Slixmpp Documentation

Release 1.7

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Get the Code

The latest source code for Slixmpp may be found on the Git repo.

```
git clone https://lab.louiz.org/poezio/slixmpp
```

An XMPP chat room is available for discussing and getting help with slixmpp.

Chat slixmpp@muc.poez.io

Reporting bugs You can report bugs at http://lab.louiz.org/poezio/slixmpp/issues.

Note: slixmpp is a friendly fork of SleekXMPP which goal is to use asyncio instead of threads to handle networking. See *Differences from SleekXMPP*.

Slixmpp is an *MIT licensed* XMPP library for Python 3.7+,

Slixmpp's design goals and philosphy are:

Low number of dependencies Installing and using Slixmpp should be as simple as possible, without having to deal with long dependency chains.

As part of reducing the number of dependencies, some third party modules are included with Slixmpp in the `thirdparty` directory. Imports from this module first try to import an existing installed version before loading the packaged version, when possible.

Every XEP as a plugin Following Python's "batteries included" approach, the goal is to provide support for all currently active XEPs (final and draft). Since adding XEP support is done through easy to create plugins, the hope is to also provide a solid base for implementing and creating experimental XEPs.

Rewarding to work with As much as possible, Slixmpp should allow things to "just work" using sensible defaults and appropriate abstractions. XML can be ugly to work with, but it doesn't have to be that way.

CHAPTER

ONE

HERE'S YOUR FIRST SLIXMPP BOT:

```
import asyncio
import logging

from slixmpp import ClientXMPP


class EchoBot(ClientXMPP):

    def __init__(self, jid, password):
        ClientXMPP.__init__(self, jid, password)

        self.add_event_handler("session_start", self.session_start)
        self.add_event_handler("message", self.message)

        # If you wanted more functionality, here's how to register plugins:
        # self.register_plugin('xep_0030') # Service Discovery
        # self.register_plugin('xep_0199') # XMPP Ping

        # Here's how to access plugins once you've registered them:
        # self['xep_0030'].add_feature('echo_demo')

    def session_start(self, event):
        self.send_presence()
        self.get_roster()

        # Most get_*/set_* methods from plugins use Iq stanzas, which
        # are sent asynchronously. You can almost always provide a
        # callback that will be executed when the reply is received.

    def message(self, msg):
        if msg['type'] in ('chat', 'normal'):
            msg.reply("Thanks for sending\n%(body)s" % msg).send()


if __name__ == '__main__':
    # Ideally use optparse or argparse to get JID,
    # password, and log level.

    logging.basicConfig(level=logging.DEBUG,
                        format='%(levelname)-8s %(message)s')

    xmpp = EchoBot('somejid@example.com', 'use_getpass')
    xmpp.connect()
    xmpp.process()
```

CHAPTER

TWO

TO READ IF YOU COME FROM SLEEKXMPP

2.1 Differences from SleekXMPP

Python 3.7+ only slixmpp will work on python 3.7 and above. It may work with previous versions but we provide no guarantees.

Stanza copies The same stanza object is given through all the handlers; a handler that edits the stanza object should make its own copy.

Replies Because stanzas are not copied anymore, *`Stanza.reply()`* calls (for *`IQs`*, *`Messages`*, etc) now return a new object instead of editing the stanza object in-place.

Block and threaded arguments All the functions that had a `threaded=` or `block=` argument do not have it anymore. Also, *`Iq.send()`* **does not block anymore**.

Coroutine facilities **See** *Using asyncio*

If an event handler is a coroutine, it will be called asynchronously in the event loop instead of inside the event caller.

A CoroutineCallback class has been added to create coroutine stream handlers, which will be also handled in the event loop.

The *`Iq`* object's *`send()`* method now **always** return a `Future` which result will be set to the IQ reply when it is received, or to `None` if the IQ is not of type `get` or `set`.

Many plugins (WIP) calls which retrieve information also return the same future.

Architectural differences slixmpp does not have an event queue anymore, and instead processes handlers directly after receiving the XML stanza.

Note: If you find something that doesn't work but should, please report it.

2.2 Using asyncio

2.2.1 Block on IQ sending

`Iq.send()` now returns a `Future` so you can easily block with:

```
result = yield from iq.send()
```

Warning: If the reply is an IQ with an `error` type, this will raise an *`IqError`*, and if it timeouts, it will raise an *`IqTimeout`*. Don't forget to catch it.

You can still use callbacks instead.

2.2.2 XEP plugin integration

The same changes from the SleekXMPP API apply, so you can do:

```
iq_info = yield from self.xmpp['xep_0030'].get_info(jid)
```

But the following will only return a Future:

```
iq_info = self.xmpp['xep_0030'].get_info(jid)
```

2.2.3 Callbacks, Event Handlers, and Stream Handlers

IQ callbacks and *Event Handlers* can be coroutine functions; in this case, they will be scheduled in the event loop using `asyncio.async()` and not ran immediately.

A *`CoroutineCallback`* class has been added as well for *Stream Handlers*, which will use `asyncio.async()` to schedule the callback.

2.2.4 Running the event loop

`XMLStream.process()` is only a thin wrapper on top of `loop.run_forever()` (if `timeout` is provided then it will only run for this amount of time, and if `forever` is False it will run until disconnection).

Therefore you can handle the event loop in any way you like instead of using `process()`.

2.2.5 Examples

Blocking until the session is established

This code blocks until the XMPP session is fully established, which can be useful to make sure external events aren't triggering XMPP callbacks while everything is not ready.

```
import asyncio, slixmpp

client = slixmpp.ClientXMPP('jid@example', 'password')
client.connected_event = asyncio.Event()
callback = lambda _: client.connected_event.set()
client.add_event_handler('session_start', callback)
client.connect()
loop.run_until_complete(event.wait())
# do some other stuff before running the event loop, e.g.
# loop.run_until_complete(httpserver.init())
client.process()
```

Use with other asyncio-based libraries

This code interfaces with aiohttp to retrieve two pages asynchronously when the session is established, and then send the HTML content inside a simple <message>.

```
import asyncio, aiohttp, slixmpp

@asyncio.coroutine
def get_pythonorg(event):
    req = yield from aiohttp.request('get', 'http://www.python.org')
    text = yield from req.text
    client.send_message(mto='jid2@example', mbody=text)

@asyncio.coroutine
def get_asyncioorg(event):
    req = yield from aiohttp.request('get', 'http://www.asyncio.org')
    text = yield from req.text
    client.send_message(mto='jid3@example', mbody=text)

client = slixmpp.ClientXMPP('jid@example', 'password')
client.add_event_handler('session_start', get_pythonorg)
client.add_event_handler('session_start', get_asyncioorg)
client.connect()
client.process()
```

Blocking Iq

This client checks (via XEP-0092) the software used by every entity it receives a message from. After this, it sends a message to a specific JID indicating its findings.

```
import asyncio, slixmpp

class ExampleClient(slixmpp.ClientXMPP):
    def __init__(self, *args, **kwargs):
        slixmpp.ClientXMPP.__init__(self, *args, **kwargs)
        self.register_plugin('xep_0092')
        self.add_event_handler('message', self.on_message)

    @asyncio.coroutine
    def on_message(self, event):
        # You should probably handle IqError and IqTimeout exceptions here
        # but this is an example.
        version = yield from self['xep_0092'].get_version(message['from'])
        text = "%s sent me a message, he runs %s" % (message['from'],
                                                     version['software_version']['name
↪'])
        self.send_message(mto='master@example.tld', mbody=text)

client = ExampleClient('jid@example', 'password')
client.connect()
client.process()
```

CHAPTER

THREE

GETTING STARTED (WITH EXAMPLES)

3.1 Slixmpp Quickstart - Echo Bot

Note: If you have any issues working through this quickstart guide join the chat room at slixmpp@muc.poez.io.

If you have not yet installed Slixmpp, do so now by either checking out a version with Git.

As a basic starting project, we will create an echo bot which will reply to any messages sent to it. We will also go through adding some basic command line configuration for enabling or disabling debug log outputs and setting the username and password for the bot.

For the command line options processing, we will use the built-in `argparse` module and the `getpass` module for reading in passwords.

3.1.1 TL;DR Just Give Me the Code

As you wish: *the completed example*.

3.1.2 Overview

To get started, here is a brief outline of the structure that the final project will have:

```
#!/usr/bin/env python
# -*- coding: utf-8 -*-

import sys
import asyncio
import logging
import getpass

from argparse import ArgumentParser

import slixmpp

'''Here we will create out echo bot class'''

if __name__ == '__main__':
    '''Here we will configure and read command line options'''

    '''Here we will instantiate our echo bot'''
```

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```
    '''Finally, we connect the bot and start listening for messages'''
```

3.1.3 Creating the EchoBot Class

There are three main types of entities within XMPP — servers, components, and clients. Since our echo bot will only be responding to a few people, and won't need to remember thousands of users, we will use a client connection. A client connection is the same type that you use with your standard IM client such as Pidgin or Psi.

Slixmpp comes with a *ClientXMPP* class which we can extend to add our message echoing feature. *ClientXMPP* requires the parameters `jid` and `password`, so we will let our `EchoBot` class accept those as well.

```
class EchoBot(slixmpp.ClientXMPP):

    def __init__(self, jid, password):
        super().__init__(jid, password)
```

Handling Session Start

The XMPP spec requires clients to broadcast its presence and retrieve its roster (buddy list) once it connects and establishes a session with the XMPP server. Until these two tasks are completed, some servers may not deliver or send messages or presence notifications to the client. So we now need to be sure that we retrieve our roster and send an initial presence once the session has started. To do that, we will register an event handler for the *session_start* event.

```
def __init__(self, jid, password):
   super().__init__(jid, password)

   self.add_event_handler('session_start', self.start)
```

Since we want the method `self.start` to execute when the *session_start* event is triggered, we also need to define the `self.start` handler.

```
async def start(self, event):
    self.send_presence()
    await self.get_roster()
```

Warning: Not sending an initial presence and retrieving the roster when using a client instance can prevent your program from receiving presence notifications or messages depending on the XMPP server you have chosen.

Our event handler, like every event handler, accepts a single parameter which typically is the stanza that was received that caused the event. In this case, `event` will just be an empty dictionary since there is no associated data.

Our first task of sending an initial presence is done using *send_presence*. Calling *send_presence* without any arguments will send the simplest stanza allowed in XMPP:

```
<presence />
```

The second requirement is fulfilled using *get_roster*, which will send an IQ stanza requesting the roster to the server and then wait for the response. You may be wondering what *get_roster* returns since we are not saving any return value. The roster data is saved by an internal handler to `self.roster`, and in the case of a *ClientXMPP* instance to `self.client_roster`. (The difference between `self.roster` and `self.client_roster` is that `self.roster` supports storing roster information for multiple JIDs, which is useful for components, whereas `self.client_roster` stores roster data for just the client's JID.)

It is possible for a timeout to occur while waiting for the server to respond, which can happen if the network is excessively slow or the server is no longer responding. In that case, an `IQTimeout` is raised. Similarly, an `IQError` exception can be raised if the request contained bad data or requested the roster for the wrong user. In either case, you can wrap the `get_roster()` call in a `try/except` block to retry the roster retrieval process.

The XMPP stanzas from the roster retrieval process could look like this:

```
<iq type="get">
  <query xmlns="jabber:iq:roster" />
</iq>

<iq type="result" to="echobot@example.com" from="example.com">
  <query xmlns="jabber:iq:roster">
    <item jid="friend@example.com" subscription="both" />
  </query>
</iq>
```

Additionally, since *`get_roster`* is using `<iq/>` stanzas, which will always receive an answer, it should be awaited on, to keep a synchronous flow.

Responding to Messages

Now that an `EchoBot` instance handles *session_start*, we can begin receiving and responding to messages. Now we can register a handler for the *message* event that is raised whenever a messsage is received.

```
def __init__(self, jid, password):
   super().__init__(jid, password)

   self.add_event_handler('session_start', self.start)
   self.add_event_handler('message', self.message)
```

The *message* event is fired whenever a `<message />` stanza is received, including for group chat messages, errors, etc. Properly responding to messages thus requires checking the `'type'` interface of the message *stanza object*. For responding to only messages addressed to our bot (and not from a chat room), we check that the type is either `normal` or `chat`. (Other potential types are `error`, `headline`, and `groupchat`.)

```
def message(self, msg):
    if msg['type'] in ('normal', 'chat'):
        msg.reply("Thanks for sending:\n%s" % msg['body']).send()
```

Let's take a closer look at the `.reply()` method used above. For message stanzas, `.reply()` accepts the parameter `body` (also as the first positional argument), which is then used as the value of the `<body />` element of the message. Setting the appropriate `to` JID is also handled by `.reply()`.

Another way to have sent the reply message would be to use *`send_message`*, which is a convenience method for generating and sending a message based on the values passed to it. If we were to use this method, the above code would look as so:

```
def message(self, msg):
    if msg['type'] in ('normal', 'chat'):
        self.send_message(mto=msg['from'],
                          mbody='Thanks for sending:\n%s' % msg['body'])
```

Whichever method you choose to use, the results in action will look like this:

```
<message to="echobot@example.com" from="someuser@example.net" type="chat">
  <body>Hej!</body>
</message>

<message to="someuser@example.net" type="chat">
  <body>Thanks for sending:
  Hej!</body>
</message>
```

Note: XMPP does not require stanzas sent by a client to include a `from` attribute, and leaves that responsibility to the XMPP server. However, if a sent stanza does include a `from` attribute, it must match the full JID of the client or some servers will reject it. Slixmpp thus leaves out the `from` attribute when replying using a client connection.

3.1.4 Command Line Arguments and Logging

While this isn't part of Slixmpp itself, we do want our echo bot program to be able to accept a JID and password from the command line instead of hard coding them. We will use the `argparse` module for this.

We want to accept three parameters: the JID for the echo bot, its password, and a flag for displaying the debugging logs. We also want these to be optional parameters, since passing a password directly through the command line can be a security risk.

```
if __name__ == '__main__':
    # Setup the command line arguments.
    parser = ArgumentParser(description=EchoBot.__doc__)

    # Output verbosity options.
    parser.add_argument("-q", "--quiet", help="set logging to ERROR",
                        action="store_const", dest="loglevel",
                        const=logging.ERROR, default=logging.INFO)
    parser.add_argument("-d", "--debug", help="set logging to DEBUG",
                        action="store_const", dest="loglevel",
                        const=logging.DEBUG, default=logging.INFO)

    # JID and password options.
    parser.add_argument("-j", "--jid", dest="jid",
                        help="JID to use")
    parser.add_argument("-p", "--password", dest="password",
                        help="password to use")

    args = parser.parse_args()

    if args.jid is None:
        args.jid = input("Username: ")
    if args.password is None:
        args.password = getpass("Password: ")
```

Since we included a flag for enabling debugging logs, we need to configure the `logging` module to behave accordingly.

```
if __name__ == '__main__':

    # .. option parsing from above ..

```

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```
    logging.basicConfig(level=args.loglevel,
                        format='%(levelname)-8s %(message)s')
```

3.1.5 Connecting to the Server and Processing

There are three steps remaining until our echo bot is complete:

1. We need to instantiate the bot.
2. The bot needs to connect to an XMPP server.
3. We have to instruct the bot to start running and processing messages.

Creating the bot is straightforward, but we can also perform some configuration at this stage. For example, let's say we want our bot to support service discovery and pings:

```
if __name__ == '__main__':

    # .. option parsing and logging steps from above

    xmpp = EchoBot(opts.jid, opts.password)
    xmpp.register_plugin('xep_0030') # Service Discovery
    xmpp.register_plugin('xep_0199') # Ping
```

If the `EchoBot` class had a hard dependency on a plugin, we could register that plugin in the `EchoBot.__init__` method instead.

Now we're ready to connect and begin echoing messages. If you have the package `aiodns` installed, then the *`slixmpp.clientxmpp.ClientXMPP.connect()`* method will perform a DNS query to find the appropriate server to connect to for the given JID. If you do not have `aiodns`, then Slixmpp will attempt to connect to the hostname used by the JID, unless an address tuple is supplied to *`slixmpp.clientxmpp.ClientXMPP.connect()`*.

```
if __name__ == '__main__':

    # .. option parsing & echo bot configuration
    xmpp.connect():
    xmpp.process(forever=True)
```

The `slixmpp.basexmpp.BaseXMPP.connect()` will only schedule a connection asynchronously. To actually connect, you need to let the event loop take over. This is done with the *`slixmpp.basexmpp.BaseXMPP.process()`* method, which can either run forever (`forever=True`, the default), run for a (maximum) duration of time (`timeout=n`), and/or run until it gets disconnected (`forever=False`).

However, calling `process()` is not required if you already have an event loop running, so you can handle the logic around it however you like.

Note: Before slixmpp, :meth:slixmpp.basexmpp.BaseXMPP.process` took `block` and `threaded` arguments. These do not make sense anymore and have been removed. Slixmpp does not use threads at all.

3.1.6 The Final Product

Here then is what the final result should look like after working through the guide above. The code can also be found in the Slixmpp examples directory.

You can run the code using:

```
python echobot.py -d -j echobot@example.com
```

which will prompt for the password and then begin echoing messages. To test, open your regular IM client and start a chat with the echo bot. Messages you send to it should be mirrored back to you. Be careful if you are using the same JID for the echo bot that you also have logged in with another IM client. Messages could be routed to your IM client instead of the bot.

```
#!/usr/bin/env python3
# -*- coding: utf-8 -*-

"""
    Slixmpp: The Slick XMPP Library
    Copyright (C) 2010  Nathanael C. Fritz
    This file is part of Slixmpp.

    See the file LICENSE for copying permission.
"""

import logging
from getpass import getpass
from argparse import ArgumentParser

import slixmpp


class EchoBot(slixmpp.ClientXMPP):

    """
    A simple Slixmpp bot that will echo messages it
    receives, along with a short thank you message.
    """

    def __init__(self, jid, password):
        slixmpp.ClientXMPP.__init__(self, jid, password)

        # The session_start event will be triggered when
        # the bot establishes its connection with the server
        # and the XML streams are ready for use. We want to
        # listen for this event so that we we can initialize
        # our roster.
        self.add_event_handler("session_start", self.start)

        # The message event is triggered whenever a message
        # stanza is received. Be aware that that includes
        # MUC messages and error messages.
        self.add_event_handler("message", self.message)

    async def start(self, event):
        """
        Process the session_start event.
```

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```
        Typical actions for the session_start event are
        requesting the roster and broadcasting an initial
        presence stanza.

        Arguments:
            event -- An empty dictionary. The session_start
                     event does not provide any additional
                     data.
        """
        self.send_presence()
        await self.get_roster()

    def message(self, msg):
        """
        Process incoming message stanzas. Be aware that this also
        includes MUC messages and error messages. It is usually
        a good idea to check the messages's type before processing
        or sending replies.

        Arguments:
            msg -- The received message stanza. See the documentation
                   for stanza objects and the Message stanza to see
                   how it may be used.
        """
        if msg['type'] in ('chat', 'normal'):
            msg.reply("Thanks for sending\n%(body)s" % msg).send()


if __name__ == '__main__':
    # Setup the command line arguments.
    parser = ArgumentParser(description=EchoBot.__doc__)

    # Output verbosity options.
    parser.add_argument("-q", "--quiet", help="set logging to ERROR",
                        action="store_const", dest="loglevel",
                        const=logging.ERROR, default=logging.INFO)
    parser.add_argument("-d", "--debug", help="set logging to DEBUG",
                        action="store_const", dest="loglevel",
                        const=logging.DEBUG, default=logging.INFO)

    # JID and password options.
    parser.add_argument("-j", "--jid", dest="jid",
                        help="JID to use")
    parser.add_argument("-p", "--password", dest="password",
                        help="password to use")

    args = parser.parse_args()

    # Setup logging.
    logging.basicConfig(level=args.loglevel,
                        format='%(levelname)-8s %(message)s')

    if args.jid is None:
        args.jid = input("Username: ")
    if args.password is None:
        args.password = getpass("Password: ")
```

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```
    # Setup the EchoBot and register plugins. Note that while plugins may
    # have interdependencies, the order in which you register them does
    # not matter.
    xmpp = EchoBot(args.jid, args.password)
    xmpp.register_plugin('xep_0030') # Service Discovery
    xmpp.register_plugin('xep_0004') # Data Forms
    xmpp.register_plugin('xep_0060') # PubSub
    xmpp.register_plugin('xep_0199') # XMPP Ping

    # Connect to the XMPP server and start processing XMPP stanzas.
    xmpp.connect()
    xmpp.process()
```

3.2 Sign in, Send a Message, and Disconnect

Note: If you have any issues working through this quickstart guide join the chat room at slixmpp@muc.poez.io.

A common use case for Slixmpp is to send one-off messages from time to time. For example, one use case could be sending out a notice when a shell script finishes a task.

We will create our one-shot bot based on the pattern explained in *Slixmpp Quickstart - Echo Bot*. To start, we create a client class based on `ClientXMPP` and register a handler for the *session_start* event. We will also accept parameters for the JID that will receive our message, and the string content of the message.

```
import slixmpp


class SendMsgBot(slixmpp.ClientXMPP):

    def __init__(self, jid, password, recipient, msg):
        super().__init__(jid, password)

        self.recipient = recipient
        self.msg = msg

        self.add_event_handler('session_start', self.start)

    async def start(self, event):
        self.send_presence()
        await self.get_roster()
```

Note that as in *Slixmpp Quickstart - Echo Bot*, we need to include send an initial presence and request the roster. Next, we want to send our message, and to do that we will use `send_message`.

```
async def start(self, event):
    self.send_presence()
    await self.get_roster()

    self.send_message(mto=self.recipient, mbody=self.msg)
```

Finally, we need to disconnect the client using `disconnect`. Now, sent stanzas are placed in a queue to pass them to the send routine. `disconnect` by default will wait for an acknowledgement from the server for at least *2.0* seconds.

This time is configurable with the *wait* parameter. If *0.0* is passed for *wait*, `disconnect` will not close the connection gracefully.

```
async def start(self, event):
    self.send_presence()
    await self.get_roster()

    self.send_message(mto=self.recipient, mbody=self.msg)

    self.disconnect()
```

Warning: If you happen to be adding stanzas to the send queue faster than the send thread can process them, then `disconnect()` will block and not disconnect.

3.2.1 Final Product

The final step is to create a small runner script for initialising our `SendMsgBot` class and adding some basic configuration options. By following the basic boilerplate pattern in *Slixmpp Quickstart - Echo Bot*, we arrive at the code below. To experiment with this example, you can use:

```
python send_client.py -d -j oneshot@example.com -t someone@example.net -m "This is a␣
↪message"
```

which will prompt for the password and then log in, send your message, and then disconnect. To test, open your regular IM client with the account you wish to send messages to. When you run the `send_client.py` example and instruct it to send your IM client account a message, you should receive the message you gave. If the two JIDs you use also have a mutual presence subscription (they're on each other's buddy lists) then you will also see the `SendMsgBot` client come online and then go offline.

```
#!/usr/bin/env python3
# -*- coding: utf-8 -*-

"""
    Slixmpp: The Slick XMPP Library
    Copyright (C) 2010  Nathanael C. Fritz
    This file is part of Slixmpp.

    See the file LICENSE for copying permission.
"""

import logging
from getpass import getpass
from argparse import ArgumentParser

import slixmpp


class SendMsgBot(slixmpp.ClientXMPP):

    """
    A basic Slixmpp bot that will log in, send a message,
    and then log out.
    """
```

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```
    def __init__(self, jid, password, recipient, message):
        slixmpp.ClientXMPP.__init__(self, jid, password)

        # The message we wish to send, and the JID that
        # will receive it.
        self.recipient = recipient
        self.msg = message

        # The session_start event will be triggered when
        # the bot establishes its connection with the server
        # and the XML streams are ready for use. We want to
        # listen for this event so that we we can initialize
        # our roster.
        self.add_event_handler("session_start", self.start)

    async def start(self, event):
        """
        Process the session_start event.

        Typical actions for the session_start event are
        requesting the roster and broadcasting an initial
        presence stanza.

        Arguments:
            event -- An empty dictionary. The session_start
                     event does not provide any additional
                     data.
        """
        self.send_presence()
        await self.get_roster()

        self.send_message(mto=self.recipient,
                          mbody=self.msg,
                          mtype='chat')

        self.disconnect()


if __name__ == '__main__':
    # Setup the command line arguments.
    parser = ArgumentParser(description=SendMsgBot.__doc__)

    # Output verbosity options.
    parser.add_argument("-q", "--quiet", help="set logging to ERROR",
                        action="store_const", dest="loglevel",
                        const=logging.ERROR, default=logging.INFO)
    parser.add_argument("-d", "--debug", help="set logging to DEBUG",
                        action="store_const", dest="loglevel",
                        const=logging.DEBUG, default=logging.INFO)

    # JID and password options.
    parser.add_argument("-j", "--jid", dest="jid",
                        help="JID to use")
    parser.add_argument("-p", "--password", dest="password",
                        help="password to use")
    parser.add_argument("-t", "--to", dest="to",
                        help="JID to send the message to")
```

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```
    parser.add_argument("-m", "--message", dest="message",
                        help="message to send")

    args = parser.parse_args()

    # Setup logging.
    logging.basicConfig(level=args.loglevel,
                        format='%(levelname)-8s %(message)s')

    if args.jid is None:
        args.jid = input("Username: ")
    if args.password is None:
        args.password = getpass("Password: ")
    if args.to is None:
        args.to = input("Send To: ")
    if args.message is None:
        args.message = input("Message: ")

    # Setup the EchoBot and register plugins. Note that while plugins may
    # have interdependencies, the order in which you register them does
    # not matter.
    xmpp = SendMsgBot(args.jid, args.password, args.to, args.message)
    xmpp.register_plugin('xep_0030') # Service Discovery
    xmpp.register_plugin('xep_0199') # XMPP Ping

    # Connect to the XMPP server and start processing XMPP stanzas.
    xmpp.connect()
    xmpp.process(forever=False)
```

3.3 Create and Run a Server Component

Note: If you have any issues working through this quickstart guide join the chat room at slixmpp@muc.poez.io.

If you have not yet installed Slixmpp, do so now by either checking out a version with Git.

Many XMPP applications eventually graduate to requiring to run as a server component in order to meet scalability requirements. To demonstrate how to turn an XMPP client bot into a component, we'll turn the echobot example (*Slixmpp Quickstart - Echo Bot*) into a component version.

The first difference is that we will add an additional import statement:

```
from slixmpp.componentxmpp import ComponentXMPP
```

Likewise, we will change the bot's class definition to match:

```
class EchoComponent(ComponentXMPP):

    def __init__(self, jid, secret, server, port):
        ComponentXMPP.__init__(self, jid, secret, server, port)
```

A component instance requires two extra parameters compared to a client instance: `server` and `port`. These specifiy the name and port of the XMPP server that will be accepting the component. For example, for a MUC component, the following could be used:

```
muc = ComponentXMPP('muc.slixmpp.com', '******', 'slixmpp.com', 5555)
```

Note: The `server` value is **NOT** derived from the provided JID for the component, unlike with client connections.

One difference with the component version is that we do not have to handle the *session_start* event if we don't wish to deal with presence.

The other, main difference with components is that the `'from'` value for every stanza must be explicitly set, since components may send stanzas from multiple JIDs. To do so, the `send_message()` and `send_presence()` accept the parameters `mfrom` and `pfrom`, respectively. For any method that uses `Iq` stanzas, `ifrom` may be used.

3.3.1 Final Product

```
#!/usr/bin/env python3
# -*- coding: utf-8 -*-

"""
    Slixmpp: The Slick XMPP Library
    Copyright (C) 2010  Nathanael C. Fritz
    This file is part of Slixmpp.

    See the file LICENSE for copying permission.
"""

import logging
from getpass import getpass
from argparse import ArgumentParser

import slixmpp
from slixmpp.componentxmpp import ComponentXMPP


class EchoComponent(ComponentXMPP):

    """
    A simple Slixmpp component that echoes messages.
    """

    def __init__(self, jid, secret, server, port):
        ComponentXMPP.__init__(self, jid, secret, server, port)

        # You don't need a session_start handler, but that is
        # where you would broadcast initial presence.

        # The message event is triggered whenever a message
        # stanza is received. Be aware that that includes
        # MUC messages and error messages.
        self.add_event_handler("message", self.message)

    def message(self, msg):
        """
        Process incoming message stanzas. Be aware that this also
        includes MUC messages and error messages. It is usually
        a good idea to check the messages's type before processing
```

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```
        or sending replies.

        Since a component may send messages from any number of JIDs,
        it is best to always include a from JID.

        Arguments:
            msg -- The received message stanza. See the documentation
                   for stanza objects and the Message stanza to see
                   how it may be used.
        """
        # The reply method will use the messages 'to' JID as the
        # outgoing reply's 'from' JID.
        msg.reply("Thanks for sending\n%(body)s" % msg).send()


if __name__ == '__main__':
    # Setup the command line arguments.
    parser = ArgumentParser(description=EchoComponent.__doc__)

    # Output verbosity options.
    parser.add_argument("-q", "--quiet", help="set logging to ERROR",
                        action="store_const", dest="loglevel",
                        const=logging.ERROR, default=logging.INFO)
    parser.add_argument("-d", "--debug", help="set logging to DEBUG",
                        action="store_const", dest="loglevel",
                        const=logging.DEBUG, default=logging.INFO)

    # JID and password options.
    parser.add_argument("-j", "--jid", dest="jid",
                        help="JID to use")
    parser.add_argument("-p", "--password", dest="password",
                        help="password to use")
    parser.add_argument("-s", "--server", dest="server",
                        help="server to connect to")
    parser.add_argument("-P", "--port", dest="port",
                        help="port to connect to")

    args = parser.parse_args()

    if args.jid is None:
        args.jid = input("Component JID: ")
    if args.password is None:
        args.password = getpass("Password: ")
    if args.server is None:
        args.server = input("Server: ")
    if args.port is None:
        args.port = int(input("Port: "))

    # Setup logging.
    logging.basicConfig(level=args.loglevel,
                        format='%(levelname)-8s %(message)s')

    # Setup the EchoComponent and register plugins. Note that while plugins
    # may have interdependencies, the order in which you register them does
    # not matter.
    xmpp = EchoComponent(args.jid, args.password, args.server, args.port)
    xmpp.register_plugin('xep_0030') # Service Discovery
```

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```
    xmpp.register_plugin('xep_0004') # Data Forms
    xmpp.register_plugin('xep_0060') # PubSub
    xmpp.register_plugin('xep_0199') # XMPP Ping

    # Connect to the XMPP server and start processing XMPP stanzas.
    xmpp.connect()
    xmpp.process()
```

3.4 Manage Presence Subscriptions

3.5 Multi-User Chat (MUC) Bot

Note: If you have any issues working through this quickstart guide join the chat room at slixmpp@muc.poez.io.

If you have not yet installed Slixmpp, do so now by either checking out a version from Git.

Now that you've got the basic gist of using Slixmpp by following the echobot example (*Slixmpp Quickstart - Echo Bot*), we can use one of the bundled plugins to create a very popular XMPP starter project: a Multi-User Chat (MUC) bot. Our bot will login to an XMPP server, join an MUC chat room and "lurk" indefinitely, responding with a generic message to anyone that mentions its nickname. It will also greet members as they join the chat room.

3.5.1 Joining The Room

As usual, our code will be based on the pattern explained in *Slixmpp Quickstart - Echo Bot*. To start, we create an `MUCBot` class based on *`ClientXMPP`* and which accepts parameters for the JID of the MUC room to join, and the nick that the bot will use inside the chat room. We also register an *event handler* for the *session_start* event.

```
import slixmpp

class MUCBot(slixmpp.ClientXMPP):

    def __init__(self, jid, password, room, nick):
        slixmpp.ClientXMPP.__init__(self, jid, password)

        self.room = room
        self.nick = nick

        self.add_event_handler("session_start", self.start)
```

After initialization, we also need to register the MUC (XEP-0045) plugin so that we can make use of the group chat plugin's methods and events.

```
xmpp.register_plugin('xep_0045')
```

Finally, we can make our bot join the chat room once an XMPP session has been established:

```
async def start(self, event):
    await self.get_roster()
    self.send_presence()
```

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```
    self.plugin['xep_0045'].join_muc(self.room,
                                     self.nick)
```

Note that as in *Slixmpp Quickstart - Echo Bot*, we need to include send an initial presence and request the roster. Next, we want to join the group chat, so we call the `join_muc` method of the MUC plugin.

Note: The *`plugin`* attribute is dictionary that maps to instances of plugins that we have previously registered, by their names.

3.5.2 Adding Functionality

Currently, our bot just sits dormantly inside the chat room, but we would like it to respond to two distinct events by issuing a generic message in each case to the chat room. In particular, when a member mentions the bot's nickname inside the chat room, and when a member joins the chat room.

Responding to Mentions

Whenever a user mentions our bot's nickname in chat, our bot will respond with a generic message resembling *"I heard that, user."* We do this by examining all of the messages sent inside the chat and looking for the ones which contain the nickname string.

First, we register an event handler for the *groupchat_message* event inside the bot's `__init__` function.

Note: We do not register a handler for the *message* event in this bot, but if we did, the group chat message would have been sent to both handlers.

```
def __init__(self, jid, password, room, nick):
    slixmpp.ClientXMPP.__init__(self, jid, password)

    self.room = room
    self.nick = nick

    self.add_event_handler("session_start", self.start)
    self.add_event_handler("groupchat_message", self.muc_message)
```

Then, we can send our generic message whenever the bot's nickname gets mentioned.

Warning: Always check that a message is not from yourself, otherwise you will create an infinite loop responding to your own messages.

```
def muc_message(self, msg):
    if msg['mucnick'] != self.nick and self.nick in msg['body']:
        self.send_message(mto=msg['from'].bare,
                          mbody="I heard that, %s." % msg['mucnick'],
                          mtype='groupchat')
```

Greeting Members

Now we want to greet member whenever they join the group chat. To do this we will use the dynamic `muc::room@server::got_online`[1] event so it's a good idea to register an event handler for it.

Note: The groupchat_presence event is triggered whenever a presence stanza is received from any chat room, including any presences you send yourself. To limit event handling to a single room, use the events `muc::room@server::presence`, `muc::room@server::got_online`, or `muc::room@server::got_offline`.

```python
def __init__(self, jid, password, room, nick):
    slixmpp.ClientXMPP.__init__(self, jid, password)

    self.room = room
    self.nick = nick

    self.add_event_handler("session_start", self.start)
    self.add_event_handler("groupchat_message", self.muc_message)
    self.add_event_handler("muc::%s::got_online" % self.room,
                           self.muc_online)
```

Now all that's left to do is to greet them:

```python
def muc_online(self, presence):
    if presence['muc']['nick'] != self.nick:
        self.send_message(mto=presence['from'].bare,
                          mbody="Hello, %s %s" % (presence['muc']['role'],
                                                  presence['muc']['nick']),
                          mtype='groupchat')
```

3.5.3 Final Product

The final step is to create a small runner script for initialising our `MUCBot` class and adding some basic configuration options. By following the basic boilerplate pattern in *Slixmpp Quickstart - Echo Bot*, we arrive at the code below. To experiment with this example, you can use:

```
python muc.py -d -j jid@example.com -r room@muc.example.net -n lurkbot
```

which will prompt for the password, log in, and join the group chat. To test, open your regular IM client and join the same group chat that you sent the bot to. You will see `lurkbot` as one of the members in the group chat, and that it greeted you upon entry. Send a message with the string "lurkbot" inside the body text, and you will also see that it responds with our pre-programmed customized message.

```python
#!/usr/bin/env python3
# -*- coding: utf-8 -*-

"""
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```

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[1] this is similar to the *got_online* event and is sent by the xep_0045 plugin whenever a member joins the referenced MUC chat room.

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```
"""

import logging
from getpass import getpass
from argparse import ArgumentParser

import slixmpp


class MUCBot(slixmpp.ClientXMPP):

    """
    A simple Slixmpp bot that will greets those
    who enter the room, and acknowledge any messages
    that mentions the bot's nickname.
    """

    def __init__(self, jid, password, room, nick):
        slixmpp.ClientXMPP.__init__(self, jid, password)

        self.room = room
        self.nick = nick

        # The session_start event will be triggered when
        # the bot establishes its connection with the server
        # and the XML streams are ready for use. We want to
        # listen for this event so that we we can initialize
        # our roster.
        self.add_event_handler("session_start", self.start)

        # The groupchat_message event is triggered whenever a message
        # stanza is received from any chat room. If you also also
        # register a handler for the 'message' event, MUC messages
        # will be processed by both handlers.
        self.add_event_handler("groupchat_message", self.muc_message)

        # The groupchat_presence event is triggered whenever a
        # presence stanza is received from any chat room, including
        # any presences you send yourself. To limit event handling
        # to a single room, use the events muc::room@server::presence,
        # muc::room@server::got_online, or muc::room@server::got_offline.
        self.add_event_handler("muc::%s::got_online" % self.room,
                               self.muc_online)


    async def start(self, event):
        """
        Process the session_start event.

        Typical actions for the session_start event are
        requesting the roster and broadcasting an initial
        presence stanza.

        Arguments:
            event -- An empty dictionary. The session_start
                     event does not provide any additional
                     data.
```

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```
        """
        await self.get_roster()
        self.send_presence()
        self.plugin['xep_0045'].join_muc(self.room,
                                         self.nick,
                                         # If a room password is needed, use:
                                         # password=the_room_password,
                                         )

    def muc_message(self, msg):
        """
        Process incoming message stanzas from any chat room. Be aware
        that if you also have any handlers for the 'message' event,
        message stanzas may be processed by both handlers, so check
        the 'type' attribute when using a 'message' event handler.

        Whenever the bot's nickname is mentioned, respond to
        the message.

        IMPORTANT: Always check that a message is not from yourself,
                   otherwise you will create an infinite loop responding
                   to your own messages.

        This handler will reply to messages that mention
        the bot's nickname.

        Arguments:
            msg -- The received message stanza. See the documentation
                   for stanza objects and the Message stanza to see
                   how it may be used.
        """
        if msg['mucnick'] != self.nick and self.nick in msg['body']:
            self.send_message(mto=msg['from'].bare,
                              mbody="I heard that, %s." % msg['mucnick'],
                              mtype='groupchat')

    def muc_online(self, presence):
        """
        Process a presence stanza from a chat room. In this case,
        presences from users that have just come online are
        handled by sending a welcome message that includes
        the user's nickname and role in the room.

        Arguments:
            presence -- The received presence stanza. See the
                        documentation for the Presence stanza
                        to see how else it may be used.
        """
        if presence['muc']['nick'] != self.nick:
            self.send_message(mto=presence['from'].bare,
                              mbody="Hello, %s %s" % (presence['muc']['role'],
                                                      presence['muc']['nick']),
                              mtype='groupchat')


if __name__ == '__main__':
    # Setup the command line arguments.
```

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```
    parser = ArgumentParser()

    # Output verbosity options.
    parser.add_argument("-q", "--quiet", help="set logging to ERROR",
                        action="store_const", dest="loglevel",
                        const=logging.ERROR, default=logging.INFO)
    parser.add_argument("-d", "--debug", help="set logging to DEBUG",
                        action="store_const", dest="loglevel",
                        const=logging.DEBUG, default=logging.INFO)

    # JID and password options.
    parser.add_argument("-j", "--jid", dest="jid",
                        help="JID to use")
    parser.add_argument("-p", "--password", dest="password",
                        help="password to use")
    parser.add_argument("-r", "--room", dest="room",
                        help="MUC room to join")
    parser.add_argument("-n", "--nick", dest="nick",
                        help="MUC nickname")

    args = parser.parse_args()

    # Setup logging.
    logging.basicConfig(level=args.loglevel,
                        format='%(levelname)-8s %(message)s')

    if args.jid is None:
        args.jid = input("Username: ")
    if args.password is None:
        args.password = getpass("Password: ")
    if args.room is None:
        args.room = input("MUC room: ")
    if args.nick is None:
        args.nick = input("MUC nickname: ")

    # Setup the MUCBot and register plugins. Note that while plugins may
    # have interdependencies, the order in which you register them does
    # not matter.
    xmpp = MUCBot(args.jid, args.password, args.room, args.nick)
    xmpp.register_plugin('xep_0030') # Service Discovery
    xmpp.register_plugin('xep_0045') # Multi-User Chat
    xmpp.register_plugin('xep_0199') # XMPP Ping

    # Connect to the XMPP server and start processing XMPP stanzas.
    xmpp.connect()
    xmpp.process()
```

3.6 Enable HTTP Proxy Support

Note: If you have any issues working through this quickstart guide join the chat room at slixmpp@muc.poez.io.

In some instances, you may wish to route XMPP traffic through an HTTP proxy, probably to get around restrictive firewalls. Slixmpp provides support for basic HTTP proxying with DIGEST authentication.

Enabling proxy support is done in two steps. The first is to instruct Slixmpp to use a proxy, and the second is to configure the proxy details:

```
xmpp = ClientXMPP(...)
xmpp.use_proxy = True
xmpp.proxy_config = {
    'host': 'proxy.example.com',
    'port': 5555,
    'username': 'example_user',
    'password': '******'
}
```

The `'username'` and `'password'` fields are optional if the proxy does not require authentication.

3.6.1 The Final Product

```
#!/usr/bin/env python3
# -*- coding: utf-8 -*-

"""
    Slixmpp: The Slick XMPP Library
    Copyright (C) 2010  Nathanael C. Fritz
    This file is part of Slixmpp.

    See the file LICENSE for copying permission.
"""

import logging
from getpass import getpass
from argparse import ArgumentParser

import slixmpp


class EchoBot(slixmpp.ClientXMPP):

    """
    A simple Slixmpp bot that will echo messages it
    receives, along with a short thank you message.
    """

    def __init__(self, jid, password):
        slixmpp.ClientXMPP.__init__(self, jid, password)

        # The session_start event will be triggered when
        # the bot establishes its connection with the server
        # and the XML streams are ready for use. We want to
```

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```
        # listen for this event so that we we can initialize
        # our roster.
        self.add_event_handler("session_start", self.start)

        # The message event is triggered whenever a message
        # stanza is received. Be aware that that includes
        # MUC messages and error messages.
        self.add_event_handler("message", self.message)

    async def start(self, event):
        """
        Process the session_start event.

        Typical actions for the session_start event are
        requesting the roster and broadcasting an initial
        presence stanza.

        Arguments:
            event -- An empty dictionary. The session_start
                     event does not provide any additional
                     data.
        """
        self.send_presence()
        await self.get_roster()

    def message(self, msg):
        """
        Process incoming message stanzas. Be aware that this also
        includes MUC messages and error messages. It is usually
        a good idea to check the messages's type before processing
        or sending replies.

        Arguments:
            msg -- The received message stanza. See the documentation
                   for stanza objects and the Message stanza to see
                   how it may be used.
        """
        msg.reply("Thanks for sending\n%(body)s" % msg).send()


if __name__ == '__main__':
    # Setup the command line arguments.
    parser = ArgumentParser()

    # Output verbosity options.
    parser.add_argument("-q", "--quiet", help="set logging to ERROR",
                        action="store_const", dest="loglevel",
                        const=logging.ERROR, default=logging.INFO)
    parser.add_argument("-d", "--debug", help="set logging to DEBUG",
                        action="store_const", dest="loglevel",
                        const=logging.DEBUG, default=logging.INFO)

    # JID and password options.
    parser.add_argument("-j", "--jid", dest="jid",
                        help="JID to use")
    parser.add_argument("-p", "--password", dest="password",
                        help="password to use")
```

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```
    parser.add_argument("--phost", dest="proxy_host",
                        help="Proxy hostname")
    parser.add_argument("--pport", dest="proxy_port",
                        help="Proxy port")
    parser.add_argument("--puser", dest="proxy_user",
                        help="Proxy username")
    parser.add_argument("--ppass", dest="proxy_pass",
                        help="Proxy password")

    args = parser.parse_args()

    # Setup logging.
    logging.basicConfig(level=args.loglevel,
                        format='%(levelname)-8s %(message)s')

    if args.jid is None:
        args.jid = input("Username: ")
    if args.password is None:
        args.password = getpass("Password: ")
    if args.proxy_host is None:
        args.proxy_host = input("Proxy host: ")
    if args.proxy_port is None:
        args.proxy_port = input("Proxy port: ")
    if args.proxy_user is None:
        args.proxy_user = input("Proxy username: ")
    if args.proxy_pass is None and args.proxy_user:
        args.proxy_pass = getpass("Proxy password: ")

    # Setup the EchoBot and register plugins. Note that while plugins may
    # have interdependencies, the order in which you register them does
    # not matter.
    xmpp = EchoBot(args.jid, args.password)
    xmpp.register_plugin('xep_0030') # Service Discovery
    xmpp.register_plugin('xep_0004') # Data Forms
    xmpp.register_plugin('xep_0060') # PubSub
    xmpp.register_plugin('xep_0199') # XMPP Ping

    xmpp.use_proxy = True
    xmpp.proxy_config = {
        'host': args.proxy_host,
        'port': int(args.proxy_port),
        'username': args.proxy_user,
        'password': args.proxy_pass}

    # Connect to the XMPP server and start processing XMPP stanzas.
    xmpp.connect()
    xmpp.process()
```

3.7 Send a Message Every 5 Minutes

3.8 Send/Receive IQ Stanzas

Unlike `Message` and `Presence` stanzas which only use text data for basic usage, `Iq` stanzas require using XML payloads, and generally entail creating a new Slixmpp plugin to provide the necessary convenience methods to make working with them easier.

3.8.1 Basic Use

XMPP's use of `Iq` stanzas is built around namespaced `<query />` elements. For clients, just sending the empty `<query />` element will suffice for retrieving information. For example, a very basic implementation of service discovery would just need to be able to send:

```
<iq to="user@example.com" type="get" id="1">
  <query xmlns="http://jabber.org/protocol/disco#info" />
</iq>
```

Creating Iq Stanzas

Slixmpp provides built-in support for creating basic `Iq` stanzas this way. The relevant methods are:

- *make_iq()*
- *make_iq_get()*
- *make_iq_set()*
- *make_iq_result()*
- *make_iq_error()*
- *make_iq_query()*

These methods all follow the same pattern: create or modify an existing `Iq` stanza, set the `'type'` value based on the method name, and finally add a `<query />` element with the given namespace. For example, to produce the query above, you would use:

```
self.make_iq_get(queryxmlns='http://jabber.org/protocol/disco#info',
                 ito='user@example.com')
```

Sending Iq Stanzas

Once an `Iq` stanza is created, sending it over the wire is done using its `send()` method, like any other stanza object. However, there are a few extra options to control how to wait for the query's response.

These options are:

- `block`: The default behaviour is that `send()` will block until a response is received and the response stanza will be the return value. Setting `block` to `False` will cause the call to return immediately. In which case, you will need to arrange some way to capture the response stanza if you need it.
- `timeout`: When using the blocking behaviour, the call will eventually timeout with an error. The default timeout is 30 seconds, but this may be overidden two ways. To change the timeout globally, set:

```
self.response_timeout = 10
```

To change the timeout for a single call, the `timeout` parameter works:

```
iq.send(timeout=60)
```

- `callback`: When not using a blocking call, using the `callback` argument is a simple way to register a handler that will execute whenever a response is finally received. Using this method, there is no timeout limit. In case you need to remove the callback, the name of the newly created callback is returned.

```
cb_name = iq.send(callback=self.a_callback)

# ... later if we need to cancel
self.remove_handler(cb_name)
```

Properly working with `Iq` stanzas requires handling the intended, normal flow, error responses, and timed out requests. To make this easier, two exceptions may be thrown by `send()`: *`IqError`* and *`IqTimeout`*. These exceptions only apply to the default, blocking calls.

```
try:
    resp = iq.send()
    # ... do stuff with expected Iq result
except IqError as e:
    err_resp = e.iq
    # ... handle error case
except IqTimeout:
    # ... no response received in time
    pass
```

If you do not care to distinguish between errors and timeouts, then you can combine both cases with a generic *`XMPPError`* exception:

```
try:
    resp = iq.send()
except XMPPError:
    # ... Don't care about the response
    pass
```

3.8.2 Advanced Use

Going beyond the basics provided by Slixmpp requires building at least a rudimentary Slixmpp plugin to create a *stanza object* for interfacting with the `Iq` payload.

See also:

- *Creating a Slixmpp Plugin*
- *How to Work with Stanza Objects*
- *Using Stream Handlers and Matchers*

The typical way to respond to `Iq` requests is to register stream handlers. As an example, suppose we create a stanza class named `CustomXEP` which uses the XML element `<query xmlns="custom-xep" />`, and has a *`plugin_attrib`* value of `custom_xep`.

There are two types of incoming `Iq` requests: `get` and `set`. You can register a handler that will accept both and then filter by type as needed, as so:

```
self.register_handler(Callback(
    'CustomXEP Handler',
    StanzaPath('iq/custom_xep'),
    self._handle_custom_iq))

# ...

def _handle_custom_iq(self, iq):
    if iq['type'] == 'get':
        # ...
        pass
    elif iq['type'] == 'set':
        # ...
        pass
    else:
        # ... This will capture error responses too
        pass
```

If you want to filter out query types beforehand, you can adjust the matching filter by using `@type=get` or `@type=set` if you are using the recommended *StanzaPath* matcher.

```
self.register_handler(Callback(
    'CustomXEP Handler',
    StanzaPath('iq@type=get/custom_xep'),
    self._handle_custom_iq_get))

# ...

def _handle_custom_iq_get(self, iq):
    assert(iq['type'] == 'get')
```

CHAPTER

FOUR

TUTORIALS, FAQS, AND HOW TO GUIDES

4.1 Supported XEPS

XEP	Description	Notes
0004	Data forms	
0009	Jabber RPC	
0012	Last Activity	
0030	Service Discovery	
0033	Extended Stanza Addressing	
0045	Multi-User Chat (MUC)	Client-side only
0050	Ad-hoc Commands	
0059	Result Set Management	
0060	Publish/Subscribe (PubSub)	Client-side only
0066	Out-of-band Data	
0078	Non-SASL Authentication	
0082	XMPP Date and Time Profiles	
0085	Chat-State Notifications	
0086	Error Condition Mappings	
0092	Software Version	
0128	Service Discovery Extensions	
0202	Entity Time	
0203	Delayed Delivery	
0224	Attention	
0249	Direct MUC Invitations	

4.2 Following *XMPP: The Definitive Guide*

Slixmpp was featured in the first edition of the O'Reilly book XMPP: The Definitive Guide by Peter Saint-Andre, Kevin Smith, and Remko Tronçon. The original source code for the book's examples can be found at http://github.com/remko/xmpp-tdg. An updated version of the source code, maintained to stay current with the latest Slixmpp release, is available at http://github.com/legastero/xmpp-tdg.

However, since publication, Slixmpp has advanced from version 0.2.1 to version 1.0 and there have been several major API changes. The most notable is the introduction of *stanza objects* which have simplified and standardized interactions with the XMPP XML stream.

What follows is a walk-through of *The Definitive Guide* highlighting the changes needed to make the code examples work with version 1.0 of Slixmpp. These changes have been kept to a minimum to preserve the correlation with the book's explanations, so be aware that some code may not use current best practices.

4.2.1 Example 2-2. (Page 26)

Implementation of a basic bot that echoes all incoming messages back to its sender.

The echo bot example requires a change to the `handleIncomingMessage` method to reflect the use of the `Message` *stanza object*. The `"jid"` field of the message object should now be `"from"` to match the `from` attribute of the actual XML message stanza. Likewise, `"message"` changes to `"body"` to match the `body` element of the message stanza.

Updated Code

```
def handleIncomingMessage(self, message):
    self.xmpp.send_message(message["from"], message["body"])
```

View full source (1) | View original code (1)

4.2.2 Example 14-1. (Page 215)

CheshiR IM bot implementation.

The main event handling method in the Bot class is meant to process both message events and presence update events. With the new changes in Slixmpp 1.0, extracting a CheshiR status "message" from both types of stanzas requires accessing different attributes. In the case of a message stanza, the `"body"` attribute would contain the CheshiR message. For a presence event, the information is stored in the `"status"` attribute. To handle both cases, we can test the type of the given event object and look up the proper attribute based on the type.

Like in the EchoBot example, the expression `event["jid"]` needs to change to `event["from"]` in order to get a JID object for the stanza's sender. Because other functions in CheshiR assume that the JID is a string, the `jid` attribute is used to access the string version of the JID. A check is also added in case `user` is `None`, but the check could (and probably should) be placed in `addMessageFromUser`.

Another change is needed in `handleMessageAddedToBackend` where an HTML-IM response is created. The HTML content should be enclosed in a single element, such as a `<p>` tag.

Updated Code

```
def handleIncomingXMPPEvent(self, event):
  msgLocations = {slixmpp.stanza.presence.Presence: "status",
                  slixmpp.stanza.message.Message: "body"}

  message = event[msgLocations[type(event)]]
  user = self.backend.getUserFromJID(event["from"].jid)
  if user is not None:
    self.backend.addMessageFromUser(message, user)

def handleMessageAddedToBackend(self, message) :
  body = message.user + ": " + message.text
  htmlBody = "<p><a href='%(uri)s'>%(user)s</a>: %(message)s</p>" % {
    "uri": self.url + "/" + message.user,
    "user" : message.user, "message" : message.text }
  for subscriberJID in self.backend.getSubscriberJIDs(message.user) :
    self.xmpp.send_message(subscriberJID, body, mhtml=htmlBody)
```

View full source (2) | View original code (2)

4.2.3 Example 14-3. (Page 217)

Configurable CheshiR IM bot implementation.

Note: Since the CheshiR examples build on each other, see previous sections for corrections to code that is not marked as new in the book example.

The main difference for the configurable IM bot is the handling for the data form in `handleConfigurationCommand`. The test for equality with the string `"1"` is no longer required; Slixmpp converts boolean data form fields to the values `True` and `False` automatically.

For the method `handleIncomingXMPPPresence`, the attribute `"jid"` is again converted to `"from"` to get a JID object for the presence stanza's sender, and the `jid` attribute is used to access the string version of that JID object. A check is also added in case `user` is `None`, but the check could (and probably should) be placed in `getShouldMonitorPresenceFromUser`.

Updated Code

```python
def handleConfigurationCommand(self, form, sessionId):
  values = form.getValues()
  monitorPresence =values["monitorPresence"]
  jid = self.xmpp.plugin["xep_0050"].sessions[sessionId]["jid"]
  user = self.backend.getUserFromJID(jid)
  self.backend.setShouldMonitorPresenceFromUser(user, monitorPresence)

def handleIncomingXMPPPresence(self, event):
  user = self.backend.getUserFromJID(event["from"].jid)
  if user is not None:
    if self.backend.getShouldMonitorPresenceFromUser(user):
      self.handleIncomingXMPPEvent(event)
```

View full source (3) | View original code (3)

4.2.4 Example 14-4. (Page 220)

CheshiR IM server component implementation.

Note: Since the CheshiR examples build on each other, see previous sections for corrections to code that is not marked as new in the book example.

Like several previous examples, a needed change is to replace `subscription["from"]` with `subscription["from"].jid` because the `BaseXMPP` method `make_presence` requires the JID to be a string.

A correction needs to be made in `handleXMPPPresenceProbe` because a line was left out of the original implementation; the variable `user` is undefined. The JID of the user can be extracted from the presence stanza's `from` attribute.

Since this implementation of CheshiR uses an XMPP component, it must include a `from` attribute in all messages that it sends. Adding the `from` attribute is done by including `mfrom=self.xmpp.jid` in calls to `self.xmpp.send_message`.

Updated Code

```
def handleXMPPPresenceProbe(self, event) :
  self.xmpp.send_presence(pto = event["from"])

def handleXMPPPresenceSubscription(self, subscription) :
  if subscription["type"] == "subscribe" :
    userJID = subscription["from"].jid
    self.xmpp.send_presence_subscription(pto=userJID, ptype="subscribed")
    self.xmpp.send_presence(pto = userJID)
    self.xmpp.send_presence_subscription(pto=userJID, ptype="subscribe")

def handleMessageAddedToBackend(self, message) :
  body = message.user + ": " + message.text
  for subscriberJID in self.backend.getSubscriberJIDs(message.user) :
    self.xmpp.send_message(subscriberJID, body, mfrom=self.xmpp.jid)
```

View full source (4) | View original code (4)

4.2.5 Example 14-6. (Page 223)

CheshiR IM server component with in-band registration support.

Note: Since the CheshiR examples build on each other, see previous sections for corrections to code that is not marked as new in the book example.

After applying the changes from Example 14-4 above, the registrable component implementation should work correctly.

Tip: To see how to implement in-band registration as a Slixmpp plugin, see the tutorial tutorial-create-plugin.

View full source (5) | View original code (5)

4.2.6 Example 14-7. (Page 225)

Extended CheshiR IM server component implementation.

Note: Since the CheshiR examples build on each other, see previous sections for corrections to code that is not marked as new in the book example.

While the final code example can look daunting with all of the changes made, it requires very few modifications to work with the latest version of Slixmpp. Most differences are the result of CheshiR's backend functions expecting JIDs to be strings so that they can be stripped to bare JIDs. To resolve these, use the `jid` attribute of the JID objects. Also, references to `"message"` and `"jid"` attributes need to be changed to either `"body"` or `"status"`, and either `"from"` or `"to"` depending on if the object is a message or presence stanza and which of the JIDs from the stanza is needed.

Updated Code

```
def handleIncomingXMPPMessage(self, event) :
  message = self.addRecipientToMessage(event["body"], event["to"].jid)
  user = self.backend.getUserFromJID(event["from"].jid)
  self.backend.addMessageFromUser(message, user)

def handleIncomingXMPPPresence(self, event) :
  if event["to"].jid == self.componentDomain :
    user = self.backend.getUserFromJID(event["from"].jid)
    self.backend.addMessageFromUser(event["status"], user)

...

def handleXMPPPresenceSubscription(self, subscription) :
  if subscription["type"] == "subscribe" :
    userJID = subscription["from"].jid
    user = self.backend.getUserFromJID(userJID)
    contactJID = subscription["to"]
    self.xmpp.send_presence_subscription(
        pfrom=contactJID, pto=userJID, ptype="subscribed", pnick=user)
    self.sendPresenceOfContactToUser(contactJID=contactJID, userJID=userJID)
    if contactJID == self.componentDomain :
      self.sendAllContactSubscriptionRequestsToUser(userJID)
```

View full source (6) | View original code (6)

4.3 How to Work with Stanza Objects

4.3.1 Defining Stanza Interfaces

4.3.2 Creating Stanza Plugins

4.3.3 Creating a Stanza Extension

4.3.4 Overriding a Parent Stanza

4.4 Creating a Slixmpp Plugin

One of the goals of Slixmpp is to provide support for every draft or final XMPP extension (XEP). To do this, Slixmpp has a plugin mechanism for adding the functionalities required by each XEP. But even though plugins were made to quickly implement and prototype the official XMPP extensions, there is no reason you can't create your own plugin to implement your own custom XMPP-based protocol.

This guide will help walk you through the steps to implement a rudimentary version of XEP-0077 In-band Registration. In-band registration was implemented in example 14-6 (page 223) of XMPP: The Definitive Guide because there was no Slixmpp plugin for XEP-0077 at the time of writing. We will partially fix that issue here by turning the example implementation from *XMPP: The Definitive Guide* into a plugin. Again, note that this will not a complete implementation, and a different, more robust, official plugin for XEP-0077 may be added to Slixmpp in the future.

Note: The example plugin created in this guide is for the server side of the registration process only. It will **NOT** be able to register new accounts on an XMPP server.

4.4.1 First Steps

Every plugin inherits from the class `BasePlugin <slixmpp.plugins.base.BasePlugin`, and must include a `plugin_init` method. While the plugins distributed with Slixmpp must be placed in the plugins directory `slixmpp/plugins` to be loaded, custom plugins may be loaded from any module. To do so, use the following form when registering the plugin:

```
self.register_plugin('myplugin', module=mod_containing_my_plugin)
```

The plugin name must be the same as the plugin's class name.

Now, we can open our favorite text editors and create `xep_0077.py` in `Slixmpp/slixmpp/plugins`. We want to do some basic house-keeping and declare the name and description of the XEP we are implementing. If you are creating your own custom plugin, you don't need to include the `xep` attribute.

```
"""
Creating a Slixmpp Plugin

This is a minimal implementation of XEP-0077 to serve
as a tutorial for creating Slixmpp plugins.
"""

from slixmpp.plugins.base import BasePlugin

class xep_0077(BasePlugin):
    """
    XEP-0077 In-Band Registration
    """

    def plugin_init(self):
        self.description = "In-Band Registration"
        self.xep = "0077"
```

Now that we have a basic plugin, we need to edit `slixmpp/plugins/__init__.py` to include our new plugin by adding `'xep_0077'` to the `__all__` declaration.

4.4.2 Interacting with Other Plugins

In-band registration is a feature that should be advertised through Service Discovery. To do that, we tell the `xep_0030` plugin to add the `"jabber:iq:register"` feature. We put this call in a method named `post_init` which will be called once the plugin has been loaded; by doing so we advertise that we can do registrations only after we finish activating the plugin.

The `post_init` method needs to call `BasePlugin.post_init(self)` which will mark that `post_init` has been called for the plugin. Once the Slixmpp object begins processing, `post_init` will be called on any plugins that have not already run `post_init`. This allows you to register plugins and their dependencies without needing to worry about the order in which you do so.

Note: by adding this call we have introduced a dependency on the XEP-0030 plugin. Be sure to register `'xep_0030'` as well as `'xep_0077'`. Slixmpp does not automatically load plugin dependencies for you.

```
def post_init(self):
    BasePlugin.post_init(self)
    self.xmpp['xep_0030'].add_feature("jabber:iq:register")
```

4.4.3 Creating Custom Stanza Objects

Now, the IQ stanzas needed to implement our version of XEP-0077 are not very complex, and we could just interact with the XML objects directly just like in the *XMPP: The Definitive Guide* example. However, creating custom stanza objects is good practice.

We will create a new `Registration` stanza. Following the *XMPP: The Definitive Guide* example, we will add support for a username and password field. We also need two flags: `registered` and `remove`. The `registered` flag is sent when an already registered user attempts to register, along with their registration data. The `remove` flag is a request to unregister a user's account.

Adding additional fields specified in XEP-0077 will not be difficult and is left as an exercise for the reader.

Our `Registration` class needs to start with a few descriptions of its behaviour:

- **`namespace`** The namespace our stanza object lives in. In this case, `"jabber:iq:register"`.
- **`name`** The name of the root XML element. In this case, the `query` element.
- **`plugin_attrib`** The name to access this type of stanza. In particular, given a registration stanza, the `Registration` object can be found using: `iq_object['register']`.
- **`interfaces`** A list of dictionary-like keys that can be used with the stanza object. When using `"key"`, if there exists a method of the form `getKey`, `setKey`, or``delKey`` (depending on context) then the result of calling that method will be returned. Otherwise, the value of the attribute `key` of the main stanza element is returned if one exists.

  Note: The accessor methods currently use title case, and not camel case. Thus if you need to access an item named `"methodName"` you will need to use `getMethodname`. This naming convention might change to full camel case in a future version of Slixmpp.

- **`sub_interfaces`** A subset of `interfaces`, but these keys map to the text of any subelements that are direct children of the main stanza element. Thus, referencing `iq_object['register']['username']` will either execute `getUsername` or return the value in the `username` element of the query.

  If you need to access an element, say `elem`, that is not a direct child of the main stanza element, you will need to add `getElem`, `setElem`, and `delElem`. See the note above about naming conventions.

```
from slixmpp.xmlstream import ElementBase, ET, JID, register_stanza_plugin
from slixmpp import Iq

class Registration(ElementBase):
    namespace = 'jabber:iq:register'
    name = 'query'
    plugin_attrib = 'register'
    interfaces = {'username', 'password', 'registered', 'remove'}
    sub_interfaces = interfaces

    def getRegistered(self):
        present = self.xml.find('{%s}registered' % self.namespace)
        return present is not None

    def getRemove(self):
```

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```
        present = self.xml.find('{%s}remove' % self.namespace)
        return present is not None

    def setRegistered(self, registered):
        if registered:
            self.addField('registered')
        else:
            del self['registered']

    def setRemove(self, remove):
        if remove:
            self.addField('remove')
        else:
            del self['remove']

    def addField(self, name):
        itemXML = ET.Element('{%s}%s' % (self.namespace, name))
        self.xml.append(itemXML)
```

Setting a `sub_interface` attribute to `""` will remove that subelement. Since we want to include empty registration fields in our form, we need the `addField` method to add the empty elements.

Since the `registered` and `remove` elements are just flags, we need to add custom logic to enforce the binary behavior.

4.4.4 Extracting Stanzas from the XML Stream

Now that we have a custom stanza object, we need to be able to detect when we receive one. To do this, we register a stream handler that will pattern match stanzas off of the XML stream against our stanza object's element name and namespace. To do so, we need to create a `Callback` object which contains an XML fragment that can identify our stanza type. We can add this handler registration to our `plugin_init` method.

Also, we need to associate our `Registration` class with IQ stanzas; that requires the use of the `register_stanza_plugin` function (in `slixmpp.xmlstream.stanzabase`) which takes the class of a parent stanza type followed by the substanza type. In our case, the parent stanza is an IQ stanza, and the substanza is our registration query.

The `__handleRegistration` method referenced in the callback will be our handler function to process registration requests.

```
def plugin_init(self):
    self.description = "In-Band Registration"
    self.xep = "0077"

    self.xmpp.register_handler(
      Callback('In-Band Registration',
        MatchXPath('{%s}iq/{jabber:iq:register}query' % self.xmpp.default_ns),
        self.__handleRegistration))
    register_stanza_plugin(Iq, Registration)
```

4.4.5 Handling Incoming Stanzas and Triggering Events

There are six situations that we need to handle to finish our implementation of XEP-0077.

Registration Form Request from a New User:

```
<iq type="result">
 <query xmlns="jabber:iq:register">
  <username />
  <password />
 </query>
</iq>
```

Registration Form Request from an Existing User:

```
<iq type="result">
 <query xmlns="jabber:iq:register">
  <registered />
  <username>Foo</username>
  <password>hunter2</password>
 </query>
</iq>
```

Unregister Account:

```
<iq type="result">
 <query xmlns="jabber:iq:register" />
</iq>
```

Incomplete Registration:

```
<iq type="error">
  <query xmlns="jabber:iq:register">
    <username>Foo</username>
  </query>
 <error code="406" type="modify">
  <not-acceptable xmlns="urn:ietf:params:xml:ns:xmpp-stanzas" />
 </error>
</iq>
```

Conflicting Registrations:

```
<iq type="error">
 <query xmlns="jabber:iq:register">
  <username>Foo</username>
  <password>hunter2</password>
 </query>
 <error code="409" type="cancel">
  <conflict xmlns="urn:ietf:params:xml:ns:xmpp-stanzas" />
 </error>
</iq>
```

Successful Registration:

```
<iq type="result">
 <query xmlns="jabber:iq:register" />
</iq>
```

Cases 1 and 2: Registration Requests

Responding to registration requests depends on if the requesting user already has an account. If there is an account, the response should include the `registered` flag and the user's current registration information. Otherwise, we just send the fields for our registration form.

We will handle both cases by creating a `sendRegistrationForm` method that will create either an empty of full form depending on if we provide it with user data. Since we need to know which form fields to include (especially if we add support for the other fields specified in XEP-0077), we will also create a method `setForm` which will take the names of the fields we wish to include.

```python
def plugin_init(self):
    self.description = "In-Band Registration"
    self.xep = "0077"
    self.form_fields = ('username', 'password')
    ... remainder of plugin_init

...

def __handleRegistration(self, iq):
    if iq['type'] == 'get':
        # Registration form requested
        userData = self.backend[iq['from'].bare]
        self.sendRegistrationForm(iq, userData)

def setForm(self, *fields):
    self.form_fields = fields

def sendRegistrationForm(self, iq, userData=None):
    reg = iq['register']
    if userData is None:
        userData = {}
    else:
        reg['registered'] = True

    for field in self.form_fields:
        data = userData.get(field, '')
        if data:
            # Add field with existing data
            reg[field] = data
        else:
            # Add a blank field
            reg.addField(field)

    iq.reply().set_payload(reg.xml)
    iq.send()
```

Note how we are able to access our `Registration` stanza object with `iq['register']`.

A User Backend

You might have noticed the reference to `self.backend`, which is an object that abstracts away storing and retrieving user information. Since it is not much more than a dictionary, we will leave the implementation details to the final, full source code example.

Case 3: Unregister an Account

The next simplest case to consider is responding to a request to remove an account. If we receive a `remove` flag, we instruct the backend to remove the user's account. Since your application may need to know about when users are registered or unregistered, we trigger an event using `self.xmpp.event('unregister_user', iq)`. See the component examples below for how to respond to that event.

```
def __handleRegistration(self, iq):
   if iq['type'] == 'get':
       # Registration form requested
       userData = self.backend[iq['from'].bare]
       self.sendRegistrationForm(iq, userData)
   elif iq['type'] == 'set':
       # Remove an account
       if iq['register']['remove']:
           self.backend.unregister(iq['from'].bare)
           self.xmpp.event('unregistered_user', iq)
           iq.reply().send()
           return
```

Case 4: Incomplete Registration

For the next case we need to check the user's registration to ensure it has all of the fields we wanted. The simple option that we will use is to loop over the field names and check each one; however, this means that all fields we send to the user are required. Adding optional fields is left to the reader.

Since we have received an incomplete form, we need to send an error message back to the user. We have to send a few different types of errors, so we will also create a `_sendError` method that will add the appropriate `error` element to the IQ reply.

```
def __handleRegistration(self, iq):
    if iq['type'] == 'get':
        # Registration form requested
        userData = self.backend[iq['from'].bare]
        self.sendRegistrationForm(iq, userData)
    elif iq['type'] == 'set':
        if iq['register']['remove']:
            # Remove an account
            self.backend.unregister(iq['from'].bare)
            self.xmpp.event('unregistered_user', iq)
            iq.reply().send()
            return

        for field in self.form_fields:
            if not iq['register'][field]:
                # Incomplete Registration
                self._sendError(iq, '406', 'modify', 'not-acceptable'
                                "Please fill in all fields.")
```

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```
                return

...

def _sendError(self, iq, code, error_type, name, text=''):
    iq.reply().set_payload(iq['register'].xml)
    iq.error()
    iq['error']['code'] = code
    iq['error']['type'] = error_type
    iq['error']['condition'] = name
    iq['error']['text'] = text
    iq.send()
```

Cases 5 and 6: Conflicting and Successful Registration

We are down to the final decision on if we have a successful registration. We send the user's data to the backend with the `self.backend.register` method. If it returns `True`, then registration has been successful. Otherwise, there has been a conflict with usernames and registration has failed. Like with unregistering an account, we trigger an event indicating that a user has been registered by using `self.xmpp.event('registered_user', iq)`. See the component examples below for how to respond to this event.

```
def __handleRegistration(self, iq):
    if iq['type'] == 'get':
        # Registration form requested
        userData = self.backend[iq['from'].bare]
        self.sendRegistrationForm(iq, userData)
    elif iq['type'] == 'set':
        if iq['register']['remove']:
            # Remove an account
            self.backend.unregister(iq['from'].bare)
            self.xmpp.event('unregistered_user', iq)
            iq.reply().send()
            return

        for field in self.form_fields:
            if not iq['register'][field]:
                # Incomplete Registration
                self._sendError(iq, '406', 'modify', 'not-acceptable',
                                "Please fill in all fields.")
                return

        if self.backend.register(iq['from'].bare, iq['register']):
            # Successful registration
            self.xmpp.event('registered_user', iq)
            iq.reply().set_payload(iq['register'].xml)
            iq.send()
        else:
            # Conflicting registration
            self._sendError(iq, '409', 'cancel', 'conflict',
                            "That username is already taken.")
```

4.4.6 Example Component Using the XEP-0077 Plugin

Alright, the moment we've been working towards - actually using our plugin to simplify our other applications. Here is a basic component that simply manages user registrations and sends the user a welcoming message when they register, and a farewell message when they delete their account.

Note that we have to register the `'xep_0030'` plugin first, and that we specified the form fields we wish to use with `self.xmpp.plugin['xep_0077'].setForm('username', 'password')`.

```
import slixmpp.componentxmpp

class Example(slixmpp.componentxmpp.ComponentXMPP):

    def __init__(self, jid, password):
        slixmpp.componentxmpp.ComponentXMPP.__init__(self, jid, password, 'localhost',
↪ 8888)

        self.register_plugin('xep_0030')
        self.register_plugin('xep_0077')
        self.plugin['xep_0077'].setForm('username', 'password')

        self.add_event_handler("registered_user", self.reg)
        self.add_event_handler("unregistered_user", self.unreg)

    def reg(self, iq):
        msg = "Welcome! %s" % iq['register']['username']
        self.send_message(iq['from'], msg, mfrom=self.fulljid)

    def unreg(self, iq):
        msg = "Bye! %s" % iq['register']['username']
        self.send_message(iq['from'], msg, mfrom=self.fulljid)
```

Congratulations! We now have a basic, functioning implementation of XEP-0077.

4.4.7 Complete Source Code for XEP-0077 Plugin

Here is a copy of a more complete implementation of the plugin we created, but with some additional registration fields implemented.

```
"""
Creating a Slixmpp Plugin

This is a minimal implementation of XEP-0077 to serve
as a tutorial for creating Slixmpp plugins.
"""

from slixmpp.plugins.base import BasePlugin
from slixmpp.xmlstream.handler.callback import Callback
from slixmpp.xmlstream.matcher.xpath import MatchXPath
from slixmpp.xmlstream import ElementBase, ET, JID, register_stanza_plugin
from slixmpp import Iq
import copy


class Registration(ElementBase):
    namespace = 'jabber:iq:register'
```

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```
    name = 'query'
    plugin_attrib = 'register'
    interfaces = {'username', 'password', 'email', 'nick', 'name',
                  'first', 'last', 'address', 'city', 'state', 'zip',
                  'phone', 'url', 'date', 'misc', 'text', 'key',
                  'registered', 'remove', 'instructions'}
    sub_interfaces = interfaces

    def getRegistered(self):
        present = self.xml.find('{%s}registered' % self.namespace)
        return present is not None

    def getRemove(self):
        present = self.xml.find('{%s}remove' % self.namespace)
        return present is not None

    def setRegistered(self, registered):
        if registered:
            self.addField('registered')
        else:
            del self['registered']

    def setRemove(self, remove):
        if remove:
            self.addField('remove')
        else:
            del self['remove']

    def addField(self, name):
        itemXML = ET.Element('{%s}%s' % (self.namespace, name))
        self.xml.append(itemXML)


class UserStore(object):
    def __init__(self):
        self.users = {}

    def __getitem__(self, jid):
        return self.users.get(jid, None)

    def register(self, jid, registration):
        username = registration['username']

        def filter_usernames(user):
            return user != jid and self.users[user]['username'] == username

        conflicts = filter(filter_usernames, self.users.keys())
        if conflicts:
            return False

        self.users[jid] = registration
        return True

    def unregister(self, jid):
        del self.users[jid]

class xep_0077(BasePlugin):
```

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```
    """
    XEP-0077 In-Band Registration
    """

    def plugin_init(self):
        self.description = "In-Band Registration"
        self.xep = "0077"
        self.form_fields = ('username', 'password')
        self.form_instructions = ""
        self.backend = UserStore()

        self.xmpp.register_handler(
            Callback('In-Band Registration',
                     MatchXPath('{%s}iq/{jabber:iq:register}query' % self.xmpp.
↪default_ns),
                     self.__handleRegistration))
        register_stanza_plugin(Iq, Registration)

    def post_init(self):
        BasePlugin.post_init(self)
        self.xmpp['xep_0030'].add_feature("jabber:iq:register")

    def __handleRegistration(self, iq):
        if iq['type'] == 'get':
            # Registration form requested
            userData = self.backend[iq['from'].bare]
            self.sendRegistrationForm(iq, userData)
        elif iq['type'] == 'set':
            if iq['register']['remove']:
                # Remove an account
                self.backend.unregister(iq['from'].bare)
                self.xmpp.event('unregistered_user', iq)
                iq.reply().send()
                return

            for field in self.form_fields:
                if not iq['register'][field]:
                    # Incomplete Registration
                    self._sendError(iq, '406', 'modify', 'not-acceptable',
                                    "Please fill in all fields.")
                    return

            if self.backend.register(iq['from'].bare, iq['register']):
                # Successful registration
                self.xmpp.event('registered_user', iq)
                reply = iq.reply()
                reply.set_payload(iq['register'].xml)
                reply.send()
            else:
                # Conflicting registration
                self._sendError(iq, '409', 'cancel', 'conflict',
                                "That username is already taken.")

    def setForm(self, *fields):
        self.form_fields = fields

    def setInstructions(self, instructions):
```

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```
        self.form_instructions = instructions

    def sendRegistrationForm(self, iq, userData=None):
        reg = iq['register']
        if userData is None:
            userData = {}
        else:
            reg['registered'] = True

        if self.form_instructions:
            reg['instructions'] = self.form_instructions

        for field in self.form_fields:
            data = userData.get(field, '')
            if data:
                # Add field with existing data
                reg[field] = data
            else:
                # Add a blank field
                reg.addField(field)

        reply = iq.reply()
        reply.set_payload(reg.xml)
        reply.send()

    def _sendError(self, iq, code, error_type, name, text=''):
        reply = iq.reply()
        reply.set_payload(iq['register'].xml)
        reply.error()
        reply['error']['code'] = code
        reply['error']['type'] = error_type
        reply['error']['condition'] = name
        reply['error']['text'] = text
        reply.send()
```

4.5 How to Use Stream Features

4.6 How SASL Authentication Works

4.7 Using Stream Handlers and Matchers

4.8 Plugin Guides

4.8.1 XEP-0030: Working with Service Discovery

XMPP networks can be composed of many individual clients, components, and servers. Determining the JIDs for these entities and the various features they may support is the role of XEP-0030, Service Discovery, or "disco" for short.

Every XMPP entity may possess what are called nodes. A node is just a name for some aspect of an XMPP entity. For example, if an XMPP entity provides Ad-Hoc Commands, then it will have a node named `http://jabber.`

`org/protocol/commands` which will contain information about the commands provided. Other agents using these ad-hoc commands will interact with the information provided by this node. Note that the node name is just an identifier; there is no inherent meaning.

Working with service discovery is about creating and querying these nodes. According to XEP-0030, a node may contain three types of information: identities, features, and items. (Further, extensible, information types are defined in XEP-0128, but they are not yet implemented by Slixmpp.) Slixmpp provides methods to configure each of these node attributes.

Configuring Service Discovery

The design focus for the XEP-0030 plug-in is handling info and items requests in a dynamic fashion, allowing for complex policy decisions of who may receive information and how much, or use alternate backend storage mechanisms for all of the disco data. To do this, each action that the XEP-0030 plug-in performs is handed off to what is called a "node handler," which is just a callback function. These handlers are arranged in a hierarchy that allows for a single handler to manage an entire domain of JIDs (say for a component), while allowing other handler functions to override that global behaviour for certain JIDs, or even further limited to only certain JID and node combinations.

The Dynamic Handler Hierarchy

- `global`: (JID is None, node is None)

  Handlers assigned at this level for an action (such as `add_feature`) provide a global default behaviour when the action is performed.

- `jid`: (JID assigned, node is None)

  At this level, handlers provide a default behaviour for actions affecting any node owned by the JID in question. This level is most useful for component connections; there is effectively no difference between this and the global level when using a client connection.

- `node`: (JID assigned, node assigned)

  A handler for this level is responsible for carrying out an action for only one node, and is the most specific handler type available. These types of handlers will be most useful for "special" nodes that require special processing different than others provided by the JID, such as using access control lists, or consolidating data from other nodes.

Default Static Handlers

The XEP-0030 plug-in provides a default set of handlers that work using in-memory disco stanzas. Each handler simply performs the appropriate lookup or storage operation using these stanzas without doing any complex operations such as checking an ACL, etc.

You may find it necessary at some point to revert a particular node or JID to using the default, static handlers. To do so, use the method `restore_defaults()`. You may also elect to only convert a given set of actions instead.

Creating a Node Handler

Every node handler receives three arguments: the JID, the node, and a data parameter that will contain the relevant information for carrying out the handler's action, typically a dictionary.

The JID will always have a value, defaulting to `xmpp.boundjid.full` for components or `xmpp.boundjid.bare` for clients. The node value may be None or a string.

Only handlers for the actions `get_info` and `get_items` need to have return values. For these actions, DiscoInfo or DiscoItems stanzas are exepected as output. It is also acceptable for handlers for these actions to generate an XMPPError exception when necessary.

Example Node Handler:

Here is one of the built-in default handlers as an example:

```
def add_identity(self, jid, node, data):
    """
    Add a new identity to the JID/node combination.

    The data parameter may provide:
        category -- The general category to which the agent belongs.
        itype    -- A more specific designation with the category.
        name     -- Optional human readable name for this identity.
        lang     -- Optional standard xml:lang value.
    """
    self.add_node(jid, node)
    self.nodes[(jid, node)]['info'].add_identity(
            data.get('category', ''),
            data.get('itype', ''),
            data.get('name', None),
            data.get('lang', None))
```

Adding Identities, Features, and Items

In order to maintain some backwards compatibility, the methods `add_identity`, `add_feature`, and `add_item` do not follow the method signature pattern of the other API methods (i.e. jid, node, then other options), but rather retain the parameter orders from previous plug-in versions.

Adding an Identity

Adding an identity may be done using either the older positional notation, or with keyword parameters. The example below uses the keyword arguments, but in the same order as expected using positional arguments.

```
xmpp['xep_0030'].add_identity(category='client',
                              itype='bot',
                              name='Slixmpp',
                              node='foo',
                              jid=xmpp.boundjid.full,
                              lang='no')
```

The JID and node values determine which handler will be used to perform the `add_identity` action.

The `lang` parameter allows for adding localized versions of identities using the `xml:lang` attribute.

Adding a Feature

The position ordering for `add_feature()` is to include the feature, then specify the node and then the JID. The JID and node values determine which handler will be used to perform the `add_feature` action.

```
xmpp['xep_0030'].add_feature(feature='jabber:x:data',
                             node='foo',
                             jid=xmpp.boundjid.full)
```

Adding an Item

The parameters to `add_item()` are potentially confusing due to the fact that adding an item requires two JID and node combinations: the JID and node of the item itself, and the JID and node that will own the item.

```
xmpp['xep_0030'].add_item(jid='myitemjid@example.com',
                          name='An Item!',
                          node='owner_node',
                          subnode='item_node',
                          ijid=xmpp.boundjid.full)
```

Note: In this case, the owning JID and node are provided with the parameters `ijid` and `node`.

Performing Disco Queries

The methods `get_info()` and `get_items()` are used to query remote JIDs and their nodes for disco information. Since these methods are wrappers for sending Iq stanzas, they also accept all of the parameters of the `Iq.send()` method. The `get_items()` method may also accept the boolean parameter `iterator`, which when set to `True` will return an iterator object using the XEP-0059 plug-in.

```
info = yield from self['xep_0030'].get_info(jid='foo@example.com',
                                             node='bar',
                                             ifrom='baz@mycomponent.example.com',
                                             timeout=30)

items = self['xep_0030'].get_info(jid='foo@example.com',
                                  node='bar',
                                  iterator=True)
```

For more examples on how to use basic disco queries, check the `disco_browser.py` example in the `examples` directory.

Local Queries

In some cases, it may be necessary to query the contents of a node owned by the client itself, or one of a component's many JIDs. The same method is used as for normal queries, with two differences. First, the parameter `local=True` must be used. Second, the return value will be a DiscoInfo or DiscoItems stanza, not a full Iq stanza.

```
info = self['xep_0030'].get_info(node='foo', local=True)
items = self['xep_0030'].get_items(jid='somejid@mycomponent.example.com',
                                   node='bar',
                                   local=True)
```

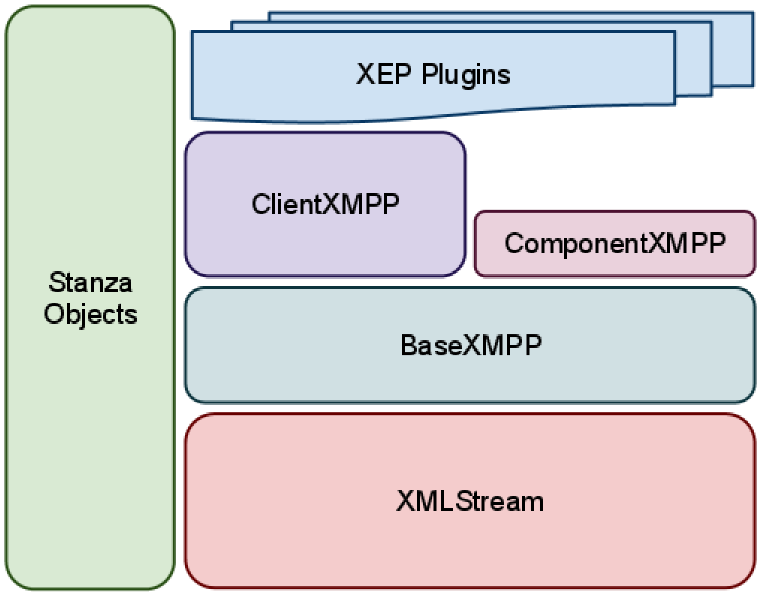
CHAPTER

FIVE

SLIXMPP ARCHITECTURE AND DESIGN

5.1 Slixmpp Architecture

The core of Slixmpp is contained in four classes: `XMLStream`, `BaseXMPP`, `ClientXMPP`, and `ComponentXMPP`. Along side this stack is a library for working with XML objects that eliminates most of the tedium of creating/manipulating XML.



5.1.1 The Foundation: XMLStream

`XMLStream` is a mostly XMPP-agnostic class whose purpose is to read and write from a bi-directional XML stream. It also allows for callback functions to execute when XML matching given patterns is received; these callbacks are also referred to as *stream handlers*. The class also provides a basic eventing system which can be triggered either manually or on a timed schedule.

The event loop

XMLStream instances inherit the `asyncio.BaseProtocol` class, and therefore do not have to handle reads and writes directly, but receive data through *data_received()* and write data in the socket transport.

Upon receiving data, *stream handlers* are run immediately, except if they are coroutines, in which case they are scheduled using `asyncio.async()`.

Event handlers (which are called inside *stream handlers*) work the same way.

How XML Text is Turned into Action

To demonstrate the flow of information, let's consider what happens when this bit of XML is received (with an assumed namespace of `jabber:client`):

```
<message to="user@example.com" from="friend@example.net">
  <body>Hej!</body>
</message>
```

1. **Convert XML strings into objects.**

   Incoming text is parsed and converted into XML objects (using ElementTree) which are then wrapped into what are referred to as *Stanza objects*. The appropriate class for the new object is determined using a map of namespaced element names to classes.

   Our incoming XML is thus turned into a *Message stanza object* because the namespaced element name `{jabber:client}message` is associated with the class *Message*.

2. **Match stanza objects to callbacks.**

   These objects are then compared against the stored patterns associated with the registered callback handlers.

   Each handler matching our *stanza object* is then added to a list.

3. **Processing callbacks**

   Every handler in the list is then called with the *stanza object* as a parameter; if the handler is a *CoroutineCallback* then it will be scheduled in the event loop using `asyncio.async()` instead of run.

4. **Raise Custom Events**

   Since a *stream handler* shouldn't block, if extensive processing for a stanza is required (such as needing to send and receive an *Iq* stanza), then custom events must be used. These events are not explicitly tied to the incoming XML stream and may be raised at any time.

   In contrast to *stream handlers*, these functions are referred to as *event handlers*.

   The code for `BaseXMPP._handle_message()` follows this pattern, and raises a `'message'` event

   ```
   self.event('message', msg)
   ```

5. **Process Custom Events**

   The *event handlers* are then executed, passing the stanza as the only argument.

   Note: Events may be raised without needing *stanza objects*. For example, you could use `self.event('custom', {'a': 'b'})`. You don't even need any arguments: `self.event('no_parameters')`. However, every event handler MUST accept at least one argument.

Finally, after a long trek, our message is handed off to the user's custom handler in order to do awesome stuff:

```
reply = msg.reply()
reply['body'] = "Hey! This is awesome!"
reply.send()
```

5.1.2 Raising XMPP Awareness: BaseXMPP

While *XMLStream* attempts to shy away from anything too XMPP specific, *BaseXMPP*'s sole purpose is to provide foundational support for sending and receiving XMPP stanzas. This support includes registering the basic message, presence, and iq stanzas, methods for creating and sending stanzas, and default handlers for incoming messages and keeping track of presence notifications.

The plugin system for adding new XEP support is also maintained by *BaseXMPP*.

5.1.3 ClientXMPP

ClientXMPP extends `BaseXMPP` with additional logic for connecting to an XMPP server by performing DNS lookups. It also adds support for stream features such as STARTTLS and SASL.

5.1.4 ComponentXMPP

ComponentXMPP is only a thin layer on top of *BaseXMPP* that implements the component handshake protocol.

5.2 Plugin Architecture

CHAPTER SIX

API REFERENCE

6.1 Event Index

attention

- **Data:** `Message`
- **Source:** *XEP_0224*

carbon_received

- **Data:** `Message`
- **Source:** *XEP_0280*

carbon_sent

- **Data:** `Message`
- **Source:** *XEP_0280*

changed_status

- **Data:** `Presence`
- **Source:** `RosterItem`

Triggered when a presence stanza is received from a JID with a show type different than the last presence stanza from the same JID.

changed_subscription

- **Data:** `Presence`
- **Source:** `BaseXMPP`

Triggered whenever a presence stanza with a type of `subscribe`, `subscribed`, `unsubscribe`, or `unsubscribed` is received.

Note that if the values `xmpp.auto_authorize` and `xmpp.auto_subscribe` are set to `True` or `False`, and not `None`, then Slixmpp will either accept or reject all subscription requests before your event handlers are called. Set these values to `None` if you wish to make more complex subscription decisions.

chatstate_active

- **Data:** `Message`
- **Source:** `xep_0085`

chatstate_composing

- **Data:** `Message`

- **Source:** `xep_0085`

chatstate_gone

- **Data:** `Message`
- **Source:** `xep_0085`

chatstate_inactive

- **Data:** `Message`
- **Source:** `xep_0085`

chatstate_paused

- **Data:** `Message`
- **Source:** `xep_0085`

command

- **Data:** `Iq`
- **Source:** *`XEP_0050`*

command_[action]

- **Data:** `Iq`
- **Source:** *`XEP_0050`*

connected

- **Data:** `{}`
- **Source:** `XMLstream`

Signal that a connection has been made with the XMPP server, but a session has not yet been established.

connection_failed

- **Data:** `{}` or `Failure Stanza` if available
- **Source:** `XMLstream`

Signal that a connection can not be established after number of attempts.

disco_info

- **Data:** `DiscoInfo`
- **Source:** `xep_0030`

Triggered whenever a `disco#info` result stanza is received.

disco_items

- **Data:** `DiscoItems`
- **Source:** `xep_0030`

Triggered whenever a `disco#items` result stanza is received.

disconnected

- **Data:** `{}`
- **Source:** `XMLstream`

Signal that the connection with the XMPP server has been lost.

entity_time

- **Data:**
- **Source:**

failed_auth

- **Data:** `{}`
- **Source:** `ClientXMPP`, `xep_0078`

Signal that the server has rejected the provided login credentials.

gmail_messages

- **Data:** `Iq`
- **Source:** `gmail_notify`

Signal that there are unread emails for the Gmail account associated with the current XMPP account.

gmail_notify

- **Data:** `{}`
- **Source:** `gmail_notify`

Signal that there are unread emails for the Gmail account associated with the current XMPP account.

got_offline

- **Data:** `Presence`
- **Source:** `RosterItem`

Signal that an unavailable presence stanza has been received from a JID.

got_online

- **Data:** `Presence`
- **Source:** `RosterItem`

If a presence stanza is received from a JID which was previously marked as offline, and the presence has a show type of '`chat`', '`dnd`', '`away`', or '`xa`', then this event is triggered as well.

groupchat_direct_invite

- **Data:** `Message`
- **Source:** `direct`

groupchat_invite

- **Data:** `Message`
- **Source:** *`XEP_0045`*

groupchat_message

- **Data:** `Message`
- **Source:** `xep_0045`

Triggered whenever a message is received from a multi-user chat room.

groupchat_presence

- **Data:** `Presence`

- **Source:** `xep_0045`

Triggered whenever a presence stanza is received from a user in a multi-user chat room.

groupchat_subject

- **Data:** `Message`
- **Source:** `xep_0045`

Triggered whenever the subject of a multi-user chat room is changed, or announced when joining a room.

ibb_stream_data

- **Data:** `IBBBytestream`
- **Source:** *`XEP_0047`*

ibb_stream_end

- **Data:** `IBBBytestream`
- **Source:** *`XEP_0047`*

ibb_stream_start

- **Data:** `IBBBytestream`
- **Source:** *`XEP_0047`*

jingle_message_accept

- **Data:** `Message`
- **Source:** *`XEP_0353`*

jingle_message_proceed

- **Data:** `Message`
- **Source:** *`XEP_0353`*

jingle_message_propose

- **Data:** `Message`
- **Source:** *`XEP_0353`*

jingle_message_reject

- **Data:** `Message`
- **Source:** *`XEP_0353`*

jingle_message_retract

- **Data:** `Message`
- **Source:** *`XEP_0353`*

killed

- **Data:**
- **Source:**

last_activity

- **Data:**
- **Source:**

marker

- **Data:** `Message`
- **Source:** *XEP_0333*

marker_acknowledged

- **Data:** `Message`
- **Source:** *XEP_0333*

marker_displayed

- **Data:** `Message`
- **Source:** *XEP_0333*

marker_received

- **Data:** `Message`
- **Source:** *XEP_0333*

message

- **Data:** `Message`
- **Source:** `BaseXMPP`

Makes the contents of message stanzas available whenever one is received. Be sure to check the message type in order to handle error messages.

message_correction

- **Data:** `Message`
- **Source:** *XEP_0308*

message_error

- **Data:** `Message`
- **Source:** `BaseXMPP`

Makes the contents of message stanzas available whenever one is received. Only handler messages with an `error` type.

message_form

- **Data:** `Form`
- **Source:** `xep_0004`

Currently the same as *message_xform*.

message_xform

- **Data:** `Form`
- **Source:** `xep_0004`

Triggered whenever a data form is received inside a message.

muc::[room]::got_offline

- **Data:** `Presence`
- **Source:** *XEP_0045*

muc::[room]::got_online

- **Data:** `Presence`
- **Source:** *`XEP_0045`*

muc::[room]::message

- **Data:** `Message`
- **Source:** *`XEP_0045`*

muc::[room]::presence

- **Data:** `Presence`
- **Source:** *`XEP_0045`*

presence_available

- **Data:** `Presence`
- **Source:** `BaseXMPP`

A presence stanza with a type of '`available`' is received.

presence_error

- **Data:** `Presence`
- **Source:** `BaseXMPP`

A presence stanza with a type of '`error`' is received.

presence_form

- **Data:** `Form`
- **Source:** `xep_0004`

This event is present in the XEP-0004 plugin code, but is currently not used.

presence_probe

- **Data:** `Presence`
- **Source:** `BaseXMPP`

A presence stanza with a type of '`probe`' is received.

presence_subscribe

- **Data:** `Presence`
- **Source:** `BaseXMPP`

A presence stanza with a type of '`subscribe`' is received.

presence_subscribed

- **Data:** `Presence`
- **Source:** `BaseXMPP`

A presence stanza with a type of '`subscribed`' is received.

presence_unavailable

- **Data:** `Presence`
- **Source:** `BaseXMPP`

A presence stanza with a type of '`unavailable`' is received.

presence_unsubscribe

- **Data:** `Presence`
- **Source:** `BaseXMPP`

A presence stanza with a type of '`unsubscribe`' is received.

presence_unsubscribed

- **Data:** `Presence`
- **Source:** `BaseXMPP`

A presence stanza with a type of '`unsubscribed`' is received.

pubsub_config

- **Data:** `Message`
- **Source:** *`XEP_0060`*

pubsub_delete

- **Data:** `Message`
- **Source:** *`XEP_0060`*

pubsub_publish

- **Data:** `Message`
- **Source:** *`XEP_0060`*

pubsub_purge

- **Data:** `Message`
- **Source:** *`XEP_0060`*

pubsub_retract

- **Data:** `Message`
- **Source:** *`XEP_0060`*

pubsub_subscription

- **Data:** `Message`
- **Source:** *`XEP_0060`*

reactions

- **Data:** `Message`
- **Source:** *`XEP_0444`*

receipt_received

- **Data:** `Message`
- **Source:** *`XEP_0184`*

room_activity

- **Data:** `Presence`
- **Source:** *`XEP_0437`*

room_activity_bare

- **Data:** `Presence`
- **Source:** *`XEP_0437`*

roster_update

- **Data:** `Roster`
- **Source:** `ClientXMPP`

An IQ result containing roster entries is received.

sent_presence

- **Data:** `{}`
- **Source:** `Roster`

Signal that an initial presence stanza has been written to the XML stream.

session_end

- **Data:** `{}`
- **Source:** `XMLstream`

Signal that a connection to the XMPP server has been lost and the current stream session has ended. Currently equivalent to *disconnected*, but implementations of XEP-0198: Stream Management distinguish between the two events.

Plugins that maintain session-based state should clear themselves when this event is fired.

session_start

- **Data:** `{}`
- **Source:** `ClientXMPP`, `ComponentXMPP` `XEP-0078`

Signal that a connection to the XMPP server has been made and a session has been established.

sm_disabled

- **Data:**
- **Source:** *`XEP_0198`*

sm_enabled

- **Data:** *`Enabled`*
- **Source:** *`XEP_0198`*

socket_error

- **Data:** `Socket` exception object
- **Source:** `XMLstream`

stream:[stream id]:[peer jid]

- **Data:** `IBBBytestream`
- **Source:** *`XEP_0047`*

stream_error

- **Data:** `StreamError`
- **Source:** `BaseXMPP`

6.2 ClientXMPP

class slixmpp.clientxmpp.**ClientXMPP**(*jid*, *password*, *plugin_config=None*, *plugin_whitelist=None*, *escape_quotes=True*, *sasl_mech=None*, *lang='en'*, ***kwargs*)

Slixmpp's client class. (Use only for good, not for evil.)

Typical use pattern:

```
xmpp = ClientXMPP('user@server.tld/resource', 'password')
# ... Register plugins and event handlers ...
xmpp.connect()
xmpp.process(block=False) # block=True will block the current
                          # thread. By default, block=False
```

Parameters

- **jid** – The JID of the XMPP user account.
- **password** – The password for the XMPP user account.
- **plugin_config** – A dictionary of plugin configurations.
- **plugin_whitelist** – A list of approved plugins that will be loaded when calling *register_plugins()*.
- **escape_quotes** – **Deprecated.**

connect(*address=()*, *use_ssl=False*, *force_starttls=True*, *disable_starttls=False*)

Connect to the XMPP server.

When no address is given, a SRV lookup for the server will be attempted. If that fails, the server user in the JID will be used.

Parameters

- **address** – A tuple containing the server's host and port.
- **force_starttls** – Indicates that negotiation should be aborted if the server does not advertise support for STARTTLS. Defaults to `True`.
- **disable_starttls** – Disables TLS for the connection. Defaults to `False`.
- **use_ssl** – Indicates if the older SSL connection method should be used. Defaults to `False`.

del_roster_item(*jid*)

Remove an item from the roster.

This is done by setting its subscription status to `'remove'`.

Parameters **jid** – The JID of the item to remove.

get_roster(*callback=None*, *timeout=None*, *timeout_callback=None*)

Request the roster from the server.

Parameters **callback** – Reference to a stream handler function. Will be executed when the roster is received.

register_feature(*name*, *handler*, *restart=False*, *order=5000*)

Register a stream feature handler.

Parameters

- **name** – The name of the stream feature.
- **handler** – The function to execute if the feature is received.
- **restart** – Indicates if feature processing should halt with this feature. Defaults to `False`.
- **order** – The relative ordering in which the feature should be negotiated. Lower values will be attempted earlier when available.

update_roster (*jid*, ***kwargs*)
Add or change a roster item.

Parameters

- **jid** – The JID of the entry to modify.
- **name** – The user's nickname for this JID.
- **subscription** – The subscription status. May be one of `'to'`, `'from'`, `'both'`, or `'none'`. If set to `'remove'`, the entry will be deleted.
- **groups** – The roster groups that contain this item.
- **timeout** – The length of time (in seconds) to wait for a response before continuing if blocking is used. Defaults to `response_timeout`.
- **callback** – Optional reference to a stream handler function. Will be executed when the roster is received. Implies `block=False`.

6.3 ComponentXMPP

class slixmpp.componentxmpp.**ComponentXMPP** (*jid*, *secret*, *host=None*, *port=None*, *plugin_config=None*, *plugin_whitelist=None*, *use_jc_ns=False*)
Slixmpp's basic XMPP server component.

Use only for good, not for evil.

Parameters

- **jid** – The JID of the component.
- **secret** – The secret or password for the component.
- **host** – The server accepting the component.
- **port** – The port used to connect to the server.
- **plugin_config** – A dictionary of plugin configurations.
- **plugin_whitelist** – A list of approved plugins that will be loaded when calling *register_plugins()*.
- **use_jc_ns** – Indicates if the `'jabber:client'` namespace should be used instead of the standard `'jabber:component:accept'` namespace. Defaults to `False`.

connect (*host=None*, *port=None*, *use_ssl=False*)
Connect to the server.

Parameters

- **host** – The name of the desired server for the connection. Defaults to `server_host`.

- **port** – Port to connect to on the server. Defauts to `server_port`.
- **use_ssl** – Flag indicating if SSL should be used by connecting directly to a port using SSL.

incoming_filter(*xml*)
Pre-process incoming XML stanzas by converting any `'jabber:client'` namespaced elements to the component's default namespace.

Parameters **xml** – The XML stanza to pre-process.

start_stream_handler(*xml*)
Once the streams are established, attempt to handshake with the server to be accepted as a component.

Parameters **xml** – The incoming stream's root element.

6.4 BaseXMPP

class `slixmpp.basexmpp.`**BaseXMPP**(*jid='', default_ns='jabber:client', **kwargs*)
The BaseXMPP class adapts the generic XMLStream class for use with XMPP. It also provides a plugin mechanism to easily extend and add support for new XMPP features.

Parameters **default_ns** – Ensure that the correct default XML namespace is used during initialization.

Iq(**args, **kwargs*)
Create an Iq stanza associated with this stream.

Message(**args, **kwargs*)
Create a Message stanza associated with this stream.

Presence(**args, **kwargs*)
Create a Presence stanza associated with this stream.

api
The API registry is a way to process callbacks based on JID+node combinations. Each callback in the registry is marked with:

- An API name, e.g. xep_0030
- The name of an action, e.g. get_info
- The JID that will be affected
- The node that will be affected

API handlers with no JID or node will act as global handlers, while those with a JID and no node will service all nodes for a JID, and handlers with both a JID and node will be used only for that specific combination. The handler that provides the most specificity will be used.

property auto_authorize
Auto accept or deny subscription requests.

If `True`, auto accept subscription requests. If `False`, auto deny subscription requests. If `None`, don't automatically respond.

property auto_subscribe
Auto send requests for mutual subscriptions.

If `True`, auto send mutual subscription requests.

boundjid
The JabberID (JID) used by this connection, as set after session binding. This may even be a different bare JID than what was requested.

client_roster
The single roster for the bound JID. This is the equivalent of:

```
self.roster[self.boundjid.bare]
```

exception(*exception*)
Process any uncaught exceptions, notably `IqError` and `IqTimeout` exceptions.

Parameters **exception** – An unhandled `Exception` object.

property fulljid
Attribute accessor for full jid

get(*key*, *default*)
Return a plugin given its name, if it has been registered.

is_component
The distinction between clients and components can be important, primarily for choosing how to handle the `'to'` and `'from'` JIDs of stanzas.

property jid
Attribute accessor for bare jid

make_iq(*id=0*, *ifrom=None*, *ito=None*, *itype=None*, *iquery=None*)
Create a new Iq stanza with a given Id and from JID.

Parameters

- **id** – An ideally unique ID value for this stanza thread. Defaults to 0.
- **ifrom** – The from `JID` to use for this stanza.
- **ito** – The destination `JID` for this stanza.
- **itype** – The `Iq`'s type, one of: `'get'`, `'set'`, `'result'`, or `'error'`.
- **iquery** – Optional namespace for adding a query element.

make_iq_error(*id*, *type='cancel'*, *condition='feature-not-implemented'*, *text=None*, *ito=None*, *ifrom=None*, *iq=None*)
Create an `Iq` stanza of type `'error'`.

Parameters

- **id** – An ideally unique ID value. May use `new_id()`.
- **type** – The type of the error, such as `'cancel'` or `'modify'`. Defaults to `'cancel'`.
- **condition** – The error condition. Defaults to `'feature-not-implemented'`.
- **text** – A message describing the cause of the error.
- **ito** – The destination `JID` for this stanza.
- **ifrom** – The `'from'` `JID` to use for this stanza.
- **iq** – Optionally use an existing stanza instead of generating a new one.

make_iq_get(*queryxmlns=None*, *ito=None*, *ifrom=None*, *iq=None*)
Create an `Iq` stanza of type `'get'`.

Optionally, a query element may be added.

Parameters

- **queryxmlns** – The namespace of the query to use.
- **ito** – The destination `JID` for this stanza.
- **ifrom** – The `'from'` `JID` to use for this stanza.
- **iq** – Optionally use an existing stanza instead of generating a new one.

make_iq_query(*iq=None*, *xmlns=''*, *ito=None*, *ifrom=None*)
Create or modify an `Iq` stanza to use the given query namespace.

Parameters

- **iq** – Optionally use an existing stanza instead of generating a new one.
- **xmlns** – The query's namespace.
- **ito** – The destination `JID` for this stanza.
- **ifrom** – The `'from'` `JID` to use for this stanza.

make_iq_result(*id=None*, *ito=None*, *ifrom=None*, *iq=None*)
Create an `Iq` stanza of type `'result'` with the given ID value.

Parameters

- **id** – An ideally unique ID value. May use `new_id()`.
- **ito** – The destination `JID` for this stanza.
- **ifrom** – The `'from'` `JID` to use for this stanza.
- **iq** – Optionally use an existing stanza instead of generating a new one.

make_iq_set(*sub=None*, *ito=None*, *ifrom=None*, *iq=None*)
Create an `Iq` stanza of type `'set'`.

Optionally, a substanza may be given to use as the stanza's payload.

Parameters

- **sub** – Either an *`ElementBase`* stanza object or an `Element` XML object to use as the `Iq`'s payload.
- **ito** – The destination `JID` for this stanza.
- **ifrom** – The `'from'` `JID` to use for this stanza.
- **iq** – Optionally use an existing stanza instead of generating a new one.

make_message(*mto*, *mbody=None*, *msubject=None*, *mtype=None*, *mhtml=None*, *mfrom=None*, *mnick=None*)
Create and initialize a new `Message` stanza.

Parameters

- **mto** – The recipient of the message.
- **mbody** – The main contents of the message.
- **msubject** – Optional subject for the message.
- **mtype** – The message's type, such as `'chat'` or `'groupchat'`.
- **mhtml** – Optional HTML body content in the form of a string.
- **mfrom** – The sender of the message. if sending from a client, be aware that some servers require that the full JID of the sender be used.

- **mnick** – Optional nickname of the sender.

make_presence(*pshow=None*, *pstatus=None*, *ppriority=None*, *pto=None*, *ptype=None*, *pfrom=None*, *pnick=None*)
Create and initialize a new `Presence` stanza.

Parameters

- **pshow** – The presence's show value.
- **pstatus** – The presence's status message.
- **ppriority** – This connection's priority.
- **pto** – The recipient of a directed presence.
- **ptype** – The type of presence, such as `'subscribe'`.
- **pfrom** – The sender of the presence.
- **pnick** – Optional nickname of the presence's sender.

make_query_roster(*iq=None*)
Create a roster query element.

Parameters **iq** – Optionally use an existing stanza instead of generating a new one.

max_redirects
The maximum number of consecutive see-other-host redirections that will be followed before quitting.

plugin
A dictionary mapping plugin names to plugins.

plugin_config
Configuration options for whitelisted plugins. If a plugin is registered without any configuration, and there is an entry here, it will be used.

plugin_whitelist
A list of plugins that will be loaded if *register_plugins()* is called.

process(*, *forever=True*, *timeout=None*)
Process all the available XMPP events (receiving or sending data on the socket(s), calling various registered callbacks, calling expired timers, handling signal events, etc). If timeout is None, this function will run forever. If timeout is a number, this function will return after the given time in seconds.

register_plugin(*plugin*, *pconfig=None*, *module=None*)
Register and configure a plugin for use in this stream.

Parameters

- **plugin** – The name of the plugin class. Plugin names must be unique.
- **pconfig** – A dictionary of configuration data for the plugin. Defaults to an empty dictionary.
- **module** – Optional refence to the module containing the plugin class if using custom plugins.

register_plugins()
Register and initialize all built-in plugins.

Optionally, the list of plugins loaded may be limited to those contained in *plugin_whitelist*.

Plugin configurations stored in *plugin_config* will be used.

requested_jid
The JabberID (JID) requested for this connection.

property resource
Attribute accessor for jid resource

roster
The main roster object. This roster supports multiple owner JIDs, as in the case for components. For clients which only have a single JID, see `client_roster`.

send_message(*mto*, *mbody*, *msubject=None*, *mtype=None*, *mhtml=None*, *mfrom=None*, *mnick=None*)
Create, initialize, and send a new `Message` stanza.

Parameters

- **mto** – The recipient of the message.
- **mbody** – The main contents of the message.
- **msubject** – Optional subject for the message.
- **mtype** – The message's type, such as `'chat'` or `'groupchat'`.
- **mhtml** – Optional HTML body content in the form of a string.
- **mfrom** – The sender of the message. if sending from a client, be aware that some servers require that the full JID of the sender be used.
- **mnick** – Optional nickname of the sender.

send_presence(*pshow=None*, *pstatus=None*, *ppriority=None*, *pto=None*, *pfrom=None*, *ptype=None*, *pnick=None*)
Create, initialize, and send a new `Presence` stanza.

Parameters

- **pshow** – The presence's show value.
- **pstatus** – The presence's status message.
- **ppriority** – This connection's priority.
- **pto** – The recipient of a directed presence.
- **ptype** – The type of presence, such as `'subscribe'`.
- **pfrom** – The sender of the presence.
- **pnick** – Optional nickname of the presence's sender.

send_presence_subscription(*pto*, *pfrom=None*, *ptype='subscribe'*, *pnick=None*)
Create, initialize, and send a new `Presence` stanza of type `'subscribe'`.

Parameters

- **pto** – The recipient of a directed presence.
- **pfrom** – The sender of the presence.
- **ptype** – The type of presence, such as `'subscribe'`.
- **pnick** – Optional nickname of the presence's sender.

sentpresence
Flag indicating that the initial presence broadcast has been sent. Until this happens, some servers may not behave as expected when sending stanzas.

property server
Attribute accessor for jid host

set_jid(*jid*)
Rip a JID apart and claim it as our own.

stanza
A reference to *slixmpp.stanza* to make accessing stanza classes easier.

start_stream_handler(*xml*)
Save the stream ID once the streams have been established.

Parameters xml – The incoming stream's root element.

stream_id
An identifier for the stream as given by the server.

use_message_ids
Messages may optionally be tagged with ID values. Setting *use_message_ids* to *True* will assign all outgoing messages an ID. Some plugin features require enabling this option.

use_origin_id
XEP-0359 <origin-id/> tag that gets added to <message/> stanzas.

use_presence_ids
Presence updates may optionally be tagged with ID values. Setting *use_message_ids* to *True* will assign all outgoing messages an ID.

property username
Attribute accessor for jid usernode

6.5 Exceptions

exception slixmpp.exceptions.**XMPPError**(*condition='undefined-condition'*, *text=''*, *etype='cancel'*, *extension=None*, *extension_ns=None*, *extension_args=None*, *clear=True*)
A generic exception that may be raised while processing an XMPP stanza to indicate that an error response stanza should be sent.

The exception method for stanza objects extending *RootStanza* will create an error stanza and initialize any additional substanzas using the extension information included in the exception.

Meant for use in Slixmpp plugins and applications using Slixmpp.

Extension information can be included to add additional XML elements to the generated error stanza.

Parameters

- **condition** – The XMPP defined error condition. Defaults to `'undefined-condition'`.
- **text** – Human readable text describing the error.
- **etype** – The XMPP error type, such as `'cancel'` or `'modify'`. Defaults to `'cancel'`.
- **extension** – Tag name of the extension's XML content.
- **extension_ns** – XML namespace of the extensions' XML content.
- **extension_args** – Content and attributes for the extension element. Same as the additional arguments to the `Element` constructor.
- **clear** – Indicates if the stanza's contents should be removed before replying with an error. Defaults to `True`.

format()
Format the error in a simple user-readable string.

exception slixmpp.exceptions.**IqError**(*iq*)
An exception raised when an Iq stanza of type 'error' is received after making a blocking send call.

iq
The `Iq` error result stanza.

exception slixmpp.exceptions.**IqTimeout**(*iq*)
An exception which indicates that an IQ request response has not been received within the alloted time window.

iq
The `Iq` stanza whose response did not arrive before the timeout expired.

6.6 Jabber IDs (JID)

class slixmpp.jid.**JID**(*jid=None*)
A representation of a Jabber ID, or JID.

Each JID may have three components: a user, a domain, and an optional resource. For example: user@domain/resource

When a resource is not used, the JID is called a bare JID. The JID is a full JID otherwise.

JID Properties:

full The string value of the full JID.

jid Alias for `full`.

bare The string value of the bare JID.

node The node portion of the JID.

user Alias for `node`.

local Alias for `node`.

username Alias for `node`.

domain The domain name portion of the JID.

server Alias for `domain`.

host Alias for `domain`.

resource The resource portion of the JID.

Parameters **jid** (*string*) – A string of the form `'[user@]domain[/resource]'`.

Raises **InvalidJID** –

unescape()
Return an unescaped JID object.

Using an unescaped JID is preferred for displaying JIDs to humans, and they should NOT be used for any other purposes than for presentation.

Returns `UnescapedJID`

New in version 1.1.10.

6.7 Stanza Objects

The *stanzabase* module provides a wrapper for the standard `ElementTree` module that makes working with XML less painful. Instead of having to manually move up and down an element tree and insert subelements and attributes, you can interact with an object that behaves like a normal dictionary or JSON object, which silently maps keys to XML attributes and elements behind the scenes.

6.7.1 Overview

The usefulness of this layer grows as the XML you have to work with becomes nested. The base unit here, *ElementBase*, can map to a single XML element, or several depending on how advanced of a mapping is desired from interface keys to XML structures. For example, a single *ElementBase* derived class could easily describe:

```
<message to="user@example.com" from="friend@example.com">
  <body>Hi!</body>
  <x:extra>
    <x:item>Custom item 1</x:item>
    <x:item>Custom item 2</x:item>
    <x:item>Custom item 3</x:item>
  </x:extra>
</message>
```

If that chunk of XML were put in the *ElementBase* instance `msg`, we could extract the data from the XML using:

```
>>> msg['extra']
['Custom item 1', 'Custom item 2', 'Custom item 3']
```

Provided we set up the handler for the `'extra'` interface to load the `<x:item>` element content into a list.

The key concept is that given an XML structure that will be repeatedly used, we can define a set of *interfaces* which when we read from, write to, or delete, will automatically manipulate the underlying XML as needed. In addition, some of these interfaces may in turn reference child objects which expose interfaces for particularly complex child elements of the original XML chunk.

See also:

Defining Stanza Interfaces.

Because the *stanzabase* module was developed as part of an XMPP library, these chunks of XML are referred to as *stanzas*, and in Slixmpp we refer to a subclass of *ElementBase* which defines the interfaces needed for interacting with a given *stanza* a *stanza object*.

To make dealing with more complicated and nested *stanzas* or XML chunks easier, *stanza objects* can be composed in two ways: as iterable child objects or as plugins. Iterable child stanzas, or *substanzas*, are accessible through a special `'substanzas'` interface. This option is useful for stanzas which may contain more than one of the same kind of element. When there is only one child element, the plugin method is more useful. For plugins, a parent stanza object delegates one of its XML child elements to the plugin stanza object. Here is an example:

```
<iq type="result">
  <query xmlns="http://jabber.org/protocol/disco#info">
    <identity category="client" type="bot" name="Slixmpp Bot" />
  </query>
</iq>
```

We can can arrange this stanza into two objects: an outer, wrapper object for dealing with the `<iq />` element and its attributes, and a plugin object to control the `<query />` payload element. If we give the plugin object the name `'disco_info'` (using its *ElementBase.plugin_attrib* value), then we can access the plugin as so:

```
>>> iq['disco_info']
'<query xmlns="http://jabber.org/protocol/disco#info">
  <identity category="client" type="bot" name="Slixmpp Bot" />
</query>'
```

We can then drill down through the plugin object's interfaces as desired:

```
>>> iq['disco_info']['identities']
[('client', 'bot', 'Slixmpp Bot')]
```

Plugins may also add new interfaces to the parent stanza object as if they had been defined by the parent directly, and can also override the behaviour of an interface defined by the parent.

See also:

- *Creating Stanza Plugins*
- *Creating a Stanza Extension*
- *Overriding a Parent Stanza*

6.7.2 Registering Stanza Plugins

`slixmpp.xmlstream.stanzabase.`**`register_stanza_plugin`**(*stanza*, *plugin*, *iterable=False*, *overrides=False*)

Associate a stanza object as a plugin for another stanza.

```
>>> from slixmpp.xmlstream import register_stanza_plugin
>>> register_stanza_plugin(Iq, CustomStanza)
```

Plugin stanzas marked as iterable will be included in the list of substanzas for the parent, using `parent['substanzas']`. If the attribute `plugin_multi_attrib` was defined for the plugin, then the substanza set can be filtered to only instances of the plugin class. For example, given a plugin class `Foo` with `plugin_multi_attrib = 'foos'` then:

```
parent['foos']
```

would return a collection of all `Foo` substanzas.

Parameters

- **`stanza`** (*`class`*) – The class of the parent stanza.
- **`plugin`** (*`class`*) – The class of the plugin stanza.
- **`iterable`** (*`bool`*) – Indicates if the plugin stanza should be included in the parent stanza's iterable `'substanzas'` interface results.
- **`overrides`** (*`bool`*) – Indicates if the plugin should be allowed to override the interface handlers for the parent stanza, based on the plugin's `overrides` field.

New in version 1.0-Beta1: Made `register_stanza_plugin` the default name. The prior `registerStanzaPlugin` function name remains as an alias.

6.7.3 ElementBase

class slixmpp.xmlstream.stanzabase.**ElementBase**(*xml=None*, *parent=None*)

The core of Slixmpp's stanza XML manipulation and handling is provided by ElementBase. ElementBase wraps XML ElementTree objects and enables access to the XML contents through dictionary syntax, similar in style to the Ruby XMPP library Blather's stanza implementation.

Stanzas are defined by their name, namespace, and interfaces. For example, a simplistic Message stanza could be defined as:

```
>>> class Message(ElementBase):
...     name = "message"
...     namespace = "jabber:client"
...     interfaces = {'to', 'from', 'type', 'body'}
...     sub_interfaces = {'body'}
```

The resulting Message stanza's contents may be accessed as so:

```
>>> message['to'] = "user@example.com"
>>> message['body'] = "Hi!"
>>> message['body']
"Hi!"
>>> del message['body']
>>> message['body']
""
```

The interface values map to either custom access methods, stanza XML attributes, or (if the interface is also in sub_interfaces) the text contents of a stanza's subelement.

Custom access methods may be created by adding methods of the form "getInterface", "setInterface", or "delInterface", where "Interface" is the titlecase version of the interface name.

Stanzas may be extended through the use of plugins. A plugin is simply a stanza that has a plugin_attrib value. For example:

```
>>> class MessagePlugin(ElementBase):
...     name = "custom_plugin"
...     namespace = "custom"
...     interfaces = {'useful_thing', 'custom'}
...     plugin_attrib = "custom"
```

The plugin stanza class must be associated with its intended container stanza by using register_stanza_plugin as so:

```
>>> register_stanza_plugin(Message, MessagePlugin)
```

The plugin may then be accessed as if it were built-in to the parent stanza:

```
>>> message['custom']['useful_thing'] = 'foo'
```

If a plugin provides an interface that is the same as the plugin's plugin_attrib value, then the plugin's interface may be assigned directly from the parent stanza, as shown below, but retrieving information will require all interfaces to be used, as so:

```
>>> # Same as using message['custom']['custom']
>>> message['custom'] = 'bar'
>>> # Must use all interfaces
```

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```
>>> message['custom']['custom']
'bar'
```

If the plugin sets *is_extension* to `True`, then both setting and getting an interface value that is the same as the plugin's plugin_attrib value will work, as so:

```
>>> message['custom'] = 'bar'  # Using is_extension=True
>>> message['custom']
'bar'
```

Parameters

- **xml** – Initialize the stanza object with an existing XML object.
- **parent** – Optionally specify a parent stanza object will contain this substanza.

__bool__()

Stanza objects should be treated as True in boolean contexts.

__copy__()

Return a copy of the stanza object that does not share the same underlying XML object.

__delitem__(*attrib*)

Delete the value of a stanza interface using dict-like syntax.

Example:

```
>>> msg['body'] = "Hi!"
>>> msg['body']
'Hi!'
>>> del msg['body']
>>> msg['body']
''
```

Stanza interfaces are typically mapped directly to the underlyig XML object, but can be overridden by the presence of a `del_attrib` method (or `del_foo` where the interface is named `'foo'`, etc).

The effect of deleting a stanza interface value named `foo` will be one of:

1. Call `del_foo` override handler, if it exists.
2. Call `del_foo`, if it exists.
3. Call `delFoo`, if it exists.
4. Delete `foo` element, if `'foo'` is in *sub_interfaces*.
5. Remove `foo` element if `'foo'` is in *bool_interfaces*.
6. Delete top level XML attribute named `foo`.
7. Remove the `foo` plugin, if it was loaded.
8. Do nothing.

Parameters **attrib** – The name of the affected stanza interface.

__eq__(*other*)

Compare the stanza object with another to test for equality.

Stanzas are equal if their interfaces return the same values, and if they are both instances of ElementBase.

Parameters **other** (ElementBase) – The stanza object to compare against.

__getitem__(*full_attrib*)

Return the value of a stanza interface using dict-like syntax.

Example:

```
>>> msg['body']
'Message contents'
```

Stanza interfaces are typically mapped directly to the underlying XML object, but can be overridden by the presence of a `get_attrib` method (or `get_foo` where the interface is named `'foo'`, etc).

The search order for interface value retrieval for an interface named `'foo'` is:

1. The list of substanzas (`'substanzas'`)
2. The result of calling the `get_foo` override handler.
3. The result of calling `get_foo`.
4. The result of calling `getFoo`.
5. The contents of the `foo` subelement, if `foo` is listed in *sub_interfaces*.
6. True or False depending on the existence of a `foo` subelement and `foo` is in *bool_interfaces*.
7. The value of the `foo` attribute of the XML object.
8. The plugin named `'foo'`
9. An empty string.

Parameters **full_attrib** (*string*) – The name of the requested stanza interface.

__init__(*xml=None*, *parent=None*)

Initialize self. See help(type(self)) for accurate signature.

__iter__()

Return an iterator object for the stanza's substanzas.

The iterator is the stanza object itself. Attempting to use two iterators on the same stanza at the same time is discouraged.

__len__()

Return the number of iterable substanzas in this stanza.

__ne__(*other*)

Compare the stanza object with another to test for inequality.

Stanzas are not equal if their interfaces return different values, or if they are not both instances of ElementBase.

Parameters **other** (ElementBase) – The stanza object to compare against.

__next__()

Return the next iterable substanza.

__repr__()

Use the stanza's serialized XML as its representation.

__setitem__(*attrib*, *value*)

Set the value of a stanza interface using dictionary-like syntax.

Example:

```
>>> msg['body'] = "Hi!"
>>> msg['body']
'Hi!'
```

Stanza interfaces are typically mapped directly to the underlying XML object, but can be overridden by the presence of a `set_attrib` method (or `set_foo` where the interface is named `'foo'`, etc).

The effect of interface value assignment for an interface named `'foo'` will be one of:

1. Delete the interface's contents if the value is None.
2. Call the `set_foo` override handler, if it exists.
3. Call `set_foo`, if it exists.
4. Call `setFoo`, if it exists.
5. Set the text of a `foo` element, if `'foo'` is in *`sub_interfaces`*.
6. Add or remove an empty subelement `foo` if `foo` is in *`bool_interfaces`*.
7. Set the value of a top level XML attribute named `foo`.
8. Attempt to pass the value to a plugin named `'foo'` using the plugin's `'foo'` interface.
9. Do nothing.

Parameters

- **`attrib`** (*`string`*) – The name of the stanza interface to modify.
- **`value`** – The new value of the stanza interface.

`__str__`(*top_level_ns=True*)
Return a string serialization of the underlying XML object.

See also:

XML Serialization

Parameters **`top_level_ns`** (*`bool`*) – Display the top-most namespace. Defaults to True.

`__weakref__`
list of weak references to the object (if defined)

`_del_attr`(*name*)
Remove a top level attribute of the XML object.

Parameters **`name`** – The name of the attribute.

`_del_sub`(*name*, *all=False*, *lang=None*)
Remove sub elements that match the given name or XPath.

If the element is in a path, then any parent elements that become empty after deleting the element may also be deleted if requested by setting all=True.

Parameters

- **`name`** – The name or XPath expression for the element(s) to remove.
- **`all`** (*`bool`*) – If True, remove all empty elements in the path to the deleted element. Defaults to False.

_get_attr(*name*, *default=''*)

Return the value of a top level attribute of the XML object.

In case the attribute has not been set, a default value can be returned instead. An empty string is returned if no other default is supplied.

Parameters

- **name** – The name of the attribute.
- **default** – Optional value to return if the attribute has not been set. An empty string is returned otherwise.

_get_stanza_values()

Return A JSON/dictionary version of the XML content exposed through the stanza's interfaces:

```
>>> msg = Message()
>>> msg.values
{'body': '', 'from': , 'mucnick': '', 'mucroom': '',
'to': , 'type': 'normal', 'id': '', 'subject': ''}
```

Likewise, assigning to `values` will change the XML content:

```
>>> msg = Message()
>>> msg.values = {'body': 'Hi!', 'to': 'user@example.com'}
>>> msg
'<message to="user@example.com"><body>Hi!</body></message>'
```

New in version 1.0-Beta1.

_get_sub_text(*name*, *default=''*, *lang=None*)

Return the text contents of a sub element.

In case the element does not exist, or it has no textual content, a default value can be returned instead. An empty string is returned if no other default is supplied.

Parameters

- **name** – The name or XPath expression of the element.
- **default** – Optional default to return if the element does not exists. An empty string is returned otherwise.

_set_attr(*name*, *value*)

Set the value of a top level attribute of the XML object.

If the new value is None or an empty string, then the attribute will be removed.

Parameters

- **name** – The name of the attribute.
- **value** – The new value of the attribute, or None or '' to remove it.

_set_stanza_values(*values*)

Set multiple stanza interface values using a dictionary.

Stanza plugin values may be set using nested dictionaries.

Parameters values – A dictionary mapping stanza interface with values. Plugin interfaces may accept a nested dictionary that will be used recursively.

New in version 1.0-Beta1.

_set_sub_text(*name*, *text=None*, *keep=False*, *lang=None*)
Set the text contents of a sub element.

In case the element does not exist, a element will be created, and its text contents will be set.

If the text is set to an empty string, or None, then the element will be removed, unless keep is set to True.

Parameters

- **name** – The name or XPath expression of the element.
- **text** – The new textual content of the element. If the text is an empty string or None, the element will be removed unless the parameter keep is True.
- **keep** – Indicates if the element should be kept if its text is removed. Defaults to False.

append(*item*)
Append either an XML object or a substanza to this stanza object.

If a substanza object is appended, it will be added to the list of iterable stanzas.

Allows stanza objects to be used like lists.

Parameters **item** – Either an XML object or a stanza object to add to this stanza's contents.

appendxml(*xml*)
Append an XML object to the stanza's XML.

The added XML will not be included in the list of iterable substanzas.

Parameters **xml** (*XML*) – The XML object to add to the stanza.

bool_interfaces = {}
A subset of *interfaces* which maps the presence of subelements to boolean values. Using this set allows for quickly checking for the existence of empty subelements like `<required />`.

New in version 1.1.

clear()
Remove all XML element contents and plugins.

Any attribute values will be preserved.

enable(*attrib*, *lang=None*)
Enable and initialize a stanza plugin.

Alias for *init_plugin()*.

Parameters **attrib** (*string*) – The *plugin_attrib* value of the plugin to enable.

get(*key*, *default=None*)
Return the value of a stanza interface.

If the found value is None or an empty string, return the supplied default value.

Allows stanza objects to be used like dictionaries.

Parameters

- **key** (*string*) – The name of the stanza interface to check.
- **default** – Value to return if the stanza interface has a value of `None` or `""`. Will default to returning None.

get_stanza_values()
Return A JSON/dictionary version of the XML content exposed through the stanza's interfaces:

```
>>> msg = Message()
>>> msg.values
{'body': '', 'from': , 'mucnick': '', 'mucroom': '',
'to': , 'type': 'normal', 'id': '', 'subject': ''}
```

Likewise, assigning to `values` will change the XML content:

```
>>> msg = Message()
>>> msg.values = {'body': 'Hi!', 'to': 'user@example.com'}
>>> msg
'<message to="user@example.com"><body>Hi!</body></message>'
```

New in version 1.0-Beta1.

init_plugin (*attrib*, *lang=None*, *existing_xml=None*, *reuse=True*)
Enable and initialize a stanza plugin.

Parameters **attrib** (*string*) – The `plugin_attrib` value of the plugin to enable.

interfaces = {'from', 'id', 'payload', 'to', 'type'}
The set of keys that the stanza provides for accessing and manipulating the underlying XML object. This set may be augmented with the `plugin_attrib` value of any registered stanza plugins.

is_extension = False
If you need to add a new interface to an existing stanza, you can create a plugin and set `is_extension = True`. Be sure to set the `plugin_attrib` value to the desired interface name, and that it is the only interface listed in `interfaces`. Requests for the new interface from the parent stanza will be passed to the plugin directly.

New in version 1.0-Beta5.

iterables
A list of child stanzas whose class is included in `plugin_iterables`.

keys ()
Return the names of all stanza interfaces provided by the stanza object.

Allows stanza objects to be used like dictionaries.

lang_interfaces = {}
New in version 1.1.2.

match (*xpath*)
Compare a stanza object with an XPath-like expression.

If the XPath matches the contents of the stanza object, the match is successful.

The XPath expression may include checks for stanza attributes. For example:

```
'presence@show=xa@priority=2/status'
```

Would match a presence stanza whose show value is set to `'xa'`, has a priority value of `'2'`, and has a status element.

Parameters **xpath** (*string*) – The XPath expression to check against. It may be either a string or a list of element names with attribute checks.

name = 'stanza'
The XML tag name of the element, not including any namespace prefixes. For example, an `ElementBase` object for `<message />` would use `name = 'message'`.

namespace = 'jabber:client'
The XML namespace for the element. Given `<foo xmlns="bar" />`, then `namespace = "bar"` should be used. The default namespace is `jabber:client` since this is being used in an XMPP library.

next()
Return the next iterable substanza.

overrides = []
In some cases you may wish to override the behaviour of one of the parent stanza's interfaces. The `overrides` list specifies the interface name and access method to be overridden. For example, to override setting the parent's `'condition'` interface you would use:

```
overrides = ['set_condition']
```

Getting and deleting the `'condition'` interface would not be affected.

New in version 1.0-Beta5.

parent
A `weakref.weakref` to the parent stanza, if there is one. If not, then *parent* is `None`.

plugin_attrib = 'plugin'
For *ElementBase* subclasses which are intended to be used as plugins, the `plugin_attrib` value defines the plugin name. Plugins may be accessed by using the `plugin_attrib` value as the interface. An example using `plugin_attrib = 'foo'`:

```
register_stanza_plugin(Message, FooPlugin)
msg = Message()
msg['foo']['an_interface_from_the_foo_plugin']
```

plugin_attrib_map = {}
A mapping of the *plugin_attrib* values of registered plugins to their respective classes.

plugin_iterables = {}
The set of stanza classes that can be iterated over using the 'substanzas' interface. Classes are added to this set when registering a plugin with `iterable=True`:

```
register_stanza_plugin(DiscoInfo, DiscoItem, iterable=True)
```

New in version 1.0-Beta5.

plugin_multi_attrib = ''
For *ElementBase* subclasses that are intended to be an iterable group of items, the `plugin_multi_attrib` value defines an interface for the parent stanza which returns the entire group of matching substanzas. So the following are equivalent:

```
# Given stanza class Foo, with plugin_multi_attrib = 'foos'
parent['foos']
filter(isinstance(item, Foo), parent['substanzas'])
```

plugin_overrides = {}
A map of interface operations to the overriding functions. For example, after overriding the `set` operation for the interface `body`, *plugin_overrides* would be:

```
{'set_body': <some function>}
```

plugin_tag_map = {}
A mapping of root element tag names (in `'{namespace}elementname'` format) to the plugin classes responsible for them.

plugins
An ordered dictionary of plugin stanzas, mapped by their *plugin_attrib* value.

pop(*index=0*)
Remove and return the last substanza in the list of iterable substanzas.

Allows stanza objects to be used like lists.

Parameters index (*int*) – The index of the substanza to remove.

set_stanza_values(*values*)
Set multiple stanza interface values using a dictionary.

Stanza plugin values may be set using nested dictionaries.

Parameters values – A dictionary mapping stanza interface with values. Plugin interfaces may accept a nested dictionary that will be used recursively.

New in version 1.0-Beta1.

setup(*xml=None*)
Initialize the stanza's XML contents.

Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters xml – An existing XML object to use for the stanza's content instead of generating new XML.

sub_interfaces = {}
A subset of *interfaces* which maps interfaces to direct subelements of the underlying XML object. Using this set, the text of these subelements may be set, retrieved, or removed without needing to define custom methods.

tag
The name of the tag for the stanza's root element. It is the same as calling *tag_name()* and is formatted as `'{namespace}elementname'`.

classmethod tag_name()
Return the namespaced name of the stanza's root element.

The format for the tag name is:

```
'{namespace}elementname'
```

For example, for the stanza `<foo xmlns="bar" />`, `stanza.tag_name()` would return `"{bar}foo"`.

property values
Return A JSON/dictionary version of the XML content exposed through the stanza's interfaces:

```
>>> msg = Message()
>>> msg.values
{'body': '', 'from': , 'mucnick': '', 'mucroom': '',
'to': , 'type': 'normal', 'id': '', 'subject': ''}
```

Likewise, assigning to *values* will change the XML content:

```
>>> msg = Message()
>>> msg.values = {'body': 'Hi!', 'to': 'user@example.com'}
>>> msg
'<message to="user@example.com"><body>Hi!</body></message>'
```

New in version 1.0-Beta1.

xml
The underlying XML object for the stanza. It is a standard `xml.etree.ElementTree` object.

xml_ns = 'http://www.w3.org/XML/1998/namespace'
The default XML namespace: `http://www.w3.org/XML/1998/namespace`.

6.7.4 StanzaBase

class `slixmpp.xmlstream.stanzabase.`**StanzaBase**(*stream=None*, *xml=None*, *stype=None*, *sto=None*, *sfrom=None*, *sid=None*, *parent=None*)

StanzaBase provides the foundation for all other stanza objects used by Slixmpp, and defines a basic set of interfaces common to nearly all stanzas. These interfaces are the `'id'`, `'type'`, `'to'`, and `'from'` attributes. An additional interface, `'payload'`, is available to access the XML contents of the stanza. Most stanza objects will provided more specific interfaces, however.

Stanza Interfaces:

id An optional id value that can be used to associate stanzas

to A JID object representing the recipient's JID.

from A JID object representing the sender's JID. with their replies.

type The type of stanza, typically will be `'normal'`, `'error'`, `'get'`, or `'set'`, etc.

payload The XML contents of the stanza.

Parameters

- **stream** (`XMLStream`) – Optional `slixmpp.xmlstream.XMLStream` object responsible for sending this stanza.
- **xml** (*XML*) – Optional XML contents to initialize stanza values.
- **stype** (*string*) – Optional stanza type value.
- **sto** – Optional string or `slixmpp.xmlstream.JID` object of the recipient's JID.
- **sfrom** – Optional string or `slixmpp.xmlstream.JID` object of the sender's JID.
- **sid** (*string*) – Optional ID value for the stanza.
- **parent** – Optionally specify a parent stanza object will contain this substanza.

del_payload()
Remove the XML contents of the stanza.

error()
Set the stanza's type to `'error'`.

exception(*e*)
Handle exceptions raised during stanza processing.

Meant to be overridden.

get_from()
Return the value of the stanza's `'from'` attribute.

get_payload()
Return a list of XML objects contained in the stanza.

get_to()
Return the value of the stanza's `'to'` attribute.

namespace = 'jabber:client'
The default XMPP client namespace

reply(*clear=True*)
Prepare the stanza for sending a reply.

Swaps the `'from'` and `'to'` attributes.

If `clear=True`, then also remove the stanza's contents to make room for the reply content.

For client streams, the `'from'` attribute is removed.

Parameters **clear** (*bool*) – Indicates if the stanza's contents should be removed. Defaults to `True`.

send()
Queue the stanza to be sent on the XML stream.

set_from(*value*)
Set the 'from' attribute of the stanza.

Parameters **from** (str or *JID*) – A string or JID object representing the sender's JID.

set_payload(*value*)
Add XML content to the stanza.

Parameters **value** – Either an XML or a stanza object, or a list of XML or stanza objects.

set_to(*value*)
Set the `'to'` attribute of the stanza.

Parameters **value** – A string or `slixmpp.xmlstream.JID` object representing the recipient's JID.

set_type(*value*)
Set the stanza's `'type'` attribute.

Only type values contained in `types` are accepted.

Parameters **value** (*str*) – One of the values contained in `types`

unhandled()
Called if no handlers have been registered to process this stanza.

Meant to be overridden.

6.8 Stanza Handlers

6.8.1 The Basic Handler

class slixmpp.xmlstream.handler.base.**BaseHandler**(*name*, *matcher*, *stream=None*)
Base class for stream handlers. Stream handlers are matched with incoming stanzas so that the stanza may be processed in some way. Stanzas may be matched with multiple handlers.

Handler execution may take place in two phases: during the incoming stream processing, and in the main event loop. The *prerun()* method is executed in the first case, and *run()* is called during the second.

Parameters

- **name** (*string*) – The name of the handler.
- **matcher** – A `MatcherBase` derived object that will be used to determine if a stanza should be accepted by this handler.
- **stream** – The `XMLStream` instance that the handle will respond to.

check_delete()
Check if the handler should be removed from the list of stream handlers.

match(*xml*)
Compare a stanza or XML object with the handler's matcher.

Parameters **xml** – An XML or `ElementBase` object

name
The name of the handler

prerun(*payload*)
Prepare the handler for execution while the XML stream is being processed.

Parameters **payload** – A `ElementBase` object.

run(*payload*)
Execute the handler after XML stream processing and during the main event loop.

Parameters **payload** – A `ElementBase` object.

stream
The XML stream this handler is assigned to

6.8.2 Callback

class slixmpp.xmlstream.handler.**Callback**(*name*, *matcher*, *pointer*, *thread=False*, *once=False*, *instream=False*, *stream=None*)
The Callback handler will execute a callback function with matched stanzas.

The handler may execute the callback either during stream processing or during the main event loop.

Callback functions are all executed in the same thread, so be aware if you are executing functions that will block for extended periods of time. Typically, you should signal your own events using the Slixmpp object's `event()` method to pass the stanza off to a threaded event handler for further processing.

Parameters

- **name** (*string*) – The name of the handler.
- **matcher** – A `MatcherBase` derived object for matching stanza objects.
- **pointer** – The function to execute during callback.
- **thread** (*bool*) – **DEPRECATED.** Remains only for backwards compatibility.
- **once** (*bool*) – Indicates if the handler should be used only once. Defaults to False.
- **instream** (*bool*) – Indicates if the callback should be executed during stream processing instead of in the main event loop.
- **stream** – The `XMLStream` instance this handler should monitor.

prerun(*payload*)
Execute the callback during stream processing, if the callback was created with `instream=True`.

Parameters **payload** – The matched `ElementBase` object.

run (*payload*, *instream=False*)
Execute the callback function with the matched stanza payload.

Parameters

- **payload** – The matched *ElementBase* object.
- **instream** (*bool*) – Force the handler to execute during stream processing. This should only be used by *prerun()*. Defaults to `False`.

6.8.3 CoroutineCallback

class slixmpp.xmlstream.handler.**CoroutineCallback**(*name*, *matcher*, *pointer*, *once=False*, *instream=False*, *stream=None*)
The Callback handler will execute a callback function with matched stanzas.

The handler may execute the callback either during stream processing or during the main event loop.

The event will be scheduled to be run soon in the event loop instead of immediately.

Parameters

- **name** (*string*) – The name of the handler.
- **matcher** – A *MatcherBase* derived object for matching stanza objects.
- **pointer** – The function to execute during callback. If `pointer` is not a coroutine, this function will raise a ValueError.
- **once** (*bool*) – Indicates if the handler should be used only once. Defaults to False.
- **instream** (*bool*) – Indicates if the callback should be executed during stream processing instead of in the main event loop.
- **stream** – The *XMLStream* instance this handler should monitor.

prerun (*payload*)
Execute the callback during stream processing, if the callback was created with `instream=True`.

Parameters payload – The matched *ElementBase* object.

run (*payload*, *instream=False*)
Execute the callback function with the matched stanza payload.

Parameters

- **payload** – The matched *ElementBase* object.
- **instream** (*bool*) – Force the handler to execute during stream processing. This should only be used by *prerun()*. Defaults to `False`.

6.8.4 Waiter

class `slixmpp.xmlstream.handler.`**`Waiter`**(*name*, *matcher*, *stream=None*)

The Waiter handler allows an event handler to block until a particular stanza has been received. The handler will either be given the matched stanza, or `False` if the waiter has timed out.

Parameters

- **`name`** (*`string`*) – The name of the handler.
- **`matcher`** – A *`MatcherBase`* derived object for matching stanza objects.
- **`stream`** – The *`XMLStream`* instance this handler should monitor.

`check_delete`()

Always remove waiters after use.

`prerun`(*payload*)

Store the matched stanza when received during processing.

Parameters **`payload`** – The matched *`ElementBase`* object.

`run`(*payload*)

Do not process this handler during the main event loop.

async `wait`(*timeout=None*)

Block an event handler while waiting for a stanza to arrive.

Be aware that this will impact performance if called from a non-threaded event handler.

Will return either the received stanza, or `False` if the waiter timed out.

Parameters **`timeout`** (*`int`*) – The number of seconds to wait for the stanza to arrive. Defaults to the the stream's `response_timeout` value.

6.9 Stanza Matchers

6.9.1 The Basic Matcher

class `slixmpp.xmlstream.matcher.base.`**`MatcherBase`**(*criteria*)

Base class for stanza matchers. Stanza matchers are used to pick stanzas out of the XML stream and pass them to the appropriate stream handlers.

Parameters **`criteria`** – Object to compare some aspect of a stanza against.

`match`(*xml*)

Check if a stanza matches the stored criteria.

Meant to be overridden.

6.9.2 ID Matching

class `slixmpp.xmlstream.matcher.id.`**`MatcherId`**(*criteria*)

The ID matcher selects stanzas that have the same stanza 'id' interface value as the desired ID.

`match`(*xml*)

Compare the given stanza's `'id'` attribute to the stored `id` value.

Parameters **`xml`** – The *`ElementBase`* stanza to compare against.

6.9.3 Stanza Path Matching

class `slixmpp.xmlstream.matcher.stanzapath.`**`StanzaPath`**(*criteria*)

The StanzaPath matcher selects stanzas that match a given "stanza path", which is similar to a normal XPath except that it uses the interfaces and plugins of the stanza instead of the actual, underlying XML.

Parameters **`criteria`** – Object to compare some aspect of a stanza against.

`match`(*stanza*)

Compare a stanza against a "stanza path". A stanza path is similar to an XPath expression, but uses the stanza's interfaces and plugins instead of the underlying XML. See the documentation for the stanza *`match()`* method for more information.

Parameters **`stanza`** – The *`ElementBase`* stanza to compare against.

6.9.4 XPath

class `slixmpp.xmlstream.matcher.xpath.`**`MatchXPath`**(*criteria*)

The XPath matcher selects stanzas whose XML contents matches a given XPath expression.

Warning: Using this matcher may not produce expected behavior when using attribute selectors. For Python 2.6 and 3.1, the ElementTree `find()` method does not support the use of attribute selectors. If you need to support Python 2.6 or 3.1, it might be more useful to use a *`StanzaPath`* matcher.

If the value of `IGNORE_NS` is set to `True`, then XPath expressions will be matched without using namespaces.

`match`(*xml*)

Compare a stanza's XML contents to an XPath expression.

If the value of `IGNORE_NS` is set to `True`, then XPath expressions will be matched without using namespaces.

Warning: In Python 2.6 and 3.1 the ElementTree `find()` method does not support attribute selectors in the XPath expression.

Parameters **`xml`** – The *`ElementBase`* stanza to compare against.

6.9.5 XMLMask

class slixmpp.xmlstream.matcher.xmlmask.**MatchXMLMask**(*criteria*, *default_ns='jabber:client'*)

The XMLMask matcher selects stanzas whose XML matches a given XML pattern, or mask. For example, message stanzas with body elements could be matched using the mask:

```
<message xmlns="jabber:client"><body /></message>
```

Use of XMLMask is discouraged, and `MatchXPath` or `StanzaPath` should be used instead.

Parameters **criteria** – Either an `Element` XML object or XML string to use as a mask.

match(*xml*)

Compare a stanza object or XML object against the stored XML mask.

Overrides MatcherBase.match.

Parameters **xml** – The stanza object or XML object to compare against.

setDefaultNS(*ns*)

Set the default namespace to use during comparisons.

Parameters **ns** – The new namespace to use as the default.

6.10 XML Stream

class slixmpp.xmlstream.xmlstream.**XMLStream**(*host=''*, *port=0*)

An XML stream connection manager and event dispatcher.

The XMLStream class abstracts away the issues of establishing a connection with a server and sending and receiving XML "stanzas". A stanza is a complete XML element that is a direct child of a root document element. Two streams are used, one for each communication direction, over the same socket. Once the connection is closed, both streams should be complete and valid XML documents.

Three types of events are provided to manage the stream:

Stream Triggered based on received stanzas, similar in concept to events in a SAX XML parser.

Custom Triggered manually.

Scheduled Triggered based on time delays.

Typically, stanzas are first processed by a stream event handler which will then trigger custom events to continue further processing, especially since custom event handlers may run in individual threads.

Parameters

- **socket** – Use an existing socket for the stream. Defaults to `None` to generate a new socket.
- **host** (*string*) – The name of the target server.
- **port** (*int*) – The port to use for the connection. Defaults to 0.

abort()

Forcibly close the connection

add_event_handler(*name*, *pointer*, *disposable=False*)

Add a custom event handler that will be executed whenever its event is manually triggered.

Parameters

- **name** – The name of the event that will trigger this handler.

- **pointer** – The function to execute.
- **disposable** – If set to `True`, the handler will be discarded after one use. Defaults to `False`.

add_filter(*mode*, *handler*, *order=None*)

Add a filter for incoming or outgoing stanzas.

These filters are applied before incoming stanzas are passed to any handlers, and before outgoing stanzas are put in the send queue.

Each filter must accept a single stanza, and return either a stanza or `None`. If the filter returns `None`, then the stanza will be dropped from being processed for events or from being sent.

Parameters

- **mode** – One of `'in'` or `'out'`.
- **handler** – The filter function.
- **order** (*int*) – The position to insert the filter in the list of active filters.

address

The desired, or actual, address of the connected server.

ca_certs

Path to a file containing certificates for verifying the server SSL certificate. A non-`None` value will trigger certificate checking.

Note: On Mac OS X, certificates in the system keyring will be consulted, even if they are not in the provided file.

cancel_connection_attempt()

Immediately cancel the current create_connection() Future. This is useful when a client using slixmpp tries to connect on flaky networks, where sometimes a connection just gets lost and it needs to reconnect while the attempt is still ongoing.

certfile

Path to a file containing a client certificate to use for authenticating via SASL EXTERNAL. If set, there must also be a corresponding *:attr:keyfile* value.

ciphers

The list of accepted ciphers, in OpenSSL Format. It might be useful to override it for improved security over the python defaults.

configure_dns(*resolver*, *domain=None*, *port=None*)

Configure and set options for a `Resolver` instance, and other DNS related tasks. For example, you can also check `getaddrinfo()` to see if you need to call out to `libresolv.so.2` to run `res_init()`.

Meant to be overridden.

Parameters

- **resolver** – A `Resolver` instance or `None` if `dnspython` is not installed.
- **domain** – The initial domain under consideration.
- **port** – The initial port under consideration.

configure_socket()

Set timeout and other options for self.socket.

Meant to be overridden.

connect (*host=''*, *port=0*, *use_ssl=False*, *force_starttls=True*, *disable_starttls=False*)
Create a new socket and connect to the server.

Parameters

- **host** – The name of the desired server for the connection.
- **port** – Port to connect to on the server.
- **use_ssl** – Flag indicating if SSL should be used by connecting directly to a port using SSL. If it is False, the connection will be upgraded to SSL/TLS later, using STARTTLS. Only use this value for old servers that have specific port for SSL/TLS
- **force_starttls** – If True, the connection will be aborted if the server does not initiate a STARTTLS negotiation. If None, the connection will be upgraded to TLS only if the server initiate the STARTTLS negotiation, otherwise it will connect in clear. If False it will never upgrade to TLS, even if the server provides it. Use this for example if you're on localhost

connection_lost (*exception*)
On any kind of disconnection, initiated by us or not. This signals the closure of the TCP connection

connection_made (*transport*)
Called when the TCP connection has been established with the server

data_received (*data*)
Called when incoming data is received on the socket.

We feed that data to the parser and the see if this produced any XML event. This could trigger one or more event (a stanza is received, the stream is opened, etc).

default_domain
The domain to try when querying DNS records.

default_ns
The default namespace of the stream content, not of the stream wrapper itself.

default_port
The default port to return when querying DNS records.

del_event_handler (*name*, *pointer*)
Remove a function as a handler for an event.

Parameters

- **name** – The name of the event.
- **pointer** – The function to remove as a handler.

del_filter (*mode*, *handler*)
Remove an incoming or outgoing filter.

disconnect (*wait=2.0*, *reason=None*, *ignore_send_queue=False*)
Close the XML stream and wait for an acknowldgement from the server for at most *wait* seconds. After the given number of seconds has passed without a response from the server, or when the server successfully responds with a closure of its own stream, abort() is called. If wait is 0.0, this will call abort() directly without closing the stream.

Does nothing but trigger the disconnected event if we are not connected.

Parameters

- **wait** (`Union[float, int]`) – Time to wait for a response from the server.
- **reason** (`Optional[str]`) – An optional reason for the disconnect.

- **`ignore_send_queue`** (`bool`) – Boolean to toggle if we want to ignore the in-flight stanzas and disconnect immediately.

Return type `Future`

Returns A future that ends when all code involved in the disconnect has ended

`disconnect_reason`
The reason why we are disconnecting from the server

`disconnected: _asyncio.Future`
An asyncio Future being done when the stream is disconnected.

`dns_answers`
A list of DNS results that have not yet been tried.

`dns_service`
The service name to check with DNS SRV records. For example, setting this to `'xmpp-client'` would query the `_xmpp-client._tcp` service.

`end_session_on_disconnect`
Flag for controlling if the session can be considered ended if the connection is terminated.

`eof_received``()`
When the TCP connection is properly closed by the remote end

`event``(`*name*, *data={}*`)`
Manually trigger a custom event.

Parameters

- **`name`** – The name of the event to trigger.
- **`data`** – Data that will be passed to each event handler. Defaults to an empty dictionary, but is usually a stanza object.

`event_handled``(`*name*`)`
Returns the number of registered handlers for an event.

Parameters **`name`** – The name of the event to check.

`exception``(`*exception*`)`
Process an unknown exception.

Meant to be overridden.

Parameters **`exception`** – An unhandled exception object.

`async get_dns_records``(`*domain*, *port=None*`)`
Get the DNS records for a domain.

Parameters

- **`domain`** – The domain in question.
- **`port`** – If the results don't include a port, use this one.

`get_ssl_context``()`
Get SSL context.

`incoming_filter``(`*xml*`)`
Filter incoming XML objects before they are processed.

Possible uses include remapping namespaces, or correcting elements from sources with incorrect behavior.

Meant to be overridden.

init_parser()
init the XML parser. The parser must always be reset for each new connexion

keyfile
Path to a file containing the private key for the selected client certificate to use for authenticating via SASL EXTERNAL.

namespace_map
A mapping of XML namespaces to well-known prefixes.

new_id()
Generate and return a new stream ID in hexadecimal form.

Many stanzas, handlers, or matchers may require unique ID values. Using this method ensures that all new ID values are unique in this stream.

async pick_dns_answer(*domain*, *port=None*)
Pick a server and port from DNS answers.

Gets DNS answers if none available. Removes used answer from available answers.

Parameters

- **domain** – The domain in question.
- **port** – If the results don't include a port, use this one.

process(**, forever=True*, *timeout=None*)
Process all the available XMPP events (receiving or sending data on the socket(s), calling various registered callbacks, calling expired timers, handling signal events, etc). If timeout is None, this function will run forever. If timeout is a number, this function will return after the given time in seconds.

proxy_config
An optional dictionary of proxy settings. It may provide: :host: The host offering proxy services. :port: The port for the proxy service. :username: Optional username for accessing the proxy. :password: Optional password for accessing the proxy.

reconnect(*wait=2.0*, *reason='Reconnecting'*)
Calls disconnect(), and once we are disconnected (after the timeout, or when the server acknowledgement is received), call connect()

register_handler(*handler*, *before=None*, *after=None*)
Add a stream event handler that will be executed when a matching stanza is received.

Parameters handler – The `BaseHandler` derived object to execute.

register_stanza(*stanza_class*)
Add a stanza object class as a known root stanza.

A root stanza is one that appears as a direct child of the stream's root element.

Stanzas that appear as substanzas of a root stanza do not need to be registered here. That is done using register_stanza_plugin() from slixmpp.xmlstream.stanzabase.

Stanzas that are not registered will not be converted into stanza objects, but may still be processed using handlers and matchers.

Parameters stanza_class – The top-level stanza object's class.

remove_handler(*name*)
Remove any stream event handlers with the given name.

Parameters name – The name of the handler.

remove_stanza(*stanza_class*)
Remove a stanza from being a known root stanza.

A root stanza is one that appears as a direct child of the stream's root element.

Stanzas that are not registered will not be converted into stanza objects, but may still be processed using handlers and matchers.

async run_filters()
Background loop that processes stanzas to send.

schedule(*name*, *seconds*, *callback*, *args=()*, *kwargs={}*, *repeat=False*)
Schedule a callback function to execute after a given delay.

Parameters

- **name** – A unique name for the scheduled callback.
- **seconds** – The time in seconds to wait before executing.
- **callback** – A pointer to the function to execute.
- **args** – A tuple of arguments to pass to the function.
- **kwargs** – A dictionary of keyword arguments to pass to the function.
- **repeat** – Flag indicating if the scheduled event should be reset and repeat after executing.

send(*data*, *use_filters=True*)
A wrapper for `send_raw()` for sending stanza objects.

Parameters

- **data** – The `ElementBase` stanza to send on the stream.
- **use_filters** (`bool`) – Indicates if outgoing filters should be applied to the given stanza data. Disabling filters is useful when resending stanzas. Defaults to `True`.

send_raw(*data*)
Send raw data across the stream.

Parameters **data** (`string`) – Any bytes or utf-8 string value.

send_xml(*data*)
Send an XML object on the stream

Parameters **data** – The `Element` XML object to send on the stream.

start_stream_handler(*xml*)
Perform any initialization actions, such as handshakes, once the stream header has been sent.

Meant to be overridden.

async start_tls()
Perform handshakes for TLS.

If the handshake is successful, the XML stream will need to be restarted.

stream_footer
The default closing tag for the stream element.

stream_header
The default opening tag for the stream element.

stream_ns
The namespace of the enveloping stream element.

use_aiodns
If set to `True`, allow using the `dnspython` DNS library if available. If set to `False`, the builtin DNS resolver will be used, even if `dnspython` is installed.

use_cdata
Use CDATA for escaping instead of XML entities. Defaults to `False`.

use_ipv6
If set to `True`, attempt to use IPv6.

use_proxy
If set to `True`, attempt to connect through an HTTP proxy based on the settings in *proxy_config*.

use_ssl
Enable connecting to the server directly over SSL, in particular when the service provides two ports: one for non-SSL traffic and another for SSL traffic.

async wait_until(*event*, *timeout=30*)
Utility method to wake on the next firing of an event. (Registers a disposable handler on it)

Parameters

- **event** (*str*) – Event to wait on.
- **timeout** (*int*) – Timeout

Return type `Any`

whitespace_keepalive
If `True`, periodically send a whitespace character over the wire to keep the connection alive. Mainly useful for connections traversing NAT.

whitespace_keepalive_interval
The default interval between keepalive signals when *whitespace_keepalive* is enabled.

6.11 XML Serialization

Since the XML layer of Slixmpp is based on `ElementTree`, why not just use the built-in `tostring()` method? The answer is that using that method produces ugly results when using namespaces. The `tostring()` method used here intelligently hides namespaces when able and does not introduce excessive namespace prefixes:

```
>>> from slixmpp.xmlstream.tostring import tostring
>>> from xml.etree import ElementTree as ET
>>> xml = ET.fromstring('<foo xmlns="bar"><baz /></foo>')
>>> ET.tostring(xml)
'<ns0:foo xmlns:ns0="bar"><ns0:baz /></foo>'
>>> tostring(xml)
'<foo xmlns="bar"><baz /></foo>'
```

As a side effect of this namespace hiding, using `tostring()` may produce unexpected results depending on how the `tostring()` method is invoked. For example, when sending XML on the wire, the main XMPP stanzas with their namespace of `jabber:client` will not include the namespace because that is already declared by the stream header. But, if you create a `Message` instance and dump it to the terminal, the `jabber:client` namespace will appear.

`slixmpp.xmlstream.`**tostring**(*xml=None*, *xmlns=''*, *stream=None*, *outbuffer=''*, *top_level=False*, *open_only=False*, *namespaces=None*)
Serialize an XML object to a Unicode string.

If an outer xmlns is provided using `xmlns`, then the current element's namespace will not be included if it matches the outer namespace. An exception is made for elements that have an attached stream, and appear at the stream root.

Parameters

- **`xml`** (`Element`) – The XML object to serialize.
- **`xmlns`** (*`string`*) – Optional namespace of an element wrapping the XML object.
- **`stream`** (*`XMLStream`*) – The XML stream that generated the XML object.
- **`outbuffer`** (*`string`*) – Optional buffer for storing serializations during recursive calls.
- **`top_level`** (*`bool`*) – Indicates that the element is the outermost element.
- **`namespaces`** (`set`) – Track which namespaces are in active use so that new ones can be declared when needed.

Return type Unicode string

6.11.1 Escaping Special Characters

In order to prevent errors when sending arbitrary text as the textual content of an XML element, certain characters must be escaped. These are: `&`, `<`, `>`, `"`, and `'`. The default escaping mechanism is to replace those characters with their equivalent escape entities: `&amp;`, `&lt;`, `&gt;`, `&apos;`, and `&quot;`.

In the future, the use of CDATA sections may be allowed to reduce the size of escaped text or for when other XMPP processing agents do not undertand these entities.

6.12 Plugins

6.12.1 Plugin index

XEP 0004

class `slixmpp.plugins.xep_0004.`**`XEP_0004`**(*xmpp*, *config=None*)

XEP-0004: Data Forms

`stanza = <module 'slixmpp.plugins.xep_0004.stanza' from '/home/docs/checkouts/readthed`

Stanza elements

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class `slixmpp.plugins.xep_0004.stanza.field.`**`FieldOption`**(*xml=None*, *parent=None*)

`interfaces = {'label', 'value'}`

`name = 'option'`

`namespace = 'jabber:x:data'`

`plugin_attrib = 'option'`

plugin_multi_attrib = 'options'

sub_interfaces = {'value'}

class slixmpp.plugins.xep_0004.stanza.field.**FormField**(*xml=None*, *parent=None*)

addOption(*label=''*, *value=''*)

add_option(*label=''*, *value=''*)

delOptions()

delRequired()

delValue()

del_options()

del_required()

del_value()

field_types = {'boolean', 'fixed', 'hidden', 'jid-multi', 'jid-single', 'list-multi',

getAnswer()

getOptions()

getRequired()

getValue(*convert=True*)

get_answer()

get_options()

get_required()

get_value(*convert=True*)

interfaces = {'answer', 'desc', 'label', 'required', 'type', 'value', 'var'}

multi_line_types = {'hidden', 'text-multi'}

multi_value_types = {'hidden', 'jid-multi', 'list-multi', 'text-multi'}

name = 'field'

namespace = 'jabber:x:data'

option_types = {'list-multi', 'list-single'}

plugin_attrib = 'field'

plugin_attrib_map = {}

plugin_multi_attrib = 'fields'

plugin_tag_map = {}

setAnswer(*answer*)

setFalse()

setOptions(*options*)

setRequired(*required*)

setTrue()

setValue(*value*)

set_answer(*answer*)

set_false()

set_options(*options*)

set_required(*required*)

set_true()

set_type(*value*)

set_value(*value*)

setup(*xml=None*)
Initialize the stanza's XML contents.

Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters **xml** – An existing XML object to use for the stanza's content instead of generating new XML.

sub_interfaces = {'desc'}

true_values = {True, '1', 'true'}

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class slixmpp.plugins.xep_0004.stanza.form.**Form**(**args*, ***kwargs*)

addField(*var=''*, *ftype=None*, *label=''*, *desc=''*, *required=False*, *value=None*, *options=None*, ***kwargs*)

addReported(*var*, *ftype=None*, *label=''*, *desc=''*, ***kwargs*)

add_field(*var=''*, *ftype=None*, *label=''*, *desc=''*, *required=False*, *value=None*, *options=None*, ***kwargs*)

add_item(*values*)

add_reported(*var*, *ftype=None*, *label=''*, *desc=''*, ***kwargs*)

cancel()

delFields()

delInstructions()

delReported()

del_fields()

del_instructions()

del_items()

del_reported()

property field

form_types = {'cancel', 'form', 'result', 'submit'}

getFields(*use_dict=False*)

getInstructions()

getReported()

getValues()

get_fields(*use_dict=False*)

get_instructions()

get_items()

get_reported()

get_values()

interfaces = OrderedSet(['instructions', 'reported', 'title', 'type', 'items', 'values

merge(*other*)

name = 'x'

namespace = 'jabber:x:data'

plugin_attrib = 'form'

reply()

setFields(*fields*)

setInstructions(*instructions*)

setReported(*reported*)
This either needs a dictionary of dictionaries or a dictionary of form fields. :param reported: :return:

setValues(*values*)

set_fields(*fields*)

set_instructions(*instructions*)

set_items(*items*)

set_reported(*reported*)
This either needs a dictionary of dictionaries or a dictionary of form fields. :param reported: :return:

set_type(*ftype*)

set_values(*values*)

setup(*xml=None*)
Initialize the stanza's XML contents.

Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters **xml** – An existing XML object to use for the stanza's content instead of generating new XML.

sub_interfaces = {'title'}

XEP 0009

class slixmpp.plugins.xep_0009.**XEP_0009**(*xmpp*, *config=None*)

> **stanza = <module 'slixmpp.plugins.xep_0009.stanza' from '/home/docs/checkouts/readthed**

Stanza elements

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class slixmpp.plugins.xep_0009.stanza.RPC.**MethodCall**(*xml=None*, *parent=None*)

> **get_method_name**()
>
> **get_params**()
>
> **interfaces = {'method_name', 'params'}**
>
> **name = 'methodCall'**
>
> **namespace = 'jabber:iq:rpc'**
>
> **plugin_attrib = 'method_call'**
>
> **plugin_attrib_map = {}**
>
> **plugin_tag_map = {}**
>
> **set_method_name**(*value*)
>
> **set_params**(*params*)
>
> **subinterfaces = {}**

class slixmpp.plugins.xep_0009.stanza.RPC.**MethodResponse**(*xml=None*, *parent=None*)

> **get_fault**()
>
> **get_params**()
>
> **interfaces = {'fault', 'params'}**
>
> **name = 'methodResponse'**
>
> **namespace = 'jabber:iq:rpc'**
>
> **plugin_attrib = 'method_response'**
>
> **plugin_attrib_map = {}**
>
> **plugin_tag_map = {}**
>
> **set_fault**(*fault*)
>
> **set_params**(*params*)
>
> **subinterfaces = {}**

class slixmpp.plugins.xep_0009.stanza.RPC.**RPCQuery**(*xml=None*, *parent=None*)

interfaces = {}

name = 'query'

namespace = 'jabber:iq:rpc'

plugin_attrib = 'rpc_query'

plugin_attrib_map = {}

plugin_tag_map = {}

subinterfaces = {}

XEP 0012

class `slixmpp.plugins.xep_0012.`**XEP_0012**(*xmpp*, *config=None*)

XEP-0012 Last Activity

stanza = <module 'slixmpp.plugins.xep_0012.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class `slixmpp.plugins.xep_0012.stanza.`**LastActivity**(*xml=None*, *parent=None*)

del_status()

get_seconds()

get_status()

interfaces = {'seconds', 'status'}

name = 'query'

namespace = 'jabber:iq:last'

plugin_attrib = 'last_activity'

set_seconds(*value*)

set_status(*value*)

XEP 0013

class `slixmpp.plugins.xep_0013.`**XEP_0013**(*xmpp*, *config=None*)

XEP-0013 Flexible Offline Message Retrieval

stanza = <module 'slixmpp.plugins.xep_0013.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class `slixmpp.plugins.xep_0013.stanza.`**`Item`**(*xml=None*, *parent=None*)

`actions = {'remove', 'view'}`

`get_jid`()

`interfaces = {'action', 'jid', 'node'}`

`name = 'item'`

`namespace = 'http://jabber.org/protocol/offline'`

`plugin_attrib = 'item'`

`set_jid`(*value*)

class `slixmpp.plugins.xep_0013.stanza.`**`Offline`**(*xml=None*, *parent=None*)

`bool_interfaces = {'fetch', 'purge', 'results'}`

`del_results`()

`get_results`()

`interfaces = {'fetch', 'purge', 'results'}`

`name = 'offline'`

`namespace = 'http://jabber.org/protocol/offline'`

`plugin_attrib = 'offline'`

`plugin_attrib_map = {'item':  <class 'slixmpp.plugins.xep_0013.stanza.Item'>}`

`plugin_iterables = {<class 'slixmpp.plugins.xep_0013.stanza.Item'>}`

`plugin_overrides = {}`

`plugin_tag_map = {'{http://jabber.org/protocol/offline}item':  <class 'slixmpp.plugins`

`set_results`(*values*)

`setup`(*xml=None*)

Initialize the stanza's XML contents.

Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters **`xml`** – An existing XML object to use for the stanza's content instead of generating new XML.

XEP 0020

class slixmpp.plugins.xep_0020.**XEP_0020**(*xmpp*, *config=None*)

stanza = <module 'slixmpp.plugins.xep_0020.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0020.stanza.**FeatureNegotiation**(*xml=None*, *parent=None*)

interfaces = {}

name = 'feature'

namespace = 'http://jabber.org/protocol/feature-neg'

plugin_attrib = 'feature_neg'

XEP 0027

class slixmpp.plugins.xep_0027.**XEP_0027**(*xmpp*, *config=None*)

stanza = <module 'slixmpp.plugins.xep_0027.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0027.stanza.**Encrypted**(*xml=None*, *parent=None*)

get_encrypted()

interfaces = {'encrypted'}

is_extension = True

name = 'x'

namespace = 'jabber:x:encrypted'

plugin_attrib = 'encrypted'

set_encrypted(*value*)

class slixmpp.plugins.xep_0027.stanza.**Signed**(*xml=None*, *parent=None*)

get_signed()

interfaces = {'signed'}

is_extension = True

name = 'x'

namespace = 'jabber:x:signed'

plugin_attrib = 'signed'

set_signed(*value*)

XEP 0030

class slixmpp.plugins.xep_0030.**XEP_0030**(*xmpp*, *config=None*)

XEP-0030: Service Discovery

Service discovery in XMPP allows entities to discover information about other agents in the network, such as the feature sets supported by a client, or signposts to other, related entities.

Also see <http://www.xmpp.org/extensions/xep-0030.html>.

The XEP-0030 plugin works using a hierarchy of dynamic node handlers, ranging from global handlers to specific JID+node handlers. The default set of handlers operate in a static manner, storing disco information in memory. However, custom handlers may use any available backend storage mechanism desired, such as SQLite or Redis.

Node handler hierarchy:

```
JID   | Node  | Level
---------------------
None  | None  | Global
Given | None  | All nodes for the JID
None  | Given | Node on self.xmpp.boundjid
Given | Given | A single node
```

Stream Handlers:

```
Disco Info  -- Any Iq stanze that includes a query with the
               namespace http://jabber.org/protocol/disco#info.
Disco Items -- Any Iq stanze that includes a query with the
               namespace http://jabber.org/protocol/disco#items.
```

Events:

```
disco_info         -- Received a disco#info Iq query result.
disco_items        -- Received a disco#items Iq query result.
disco_info_query   -- Received a disco#info Iq query request.
disco_items_query  -- Received a disco#items Iq query request.
```

Attributes:

Variables

- **static** – Object containing the default set of static node handlers.
- **default_handlers** – A dictionary mapping operations to the default global handler (by default, the static handlers).

add_feature(*feature*, *node=None*, *jid=None*)

Add a feature to a JID/node combination.

Parameters

- **feature** (str) – The namespace of the supported feature.

- **node** (Optional[str]) – The node to modify.
- **jid** (Optional[*JID*]) – The JID to modify.

add_identity (*category=''*, *itype=''*, *name=''*, *node=None*, *jid=None*, *lang=None*)
Add a new identity to the given JID/node combination.

Each identity must be unique in terms of all four identity components: category, type, name, and language.

Multiple, identical category/type pairs are allowed only if the xml:lang values are different. Likewise, multiple category/type/xml:lang pairs are allowed so long as the names are different. A category and type is always required.

Parameters

- **category** – The identity's category.
- **itype** – The identity's type.
- **name** – Optional name for the identity.
- **lang** – Optional two-letter language code.
- **node** – The node to modify.
- **jid** – The JID to modify.

add_item (*jid=''*, *name=''*, *node=None*, *subnode=''*, *ijid=None*)
Add a new item element to the given JID/node combination.

Each item is required to have a JID, but may also specify a node value to reference non-addressable entities.

Parameters

- **jid** – The JID for the item.
- **name** – Optional name for the item.
- **node** – The node to modify.
- **subnode** – Optional node for the item.
- **ijid** – The JID to modify.

del_feature (*jid=None*, *node=None*, ***kwargs*)
Remove a feature from a given JID/node combination.

Parameters

- **jid** – The JID to modify.
- **node** – The node to modify.
- **feature** – The feature's namespace.

del_features (*jid=None*, *node=None*, ***kwargs*)
Remove all features from a JID/node combination.

Parameters

- **jid** – The JID to modify.
- **node** – The node to modify.

del_identities (*jid=None*, *node=None*, ***kwargs*)
Remove all identities for a JID/node combination.

If a language is specified, only identities using that language will be removed.

Parameters

- **jid** – The JID to modify.
- **node** – The node to modify.
- **lang** – Optional. If given, only remove identities using this xml:lang value.

del_identity (*jid=None*, *node=None*, ***kwargs*)
Remove an identity from the given JID/node combination.

Parameters

- **jid** (Optional[*JID*]) – The JID to modify.
- **node** (Optional[str]) – The node to modify.
- **category** – The identity's category.
- **itype** – The identity's type value.
- **name** – Optional, human readable name for the identity.
- **lang** – Optional, the identity's xml:lang value.

del_item (*jid=None*, *node=None*, ***kwargs*)
Remove a single item from the given JID/node combination.

Parameters

- **jid** – The JID to modify.
- **node** – The node to modify.
- **ijid** – The item's JID.
- **inode** – The item's node.

del_items (*jid=None*, *node=None*, ***kwargs*)
Remove all items from the given JID/node combination.

Arguments: :param jid: The JID to modify. :param node: Optional node to modify.

del_node_handler (*htype*, *jid*, *node*)
Remove a handler type for a JID and node combination.

The next handler in the hierarchy will be used if one exists. If removing the global handler, make sure that other handlers exist to process existing nodes.

Node handler hierarchy:

```
JID   | Node  | Level
---------------------
None  | None  | Global
Given | None  | All nodes for the JID
None  | Given | Node on self.xmpp.boundjid
Given | Given | A single node
```

Parameters

- **htype** – The type of handler to remove.
- **jid** – The JID from which to remove the handler.
- **node** – The node from which to remove the handler.

get_info(*jid=None*, *node=None*, *local=None*, *cached=None*, ***kwargs*)
Retrieve the disco#info results from a given JID/node combination.

Info may be retrieved from both local resources and remote agents; the local parameter indicates if the information should be gathered by executing the local node handlers, or if a disco#info stanza must be generated and sent.

If requesting items from a local JID/node, then only a DiscoInfo stanza will be returned. Otherwise, an Iq stanza will be returned.

Parameters

- **jid** – Request info from this JID.
- **node** – The particular node to query.
- **local** – If true, then the query is for a JID/node combination handled by this Slixmpp instance and no stanzas need to be sent. Otherwise, a disco stanza must be sent to the remote JID to retrieve the info.
- **cached** – If true, then look for the disco info data from the local cache system. If no results are found, send the query as usual. The self.use_cache setting must be set to true for this option to be useful. If set to false, then the cache will be skipped, even if a result has already been cached. Defaults to false.

async get_info_from_domain(*domain=None*, *timeout=None*, *cached=True*, *callback=None*)
Fetch disco#info of specified domain and one disco#items level below

get_items(*jid=None*, *node=None*, *local=False*, ***kwargs*)
Retrieve the disco#items results from a given JID/node combination.

Items may be retrieved from both local resources and remote agents; the local parameter indicates if the items should be gathered by executing the local node handlers, or if a disco#items stanza must be generated and sent.

If requesting items from a local JID/node, then only a DiscoItems stanza will be returned. Otherwise, an Iq stanza will be returned.

Parameters

- **jid** – Request info from this JID.
- **node** – The particular node to query.
- **local** – If true, then the query is for a JID/node combination handled by this Slixmpp instance and no stanzas need to be sent. Otherwise, a disco stanza must be sent to the remove JID to retrieve the items.
- **iterator** – If True, return a result set iterator using the XEP-0059 plugin, if the plugin is loaded. Otherwise the parameter is ignored.

has_identity(*jid=None*, *node=None*, *category=None*, *itype=None*, *lang=None*, *local=False*, *cached=True*, *ifrom=None*)
Check if a JID provides a given identity.

Return values: :param True: The identity is provided :param False: The identity is not listed :param None: Nothing could be found due to a timeout

Parameters

- **jid** – Request info from this JID.
- **node** – The particular node to query.
- **category** – The category of the identity to check.

- **itype** – The type of the identity to check.
- **lang** – The language of the identity to check.
- **local** – If true, then the query is for a JID/node combination handled by this Slixmpp instance and no stanzas need to be sent. Otherwise, a disco stanza must be sent to the remove JID to retrieve the info.
- **cached** – If true, then look for the disco info data from the local cache system. If no results are found, send the query as usual. The self.use_cache setting must be set to true for this option to be useful. If set to false, then the cache will be skipped, even if a result has already been cached. Defaults to false.

restore_defaults (*jid=None*, *node=None*, *handlers=None*)

Change all or some of a node's handlers to the default handlers. Useful for manually overriding the contents of a node that would otherwise be handled by a JID level or global level dynamic handler.

The default is to use the built-in static handlers, but that may be changed by modifying self.default_handlers.

Parameters

- **jid** – The JID owning the node to modify.
- **node** – The node to change to using static handlers.
- **handlers** – Optional list of handlers to change to the default version. If provided, only these handlers will be changed. Otherwise, all handlers will use the default version.

set_features (*jid=None*, *node=None*, ***kwargs*)

Add or replace the set of supported features for a JID/node combination.

Parameters

- **jid** – The JID to modify.
- **node** – The node to modify.
- **features** – The new set of supported features.

set_identities (*jid=None*, *node=None*, ***kwargs*)

Add or replace all identities for the given JID/node combination.

The identities must be in a set where each identity is a tuple of the form: (category, type, lang, name)

Parameters

- **jid** – The JID to modify.
- **node** – The node to modify.
- **identities** – A set of identities in tuple form.
- **lang** – Optional, xml:lang value.

set_info (*jid=None*, *node=None*, *info=None*)

Set the disco#info data for a JID/node based on an existing disco#info stanza.

set_items (*jid=None*, *node=None*, ***kwargs*)

Set or replace all items for the specified JID/node combination.

The given items must be in a list or set where each item is a tuple of the form: (jid, node, name).

Parameters

- **jid** – The JID to modify.

- **node** – Optional node to modify.
- **items** – A series of items in tuple format.

set_node_handler (*htype*, *jid=None*, *node=None*, *handler=None*)

Add a node handler for the given hierarchy level and handler type.

Node handlers are ordered in a hierarchy where the most specific handler is executed. Thus, a fallback, global handler can be used for the majority of cases with a few node specific handler that override the global behavior.

Node handler hierarchy:

```
JID   | Node  | Level
---------------------
None  | None  | Global
Given | None  | All nodes for the JID
None  | Given | Node on self.xmpp.boundjid
Given | Given | A single node
```

Handler types:

```
get_info
get_items
set_identities
set_features
set_items
del_items
del_identities
del_identity
del_feature
del_features
del_item
add_identity
add_feature
add_item
```

Parameters

- **htype** (str) – The operation provided by the handler.
- **jid** (Optional[*JID*]) – The JID the handler applies to. May be narrowed further if a node is given.
- **node** (Optional[str]) – The particular node the handler is for. If no JID is given, then the self.xmpp.boundjid.full is assumed.
- **handler** (Optional[Callable]) – The handler function to use.

stanza = <module 'slixmpp.plugins.xep_0030.stanza' from '/home/docs/checkouts/readthed

supports (*jid=None*, *node=None*, *feature=None*, *local=False*, *cached=True*, *ifrom=None*)

Check if a JID supports a given feature.

Return values: :param True: The feature is supported :param False: The feature is not listed as supported :param None: Nothing could be found due to a timeout

Parameters

- **jid** – Request info from this JID.
- **node** – The particular node to query.

- **`feature`** – The name of the feature to check.
- **`local`** – If true, then the query is for a JID/node combination handled by this Slixmpp instance and no stanzas need to be sent. Otherwise, a disco stanza must be sent to the remove JID to retrieve the info.
- **`cached`** – If true, then look for the disco info data from the local cache system. If no results are found, send the query as usual. The self.use_cache setting must be set to true for this option to be useful. If set to false, then the cache will be skipped, even if a result has already been cached. Defaults to false.

Stanza elements

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class `slixmpp.plugins.xep_0030.stanza.info.`**`DiscoInfo`**(*xml=None*, *parent=None*)

XMPP allows for users and agents to find the identities and features supported by other entities in the XMPP network through service discovery, or "disco". In particular, the "disco#info" query type for <iq> stanzas is used to request the list of identities and features offered by a JID.

An identity is a combination of a category and type, such as the 'client' category with a type of 'pc' to indicate the agent is a human operated client with a GUI, or a category of 'gateway' with a type of 'aim' to identify the agent as a gateway for the legacy AIM protocol. See <http://xmpp.org/registrar/disco-categories.html> for a full list of accepted category and type combinations.

Features are simply a set of the namespaces that identify the supported features. For example, a client that supports service discovery will include the feature 'http://jabber.org/protocol/disco#info'.

Since clients and components may operate in several roles at once, identity and feature information may be grouped into "nodes". If one were to write all of the identities and features used by a client, then node names would be like section headings.

Example disco#info stanzas:

```
<iq type="get">
  <query xmlns="http://jabber.org/protocol/disco#info" />
</iq>

<iq type="result">
  <query xmlns="http://jabber.org/protocol/disco#info">
    <identity category="client" type="bot" name="Slixmpp Bot" />
    <feature var="http://jabber.org/protocol/disco#info" />
    <feature var="jabber:x:data" />
    <feature var="urn:xmpp:ping" />
  </query>
</iq>
```

Stanza Interface:

```
node        -- The name of the node to either
               query or return info from.
identities -- A set of 4-tuples, where each tuple contains
               the category, type, xml:lang, and name
               of an identity.
features    -- A set of namespaces for features.
```

`add_feature` (*feature*)
Add a single, new feature.

Parameters **`feature`** – The namespace of the supported feature.

`add_identity` (*category*, *itype*, *name=None*, *lang=None*)
Add a new identity element. Each identity must be unique in terms of all four identity components.

Multiple, identical category/type pairs are allowed only if the xml:lang values are different. Likewise, multiple category/type/xml:lang pairs are allowed so long as the names are different. In any case, a category and type are required.

Parameters

- **`category`** – The general category to which the agent belongs.
- **`itype`** – A more specific designation with the category.
- **`name`** – Optional human readable name for this identity.
- **`lang`** – Optional standard xml:lang value.

`del_feature` (*feature*)
Remove a single feature.

Parameters **`feature`** – The namespace of the removed feature.

`del_features` ()
Remove all features.

`del_identities` (*lang=None*)
Remove all identities. If a language was specified, only remove identities using that language.

Parameters **`lang`** – Optional, standard xml:lang value.

`del_identity` (*category*, *itype*, *name=None*, *lang=None*)
Remove a given identity.

Parameters

- **`category`** – The general category to which the agent belonged.
- **`itype`** – A more specific designation with the category.
- **`name`** – Optional human readable name for this identity.
- **`lang`** – Optional, standard xml:lang value.

`get_features` (*dedupe=True*)
Return the set of all supported features.

`get_identities` (*lang=None*, *dedupe=True*)
Return a set of all identities in tuple form as so:

(category, type, lang, name)

If a language was specified, only return identities using that language.

Parameters

- **`lang`** – Optional, standard xml:lang value.
- **`dedupe`** – If True, de-duplicate identities, otherwise return a list of all identities.

`interfaces = {'features', 'identities', 'node'}`

`lang_interfaces = {'identities'}`

name = 'query'

namespace = 'http://jabber.org/protocol/disco#info'

plugin_attrib = 'disco_info'

set_features (*features*)
Add or replace the set of supported features.

Parameters **features** – The new set of supported features.

set_identities (*identities*, *lang=None*)
Add or replace all identities. The identities must be a in set where each identity is a tuple of the form:

(category, type, lang, name)

If a language is specifified, any identities using that language will be removed to be replaced with the given identities.

Note: An identity's language will not be changed regardless of the value of lang.

Parameters

- **identities** – A set of identities in tuple form.
- **lang** – Optional, standard xml:lang value.

setup (*xml=None*)
Populate the stanza object using an optional XML object.

Overrides ElementBase.setup

Caches identity and feature information.

Parameters **xml** – Use an existing XML object for the stanza's values.

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class slixmpp.plugins.xep_0030.stanza.items.**DiscoItem** (*xml=None*, *parent=None*)

get_name ()
Return the item's human readable name, or `None`.

get_node ()
Return the item's node name or `None`.

interfaces = {'jid', 'name', 'node'}

name = 'item'

namespace = 'http://jabber.org/protocol/disco#items'

plugin_attrib = 'item'

class slixmpp.plugins.xep_0030.stanza.items.**DiscoItems** (*xml=None*, *parent=None*)
Example disco#items stanzas:

```
<iq type="get">
  <query xmlns="http://jabber.org/protocol/disco#items" />
</iq>

<iq type="result">
  <query xmlns="http://jabber.org/protocol/disco#items">
    <item jid="chat.example.com"
          node="xmppdev"
          name="XMPP Dev" />
    <item jid="chat.example.com"
          node="slixdev"
          name="Slixmpp Dev" />
  </query>
</iq>
```

Stanza Interface:

```
node  -- The name of the node to either
         query or return info from.
items -- A list of 3-tuples, where each tuple contains
         the JID, node, and name of an item.
```

add_item (*jid*, *node=None*, *name=None*)

Add a new item element. Each item is required to have a JID, but may also specify a node value to reference non-addressable entitities.

Parameters

- **jid** – The JID for the item.
- **node** – Optional additional information to reference non-addressable items.
- **name** – Optional human readable name for the item.

del_item (*jid*, *node=None*)

Remove a single item.

Parameters

- **jid** – JID of the item to remove.
- **node** – Optional extra identifying information.

del_items ()

Remove all items.

get_items ()

Return all items.

interfaces = {'items', 'node'}

name = 'query'

namespace = 'http://jabber.org/protocol/disco#items'

plugin_attrib = 'disco_items'

plugin_attrib_map = {'item': <class 'slixmpp.plugins.xep_0030.stanza.items.DiscoItem'

plugin_iterables = {<class 'slixmpp.plugins.xep_0030.stanza.items.DiscoItem'>}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/disco#items}item': <class 'slixmpp.plu

set_items(*items*)
Set or replace all items. The given items must be in a list or set where each item is a tuple of the form:

(jid, node, name)

Parameters **items** – A series of items in tuple format.

setup(*xml=None*)
Populate the stanza object using an optional XML object.

Overrides ElementBase.setup

Caches item information.

Parameters **xml** – Use an existing XML object for the stanza's values.

XEP 0033

class slixmpp.plugins.xep_0033.**XEP_0033**(*xmpp*, *config=None*)
XEP-0033: Extended Stanza Addressing

stanza = <module 'slixmpp.plugins.xep_0033.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0033.stanza.**Address**(*xml=None*, *parent=None*)

address_types = {'bcc', 'cc', 'noreply', 'replyroom', 'replyto', 'to'}

get_delivered()

get_jid()

interfaces = {'delivered', 'desc', 'jid', 'node', 'type', 'uri'}

name = 'address'

namespace = 'http://jabber.org/protocol/address'

plugin_attrib = 'address'

set_delivered(*delivered*)

set_jid(*value*)

set_uri(*uri*)

class slixmpp.plugins.xep_0033.stanza.**Addresses**(*xml=None*, *parent=None*)

add_address(*atype='to', jid='', node='', uri='', desc='', delivered=False*)

del_addresses()

del_all()

del_bcc()

del_cc()

del_noreply()

del_replyroom()

del_replyto()

del_to()

get_addresses()

get_all()

get_bcc()

get_cc()

get_noreply()

get_replyroom()

get_replyto()

get_to()

interfaces = {'addresses', 'all', 'bcc', 'cc', 'noreply', 'replyroom', 'replyto', 'to'

name = 'addresses'

namespace = 'http://jabber.org/protocol/address'

plugin_attrib = 'addresses'

plugin_attrib_map = {'address': <class 'slixmpp.plugins.xep_0033.stanza.Address'>}

plugin_iterables = {<class 'slixmpp.plugins.xep_0033.stanza.Address'>}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/address}address': <class 'slixmpp.plug

set_addresses(*value*)

set_all(*value*)

set_bcc(*value*)

set_cc(*value*)

set_noreply(*value*)

set_replyroom(*value*)

set_replyto(*value*)

set_to(*value*)

slixmpp.plugins.xep_0033.stanza.**del_multi**(*self*)

slixmpp.plugins.xep_0033.stanza.**get_multi**(*self*)

slixmpp.plugins.xep_0033.stanza.**set_multi**(*self*, *value*)

XEP 0045

class slixmpp.plugins.xep_0045.**XEP_0045**(*xmpp*, *config=None*)

Implements XEP-0045 Multi-User Chat

async cancel_config(*room*, ***, *ifrom=None*, ***iqkwargs*)

Cancel a requested config form

Return type Iq

client_handle_presence(*pr*)

As a client, handle a presence stanza

decline(*room*, *jid*, *reason=''*, ***, *mfrom=None*)

Decline a mediated invitation.

async destroy(*room*, *reason=''*, *altroom=''*, ***, *ifrom=None*, ***iqkwargs*)

Destroy a room.

async get_affiliation_list(*room*, *affiliation*, ***, *ifrom=None*, ***iqkwargs*)

"Get a list of JIDs with the specified affiliation

Return type List[*JID*]

get_jid_property(*room*, *nick*, *jid_property*)

Get the property of a nick in a room, such as its 'jid' or 'affiliation' If not found, return None.

get_our_jid_in_room(*room_jid*)

Return the jid we're using in a room.

Return type str

async get_roles_list(*room*, *role*, ***, *ifrom=None*, ***iqkwargs*)

"Get a list of JIDs with the specified role

Return type List[str]

async get_room_config(*room*, *ifrom=''*)

Get the room config form in 0004 plugin format

get_roster(*room*)

Get the list of nicks in a room.

Return type List[str]

handle_config_change(*msg*)

Handle a MUC configuration change (with status code).

handle_groupchat_decline(*decl*)

Handle an invitation decline.

handle_groupchat_error_message(*msg*)

Handle a message error event in a muc.

handle_groupchat_invite(*inv*)

Handle an invite into a muc.

handle_groupchat_join(*pr*)

Received a join presence (as a component)

handle_groupchat_message(*msg*)

Handle a message event in a muc.

Return type None

handle_groupchat_presence(*pr*)
Handle a presence in a muc.

handle_groupchat_subject(*msg*)
Handle a message coming from a muc indicating a change of subject (or announcing it when joining the room)

Return type None

invite(*room*, *jid*, *reason=''*, ***, *mfrom=None*)
Invite a jid to a room.

join_muc(*room*, *nick*, *maxhistory='0'*, *password=''*, *pstatus=''*, *pshow=''*, *pfrom=''*)
Join the specified room, requesting 'maxhistory' lines of history.

leave_muc(*room*, *nick*, *msg=''*, *pfrom=None*)
Leave the specified room.

async send_affiliation_list(*room*, *affiliations*, ***, *ifrom=None*, ***iqkwargs*)
Send an affiliation delta list

Return type Iq

async send_role_list(*room*, *roles*, ***, *ifrom=None*, ***iqkwargs*)
Send a role delta list

Return type Iq

async set_affiliation(*room*, *affiliation*, ***, *jid=None*, *nick=None*, *reason=''*, *ifrom=None*, ***iqkwargs*)
Change room affiliation.

async set_role(*room*, *nick*, *role*, ***, *reason=''*, *ifrom=None*, ***iqkwargs*)
Change role property of a nick in a room. Typically, roles are temporary (they last only as long as you are in the room), whereas affiliations are permanent (they last across groupchat sessions).

async set_room_config(*room*, *config*, ***, *ifrom=None*, ***iqkwargs*)
Send a room config form

Return type Iq

set_subject(*room*, *subject*, ***, *mfrom=None*)
Set a room's subject.

stanza = <module 'slixmpp.plugins.xep_0045.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0045.stanza.**MUCActor**(*xml=None*, *parent=None*)

get_jid()

Return type Optional[*JID*]

interfaces = {'jid', 'nick'}

name = 'actor'

namespace = 'http://jabber.org/protocol/muc#user'

plugin_attrib = 'actor'

class slixmpp.plugins.xep_0045.stanza.**MUCAdminItem**(*xml=None*, *parent=None*)

interfaces = {'affiliation', 'jid', 'nick', 'reason', 'role'}

name = 'item'

namespace = 'http://jabber.org/protocol/muc#admin'

plugin_attrib = 'item'

sub_interfaces = {'reason'}

class slixmpp.plugins.xep_0045.stanza.**MUCAdminQuery**(*xml=None*, *parent=None*)

name = 'query'

namespace = 'http://jabber.org/protocol/muc#admin'

plugin_attrib = 'mucadmin_query'

class slixmpp.plugins.xep_0045.stanza.**MUCBase**(*xml=None*, *parent=None*)

del_affiliation()

del_item_attr(*attr*)

del_jid()

del_nick()

del_role()

del_room()

del_status_codes()

get_affiliation()

get_item_attr(*attr*, *default*)

get_jid()

Return type JID

get_nick()

Return type str

get_role()

Return type str

get_room()

Return type str

get_status_codes()

Return type Set[str]

interfaces = {'affiliation', 'jid', 'nick', 'role', 'room', 'status_codes'}

name = 'x'

namespace = 'http://jabber.org/protocol/muc#user'

plugin_attrib = 'muc'

set_affiliation(*value*)

set_item_attr(*attr*, *value*)

set_jid(*value*)

set_nick(*value*)

set_role(*value*)

set_room(*value*)

set_status_codes(*codes*)

class slixmpp.plugins.xep_0045.stanza.**MUCDecline**(*xml=None*, *parent=None*)

interfaces = {'from', 'reason', 'to'}

name = 'decline'

namespace = 'http://jabber.org/protocol/muc#user'

plugin_attrib = 'decline'

sub_interfaces = {'reason'}

class slixmpp.plugins.xep_0045.stanza.**MUCHistory**(*xml=None*, *parent=None*)

interfaces = {'maxchars', 'maxstanzas', 'seconds', 'since'}

name = 'history'

namespace = 'http://jabber.org/protocol/muc'

plugin_attrib = 'history'

class slixmpp.plugins.xep_0045.stanza.**MUCInvite**(*xml=None*, *parent=None*)

interfaces = {'from', 'reason', 'to'}

name = 'invite'

namespace = 'http://jabber.org/protocol/muc#user'

plugin_attrib = 'invite'

sub_interfaces = {'reason'}

class slixmpp.plugins.xep_0045.stanza.**MUCJoin**(*xml=None*, *parent=None*)

interfaces = {'password'}

name = 'x'

namespace = 'http://jabber.org/protocol/muc'

plugin_attrib = 'muc_join'

sub_interfaces = {'password'}

class slixmpp.plugins.xep_0045.stanza.**MUCMessage**(*xml=None*, *parent=None*)
A MUC Message

```
<message from='foo@muc/user1' type='groupchat' id='someid'>
    <body>Foo</body>
    <x xmlns='http://jabber.org/protocol/muc#user'>
        <item affiliation='none'
              role='none'
              nick='newnick2'
              jid='some@jid'/>
    </x>
</message>
```

class `slixmpp.plugins.xep_0045.stanza.`**MUCOwnerDestroy**(*xml=None*, *parent=None*)

interfaces = {'jid', 'reason'}

name = 'destroy'

plugin_attrib = 'destroy'

sub_interfaces = {'reason'}

class `slixmpp.plugins.xep_0045.stanza.`**MUCOwnerQuery**(*xml=None*, *parent=None*)

name = 'query'

namespace = 'http://jabber.org/protocol/muc#owner'

plugin_attrib = 'mucowner_query'

class `slixmpp.plugins.xep_0045.stanza.`**MUCPresence**(*xml=None*, *parent=None*)

A MUC Presence

```
<presence from='foo@muc/user1' type='unavailable'>
    <x xmlns='http://jabber.org/protocol/muc#user'>
        <item affiliation='none'
              role='none'
              nick='newnick2'
              jid='some@jid'/>
        <status code='303'/>
    </x>
</presence>
```

class `slixmpp.plugins.xep_0045.stanza.`**MUCStatus**(*xml=None*, *parent=None*)

interfaces = {'code'}

name = 'status'

namespace = 'http://jabber.org/protocol/muc#user'

plugin_attrib = 'status'

set_code(*code*)

class `slixmpp.plugins.xep_0045.stanza.`**MUCUserItem**(*xml=None*, *parent=None*)

get_jid()

Return type `Optional[JID]`

interfaces = {'affiliation', 'jid', 'nick', 'reason', 'role'}

name = 'item'

namespace = 'http://jabber.org/protocol/muc#user'

plugin_attrib = 'item'

sub_interfaces = {'reason'}

XEP 0047

class `slixmpp.plugins.xep_0047.`**XEP_0047**(*xmpp*, *config=None*)

Stanza elements

class `slixmpp.plugins.xep_0047.stanza.`**Close**(*xml=None*, *parent=None*)

interfaces = {'sid'}

name = 'close'

namespace = 'http://jabber.org/protocol/ibb'

plugin_attrib = 'ibb_close'

class `slixmpp.plugins.xep_0047.stanza.`**Data**(*xml=None*, *parent=None*)

del_data()

get_data()

get_seq()

interfaces = {'data', 'seq', 'sid'}

name = 'data'

namespace = 'http://jabber.org/protocol/ibb'

plugin_attrib = 'ibb_data'

set_data(*value*)

set_seq(*value*)

sub_interfaces = {'data'}

class `slixmpp.plugins.xep_0047.stanza.`**Open**(*xml=None*, *parent=None*)

del_block_size()

get_block_size()

interfaces = {'block_size', 'sid', 'stanza'}

name = 'open'

namespace = 'http://jabber.org/protocol/ibb'

plugin_attrib = 'ibb_open'

set_block_size(*value*)

`slixmpp.plugins.xep_0047.stanza.`**from_b64**(*data*) slixmpp.plugins.xep_0047.stanza.**to_b64**(*data*)

XEP 0049

class slixmpp.plugins.xep_0049.**XEP_0049**(*xmpp*, *config=None*)

stanza = <module 'slixmpp.plugins.xep_0049.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0049.stanza.**PrivateXML**(*xml=None*, *parent=None*)

interfaces = {}

name = 'query'

namespace = 'jabber:iq:private'

plugin_attrib = 'private'

XEP 0050

class slixmpp.plugins.xep_0050.**XEP_0050**(*xmpp*, *config=None*)

XEP-0050: Ad-Hoc Commands

XMPP's Adhoc Commands provides a generic workflow mechanism for interacting with applications. The result is similar to menu selections and multi-step dialogs in normal desktop applications. Clients do not need to know in advance what commands are provided by any particular application or agent. While adhoc commands provide similar functionality to Jabber-RPC, adhoc commands are used primarily for human interaction.

Also see <http://xmpp.org/extensions/xep-0050.html>

Events: command_execute – Received a command with action="execute" command_next – Received a command with action="next" command_complete – Received a command with action="complete" command_cancel – Received a command with action="cancel"

Attributes:

commands – A dictionary mapping JID/node pairs to command names and handlers.

sessions – A dictionary or equivalent backend mapping session IDs to dictionaries containing data relevant to a command's session.

add_command(*jid=None*, *node=None*, *name=''*, *handler=None*)

Make a new command available to external entities.

Access control may be implemented in the provided handler.

Command workflow is done across a sequence of command handlers. The first handler is given the initial Iq stanza of the request in order to support access control. Subsequent handlers are given only the payload items of the command. All handlers will receive the command's session data.

Parameters

- **jid** – The JID that will expose the command.

- **node** – The node associated with the command.
- **name** – A human readable name for the command.
- **handler** – A function that will generate the response to the initial command request, as well as enforcing any access control policies.

cancel_command(*session*)
Cancel the execution of a command.

Parameters **session** – All stored data relevant to the current command session.

complete_command(*session*)
Finish the execution of a command workflow.

Parameters **session** – All stored data relevant to the current command session.

continue_command(*session*, *direction='next'*)
Execute the next action of the command.

Parameters **session** – All stored data relevant to the current command session.

get_commands(*jid*, ***kwargs*)
Return a list of commands provided by a given JID.

Parameters

- **jid** – The JID to query for commands.
- **local** – If true, then the query is for a JID/node combination handled by this Slixmpp instance and no stanzas need to be sent. Otherwise, a disco stanza must be sent to the remove JID to retrieve the items.
- **iterator** – If True, return a result set iterator using the XEP-0059 plugin, if the plugin is loaded. Otherwise the parameter is ignored.

new_session()
Return a new session ID.

prep_handlers(*handlers*, ***kwargs*)
Prepare a list of functions for use by the backend service.

Intended to be replaced by the backend service as needed.

Parameters

- **handlers** – A list of function pointers
- **kwargs** – Any additional parameters required by the backend.

send_command(*jid*, *node*, *ifrom=None*, *action='execute'*, *payload=None*, *sessionid=None*, *flow=False*, ***kwargs*)
Create and send a command stanza, without using the provided workflow management APIs.

Parameters

- **jid** – The JID to send the command request or result.
- **node** – The node for the command.
- **ifrom** – Specify the sender's JID.
- **action** – May be one of: execute, cancel, complete, or cancel.
- **payload** – Either a list of payload items, or a single payload item such as a data form.
- **sessionid** – The current session's ID value.

- **flow** – If True, process the Iq result using the command workflow methods contained in the session instead of returning the response stanza itself. Defaults to False.

set_backend(*db*)
Replace the default session storage dictionary with a generic, external data storage mechanism.

The replacement backend must be able to interact through the same syntax and interfaces as a normal dictionary.

Parameters db – The new session storage mechanism.

stanza = <module 'slixmpp.plugins.xep_0050.stanza' from '/home/docs/checkouts/readthed

start_command(*jid*, *node*, *session*, *ifrom=None*)
Initiate executing a command provided by a remote agent.

The provided session dictionary should contain:

Parameters

- **next** – A handler for processing the command result.
- **error** – A handler for processing any error stanzas generated by the request.
- **jid** – The JID to send the command request.
- **node** – The node for the desired command.
- **session** – A dictionary of relevant session data.

terminate_command(*session*)
Delete a command's session after a command has completed or an error has occurred.

Parameters session – All stored data relevant to the current command session.

Stanza elements

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class slixmpp.plugins.xep_0050.stanza.**Command**(*xml=None*, *parent=None*)
XMPP's Adhoc Commands provides a generic workflow mechanism for interacting with applications. The result is similar to menu selections and multi-step dialogs in normal desktop applications. Clients do not need to know in advance what commands are provided by any particular application or agent. While adhoc commands provide similar functionality to Jabber-RPC, adhoc commands are used primarily for human interaction.

Also see <http://xmpp.org/extensions/xep-0050.html>

Example command stanzas:

```
<iq type="set">
  <command xmlns="http://jabber.org/protocol/commands"
           node="run_foo"
           action="execute" />
</iq>

<iq type="result">
  <command xmlns="http://jabber.org/protocol/commands"
           node="run_foo"
           sessionid="12345"
           status="executing">
```

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```
    <actions>
      <complete />
    </actions>
    <note type="info">Information!</note>
    <x xmlns="jabber:x:data">
      <field var="greeting"
             type="text-single"
             label="Greeting" />
    </x>
  </command>
</iq>
```

Stanza Interface:

```
action    -- The action to perform.
actions   -- The set of allowable next actions.
node      -- The node associated with the command.
notes     -- A list of tuples for informative notes.
sessionid -- A unique identifier for a command session.
status    -- May be one of: canceled, completed, or executing.
```

actions = {'cancel', 'complete', 'execute', 'next', 'prev'}

add_note (*msg=''*, *ntype='info'*)
Add a single note annotation to the command.

Arguments: msg – A human readable message. ntype – One of: 'info', 'warning', 'error'

del_actions ()
Remove all allowable next actions.

del_notes ()
Remove all notes associated with the command result.

get_action ()
Return the value of the action attribute.

If the Iq stanza's type is "set" then use a default value of "execute".

get_actions ()
Return the set of allowable next actions.

get_notes ()
Return a list of note information.

Example:

[('info', 'Some informative data'), ('warning', 'Use caution'), ('error', 'The command ran, but had errors')]

interfaces = {'action', 'actions', 'node', 'notes', 'sessionid', 'status'}

name = 'command'

namespace = 'http://jabber.org/protocol/commands'

next_actions = {'complete', 'next', 'prev'}

plugin_attrib = 'command'

set_actions (*values*)
Assign the set of allowable next actions.

Parameters `values` – A list containing any combination of: 'prev', 'next', and 'complete'

`set_notes`(*notes*)
Add multiple notes to the command result.

Each note is a tuple, with the first item being one of: 'info', 'warning', or 'error', and the second item being any human readable message.

Example:

[('info', 'Some informative data'), ('warning', 'Use caution'), ('error', 'The command ran, but had errors')]

Arguments: notes – A list of tuples of note information.

`statuses = {'canceled', 'completed', 'executing'}`

XEP 0054

class `slixmpp.plugins.xep_0054.`**`XEP_0054`**(*xmpp*, *config=None*)
XEP-0054: vcard-temp

Stanza elements

class `slixmpp.plugins.xep_0054.stanza.`**`Address`**(*xml=None*, *parent=None*)

`bool_interfaces = {'DOM', 'HOME', 'INTL', 'PREF', 'WORK'}`

`interfaces = {'CTRY', 'DOM', 'EXTADD', 'HOME', 'INTL', 'LOCALITY', 'PARCEL', 'PCODE',`

`name = 'ADR'`

`namespace = 'vcard-temp'`

`plugin_attrib = 'ADR'`

`plugin_multi_attrib = 'addresses'`

`sub_interfaces = {'CTRY', 'EXTADD', 'LOCALITY', 'PCODE', 'POBOX', 'REGION', 'STREET'}`

class `slixmpp.plugins.xep_0054.stanza.`**`Agent`**(*xml=None*, *parent=None*)

`interfaces = {'EXTVAL'}`

`name = 'AGENT'`

`namespace = 'vcard-temp'`

`plugin_attrib = 'AGENT'`

`plugin_attrib_map = {'vcard_temp': <class 'slixmpp.plugins.xep_0054.stanza.VCardTemp'`

`plugin_iterables = {}`

`plugin_multi_attrib = 'agents'`

`plugin_overrides = {}`

`plugin_tag_map = {'{vcard-temp}vCard': <class 'slixmpp.plugins.xep_0054.stanza.VCardT`

`sub_interfaces = {'EXTVAL'}`

class `slixmpp.plugins.xep_0054.stanza.`**`BinVal`**(*xml=None*, *parent=None*)

`del_binval`()

`get_binval`()

`interfaces = {'BINVAL'}`

`is_extension = True`

`name = 'BINVAL'`

`namespace = 'vcard-temp'`

`plugin_attrib = 'BINVAL'`

`set_binval`(*value*)

`setup`(*xml=None*)

Initialize the stanza's XML contents.

Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters **`xml`** – An existing XML object to use for the stanza's content instead of generating new XML.

class `slixmpp.plugins.xep_0054.stanza.`**`Birthday`**(*xml=None*, *parent=None*)

`get_bday`()

`interfaces = {'BDAY'}`

`is_extension = True`

`name = 'BDAY'`

`namespace = 'vcard-temp'`

`plugin_attrib = 'BDAY'`

`plugin_multi_attrib = 'birthdays'`

`set_bday`(*value*)

class `slixmpp.plugins.xep_0054.stanza.`**`Categories`**(*xml=None*, *parent=None*)

`del_categories`()

`get_categories`()

`interfaces = {'CATEGORIES'}`

`is_extension = True`

`name = 'CATEGORIES'`

`namespace = 'vcard-temp'`

`plugin_attrib = 'CATEGORIES'`

`plugin_multi_attrib = 'categories'`

`set_categories`(*values*)

class slixmpp.plugins.xep_0054.stanza.**Classification**(*xml=None*, *parent=None*)

bool_interfaces = {'CONFIDENTIAL', 'PRIVATE', 'PUBLIC'}

interfaces = {'CONFIDENTIAL', 'PRIVATE', 'PUBLIC'}

name = 'CLASS'

namespace = 'vcard-temp'

plugin_attrib = 'CLASS'

plugin_multi_attrib = 'classifications'

class slixmpp.plugins.xep_0054.stanza.**Desc**(*xml=None*, *parent=None*)

get_desc()

interfaces = {'DESC'}

is_extension = True

name = 'DESC'

namespace = 'vcard-temp'

plugin_attrib = 'DESC'

plugin_multi_attrib = 'descriptions'

set_desc(*value*)

class slixmpp.plugins.xep_0054.stanza.**Email**(*xml=None*, *parent=None*)

bool_interfaces = {'HOME', 'INTERNET', 'PREF', 'WORK', 'X400'}

interfaces = {'HOME', 'INTERNET', 'PREF', 'USERID', 'WORK', 'X400'}

name = 'EMAIL'

namespace = 'vcard-temp'

plugin_attrib = 'EMAIL'

plugin_multi_attrib = 'emails'

sub_interfaces = {'USERID'}

class slixmpp.plugins.xep_0054.stanza.**Geo**(*xml=None*, *parent=None*)

interfaces = {'LAT', 'LON'}

name = 'GEO'

namespace = 'vcard-temp'

plugin_attrib = 'GEO'

plugin_multi_attrib = 'geolocations'

sub_interfaces = {'LAT', 'LON'}

class slixmpp.plugins.xep_0054.stanza.**JabberID**(*xml=None*, *parent=None*)

get_jabberid()

interfaces = {'JABBERID'}

is_extension = True

name = 'JABBERID'

namespace = 'vcard-temp'

plugin_attrib = 'JABBERID'

plugin_multi_attrib = 'jids'

set_jabberid(*value*)

class slixmpp.plugins.xep_0054.stanza.**Label**(*xml=None*, *parent=None*)

add_line(*value*)

bool_interfaces = {'DOM', 'HOME', 'INT', 'PARCEL', 'POSTAL', 'PREF', 'WORK'}

del_lines()

get_lines()

interfaces = {'DOM', 'HOME', 'INT', 'PARCEL', 'POSTAL', 'PREF', 'WORK', 'lines'}

name = 'LABEL'

namespace = 'vcard-temp'

plugin_attrib = 'LABEL'

plugin_multi_attrib = 'labels'

set_lines(*values*)

class slixmpp.plugins.xep_0054.stanza.**Logo**(*xml=None*, *parent=None*)

interfaces = {'EXTVAL', 'TYPE'}

name = 'LOGO'

namespace = 'vcard-temp'

plugin_attrib = 'LOGO'

plugin_attrib_map = {'BINVAL': <class 'slixmpp.plugins.xep_0054.stanza.BinVal'>}

plugin_iterables = {}

plugin_multi_attrib = 'logos'

plugin_overrides = {}

plugin_tag_map = {'{vcard-temp}BINVAL': <class 'slixmpp.plugins.xep_0054.stanza.BinVal

sub_interfaces = {'EXTVAL', 'TYPE'}

class slixmpp.plugins.xep_0054.stanza.**Mailer**(*xml=None*, *parent=None*)

get_mailer()

interfaces = {'MAILER'}

is_extension = True

name = 'MAILER'

namespace = 'vcard-temp'

plugin_attrib = 'MAILER'

plugin_multi_attrib = 'mailers'

set_mailer(*value*)

class slixmpp.plugins.xep_0054.stanza.**Name**(*xml=None*, *parent=None*)

get_family()

get_given()

get_middle()

get_prefix()

get_suffix()

interfaces = {'FAMILY', 'GIVEN', 'MIDDLE', 'PREFIX', 'SUFFIX'}

name = 'N'

namespace = 'vcard-temp'

plugin_attrib = 'N'

set_family(*value*)

set_given(*value*)

set_middle(*value*)

set_prefix(*value*)

set_suffix(*value*)

sub_interfaces = {'FAMILY', 'GIVEN', 'MIDDLE', 'PREFIX', 'SUFFIX'}

class slixmpp.plugins.xep_0054.stanza.**Nickname**(*xml=None*, *parent=None*)

get_nickname()

interfaces = {'NICKNAME'}

is_extension = True

name = 'NICKNAME'

namespace = 'vcard-temp'

plugin_attrib = 'NICKNAME'

plugin_multi_attrib = 'nicknames'

set_nickname(*value*)

class slixmpp.plugins.xep_0054.stanza.**Note**(*xml=None*, *parent=None*)

get_note()

interfaces = {'NOTE'}

is_extension = True

name = 'NOTE'

namespace = 'vcard-temp'

plugin_attrib = 'NOTE'

plugin_multi_attrib = 'notes'

set_note(*value*)

class slixmpp.plugins.xep_0054.stanza.**Org**(*xml=None*, *parent=None*)

add_orgunit(*value*)

del_orgunits()

get_orgunits()

interfaces = {'ORGNAME', 'ORGUNIT', 'orgunits'}

name = 'ORG'

namespace = 'vcard-temp'

plugin_attrib = 'ORG'

plugin_multi_attrib = 'organizations'

set_orgunits(*values*)

sub_interfaces = {'ORGNAME', 'ORGUNIT'}

class slixmpp.plugins.xep_0054.stanza.**Photo**(*xml=None*, *parent=None*)

interfaces = {'EXTVAL', 'TYPE'}

name = 'PHOTO'

namespace = 'vcard-temp'

plugin_attrib = 'PHOTO'

plugin_attrib_map = {'BINVAL': <class 'slixmpp.plugins.xep_0054.stanza.BinVal'>}

plugin_iterables = {}

plugin_multi_attrib = 'photos'

plugin_overrides = {}

plugin_tag_map = {'{vcard-temp}BINVAL': <class 'slixmpp.plugins.xep_0054.stanza.BinVal

sub_interfaces = {'EXTVAL', 'TYPE'}

class slixmpp.plugins.xep_0054.stanza.**ProdID**(*xml=None*, *parent=None*)

get_prodid()

interfaces = {'PRODID'}

is_extension = True

name = 'PRODID'

namespace = 'vcard-temp'

plugin_attrib = 'PRODID'

plugin_multi_attrib = 'product_ids'

set_prodid(*value*)

class slixmpp.plugins.xep_0054.stanza.**Rev**(*xml=None*, *parent=None*)

get_rev()

interfaces = {'REV'}

is_extension = True

name = 'REV'

namespace = 'vcard-temp'

plugin_attrib = 'REV'

plugin_multi_attrib = 'revision_dates'

set_rev(*value*)

class slixmpp.plugins.xep_0054.stanza.**Role**(*xml=None*, *parent=None*)

get_role()

interfaces = {'ROLE'}

is_extension = True

name = 'ROLE'

namespace = 'vcard-temp'

plugin_attrib = 'ROLE'

plugin_multi_attrib = 'roles'

set_role(*value*)

class slixmpp.plugins.xep_0054.stanza.**SortString**(*xml=None*, *parent=None*)

get_sort_string()

interfaces = {'SORT-STRING'}

is_extension = True

name = 'SORT-STRING'

namespace = 'vcard-temp'

plugin_attrib = 'SORT_STRING'

plugin_multi_attrib = 'sort_strings'

set_sort_string(*value*)

class slixmpp.plugins.xep_0054.stanza.**Sound**(*xml=None*, *parent=None*)

interfaces = {'EXTVAL', 'PHONETC'}

name = 'SOUND'

namespace = 'vcard-temp'

plugin_attrib = 'SOUND'

plugin_attrib_map = {'BINVAL': <class 'slixmpp.plugins.xep_0054.stanza.BinVal'>}

plugin_iterables = {}

plugin_multi_attrib = 'sounds'

plugin_overrides = {}

plugin_tag_map = {'{vcard-temp}BINVAL': <class 'slixmpp.plugins.xep_0054.stanza.BinVal

sub_interfaces = {'EXTVAL', 'PHONETC'}

class `slixmpp.plugins.xep_0054.stanza.`**Telephone**(*xml=None*, *parent=None*)

bool_interfaces = {'BBS', 'CELL', 'FAX', 'HOME', 'ISDN', 'MODEM', 'MSG', 'PAGER', 'PCS

del_number()

interfaces = {'BBS', 'CELL', 'FAX', 'HOME', 'ISDN', 'MODEM', 'MSG', 'NUMBER', 'PAGER',

name = 'TEL'

namespace = 'vcard-temp'

plugin_attrib = 'TEL'

plugin_multi_attrib = 'telephone_numbers'

set_number(*value*)

setup(*xml=None*)
Initialize the stanza's XML contents.

Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters **`xml`** – An existing XML object to use for the stanza's content instead of generating new XML.

sub_interfaces = {'NUMBER'}

class `slixmpp.plugins.xep_0054.stanza.`**TimeZone**(*xml=None*, *parent=None*)

get_tz()

interfaces = {'TZ'}

is_extension = True

name = 'TZ'

namespace = 'vcard-temp'

plugin_attrib = 'TZ'

plugin_multi_attrib = 'timezones'

set_tz(*value*)

class `slixmpp.plugins.xep_0054.stanza.`**Title**(*xml=None*, *parent=None*)

get_title()

interfaces = {'TITLE'}

is_extension = True

name = 'TITLE'

namespace = 'vcard-temp'

plugin_attrib = 'TITLE'

plugin_multi_attrib = 'titles'

set_title(*value*)

class slixmpp.plugins.xep_0054.stanza.**UID**(*xml=None*, *parent=None*)

get_uid()

interfaces = {'UID'}

is_extension = True

name = 'UID'

namespace = 'vcard-temp'

plugin_attrib = 'UID'

plugin_multi_attrib = 'uids'

set_uid(*value*)

class slixmpp.plugins.xep_0054.stanza.**URL**(*xml=None*, *parent=None*)

get_url()

interfaces = {'URL'}

is_extension = True

name = 'URL'

namespace = 'vcard-temp'

plugin_attrib = 'URL'

plugin_multi_attrib = 'urls'

set_url(*value*)

class slixmpp.plugins.xep_0054.stanza.**VCardTemp**(*xml=None*, *parent=None*)

interfaces = {'FN', 'VERSION'}

name = 'vCard'

namespace = 'vcard-temp'

plugin_attrib = 'vcard_temp'

plugin_attrib_map = {'ADR': <class 'slixmpp.plugins.xep_0054.stanza.Address'>, 'AGENT'

plugin_iterables = {<class 'slixmpp.plugins.xep_0054.stanza.Label'>, <class 'slixmpp.p

plugin_overrides = {}

plugin_tag_map = {'{jabber:client}stanza': <class 'slixmpp.xmlstream.stanzabase.multi

sub_interfaces = {'FN', 'VERSION'}

XEP 0059

class `slixmpp.plugins.xep_0059.`**`XEP_0059`**(*xmpp*, *config=None*)

XEP-0050: Result Set Management

`iterate`(*stanza*, *interface*, *results='substanzas'*, *amount=10*, *reverse=False*, *recv_interface=None*, *pre_cb=None*, *post_cb=None*)

Create a new result set iterator for a given stanza query.

Arguments:

stanza – A stanza object to serve as a template for queries made each iteration. For example, a basic disco#items query.

interface – The name of the substanza to which the result set management stanza should be appended in the query stanza. For example, for disco#items queries the interface 'disco_items' should be used.

recv_interface – The name of the substanza from which the result set management stanza should be read in the result stanza. If unspecified, it will be set to the same value as the `interface` parameter.

pre_cb – Callback to run before sending each stanza e.g. setting the MAM queryid and starting a stanza collector.

post_cb – Callback to run after receiving each stanza e.g. stopping a MAM stanza collector in order to gather results.

results – The name of the interface containing the query results (typically just 'substanzas').

`stanza = <module 'slixmpp.plugins.xep_0059.stanza' from '/home/docs/checkouts/readthed`

Stanza elements

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class `slixmpp.plugins.xep_0059.stanza.`**`Set`**(*xml=None*, *parent=None*)

XEP-0059 (Result Set Management) can be used to manage the results of queries. For example, limiting the number of items per response or starting at certain positions.

Example set stanzas:

```
<iq type="get">
  <query xmlns="http://jabber.org/protocol/disco#items">
    <set xmlns="http://jabber.org/protocol/rsm">
      <max>2</max>
    </set>
  </query>
</iq>

<iq type="result">
  <query xmlns="http://jabber.org/protocol/disco#items">
    <item jid="conference.example.com" />
    <item jid="pubsub.example.com" />
    <set xmlns="http://jabber.org/protocol/rsm">
      <first>conference.example.com</first>
      <last>pubsub.example.com</last>
```

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```
    </set>
  </query>
</iq>
```

Stanza Interface:

```
first_index -- The index attribute of <first>
after       -- The id defining from which item to start
before      -- The id defining from which item to
               start when browsing backwards
max         -- Max amount per response
first       -- Id for the first item in the response
last        -- Id for the last item in the response
index       -- Used to set an index to start from
count       -- The number of remote items available
```

del_first_index()
Removes the index attribute for <first> but keeps the element

get_before()
Returns the value of <before>, if it is empty it will return True

get_first_index()
Returns the value of the index attribute for <first>

interfaces = {'after', 'before', 'count', 'first', 'first_index', 'index', 'last', 'ma

name = 'set'

namespace = 'http://jabber.org/protocol/rsm'

plugin_attrib = 'rsm'

set_before(*val*)
Sets the value of <before>, if the value is True then the element will be created without a value

set_first_index(*val*)
Sets the index attribute for <first> and creates the element if it doesn't exist

sub_interfaces = {'after', 'before', 'count', 'first', 'index', 'last', 'max'}

XEP 0060

class slixmpp.plugins.xep_0060.**XEP_0060**(*xmpp*, *config=None*)
XEP-0060 Publish Subscribe

create_node(*jid*, *node*, *config=None*, *ntype=None*, *ifrom=None*, *timeout_callback=None*, *callback=None*, *timeout=None*)
Create and configure a new pubsub node.

A server MAY use a different name for the node than the one provided, so be sure to check the result stanza for a server assigned name.

If no configuration form is provided, the node will be created using the server's default configuration. To get the default configuration use get_node_config().

Parameters

- **jid** – The JID of the pubsub service.

- **node** – Optional name of the node to create. If no name is provided, the server MAY generate a node ID for you. The server can also assign a different name than the one you provide; check the result stanza to see if the server assigned a name.
- **config** – Optional XEP-0004 data form of configuration settings.
- **ntype** – The type of node to create. Servers typically default to using 'leaf' if no type is provided.

delete_node (*jid*, *node*, *ifrom=None*, *timeout_callback=None*, *callback=None*, *timeout=None*)
Delete a a pubsub node.

Parameters

- **jid** – The JID of the pubsub service.
- **node** – The node to delete.

get_item (*jid*, *node*, *item_id*, *ifrom=None*, *timeout_callback=None*, *callback=None*, *timeout=None*)
Retrieve the content of an individual item.

get_item_ids (*jid*, *node*, *ifrom=None*, *timeout_callback=None*, *callback=None*, *timeout=None*, *iterator=False*)
Retrieve the ItemIDs hosted by a given node, using disco.

get_items (*jid*, *node*, *item_ids=None*, *max_items=None*, *iterator=False*, *ifrom=None*, *timeout_callback=None*, *callback=None*, *timeout=None*)
Request the contents of a node's items.

The desired items can be specified, or a query for the last few published items can be used.

Pubsub services may use result set management for nodes with many items, so an iterator can be returned if needed.

get_node_affiliations (*jid*, *node*, *ifrom=None*, *timeout_callback=None*, *callback=None*, *timeout=None*)
Retrieve the affiliations associated with a given node.

Parameters

- **jid** – The JID of the pubsub service.
- **node** – The node to retrieve affiliations from.

get_node_config (*jid*, *node=None*, *ifrom=None*, *timeout_callback=None*, *callback=None*, *timeout=None*)
Retrieve the configuration for a node, or the pubsub service's default configuration for new nodes.

Parameters

- **jid** – The JID of the pubsub service.
- **node** – The node to retrieve the configuration for. If None, the default configuration for new nodes will be requested. Defaults to None.

get_node_subscriptions (*jid*, *node*, *ifrom=None*, *timeout_callback=None*, *callback=None*, *timeout=None*)
Retrieve the subscriptions associated with a given node.

Parameters

- **jid** – The JID of the pubsub service.
- **node** – The node to retrieve subscriptions from.

get_nodes (**args*, ***kwargs*)
Discover the nodes provided by a Pubsub service, using disco.

map_node_event (*node*, *event_name*)

Map node names to events.

When a pubsub event is received for the given node, raise the provided event.

For example:

```
map_node_event('http://jabber.org/protocol/tune',
               'user_tune')
```

will produce the events 'user_tune_publish' and 'user_tune_retract' when the respective notifications are received from the node 'http://jabber.org/protocol/tune', among other events.

Parameters

- **node** – The node name to map to an event.
- **event_name** – The name of the event to raise when a notification from the given node is received.

publish (*jid*, *node*, *id=None*, *payload=None*, *options=None*, *ifrom=None*, *timeout_callback=None*, *callback=None*, *timeout=None*)

Add a new item to a node, or edit an existing item.

For services that support it, you can use the publish command as an event signal by not including an ID or payload.

When including a payload and you do not provide an ID then the service will generally create an ID for you.

Publish options may be specified, and how those options are processed is left to the service, such as treating the options as preconditions that the node's settings must match.

Parameters

- **jid** – The JID of the pubsub service.
- **node** – The node to publish the item to.
- **id** – Optionally specify the ID of the item.
- **payload** – The item content to publish.
- **options** – A form of publish options.

purge (*jid*, *node*, *ifrom=None*, *timeout_callback=None*, *callback=None*, *timeout=None*)

Remove all items from a node.

retract (*jid*, *node*, *id*, *notify=None*, *ifrom=None*, *timeout_callback=None*, *callback=None*, *timeout=None*)

Delete a single item from a node.

stanza = <module 'slixmpp.plugins.xep_0060.stanza' from '/home/docs/checkouts/readthed

subscribe (*jid*, *node*, *bare=True*, *subscribee=None*, *options=None*, *ifrom=None*, *timeout_callback=None*, *callback=None*, *timeout=None*)

Subscribe to updates from a pubsub node.

The rules for determining the JID that is subscribing to the node are: 1. If subscribee is given, use that as provided. 2. If ifrom was given, use the bare or full version based on bare. 3. Otherwise, use self.xmpp.boundjid based on bare.

Parameters

- **jid** – The pubsub service JID.

- **node** – The node to subscribe to.
- **bare** – Indicates if the subscribee is a bare or full JID. Defaults to True for a bare JID.
- **subscribee** – The JID that is subscribing to the node.
- **options** –

unsubscribe(*jid*, *node*, *subid=None*, *bare=True*, *subscribee=None*, *ifrom=None*, *timeout_callback=None*, *callback=None*, *timeout=None*)

Unubscribe from updates from a pubsub node.

The rules for determining the JID that is unsubscribing from the node are: 1. If subscribee is given, use that as provided. 2. If ifrom was given, use the bare or full version based on bare. 3. Otherwise, use self.xmpp.boundjid based on bare.

Parameters

- **jid** – The pubsub service JID.
- **node** – The node to unsubscribe from.
- **subid** – The specific subscription, if multiple subscriptions exist for this JID/node combination.
- **bare** – Indicates if the subscribee is a bare or full JID. Defaults to True for a bare JID.
- **subscribee** – The JID that is unsubscribing from the node.

Stanza elements

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class slixmpp.plugins.xep_0060.stanza.base.**OptionalSetting**

del_required()

get_required()

interfaces = {'required'}

set_required(*value*)

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class slixmpp.plugins.xep_0060.stanza.pubsub.**Affiliation**(*xml=None*, *parent=None*)

get_jid()

interfaces = {'affiliation', 'jid', 'node'}

name = 'affiliation'

namespace = 'http://jabber.org/protocol/pubsub'

plugin_attrib = 'affiliation'

set_jid(*value*)

class slixmpp.plugins.xep_0060.stanza.pubsub.**Affiliations**(*xml=None*, *parent=None*)

interfaces = {'node'}

name = 'affiliations'

namespace = 'http://jabber.org/protocol/pubsub'

plugin_attrib = 'affiliations'

plugin_attrib_map = {'affiliation': <class 'slixmpp.plugins.xep_0060.stanza.pubsub.Af

plugin_iterables = {<class 'slixmpp.plugins.xep_0060.stanza.pubsub.Affiliation'>}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/pubsub}affiliation': <class 'slixmpp.p

class slixmpp.plugins.xep_0060.stanza.pubsub.**Configure**(*xml=None*, *parent=None*)

getType()

interfaces = {'node', 'type'}

name = 'configure'

namespace = 'http://jabber.org/protocol/pubsub'

plugin_attrib = 'configure'

plugin_attrib_map = {'form': <class 'slixmpp.plugins.xep_0004.stanza.form.Form'>}

plugin_iterables = {}

plugin_overrides = {}

plugin_tag_map = {'{jabber:x:data}x': <class 'slixmpp.plugins.xep_0004.stanza.form.Fo

class slixmpp.plugins.xep_0060.stanza.pubsub.**Create**(*xml=None*, *parent=None*)

interfaces = {'node'}

name = 'create'

namespace = 'http://jabber.org/protocol/pubsub'

plugin_attrib = 'create'

class slixmpp.plugins.xep_0060.stanza.pubsub.**Default**(*xml=None*, *parent=None*)

get_type()

interfaces = {'node', 'type'}

name = 'default'

namespace = 'http://jabber.org/protocol/pubsub'

plugin_attrib = 'default'

class slixmpp.plugins.xep_0060.stanza.pubsub.**Item**(*xml=None*, *parent=None*)

del_payload()

get_payload()

interfaces = {'id', 'payload'}

name = 'item'

namespace = 'http://jabber.org/protocol/pubsub'

plugin_attrib = 'item'

set_payload(*value*)

class slixmpp.plugins.xep_0060.stanza.pubsub.**Items**(*xml=None*, *parent=None*)

interfaces = {'max_items', 'node'}

name = 'items'

namespace = 'http://jabber.org/protocol/pubsub'

plugin_attrib = 'items'

plugin_attrib_map = {'item': <class 'slixmpp.plugins.xep_0060.stanza.pubsub.Item'>}

plugin_iterables = {<class 'slixmpp.plugins.xep_0060.stanza.pubsub.Item'>}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/pubsub}item': <class 'slixmpp.plugins.

set_max_items(*value*)

class slixmpp.plugins.xep_0060.stanza.pubsub.**Options**(**args*, ***kwargs*)

del_options()

get_jid()

get_options()

interfaces = {'jid', 'node', 'options'}

name = 'options'

namespace = 'http://jabber.org/protocol/pubsub'

plugin_attrib = 'options'

set_jid(*value*)

set_options(*value*)

class slixmpp.plugins.xep_0060.stanza.pubsub.**Publish**(*xml=None*, *parent=None*)

interfaces = {'node'}

name = 'publish'

namespace = 'http://jabber.org/protocol/pubsub'

plugin_attrib = 'publish'

plugin_attrib_map = {'item': <class 'slixmpp.plugins.xep_0060.stanza.pubsub.Item'>}

plugin_iterables = {<class 'slixmpp.plugins.xep_0060.stanza.pubsub.Item'>}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/pubsub}item': <class 'slixmpp.plugins.

class slixmpp.plugins.xep_0060.stanza.pubsub.**PublishOptions**(*xml=None*, *parent=None*)

del_publish_options()

get_publish_options()

interfaces = {'publish_options'}

is_extension = True

name = 'publish-options'

namespace = 'http://jabber.org/protocol/pubsub'

plugin_attrib = 'publish_options'

set_publish_options(*value*)

class slixmpp.plugins.xep_0060.stanza.pubsub.**Pubsub**(*xml=None*, *parent=None*)

interfaces = {}

name = 'pubsub'

namespace = 'http://jabber.org/protocol/pubsub'

plugin_attrib = 'pubsub'

plugin_attrib_map = {'affiliations': <class 'slixmpp.plugins.xep_0060.stanza.pubsub.A

plugin_iterables = {}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/pubsub}affiliations': <class 'slixmpp.

class slixmpp.plugins.xep_0060.stanza.pubsub.**Retract**(*xml=None*, *parent=None*)

get_notify()

interfaces = {'node', 'notify'}

name = 'retract'

namespace = 'http://jabber.org/protocol/pubsub'

plugin_attrib = 'retract'

plugin_attrib_map = {'item': <class 'slixmpp.plugins.xep_0060.stanza.pubsub.Item'>}

plugin_iterables = {}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/pubsub}item': <class 'slixmpp.plugins.

set_notify(*value*)

class slixmpp.plugins.xep_0060.stanza.pubsub.**Subscribe**(*xml=None*, *parent=None*)

get_jid()

interfaces = {'jid', 'node'}

name = 'subscribe'

namespace = 'http://jabber.org/protocol/pubsub'

plugin_attrib = 'subscribe'

plugin_attrib_map = {'options': <class 'slixmpp.plugins.xep_0060.stanza.pubsub.Option

plugin_iterables = {}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/pubsub}options': <class 'slixmpp.plugi

set_jid(*value*)

class slixmpp.plugins.xep_0060.stanza.pubsub.**SubscribeOptions**(*xml=None*, *parent=None*)

interfaces = {'required'}

name = 'subscribe-options'

namespace = 'http://jabber.org/protocol/pubsub'

plugin_attrib = 'suboptions'

class slixmpp.plugins.xep_0060.stanza.pubsub.**Subscription**(*xml=None*, *parent=None*)

get_jid()

interfaces = {'jid', 'node', 'subid', 'subscription'}

name = 'subscription'

namespace = 'http://jabber.org/protocol/pubsub'

plugin_attrib = 'subscription'

plugin_attrib_map = {'suboptions': <class 'slixmpp.plugins.xep_0060.stanza.pubsub.Sub

plugin_iterables = {}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/pubsub}subscribe-options': <class 'sli

set_jid(*value*)

class slixmpp.plugins.xep_0060.stanza.pubsub.**Subscriptions**(*xml=None*, *parent=None*)

interfaces = {'node'}

name = 'subscriptions'

namespace = 'http://jabber.org/protocol/pubsub'

plugin_attrib = 'subscriptions'

plugin_attrib_map = {'subscription': <class 'slixmpp.plugins.xep_0060.stanza.pubsub.S

plugin_iterables = {<class 'slixmpp.plugins.xep_0060.stanza.pubsub.Subscription'>}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/pubsub}subscription': <class 'slixmpp.

class slixmpp.plugins.xep_0060.stanza.pubsub.**Unsubscribe**(*xml=None*, *parent=None*)

get_jid()

interfaces = {'jid', 'node', 'subid'}

name = 'unsubscribe'

namespace = 'http://jabber.org/protocol/pubsub'

plugin_attrib = 'unsubscribe'

set_jid(*value*)

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class slixmpp.plugins.xep_0060.stanza.pubsub_errors.**PubsubErrorCondition**(*xml=None*, *parent=None*)

condition_ns = 'http://jabber.org/protocol/pubsub#errors'

conditions = {'closed-node', 'configuration-required', 'invalid-jid', 'invalid-options

del_condition()
Remove the condition element.

del_unsupported()
Delete an unsupported feature condition.

get_condition()
Return the condition element's name.

get_unsupported()
Return the name of an unsupported feature

interfaces = {'condition', 'unsupported'}

plugin_attrib = 'pubsub'

plugin_attrib_map = {}

plugin_tag_map = {}

set_condition(*value*)
Set the tag name of the condition element.

Arguments: value – The tag name of the condition element.

set_unsupported(*value*)
Mark a feature as unsupported

setup(*xml*)
Don't create XML for the plugin.

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class slixmpp.plugins.xep_0060.stanza.pubsub_owner.**DefaultConfig**(**args*, ***kwargs*)

get_config()

interfaces = {'config', 'node'}

name = 'default'

namespace = 'http://jabber.org/protocol/pubsub#owner'

plugin_attrib = 'default'

plugin_attrib_map = {'form': <class 'slixmpp.plugins.xep_0004.stanza.form.Form'>}

plugin_iterables = {}

plugin_overrides = {}

plugin_tag_map = {'{jabber:x:data}x': <class 'slixmpp.plugins.xep_0004.stanza.form.Fo

set_config(*value*)

class slixmpp.plugins.xep_0060.stanza.pubsub_owner.**OwnerAffiliation**(*xml=None*, *par-ent=None*)

interfaces = {'affiliation', 'jid'}

namespace = 'http://jabber.org/protocol/pubsub#owner'

class slixmpp.plugins.xep_0060.stanza.pubsub_owner.**OwnerAffiliations**(*xml=None*, *par-ent=None*)

append(*affiliation*)

Append either an XML object or a substanza to this stanza object.

If a substanza object is appended, it will be added to the list of iterable stanzas.

Allows stanza objects to be used like lists.

Parameters **item** – Either an XML object or a stanza object to add to this stanza's contents.

interfaces = {'node'}

namespace = 'http://jabber.org/protocol/pubsub#owner'

plugin_attrib_map = {'affiliation': <class 'slixmpp.plugins.xep_0060.stanza.pubsub_ow

plugin_iterables = {<class 'slixmpp.plugins.xep_0060.stanza.pubsub.Affiliation'>, <cla

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/pubsub#owner}affiliation': <class 'sli

class slixmpp.plugins.xep_0060.stanza.pubsub_owner.**OwnerConfigure**(*xml=None*, *par-ent=None*)

interfaces = {'node'}

name = 'configure'

namespace = 'http://jabber.org/protocol/pubsub#owner'

plugin_attrib = 'configure'

plugin_attrib_map = {'form': <class 'slixmpp.plugins.xep_0004.stanza.form.Form'>}

plugin_iterables = {}

plugin_overrides = {}

plugin_tag_map = {'{jabber:x:data}x': <class 'slixmpp.plugins.xep_0004.stanza.form.Fo

class slixmpp.plugins.xep_0060.stanza.pubsub_owner.**OwnerDefault**(*xml=None*, *parent=None*)

interfaces = {'node'}

namespace = 'http://jabber.org/protocol/pubsub#owner'

plugin_attrib_map = {'form': <class 'slixmpp.plugins.xep_0004.stanza.form.Form'>}

plugin_iterables = {}

plugin_overrides = {}

plugin_tag_map = {'{jabber:x:data}x': <class 'slixmpp.plugins.xep_0004.stanza.form.Fo

class slixmpp.plugins.xep_0060.stanza.pubsub_owner.**OwnerDelete**(*xml=None*, *parent=None*)

interfaces = {'node'}

name = 'delete'

namespace = 'http://jabber.org/protocol/pubsub#owner'

plugin_attrib = 'delete'

plugin_attrib_map = {'redirect': <class 'slixmpp.plugins.xep_0060.stanza.pubsub_owner

plugin_iterables = {}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/pubsub#owner}redirect': <class 'slixmp

class slixmpp.plugins.xep_0060.stanza.pubsub_owner.**OwnerPurge**(*xml=None*, *parent=None*)

interfaces = {'node'}

name = 'purge'

namespace = 'http://jabber.org/protocol/pubsub#owner'

plugin_attrib = 'purge'

class slixmpp.plugins.xep_0060.stanza.pubsub_owner.**OwnerRedirect**(*xml=None*, *parent=None*)

get_jid()

interfaces = {'jid', 'node'}

name = 'redirect'

namespace = 'http://jabber.org/protocol/pubsub#owner'

plugin_attrib = 'redirect'

set_jid(*value*)

class slixmpp.plugins.xep_0060.stanza.pubsub_owner.**OwnerSubscription**(*xml=None*, *parent=None*)

get_jid()

interfaces = {'jid', 'subscription'}

name = 'subscription'

namespace = 'http://jabber.org/protocol/pubsub#owner'

plugin_attrib = 'subscription'

set_jid(*value*)

class slixmpp.plugins.xep_0060.stanza.pubsub_owner.**OwnerSubscriptions**(*xml=None*, *parent=None*)

append(*subscription*)

Append either an XML object or a substanza to this stanza object.

If a substanza object is appended, it will be added to the list of iterable stanzas.

Allows stanza objects to be used like lists.

Parameters **item** – Either an XML object or a stanza object to add to this stanza's contents.

interfaces = {'node'}

name = 'subscriptions'

namespace = 'http://jabber.org/protocol/pubsub#owner'

plugin_attrib = 'subscriptions'

plugin_attrib_map = {'subscription': <class 'slixmpp.plugins.xep_0060.stanza.pubsub_o

plugin_iterables = {<class 'slixmpp.plugins.xep_0060.stanza.pubsub.Subscription'>, <cl

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/pubsub#owner}subscription': <class 'sl

class slixmpp.plugins.xep_0060.stanza.pubsub_owner.**PubsubOwner**(*xml=None*, *parent=None*)

interfaces = {}

name = 'pubsub'

namespace = 'http://jabber.org/protocol/pubsub#owner'

plugin_attrib = 'pubsub_owner'

plugin_attrib_map = {'affiliations': <class 'slixmpp.plugins.xep_0060.stanza.pubsub_o

plugin_iterables = {}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/pubsub#owner}affiliations': <class 'sl

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class slixmpp.plugins.xep_0060.stanza.pubsub_event.**Event**(*xml=None*, *parent=None*)

interfaces = {}

name = 'event'

namespace = 'http://jabber.org/protocol/pubsub#event'

plugin_attrib = 'pubsub_event'

plugin_attrib_map = {'collection': <class 'slixmpp.plugins.xep_0060.stanza.pubsub_eve

plugin_iterables = {}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/pubsub#event}collection': <class 'slix

class slixmpp.plugins.xep_0060.stanza.pubsub_event.**EventAssociate**(*xml=None, parent=None*)

interfaces = {'node'}

name = 'associate'

namespace = 'http://jabber.org/protocol/pubsub#event'

plugin_attrib = 'associate'

class slixmpp.plugins.xep_0060.stanza.pubsub_event.**EventCollection**(*xml=None, parent=None*)

interfaces = {'node'}

name = 'collection'

namespace = 'http://jabber.org/protocol/pubsub#event'

plugin_attrib = 'collection'

plugin_attrib_map = {'associate': <class 'slixmpp.plugins.xep_0060.stanza.pubsub_even

plugin_iterables = {}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/pubsub#event}associate': <class 'slixm

class slixmpp.plugins.xep_0060.stanza.pubsub_event.**EventConfiguration**(*xml=None, parent=None*)

interfaces = {'node'}

name = 'configuration'

namespace = 'http://jabber.org/protocol/pubsub#event'

plugin_attrib = 'configuration'

plugin_attrib_map = {'form': <class 'slixmpp.plugins.xep_0004.stanza.form.Form'>}

plugin_iterables = {}

plugin_overrides = {}

plugin_tag_map = {'{jabber:x:data}x': <class 'slixmpp.plugins.xep_0004.stanza.form.Fo

class slixmpp.plugins.xep_0060.stanza.pubsub_event.**EventDelete**(*xml=None, parent=None*)

del_redirect()

get_redirect()

    interfaces = {'node', 'redirect'}

    name = 'delete'

    namespace = 'http://jabber.org/protocol/pubsub#event'

    plugin_attrib = 'delete'

    set_redirect(*uri*)

class slixmpp.plugins.xep_0060.stanza.pubsub_event.**EventDisassociate**(*xml=None*, *parent=None*)

    interfaces = {'node'}

    name = 'disassociate'

    namespace = 'http://jabber.org/protocol/pubsub#event'

    plugin_attrib = 'disassociate'

class slixmpp.plugins.xep_0060.stanza.pubsub_event.**EventItem**(*xml=None*, *parent=None*)

    del_payload()

    get_payload()

    interfaces = {'id', 'node', 'payload', 'publisher'}

    name = 'item'

    namespace = 'http://jabber.org/protocol/pubsub#event'

    plugin_attrib = 'item'

    set_payload(*value*)

class slixmpp.plugins.xep_0060.stanza.pubsub_event.**EventItems**(*xml=None*, *parent=None*)

    interfaces = {'node'}

    name = 'items'

    namespace = 'http://jabber.org/protocol/pubsub#event'

    plugin_attrib = 'items'

    plugin_attrib_map = {'item': <class 'slixmpp.plugins.xep_0060.stanza.pubsub_event.Eve

    plugin_iterables = {<class 'slixmpp.plugins.xep_0060.stanza.pubsub_event.EventRetract'

    plugin_overrides = {}

    plugin_tag_map = {'{http://jabber.org/protocol/pubsub#event}item': <class 'slixmpp.pl

class slixmpp.plugins.xep_0060.stanza.pubsub_event.**EventPurge**(*xml=None*, *parent=None*)

    interfaces = {'node'}

    name = 'purge'

    namespace = 'http://jabber.org/protocol/pubsub#event'

    plugin_attrib = 'purge'

class slixmpp.plugins.xep_0060.stanza.pubsub_event.**EventRetract**(*xml=None*, *parent=None*)

interfaces = {'id'}

name = 'retract'

namespace = 'http://jabber.org/protocol/pubsub#event'

plugin_attrib = 'retract'

class slixmpp.plugins.xep_0060.stanza.pubsub_event.**EventSubscription**(*xml=None*, *parent=None*)

get_expiry()

get_jid()

interfaces = {'expiry', 'jid', 'node', 'subid', 'subscription'}

name = 'subscription'

namespace = 'http://jabber.org/protocol/pubsub#event'

plugin_attrib = 'subscription'

set_expiry(*value*)

set_jid(*value*)

XEP 0065

class slixmpp.plugins.xep_0065.**XEP_0065**(*xmpp*, *config=None*)

activate(*proxy*, *sid*, *target*, *ifrom=None*, *timeout=None*, *callback=None*)
Activate the socks5 session that has been negotiated.

close()
Closes all proxy sockets.

deactivate(*sid*)
Closes the proxy socket associated with this SID.

async discover_proxies(*jid=None*, *ifrom=None*, *timeout=None*)
Auto-discover the JIDs of SOCKS5 proxies on an XMPP server.

get_network_address(*proxy*, *ifrom=None*, *timeout=None*, *callback=None*)
Get the network information of a proxy.

get_socket(*sid*)
Returns the socket associated to the SID.

async handshake(*to*, *ifrom=None*, *sid=None*, *timeout=None*)
Starts the handshake to establish the socks5 bytestreams connection.

Stanza elements

class slixmpp.plugins.xep_0065.stanza.**Socks5**(*xml=None*, *parent=None*)

add_streamhost(*jid*, *host*, *port*)

interfaces = {'activate', 'sid'}

name = 'query'

namespace = 'http://jabber.org/protocol/bytestreams'

plugin_attrib = 'socks'

plugin_attrib_map = {'streamhost': <class 'slixmpp.plugins.xep_0065.stanza.StreamHost

plugin_iterables = {<class 'slixmpp.plugins.xep_0065.stanza.StreamHost'>}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/bytestreams}streamhost': <class 'slixm

sub_interfaces = {'activate'}

class slixmpp.plugins.xep_0065.stanza.**StreamHost**(*xml=None*, *parent=None*)

get_jid()

interfaces = {'host', 'jid', 'port'}

name = 'streamhost'

namespace = 'http://jabber.org/protocol/bytestreams'

plugin_attrib = 'streamhost'

plugin_multi_attrib = 'streamhosts'

set_jid(*value*)

class slixmpp.plugins.xep_0065.stanza.**StreamHostUsed**(*xml=None*, *parent=None*)

get_jid()

interfaces = {'jid'}

name = 'streamhost-used'

namespace = 'http://jabber.org/protocol/bytestreams'

plugin_attrib = 'streamhost_used'

set_jid(*value*)

XEP 0066

class slixmpp.plugins.xep_0066.**XEP_0066**(*xmpp*, *config=None*)

XEP-0066: Out of Band Data

Out of Band Data is a basic method for transferring files between XMPP agents. The URL of the resource in question is sent to the receiving entity, which then downloads the resource before responding to the OOB request. OOB is also used as a generic means to transmit URLs in other stanzas to indicate where to find additional information.

Also see <http://www.xmpp.org/extensions/xep-0066.html>.

Events:

oob_transfer – Raised when a request to download a resource has been received.

register_url_handler(*jid=None*, *handler=None*)

Register a handler to process download requests, either for all JIDs or a single JID.

Parameters

- **jid** – If None, then set the handler as a global default.
- **handler** – If None, then remove the existing handler for the given JID, or reset the global handler if the JID is None.

send_oob(*to*, *url*, *desc=None*, *ifrom=None*, ***iqargs*)

Initiate a basic file transfer by sending the URL of a file or other resource.

Parameters

- **url** – The URL of the resource to transfer.
- **desc** – An optional human readable description of the item that is to be transferred.

stanza = <module 'slixmpp.plugins.xep_0066.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0066.stanza.**OOB**(*xml=None*, *parent=None*)

interfaces = {'desc', 'url'}

name = 'x'

namespace = 'jabber:x:oob'

plugin_attrib = 'oob'

sub_interfaces = {'desc', 'url'}

class slixmpp.plugins.xep_0066.stanza.**OOBTransfer**(*xml=None*, *parent=None*)

interfaces = {'desc', 'sid', 'url'}

name = 'query'

namespace = 'jabber:iq:oob'

plugin_attrib = 'oob_transfer'

sub_interfaces = {'desc', 'url'}

XEP 0070

class slixmpp.plugins.xep_0070.**XEP_0070**(*xmpp*, *config=None*)

XEP-0070 Verifying HTTP Requests via XMPP

stanza = <module 'slixmpp.plugins.xep_0070.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0070.stanza.**Confirm**(*xml=None*, *parent=None*)

interfaces = {'id', 'method', 'url'}

name = 'confirm'

namespace = 'http://jabber.org/protocol/http-auth'

plugin_attrib = 'confirm'

XEP 0071

class slixmpp.plugins.xep_0071.**XEP_0071**(*xmpp*, *config=None*)

stanza = <module 'slixmpp.plugins.xep_0071.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0071.stanza.**XHTML_IM**(*xml=None*, *parent=None*)

del_body(*lang=None*)

get_body(*lang=None*)

Return the contents of the HTML body.

interfaces = {'body'}

lang_interfaces = {'body'}

name = 'html'

namespace = 'http://jabber.org/protocol/xhtml-im'

plugin_attrib = 'html'

set_body(*content*, *lang=None*)

XEP 0077

class slixmpp.plugins.xep_0077.**XEP_0077**(*xmpp*, *config=None*)

XEP-0077: In-Band Registration

stanza = <module 'slixmpp.plugins.xep_0077.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0077.stanza.**Register**(*xml=None*, *parent=None*)

add_field(*value*)

del_fields()

form_fields = {'address', 'city', 'date', 'email', 'first', 'key', 'last', 'misc', 'na

get_fields()

get_registered()

get_remove()

interfaces = {'address', 'city', 'date', 'email', 'fields', 'first', 'instructions', '

name = 'query'

namespace = 'jabber:iq:register'

plugin_attrib = 'register'

set_fields(*fields*)

set_registered(*value*)

set_remove(*value*)

sub_interfaces = {'address', 'city', 'date', 'email', 'fields', 'first', 'instructions

class slixmpp.plugins.xep_0077.stanza.**RegisterFeature**(*xml=None*, *parent=None*)

interfaces = {}

name = 'register'

namespace = 'http://jabber.org/features/iq-register'

plugin_attrib = 'register'

XEP 0079

class slixmpp.plugins.xep_0079.**XEP_0079**(*xmpp*, *config=None*)

XEP-0079 Advanced Message Processing

stanza = <module 'slixmpp.plugins.xep_0079.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0079.stanza.**AMP**(*xml=None*, *parent=None*)

add_rule(*action*, *condition*, *value*)

del_per_hop()

get_from()

get_per_hop()

get_to()

interfaces = {'from', 'per_hop', 'status', 'to'}

name = 'amp'

namespace = 'http://jabber.org/protocol/amp'

plugin_attrib = 'amp'

plugin_attrib_map = {'rule': <class 'slixmpp.plugins.xep_0079.stanza.Rule'>, 'rules':

plugin_iterables = {<class 'slixmpp.plugins.xep_0079.stanza.Rule'>}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/amp}rule': <class 'slixmpp.plugins.xep

set_from(*value*)

set_per_hop(*value*)

set_to(*value*)

class slixmpp.plugins.xep_0079.stanza.**AMPFeature**(*xml=None*, *parent=None*)

name = 'amp'

namespace = 'http://jabber.org/features/amp'

class slixmpp.plugins.xep_0079.stanza.**FailedRule**(*xml=None*, *parent=None*)

namespace = 'http://jabber.org/protocol/amp#errors'

class slixmpp.plugins.xep_0079.stanza.**FailedRules**(*xml=None*, *parent=None*)

name = 'failed-rules'

namespace = 'http://jabber.org/protocol/amp#errors'

plugin_attrib = 'failed_rules'

plugin_attrib_map = {'rule': <class 'slixmpp.plugins.xep_0079.stanza.FailedRule'>, 'ru

plugin_iterables = {<class 'slixmpp.plugins.xep_0079.stanza.FailedRule'>}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/amp#errors}rule': <class 'slixmpp.plug

class slixmpp.plugins.xep_0079.stanza.**InvalidRules**(*xml=None*, *parent=None*)

name = 'invalid-rules'

namespace = 'http://jabber.org/protocol/amp'

plugin_attrib = 'invalid_rules'

plugin_attrib_map = {'rule': <class 'slixmpp.plugins.xep_0079.stanza.Rule'>, 'rules':

plugin_iterables = {<class 'slixmpp.plugins.xep_0079.stanza.Rule'>}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/amp}rule': <class 'slixmpp.plugins.xep_

class slixmpp.plugins.xep_0079.stanza.**Rule**(*xml=None*, *parent=None*)

interfaces = {'action', 'condition', 'value'}

name = 'rule'

namespace = 'http://jabber.org/protocol/amp'

plugin_attrib = 'rule'

plugin_multi_attrib = 'rules'

class slixmpp.plugins.xep_0079.stanza.**UnsupportedActions**(*xml=None*, *parent=None*)

name = 'unsupported-actions'

namespace = 'http://jabber.org/protocol/amp'

plugin_attrib = 'unsupported_actions'

plugin_attrib_map = {'rule': <class 'slixmpp.plugins.xep_0079.stanza.Rule'>, 'rules':

plugin_iterables = {<class 'slixmpp.plugins.xep_0079.stanza.Rule'>}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/amp}rule': <class 'slixmpp.plugins.xep_

class slixmpp.plugins.xep_0079.stanza.**UnsupportedConditions**(*xml=None*, *parent=None*)

name = 'unsupported-conditions'

namespace = 'http://jabber.org/protocol/amp'

plugin_attrib = 'unsupported_conditions'

plugin_attrib_map = {'rule': <class 'slixmpp.plugins.xep_0079.stanza.Rule'>, 'rules':

plugin_iterables = {<class 'slixmpp.plugins.xep_0079.stanza.Rule'>}

plugin_overrides = {}

plugin_tag_map = {'{http://jabber.org/protocol/amp}rule': <class 'slixmpp.plugins.xep

XEP 0080

class slixmpp.plugins.xep_0080.**XEP_0080**(*xmpp*, *config=None*)
XEP-0080: User Location

publish_location(***kwargs*)
Publish the user's current location.

Parameters

- **accuracy** – Horizontal GPS error in meters.
- **alt** – Altitude in meters above or below sea level.
- **area** – A named area such as a campus or neighborhood.
- **bearing** – GPS bearing (direction in which the entity is heading to reach its next way-point), measured in decimal degrees relative to true north.
- **building** – A specific building on a street or in an area.
- **country** – The nation where the user is located.
- **countrycode** – The ISO 3166 two-letter country code.
- **datum** – GPS datum.
- **description** – A natural-language name for or description of the location.
- **error** – Horizontal GPS error in arc minutes. Obsoleted by the accuracy parameter.
- **floor** – A particular floor in a building.
- **lat** – Latitude in decimal degrees North.
- **locality** – A locality within the administrative region, such as a town or city.
- **lon** – Longitude in decimal degrees East.
- **postalcode** – A code used for postal delivery.
- **region** – An administrative region of the nation, such as a state or province.
- **room** – A particular room in a building.
- **speed** – The speed at which the entity is moving, in meters per second.
- **street** – A thoroughfare within the locality, or a crossing of two thoroughfares.
- **text** – A catch-all element that captures any other information about the location.
- **timestamp** – UTC timestamp specifying the moment when the reading was taken.
- **uri** – A URI or URL pointing to information about the location.
- **options** – Optional form of publish options.

stanza = <module 'slixmpp.plugins.xep_0080.stanza' from '/home/docs/checkouts/readthed

stop(*ifrom=None*, *callback=None*, *timeout=None*, *timeout_callback=None*)
Clear existing user location information to stop notifications.

Stanza elements

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class slixmpp.plugins.xep_0080.stanza.**Geoloc**(*xml=None*, *parent=None*)

XMPP's <geoloc> stanza allows entities to know the current geographical or physical location of an entity. (XEP-0080: User Location)

Example <geoloc> stanzas:

```
<geoloc xmlns='http://jabber.org/protocol/geoloc'/>

<geoloc xmlns='http://jabber.org/protocol/geoloc' xml:lang='en'>
  <accuracy>20</accuracy>
  <country>Italy</country>
  <lat>45.44</lat>
  <locality>Venice</locality>
  <lon>12.33</lon>
</geoloc>
```

Stanza Interface:

```
accuracy    -- Horizontal GPS error in meters.
alt         -- Altitude in meters above or below sea level.
area        -- A named area such as a campus or neighborhood.
bearing     -- GPS bearing (direction in which the entity is
               heading to reach its next waypoint), measured in
               decimal degrees relative to true north.
building    -- A specific building on a street or in an area.
country     -- The nation where the user is located.
countrycode -- The ISO 3166 two-letter country code.
datum       -- GPS datum.
description -- A natural-language name for or description of
               the location.
error       -- Horizontal GPS error in arc minutes. Obsoleted by
               the accuracy parameter.
floor       -- A particular floor in a building.
lat         -- Latitude in decimal degrees North.
locality    -- A locality within the administrative region, such
               as a town or city.
lon         -- Longitude in decimal degrees East.
postalcode  -- A code used for postal delivery.
region      -- An administrative region of the nation, such
               as a state or province.
room        -- A particular room in a building.
speed       -- The speed at which the entity is moving,
               in meters per second.
street      -- A thoroughfare within the locality, or a crossing
               of two thoroughfares.
text        -- A catch-all element that captures any other
               information about the location.
timestamp   -- UTC timestamp specifying the moment when the
               reading was taken.
uri         -- A URI or URL pointing to information about
               the location.
```

exception(*e*)

Override exception passback for presence.

`get_accuracy`()
Return the value of the <accuracy> element as an integer.

`get_alt`()
Return the value of the <alt> element as an integer.

`get_bearing`()
Return the value of the <bearing> element as a float.

`get_error`()
Return the value of the <error> element as a float.

`get_lat`()
Return the value of the <lat> element as a float.

`get_lon`()
Return the value of the <lon> element as a float.

`get_speed`()
Return the value of the <speed> element as a float.

`get_timestamp`()
Return the value of the <timestamp> element as a DateTime.

`interfaces = {'accuracy', 'alt', 'area', 'bearing', 'building', 'country', 'countrycod`

`name = 'geoloc'`

`namespace = 'http://jabber.org/protocol/geoloc'`

`plugin_attrib = 'geoloc'`

`set_accuracy`(*accuracy*)
Set the value of the <accuracy> element.

Parameters **`accuracy`** – Horizontal GPS error in meters

`set_alt`(*alt*)
Set the value of the <alt> element.

Parameters **`alt`** – Altitude in meters above or below sea level

`set_bearing`(*bearing*)
Set the value of the <bearing> element.

Parameters **`bearing`** – GPS bearing (direction in which the entity is heading to reach its next waypoint), measured in decimal degrees relative to true north

`set_error`(*error*)
Set the value of the <error> element.

Parameters **`error`** – Horizontal GPS error in arc minutes; this element is deprecated in favor of <accuracy/>

`set_lat`(*lat*)
Set the value of the <lat> element.

Parameters **`lat`** – Latitude in decimal degrees North

`set_lon`(*lon*)
Set the value of the <lon> element.

Parameters **`lon`** – Longitude in decimal degrees East

set_speed(*speed*)
Set the value of the <speed> element.

Parameters **speed** – The speed at which the entity is moving, in meters per second

set_timestamp(*timestamp*)
Set the value of the <timestamp> element.

Parameters **timestamp** – UTC timestamp specifying the moment when the reading was taken

sub_interfaces = {'accuracy', 'alt', 'area', 'bearing', 'building', 'country', 'countr

XEP 0082

class slixmpp.plugins.xep_0082.**XEP_0082**(*xmpp*, *config=None*)
XEP-0082: XMPP Date and Time Profiles

XMPP uses a subset of the formats allowed by ISO 8601 as a matter of pragmatism based on the relatively few formats historically used by the XMPP.

Also see <http://www.xmpp.org/extensions/xep-0082.html>.

Methods: date – Create a time stamp using the Date profile. datetime – Create a time stamp using the DateTime profile. time – Create a time stamp using the Time profile. format_date – Format an existing date object. format_datetime – Format an existing datetime object. format_time – Format an existing time object. parse – Convert a time string into a Python datetime object.

XEP 0084

class slixmpp.plugins.xep_0084.**XEP_0084**(*xmpp*, *config=None*)

stanza = <module 'slixmpp.plugins.xep_0084.stanza' from '/home/docs/checkouts/readthed

stop(*ifrom=None*, *callback=None*, *timeout=None*, *timeout_callback=None*)
Clear existing avatar metadata information to stop notifications.

Stanza elements

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class slixmpp.plugins.xep_0084.stanza.**Data**(*xml=None*, *parent=None*)

del_value()

get_value()

interfaces = {'value'}

name = 'data'

namespace = 'urn:xmpp:avatar:data'

plugin_attrib = 'avatar_data'

set_value(*value*)

class slixmpp.plugins.xep_0084.stanza.**Info**(*xml=None*, *parent=None*)

    interfaces = {'bytes', 'height', 'id', 'type', 'url', 'width'}

    name = 'info'

    namespace = 'urn:xmpp:avatar:metadata'

    plugin_attrib = 'info'

    plugin_multi_attrib = 'items'

class slixmpp.plugins.xep_0084.stanza.**MetaData**(*xml=None*, *parent=None*)

    add_info(*id*, *itype*, *ibytes*, *height=None*, *width=None*, *url=None*)

    add_pointer(*xml*)

    interfaces = {}

    name = 'metadata'

    namespace = 'urn:xmpp:avatar:metadata'

    plugin_attrib = 'avatar_metadata'

    plugin_attrib_map = {'info': <class 'slixmpp.plugins.xep_0084.stanza.Info'>, 'items':

    plugin_iterables = {<class 'slixmpp.plugins.xep_0084.stanza.Info'>, <class 'slixmpp.pl

    plugin_overrides = {}

    plugin_tag_map = {'{jabber:client}stanza': <class 'slixmpp.xmlstream.stanzabase.multi

class slixmpp.plugins.xep_0084.stanza.**Pointer**(*xml=None*, *parent=None*)

    interfaces = {}

    name = 'pointer'

    namespace = 'urn:xmpp:avatar:metadata'

    plugin_attrib = 'pointer'

    plugin_multi_attrib = 'pointers'

XEP 0085

class slixmpp.plugins.xep_0085.**XEP_0085**(*xmpp*, *config=None*)

    XEP-0085 Chat State Notifications

    stanza = <module 'slixmpp.plugins.xep_0085.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class `slixmpp.plugins.xep_0085.stanza.`**`Active`**(*xml=None*, *parent=None*)

> **`name = 'active'`**

class `slixmpp.plugins.xep_0085.stanza.`**`ChatState`**(*xml=None*, *parent=None*)

> Example chat state stanzas:
>
> ```
> <message>
>   <active xmlns="http://jabber.org/protocol/chatstates" />
> </message>
>
> <message>
>   <paused xmlns="http://jabber.org/protocol/chatstates" />
> </message>
> ```
>
> **`del_chat_state`**()
>
> **`get_chat_state`**()
>
> **`interfaces = {'chat_state'}`**
>
> **`is_extension = True`**
>
> **`name = ''`**
>
> **`namespace = 'http://jabber.org/protocol/chatstates'`**
>
> **`plugin_attrib = 'chat_state'`**
>
> **`set_chat_state`**(*state*)
>
> **`setup`**(*xml=None*)
>
> > Initialize the stanza's XML contents.
> >
> > Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.
> >
> > **Parameters** **`xml`** – An existing XML object to use for the stanza's content instead of generating new XML.
>
> **`states = {'active', 'composing', 'gone', 'inactive', 'paused'}`**
>
> **`sub_interfaces = {'chat_state'}`**

class `slixmpp.plugins.xep_0085.stanza.`**`Composing`**(*xml=None*, *parent=None*)

> **`name = 'composing'`**

class `slixmpp.plugins.xep_0085.stanza.`**`Gone`**(*xml=None*, *parent=None*)

> **`name = 'gone'`**

class `slixmpp.plugins.xep_0085.stanza.`**`Inactive`**(*xml=None*, *parent=None*)

> **`name = 'inactive'`**

class slixmpp.plugins.xep_0085.stanza.**Paused**(*xml=None*, *parent=None*)

name = 'paused'

XEP 0086

class slixmpp.plugins.xep_0086.**XEP_0086**(*xmpp*, *config=None*)
XEP-0086: Error Condition Mappings

Older XMPP implementations used code based error messages, similar to HTTP response codes. Since then, error condition elements have been introduced. XEP-0086 provides a mapping between the new condition elements and a combination of error types and the older response codes.

Also see <http://xmpp.org/extensions/xep-0086.html>.

Configuration Values:

```
override -- Indicates if applying legacy error codes should
            be done automatically. Defaults to True.
            If False, then inserting legacy error codes can
            be done using:
                iq['error']['legacy']['condition'] = ...
```

stanza = <module 'slixmpp.plugins.xep_0086.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0086.stanza.**LegacyError**(*xml=None*, *parent=None*)
Older XMPP implementations used code based error messages, similar to HTTP response codes. Since then, error condition elements have been introduced. XEP-0086 provides a mapping between the new condition elements and a combination of error types and the older response codes.

Also see <http://xmpp.org/extensions/xep-0086.html>.

Example legacy error stanzas:

```
<error xmlns="jabber:client" code="501" type="cancel">
  <feature-not-implemented
        xmlns="urn:ietf:params:xml:ns:xmpp-stanzas" />
</error>

<error code="402" type="auth">
  <payment-required
        xmlns="urn:ietf:params:xml:ns:xmpp-stanzas" />
</error>
```

Variables *error_map* – A map of error conditions to error types and code values.

error_map = {'bad-request': ('modify', '400'), 'conflict': ('cancel', '409'), 'featu

interfaces = {'condition'}

name = 'legacy'

namespace = 'jabber:client'

overrides = ['set_condition']

plugin_attrib = 'legacy'

set_condition (*value*)
Set the error type and code based on the given error condition value.

Parameters **value** – The new error condition.

setup (*xml*)
Don't create XML for the plugin.

XEP 0092

class slixmpp.plugins.xep_0092.**XEP_0092** (*xmpp*, *config=None*)
XEP-0092: Software Version

get_version (*jid*, *ifrom=None*, *timeout=None*, *callback=None*, *timeout_callback=None*)
Retrieve the software version of a remote agent.

Arguments: jid – The JID of the entity to query.

stanza = <module 'slixmpp.plugins.xep_0092.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0092.stanza.**Version** (*xml=None*, *parent=None*)
XMPP allows for an agent to advertise the name and version of the underlying software libraries, as well as the operating system that the agent is running on.

Example version stanzas:

```
<iq type="get">
  <query xmlns="jabber:iq:version" />
</iq>

<iq type="result">
  <query xmlns="jabber:iq:version">
    <name>Slixmpp</name>
    <version>1.0</version>
    <os>Linux</os>
  </query>
</iq>
```

Stanza Interface:

```
name    -- The human readable name of the software.
version -- The specific version of the software.
os      -- The name of the operating system running the program.
```

interfaces = {'name', 'os', 'version'}

name = 'query'

namespace = 'jabber:iq:version'

plugin_attrib = 'software_version'

sub_interfaces = {'name', 'os', 'version'}

XEP 0106

class slixmpp.plugins.xep_0106.**XEP_0106**(*xmpp*, *config=None*)

XEP 0107

class slixmpp.plugins.xep_0107.**XEP_0107**(*xmpp*, *config=None*)
XEP-0107: User Mood

publish_mood(*value=None*, *text=None*, *options=None*, *ifrom=None*, *callback=None*, *timeout=None*, *timeout_callback=None*)
Publish the user's current mood.

Parameters

- **value** – The name of the mood to publish.
- **text** – Optional natural-language description or reason for the mood.
- **options** – Optional form of publish options.

stanza = <module 'slixmpp.plugins.xep_0107.stanza' from '/home/docs/checkouts/readthed

stop(*ifrom=None*, *callback=None*, *timeout=None*, *timeout_callback=None*)
Clear existing user mood information to stop notifications.

Stanza elements

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class slixmpp.plugins.xep_0107.stanza.**UserMood**(*xml=None*, *parent=None*)

del_value()

get_value()

interfaces = {'text', 'value'}

moods = {'afraid', 'amazed', 'amorous', 'angry', 'annoyed', 'anxious', 'aroused', 'ash

name = 'mood'

namespace = 'http://jabber.org/protocol/mood'

plugin_attrib = 'mood'

set_value(*value*)

sub_interfaces = {'text'}

XEP 0108

class slixmpp.plugins.xep_0108.**XEP_0108**(*xmpp*, *config=None*)

XEP-0108: User Activity

publish_activity(*general*, *specific=None*, *text=None*, *options=None*, *ifrom=None*, *callback=None*, *timeout=None*, *timeout_callback=None*)

Publish the user's current activity.

Parameters

- **general** – The required general category of the activity.
- **specific** – Optional specific activity being done as part of the general category.
- **text** – Optional natural-language description or reason for the activity.
- **options** – Optional form of publish options.

stanza = <module 'slixmpp.plugins.xep_0108.stanza' from '/home/docs/checkouts/readthed

stop(*ifrom=None*, *callback=None*, *timeout=None*, *timeout_callback=None*)

Clear existing user activity information to stop notifications.

Stanza elements

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class slixmpp.plugins.xep_0108.stanza.**UserActivity**(*xml=None*, *parent=None*)

del_value()

general = {'doing_chores', 'drinking', 'eating', 'exercising', 'grooming', 'having_app

get_value()

interfaces = {'text', 'value'}

name = 'activity'

namespace = 'http://jabber.org/protocol/activity'

plugin_attrib = 'activity'

set_value(*value*)

specific = {'at_the_spa', 'brushing_teeth', 'buying_groceries', 'cleaning', 'coding',

sub_interfaces = {'text'}

XEP 0115

class slixmpp.plugins.xep_0115.**XEP_0115**(*xmpp*, *config=None*)
XEP-0115: Entity Capabilities

stanza = <module 'slixmpp.plugins.xep_0115.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0115.stanza.**Capabilities**(*xml=None*, *parent=None*)

interfaces = {'ext', 'hash', 'node', 'ver'}

name = 'c'

namespace = 'http://jabber.org/protocol/caps'

plugin_attrib = 'caps'

XEP 0118

class slixmpp.plugins.xep_0118.**XEP_0118**(*xmpp*, *config=None*)
XEP-0118: User Tune

publish_tune(*artist=None*, *length=None*, *rating=None*, *source=None*, *title=None*, *track=None*, *uri=None*, *options=None*, *ifrom=None*, *callback=None*, *timeout=None*, *timeout_callback=None*)
Publish the user's current tune.

Parameters

- **artist** – The artist or performer of the song.
- **length** – The length of the song in seconds.
- **rating** – The user's rating of the song (from 1 to 10)
- **source** – The album name, website, or other source of the song.
- **title** – The title of the song.
- **track** – The song's track number, or other unique identifier.
- **uri** – A URL to more information about the song.
- **options** – Optional form of publish options.

stanza = <module 'slixmpp.plugins.xep_0118.stanza' from '/home/docs/checkouts/readthed

stop(*ifrom=None*, *callback=None*, *timeout=None*, *timeout_callback=None*)
Clear existing user tune information to stop notifications.

Stanza elements

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class slixmpp.plugins.xep_0118.stanza.**UserTune**(*xml=None*, *parent=None*)

> **interfaces = {'artist', 'length', 'rating', 'source', 'title', 'track', 'uri'}**
>
> **name = 'tune'**
>
> **namespace = 'http://jabber.org/protocol/tune'**
>
> **plugin_attrib = 'tune'**
>
> **set_length**(*value*)
>
> **set_rating**(*value*)
>
> **sub_interfaces = {'artist', 'length', 'rating', 'source', 'title', 'track', 'uri'}**

XEP 0122

class slixmpp.plugins.xep_0122.**XEP_0122**(*xmpp*, *config=None*)

> XEP-0122: Data Forms
>
> **stanza = <module 'slixmpp.plugins.xep_0004.stanza' from '/home/docs/checkouts/readthed**

Stanza elements

class slixmpp.plugins.xep_0122.stanza.**FormValidation**(*xml=None*, *parent=None*)

> Validation values for form fields.
>
> Example:

```
<field var='evt.date' type='text-single' label='Event Date/Time'>
  <validate xmlns='http://jabber.org/protocol/xdata-validate'
            datatype='xs:dateTime'/>
  <value>2003-10-06T11:22:00-07:00</value>
</field>
```

> Questions:
>
> - Should this look at the datatype value and convert the range values as appropriate?
> - Should this stanza provide a pass/fail for a value from the field, or convert field value to datatype?
>
> **get_basic**()
>
> **get_open**()
>
> **get_range**()
>
> **get_regex**()
>
> **interfaces = {'basic', 'datatype', 'open', 'range', 'regex'}**
>
> **name = 'validate'**
>
> **namespace = 'http://jabber.org/protocol/xdata-validate'**

plugin_attrib = 'validate'

plugin_attrib_map = {}

plugin_tag_map = {}

remove_all (*except_tag=None*)

set_basic (*value*)

set_open (*value*)

set_range (*value*, *minimum=None*, *maximum=None*)

set_regex (*regex*)

sub_interfaces = {'basic', 'open', 'range', 'regex'}

XEP 0128

class slixmpp.plugins.xep_0128.**XEP_0128** (*xmpp*, *config=None*)
XEP-0128: Service Discovery Extensions

Allow the use of data forms to add additional identity information to disco#info results.

Also see <http://www.xmpp.org/extensions/xep-0128.html>.

Variables

- **disco** – A reference to the XEP-0030 plugin.
- **static** – Object containing the default set of static node handlers.

add_extended_info (*jid=None*, *node=None*, ***kwargs*)
Add additional, extended identity information to a node.

Parameters

- **jid** – The JID to modify.
- **node** – The node to modify.
- **data** – Either a form, or a list of forms to add as extended information.

del_extended_info (*jid=None*, *node=None*, ***kwargs*)
Remove all extended identity information to a node.

Parameters

- **jid** (`Optional[JID]`) – The JID to modify.
- **node** (`Optional[str]`) – The node to modify.

set_extended_info (*jid=None*, *node=None*, ***kwargs*)
Set additional, extended identity information to a node.

Replaces any existing extended information.

Parameters

- **jid** – The JID to modify.
- **node** – The node to modify.
- **data** – Either a form, or a list of forms to use as extended information, replacing any existing extensions.

XEP 0131

class slixmpp.plugins.xep_0131.**XEP_0131**(*xmpp*, *config=None*)

stanza = <module 'slixmpp.plugins.xep_0131.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0131.stanza.**Headers**(*xml=None*, *parent=None*)

del_headers()

get_headers()

interfaces = {'headers'}

is_extension = True

name = 'headers'

namespace = 'http://jabber.org/protocol/shim'

plugin_attrib = 'headers'

set_headers(*values*)

XEP 0133

class slixmpp.plugins.xep_0133.**XEP_0133**(*xmpp*, *config=None*)

XEP 0152

class slixmpp.plugins.xep_0152.**XEP_0152**(*xmpp*, *config=None*)
XEP-0152: Reachability Addresses

publish_reachability(*addresses*, *options=None*, *ifrom=None*, *callback=None*, *timeout=None*, *timeout_callback=None*)
Publish alternative addresses where the user can be reached.

Parameters

- **addresses** (List[Dict[str, str]]) – A list of dictionaries containing the URI and optional description for each address.
- **options** (Optional[*Form*]) – Optional form of publish options.

stanza = <module 'slixmpp.plugins.xep_0152.stanza' from '/home/docs/checkouts/readthed

stop(*ifrom=None*, *callback=None*, *timeout=None*, *timeout_callback=None*)
Clear existing user activity information to stop notifications.

Stanza elements

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class `slixmpp.plugins.xep_0152.stanza.`**`Address`**(*xml=None*, *parent=None*)

> **`interfaces = {'desc', 'uri'}`**
>
> **`lang_interfaces = {'desc'}`**
>
> **`name = 'addr'`**
>
> **`namespace = 'urn:xmpp:reach:0'`**
>
> **`plugin_attrib = 'address'`**
>
> **`plugin_multi_attrib = 'addresses'`**
>
> **`sub_interfaces = {'desc'}`**

class `slixmpp.plugins.xep_0152.stanza.`**`Reachability`**(*xml=None*, *parent=None*)

> **`interfaces = {}`**
>
> **`name = 'reach'`**
>
> **`namespace = 'urn:xmpp:reach:0'`**
>
> **`plugin_attrib = 'reach'`**
>
> **`plugin_attrib_map = {'address': <class 'slixmpp.plugins.xep_0152.stanza.Address'>, 'a`**
>
> **`plugin_iterables = {<class 'slixmpp.plugins.xep_0152.stanza.Address'>}`**
>
> **`plugin_overrides = {}`**
>
> **`plugin_tag_map = {'{jabber:client}stanza': <class 'slixmpp.xmlstream.stanzabase.multi`**

XEP 0153

class `slixmpp.plugins.xep_0153.`**`XEP_0153`**(*xmpp*, *config=None*)

> **`stanza = <module 'slixmpp.plugins.xep_0153.stanza' from '/home/docs/checkouts/readthed`**

Stanza elements

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class `slixmpp.plugins.xep_0153.stanza.`**`VCardTempUpdate`**(*xml=None*, *parent=None*)

> **`get_photo`**()
>
> **`interfaces = {'photo'}`**
>
> **`name = 'x'`**

namespace = 'vcard-temp:x:update'

plugin_attrib = 'vcard_temp_update'

set_photo (*value*)

sub_interfaces = {'photo'}

XEP 0163

class `slixmpp.plugins.xep_0163.`**XEP_0163** (*xmpp*, *config=None*)

XEP-0163: Personal Eventing Protocol (PEP)

add_interest (*namespace*, *jid=None*)

Mark an interest in a PEP subscription by including a disco feature with the '+notify' extension.

Parameters

- **namespace** (`str`) – The base namespace to register as an interest, such as 'http://jabber.org/protocol/tune'. This may also be a list of such namespaces.
- **jid** (`Optional[JID]`) – Optionally specify the JID.

publish (*stanza*, *node=None*, *id=None*, *options=None*, *ifrom=None*, *timeout_callback=None*, *callback=None*, *timeout=None*)

Publish a PEP update.

This is just a (very) thin wrapper around the XEP-0060 publish() method to set the defaults expected by PEP.

Parameters

- **stanza** (`ElementBase`) – The PEP update stanza to publish.
- **node** (`Optional[str]`) – The node to publish the item to. If not specified, the stanza's namespace will be used.
- **id** (`Optional[str]`) – Optionally specify the ID of the item.
- **options** (`Optional[Form]`) – A form of publish options.

register_pep (*name*, *stanza*)

Setup and configure events and stanza registration for the given PEP stanza:

- Add disco feature for the PEP content.
- Register disco interest in the PEP content.
- Map events from the PEP content's namespace to the given name.

Parameters

- **name** (`str`) – The event name prefix to use for PEP events.
- **stanza** – The stanza class for the PEP content.

remove_interest (*namespace*, *jid=None*)

Mark an interest in a PEP subscription by including a disco feature with the '+notify' extension.

Parameters

- **namespace** (`str`) – The base namespace to remove as an interest, such as 'http://jabber.org/protocol/tune'. This may also be a list of such namespaces.
- **jid** (`Optional[JID]`) – Optionally specify the JID.

XEP 0172

class slixmpp.plugins.xep_0172.**XEP_0172**(*xmpp*, *config=None*)

XEP-0172: User Nickname

publish_nick(*nick=None*, *options=None*, *ifrom=None*, *timeout_callback=None*, *callback=None*, *timeout=None*)

Publish the user's current nick.

Parameters

- **nick** (Optional[str]) – The user nickname to publish.
- **options** (Optional[*Form*]) – Optional form of publish options.

stanza = <module 'slixmpp.plugins.xep_0172.stanza' from '/home/docs/checkouts/readthed

stop(*ifrom=None*, *timeout_callback=None*, *callback=None*, *timeout=None*)

Clear existing user nick information to stop notifications.

Stanza elements

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class slixmpp.plugins.xep_0172.stanza.**UserNick**(*xml=None*, *parent=None*)

XEP-0172: User Nickname allows the addition of a <nick> element in several stanza types, including <message> and <presence> stanzas.

The nickname contained in a <nick> should be the global, friendly or informal name chosen by the owner of a bare JID. The <nick> element may be included when establishing communications with new entities, such as normal XMPP users or MUC services.

The nickname contained in a <nick> element will not necessarily be the same as the nickname used in a MUC.

Example stanzas:

```
<message to="user@example.com">
  <nick xmlns="http://jabber.org/nick/nick">The User</nick>
  <body>...</body>
</message>

<presence to="otheruser@example.com" type="subscribe">
  <nick xmlns="http://jabber.org/nick/nick">The User</nick>
</presence>
```

Stanza Interface:

```
nick -- A global, friendly or informal name chosen by a user.
```

del_nick()

Remove the <nick> element.

get_nick()

Return the nickname in the <nick> element.

interfaces = {'nick'}

name = 'nick'

namespace = 'http://jabber.org/protocol/nick'

plugin_attrib = 'nick'

set_nick (*nick*)
Add a <nick> element with the given nickname.

Arguments: nick – A human readable, informal name.

XEP 0184

class slixmpp.plugins.xep_0184.**XEP_0184** (*xmpp*, *config=None*)
XEP-0184: Message Delivery Receipts

ack (*msg*)
Acknowledge a message by sending a receipt.

Arguments: msg – The message to acknowledge.

stanza = <module 'slixmpp.plugins.xep_0184.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0184.stanza.**Received** (*xml=None*, *parent=None*)

del_receipt ()

get_receipt ()

interfaces = {'receipt'}

is_extension = True

name = 'received'

namespace = 'urn:xmpp:receipts'

plugin_attrib = 'receipt'

set_receipt (*value*)

setup (*xml=None*)
Initialize the stanza's XML contents.

Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters **xml** – An existing XML object to use for the stanza's content instead of generating new XML.

sub_interfaces = {'receipt'}

class slixmpp.plugins.xep_0184.stanza.**Request** (*xml=None*, *parent=None*)

del_request_receipt ()

get_request_receipt ()

interfaces = {'request_receipt'}

is_extension = True

name = 'request'

namespace = 'urn:xmpp:receipts'

plugin_attrib = 'request_receipt'

set_request_receipt(*val*)

setup(*xml=None*)

Initialize the stanza's XML contents.

Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters **xml** – An existing XML object to use for the stanza's content instead of generating new XML.

sub_interfaces = {'request_receipt'}

XEP 0186

class slixmpp.plugins.xep_0186.**XEP_0186**(*xmpp*, *config=None*)

Stanza elements

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class slixmpp.plugins.xep_0186.stanza.**Invisible**(*xml=None*, *parent=None*)

interfaces = {}

name = 'invisible'

namespace = 'urn:xmpp:invisible:0'

plugin_attrib = 'invisible'

class slixmpp.plugins.xep_0186.stanza.**Visible**(*xml=None*, *parent=None*)

interfaces = {}

name = 'visible'

namespace = 'urn:xmpp:visible:0'

plugin_attrib = 'visible'

XEP 0191

class slixmpp.plugins.xep_0191.**XEP_0191**(*xmpp*, *config=None*)

> **stanza = <module 'slixmpp.plugins.xep_0191.stanza' from '/home/docs/checkouts/readthed**

Stanza elements

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class slixmpp.plugins.xep_0191.stanza.**Block**(*xml=None*, *parent=None*)

> **name = 'block'**
>
> **plugin_attrib = 'block'**

class slixmpp.plugins.xep_0191.stanza.**BlockList**(*xml=None*, *parent=None*)

> **del_items**()
>
> **get_items**()
>
> **interfaces = {'items'}**
>
> **name = 'blocklist'**
>
> **namespace = 'urn:xmpp:blocking'**
>
> **plugin_attrib = 'blocklist'**
>
> **set_items**(*values*)

class slixmpp.plugins.xep_0191.stanza.**Unblock**(*xml=None*, *parent=None*)

> **name = 'unblock'**
>
> **plugin_attrib = 'unblock'**

XEP 0196

class slixmpp.plugins.xep_0196.**XEP_0196**(*xmpp*, *config=None*)

> XEP-0196: User Gaming
>
> **publish_gaming**(*name=None*, *level=None*, *server_name=None*, *uri=None*, *character_name=None*, *character_profile=None*, *server_address=None*, *options=None*, *ifrom=None*, *callback=None*, *timeout=None*, *timeout_callback=None*)
>
> > Publish the user's current gaming status.
> >
> > **Parameters**
> >
> > - **name** (`Optional[str]`) – The name of the game.
> > - **level** (`Optional[str]`) – The user's level in the game.
> > - **uri** (`Optional[str]`) – A URI for the game or relevant gaming service
> > - **server_name** (`Optional[str]`) – The name of the server where the user is playing.

- **server_address** (Optional[str]) – The hostname or IP address of the server where the user is playing.
- **character_name** (Optional[str]) – The name of the user's character in the game.
- **character_profile** (Optional[str]) – A URI for a profile of the user's character.
- **options** (Optional[*Form*]) – Optional form of publish options.

stanza = <module 'slixmpp.plugins.xep_0196.stanza' from '/home/docs/checkouts/readthed

stop (*ifrom=None*, *callback=None*, *timeout=None*, *timeout_callback=None*)
Clear existing user gaming information to stop notifications.

Stanza elements

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class slixmpp.plugins.xep_0196.stanza.**UserGaming** (*xml=None*, *parent=None*)

interfaces = {'character_name', 'character_profile', 'level', 'name', 'server_address'

name = 'game'

namespace = 'urn:xmpp:gaming:0'

plugin_attrib = 'gaming'

sub_interfaces = {'character_name', 'character_profile', 'level', 'name', 'server_addr

XEP 0198

class slixmpp.plugins.xep_0198.**XEP_0198** (*xmpp*, *config=None*)
XEP-0198: Stream Management

disconnected (*event*)
Reset enabled state until we can resume/reenable.

request_ack (*e=None*)
Request an ack from the server.

send_ack ()
Send the current ack count to the server.

session_end (*event*)
Reset stream management state.

stanza = <module 'slixmpp.plugins.xep_0198.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class `slixmpp.plugins.xep_0198.stanza.`**`Ack`**(*stream=None*, *xml=None*, *stype=None*, *sto=None*, *sfrom=None*, *sid=None*, *parent=None*)

`get_h`()

`interfaces = {'h'}`

`name = 'a'`

`namespace = 'urn:xmpp:sm:3'`

`set_h`(*val*)

`setup`(*xml*)

Initialize the stanza's XML contents.

Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters **`xml`** – An existing XML object to use for the stanza's content instead of generating new XML.

class `slixmpp.plugins.xep_0198.stanza.`**`Enable`**(*stream=None*, *xml=None*, *stype=None*, *sto=None*, *sfrom=None*, *sid=None*, *parent=None*)

`get_resume`()

`interfaces = {'max', 'resume'}`

`name = 'enable'`

`namespace = 'urn:xmpp:sm:3'`

`set_resume`(*val*)

`setup`(*xml*)

Initialize the stanza's XML contents.

Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters **`xml`** – An existing XML object to use for the stanza's content instead of generating new XML.

class `slixmpp.plugins.xep_0198.stanza.`**`Enabled`**(*stream=None*, *xml=None*, *stype=None*, *sto=None*, *sfrom=None*, *sid=None*, *parent=None*)

`get_resume`()

`interfaces = {'id', 'location', 'max', 'resume'}`

`name = 'enabled'`

`namespace = 'urn:xmpp:sm:3'`

`set_resume`(*val*)

setup(*xml*)
Initialize the stanza's XML contents.

Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters **xml** – An existing XML object to use for the stanza's content instead of generating new XML.

class slixmpp.plugins.xep_0198.stanza.**Failed**(*stream=None*, *xml=None*, *stype=None*, *sto=None*, *sfrom=None*, *sid=None*, *parent=None*)

interfaces = {}

name = 'failed'

namespace = 'urn:xmpp:sm:3'

setup(*xml*)
Initialize the stanza's XML contents.

Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters **xml** – An existing XML object to use for the stanza's content instead of generating new XML.

class slixmpp.plugins.xep_0198.stanza.**RequestAck**(*stream=None*, *xml=None*, *stype=None*, *sto=None*, *sfrom=None*, *sid=None*, *parent=None*)

interfaces = {}

name = 'r'

namespace = 'urn:xmpp:sm:3'

setup(*xml*)
Initialize the stanza's XML contents.

Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters **xml** – An existing XML object to use for the stanza's content instead of generating new XML.

class slixmpp.plugins.xep_0198.stanza.**Resume**(*stream=None*, *xml=None*, *stype=None*, *sto=None*, *sfrom=None*, *sid=None*, *parent=None*)

get_h()

interfaces = {'h', 'previd'}

name = 'resume'

namespace = 'urn:xmpp:sm:3'

set_h(*val*)

setup(*xml*)
Initialize the stanza's XML contents.

Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters **`xml`** – An existing XML object to use for the stanza's content instead of generating new XML.

class `slixmpp.plugins.xep_0198.stanza.`**`Resumed`**(*stream=None*, *xml=None*, *stype=None*, *sto=None*, *sfrom=None*, *sid=None*, *parent=None*)

`get_h`()

`interfaces = {'h', 'previd'}`

`name = 'resumed'`

`namespace = 'urn:xmpp:sm:3'`

`set_h`(*val*)

`setup`(*xml*)
Initialize the stanza's XML contents.

Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters **`xml`** – An existing XML object to use for the stanza's content instead of generating new XML.

class `slixmpp.plugins.xep_0198.stanza.`**`StreamManagement`**(*xml=None*, *parent=None*)

`del_optional`()

`del_required`()

`get_optional`()

`get_required`()

`interfaces = {'optional', 'required'}`

`name = 'sm'`

`namespace = 'urn:xmpp:sm:3'`

`plugin_attrib = 'sm'`

`set_optional`(*val*)

`set_required`(*val*)

XEP 0199

class `slixmpp.plugins.xep_0199.`**`XEP_0199`**(*xmpp*, *config=None*)
XEP-0199: XMPP Ping

Given that XMPP is based on TCP connections, it is possible for the underlying connection to be terminated without the application's awareness. Ping stanzas provide an alternative to whitespace based keepalive methods for detecting lost connections.

Also see <http://www.xmpp.org/extensions/xep-0199.html>.

Attributes:

keepalive – If True, periodically send ping requests to the server. If a ping is not answered, the connection will be reset.

interval – Time in seconds between keepalive pings. Defaults to 300 seconds.

timeout – Time in seconds to wait for a ping response. Defaults to 30 seconds.

Methods:

send_ping – Send a ping to a given JID, returning the round trip time.

async ping(*jid=None*, *ifrom=None*, *timeout=None*)
Send a ping request and calculate RTT. This is a coroutine.

Parameters **jid** (`Optional[JID]`) – The JID that will receive the ping.

Return type `float`

send_ping(*jid*, *ifrom=None*, *timeout=None*, *callback=None*, *timeout_callback=None*)
Send a ping request.

Parameters **jid** (*JID*) – The JID that will receive the ping.

stanza = <module 'slixmpp.plugins.xep_0199.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0199.stanza.**Ping**(*xml=None*, *parent=None*)
Given that XMPP is based on TCP connections, it is possible for the underlying connection to be terminated without the application's awareness. Ping stanzas provide an alternative to whitespace based keepalive methods for detecting lost connections.

Example ping stanza:

```
<iq type="get">
  <ping xmlns="urn:xmpp:ping" />
</iq>
```

interfaces = {}

name = 'ping'

namespace = 'urn:xmpp:ping'

plugin_attrib = 'ping'

XEP 0202

class slixmpp.plugins.xep_0202.**XEP_0202**(*xmpp*, *config=None*)
XEP-0202: Entity Time

get_entity_time(*to*, *ifrom=None*, ***iqargs*)
Request the time from another entity.

Parameters **to** (*JID*) – JID of the entity to query.

stanza = <module 'slixmpp.plugins.xep_0202.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0202.stanza.**EntityTime**(*xml=None*, *parent=None*)

The <time> element represents the local time for an XMPP agent. The time is expressed in UTC to make synchronization easier between entities, but the offset for the local timezone is also included.

Example <time> stanzas:

```
<iq type="result">
  <time xmlns="urn:xmpp:time">
    <utc>2011-07-03T11:37:12.234569</utc>
    <tzo>-07:00</tzo>
  </time>
</iq>
```

Stanza Interface:

```
time -- The local time for the entity (updates utc and tzo).
utc  -- The UTC equivalent to local time.
tzo  -- The local timezone offset from UTC.
```

del_time()

Remove both the UTC and TZO fields.

get_time()

Return the entity's local time based on the UTC and TZO data.

get_tzo()

Return the timezone offset from UTC as a tzinfo object.

get_utc()

Return the time in UTC as a datetime object.

interfaces = {'time', 'tzo', 'utc'}

name = 'time'

namespace = 'urn:xmpp:time'

plugin_attrib = 'entity_time'

set_time(*value*)

Set both the UTC and TZO fields given a time object.

Parameters **value** – A datetime object or properly formatted string equivalent.

set_tzo(*value*)

Set the timezone offset from UTC.

Parameters **value** – Either a tzinfo object or the number of seconds (positive or negative) to offset.

set_utc(*value*)

Set the time in UTC.

Parameters **value** – A datetime object or properly formatted string equivalent.

sub_interfaces = {'time', 'tzo', 'utc'}

XEP 0203

class slixmpp.plugins.xep_0203.**XEP_0203**(*xmpp*, *config=None*)

XEP-0203: Delayed Delivery

XMPP stanzas are sometimes withheld for delivery due to the recipient being offline, or are resent in order to establish recent history as is the case with MUCS. In any case, it is important to know when the stanza was originally sent, not just when it was last received.

Also see <http://www.xmpp.org/extensions/xep-0203.html>.

stanza = <module 'slixmpp.plugins.xep_0203.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0203.stanza.**Delay**(*xml=None*, *parent=None*)

del_text()

get_from()

get_stamp()

get_text()

interfaces = {'from', 'stamp', 'text'}

name = 'delay'

namespace = 'urn:xmpp:delay'

plugin_attrib = 'delay'

set_from(*value*)

set_stamp(*value*)

set_text(*value*)

XEP 0221

class slixmpp.plugins.xep_0221.**XEP_0221**(*xmpp*, *config=None*)

Stanza elements

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class slixmpp.plugins.xep_0221.stanza.**Media**(*xml=None*, *parent=None*)

add_uri(*value*, *itype*)

interfaces = {'alt', 'height', 'width'}

name = 'media'

namespace = 'urn:xmpp:media-element'

plugin_attrib = 'media'

plugin_attrib_map = {'uri': <class 'slixmpp.plugins.xep_0221.stanza.URI'>, 'uris': <

plugin_iterables = {<class 'slixmpp.plugins.xep_0221.stanza.URI'>}

plugin_overrides = {}

plugin_tag_map = {'{jabber:client}stanza': <class 'slixmpp.xmlstream.stanzabase.multi

class slixmpp.plugins.xep_0221.stanza.**URI**(*xml=None*, *parent=None*)

del_value()

get_value()

interfaces = {'type', 'value'}

name = 'uri'

namespace = 'urn:xmpp:media-element'

plugin_attrib = 'uri'

plugin_multi_attrib = 'uris'

set_value(*value*)

XEP 0222

class slixmpp.plugins.xep_0222.**XEP_0222**(*xmpp*, *config=None*)
XEP-0222: Persistent Storage of Public Data via PubSub

configure(*node*, *ifrom=None*, *callback=None*, *timeout=None*)
Update a node's configuration to match the public storage profile.

retrieve(*node*, *id=None*, *item_ids=None*, *ifrom=None*, *callback=None*, *timeout=None*)
Retrieve public data via PEP.

This is just a (very) thin wrapper around the XEP-0060 publish() method to set the defaults expected by PEP.

Parameters

- **node** (str) – The node to retrieve content from.
- **id** (Optional[str]) – Optionally specify the ID of the item.
- **item_ids** (Optional[List[str]]) – Specify a group of IDs. If id is also specified, it will be included in item_ids.
- **ifrom** (Optional[*JID*]) – Specify the sender's JID.
- **timeout** (Optional[int]) – The length of time (in seconds) to wait for a response before exiting the send call if blocking is used. Defaults to slixmpp.xmlstream.RESPONSE_TIMEOUT
- **callback** (Optional[Callable]) – Optional reference to a stream handler function. Will be executed when a reply stanza is received.

store(*stanza*, *node=None*, *id=None*, *ifrom=None*, *options=None*, *callback=None*, *timeout=None*)
Store public data via PEP.

This is just a (very) thin wrapper around the XEP-0060 publish() method to set the defaults expected by PEP.

Parameters

- **stanza** (*ElementBase*) – The private content to store.
- **node** (Optional[str]) – The node to publish the content to. If not specified, the stanza's namespace will be used.
- **id** (Optional[str]) – Optionally specify the ID of the item.
- **options** (Optional[*Form*]) – Publish options to use, which will be modified to fit the persistent storage option profile.

XEP 0223

class slixmpp.plugins.xep_0223.**XEP_0223**(*xmpp*, *config=None*)
XEP-0223: Persistent Storage of Private Data via PubSub

configure(*node*, *ifrom=None*, *callback=None*, *timeout=None*)
Update a node's configuration to match the public storage profile.

retrieve(*node*, *id=None*, *item_ids=None*, *ifrom=None*, *callback=None*, *timeout=None*, *timeout_callback=None*)
Retrieve private data via PEP.

This is just a (very) thin wrapper around the XEP-0060 publish() method to set the defaults expected by PEP.

Parameters

- **node** (str) – The node to retrieve content from.
- **id** (Optional[str]) – Optionally specify the ID of the item.
- **item_ids** (Optional[List[str]]) – Specify a group of IDs. If id is also specified, it will be included in item_ids.
- **ifrom** (Optional[*JID*]) – Specify the sender's JID.
- **timeout** (Optional[int]) – The length of time (in seconds) to wait for a response before exiting the send call if blocking is used. Defaults to slixmpp.xmlstream.RESPONSE_TIMEOUT
- **callback** (Optional[Callable]) – Optional reference to a stream handler function. Will be executed when a reply stanza is received.

store(*stanza*, *node=None*, *id=None*, *ifrom=None*, *options=None*, *callback=None*, *timeout=None*, *timeout_callback=None*)
Store private data via PEP.

This is just a (very) thin wrapper around the XEP-0060 publish() method to set the defaults expected by PEP.

Parameters

- **stanza** (*ElementBase*) – The private content to store.
- **node** (Optional[str]) – The node to publish the content to. If not specified, the stanza's namespace will be used.

- **id** (Optional[str]) – Optionally specify the ID of the item.
- **options** (Optional[*Form*]) – Publish options to use, which will be modified to fit the persistent storage option profile.

XEP 0224

class slixmpp.plugins.xep_0224.**XEP_0224**(*xmpp*, *config=None*)
XEP-0224: Attention

request_attention(*to*, *mfrom=None*, *mbody=''*)
Send an attention message with an optional body.

Arguments: to – The attention request recipient's JID. mfrom – Optionally specify the sender of the attention request. mbody – An optional message body to include in the request.

stanza = <module 'slixmpp.plugins.xep_0224.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0224.stanza.**Attention**(*xml=None*, *parent=None*)

del_attention()

get_attention()

interfaces = {'attention'}

is_extension = True

name = 'attention'

namespace = 'urn:xmpp:attention:0'

plugin_attrib = 'attention'

set_attention(*value*)

setup(*xml*)
Initialize the stanza's XML contents.

Will return True if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters xml – An existing XML object to use for the stanza's content instead of generating new XML.

XEP 0231

class slixmpp.plugins.xep_0231.**XEP_0231**(*xmpp*, *config=None*)
XEP-0231 Bits of Binary

Stanza elements

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class slixmpp.plugins.xep_0231.stanza.**BitsOfBinary**(*xml=None*, *parent=None*)

del_data()

get_data()

get_max_age()

interfaces = {'cid', 'data', 'max_age', 'type'}

name = 'data'

namespace = 'urn:xmpp:bob'

plugin_attrib = 'bob'

set_data(*value*)

set_max_age(*value*)

XEP 0235

class slixmpp.plugins.xep_0235.**XEP_0235**(*xmpp*, *config=None*)

stanza = <module 'slixmpp.plugins.xep_0235.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0235.stanza.**OAuth**(*xml=None*, *parent=None*)

generate_signature(*stanza*, *sfrom*, *sto*, *consumer_secret*, *token_secret*, *method='HMAC-SHA1'*)

interfaces = {'oauth_consumer_key', 'oauth_nonce', 'oauth_signature', 'oauth_signature_

name = 'oauth'

namespace = 'urn:xmpp:oauth:0'

plugin_attrib = 'oauth'

sub_interfaces = {'oauth_consumer_key', 'oauth_nonce', 'oauth_signature', 'oauth_signa

verify_signature(*stanza*, *sfrom*, *sto*, *consumer_secret*, *token_secret*)

XEP 0249

class slixmpp.plugins.xep_0249.**XEP_0249**(*xmpp*, *config=None*)
XEP-0249: Direct MUC Invitations

send_invitation(*jid*, *roomjid*, *password=None*, *reason=None*, ***, *mfrom=None*)
Send a direct MUC invitation to an XMPP entity.

Parameters

- **jid** (JID) – The JID of the entity that will receive the invitation
- **roomjid** (JID) – the address of the groupchat room to be joined
- **password** (*str*) – a password needed for entry into a password-protected room (OPTIONAL).
- **reason** (*str*) – a human-readable purpose for the invitation (OPTIONAL).

stanza = <module 'slixmpp.plugins.xep_0249.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0249.stanza.**Invite**(*xml=None*, *parent=None*)
XMPP allows for an agent in an MUC room to directly invite another user to join the chat room (as opposed to a mediated invitation done through the server).

Example invite stanza:

```
<message from='crone1@shakespeare.lit/desktop'
    to='hecate@shakespeare.lit'>
  <x xmlns='jabber:x:conference'
     jid='darkcave@macbeth.shakespeare.lit'
     password='cauldronburn'
     reason='Hey Hecate, this is the place for all good witches!'/>
</message>
```

Stanza Interface:

```
jid      -- The JID of the groupchat room
password -- The password used to gain entry in the room
            (optional)
reason   -- The reason for the invitation (optional)
```

interfaces = ('jid', 'password', 'reason')

name = 'x'

namespace = 'jabber:x:conference'

plugin_attrib = 'groupchat_invite'

XEP 0256

class slixmpp.plugins.xep_0256.**XEP_0256**(*xmpp*, *config=None*)

stanza = <module 'slixmpp.plugins.xep_0012.stanza' from '/home/docs/checkouts/readthed

XEP 0257

class slixmpp.plugins.xep_0257.**XEP_0257**(*xmpp*, *config=None*)

stanza = <module 'slixmpp.plugins.xep_0257.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0257.stanza.**AppendCert**(*xml=None*, *parent=None*)

del_cert_management()

get_cert_management()

interfaces = {'cert_management', 'name', 'x509cert'}

name = 'append'

namespace = 'urn:xmpp:saslcert:1'

plugin_attrib = 'sasl_cert_append'

set_cert_management(*value*)

sub_interfaces = {'name', 'x509cert'}

class slixmpp.plugins.xep_0257.stanza.**CertItem**(*xml=None*, *parent=None*)

del_users()

get_users()

interfaces = {'name', 'users', 'x509cert'}

name = 'item'

namespace = 'urn:xmpp:saslcert:1'

plugin_attrib = 'item'

plugin_multi_attrib = 'items'

set_users(*values*)

sub_interfaces = {'name', 'x509cert'}

class slixmpp.plugins.xep_0257.stanza.**Certs**(*xml=None*, *parent=None*)

interfaces = {}

    name = 'items'

    namespace = 'urn:xmpp:saslcert:1'

    plugin_attrib = 'sasl_certs'

    plugin_attrib_map = {'item': <class 'slixmpp.plugins.xep_0257.stanza.CertItem'>, 'iter

    plugin_iterables = {<class 'slixmpp.plugins.xep_0257.stanza.CertItem'>}

    plugin_overrides = {}

    plugin_tag_map = {'{jabber:client}stanza': <class 'slixmpp.xmlstream.stanzabase.multi

class slixmpp.plugins.xep_0257.stanza.**DisableCert**(*xml=None*, *parent=None*)

    interfaces = {'name'}

    name = 'disable'

    namespace = 'urn:xmpp:saslcert:1'

    plugin_attrib = 'sasl_cert_disable'

    sub_interfaces = {'name'}

class slixmpp.plugins.xep_0257.stanza.**RevokeCert**(*xml=None*, *parent=None*)

    interfaces = {'name'}

    name = 'revoke'

    namespace = 'urn:xmpp:saslcert:1'

    plugin_attrib = 'sasl_cert_revoke'

    sub_interfaces = {'name'}

XEP 0258

class slixmpp.plugins.xep_0258.**XEP_0258**(*xmpp*, *config=None*)

    stanza = <module 'slixmpp.plugins.xep_0258.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0258.stanza.**Catalog**(*xml=None*, *parent=None*)

    get_from()

    get_restrict()

    get_to()

    interfaces = {'desc', 'from', 'id', 'name', 'restrict', 'size', 'to'}

    name = 'catalog'

namespace = 'urn:xmpp:sec-label:catalog:2'

plugin_attrib = 'security_label_catalog'

plugin_attrib_map = {'item': <class 'slixmpp.plugins.xep_0258.stanza.CatalogItem'>, '

plugin_iterables = {<class 'slixmpp.plugins.xep_0258.stanza.CatalogItem'>}

plugin_overrides = {}

plugin_tag_map = {'{jabber:client}stanza': <class 'slixmpp.xmlstream.stanzabase.multi

set_from(*value*)

set_restrict(*value*)

set_to(*value*)

class slixmpp.plugins.xep_0258.stanza.**CatalogItem**(*xml=None*, *parent=None*)

get_default()

interfaces = {'default', 'selector'}

name = 'catalog'

namespace = 'urn:xmpp:sec-label:catalog:2'

plugin_attrib = 'item'

plugin_attrib_map = {'security_label': <class 'slixmpp.plugins.xep_0258.stanza.Securi

plugin_iterables = {}

plugin_multi_attrib = 'items'

plugin_overrides = {}

plugin_tag_map = {'{urn:xmpp:sec-label:0}securitylabel': <class 'slixmpp.plugins.xep_

set_default(*value*)

class slixmpp.plugins.xep_0258.stanza.**DisplayMarking**(*xml=None*, *parent=None*)

del_value()

get_bgcolor()

get_fgcolor()

get_value()

interfaces = {'bgcolor', 'fgcolor', 'value'}

name = 'displaymarking'

namespace = 'urn:xmpp:sec-label:0'

plugin_attrib = 'display_marking'

set_value(*value*)

class slixmpp.plugins.xep_0258.stanza.**ESSLabel**(*xml=None*, *parent=None*)

del_value()

get_value()

    interfaces = {'value'}

    name = 'esssecuritylabel'

    namespace = 'urn:xmpp:sec-label:ess:0'

    plugin_attrib = 'ess'

    set_value(*value*)

class slixmpp.plugins.xep_0258.stanza.**EquivalentLabel**(*xml=None*, *parent=None*)

    name = 'equivalentlabel'

    namespace = 'urn:xmpp:sec-label:0'

    plugin_attrib = 'equivalent_label'

    plugin_attrib_map = {'ess': <class 'slixmpp.plugins.xep_0258.stanza.ESSLabel'>}

    plugin_iterables = {}

    plugin_multi_attrib = 'equivalent_labels'

    plugin_overrides = {}

    plugin_tag_map = {'{urn:xmpp:sec-label:ess:0}esssecuritylabel': <class 'slixmpp.plugi

class slixmpp.plugins.xep_0258.stanza.**Label**(*xml=None*, *parent=None*)

    name = 'label'

    namespace = 'urn:xmpp:sec-label:0'

    plugin_attrib = 'label'

    plugin_attrib_map = {'ess': <class 'slixmpp.plugins.xep_0258.stanza.ESSLabel'>}

    plugin_iterables = {}

    plugin_overrides = {}

    plugin_tag_map = {'{urn:xmpp:sec-label:ess:0}esssecuritylabel': <class 'slixmpp.plugi

class slixmpp.plugins.xep_0258.stanza.**SecurityLabel**(*xml=None*, *parent=None*)

    add_equivalent(*label*)

    name = 'securitylabel'

    namespace = 'urn:xmpp:sec-label:0'

    plugin_attrib = 'security_label'

    plugin_attrib_map = {'display_marking': <class 'slixmpp.plugins.xep_0258.stanza.Displa

    plugin_iterables = {<class 'slixmpp.plugins.xep_0258.stanza.EquivalentLabel'>}

    plugin_overrides = {}

    plugin_tag_map = {'{jabber:client}stanza': <class 'slixmpp.xmlstream.stanzabase.multi

XEP 0279

class slixmpp.plugins.xep_0279.**XEP_0279**(*xmpp*, *config=None*)

stanza = <module 'slixmpp.plugins.xep_0279.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0279.stanza.**IPCheck**(*xml=None*, *parent=None*)

del_ip_check()

get_ip_check()

interfaces = {'ip_check'}

is_extension = True

name = 'ip'

namespace = 'urn:xmpp:sic:0'

plugin_attrib = 'ip_check'

set_ip_check(*value*)

XEP 0280

class slixmpp.plugins.xep_0280.**XEP_0280**(*xmpp*, *config=None*)
XEP-0280 Message Carbons

stanza = <module 'slixmpp.plugins.xep_0280.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0280.stanza.**CarbonDisable**(*xml=None*, *parent=None*)

interfaces = {}

name = 'disable'

namespace = 'urn:xmpp:carbons:2'

plugin_attrib = 'carbon_disable'

class slixmpp.plugins.xep_0280.stanza.**CarbonEnable**(*xml=None*, *parent=None*)

interfaces = {}

name = 'enable'

namespace = 'urn:xmpp:carbons:2'

plugin_attrib = 'carbon_enable'

class slixmpp.plugins.xep_0280.stanza.**PrivateCarbon**(*xml=None*, *parent=None*)

interfaces = {}

name = 'private'

namespace = 'urn:xmpp:carbons:2'

plugin_attrib = 'carbon_private'

class slixmpp.plugins.xep_0280.stanza.**ReceivedCarbon**(*xml=None*, *parent=None*)

del_carbon_received()

get_carbon_received()

interfaces = {'carbon_received'}

is_extension = True

name = 'received'

namespace = 'urn:xmpp:carbons:2'

plugin_attrib = 'carbon_received'

set_carbon_received(*stanza*)

class slixmpp.plugins.xep_0280.stanza.**SentCarbon**(*xml=None*, *parent=None*)

del_carbon_sent()

get_carbon_sent()

interfaces = {'carbon_sent'}

is_extension = True

name = 'sent'

namespace = 'urn:xmpp:carbons:2'

plugin_attrib = 'carbon_sent'

set_carbon_sent(*stanza*)

XEP 0297

class slixmpp.plugins.xep_0297.**XEP_0297**(*xmpp*, *config=None*)

stanza = <module 'slixmpp.plugins.xep_0297.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class `slixmpp.plugins.xep_0297.stanza.`**`Forwarded`**(*xml=None*, *parent=None*)

> **`del_stanza`**()
>
> **`get_stanza`**()
>
> **`interfaces = {'stanza'}`**
>
> **`name = 'forwarded'`**
>
> **`namespace = 'urn:xmpp:forward:0'`**
>
> **`plugin_attrib = 'forwarded'`**
>
> **`set_stanza`**(*value*)

XEP 0300

class `slixmpp.plugins.xep_0300.`**`XEP_0300`**(**args*, ***kwargs*)

> **`stanza = <module 'slixmpp.plugins.xep_0300.stanza' from '/home/docs/checkouts/readthed`**

Stanza elements

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class `slixmpp.plugins.xep_0300.stanza.`**`Hash`**(*xml=None*, *parent=None*)

> **`allowed_algos = ['sha-1', 'sha-256', 'sha-512', 'sha3-256', 'sha3-512', 'BLAKE2b256',`**
>
> **`del_value`**()
>
> **`get_value`**()
>
> **`interfaces = {'algo', 'value'}`**
>
> **`name = 'hash'`**
>
> **`namespace = 'urn:xmpp:hashes:2'`**
>
> **`plugin_attrib = 'hash'`**
>
> **`set_algo`**(*value*)
>
> **`set_value`**(*value*)

XEP 0308

class slixmpp.plugins.xep_0308.**XEP_0308**(*xmpp*, *config=None*)

XEP-0308 Last Message Correction

stanza = <module 'slixmpp.plugins.xep_0308.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0308.stanza.**Replace**(*xml=None*, *parent=None*)

interfaces = {'id'}

name = 'replace'

namespace = 'urn:xmpp:message-correct:0'

plugin_attrib = 'replace'

XEP 0313

class slixmpp.plugins.xep_0313.**XEP_0313**(*xmpp*, *config=None*)

XEP-0313 Message Archive Management

retrieve(*jid=None*, *start=None*, *end=None*, *with_jid=None*, *ifrom=None*, *reverse=False*, *timeout=None*, *callback=None*, *iterator=False*, *rsm=None*)

Send a MAM query and retrieve the results.

Parameters

- **jid** (`JID`) – Entity holding the MAM records
- **start,end** (*datetime*) – MAM query temporal boundaries
- **with_jid** (`JID`) – Filter results on this JID
- **ifrom** (`JID`) – To change the from address of the query
- **reverse** (*bool*) – Get the results in reverse order
- **timeout** (*int*) – IQ timeout
- **callback** (*func*) – Custom callback for handling results
- **iterator** (*bool*) – Use RSM and iterate over a paginated query
- **rsm** (*dict*) – RSM custom options

Return type `Awaitable`

stanza = <module 'slixmpp.plugins.xep_0313.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class `slixmpp.plugins.xep_0313.stanza.`**`Fin`**(*xml=None*, *parent=None*)

`name = 'fin'`

`namespace = 'urn:xmpp:mam:2'`

`plugin_attrib = 'mam_fin'`

class `slixmpp.plugins.xep_0313.stanza.`**`MAM`**(*xml=None*, *parent=None*)

`del_results`()

`get_end`()

`get_results`()

`get_start`()

`get_with`()

`interfaces = {'end', 'queryid', 'results', 'start', 'with'}`

`name = 'query'`

`namespace = 'urn:xmpp:mam:2'`

`plugin_attrib = 'mam'`

`set_end`(*value*)

`set_results`(*values*)

`set_start`(*value*)

`set_with`(*value*)

`setup`(*xml=None*)
Initialize the stanza's XML contents.

Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters **`xml`** – An existing XML object to use for the stanza's content instead of generating new XML.

`sub_interfaces = {'end', 'start', 'with'}`

class `slixmpp.plugins.xep_0313.stanza.`**`Preferences`**(*xml=None*, *parent=None*)

`get_always`()

`get_never`()

`interfaces = {'always', 'default', 'never'}`

`name = 'prefs'`

`namespace = 'urn:xmpp:mam:2'`

`plugin_attrib = 'mam_prefs'`

set_always(*value*)

set_never(*value*)

sub_interfaces = {'always', 'never'}

class slixmpp.plugins.xep_0313.stanza.**Result**(*xml=None*, *parent=None*)

interfaces = {'id', 'queryid'}

name = 'result'

namespace = 'urn:xmpp:mam:2'

plugin_attrib = 'mam_result'

XEP 0319

class slixmpp.plugins.xep_0319.**XEP_0319**(*xmpp*, *config=None*)

stanza = <module 'slixmpp.plugins.xep_0319.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0319.stanza.**Idle**(*xml=None*, *parent=None*)

get_since()

interfaces = {'since'}

name = 'idle'

namespace = 'urn:xmpp:idle:1'

plugin_attrib = 'idle'

set_since(*value*)

XEP 0332

class slixmpp.plugins.xep_0332.**XEP_0332**(*xmpp*, *config=None*)
XEP-0332: HTTP over XMPP transport

default_config = {'supported_headers': {'Accept', 'Accept-Charset', 'Accept-Encoding'
TODO: Do we really need to mention the supported_headers?!

dependencies = {'xep_0030', 'xep_0131'}
xep_0047 not included. xep_0001, 0137 and 0166 are missing

Stanza elements

Slixmpp: The Slick XMPP Library Implementation of HTTP over XMPP transport http://xmpp.org/extensions/xep-0332.html Copyright (C) 2015 Riptide IO, sangeeth@riptideio.com This file is part of slixmpp.

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class slixmpp.plugins.xep_0332.stanza.data.**HTTPData**(*xml=None*, *parent=None*)
The data element.

get_data(*encoding='text'*)

interfaces = {'data'}

is_extension = True

name = 'data'

namespace = 'urn:xmpp:http'

plugin_attrib = 'data'

set_data(*data*, *encoding='text'*)

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class slixmpp.plugins.xep_0332.stanza.request.**HTTPRequest**(*xml=None*, *parent=None*)
All HTTP communication is done using the *Request/Response* paradigm. Each HTTP Request is made sending an *iq* stanza containing a *req* element to the server. Each *iq* stanza sent is of type *set*.

Examples:

```
<iq type='set' from='a@b.com/browser' to='x@y.com' id='1'>
    <req xmlns='urn:xmpp:http'
         method='GET'
         resource='/api/users'
         version='1.1'>
        <headers xmlns='http://jabber.org/protocol/shim'>
            <header name='Host'>b.com</header>
        </headers>
    </req>
</iq>

<iq type='set' from='a@b.com/browser' to='x@y.com' id='2'>
    <req xmlns='urn:xmpp:http'
         method='PUT'
         resource='/api/users'
         version='1.1'>
        <headers xmlns='http://jabber.org/protocol/shim'>
            <header name='Host'>b.com</header>
            <header name='Content-Type'>text/html</header>
            <header name='Content-Length'>...</header>
        </headers>
        <data>
            <text>...</text>
        </data>
    </req>
</iq>
```

get_method()

get_resource()

get_version()

interfaces = {'method', 'resource', 'version'}

name = 'request'

namespace = 'urn:xmpp:http'

plugin_attrib = 'http-req'

set_method(*method*)

set_resource(*resource*)

set_version(*version='1.1'*)

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class slixmpp.plugins.xep_0332.stanza.response.**HTTPResponse**(*xml=None, parent=None*)

When the HTTP Server responds, it does so by sending an *iq* stanza response (type=`result`) back to the client containing the *resp* element. Since response are asynchronous, and since multiple requests may be active at the same time, responses may be returned in a different order than the in which the original requests were made.

Examples:

```
<iq type='result'
    from='httpserver@clayster.com'
    to='httpclient@clayster.com/browser' id='2'>
    <resp xmlns='urn:xmpp:http'
          version='1.1'
          statusCode='200'
          statusMessage='OK'>
        <headers xmlns='http://jabber.org/protocol/shim'>
            <header name='Date'>Fri, 03 May 2013 16:39:54GMT-4</header>
            <header name='Server'>Clayster</header>
            <header name='Content-Type'>text/turtle</header>
            <header name='Content-Length'>...</header>
            <header name='Connection'>Close</header>
        </headers>
        <data>
            <text>
                ...
            </text>
        </data>
    </resp>
</iq>
```

get_code()

get_message()

interfaces = {'code', 'message', 'version'}

name = 'response'

namespace = 'urn:xmpp:http'

plugin_attrib = 'http-resp'

set_code(*code*)

set_message(*message*)

set_version(*version='1.1'*)

XEP 0333

class slixmpp.plugins.xep_0333.**XEP_0333**(*xmpp*, *config=None*)

send_marker(*mto*, *id*, *marker*, *thread=None*, ***, *mfrom=None*)
Send a chat marker.

Parameters

- **mto** (JID) – recipient of the marker
- **id** (*str*) – Identifier of the marked message
- **marker** (*str*) – Marker to send (one of displayed, retrieved, or acknowledged)
- **thread** (*str*) – Message thread
- **mfrom** (*str*) – Use a specific JID to send the message

stanza = <module 'slixmpp.plugins.xep_0333.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0333.stanza.**Acknowledged**(*xml=None*, *parent=None*)

interfaces = {'id'}

name = 'acknowledged'

namespace = 'urn:xmpp:chat-markers:0'

plugin_attrib = 'acknowledged'

class slixmpp.plugins.xep_0333.stanza.**Displayed**(*xml=None*, *parent=None*)

interfaces = {'id'}

name = 'displayed'

namespace = 'urn:xmpp:chat-markers:0'

plugin_attrib = 'displayed'

class slixmpp.plugins.xep_0333.stanza.**Markable**(*xml=None*, *parent=None*)

name = 'markable'

namespace = 'urn:xmpp:chat-markers:0'

plugin_attrib = 'markable'

class slixmpp.plugins.xep_0333.stanza.**Received**(*xml=None*, *parent=None*)

interfaces = {'id'}

name = 'received'

namespace = 'urn:xmpp:chat-markers:0'

plugin_attrib = 'received'

XEP 0334

class slixmpp.plugins.xep_0334.**XEP_0334**(*xmpp*, *config=None*)

stanza = <module 'slixmpp.plugins.xep_0334.stanza' from '/home/docs/checkouts/readthed

Stanza elements

slixmpp: The Slick XMPP Library Implementation of Message Processing Hints http://xmpp.org/extensions/xep-0334.html This file is part of slixmpp.

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class slixmpp.plugins.xep_0334.stanza.**NoCopy**(*xml=None*, *parent=None*)

name = 'no-copy'

namespace = 'urn:xmpp:hints'

plugin_attrib = 'no-copy'

class slixmpp.plugins.xep_0334.stanza.**NoPermanentStore**(*xml=None*, *parent=None*)

name = 'no-permanent-store'

namespace = 'urn:xmpp:hints'

plugin_attrib = 'no-permanent-store'

class slixmpp.plugins.xep_0334.stanza.**NoStore**(*xml=None*, *parent=None*)

name = 'no-store'

namespace = 'urn:xmpp:hints'

plugin_attrib = 'no-store'

class slixmpp.plugins.xep_0334.stanza.**Store**(*xml=None*, *parent=None*)

name = 'store'

namespace = 'urn:xmpp:hints'

plugin_attrib = 'store'

XEP 0335

class slixmpp.plugins.xep_0335.**XEP_0335**(*xmpp*, *config=None*)

> **stanza = <module 'slixmpp.plugins.xep_0335.stanza' from '/home/docs/checkouts/readthed**

Stanza elements

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class slixmpp.plugins.xep_0335.stanza.**JSON_Container**(*xml=None*, *parent=None*)

> **del_value**()
>
> **get_value**()
>
> **interfaces = {'value'}**
>
> **name = 'json'**
>
> **namespace = 'urn:xmpp:json:0'**
>
> **plugin_attrib = 'json'**
>
> **set_value**(*value*)

XEP 0352

class slixmpp.plugins.xep_0352.**XEP_0352**(*xmpp*, *config=None*)

> XEP-0352: Client State Indication
>
> **send_active**()
>
> > Send an 'active' state
>
> **send_inactive**()
>
> > Send an 'active' state
>
> **stanza = <module 'slixmpp.plugins.xep_0352.stanza' from '/home/docs/checkouts/readthed**

Stanza elements

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class slixmpp.plugins.xep_0352.stanza.**Active**(*stream=None*, *xml=None*, *stype=None*, *sto=None*, *sfrom=None*, *sid=None*, *parent=None*)

> **name = 'active'**
>
> **namespace = 'urn:xmpp:csi:0'**
>
> **plugin_attrib = 'active'**

setup(*xml*)
Initialize the stanza's XML contents.

Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters **xml** – An existing XML object to use for the stanza's content instead of generating new XML.

class slixmpp.plugins.xep_0352.stanza.**ClientStateIndication**(*xml=None*, *parent=None*)

name = 'csi'

namespace = 'urn:xmpp:csi:0'

plugin_attrib = 'csi'

class slixmpp.plugins.xep_0352.stanza.**Inactive**(*stream=None*, *xml=None*, *stype=None*, *sto=None*, *sfrom=None*, *sid=None*, *parent=None*)

name = 'inactive'

namespace = 'urn:xmpp:csi:0'

plugin_attrib = 'inactive'

setup(*xml*)
Initialize the stanza's XML contents.

Will return `True` if XML was generated according to the stanza's definition instead of building a stanza object from an existing XML object.

Parameters **xml** – An existing XML object to use for the stanza's content instead of generating new XML.

XEP 0353

class slixmpp.plugins.xep_0353.**XEP_0353**(*xmpp*, *config=None*)

stanza = <module 'slixmpp.plugins.xep_0353.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0353.stanza.**Accept**(*xml=None*, *parent=None*)

name = 'accept'

plugin_attrib = 'jingle_accept'

class slixmpp.plugins.xep_0353.stanza.**JingleMessage**(*xml=None*, *parent=None*)

interfaces = {'id'}

namespace = 'urn:xmpp:jingle-message:0'

class slixmpp.plugins.xep_0353.stanza.**Proceed**(*xml=None*, *parent=None*)

name = 'proceed'

plugin_attrib = 'jingle_proceed'

class slixmpp.plugins.xep_0353.stanza.**Propose**(*xml=None*, *parent=None*)

del_descriptions()

get_descriptions()

Return type List[Tuple[str, str]]

interfaces = {'descriptions', 'id'}

name = 'propose'

plugin_attrib = 'jingle_propose'

set_descriptions(*descriptions*)

class slixmpp.plugins.xep_0353.stanza.**Reject**(*xml=None*, *parent=None*)

name = 'reject'

plugin_attrib = 'jingle_reject'

class slixmpp.plugins.xep_0353.stanza.**Retract**(*xml=None*, *parent=None*)

name = 'retract'

plugin_attrib = 'jingle_retract'

XEP 0359

class slixmpp.plugins.xep_0359.**XEP_0359**(*xmpp*, *config=None*)

XEP-0359: Unique and Stable Stanza IDs

stanza = <module 'slixmpp.plugins.xep_0359.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0359.stanza.**OriginID**(*xml=None*, *parent=None*)

interfaces = {'id'}

name = 'origin-id'

namespace = 'urn:xmpp:sid:0'

plugin_attrib = 'origin_id'

class `slixmpp.plugins.xep_0359.stanza.`**`StanzaID`**(*xml=None*, *parent=None*)

> **`interfaces = {'by', 'id'}`**
>
> **`name = 'stanza-id'`**
>
> **`namespace = 'urn:xmpp:sid:0'`**
>
> **`plugin_attrib = 'stanza_id'`**

`slixmpp.plugins.xep_0359.stanza.`**`register_plugins`**()

XEP 0363

Stanza elements

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class `slixmpp.plugins.xep_0363.stanza.`**`Get`**(*xml=None*, *parent=None*)

> **`interfaces = {'url'}`**
>
> **`name = 'get'`**
>
> **`namespace = 'urn:xmpp:http:upload:0'`**
>
> **`plugin_attrib = 'get'`**

class `slixmpp.plugins.xep_0363.stanza.`**`Header`**(*xml=None*, *parent=None*)

> **`del_value`**()
>
> **`get_value`**()
>
> **`interfaces = {'name', 'value'}`**
>
> **`name = 'header'`**
>
> **`namespace = 'urn:xmpp:http:upload:0'`**
>
> **`plugin_attrib = 'header'`**
>
> **`plugin_multi_attrib = 'headers'`**
>
> **`set_value`**(*value*)

class `slixmpp.plugins.xep_0363.stanza.`**`Put`**(*xml=None*, *parent=None*)

> **`interfaces = {'url'}`**
>
> **`name = 'put'`**
>
> **`namespace = 'urn:xmpp:http:upload:0'`**
>
> **`plugin_attrib = 'put'`**

class `slixmpp.plugins.xep_0363.stanza.`**`Request`**(*xml=None*, *parent=None*)

> **`interfaces = {'content-type', 'filename', 'size'}`**

name = 'request'

namespace = 'urn:xmpp:http:upload:0'

plugin_attrib = 'http_upload_request'

class slixmpp.plugins.xep_0363.stanza.**Slot**(*xml=None*, *parent=None*)

name = 'slot'

namespace = 'urn:xmpp:http:upload:0'

plugin_attrib = 'http_upload_slot'

XEP 0369

class slixmpp.plugins.xep_0369.**XEP_0369**(*xmpp*, *config=None*)
XEP-0369: MIX-CORE

async can_create_channel(*service*)
Check if the current user can create a channel on the MIX service

Parameters **service** (JID) – MIX service jid

Return type bool

async create_channel(*service*, *channel=None*, ***, *ifrom=None*, ***iqkwargs*)
Create a MIX channel.

Parameters

- **service** (JID) – MIX service JID
- **channel** (*Optional[str]*) – Channel name (or leave empty to let the service generate it)

Return type str

Returns The channel name, as created by the service

async destroy_channel(*channel*, ***, *ifrom=None*, ***iqkwargs*)
Destroy a MIX channel. :param JID channel: MIX channelJID

async get_channel_info(*channel*)
" Get the contents of the channel info node.

Parameters **channel** (*JID*) – The MIX channel

Return type Dict[str, Any]

Returns a dict containing the last modified time and form contents (Name, Description, Contact per the spec, YMMV)

async join_channel(*channel*, *nick*, *subscribe=None*, ***, *ifrom=None*, ***iqkwargs*)
Join a MIX channel.

Parameters

- **channel** (JID) – JID of the MIX channel
- **nick** (*str*) – Desired nickname on that channel
- **subscribe** (Set*[str]*) – Set of notes to subscribe to when joining. If empty, all nodes will be subscribed by default.

Return type *Set*[str]

Returns The nodes that failed to subscribe, if any

async leave_channel(*channel*, *, *ifrom=None*, ***iqkwargs*)
” Leave a MIX channel :param JID channel: JID of the channel to leave

Return type `None`

async list_channels(*service*, *, *ifrom=None*, ***discokwargs*)
List the channels on a MIX service

Parameters **service** (`JID`) – MIX service JID

Return type `List[Tuple[JID, str]]`

Returns A list of channels with their JID and name

async list_mix_nodes(*channel*, *ifrom=None*, ***discokwargs*)
List mix nodes for a channel.

Parameters **channel** (`JID`) – The MIX channel

Return type `Set[str]`

Returns List of nodes available

async list_participants(*channel*, *, *ifrom=None*, ***pubsubkwargs*)
List the participants of a MIX channel :param JID channel: The MIX channel

Return type `List[Tuple[str, str, Optional[JID]]]`

Returns A list of tuples containing the participant id, nick, and jid (if available)

async set_nick(*channel*, *nick*, *, *ifrom=None*, ***iqkwargs*)
Set your nick on a channel. The returned nick MAY be different from the one provided, depending on service configuration. :param JID channel: MIX channel JID :param str nick: desired nick :rtype: str :return: The nick saved on the MIX channel

stanza = <module 'slixmpp.plugins.xep_0369.stanza' from '/home/docs/checkouts/readthed

async update_subscription(*channel*, *subscribe=None*, *unsubscribe=None*, *, *ifrom=None*, ***iqkwargs*)
Update a MIX channel subscription.

Parameters

- **channel** (`JID`) – JID of the MIX channel
- **subscribe** (`Set[str]`) – Set of notes to subscribe to additionally.
- **unsubscribe** (`Set[str]`) – Set of notes to unsubscribe from.

Return type Tuple[*Set*[str], *Set*[str]]

Returns A tuple containing the set of nodes that failed to subscribe and the set of nodes that failed to unsubscribe.

Stanza elements

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class `slixmpp.plugins.xep_0369.stanza.`**`Create`**(*xml=None*, *parent=None*)

> **`interfaces = {'channel'}`**
>
> **`name = 'create'`**
>
> **`namespace = 'urn:xmpp:mix:core:1'`**
>
> **`plugin_attrib = 'mix_create'`**

class `slixmpp.plugins.xep_0369.stanza.`**`Destroy`**(*xml=None*, *parent=None*)

> **`interfaces = {'channel'}`**
>
> **`name = 'destroy'`**
>
> **`namespace = 'urn:xmpp:mix:core:1'`**
>
> **`plugin_attrib = 'mix_destroy'`**

class `slixmpp.plugins.xep_0369.stanza.`**`Join`**(*xml=None*, *parent=None*)

> **`interfaces = {'id', 'nick'}`**
>
> **`name = 'join'`**
>
> **`namespace = 'urn:xmpp:mix:core:1'`**
>
> **`plugin_attrib = 'mix_join'`**
>
> **`sub_interfaces = {'nick'}`**

class `slixmpp.plugins.xep_0369.stanza.`**`Leave`**(*xml=None*, *parent=None*)

> **`name = 'leave'`**
>
> **`namespace = 'urn:xmpp:mix:core:1'`**
>
> **`plugin_attrib = 'mix_leave'`**

class `slixmpp.plugins.xep_0369.stanza.`**`MIX`**(*xml=None*, *parent=None*)

> **`interfaces = {'jid', 'nick'}`**
>
> **`name = 'mix'`**
>
> **`namespace = 'urn:xmpp:mix:core:1'`**
>
> **`plugin_attrib = 'mix'`**
>
> **`sub_interfaces = {'jid', 'nick'}`**

class `slixmpp.plugins.xep_0369.stanza.`**`Participant`**(*xml=None*, *parent=None*)

> **`interfaces = {'jid', 'nick'}`**

name = 'participant'

namespace = 'urn:xmpp:mix:core:1'

plugin_attrib = 'mix_participant'

sub_interfaces = {'jid', 'nick'}

class `slixmpp.plugins.xep_0369.stanza.`**`Setnick`**(*xml=None*, *parent=None*)

interfaces = {'nick'}

name = 'setnick'

namespace = 'urn:xmpp:mix:core:1'

plugin_attrib = 'mix_setnick'

sub_interfaces = {'nick'}

class `slixmpp.plugins.xep_0369.stanza.`**`Subscribe`**(*xml=None*, *parent=None*)

interfaces = {'node'}

name = 'subscribe'

namespace = 'urn:xmpp:mix:core:1'

plugin_attrib = 'subscribe'

class `slixmpp.plugins.xep_0369.stanza.`**`Unsubscribe`**(*xml=None*, *parent=None*)

interfaces = {'node'}

name = 'unsubscribe'

namespace = 'urn:xmpp:mix:core:1'

plugin_attrib = 'unsubscribe'

class `slixmpp.plugins.xep_0369.stanza.`**`UpdateSubscription`**(*xml=None*, *parent=None*)

interfaces = {'jid'}

name = 'update-subscription'

namespace = 'urn:xmpp:mix:core:1'

plugin_attrib = 'mix_updatesub'

`slixmpp.plugins.xep_0369.stanza.`**`register_plugins`**()

XEP 0377

class slixmpp.plugins.xep_0377.**XEP_0377**(*xmpp*, *config=None*)

XEP-0377: Spam reporting

stanza = <module 'slixmpp.plugins.xep_0377.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0377.stanza.**Report**(*xml=None*, *parent=None*)

A spam/abuse report.

Example sub stanza:

```
<report xmlns="urn:xmpp:reporting:0">
  <text xml:lang="en">
    Never came trouble to my house like this.
  </text>
  <spam/>
</report>
```

Stanza Interface:

```
abuse     -- Flag the report as abuse
spam      -- Flag the report as spam
text      -- Add a reason to the report
```

Only one <spam/> or <abuse/> element can be present at once.

get_abuse()

get_spam()

interfaces = ('spam', 'abuse', 'text')

name = 'report'

namespace = 'urn:xmpp:reporting:0'

plugin_attrib = 'report'

set_abuse(*value*)

set_spam(*value*)

sub_interfaces = {'text'}

class slixmpp.plugins.xep_0377.stanza.**Text**(*xml=None*, *parent=None*)

name = 'text'

namespace = 'urn:xmpp:reporting:0'

plugin_attrib = 'text'

XEP 0380

class slixmpp.plugins.xep_0380.**XEP_0380**(*xmpp*, *config=None*)
XEP-0380: Explicit Message Encryption

Stanza elements

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class slixmpp.plugins.xep_0380.stanza.**Encryption**(*xml=None*, *parent=None*)

interfaces = {'name', 'namespace'}

name = 'encryption'

namespace = 'urn:xmpp:eme:0'

plugin_attrib = 'eme'

XEP 0394

class slixmpp.plugins.xep_0394.**XEP_0394**(*xmpp*, *config=None*)

stanza = <module 'slixmpp.plugins.xep_0394.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0394.stanza.**BlockCode**(*xml=None*, *parent=None*)

name = 'bcode'

plugin_attrib = 'bcode'

plugin_multi_attrib = 'bcodes'

class slixmpp.plugins.xep_0394.stanza.**BlockQuote**(*xml=None*, *parent=None*)

name = 'bquote'

plugin_attrib = 'bquote'

plugin_multi_attrib = 'bquotes'

class slixmpp.plugins.xep_0394.stanza.**CodeType**(*xml=None*, *parent=None*)

name = 'code'

plugin_attrib = 'code'

class slixmpp.plugins.xep_0394.stanza.**DeletedType**(*xml=None*, *parent=None*)

name = 'deleted'

plugin_attrib = 'deleted'

class slixmpp.plugins.xep_0394.stanza.**EmphasisType**(*xml=None*, *parent=None*)

name = 'emphasis'

plugin_attrib = 'emphasis'

class slixmpp.plugins.xep_0394.stanza.**Li**(*xml=None*, *parent=None*)

get_start()

interfaces = {'start'}

name = 'li'

namespace = 'urn:xmpp:markup:0'

plugin_attrib = 'li'

plugin_multi_attrib = 'lis'

set_start(*value*)

class slixmpp.plugins.xep_0394.stanza.**List**(*xml=None*, *parent=None*)

interfaces = {'end', 'li', 'start'}

name = 'list'

plugin_attrib = 'list'

plugin_attrib_map = {'li': <class 'slixmpp.plugins.xep_0394.stanza.Li'>, 'lis': <cla

plugin_iterables = {<class 'slixmpp.plugins.xep_0394.stanza.Li'>}

plugin_multi_attrib = 'lists'

plugin_overrides = {}

plugin_tag_map = {'{jabber:client}stanza': <class 'slixmpp.xmlstream.stanzabase.multi

class slixmpp.plugins.xep_0394.stanza.**Markup**(*xml=None*, *parent=None*)

name = 'markup'

namespace = 'urn:xmpp:markup:0'

plugin_attrib = 'markup'

plugin_attrib_map = {'bcode': <class 'slixmpp.plugins.xep_0394.stanza.BlockCode'>, 'b

plugin_iterables = {<class 'slixmpp.plugins.xep_0394.stanza.BlockQuote'>, <class 'slix

plugin_overrides = {}

plugin_tag_map = {'{jabber:client}stanza': <class 'slixmpp.xmlstream.stanzabase.multi

class slixmpp.plugins.xep_0394.stanza.**Span**(*xml=None*, *parent=None*)

det_types()

get_types()

interfaces = {'end', 'start', 'types'}

name = 'span'

plugin_attrib = 'span'

plugin_attrib_map = {'code': <class 'slixmpp.plugins.xep_0394.stanza.CodeType'>, 'del

plugin_iterables = {}

plugin_multi_attrib = 'spans'

plugin_overrides = {}

plugin_tag_map = {'{urn:xmpp:markup:0}code': <class 'slixmpp.plugins.xep_0394.stanza.

set_types(*value*)

XEP 0403

class slixmpp.plugins.xep_0403.**XEP_0403**(*xmpp*, *config=None*)
XEP-0403: MIX-Presence

stanza = <module 'slixmpp.plugins.xep_0403.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0403.stanza.**MIXPresence**(*xml=None*, *parent=None*)

interfaces = {'jid', 'nick'}

name = 'mix'

namespace = 'urn:xmpp:mix:presence:0'

plugin_attrib = 'mix'

sub_interfaces = {'jid', 'nick'}

slixmpp.plugins.xep_0403.stanza.**register_plugins**()

XEP 0404

class slixmpp.plugins.xep_0404.**XEP_0404**(*xmpp*, *config=None*)
XEP-0404: MIX JID Hidden Channels

async get_anon_by_id(*channel*, ***, *ifrom=None*, ***pubsubkwargs*)
Get the jid-participant mapping, by participant id

Parameters channel (JID) – MIX channel JID

Return type Dict[str, *JID*]

async get_anon_by_jid(*channel*, *, *ifrom=None*, ***pubsubkwargs*)
Get the jid-participant mapping, by JID

Parameters **channel** (JID) – MIX channel JID

Return type Dict[*JID*, str]

async get_anon_raw(*channel*, *, *ifrom=None*, ***pubsubkwargs*)
Get the jid-participant mapping result (raw). :param JID channel: MIX channel JID

Return type Iq

async get_preferences(*channel*, *, *ifrom=None*, ***iqkwargs*)
Get channel preferences with default values. :param JID channel: MIX channel JID

Return type *Form*

async set_preferences(*channel*, *form*, *, *ifrom=None*, ***iqkwargs*)
Set channel preferences :param JID channel: MIX channel JID :param Form form: A 0004 form with updated preferences

Return type *Form*

stanza = <module 'slixmpp.plugins.xep_0404.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0404.stanza.**Participant**(*xml=None*, *parent=None*)

interfaces = {'jid'}

name = 'participant'

namespace = 'urn:xmpp:mix:anon:0'

plugin_attrib = 'anon_participant'

sub_interfaces = {'jid'}

class slixmpp.plugins.xep_0404.stanza.**UserPreference**(*xml=None*, *parent=None*)

name = 'user-preference'

namespace = 'urn:xmpp:mix:anon:0'

plugin_attrib = 'user_preference'

slixmpp.plugins.xep_0404.stanza.**register_plugins**()

XEP 0405

class slixmpp.plugins.xep_0405.**XEP_0405**(*xmpp*, *config=None*)
XEP-0405: MIX-PAM

async check_server_capability()
Check if the server is MIX-PAM capable

Return type bool

async join_channel(*room*, *nick*, *subscribe=None*, ***, *ito=None*, *ifrom=None*, ***iqkwargs*)
Join a MIX channel.

Parameters

- **room** (JID) – JID of the MIX channel
- **nick** (*str*) – Desired nickname on that channel
- **subscribe** (Set *[str]*) – Set of nodes to subscribe to when joining. If empty, all nodes will be subscribed by default.

Return type *Set*[str]

Returns The nodes that failed to subscribe, if any

async leave_channel(*room*, ***, *ito=None*, *ifrom=None*, ***iqkwargs*)
” Leave a MIX channel :param JID room: JID of the channel to leave

Return type Iq

stanza = <module 'slixmpp.plugins.xep_0405.stanza' from '/home/docs/checkouts/readthedo

Stanza elements

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class slixmpp.plugins.xep_0405.stanza.**ClientJoin**(*xml=None*, *parent=None*)

interfaces = {'channel'}

name = 'client-join'

namespace = 'urn:xmpp:mix:pam:2'

plugin_attrib = 'client_join'

class slixmpp.plugins.xep_0405.stanza.**ClientLeave**(*xml=None*, *parent=None*)

interfaces = {'channel'}

name = 'client-leave'

namespace = 'urn:xmpp:mix:pam:2'

plugin_attrib = 'client_leave'

slixmpp.plugins.xep_0405.stanza.**register_plugins**()

XEP 0421

class slixmpp.plugins.xep_0421.**XEP_0421**(*xmpp*, *config=None*)

XEP-0421: Anonymous unique occupant identifiers for MUCs

stanza = <module 'slixmpp.plugins.xep_0421.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0421.stanza.**OccupantId**(*xml=None*, *parent=None*)

An Occupant-id tag.

An <occupant-id/> tag is set by the MUC.

This is useful in semi-anon MUCs (and MUC-PMs) as a stable identifier to prevent the usual races with nicknames.

Without occupant-id, getting the following messages from MUC history would prevent a client from asserting senders are the same entity:

```
<message type='groupchat' from='foo@muc/nick1' id='message1'>
    <body>Some message</body>
    <occupant-id xmlns='urn:xmpp:occupant-id:0' id='unique-opaque-id1'/>
</message>
<message type='groupchat' from='foo@muc/nick2' id='message2'>
    <body>Some correction</body>
    <occupant-id xmlns='urn:xmpp:occupant-id:0' id='unique-opaque-id1'/>
    <replace xmlns='urn:xmpp:message-correct:0' id='message1'/>
</message>
```

interface = {'id'}

name = 'occupant-id'

namespace = 'urn:xmpp:occupant-id:0'

plugin_attrib = 'occupant-id'

XEP 0422

class slixmpp.plugins.xep_0422.**XEP_0422**(*xmpp*, *config=None*)

XEP-0422: Message Fastening

stanza = <module 'slixmpp.plugins.xep_0422.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0422.stanza.**ApplyTo**(*xml=None*, *parent=None*)

interfaces = {'id', 'shell'}

name = 'apply-to'

namespace = 'urn:xmpp:fasten:0'

plugin_attrib = 'apply_to'

set_shell(*value*)

class slixmpp.plugins.xep_0422.stanza.**External**(*xml=None*, *parent=None*)

interfaces = {'name'}

name = 'external'

namespace = 'urn:xmpp:fasten:0'

plugin_attrib = 'external'

slixmpp.plugins.xep_0422.stanza.**register_plugins**()

XEP 0424

class slixmpp.plugins.xep_0424.**XEP_0424**(*xmpp*, *config=None*)

XEP-0424: Message Retraction

send_retraction(*mto*, *id*, *mtype='chat'*, *include_fallback=True*, *fallback_text=None*, ***, *mfrom=None*)

Send a message retraction

Parameters

- **mto** (JID) – The JID to retract the message from
- **id** (*str*) – Message ID to retract
- **mtype** (*str*) – Message type
- **include_fallback** (*bool*) – Whether to include a fallback body
- **fallback_text** (*Optional[str]*) – The content of the fallback body. None will set the default value.

stanza = <module 'slixmpp.plugins.xep_0424.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0424.stanza.**Retract**(*xml=None*, *parent=None*)

    name = 'retract'

    namespace = 'urn:xmpp:message-retract:0'

    plugin_attrib = 'retract'

class slixmpp.plugins.xep_0424.stanza.**Retracted**(*xml=None*, *parent=None*)

    interfaces = {'stamp'}

    name = 'retracted'

    namespace = 'urn:xmpp:message-retract:0'

    plugin_attrib = 'retracted'

slixmpp.plugins.xep_0424.stanza.**register_plugins**()

XEP 0425

class slixmpp.plugins.xep_0425.**XEP_0425**(*xmpp*, *config=None*)

    XEP-0425: Message Moderation

    stanza = <module 'slixmpp.plugins.xep_0425.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0425.stanza.**Moderate**(*xml=None*, *parent=None*)

    interfaces = {'reason'}

    name = 'moderate'

    namespace = 'urn:xmpp:message-moderate:0'

    plugin_attrib = 'moderate'

    sub_interfaces = {'reason'}

class slixmpp.plugins.xep_0425.stanza.**Moderated**(*xml=None*, *parent=None*)

    interfaces = {'by', 'reason'}

    name = 'moderated'

namespace = 'urn:xmpp:message-moderate:0'

plugin_attrib = 'moderated'

sub_interfaces = {'reason'}

slixmpp.plugins.xep_0425.stanza.**register_plugins**()

XEP 0428

class slixmpp.plugins.xep_0428.**XEP_0428**(*xmpp*, *config=None*)

XEP-0428: Fallback Indication

stanza = <module 'slixmpp.plugins.xep_0428.stanza' from '/home/docs/checkouts/readthed

Stanza elements

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class slixmpp.plugins.xep_0428.stanza.**Fallback**(*xml=None*, *parent=None*)

name = 'fallback'

namespace = 'urn:xmpp:fallback:0'

plugin_attrib = 'fallback'

slixmpp.plugins.xep_0428.stanza.**register_plugins**()

XEP 0437

class slixmpp.plugins.xep_0437.**XEP_0437**(*xmpp*, *config=None*)

stanza = <module 'slixmpp.plugins.xep_0437.stanza' from '/home/docs/checkouts/readthed

subscribe(*service*, ***, *pfrom=None*)

Subscribe to room activty on a MUC service. :param JID service: MUC service

unsubscribe(*service*, ***, *pfrom=None*)

Unsubscribe from room activty on a MUC service. :param JID service: MUC service

Stanza elements

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class slixmpp.plugins.xep_0437.stanza.**Activity**(*xml=None*, *parent=None*)

name = 'activity'

namespace = 'urn:xmpp:rai:0'

plugin_attrib = 'activity'

class slixmpp.plugins.xep_0437.stanza.**RAI**(*xml=None*, *parent=None*)

del_activities()

get_activities()

Return type Iterable[*JID*]

interfaces = {'activities'}

name = 'rai'

namespace = 'urn:xmpp:rai:0'

plugin_attrib = 'rai'

set_activities(*activities*)

slixmpp.plugins.xep_0437.stanza.**register_plugins**()

XEP 0439

class slixmpp.plugins.xep_0439.**XEP_0439**(*xmpp*, *config=None*)

XEP-0439: Quick Response

ask_for_actions(*mto*, *body*, *actions*, *mtype='chat'*, *lang=None*, ***, *mfrom=None*)

Send a message with a set of actions.

Parameters

- **mto** (JID) – The JID of the entity which will receive the message
- **body** (*str*) – The message body of the question
- **str]] actions** (*Iterable[Tuple[str,*) – A set of tuples containing (action, label) for each action
- **mtype** (*str*) – The message type
- **lang** (*str*) – The lang of the message (if not use, the default for this session will be used.

ask_for_response(*mto*, *body*, *responses*, *mtype='chat'*, *lang=None*, ***, *mfrom=None*)

Send a message with a set of responses.

Parameters

- **mto** (JID) – The JID of the entity which will receive the message
- **body** (*str*) – The message body of the question
- **str]] responses** (*Iterable[Tuple[str,*) – A set of tuples containing (value, label) for each response
- **mtype** (*str*) – The message type
- **lang** (*str*) – The lang of the message (if not use, the default for this session will be used.

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Stanza elements

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class `slixmpp.plugins.xep_0439.stanza.`**`Action`**(*xml=None*, *parent=None*)

  `interfaces = {'id', 'label'}`

  `name = 'action'`

  `namespace = 'urn:xmpp:tmp:quick-response'`

  `plugin_attrib = 'action'`

class `slixmpp.plugins.xep_0439.stanza.`**`ActionSelected`**(*xml=None*, *parent=None*)

  `interfaces = {'id'}`

  `name = 'action-selected'`

  `namespace = 'urn:xmpp:tmp:quick-response'`

  `plugin_attrib = 'action_selected'`

class `slixmpp.plugins.xep_0439.stanza.`**`Response`**(*xml=None*, *parent=None*)

  `interfaces = {'label', 'value'}`

  `name = 'response'`

  `namespace = 'urn:xmpp:tmp:quick-response'`

  `plugin_attrib = 'response'`

`slixmpp.plugins.xep_0439.stanza.`**`register_plugins`**()

XEP 0444

class `slixmpp.plugins.xep_0444.`**`XEP_0444`**(*xmpp*, *config=None*)

  `send_reactions`(*to*, *to_id*, *reactions*, *, *store=True*)
    Send reactions related to a message

  `static set_reactions`(*message*, *to_id*, *reactions*)
    Add reactions to a Message object.

  `stanza = <module 'slixmpp.plugins.xep_0444.stanza' from '/home/docs/checkouts/readthed`

Stanza elements

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class `slixmpp.plugins.xep_0444.stanza.`**`Reaction`**(*xml=None*, *parent=None*)

> **`get_value`**()
>
> > **Return type** `str`
>
> **`interfaces = {'value'}`**
>
> **`name = 'reaction'`**
>
> **`namespace = 'urn:xmpp:reactions:0'`**
>
> **`set_value`**(*value*, ***, *all_chars=False*)

class `slixmpp.plugins.xep_0444.stanza.`**`Reactions`**(*xml=None*, *parent=None*)

> **`get_values`**(***, *all_chars=False*)
>
> > “Get all reactions as str
> >
> > **Return type** `Set[str]`
>
> **`interfaces = {'id', 'values'}`**
>
> **`name = 'reactions'`**
>
> **`namespace = 'urn:xmpp:reactions:0'`**
>
> **`plugin_attrib = 'reactions'`**
>
> **`set_values`**(*values*, ***, *all_chars=False*)
>
> > “Set all reactions as str

6.13 Core Stanzas

6.13.1 Root Stanza

class `slixmpp.stanza.rootstanza.`**`RootStanza`**(*stream=None*, *xml=None*, *stype=None*, *sto=None*, *sfrom=None*, *sid=None*, *parent=None*)

> A top-level XMPP stanza in an XMLStream.
>
> The RootStanza class provides a more XMPP specific exception handler than provided by the generic StanzaBase class.
>
> **Methods:** exception – Overrides StanzaBase.exception
>
> **`exception`**(*e*)
>
> > Create and send an error reply.
> >
> > Typically called when an event handler raises an exception. The error’s type and text content are based on the exception object’s type and content.
> >
> > Overrides StanzaBase.exception.
> >
> > **Arguments:** e – Exception object

6.13.2 Message Stanza

class slixmpp.stanza.**Message**(**args*, ***kwargs*)

XMPP's <message> stanzas are a "push" mechanism to send information to other XMPP entities without requiring a response.

Chat clients will typically use <message> stanzas that have a type of either "chat" or "groupchat".

When handling a message event, be sure to check if the message is an error response.

Example <message> stanzas:

```xml
<message to="user1@example.com" from="user2@example.com">
  <body>Hi!</body>
</message>

<message type="groupchat" to="room@conference.example.com">
  <body>Hi everyone!</body>
</message>
```

Stanza Interface:

- **body**: The main contents of the message.
- **subject**: An optional description of the message's contents.
- **mucroom**: (Read-only) The name of the MUC room that sent the message.
- **mucnick**: (Read-only) The MUC nickname of message's sender.

Attributes:

- **types**: May be one of: normal, chat, headline, groupchat, or error.

chat()

Set the message type to 'chat'.

del_mucnick()

Dummy method to prevent deletion.

del_mucroom()

Dummy method to prevent deletion.

del_parent_thread()

Delete the message thread's parent reference.

get_mucnick()

Return the nickname of the MUC user that sent the message.

Read-only stanza interface.

Return type str

get_mucroom()

Return the name of the MUC room where the message originated.

Read-only stanza interface.

Return type str

get_parent_thread()

Return the message thread's parent thread.

Return type str

get_type()
Return the message type.

Overrides default stanza interface behavior.

Returns 'normal' if no type attribute is present.

Return type str

normal()
Set the message type to 'normal'.

reply(*body=None*, *clear=True*)
Create a message reply.

Overrides StanzaBase.reply.

Sets proper 'to' attribute if the message is from a MUC, and adds a message body if one is given.

Parameters

- **body** (*str*) – Optional text content for the message.
- **clear** (*bool*) – Indicates if existing content should be removed before replying. Defaults to True.

Return type *Message*

set_mucnick(*value*)
Dummy method to prevent modification.

set_mucroom(*value*)
Dummy method to prevent modification.

set_parent_thread(*value*)
Add or change the message thread's parent thread.

Parameters **value** (*str*) – identifier of the thread

6.13.3 Presence Stanza

class slixmpp.stanza.**Presence**(**args*, ***kwargs*)
XMPP's <presence> stanza allows entities to know the status of other clients and components. Since it is currently the only multi-cast stanza in XMPP, many extensions add more information to <presence> stanzas to broadcast to every entry in the roster, such as capabilities, music choices, or locations (XEP-0115: Entity Capabilities and XEP-0163: Personal Eventing Protocol).

Since <presence> stanzas are broadcast when an XMPP entity changes its status, the bulk of the traffic in an XMPP network will be from <presence> stanzas. Therefore, do not include more information than necessary in a status message or within a <presence> stanza in order to help keep the network running smoothly.

Example <presence> stanzas:

```
<presence />

<presence from="user@example.com">
  <show>away</show>
  <status>Getting lunch.</status>
  <priority>5</priority>
</presence>

<presence type="unavailable" />
```

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```
<presence to="user@otherhost.com" type="subscribe" />
```

Stanza Interface:

- **priority**: A value used by servers to determine message routing.
- **show**: The type of status, such as away or available for chat.
- **status**: Custom, human readable status message.

Attributes:

- **types**: One of: available, unavailable, error, probe, subscribe, subscribed, unsubscribe, and unsubscribed.
- **showtypes**: One of: away, chat, dnd, and xa.

`del_type`()
Remove both the type attribute and the <show> element.

`get_priority`()
Return the value of the <presence> element as an integer.

Return type int

`get_type`()
Return the value of the <presence> stanza's type attribute, or the value of the <show> element if valid.

`reply`(*clear=True*)
Create a new reply <presence/> stanza from `self`.

Overrides StanzaBase.reply.

Parameters **`clear`** (*`bool`*) – Indicates if the stanza contents should be removed before replying. Defaults to True.

`set_priority`(*value*)
Set the entity's priority value. Some server use priority to determine message routing behavior.

Bot clients should typically use a priority of 0 if the same JID is used elsewhere by a human-interacting client.

Parameters **`value`** (*`int`*) – An integer value greater than or equal to 0.

`set_show`(*show*)
Set the value of the <show> element.

Parameters **`show`** (*`str`*) – Must be one of: away, chat, dnd, or xa.

`set_type`(*value*)
Set the type attribute's value, and the <show> element if applicable.

Parameters **`value`** (*`str`*) – Must be in either self.types or self.showtypes.

6.13.4 IQ Stanza

class slixmpp.stanza.**Iq**(**args*, ***kwargs*)

XMPP <iq> stanzas, or info/query stanzas, are XMPP's method of requesting and modifying information, similar to HTTP's GET and POST methods.

Each <iq> stanza must have an 'id' value which associates the stanza with the response stanza. XMPP entities must always be given a response <iq> stanza with a type of 'result' after sending a stanza of type 'get' or 'set'.

Most uses cases for <iq> stanzas will involve adding a <query> element whose namespace indicates the type of information desired. However, some custom XMPP applications use <iq> stanzas as a carrier stanza for an application-specific protocol instead.

Example <iq> Stanzas:

```
<iq to="user@example.com" type="get" id="314">
  <query xmlns="http://jabber.org/protocol/disco#items" />
</iq>

<iq to="user@localhost" type="result" id="17">
  <query xmlns='jabber:iq:roster'>
    <item jid='otheruser@example.net'
          name='John Doe'
          subscription='both'>
      <group>Friends</group>
    </item>
  </query>
</iq>
```

Stanza Interface:

- **query**: The namespace of the <query> element if one exists.

Attributes:

- **types**: May be one of: get, set, result, or error.

del_query()

Remove the <query> element.

get_query()

Return the namespace of the <query> element.

Return type str

reply(*clear=True*)

Create a new <iq> stanza replying to `self`.

Overrides StanzaBase.reply

Sets the 'type' to 'result' in addition to the default StanzaBase.reply behavior.

Parameters clear (*bool*) – Indicates if existing content should be removed before replying. Defaults to True.

send(*callback=None*, *timeout=None*, *timeout_callback=None*)

Send an <iq> stanza over the XML stream.

A callback handler can be provided that will be executed when the Iq stanza's result reply is received.

Returns a future which result will be set to the result Iq if it is of type 'get' or 'set' (when it is received), or a future with the result set to None if it has another type.

Overrides StanzaBase.send

Parameters

- **`callback`** (*`function`*) – Optional reference to a stream handler function. Will be executed when a reply stanza is received.
- **`timeout`** (*`int`*) – The length of time (in seconds) to wait for a response before the timeout_callback is called, instead of the regular callback
- **`timeout_callback`** (*`function`*) – Optional reference to a stream handler function. Will be executed when the timeout expires before a response has been received for the originally-sent IQ stanza.

Return type asyncio.Future

`set_payload`(*value*)

Set the XML contents of the <iq> stanza.

Parameters **`value`** (*`list or XML object`*) – An XML object or a list of XML objects to use as the <iq> stanza's contents

`set_query`(*value*)

Add or modify a <query> element.

Query elements are differentiated by their namespace.

Parameters **`value`** (*`str`*) – The namespace of the <query> element.

`unhandled`()

Send a feature-not-implemented error if the stanza is not handled.

Overrides StanzaBase.unhandled.

CHAPTER SEVEN

ADDITIONAL INFO

7.1 Glossary

event handler A callback function that responds to events raised by *`XMLStream.event()`*.

interfaces A set of keys defined on a *stanza plugin*.

stanza An XML payload sent over the XML stream, which is the root of XMPP. A stanza is either `<iq/>`, `<message/>` or `<presence/>`. Other elements are called nonzas.

stanza object Informally may refer both to classes which extend *`ElementBase`* or *`StanzaBase`*, and to objects of such classes.

A stanza object is a wrapper for an XML object which exposes `dict` like interfaces which may be assigned to, read from, or deleted.

stanza plugin A *stanza object* which has been registered as a potential child of another stanza object. The plugin stanza may accessed through the parent stanza using the plugin's `plugin_attrib` as an interface.

stream handler A callback function that accepts stanza objects pulled directly from the XML stream. A stream handler is encapsulated in a object that includes a *`Matcher`* object which provides additional semantics.

substanza See *stanza plugin*

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- *License (MIT)*
- *Glossary*
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- search

CHAPTER

EIGHT

SLEEKXMPP CREDITS

Note: Those people made SleekXMPP, so you should not bother them if you have an issue with slixmpp. But it's still fair to credit them for their work.

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