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# **aiospamc Documentation**

***Release 0.10.1***

**Michael Caley**

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aiospamc is an asyncio-based library to interact with SpamAssassin's SPAMD service.



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## 1.1 Installation

### 1.1.1 Requirements

- Python 3.8 or later
- SpamAssassin running as a service

### 1.1.2 Install

#### With pip

```
pip install aiospamc
```

#### With git

```
git clone https://github.com/mjcaley/aiospamc.git
cd aiospamc
poetry install
```

---

**Note:** aiospamc's build system uses Poetry which you can get from here: <https://python-poetry.org/>

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## 1.2 User Guide

### 1.2.1 Command Line Interface

#### Description

**aiospamc** is the command line interface for the SpamAssassin client. It provides common actions to interact with the SpamAssassin server.

## Global Options

### **--version**

Print the version of **aiospamc** to the console.

### **--debug**

Enable debug logging.

## Commands

### **check** [MESSAGE]

Sends message to SpamAssassin and prints the score if there is any.

If no message is given then it will read from *stdin*.

The exit code will be 0 if the message is ham and 1 if it's spam.

#### **-h, --host** HOSTNAME

Hostname or IP address of the server.

#### **-p, --port** PORT

Port number of the server.

#### **--socket-path** PATH

Path to UNIX domain socket.

#### **--ssl**

Enables or disables SSL when using a TCP connection. Will use the system's root certificates by default.

#### **--user** USERNAME

User to send the request as.

#### **--timeout** SECONDS

Set the connection timeout. Default is 10 seconds.

#### **--out** [json|text]

Choose the output format to the console. *text* will print human friendly output. *json* will display JSON formatted output with keys for *request*, *response*, and *exit\_code*. Default is *text*.

### **forget** [MESSAGE]

Forgets the classification of a message.

#### **-h, --host** HOSTNAME

Hostname or IP address of the server.

#### **-p, --port** PORT

Port number of the server.

#### **--socket-path** PATH

Path to UNIX domain socket.

#### **--ssl**

Enables or disables SSL when using a TCP connection. Will use the system's root certificates by default.

#### **--user** USERNAME

User to send the request as.



**--timeout** SECONDS

Set the connection timeout. Default is 10 seconds.

**--out** [json|text]

Choose the output format to the console. *text* will print human friendly output. *json* will display JSON formatted output with keys for *request*, *response*, and *exit\_code*. Default is *text*.

**learn** [MESSAGE]

Ask SpamAssassin to learn the message as spam or ham.

**-h, --host** HOSTNAME

Hostname or IP address of the server.

**-p, --port** PORT

Port number of the server.

**--socket-path** PATH

Path to UNIX domain socket.

**--ssl**

Enables or disables SSL when using a TCP connection. Will use the system's root certificates by default.

**--user** USERNAME

User to send the request as.

**--timeout** SECONDS

Set the connection timeout. Default is 10 seconds.

**--out** [json|text]

Choose the output format to the console. *text* will print human friendly output. *json* will display JSON formatted output with keys for *request*, *response*, and *exit\_code*. Default is *text*.

**ping**

Pings SpamAssassin and prints the response.

An exit code of 0 is successful, 1 is not successful.

**-h, --host** HOSTNAME

Hostname or IP address of the server.

**-p, --port** PORT

Port number of the server.

**--socket-path** PATH

Path to UNIX domain socket.

**--ssl**

Enables or disables SSL when using a TCP connection. Will use the system's root certificates by default.

**--user** USERNAME

User to send the request as.

**--timeout** SECONDS

Set the connection timeout. Default is 10 seconds.

**--out** [json|text]

Choose the output format to the console. *text* will print human friendly output. *json* will display JSON formatted output with keys for *request*, *response*, and *exit\_code*. Default is *text*.

**report** [MESSAGE]

Report a message to collaborative filtering databases as spam.

If reporting fails will exit with a code of 1.

**-h, --host** HOSTNAME

Hostname or IP address of the server.

**-p, --port** PORT

Port number of the server.

**--socket-path** PATH

Path to UNIX domain socket.

**--ssl**

Enables or disables SSL when using a TCP connection. Will use the system's root certificates by default.

**--user** USERNAME

User to send the request as.

**--timeout** SECONDS

Set the connection timeout. Default is 10 seconds.

**--out** [json|text]

Choose the output format to the console. *text* will print human friendly output. *json* will display JSON formatted output with keys for *request*, *response*, and *exit\_code*. Default is *text*.

**revoke** [MESSAGE]

Revoke a message to collaborative filtering databases.

If revoking fails will exit with a code of 1.

**-h, --host** HOSTNAME

Hostname or IP address of the server.

**-p, --port** PORT

Port number of the server.

**--socket-path** PATH

Path to UNIX domain socket.

**--ssl**

Enables or disables SSL when using a TCP connection. Will use the system's root certificates by default.

**--user** USERNAME

User to send the request as.

**--timeout** SECONDS

Set the connection timeout. Default is 10 seconds.

**--out** [json|text]

Choose the output format to the console. *text* will print human friendly output. *json* will display JSON formatted output with keys for *request*, *response*, and *exit\_code*. Default is *text*.

## Environment Variables

### AIOSPAMC\_CERT\_FILE

Path to the file containing trusted certificates. These will be used in place of the default root certificates when using the `--ssl` option.

## Exit Codes

3 - Error occurred when parsing response. 4 - Network timeout. 5 - Connection error. Check the host, port, or socket path. 6 - Unexpected error. 7 - Could not open the message.

## 1.2.2 Library

*aiospamc* provides top-level functions for basic functionality a lot like the *requests* library.

For example, to ask SpamAssassin to check and score a message you can use the `aiospamc.check()` function. Just give it a bytes-encoded copy of the message, specify the host and await on the request. In this case, the response will contain a header called *Spam* with a boolean if the message is considered spam as well as the score.

```
import asyncio
import aiospamc

example_message = ('From: John Doe <jdoe@machine.example>'
                   'To: Mary Smith <mary@example.net>'
                   'Subject: Saying Hello'
                   'Date: Fri, 21 Nov 1997 09:55:06 -0600'
                   'Message-ID: <1234@local.machine.example>'
                   ''
                   'This is a message just to say hello.'
                   'So, "Hello".').encode('ascii')

async def check_for_spam(message):
    response = await aiospamc.check(message, host='localhost')
    return response

loop = asyncio.get_event_loop()

response = loop.run_until_complete(check_for_spam(example_message))
print(
    f'Is the message spam? {response.headers['Spam'].value}\n',
    f'The score and threshold is {response.headers['Spam'].score} ',
    f'/{response.headers['Spam'].threshold}',
    sep=''
)
```

## Connect using SSL

Each frontend function has a *verify* parameter which allows configuring an SSL connection.

If *True* is supplied, then root certificates from the *certifi* project will be used to verify the connection.

If a path is supplied as a string or `pathlib.Path` object then the path is used to load certificates to verify the connection.

If *False* then an SSL connection is established, but the server certificate is not verified.

## Setting timeouts

*aiospamc* is configured by default to use a timeout of 600 seconds (or 10 minutes) from the point when a connection is attempted until a response comes in.

If you would like more fine-grained control of timeouts then an *aiospamc.connections.Timeout* object can be passed in.

You can configure any of the three optional parameters: \* total - maximum time in seconds to wait for a connection and response \* connection - time in seconds to wait for a connection to be established \* response - time in seconds to wait for a response after sending the request

Example:

```
my_timeout = aiospamc.Timeout(total=60, connection=10, response=10)

await def check():
    response = await aiospamc.check(example_message, timeout=my_timeout)

    return response
```

## Logging

Logging is provided using through the *loguru* package.

The *aiospamc* package disables logging by default. It can be enabled by calling the function:

```
from loguru import logger
logger.enable("aiospamc")
```

Modules log under their own logger names (for example, frontend functions will log under *aiospamc.frontend*). Extra data like request and response objects are attached to log records which can be used to trace through flow.

## Interpreting results

Responses are encapsulated in the *aiospamc.responses.Response* class. It includes the status code, headers and body.

## 1.3 API Reference

### 1.3.1 aiospamc package

#### Submodules

#### aiospamc.connections module

ConnectionManager classes for TCP and Unix sockets.

```
class aiospamc.connections.Timeout(total: float = 600, connection: float | None = None, response: float | None = None)
```

Bases: `object`

Container object for defining timeouts.

```
__init__(total: float = 600, connection: float | None = None, response: float | None = None) → None
```

Timeout constructor.

#### Parameters

- **total** – The total length of time in seconds to set the timeout.
- **connection** – The length of time in seconds to allow for a connection to live before timing out.
- **response** – The length of time in seconds to allow for a response from the server before timing out.

```
class aiospamc.connections.ConnectionManager(connection_string: str, timeout: Timeout | None = None)
```

Bases: `object`

Stores connection parameters and creates connections.

```
__init__(connection_string: str, timeout: Timeout | None = None) → None
```

ConnectionManager constructor.

#### Parameters

**timeout** – Timeout configuration

```
property logger: loguru.Logger
```

Return the logger object.

```
async request(data: bytes) → bytes
```

Send bytes data and receive a response.

#### Raises

AIOspamcConnectionFailed

#### Raises

ClientTimeoutException

#### Parameters

**data** – Data to send.

```
async open() → Tuple[StreamReader, StreamWriter]
```

Opens a connection, returning the reader and writer objects.

**property connection\_string:** `str`

String representation of the connection.

**class** aiospamc.connections.TcpConnectionManager(*host: str, port: int, ssl\_context: SSLContext | None = None, timeout: Timeout | None = None*)

Bases: `ConnectionManager`

Connection manager for TCP connections.

**\_\_init\_\_**(*host: str, port: int, ssl\_context: SSLContext | None = None, timeout: Timeout | None = None*) → `None`

TcpConnectionManager constructor.

**Parameters**

- **host** – Hostname or IP address.
- **port** – TCP port.
- **ssl\_context** – SSL context.
- **timeout** – Timeout configuration.

**async open**() → `Tuple[StreamReader, StreamWriter]`

Opens a TCP connection.

**Raises**

`AIOspamcConnectionFailed`

**Returns**

Reader and writer for the connection.

**class** aiospamc.connections.UnixConnectionManager(*path: str, timeout: Timeout | None = None*)

Bases: `ConnectionManager`

Connection manager for Unix pipes.

**\_\_init\_\_**(*path: str, timeout: Timeout | None = None*)

UnixConnectionManager constructor.

**Parameters**

- **path** – Unix socket path.
- **timeout** – Timeout configuration

**async open**() → `Tuple[StreamReader, StreamWriter]`

Opens a unix socket path connection.

**Raises**

`AIOspamcConnectionFailed`

**Returns**

Reader and writer for the connection.

**aiospamc.connections.new\_ssl\_context**(*verify: Any | None*) → `SSLContext | None`

Creates an SSL context based on the supplied parameter.

**Parameters**

**verify** – Use SSL for the connection. If True, will use root certificates. If False, will not verify the certificate. If a string to a path or a Path object, the connection will use the certificates found there.

`aiospamc.connections.new_connection_manager`(*host*: *str* | *None* = *None*, *port*: *int* | *None* = *None*, *socket\_path*: *str* | *None* = *None*, *timeout*: *Timeout* | *None* = *None*, *context*: *SSLContext* | *None* = *None*) → *ConnectionManager*

Create a new connection manager.

#### Parameters

- **host** – TCP hostname.
- **port** – TCP port number.
- **socket\_path** – Unix socket path.
- **timeout** – Timeout configuration.
- **context** – SSL context configuration.

### aiospamc.exceptions module

Collection of exceptions.

**exception** `aiospamc.exceptions.ClientException`

Bases: `Exception`

Base class for exceptions raised from the client.

**exception** `aiospamc.exceptions.BadRequest`

Bases: `ClientException`

Request is not in the expected format.

**exception** `aiospamc.exceptions.BadResponse`

Bases: `ClientException`

Response is not in the expected format.

**exception** `aiospamc.exceptions.AIOSpamcConnectionFailed`

Bases: `ClientException`

Connection failed.

**exception** `aiospamc.exceptions.TimeoutException`

Bases: `Exception`

General timeout exception.

**exception** `aiospamc.exceptions.ClientTimeoutException`

Bases: `ClientException`, `TimeoutException`

Timeout exception from the client.

**exception** `aiospamc.exceptions.ParseError`(*message*=*None*)

Bases: `Exception`

Error occurred while parsing.

`__init__`(*message*=*None*)

Construct parsing exception with optional message.

#### Parameters

- **message** – User friendly message.

**exception** aiospamc.exceptions.**NotEnoughDataError**(message=None)

Bases: [ParseError](#)

Expected more data than what the protocol content specified.

**exception** aiospamc.exceptions.**TooMuchDataError**(message=None)

Bases: [ParseError](#)

Too much data was received than what the protocol content specified.

## aiospamc.frontend module

Frontend functions for the package.

**async** aiospamc.frontend.**check**(message: *bytes* | *SupportsBytes*, \*, host: *str* = 'localhost', port: *int* = 783, socket\_path: *str* | *None* = *None*, timeout: *Timeout* | *None* = *None*, verify: *Any* = *None*, user: *str* | *None* = *None*, compress: *bool* = *False*, \*\*kwargs) → *Response*

Checks a message if it's spam and return a response with a score header.

### Parameters

- **message** – Copy of the message.
- **host** – Hostname or IP address of the SPAMD service, defaults to localhost.
- **port** – Port number for the SPAMD service, defaults to 783.
- **socket\_path** – Path to Unix socket.
- **timeout** – Timeout settings.
- **verify** – Enable SSL. *True* will use the root certificates from the *certifi* package. *False* will use SSL, but not verify the root certificates. Passing a string to a filename will use the path to verify the root certificates.
- **user** – Username to pass to the SPAMD service.
- **compress** – Enable compress of the request body.

### Returns

A successful response with a “Spam” header showing if the message is considered spam as well as the score.

### Raises

- [BadResponse](#) – If the response from SPAMD is ill-formed this exception will be raised.
- [AIOSpamcConnectionFailed](#) – Raised if an error occurred when trying to connect.
- [UsageException](#) – Error in command line usage.
- [DataErrorException](#) – Error with data format.
- [NoInputException](#) – Cannot open input.
- [NoUserException](#) – Addressee unknown.
- [NoHostException](#) – Hostname unknown.
- [UnavailableException](#) – Service unavailable.
- [InternalSoftwareException](#) – Internal software error.
- [OSErrorException](#) – System error.



- ***OSFileException*** – Operating system file missing.
- ***CantCreateException*** – Cannot create output file.
- ***IOErrorException*** – Input/output error.
- ***TemporaryFailureException*** – Temporary failure, may reattempt.
- ***ProtocolException*** – Error in the protocol.
- ***NoPermissionException*** – Permission denied.
- ***ConfigException*** – Error in configuration.
- ***ServerTimeoutException*** – Server returned a response that it timed out.
- ***ClientTimeoutException*** – Client timed out during connection.

```
async aiospamc.frontend.headers(message: bytes | SupportsBytes, *, host: str = 'localhost', port: int = 783,
                                socket_path: str | None = None, timeout: Timeout | None = None, verify:
                                Any = None, user: str | None = None, compress: bool = False, **kwargs)
                                → Response
```

Checks a message if it's spam and return the modified message headers.

#### Parameters

- **message** – Copy of the message.
- **host** – Hostname or IP address of the SPAMD service, defaults to localhost.
- **port** – Port number for the SPAMD service, defaults to 783.
- **socket\_path** – Path to Unix socket.
- **timeout** – Timeout settings.
- **verify** – Enable SSL. *True* will use the root certificates from the *certifi* package. *False* will use SSL, but not verify the root certificates. Passing a string to a filename will use the path to verify the root certificates.
- **user** – Username to pass to the SPAMD service.
- **compress** – Enable compress of the request body.

#### Returns

A successful response with a “Spam” header showing if the message is considered spam as well as the score. The body contains the modified message headers, but not the content of the message.

#### Raises

- ***BadResponse*** – If the response from SPAMD is ill-formed this exception will be raised.
- ***AIOSpamcConnectionFailed*** – Raised if an error occurred when trying to connect.
- ***UsageException*** – Error in command line usage.
- ***DataErrorException*** – Error with data format.
- ***NoInputException*** – Cannot open input.
- ***NoUserException*** – Addressee unknown.
- ***NoHostException*** – Hostname unknown.
- ***UnavailableException*** – Service unavailable.
- ***InternalSoftwareException*** – Internal software error.
- ***OSErrorException*** – System error.

- *OSFileException* – Operating system file missing.
- *CantCreateException* – Cannot create output file.
- *IOErrorException* – Input/output error.
- *TemporaryFailureException* – Temporary failure, may reattempt.
- *ProtocolException* – Error in the protocol.
- *NoPermissionException* – Permission denied.
- *ConfigException* – Error in configuration.
- *ServerTimeoutException* – Server returned a response that it timed out.
- *ClientTimeoutException* – Client timed out during connection.

**async** aiospamc.frontend.ping(\*, host: *str* = 'localhost', port: *int* = 783, socket\_path: *str* | *None* = *None*, timeout: *Timeout* | *None* = *None*, verify: *Any* | *None* = *None*, \*\*kwargs) → *Response*

Sends a ping to the SPAMD service.

#### Parameters

- **host** – Hostname or IP address of the SPAMD service, defaults to localhost.
- **port** – Port number for the SPAMD service, defaults to 783.
- **socket\_path** – Path to Unix socket.
- **timeout** – Timeout settings.
- **verify** – Enable SSL. *True* will use the root certificates from the *certifi* package. *False* will use SSL, but not verify the root certificates. Passing a string to a filename will use the path to verify the root certificates.

#### Returns

A response with “PONG”.

#### Raises

- *BadResponse* – If the response from SPAMD is ill-formed this exception will be raised.
- *AIOSpamcConnectionFailed* – Raised if an error occurred when trying to connect.
- *UsageException* – Error in command line usage.
- *DataErrorException* – Error with data format.
- *NoInputException* – Cannot open input.
- *NoUserException* – Addressee unknown.
- *NoHostException* – Hostname unknown.
- *UnavailableException* – Service unavailable.
- *InternalSoftwareException* – Internal software error.
- *OSErrorException* – System error.
- *OSFileException* – Operating system file missing.
- *CantCreateException* – Cannot create output file.
- *IOErrorException* – Input/output error.
- *TemporaryFailureException* – Temporary failure, may reattempt.

- **ProtocolException** – Error in the protocol.
- **NoPermissionException** – Permission denied.
- **ConfigException** – Error in configuration.
- **ServerTimeoutException** – Server returned a response that it timed out.
- **ClientTimeoutException** – Client timed out during connection.

```
async aiospamc.frontend.process(message: bytes | SupportsBytes, *, host: str = 'localhost', port: int = 783,
                                socket_path: str | None = None, timeout: Timeout | None = None, verify:
                                Any = None, user: str | None = None, compress: bool = False, **kwargs)
                                → Response
```

Checks a message if it's spam and return a response with a score header.

#### Parameters

- **message** – Copy of the message.
- **host** – Hostname or IP address of the SPAMD service, defaults to localhost.
- **port** – Port number for the SPAMD service, defaults to 783.
- **socket\_path** – Path to Unix socket.
- **timeout** – Timeout settings.
- **verify** – Enable SSL. *True* will use the root certificates from the *certifi* package. *False* will use SSL, but not verify the root certificates. Passing a string to a filename will use the path to verify the root certificates.
- **user** – Username to pass to the SPAMD service.
- **compress** – Enable compress of the request body.

#### Returns

A successful response with a “Spam” header showing if the message is considered spam as well as the score. The body contains a modified copy of the message.

#### Raises

- **BadResponse** – If the response from SPAMD is ill-formed this exception will be raised.
- **AIOSpamcConnectionFailed** – Raised if an error occurred when trying to connect.
- **UsageException** – Error in command line usage.
- **DataErrorException** – Error with data format.
- **NoInputException** – Cannot open input.
- **NoUserException** – Addressee unknown.
- **NoHostException** – Hostname unknown.
- **UnavailableException** – Service unavailable.
- **InternalSoftwareException** – Internal software error.
- **OSErrorException** – System error.
- **OSFileException** – Operating system file missing.
- **CantCreateException** – Cannot create output file.
- **IOErrorException** – Input/output error.
- **TemporaryFailureException** – Temporary failure, may reattempt.

- **ProtocolException** – Error in the protocol.
- **NoPermissionException** – Permission denied.
- **ConfigException** – Error in configuration.
- **ServerTimeoutException** – Server returned a response that it timed out.
- **ClientTimeoutException** – Client timed out during connection.

```
async aiospamc.frontend.report(message: bytes | SupportsBytes, *, host: str = 'localhost', port: int = 783,
                               socket_path: str | None = None, timeout: Timeout | None = None, verify:
                               Any = None, user: str | None = None, compress: bool = False, **kwargs)
    → Response
```

Checks a message if it's spam and return a response with a score header.

#### Parameters

- **message** – Copy of the message.
- **host** – Hostname or IP address of the SPAMD service, defaults to localhost.
- **port** – Port number for the SPAMD service, defaults to 783.
- **socket\_path** – Path to Unix socket.
- **timeout** – Timeout settings.
- **verify** – Enable SSL. *True* will use the root certificates from the *certifi* package. *False* will use SSL, but not verify the root certificates. Passing a string to a filename will use the path to verify the root certificates.
- **user** – Username to pass to the SPAMD service.
- **compress** – Enable compress of the request body.

#### Returns

A successful response with a “Spam” header showing if the message is considered spam as well as the score. The body contains a report.

#### Raises

- **BadResponse** – If the response from SPAMD is ill-formed this exception will be raised.
- **AIOSpamcConnectionFailed** – Raised if an error occurred when trying to connect.
- **UsageException** – Error in command line usage.
- **DataErrorException** – Error with data format.
- **NoInputException** – Cannot open input.
- **NoUserException** – Addressee unknown.
- **NoHostException** – Hostname unknown.
- **UnavailableException** – Service unavailable.
- **InternalSoftwareException** – Internal software error.
- **OSErrorException** – System error.
- **OSFileException** – Operating system file missing.
- **CantCreateException** – Cannot create output file.
- **IOErrorException** – Input/output error.
- **TemporaryFailureException** – Temporary failure, may reattempt.

- **ProtocolException** – Error in the protocol.
- **NoPermissionException** – Permission denied.
- **ConfigException** – Error in configuration.
- **ServerTimeoutException** – Server returned a response that it timed out.
- **ClientTimeoutException** – Client timed out during connection.

```
async aiospamc.frontend.report_if_spam(message: bytes | SupportsBytes, *, host: str = 'localhost', port: int
                                     = 783, socket_path: str | None = None, timeout: Timeout | None
                                     = None, verify: Any = None, user: str | None = None, compress:
                                     bool = False, **kwargs) → Response
```

Checks a message if it's spam and return a response with a score header.

#### Parameters

- **message** – Copy of the message.
- **host** – Hostname or IP address of the SPAMD service, defaults to localhost.
- **port** – Port number for the SPAMD service, defaults to 783.
- **socket\_path** – Path to Unix socket.
- **timeout** – Timeout settings.
- **verify** – Enable SSL. *True* will use the root certificates from the *certifi* package. *False* will use SSL, but not verify the root certificates. Passing a string to a filename will use the path to verify the root certificates.
- **user** – Username to pass to the SPAMD service.
- **compress** – Enable compress of the request body.

#### Returns

A successful response with a “Spam” header showing if the message is considered spam as well as the score. The body contains a report if the message is considered spam.

#### Raises

- **BadResponse** – If the response from SPAMD is ill-formed this exception will be raised.
- **AIOSpamcConnectionFailed** – Raised if an error occurred when trying to connect.
- **UsageException** – Error in command line usage.
- **DataErrorException** – Error with data format.
- **NoInputException** – Cannot open input.
- **NoUserException** – Addressee unknown.
- **NoHostException** – Hostname unknown.
- **UnavailableException** – Service unavailable.
- **InternalSoftwareException** – Internal software error.
- **OSErrorException** – System error.
- **OSFileException** – Operating system file missing.
- **CantCreateException** – Cannot create output file.
- **IOErrorException** – Input/output error.
- **TemporaryFailureException** – Temporary failure, may reattempt.

- **ProtocolException** – Error in the protocol.
- **NoPermissionException** – Permission denied.
- **ConfigException** – Error in configuration.
- **ServerTimeoutException** – Server returned a response that it timed out.
- **ClientTimeoutException** – Client timed out during connection.

```
async aiospamc.frontend.symbols(message: bytes | SupportsBytes, *, host: str = 'localhost', port: int = 783,
                                socket_path: str | None = None, timeout: Timeout | None = None, verify:
                                Any = None, user: str | None = None, compress: bool = False, **kwargs)
                                → Response
```

Checks a message if it's spam and return a response with rules that matched.

#### Parameters

- **message** – Copy of the message.
- **host** – Hostname or IP address of the SPAMD service, defaults to localhost.
- **port** – Port number for the SPAMD service, defaults to 783.
- **socket\_path** – Path to Unix socket.
- **timeout** – Timeout settings.
- **verify** – Enable SSL. *True* will use the root certificates from the *certifi* package. *False* will use SSL, but not verify the root certificates. Passing a string to a filename will use the path to verify the root certificates.
- **user** – Username to pass to the SPAMD service.
- **compress** – Enable compress of the request body.

#### Returns

A successful response with a “Spam” header showing if the message is considered spam as well as the score. The body contains a comma-separated list of the symbols that were hit.

#### Raises

- **BadResponse** – If the response from SPAMD is ill-formed this exception will be raised.
- **AIOSpamcConnectionFailed** – Raised if an error occurred when trying to connect.
- **UsageException** – Error in command line usage.
- **DataErrorException** – Error with data format.
- **NoInputException** – Cannot open input.
- **NoUserException** – Addressee unknown.
- **NoHostException** – Hostname unknown.
- **UnavailableException** – Service unavailable.
- **InternalSoftwareException** – Internal software error.
- **OSErrorException** – System error.
- **OSFileException** – Operating system file missing.
- **CantCreateException** – Cannot create output file.
- **IOErrorException** – Input/output error.
- **TemporaryFailureException** – Temporary failure, may reattempt.

- **ProtocolException** – Error in the protocol.
- **NoPermissionException** – Permission denied.
- **ConfigException** – Error in configuration.
- **ServerTimeoutException** – Server returned a response that it timed out.
- **ClientTimeoutException** – Client timed out during connection.

```
async aiospamc.frontend.tell(message: bytes | SupportsBytes, message_class: str | MessageClassOption,
                             remove_action: str | ActionOption | None = None, set_action: str |
                             ActionOption | None = None, *, host: str = 'localhost', port: int = 783,
                             socket_path: str | None = None, timeout: Timeout | None = None, verify: Any
                             = None, user: str | None = None, compress: bool = False, **kwargs) →
                             Response
```

Checks a message if it's spam and return a response with a score header.

#### Parameters

- **message** – Copy of the message.
- **message\_class** – Classify the message as 'spam' or 'ham'.
- **remove\_action** – Remove message class for message in database.
- **set\_action** – Set message class for message in database.
- **host** – Hostname or IP address of the SPAMD service, defaults to localhost.
- **port** – Port number for the SPAMD service, defaults to 783.
- **socket\_path** – Path to Unix socket.
- **timeout** – Timeout settings.
- **verify** – Enable SSL. *True* will use the root certificates from the *certifi* package. *False* will use SSL, but not verify the root certificates. Passing a string to a filename will use the path to verify the root certificates.
- **user** – Username to pass to the SPAMD service.
- **compress** – Enable compress of the request body.

#### Returns

A successful response with “DidSet” and/or “DidRemove” headers along with the actions that were taken.

#### Raises

- **BadResponse** – If the response from SPAMD is ill-formed this exception will be raised.
- **AIOSpamcConnectionFailed** – Raised if an error occurred when trying to connect.
- **UsageException** – Error in command line usage.
- **DataErrorException** – Error with data format.
- **NoInputException** – Cannot open input.
- **NoUserException** – Addressee unknown.
- **NoHostException** – Hostname unknown.
- **UnavailableException** – Service unavailable.
- **InternalSoftwareException** – Internal software error.

- ***OSErrorException*** – System error.
- ***OSFileException*** – Operating system file missing.
- ***CantCreateException*** – Cannot create output file.
- ***IOErrorException*** – Input/output error.
- ***TemporaryFailureException*** – Temporary failure, may reattempt.
- ***ProtocolException*** – Error in the protocol.
- ***NoPermissionException*** – Permission denied.
- ***ConfigException*** – Error in configuration.
- ***ServerTimeoutException*** – Server returned a response that it timed out.
- ***ClientTimeoutException*** – Client timed out during connection.

### **aiospamc.header\_values module**

Collection of request and response header value objects.

**protocol** aiospamc.header\_values.**HeaderValue**

Bases: **Protocol**

Protocol for headers.

Classes that implement this protocol must have the following methods / attributes:

**\_\_bytes\_\_**() → **bytes**

**to\_json**() → **Any**

Convert to a JSON object.

**class** aiospamc.header\_values.**BytesHeaderValue**(*value: bytes*)

Bases: **object**

Header with bytes value.

**Parameters**

**value** – Value of the header.

**value:** **bytes**

**to\_json**() → **Any**

Converts object to a JSON serializable object.

**\_\_init\_\_**(*value: bytes*) → **None**

**class** aiospamc.header\_values.**GenericHeaderValue**(*value: str, encoding: str = 'utf8'*)

Bases: **object**

Generic header value.

**value:** **str**

**encoding:** **str** = **'utf8'**

**to\_json**() → **Any**

Converts object to a JSON serializable object.



`__init__(value: str, encoding: str = 'utf8') → None`

**class** aiospamc.header\_values.**CompressValue**(algorithm: str = 'zlib')

Bases: `object`

Compress header. Specifies what encryption scheme to use. So far only 'zlib' is supported.

**algorithm:** `str = 'zlib'`

**to\_json()** → Any

Converts object to a JSON serializable object.

`__init__(algorithm: str = 'zlib') → None`

**class** aiospamc.header\_values.**ContentLengthValue**(length: int = 0)

Bases: `object`

ContentLength header. Indicates the length of the body in bytes.

**length:** `int = 0`

**to\_json()** → Any

Converts object to a JSON serializable object.

`__init__(length: int = 0) → None`

**class** aiospamc.header\_values.**MessageClassOption**(value, names=None, \*, module=None, qualname=None, type=None, start=1, boundary=None)

Bases: `str`, `Enum`

Option to be used for the MessageClass header.

**spam** = 'spam'

**ham** = 'ham'

**class** aiospamc.header\_values.**MessageClassValue**(value: MessageClassOption = MessageClassOption.ham)

Bases: `object`

MessageClass header. Used to specify whether a message is 'spam' or 'ham.'

**value:** `MessageClassOption = 'ham'`

**to\_json()** → Any

Converts object to a JSON serializable object.

`__init__(value: MessageClassOption = MessageClassOption.ham) → None`

**class** aiospamc.header\_values.**ActionOption**(local: bool = False, remote: bool = False)

Bases: `object`

Option to be used in the DidRemove, DidSet, Set, and Remove headers.

**Parameters**

- **local** – An action will be performed on the SPAMD service's local database.
- **remote** – An action will be performed on the SPAMD service's remote database.

**local:** `bool` = `False`

**remote:** `bool` = `False`

**\_\_init\_\_**(*local: bool = False, remote: bool = False*) → `None`

**class** aiospamc.header\_values.SetOrRemoveValue(*action: ActionOption*)

Bases: `object`

Base class for headers that implement “local” and “remote” rules.

**action:** `ActionOption`

**to\_json**() → `Any`

Converts object to a JSON serializable object.

**\_\_init\_\_**(*action: ActionOption*) → `None`

**class** aiospamc.header\_values.SpamValue(*value: bool = False, score: float = 0.0, threshold: float = 0.0*)

Bases: `object`

Spam header. Used by the SPAMD service to report on if the submitted message was spam and the score/threshold that it used.

**value:** `bool` = `False`

**score:** `float` = `0.0`

**threshold:** `float` = `0.0`

**to\_json**() → `Any`

Converts object to a JSON serializable object.

**\_\_init\_\_**(*value: bool = False, score: float = 0.0, threshold: float = 0.0*) → `None`

**class** aiospamc.header\_values.UserValue(*name: str = 'docs'*)

Bases: `object`

User header. Used to specify which user the SPAMD service should use when loading configuration files.

**name:** `str` = `'docs'`

**to\_json**() → `Any`

Converts object to a JSON serializable object.

**\_\_init\_\_**(*name: str = 'docs'*) → `None`

**class** aiospamc.header\_values.Headers(*dict=None, /, \*\*kwargs*)

Bases: `UserDict`

Class to store headers with shortcut properties.

**get\_header**(*name: str*) → `str` | `None`

Get a string header if it exists.

**Parameters**

**name** – Name of the header.

**Returns**

The header value.

**set\_header**(*name: str, value: str*)

Sets a string header.

**Parameters**

- **name** – Name of the header.
- **value** – Value of the header.

**get\_bytes\_header**(*name: str*) → bytes | None

Get a bytes header if it exists.

**Parameters**

**name** – Name of the header.

**Returns**

The header value.

**set\_bytes\_header**(*name: str, value: bytes*)

Sets a string header.

**Parameters**

- **name** – Name of the header.
- **value** – Value of the header.

**property compress:** str | None

Gets the Compress header if it exists.

**Returns**

Compress header value.

**property content\_length:** int | None

Gets the Content-length header if it exists.

**Returns**

Content-length header value.

**property message\_class:** MessageClassOption | None

Gets the Message-class header if it exists.

**Returns**

Message-class header value.

**property set\_:** ActionOption | None

Gets the Set header if it exists.

**Returns**

Set header value.

**property remove:** ActionOption | None

Gets the Remove header if it exists.

**Returns**

Remove header value.

**property did\_set:** ActionOption | None

Gets the DidSet header if it exists.

**Returns**

DidSet header value.

**property did\_remove:** *ActionOption* | *None*

Gets the DidRemove header if it exists.

**Returns**

DidRemove header value.

**property spam:** *SpamValue* | *None*

Gets the Spam header if it exists.

**Returns**

Spam header value.

**property user:** *str* | *None*

Gets the User header if it exists.

**Returns**

User header value.

## aiosпамc.incremental\_parser module

Module for the parsing functions and objects.

**class** aiosпамc.incremental\_parser.**States**(*value, names=None, \*, module=None, qualname=None, type=None, start=1, boundary=None*)

Bases: *Enum*

States for the parser state machine.

**Status** = 1

**Header** = 2

**Body** = 3

**Done** = 4

**class** aiosпамc.incremental\_parser.**Parser**(*delimiter: bytes, status\_parser: Callable[[bytes], Mapping[str, str]], header\_parser: Callable[[bytes], Tuple[str, Any]], body\_parser: Callable[[bytes, int], bytes], start: States = States.Status*)

Bases: *object*

The parser state machine.

**Variables**

**result** – Storage location for parsing results.

**\_\_init\_\_**(*delimiter: bytes, status\_parser: Callable[[bytes], Mapping[str, str]], header\_parser: Callable[[bytes], Tuple[str, Any]], body\_parser: Callable[[bytes, int], bytes], start: States = States.Status*) → *None*

Parser constructor.

**Parameters**

- **delimiter** – Byte string to split the different sections of the message.
- **status\_parser** – Callable to parse the status line of the message.
- **header\_parser** – Callable to parse each header line of the message.
- **body\_parser** – Callable to parse the body of the message.

- **start** – The state to start the parser on. Allowed for easier testing.

**property state:** `States`

The current state of the parser.

**Returns**

The `States` instance.

**parse**(*stream: bytes*) → `Mapping[str, Any]`

Entry method to parse a message.

**Parameters**

**stream** – Byte string to parse.

**Returns**

Returns the parser results dictionary stored in the class attribute `result`.

**Raises**

- `NotEnoughDataError` – Raised when not enough data is sent to be parsed.
- `TooMuchDataError` – Raised when too much data is sent to be parsed.
- `ParseError` – Raised when a general parse error is found.

**status**() → `None`

Splits the message at the delimiter and sends the first part of the message to the `status_line` callable to be parsed. If successful then the results are stored in the `result` class attribute and the state transitions to `States.Header`.

**Raises**

- `NotEnoughDataError` – When there is no delimiter the message is incomplete.
- `ParseError` – When the `status_line` callable experiences an error.

**header**() → `None`

Splits the message at the delimiter and sends the line to the `header_parser`.

When splitting the action will be determined depending what is matched:

Header line	Delimiter	Left-over	Action
No	Yes	Delimiter	Headers done, empty body. Clear buffer and transition to <code>States.Body</code> .
No	Yes	N/A	Headers done. Transition to <code>States.Body</code> .
Yes	Yes	N/A	Parse header. Record in <code>result</code> class attribute.
No	No	No	Message was a status line only. Transition to <code>States.Body</code> .

**Raises**

`ParseError` – None of the previous conditions are matched.

**body**() → `None`

Uses the length defined in the `Content-length` header (defaulted to 0) to determine how many bytes the body contains.

**Raises**

`TooMuchDataError` – When there are too many bytes in the buffer compared to the `Content-length` header value. Transitions the state to `States.Done`.

`aiospamc.incremental_parser.parse_request_status(stream: bytes) → Dict[str, str]`

Parses the status line from a request.

**Parameters**

**stream** – The byte stream to parse.

**Returns**

A dictionary with the keys *verb*, *protocol* and *version*.

**Raises**

**ParseError** – When the status line is in an invalid format, not a valid verb, or doesn't have the correct protocol.

`aiospamc.incremental_parser.parse_response_status(stream: bytes) → Dict[str, str | int]`

Parse the status line for a response.

**Parameters**

**stream** – The byte stream to parse.

**Returns**

A dictionary with the keys *protocol*, *version*, *status\_code*, and *message*.

**Raises**

**ParseError** – When the status line is in an invalid format, status code is not an integer, or doesn't have the correct protocol.

`aiospamc.incremental_parser.parse_message_class_value(stream: str | MessageClassOption) → MessageClassValue`

Parses the *Message-class* header value.

**Parameters**

**stream** – String or *MessageClassOption* instance.

**Returns**

A *MessageClassValue* instance representing the value.

**Raises**

**ParseError** – When the value doesn't match either *ham* or *spam*.

`aiospamc.incremental_parser.parse_content_length_value(stream: str | int) → ContentLengthValue`

Parses the *Content-length* header value.

**Parameters**

**stream** – String or integer value of the header.

**Returns**

A *ContentLengthValue* instance.

**Raises**

**ParseError** – When the value cannot be cast to an integer.

`aiospamc.incremental_parser.parse_compress_value(stream: str) → CompressValue`

Parses a value for the *Compress* header.

**Parameters**

**stream** – String to parse.

**Returns**

A *CompressValue* instance.

`aiospamc.incremental_parser.parse_set_remove_value(stream: ActionOption | str) → SetOrRemoveValue`

Parse a value for the *DidRemove*, *DidSet*, *Remove*, and *Set* headers.

**Parameters**

**stream** – String to parse or an instance of *ActionOption*.

**Returns**

A *SetOrRemoveValue* instance.

`aiospamc.incremental_parser.parse_spam_value(stream: str) → SpamValue`

Parses the values for the *Spam* header.

**Parameters**

**stream** – String to parse.

**Returns**

An *SpamValue* instance.

**Raises**

*ParseError* – Raised if there is no true/false value, or valid numbers for the score or threshold.

`aiospamc.incremental_parser.parse_user_value(stream: str) → UserValue`

Parse the username.

**Parameters**

**stream** – String of username to parse. Whitespace is trimmed.

**Returns**

The *UserValue* instance.

`aiospamc.incremental_parser.parse_header_value(header: str, value: str | bytes) → Any`

Sends the header value stream to the header value parsing function.

**Parameters**

- **header** – Name of the header.
- **value** – String or byte stream of the header value.

**Returns**

The *HeaderValue* instance from the parsing function.

`aiospamc.incremental_parser.parse_header(stream: bytes) → Tuple[str, Any]`

Splits the header line and sends to the header parsing function.

**Parameters**

**stream** – Byte stream of the header line.

**Returns**

A tuple of the header name and value.

`aiospamc.incremental_parser.parse_body(stream: bytes, content_length: int) → bytes`

Parses the body of a message.

**Parameters**

- **stream** – Byte stream for the body.
- **content\_length** – Expected length of the body in bytes.

**Returns**

Byte stream of the body.

**Raises**

- *NotEnoughDataError* – If the length is less than the stream.
- *TooMuchDataError* – If the length is more than the stream.

```
aiospamc.incremental_parser.header_value_parsers = {'Compress': <function
parse_compress_value>, 'Content-length': <function parse_content_length_value>,
'DidRemove': <function parse_set_remove_value>, 'DidSet': <function
parse_set_remove_value>, 'Message-class': <function parse_message_class_value>,
'Remove': <function parse_set_remove_value>, 'Set': <function parse_set_remove_value>,
'Spam': <function parse_spam_value>, 'User': <function parse_user_value>}
```

Mapping for header names to their parsing functions.

**class** aiospamc.incremental\_parser.RequestParser

Bases: *Parser*

Sub-class of the parser for requests.

**\_\_init\_\_()**

RequestParse constructor.

**class** aiospamc.incremental\_parser.ResponseParser

Bases: *Parser*

Sub-class of the parser for responses.

**\_\_init\_\_()**

ResponseParser constructor.

## aiospamc.requests module

Contains all requests that can be made to the SPAMD service.

**class** aiospamc.requests.Request(*verb: str, version: str = '1.5', headers: Dict[str, Any] | Headers | None = None, body: bytes | SupportsBytes = b'', \*\*\_*)

Bases: *object*

SPAMC request object.

**\_\_init\_\_**(*verb: str, version: str = '1.5', headers: Dict[str, Any] | Headers | None = None, body: bytes | SupportsBytes = b'', \*\*\_*) → None

Request constructor.

### Parameters

- **verb** – Method name of the request.
- **version** – Version of the protocol.
- **headers** – Collection of headers to be added.
- **body** – Byte string representation of the body.

**property body:** *bytes*

Body property getter.

### Returns

Value of body.

**to\_json()**

Converts to JSON serializable object.



## aiospamc.responses module

Contains classes used for responses.

```
class aiospamc.responses.Status(value, names=None, *, module=None, qualname=None, type=None,
                                start=1, boundary=None)
```

Bases: `IntEnum`

Enumeration for the status values defined by SPAMD.

**EX\_OK** = 0

**EX\_USAGE** = 64

**EX\_DATAERR** = 65

**EX\_NOINPUT** = 66

**EX\_NOUSER** = 67

**EX\_NOHOST** = 68

**EX\_UNAVAILABLE** = 69

**EX\_SOFTWARE** = 70

**EX\_OSERR** = 71

**EX\_OSFILE** = 72

**EX\_CANTCREAT** = 73

**EX\_IOERR** = 74

**EX\_TEMPFAIL** = 75

**EX\_PROTOCOL** = 76

**EX\_NOPERM** = 77

**EX\_CONFIG** = 78

**EX\_TIMEOUT** = 79

```
class aiospamc.responses.Response(version: str = '1.5', status_code: Status | int = 0, message: str = "",
                                   headers: Dict[str, Any] | Headers | None = None, body: bytes = b'', **_)
```

Bases: `object`

Class to encapsulate response.

```
__init__(version: str = '1.5', status_code: Status | int = 0, message: str = "", headers: Dict[str, Any] |
          Headers | None = None, body: bytes = b'', **_)
```

Response constructor.

### Parameters

- **version** – Version reported by the SPAMD service response.
- **status\_code** – Success or error code.
- **message** – Message associated with status code.

- **body** – Byte string representation of the body.
- **headers** – Collection of headers to be added.

**property status\_code:** *Status* | *int*

Status code property getter.

**Returns**

Value of status code.

**property body:** *bytes*

Body property getter.

**Returns**

Value of body.

**raise\_for\_status()** → *None*

Raises an exception if the status code isn't zero.

**Raises**

- *ResponseException* –
- *UsageException* –
- *DataErrorException* –
- *NoInputException* –
- *NoUserException* –
- *NoHostException* –
- *UnavailableException* –
- *InternalSoftwareException* –
- *OSErrorException* –
- *OSFileException* –
- *CantCreateException* –
- *IOErrorException* –
- *TemporaryFailureException* –
- *ProtocolException* –
- *NoPermissionException* –
- *ConfigException* –
- *ServerTimeoutException* –

**to\_json()** → *Dict[str, Any]*

Converts to JSON serializable object.

**exception** aiosпамc.responses.**ResponseException**(*code: int, message: str, response: Response*)

Bases: *Exception*

Base class for exceptions raised from a response.

**\_\_init\_\_**(code: *int*, message: *str*, response: *Response*)

ResponseException constructor.

**Parameters**

- **code** – Response code number.
- **message** – Message response.

**exception** aiospamc.responses.**UsageException**(message: *str*, response: *Response*)

Bases: *ResponseException*

Command line usage error.

**\_\_init\_\_**(message: *str*, response: *Response*)

UsageException constructor.

**Parameters**

**message** – Message response.

**exception** aiospamc.responses.**DataErrorException**(message: *str*, response: *Response*)

Bases: *ResponseException*

Data format error.

**\_\_init\_\_**(message: *str*, response: *Response*)

DataErrorException constructor.

**Parameters**

**message** – Message response.

**exception** aiospamc.responses.**NoInputException**(message: *str*, response: *Response*)

Bases: *ResponseException*

Cannot open input.

**\_\_init\_\_**(message: *str*, response: *Response*)

NoInputException constructor.

**Parameters**

**message** – Message response.

**exception** aiospamc.responses.**NoUserException**(message: *str*, response: *Response*)

Bases: *ResponseException*

Addressee unknown.

**\_\_init\_\_**(message: *str*, response: *Response*)

NoUserException constructor.

**Parameters**

**message** – Message response.

**exception** aiospamc.responses.**NoHostException**(message: *str*, response: *Response*)

Bases: *ResponseException*

Hostname unknown.

**\_\_init\_\_**(message: *str*, response: *Response*)

NoHostException constructor.

**Parameters**

**message** – Message response.

**exception** aiospamc.responses.UnavailableException(message: str, response: Response)

Bases: ResponseException

Service unavailable.

**\_\_init\_\_**(message: str, response: Response)

UnavailableException constructor.

**Parameters**

**message** – Message response.

**exception** aiospamc.responses.InternalSoftwareException(message: str, response: Response)

Bases: ResponseException

Internal software error.

**\_\_init\_\_**(message: str, response: Response)

InternalSoftwareException constructor.

**Parameters**

**message** – Message response.

**exception** aiospamc.responses.OSErrorException(message: str, response: Response)

Bases: ResponseException

System error (e.g. can't fork the process).

**\_\_init\_\_**(message: str, response: Response)

OSErrorException constructor.

**Parameters**

**message** – Message response.

**exception** aiospamc.responses.OSFileException(message: str, response: Response)

Bases: ResponseException

Critical operating system file missing.

**\_\_init\_\_**(message: str, response: Response)

OSFileException constructor.

**Parameters**

**message** – Message response.

**exception** aiospamc.responses.CantCreateException(message: str, response: Response)

Bases: ResponseException

Can't create (user) output file.

**\_\_init\_\_**(message: str, response: Response)

CantCreateException constructor.

**Parameters**

**message** – Message response.

**exception** aiospamc.responses.IOErrorException(message: str, response: Response)

Bases: ResponseException

Input/output error.

**\_\_init\_\_**(*message: str, response: Response*)

IOErrorException constructor.

**Parameters**

**message** – Message response.

**exception** aiospamc.responses.**TemporaryFailureException**(*message: str, response: Response*)

Bases: [ResponseException](#)

Temporary failure, user is invited to try again.

**\_\_init\_\_**(*message: str, response: Response*)

TemporaryFailureException constructor.

**Parameters**

**message** – Message response.

**exception** aiospamc.responses.**ProtocolException**(*message: str, response: Response*)

Bases: [ResponseException](#)

Remote error in protocol.

**\_\_init\_\_**(*message: str, response: Response*)

ProtocolException constructor.

**Parameters**

**message** – Message response.

**exception** aiospamc.responses.**NoPermissionException**(*message: str, response: Response*)

Bases: [ResponseException](#)

Permission denied.

**\_\_init\_\_**(*message: str, response: Response*)

NoPermissionException constructor.

**Parameters**

**message** – Message response.

**exception** aiospamc.responses.**ConfigException**(*message: str, response: Response*)

Bases: [ResponseException](#)

Configuration error.

**\_\_init\_\_**(*message: str, response: Response*)

ConfigException constructor.

**Parameters**

**message** – Message response.

**exception** aiospamc.responses.**ServerTimeoutException**(*message: str, response: Response*)

Bases: [ResponseException](#), [TimeoutException](#)

Timeout exception from the server.

**\_\_init\_\_**(*message: str, response: Response*)

ServerTimeoutException constructor.

**Parameters**

**message** – Message response.

## Module contents

aiospamc package.

An asyncio-based library to communicate with SpamAssassin's SPAMD service.

## 1.4 SPAMC/SPAMD Protocol As Implemented by SpamAssassin

### 1.4.1 Requests and Responses

The structure of a request is similar to an HTTP request.<sup>1</sup> The method/verb, protocol name and version are listed followed by headers separated by newline characters (carriage return and linefeed or `\r\n`). Following the headers is a blank line with a newline (`\r\n`). If there is a message body it will be added after all headers.

The current requests are *CHECK*, *HEADERS*, *PING*, *PROCESS*, *REPORT*, *REPORT\_IFSPAM*, *SKIP*, *SYMBOLS*, and *TELL*:

```
METHOD SPAMC/1.5\r\n
HEADER_NAME1: HEADER_VALUE1\r\n
HEADER_NAME2: HEADER_VALUE2\r\n
...
\r\n
REQUEST_BODY
```

The structure of responses are also similar to HTTP responses. The protocol name, version, status code, and message are listed on the first line. Any headers are also listed and all are separated by newline characters. Following the headers is a newline. If there is a message body it's included after all headers:

```
SPAMD/1.5 STATUS_CODE MESSAGE\r\n
HEADER_NAME1: HEADER_VALUE1\r\n
HEADER_NAME2: HEADER_VALUE2\r\n
...
\r\n
RESPONSE_BODY
```

---

**Note:** The header name and value are separated by a `:` character. For built-in headers the name must not have any whitespace surrounding it. It will be parsed exactly as it's represented.

---

The following are descriptions of the requests that can be sent and examples of the responses that you can expect to receive.

---

<sup>1</sup> <https://svn.apache.org/viewvc/spamassassin/branches/3.4/spamd/PROTOCOL?revision=1676616&view=co>

## CHECK

Instruct SpamAssassin to process the included message.

### Request

#### Required Headers

- *Content-length*

#### Optional Headers

- *Compress*
- *User*

#### Required body

An email based on the [RFC 5322](#) standard.

### Response

Will include a Spam header with a “True” or “False” value, followed by the score and threshold. Example:

```
SPAMD/1.1 0 EX_OK
Spam: True ; 1000.0 / 5.0
```

## HEADERS

Process the included message and return only the modified headers.

### Request

#### Required Headers

- *Content-length*

#### Optional Headers

- *Compress*
- *User*

## Required Body

An email based on the [RFC 5322](#) standard.

## Response

Will return the modified headers of the message in the body. The *Spam* header is also included.

```
SPAMD/1.1 0 EX_OK
Spam: True ; 1000.0 / 5.0
Content-length: 654

Received: from localhost by debian
    with SpamAssassin (version 3.4.0);
    Tue, 10 Jan 2017 11:09:26 -0500
From: Sender <sender@example.net>
To: Recipient <recipient@example.net>
Subject: Test spam mail (GTUBE)
Date: Wed, 23 Jul 2003 23:30:00 +0200
Message-Id: <GTUBE1.1010101@example.net>
X-Spam-Checker-Version: SpamAssassin 3.4.0 (2014-02-07) on debian
X-Spam-Flag: YES
X-Spam-Level: *****
X-Spam-Status: Yes, score=1000.0 required=5.0 tests=GTUBE,NO_RECEIVED,
    NO_RELAYS autolearn=no autolearn_force=no version=3.4.0
MIME-Version: 1.0Content-Type: multipart/mixed; boundary="-----=_58750736.8D9F70BC"
```

## PING

Send a request to test if the server is alive.

## Request

### Required Headers

None.

### Optional Headers

None.



## Response

Example:

```
SPAMD/1.5 0 PONG
```

## PROCESS

Instruct SpamAssassin to process the message and return the modified message.

## Request

### Required Headers

- *Content-length*

### Optional Headers

- *Compress*
- *User*

### Required Body

An email based on the [RFC 5322](#) standard.

## Response

Will return a modified message in the body. The *Spam* header is also included. Example:

```
SPAMD/1.1 0 EX_OK
Spam: True ; 1000.0 / 5.0
Content-length: 2948

Received: from localhost by debian
        with SpamAssassin (version 3.4.0);
        Tue, 10 Jan 2017 10:57:02 -0500
From: Sender <sender@example.net>
To: Recipient <recipient@example.net>
Subject: Test spam mail (GTUBE)
Date: Wed, 23 Jul 2003 23:30:00 +0200
Message-Id: <GTUBE1.1010101@example.net>
X-Spam-Checker-Version: SpamAssassin 3.4.0 (2014-02-07) on debian
X-Spam-Flag: YES
X-Spam-Level: *****
X-Spam-Status: Yes, score=1000.0 required=5.0 tests=GTUBE,NO_RECEIVED,
        NO_RELAYS autolearn=no autolearn_force=no version=3.4.0
MIME-Version: 1.0
```

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Content-Type: multipart/mixed; boundary="-----=\_5875044E.D4EFFF7D"

This is a multi-part message in MIME format.

-----=\_5875044E.D4EFFF7D

Content-Type: text/plain; charset=iso-8859-1

Content-Disposition: inline

Content-Transfer-Encoding: 8bit

Spam detection software, running on the system "debian", has identified this incoming email as possible spam. The original message has been attached to this so you can view it or label similar future email. If you have any questions, see @@CONTACT\_ADDRESS@@ for details.

Content preview: This is the GTUBE, the Generic Test for Unsolicited Bulk Email. If your spam filter supports it, the GTUBE provides a test by which you can verify that the filter is installed correctly and is detecting incoming spam. You can send yourself a test mail containing the following string of characters (in upper case and with no white spaces and line breaks): [...]

Content analysis details: (1000.0 points, 5.0 required)

pts	rule name	description
1000	GTUBE	BODY: Generic Test for Unsolicited Bulk Email
-0.0	NO_RELAYS	Informational: message was not relayed via SMTP
-0.0	NO_RECEIVED	Informational: message has no Received headers

-----=\_5875044E.D4EFFF7D

Content-Type: message/rfc822; x-spam-type=original

Content-Description: original message before SpamAssassin

Content-Disposition: inline

Content-Transfer-Encoding: 8bit

Subject: Test spam mail (GTUBE)

Message-ID: <GTUBE1.1010101@example.net>

Date: Wed, 23 Jul 2003 23:30:00 +0200

From: Sender <sender@example.net>

To: Recipient <recipient@example.net>

Precedence: junk

MIME-Version: 1.0

Content-Type: text/plain; charset=us-ascii

Content-Transfer-Encoding: 7bit

This is the GTUBE, the  
Generic  
Test for  
Unsolicited  
Bulk

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(continued from previous page)

**Email**

If your spam filter supports it, the GTUBE provides a test by which you can verify that the filter is installed correctly and is detecting incoming spam. You can send yourself a test mail containing the following string of characters (in upper case and with no white spaces and line breaks):

```
XJS*C4JDBQADN1.NSBN3*2IDNEN*GTUBE-STANDARD-ANTI-UBE-TEST-EMAIL*C.34X
```

You should send this test mail from an account outside of your network.

```
-----=_5875044E.D4EFFF7D7--
```

**REPORT**

Send a request to process a message and return a report.

**Request****Required Headers**

- *Content-length*

**Optional Headers**

- *Compress*
- *User*

**Required body**

An email based on the [RFC 5322](#) standard.

**Response**

Response returns the *Spam* header and the body containing a report of the message scanned.

Example:

```
SPAMD/1.1 0 EX_OK
Content-length: 1071
Spam: True ; 1000.0 / 5.0
```

Spam detection software, running on the system "debian", has identified this incoming email as possible spam. The original message has been attached to this so you can view it or label similar future email. If you have any questions, see

(continues on next page)

(continued from previous page)

@@CONTACT\_ADDRESS@@ for details.

Content preview: This is the GTUBE, the Generic Test for Unsolicited Bulk Email  
If your spam filter supports it, the GTUBE provides a test by which you can verify that the filter is installed correctly and is detecting incoming spam. You can send yourself a test mail containing the following string of characters (in upper case and with no white spaces and line breaks): [...]

Content analysis details: (1000.0 points, 5.0 required)

pts	rule name	description
-----		
1000	GTUBE	BODY: Generic Test for Unsolicited Bulk Email
-0.0	NO_RELAYS	Informational: message was not relayed via SMTP
-0.0	NO_RECEIVED	Informational: message has no Received headers

## REPORT\_IFSPAM

Matches the *REPORT* request, with the exception a report will not be generated if the message is not spam.

## SKIP

Sent when a connection is made in error. The SPAMD service will immediately close the connection.

## Request

### Required Headers

None.

### Optional Headers

None.

## SYMBOLS

Instruct SpamAssassin to process the message and return the rules that were matched.

## Request

### Required Headers

- *Content-length*

### Optional Headers

- *Compress*
- *User*

### Required body

An email based on the [RFC 5322](#) standard.

## Response

Response includes the *Spam* header. The body contains the SpamAssassin rules that were matched. Example:

```
SPAMD/1.1 0 EX_OK
Content-length: 27
Spam: True ; 1000.0 / 5.0

GTUBE,NO_RECEIVED,NO_RELAYS
```

## TELL

Send a request to classify a message and add or remove it from a database. The message type is defined by the *Message-class*. The *Remove* and *Set* headers are used to choose the location (“local” or “remote”) to add or remove it. SpamAssassin will return an error if a request tries to apply a conflicting change (e.g. both setting and removing to the same location).

---

**Note:** The SpamAssassin daemon must have the `--allow-tell` option enabled to support this feature.

---

## Request

### Required Headers

- *Content-length*
- *Message-class*
- *Remove* and/or *Set*
- *User*

## Optional Headers

- *Compress*

## Required Body

An email based on the [RFC 5322](#) standard.

## Response

If successful, the response will include the *DidRemove* and/or *DidSet* headers depending on the request.

Response from a request that sent a *Remove*:

```
SPAMD/1.1 0 EX_OK
DidRemove: local
Content-length: 2
```

Response from a request that sent a *Set*:

```
SPAMD/1.1 0 EX_OK
DidSet: local
Content-length: 2
```

## 1.4.2 Headers

Headers are structured very simply. They have a name and value which are separated by a colon (:). All headers are followed by a newline. The current headers include *Compress*, *Content-length*, *DidRemove*, *DidSet*, *Message-class*, *Remove*, *Set*, *Spam*, and *User*.

For example:

```
Content-length: 42\r\n
```

The following is a list of headers defined by SpamAssassin, although anything is allowable as a header. If an unrecognized header is included in the request or response it should be ignored.

## Compress

Specifies that the body is compressed and what compression algorithm is used. Contains a string of the compression algorithm. Currently only *zlib* is supported.

### Content-length

The length of the body in bytes. Contains an integer representing the body length.

### DidRemove

Included in a response to a *TELL* request. Identifies which databases a message was removed from. Contains a string containing either *local*, *remote* or both separated by a comma.

### DidSet

Included in a response to a *TELL* request. Identifies which databases a message was set in. Contains a string containing either *local*, *remote* or both separated by a comma.

### Message-class

Classifies the message contained in the body. Contains a string containing either *local*, *remote* or both separated by a comma.

### Remove

Included in a *TELL* request to remove the message from the specified database. Contains a string containing either *local*, *remote* or both separated by a comma.

### Set

Included in a *TELL* request to remove the message from the specified database. Contains a string containing either *local*, *remote* or both separated by a comma.

### Spam

Identify whether the message submitted was spam or not including the score and threshold. Contains a string containing a boolean if the message is spam (either *True*, *False*, *Yes*, or *No*), followed by a *;*, a floating point number representing the score, followed by a */*, and finally a floating point number representing the threshold of which to consider it spam.

For example:

```
Spam: True ; 1000.0 / 5.0
```

### User

Specify which user the request will run under. SpamAssassin will use the configuration files for the user included in the header. Contains a string containing the name of the user.

### 1.4.3 Status Codes

A status code is an integer detailing whether the request was successful or if an error occurred.

The following status codes are defined in the SpamAssassin source repository<sup>2</sup>.

#### **EX\_OK**

Code: 0

Definition: No problems were found.

#### **EX\_USAGE**

Code: 64

Definition: Command line usage error.

#### **EX\_DATAERR**

Code: 65

Definition: Data format error.

#### **EX\_NOINPUT**

Code: 66

Definition: Cannot open input.

#### **EX\_NOUSER**

Code: 67

Definition: Addressee unknown.

#### **EX\_NOHOST**

Code: 68

Definition: Hostname unknown.

---

<sup>2</sup> <https://svn.apache.org/viewvc/spamassassin/branches/3.4/spamd/spamd.raw?revision=1749346&view=co>



## **EX\_UNAVAILABLE**

Code: 69

Definition: Service unavailable.

## **EX\_SOFTWARE**

Code: 70

Definition: Internal software error.

## **EX\_OSERR**

Code: 71

Definition: System error (e.g. can't fork the process).

## **EX\_OSFILE**

Code: 72

Definition: Critical operating system file missing.

## **EX\_CANTCREAT**

Code: 73

Definition: Can't create (user) output file.

## **EX\_IOERR**

Code: 74

Definition: Input/output error.

## **EX\_TEMPFAIL**

Code: 75

Definition: Temporary failure, user is invited to retry.

## **EX\_PROTOCOL**

Code: 76

Definition: Remote error in protocol.

## EX\_NOPERM

Code: 77

Definition: Permission denied.

## EX\_CONFIG

Code: 78

Definition: Configuration error.

## EX\_TIMEOUT

Code: 79

Definition: Read timeout.

### 1.4.4 Body

SpamAssassin will generally want the body of a request to be in a supported RFC email format. The response body will differ depending on the type of request that was sent.

### 1.4.5 References

## 1.5 Release Notes

### 1.5.1 v0.10.1

#### Bug Fixes

- Fixed *report* CLI sub-command that did not set the *User* header. [#385](#)

### 1.5.2 v0.10.0

#### New Features

- Add command line interface and documentation [#324](#)
- Documentation now links to GitHub issues. [#359](#)
- Added headers class with properties for well-known headers. [#385](#)

## Deprecation Notes

- Deprecating support for Python 3.7 [#378](#)

## 1.5.3 v0.9.0

### New Features

- Add support for Python 3.11. [#355](#)

### Bug Fixes

- Resolved *ValueError* exception when importing *ActionOption*. [#357](#)

## 1.5.4 v0.8.1

### Security Issues

- Updated loguru dependency to 0.6.0 resolve vulnerability [CVE-2022-0329](#). [#339](#)

## 1.5.5 v0.8.0

### New Features

- Added support and tests for Python 3.10. [#299](#)
- Added warning for using SSL and compression hangs the connection. [#305](#)
- Made repr methods of Request and Response objects more descriptive. [#310](#)
- Using the loguru library <<https://github.com/Delgan/loguru>> instead of logging from the standard library. [#321](#)

## Deprecation Notes

- Support for Python 3.6. [#308](#)

### Bug Fixes

- Now correctly parses response messages that had spaces. [#317](#)



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