

Network Working Group
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STD: 1
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Internet Official Protocol Standards

Status of this Memo

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Abstract

This memo contains a snapshot of the state of standardization of protocols used in the Internet as of October 24, 2002. It lists official protocol standards and Best Current Practice RFCs; it is not a complete index to the RFC series. The latest version of this memo is designated STD 1.

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1. Overview

This memo contains a snapshot of the state of standardization of protocols used in the Internet, as determined by the Internet Engineering Task Force (IETF). It is an October 24, 2002 snapshot of the current official protocol standards list and the Best Current Practice list, which is updated daily and is available from the RFC Editor Web site.

The RFC Editor publishes Request for Comments (RFC) documents that are the output of the IETF process or are submitted individually via electronic mail. Further information about the RFC series is contained in section 2.1, RFC 2026 and at <http://www.rfc-editor.org>.

This memo is published by the RFC Editor for the IESG and IAB in accordance with Section 2.1 of "The Internet Standards Process -- Revision 3", RFC 2026, which specifies the rules and procedures by which all Internet standards are set. Sections 3.1 - 3.6 of this memo contain the lists of protocols in each stage of standardization - Standard, Draft Standard, Proposed Standard, Experimental, Historic, as well as Best Current Practice documents. Protocols that are new to this document or have been moved from one protocol level to another, or that differ from the previous edition of this document are marked with an asterisk. Informational RFCs are not included. This memo lists the current standards track, Best Current Practice, Experimental, and Historic protocols; it is not a complete index to RFCs.

2. Resources

This section contains important contact information, for reference.

2.1. Internet-Related Organizations

Internet Architecture Board (IAB) Contact: www.iab.org

Internet Engineering Task Force (IETF) Contact: www.ietf.org

Internet Research Task Force (IRTF) Contact: www.irtf.org

Internet Assigned Numbers Authority (IANA) Contact: www.iana.org

2.2. Request for Comments Editor (RFC Editor) Web Pages

The RFC Editor maintains the official repository of all RFCs and indexes to them. The RFC Editor web site is:

<http://www.rfc-editor.org>.

At this URL, a user can:

- (a) Obtain the current "Internet Official Protocol Standards" list.
See:

<http://www.rfc-editor.org/rfcxx00.html>

This hyper-linked listing is updated daily.

- (b) Retrieve the latest version of this STD 1 memo. See:

<http://www.rfc-editor.org/go.html>, and select STD and "1".

- (c) Retrieve text of any RFC. See:

<http://www.rfc-editor.org/go.html>

- (d) Search for RFCs by category. See:

<http://www.rfc-editor.org/category.html>

- (e) Search the RFC index for document number, author, title, and/or keywords, and retrieve the text of any matching documents. See:

<http://www.rfc-editor.org/rfcsearch.html>

RFC information can also be retrieved using FTP or email.

2.3 Retrieval using FTP

RFC-related files may be copied via FTP from the FTP.RFC-EDITOR.ORG computer using the FTP username "anonymous" and password "name@host.domain". An FTP user can:

- (a) Retrieve the latest version of this STD 1 memo.

File: "in-notes/std/std1.txt"

- (b) Retrieve text of any RFC.

File: "in-notes/rfcnnnn.txt" will retrieve the ASCII version. Some RFCs also have secondary Postscript and/or PDF versions, available from File: "in-notes/rfcnnnn.ps" and/or "in-notes/rfcnnnn.pdf", respectively.

Here "nnnn" is a 1-4 digit RFC number, with no leading zeros.

2.4 Search and Retrieval Using Email

To use the RFC Editor's email-based RFC-INFO service, send a request to:

RFC-INFO@RFC-EDITOR.ORG

In the message body, include your information request. For example, the following message bodies may be used.

(a) To retrieve the latest version of this STD 1 memo:

```
Retrieve: STD
Doc-ID: STD0001
```

(b) To retrieve ASCII text of any RFC:

```
Retrieve: RFC
Doc-ID: RFCnnnn
```

Here "nnnn" must be filled with leading zeros to 4 digits.

(c) The RFC-INFO@RFC-EDITOR.ORG server provides other capabilities, e.g., search and retrieval based on author, title, and/or keyword. For more information, send the following message body to the server:

```
help: help
```

The server will email back the results.

3. Current Technical Specifications

3.1. Standard Protocols Ordered by STD

Mnemonic	Title	RFC#	STD#
-----	Internet Official Protocol Standards	3003	1*
-----	[Reserved for Assigned Numbers. See RFC 1700 and RFC 3232.]		2
-----	Requirements for Internet Hosts - Communication Layers	1122	3
-----	Requirements for Internet Hosts - Application and Support	1123	3
-----	[Reserved for Router Requirements. See RFC 1812.]		4
IP	Internet Protocol	791	5
ICMP	Internet Control Message Protocol	792	5
-----	Broadcasting Internet Datagrams	919	5
-----	Broadcasting Internet datagrams in the presence of subnets	922	5
-----	Internet Standard Subnetting Procedure	950	5
IGMP	Host extensions for IP multicasting	1112	5
UDP	User Datagram Protocol	768	6
TCP	Transmission Control Protocol	793	7
TELNET	Telnet Protocol Specification	854	8
TELNET	Telnet Option Specifications	855	8
FTP	File Transfer Protocol	959	9
SMTP	Simple Mail Transfer Protocol	821	10
SMTP-SIZE	SMTP Service Extension for Message Size Declaration	1870	10
MAIL	Standard for the format of ARPA Internet text messages	822	11
-----	[Reserved for Network Time Protocol (NTP). See RFC 1305.]		12
DOMAIN	Domain names - concepts and facilities	1034	13
DOMAIN	Domain names - implementation and specification	1035	13
-----	[Was Mail Routing and the Domain System. Now Historic.]		14
SNMP	Simple Network Management Protocol (SNMP)	1157	15
SMI	Structure and identification of management information for TCP/IP-based internets	1155	16
Concise-MI	Concise MIB definitions	1212	16
MIB-II	Management Information Base for Network Management of TCP/IP-based internets:MIB-II	1213	17
-----	[Was Exterior Gateway Protocol (RFC 904). Now Historic.]		18
NETBIOS	Protocol standard for a NetBIOS service on a TCP/UDP transport: Concepts and methods	1001	19
NETBIOS	Protocol standard for a NetBIOS service on a TCP/UDP transport: Detailed specifications	1002	19

ECHO	Echo Protocol	862	20
DISCARD	Discard Protocol	863	21
CHARGEN	Character Generator Protocol	864	22
QUOTE	Quote of the Day Protocol	865	23
USERS	Active users	866	24
DAYTIME	Daytime Protocol	867	25
TIME	Time Protocol	868	26
TOPT-BIN	Telnet Binary Transmission	856	27
TOPT-ECHO	Telnet Echo Option	857	28
TOPT-SUPP	Telnet Suppress Go Ahead Option	858	29
TOPT-STAT	Telnet Status Option	859	30
TOPT-TIM	Telnet Timing Mark Option	860	31
TOPT-EXTOP	Telnet Extended Options: List Option	861	32
TFTP	The TFTP Protocol (Revision 2)	1350	33
-----	[Was Routing Information Protocol (RIP). Replaced by STD 56.]		34
TP-TCP	ISO transport services on top of the TCP: Version 3	1006	35
IP-FDDI	Transmission of IP and ARP over FDDI Networks	1390	36
ARP	Ethernet Address Resolution Protocol: Or converting network protocol addresses to 48.bit Ethernet address for transmission on Ethernet hardware	826	37
RARP	Reverse Address Resolution Protocol	903	38
IP-ARPA	[Was BBN Report 1822 (IMP/Host Interface). Now Historic.]		39
IP-WB	Host Access Protocol specification	907	40
IP-E	Standard for the transmission of IP datagrams over Ethernet networks	894	41
IP-EE	Standard for the transmission of IP datagrams over experimental Ethernet networks	895	42
IP-IEEE	Standard for the transmission of IP datagrams over IEEE 802 networks	1042	43
IP-DC	DCN local-network protocols	891	44
IP-HC	Internet Protocol on Network System's HYPERchannel: Protocol specification	1044	45
IP-ARC	Transmitting IP traffic over ARCNET networks	1201	46
IP-SLIP	Nonstandard for transmission of IP datagrams over serial lines: SLIP	1055	47
IP-NETBIOS	Standard for the transmission of IP datagrams over NetBIOS networks	1088	48
IP-IPX	Standard for the transmission of 802.2 packets over IPX networks	1132	49
ETHER-MIB	Definitions of Managed Objects for the Ethernet- like Interface Types	1643	50
PPP	The Point-to-Point Protocol (PPP)	1661	51
PPP-HDLC	PPP in HDLC-like Framing	1662	51
IP-SMDS	Transmission of IP datagrams over the SMDS Service	1209	52
POP3	Post Office Protocol - Version 3	1939	53

OSPF2	OSPF Version 2	2328	54
IP-FR	Multiprotocol Interconnect over Frame Relay	2427	55
RIP2	RIP Version 2	2453	56
RIP2-APP	RIP Version 2 Protocol Applicability Statement	1722	57
SMIv2	Structure of Management Information Version 2 (SMIv2)	2578	58
CONV-MIB	Textual Conventions for SMIv2	2579	58
CONF-MIB	Conformance Statements for SMIv2	2580	58
RMON-MIB	Remote Network Monitoring Management Information Base	2819	59
SMTP-Pipe	SMTP Service Extension for Command Pipelining	2920	60
ONE-PASS	A One-Time Password System	2289	61

[Note: an asterisk at the end of a line indicates a change from the previous edition of this document.]

3.2. Standard Protocols Ordered by RFC

Mnemonic	Title	STD#	RFC#
-----	Internet Official Protocol Standards	1*	3003*
SMTP-Pipe	SMTP Service Extension for Command Pipelining	60	2920
RMON-MIB	Remote Network Monitoring Management Information Base	59	2819
CONF-MIB	Conformance Statements for SMIV2	58	2580
CONV-MIB	Textual Conventions for SMIV2	58	2579
SMIV2	Structure of Management Information Version 2 (SMIV2)	58	2578
RIP2	RIP Version 2	56	2453
IP-FR	Multiprotocol Interconnect over Frame Relay	55	2427
OSPF2	OSPF Version 2	54	2328
ONE-PASS	A One-Time Password System	61	2289
POP3	Post Office Protocol - Version 3	53	1939
SMTP-SIZE	SMTP Service Extension for Message Size Declaration	10	1870
RIP2-APP	RIP Version 2 Protocol Applicability Statement	57	1722
PPP-HDLC	PPP in HDLC-like Framing	51	1662
PPP	The Point-to-Point Protocol (PPP)	51	1661
ETHER-MIB	Definitions of Managed Objects for the Ethernet-like Interface Types	50	1643
IP-FDDI	Transmission of IP and ARP over FDDI Networks	36	1390
TFTP	The TFTP Protocol (Revision 2)	33	1350
MIB-II	Management Information Base for Network Management of TCP/IP-based internets:MIB-II	17	1213
Concise-MI	Concise MIB definitions	16	1212
IP-SMDS	Transmission of IP datagrams over the SMDS Service	52	1209
IP-ARC	Transmitting IP traffic over ARCNET networks	46	1201
SNMP	Simple Network Management Protocol (SNMP)	15	1157
SMI	Structure and identification of management information for TCP/IP-based internets	16	1155
IP-IPX	Standard for the transmission of 802.2 packets over IPX networks	49	1132
-----	Requirements for Internet Hosts - Application and Support	3	1123
-----	Requirements for Internet Hosts - Communication Layers	3	1122
IGMP	Host extensions for IP multicasting	5	1112
IP-NETBIOS	Standard for the transmission of IP datagrams over NetBIOS networks	48	1088
IP-SLIP	Nonstandard for transmission of IP datagrams over serial lines: SLIP	47	1055
IP-HC	Internet Protocol on Network System's HYPERchannel: Protocol specification	45	1044
IP-IEEE	Standard for the transmission of IP datagrams over IEEE 802 networks	43	1042

DOMAIN	Domain names - implementation and specification	13	1035
DOMAIN	Domain names - concepts and facilities	13	1034
TP-TCP	ISO transport services on top of the TCP: Version 3	35	1006
NETBIOS	Protocol standard for a NetBIOS service on a TCP/UDP transport: Detailed specifications	19	1002
NETBIOS	Protocol standard for a NetBIOS service on a TCP/UDP transport: Concepts and methods	19	1001
FTP	File Transfer Protocol	9	959
-----	Internet Standard Subnetting Procedure	5	950
-----	Broadcasting Internet datagrams in the presence of subnets	5	922
-----	Broadcasting Internet Datagrams	5	919
IP-WB	Host Access Protocol specification	40	907
RARP	Reverse Address Resolution Protocol	38	903
IP-EE	Standard for the transmission of IP datagrams over experimental Ethernet networks	42	895
IP-E	Standard for the transmission of IP datagrams over Ethernet networks	41	894
IP-DC	DCN local-network protocols	44	891
TIME	Time Protocol	26	868
DAYTIME	Daytime Protocol	25	867
USERS	Active users	24	866
QUOTE	Quote of the Day Protocol	23	865
CHARGEN	Character Generator Protocol	22	864
DISCARD	Discard Protocol	21	863
ECHO	Echo Protocol	20	862
TOPT-EXTOP	Telnet Extended Options: List Option	32	861
TOPT-TIM	Telnet Timing Mark Option	31	860
TOPT-STAT	Telnet Status Option	30	859
TOPT-SUPP	Telnet Suppress Go Ahead Option	29	858
TOPT-ECHO	Telnet Echo Option	28	857
TOPT-BIN	Telnet Binary Transmission	27	856
TELNET	Telnet Option Specifications	8	855
TELNET	Telnet Protocol Specification	8	854
ARP	Ethernet Address Resolution Protocol: Or converting network protocol addresses to 48.bit Ethernet address for transmission on Ethernet hardware	37	826
MAIL	Standard for the format of ARPA Internet text messages	11	822
SMTP	Simple Mail Transfer Protocol	10	821
TCP	Transmission Control Protocol	7	793
ICMP	Internet Control Message Protocol	5	792
IP	Internet Protocol	5	791
UDP	User Datagram Protocol	6	768

[Note: an asterisk at the end of a line indicates a change from the previous edition of this document.]

3.3. Draft Standard Protocols

Mnemonic	Title	RFC#
-----	Content Language Headers	3282*
-----	(Extensible Markup Language) XML-Signature Syntax and Processing	3275*
MINFAX-IM	Minimal FAX address format in Internet Mail	3192*
MIN-PSTN	Minimal GSTN address format in Internet Mail	3191*
RADIUS	Remote Authentication Dial In User Service (RADIUS)	2865
INTERGRMIB	The Interfaces Group MIB	2863
-----	Host Resources MIB	2790
SNMP	Definitions of Managed Objects for Extensible SNMP Agents	2742*
-----	Agent Extensibility (AgentX) Protocol Version 1	2741*
-----	HTTP Authentication: Basic and Digest Access Authentication	2617
HTTP	Hypertext Transfer Protocol -- HTTP/1.1	2616
VACM-SNMP	View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)	2575
USM-SNMPV3	User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)	2574
SNMP-APP	SNMP Applications	2573
MPD-SNMP	Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)	2572
ARCH-SNMP	An Architecture for Describing SNMP Management Frameworks	2571
ICMPv6	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification	2463
IPV6-AUTO	IPv6 Stateless Address Autoconfiguration	2462
IPV6-ND	Neighbor Discovery for IP Version 6 (IPv6)	2461
IPV6	Internet Protocol, Version 6 (IPv6) Specification	2460
URI-GEN	Uniform Resource Identifiers (URI): Generic Syntax	2396
IARP	Inverse Address Resolution Protocol	2390
TN3270E	TN3270 Enhancements	2355
TFTP-Opt	TFTP Timeout Interval and Transfer Size Options	2349
TFTP-Blk	TFTP Blocksize Option	2348
TFTP-Ext	TFTP Option Extension	2347
UTF-8	UTF-8, a transformation format of ISO 10646	2279
DHCP-BOOTP	DHCP Options and BOOTP Vendor Extensions	2132
DHCP	Dynamic Host Configuration Protocol	2131
FRAME-MIB	Management Information Base for Frame Relay DTEs Using SMiv2	2115
IP-HIPPI	IP over HIPPI	2067
MIME-CONF	Multipurpose Internet Mail Extensions (MIME) Part Five: Conformance Criteria and Examples	2049

MIME-MSG	MIME (Multipurpose Internet Mail Extensions) Part Three: Message Header Extensions for Non-ASCII Text	2047
MIME-MEDIA	Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types	2046
MIME	Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies	2045
PPP-CHAP	PPP Challenge Handshake Authentication Protocol (CHAP)	1994
PPP-MP	The PPP Multilink Protocol (MP)	1990
PPP-LINK	PPP Link Quality Monitoring	1989
SNMPv2-MIB	Management Information Base for Version 2 of the Simple Network Management Protocol (SNMPv2)	1907
TRANS-MIB	Transport Mappings for Version 2 of the Simple Network Management Protocol (SNMPv2)	1906
OPS-MIB	Protocol Operations for Version 2 of the Simple Network Management Protocol (SNMPv2)	1905
CON-MD5	The Content-MD5 Header Field	1864
OSPF-MIB	OSPF Version 2 Management Information Base	1850
XDR	XDR: External Data Representation Standard	1832
-----	The String Representation of Standard Attribute Syntaxes	1778
-----	Lightweight Directory Access Protocol	1777
BGP-4-APP	Application of the Border Gateway Protocol in the Internet	1772
BGP-4	A Border Gateway Protocol 4 (BGP-4)	1771
PPP-DNCP	The PPP DECnet Phase IV Control Protocol (DNCP)	1762
802.5-MIB	IEEE 802.5 MIB using SMIV2	1748
RIP2-MIB	RIP Version 2 MIB Extension	1724
SIP-MIB	Definitions of Managed Objects for SMDS Interfaces using SMIV2	1694
-----	Definitions of Managed Objects for Parallel- printer-like Hardware Devices using SMIV2	1660
-----	Definitions of Managed Objects for RS-232- like Hardware Devices using SMIV2	1659
-----	Definitions of Managed Objects for Character Stream Devices using SMIV2	1658
BGP-4-MIB	Definitions of Managed Objects for the Fourth Version of the Border Gateway Protocol (BGP- 4) using SMIV2	1657
-----	SMTP Service Extension for 8bit-MIMEtransport	1652
OSI-NSAP	Guidelines for OSI NSAP Allocation in the Internet	1629
ISO-TS-ECH	An Echo Function for CLNP (ISO 8473)	1575
DECNET-MIB	DECnet Phase IV MIB Extensions	1559
-----	Clarifications and Extensions for the Bootstrap Protocol	1542
DHCP-BOOTP	Interoperation Between DHCP and BOOTP	1534
BRIDGE-MIB	Definitions of Managed Objects for Bridges	1493

IP-X.25	Multiprotocol Interconnect on X.25 and ISDN in the Packet Mode	1356
NTPV3	Network Time Protocol (Version 3) Specification, Implementation	1305
FINGER	The Finger User Information Protocol	1288
IP-MTU	Path MTU discovery	1191
-----	Proposed Standard for the Transmission of IP Datagrams over FDDI Networks	1188
TOPT-LINE	Telnet Linemode Option	1184
NICNAME	NICNAME/WHOIS	954
BOOTP	Bootstrap Protocol	951

[Note: an asterisk at the end of a line indicates a change from the previous edition of this document.]

3.4. Proposed Standard Protocols

Mnemonic	Title	RFC#
-----	Session Description Protocol (SDP) Simple Capability Declaration	3407*
NAPTR	Dynamic Delegation Discovery System (DDDS) Part Four: The Uniform Resource Identifiers (URI)	3404*
NAPTR	Dynamic Delegation Discovery System (DDDS) Part Three: The Domain Name System (DNS) Database	3403*
NAPTR	Dynamic Delegation Discovery System (DDDS) Part Two: The Algorithm	3402*
RMON-MIB	Remote Network Monitoring MIB Protocol Identifier Reference Extensions	3395*
-----	Real-time Transport Protocol (RTP) Payload for Comfort Noise (CN)	3389*
IPP-E-T	Internet Printing Protocol (IPP): The 'collection' attribute syntax	3382*
IPP-E-T	Internet Printing Protocol (IPP): Job Progress Attributes	3381*
IPP-E-T	Internet Printing Protocol (IPP): Job and Printer Set Operations	3380*
-----	Delegated Path Validation and Delegated Path Discovery Protocol Requirements	3379*
-----	Lightweight Directory Access Protocol (v3): Technical Specification	3377*
IGMP	Internet Group Management Protocol, Version 3	3376*
-----	Layer Two Tunneling Protocol "L2TP" Management Information Base	3371*
-----	Cryptographic Message Syntax (CMS) Algorithms	3370*
-----	Cryptographic Message Syntax (CMS)	3369*
-----	The 'go' URI Scheme for the Common Name Resolution Protocol	3368*
-----	Common Name Resolution Protocol (CNRP)	3367*
-----	Real-time Facsimile (T.38) - image/t38 MIME Sub-type Registration	3362*
-----	Dynamic Host Configuration Protocol (DHCP-for-IPv4) Option for Session Initiation Protocol (SIP) Servers	3361*
-----	Layer Two Tunnelling Protocol (L2TP) Over ATM Adaptation Layer 5 (AAL5)	3355*
-----	Small Computer Systems Interface protocol over the Internet (iSCSI) Requirements and Design Considerations	3347*
MOBILEIPSU	IP Mobility Support for IPv4	3344*
-----	The Application Exchange (APEX) Option Party Pack, Part Deux!	3342*
-----	The Application Exchange (APEX) Access Service	3341*
-----	The Application Exchange Core	3340*

-----	Date and Time on the Internet: Timestamps	3339*
-----	MIME-based Secure Peer-to-Peer Business Data Interchange over the Internet	3335*
-----	Signaling System 7 (SS7) Message Transfer Part 3 (MTP3) - User Adaptation Layer (M3UA)	3332*
-----	Signaling System 7 (SS7) Message Transfer Part 2 (MTP2) - User Adaptation Layer	3331*
-----	Integration of Resource Management and Session Initiation Protocol (SIP)	3312*
-----	The Session Initiation Protocol (SIP) UPDATE Method	3311*
-----	Stream Control Transmission Protocol (SCTP) Checksum Change	3309*
-----	Allocation Guidelines for IPv6 Multicast Addresses	3307*
-----	Unicast-Prefix-based IPv6 Multicast Addresses	3306*
TIFF	Tag Image File Format (TIFF) - image/tiff MIME Sub-type Registration	3302*
-----	Layer Two Tunnelling Protocol (L2TP): ATM access network extensions	3301*
-----	Content Negotiation for Messaging Services based on Email	3297*
-----	Named Subordinate References in Lightweight Directory Access Protocol (LDAP) Directories	3296*
-----	Definitions of Managed Objects for the General Switch Management Protocol (GSMP)	3295*
-----	General Switch Management Protocol (GSMP) Packet Encapsulations for Asynchronous Transfer Mode (ATM), Ethernet and Transmission Control Protocol (TCP)	3293*
-----	General Switch Management Protocol (GSMP) V3	3292*
-----	Textual Conventions for Internet Network Addresses	3291*
-----	Management Information Base for the Differentiated Services Architecture	3289*
-----	Using the Simple Object Access Protocol (SOAP) in Blocks Extensible Exchange Protocol (BEEP)	3288*
-----	Remote Monitoring MIB Extensions for Differentiated Services	3287*
-----	The VCDIFF Generic Differencing and Compression Data Format	3284*
-----	An Internet Attribute Certificate Profile for Authorization	3281*
-----	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile	3280*
-----	Algorithms and Identifiers for the Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile	3279*

-----	Definitions of Managed Objects for High Bit-Rate DSL - 2nd generation (HDSL2) and Single-Pair High-Speed Digital Subscriber Line (SHDSL) Lines Processing	3276*
-----	Compressed Data Content Type for Cryptographic Message Syntax (CMS)	3274*
-----	Remote Network Monitoring Management Information Base for High Capacity Networks	3273*
-----	Multi-Protocol Label Switching (MPLS) Support of Differentiated Services	3270*
-----	Advanced Encryption Standard (AES) Ciphersuites for Transport Layer Security (TLS)	3268*
-----	Real-Time Transport Protocol (RTP) Payload Format and File Storage Format for the Adaptive Multi-Rate (AMR) and Adaptive Multi-Rate Wideband (AMR-WB) Audio Codecs	3267*
-----	Support for IPv6 in Session Description Protocol (SDP)	3266*
SIP	Session Initiation Protocol (SIP)-Specific Event Notification	3265*
SIP	An Offer/Answer Model with Session Description Protocol (SDP)	3264*
SIP	Session Initiation Protocol (SIP): Locating SIP Servers	3263*
SIP	Reliability of Provisional Responses in Session Initiation Protocol (SIP)	3262*
SIP	SIP: Session Initiation Protocol	3261*
-----	The DOCSIS (Data-Over-Cable Service Interface Specifications) Device Class DHCP (Dynamic Host Configuration Protocol) Relay Agent Information Sub-option	3256*
-----	Extending Point-to-Point Protocol (PPP) over Synchronous Optical Network/Synchronous Digital Hierarchy (SONET/SDH) with virtual concatenation, high order and low order payloads	3255*
-----	Versioning Extensions to WebDAV (Web Distributed Authoring and Versioning)	3253*
FFIF	Tag Image File Format Fax eXtended (TIFF-FX) - image/tiff-fx MIME Sub-type Registration	3250*
-----	An Expedited Forwarding PHB (Per-Hop Behavior)	3246*
-----	RObust Header Compression (ROHC): A Link-Layer Assisted Profile for IP/UDP/RTP	3242*
-----	Robust Header Compression (ROHC) over PPP	3241*
-----	Definitions of Managed Objects for Scheduling Management Operations	3231*
-----	Instance Digests in HTTP	3230*
-----	Delta encoding in HTTP	3229*

-----	DNSSEC and IPv6 A6 aware server/resolver message size requirements	3226*
-----	Indicating Resolver Support of DNSSEC	3225*
SLP	Vendor Extensions for Service Location Protocol, Version 2	3224*
-----	Telephony Routing over IP (TRIP)	3219*
-----	LSP Modification Using CR-LDP	3214*
-----	Constraint-Based LSP Setup using LDP	3212*
-----	RSVP-TE: Extensions to RSVP for LSP Tunnels	3209*
-----	SMTP Service Extension for Secure SMTP over Transport Layer Security	3207*
-----	The SYS and AUTH POP Response Codes	3206*
-----	MIME media types for ISUP and QSIG Objects	3204*
-----	Definitions of Managed Objects for Frame Relay Service Level Definitions	3202*
-----	Definitions of Managed Objects for Circuit to Interface Translation	3201*
-----	Reliable Delivery for syslog	3195*
-----	Securing L2TP using IPsec	3193*
-----	RTP Payload Format for 12-bit DAT Audio and 20- and 24-bit Linear Sampled Audio	3190*
-----	RTP Payload Format for DV (IEC 61834) Video	3189*
-----	Reuse of CMS Content Encryption Keys	3185
-----	Identity Representation for RSVP	3182*
-----	Signaled Preemption Priority Policy Element	3181*
-----	Aggregation of RSVP for IPv4 and IPv6 Reservations	3175
IPCOMP	IP Payload Compression Protocol (IPComp)	3173
-----	The Addition of Explicit Congestion Notification (ECN) to IP	3168
-----	Definitions of Managed Objects for the Delegation of Management Scripts	3165
-----	RADIUS and IPv6	3162
TSA	Internet X.509 Public Key Infrastructure Time-Stamp Protocol (TSP)	3161
PIB	Structure of Policy Provisioning Information (SPPI)	3159
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IMAP4-LIT	IMAP4 non-synchronizing literals	2088
IMAP4-QUO	IMAP4 QUOTA extension	2087
IMAP4-ACL	IMAP4 ACL extension	2086
HMAC-MD5	HMAC-MD5 IP Authentication with Replay Prevention	2085
RIP2-MD5	RIP-2 MD5 Authentication	2082
RIPNG-IPV6	RIPng for IPv6	2080
URI-ATT	Definition of an X.500 Attribute Type and an Object Class to Hold Uniform Resource Identifiers (URIs)	2079
MIME-MODEL	The Model Primary Content Type for Multipurpose Internet Mail Extensions	2077
IMAPV4	Internet Message Access Protocol - Version 4rev1	2060
URLZ39.50	Uniform Resource Locators for Z39.50	2056
SNANAU-APP	Definitions of Managed Objects for APPC using SMIV2	2051
PPP-SNACP	The PPP SNA Control Protocol (SNACP)	2043
SMTP-ENH	SMTP Service Extension for Returning Enhanced Error Codes	2034
RTP-H.261	RTP Payload Format for H.261 Video Streams	2032
RTP-CELLB	RTP Payload Format of Sun's CellB Video Encoding	2029
SPKM	The Simple Public-Key GSS-API Mechanism (SPKM)	2025
DLSW-MIB	Definitions of Managed Objects for Data Link Switching using SMIV2	2024

MULTI-UNI	Support for Multicast over UNI 3.0/3.1 based ATM Networks	2022
RMON-MIB	Remote Network Monitoring Management Information Base Version 2 using SMIV2	2021
802.12-MIB	IEEE 802.12 Interface MIB	2020
TCP-ACK	TCP Selective Acknowledgement Options	2018
URL-ACC	Definition of the URL MIME External-Body Access-Type	2017
MIME-PGP	MIME Security with Pretty Good Privacy (PGP)	2015
MIB-UDP	SNMPv2 Management Information Base for the User Datagram Protocol using SMIV2	2013
MIB-TCP	SNMPv2 Management Information Base for the Transmission Control Protocol using SMIV2	2012
MIB-IP	SNMPv2 Management Information Base for the Internet Protocol using SMIV2	2011
MOBILEIPMI	The Definitions of Managed Objects for IP Mobility Support using SMIV2	2006
-----	Applicability Statement for IP Mobility Support	2005
MINI-IP	Minimal Encapsulation within IP	2004
IPENCAPIP	IP Encapsulation within IP	2003
BGP-COMM	BGP Communities Attribute	1997
DNS-NOTIFY	A Mechanism for Prompt Notification of Zone Changes (DNS NOTIFY)	1996
DNS-IZT	Incremental Zone Transfer in DNS	1995
SMTP-ETRN	SMTP Service Extension for Remote Message Queue Starting	1985
SNA	Serial Number Arithmetic	1982
MTU-IPV6	Path MTU Discovery for IP version 6	1981
PPP-FRAME	PPP in Frame Relay	1973
PPP-ECP	The PPP Encryption Control Protocol (ECP)	1968
GSSAPI-KER	The Kerberos Version 5 GSS-API Mechanism	1964
PPP-CCP	The PPP Compression Control Protocol (CCP)	1962
GSSAPI-SOC	GSS-API Authentication Method for SOCKS Version 5	1961
AUTH-SOCKS	Username/Password Authentication for SOCKS V5	1929
SOCKSV5	SOCKS Protocol Version 5	1928
WHOIS++M	How to Interact with a Whois++ Mesh	1914
WHOIS++A	Architecture of the Whois++ Index Service	1913
DSN	An Extensible Message Format for Delivery Status Notifications	1894
EMS-CODE	Enhanced Mail System Status Codes	1893
MIME-RPT	The Multipart/Report Content Type for the Reporting of Mail System Administrative Messages	1892
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RTP-AV	RTP Profile for Audio and Video Conferences with Minimal Control	1890
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MIME-Sec	MIME Object Security Services	1848

MIME-Encyp	Security Multiparts for MIME: Multipart/Signed and Multipart/Encrypted	1847
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XNSCP	The PPP XNS IDP Control Protocol (XNSCP)	1764
BVCP	The PPP Banyan Vines Control Protocol (BVCP)	1763
Print-MIB	Printer MIB	1759
ATM	ATM Signaling Support for IP over ATM	1755
IPNG	The Recommendation for the IP Next Generation Protocol	1752
802.5-SSR	IEEE 802.5 Station Source Routing MIB using SMIV2	1749
SDLC SMIV2	Definitions of Managed Objects for SNA Data Link Control (SDLC) using SMIV2	1747
AT-MIB	AppleTalk Management Information Base II	1742
MacMIME	MIME Encapsulation of Macintosh Files - MacMIME	1740
URL	Uniform Resource Locators (URL)	1738
POP3-AUTH	POP3 AUTHentication command	1734
IMAP4-AUTH	IMAP4 Authentication Mechanisms	1731
RDBMS-MIB	Relational Database Management System (RDBMS) Management Information Base (MIB) using SMIV2	1697
MODEM-MIB	Modem Management Information Base (MIB) using SMIV2	1696
TMUX	Transport Multiplexing Protocol (TMux)	1692
SNANAU-MIB	Definitions of Managed Objects for SNA NAUs using SMIV2	1666
PPP-TRANS	PPP Reliable Transmission	1663
-----	Postmaster Convention for X.400 Operations	1648
UPS-MIB	UPS Management Information Base	1628
PPP-ISDN	PPP over ISDN	1618
PPP-X25	PPP in X.25	1598
OSPF-NSSA	The OSPF NSSA Option	1587
OSPF-Multi	Multicast Extensions to OSPF	1584
RIP-DC	Extensions to RIP to Support Demand Circuits	1582
TOPT-ENVIR	Telnet Environment Option	1572
PPP-LCP	PPP LCP Extensions	1570
CIPX	Compressing IPX Headers Over WAN Media (CIPX)	1553
IPXCP	The PPP Internetworking Packet Exchange Control Protocol (IPXCP)	1552

SRB-MIB	Definitions of Managed Objects for Source Routing Bridges	1525
CIDR-STRA	Classless Inter-Domain Routing (CIDR): an Address Assignment and Aggregation Strategy	1519
CIDR-ARCH	An Architecture for IP Address Allocation with CIDR	1518
CIDR	Applicability Statement for the Implementation of Classless Inter-Domain Routing (CIDR)	1517
-----	Definitions of Managed Objects for IEEE 802.3 Medium Attachment Units (MAUs)	1515
-----	Token Ring Extensions to the Remote Network Monitoring MIB	1513
FDDI-MIB	FDDI Management Information Base	1512
KERBEROS	The Kerberos Network Authentication Service (V5)	1510
-----	X.400 Use of Extended Character Sets	1502
HARPOON	Rules for downgrading messages from X.400/88 to X.400/84 when MIME content-types are present in the messages	1496
Equiv	Equivalences between 1988 X.400 and RFC-822 Message Bodies	1494
IDPR	Inter-Domain Policy Routing Protocol Specification: Version 1	1479
IDPR-ARCH	An Architecture for Inter-Domain Policy Routing	1478
PPP/Bridge	The Definitions of Managed Objects for the Bridge Network Control Protocol of the Point-to-Point Protocol	1474
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PPP/SECMIB	The Definitions of Managed Objects for the Security Protocols of the Point-to-Point Protocol	1472
PPP/LCPMIB	The Definitions of Managed Objects for the Link Control Protocol of the Point-to-Point Protocol	1471
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X25-MIB	SNMP MIB extension for Multiprotocol Interconnect over X.25	1461
SNMPv2	Introduction to version 2 of the Internet-standard Network Management Framework	1441
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IDENT-MIB	Identification MIB	1414
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-----	Default Route Advertisement In BGP2 and BGP3 Version of The Border Gateway Protocol	1397
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-----	Applicability Statement for OSPF	1370
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-----	Replication and Distributed Operations extensions to provide an Internet Directory using X.500	1276
-----	The COSINE and Internet X.500 Schema	1274
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TOPT-XDL	Telnet X display location option	1096
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-----	Dual Stack Hosts Using "Bump-in-the-API" (BIA)	3338*
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-----	Notification and Subscription for SLP	3082
-----	MPLS Loop Prevention Mechanism	3063
-----	Internet X.509 Public Key Infrastructure Data Validation and Certification Server Protocols	3029
-----	Unified Memory Space Protocol Specification	3018
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-----	Protocol Independent Multicast MIB for IPv4	2934
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-----	DNS Extensions to Support IPv6 Address Aggregation and Renumbering	2874*
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-----	OSPF over ATM and Proxy-PAR	2844
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-----	Definitions of Managed Objects for Service Level Agreements Performance Monitoring	2758
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-----	Registration Procedures for SOIF Template Types	2656
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-----	An LDAP Control and Schema for Holding Operation Signatures	2649
-----	The NewReno Modification to TCP's Fast Recovery Algorithm	2582
-----	Mapping between LPD and IPP Protocols	2569
IPP-RAT	Rationale for the Structure of the Model and Protocol for the Internet Printing Protocol	2568
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-----	URI Resolution Services Necessary for URN Resolution	2483
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-----	Domain Names and Company Name Retrieval	2345
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-----	Intra-LIS IP multicast among routers over ATM using Sparse Mode PIM	2337
-----	The Safe Response Header Field	2310
LDAP-NIS	An Approach for Using LDAP as a Network Information Service	2307
HTTP-RVSA	HTTP Remote Variant Selection Algorithm -- RVSA/1.0	2296
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-----	Core Based Trees (CBT) Multicast Routing Architecture	2201
-----	Core Based Trees (CBT version 2) Multicast Routing -- Protocol Specification --	2189
-----	A Trivial Convention for using HTTP in URN Resolution	2169
MAP-MAIL	MaXIM-11 - Mapping between X.400 / Internet mail and Mail-11 mail	2162
MIME-ODA	A MIME Body Part for ODA	2161
OSPF-DIG	OSPF with Digital Signatures	2154
IP-SCSI	Encapsulating IP with the Small Computer System Interface	2143
X.500-NAME	Managing the X.500 Root Naming Context	2120
GKMP-ARCH	Group Key Management Protocol (GKMP) Architecture	2094

GKMP-SPEC	Group Key Management Protocol (GKMP) Specification	2093
TFTP-MULTI	TFTP Multicast Option	2090
IP-Echo	IP Echo Host Service	2075
TOPT-CHARS	TELNET CHARSET Option	2066
URAS	Uniform Resource Agents (URAs)	2016
GPS-AR	GPS-Based Addressing and Routing	2009
ETFTP	Experiments with a Simple File Transfer Protocol for Radio Links using Enhanced Trivial File Transfer Protocol (ETFTP)	1986
BGP-RR	BGP Route Reflection An alternative to full mesh IBGP	1966
SMKD	Scalable Multicast Key Distribution	1949
SNMPV2SM	User-based Security Model for SNMPv2	1910
SNMPV2AI	An Administrative Infrastructure for SNMPv2	1909
SNMPV2CB	Introduction to Community-based SNMPv2	1901
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SGML-MT	SGML Media Types	1874
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ESP3DES	The ESP Triple DES Transform	1851
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-----	Schema Publishing in X.500 Directory	1804
-----	MHS use of the X.500 Directory to support MHS Routing	1801
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RWP	Remote Write Protocol - Version 1.0	1756
NARP	NBMA Address Resolution Protocol (NARP)	1735
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MIME-UNI	Using Unicode with MIME	1641
FOOBAR	FTP Operation Over Big Address Records (FOOBAR)	1639
X500-CHART	Charting Networks in the X.500 Directory	1609
X500-DIR	Representing IP Information in the X.500 Directory	1608

SNMP-DPI	Simple Network Management Protocol Distributed Protocol Interface Version 2.0	1592
CLNP-TUBA	Use of ISO CLNP in TUBA Environments	1561
REM-PRINT	Principles of Operation for the TPC.INT Subdomain: Remote Printing -- Technical Procedures	1528
DASS	DASS - Distributed Authentication Security Service	1507
EHF-MAIL	Encoding Header Field for Internet Messages	1505
RAP	RAP: Internet Route Access Protocol	1476
TP-IX	TP/IX: The Next Internet	1475
-----	Routing Coordination for X.400 MHS Services Within a Multi Protocol / Multi Network Environment Table Format V3 for Static Routing	1465
-----	Using the Domain Name System To Store Arbitrary String Attributes	1464
IRCP	Internet Relay Chat Protocol	1459
SIFT	SIFT/UFT: Sender-Initiated/Unsolicited File Transfer	1440
DIR-ARP	Directed ARP	1433
TEL-SPX	Telnet Authentication: SPX	1412
TEL-KER	Telnet Authentication: Kerberos Version 4	1411
TRACE-IP	Traceroute Using an IP Option	1393
DNS-IP	An Experiment in DNS Based IP Routing	1383
RMCP	Remote Mail Checking Protocol	1339
MSP2	Message Send Protocol 2	1312
DSLCP	Dynamically Switched Link Control Protocol	1307
-----	X.500 and Domains	1279
IN-ENCAP	Scheme for an internet encapsulation protocol: Version 1	1241
CLNS-MIB	CLNS MIB for use with Connectionless Network Protocol (ISO 8473) and End System to Intermediate System (ISO 9542)	1238
CFDP	Coherent File Distribution Protocol	1235
IP-AX.25	Internet protocol encapsulation of AX.25 frames	1226
ALERTS	Techniques for managing asynchronously generated alerts	1224
MPP	Message Posting Protocol (MPP)	1204
SNMP-BULK	Bulk Table Retrieval with the SNMP	1187
DNS-RR	New DNS RR Definitions	1183
IMAP2	Interactive Mail Access Protocol: Version 2	1176
NTP-OSI	Network Time Protocol (NTP) over the OSI Remote Operations Service	1165
DMF-MAIL	Digest message format	1153
RDP	Version 2 of the Reliable Data Protocol (RDP)	1151
-----	Standard for the transmission of IP datagrams on avian carriers	1149
TCP-ACO	TCP alternate checksum options	1146
-----	The Q Method of Implementing TELNET Option Negotiation	1143
IP-DVMRP	Distance Vector Multicast Routing Protocol	1075
VMTP	VMTP: Versatile Message Transaction Protocol	1045

COOKIE-JAR	Distributed-protocol authentication scheme	1004
NETBLT	NETBLT: A bulk data transfer protocol	998
IRTP	Internet Reliable Transaction Protocol functional and interface specification	938
LDP	Loader Debugger Protocol	909
RDP	Reliable Data Protocol	908

[Note: an asterisk at the end of a line indicates a change from the previous edition of this document.]

3.8. Historic Protocols

Mnemonic	Title	RFC#
IP-MAC	IP Authentication using Keyed SHA1 with Interleaved Padding (IP-MAC)	2841
L2F	Cisco Layer Two Forwarding (Protocol) "L2F"	2341
IPV6-UNI	An IPv6 Provider-Based Unicast Address Format	2073
HTML-INT	Internationalization of the Hypertext Markup Language	2070
-----	A Proposed Extension to HTML : Client-Side Image Maps	1980
HTML-TBL	HTML Tables	1942
IPV6-Addr	IP Version 6 Addressing Architecture	1884
-----	Form-based File Upload in HTML	1867
HTML	Hypertext Markup Language - 2.0	1866
BGP4/IDRP	BGP4/IDRP for IP---OSPF Interaction	1745
-----	Assigned Numbers	1700*
-----	Definitions of Managed Objects for the Ethernet-like Interface Types	1623
DNS-R-MIB	DNS Resolver MIB Extensions	1612*
DNS-S-MIB	DNS Server MIB Extensions	1611*
-----	Manager-to-Manager Management Information Base	1451
-----	Party MIB for version 2 of the Simple Network Management Protocol (SNMPv2)	1447
-----	Security Protocols for version 2 of the Simple Network Management Protocol (SNMPv2)	1446
-----	Administrative Model for version 2 of the Simple Network Management Protocol (SNMPv2)	1445
TOPT-ENVIR	Telnet Environment Option	1408
BGP-OSPF	BGP OSPF Interaction	1403
SNMP-PARTY	Definitions of Managed Objects for Administration of SNMP Parties	1353
SNMP-SEC	SNMP Security Protocols	1352
SNMP-ADMIN	SNMP Administrative Model	1351
-----	Application of the Border Gateway Protocol in the Internet	1268
BGP3	Border Gateway Protocol 3 (BGP-3)	1267
OSI-UDP	OSI connectionless transport services on top of UDP: Version 1	1240
802.4-MIP	IEEE 802.4 Token Bus MIB	1230
SNMP-MUX	SNMP MUX protocol and MIB	1227
OIM-MIB-II	OSI internet management: Management Information Base	1214
IMAP3	Interactive Mail Access Protocol: Version 3	1203
CMOT	Common Management Information Services and Protocols for the Internet (CMOT and CMIP)	1189
-----	Application of the Border Gateway Protocol in the Internet	1164
BGP	Border Gateway Protocol (BGP)	1163

MIB-I	Management Information Base for network management of TCP/IP-based internets	1156
-----	Mapping between full RFC 822 and RFC 822 with restricted encoding	1137
-----	Privacy enhancement for Internet electronic mail: Part III - algorithms, modes, and identifiers	1115
-----	Privacy enhancement for Internet electronic mail: Part II - certificate-based key management	1114
-----	Privacy enhancement for Internet electronic mail: Part I - message encipherment and authentication procedures	1113
IPSO	U.S. Department of Defense Security Options for the Internet Protocol	1108
RIP	Routing Information Protocol	1058
-----	Standard for the transmission of IP datagrams and ARP packets over ARCNET networks	1051
SUN-RPC	RPC: Remote Procedure Call Protocol specification	1050
CONTENT	Content-type header field for Internet messages	1049
NFILE	NFILE - a file access protocol	1037
SGMP	Simple Gateway Monitoring Protocol	1028
HEMS	High-level Entity Management System (HEMS)	1021
-----	Requirements for Internet gateways	1009
STATSRV	Statistics server	996
HOSTNAME	Hostname Server	953
POP2	Post Office Protocol: Version 2	937
HFEP	Proposed Host-Front End Protocol	929
RATP	Reliable Asynchronous Transfer Protocol (RATP)	916
THINWIRE	Thinwire protocol for connecting personal computers to the Internet	914
SFTP	Simple File Transfer Protocol	913
EGP	Exterior Gateway Protocol formal specification	904
HMP	Host Monitoring Protocol	869
GGP	DARPA Internet gateway	823
RTELNET	Remote User Telnet service	818
CLOCK	DCNET Internet Clock Service	778
MPM	Internet Message Protocol	759
NETRJS	NETRJS Protocol	740
SUPDUP	SUPDUP Protocol	734
TOPT-OLD	Telnet output linefeed disposition	658
TOPT-OVTD	Telnet output vertical tab disposition option	657
TOPT-OVT	Telnet output vertical tabstops option	656
TOPT-OFD	Telnet output formfeed disposition option	655
TOPT-OHTD	Telnet output horizontal tab disposition option	654
TOPT-OHT	Telnet output horizontal tabstops option	653
TOPT-OCRD	Telnet output carriage-return disposition option	652

NETED	NETED: A Common Editor for the ARPA Network	569
RJE	Remote Job Entry Protocol	407

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4. Security Considerations

This memo does not affect the technical security of the Internet, but it does cite a number of important security specifications.

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