Network Working Group J. Reynolds
Request for Comments: 1011 J. Postel
ISI
Obsoletes: RFCs 991, 961, 943, 924, 901, 880, 840 May 1987

OFFICIAL INTERNET PROTOCOLS

STATUS OF THIS MEMO

This memo is an official status report on the protocols used in the Internet community. Distribution of this memo is unlimited.

INTRODUCTION

This RFC identifies the documents specifying the official protocols used in the Internet. Comments indicate any revisions or changes planned.

To first order, the official protocols are those specified in the "DDN Protocol Handbook" (DPH), dated December 1985 (this is a three volume set with a total thickness of about 5 inches).

Older collections that include many of these specifications are the "Internet Protocol Transition Workbook" (IPTW), dated March 1982; the "Internet Mail Protocols", dated November 1982; and the "Internet Telnet Protocols and Options", dated June 1983. There is also a volume of protocol related information called the "Internet Protocol Implementers Guide" (IPIG) dated August 1982. An even older collection is the "ARPANET Protocol Handbook" (APH) dated January 1978. Nearly all the relevant material from these collections has been reproduced in the current DPH.

The following material is organized as a sketchy outline. The entries are protocols (e.g., Transmission Control Protocol). In each entry there are notes on status, specification, comments, other references, dependencies, and contact.

The STATUS is one of: required, recommended, elective, experimental, or none.

The SPECIFICATION identifies the protocol defining documents.

The COMMENTS describe any differences from the specification or problems with the protocol.

The OTHER REFERENCES identify documents that comment on or expand on the protocol.

The DEPENDENCIES indicate what other protocols are called upon by this protocol.

The CONTACT indicates a person who can answer questions about the protocol.

In particular, the status may be:

required

- all hosts must implement the required protocol,

recommended

- all hosts are encouraged to implement the recommended protocol,

elective

- hosts may implement or not the elective protocol,

experimental

- hosts should not implement the experimental protocol unless they are participating in the experiment and have coordinated their use of this protocol with the contact person, and

none

- this is not a protocol.

For further information about protocols in general, please contact:

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OVERVIEW

Catenet Model ----------

STATUS: None

SPECIFICATION: IEN 48 (in DPH)

COMMENTS:

Gives an overview of the organization and principles of the Internet.

Could be revised and expanded.

OTHER REFERENCES:

Leiner, B., Cole R., Postel, J., and D. Mills, "The DARPA Protocol Suite", IEEE INFOCOM 85, Washington, D.C., March 1985. Also in IEEE Communications Magazine, and as ISI/RS-85-153, March 1985.

Postel, J., "Internetwork Applications Using the DARPA Protocol Suite", IEEE INFOCOM 85, Washington, D.C., March 1985. Also in IEEE Communications Magazine, and as ISI/RS-85-151, April 1985.

Padlipsky, M.A., "The Elements of Networking Style and other Essays and Animadversions on the Art of Intercomputer Networking", Prentice-Hall, New Jersey, 1985.

RFC 871 - A Perspective on the ARPANET Reference Model

DEPENDENCIES:

CONTACT: Postel@ISI.EDU

NETWORK LEVEL

Internet Protocol ---------- (IP)

STATUS: Required

SPECIFICATION: RFC 791 (in DPH)

COMMENTS:

This is the universal protocol of the Internet. This datagram protocol provides the universal addressing of hosts in the Internet.

A few minor problems have been noted in this document.

The most serious is a bit of confusion in the route options. The route options have a pointer that indicates which octet of the route is the next to be used. The confusion is between the phrases "the pointer is relative to this option" and "the smallest legal value for the pointer is 4". If you are confused, forget about the relative part, the pointer begins at 4. The MIL-STD description of source routing is wrong in some of the details.

Another important point is the alternate reassembly procedure suggested in RFC 815.

Some changes are in the works for the security option.

Note that ICMP is defined to be an integral part of IP. You have not completed an implementation of IP if it does not include ICMP.

The subnet procedures defined in RFC 950 are now considered an essential part of the IP architecture and must be implemented by all hosts and gateways.

OTHER REFERENCES:

RFC 815 (in DPH) - IP Datagram Reassembly Algorithms

RFC 814 (in DPH) - Names, Addresses, Ports, and Routes

RFC 816 (in DPH) - Fault Isolation and Recovery

RFC 817 (in DPH) - Modularity and Efficiency in Protocol Implementation

MIL-STD-1777 (in DPH) - Military Standard Internet Protocol

RFC 963 - Some Problems with the Specification of the Military Standard Internet Protocol

DEPENDENCIES:

CONTACT: Postel@ISI.EDU

Internet Control Message Protocol ---------- (ICMP)

STATUS: Required

SPECIFICATION: RFC 792 (in DPH)

COMMENTS:

The control messages and error reports that go with the Internet Protocol.

A few minor errors in the document have been noted. Suggestions have been made for additional types of redirect message and additional destination unreachable messages.

Two additional ICMP message types are defined in RFC 950 "Internet Subnets", Address Mask Request (A1=17), and Address Mask Reply (A2=18).

Note that ICMP is defined to be an integral part of IP. You have not completed an implementation of IP if it does not include ICMP.

OTHER REFERENCES: RFC 950

DEPENDENCIES: Internet Protocol

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