HEADERS

When you send an e-mail, a lot of information is transmitted besides your words of wisdom at the top of the message. This information is called the HEADERS, and is normally either hidden or interpreted by your e-mail client (Outlook Express etc). A message as sent is called a "raw message". This is what a multipart one, as sent by Outlook Express, looks like:

```
Received: from cftb.net [203.194.209.77]
          by billnot.com (172.26.0.2)
          with POP3 (Classic Hamster Vr. 1.3 Build 1.3.23.191) ; Tue, 15 Oct
2002 20:47:33 +0200
Return-Path: <johndubois@wanadoo.es>
Delivered-To: classes@2
Received: (qmail 12069 invoked from network); 15 Oct 2002 18:02:00 -0000
Received: from unknown (HELO smtp.wanadoo.es) (62.37.236.138)
  by ns1.serversys852.com with SMTP; 15 Oct 2002 18:02:00 -0000
Received: from johnduboiswanadoo (62-37-15-180.dialup.uni2.es [62.37.15.180])
          by smtp.wanadoo.es (8.11.6/8.11.6) with SMTP id g9FI0dt14691
          for <classes@cftb.net>; Tue, 15 Oct 2002 20:00:40 +0200
Message-ID: <003a01c27475$8cb59020$b40f253e@johnduboiswanadoo>
From: "John & Veronica Du Bois" <johndubois@wanadoo.es>
To: <classes@cftb.net>
Subject: Identifying Software
Date: Tue, 15 Oct 2002 20:05:33 +0200
MIME-Version: 1.0
Content-Type: multipart/alternative;
          boundary="----=_NextPart_000_0037_01C27486.384FF8C0"
X-Priority: 3
X-MSMail-Priority: Normal
X-Mailer: Microsoft Outlook Express 5.50.4133.2400
X-MimeOLE: Produced By Microsoft MimeOLE V5.50.4133.2400
X-Hamster-To: account:classes,account:oasis,news:lists.classes
X-Hamster-Info: Score=0 UIDL=aohut5.3vvl0hd.1 Received=20021015204733

This is a multi-part message in MIME format.

------=_NextPart_000_0037_01C27486.384FF8C0
Content-Type: text/plain;
          charset="iso-8859-1"
Content-Transfer-Encoding: quoted-printable

Hello Bill,
I would prefer you to reveal to your eager students how to identify the =
Software being used, that way we are all sure of getting the correct =
information. To be quite honest I just stumbled across it in Properties.
If nothing else it proves that you are encouraging us to be inquisitive =
!!!

John

------=_NextPart_000_0037_01C27486.384FF8C0
Content-Type: text/html;
          charset="iso-8859-1"
Content-Transfer-Encoding: quoted-printable

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
<HTML><HEAD>
<META http-equiv=3DContent-Type content=3D"text/html; =
charset=3Diso-8859-1">
<META content=3D"MSHTML 5.50.4134.100" name=3DGENERATOR>
```

```
<STYLE></STYLE>
</HEAD>
<BODY bgColor=3D#ffffff>
<DIV><FONT face=3DArial size=3D2>Hello Bill,</FONT></DIV>
<DIV><FONT face=3DArial size=3D2>I would prefer you to reveal to your =
eager students=20
how to identify the Software being used, that way we are all sure of =
getting the=20
correct information. To be quite honest I just stumbled across it in=20
Properties.</FONT></DIV>
<DIV><FONT face=3DArial size=3D2>If nothing else it proves that you are =
encouraging=20
us to be inquisitive !!!</FONT></DIV>
<DIV><FONT face=3DArial size=3D2></FONT> </DIV>
<DIV><FONT face=3DArial size=3D2>John</FONT></DIV></BODY></HTML>

------=_NextPart_000_0037_01C27486.384FF8C0--
```

Let's ignore, for now, the duplication of data generated by Outlook Express (we may come back to that later) and look at the headers. This is adapted from a good explanation of the process on Usenet.

MTA - Mail Transmitting Agent (your ISPs SMTP server)
MUA - Mail User Agent (your own software)

There are two general classes of headers: those generated automatically by the MTA, and those configured and inserted by the MUA, on the user's behalf.

The former, the ones generated by the MTAs, are used mostly for tracking the e-mail, and generally have nothing to do with the content of the email.

The latter, the ones inserted by the MUA or by the user, determine the source, the destination, and describe the content of the mail.

It would be overburdensome for the user to generate all of these MUA headers themselves, so the user's mailer generates many or most of them automatically, typically under configration control. Of course, the user can always override or replace the automatic MUA headers.

The MTA headers, on the other hand, are almost completely automatic and the user almost never can change them. Only under special circumstances can the MTA headers be inserted or modified by the user.

From the user's pespective, however, the e-mail process seems atomic, so that the distinction of these header classes is lost. Even some systems managers or postmasters fail to appreciate that it is during different stages of the e-mail process, that different sets of headers get inserted.

To help clarify this distinction, here's a diagram of the e-mail process and its several stages:

```
 sender -> MUA -> MTA -> ... -> MTA -> MDA ->{maildrop}-> MUA -> reader
         [1]    [2]       [3]        [4]    [5]                [6]
```

Headers typically provided by "template" by the MUA to the sender,
usually during stage [1] (when composing e-mail):

```
From:                   # who I am
To:                     # the target
Cc:                     # people to keep informed, but need not respond
Bcc:                    # secret admireres
Subject:                # what's the mail about
Reply-To:               # highest priority return address
Priority:
Precedence:
Resent-To:              # used for redirecting e-mail
Resent-Cc:
X-BlahBlah:                     # personalized headers
```

When the sender is done composing, and says "send it" to his/her mailer,
some additional headers may get inserted by the MUA at this stage [2]:

```
Date:
Resent-Date:            # if being redirected
From:                   # If not already present
Sender:                 # if a From: is already present
X-Mailer:               # what MUA composed this message
Mime-Version:
Content-Type:           # what kind of stuff is in here
Content-Transfer-Encoding:
Content-Length:
```

When the MTA receives the e-mail from the MUA at stage [3], it may
insert additional headers showing the origination of the e-mail:

```
From                    # if local e-mail, automatic or by -f option
Date                    # If not already present
Message-Id:                     # unique ID for the e-mail; the first MTA
                                # creates this
Received:               # shows inter-system e-mail tracking info
Return-Path:            # shows how to get back to the sender
```

As each MTA hands off the e-mail, additional headers may get added, all
as part of the MTA to MTA handoff in stage [3]:

```
Received:               # inserted by each MTA
```

As the final MTA hands the e-mail to a delivery agent (MDA), in stage
[4], there are still some more header insertions which may occur:

```
Apparently-To:          # added if no To: header exists
From                    # may get added if local e-mail
```