

## Request for Comments Summary

### RFC Numbers 1100-1199

#### Status of This Memo

This RFC is a slightly annotated list of the 100 RFCs from RFC 1100 through RFCs 1199. This is a status report on these RFCs. This memo provides information for the Internet community. It does not specify an Internet standard. Distribution of this memo is unlimited.

#### Note

Many RFCs, but not all, are Proposed Standards, Draft Standards, or Standards. Since the status of these RFCs may change during the standards processing, we note here only that they are on the standards track. Please see the latest edition of "IAB Official Protocol Standards" for the current state and status of these RFCs. In the following, RFCs on the standards track are marked [STANDARDS-TRACK].

| RFC<br>--- | Author<br>----- | Date<br>---- | Title<br>-----                |
|------------|-----------------|--------------|-------------------------------|
| 1199       | Reynolds        | Dec 91       | Requests For Comments Summary |

This memo.

|      |           |        |                            |
|------|-----------|--------|----------------------------|
| 1198 | Scheifler | Jan 91 | FYI on the X Window System |
|------|-----------|--------|----------------------------|

This FYI RFC provides pointers to the published standards of the MIT X Consortium. This memo provides information for the Internet community. It does not specify any Internet standard.

|      |         |        |  |
|------|---------|--------|--|
| 1197 | Sherman | Dec 90 | Using ODA for Translating Multimedia Information |
|------|---------|--------|--|

The purpose of this RFC is to inform implementors of multimedia systems about our experiences using ISO 8613: Office Document Architecture (ODA). Because ODA is being proposed as an encoding format for use in multimedia mail and file exchange, implementors wishing to use ODA in an

open systems environment may profit from our experiences. This memo provides information for the Internet community. It does not specify any standard.

|      |           |        |                                      |
|------|-----------|--------|--------------------------------------|
| 1196 | Zimmerman | Dec 90 | The Finger User Information Protocol |
|------|-----------|--------|--------------------------------------|

This memo describes the Finger User Information Protocol. This is a simple protocol which provides an interface to a remote user information program. Based on RFC 742, a description of the original Finger protocol, this memo attempts to clarify the expected communication between the two ends of a Finger connection. It also tries not to invalidate the many existing implementations or add unnecessary restrictions to the original protocol definition. This edition corrects and clarifies in a minor way, RFC 1194. [STANDARDS-TRACK]

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|------|--------|--------|---|
| 1195 | Callon | Dec 90 | Use of OSI IS-IS for Routing in TCP/IP<br>and Dual Environments |
|------|--------|--------|---|

This memo specifies an integrated routing protocol, based on the OSI Intra-Domain IS-IS Routing Protocol, which may be used as an interior gateway protocol (IGP) to support TCP/IP as well as OSI. This allows a single routing protocol to be used to support pure IP environments, pure OSI environments, and dual environments. This specification was developed by the IS-IS working group of the Internet Engineering Task Force. [STANDARDS-TRACK]

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1194      Zimmerman      Nov 90      The Finger User Information Protocol
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This memo describes the Finger User Information Protocol. This is a simple protocol which provides an interface to a remote user information program. Based on RFC 742, a description of the original Finger protocol, this memo attempts to clarify the expected communication between the two ends of a Finger connection. It also tries not to invalidate the many existing implementations or add unnecessary restrictions to the original protocol definition. [STANDARDS-TRACK]

|      |         |        |   |
|------|---------|--------|---|
| 1193 | Ferrari | Nov 90 | Client Requirements for Real-Time<br>Communication Services |
|------|---------|--------|---|

This memo describes client requirements for real-time communication services. This memo provides information for the Internet community, and requests discussion and suggestions for improvements. It does not specify any standard.

1192 Kahin Nov 90 Commercialization of the Internet  
Summary Repor

This memo is based on a workshop held by the Science, Technology and Public Policy Program of the John F. Kennedy School of Government, Harvard University, March 1-3, 1990. This memo provides information for the Internet community. It does not specify any standard.

1191 Mogul Nov 90 Path MTU Discovery

This memo describes a technique for dynamically discovering the maximum transmission unit (MTU) of an arbitrary internet path. It specifies a small change to the way routers generate one type of ICMP message. For a path that passes through a router that has not been so changed, this technique might not discover the correct Path MTU, but it will always choose a Path MTU as accurate as, and in many cases more accurate than, the Path MTU that would be chosen by current practice. [STANDARDS-TRACK]

1190 Topolcic Oct 90 Experimental Internet Stream Protocol,  
Version 2 (ST-II)

This memo defines a revised version of the Internet Stream Protocol, originally defined in IEN-119 [8], based on results from experiments with the original version, and subsequent requests, discussion, and suggestions for improvements. This is a Limited-Use Experimental Protocol. Please refer to the current edition of the "IAB Official Protocol Standards" for the standardization state and status of this protocol.

1189 Warrior Oct 90 The Common Management Information  
Services and Protocols for the Internet

This memo defines a network management architecture that uses the International Organization for Standardization's (ISO) Common Management Information Services/Common Management Information Protocol (CMIS/CMIP) in the Internet. [STANDARDS-TRACK]

1188 Katz Oct 90 A Proposed Standard for the  
Transmission of IP Datagrams over  
FDDI Networks

This memo defines a method of encapsulating the Internet Protocol (IP) datagrams and Address Resolution Protocol (ARP) requests and replies on

Fiber Distributed Data Interface (FDDI) Networks. [STANDARDS-TRACK]

1187      Rose                      Oct 90      Bulk Table Retrieval with the SNMP

This memo reports an interesting family of algorithms for bulk table retrieval using the Simple Network Management Protocol (SNMP). This memo describes an Experimental Protocol for the Internet community, and requests discussion and suggestions for improvements. This memo does not specify a standard for the Internet community. Please refer to the current edition of the "IAB Official Protocol Standards" for the standardization state and status of this protocol.

1186      Rivest                    Oct 90      The MD4 Message Digest Algorithm

This RFC is the specification of the MD4 Digest Algorithm. If you are going to implement MD4, it is suggested you do it this way. This memo is for informational use and does not constitute a standard.

1185      Jacobson                  Oct 90      TCP Extension for High-Speed Paths

This memo describes an Experimental Protocol extension to TCP for the Internet community, and requests discussion and suggestions for improvements. Please refer to the current edition of the "IAB Official Protocol Standards" for the standardization state and status of this protocol.

1184      Borman                    Oct 90      Telnet Linemode Option

This RFC specifies a procedure for line at a time terminal interaction based on the Telnet Protocol. It obsoletes RFC 1116. [STANDARDS-TRACK]

1183      Everhart                  Oct 90      New DNS RR Definitions

This memo defines five new DNS types for experimental purposes. This RFC describes an Experimental Protocol for the Internet community, and requests discussion and suggestions for improvements.

1182      Never issued.



[Page 6]

1172 Perkins Jul 90 The Point-to-Point Protocol (PPP)  
Initial Configuration Options

This memo specifies the Point-to-Point Protocol (PPP) Initial Configuration Options as a Proposed Standard Protocol for the Internet community. When it becomes a full Standard, this protocol will be recommended for all TCP/IP implementations that communicate over serial links.

1171 Perkins Jul 90 The Point-to-Point Protocol for the  
Transmission of Multi-Protocol Datagrams  
Over Point-to-Point Links

This memo specifies the Point-to-Point Protocol (PPP) as a Draft Standard Protocol for the Internet community. When it becomes a full Standard, this protocol will be recommended for all TCP/IP implementations that communicate over serial links.

1170 Fougner Jan 91 Public Key Standards and Licenses

This RFC is a public statement by Public Key Partners regarding Public Key Standards and Licenses. This memo is for informational use only, and does not constitute an Internet standard.

1169 Cerf Aug 90 Explaining the Role of GOSIP

This informational RFC represents the official view of the Internet Activities Board (IAB), after coordination with the Federal Networking Council (FNC). This RFC does not specify a standard.

1168 Westine Jul 90 Intermail and Commercial Mail  
Relay Services

This RFC discusses the history and evolution of the Intermail and Commercial mail systems. The problems encountered in operating a store-and-forward mail relay between commercial systems such as Telemail, MCI Mail and Dialcom are also discussed. This RFC provides information for the Internet community, and does not specify any standard.

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|------|------|--------|---|
| 1167 | Cerf | Jul 90 | Thoughts on the National Research and Education Network |
|------|------|--------|---|

The memo provides a brief outline of a National Research and Education Network (NREN). This memo provides information for the Internet community. It does not specify any standard. It is not a statement of IAB policy or recommendations.

- 1166 Kirkpatrick Jul 90 Internet Numbers

This memo is a status report on the network numbers and autonomous system numbers used in the Internet community.

- |      |            |        |   |
|------|------------|--------|---|
| 1165 | Crowcrowft | Jun 90 | Network Time Protocol (NTP)<br>over the OSI Remote Operations Service |
|------|------------|--------|---|

This memo suggests an Experimental Protocol for the OSI and Internet communities. Hosts in either community, and in particular those on both are encouraged to experiment with this mechanism.

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|------|-------|--------|--|
| 1164 | Honig | Jun 90 | Application of the Border Gateway Protocol in the Internet |
|------|-------|--------|--|

This RFC, together with its companion RFC-1163, "A Border Gateway Protocol (BGP)", specify an inter-autonomous system routing protocol for the Internet. [STANDARDS-TRACK]

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|------|----------|--------|---------------------------------|
| 1163 | Lougheed | Jun 90 | A Border Gateway Protocol (BGP) |
|------|----------|--------|---------------------------------|

This RFC, together with its companion RFC-1164, "Application of the Border Gateway Protocol in the Internet", specify an inter-autonomous system routing protocol for the Internet. [STANDARDS-TRACK]

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|------|------|--------|--|
| 1162 | Satz | Jun 90 | Connectionless Network Protocol<br>(ISO 8473) and End System to<br>Intermediate System (ISO 9542)<br>Management Information Base |
|------|------|--------|--|

This memo defines an experimental portion of the Management Information Base (MIB) for use with network management protocols in TCP/IP-based internets. This memo does not specify a standard for the Internet community.



1161      Rose              Jun 90      SNMP over OSI

This memo defines an experimental means for running the Simple Network Management Protocol (SNMP) over OSI transports. This memo does not specify a standard for the Internet community,

1160      Cerf              May 90      The Internet Activities Board

This RFC provides a history and description of the Internet Activities Board (IAB) and its subsidiary organizations. This memo is for informational use and does not constitute a standard. This is a revision of RFC 1120.

1159      Nelson             Jun 90      Message Send Protocol

This RFC suggests an Experimental Protocol for the Internet community. Hosts on the Internet that choose to implement a Message Send Protocol may experiment with this protocol.

1158      Rose              May 90      Management Information Base for  
   Network Management of TCP/IP-based  
   internets: MIB-II

This memo defines the second version of the Management Information Base (MIB-II) for use with network management protocols in TCP/IP- based internets. In particular, together with its companion memos which describe the structure of management information (RFC 1155) along with the network management protocol (RFC 1157) for TCP/IP- based internets, these documents provide a simple, workable architecture and system for managing TCP/IP-based internets and in particular the Internet community.

This document on MIB-II incorporates all of the technical content of RFC 1156 on MIB-I and extends it, without loss of compatibility.  
[STANDARDS-TRACK]

1157      Case              May 90      A Simple Network Management  
   Protocol (SNMP)

This RFC is a re-release of RFC 1098, with a changed "Status of this Memo" section plus a few minor typographical corrections. This memo defines a simple protocol by which management information for a network element may be inspected or altered by logically remote users.  
[STANDARDS-TRACK]

1156      McCloghrie      May 90      Management Information Base for  
   Network Management of  
   TCP/IP-based internets

This RFC is a re-release of RFC 1066, with a changed "Status of this Memo", "IAB Policy Statement", and "Introduction" sections plus a few minor typographical corrections. The technical content of the document is unchanged from RFC 1066. [STANDARDS-TRACK]

1155      Rose                      May 90      Structure and Identification of  
   Management Information for  
   TCP/IP-based Internets

This RFC is a re-release of RFC 1065, with a changed "Status of this Memo", plus a few minor typographical corrections. The technical content of the document is unchanged from RFC 1065. [STANDARDS-TRACK]

1154      Robinson              Apr 90      Encoding Header Field for  
   Internet Messages

This RFC proposes an elective experimental Encoding header field to permit the mailing of multi-part, multi-structured messages.

The use of Encoding updates RFC 1049 (Content-Type), and is a suggested update to RFCs 1113, 1114, and 1115 (Privacy Enhancement).

1153      Wancho                      Apr 90      Digest Message Format

This memo describes the de facto standard Digest Message Format. This is an elective experimental protocol.

1152      Partridge              Apr 90      Workshop Report: Internet Research  
   Steering GroupWorkshop on  
   Very-High-Speed Networks

This memo is a report on a workshop sponsored by the Internet Research Steering Group. This memo is for information only. This RFC does not specify an Internet standard.

1151      Partridge              Apr 90      Version 2 of the Reliable Data  
   Protocol (RDP)

This RFC suggests several updates to the specification of the Reliable

Data Protocol (RDP) in RFC-908 based on experience with the protocol. This revised version of the protocol is experimental.

1150      Malkin              Mar 90      F.Y.I on F.Y.I:  
   Introduction to the F.Y.I. Notes

This memo is the first in a new sub-series of RFCs called FYIs (For Your Information). This memo provides information for the Internet community. It does not specify any standard. [Also FYI 1.]

1149      Waitzman          Apr 90      A Standard for the Transmission of  
   IP Datagrams on Avian Carriers

This memo describes an experimental method for the encapsulation of IP datagrams in avian carriers. This specification is primarily useful in Metropolitan Area Networks. This is an experimental, not recommended standard.

1148      Kille                Mar 90      Mapping between X.400(1988) /  
   ISO 10021 and RFC 822

This RFC suggests an electronic mail protocol mapping for the Internet community and UK Academic Community, and requests discussion and suggestions for improvements. This memo does not specify an Internet standard. This edition includes material lost in editing.

1147      Stine                Apr 90      FYI on a Network Management Tool  
   Catalog: Tools for Monitoring and  
   Debugging TCP/IP Internets  
   and Interconnected Devices

The goal of this FYI memo is to provide practical information to site administrators and network managers. This memo provides information for the Internet community. It does not specify any standard. It is not a statement of IAB policy or recommendations. [Also FYI 2.] This catalog contains descriptions of several tools available to assist network managers in debugging and maintaining TCP/IP internets and interconnected communications resources. Entries in the catalog tell what a tool does, how it works, and how it can be obtained.

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|------|-------|--------|--------------------------------|
| 1146 | Zweig | Mar 90 | TCP Alternate Checksum Options |
|------|-------|--------|--------------------------------|

This memo suggests a pair of TCP options to allow use of alternate data checksum algorithms in the TCP header. The use of these options is experimental, and not recommended for production use. Note: This RFC corrects errors introduced in the editing process in RFC 1145.

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1145      Zweig      Feb 90      TCP Alternate Checksum Options
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This memo suggests a pair of TCP options to allow use of alternate data checksum algorithms in the TCP header. The use of these options is experimental, and not recommended for production use.

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|------|----------|--------|--|
| 1144 | Jacobson | Feb 90 | Compressing TCP/IP Headers for<br>Low-Speed Serial Links |
|------|----------|--------|--|

This RFC describes a method for compressing the headers of TCP/IP datagrams to improve performance over low speed serial links. The motivation, implementation and performance of the method are described. C code for a sample implementation is given for reference. [STANDARDS-TRACK]

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|------|-----------|--------|---|
| 1143 | Bernstein | Feb 90 | The Q Method of Implementing TELNET<br>Option Negotiation |
|------|-----------|--------|---|

This is RFC discusses an implementation approach to option negotiation in the Telnet protocol (RFC 854). It does not propose any changes to the TELNET protocol. Rather, it discusses the implementation of the protocol of one feature, only. This is not a protocol specification. This is an experimental method of implementing a protocol.

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1142      Oran      Feb 90      OSI IS-IS Intra-domain Routing Protocol
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This RFC is a republication of ISO DP 10589 as a service to the Internet community. This is not an Internet standard.

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|------|---------|--------|--|
| 1141 | Mallory | Jan 90 | Incremental Updating of the<br>Internet Checksum |
|------|---------|--------|--|

This memo correctly describes the incremental update procedure for use with the standard Internet checksum. It is intended to replace the description of Incremental Update in RFC 1071. This is not a standard but rather, an implementation technique.

1140 Postel May 90 IAB Official Protocol Standards

This memo describes the state of standardization of protocols used in the Internet as determined by the Internet Activities Board (IAB).

This memo is issued quarterly, please be sure the copy you are reading is dated within the last three months. Current copies may be obtained from the Network Information Center or from the Internet Assigned Numbers Authority. Do not use this edition after 31-Aug-90.

1139 Hagens Jan 90 An Echo Function for ISO 8473

This memo defines an echo function for the connection-less network layer protocol. Two mechanisms are introduced that may be used to implement the echo function. The first mechanism is recommended as an interim solution for the Internet community. The second mechanism will be progressed to the ANSI X3S3.3 working group for consideration as a work item.

When an ISO standard is adopted that provides functionality similar to that described by this memo, then this memo will become obsolete and superceded by the ISO standard. This memo is not intended to compete with an ISO standard. [STANDARDS-TRACK]

1138 Kille Dec 89 Mapping between X.400(1988) / ISO 10021 and RFC 822

This RFC suggests an electronic mail protocol mapping for the Internet community and UK Academic Community, and requests discussion and suggestions for improvements. This memo does not specify an Internet standard. This memo updates RFCs 822, 987, and 1026.

1137 Kille Dec 89 Mapping Between Full RFC 822 and RFC 822 with Restricted Encoding

This RFC suggests an electronic mail protocol mapping for the Internet community and UK Academic Community, and requests discussion and suggestions for improvements. This memo does not specify an Internet standard.

1136 Hares Dec 89 Administrative Domains and Routing Domains  
A Model for Routing in the Internet

This RFC proposes a model for describing routing within the Internet.

The model is an adaptation of the "OSI Routeing Framework". This memo does not specify an Internet standard.

1135 Reynolds Dec 89 The Helminthiasis of the Internet

This memo takes a look back at the helminthiasis (infestation with, or disease caused by parasitic worms) of the Internet that was unleashed the evening of 2 November 1988. This RFC provides information about an event that occurred in the life of the Internet. This memo does not specify any standard.

This document provides a glimpse at the infection, its festering, and cure. The impact of the worm on the Internet community, ethics statements, the role of the news media, crime in the computer world, and future prevention is discussed. A documentation review presents four publications that describe in detail this particular parasitic computer program. Reference and bibliography sections are also included.

1134 Perkins Nov 89 The Point-to-Point Protocol: A Proposal  
for Multi-Protocol Transmission of  
Datagrams Over Point-to-Point Links

This proposal is the product of the Point-to-Point Protocol Working Group of the Internet Engineering Task Force (IETF). Comments on this memo should be submitted to the IETF Point-to-Point Protocol Working Group chair by January 15, 1990. Comments will be reviewed at the February 1990 IETF meeting, with the goal of advancing PPP to draft standard status. [STANDARDS-TRACK]

1133 Yu Nov 89 Routing between the NSFNET and the DDN

This document is a case study of the implementation of routing between the NSFNET and the DDN components (the MILNET and the ARPANET). We hope that it can be used to expand towards interconnection of other Administrative Domains. We would welcome discussion and suggestions about the methods employed for the interconnections. No standards are specified in this memo.

1132 McLaughlin Nov 89 A Standard for the Transmission of  
802.2 Packets over IPX Networks

This document specifies a standard method of encapsulating 802.2 packets on networks supporting Novell's Internet Packet Exchange Protocol (IPX). It obsoletes earlier documents detailing the transmission of Internet

packets over IPX networks. It differs from these earlier documents in that it allows for the transmission of multiple network protocols over IPX and for the transmission of packets through IPX bridges.

1131 Moy Oct 89 The OSPF Specification

This RFC is the specification of the Open Shortest Path First (OSPF) Internet routing protocol. OSPF is in the class of Internal Gateway Protocols (IGPs) for distributing routing information between gateways of a single Autonomous System. This routing protocol is based on the link-state approach (in contrast to the distance-vector approach). This specification was developed by the OSPF Working Group of the Internet Engineering Task Force. [STANDARDS-TRACK]

1130 Postel Oct 89 IAB Official Protocol Standards

This memo describes the state of standardization of protocols used in the Internet as determined by the Internet Activities Board (IAB).

1129 Mills Oct 89 Internet Time Synchronization:  
the Network Time Protocol

This memo describes the Network Time Protocol (NTP) designed to distribute time information in a large, diverse internet system operating at speeds from mundane to lightwave. It uses a returnable-time architecture in which a distributed subnet of time servers operating in a self-organizing, hierarchical, master-slave configuration synchronizes local clocks within the subnet and to national time standards via wire or radio. The servers can also redistribute time information within a network via local routing algorithms and time daemons.

The architectures, algorithms and protocols which have evolved to NTP over several years of implementation and refinement are described in this paper. The synchronization subnet which has been in regular operation in the Internet for the last several years is described along with performance data which shows that timekeeping accuracy throughout most portions of the Internet can be ordinarily maintained to within a few tens of milliseconds, even in cases of failure or disruption of clocks, time servers or networks.

This memo describes the Network Time Protocol in RFC-1119.

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|------|-------|--------|--|
| 1128 | Mills | Oct 89 | Measured Performance of the Network Time Protocol in the Internet System |
|------|-------|--------|--|

This paper describes a series of experiments involving over 100,000 hosts of the Internet system and located in the U.S., Europe and the Pacific. The experiments are designed to evaluate the availability, accuracy and reliability of international standard time distribution using the DARPA/NSF Internet and the Network Time Protocol (NTP), which is specified in RFC-1119. NTP is designed specifically for use in a large, diverse internet system operating at speeds from mundane to lightwave. In NTP a distributed subnet of time servers operating in a self-organizing, hierarchical, master-slave configuration exchange precision timestamps in order to synchronize subnet clocks to each other and national time standards via wire or radio.

The experiments are designed to locate Internet hosts and gateways that provide time by one of three time distribution protocols and evaluate the accuracy of their indications. For those hosts that support NTP, the experiments determine the distribution of errors and other statistics over paths spanning major portions of the globe. Finally, the experiments evaluate the accuracy and reliability of precision timekeeping using NTP and typical Internet paths involving DARPA, NSFNET and other agency networks. The experiments demonstrate that timekeeping accuracy throughout most portions of the Internet can be ordinarily maintained to within a few tens of milliseconds, even in cases of failure or disruption of clocks, time servers or networks.

This memo does not specify a standard.

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|------|--------|--------|----------------------------------|
| 1127 | Braden | Oct 89 | Perspective on Host Requirements |
|------|--------|--------|----------------------------------|

This RFC is for information only; it does not constitute a standard, draft standard, or proposed standard, and it does not define a protocol.

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|------|--------|--------|--|
| 1126 | Little | Oct 89 | Goals and Functional Requirements for<br>Inter-Autonomous System Routing |
|------|--------|--------|--|

This document describes the functional requirements for a routing protocol to be used between autonomous systems. This document is intended as a necessary precursor to the design of a new inter-autonomous system routing protocol and specifies requirements for the Internet applicable for use with the current DoD IP, the ISO IP, and future Internet Protocols. It is intended that these requirements will form the basis for the future development of a new inter-autonomous systems routing architecture and protocol. This memo does not specify a standard.



1125 Estrin Nov 89 Policy Requirements for Inter  
Administrative Domain Routing

The purpose of this memo is to focus discussion on particular problems in the Internet and possible methods of solution. No proposed solutions in this document are intended as standards for the Internet. Rather, it is hoped that a general consensus will emerge as to the appropriate solution to such problems, leading eventually to the development and adoption of standards.

1124 Leiner Sep 89 Policy Issues in Interconnecting Networks

To support the activities of the Federal Research Internet Coordinating Committee (FRICC) in creating an interconnected set of networks to serve the research community, two workshops were held to address the technical support of policy issues that arise when interconnecting such networks. Held under the auspices of the Internet Activities Board at the request of the FRICC, and sponsored by NASA through RIACS, the workshops addressed the required and feasible technologies and architectures that could be used to satisfy the desired policies for interconnection. The purpose of this RFC is to report the results of these workshops.

1123 Braden Oct 89 Requirements for Internet Hosts --  
Application and Support

This RFC is an official specification for the Internet community. It incorporates by reference, amends, corrects, and supplements the primary protocol standards documents relating to hosts. [STANDARDS-TRACK]

1122 Braden Oct 89 Requirements for Internet Hosts --  
Communication Layers

This RFC is an official specification for the Internet community. It incorporates by reference, amends, corrects, and supplements the primary protocol standards documents relating to hosts. [STANDARDS-TRACK]

1121 Postel Sep 89 Act One - The Poems

This RFC presents a collection of poems that were presented at "Act One", a symposium held partially in celebration of the 20th anniversary of the ARPANET.

1120 Cerf Sep 89 The Internet Activities Board

This RFC provides a history and description of the Internet Activities Board (IAB) and its subsidiary organizations. This memo is for informational use and does not constitute a standard.

1119 Mills Sep 89 Network Time Protocol (Version 2)  
Specification and Implementation

This document describes the Network Time Protocol (NTP), specifies its formal structure and summarizes information useful for its implementation. NTP provides the mechanisms to synchronize time and coordinate time distribution in a large, diverse internet operating at rates from mundane to lightwave. It uses a returnable-time design in which a distributed subnet of time servers operating in a self-organizing, hierarchical-master-slave configuration synchronizes local clocks within the subnet and to national time standards via wire or radio. The servers can also redistribute reference time via local routing algorithms and time daemons. [STANDARDS-TRACK]

1118 Krol Sep 89 The Hitchhikers Guide to the Internet

This RFC is being distributed to members of the Internet community in order to make available some "hints" which will allow new network participants to understand how the direction of the Internet is set, how to acquire online information and how to be a good Internet neighbor. While the information discussed may not be relevant to the research problems of the Internet, it may be interesting to a number of researchers and implementors. No standards are defined or specified in this memo.

1117 Romano Aug 89 Internet Numbers

This memo is an official status report on the network numbers and the autonomous system numbers used in the Internet community.

1116 Borman Aug 89 Telnet Linemode Option

Hosts on the Internet that support Linemode within the Telnet protocol are expected to adopt and implement this protocol. Obsoleted by RFC 1184. [STANDARDS-TRACK]

1115      Linn              Aug 89      Privacy Enhancement for Internet  
   Electronic Mail: Part III --  
   Algorithms, Modes, and Identifiers

This RFC provides definitions, references, and citations for algorithms, usage modes, and associated identifiers used in RFC-1113 and RFC-1114 in support of privacy-enhanced electronic mail.  
[STANDARDS-TRACK]

1114      Kent              Aug 89      Privacy Enhancement for Internet  
   Electronic Mail: Part II --  
   Certificate-Based Key Management

This RFC specifies the key management aspects of Privacy Enhanced Mail.  
[STANDARDS-TRACK]

1113      Linn              Aug 89      Privacy Enhancement for Internet  
   Electronic Mail: Part I -- Message  
   Encipherment and Authentication  
   Procedures

This RFC specifies features for private electronic mail based on encryption technology. [STANDARDS-TRACK]

1112      Deering          Aug 89      Host Extensions for IP Multicasting

This memo specifies the extensions required of a host implementation of the Internet Protocol (IP) to support multicasting. Recommended procedure for IP multicasting in the Internet. This RFC obsoletes RFCs 998 and 1054. [STANDARDS-TRACK]

1111      Postel            Aug 89      Request for Comments on Request for  
   Comments - Instructions to  
   RFC Authors

This RFC specifies a standard for the Internet community. Authors of RFCs are expected to adopt and implement this standard.

1110      McKenzie          Aug 89      A Problem with the TCP Big Window  
   Option

This memo comments on the TCP Big Window option described in RFC 1106.

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|------|------|--------|--|
| 1109 | Cerf | Aug 89 | Report of the Second Ad Hoc<br>Network Management Review Group |
|------|------|--------|--|

This RFC reports an official Internet Activities Board (IAB) policy position on the treatment of Network Management in the Internet. This RFC presents the results and recommendations of the second Ad Hoc Network Management Review on June 12, 1989. The results of the first such meeting were reported in RFC 1052.

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|------|------|--------|--|
| 1108 | Kent | Nov 91 | U.S. Department of Defense Security<br>Options for the Internet Protocol |
|------|------|--------|--|

This RFC specifies the U.S. Department of Defense Basic Security Option and the top-level description of the Extended Security Option for use with the Internet Protocol. This RFC obsoletes RFC 1038, "Revised IP Security Option", dated January 1988. [STANDARDS-TRACK]

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|------|---------|--------|--|
| 1107 | Sollins | Jul 89 | A Plan for Internet Directory Services |
|------|---------|--------|--|

This memo proposes a program to develop a directory service for the Internet. It reports the results of a meeting held in February 1989, which was convened to review requirements and options for such a service. This proposal is offered for comment, and does not represent a committed research activity of the Internet community.

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|------|-----|--------|--------------------------------|
| 1106 | Fox | Jun 89 | TCP Big Window and Nak Options |
|------|-----|--------|--------------------------------|

This memo discusses two extensions to the TCP protocol to provide a more efficient operation over a network with a high bandwidth\*delay product. The extensions described in this document have been implemented and shown to work using resources at NASA. This memo describes an Experimental Protocol, these extensions are not proposed as an Internet standard, but as a starting point for further research.

- |      |          |        |                                 |
|------|----------|--------|---------------------------------|
| 1105 | Lougheed | Jun 89 | A Border Gateway Protocol (BGP) |
|------|----------|--------|---------------------------------|

This RFC outlines a specific approach for the exchange of network reachability information between Autonomous Systems. Updated by RFCs 1163 and 1164. [STANDARDS-TRACK]



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#### Security Considerations

Security issues are not discussed in this memo.

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