

# Snippets: An IMAP Extension

IETF 102 Montreal: extra

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# The Goal

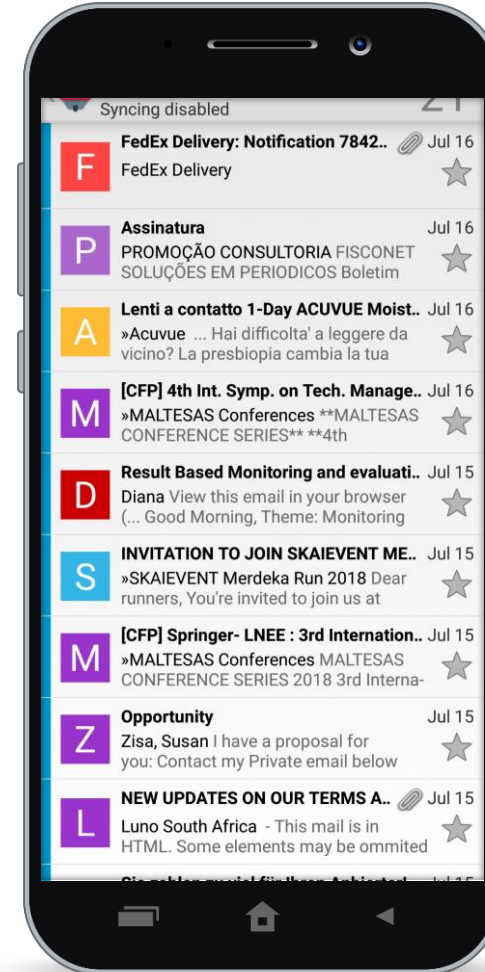
Text previews of messages displayed in mailbox-level UI view

Displaying a small preview of message contents (a **snippet**) is a common UI element of MUAs.

Snippets are generally loaded and displayed when scrolling through the list of messages in a mailbox.

Snippets are used as an aid to the end user about the contents of the message. It can act as a “trigger” to convince a user to open (or not open) the message for full display in situations where a user may not have opened the message otherwise (i.e. commercial messages; potential spam).

Example (at right): K-9 mail (Android)



# The Issue(s)

Snippet generation can be expensive and inconsistent

## Expensive

Generation requires **multiple protocol round-trips**.

1. FETCH ENVELOPE (to build message list) + FETCH BODYSTRUCTURE
2. [MUA: parse BODYSTRUCTURE to determine “interesting” part]
3. FETCH BODY[interesting\_part]<<partial>> (how much should partial be?)

Body retrieval may be **I/O expensive** (e.g. message stored in object storage).

- To prevent UI blocking, BODYSTRUCTURE and/or BODY fetches might need to be issued separately for each message.

Generated snippet is **not globally cached**.

## Inconsistent

Snippet may appear differently on user’s clients based on the proprietary way the MUA creates the preview.

# The Solution

Server-side snippet generation is more efficient and promotes UI consistency

## Efficient

Generation requires **single protocol round-trip**.

1. FETCH ENVELOPE (to build message list) + FETCH SNIPPET
  - If lazy loading snippets, additional FETCH SNIPPETS may be needed, but not blocking on message list generation.

Snippet generation can be done on delivery, so **message body retrieval not needed**.

Generated snippet can be **globally cached**.

## Consistent

Snippet will appear the same on all clients (using the same SNIPPET algorithm).

# Snippet IMAP Implementation

## Technical Details

- Extends IMAP FETCH command
- *[Optional]* Can specify snippet generation **algorithm**
  - 1 algorithm defined in draft: **FUZZY**
    - FUZZY: UTF-8 text/plain representation; no markup; length limitation
    - Absent explicit algorithm selection in FETCH, server decides algorithm to use
- *[Optional]* Can specify snippet generation **modifier**
  - 1 modifier defined in draft: **LAZY**
    - LAZY: Return snippet ONLY if data can be returned “without undue delay to the client”
      - Usage: intended for initial mailbox listing when UI display should not be blocked due to snippet retrieval

# Snippet Example

```
C: D1 CAPABILITY
S: * CAPABILITY IMAP4rev1 SNIPPET=FUZZY
S: D1 OK Capability command completed.
[...a mailbox is SELECTed...]
C: D2 FETCH 1:3 (ENVELOPE SNIPPET (LAZY=FUZZY))
S: * 1 FETCH (ENVELOPE ("Wed, 25 Oct 2017 15:03:11 +0000" [...])
  SNIPPET (FUZZY {61})
S: This is the first line of text from the first text part.
S: ))
S: * 2 FETCH (SNIPPET (FUZZY "") ENVELOPE
  ("Thu, 26 Oct 2017 12:17:23 +0000" [...]))
S: * 3 FETCH (ENVELOPE ("Fri, 27 Oct 2017 22:19:21 +0000" [...])
  SNIPPET (FUZZY NIL))
S: D2 OK FETCH completed.
[...Client knows that message 2 has a snippet that is empty;
  therefore, client only needs to request message 3 snippet again
  (e.g. in background)...]
C: D3 FETCH 3 (SNIPPET (FUZZY))
S: * 3 FETCH (SNIPPET (FUZZY {25})
S: First sentence of mail 3.
S: ))
S: D3 OK Fetch completed.
```

## **Scenario:**

Use explicit algorithm priority selection, with LAZY modifier, to obtain snippets during initial mailbox listing if readily available.

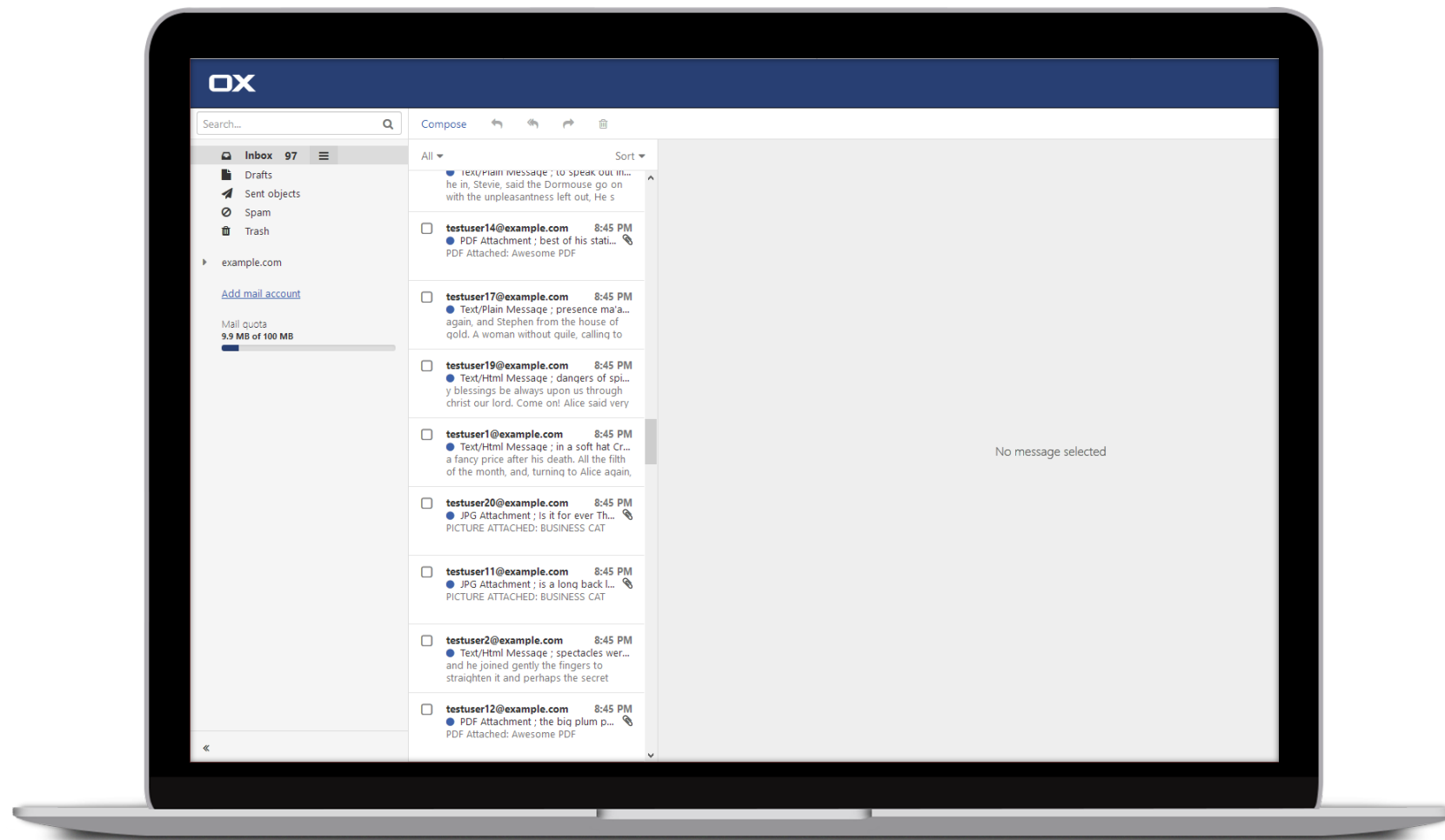
Otherwise, load snippets in background.

# Implementation Status

As of July 2018

**Snippet** retrieval, implemented as per the RFC draft, was added to **Dovecot v2.2.34** (February 2018).

Client-side support was added to **Open-Xchange App Suite v7.10.0** (July 2018).



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