

# MTA Hooks

## An HTTP-Based Mail Processing Protocol

draft-degennaro-mta-hooks-00: IETF 125 DISPATCH

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# Why This Work Matters

Mail filtering is critical infrastructure: spam filtering, virus scanning, policy enforcement: yet **there is no standard protocol** for MTA-to-filter communication.

- **Milter** (Sendmail, ~2000) is the de facto solution but:
  - No formal specification: only a C library ( `libmilter` )
  - Proprietary binary wire format, painful to implement in modern languages
  - Inconsistent behavior across MTAs (Sendmail vs. Postfix)
  - No support for outbound delivery hooks
  - Not adopted by modern MTAs
- Filters like **Rspamd**, **ClamAV**, **SpamAssassin** all rely on Milter over the network today: on an undocumented protocol

**MTA Hooks** proposes a standardized, HTTP-based replacement that is simple to implement, language-agnostic, and covers both inbound and outbound mail processing.

# Protocol Overview

MTA Hooks uses **HTTP POST** requests from the MTA to registered scanner endpoints at each SMTP processing stage. Scanners respond with **JSON Pointer patches** to modify the message transaction.

## Key Design Choices

- Built on **HTTP**: works with existing infrastructure (load balancers, proxies, monitoring)
- **JSON** and **CBOR** serialization
- Message representation based on **JMAP** (RFC 8620 / RFC 8621)
- Modifications via **JSON Pointer** (RFC 6901) set/add/delete ops
- Capability negotiation via discovery & registration

## Inbound Stages (reception)

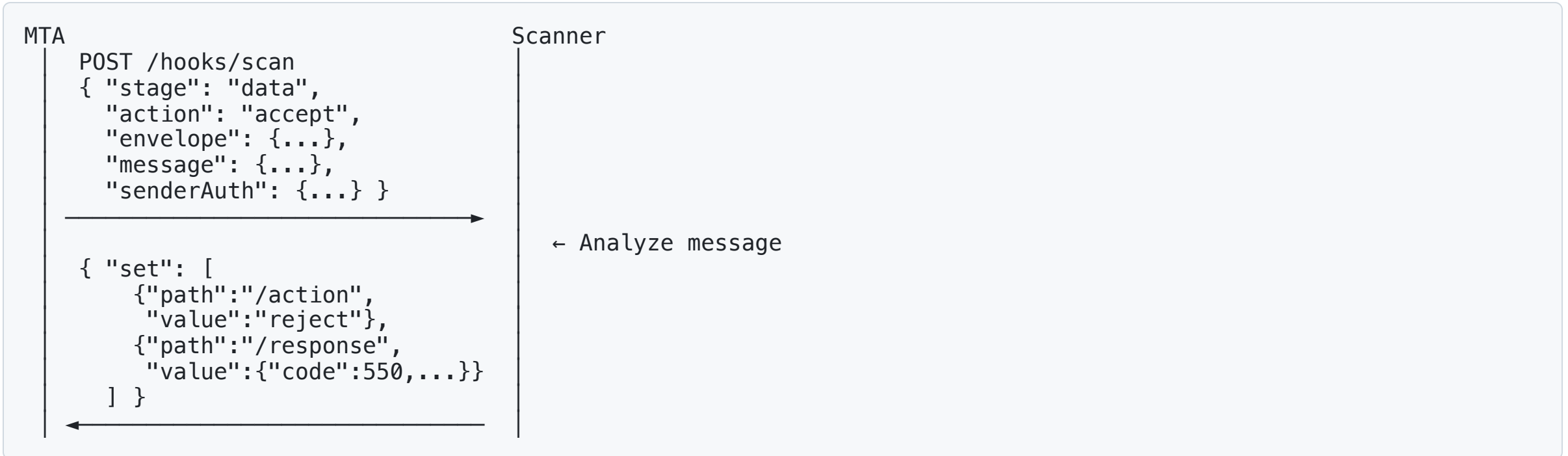
connect → ehlo → mail → rcpt → data

## Outbound Stages (delivery)

delivery → defer → dsn

**Actions:** accept, reject, discard, quarantine, disconnect (inbound) / continue, cancel (outbound)

# How It Works: Simple Model



- Scanner receives full context (envelope, parsed message, auth results, TLS info)
- Responds with **patches**: no need to echo back the entire message
- Multiple scanners chain sequentially; terminal actions stop the chain
- Both structured ( `message` ) and raw ( `rawMessage` ) representations supported

# Prior Work & Community Interest

<b>Draft</b>	<a href="#">draft-degennaro-mta-hooks-00</a>
<b>Presented</b>	IETF 123 (Madrid): MAILMAINT session
<b>Discussed</b>	FOSDEM 2026
<b>Implementation</b>	<a href="#">Stalwart Mail Server</a> : in production
<b>3rd-party scanners</b>	Multiple scanner implementations on GitHub
<b>Rspamd</b>	Plans to implement MTA Hooks support
<b>Interest</b>	6–10 people expressed interest at IETF 123 and FOSDEM in participating in a WG

Feedback from IETF 123 and FOSDEM has already shaped the current draft: including support for both raw and parsed message formats, CBOR serialization, and the JSON Pointer modification model.

# Hoped Dispatching Outcome

We believe there is sufficient interest and a clear gap to fill.

We ask DISPATCH to consider:

❶ **Propose a new focused Working Group**

or

❷ **Hold a full BOF at a future IETF meeting**

to advance standardization of an HTTP-based MTA filtering protocol.

**Questions? Feedback?**

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