

:mod:`smtpd` --- SMTP Server

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library) smtpd.rst, line 1); [backlink](#)

Unknown interpreted text role "mod".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library) smtpd.rst, line 4)

Unknown directive type "module".

```
.. module:: smtpd
   :synopsis: A SMTP server implementation in Python.
   :deprecated:
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library) smtpd.rst, line 8)

Unknown directive type "moduleauthor".

```
.. moduleauthor:: Barry Warsaw <barry@python.org>
```

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Unknown directive type "sectionauthor".

```
.. sectionauthor:: Moshe Zadka <moshez@moshez.org>
```

Source code: :source:`Lib/smtpd.py`

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Unknown interpreted text role "source".

This module offers several classes to implement SMTP (email) servers.

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Unknown directive type "deprecated".

```
.. deprecated:: 3.6
   :mod:`smtpd` will be removed in Python 3.12 (:pep:`594`).
   The `aiosmtpd <https://aiosmtpd.readthedocs.io/>`_ package is a recommended
   replacement for this module. It is based on :mod:`asyncio` and provides a
   more straightforward API.
```

Several server implementations are present; one is a generic do-nothing implementation, which can be overridden, while the other two offer specific mail-sending strategies.

Additionally the SMTPChannel may be extended to implement very specific interaction behaviour with SMTP clients.

The code supports [RFC 5321](#), plus the [RFC 1870](#) SIZE and [RFC 6531](#) SMTPUTF8 extensions.

SMTPServer Objects

Create a new :class:`SMTPServer` object, which binds to local address *localaddr*. It will treat *remoteaddr* as an upstream SMTP relay. Both *localaddr* and *remoteaddr* should be a :ref:`(host, port) <host_port>` tuple. The object inherits from :class:`asyncore.dispatcher`, and so will insert itself into :mod:`asyncore`'s event loop on instantiation.

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main\Doc\library\ (cpython-main) (Doc) (library) smtpd.rst, line 41); [backlink](#)

Unknown interpreted text role "class".

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Unknown interpreted text role "ref".

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Unknown interpreted text role "class".

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Unknown interpreted text role "mod".

`data_size_limit` specifies the maximum number of bytes that will be accepted in a `DATA` command. A value of `None` or `0` means no limit.

`map` is the socket map to use for connections (an initially empty dictionary is a suitable value). If not specified the `mod:'asyncore'` global socket map is used.

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Unknown interpreted text role "mod".

`enable_SMTPUTF8` determines whether the SMTPUTF8 extension (as defined in [RFC 6531](#)) should be enabled. The default is `False`. When `True`, SMTPUTF8 is accepted as a parameter to the `MAIL` command and when present is passed to `meth:'process_message'` in the `kwargs['mail_options']` list. `decode_data` and `enable_SMTPUTF8` cannot be set to `True` at the same time.

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Unknown interpreted text role "meth".

`decode_data` specifies whether the data portion of the SMTP transaction should be decoded using UTF-8. When `decode_data` is `False` (the default), the server advertises the 8BITMIME extension ([RFC 6152](#)), accepts the `BODY=8BITMIME` parameter to the `MAIL` command, and when present passes it to `meth:'process_message'` in the `kwargs['mail_options']` list. `decode_data` and `enable_SMTPUTF8` cannot be set to `True` at the same time.

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Unknown interpreted text role "meth".

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Unknown directive type "method".

```
.. method:: process_message(peer, mailfrom, rcpttos, data, **kwargs)
```

Raise a `:exc:`NotImplementedError`` exception. Override this in subclasses to do something useful with this message. Whatever was passed in the constructor as `*remoteaddr*` will be available as the `:attr:`_remoteaddr`` attribute. `*peer*` is the remote host's address, `*mailfrom*` is the envelope originator, `*rcpttos*` are the envelope recipients and `*data*` is a string containing the contents of the e-mail (which should be in `:rfc:`5321`` format).

If the `*decode_data*` constructor keyword is set to ```True```, the `*data*` argument will be a unicode string. If it is set to ```False```, it will be a bytes object.

`*kwargs*` is a dictionary containing additional information. It is empty if `decode_data=True` was given as an init argument, otherwise it contains the following keys:

`*mail_options*`:
a list of all received parameters to the `MAIL` command (the elements are uppercase strings; example: `['BODY=8BITMIME', 'SMTPUTF8']`).

`*rcpt_options*`:
same as `*mail_options*` but for the `RCPT` command. Currently no `RCPT TO` options are supported, so for now this will always be an empty list.

Implementations of `process_message` should use the `kwargs` signature to accept arbitrary keyword arguments, since future feature enhancements may add keys to the `kwargs` dictionary.

Return `None` to request a normal `250 Ok` response; otherwise return the desired response string in `:RFC:5321` format.

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Unknown directive type "attribute".

```
.. attribute:: channel_class
```

Override this in subclasses to use a custom `:class:SMTPChannel` for managing SMTP clients.

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Unknown directive type "versionadded".

```
.. versionadded:: 3.4
   The *map* constructor argument.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library) smtpd.rst, line 113)

Unknown directive type "versionchanged".

```
.. versionchanged:: 3.5
   *localaddr* and *remoteaddr* may now contain IPv6 addresses.
```

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Unknown directive type "versionadded".

```
.. versionadded:: 3.5
   The *decode_data* and *enable_SMTPUTF8* constructor parameters, and the
   *kwargs* parameter to :meth:`process_message` when *decode_data* is
   False.
```

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Unknown directive type "versionchanged".

```
.. versionchanged:: 3.6
   *decode_data* is now False by default.
```

DebuggingServer Objects

Create a new debugging server. Arguments are as per `:class:SMTPServer`. Messages will be discarded, and printed on stdout.

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Unknown interpreted text role "class".

PureProxy Objects

Create a new pure proxy server. Arguments are as per `:class:SMTPServer`. Everything will be relayed to *remoteaddr*. Note that running this has a good chance to make you into an open relay, so please be careful.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library) smtpd.rst, line 141); [backlink](#)

Unknown interpreted text role "class".

SMTPChannel Objects

Create a new `:class:SMTPChannel` object which manages the communication between the server and a single SMTP client.

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Unknown interpreted text role "class".

conn and *addr* are as per the instance variables described below.

data_size_limit specifies the maximum number of bytes that will be accepted in a `DATA` command. A value of `None` or `0` means no limit.

enable_SMTPUTF8 determines whether the `SMTPUTF8` extension (as defined in [RFC 6531](#)) should be enabled. The default is `False`. *decode_data* and *enable_SMTPUTF8* cannot be set to `True` at the same time.

A dictionary can be specified in *map* to avoid using a global socket map.

decode_data specifies whether the data portion of the SMTP transaction should be decoded using UTF-8. The default is `False`. *decode_data* and *enable_SMTPUTF8* cannot be set to `True` at the same time.

To use a custom SMTPChannel implementation you need to override the `:attr:SMTPServer.channel_class` of your `:class:SMTPServer`.

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Unknown interpreted text role "attr".

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Unknown interpreted text role "class".

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Unknown directive type "versionchanged".

```
.. versionchanged:: 3.5
   The *decode_data* and *enable_SMTPUTF8* parameters were added.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library) smtpd.rst, line 179)

Unknown directive type "versionchanged".

```
.. versionchanged:: 3.6
   *decode_data* is now ``False`` by default.
```

The `:class:SMTPChannel` has the following instance variables:

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Unknown interpreted text role "class".

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Unknown directive type "attribute".

```
.. attribute:: smtp_server
```

Holds the `:class:`SMTPServer`` that spawned this channel.

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Unknown directive type "attribute".

```
.. attribute:: conn
```

Holds the socket object connecting to the client.

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Unknown directive type "attribute".

```
.. attribute:: addr
```

Holds the address of the client, the second value returned by `:func:`socket.accept`` `<socket.socket.accept>`

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Unknown directive type "attribute".

```
.. attribute:: received_lines
```

Holds a list of the line strings (decoded using UTF-8) received from the client. The lines have their ```"\r\n"``` line ending translated to ```"\n"```.

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Unknown directive type "attribute".

```
.. attribute:: smtp_state
```

Holds the current state of the channel. This will be either `:attr:`COMMAND`` initially and then `:attr:`DATA`` after the client sends a "DATA" line.

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Unknown directive type "attribute".

```
.. attribute:: seen_greeting
```

Holds a string containing the greeting sent by the client in its "HELO".

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Unknown directive type "attribute".

```
.. attribute:: mailfrom
```

Holds a string containing the address identified in the "MAIL FROM:" line from the client.

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Unknown directive type "attribute".

```
.. attribute:: rcpttos
```

Holds a list of strings containing the addresses identified in the "RCPT TO:" lines from the client.

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Unknown directive type "attribute".

```
.. attribute:: received_data
```

Holds a string containing all of the data sent by the client during the DATA state, up to but not including the terminating `""\r\n.\r\n""`.

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Unknown directive type "attribute".

```
.. attribute:: fqdn
```

Holds the fully-qualified domain name of the server as returned by `:func:`socket.getfqdn``.

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Unknown directive type "attribute".

```
.. attribute:: peer
```

Holds the name of the client peer as returned by ```conn.getpeername()``` where ```conn``` is `:attr:`conn``.

The `:class:`SMTPChannel`` operates by invoking methods named `smtp_<command>` upon reception of a command line from the client. Built into the base `:class:`SMTPChannel`` class are methods for handling the following commands (and responding to them appropriately):

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Unknown interpreted text role "class".

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Unknown interpreted text role "class".

Command	Action taken
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Command	Action taken
HELO	<p>Accepts the greeting from the client and stores it in <code>:attr:'seen_greeting'</code>. Sets server to base command mode.</p> <div> <p>System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library) smtpd.rst, line 247); backlink</p> <p>Unknown interpreted text role "attr".</p> </div>
EHLO	<p>Accepts the greeting from the client and stores it in <code>:attr:'seen_greeting'</code>. Sets server to extended command mode.</p> <div> <p>System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library) smtpd.rst, line 249); backlink</p> <p>Unknown interpreted text role "attr".</p> </div>
NOOP	Takes no action.
QUIT	Closes the connection cleanly.
MAIL	<p>Accepts the "MAIL FROM:" syntax and stores the supplied address as <code>:attr:'mailfrom'</code>. In extended command mode, accepts the RFC 1870 SIZE attribute and responds appropriately based on the value of <code>data_size_limit</code>.</p> <div> <p>System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library) smtpd.rst, line 253); backlink</p> <p>Unknown interpreted text role "attr".</p> </div>
RCPT	<p>Accepts the "RCPT TO:" syntax and stores the supplied addresses in the <code>:attr:'rcpttos'</code> list.</p> <div> <p>System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library) smtpd.rst, line 257); backlink</p> <p>Unknown interpreted text role "attr".</p> </div>
RSET	<p>Resets the <code>:attr:'mailfrom'</code>, <code>:attr:'rcpttos'</code>, and <code>:attr:'received_data'</code>, but not the greeting.</p> <div> <p>System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library) smtpd.rst, line 259); backlink</p> <p>Unknown interpreted text role "attr".</p> </div> <div> <p>System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library) smtpd.rst, line 259); backlink</p> <p>Unknown interpreted text role "attr".</p> </div> <div> <p>System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library) smtpd.rst, line 259); backlink</p> <p>Unknown interpreted text role "attr".</p> </div>

Command	Action taken
DATA	<p>Sets the internal state to <code>:attr:'DATA'</code> and stores remaining lines from the client in <code>:attr:'received_data'</code> until the terminator "<code>\r\n.\r\n</code>" is received.</p> <div> <p>System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library) smtpd.rst, line 261); backlink</p> <p>Unknown interpreted text role "attr".</p> </div> <div> <p>System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library) smtpd.rst, line 261); backlink</p> <p>Unknown interpreted text role "attr".</p> </div>
HELP	Returns minimal information on command syntax
VRFY	Returns code 252 (the server doesn't know if the address is valid)
EXPN	Reports that the command is not implemented.