Network Working Group Request for Comments: 1340 Obsoletes RFCs: 1060, 1010, 990, 960, 943, 923, 900, 870, 820, 790, 776, 770, 762, 758,755, 750, 739, 604, 503, 433, 349 Obsoletes IENs: 127, 117, 93 J. Reynolds J. Postel ISI July 1992

ASSIGNED NUMBERS

Status of this Memo

This memo is a status report on the parameters (i.e., numbers and keywords) used in protocols in the Internet community. Distribution of this memo is unlimited.

Table of Contents

INTRODUCTION	2
Data Notations	3
Special Addresses	4
VERSION NUMBERS	6
PROTOCOL NUMBERS	7
WELL KNOWN PORT NUMBERS	9
REGISTERED PORT NUMBERS	23
INTERNET MULTICAST ADDRESSES	27
IANA ETHERNET ADDRESS BLOCK	29
IP TOS PARAMETERS	30
IP TIME TO LIVE PARAMETER	32
DOMAIN SYSTEM PARAMETERS	33
BOOTP PARAMETERS	35
NETWORK MANAGEMENT PARAMETERS	36
MILNET LOGICAL ADDRESSES	49
MILNET LINK NUMBERS	50
MILNET X.25 ADDRESS MAPPINGS	51
IEEE 802 NUMBERS OF INTEREST	53
ETHERNET NUMBERS OF INTEREST	54
ETHERNET VENDOR ADDRESS COMPONENTS	57
ETHERNET MULTICAST ADDRESSES	60
XNS PROTOCOL TYPES	62
PROTOCOL/TYPE FIELD ASSIGNMENTS	63
PRONET 80 TYPE NUMBERS	64
POINT-TO-POINT PROTOCOL FIELD ASSIGNMENTS	65
ADDRESS RESOLUTION PROTOCOL PARAMETERS	69
REVERSE ADDRESS RESOLUTION PROTOCOL OPERATION CODES	70
DYNAMIC REVERSE ARP	70
INVERSE ADDRESS RESOULUTION PROTOCOL	70
X.25 TYPE NUMBERS	71

Reynolds & Postel

DOCKET

[Page 1]

PUBLIC DATA NETWORK NUMBERS	72
TELNET OPTIONS	75
MAIL ENCRYPTION TYPES	76
MIME TYPES	77
CHARACTER SETS	79
MACHINE NAMES	33
SYSTEM NAMES	37
PROTOCOL AND SERVICE NAMES	38
TERMINAL TYPE NAMES	92
DOCUMENTS	96
PEOPLE)9
Security Considerations1	39
Authors' Addresses1	39

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 the Internet Assigned Numbers Authority (IANA). If you are developing a protocol or application that will require the use of a link, socket, port, protocol, etc., please contact the IANA to receive a number assignment.

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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 "IAB Official Protocol Standards" [62].

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.

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[Page 2]



Data Notations

The convention in the documentation of Internet Protocols is to express numbers in decimal and to picture data in "big-endian" order [21]. 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	67890123	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).

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.

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DOCKET

[Page 3]

Special Addresses:

There are five classes of IP addresses: Class A through Class E [119]. Of these, Class E addresses are reserved for experimental use. A gateway which is not participating in these experiments must ignore all datagrams with a Class E destination IP address. ICMP Destination Unreachable or ICMP Redirect messages must not result from receiving such datagrams.

There are certain special cases for IP addresses [11]. These special cases can be concisely summarized using the earlier notation for an IP address:

IP-address ::= { <Network-number>, <Host-number> }

or

if we also use the notation "-1" to mean the field contains all 1 bits. Some common special cases are as follows:

(a) $\{0, 0\}$

This host on this network. Can only be used as a source address (see note later).

(b) $\{0, <Host-number>\}$

Specified host on this network. Can only be used as a source address.

 $(c) \{ -1, -1 \}$

Limited broadcast. Can only be used as a destination address, and a datagram with this address must never be forwarded outside the (sub-)net of the source.

(d) {<Network-number>, -1}

Directed broadcast to specified network. Can only be used as a destination address.

(e) {<Network-number>, <Subnet-number>, -1}

Directed broadcast to specified subnet. Can only be used as a destination address.

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DOCKET

[Page 4]

(f) {<Network-number>, -1, -1}

Directed broadcast to all subnets of specified subnetted network. Can only be used as a destination address.

(g) {127, <any>}

Internal host loopback address. Should never appear outside a host.

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[Page 5]

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