

AMHS Workshop 1

2023

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X.400 x SMTP

- ▶ X.400:
 - ▶ Most succinct message format
 - ▶ can restrict the topology of the backbone
 - ▶ better notifications
 - ▶ closely related to X.435, the current EDI standard
 - ▶ Closer to X.500, which offers a more efficient directory service than LDAP
- ▶ SMTP:
 - ▶ Simpler to implement and maintain
 - ▶ It has the "impulse" of Internet
 - ▶ It is more flexible and adaptable

SMTP

- ▶ Internet message structure
 - ▶ Originally defined in RFC 561
 - ▶ Refined in RFC 680, 724, and 733, before reaching the current RFC 822 standard
 - ▶ RFC 822 merges with RFC 821
 - ▶ RFC 821 describes how to transfer the file
 - ▶ RFC 822 describes how it is structured
- ▶ Fields delimited by : make up the structure

Required fields:

Date: Message creation date
From: Message originator (source)
To:, Cc: Message recipient(s)
ou Bcc:

Optional fields:

Received: Provides tracing
Subject: Message Subject
Reply-to: Sender reply address

Header

Received: from arl5.relay.com ([10.48.46.10]) by hard.rock
id HQVGT8A9; Fri, 31 Mar 1999 23:17:32 +0000

Received: (from mailgate@wet.wet.wet)
by arl5.relay.com (8.8.6/8.8.6/2.10) ID oaa18972
for rhea@hard.rock; Fri, 31 Mar 1999 23:15:21 +0000

Date: Fri, 31 Dec 99 23:11 -0000

From: "Oceanus" <oceanus@wet.wet.wet>

To: "Rhea" <rhea@hard.rock>

Subject: Tricks to use in the elevator (if you want to be considered crazy)

Body

- 1) Open your briefcase and ask: Is there enough air in here?;
- 2) Stand in the corner, in silence, staring at the wall, without descending on any floor;
- 3) Stare at another passenger, then exclaim, "I'm in new socks";
- 4) When more than seven people board, speak groaning from the bottom of the elevator, "Oh no, I think I'm going to throw up";
- 5) Shout, "NO PARACHUTE," as the elevator begins to descend;
- 6) Stare at one of the passengers, then announce, "You are one of THEM." and move to a distant corner at the bottom of the elevator;
- 7) When the elevator is silent, look around and ask the person near you, "Is it your cell phone?"

MIME

- ▶ RFC 822 did not provide:
 - ▶ support for binary data and 8-bit character
 - ▶ structure for multiple parts of the body
- ▶ Multipurpose Internet Mail Extensions
 - ▶ RFC 2045 to 2049
 - ▶ Maintains compability with RFC 822
 - ▶ Ensures humans have ease of reading
 - ▶ Provides intuitive and extensible body part definitions
 - ▶ Defines additional headers

Date: Fri, 31 Dec 99 23:59 -0000

From: "Almeida" <almeida@cesupa.br>

To: "Nilton" <cns2-2@decea.gov.br>

Subject: Teste

MIME-Version: 1.0

Content-Type: multipart/mixed; boundary="--Boundary.9241449.2213818--"

This message is in MIME format. If your mail program doesn't support MIME, you won't be able to read the entire message.

---Boundary.9241449.2213818--

Prezado Nilton ...

---Boundary.9241449.2213818--

Content-Type: text/plain;

name="teste.txt"

Content-Transfer-Encoding: quoted-printable

Content-Disposition: attachment;

filename="teste.txt"

=C9 s=F3 um teste.

---Boundary.9241449.2213818---

MIME — Content-Type

- ▶ Takes Type/Subtype values. The most common are:
 - ▶ Text/plain - for ASCII texts
 - ▶ Application/octet-stream - for non-ASCII data
 - ▶ Multipart/mixed - composition or multiple attachments
- ▶ MIME Media Types

Category	Media Type	Subtype
Discrete	Text	Plain
	Image	
	Audio	
	Video	
	Application	Octet-Stream
Composite	Multipart	PostScript
		Mixed
		Alternative
		Digest
	Message	Parallel
	RFC822	
	Partial	
	External-Body	

Base-64 Encoding Table

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

QuotedPrintable encoding

- ▶ Applicable for text with eight-bit characters
- ▶ Seven-bit characters are kept unchanged
- ▶ Eight-bit characters are encoded
 - ▶ You get the (decimal) value in the ASCII table;
 - ▶ Transforms the value to hexadecimal; and
 - ▶ The prefix "=" is placed.
- ▶ Example: **ß**
 - ▶ In the ASCII table is the value 223;
 - ▶ $223 = DF_H$
 - ▶ Coding **ß**, it would be "**=DF**"
- ▶ **weiße** \Rightarrow **wei=DFe**
- ▶ **F=ma** \Rightarrow **F=3Dma**