

Chapter 7

1. Can a machine with a single DNS name have multiple IP addresses? How could this occur?

Solution:

可能。

举例：IP 地址由网络号和主机号组成，如果一台机器上由 2 块以太网卡，那么它可以处于两个单独的网络上，这时它需要 2 个 IP 地址。

2. A binary file is 3072 bytes long. How long will it be if encoded using base64 encoding, with a CR+LF pair inserted after every 80 bytes sent and at the end?

Solution:

Base64编码将消息分解成 $3072 \div 3 = 1024$ 个单元（3个字节一组）
将每组编码为4个字节，即 $1024 \times 4 = 4096$ bytes
把这些字节以80个字节每组分行，可以得到 $4096 \div 80 = 51.2 \approx 52$ 行
这样得到的总长（加上52个CR和52个LF）为 $4096 + 52 \times 2 = 4200$ bytes

3. Consider the quoted-printable MIME encoding scheme. Mention a problem not discussed in the text and propose a solution.

Solution:

如果在文本中出现了一个以等号开头且后跟两个十六进制数字的序列，例如=FF，则该序列将被错误地解释为转义序列。
解决方案是对等号本身进行编码。

4. From an ISP's point of view, POP3 and IMAP differ in an important way. POP3 users generally empty their mailboxes every day. IMAP users keep their mail on the server indefinitely. Imagine that you were called in to advise an ISP on which protocol it should support. What considerations would you bring up?

Solution:

IMAP是一个更好的选择，因为它提供了更好，更直观的同步作用。IMAP用于下载，阅读和管理电子邮件，而POP3仅用于下载电子邮件。当邮箱很大或多个客户端访问同一帐户时，IMAP比POP3更新和流行。我觉得可以支持IMAP，鼓励用户把邮件保存在服务器上并使其为使用的磁盘存储支付费用。

5. The standard http URL assumes that the Web server is listening on port 80. However, it is possible for a Web server to listen to some other port. Devise a reasonable syntax for a URL accessing a file on a nonstandard port

Solution:

`http://dns-name:port/file`

6. Imagine that someone in the CS Department at Stanford has just written a new program that he wants to distribute by FTP. He puts the program in the FTP directory `ftp/pub/freebies/newprog.c`. What is the URL for this program likely to be?

Solution: The URL is probably

`ftp://www.cs.stanford.edu/ftp/pub/freebies/newprog.c`