

## The Message Header (RFC 822)

Date : 27 Aug 76 0932 PDT  
From : Ken Davis <KDavis@This-Host.This-net>  
Subject : Re: The Syntax in the RFC  
Sender : KSecy@Other-Host  
Reply-To : Sam.Irving@Reg.Organization  
To : George Jones <Group@Some-Reg.An-Org>,  
Al.Neuman@MAD.Publisher  
cc : Important folk:  
Tom Softwood <Balsa@Tree.Root>,  
"Sam Irving"@Other-Host;  
Standard Distribution:  
/main/davis/people/standard@Other-Host,  
"<Jones>standard.dist.3"@Tops-20-Host";  
Comment : Sam is away on business. He asked me to handle  
his mail for him. He'll be able to provide a  
more accurate explanation when he returns  
next week.  
In-Reply-To: <some.string@DBM.Group>, George's message  
X-Special-action: This is a sample of user-defined field-  
names. There could also be a field-name  
"Special-action", but its name might later be  
preempted  
Message-ID: <4231.629.XYzi-What@Other-Host>

## Multipurpose Internet Mail Extension

**MIME-Version** - a version number

**Content-Type** - specify the type and subtype of data in the body of a message

- "text" - represent textual information in a number of character sets and formatted text description languages in a standardized manner.
- "multipart" - combine several body parts, possibly of differing types of data, into a single message.
- "application" - transmit application data or binary data, and hence, among other uses, to implement an electronic mail file transfer service.
- "message" - encapsulating another mail message.
- "image" - transmitting still image (picture) data.
- "audio" - transmitting audio or voice data.
- "video" - transmitting video or moving image data, possibly with audio as part of the composite video data format.

**Content-Transfer-Encoding** - specify an auxiliary encoding that was applied to the data

**Two additional headers** - can be used to further describe the data in a message body, the Content-ID and Content-Description header fields.

### Examples:

```
Content-type: text/plain; charset=US-ASCII  
Content-type: text/html; charset=Windows-1250  
Content-type: application/msword; name="paper.doc"  
Content-type: image/jpeg
```

## Subtypes:

### *Multipart/mixed*

the body parts are independent and need to be bundled in a particular order.

### *Multipart/alternative*

each of the parts is an "alternative" version of the same information. Systems should recognize that the content of the various parts are interchangeable.

### *Multipart/digest*

the default Content-Type value for a body part is changed from "text/plain" to "message/rfc822".

### *Multipart/parallel*

the order of body parts is not significant. A common presentation of this type is to display all of the parts simultaneously on hardware and software that are capable of doing so.

### *Message/rfc822*

the body contains an encapsulated message, with the syntax of an RFC 822 message.

### *Message/Partial*

allow large objects to be delivered as several separate pieces of mail and automatically reassembled by the receiving user agent.

### *Message/External-Body*

actual body data are not included, but merely referenced. In this case, the parameters describe a mechanism for accessing the external data.

## Examples:

```
From: Nathaniel Borenstein <nsb@bellcore.com>
To: Ned Freed <ned@innosoft.com>
Subject: Sample message
MIME-Version: 1.0
Content-type: multipart/mixed; boundary="simple
boundary"
```

```
This is the preamble. It is to be ignored, though it
is a handy place for mail composers to include an
explanatory note to non-MIME conformant readers.
--simple boundary
```

```
This is implicitly typed plain ASCII text.
It does NOT end with a linebreak.
--simple boundary
Content-type: text/plain; charset=us-ascii
```

```
This is explicitly typed plain ASCII text.
It DOES end with a linebreak.
```

```
--simple boundary--
This is the epilogue. It is also to be ignored.
```

```
Content-type: message/external-body; access-
type=local-file; name="/u/nsb/Me.gif"
```

```
Content-type: image/gif
Content-ID: <id42@guppylake.bellcore.com>
Content-Transfer-Encoding: binary
```

THIS IS NOT REALLY THE BODY!

## Content-Transfer-Encoding

- "7bit"
- "quoted-printable"
- "base64"
- "8bit"
- "binary"
- x-token

## Quoted-Printable Content-Transfer-Encoding

#1. Any octet may be represented by an "=" followed by a two digit hexadecimal representation of the octet's value

Example: ESC → decimal value 27 → "=1B"

#2. Octets with decimal values of 33 through 60 inclusive, and 62 through 126, inclusive, MAY be represented as the ASCII characters which correspond to those octets

Example: "A" → decimal value 65 → "A"

#3. Octets with values of 9 and 32 MAY be represented as ASCII TAB (HT) and SPACE characters, respectively, but MUST NOT be so represented at the end of an encoded line.

#4. A line break in a text body, independent of what its representation is following the canonical representation of the data being encoded, must be represented by a (RFC 822) line break, which is a CRLF sequence, in the Quoted-Printable encoding.

Example: "CR" → decimal value 13 → "=0D"  
"LF" → decimal value 10 → "=0A"  
"CRLF" → "=0D=0A"

#5. The Quoted-Printable encoding REQUIRES that encoded lines be no more than 76 characters long. If longer lines are to be encoded with the Quoted-Printable encoding, 'soft' line breaks must be used. An equal sign as the last character on a encoded line indicates such a non-significant ('soft') line break in the encoded text.

## Base64 Content-Transfer-Encoding

| J  |   |   |   |   |   |   |   | á   |   |   |   |   |   |   | n   |   |   |   |   |    |   |   |   |  |  |  |
|----|---|---|---|---|---|---|---|-----|---|---|---|---|---|---|-----|---|---|---|---|----|---|---|---|--|--|--|
| 74 |   |   |   |   |   |   |   | 225 |   |   |   |   |   |   | 110 |   |   |   |   |    |   |   |   |  |  |  |
| 0  | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1   | 1 | 1 | 0 | 0 | 0 | 0 | 1   | 0 | 1 | 1 | 0 | 1  | 1 | 1 | 0 |  |  |  |
| 0  | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1   | 1 | 1 | 0 | 0 | 0 | 0 | 1   | 0 | 1 | 1 | 0 | 1  | 1 | 1 | 0 |  |  |  |
| 18 |   |   |   |   |   |   |   | 46  |   |   |   |   |   |   | 5   |   |   |   |   | 46 |   |   |   |  |  |  |
| S  |   |   |   |   |   |   |   | u   |   |   |   |   |   |   | F   |   |   |   |   | u  |   |   |   |  |  |  |

| Value Encoding | Value Encoding | Value Encoding | Value Encoding |
|----------------|----------------|----------------|----------------|
| 0 A            | 17 R           | 34 l           | 51 z           |
| 1 B            | 18 S           | 35 j           | 52 0           |
| 2 C            | 19 T           | 36 k           | 53 1           |
| 3 D            | 20 U           | 37 l           | 54 2           |
| 4 E            | 21 V           | 38 m           | 55 3           |
| 5 F            | 22 W           | 39 n           | 56 4           |
| 6 G            | 23 X           | 40 o           | 57 5           |
| 7 H            | 24 Y           | 41 p           | 58 6           |
| 8 I            | 25 Z           | 42 q           | 59 7           |
| 9 J            | 26 a           | 43 r           | 60 8           |
| 10 K           | 27 b           | 44 s           | 61 9           |
| 11 L           | 28 c           | 45 t           | 62 +           |
| 12 M           | 29 d           | 46 u           | 63 /           |
| 13 N           | 30 e           | 47 v           |                |
| 14 O           | 31 f           | 48 w           | (pad) =        |
| 15 P           | 32 g           | 49 x           |                |
| 16 Q           | 33 h           | 50 y           |                |

From - Tue Nov 25 09:01:16 2003  
X-UIDL: 3fc31c5300000006  
X-Mozilla-Status: 0001  
X-Mozilla-Status2: 00000000  
Return-Path: <obona@ktl.elf.stuba.sk>  
Delivered-To: obona@ktl.elf.stuba.sk  
Received: from info.elf.stuba.sk (info.elf.stuba.sk [147.175.111.14])  
by postoffice.ktl.elf.stuba.sk (Postfix) with ESMTTP id B0F7B40091  
for <obona@ktl.elf.stuba.sk>; Tue, 25 Nov 2003 05:02:59 +0100 (CET)  
Received: from gwen.pobox.sk (gwen.pobox.sk [212.5.216.21])  
by info.elf.stuba.sk (8.11.6/8.11.6) with ESMTTP id hAP2sZZ00809  
for <obona@ktl.elf.stuba.sk>; Tue, 25 Nov 2003 03:54:35 +0100 (CET)  
Received: from postar.telecom.sk (postar.telecom.sk [195.146.134.59])  
by gwen.pobox.sk (8.12.10/8.12.9) with ESMTTP id hAP2rtDW024837  
for <jobona@pobox.sk>; Tue, 25 Nov 2003 03:53:59 +0100 (CET)  
Received: from info.elf.stuba.sk (info.elf.stuba.sk [147.175.111.14])  
by postar.telecom.sk (8.12.10/8.12.3) with ESMTTP id hAOBITs9011259  
for <jobona@pobox.sk>; Mon, 24 Nov 2003 12:19:01 +0100 (MET)  
Received: from postoffice.ktl.elf.stuba.sk (juno.ktl.elf.stuba.sk [147.175.103.7])  
by info.elf.stuba.sk (8.11.6/8.11.6) with ESMTTP id hAOBI3Z24521  
for <jobona@pobox.sk>; Mon, 24 Nov 2003 12:18:03 +0100 (CET)  
Received: from ktl.elf.stuba.sk (b607-jozef.ktl.elf.stuba.sk [147.175.103.220])  
by postoffice.ktl.elf.stuba.sk (Postfix) with ESMTTP id 1792140091  
for <jobona@pobox.sk>; Mon, 24 Nov 2003 13:26:22 +0100 (CET)  
Message-ID: <3FC1E8E5.1050807@ktl.elf.stuba.sk>  
Date: Mon, 24 Nov 2003 12:17:57 +0100  
From: Jozef Obona <obona@ktl.elf.stuba.sk>  
Organization: Katedra telekomunikacii FEI STU v Bratislava  
User-Agent: Mozilla/5.0 (Windows; U; Windows NT 5.0; en-US; rv:1.4) Gecko/20030529  
X-Accept-Language: en-us, en, sk  
MIME-Version: 1.0  
To: =?windows-1252?Q?Jozef\_Obon=28a?= <jobona@pobox.sk>  
Subject: example  
X-Security: MIME headers sanitized on juno.ktl.elf.stuba.sk  
See <http://www.impsec.org/email-tools/sanitizer-intro.html>  
for details. \$Revision: 1.133 \$Date: 2002-01-05 17:09:21-08  
Content-Type: multipart/mixed;  
boundary="-----000108070302030103010107"  
X-Scanned: by AntiVirus filter AVilter (msg.y5n756pg@delta.elf.stuba.sk)  
X-Scanned: by AntiVirus filter AVilter (msg.MFpC6d4p@delta.elf.stuba.sk)  
X-RAVMilter-Version: 8.4.2(snapshot 20021217) (gwen)  
Status:

This is a multi-part message in MIME format.

-----000108070302030103010107  
Content-Type: text/plain; charset=us-ascii; format=flowed  
Content-Transfer-Encoding: 7bit

This is text of message.

-----000108070302030103010107  
Content-Type: text/plain; name="name.txt"  
Content-Disposition: inline; filename="name.txt"  
Content-Transfer-Encoding: 8bit

oboda

-----000108070302030103010107--