

Creating Virtual Environments

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The [virtualenv](#) utility uses the command line path environment variable to create isolated **Python virtual environments**, similar to [venv](#). Compared to `venv`, `virtualenv` provides additional functionality by supporting Python 2.7 and providing convenient features for configuring, maintaining, duplicating, and debugging the virtual environments.

Python **Virtual Environments** allow Python packages to be installed in an isolated (local) location, rather than being installed globally.

There are currently two popular tools for creating Python virtual environments:

- [venv](#) (Python 3.4+) is part of Python since Python 3.3
- [virtualenv](#) (Python 2.7+ and Python 3.3+)

See [Pipenv](#) to manage multiple virtual environments. The `pyvenv` virtual environment creation tool recommended for Python 3.3 and 3.4 is deprecated in Python 3.6. The use

of `venv` is recommended for creating virtual environments in Python 3.5 and later.

1 Basic Usage venv

For `bash` or `zsh`:

```
python3 -m venv <DIR>
source <DIR>/bin/activate
```

For `csh` or `tcsch`:

```
python3 -m venv <DIR>
source <DIR>/bin/activate.csh
```

2 Basic Usage virtualenv

```
virtualenv <DIR>
source <DIR>/bin/activate
```

2.1 Example

Without any other information it sets up a python2 environment

```
virtualenv /tmp/test-virtualenv
Running virtualenv with interpreter /usr/bin/python2
New python executable in /tmp/test-virtualenv/bin/python2
Also creating executable in /tmp/test-virtualenv/bin/python
Installing setuptools, pkg_resources, pip, wheel...done.
find test-virtualenv |wc -l
1141
```

3 Basic Creation venv

```
python3 -m venv /path/to/new/virtual/environment
```

A common name for the target directory is `.venv`.

3.1 Example

This creates a horrible long list of files.

```
python3 -m venv /tmp/test-venv
cd /tmp/test-venv
find|wc -l
448
```

4 Excursus On Perl Virtual Environments

Virtual environments are well known in Perl. And there are basically two reasons why you would want to manage and use virtual environments in Perl: (1) Some conflicting Perl modules. (2) A controlled environment. While I have encountered (2) more than once, I have never encountered (1) in the last 25 years. While I think it is possible, it rarely seems to be an issue, as modules in Perl tend to upgrade quite smoothly. Since my experience with Python is less long, I wonder why virtual environments are suggested so often.

Scope	Python	Perl
Manage Language Versions	pyenv	plenv, plerlbrew
Manage Module Versions	venv, virtualenv	local::lib, carton
Manage Module Installations	pip	cpanminus

5 History

Version	Date	Notes
0.1.2	2023-03-04	Improve writing
0.1.1	2022-07-12	History, shell->bash
0.1.0	2020-05-16	Initial release

6 Disclaimer of Warranty

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