

Creating Virtual Environments

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The tool `virtualenv` uses the command-line path environment variable to create isolated **Python Virtual Environments**, much as `venv` does. Compared to `venv`, `virtualenv` provides additional functionality by supporting Python 2.7 and by providing convenient features for configuring, maintaining, duplicating, and troubleshooting the virtual environments.

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

Currently, there are two common 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` on how to manage multiple virtual environments. The recommended tool

pyvenv for creating virtual environments for Python 3.3 and 3.4 is deprecated in Python 3.6. The use of **venv** is from Python 3.5 recommended for creating virtual environments.

1 Basic Usage venv

For **bash** or **zsh**:

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

For **csh** or **tcsh**:

```
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 manage and use Perl virtual environments: (1) Some conflicting Perl modules. (2) A controlled environment. While I came across (2) more than once I actually never experienced (1) in the last 25 years. While I think it is possible, it seems seldom to be an issue as modules tend to upgrade in Perl quite smoothly. As my experience with Python is less long, I am wondering why virtual environments are suggested to be used so many times.

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
0.1.0	2022-07-12	History, shell->bash
0.1.0	2020-05-16	Initial release

6 Disclaimer of Warranty

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