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# wheel Documentation

*Release 0.43.0*

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This library is the reference implementation of the Python wheel packaging standard, as defined in [PEP 427](#).

It has two different roles:

1. A [setuptools](#) extension for building wheels that provides the `bdist_wheel` setuptools command
2. A command line tool for working with wheel files



## QUICKSTART

To build a wheel for your project:

```
python -m pip install build
python -m build --wheel
```

The wheel will go to `dist/yourproject-<tags>.whl`.

If you want to make universal (Python 2/3 compatible, pure Python) wheels, add the following section to your `setup.cfg`:

```
[bdist_wheel]
universal = 1
```

To convert an `.egg` or file to a wheel:

```
wheel convert youreggfile.egg
```

Similarly, to convert a Windows installer (made using `python setup.py bdist_wininst`) to a wheel:

```
wheel convert yourinstaller.exe
```





## INSTALLATION

You can use `pip` to install wheel:

```
pip install wheel
```

If you do not have `pip` installed, see its documentation for [installation instructions](#).

If you prefer using your system package manager to install Python packages, you can typically find the wheel package under one of the following package names:

- `python-wheel`
- `python3-wheel`

### 2.1 Python and OS Compatibility

wheel should work on any Python implementation and operating system and is compatible with Python version 3.7 and upwards.



## 3.1 Building Wheels

To build a wheel for your project:

```
python -m pip install build
python -m build --wheel
```

This will build any C extensions in the project and then package those and the pure Python code into a `.whl` file in the `dist` directory.

If your project contains no C extensions and is expected to work on both Python 2 and 3, you will want to tell wheel to produce universal wheels by adding this to your `setup.cfg` file:

```
[bdist_wheel]
universal = 1
```

## 3.2 Including license files in the generated wheel file

Several open source licenses require the license text to be included in every distributable artifact of the project. By default, wheel conveniently includes files matching the following `glob` patterns in the `.dist-info` directory:

- `AUTHORS*`
- `COPYING*`
- `LICEN[CS]E*`
- `NOTICE*`

This can be overridden by setting the `license_files` option in the `[metadata]` section of the project's `setup.cfg`. For example:

```
[metadata]
license_files =
    license.txt
    3rdparty/*.txt
```

No matter the path, all the matching license files are written in the wheel in the `.dist-info` directory based on their file name only.

By specifying an empty `license_files` option, you can disable this functionality entirely.

**Note:** There used to be an option called `license_file` (singular). As of wheel v0.32, this option has been deprecated in favor of the more versatile `license_files` option.

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### 3.3 Converting Eggs to Wheels

The wheel tool is capable of converting eggs to the wheel format. It works on both `.egg` files and `.egg` directories, and you can convert multiple eggs with a single command:

```
wheel convert blah-1.2.3-py2.7.egg foo-2.0b1-py3.5.egg
```

The command supports wildcard expansion as well (via `iglob()`) to accommodate shells that do not do such expansion natively:

```
wheel convert *.egg
```

By default, the resulting wheels are written to the current working directory. This can be changed with the `--dest-dir` option:

```
wheel convert --dest-dir /tmp blah-1.2.3-py2.7.egg
```

### 3.4 Installing Wheels

To install a wheel file, use `pip`:

```
$ pip install someproject-1.5.0-py2-py3-none.whl
```

## REFERENCE GUIDE

### 4.1 wheel convert

#### 4.1.1 Usage

```
wheel convert [options] <egg_file_or_directory> [egg_file_or_directory...]
```

#### 4.1.2 Description

Convert one or more eggs (.egg; made with bdist\_egg) or Windows installers (.exe; made with bdist\_wininst) into wheels.

Egg names must match the standard format:

- <project>-<version>-pyX.Y for pure Python wheels
- <project>-<version>-pyX.Y-<arch> for binary wheels

#### 4.1.3 Options

**-d, --dest-dir** <dir>

Directory to store the generated wheels in (defaults to current directory).

#### 4.1.4 Examples

- Convert a single egg file:

```
$ wheel convert foobar-1.2.3-py2.7.egg
$ ls *.whl
foobar-1.2.3-py27-none.whl
```

- If the egg file name is invalid:

```
$ wheel convert pycharm-debug.egg
"pycharm-debug.egg" is not a valid egg name (must match at least name-version-pyX.Y.
→egg)
$ echo $?
1
```

## 4.2 wheel unpack

### 4.2.1 Usage

```
wheel unpack <wheel_file>
```

### 4.2.2 Description

Unpack the given wheel file.

This is the equivalent of `unzip <wheel_file>`, except that it also checks that the hashes and file sizes match with those in RECORD and exits with an error if it encounters a mismatch.

### 4.2.3 Options

`-d, --dest <dir>`

Directory to unpack the wheel into.

### 4.2.4 Examples

- Unpack a wheel:

```
$ wheel unpack someproject-1.5.0-py2-py3-none.whl
Unpacking to: ./someproject-1.5.0
```

- If a file's hash does not match:

```
$ wheel unpack someproject-1.5.0-py2-py3-none.whl
Unpacking to: ./someproject-1.5.0
Traceback (most recent call last):
...
wheel.install.BadWheelFile: Bad hash for file 'mypackage/module.py'
$ echo $?
1
```

## 4.3 wheel pack

### 4.3.1 Usage

```
wheel pack <wheel_directory>
```

## 4.3.2 Description

Repack a previously unpacked wheel file.

This command can be used to repack a wheel file after its contents have been modified. This is the equivalent of `zip -r <wheel_file> <wheel_directory>` except that it regenerates the RECORD file which contains hashes of all included files.

## 4.3.3 Options

**-d, --dest-dir <dir>**

Directory to put the new wheel file into.

**--build-number <tag>**

Override the build tag in the new wheel file name

## 4.3.4 Examples

- Unpack a wheel, add a dummy module and then repack it (with a new build number):

```
$ wheel unpack someproject-1.5.0-py2-py3-none.whl
Unpacking to: ./someproject-1.5.0
$ touch someproject-1.5.0/somepackage/module.py
$ wheel pack --build-number 2 someproject-1.5.0
Repacking wheel as ./someproject-1.5.0-2-py2-py3-none.whl...OK
```

## 4.4 wheel tags

### 4.4.1 Usage

```
wheel tags [-h] [--remove] [--python-tag TAG] [--abi-tag TAG] [--platform-tag TAG] [--
->build NUMBER] WHEEL [...]
```

### 4.4.2 Description

Make a new wheel with given tags from an existing wheel. Any tags left unspecified will remain the same. Multiple tags are separated by a “.” Starting with a “+” will append to the existing tags. Starting with a “-” will remove a tag. Be sure to use the equals syntax on the shell so that it does not get parsed as an extra option, such as `--python-tag=py2`. The original file will remain unless `--remove` is given. The output filename(s) will be displayed on stdout for further processing.

### 4.4.3 Options

**--remove**

Remove the original wheel, keeping only the retagged wheel.

**--python-tag=TAG**

Override the python tag (prepend with “+” to append, “-” to remove). Multiple tags can be separated with a dot.

**--abi-tag=TAG**

Override the abi tag (prepend with “+” to append, “-” to remove). Multiple tags can be separated with a dot.

**--platform-tag=TAG**

Override the platform tag (prepend with “+” to append, “-” to remove). Multiple tags can be separated with a dot.

**--build=NUMBER**

Specify a build number.

### 4.4.4 Examples

- Replace a wheel’s Python specific tags with generic tags (if no Python extensions are present, for example):

```
$ wheel tags --python-tag=py2.py3 --abi-tag=none cmake-3.20.2-cp39-cp39-win_amd64.  
↪whl  
cmake-3.20.2-py2.py3-none-win_amd64.whl
```

- Add compatibility tags for macOS universal wheels and older pips:

```
$ wheel tags \  
  --platform-tag+=macosx_10_9_x86_64.macosx_11_0_arm64 \  
  ninja-1.11.1-py2.py3-none-macosx_10_9_universal2.whl  
ninja-1.11.1-py2.py3-none-macosx_10_9_universal2.macosx_10_9_x86_64.macosx_11_0_  
↪arm64.whl
```



## 5.1 Pull Requests

- Submit Pull Requests against the `main` branch.
- Provide a good description of what you’re doing and why.
- Provide tests that cover your changes and try to run the tests locally first.

**Example.** Assuming you set up GitHub account, forked wheel repository from <https://github.com/pypa/wheel> to your own page via web interface, and your fork is located at <https://github.com/yourname/wheel>

```
$ git clone git@github.com:pypa/wheel.git
$ cd wheel
# ...
$ git diff
$ git add <modified> ...
$ git status
$ git commit
```

You may reference relevant issues in commit messages (like #1259) to make GitHub link issues and commits together, and with phrase like “fixes #1259” you can even close relevant issues automatically. Now push the changes to your fork:

```
$ git push git@github.com:yourname/wheel.git
```

Open Pull Requests page at <https://github.com/yourname/wheel/pulls> and click “New pull request”. That’s it.

## 5.2 Automated Testing

All pull requests and merges to `main` branch are tested in [GitHub Actions](#) based on the workflows in the `.github` directory.

The only way to trigger the test suite to run again for a pull request is to submit another change to the pull branch.

## 5.3 Running Tests Locally

Python requirements: `tox` or `pytest`

To run the tests via `tox` against all matching interpreters:

```
$ tox
```

To run the tests via `tox` against a specific environment:

```
$ tox -e py35
```

Alternatively, you can run the tests via `pytest` using your default interpreter:

```
$ pip install -e .[test] # Installs the test dependencies
$ pytest                # Runs the tests with the current interpreter
```

The above `pip install` command will replace the current interpreter's installed wheel package with the development package being tested. If you use this workflow, it is recommended to run it under a `virtualenv`.

## 5.4 Getting Involved

The wheel project welcomes help in the following ways:

- Making Pull Requests for code, tests, or docs.
- Commenting on open issues and pull requests.
- Helping to answer questions on the [mailing list](#).

## 5.5 Release Process

To make a new release:

1. Edit `docs/news.rst` and replace `**UNRELEASED**` with a release version and date, like `**X.Y.Z (20XX-YY-ZZ)**`.
2. Replace the `__version__` attribute in `src/wheel/__init__.py` with the same version number as above (without the date of course).
3. Create a new git tag matching the version exactly
4. Push the new tag to GitHub

Pushing a new tag to GitHub will trigger the publish workflow which package the project and publish the resulting artifacts to PyPI.

## RELEASE NOTES

### 0.43.0 (2024-03-11)

- Dropped support for Python 3.7
- Updated vendored packaging to 24.0

### 0.42.0 (2023-11-26)

- Allowed removing build tag with `wheel tags --build ""`
- Fixed `wheel pack` and `wheel tags` writing updated WHEEL fields after a blank line, causing other tools to ignore them
- Fixed `wheel pack` and `wheel tags` writing WHEEL with CRLF line endings or a mix of CRLF and LF
- Fixed `wheel pack --build-number ""` not removing build tag from WHEEL (above changes by Benjamin Gilbert)

### 0.41.3 (2023-10-30)

- Updated vendored packaging to 23.2
- Fixed ABI tag generation for CPython 3.13a1 on Windows (PR by Sam Gross)

### 0.41.2 (2023-08-22)

- Fixed platform tag detection for GraalPy and 32-bit python running on an aarch64 kernel (PR by Matthieu Darbois)
- Fixed `wheel tags` to not list directories in RECORD files (PR by Mike Taves)
- Fixed ABI tag generation for GraalPy (PR by Michael Simacek)

### 0.41.1 (2023-08-05)

- Fixed naming of the `data_dir` directory in the presence of local version segment given via `egg_info.tag_build` (PR by Anderson Bravalheri)
- Fixed version specifiers in `Requires-Dist` being wrapped in parentheses

### 0.41.0 (2023-07-22)

- Added full support of the build tag syntax to `wheel tags` (you can now set a build tag like 123mytag)
- Fixed warning on Python 3.12 about `onerror` deprecation. (PR by Henry Schreiner)
- Support testing on Python 3.12 betas (PR by Ewout ter Hoeven)

### 0.40.0 (2023-03-14)

- Added a `wheel tags` command to modify tags on an existing wheel (PR by Henry Schreiner)
- Updated vendored packaging to 23.0

- `wheel unpack` now preserves the executable attribute of extracted files
- Fixed spaces in platform names not being converted to underscores (PR by David Tucker)
- Fixed RECORD files in generated wheels missing the regular file attribute
- Fixed `DeprecationWarning` about the use of the deprecated `pkg_resources` API (PR by Thomas Grainger)
- Wheel now uses `flit-core` as a build backend (PR by Henry Schreiner)

### 0.38.4 (2022-11-09)

- Fixed PKG-INFO conversion in `bdist_wheel` mangling UTF-8 header values in METADATA (PR by Anderson Bravalheri)

### 0.38.3 (2022-11-08)

- Fixed install failure when used with `--no-binary`, reported on Ubuntu 20.04, by removing `setup_requires` from `setup.cfg`

### 0.38.2 (2022-11-05)

- Fixed regression introduced in v0.38.1 which broke parsing of wheel file names with multiple platform tags

### 0.38.1 (2022-11-04)

- Removed install dependency on `setuptools`
- The future-proof fix in 0.36.0 for converting PyPy's SOABI into a abi tag was faulty. Fixed so that future changes in the SOABI will not change the tag.

### 0.38.0 (2022-10-21)

- Dropped support for Python < 3.7
- Updated vendored packaging to 21.3
- Replaced all uses of `distutils` with `setuptools`
- The handling of `license_files` (including glob patterns and default values) is now delegated to `setuptools`>=57.0.0 (#466). The package dependencies were updated to reflect this change.
- Fixed potential DoS attack via the `WHEEL_INFO_RE` regular expression
- Fixed `ValueError: ZIP does not support timestamps before 1980` when using `SOURCE_DATE_EPOCH=0` or when on-disk timestamps are earlier than 1980-01-01. Such timestamps are now changed to the minimum value before packaging.

### 0.37.1 (2021-12-22)

- Fixed `wheel pack` duplicating the WHEEL contents when the build number has changed (#415)
- Fixed parsing of file names containing commas in RECORD (PR by Hood Chatham)

### 0.37.0 (2021-08-09)

- Added official Python 3.10 support
- Updated vendored packaging library to v20.9

### 0.36.2 (2020-12-13)

- Updated vendored packaging library to v20.8
- Fixed wheel sdist missing `LICENSE.txt`
- Don't use default `macos/arm64` deployment target in calculating the platform tag for fat binaries (PR by Ronald Oussoren)

**0.36.1 (2020-12-04)**

- Fixed `AssertionError` when `MACOSX_DEPLOYMENT_TARGET` was set to 11 (PR by Grzegorz Bokota and François-Xavier Coudert)
- Fixed regression introduced in 0.36.0 on Python 2.7 when a custom generator name was passed as unicode (Scikit-build) (`TypeError: 'unicode' does not have the buffer interface`)

**0.36.0 (2020-12-01)**

- Added official Python 3.9 support
- Updated vendored packaging library to v20.7
- Switched to always using LF as line separator when generating WHEEL files (on Windows, CRLF was being used instead)
- The ABI tag is taken from the sysconfig SOABI value. On PyPy the SOABI value is `pypy37-pp73` which is not compliant with PEP 3149, as it should have both the API tag and the platform tag. This change future-proofs any change in PyPy's SOABI tag to make sure only the ABI tag is used by wheel.
- Fixed regression and test for `bdist_wheel --plat-name`. It was ignored for C extensions in v0.35, but the regression was not detected by tests.

**0.35.1 (2020-08-14)**

- Replaced install dependency on packaging with a vendored copy of its tags module
- Fixed `bdist_wheel` not working on FreeBSD due to mismatching platform tag name (it was not being converted to lowercase)

**0.35.0 (2020-08-13)**

- Switched to the `packaging` library for computing wheel tags
- Fixed a resource leak in `WheelFile.open()` (PR by Jon Dufresne)

**0.34.2 (2020-01-30)**

- Fixed installation of `wheel` from `sdist` on environments without Unicode file name support

**0.34.1 (2020-01-27)**

- Fixed installation of `wheel` from `sdist` which was broken due to a chicken and egg problem with PEP 517 and `setuptools_scm`

**0.34.0 (2020-01-27)**

- Dropped Python 3.4 support
- Added automatic platform tag detection for macOS binary wheels (PR by Grzegorz Bokota)
- Added the `--compression=` option to the `bdist_wheel` command
- Fixed PyPy tag generation to work with the updated semantics (#328)
- Updated project packaging and testing configuration for [PEP 517](#)
- Moved the contents of `setup.py` to `setup.cfg`
- Fixed duplicate RECORD file when using `wheel pack` on Windows
- Fixed `bdist_wheel` failing at cleanup on Windows with a read-only source tree
- Fixed `wheel pack` not respecting the existing build tag in WHEEL
- Switched the project to use the “src” layout
- Switched to `setuptools_scm` for versioning

**0.33.6 (2019-08-18)**

- Fixed regression from 0.33.5 that broke building binary wheels against the limited ABI
- Fixed egg2wheel compatibility with the future release of Python 3.10 (PR by Anthony Sottile)

**0.33.5 (2019-08-17)**

- Don't add the m ABI flag to wheel names on Python 3.8 (PR by rdb)
- Updated MANIFEST.in to include many previously omitted files in the sdist

**0.33.4 (2019-05-12)**

- Reverted PR #289 (adding directory entries to the wheel file) due to incompatibility with `distlib.wheel`

**0.33.3 (2019-05-10)** (redacted release)

- Fixed wheel build failures on some systems due to all attributes being preserved (PR by Matt Wozniski)

**0.33.2 (2019-05-08)** (redacted release)

- Fixed empty directories missing from the wheel (PR by Jason R. Coombs)

**0.33.1 (2019-02-19)**

- Fixed the `--build-number` option for `wheel pack` not being applied

**0.33.0 (2019-02-11)**

- Added the `--build-number` option to the `wheel pack` command
- Fixed bad shebangs sneaking into wheels
- Fixed documentation issue with `wheel pack` erroneously being called `wheel repack`
- Fixed filenames with “bad” characters (like commas) not being quoted in RECORD (PR by Paul Moore)
- Sort requirements extras to ensure deterministic builds (PR by PoncinMatthieu)
- Forced `inplace = False` when building a C extension for the wheel

**0.32.3 (2018-11-18)**

- Fixed compatibility with Python 2.7.0 – 2.7.3
- Fixed handling of direct URL requirements with markers (PR by Benoit Pierre)

**0.32.2 (2018-10-20)**

- Fixed build number appearing in the `.dist-info` directory name
- Made wheel file name parsing more permissive
- Fixed wrong Python tag in wheels converted from eggs (PR by John T. Wodder II)

**0.32.1 (2018-10-03)**

- Fixed `AttributeError: 'Requirement' object has no attribute 'url'` on `setup-tools/pkg_resources` versions older than 18.8 (PR by Benoit Pierre)
- Fixed `AttributeError: 'module' object has no attribute 'algorithms_available'` on Python < 2.7.9 (PR by Benoit Pierre)
- Fixed permissions on the generated `.dist-info/RECORD` file

**0.32.0 (2018-09-29)**

- Removed wheel signing and verifying features

- Removed the “wheel install” and “wheel installscripts” commands
- Added the `wheel pack` command
- Allowed multiple license files to be specified using the `license_files` option
- Deprecated the `license_file` option
- Eliminated duplicate lines from generated requirements in `.dist-info/METADATA` (thanks to Wim Glenn for the contribution)
- Fixed handling of direct URL specifiers in requirements (PR by Benoit Pierre)
- Fixed canonicalization of extras (PR by Benoit Pierre)
- Warn when the deprecated `[wheel]` section is used in `setup.cfg` (PR by Jon Dufresne)

#### **0.31.1 (2018-05-13)**

- Fixed arch as `None` when converting eggs to wheels

#### **0.31.0 (2018-04-01)**

- Fixed displaying of errors on Python 3
- Fixed single digit versions in wheel files not being properly recognized
- Fixed wrong character encodings being used (instead of UTF-8) to read and write RECORD (this sometimes crashed `bdist_wheel` too)
- Enabled Zip64 support in wheels by default
- Metadata-Version is now 2.1
- Dropped `DESCRIPTION.rst` and `metadata.json` from the list of generated files
- Dropped support for the non-standard, undocumented `provides-extra` and `requires-dist` keywords in `setup.cfg` metadata
- Deprecated all wheel signing and signature verification commands
- Removed the (already defunct) `tool` extras from `setup.py`

#### **0.30.0 (2017-09-10)**

- Added `py-limited-api {cp32|cp33|cp34}...` flag to produce `cpNN.abi3.{arch}` tags on CPython 3.
- Documented the `license_file` metadata key
- Improved Python, abi tagging for `wheel convert`. Thanks Ales Erjavec.
- Fixed `>` being prepended to lines starting with “From” in the long description
- Added support for specifying a build number (as per PEP 427). Thanks Ian Cordasco.
- Made the order of files in generated ZIP files deterministic. Thanks Matthias Bach.
- Made the order of requirements in metadata deterministic. Thanks Chris Lamb.
- Fixed `wheel install` clobbering existing files
- Improved the error message when trying to verify an unsigned wheel file
- Removed support for Python 2.6, 3.2 and 3.3.

#### **0.29.0 (2016-02-06)**

- Fix compression type of files in archive (Issue #155, Pull Request #62, thanks Xavier Fernandez)

#### **0.28.0 (2016-02-05)**

- Fix file modes in archive (Issue #154)

#### 0.27.0 (2016-02-05)

- Support forcing a platform tag using `--plat-name` on pure-Python wheels, as well as nonstandard platform tags on non-pure wheels (Pull Request #60, Issue #144, thanks Andrés Díaz)
- Add SOABI tags to platform-specific wheels built for Python 2.X (Pull Request #55, Issue #63, Issue #101)
- Support reproducible wheel files, wheels that can be rebuilt and will hash to the same values as previous builds (Pull Request #52, Issue #143, thanks Barry Warsaw)
- Support for changes in keyring  $\geq 8.0$  (Pull Request #61, thanks Jason R. Coombs)
- Use the file context manager when checking if `dependency_links.txt` is empty, fixes problems building wheels under PyPy on Windows (Issue #150, thanks Cosimo Lupo)
- Don't attempt to (recursively) create a build directory ending with `..` (invalid on all platforms, but code was only executed on Windows) (Issue #91)
- Added the PyPA Code of Conduct (Pull Request #56)

#### 0.26.0 (2015-09-18)

- Fix multiple entrypoint comparison failure on Python 3 (Issue #148)

#### 0.25.0 (2015-09-16)

- Add Python 3.5 to tox configuration
- Deterministic (sorted) metadata
- Fix tagging for Python 3.5 compatibility
- Support `py2-none-arch` and `py3-none-arch` tags
- Treat data-only wheels as pure
- Write to temporary file and rename when using `wheel install -force`

#### 0.24.0 (2014-07-06)

- The `python` tag used for pure-python packages is now `.pyN` (major version only). This change actually occurred in 0.23.0 when the `-python-tag` option was added, but was not explicitly mentioned in the changelog then.
- `wininst2wheel` and `egg2wheel` removed. Use “`wheel convert [archive]`” instead.
- Wheel now supports `setuptools` style conditional requirements via the `extras_require={}` syntax. Separate ‘extra’ names from conditions using the `:` character. Wheel's own `setup.py` does this. (The empty-string extra is the same as `install_requires`.) These conditional requirements should work the same whether the package is installed by wheel or by `setup.py`.

#### 0.23.0 (2014-03-31)

- Compatibility tag flags added to the `bdist_wheel` command
- `sdist` should include files necessary for tests
- ‘`wheel convert`’ can now also convert unpacked eggs to wheel
- Rename `pydist.json` to `metadata.json` to avoid stepping on the PEP
- The `-skip-scripts` option has been removed, and not generating scripts is now the default. The option was a temporary approach until installers could generate scripts themselves. That is now the case with pip 1.5 and later. Note that using pip 1.4 to install a wheel without scripts will leave the installation without entry-point wrappers. The “`wheel install-scripts`” command can be used to generate the scripts in such cases.
- Thank you contributors



**0.22.0 (2013-09-15)**

- Include entry\_points.txt, scripts a.k.a. commands, in experimental pydist.json
- Improved test\_requires parsing
- Python 2.6 fixes, “wheel version” command courtesy pombredanne

**0.21.0 (2013-07-20)**

- Pregenerated scripts are the default again.
- “setup.py bdist\_wheel --skip-scripts” turns them off.
- setuptools is no longer a listed requirement for the ‘wheel’ package. It is of course still required in order for bdist\_wheel to work.
- “python -m wheel” avoids importing pkg\_resources until it’s necessary.

**0.20.0**

- No longer include console\_scripts in wheels. Ordinary scripts (shell files, standalone Python files) are included as usual.
- Include new command “python -m wheel install-scripts [distribution [distribution ...]]” to install the console\_scripts (setuptools-style scripts using pkg\_resources) for a distribution.

**0.19.0 (2013-07-19)**

- pymeta.json becomes pydist.json

**0.18.0 (2013-07-04)**

- Python 3 Unicode improvements

**0.17.0 (2013-06-23)**

- Support latest PEP-426 “pymeta.json” (json-format metadata)

**0.16.0 (2013-04-29)**

- Python 2.6 compatibility bugfix (thanks John McFarlane)
- Bugfix for C-extension tags for CPython 3.3 (using SOABI)
- Bugfix for bdist\_wininst converter “wheel convert”
- Bugfix for dists where “is pure” is None instead of True or False
- Python 3 fix for moving Unicode Description to metadata body
- Include rudimentary API documentation in Sphinx (thanks Kevin Horn)

**0.15.0 (2013-01-14)**

- Various improvements

**0.14.0 (2012-10-27)**

- Changed the signature format to better comply with the current JWS spec. Breaks all existing signatures.
- Include wheel unsign command to remove RECORD.jws from an archive.
- Put the description in the newly allowed payload section of PKG-INFO (METADATA) files.

**0.13.0 (2012-10-17)**

- Use distutils instead of sysconfig to get installation paths; can install headers.
- Improve WheelFile() sort.

- Allow bootstrap installs without any pkg\_resources.

**0.12.0 (2012-10-06)**

- Unit test for wheel.tool.install

**0.11.0 (2012-10-17)**

- API cleanup

**0.10.3 (2012-10-03)**

- Scripts fixer fix

**0.10.2 (2012-10-02)**

- Fix keygen

**0.10.1 (2012-09-30)**

- Preserve attributes on install.

**0.10.0 (2012-09-30)**

- Include a copy of pkg\_resources. Wheel can now install into a virtualenv that does not have distribute (though most packages still require pkg\_resources to actually work; wheel install distribute)
- Define a new setup.cfg section [wheel]. universal=1 will apply the py2.py3-none-any tag for pure python wheels.

**0.9.7 (2012-09-20)**

- Only import dirspeg when needed. dirspeg is only needed to find the configuration for keygen/signing operations.

**0.9.6 (2012-09-19)**

- requires-dist from setup.cfg overwrites any requirements from setup.py Care must be taken that the requirements are the same in both cases, or just always install from wheel.
- drop dirspeg requirement on win32
- improved command line utility, adds 'wheel convert [egg or wininst]' to convert legacy binary formats to wheel

**0.9.5 (2012-09-15)**

- Wheel's own wheel file can be executed by Python, and can install itself: `python wheel-0.9.5-py27-none-any/wheel install ...`
- Use argparse; basic wheel install command should run with only stdlib dependencies.
- Allow requires\_dist in setup.cfg's [metadata] section. In addition to dependencies in setup.py, but will only be interpreted when installing from wheel, not from sdist. Can be qualified with environment markers.

**0.9.4 (2012-09-11)**

- Fix wheel.signatures in sdist

**0.9.3 (2012-09-10)**

- Integrated digital signatures support without C extensions.
- Integrated "wheel install" command (single package, no dependency resolution) including compatibility check.
- Support Python 3.3
- Use Metadata 1.3 (PEP 426)

**0.9.2 (2012-08-29)**

- Automatic signing if WHEEL\_TOOL points to the wheel binary

- Even more Python 3 fixes

#### **0.9.1 (2012-08-28)**

- ‘wheel sign’ uses the keys generated by ‘wheel keygen’ (instead of generating a new key at random each time)
- Python 2/3 encoding/decoding fixes
- Run tests on Python 2.6 (without signature verification)

#### **0.9 (2012-08-22)**

- Updated digital signatures scheme
- Python 3 support for digital signatures
- Always verify RECORD hashes on extract
- “wheel” command line tool to sign, verify, unpack wheel files

#### **0.8 (2012-08-17)**

- none/any draft pep tags update
- improved wininst2wheel script
- doc changes and other improvements

#### **0.7 (2012-07-28)**

- sort .dist-info at end of wheel archive
- Windows & Python 3 fixes from Paul Moore
- pep8
- scripts to convert wininst & egg to wheel

#### **0.6 (2012-07-23)**

- require distribute  $\geq 0.6.28$
- stop using verlib

#### **0.5 (2012-07-17)**

- working pretty well

#### **0.4.2 (2012-07-12)**

- hyphenated name fix

#### **0.4 (2012-07-11)**

- improve test coverage
- improve Windows compatibility
- include tox.ini courtesy of Marc Abramowitz
- draft hmac sha-256 signing function

#### **0.3 (2012-07-04)**

- prototype egg2wheel conversion script

#### **0.2 (2012-07-03)**

- Python 3 compatibility

#### **0.1 (2012-06-30)**

- Initial version

## Symbols

- abi-tag
  - command line option, 12
- build
  - command line option, 12
- build-number
  - command line option, 11
- dest
  - command line option, 10
- dest-dir
  - command line option, 9, 11
- platform-tag
  - command line option, 12
- python-tag
  - command line option, 12
- remove
  - command line option, 12
- d
  - command line option, 9–11

## C

- command line option
  - abi-tag, 12
  - build, 12
  - build-number, 11
  - dest, 10
  - dest-dir, 9, 11
  - platform-tag, 12
  - python-tag, 12
  - remove, 12
  - d, 9–11

## P

- Python Enhancement Proposals
  - PEP 517, 17