Twine Documentation

Release 5.0.1.dev57+g48af4c1

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Apr 24, 2024

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This project follows the semantic versioning and pre-release versioning schemes recommended by the Python Packaging Authority.

CHAPTER

ONE

TWINE 5.0.0 (2024-02-10)

1.1 Bugfixes

- Use `email.message` instead of `cgi` as `cgi` has been deprecated (#969)

1.2 Misc

- #931, #991, #1028, #1040

CHAPTER

TWO

TWINE 4.0.2 (2022-11-30)

2.1 Bugfixes

- Remove deprecated function to fix `twine check` with pkginfo 1.9.0. (#941)

CHAPTER

THREE

TWINE 4.0.1 (2022-06-01)

3.1 Bugfixes

- Improve logging when keyring fails. (#890)
- Reconfigure root logger to show all log messages. (#896)

CHAPTER

FOUR

TWINE 4.0.0 (2022-03-31)

4.1 Features

- Drop support for Python 3.6. (#869)
- Use Rich to add color to `upload` output. (#851)
- Use Rich to add color to `check` output. (#874)
- Use Rich instead of tqdm for upload progress bar. (#877)

4.2 Bugfixes

- Remove Twine's dependencies from the `User-Agent` header when uploading. (#871)
- Improve detection of disabled BLAKE2 hashing due to FIPS mode. (#879)
- Restore warning for missing `long_description`. (#887)

CHAPTER

FIVE

TWINE 3.8.0 (2022-02-02)

5.1 Features

- Add `--verbose` logging for querying keyring credentials. (#849)
- Log all upload responses with `--verbose`. (#859)
- Show more helpful error message for invalid metadata. (#861)

5.2 Bugfixes

- Require a recent version of urllib3. (#858)

CHAPTER

SIX

TWINE 3.7.1 (2021-12-07)

6.1 Improved Documentation

- Fix broken link to packaging tutorial. (#844)

CHAPTER

SEVEN

TWINE 3.7.0 (2021-12-01)

7.1 Features

- Add support for core metadata version 2.2, defined in PEP 643. (#833)

CHAPTER

EIGHT

TWINE 3.6.0 (2021-11-10)

8.1 Features

- Add support for Python 3.10. (#827)

CHAPTER

NINE

TWINE 3.5.0 (2021-11-02)

9.1 Features

- Show more helpful messages for invalid passwords. (#815)
- Allow the `--skip-existing` option to work with GCP Artifact Registry. (#823)

9.2 Bugfixes

- Add a helpful error message when an upload fails due to missing a trailing slash in the URL. (#812)
- Generalize `--verbose` suggestion when an upload fails. (#817)

CHAPTER

TEN

TWINE 3.4.2 (2021-07-20)

10.1 Bugfixes

- Improve error message for unsupported metadata. (#755)
- Improve error message for a missing config file. (#770)
- Do not include md5_digest or blake2_256_digest if FIPS mode is enabled on the host. This removes those fields from the metadata before sending the metadata to the repository. (#776)

CHAPTER

ELEVEN

TWINE 3.4.1 (2021-03-16)

11.1 Bugfixes

- Fix a regression that was causing some namespace packages with dots in them fail to upload to PyPI. (#745)

CHAPTER

TWELVE

TWINE 3.4.0 (2021-03-15)

12.1 Features

- Prefer importlib.metadata for entry point handling. (#728)
- Rely on importlib_metadata 3.6 for nicer entry point processing. (#732)
- Eliminate dependency on setuptools/pkg_resources and replace with packaging and importlib_metadata. (#736)

CHAPTER

THIRTEEN

TWINE 3.3.0 (2020-12-23)

13.1 Features

- Print files to be uploaded using `upload --verbose` (#670)
- Print configuration file location when using `upload --verbose` (#675)
- Print source and values of credentials when using `upload --verbose` (#685)
- Add support for Python 3.9 (#708)
- Turn warnings into errors when using `check --strict` (#715)

13.2 Bugfixes

- Make password optional when using `upload --client-cert` (#678)
- Support more Nexus versions with `upload --skip-existing` (#693)
- Support Gitlab Enterprise with `upload --skip-existing` (#698)
- Show a better error message for malformed files (#714)

13.3 Improved Documentation

- Adopt PSF code of conduct (#680)
- Adopt towncrier for the changleog (#718)

CHAPTER

FOURTEEN

TWINE 3.2.0 (2020-06-24)

14.1 Features

- Improve display of HTTP errors during upload (#666)
- Print packages and signatures to be uploaded when using `--verbose` option (#652)
- Use red text when printing errors on the command line (#649)
- Require repository URL scheme to be `http` or `https` (#602)
- Add type annotations, checked with mypy, with **PEP 561** support for users of Twine's API (#231)

14.2 Bugfixes

- Update URL to `.pypirc` specification (#655)
- Don't raise an exception when Python version can't be parsed from filename (#612)
- Fix inaccurate retry message during `upload` (#611)
- Clarify error messages for archive format (#601)

CHAPTER

FIFTEEN

TWINE 3.1.1 (2019-11-27)

15.1 Bugfixes

- Restore `--non-interactive` as a flag not expecting an argument. (#548)

CHAPTER

SIXTEEN

TWINE 3.1.0 (2019-11-23)

16.1 Features

- Add support for specifying `--non-interactive` as an environment variable. (#547)

CHAPTER

SEVENTEEN

TWINE 3.0.0 (2019-11-18)

17.1 Features

- When a client certificate is indicated, all password processing is disabled. (#336)
- Add `--non-interactive` flag to abort upload rather than interactively prompt if credentials are missing. (#489)
- Twine now unconditionally requires the keyring library and no longer supports uninstalling `keyring` as a means to disable that functionality. Instead, use `keyring --disable` keyring functionality if necessary. (#524)
- Add Python 3.8 to classifiers. (#518)

17.2 Bugfixes

- More robust handling of server response in `--skip-existing` (#332)

CHAPTER

EIGHTEEN

TWINE 2.0.0 (2019-09-24)

18.1 Features

- Twine now requires Python 3.6 or later. Use pip 9 or pin to "twine<2" to install twine on older Python versions. (#437)

18.2 Bugfixes

- Require requests 2.20 or later to avoid reported security vulnerabilities in earlier releases. (#491)

CHAPTER

NINETEEN

TWINE 1.15.0 (2019-09-17)

19.1 Features

- Improved output on `check` command: Prints a message when there are no distributions given to check. Improved handling of errors in a distribution's markup, avoiding messages flowing through to the next distribution's errors. (#488)

CHAPTER

TWENTY

TWINE 1.14.0 (2019-09-06)

20.1 Features

- Show Warehouse URL after uploading a package (#459)
- Better error handling and gpg2 fallback if gpg not available. (#456)
- Now provide a more meaningful error on redirect during upload. (#310)

20.2 Bugfixes

- Fail more gracefully when encountering bad metadata (#341)

CHAPTER

TWENTYONE

TWINE 1.13.0 (2019-02-13)

21.1 Features

- Add disable_progress_bar option to disable tqdm. (#427)
- Allow defining an empty username and password in .pypirc. (#426)
- Support keyring.get_credential. (#419)
- Support keyring.get_username_and_password. (#418)
- Add Python 3.7 to classifiers. (#416)

21.2 Bugfixes

- Restore prompts while retaining support for suppressing prompts. (#452)
- Avoid requests-toolbelt to 0.9.0 to prevent attempting to use openssl when it isn't available. (#447)
- Use io.StringIO instead of StringIO. (#444)
- Only install pyblake2 if needed. (#441)
- Use modern Python language features. (#436)
- Specify python_requires in setup.py (#435)
- Use https URLs everywhere. (#432)
- Fix –skip-existing for Nexus Repos. (#428)
- Remove unnecessary usage of readme_render.markdown. (#421)
- Don't crash if there's no package description. (#412)
- Fix keyring support. (#408)

21.3 Misc

- Refactor tox env and travis config. (#439)

CHAPTER

TWENTYTWO

TWINE 1.12.1 (2018-09-24)

22.1 Bugfixes

- Fix regression with upload exit code (#404)

CHAPTER

TWENTYTHREE

TWINE 1.12.0 (2018-09-24)

23.1 Features

- Add `twine check` command to check long description (#395)
- Drop support for Python 3.3 (#392)
- Empower `--skip-existing` for Artifactory repositories (#363)

23.2 Bugfixes

- Avoid MD5 when Python is compiled in FIPS mode (#367)

CHAPTER

TWENTYFOUR

TWINE 1.11.0 (2018-03-19)

24.1 Features

- Remove PyPI as default `register` package index. (#320)
- Support Metadata 2.1 (**PEP 566**), including Markdown for `description` fields. (#319)

24.2 Bugfixes

- Raise exception if attempting upload to deprecated legacy PyPI URLs. (#322)
- Avoid uploading to PyPI when given alternate repository URL, and require `http://` or `https://` in `repository_url`. (#269)

24.3 Misc

- Update PyPI URLs. (#318)
- Add new maintainer, release checklists. (#314)
- Add instructions on how to use keyring. (#277)

CHAPTER

TWENTYFIVE

TWINE 1.10.0 (2018-03-07)

25.1 Features

- Link to changelog from `README` (#46)
- Reorganize & improve user & developer documentation. (#304)
- Revise docs predicting future of `twine` (#303)
- Add architecture overview to docs (#296)
- Add doc building instructions (#295)
- Declare support for Python 3.6 (#257)
- Improve progressbar (#256)

25.2 Bugfixes

- Degrade gracefully when keyring is unavailable (#315)
- Fix changelog formatting (#299)
- Fix syntax highlighting in `README` (#298)
- Fix Read the Docs, tox, Travis configuration (#297)
- Fix Travis CI and test configuration (#286)
- Print progress to `stdout`, not `stderr` (#268)
- Fix `--repository[-url]` help text (#265)
- Remove obsolete registration guidance (#200)

CHAPTER

TWENTYSIX

TWINE 1.9.1 (2017-05-27)

26.1 Bugfixes

- Blacklist known bad versions of Requests. (#253)

CHAPTER

TWENTYSEVEN

TWINE 1.9.0 (2017-05-22)

27.1 Bugfixes

- Twine sends less information about the user's system in the User-Agent string. (#229)
- Fix `--skip-existing` when used to upload a package for the first time. (#220)
- Fix precedence of `--repository-url` over `--repository`. (#206)

27.2 Misc

- Twine will now resolve passwords using the keyring if available. Module can be required with the `keyring` extra.
- Twine will use `hashlib.blake2b` on Python 3.6+ instead of pyblake2

CHAPTER

TWENTYEIGHT

TWINE 1.8.1 (2016-08-09)

28.1 Misc

- Check if a package exists if the URL is one of:
  - `https://pypi.python.org/pypi/`
  - `https://upload.pypi.org/`
  - `https://upload.pypi.io/`

  This helps people with `https://upload.pypi.io` still in their `.pypirc` file.

CHAPTER

TWENTYNINE

TWINE 1.8.0 (2016-08-08)

29.1 Features

- Switch from upload.pypi.io to upload.pypi.org. (#201)
- Retrieve configuration from the environment as a default. (#144)
  - Repository URL will default to `TWINE_REPOSITORY`
  - Username will default to `TWINE_USERNAME`
  - Password will default to `TWINE_PASSWORD`
- Allow the Repository URL to be provided on the command-line (`--repository-url`) or via an environment variable (`TWINE_REPOSITORY_URL`). (#166)
- Generate Blake2b 256 digests for packages *if* `pyblake2` is installed. Users can use `python -m pip install twine[with-blake2]` to have `pyblake2` installed with Twine. (#171)

29.2 Misc

- Generate SHA256 digest for all packages by default.
- Stop testing on Python 2.6.
- Warn users if they receive a 500 error when uploading to `*pypi.python.org` (#199)

CHAPTER

THIRTY

TWINE 1.7.4 (2016-07-09)

30.1 Bugfixes

- Correct a packaging error.

CHAPTER

THIRTYONE

TWINE 1.7.3 (2016-07-08)

31.1 Bugfixes

- Fix uploads to instances of pypiserver using `--skip-existing`. We were not properly checking the return status code on the response after attempting an upload. (#195)

31.2 Misc

- Avoid attempts to upload a package if we can find it on Legacy PyPI.

CHAPTER

THIRTYTWO

TWINE 1.7.2 (2016-07-05)

32.1 Bugfixes

- Fix issue where we were checking the existence of packages even if the user didn't specify `--skip-existing`. (#189) (#191)

CHAPTER

THIRTYTHREE

TWINE 1.7.1 (2016-07-05)

33.1 Bugfixes

- Clint was not specified in the wheel metadata as a dependency. (#187)

CHAPTER

THIRTYFOUR

TWINE 1.7.0 (2016-07-04)

34.1 Features

- Support `--cert` and `--client-cert` command-line flags and config file options for feature parity with pip. This allows users to verify connections to servers other than PyPI (e.g., local package repositories) with different certificates. (#142)
- Add progress bar to uploads. (#152)
- Allow `--skip-existing` to work for 409 status codes. (#162)
- Implement retries when the CDN in front of PyPI gives us a 5xx error. (#167)
- Switch Twine to upload to pypi.io instead of pypi.python.org. (#177)

34.2 Bugfixes

- Allow passwords to have %s in them. (#186)

CHAPTER

THIRTYFIVE

TWINE 1.6.5 (2015-12-16)

35.1 Bugfixes

- Bump requests-toolbelt version to ensure we avoid ConnectionErrors (#155)

CHAPTER

THIRTYSIX

TWINE 1.6.4 (2015-10-27)

36.1 Bugfixes

- Paths with hyphens in them break the Wheel regular expression. (#145)
- Exception while accessing the `repository` key (sic) when raising a redirect exception. (#146)

CHAPTER

THIRTYSEVEN

TWINE 1.6.3 (2015-10-05)

37.1 Bugfixes

- Fix uploading signatures causing a 500 error after large file support was added. (#137, #140)

CHAPTER

THIRTYEIGHT

TWINE 1.6.2 (2015-09-28)

38.1 Bugfixes

- Upload signatures with packages appropriately (#132)

  As part of the refactor for the 1.6.0 release, we were using the wrong name to find the signature file.

  This also uncovered a bug where if you're using twine in a situation where * is not expanded by your shell, we might also miss uploading signatures to PyPI. Both were fixed as part of this.

CHAPTER

THIRTYNINE

TWINE 1.6.1 (2015-09-18)

39.1 Bugfixes

- Fix signing support for uploads (#130)

CHAPTER

FORTY

TWINE 1.6.0 (2015-09-14)

40.1 Features

- Allow the user to specify the location of their `.pypirc` (#97)
- Support registering new packages with `twine register` (#8)
- Add the `--skip-existing` flag to `twine upload` to allow users to skip releases that already exist on PyPI. (#115)
- Upload wheels first to PyPI (#106)
- Large file support via the `requests-toolbelt` (#104)

40.2 Bugfixes

- Raise an exception on redirects (#92)
- Work around problems with Windows when using `getpass.getpass` (#116)
- Warnings triggered by pkginfo searching for `PKG-INFO` files should no longer be user visible. (#114)
- Provide more helpful messages if `.pypirc` is out of date. (#111)

CHAPTER

FORTYONE

TWINE 1.5.0 (2015-03-10)

41.1 Features

- Support commands not named “gpg” for signing (#29)

41.2 Bugfixes

- Display information about the version of setuptools installed (#85)
- Support deprecated pypirc file format (#61)

41.3 Misc

- Add lower-limit to requests dependency

CHAPTER

FORTYTWO

TWINE 1.4.0 (2014-12-12)

42.1 Features

- Switch to a git style dispatching for the commands to enable simpler commands and programmatic invocation. (#6)
- Parse `~/.pypirc` ourselves and use `subprocess` instead of the `distutils.spawn` module. (#13)

42.2 Bugfixes

- Expand globs and check for existence of dists to upload (#65)
- Fix issue uploading packages with _s in the name (#47)
- List registered commands in help text (#34)
- Use `pkg_resources` to load registered commands (#32)
- Prevent ResourceWarning from being shown (#28)
- Add support for uploading Windows installers (#26)

CHAPTER

FORTYTHREE

TWINE 1.3.0 (2014-03-31)

43.1 Features

- Additional functionality.

CHAPTER

FORTYFOUR

TWINE 1.2.2 (2013-10-03)

44.1 Features

- Basic functionality.

CHAPTER

FORTYFIVE

CONTRIBUTING

We are happy you have decided to contribute to Twine.

Please see the GitHub repository for code and more documentation, and the official Python Packaging User Guide for user documentation. To ask questions or get involved, you can join the Python Packaging Discourse forum, `#pypa` or `#pypa-dev` on IRC, or the distutils-sig mailing list.

Everyone interacting in the Twine project's codebases, issue trackers, chat rooms, and mailing lists is expected to follow the PSF Code of Conduct.

45.1 Getting started

We use tox to run tests, check code style, and build the documentation. To install `tox`, run:

```
python3 -m pip install tox
```

Clone the twine repository from GitHub, then run:

```
cd /path/to/your/local/twine
tox -e dev
```

This creates a virtual environment, so that twine and its dependencies do not interfere with other packages installed on your machine. In the virtual environment, `twine` is pointing at your local copy, so when you make changes, you can easily see their effect.

The virtual environment also contains the tools for running tests and checking code style, so you can run them on single files directly or in your code editor. However, we still encourage using the `tox` commands below on the whole codebase.

To use the virtual environment, run:

```
source venv/bin/activate
```

45.1.1 Building the documentation

Additions and edits to twine's documentation are welcome and appreciated.

To preview the docs while you're making changes, run:

```
tox -e watch-docs
```

Then open a web browser to http://127.0.0.1:8000.

When you're done making changes, lint and build the docs locally before making a pull request. In your active virtual environment, run:

```
tox -e docs
```

The HTML of the docs will be written to `docs/_build/html`.

45.1.2 Code style

To automatically reformat your changes with isort and black, run:

```
tox -e format
```

To detect any remaining code smells with flake8, run:

```
tox -e lint
```

To perform strict type-checking using mypy, run:

```
tox -e types
```

Any errors from `lint` or `types` need to be fixed manually.

Additionally, we prefer that `import` statements be used for packages and modules only, rather than individual classes or functions.

45.1.3 Testing

We use pytest for writing and running tests.

To run the tests in your virtual environment, run:

```
tox -e py
```

To pass options to `pytest`, e.g. the name of a test, run:

```
tox -e py -- tests/test_upload.py::test_exception_for_http_status
```

Twine is continuously tested against supported versions of Python using GitHub Actions. To run the tests against a specific version, e.g. Python 3.8, you will need it installed on your machine. Then, run:

```
tox -e py38
```

To run the "integration" tests of uploading to real package indexes, run:

```
tox -e integration
```

To run the tests against all supported Python versions, check code style, and build the documentation, run:

```
tox
```

45.2 Submitting changes

1. Fork the GitHub repository.
2. Make a branch off of `main` and commit your changes to it.
3. Run the tests, check code style, and build the docs as described above.
4. Optionally, add your name to the end of the `AUTHORS` file using the format `Name <email@domain.com> (url)`, where the `(url)` portion is optional.
5. Submit a pull request to the `main` branch on GitHub, referencing an open issue.
6. Add a changelog entry.

45.2.1 Changelog entries

The `docs/changelog.rst` file is built by towncrier from files in the `changelog/` directory. To add an entry, create a file in that directory named `{number}.{type}.rst`, where `{number}` is the pull request number, and `{type}` is `feature`, `bugfix`, `doc`, `removal`, or `misc`.

For example, if your PR number is 1234 and it's fixing a bug, then you would create `changelog/1234.bugfix.rst`. PRs can span multiple categories by creating multiple files: if you added a feature and deprecated/removed an old feature in PR #5678, you would create `changelog/5678.feature.rst` and `changelog/5678.removal.rst`.

A changelog entry is meant for end users and should only contain details relevant to them. In order to maintain a consistent style, please keep the entry to the point, in sentence case, shorter than 80 characters, and in an imperative tone. An entry should complete the sentence "This change will …". If one line is not enough, use a summary line in an imperative tone, followed by a description of the change in one or more paragraphs, each wrapped at 80 characters and separated by blank lines.

You don't need to reference the pull request or issue number in a changelog entry, since towncrier will add a link using the number in the file name, and the pull request should reference an issue number. Similarly, you don't need to add your name to the entry, since that will be associated with the pull request.

Changelog entries are rendered using reStructuredText, but they should only have minimal formatting (such as ``monospaced text``).

45.3 Architectural overview

Twine is a command-line tool for interacting with PyPI securely over HTTPS. Its three purposes are to be:

1. A user-facing tool for publishing on pypi.org
2. A user-facing tool for publishing on other Python package indexes (e.g., `devpi` instances)
3. A useful API for other programs (e.g., `zest.releaser`) to call for publishing on any Python package index

Currently, twine has two principle functions: uploading new packages and registering new projects (`register` is no longer supported on PyPI, and is in Twine for use with other package indexes).

Its command line arguments are parsed in `twine/cli.py`. The code for registering new projects is in `twine/commands/register.py`, and the code for uploading is in `twine/commands/upload.py`. The file `twine/package.py` contains a single class, `PackageFile`, which hashes the project files and extracts their metadata. The file `twine/repository.py` contains the `Repository` class, whose methods control the URL the package is uploaded to (which the user can specify either as a default, in the `.pypirc` file, or pass on the command line), and the methods that upload the package securely to a URL.

For more details, refer to the source documentation (currently a work in progress):

45.3.1 twine package

Top-level module for Twine.

The contents of this package are not a public API. For more details, see https://github.com/pypa/twine/issues/194 and https://github.com/pypa/twine/issues/665.

twine.commands package

Module containing the logic for the `twine` sub-commands.

The contents of this package are not a public API. For more details, see https://github.com/pypa/twine/issues/194 and https://github.com/pypa/twine/issues/665.

twine.commands.check module

Module containing the logic for `twine check`.

class twine.commands.check.**_WarningStream**

write(*text: str*) → int

Write string to file.

Returns the number of characters written, which is always equal to the length of the string.

twine.commands.check.**_parse_content_type**(*value: str*) → Tuple[str, Dict[str, str]]

Implement logic of deprecated cgi.parse_header().

From https://docs.python.org/3.11/library/cgi.html#cgi.parse_header.

twine.commands.check.**_check_file**(*filename: str*, *render_warning_stream: _WarningStream*) → Tuple[List[str], bool]

Check given distribution.

twine.commands.check.**check**(*dists: List[str]*, *strict: bool = False*) → bool

Check that a distribution will render correctly on PyPI and display the results.

This is currently only validates `long_description`, but more checks could be added; see https://github.com/pypa/twine/projects/2.

Parameters

- **dists** – The distribution files to check.
- **output_stream** – The destination of the resulting output.

- **strict** – If `True`, treat warnings as errors.

Returns
`True` if there are rendering errors, otherwise `False`.

`twine.commands.check.main`(*args: List[str]*) → bool
Execute the `check` command.

Parameters
args – The command-line arguments.

Returns
The exit status of the `check` command.

twine.commands.register module

Module containing the logic for `twine register`.

`twine.commands.register.register`(*register_settings:* Settings, *package: str*) → None
Pre-register a package name with a repository before uploading a distribution.

Pre-registration is not supported on PyPI, so the `register` command is only necessary if you are using a different repository that requires it.

Parameters

- **register_settings** – The configured options relating to repository registration.
- **package** – The path of the distribution to use for package metadata.

Raises

- ***twine.exceptions.TwineException*** – The registration failed due to a configuration error.
- **requests.HTTPError** – The repository responded with an error.

`twine.commands.register.main`(*args: List[str]*) → None
Execute the `register` command.

Parameters
args – The command-line arguments.

twine.commands.upload module

Module containing the logic for `twine upload`.

`twine.commands.upload.skip_upload`(*response: Response*, *skip_existing: bool*, *package:* PackageFile) → bool
Determine if a failed upload is an error or can be safely ignored.

Parameters

- **response** – The response from attempting to upload `package` to a repository.
- **skip_existing** – If `True`, use the status and content of `response` to determine if the package already exists on the repository. If so, then a failed upload is safe to ignore.
- **package** – The package that was being uploaded.

Returns
`True` if a failed upload can be safely ignored, otherwise `False`.

twine.commands.upload.**_make_package**(*filename: str*, *signatures: Dict[str, str]*, *upload_settings:* Settings) → *PackageFile*

Create and sign a package, based off of filename, signatures and settings.

twine.commands.upload.**upload**(*upload_settings:* Settings, *dists: List[str]*) → None

Upload one or more distributions to a repository, and display the progress.

If a package already exists on the repository, most repositories will return an error response. However, if `upload_settings.skip_existing` is `True`, a message will be displayed and any remaining distributions will be uploaded.

For known repositories (like PyPI), the web URLs of successfully uploaded packages will be displayed.

Parameters

- **upload_settings** – The configured options related to uploading to a repository.
- **dists** – The distribution files to upload to the repository. This can also include `.asc` files; the GPG signatures will be added to the corresponding uploads.

Raises

- ***twine.exceptions.TwineException*** – The upload failed due to a configuration error.
- **requests.HTTPError** – The repository responded with an error.

twine.commands.upload.**main**(*args: List[str]*) → None

Execute the `upload` command.

Parameters

args – The command-line arguments.

twine.auth module

class twine.auth.**CredentialInput**

__init__(*username: str | None = None*, *password: str | None = None*) → None

class twine.auth.**Resolver**

__init__(*config: Dict[str, str | None]*, *input:* CredentialInput) → None

classmethod choose(*interactive: bool*) → Type[*Resolver*]

property username: **str | None**

property password: **str | None**

property system: **str | None**

get_username_from_keyring() → str | None

get_password_from_keyring() → str | None

username_from_keyring_or_prompt() → str

password_from_keyring_or_prompt() → str

prompt(*what: str*, *how: Callable[[...], str]*) → str

class twine.auth.**Private**

prompt(*what: str*, *how: Callable[[...], str] | None = None*) → str

twine.cli module

twine.cli.**configure_output**() → None

twine.cli.**list_dependencies_and_versions**() → List[Tuple[str, str]]

twine.cli.**dep_versions**() → str

twine.cli.**dispatch**(*argv: List[str]*) → Any

twine.exceptions module

Module containing exceptions raised by twine.

exception twine.exceptions.**TwineException**

Base class for all exceptions raised by twine.

exception twine.exceptions.**RedirectDetected**

A redirect was detected that the user needs to resolve.

In some cases, requests refuses to issue a new POST request after a redirect. In order to prevent a confusing user experience, we raise this exception to allow users to know the index they're uploading to is redirecting them.

classmethod from_args(*repository_url: str*, *redirect_url: str*) → *RedirectDetected*

exception twine.exceptions.**PackageNotFound**

A package file was provided that could not be found on the file system.

This is only used when attempting to register a package_file.

exception twine.exceptions.**UploadToDeprecatedPyPIDetected**

An upload attempt was detected to deprecated PyPI domains.

The sites pypi.python.org and testpypi.python.org are deprecated.

classmethod from_args(*target_url: str*, *default_url: str*, *test_url: str*) → *UploadToDeprecatedPyPIDetected*

Return an UploadToDeprecatedPyPIDetected instance.

exception twine.exceptions.**UnreachableRepositoryURLDetected**

An upload attempt was detected to a URL without a protocol prefix.

All repository URLs must have a protocol (e.g., `https://`).

exception twine.exceptions.**InvalidSigningConfiguration**

Both the sign and identity parameters must be present.

exception twine.exceptions.**InvalidSigningExecutable**

Signing executable must be installed on system.

exception twine.exceptions.**InvalidConfiguration**

Raised when configuration is invalid.

exception twine.exceptions.**InvalidDistribution**

Raised when a distribution is invalid.

exception twine.exceptions.**NonInteractive**

Raised in non-interactive mode when credentials could not be found.

exception twine.exceptions.**InvalidPyPIUploadURL**

Repository configuration tries to use PyPI with an incorrect URL.

For example, https://pypi.org instead of https://upload.pypi.org/legacy.

twine.package module

twine.package.**_safe_name**(*name: str*) → str

Convert an arbitrary string to a standard distribution name.

Any runs of non-alphanumeric/. characters are replaced with a single '-'.

Copied from pkg_resources.safe_name for compatibility with warehouse. See https://github.com/pypa/twine/issues/743.

class twine.package.**PackageFile**

__init__(*filename: str*, *comment: str | None*, *metadata: Distribution*, *python_version: str | None*, *filetype: str | None*) → None

classmethod from_filename(*filename: str*, *comment: str | None*) → *PackageFile*

metadata_dictionary() → Dict[str, str | None | Sequence[str] | Tuple[str, bytes]]

Merge multiple sources of metadata into a single dictionary.

Includes values from filename, PKG-INFO, hashers, and signature.

add_gpg_signature(*signature_filepath: str*, *signature_filename: str*) → None

sign(*sign_with: str*, *identity: str | None*) → None

classmethod run_gpg(*gpg_args: Tuple[str, ...]*) → None

class twine.package.**Hexdigest**

Hexdigest(md5, sha2, blake2)

md5: **str | None**

Alias for field number 0

sha2: **str | None**

Alias for field number 1

blake2: **str | None**

Alias for field number 2

static __new__(*_cls*, *md5: str | None*, *sha2: str | None*, *blake2: str | None*)

Create new instance of Hexdigest(md5, sha2, blake2)

_asdict()

Return a new dict which maps field names to their values.

_field_defaults = {}

_fields = ('md5', 'sha2', 'blake2')

classmethod _make(*iterable*)

Make a new Hexdigest object from a sequence or iterable

_replace(***kwds*)

Return a new Hexdigest object replacing specified fields with new values

class twine.package.**HashManager**

Manage our hashing objects for simplicity.

This will also allow us to better test this logic.

__init__(*filename: str*) → None

Initialize our manager and hasher objects.

_md5_update(*content: bytes*) → None

_md5_hexdigest() → str | None

_sha2_update(*content: bytes*) → None

_sha2_hexdigest() → str | None

_blake_update(*content: bytes*) → None

_blake_hexdigest() → str | None

hash() → None

Hash the file contents.

hexdigest() → *Hexdigest*

Return the hexdigest for the file.

twine.repository module

class twine.repository.**Repository**

__init__(*repository_url: str*, *username: str | None*, *password: str | None*, *disable_progress_bar: bool = False*) → None

static _make_adapter_with_retries() → HTTPAdapter

static _make_user_agent_string() → str

close() → None

static _convert_data_to_list_of_tuples(*data: Dict[str, Any]*) → List[Tuple[str, Any]]

set_certificate_authority(*cacert: str | None*) → None

set_client_certificate(*clientcert: str | None*) → None

register(*package:* PackageFile) → Response

_upload(*package:* PackageFile) → Response

upload(*package:* PackageFile, *max_redirects: int = 5*) → Response

package_is_uploaded(*package:* PackageFile, *bypass_cache:* *bool* = *False*) → bool

release_urls(*packages:* *List*[PackageFile]) → Set[str]

verify_package_integrity(*package:* PackageFile) → None

twine.settings module

Module containing logic for handling settings.

class twine.settings.**Settings**

Object that manages the configuration for Twine.

This object can only be instantiated with keyword arguments.

For example,

```
Settings(True, username='fakeusername')
```

Will raise a TypeError. Instead, you would want

```
Settings(sign=True, username='fakeusername')
```

__init__(**, sign:* *bool* = *False*, *sign_with:* *str* = *'gpg'*, *identity:* *str* | *None* = *None*, *username:* *str* | *None* = *None*, *password:* *str* | *None* = *None*, *non_interactive:* *bool* = *False*, *comment:* *str* | *None* = *None*, *config_file:* *str* = *utils.DEFAULT_CONFIG_FILE*, *skip_existing:* *bool* = *False*, *cacert:* *str* | *None* = *None*, *client_cert:* *str* | *None* = *None*, *repository_name:* *str* = *'pypi'*, *repository_url:* *str* | *None* = *None*, *verbose:* *bool* = *False*, *disable_progress_bar:* *bool* = *False*, ***ignored_kwargs:* *Any*) → None

Initialize our settings instance.

Parameters

- **sign** – Configure whether the package file should be signed.
- **sign_with** – The name of the executable used to sign the package with.
- **identity** – The GPG identity that should be used to sign the package file.
- **username** – The username used to authenticate to the repository (package index).
- **password** – The password used to authenticate to the repository (package index).
- **non_interactive** – Do not interactively prompt for username/password if the required credentials are missing.
- **comment** – The comment to include with each distribution file.
- **config_file** – The path to the configuration file to use.
- **skip_existing** – Specify whether twine should continue uploading files if one of them already exists. This primarily supports PyPI. Other package indexes may not be supported.
- **cacert** – The path to the bundle of certificates used to verify the TLS connection to the package index.
- **client_cert** – The path to the client certificate used to perform authentication to the index. This must be a single file that contains both the private key and the PEM-encoded certificate.
- **repository_name** – The name of the repository (package index) to interact with. This should correspond to a section in the config file.

- **repository_url** – The URL of the repository (package index) to interact with. This will override the settings inferred from `repository_name`.
- **verbose** – Show verbose output.
- **disable_progress_bar** – Disable the progress bar.

property username: `str | None`

property password: `str | None`

_allow_noninteractive() → AbstractContextManager[None]

Bypass NonInteractive error when client cert is present.

property verbose: `bool`

static register_argparse_arguments(*parser: ArgumentParser*) → None

Register the arguments for argparse.

classmethod from_argparse(*args: Namespace*) → *Settings*

Generate the Settings from parsed arguments.

_handle_package_signing(*sign: bool*, *sign_with: str*, *identity: str | None*) → None

_handle_repository_options(*repository_name: str*, *repository_url: str | None*) → None

_handle_certificates(*cacert: str | None*, *client_cert: str | None*) → None

check_repository_url() → None

Verify we are not using legacy PyPI.

Raises

twine.exceptions.UploadToDeprecatedPyPIDetected – The configured repository URL is for legacy PyPI.

create_repository() → *Repository*

Create a new repository for uploading.

twine.utils module

twine.utils.**get_config**(*path: str*) → Dict[str, Dict[str, str | None]]

Read repository configuration from a file (i.e. ~/.pypirc).

Format: https://packaging.python.org/specifications/pypirc/

If the default config file doesn't exist, return a default configuration for pypyi and testpypi.

twine.utils.**_validate_repository_url**(*repository_url: str*) → None

Validate the given url for allowed schemes and components.

twine.utils.**get_repository_from_config**(*config_file: str*, *repository: str*, *repository_url: str | None = None*) → Dict[str, str | None]

Get repository config command-line values or the .pypirc file.

twine.utils.**normalize_repository_url**(*url: str*) → str

twine.utils.**get_file_size**(*filename: str*) → str

Return the size of a file in KB, or MB if >= 1024 KB.

twine.utils.**check_status_code**(*response: Response*, *verbose: bool*) → None

Generate a helpful message based on the response from the repository.

Raise a custom exception for recognized errors. Otherwise, print the response content (based on the verbose option) before re-raising the HTTPError.

twine.utils.**get_userpass_value**(*cli_value: str | None*, *config: Dict[str, str | None]*, *key: str*, *prompt_strategy: Callable[[], str] | None = None*) → str | None

Get a credential (e.g. a username or password) from the configuration.

Uses the following rules:

1. If `cli_value` is specified, use that.
2. If `config[key]` is specified, use that.
3. If `prompt_strategy` is specified, use its return value.
4. Otherwise return `None`

Parameters

- **cli_value** – The value supplied from the command line.
- **config** – A dictionary of repository configuration values.
- **key** – The credential to look up in `config`, e.g. `"username"` or `"password"`.
- **prompt_strategy** – An argumentless function to get the value, e.g. from keyring or by prompting the user.

Returns

The credential value, i.e. the username or password.

twine.utils.**get_cacert**(*cli_value: str | None*, *config: Dict[str, str | None]*, ***, *key: str = 'ca_cert'*, *prompt_strategy: Callable[[], str] | None = None*) → str | None

Get the CA bundle via *get_userpass_value()*.

twine.utils.**get_clientcert**(*cli_value: str | None*, *config: Dict[str, str | None]*, ***, *key: str = 'client_cert'*, *prompt_strategy: Callable[[], str] | None = None*) → str | None

Get the client certificate via *get_userpass_value()*.

class twine.utils.**EnvironmentDefault**

Get values from environment variable.

__init__(*env: str*, *required: bool = True*, *default: str | None = None*, ***kwargs: Any*) → None

class twine.utils.**EnvironmentFlag**

Set boolean flag from environment variable.

__init__(*env: str*, ***kwargs: Any*) → None

static bool_from_env(*val: str | None*) → bool

Allow '0' and 'false' and 'no' to be False.

twine.wheel module

class twine.wheel.**Wheel**

__init__(*filename: str*, *metadata_version: str | None = None*) → None

property py_version: str

static find_candidate_metadata_files(*names: List[str]*) → List[List[str]]

Filter files that may be METADATA files.

read() → bytes

parse(*data: bytes*) → None

twine.wininst module

class twine.wininst.**WinInst**

__init__(*filename: str*, *metadata_version: str | None = None*) → None

property py_version: str

read() → bytes

45.3.2 Where Twine gets configuration and credentials

A user can set the repository URL, username, and/or password via command line, `.pypirc` files, environment variables, and `keyring`.

45.4 Adding a maintainer

A checklist for adding a new maintainer to the project.

1. Add them as a Member in the GitHub repo settings.
2. Get them Test PyPI and canon PyPI usernames and add them as a Maintainer on our Test PyPI project and canon PyPI.

45.5 Making a new release

A checklist for creating, testing, and distributing a new version.

1. Choose a version number, and create a new branch

```
VERSION=3.4.2

git switch -c release-$VERSION
```

2. Update `docs/changelog.rst`

```
tox -e changelog -- --version $VERSION

git commit -am "Update changelog for $VERSION"
```

3. Open a pull request for review
4. Merge the pull request, and ensure the GitHub Actions build passes
5. Create a new git tag for the version

```
git switch main

git pull --ff-only upstream main

git tag -m "Release v$VERSION" $VERSION
```

6. Push to start the release, and watch it in GitHub Actions

```
git push upstream $VERSION
```

7. View the new release on PyPI

45.6 Future development

See our open issues.

In the future, `pip` and `twine` may merge into a single tool; see ongoing discussion.

CHAPTER

FORTYSIX

TWINE

Twine is a utility for publishing Python packages to PyPI and other repositories. It provides build system independent uploads of source and binary distribution artifacts for both new and existing projects.

46.1 Why Should I Use This?

The goal of Twine is to improve PyPI interaction by improving security and testability.

The biggest reason to use Twine is that it securely authenticates you to PyPI over HTTPS using a verified connection, regardless of the underlying Python version. Meanwhile, `python setup.py upload` will only work correctly and securely if your build system, Python version, and underlying operating system are configured properly.

Secondly, Twine encourages you to build your distribution files. `python setup.py upload` only allows you to upload a package as a final step after building with `distutils` or `setuptools`, within the same command invocation. This means that you cannot test the exact file you're going to upload to PyPI to ensure that it works before uploading it.

Finally, Twine allows you to pre-sign your files and pass the `.asc` files into the command line invocation (`twine upload myproject-1.0.1.tar.gz myproject-1.0.1.tar.gz.asc`). This enables you to be assured that you're typing your `gpg` passphrase into `gpg` itself and not anything else, since *you* will be the one directly executing `gpg --detach-sign -a <filename>`.

46.2 Features

- Verified HTTPS connections
- Uploading doesn't require executing `setup.py`
- Uploading files that have already been created, allowing testing of distributions before release
- Supports uploading any packaging format (including wheels)

46.3 Installation

```
pip install twine
```

46.4 Using Twine

1. Create some distributions in the normal way:

   ```
   python -m build
   ```

2. Upload to Test PyPI and verify things look right:

   ```
   twine upload -r testpypi dist/*
   ```

   Twine will prompt for your username and password.

3. Upload to PyPI:

   ```
   twine upload dist/*
   ```

4. Done!

Note: Like many other command line tools, Twine does not show any characters when you enter your password.

If you're using Windows and trying to paste your username, password, or token in the Command Prompt or PowerShell, `Ctrl-V` and `Shift+Insert` won't work. Instead, you can use "Edit > Paste" from the window menu, or enable "Use Ctrl+Shift+C/V as Copy/Paste" in "Properties". This is a known issue with Python's `getpass` module.

More documentation on using Twine to upload packages to PyPI is in the Python Packaging User Guide.

46.5 Commands

46.5.1 `twine upload`

Uploads one or more distributions to a repository.

```
usage: twine upload [-h] [-r REPOSITORY] [--repository-url REPOSITORY_URL]
                    [-s] [--sign-with SIGN_WITH] [-i IDENTITY] [-u USERNAME]
                    [-p PASSWORD] [--non-interactive] [-c COMMENT]
                    [--config-file CONFIG_FILE] [--skip-existing]
                    [--cert path] [--client-cert path] [--verbose]
                    [--disable-progress-bar]
                    dist [dist ...]

positional arguments:
  dist                  The distribution files to upload to the repository
                        (package index). Usually dist/* . May additionally
                        contain a .asc file to include an existing signature
                        with the file upload.

options:
  -h, --help            show this help message and exit
  -r REPOSITORY, --repository REPOSITORY
                        The repository (package index) to upload the package
                        to. Should be a section in the config file (default:
```

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```
                        pypi). (Can also be set via TWINE_REPOSITORY
                        environment variable.)
  --repository-url REPOSITORY_URL
                        The repository (package index) URL to upload the
                        package to. This overrides --repository. (Can also be
                        set via TWINE_REPOSITORY_URL environment variable.)
  -s, --sign            Sign files to upload using GPG.
  --sign-with SIGN_WITH
                        GPG program used to sign uploads (default: gpg).
  -i IDENTITY, --identity IDENTITY
                        GPG identity used to sign files.
  -u USERNAME, --username USERNAME
                        The username to authenticate to the repository
                        (package index) as. (Can also be set via
                        TWINE_USERNAME environment variable.)
  -p PASSWORD, --password PASSWORD
                        The password to authenticate to the repository
                        (package index) with. (Can also be set via
                        TWINE_PASSWORD environment variable.)
  --non-interactive     Do not interactively prompt for username/password if
                        the required credentials are missing. (Can also be set
                        via TWINE_NON_INTERACTIVE environment variable.)
  -c COMMENT, --comment COMMENT
                        The comment to include with the distribution file.
  --config-file CONFIG_FILE
                        The .pypirc config file to use.
  --skip-existing       Continue uploading files if one already exists. (Only
                        valid when uploading to PyPI. Other implementations
                        may not support this.)
  --cert path           Path to alternate CA bundle (can also be set via
                        TWINE_CERT environment variable).
  --client-cert path    Path to SSL client certificate, a single file
                        containing the private key and the certificate in PEM
                        format.
  --verbose             Show verbose output.
  --disable-progress-bar
                        Disable the progress bar.
```

46.5.2 twine check

Checks whether your distribution's long description will render correctly on PyPI.

```
usage: twine check [-h] [--strict] dist [dist ...]

positional arguments:
  dist        The distribution files to check, usually dist/*

options:
  -h, --help  show this help message and exit
  --strict    Fail on warnings
```

46.5.3 twine register

Pre-register a name with a repository before uploading a distribution.

Warning: Pre-registration is not supported on PyPI, so the `register` command is only necessary if you are using a different repository that requires it. See issue #1627 on Warehouse (the software running on PyPI) for more details.

```
usage: twine register [-h] [-r REPOSITORY] [--repository-url REPOSITORY_URL]
                      [-s] [--sign-with SIGN_WITH] [-i IDENTITY] [-u USERNAME]
                      [-p PASSWORD] [--non-interactive] [-c COMMENT]
                      [--config-file CONFIG_FILE] [--skip-existing]
                      [--cert path] [--client-cert path] [--verbose]
                      [--disable-progress-bar]
                      package

register operation is not required with PyPI.org

positional arguments:
  package               File from which we read the package metadata.

options:
  -h, --help            show this help message and exit
  -r REPOSITORY, --repository REPOSITORY
                        The repository (package index) to upload the package
                        to. Should be a section in the config file (default:
                        pypi). (Can also be set via TWINE_REPOSITORY
                        environment variable.)
  --repository-url REPOSITORY_URL
                        The repository (package index) URL to upload the
                        package to. This overrides --repository. (Can also be
                        set via TWINE_REPOSITORY_URL environment variable.)
  -s, --sign            Sign files to upload using GPG.
  --sign-with SIGN_WITH
                        GPG program used to sign uploads (default: gpg).
  -i IDENTITY, --identity IDENTITY
                        GPG identity used to sign files.
  -u USERNAME, --username USERNAME
                        The username to authenticate to the repository
                        (package index) as. (Can also be set via
                        TWINE_USERNAME environment variable.)
  -p PASSWORD, --password PASSWORD
                        The password to authenticate to the repository
                        (package index) with. (Can also be set via
                        TWINE_PASSWORD environment variable.)
  --non-interactive     Do not interactively prompt for username/password if
                        the required credentials are missing. (Can also be set
                        via TWINE_NON_INTERACTIVE environment variable.)
  -c COMMENT, --comment COMMENT
                        The comment to include with the distribution file.
  --config-file CONFIG_FILE
                        The .pypirc config file to use.
```

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```
  --skip-existing       Continue uploading files if one already exists. (Only
                        valid when uploading to PyPI. Other implementations
                        may not support this.)
  --cert path           Path to alternate CA bundle (can also be set via
                        TWINE_CERT environment variable).
  --client-cert path    Path to SSL client certificate, a single file
                        containing the private key and the certificate in PEM
                        format.
  --verbose             Show verbose output.
  --disable-progress-bar
                        Disable the progress bar.
```

46.6 Configuration

Twine can read repository configuration from a `.pypirc` file, either in your home directory, or provided with the `--config-file` option. For details on writing and using `.pypirc`, see the specification in the Python Packaging User Guide.

46.6.1 Environment Variables

Twine also supports configuration via environment variables. Options passed on the command line will take precedence over options set via environment variables. Definition via environment variable is helpful in environments where it is not convenient to create a `.pypirc` file (for example, on a CI/build server).

- `TWINE_USERNAME` - the username to use for authentication to the repository.
- `TWINE_PASSWORD` - the password to use for authentication to the repository.
- `TWINE_REPOSITORY` - the repository configuration, either defined as a section in `.pypirc` or provided as a full URL.
- `TWINE_REPOSITORY_URL` - the repository URL to use.
- `TWINE_CERT` - custom CA certificate to use for repositories with self-signed or untrusted certificates.
- `TWINE_NON_INTERACTIVE` - Do not interactively prompt for username/password if the required credentials are missing.

46.6.2 Proxy Support

Twine can be configured to use a proxy by setting environment variables. For example, to use a proxy for just the `twine` command, without `export`-ing it for other tools:

```
HTTPS_PROXY=socks5://user:pass@host:port twine upload dist/*
```

For more information, see the Requests documentation on Proxies and SOCKS, and an in-depth article about proxy environment variables.

46.7 Keyring Support

Instead of typing in your password every time you upload a distribution, Twine allows storing a username and password securely using keyring. Keyring is installed with Twine but for some systems (Linux mainly) may require additional installation steps.

Once Twine is installed, use the `keyring` program to set a username and password to use for each repository to which you may upload.

For example, to set a username and password for PyPI:

```
keyring set https://upload.pypi.org/legacy/ your-username
```

and enter the password when prompted.

For a different repository, replace the URL with the relevant repository URL. For example, for Test PyPI, use `https://test.pypi.org/legacy/`.

The next time you run `twine`, it will prompt you for a username, and then get the appropriate password from Keyring.

Note: If you are using Linux in a headless environment (such as on a server) you'll need to do some additional steps to ensure that Keyring can store secrets securely. See Using Keyring on headless systems.

46.7.1 Disabling Keyring

In most cases, simply not setting a password with `keyring` will allow Twine to fall back to prompting for a password. In some cases, the presence of Keyring will cause unexpected or undesirable prompts from the backing system. In these cases, it may be desirable to disable Keyring altogether. To disable Keyring, run:

```
keyring --disable
```

See Twine issue #338 for discussion and background.

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