Network Working Group   K. Murchison, Ed.
Request for Comments: 5536   Carnegie Mellon University
Obsoletes: 1036   C. Lindsey
Category: Standards Track   University of Manchester
                                                             D. Kohn
                                                   Healing Thresholds
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Netnews Article Format

Abstract

   This document specifies the syntax of Netnews articles in the context
   of the Internet Message Format (RFC 5322) and Multipurpose Internet
   Mail Extensions (MIME) (RFC 2045). This document obsoletes RFC 1036,
   providing an updated specification to reflect current practice and
   incorporating incremental changes specified in other documents.

Status of This Memo

   This document specifies an Internet standards track protocol for the
   Internet community, and requests discussion and suggestions for
   improvements. Please refer to the current edition of the "Internet
   Official Protocol Standards" (STD 1) for the standardization state
   and status of this protocol. Distribution of this memo is unlimited.

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1. Introduction

1.1. Basic Concepts

   "Netnews" is a set of protocols for generating, storing, and
   retrieving news "articles" (whose format is a subset of that for
   Email messages), and for exchanging them amongst a readership that is
   potentially widely distributed. It is organized around "newsgroups",
   with the expectation that each reader will be able to see all
   articles posted to each newsgroup in which he participates. These
   protocols most commonly use a flooding algorithm, which propagates
   copies throughout a network of participating servers. Typically,
   only one copy is stored per server, and each server makes it
   available on demand to readers who are able to access that server.

1.2. Scope

   This document specifies the syntax of Netnews articles in the context
   of the Internet Message Format [RFC5322] and Multipurpose Internet
   Mail Extensions (MIME) [RFC2045]. This document obsoletes [RFC1036],
   updating the syntax of Netnews articles to reflect current practice
   and incorporating changes and clarifications specified in other
   documents such as [Son-of-1036].

   This is the first in a set of documents that obsolete [RFC1036].
   This document focuses on the syntax and semantics of Netnews
   articles. [RFC5537] is also a Standards Track document and describes
   the protocol issues of Netnews articles, independent of transport
   protocols such as the Network News Transfer Protocol (NNTP)
   [RFC3977]. [USEAGE], "Usenet Best Practice", describes
   implementation recommendations to improve interoperability and
   usability.

   This specification is intended as a definition of what article
   content format is to be passed between systems. Although many news
   systems locally store articles in this format (which eliminates the
   need for translation between formats), local storage is outside of
   the scope of this standard.

1.3. Requirements Notation

   The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT",
   "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this
   document are to be interpreted as described in [RFC2119].

1.4. Syntax Notation

   Header fields defined in this specification use the Augmented Backus-
   Naur Form (ABNF) notation (including the Core Rules) specified in
   [RFC5234] as well as many constructs defined in [RFC5322], [RFC2045]
   as updated by [RFC2231], and [RFC3986]. Specifically:

   token   = <see RFC 2045 Section 5.1>
   value   = <see RFC 2045 Section 5.1>
   parameter   = <see RFC 2231 Section 7>
   attribute   = <see RFC 2231 Section 7>

   FWS   = <see RFC 5322 Section 3.2.2>
   comment   = <see RFC 5322 Section 3.2.2>
   CFWS   = <see RFC 5322 Section 3.2.2>
   atext   = <see RFC 5322 Section 3.2.3>
   dot-atom-text = <see RFC 5322 Section 3.2.3>
   phrase   = <see RFC 5322 Section 3.2.5>
   date-time   = <see RFC 5322 Section 3.3>
   mailbox   = <see RFC 5322 Section 3.4>
   mailbox-list = <see RFC 5322 Section 3.4>
   address-list = <see RFC 5322 Section 3.4>
   body   = <see RFC 5322 Section 3.5>
   fields   = <see RFC 5322 Section 3.6>

   IPv6address   = <see RFC 3986 Section 3.2.2>
   IPv4address   = <see RFC 3986 Section 3.2.2>

   ALPHA   = <see RFC 5234 Appendix B.1>
   CRLF   = <see RFC 5234 Appendix B.1>
   DIGIT   = <see RFC 5234 Appendix B.1>
   DQUOTE   = <see RFC 5234 Appendix B.1>
   SP   = <see RFC 5234 Appendix B.1>
   VCHAR   = <see RFC 5234 Appendix B.1>

   Additionally, Section 3.1.3 specifies a stricter definition of
   <msg-id> than the syntax in Section 3.6.4 of [RFC5322].

1.5. Definitions

   An "article" is the unit of Netnews, analogous to an [RFC5322]
   "message". A "proto-article" is one that has not yet been injected
   into the news system. In contrast to an article, a proto-article may
   lack some mandatory header fields.

   A "message identifier" (Section 3.1.3) is a unique identifier for an
   article, usually supplied by the user agent that posted it or,
   failing that, by the "news server". It distinguishes the article

from every other article ever posted anywhere. Articles with the
same message identifier are treated as if they are the same article
regardless of any differences in the body or header fields.

A "newsgroup" is a forum having a name and that is intended for
articles on a specific topic. An article is "posted to" a single
newsgroup or several newsgroups. When an article is posted to more
than one newsgroup, it is said to be "crossposted"; note that this
differs from posting the same text as part of each of several
articles, one per newsgroup.

A newsgroup may be "moderated", in which case submissions are not
posted directly, but mailed to a "moderator" for consideration and
possible posting. Moderators are typically human but may be
implemented partially or entirely in software.

A "poster" is the person or software that composes and submits a
potentially compliant article to a user agent.

A "reader" is the person or software reading Netnews articles.

A "followup" is an article containing a response to the contents of
an earlier article, its "precursor". Every followup includes a
"References" header field identifying that precursor (but note that
non-followup articles may also use a References header field).

A "control message" is an article that is marked as containing
control information; a news server receiving such an article may
(subject to the policies observed at that site) take actions beyond
just filing and passing on the article.

A news server is software that may accept articles from a user agent,
and/or make articles available to user agents, and/or exchange
articles with other news servers.

A "user agent" is software that may help posters submit proto-
articles to a news server, and/or fetch articles from a news server
and present them to a reader, and/or assist the reader in creating
articles and followups.

The generic term "agent" is used when describing requirements that
apply to both user agents and news servers.

An agent is said to "generate" a construct if it did not exist before
the agent created it. Examples are when a user agent creates a
message from text and addressing information supplied by a user, or
when a news server creates an "Injection-Info" header field for a
newly posted message.

An agent is said to "accept" a construct if some other entity
generates it and passes it to the agent in question, and the agent
processes it without treating it as a format or protocol error.

1.6. Structure of This Document

This document uses a cite-by-reference methodology, rather than
repeating the contents of other standards, which could otherwise
result in subtle differences and interoperability challenges.
Although this document is as a result rather short, it requires
complete understanding and implementation of the normative references
to be compliant.

Section 2 defines the format of Netnews articles. Section 3 details
the header fields necessary to make an article suitable for the
Netnews environment.

2. Format

2.1. Base

An article is said to be conformant to this specification if it
conforms to the format specified in Section 3 of [RFC5322] and to the
additional requirements of this specification.

An article that uses the obsolete syntax specified in Section 4 of
[RFC5322] is NOT conformant to this specification, except for the
following two cases:

o Articles are conformant if they use the <obs-phrase> construct
   (use of a phrase like "John Q. Public" without the use of quotes,
   see Section 4.1 of [RFC5322]), but agents MUST NOT generate
   productions of such syntax.

o Articles are conformant if they use the "GMT" <zone>, as specified
   in Section 3.1.1.

This document, and specifications that build upon it, specify how to
handle conformant articles. Handling of non-conformant articles is
outside the scope of this specification.

Agents conforming to this specification MUST generate only conformant
articles.

The text below uses ABNF to specify restrictions on the syntax
specified in [RFC5322]; this grammar is intended to be more
restrictive than the [RFC5322] grammar. Articles must conform to the

ABNF specified in [RFC5322] and also to the restrictions specified
here, both those that are expressed as text and those that are
expressed as ABNF.

   NOTE: Other specifications use the term "header" as a synonym for
   what [RFC5322] calls "header field". This document follows the
   terminology in Section 2 of [RFC5322] in using the terms "line",
   "header field", "header field name", "header field body", and
   "folding", based on a belief that consistent terminology among
   specifications that depend on each other makes the specifications
   easier to use in the long run.

2.2. Header Fields

All header fields in a Netnews article are compliant with [RFC5322];
this specification, however, is less permissive in what can be
generated and accepted by agents. The syntax allowed for Netnews
article headers is a strict subset of the Internet Message Format
headers, making all headers compliant with this specification
inherently compliant with [RFC5322]. Note however that the converse
is not guaranteed to be true in all cases.

General rules that apply to all header fields (even those documented
in [RFC5322] and [RFC2045]) are listed below, and those that apply to
specific header fields are described in the relevant sections of this
document.

o All agents MUST generate header fields so that at least one space
   immediately follows the ':' separating the header field name and
   the header field body (for compatibility with deployed software,
   including NNTP [RFC3977] servers). News agents MAY accept header
   fields that do not contain the required space.

o Every line of a header field body (including the first and any
   that are subsequently folded) MUST contain at least one non-
   whitespace character.

      NOTE: This means that no header field body defined by or
      referenced by this document can be empty. As a result, rather
      than using the <unstructured> syntax from Section 3.2.5 of
      [RFC5322], this document uses a stricter definition:

unstructured   = *WSP VCHAR *([FWS] VCHAR) *WSP

      NOTE: The [RFC5322] specification sometimes uses [FWS] at the
      beginning or end of ABNF describing header field content. This
      specification uses *WSP in such cases, also in cases where this
      specification redefines constructs from [RFC5322]. This is

done for consistency with the restriction described here, but
the restriction applies to all header fields, not just those
where ABNF is defined in this document.

o Compliant software MUST NOT generate (but MAY accept) header field
   lines of more than 998 octets. This is the only limit on the
   length of a header field line prescribed by this standard.
   However, specific rules to the contrary may apply in particular
   cases (for example, according to [RFC2047], lines of a header
   field containing encoded words are limited to 76 octets).
   [USEAGE] includes suggested limits for convenience of display by
   user agents.

      NOTE: As stated in [RFC5322], there is NO restriction on the
      number of lines into which a header field may be split, and
      hence there is NO restriction on the total length of a header
      field (in particular it may, by suitable folding, be made to
      exceed the 998-octet restriction pertaining to a single header
      field line).

o The character set for header fields is US-ASCII. Where the use of
   non-ASCII characters is required, they MUST be encoded using the
   MIME mechanisms defined in [RFC2047] and [RFC2231].

2.3. MIME Conformance

   User agents MUST meet the definition of MIME conformance in [RFC2049]
   and MUST also support [RFC2231]. This level of MIME conformance
   provides support for internationalization and multimedia in message
   bodies [RFC2045], [RFC2046], and [RFC2231], and support for
   internationalization of header fields [RFC2047] and [RFC2231]. Note
   that [Errata] currently exist for [RFC2045], [RFC2046], [RFC2047] and
   [RFC2231].

   For the purposes of Section 5 of [RFC2047], all header fields defined
   in Section 3 of this standard are to be considered as "extension
   message header fields", permitting the use of [RFC2047] encodings
   within any <unstructured> header field, or within any <comment> or
   <phrase> permitted within any structured header field.

   User agents MAY accept and generate other MIME extension header
   fields, and in particular SHOULD accept Content-Disposition [RFC2183]
   and Content-Language [RFC3282].

3. News Header Fields

   The following news header fields extend those defined in Section 3.6
   of [RFC5322]:

```
   fields          =/ *( approved /
                         archive /
                         control /
                         distribution /
                         expires /
                         followup-to /
                         injection-date /
                         injection-info /
                         lines /
                         newsgroups /
                         organization /
                         path /
                         summary /
                         supersedes /
                         user-agent /
                         xref )
```

Each of these header fields MUST NOT occur more than once in a news
article.

The following header fields defined in this document do not allow
<comment>s (i.e., they use FWS rather than CFWS).

Control
Distribution
Followup-To
Lines
Newsgroups
Path
Supersedes
Xref

This also applies to the following header field defined in [RFC5322]:

Message-ID

Most of these header fields are mainly of interest to news servers,
and news servers often need to process these fields very rapidly.
Thus, some header fields prohibit <comment>s.

3.1. Mandatory Header Fields

Each Netnews article conformant with this specification MUST have
exactly one of each of the following header fields: Date, From,
Message-ID, Newsgroups, Path, and Subject.

3.1.1. Date

   The Date header field is the same as that specified in Sections 3.3
   and 3.6.1 of [RFC5322], with the added restrictions detailed above in
   Section 2.2. However, the use of "GMT" as a time zone (part of
   <obs-zone>), although deprecated, is widespread in Netnews articles
   today. Therefore, agents MUST accept <date-time> constructs that use
   the "GMT" zone.

   orig-date   = "Date:" SP date-time CRLF

      NOTE: This specification does not change [RFC5322], which says
      that agents MUST NOT generate <date-time> constructs that include
      any zone names defined by <obs-zone>.

   Software that accepts dates with unknown timezones SHOULD treat such
   timezones as equivalent to "-0000" when comparing dates, as specified
   in Section 4.3 of [RFC5322].

   Also note that these requirements apply wherever <date-time> is used,
   including Injection-Date and Expires (Sections 3.2.7 and 3.2.5,
   respectively).

3.1.2. From

   The From header field is the same as that specified in Section 3.6.2
   of [RFC5322], with the added restrictions detailed above in
   Section 2.2.

   from   = "From:" SP mailbox-list CRLF

3.1.3. Message-ID

   The Message-ID header field contains a unique message identifier.
   Netnews is more dependent on message identifier uniqueness and fast
   comparison than Email is, and some news software and standards
   [RFC3977] might have trouble with the full range of possible
   <msg-id>s permitted by [RFC5322]. This section therefore restricts
   the syntax of <msg-id> as compared to Section 3.6.4 of [RFC5322].
   The global uniqueness requirement for <msg-id> in [RFC5322] is to be
   understood as applying across all protocols using such message
   identifiers, and across both Email and Netnews in particular.

   message-id   = "Message-ID:" SP *WSP msg-id *WSP CRLF

   msg-id   = "<" msg-id-core ">"
                      ; maximum length is 250 octets

```
   msg-id-core     = id-left "@" id-right

   id-left         = dot-atom-text

   id-right        = dot-atom-text / no-fold-literal

   no-fold-literal = "[" *mdtext "]"

   mdtext          = %d33-61 /         ; The rest of the US-ASCII
                     %d63-90 /         ; characters not including
                     %d94-126          ; ">", "[", "]", or "\"
```

The <msg-id> MUST NOT be more than 250 octets in length.

   NOTE: The length restriction ensures that systems that accept
   message identifiers as a parameter when referencing an article
   (e.g., [RFC3977]) can rely on a bounded length.

Observe that <msg-id> includes the < and >.

Observe also that in contrast to the corresponding header field in
[RFC5322]:

o The syntax does not allow comments within the Message-ID header
   field.

o There is no possibility for ">" or WSP to occur inside a <msg-id>.

o Even though commonly derived from <domain>s, <id-rights>s are
   case-sensitive (and thus, once created, are not to be altered
   during subsequent transmission or copying)

This is to simplify processing by news servers and to ensure
interoperability with existing implementations and compliance with
[RFC3977]. A simple comparison of octets will always suffice to
determine the identity of two <msg-id>s.

Also note that this updated ABNF applies wherever <msg-id> is used,
including the References header field discussed in Section 3.2.10 and
the Supersedes header field discussed in Section 3.2.12.

Some software will try to match the <id-right> of a <msg-id> in a
case-insensitive fashion; some will match it in a case-sensitive
fashion. Implementations MUST NOT generate a Message-ID where the
only difference from another Message-ID is the case of characters in
the <id-right> part.

When generating a <msg-id>, implementations SHOULD use a domain name
as the <id-right>.

   NOTE: Section 3.6.4 of [RFC5322] recommends that the <id-right>
   should be a domain name or a domain literal. Domain literals are
   troublesome since many IP addresses are not globally unique;
   domain names are more likely to generate unique Message-IDs.

3.1.4. Newsgroups

The Newsgroups header field specifies the newsgroup(s) to which the
article is posted.

    newsgroups   =   "Newsgroups:" SP newsgroup-list CRLF

    newsgroup-list   =   *WSP newsgroup-name
                         *([FWS] "," [FWS] newsgroup-name) *WSP

    newsgroup-name   =   component *("." component)

    component   =   1*component-char

    component-char   =   ALPHA / DIGIT / "+" / "-" / "_"

Not all servers support optional FWS in the list of newsgroups. In
particular, folding the Newsgroups header field over several lines
has been shown to harm propagation significantly. Optional FWS in
the <newsgroup-list> SHOULD NOT be generated, but MUST be accepted.

A <component> SHOULD NOT consist solely of digits and SHOULD NOT
contain uppercase letters. Such <component>s MAY be used only to
refer to existing groups that do not conform to this naming scheme,
but MUST NOT be used otherwise.

   NOTE: All-digit <component>s conflict with one widely used storage
   scheme for articles. Mixed-case groups cause confusion between
   systems with case-sensitive matching and systems with case-
   insensitive matching of <newsgroup-name>s.

<component>s beginning with underline ("_") are reserved for use by
future versions of this standard and SHOULD NOT be generated by user
agents (whether in header fields or in newgroup control messages as
defined by [RFC5537]). However, such names MUST be accepted by news
servers.

<component>s beginning with "+" and "-" are reserved for private use
and SHOULD NOT be generated by user agents (whether in header fields
or in newgroup control messages [RFC5537]) without a private prior
agreement to do so. However, such names MUST be accepted by news
servers.

The following <newsgroup-name>s are reserved and MUST NOT be used as
the name of a newsgroup:

o Groups whose first (or only) <component> is "example"

o The group "poster"

The following <newsgroup-name>s have been used for specific purposes
in various implementations and protocols and therefore MUST NOT be
used for the names of normal newsgroups. They MAY be used for their
specific purpose or by local agreement.

o Groups whose first (or only) component is "to"

o Groups whose first (or only) component is "control"

o Groups that contain (or consist only of) the component "all"

o Groups that contain (or consist only of) the component "ctl"

o The group "junk"

   NOTE: "example.*" is reserved for examples in this and other
   standards; "poster" has a special meaning in the Followup-To
   header field; "to.*" is reserved for certain point-to-point
   communications in conjunction with the "ihave" control message as
   defined in [RFC5537]; "control.*" and "junk" have special meanings
   in some news servers; "all" is used as a wildcard in some
   implementations; and "ctl" was formerly used to indicate a
   <control-command> within the Newsgroups header field.

3.1.5. Path

   The Path header field indicates the route taken by an article since
   its injection into the Netnews system. Each agent that processes an
   article is required to prepend at least one <path-identity> to this
   header field body. This is primarily so that news servers are able
   to avoid sending articles to sites already known to have them, in
   particular the site they came from. Additionally, it permits
   gathering statistics and tracing the route articles take in moving
   over the network.

```
path           =  "Path:" SP *WSP path-list tail-entry *WSP CRLF

path-list      =  *( path-identity [FWS] [path-diagnostic] "!" )

path-diagnostic =  diag-match / diag-other / diag-deprecated

diag-match     =  "!"            ; another "!"

diag-other     =  "!." diag-keyword [ "." diag-identity ] [FWS]

diag-deprecated =  "!" IPv4address [FWS]

diag-keyword   =  1*ALPHA        ; see [RFC5537]

diag-identity  =  path-identity / IPv4address / IPv6address

tail-entry     =  path-nodot
                  ; may be the string "not-for-mail"

path-identity  =  ( 1*( label "." ) toplabel ) / path-nodot

path-nodot     =  1*( alphanum / "-" / "_" )   ; legacy names

label          =  alphanum [ *( alphanum / "-" ) alphanum ]

toplabel       =  ( [ label *( "-" ) ] ALPHA *( "-" ) label ) /
                  ( label *( "-" ) ALPHA [ *( "-" ) label ] ) /
                  ( label 1*( "-" ) label )

alphanum       =  ALPHA / DIGIT        ; compare [RFC3696]
```

A <path-identity> is a name identifying a site. It takes the form of
a domain name having two or more components separated by dots, or a
single name with no dots (<path-nodot>).

Each <path-identity> in the <path-list> (which does not include the
<tail-entry>) indicates, from right to left, the successive agents
through which the article has passed. The use of the <diag-match>,
which appears as "!!", indicates that the agent to its left verified
the identity of the agent to its right before accepting the article
(whereas the <path-delimiter> "!" implies no such claim).

   NOTE: Historically, the <tail-entry> indicated the name of the
   sender. If not used for this purpose, the string "not-for-mail"
   is often used instead (since at one time the whole path could be
   used as a mail address for the sender).

   NOTE: Although case-insensitive, it is intended that the
   <diag-keyword>s should be in uppercase, to distinguish them from
   the <path-identity>s, which are traditionally in lowercase.

A <path-diagnostic> is an item inserted into the Path header field
for purposes other than to indicate the name of a site. The use of
these is described in [RFC5537].

   NOTE: One usage of a <path-diagnostic> is to record an IP address.
   The fact that <IPv6address>es are allowed means that the colon (:)
   is permitted; note that this may cause interoperability problems
   at older sites that regard ":" as a <path-delimiter> and have
   neighbors whose names have 4 or fewer characters, and where all
   the characters are valid HEX digits.

   NOTE: Although <IPv4address>es have occasionally been used in the
   past (usually with a diagnostic intent), their continued use is
   deprecated (though it is still acceptable in the form of the
   <diag-deprecated>).

3.1.6. Subject

The Subject header field is the same as that specified in Section
3.6.5 of [RFC5322], with the added restrictions detailed above in
Section 2.2. Further discussion of the content of the Subject header
field appears in [RFC5537] and [USEAGE].

   subject   =   "Subject:" SP unstructured CRLF

3.2. Optional Header Fields

None of the header fields appearing in this section are required to
appear in every article, but some of them may be required in certain
types of articles. Further discussion of these requirements appears
in [RFC5537] and [USEAGE].

The header fields Comments, Keywords, Reply-To, and Sender are used
in Netnews articles in the same circumstances and with the same
meanings as those specified in [RFC5322], with the added restrictions
detailed above in Section 2.2. Multiple occurrences of the Keywords
header field are not permitted.

   comments   =   "Comments:" SP unstructured CRLF

   keywords   =   "Keywords:" SP phrase *("," phrase) CRLF

```
reply-to        =  "Reply-To:" SP address-list CRLF

sender          =  "Sender:" SP mailbox CRLF
```

The MIME header fields MIME-Version, Content-Type, Content-Transfer-
Encoding, Content-Disposition, and Content-Language are used in
Netnews articles in the same circumstances and with the same meanings
as those specified in [RFC2045], [RFC2183], and [RFC3282], with the
added restrictions detailed above in Section 2.2.

All remaining news header fields are described below.

3.2.1. Approved

The Approved header field indicates the mailing addresses (and
possibly the full names) of the persons or entities approving the
article for posting. Its principal uses are in moderated articles
and in group control messages; see [RFC5537].

```
approved        =  "Approved:" SP mailbox-list CRLF
```

3.2.2. Archive

The Archive header field provides an indication of the poster's
intent regarding preservation of the article in publicly accessible
long-term or permanent storage.

```
archive         =  "Archive:" SP [CFWS] ("no" / "yes")
                      *( [CFWS] ";" [CFWS] archive-param ) [CFWS] CRLF

archive-param   =  parameter
```

The presence of an Archive header field in an article with a field
body of "no" indicates that the poster does not permit redistribution
from publicly accessible long-term or permanent archives. A field
body of "yes" indicates that the poster permits such redistribution.

No <parameter>s are currently defined; if present, they can be
ignored. Further discussion of the use of the Archive header field
appears in [USEAGE].

3.2.3. Control

The Control header field marks the article as a control message and
specifies the desired actions (in addition to the usual actions of
storing and/or relaying the article).

```
control         =  "Control:" SP *WSP control-command *WSP CRLF

control-command =  verb *( 1*WSP argument )

verb            =  token

argument        =  1*( %x21-7E )
```

The verb indicates what action should be taken, and the argument(s)
(if any) supply details. In some cases, the <body> (as defined in
[RFC5322]) of the article may also contain details. The legal verbs
and respective arguments are discussed in the companion document,
[RFC5537].

An article with a Control header field MUST NOT also have a
Supersedes header field.

3.2.4. Distribution

   The Distribution header field specifies geographic or organizational
   limits on an article's propagation.

```
distribution    =  "Distribution:" SP dist-list CRLF

dist-list       =  *WSP dist-name
                   *( [FWS] "," [FWS] dist-name ) *WSP

dist-name       =  ALPHA / DIGIT
                   *( ALPHA / DIGIT / "+" / "-" / "_" )
```

The <dist-name>s "world" and "local" are reserved. "world" indicates
unlimited distribution and SHOULD NOT be used explicitly, since it is
the default when the Distribution header field is absent entirely.
"local" is reserved for indicating distribution only to the local
site, as defined by local software configuration.

"All" MUST NOT be used as a <dist-name>. <dist-name>s SHOULD contain
at least three characters, except when they are two-letter country
codes drawn from [ISO3166-1]. <dist-name>s are case-insensitive
(i.e., "US", "Us", "uS", and "us" all specify the same distribution).

Optional FWS in the <dist-list> SHOULD NOT be generated, but MUST be
accepted.

3.2.5. Expires

   The Expires header field specifies a date and time when the poster
   deems the article to be no longer relevant and could usefully be
   removed ("expired").

      NOTE: This header field is useful when the poster desires an
      unusually long or an unusually short expiry time.

   expires   = "Expires:" SP date-time CRLF

   See the remarks under Section 3.1.1 regarding the syntax of
   <date-time> and the requirements and recommendations to which it is
   subject.

      NOTE: The Expires header field is also sometimes used in Email
      with a similar meaning; see [RFC2156].

3.2.6. Followup-To

   The Followup-To header field specifies to which newsgroup(s) the
   poster has requested that followups are to be posted. The
   Followup-To header field SHOULD NOT appear in a message, unless its
   content is different from the content of the Newsgroups header field.

   followup-to   = "Followup-To:" SP (newsgroup-list / poster-text)
                     CRLF

   poster-text   = *WSP %d112.111.115.116.101.114 *WSP
                     ; "poster" in lowercase

   The syntax is the same as that of the Newsgroups (Section 3.1.4)
   header field, with the exception that the keyword "poster" requests
   that followups should be emailed directly to the article's poster
   (using the addresses contained in the Reply-To header field if one
   exists, otherwise using the addresses contained in the From header
   field) rather than posted to any newsgroups. Agents MUST generate
   the keyword "poster" in lowercase, but MAY choose to recognize case-
   insensitive forms such as "Poster".

   As in the Newsgroups (Section 3.1.4) header field, optional FWS in
   the <newsgroup-list> SHOULD NOT be generated, but MUST be accepted.

3.2.7. Injection-Date

   The Injection-Date header field contains the date and time that the
   article was injected into the network. Its purpose is to enable news
   servers, when checking for "stale" articles, to use a <date-time>
   that was added by a news server at injection time rather than one
   added by the user agent at message composition time.

   This header field MUST be inserted whenever an article is injected.
   However, software that predates this standard does not use this
   header, and therefore agents MUST accept articles without the
   Injection-Date header field.

   injection-date = "Injection-Date:" SP date-time CRLF

   See the remarks under Section 3.1.1 regarding the syntax of
   <date-time> and the requirements and recommendations to which it is
   subject.

      NOTE: Since clocks on various agents are not necessarily
      synchronized, the <date-time> in this header field might not be a
      later value than that in the Date header field. Agents MUST NOT
      alter a pre-existing Date header field when adding an Injection-
      Date header field.

   This header field is intended to replace the currently used but
   undocumented "NNTP-Posting-Date" header field, whose use is now
   deprecated.

3.2.8. Injection-Info

   The Injection-Info header field contains information provided by the
   injecting news server as to how an article entered the Netnews
   system; it assists in tracing the article's true origin. It can also
   specify one or more addresses where complaints concerning the poster
   of the article may be sent.

   injection-info = "Injection-Info:" SP [CFWS] path-identity
                      [CFWS] *(";" [CFWS] parameter) [CFWS] CRLF

      NOTE: The syntax of <parameter> (Section 5.1 of [RFC2045], as
      amended by [RFC2231]), taken in conjunction with the folding rules
      of [RFC0822] (note: not [RFC2822] or [RFC5322]), effectively
      allows [CFWS] to occur on either side of the "=" inside a
      <parameter>.

   The following table gives the <attribute> and the format of the
   <value> for each <parameter> defined for use with this header field.
   At most, one occurrence of each such <parameter> is allowed.

      <attribute>   format of <value>
      --------------------   -----------------
      "posting-host"   a <host-value>
      "posting-account"   any <value>
      "logging-data"   any <value>
      "mail-complaints-to"   an <address-list>

      where

      host-value   = dot-atom-text / IPv4address / IPv6address /
                         (dot-atom-text ":" (IPv4address / IPv6address))

         NOTE: Since any such <host-value> or <address-list> also has to be
         a syntactically correct <value>, it will usually be necessary to
         encapsulate it as a <quoted-string>, for example:

          posting-host = "posting.example.com:192.0.2.1"

   Other <attribute>s SHOULD NOT be used unless defined in extensions to
   this standard. If non-standards-based <attribute>s are used, they
   MUST begin with an "x-".

   Although comments and folding of whitespace are permitted throughout
   the Injection-Info header field, folding SHOULD NOT be used within
   any <parameter>. Folding SHOULD only occur before or after the ";"
   separating <parameter>s, and comments SHOULD only be used following
   the last <parameter>.

      NOTE: Some of this information has previously been sent in non-
      standardized header fields such as NNTP-Posting-Host, X-Trace,
      X-Complaints-To, and others. Once a news server generates an
      Injection-Info header field, it should have no need to send these
      non-standard header fields.

   The "posting-host" <parameter> specifies the Fully Qualified Domain
   Name (FQDN) and/or IP address (IPv4address or IPv6address) of the
   host from which the news server received the article.

      NOTE: If the "posting-host" <parameter> fails to deterministically
      identify the host (e.g., dynamic IP address allocation), the
      "posting-account" or "logging-data" <parameter> may provide
      additional information about the true origin of the article.

The "posting-account" <parameter> identifies the source from which
that news server received the article, in a notation that can be
interpreted by the news server administrator. This notation can
include any information the administrator deems pertinent. In order
to limit the exposure of personal data, it SHOULD be given in a form
that cannot be interpreted by other sites. However, to make it
useful for rate limiting and abuse detection, two messages posted
from the same source SHOULD have the same value of "posting-account",
and two messages from different sources SHOULD have differing values
of "posting-account". The exact definition of "source" is left to
the discretion of the news server administrator.

The "logging-data" <parameter> contains information (typically a
session number or other non-persistent means of identifying a posting
account) that will enable the true origin of the article to be
determined by reference to logging information kept by the news
server.

The "mail-complaints-to" <parameter> specifies one or more mailboxes
for sending complaints concerning the behavior of the poster of the
article.

It is a matter of local policy which of the above <parameter>s to
include. Some pieces of information have privacy implications; this
is discussed in [USEAGE].

3.2.9. Organization

The Organization header field is a short phrase identifying the
poster's organization.

organization   = "Organization:" SP unstructured CRLF

   NOTE: There is no "s" in Organization.

3.2.10. References

The References header field is the same as that specified in Section
3.6.4 of [RFC5322], with the added restrictions detailed above in
Section 2.2 and those listed below:

o The updated <msg-id> construct defined in Section 3.1.3 MUST be
   used.

o Message identifiers MUST be separated with CFWS.

   o Comments in CFWS between message identifiers can cause
      interoperability problems, so comments SHOULD NOT be generated but
      MUST be accepted.

   references   = "References:" SP [CFWS] msg-id *(CFWS msg-id)
                      [CFWS] CRLF

3.2.11. Summary

   The Summary header field is a short phrase summarizing the article's
   content.

   summary   = "Summary:" SP unstructured CRLF

3.2.12. Supersedes

   The Supersedes header field contains a message identifier specifying
   an article to be superseded upon the arrival of this one. An article
   containing a Supersedes header field is equivalent to a "cancel"
   [RFC5537] control message for the specified article, followed
   immediately by the new article without the Supersedes header field.

   supersedes   = "Supersedes:" SP *WSP msg-id *WSP CRLF

      NOTE: There is no "c" in Supersedes.

      NOTE: The Supersedes header field defined here has no connection
      with the Supersedes header field that sometimes appears in Email
      messages converted from X.400 according to [RFC2156]; in
      particular, the syntax here permits only one <msg-id> in contrast
      to the multiple <msg-id>s in that Email version.

3.2.13. User-Agent

   The User-Agent header field contains information about the user agent
   (typically a newsreader) generating the article, for statistical
   purposes and tracing of standards violations to specific software in
   need of correction. It is intended that this header field be
   suitable for use in Email.

   user-agent   = "User-Agent:" SP 1*product [CFWS] CRLF

   product   = [CFWS] token [[CFWS] "/" product-version]

   product-version = [CFWS] token

This header field MAY contain multiple <product> tokens identifying
the user agent and any subproducts that form a significant part of
it, listed in order of their significance for identifying the
application.

   NOTE: Some of this information has previously been sent in non-
   standardized header fields such as X-Newsreader, X-Mailer,
   X-Posting-Agent, X-Http-User-Agent, and others. Once a user agent
   generates a User-Agent header field, it should have no need to
   send these non-standard header fields.

   NOTE: [RFC2616] describes a similar facility for the HTTP
   protocol. The Netnews article format differs in that "{" and "}"
   are allowed in tokens (<product> and <product-version>) and
   comments are permitted wherever white space is allowed.

3.2.14. Xref

The Xref header field indicates where an article was filed by the
last news server to process it. User agents often use the
information in the Xref header field to avoid multiple processing of
crossposted articles.

```
xref             = "Xref:" SP *WSP server-name
                   1*( FWS location ) *WSP CRLF

server-name      = path-identity

location         = newsgroup-name ":" article-locator

article-locator = 1*( %x21-27 / %x29-3A / %x3C-7E )
                   ; US-ASCII printable characters
                   ; except '(' and ';'
```

The <server-name> is included so that software can determine which
news server generated the header field. The locations specify where
the article is filed -- i.e., under which newsgroups (which may
differ from those in the Newsgroups header field), and where under
those newsgroups. The exact form of an <article-locator> is
implementation-specific.

   NOTE: The traditional form of an <article-locator> (as required by
   [RFC3977]) is a decimal number, with articles in each newsgroup
   numbered consecutively starting from 1.

3.3. Obsolete Header Fields

   The header fields Date-Received, Posting-Version, and Relay-Version
   defined in [RFC0850], as well as Also-Control, Article-Names,
   Article-Updates, and See-Also defined in [Son-of-1036] are declared
   obsolete. See the cited specification documents for further
   information on their original use.

   These header fields MUST NOT be generated and SHOULD be ignored.

3.3.1. Lines

   The Lines header field indicates the number of lines in the <body>
   (as defined in [RFC5322]) of the article.

   lines   = "Lines:" SP *WSP 1*DIGIT *WSP CRLF

   The line count is the number of CRLF separators in the <body>.

   Historically, this header field was used by the NNTP [RFC3977]
   overview facility, but its use for this purpose is now deprecated.
   As a result, this header field is to be regarded as obsolescent, and
   it is likely to be removed entirely in a future version of this
   standard. All agents SHOULD ignore it and SHOULD NOT generate it.

4. Internationalization Considerations

   Internationalization of Netnews article header fields and bodies is
   provided using the MIME mechanisms discussed in Section 2.3. Note
   that the generation of internationalized <newsgroup-name>s for use in
   header fields is not addressed in this document.

5. Security Considerations

   The Netnews article format specified in this document does not
   provide any security services, such as confidentiality,
   authentication of sender, or non-repudiation. Instead, such services
   need to be layered above, using such protocols as S/MIME [RFC3851] or
   PGP/MIME (Pretty Good Privacy / MIME) [RFC3156], or below, using
   secure versions of news transport protocols. Additionally, several
   currently non-standardized protocols such as [PGPVERIFY] may be
   standardized in the near future.

   Message identifiers (Section 3.1.3) in Netnews articles are required
   to be unique; articles may be refused (in server-to-server transfer)
   if the identifier has already been seen. If a malicious agent can
   predict the identifier of an article, it can preempt the article by
   posting its own article (possibly to a quite different group) with

the same message identifier, thereby preventing the target article
from propagating. Therefore, agents that generate message
identifiers for Netnews articles SHOULD ensure that they are
unpredictable.

MIME security considerations are discussed in [RFC2046]. Note that
the full range of encodings allowed for parameters in [RFC2046] and
[RFC2231] permits constructs that simple parsers may fail to parse
correctly; examples of hard-to-parse constructs are:

Content-Type: multipart/mixed
  (; boundary=foo ; xyz=");bOuNdArY*=''next%20part(")

Content-Type: multipart/digest;
  boundary (not=me) = ("yes ;-) simple (foo;bar") ; x-foo = xyzzy

Such deficiencies in parsing may be used as part of an attack.

Further security considerations are discussed in [RFC5537].

6. IANA Considerations

IANA has registered the following header fields in the Permanent
Message Header Field Repository, in accordance with the procedures
set out in [RFC3864].

   Header field name: Also-Control
   Applicable protocol: netnews
   Status: obsoleted
   Author/change controller: IETF
   Specification document(s): [Son-of-1036] (Section 6.15)

   Header field name: Approved
   Applicable protocol: netnews
   Status: standard
   Author/change controller: IETF
   Specification document(s): This document (Section 3.2.1)

   Header field name: Archive
   Applicable protocol: netnews
   Status: standard
   Author/change controller: IETF
   Specification document(s): This document (Section 3.2.2)

```
      Header field name: Article-Names
      Applicable protocol: netnews
      Status: obsoleted
      Author/change controller: IETF
      Specification document(s): [Son-of-1036] (Section 6.17)

      Header field name: Article-Updates
      Applicable protocol: netnews
      Status: obsoleted
      Author/change controller: IETF
      Specification document(s): [Son-of-1036] (Section 6.18)

      Header field name: Comments
      Applicable protocol: netnews
      Status: standard
      Author/change controller: IETF
      Specification document(s): This document (Section 3.2),
      [RFC5322] (Section 3.6.5)

      Header field name: Control
      Applicable protocol: netnews
      Status: standard
      Author/change controller: IETF
      Specification document(s): This document (Section 3.2.3)

      Header field name: Date
      Applicable protocol: netnews
      Status: standard
      Author/change controller: IETF
      Specification document(s): This document (Section 3.1.1),
      [RFC5322] (Section 3.6.1)

      Header field name: Date-Received
      Applicable protocol: netnews
      Status: obsoleted
      Author/change controller: IETF
      Specification document(s): [RFC0850] (Section 2.2.4)

      Header field name: Distribution
      Applicable protocol: netnews
      Status: standard
      Author/change controller: IETF
      Specification document(s): This document (Section 3.2.4)
```

```
Header field name: Expires
Applicable protocol: netnews
Status: standard
Author/change controller: IETF
Specification document(s): This document (Section 3.2.5)


Header field name: Followup-To
Applicable protocol: netnews
Status: standard
Author/change controller: IETF
Specification document(s): This document (Section 3.2.6)


Header field name: From
Applicable protocol: netnews
Status: standard
Author/change controller: IETF
Specification document(s): This document (Section 3.1.2),
[RFC5322] (Section 3.6.2)


Header field name: Injection-Date
Applicable protocol: netnews
Status: standard
Author/change controller: IETF
Specification document(s): This document (Section 3.2.7)


Header field name: Injection-Info
Applicable protocol: netnews
Status: standard
Author/change controller: IETF
Specification document(s): This document (Section 3.2.8)


Header field name: Keywords
Applicable protocol: netnews
Status: standard
Author/change controller: IETF
Specification document(s): This document (Section 3.2),
[RFC5322] (Section 3.6.5)


Header field name: Lines
Applicable protocol: netnews
Status: deprecated
Author/change controller: IETF
Specification document(s): This document (Section 3.3.1)
Related information: [RFC3977] (Section 8.1)
```

```
      Header field name: Message-ID
      Applicable protocol: netnews
      Status: standard
      Author/change controller: IETF
      Specification document(s): This document (Section 3.1.3)
      Related information: [RFC5322] (Section 3.6.4)

      Header field name: Newsgroups
      Applicable protocol: netnews
      Status: standard
      Author/change controller: IETF
      Specification document(s): This document (Section 3.1.4)

      Header field name: NNTP-Posting-Date
      Applicable protocol: netnews
      Status: obsoleted
      Author/change controller: IETF
      Specification document(s): none

      Header field name: NNTP-Posting-Host
      Applicable protocol: netnews
      Status: obsoleted
      Author/change controller: IETF
      Specification document(s): [RFC2980] (Section 3.4.1)

      Header field name: Organization
      Applicable protocol: netnews
      Status: standard
      Author/change controller: IETF
      Specification document(s): This document (Section 3.2.9)

      Header field name: Path
      Applicable protocol: netnews
      Status: standard
      Author/change controller: IETF
      Specification document(s): This document (Section 3.1.5)

      Header field name: Posting-Version
      Applicable protocol: netnews
      Status: obsoleted
      Author/change controller: IETF
      Specification document(s): [RFC0850] (Section 2.1.2)
```

```
Header field name: References
Applicable protocol: netnews
Status: standard
Author/change controller: IETF
Specification document(s): This document (Section 3.2.10),
[RFC5322] (Section 3.6.4)

Header field name: Relay-Version
Applicable protocol: netnews
Status: obsoleted
Author/change controller: IETF
Specification document(s): [RFC0850] (Section 2.1.1)

Header field name: Reply-To
Applicable protocol: netnews
Status: standard
Author/change controller: IETF
Specification document(s): This document (Section 3.2),
[RFC5322] (Section 3.6.2)

Header field name: See-Also
Applicable protocol: netnews
Status: obsoleted
Author/change controller: IETF
Specification document(s): [Son-of-1036] (Section 6.16)

Header field name: Sender
Applicable protocol: netnews
Status: standard
Author/change controller: IETF
Specification document(s): This document (Section 3.2),
[RFC5322] (Section 3.6.2)

Header field name: Subject
Applicable protocol: netnews
Status: standard
Author/change controller: IETF
Specification document(s): This document (Section 3.1.6),
[RFC5322] (Section 3.6.5)

Header field name: Summary
Applicable protocol: netnews
Status: standard
Author/change controller: IETF
Specification document(s): This document (Section 3.2.11)
```

```
      Header field name: Supersedes
      Applicable protocol: netnews
      Status: standard
      Author/change controller: IETF
      Specification document(s): This document (Section 3.2.12)

      Header field name: User-Agent
      Applicable protocol: netnews
      Status: standard
      Author/change controller: IETF
      Specification document(s): This document (Section 3.2.13)
      Related information: [RFC2616] (Section 14.43)

      Header field name: Xref
      Applicable protocol: netnews
      Status: standard
      Author/change controller: IETF
      Specification document(s): This document (Section 3.2.14)
```

7. References

7.1. Normative References

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Appendix A. Acknowledgments

   As this document is the result of an eight-year effort, the number of
   people that have contributed to its content are too numerous to
   mention individually. Many thanks go out to all past and present
   members of the USEFOR Working Group of the Internet Engineering Task
   Force (IETF) and its accompanying mailing list.

Appendix B. Differences from RFC 1036 and Its Derivatives

   This appendix contains a list of changes that have been made in the
   Netnews article format from earlier standards, specifically
   [RFC1036].

   o The [RFC5322] conventions for parenthesis-enclosed <comment>s in
      header fields are supported in all newly defined header fields and
      in header fields inherited from [RFC5322]. They are, however,
      still disallowed for performance and/or compatibility reasons in
      the Control, Distribution, Followup-To, Lines, Message-ID,
      Newsgroups, Path, Supersedes, and Xref header fields.

   o Multiple addresses are allowed in the From header field.

   o [FWS] is permitted in Newsgroups header fields.

   o An enhanced syntax for the Path header field enables the injection
      point of, and the route taken by, an article to be determined with
      more precision.

   o Only one (1) message identifier is allowed in the Supersedes
      header field.

   o MIME is recognized as an integral part of Netnews.

   o There is a new Injection-Date header field to make the rejection
      of stale articles more precise and to minimize spurious
      rejections.

   o There are several new optional header fields defined, notably
      Archive, Injection-Info, and User-Agent, leading to increased
      functionality.

   o Certain header fields, notably Lines, have been deprecated or made
      obsolete (Section 3.3).

   o The convention to interpret subjects starting with the word "cmsg"
      as a control message was removed.

   o There are numerous other small changes, clarifications, and
      enhancements.

Appendix C. Differences from RFC 5322

   This appendix lists the differences between the syntax allowed by the
   Netnews article format (this document) as compared to the Internet
   Message Format, as specified in [RFC5322].

   The Netnews article format is a strict subset of the Internet Message
   Format; all Netnews articles conform to the syntax of [RFC5322].

   The following restrictions are important:

   o A SP (space) is REQUIRED after the colon (':') following a header
      field name.

   o A slightly restricted syntax of <msg-id> (to be used by the
      Message-ID, References, and Supersedes header fields) is defined.

   o The length of a <msg-id> MUST NOT exceed 250 octets.

   o Comments are not allowed in the Message-ID header field.

   o The CFWS between <msg-id>s in the References header field is not
      optional.

   o It is legal for a parser to reject obsolete syntax, except that:

      * The <obs-phrase> construct MUST be accepted.

      * The obsolete <zone> "GMT" MUST be accepted within a
         <date-time>.

   o Every line of a header field body (including the first and any
      that are subsequently folded) MUST contain at least one non-
      whitespace character. This means that an empty header field body
      is illegal.

Authors' Addresses

   Kenneth Murchison (editor)
   Carnegie Mellon University
   5000 Forbes Avenue
   Cyert Hall 285
   Pittsburgh, PA 15213
   U.S.A.

   Phone: +1 412 268 2638
   EMail: murch@andrew.cmu.edu

   Charles H. Lindsey
   University of Manchester
   5 Clerewood Avenue
   Heald Green
   Cheadle
   Cheshire SK8 3JU
   U.K.

   Phone: +44 161 436 6131
   EMail: chl@clerew.man.ac.uk

   Dan Kohn
   Healing Thresholds
   211 N End Ave Apt 22E
   New York, NY 10282
   U.S.A.

   Phone: +1 415 233 1000
   EMail: dan@dankohn.com