

Essential **Email Standards**

RFCs and Protocols
Made Practical

*Internet
Standards
Series*

Pete Loshin



31051000524877





Foreword	xiii
Acknowledgments	xv
About the Author	xvii
Part One: Internet Standards	1
Chapter 1 Internet Email Standards	3
Basic Email Requirements	5
Closed-System Email	6
Internet Email	7
Standards for Internet Messaging	8
Formatting and Message Headers	8
Email Addressing	10
Email Transport	10
Internet Messaging and Collaboration	11
Security Considerations	11
Chapter 2 Internet Standards and Internet Protocols	13
Internet Documents	14
RFCs	14
STDs	15
FYIs	16
BCPs	16
RTRs	17
Internet-Drafts	17
Internet Standards	18
States: Standards Maturity Levels	19
Status: Standards	
Requirements Levels	20
Internet Nonstandards	21
What's Standard, What's Not	22
Reading List	25

Internet Standards Bodies	27
The IAB	28
IAB History	28
IAB Charter	29
How the IAB Works	30
The Internet Society	32
The IETF and IESG	33
The Internet Research Task Force and Internet Research Steering Group	34
Internet Assigned Numbers Authority and Internet Corporation for Assigned Names and Numbers	36
Other Relevant Bodies	37
W3C	37
IEEE	39
ITU	39
NIST	39
Reading List	40
Chapter 4 The Internet Standards Process	41
The Standards Process	41
Standards Actions	42
The Standards Track	44
IETF Workgroups	47
Reading List	52
Chapter 5 Getting the RFCs	55
Staying on Top of RFCs	56
IETF Mailing Lists	57
RFC Archives	58
Finding RFC Archives	59
RFC Archive Features	59
RFCs by Email	60
Getting Internet-Drafts	60
Reading List	61
Chapter 6 Reading the RFCs	63
Understanding Protocols	64
Reading the RFCs	65
Checking References and Dependencies	65
Getting More Help	66
RFC Troubleshooting	66
Building Protocol Implementations	67

Understanding the Standards	68
Reading List	68
Part Two: Internet Messaging Standards	69
Chapter 7 Messaging Standards	71
Internet Messaging Components	72
Message Formatting	72
Message Transfer	75
Message Delivery	76
Address Resolution	77
Internet Messaging Applications	78
Messaging Security	80
Reading List	80
Chapter 8 Internet Message Format Standard	81
Internet Message Format Standard Scope	82
Technical Specification Format Syntax	83
Parts of the Internet Message	85
Message Body	85
Header Fields	86
Folding Header Fields	86
Message Header Fields	87
Origination Date and Origination Addresses	89
Message Destinations	90
Message Identification	91
Message Information	92
Resent Fields	93
Trace Fields	95
Optional Fields	96
Internet Message Syntax	97
Building Blocks	97
Date and Time Syntax	100
Address Specification	102
Overall Message Syntax	103
Header Field Syntax	104
Obsolete Message Syntax	105
Examples	108
Simple Email Message	108
Mailing List Message	109
Usenet News Posting	110
Reading List	111

Chapter 9 Multipurpose Internet Mail Extensions (MIME)	113
MIME Specification Overview	114
Format of Internet Message Bodies	116
Content-Type Header Field	117
Data Transfer Encoding	119
Other MIME Header Fields	121
MIME Content Types/Subtypes	123
Discrete Top-Level Media Types	124
Composite Top-Level Media Types	128
Additional MIME Standard Information	136
MIME Header Extensions	136
MIME Facilities Registration	138
MIME Conformance	141
Other MIME Content Types/Subtypes	141
Reading List	141
Chapter 10 Simple Mail Transfer Protocol (SMTP)	143
Scope and Applicability	144
The SMTP Model	145
SMTP Server Roles	146
SMTP Extensions	148
The Simple Mail Transfer Protocol	149
Commands	150
Replies	152
Extensions	154
SMTP Procedures by Example	156
SMTP Responses and Replies	157
Session Initiation	158
Mail Transactions	160
Closing the Session	165
Verifying and Expanding	165
Additional Protocol Considerations	167
SMTP and Message Submission	169
Reading List	170
Chapter 11 Post Office Protocol (POP)	171
POP3	172
POP3 Commands and Responses	173
Using POP3	174
POP3 Authentication and Authorization	179
POP3 Extensions	180
Initial POP3 Capabilities	181

Extended POP3 Response Codes	183
Reading List	183
Chapter 12 Internet Message Access Protocol (IMAP)	185
IMAP4rev1 Protocol Overview	186
IMAP Electronic Mail Models	186
IMAP Functionality	188
IMAP Message Attributes	190
IMAP Protocol Components	194
IMAP Server Responses	202
Sample IMAP Session	210
IMAP-Related RFCs	211
RFC 1731, IMAP4 Authentication Mechanisms	212
RFC 2086, IMAP4 ACL Extension	213
RFC 2087, IMAP4 QUOTA Extension	213
RFC 2088, IMAP4 Non-Synchronizing Literals	213
RFC 2177, IMAP4 IDLE Command	213
RFC 2192, IMAP URL Scheme	213
RFC 2193, IMAP4 Mailbox Referrals	213
RFC 2195, IMAP/POP AUTHorize Extension	
for Simple Challenge/Response	214
RFC 2221, IMAP4 Login Referrals	214
RFC 2342, IMAP4 Namespace	214
RFC 2359, IMAP4 UIDPLUS Extension	214
Reading List	215
Chapter 13 SMTP Message Address Resolution	217
The Domain Name System	218
DNS Structure	218
DNS Name Resolution	219
DNS Resource Records	219
Internet Email Addressing	220
SMTP Domain Name Resolution	220
Alternative Delivery Addresses	221
SMTP Source Routing	223
SMTP Gatewaying	223
Mailing Lists and Aliases	224
Reading List	225
Chapter 14 Network News Transfer Protocol (NNTP)	227
NNTP Protocol Overview	228
History of Netnews	229
News Architecture	230
News, Mail, and MIME	236

Usenet Message Format	236
Usenet Message Format, RFC 822, and RFC 822bis	236
Updating the Usenet Message Format	246
Network News Transfer Protocol	248
NNTP Functions and Features	248
NNTP States	249
NNTP Commands and Responses	250
News Reader Client Commands	254
WILDMAT Matching in NNTP	255
Extending and Updating NNTP	256
Reading List	257
Chapter 15 vCard	259
What Is vCard?	260
MIME Text/Directory Content-Type	261
Parameters	262
Data Types	262
Type Values	264
Profiles	266
The vCard Specification	266
vCard Profile Information	266
vCard Value Extensions	267
vCard Data Types	267
Reading List	271
Chapter 16 Calendaring and Scheduling Standards	273
The iCalendar Architecture	275
The iCalendar Core Object	276
Properties	277
Property Parameters	281
Property Value Data Types	283
iCalendar Components	283
iTIP	284
iTIP Roles and Methods	284
iTIP Protocol Elements	285
iMIP	286
iCalendar Works in Progress	287
Calendar Access Protocol (CAP)	287
iRIP	287
Reading List	287

Chapter 17 Internet Messaging Security	289
Lower-Layer Security Protocols	290
Internet Messaging Security Issues	292
Message Privacy	293
Message Integrity	294
Authorization, Access Control, and Other Attacks	295
Protection from Attack	296
Internet Email Security Standards	296
Privacy Enhanced Mail (PEM)	297
MIME Object Security Services (MOSS)	299
Standards Track Messaging Security Protocols	299
TLS and POP3, IMAP, and ACAP	301
POP3 Authentication	301
MIME Security Multipart	
Content Types	302
MIME Security with PGP	304
OpenPGP	305
Reading List	305
Chapter 18 The Future of Internet Messaging	309
What's Coming Right Up	310
Detailed Revision/Update of Message Standards (drums)	310
NNTP Extensions (nntpxt)	310
Usenet Article Standard Update (usefor)	311
Expanded Standards and Availability of Calendaring Tools (calsch)	311
Internet Fax (fax)	312
What's Next	313
Instant Messaging and Presence Protocol (impp)	314
Message Tracking Protocol (msgtrk)	314
Crystal Ball Gazing	315
Summing Up	315
Reading List	316
Appendix A Augmented Backus-Naur Form	317
Appendix B Using the Companion CD-ROM	333
Index	335