【CN】Day17

⏱ Created	@June 9, 2022 1:03 PM
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【Ch2】Application Layer

2.3.3 Mail Message Formats

When an email message is sent from one person to another, a header containing peripheral information precedes the body of the message itself. This peripheral information is contained in a series of header lines, which are defined in RFC 5322.

The header lines and the body of the message are separated by a blank line.

Each header line contains readable text, consisting of a keyword followed by a colon followed by a value. Some keywords are required and others are optional.

Every header must have a `From:` header line and a `To:` header line; a header may include a `Subject:` header line as well as other optional header lines.

A typical message header looks like this:

```
From: alice@crepes.fr
To: bob@hamburger.edu
Subject: Searching for the meaning of life.
```

There is still one missing piece to the puzzle. *How does a recipient like Bob obtain his messages, which are sitting in a mail server within Bob's ISP?*

Note that Bob's user agent cannot use SMTP to obtain the messages because obtaining the message is a pull operation, whereas SMTP is a push protocol.

There are currently a number of popular mail access protocols, including Post Office Protocol-Version 3(POP 3), Internet Mail Access Protocol(IMAP), and HTTP.

POP3

POP3 begins when the user agent opens a TCP connection to the mail server on port 110.

With the TCP connection established, POP3 progresses through three phases: authorization, transaction, and update.

1. During the first phase, authorization, the user agent sends a username and a password to authenticate the user.

2. During the second phase, transaction, the user agent retrieves messages; also during this phase, the user agent can mark messages for deletion, remove deletion marks, and obtain mail statistics

3. The third phase, update, occurs after the client has issued the quite command, ending the POP3 session. At this time, the mail server deletes the messages that were marked for deletion.