.rrr Unassigned                   [JBP]
      005.rrr.rrr.rrr    Unassigned       Unassigned                [JBP]
      009.rrr.rrr.rrr    Unassigned       Unassigned                [JBP]
      016.rrr.rrr.rrr-017.rrr.rrr.rrr Unassigned                   [JBP]
      019.rrr.rrr.rrr-020.rrr.rrr.rrr Unassigned                   [JBP]
      024.rrr.rrr.rrr    Unassigned       Unassigned                [JBP]
      033.rrr.rrr.rrr-034.rrr.rrr.rrr Unassigned                   [JBP]
      037.rrr.rrr.rrr-038.rrr.rrr.rrr Unassigned                   [JBP]
      040.rrr.rrr.rrr    Unassigned       Unassigned                [JBP]
      042.rrr.rrr.rrr-043.rrr.rrr.rrr Unassigned                   [JBP]
      045.rrr.rrr.rrr-126.rrr.rrr.rrr Unassigned                   [JBP]
   R  127.rrr.rrr.rrr                     Loopback                  [JBP]
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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	[78,DLM1]
R	128.005.rrr.rrr	FORDNET	FORD DCNET	[78,DLM1]
R	128.006.rrr.rrr	RUTGERS	RUTGERS	[CLH3]
R	128.007.rrr.rrr	DFVLR	DFVLR DCNET Network	[GB7]
R	128.008.rrr.rrr	UMDNET	Univ of Maryland DCNET	[78,DLM1]
R	128.009.rrr.rrr	ISI-NET	USC-ISI Local Network	[CMR]
R	128.010.rrr.rrr	PURDUE-CS-EN	Purdue Computer Science	[CAK]
R	128.011.rrr.rrr	BBN-CRONUS	BBN DOS Project	[72,WXM]
R	128.012.rrr.rrr	SU-NET	Stanford University Net	[LB3]
D	128.013.rrr.rrr	MATNET	Mobile Access Terminal Net	[SHB]
R	128.014.rrr.rrr	BBN-SAT-TEST	BBN SATNET Test Net	[SHB]
R	128.015.rrr.rrr	S1NET	LLL-S1-NET	[EAK1]
R	128.016.rrr.rrr	UCLNET	University College London	[PK]
D	128.017.rrr.rrr	MATNET-ALT	Mobile Access Terminal Alt	[SHB]
R	128.018.rrr.rrr	SRINET	SRI Local Network	[GEOF]
D	128.019.rrr.rrr	EDN	DCEC EDN	[EC5]
D	128.020.rrr.rrr	BRLNET	BRLNET	[10,MJM2]
R	128.021.rrr.rrr	SF-PR-1	SF-1 Packet Radio Network	[JEM]
R	128.022.rrr.rrr	SF-PR-2	SF-2 Packet Radio Network	[JEM]
R	128.023.rrr.rrr	BBN-PR	BBN Packet Radio Network	[JAW3]
R	128.024.rrr.rrr	ROCKWELL-PR	Rockwell Packet Radio Net	[EHP]
D	128.025.rrr.rrr	BRAGG-PR	Ft. Bragg Packet Radio Net	[JEM]
D	128.026.rrr.rrr	SAC-PR	SAC Packet Radio Network	[BG5]
D	128.027.rrr.rrr	DEMO-PR-1	Demo-1 Packet Radio Network	[LCS]
D	128.028.rrr.rrr	C3-PR-TEMP	Testbed Development PR NET	[BG5]
R	128.029.rrr.rrr	MITRE	MITRE Cablenet	[121,TML]
R	128.030.rrr.rrr	MIT-NET	MIT Local Network	[DDC1]
R	128.031.rrr.rrr	MIT-RES	MIT Research Network	[DDC1]
R	128.032.rrr.rrr	UCB-ETHER	UC Berkeley Ethernet	[DAM1]
R	128.033.rrr.rrr	BBN-NET	BBN Network	[JSG5]
R	128.034.rrr.rrr	NOSC-LCCN	NOSC / LCCN	[RH6]
R	128.035.rrr.rrr	CISLTESTNET1	Honeywell	[60,61,JLM23]
R	128.036.rrr.rrr	YALE-NET	YALE NET	[129,JO5]
D	128.037.rrr.rrr	YPG-NET	Yuma Proving Grounds	[10,BWA]
D	128.038.rrr.rrr	NSWC-NET	NSWC Local Host Net	[RLH2]
R	128.039.rrr.rrr	NTANET	NDRE-TIU	[PS3]
R	128.040.rrr.rrr	UCL-NET-A	UCL	[RC7]
R	128.041.rrr.rrr	UCL-NET-B	UCL	[RC7]
R	128.042.rrr.rrr	RICE-NET	Rice University	[129,PGM]

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    R 128.043.rrr.rrr     DRENET         Canada REF ARPANET      [10,JR17]
    D 128.044.rrr.rrr     WSMR-NET       White Sands Network       [CAS1]
    C 128.045.rrr.rrr     DEC-WRL-NET    DEC WRL Network        [129,RKJ2]
    R 128.046.rrr.rrr     PURDUE-NET     Purdue Campus Network      [CAK]
    D 128.047.rrr.rrr     TACTNET        Tactical Packet Net      [9,KTP]
    G 128.048.rrr.rrr     UCDLA-NET-B    UCDLA-Network-B         [10,CXL]
    R 128.049.rrr.rrr     NOSC-ETHER     NOSC Ethernet          [129,RLB3]
    G 128.050.rrr.rrr     COINS          COINS On-Line Intel Net   [RLS6]
    G 128.051.rrr.rrr     COINSTNET      COINS TEST NETWORK        [RLS6]
    R 128.052.rrr.rrr     MIT-AI-NET     MIT AI NET             [129,MDC]
    R 128.053.rrr.rrr     SAC-PR-2       SAC PRNET Number 2         [BG5]
    R 128.054.rrr.rrr     UCSD           UC San Diego Network   [129,GH29]
    R*128.055.rrr.rrr     MFENET         LLNL MFE Network       [119,DRP]
    D 128.056.rrr.rrr     USNA-NET       US Naval Academy Network   [TXS]
    D 128.057.rrr.rrr     DEMO-PR-2      Demo-2 Packet Radio Net    [LCS]
    C*128.058.rrr.rrr     SPAR           Schlumberger PA Net    [129,RXB]
    R 128.059.rrr.rrr     CU-NET         Columbia University    [129,LH2]
    D 128.060.rrr.rrr     NRL-LAN        NRL Lab Area Net           [WF3]
    R*128.061.rrr.rrr     GATECH         Georgia Tech           [129,GXS]
    R 128.062.rrr.rrr     MCC-NET        MCC Corporate Net      [129,CBD]
    R 128.063.rrr.rrr     BRL-SUBNET     BRL-SUBNET-EXP            [RBN1]
    R 128.064.rrr.rrr-128.079.rrr.rrr Net Dynamics Exp           [ZSU]
    D 128.080.rrr.rrr     CECOMNET       CECOM EPR NET            [PFS2]
    R 128.081.rrr.rrr     SYMBOLICS      SYMBOLICS              [129,CH2]
      128.082.rrr.rrr     Unassigned     Unassigned               [JBP]
    R 128.083.rrr.rrr     UTAUSTIN       U. Texas Austin        [129,JSQ1]
    R 128.084.rrr.rrr     CORNELL-NET    Cornell Backbone Net   [129,BN9]
    C*128.085.rrr.rrr     DRILL-NET      Teleco Drilltech Net       [DBJ]
    R 128.086.rrr.rrr     MRC            UK.CO.GEC.RL.MRC          [RHC3]
    R 128.087.rrr.rrr     HIRST          UK.CO.GEC.RL.HRC          [RHC3]
    R*128.088.rrr.rrr     HP-NET         HEWLETT-PACKARD-NET        [AXG]
    R 128.089.rrr.rrr     BBN-ENET-TEMP  BBN ETHER NETWORK      [129,SGC]
    C*128.090.rrr.rrr     PQS            PERQ SYSTEMS CORP      [129,DXS]
    R 128.091.rrr.rrr     UPENN          UPenn Campus Network   [129,IW5]
    R 128.092.rrr.rrr     INTELLINET     INTELLICORP NET        [129,DAVE]
    R*128.093.rrr.rrr     INRIA-ROCQU    INRIA Rocquencourt        [MXA1]
    R*128.094.rrr.rrr     SYSNET         AT&T SYSNETWORK           [EXY]
    R 128.095.rrr.rrr     WASHINGTON     Comp Sci Ether Net     [129,RA17]
    C*128.096.rrr.rrr     BELLCORE-NET   BELLCORE-NET              [PK28]
    R 128.097.rrr.rrr     UCLANET        UCLA Network             [BJL5]
    R 128.098.rrr.rrr     RSRE-EN2       RSRE-EXP-NET-2            [JXW]
    C 128.099.rrr.rrr     NORTHROP-NET   Northrop Net           [129,RSM1]
    R*128.100.rrr.rrr     TORONTO        U. of Toronto Net      [129,BXD]
    R 128.101.rrr.rrr     UMN            Univ. of Minn.            [SSB]
    G 128.102.rrr.rrr     AMES-NET       Ames Backbone Net.     [129,MSM1]
    R 128.103.rrr.rrr     HARV-FIBER     Harvard FiberOp Ether  [129,SB28]
    R 128.104.rrr.rrr     WISC-HERD      Univ. of Wisconsin     [129,EJN1]
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    R 128.105.rrr.rrr   WISC-CS        Univ. of Wisconsin       [129,CBP]
    D 128.106.rrr.rrr   SRI-PSON-1     ADEA/SRI Ft. Lewis          [ERK3]
    D 128.107.rrr.rrr   LEWIS-PRNET1   ADEA/SRI Ft. Lewis          [ERK3]
    D 128.108.rrr.rrr   LEWIS-PRNET2   ADEA/SRI Ft. Lewis          [ERK3]
    R 128.109.rrr.rrr   TUCC-MCNC      TUCC-MCNC NC Net             [JXR]
    R 128.110.rrr.rrr   UTAH-NET       UTAH-CAMPUS-NET             [JL15]
    R 128.111.rrr.rrr   UCSB           U of CA, Santa Barbara       [PXH]
    R 128.112.rrr.rrr   PRINCETON      Princeton University         [LXR]
    R 128.113.rrr.rrr   RPINET         RPI-LOCALNET                 [MS9]
    R 128.114.rrr.rrr   UCSC           U.C. Santa Cruz Net      [129,JXH]
    R 128.115.rrr.rrr   LLL-LABNET     LLNL Open Labnet           [BANDY]
    R 128.116.rrr.rrr   USAN           UNIV SATELLITE NET       [129,BXI]
    R 128.117.rrr.rrr   UCAR           UNIV CORP ATM RSCH       [129,BXI]
    R 128.118.rrr.rrr   PENN-STATE     Penn State Network          [SXS1]
    R 128.119.rrr.rrr   UMASS-CS       UMass COINS Dept LAN     [129,GXW]
    R 128.120.rrr.rrr   UCDAVIS        U.C. Davis Network       [129,RXH]
    R 128.121.rrr.rrr   JVNC-NET       John von Neumann Ctr Net     [FXH]
    R 128.122.rrr.rrr   NYU-NET        NYU Campus Network          [BJR2]
    R*128.123.rrr.rrr   NMSU           N M State Univ           [129,MXS3]
    R 128.124.rrr.rrr T NTA-TEMP       NTARE BF-TO-PDP11           [TM10]
    R 128.125.rrr.rrr   USCNET         USC Campus Network       [129,MAB4]
    R 128.126.rrr.rrr   SDC-PRC        SDC Paoli R&D Center     [129,MXS2]
    C*128.127.rrr.rrr   FTP-SOFTWARE   FTP Software Net            [JLR4]
    R 128.128.rrr.rrr   WHOINET        WHOI Campus Net             [ARM5]
    C*128.129.rrr.rrr   CGI            Carnegie Group               [RXA]
    R*128.130.rrr.rrr   TUNET-T        TU Wien Terminal Net     [129,GXP1]
    R*128.131.rrr.rrr   TUNET-F        TU Wien File Net         [129,GXP1]
    G*128.132.rrr.rrr   RADC-LONS      RADC-LONS Net            [129,GXG]
    G*128.133.rrr.rrr   AFSC-LONS      AFSC-LONS Net            [129,GXG]
    R 128.134.rrr.rrr   SDN            System Dev Net        [21,22,HXC]
    R 128.135.rrr.rrr   U-CHICAGO      UNIVERSITYOFCHICAGO      [129,MC17]
    R 128.136.rrr.rrr   TEK-ALLNET     Teknowledge-Net          [129,TE2]
    C*128.137.rrr.rrr   GENNET1        Genentech Corp Net       [129,SXM1]
    R 128.138.rrr.rrr   COLORADO       U Colorado Boulder       [129,RXJ1]
    R 128.139.rrr.rrr   ILAN           Israel Academic Net      [129,DB35]
    R 128.140.rrr.rrr   EMORY-INET     Emory Internet           [129,SA29]
    R*128.141.rrr.rrr   CERN-ETHER     DD Main Ethernet         [129,BXS]
    R*128.142.rrr.rrr   CERN-TOKEN     DD Main IBM Token Ring [129,BXS]
    R*128.143.rrr.rrr   VIRGINIA       Univ. of Virginia        [129,JXJ1]
    R*128.144.rrr.rrr   ARC-CALGARY    Alta Research Calgary        [DXK]
    R 128.145.rrr.rrr   NYSERNET       NYSERNET                     [MXF]
    R 128.146.rrr.rrr   OHIO-STATE     Ohio State Univ             [RSD2]
    R 128.147.rrr.rrr   U-PGH-NET      Univ. Pittsburgh Net         [SM6]
    R 128.148.rrr.rrr   BROWN-UNIV     Brown University Net        [MXR1]
    G 128.149.rrr.rrr   JPL-NET        JPL Central Net             [MSM1]
    G 128.150.rrr.rrr   NSF-LAN        NSF-LAN                     [FW17]
    R 128.151.rrr.rrr   UR-NET         Univ. of Rochester         [TXM1]
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   C*128.152.rrr.rrr   HAC-VLSI       Hughes Aircraft VLSI Net [PXH1]
   R 128.153.rrr.rrr   CLARKSON       Clarkson University      [JXH]
   G 128.154.rrr.rrr   GSFC-NET       GSFC Central Net         [MSM1]
   G 128.155.rrr.rrr   LARC-NET       LARC Central Net         [MSM1]
   G 128.156.rrr.rrr   LERC-NET       LERC Central Net         [MSM1]
   G 128.157.rrr.rrr   JSC-NET        JSC Central Net          [MSM1]
   G 128.158.rrr.rrr   MSFC-NET       MSFC Central Net         [MSM1]
   G 128.159.rrr.rrr   KSC-NET        KSC Central Net          [MSM1]
   G 128.160.rrr.rrr   NSTL-NET       NSTL Central Net         [MSM1]
   G 128.161.rrr.rrr   NSN-NET        NASA Science Net         [MSM1]
   C 128.162.rrr.rrr   CRAY-NET       Cray Research            [DXB]
   R 128.163.rrr.rrr   UKY-NET        U. of Kentucky Net       [GXB]
   R 128.164.rrr.rrr   GWU-GATE       George Washington U.     [TXT]
   G 128.165.rrr.rrr   LANL-INET      LANL Inter-Network       [JC11]
   D*128.166.rrr.rrr   BAC-NET        Boeing Aerospace Corp Net [JXJ2]
   R 128.167.rrr.rrr   SURA           SURAnet                  [JXH1]
   C 128.168.rrr.rrr   GOLDHILL       Gold-Hill-Computers      [GXM]
   R 128.169.rrr.rrr   UTK            Univ Tenn-Knoxville      [JXC]
   R 128.170.rrr.rrr   SDC-CAM        SDC Camarillo R&D Net    [DSR]
     128.171.rrr.rrr-191.254.rrr.rrr Unassigned               [JBP]
     191.255.rrr.rrr                  Reserved                 [JBP]

   Class C Networks

   * Internet Address   Name           Network              References
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     192.000.000.rrr                   Reserved                 [JBP]
   R 192.000.001.rrr   BBN-TEST-C     BBN-GATE-TEST-C          [RH6]
     192.000.002.rrr-192.000.255.rrr Unassigned               [JBP]
   R 192.001.000.rrr-192.001.004.rrr BBN local networks       [SGC]
   R 192.001.005.rrr   BBN-ENET2      BBN-ENET2                [SGC]
   R 192.001.006.rrr                  BBN local network        [SGC]
   R 192.001.007.rrr   BBN-ENET       BBN-ENET                 [SGC]
   R 192.001.008.rrr                  BBN local network        [SGC]
   R 192.001.009.rrr   BBN-ENET3      BBN-ENET3                [SGC]
   R 192.001.010.rrr   BBN-NETR       BBN-NETR                 [SGC]
   R 192.001.011.rrr   BBN-SPC-ENET   BBN-SPC-ENET             [SGC]
   R 192.001.012.rrr-192.003.255.rrr BBN local networks       [SGC]
   R*192.004.000.rrr-192.004.255.rrr BELLCORE-NET        [129,PK28]
   R 192.005.001.rrr   CISLHYPERNET   Honeywell                [JLM23]
   R*192.005.002.rrr   UF-NET-A       UF-CIS Dept Ether        [AXW]
   C 192.005.003.rrr   HP-DESIGN-AIDS HP Design Aids           [AXG]
   C 192.005.004.rrr   HP-TCG-UNIX    Hewlett Packard TCG Unix [AXG]
   R 192.005.005.rrr   DEC-MRNET      DEC Marlboro Ethernet [129,KWP]
   R 192.005.006.rrr   DEC-MRRAD      DEC Marlboro Developmt [129,KWP]
   R 192.005.007.rrr   CIT-CS-NET     Caltech-CS-Net       [137,DSW]
     192.005.008.rrr   Unassigned     Unassigned               [JBP]
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     R 192.005.009.rrr     AERONET          Aerospace Labnet          [2,LCN]
     R 192.005.010.rrr     ECLNET           USC-ECL-CAMPUS-NET          [MAB4]
     R 192.005.011.rrr     CSS-RING         SEISMIC-RESEARCH-NET         [RR2]
     R 192.005.012.rrr     UTAH-NET-C       UTAH-COMPUTER-SCIENCE-NET [GW22]
     R 192.005.013.rrr     GSWDNET          Compion Network          [129,FAS]
     R 192.005.014.rrr     RAND-NET         RAND Network             [129,JDG]
     R 192.005.015.rrr T   NYU-NET-TEMP     NYU Network                  [EF5]
     R 192.005.016.rrr     LANLLAND         Los Alamos Dev LAN       [129,JC11]
     R 192.005.017.rrr     NRL-NET          Naval Research Lab            [AP]
     R 192.005.018.rrr     IPTO-NET         ARPA-IPTO Office Net         [SA2]
     R 192.005.019.rrr     UCIICS           UCI-ICS Res Net              [MTR]
     R 192.005.020.rrr     CISLTTYNET       Honeywell                  [JLM23]
     D 192.005.021.rrr     BRLNET1          BRLNET1                  [10,MJM2]
     D 192.005.022.rrr     BRLNET2          BRLNET2                  [10,MJM2]
     D 192.005.023.rrr     BRLNET3          BRLNET3                  [10,MJM2]
     D 192.005.024.rrr     BRLNET4          BRLNET4                  [10,MJM2]
     D 192.005.025.rrr     BRLNET5          BRLNET5                  [10,MJM2]
     D 192.005.026.rrr     NSRDCOA-NET      NSRDC Office Auto Net        [TXC]
     D 192.005.027.rrr     DTNSRDC-NET      DTNSRDC-NET                  [TXC]
     R 192.005.028.rrr     RSRE-NULL        RSRE-NULL                   [RNM1]
     R 192.005.029.rrr     RSRE-ACC         RSRE-ACC                    [RNM1]
     R 192.005.030.rrr     RSRE-PR          RSRE-PR                     [RNM1]
     R*192.005.031.rrr     SIEMENS-NET      Siemens Research Network    [PXN]
     R 192.005.032.rrr     CISLTESTNET2     Honeywell             [60,61,JLM23]
     R 192.005.033.rrr     CISLTESTNET3     Honeywell             [60,61,JLM23]
     R 192.005.034.rrr     CISLTESTNET4     Honeywell             [60,61,JLM23]
     R 192.005.035.rrr     RIACS            USRA                     [129,RLB1]
     R 192.005.036.rrr     CORNELL-CS       CORNELL CS Research       [129,DK2]
     R 192.005.037.rrr     UR-CS-NET        U of R CS 3Mb Net         [129,LB1]
     R 192.005.038.rrr     SRI-C3ETHER      SRI-AITAD C3ETHERNET      [129,BG5]
     R 192.005.039.rrr     UDEL-EECIS       Udel EECIS LAN            [129,CC2]
     R 192.005.040.rrr     PUCC-NET-A       PURDUE Comp Cntr Net         [JRS8]
     D 192.005.041.rrr     WISLAN           WIS Research LAN         [129,JRM1]
     D 192.005.042.rrr     HYPER-1ISG       AFDSC Hypernet               [MCA1]
     R 192.005.043.rrr     CUCSNET          Columbia CS Net           [129,LH2]
     R 192.005.044.rrr     FARBER-PC-NET Farber PC Network              [DJF]
     R 192.005.045.rrr     AIDS-NET         AI&DS Network            [129,KFD]
     R 192.005.046.rrr     NTA-RING         NDRE-RING                    [PS3]
     R 192.005.047.rrr     NSRDC            NSRDC                        [PXM]
     R 192.005.048.rrr     PURDUE-CS-NET Purdue CS Ethernet         [129,CAK]
     R 192.005.049.rrr     UCSF             Univ of Calif, San Fran[129,TF6]
     R 192.005.050.rrr     CTH-CS-NET       Chalmers CSN Net          [129,UXB]
     R 192.005.051.rrr     THEORYNET        Cornell Theory Center  [129,AB13]
     R 192.005.052.rrr     NLM-ETHER        NLM-LHNCBC-ETHERNET       [129,JA1]
     R 192.005.053.rrr     UR-CS-ETHER      U of R CS 10Mb Net        [129,LB1]
     R 192.005.054.rrr     AERO-A6          Aerospace                 [2,LCN]
     R 192.005.055.rrr     UCLA-CECS        UCLA-CECS Network         [129,RBW]
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   C 192.005.056.rrr   TARTAN-NET      Tartan Labs                 [SXB]
   R 192.005.057.rrr   UDEL-CC         UDEL Comp Center       [129,RR18]
   R 192.005.058.rrr   CSNET-PDN       CSNET X.25 Network      [68,RDR4]
   R*192.005.059.rrr   INRIA-SM90      Inria GIP SM-90             [MXS]
   R*192.005.060.rrr   SM90-X1         Inria SM-90 exp. 1          [MXS]
   R*192.005.061.rrr   SM90-X2         Inria SM-90 exp. 2          [MXS]
   R*192.005.062.rrr   LITP-SM90       LITP SM-90                  [MXS]
     192.005.063.rrr   Unassigned      Unassigned                  [JBP]
   R 192.005.064.rrr   AMES-NAS-NET    NASA ARC NAS LAN       [129,MF31]
   R 192.005.065.rrr   NPRDC-Ether     NPRDC TRCF Ethernet         [LRB]
   R 192.005.066.rrr   HARV-NET        Harvard Comp Sci Net        [SB28]
   R 192.005.067.rrr   CECOM-ETHER     CECOM ADDCOMPE ETHER    [129,GIH]
   R 192.005.068.rrr   AERO-130        AEROSPACE-130               [LCN]
   R 192.005.069.rrr   UIUC-NET        Univ of IL at Urbana    [129,AKC]
   G 192.005.070.rrr   CELAN           COINS Exper. LAN            [MXM]
   R 192.005.071.rrr   SAC-ETHER       SAC C3 Ethernet         [129,BG5]
   R*192.005.072.rrr   U CHICAGO       U Chicago                   [TXN]
   R 192.005.073.rrr   U CHICAGO       U Chicago                   [TXN]
   R*192.005.074.rrr-192.005.087.rrr U Chicago                    [TXN]
   R 192.005.088.rrr   YALE-EE-NET     YALE-EE-NET            [129,AG22]
   R 192.005.089.rrr   HARV-APPOLLO    Harvard University       [4,SB28]
   R 192.005.090.rrr   HARV-ETHER      Harvard CS Ethernet         [SB28]
   R 192.005.091.rrr   PURDUE-ECN1     Purdue ECN           [42,63,GG11]
   R 192.005.092.rrr   BRAGG-ETHER     SRI Bragg Ether         [129,GIH]
   R 192.005.093.rrr   SRI-DEMO        SRI Ether Demo          [129,GIH]
   R*192.005.094.rrr   SDCRDCF-10MB    SDC R&D primary net     [129,DJV1]
   R*192.005.095.rrr   SDCRDCF-3MB     SDC R&D old net         [129,DJV1]
   R*192.005.096.rrr   UBC-CS-NET      UBC Comp Sci Net        [129,PXB]
   R*192.005.097.rrr   UCLA-CS-LNI     UCLA CS LNI Network         [RBW]
   R*192.005.098.rrr   UCLA-PIC        UCLA PIC Network        [129,RBW]
   R 192.005.099.rrr   SPACENET        S-1 Workstation Net.    [129,TXW]
   R*192.005.100.rrr   HCSC-NET        Honeywell CSC Net       [129,TRG4]
   R 192.005.101.rrr   PUCC-NET-B      Purdue Gateway Network      [JRS8]
   R 192.005.102.rrr   PUCC-RHF-NET    PUCC RHF Based Net          [JRS8]
   C*192.005.103.rrr   TYM-NTD-NET     Tymnet NTD Ethernet         [SMF]
   R 192.005.104.rrr   THINK-INET      Thinking Machines       [129,BJN1]
   R 192.005.105.rrr   CCA-POND        CCA Ethernet1 (POND)    [129,AL6]
   C*192.005.106.rrr   BITSTREAM       Bitstream Type Foundry  [129,PXA]
   R*192.005.107.rrr   PASC-ETHER      IBM PASC Ethernet       [129,GXL]
   R*192.005.108.rrr   PASC-BB         IBM PASC Broadband       [63,GXL]
   R*192.005.109.rrr   CWR-JCC-T       ARJCC TOPS-20 NET       [129,JAG3]
   R*192.005.110.rrr   CWR-JCC-L       ARJCC LOCAL NET         [129,JAG3]
   R*192.005.111.rrr   CWR-QUAD        Campus QUAD NET         [129,JAG3]
   R*192.005.112.rrr   CWR-CAISR       CAISR LOCAL NET         [129,JAG3]
   R*192.005.113.rrr   CWR-CES         CES LOCAL NET               [JAG3]
   C*192.005.114.rrr   I2-RING-1       INTERMETRICS PRONET     [129,NXH]
   C*192.005.115.rrr   I2-ETHER-1      INTERMETRICS ETHER      [129,NXH]
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    R 192.005.116.rrr    BRAGGNET-1     BRAGG/ADDCOMPE      [129,BG25]
    R 192.005.117.rrr    BRAGGNET-2     BRAGG/ADDCOMPE      [129,BG25]
    R 192.005.118.rrr    BRAGGNET-3     BRAGG/ADDCOMPE      [129,BG25]
    R 192.005.119.rrr    BRAGGNET-4     BRAGG/ADDCOMPE      [129,BG25]
    R 192.005.120.rrr    BRAGGNET-5     BRAGG/ADDCOMPE      [129,BG25]
    R 192.005.121.rrr    BRAGGNET-6     BRAGG/ADDCOMPE      [129,BG25]
    R 192.005.122.rrr    BRAGGNET-7     BRAGG/ADDCOMPE      [129,BG25]
    R 192.005.123.rrr    BRAGGNET-8     BRAGG/ADDCOMPE      [129,BG25]
    R 192.005.124.rrr    BRAGGNET-9     BRAGG/ADDCOMPE      [129,BG25]
    R 192.005.125.rrr    BRAGGNET-10    BRAGG/ADDCOMPE      [129,BG25]
    R 192.005.126.rrr    BRAGGNET-11    BRAGG/ADDCOMPE      [129,BG25]
    R 192.005.127.rrr    BRAGGNET-12    BRAGG/ADDCOMPE      [129,BG25]
    R 192.005.128.rrr    BRAGGNET-13    BRAGG/ADDCOMPE      [129,BG25]
    R 192.005.129.rrr    BRAGGNET-14    BRAGG/ADDCOMPE      [129,BG25]
    R 192.005.130.rrr    BRAGGNET-15    BRAGG/ADDCOMPE      [129,BG25]
    R 192.005.131.rrr    BRAGGNET-16    BRAGG/ADDCOMPE      [129,BG25]
    R 192.005.132.rrr    BRAGGNET-17    BRAGG/ADDCOMPE      [129,BG25]
    R*192.005.133.rrr    PERCEPT-AI     Perceptronics         [KXC]
    C*192.005.134.rrr    I2-ETHER-2     Intermetrics        [129,NH2]
    R 192.005.135.rrr    LL-SPEECH-NET  LL Speech Net       [129,RH60]
    R 192.005.136.rrr    LL43-LEX-BACK  Lincoln G43-LEX-BACK [129,BC65]
    R 192.005.137.rrr    LL43-LEX-SUNA  Lincoln G43-LEX-SUNA [129,BC65]
    R 192.005.138.rrr    LL43-LEX-SUNB  Lincoln G43-LEX-SUNB [129,BC65]
    R 192.005.139.rrr    LL43-LEX-APO   Lincoln G43-LEX-APO  [129,BC65]
    R 192.005.140.rrr    LL43-TB-BACK   Lincoln G43-TB-BACK  [129,BC65]
    R 192.005.141.rrr    LL43-TB-APO    Lincoln G43-TB-APO   [129,BC65]
    R*192.005.142.rrr    CCVR           CCVR Network        [129,RXD]
    R 192.005.143.rrr    NWU            NORTHWESTERN          [AXS]
    R 192.005.144.rrr    CRE-NET        CANADA-CRC-ETHERNET  [JR17]
    R 192.005.145.rrr    ECRC-SL        ECRC-SL Net           [PXD]
    R 192.005.146.rrr    CPW-PSC        Pittsburgh SC Center  [MXL]
    R 192.005.147.rrr    ALV-ETHER      MMDAALVVAX            [LXR]
    R 192.005.148.rrr    DISE           Dist Sys Eval Envir  [RHS4]
    R 192.005.149.rrr    RDL-ETHER      RDL                 [129,MXS1]
    G*192.005.150.rrr    SP-ACE-NET     Sperry Space Sys Net [129,JXM]
    R 192.005.151.rrr    PENN-STATE-1   Penn State Network   [SXS1]
    R 192.005.152.rrr    PENN-STATE-2   Penn State Network   [SXS1]
    R 192.005.153.rrr    PENN-STATE-3   Penn State Network   [SXS1]
    R 192.005.154.rrr    PENN-STATE-4   Penn State Network   [SXS1]
    R 192.005.155.rrr    PENN-STATE-5   Penn State Network   [SXS1]
    R 192.005.156.rrr    PENN-STATE-6   Penn State Network   [SXS1]
    R 192.005.157.rrr    PENN-STATE-7   Penn State Network   [SXS1]
    R 192.005.158.rrr    PENN-STATE-8   Penn State Network   [SXS1]
    R 192.005.159.rrr    PENN-STATE-9   Penn State Network   [SXS1]
    R 192.005.160.rrr    PENN-STATE-10  Penn State Network   [SXS1]
    R 192.005.161.rrr    PENN-STATE-11  Penn State Network   [SXS1]
    R 192.005.162.rrr    PENN-STATE-12  Penn State Network   [SXS1]
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   C*192.005.163.rrr   I2-SPDNET-1   I2 SPD Ethernet        [129,NH2]
   C 192.005.164.rrr   GTEECN        GTE Eng Net            [129,JXE]
   R 192.005.165.rrr   SDC-CAM-1     SDC Camarillo R&D Net     [DSR]
   R*192.005.166.rrr   CRC-WDC-NET   CRC Washington DC        [GEOF]
   R 192.005.167.rrr   MCC-AI-NET    MCC AI Subnet          [129,CBD]
   R 192.005.168.rrr   MCC-CAD2-NET  MCC CAD2 Subnet        [129,CBD]
   R 192.005.169.rrr   MCC-PKG-NET   MCC PKG Subnet         [129,CBD]
   G 192.005.170.rrr   ANLNET1       Argonne Network        [129,LW26]
   G 192.005.171.rrr   ANLNET2       Argonne Network        [129,LW26]
   G 192.005.172.rrr   ANLNET3       Argonne Network        [129,LW26]
   G 192.005.173.rrr   ANLNET4       Argonne Network        [129,LW26]
   G 192.005.174.rrr   ANLNET5       Argonne Network        [129,LW26]
   G 192.005.175.rrr   ANLNET6       Argonne Network        [129,LW26]
   G 192.005.176.rrr   ANLNET7       Argonne Network        [129,LW26]
   G 192.005.177.rrr   ANLNET8       Argonne Network        [129,LW26]
   G 192.005.178.rrr   ANLNET9       Argonne Network        [129,LW26]
   G 192.005.179.rrr   ANLNET10      Argonne Network        [129,LW26]
   G 192.005.180.rrr   ANLNET11      Argonne Network        [129,LW26]
   G 192.005.181.rrr   ANLNET12      Argonne Network        [129,LW26]
   G 192.005.182.rrr   ANLNET13      Argonne Network        [129,LW26]
   G 192.005.183.rrr   ANLNET14      Argonne Network        [129,LW26]
   G 192.005.184.rrr   ANLNET15      Argonne Network        [129,LW26]
   G 192.005.185.rrr   ANLNET16      Argonne Network        [129,LW26]
   G 192.005.186.rrr   ANLNET17      Argonne Network        [129,LW26]
   G 192.005.187.rrr   ANLNET18      Argonne Network        [129,LW26]
   G 192.005.188.rrr   ANLNET19      Argonne Network        [129,LW26]
   G 192.005.189.rrr   ANLNET20      Argonne Network        [129,LW26]
   G 192.005.190.rrr   ANLNET21      Argonne Network        [129,LW26]
   G 192.005.191.rrr   ANLNET22      Argonne Network        [129,LW26]
   G 192.005.192.rrr   ANLNET23      Argonne Network        [129,LW26]
   G 192.005.193.rrr   ANLNET24      Argonne Network        [129,LW26]
   G 192.005.194.rrr   ANLNET25      Argonne Network        [129,LW26]
   G 192.005.195.rrr   ANLNET26      Argonne Network        [129,LW26]
   G 192.005.196.rrr   ANLNET27      Argonne Network        [129,LW26]
   G 192.005.197.rrr   ANLNET28      Argonne Network        [129,LW26]
   G 192.005.198.rrr   ANLNET29      Argonne Network        [129,LW26]
   G 192.005.199.rrr   ANLNET30      Argonne Network        [129,LW26]
   G 192.005.200.rrr   ANLNET31      Argonne Network        [129,LW26]
   G 192.005.201.rrr   ANLNET32      Argonne Network        [129,LW26]
   R 192.005.202.rrr   FMC-CEL       FMC-CEL Host Net       [129,BXL1]
   R*192.005.203.rrr   OKSTATE-CS    Okla. St. CS Network   [129,MXV]
   R 192.005.204.rrr   SKL-ENET      Canada_SKL_ethernet       [JR17]
   R*192.005.205.rrr   ARC-CALGARY   Alta Research Calgary     [DXK]
   R 192.005.206.rrr   BU-MATHNET    BU-MATHNET                [BS24]
   R 192.005.207.rrr   BU-CHEMNET    BU-CHEMNET                [BS24]
   R 192.005.208.rrr   BU-CLANNET    BU-CLANNET                [BS24]
   D 192.005.209.rrr   SSDF-CDCNET   CDC-DDN-DEVELOPMENT        [RXE]
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   G 192.005.210.rrr    ECSNET         Embedded Comp Sys Net      [CAL7]
   R 192.005.211.rrr    INTEL-IWARP    Intel iWarp Net          [129,BT5]
   R 192.005.212.rrr T EMORY-INET4     Emory Internet 4           [SA29]
   R 192.005.213.rrr    HARRIS         Harris-GSSNet              [DXT1]
   C*192.005.214.rrr    DECUACNET      Decuac Network           [129,FXA]
   R 192.005.215.rrr    MASONNET       GMU Network             [129,TH15]
   R*192.005.216.rrr    NTT-NET        NTT Research Lab Net     [129,YXS]
   R 192.005.217.rrr    YALE-ZOO-NET   Yale Apollo Ed Net         [RC77]
   R 192.005.218.rrr    ARINC-GW-NET   Yale Apollo Ed Net          [YXN]
   R 192.005.219.rrr    CLEMSON        Clemson Univ Comp Center    [DXB]
   C*192.005.220.rrr    SCCNET         SPACECOM IP Network         [MXO]
   C*192.005.221.rrr    CSC-LONS       CSC-LONS Network         [129,GXG]
   C*192.005.222.rrr    CSC-OIS        CSC-OIS Network          [129,GXG]
   R*192.005.223.rrr    HWELL-RE       HWELL-RESD-ENGRG         [129,PXP]
   D*192.005.224.rrr    HAIC-NET       Hughes AI Center Net     [129,DXK]
   C*192.005.225.rrr-192.005.236.rrr GE CALMA BLOCK            [129,TXR]
   C*192.005.237.rrr    PRIME-AI       Prime AI CAD/CAM         [112,NXS]
   C*192.005.238.rrr    PALLADIAN-1    Palladian-IN1            [CSTACY]
   C*192.005.239.rrr    PALLADIAN-2    Palladian-RING           [CSTACY]
   C*192.005.240.rrr    PALLADIAN-3    Palladian-IN2            [CSTACY]
   R 192.005.241.rrr    USC-CYPRESS    USC Cypress Network       [27,DXE]
   C*192.005.242.rrr    MOT-ASIC       Motorola Chandler LAN      [GXW1]
   C*192.005.243.rrr    MOT-MESA       Motorola Mesa LAN          [GXW1]
   C*192.005.244.rrr    MOT-DOVER      Motorola Dover LAN         [GXW1]
   C*192.005.245.rrr    MOT-PRICE      Motorola Prince Road LAN   [GXW1]
   C*192.005.246.rrr    MOT-PICO       Motorola Pico LAN          [GXW1]
   C*192.005.247.rrr    MOT-52ND       Motorola Semi MIS LAN      [GXW1]
   C*192.005.248.rrr    MOT-AUSTIN     Motorola Austin LAN        [GXW1]
   C*192.005.249.rrr    MOT-OAKHILL    Motorola Oakhill LAN       [GXW1]
   C*192.005.250.rrr    MOT-TELAVIV    Motorola Tel Aviv LAN      [GXW1]
   C*192.005.251.rrr    MOT-GENEVA     Motorola Geneva LAN        [GXW1]
   C*192.005.252.rrr    MOT-TOKYO      Motorola Tokyo LAN         [GXW1]
   C*192.005.253.rrr    MOT-HONGKONG   Motorola Hongkong LAN      [GXW1]
   R*192.005.254.rrr    ANSA           ANSA Project             [129,DXO]
     192.005.255.rrr    Unassigned     Unassigned                 [JBP]
   C*192.006.000.rrr-192.006.255.rrr Hewlett Packard             [AXG]
   C*192.007.000.rrr-192.007.255.rrr Computer Consoles, Inc.    [RA11]
   C*192.008.000.rrr-192.008.255.rrr Spartacus Computers, Inc.   [SXM]
   C*192.009.000.rrr-192.009.255.rrr SUN Microsystems, Inc.      [BN4]
   C*192.010.000.rrr-192.010.040.rrr Symbolics, Inc.             [CH2]
   R 192.010.041.rrr T SCRC-ETHERNET SCRC ETHERNET            [129,CH2]
   C*192.010.042.rrr-192.010.255.rrr Symbolics, Inc.             [CH2]
   C*192.011.000.rrr-192.011.255.rrr ATT, Bell Labs             [MH12]
     192.012.000.rrr    Unassigned     Unassigned                 [JBP]
     192.012.001.rrr    Unassigned     Unassigned                 [JBP]
     192.012.002.rrr    Unassigned     Unassigned                 [JBP]
   C*192.012.003.rrr    FLAIR          Fairchild AI Lab Net     [129,AMS1]
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   C*192.012.004.rrr   SCG-NET        Hughes SCG Net         [132,MXP]
   R 192.012.005.rrr   AIC-LISPMS     SRI-AIC-LispMachNet    [129,PM4]
   R 192.012.006.rrr   NPS-C2         NPS-C2                 [129,AW9]
   R 192.012.007.rrr T NYU-CS-ETHER   NYU CompSci Ethernet   [129,LOU]
   D 192.012.008.rrr   PICANET1       Picatinny Arsenal LAN1[129,RFD1]
   R 192.012.009.rrr T CADRE-NET      Decision Systems Lab       [SM6]
   R 192.012.010.rrr   CORNELL-ENG    Cornell-Engineering    [129,BN9]
   R 192.012.011.rrr   MIT-TEST       MIT Gateway TEST NET   [129,NC3]
     192.012.012.rrr   Unassigned     Unassigned                 [JBP]
   R 192.012.013.rrr   JHU-NET1       JHU-NET1              [129,MO14]
   R 192.012.014.rrr   JHU-NET2       JHU-NET2              [129,MO14]
   R 192.012.015.rrr   BROOKNET       BNL Brooknet III        [129,GC]
   R 192.012.016.rrr   PRMNET         SRI-SURAN-EN          [129,BP17]
   G 192.012.017.rrr   LLL-TIS-NET    LLL-TIS-NET        [129,132,NAL]
   R 192.012.018.rrr   CIT-CS-10NET   Caltech 10Meg EtherNet[137,AD22]
   R 192.012.019.rrr   CIT-NET        Caltech Campus Net    [137,AD22]
   R 192.012.020.rrr   CIT-SUN-NET    Caltech Sun Net       [137,AD22]
   R 192.012.021.rrr   CIT-PHYSCOMP   Caltech Phys Comp Net [137,AD22]
   R 192.012.022.rrr   UTCSRES        UTCS Net Research      [129,JSQ1]
   R 192.012.023.rrr   UTCSTTY        UTCS TTY Kludgenet     [129,JSQ1]
   R 192.012.024.rrr   MICANET        MITRE (Experimental)       [WDL]
   R 192.012.025.rrr   CSS-GRAMINAE   CSS Workstation Net     [62,RR2]
   R 192.012.026.rrr   NOSC-NETR      Net-R Testbed at BBN   [116,CP10]
   R 192.012.027.rrr   UR-LASER       UR Laser Energetics    [129,WXL]
   R*192.012.028.rrr   RIACS-X-NET    RIACS-Experimental-Net    [DG28]
   D 192.012.029.rrr   RF-EVANS       ADDCOMPE DC3 LAN1      [129,MB31]
   D 192.012.030.rrr   RF-HEX-A       ADDCOMPE DC3 LAN2      [129,MB31]
   D 192.012.031.rrr   USNA-ENET      USNA Engineering Net    [129,TXS]
   R*192.012.032.rrr   CMU-VINEYARD   CMU File Cluster Net   [129,MXK]
   R 192.012.033.rrr   SRI-CSL-NET    SRI-CSL 10MB Ethernet     [GEOF]
   C*192.012.034.rrr-192.012.043.rrr Schlumberger PA Net    [129,RXB]
   R 192.012.044.rrr T NRTC-NET       Northrop Research Net  [129,RSM1]
   R 192.012.045.rrr   ACC-SB-IMP-NET ACC Santa Barbara IMP     [AB20]
   R 192.012.046.rrr   ACC-SB-ETHER   ACC Santa Barbara Ethernet[AB20]
   R 192.012.047.rrr   UMN-UCC-NET    Univ. of Minnesota        [RG12]
   G 192.012.048.rrr   AMES-ED-EXPNET Code ED Exp. Net.      [129,MSM1]
   G 192.012.049.rrr   AMES-ED-NET    Code ED IP Net         [129,MSM1]
   G 192.012.050.rrr   AMES-DB-NET    Ames DBridge Net       [129,MSM1]
   R 192.012.051.rrr   THINK-CHAOS    TMC Chaos              [129,BJN1]
   R*192.012.052.rrr   NEURO-NET      NEURO-NET               [129,JXB]
   R*192.012.053.rrr   PU-LCA         Princeton U. LCA        [129,CXH]
   R 192.012.054.rrr   AERO-A3        Aerospace                 [AWS3]
   R 192.012.055.rrr   HAZ-LPR-BETA   Hazeltine LPR Net       [129,KXK]
   R 192.012.056.rrr   UTAH-AP-NET    Utah-Appolo-Ring-Net      [JL15]
   R 192.012.057.rrr   MCC-CAD-NET    MCC CAD Subnet          [129,CBD]
   R 192.012.058.rrr   MCC-PP-NET     MCC AI Subnet           [129,CBD]
   R 192.012.059.rrr   MCC-DB-NET     MCC DB Subnet           [129,CBD]
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   R 192.012.060.rrr    MCC-HI-NET     MCC HI Subnet          [129,CBD]
   R 192.012.061.rrr    MCC-SW-NET     MCC SW Subnet          [129,CBD]
   R 192.012.062.rrr    DREA-ENET      DREA Lispm & Vaxen     [129,GLH5]
   R 192.012.063.rrr    CYPRESS        CYPRESS Serial Net         [CAK]
   D 192.012.064.rrr    LOGNET         Logistics Net GW        [10,JR15]
   D 192.012.065.rrr    HELNET1        HELNET1                [129,MJM2]
   D 192.012.066.rrr    HELNET2        HELNET2                [129,MJM2]
   D 192.012.067.rrr    HELNET3        HELNET3                   [MJM2]
   G 192.012.068.rrr    ORNL-MSRNET    ORNL Local Area Net      [10,HD]
   R 192.012.069.rrr    UA-CS-NET      UNIV. OF ARIZ-CS DEPT  [129,BM40]
   R 192.012.070.rrr    NPRDC-IPD      NPRDC-IPD REMOTE ETHERNET  [LRB]
   R 192.012.071.rrr    NPRDC-ISG      NPRDC-ISG REMOTE ETHERNET  [LRB]
   R 192.012.072.rrr    ULCC           UK.AC.ULCC                [RHC3]
   R 192.012.073.rrr    BTRL           UK.CO.BT-RESEARCH-LABS    [RHC3]
   R*192.012.074.rrr    APPLE-ETHER    APPLE COMPUTER ETHER   [129,RXJ]
   R*192.012.075.rrr    PASC-RING      IBM PASC TOKEN RING       [GXL]
   R*192.012.076.rrr    UQ-NET         UNIV. OF QLD NETWORK   [129,AXH]
   C*192.012.077.rrr    PRIME          PRIME COMPUTER, INC.      [FXS]
   C*192.012.078.rrr    GENNET         GENENTECH NET          [129,SXM]
   C*192.012.079.rrr    SLI            SOFTWARE LEVERAGE INC.    [MXG]
   R 192.012.080.rrr    CAEN           UMICH-CAEN                [HWB]
   R 192.012.081.rrr    YALE-RING-NET  YALE RESEARCH RING        [RC77]
   C 192.012.082.rrr    CU-CC-NET      Columbia CC Net        [129,BC14]
   G 192.012.083.rrr    UCDLA-EXNET    UCDLA EXPERIMENTAL NET    [CXL]
   G 192.012.084.rrr    UCDLA-PCNET    UCDLA PERSONAL NET        [CXL]
   G 192.012.085.rrr    UCDLA-OPNET    UCDLA OPTICAL DISK        [CXL]
   G 192.012.086.rrr    UCDLA-RADNET   UCDLA PACKET RADIO        [CXL]
   G 192.012.087.rrr    UCDLA-CSLNET   UCDLA STATE LIBRARY       [CXL]
   R*192.012.088.rrr    RUTGERS-NWK    RUTGERS, NEWARK           [DXB]
   R 192.012.089.rrr    SBCS-CSDEPT-1  SB Computer Science       [JXS]
   R 192.012.090.rrr    SBCS-CSDEPT-2  SB Computer Science       [JXS]
   R 192.012.091.rrr    RPICSNET0      RPICS-LOCALNET-0          [MS9]
   R 192.012.092.rrr    RPICSNET1      RPICS-LOCALNET-1          [MS9]
   R 192.012.093.rrr    RPICSNET2      RPICS-LOCALNET-2          [MS9]
   R 192.012.094.rrr    RPICSNET3      RPICS-LOCALNET-3          [MS9]
   R 192.012.095.rrr    RPICSNET4      RPICS-LOCALNET-4          [MS9]
   R 192.012.096.rrr    RPICSNET5      RPICS-LOCALNET-5          [MS9]
   R 192.012.097.rrr    RPICSNET6      RPICS-LOCALNET-6          [MS9]
   R 192.012.098.rrr    RPICSNET7      RPICS-LOCALNET-7          [MS9]
   R 192.012.099.rrr    RPICSNET8      RPICS-LOCALNET-8          [MS9]
   R 192.012.100.rrr    RPICSNET9      RPICS-LOCALNET-9          [MS9]
   R*192.012.101.rrr    OSU-CGRG       OSU Computer Graphics  [129,KXS]
   G 192.012.102.rrr    AMES-NAS-HY    AMES NAS HY NET           [MF31]
   R 192.012.103.rrr    CSU-USCETHER   Colorado State Univ Nets  [RXB1]
   R 192.012.104.rrr    CSUNRELETHER   Colorado State Univ Nets  [RXB1]
   R 192.012.105.rrr    CSU-ASYNC      Colorado State Univ Nets  [RXB1]
   R 192.012.106.rrr    CSU-LANCE      Colorado State Univ Nets  [RXB1]
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    R 192.012.107.rrr    CSU-ATMOS      Colorado State Univ Nets   [RXB1]
    R 192.012.108.rrr    CSU-UCC-ETHER  Colorado State Univ Nets   [RXB1]
    R*192.012.109 rrr-192.012.118.rrr  Colorado State Univ Nets   [RXB1]
    G 192.012.119.rrr    ICST           ICST Network           [129,JCN2]
    D 192.012.120.rrr    MITRE-B-NET    MITRE BEDFORD ETHER        [BSW]
    R*192.012.121.rrr    FSUCS          FSU COMPUTER SCIENCE 1     [TXB]
    R*192.012.122.rrr    FSUCS2         FSU COMPUTER SCIENCE 2     [TXB]
    G 192.012.123.rrr    AMES-CCF-NET   AMES CCF NETWORK       [129,MSM1]
    D 192.012.124.rrr    ETL-LAN        ETL LOCAL AREA NET      [129,WWS]
    D 192.012.125.rrr    CRDC-NET1      CRDC-NET1               [129,JXY]
    D 192.012.126.rrr    CRDC-NET2      CRDC-NET2               [129,JXY]
    R 192.012.127.rrr    LL-MI-NET      LL-Machine Intell.      [129,GAA]
    R 192.012.128.rrr    AITAC-ADMIN    SRI-AITAC ADMIN NET     [129,DVC]
    C*192.012.129.rrr    SYM-CAN        Symbolics/Canada           [MXH]
    R 192.012.130.rrr    SDC-SM         SDC Santa Monica           [CAS]
    R 192.012.131.rrr    SAC-ADMIN      SRI-SAC ADMIN NET       [129,KMC3]
    R 192.012.132.rrr    LLL-MON        LLL Open Labnet-1     [129,BANDY]
    R 192.012.133.rrr    LLL-TUE        LLL Open Labnet-2     [129,BANDY]
    R 192.012.134.rrr    LLL-WED        LLL Open Labnet-3     [129,BANDY]
    R 192.012.135.rrr    LLL-THU        LLL Open Labnet-4     [129,BANDY]
    R 192.012.136.rrr    LLL-FRI        LLL Open Labnet-5     [129,BANDY]
    R 192.012.137.rrr    LLL-SAT        LLL Open Labnet-6     [129,BANDY]
    R 192.012.138.rrr    LLL-SUN        LLL Open Labnet-7     [129,BANDY]
    D 192.012.139.rrr    JTELS-BEN-GW   JUMPS Teleprocessing      [RR26]
    R*192.012.140.rrr    INFERENCE      INFERENCE                  [DXT]
    R 192.012.141.rrr    CSS-ETHER      CSS Workstation Net 2     [RA11]
    C*192.012.142.rrr    SENTRY         Sentry Adv. Prod. Net      [LXL]
    C*192.012.143.rrr    VHSIC-NET      Sentry VHSIC Test          [LXL]
    R 192.012.144.rrr    ECRCNET        ECRC Internet           [129,PXD]
    C*192.012.145 rrr-192.012.154.rrr  RCA-CADNET             [129,RXG]
    C*192.012.155 rrr-192.012.170.rrr  MTCS-CUST                  [SXF]
    D 192.012.171.rrr    PICANET2       Picatinny Arsenal 2       [RFD1]
    R 192.012.172.rrr    ROCKWELLENET   ROCKWELL ETHERNET           [NG]
    R 192.012.173.rrr    AERO-D8        Aerospace                 [AWS3]
    R*192.012.174 rrr-192.012.183.rrr  TORONTO                [129,BXD]
    R 192.012.184.rrr    DSPO-NET       BRL Hyper Proj Net         [BT5]
    R 192.012.185.rrr    BU-NET         BU COMPUTING              [BS24]
    R 192.012.186.rrr    BU-ACCNET      BU ACADEMIC               [BS24]
    R 192.012.187.rrr    BU-BROADB      BU BROADBAND              [BS24]
    R 192.012.188.rrr    BU-SCINET      BU SCIENCE                [BS24]
    R 192.012.189.rrr    BU-ENGNET      BU ENGINEERING            [BS24]
    R 192.012.190.rrr    BU-DSGNET      BU DIST SYS               [BS24]
    R 192.012.191.rrr    BU-MEDNET      BU MED SCHOOL             [BS24]
    R 192.012.192.rrr    CNUCE-LAN1     CNR Pisa Ethernet         [ABB2]
    R 192.012.193.rrr    CNUCE-LAN2     CNR Pisa Ethernet         [ABB2]
    R 192.012.194.rrr    CNUCE-LAN3     CNR Pisa Ethernet         [ABB2]
    R 192.012.195.rrr    SDC-PRC        SDC Paoli R&D Center      [MXS2]
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   D 192.012.196.rrr    JHUAPL-NET      JHU APL Net           [129,SAK3]
   D 192.012.197.rrr    ACATT-ETHER1    ADEA/CECOM Adv Tech   [129,ERK3]
   D 192.012.198.rrr    ACATT-ETHER2    ADEA/CECOM Adv Tech   [129,ERK3]
   D 192.012.199.rrr    LEWIS-ETHER1    ADEA/SRI Ft. Lewis    [129,ERK3]
   D 192.012.200.rrr    SRI-PSON-10     ADEA/SRI Ft. Lewis    [129,ERK3]
   D 192.012.201.rrr    SRI-PSON-11     ADEA/SRI Ft. Lewis    [129,ERK3]
   D 192.012.202.rrr    SRI-PSON-12     ADEA/SRI Ft. Lewis    [129,ERK3]
   D 192.012.203.rrr    SRI-PSON-13     ADEA/SRI Ft. Lewis    [129,ERK3]
   D 192.012.204.rrr    SRI-PSON-14     ADEA/SRI Ft. Lewis    [129,ERK3]
   R 192.012.205.rrr    OHIO-STATE1     Ohio State Univ.          [RSD2]
   R 192.012.206.rrr    INDIANA         Indiana-Bloomington       [BXS1]
   R 192.012.207.rrr    SUPERCOMP       SDSC-Supercomputer         [SIP]
   R 192.012.208.rrr    TEK-NET         Teknowledge-Net            [TE2]
   R 192.012.209.rrr    NSF             NSF Internal Net           [FXW]
   R*192.012.210.rrr    NORTHEASTERN    Northeastern Univ.         [CXJ]
   R 192.012.211.rrr    JVNC            NSF/JVNC Net               [HXH]
   R 192.012.212.rrr    RAND-NET2       RAND-NET2                  [JDG]
   R 192.012.213.rrr    RAND-NET3       RAND-NET3                  [JDG]
   R*192.012.214.rrr    BUFFALO-CS      SUNY/Buffalo-CS-Ether [129,JRL8]
   R 192.012.215.rrr    XDRENET         DRE X.25 COMPONENT        [JR17]
   R 192.012.216.rrr    STEVENS-TECH    Stevens Inst of Tech  [129,RXM]
   R 192.012.217.rrr T  EMORY-INET1     Emory Internet        [129,SA29]
   R 192.012.218.rrr T  EMORY-INET2     Emory Internet        [129,SA29]
   R 192.012.219.rrr T  EMORY-INET3     Emory Internet        [129,SA29]
   R 192.012.220 rrr-192.012.234.rrr UWISC-IPNET              [129,EJN1]
   R*192.012.235.rrr    IDA-NET         Comp Sc Linkoping S       [MXA2]
   R 192.012.236.rrr    CITNET          CIT Campus Net        [129,CXB]
   R*192.012.237.rrr    HCSC-APOLLO     Honeywell CSC Apollo    [4,TRG4]
   R*192.012.238.rrr    CU-BOULDER      CU Boulder Campus     [129,DXW]
   R*192.012.239.rrr    CU-ACS          CU ACS Net            [129,DXW]
   R*192.012.240.rrr    CU-ENGINEER     CU Engineering Net    [129,DXW]
   R*192.012.241.rrr    CU-SUNNET       CU Sun Net            [129,DXW]
   R*192.012.242.rrr    CU-CER          CU CER Net            [129,DXW]
   R*192.012.243.rrr    CU-OT           CU Office Tower       [129,DXW]
   R*192.012.244.rrr    CU-ENTERPRISE   CU ECE Sun Net        [129,DXW]
   R*192.012.245.rrr    CU-LASP         CU LASP Net           [129,DXW]
   R*192.012.246.rrr    CU-JILA         CU JILA Net           [129,DXW]
   R*192.012.247.rrr    CU-PHYSICS      CU Physics Net        [129,DXW]
   R*192.012.248.rrr    CU-PSYCHOLOGY   CU Psychology Net     [129,DXW]
   R*192.012.249.rrr    CU-MCDB         CU MCDB Net           [129,DXW]
   R*192.012.250.rrr    CU-AI           CU AI Consortium      [129,DXW]
   R*192.012.251.rrr    CU-CHEMISTRY    CU Chemistry Net      [129,DXW]
   R 192.012.252.rrr    LL-VENET1       Linclon Labs Venet1   [129,BC65]
   R 192.012.253.rrr    LL-VENET2       Linclon Labs Venet2   [129,BC65]
   R 192.012.254.rrr    LL-APOLLO       Linclon Labs Apollo   [129,BC65]
   R 192.012.255.rrr    LL-ENET         Linclon Labs Enet     [129,BC65]
   D 192.013.000.rrr-192.014.255.rrr DODIIS Subnetworks          [AY5]
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   C*192.015.000.rrr-192.015.255.rrr NBINET                   [WW2]
   G 192.016.000.rrr-192.016.049.rrr LANLLAN            [129,JC11]
   R 192.016.050.rrr-192.016.071.rrr RPI-LOCALNETS       [129,MS9]
   R 192.016.072.rrr    UTCHPC       U.T. System CHPC    [129,WCB3]
   R 192.016.073.rrr    UTDALLAS     U.T. Dallas         [129,WCB3]
   R 192.016.074.rrr    UTABRC       U.T. Austin BRC     [129,WCB3]
   C*192.016.075.rrr-192.016.122.rrr CSC-BLOCK           [129,GXG]
   R*192.016.123.rrr-192.016.154.rrr Swedish Network          [BXE]
   R*192.016.155.rrr-192.016.166.rrr CERN-Block               [BXS]
   R 192.016.167.rrr    YALE-HP-NET  YALE-HP-NET              [RC77]
   D 192.016.168.rrr    PICANET3     Picatinny 3              [RFD1]
   D 192.016.169.rrr    NRL-HUBNET   Experimental Hubnet       [MPM]
   C 192.016.170.rrr    TWG-DEMO-NET TWG Net for Demos        [JXS1]
   R 192.016.171.rrr    MACOM        M/A-COM Net               [JXA]
     192.016.172.rrr-192.016.255.rrr Unassigned               [JBP]
   R*192.017.000.rrr-192.017.255.rrr NIBELUNG                 [MXA]
   C*192.018.000.rrr-192.018.255.rrr SUN Microsystems, Inc.   [BN4]
   C*192.019.000.rrr-192.019.255.rrr SYSNET-2                 [EXY]
   C*192.020.000.rrr-192.020.255.rrr ATT-MD-NET          [129,MH12]
   C*192.021.000.rrr-192.021.255.rrr FORMATIVE                [SXB]
   C*192.022.000.rrr-192.022.255.rrr APPLICON                [AXS1]
   C*192.023.000.rrr-192.023.255.rrr FACTNET                  [JXB]
   C*192.024.000.rrr-192.024.255.rrr CHROMATICS              [RXB2]
   R*192.025.000.rrr-192.024.255.rrr Hewlett Packard          [SXI]
   D*192.026.000.rrr    ACSAD        ACSAD Network            [SXH]
   R 192.026.001.rrr    MCC-DB1-NET  MCC DB1 Network           [CBD]
   R 192.026.002.rrr    MCC-DB2-NET  MCC DB2 Network           [CBD]
   R 192.026.003.rrr    MCC-DB3-NET  MCC DB3 Network           [CBD]
   R 192.026.004.rrr    MCC-DB4-NET  MCC DB4 Network           [CBD]
   R 192.026.005.rrr    MCC-DB5-NET  MCC DB5 Network           [CBD]
   R 192.026.006.rrr    MCC-DB6-NET  MCC DB6 Network           [CBD]
   R 192.026.007.rrr    SPAWAR       SPARWAR Systems Command   [JK7]
     192.026.008.rrr    Unassigned   Unassigned                [JBP]
   R*192.026.009.rrr    ICOT         ICOT Local Network        [SXT]
   R 192.026.010.rrr    GALLAUDET    GALLAUDET UNIVERSITY      [KXC]
   D 192.026.011.rrr    NRL-HUBNET1  Experimental Hubnet 1     [MPM]
   D 192.026.012.rrr    NRL-HUBNET2  Experimental Hubnet 2     [MPM]
   D 192.026.013.rrr    NRL-HUBNET3  Experimental Hubnet 3     [MPM]
   D 192.026.014.rrr    NRL-HUBNET4  Experimental Hubnet 4     [MPM]
   D 192.026.015.rrr    NRL-HUBNET5  Experimental Hubnet 5     [MPM]
   D 192.026.016.rrr    NRL-HUBNET6  Experimental Hubnet 6     [MPM]
   D 192.026.017.rrr    NRL-HUBNET7  Experimental Hubnet 7     [MPM]
   D 192.026.018.rrr    NRL-HUBNET8  Experimental Hubnet 8     [MPM]
   D 192.026.019.rrr    NRL-HUBNET9  Experimental Hubnet 9     [MPM]
   R*192.026.020.rrr    NJIT-NET     NJIT-SUPERCOMPUTER        [BXC]
   R 192.026.021.rrr    SDC-PRC-SW   SDC/PAOLI SOFT TECH      [MXS2]
   R 192.026.022.rrr    SDC-PRC-LBS  SDC/PAOLI ARTIF INT      [MXS2]
```

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


   Other Reserved Internet Addresses

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

Network Totals

   Assigned for the ARPA-Internet and the DDN-Internet

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

   Allocated for Internet and Independent Uses

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

   Maximum Allowed

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

                    ASSIGNED VERSION NUMBERS

   In the Internet Protocol (IP) [46,101] there is a field to identify
   the version of the internetwork general protocol. This field is 4
   bits in size.

   Assigned Internet Version Numbers

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

                    ASSIGNED PROTOCOL NUMBERS

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

   Assigned Internet Protocol Numbers

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

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

                         ASSIGNED PORT NUMBERS

   Ports are used in the TCP [46,102] to name the ends of logical
   connections which carry long term conversations. For the purpose of
   providing services to unknown callers, a service contact port is
   defined. This list specifies the port used by the server process as
   its contact port. The contact port is sometimes called the
   "well-known port".

   To the extent possible, these same port assignments are used with the
   UDP [46,100].

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

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

   Port Assignments:

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

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

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

                    ASSIGNED AUTONOMOUS SYSTEM NUMBERS

   The Exterior Gateway Protocol (EGP) [115,118] specifies that groups
   of gateways may form autonomous systems. The EGP provides a 16-bit
   field for identifying such systems. The values of this field are
   registered here.

   Autonomous System Numbers:

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

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

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

                     DOMAIN SYSTEM PARAMETERS

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

   Domain System Parameters:

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

                    ASSIGNED ARPANET LOGICAL ADDRESSES

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

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

   Logical Address Assignments:

      Decimal   Description   References
      -------   -----------   ----------
      0   Reserved   [JBP]
      1   The BBN Core Gateways   [MB]
      2-254   Unassigned   [JBP]
      255   Reserved   [JBP]

                    ASSIGNED ARPANET LINK NUMBERS

The word "link" here refers to a field in the original ARPANET
Host/IMP interface leader. The link was originally defined as an
8-bit field. Later specifications defined this field as the
"message-id" with a length of 12 bits. The name link now refers to
the high order 8 bits of this 12-bit message-id field. The Host/IMP
interface is defined in BBN Report 1822 [10].

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

Link Assignments:

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

                      IEEE 802 NUMBERS OF INTEREST

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

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

   Assignments:

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

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

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

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

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

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

                                                          Header


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


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


   +--------+--------+---------+--------+--------+
   |protocol id or org code =K2|   Ether Type    |      802.2 SNAP
   +--------+--------+---------+--------+--------+
```
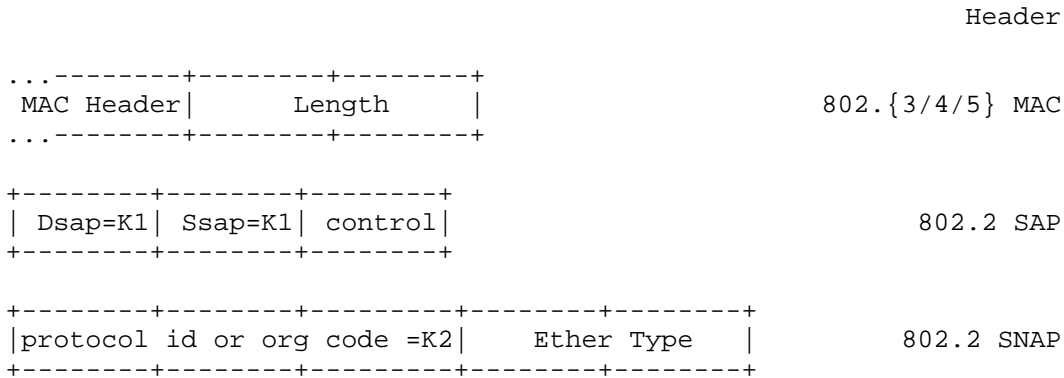
The values of K1 and K2 must be assigned by the IEEE. There is
already assigned a value of K1 that indicates that the 5-octet SNAP
header follows. There may be a value of K2 that is already assigned
that indicates that the last two octets of the SNAP header holds the
EtherType.

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

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

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

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

                    ETHERNET NUMBERS OF INTEREST

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

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

   Assignments:

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

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

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

                    ASSIGNED ADDRESS RESOLUTION PROTOCOL PARAMETERS

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

   Assignments:

      Operation Code (op)

         1   REQUEST
         2   REPLY

      Hardware Type (hrd)

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

      Protocol Type (pro)

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

                  ASSIGNED PUBLIC DATA NETWORK NUMBERS

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

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

   Assignments:

     * Internet   Public Data Net   Description   References
     - --------------   -----------------   ----------   ----------
       014.000.000.000   Reserved   [JBP]
       014.000.000.001   3110-317-00035 00   PURDUE-TN   [CAK]
       014.000.000.002   3110-608-00027 00   UWISC-TN   [CAK]
       014.000.000.003   3110-302-00024 00   UDEL-TN   [CAK]
       014.000.000.004   2342-192-00149 23   UCL-VTEST   [PK]
       014.000.000.005   2342-192-00300 23   UCL-TG   [PK]
       014.000.000.006   2342-192-00300 25   UK-SATNET   [PK]
       014.000.000.007   3110-608-00024 00   UWISC-IBM   [MHS1]
       014.000.000.008   3110-213-00045 00   RAND-TN   [MO2]
       014.000.000.009   2342-192-00300 23   UCL-CS   [PK]
       014.000.000.010   3110-617-00025 00   BBN-VAN-GW   [JD21]
     * 014.000.000.011   2405-015-50300 00   CHALMERS   [UXB]
       014.000.000.012   3110-713-00165 00   RICE   [PAM6]
       014.000.000.013   3110-415-00261 00   DECWRL   [PAM6]
       014.000.000.014   3110-408-00051 00   IBM-SJ   [SA1]
       014.000.000.015   2041-117-01000 00   SHAPE   [JFW]
       014.000.000.016   2628-153-90075 00   DFVLR4-X25   [GB7]
       014.000.000.017   3110-213-00032 00   ISI-VAN-GW   [JD21]
       014.000.000.018   2624-522-80900 52   DFVLR5-X25   [GB7]
       014.000.000.019   2041-170-10000 00   SHAPE-X25   [JFW]
       014.000.000.020   5052-737-20000 50   UQNET   [AXH]
       014.000.000.021   3020-801-00057 50   DMC-CRC1   [JR17]
       014.000.000.022   2624-522-80902 77   DFVLRVAX-X25   [GB7]
     * 014.000.000.023   2624-589-00908 01   ECRC-X25   [PXD]
       014.000.000.024-014.255.255.254   Unassigned   [JBP]
       014.255.255.255   Reserved   [JBP]

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

                    ASSIGNED TELNET OPTIONS

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

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

OFFICIAL MACHINE NAMES

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

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

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

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

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

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

                        OFFICIAL SYSTEM NAMES

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

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

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

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

                    OFFICIAL PROTOCOL AND SERVICE NAMES

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

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

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

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

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

                         OFFICIAL TERMINAL TYPE NAMES

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

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

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

      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

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

  Network Numbers

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

     Class A (highest-order bit 0)

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

     Class B (highest-order bits 1-0)

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

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

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

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

        All addresses in this class are used for multicast addresses.

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

        All addresses in this class are reserved for future use.

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

Experimental networks which later become operational need not be
renumbered. Rather, the identifiers could be moved from Research
to Defense, Government or Commercial status. Thus, network
identifiers may change state among Research, Defense, Government
and Commercial, but the number of identifiers allocated to each
use must remain within the limits indicated above. To make
possible this fluid assignment, the network identifier spaces are
not allocated by simple partition, but rather by specific
assignment.

Protocol Identifiers

    These assignments are shared by the four communities.

Port Numbers

    These assignments are shared by the four communities.

ARPANET Link Numbers

    These assignments are shared by the four communities.

IP Version Numbers

    These assignments are shared by the four communities.

TCP, IP and Telnet Option Identifiers

    These assignments are shared by the four communities.

Implementation:

    Joyce Reynolds is the coordinator for all number assignments.