

python Linux 环境（版本隔离工具）

首先新建用户，养成良好习惯useradd python

1、安装pyenv

GitHub官网: <https://github.com/pyenv/pyenv-installer>

pyenv installer

This tool installs [pyenv](#) and friends. It is inspired by [rbenv-installer](#).

Prerequisites

In general, compiling your own Python interpreter requires the installation of the appropriate libraries and packages. The [installation wiki](#) provides a list of these for common operating systems.

Install:

```
1 | $ curl https://pyenv.run | bash
```

`pyenv.run` redirects to the install script in this repository and the invocation above is equivalent to:

```
1 | $ curl -L https://github.com/pyenv/pyenv-installer/raw/master/bin/pyenv-installer | bash
```

Restart your shell so the path changes take effect:

You can now begin using pyenv.

Update:

```
1 | $ pyenv update
```

Uninstall: `pyenv` is installed within `$PYENV_ROOT` (default: `~/.pyenv`). To uninstall, just remove it:

```
1 | $ rm -fr ~/.pyenv
```

and remove these three lines from `.bashrc`:

```
1 export PATH="$HOME/.pyenv/bin:$PATH"
2 eval "$(pyenv init -)"
3 eval "$(pyenv virtualenv-init -)"
```

If you need, export USE_GIT_URI to use git:// instead of https:// for git clone.

Travis itself uses pyenv and therefore PYENV_ROOT is set already. To make it work anyway the installation for pyenv-installer needs to look like this:

```
1 [...]
2 - unset PYENV_ROOT
3 - curl -L https://github.com/pyenv/pyenv-installer/raw/master/bin/pyenv-
  installer | bash
4 - export PATH="$HOME/.pyenv/bin:$PATH"
5 - pyenv install 3.5.2
```

The [project on github](#) contains a setup for vagrant to test the installer inside a vagrant managed virtual image.

If you don't know vagrant yet: just [install the latest package](#), open a shell in this project directory and say

```
1 $ vagrant up
2 $ vagrant ssh
```

Now you are inside the vagrant container and your prompt should look something like

```
vagrant@vagrant-ubuntu-trusty-64:~$
```

The project (this repository) is mapped into the vagrant image at /vagrant

```
1 $ cd /vagrant
2 $ python setup.py install
3 $ echo 'export PATH="$HOME/.pyenv/bin:$PATH"' >> ~/.bashrc
4 $ echo 'eval "$(pyenv init -)"' >> ~/.bashrc
5 $ echo 'eval "$(pyenv virtualenv-init -)"' >> ~/.bashrc
6 $ source ~/.bashrc
```

Pyenv should be installed and responding now.

20190111

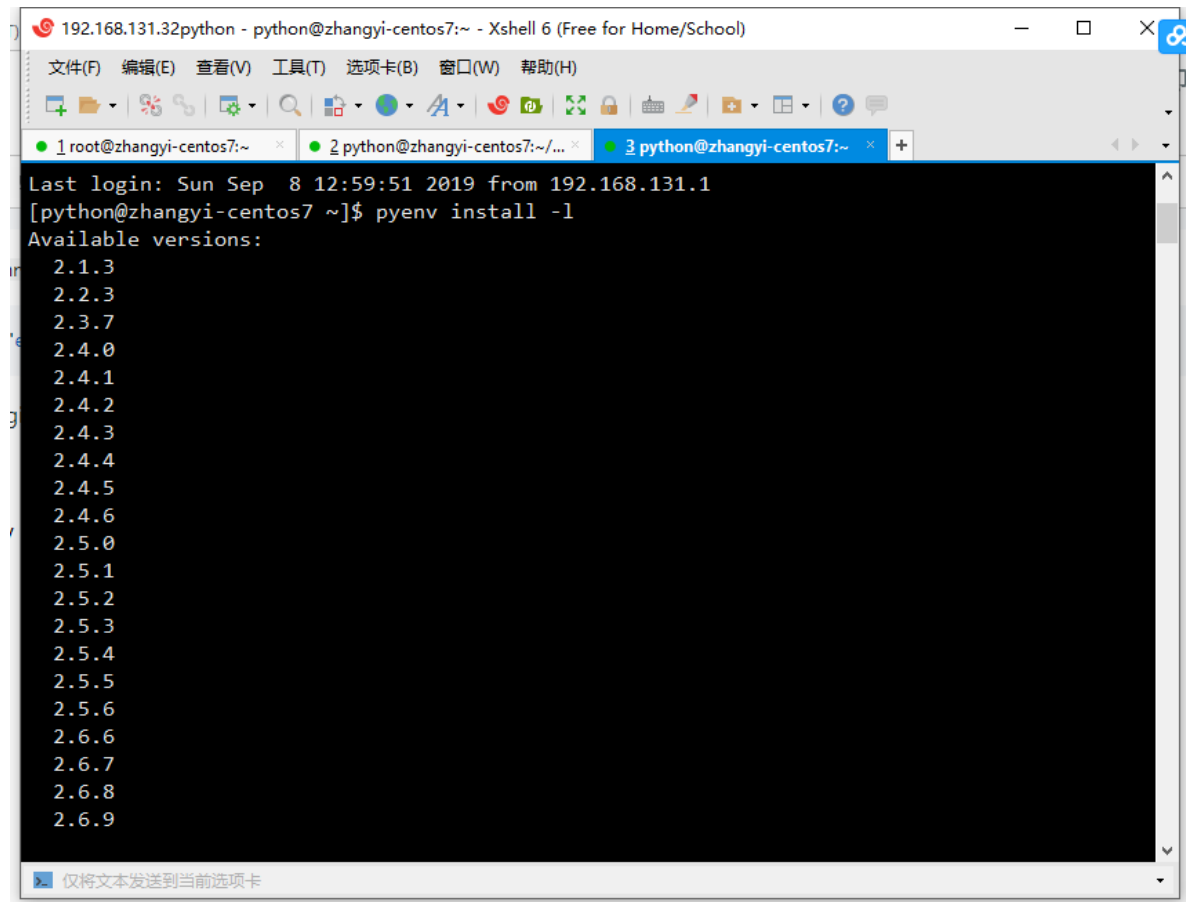
- Remove experimental PyPi support and replace with a dummy package.
- Initial release on PyPi.
- Initial public release.

MIT - see [License file](#).

2、安装python

查看python可用版本

```
1 | pyenv install -l
```



```
192.168.131.32python - python@zhangyi-centos7:~ - Xshell 6 (Free for Home/School)
文件(F) 编辑(E) 查看(V) 工具(T) 选项卡(B) 窗口(W) 帮助(H)
1 root@zhangyi-centos7:~ 2 python@zhangyi-centos7:~/... 3 python@zhangyi-centos7:~
Last login: Sun Sep  8 12:59:51 2019 from 192.168.131.1
[python@zhangyi-centos7 ~]$ pyenv install -l
Available versions:
 2.1.3
 2.2.3
 2.3.7
 2.4.0
 2.4.1
 2.4.2
 2.4.3
 2.4.4
 2.4.5
 2.4.6
 2.5.0
 2.5.1
 2.5.2
 2.5.3
 2.5.4
 2.5.5
 2.5.6
 2.6.6
 2.6.7
 2.6.8
 2.6.9
仅将文本发送到当前选项卡
```

在线安装

```
1 | [python@zhangyi-centos7 ~]$ pyenv install 3.5.4
2 | Downloading Python-3.5.4.tar.xz...->
  | https://www.python.org/ftp/python/3.5.4/Python-3.5.4.tar.xz
```

The screenshot shows an Xshell terminal window with the title bar "192.168.131.32python - python@zhangyi-centos7:~ - Xshell 6 (Free for Home/School)". The terminal has three tabs: "1 root@zhangyi-centos7:~", "2 python@zhangyi-centos7:~/...", and "3 python@zhangyi-centos7:~". The active tab shows a list of Python versions installed by pyenv: stackless-2.7.3 through stackless-3.5.4. Below the list, the command `[python@zhangyi-centos7 ~]$ pyenv install 3.5.4` is executed, followed by the download progress of Python-3.5.4.tar.xz from the official Python website.

```
stackless-2.7.3
stackless-2.7.4
stackless-2.7.5
stackless-2.7.6
stackless-2.7.7
stackless-2.7.8
stackless-2.7.9
stackless-2.7.10
stackless-2.7.11
stackless-2.7.12
stackless-2.7.14
stackless-3.2.2
stackless-3.2.5
stackless-3.3.5
stackless-3.3.7
stackless-3.4-dev
stackless-3.4.1
stackless-3.4.2
stackless-3.4.7
stackless-3.5.4
[python@zhangyi-centos7 ~]$ pyenv install 3.5.4
Downloading Python-3.5.4.tar.xz...
-> https://www.python.org/ftp/python/3.5.4/Python-3.5.4.tar.xz
```

离线安装

到官网下载 对应版本源码

<https://www.python.org/downloads/source/>

两个包都下载好

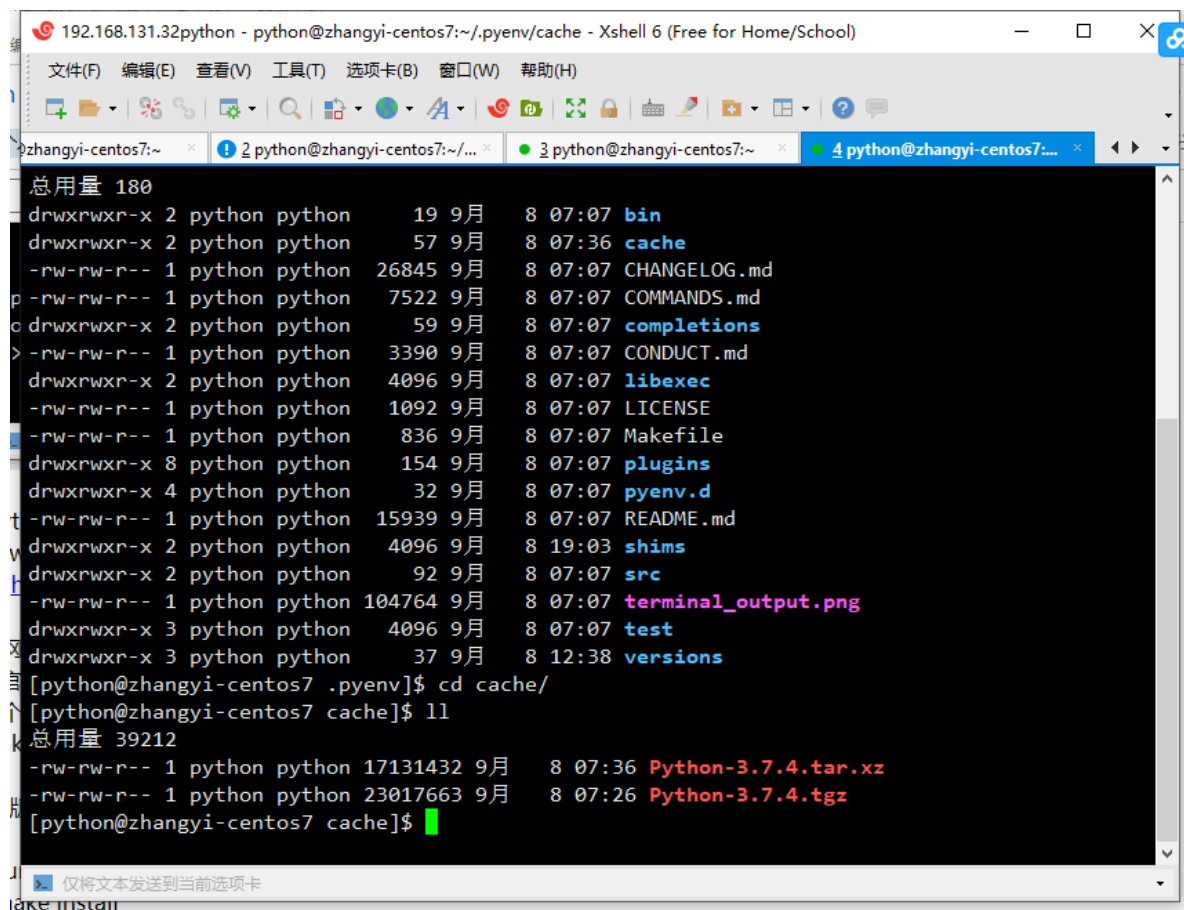
Python-x.x.x.tar.xz

Python-x.x.x.tgz

放入用户目录下的`~/.pyenv/cache`文件夹

新建文件夹

```
1 | mkdir -r ~/.pyenv/cache
```



```
192.168.131.32python - python@zhangyi-centos7:~/pyenv/cache - Xshell 6 (Free for Home/School)
文件(F) 编辑(E) 查看(V) 工具(T) 选项卡(B) 窗口(W) 帮助(H)
python@zhangyi-centos7:~
总用量 180
drwxrwxr-x 2 python python    19 9月  8 07:07 bin
drwxrwxr-x 2 python python    57 9月  8 07:36 cache
-rw-rw-r-- 1 python python 26845 9月  8 07:07 CHANGELOG.md
-rw-rw-r-- 1 python python  7522 9月  8 07:07 COMMANDS.md
drwxrwxr-x 2 python python    59 9月  8 07:07 completions
-rw-rw-r-- 1 python python  3390 9月  8 07:07 CONDUCT.md
drwxrwxr-x 2 python python   4096 9月  8 07:07 libexec
-rw-rw-r-- 1 python python   1092 9月  8 07:07 LICENSE
-rw-rw-r-- 1 python python    836 9月  8 07:07 Makefile
drwxrwxr-x 8 python python    154 9月  8 07:07 plugins
drwxrwxr-x 4 python python     32 9月  8 07:07 pyenv.d
-rw-rw-r-- 1 python python  15939 9月  8 07:07 README.md
drwxrwxr-x 2 python python   4096 9月  8 19:03 shims
drwxrwxr-x 2 python python     92 9月  8 07:07 src
-rw-rw-r-- 1 python python 104764 9月  8 07:07 terminal_output.png
drwxrwxr-x 3 python python   4096 9月  8 07:07 test
drwxrwxr-x 3 python python     37 9月  8 12:38 versions
[python@zhangyi-centos7 ~]$ cd cache/
[python@zhangyi-centos7 cache]$ ll
总用量 39212
-rw-rw-r-- 1 python python 17131432 9月  8 07:36 Python-3.7.4.tar.xz
-rw-rw-r-- 1 python python 23017663 9月  8 07:26 Python-3.7.4.tgz
[python@zhangyi-centos7 cache]$
```

3、3.7版本依赖问题:

3.7版本需要一个新的包libffi-devel，安装此包之后再次进行编译安装即可。

```
1 #yum install libffi-devel -y
2 #make install
```

若在安装前移除了/usr/bin下python的文件链接依赖，此时yum无法正常使用，需要自己下载相关软件包安装，为节省读者时间，放上链接

```
1 #wget http://mirror.centos.org/centos/7/os/x86_64/Packages/libffi-devel-
  3.0.13-18.el7.x86_64.rpm
2 #rpm -ivh libffi-devel-3.0.13-18.el7.x86_64.rpm
```

安装完成后重新进行make install，结束后再次配置相关文件的软连接即可。

4、使用 pyenv 进行版本隔离

查看已安装的python版本

```
[python@zhangyi-centos7 ~]$ pyenv versions
system
* 3.7.4 (set by /home/python/.python-version)
3.7.4/envs/zhangyi
3.7.4/envs/zypy-3.7.4
zhangyi
zypy-3.7.4
[python@zhangyi-centos7 ~]$
```

已安装版本

虚拟版本

仅将文本发送到当前选项卡

5、把用户目录下的环境设置成新安装的python版本

```
1 | pyenv local 3.7.4
```

```
[python@zhangyi-centos7 ~]$ pyenv local 3.7.4
[python@zhangyi-centos7 ~]$ python -V
Python 3.7.4
[python@zhangyi-centos7 ~]$
```

6、增加虚拟环境

增加名为zhangyi的虚拟环境

```
1 | pyenv virtualenv zhangyi
```

```
192.168.131.32python - python@zhangyi-centos7:~/pyenv/cache - Xshell 6 (Free for Home/School)
文件(F) 编辑(E) 查看(V) 工具(T) 选项卡(B) 窗口(W) 帮助(H)
python@zhangyi-centos7:~$ pyenv <command> [<args>]

Usage: pyenv <command> [<args>]

Some useful pyenv commands are:
  commands  List all available pyenv commands
  local      Set or show the local application-specific Python version
  global     Set or show the global Python version
  shell      Set or show the shell-specific Python version
  install    Install a Python version using python-build
  uninstall  Uninstall a specific Python version
  rehash     Rehash pyenv shims (run this after installing executables)
  version    Show the current Python version and its origin
  versions   List all Python versions available to pyenv
  which      Display the full path to an executable
  whence     List all Python versions that contain the given executable

See 'pyenv help <command>' for information on a specific command.
For full documentation, see: https://github.com/pyenv/pyenv#readme

[python@zhangyi-centos7 cache]$ pyenv virtualenv zhangyi
Looking in links: /tmp/tmpvtiy87ue
Requirement already satisfied: setuptools in /home/python/.pyenv/versions/3.7.4/envs/zhangyi/lib/python3.7/site-packages (40.8.0)
Requirement already satisfied: pip in /home/python/.pyenv/versions/3.7.4/envs/zhangyi/lib/python3.7/site-packages (19.0.3)
[python@zhangyi-centos7 cache]$
```

查看虚拟环境

```
[python@zhangyi-centos7 ~]$ pyenv versions
system
* 3.7.4 (set by /home/python/.python-version)
  3.7.4/envs/zhangyi
  3.7.4/envs/zypy-3.7.4
  zhangyi
  zypy-3.7.4
[python@zhangyi-centos7 ~]$
```

已安装版本

虚拟版本

7、安装ipython

切换pip源

参考博客: <https://blog.csdn.net/u011220960/article/details/81512435>

Linux系统:

```
1 | mkdir ~/.pip
2 | cat > ~/.pip/pip.conf << EOF
3 | [global]trusted-host=[mirrors.aliyun.com](http://mirrors.aliyun.com/)index-
  url=https://mirrors.aliyun.com/pypi/simple/
4 | EOF
5 | pip install ipython
```

8、安装jupyter

```
1 | pip install jupyter
```

启动jupyter初始化密码

```
1 | jupyter notebook passwd
```

```
(zypy-3.7.4) [python@zhangyi-centos7 zypy]$ jupyter notebook password --ip=0.0.0.0
[NotebookPasswordApp] WARNING | Unrecognized alias: '--ip=0.0.0.0', it will probably have
no effect.
Enter password:
Verify password:
```

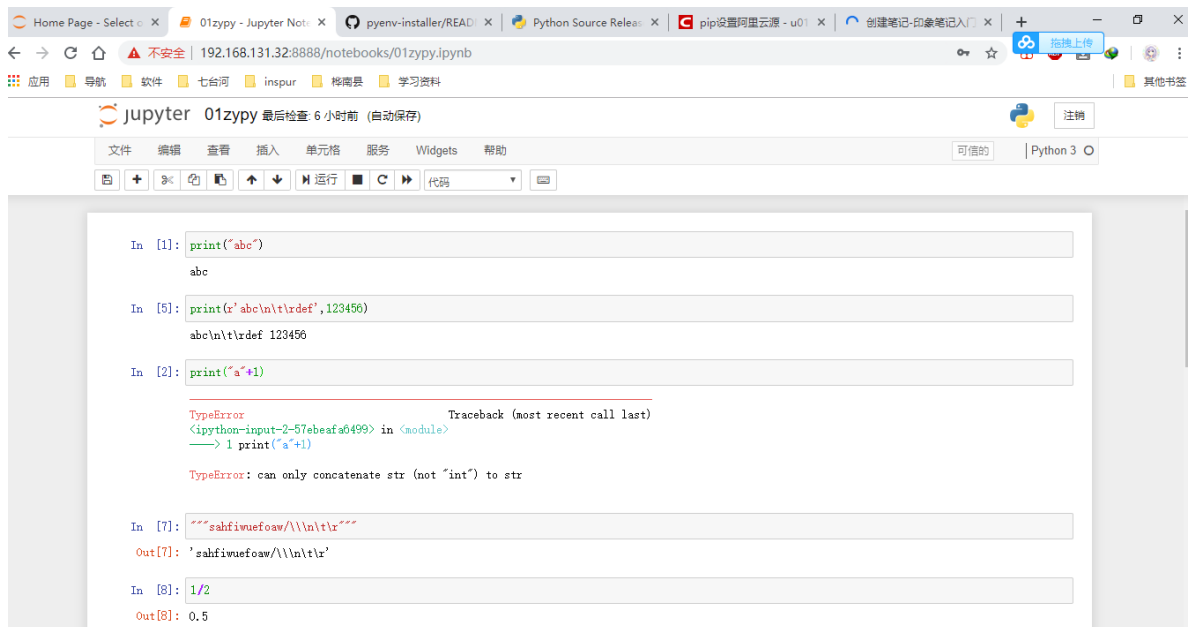
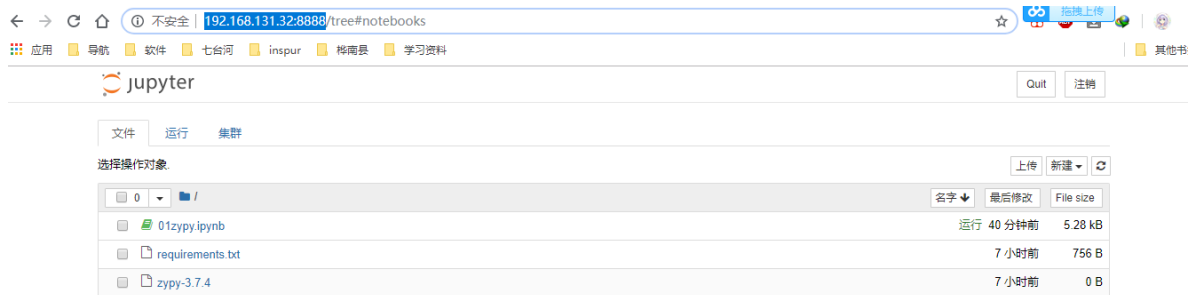
指定jupyter 启动绑定的ip

```
1 | jupyter notebook --ip=0.0.0.0
```

```
ig.json
le (zypy-3.7.4) [python@zhangyi-centos7 zypy]$ jupyter notebook --ip=0.0.0.0
[I 17:54:07.116 NotebookApp] 启动notebooks 在本地路径: /home/python/zypy
F [I 17:54:07.117 NotebookApp] 本程序运行在: http://zhangyi-centos7:8888/
[I 17:54:07.117 NotebookApp] 使用control-c停止此服务器并关闭所有内核(两次跳过确认).
[W 17:54:07.150 NotebookApp] 没有找到web浏览器: could not locate runnable browser.
[W 17:54:48.101 NotebookApp] Clearing invalid/expired login cookie username-192-168-131-32
-8888
[W 17:54:48.102 NotebookApp] Clearing invalid/expired login cookie username-192-168-131-32
-8888
[I 17:54:48.103 NotebookApp] 302 GET /notebooks/01zypy.ipynb (192.168.131.1) 2.22ms
[I 17:54:54.185 NotebookApp] 302 POST /login?next=%2Fnotebooks%2F01zypy.ipynb (192.168.131
.1) 3.15ms
[I 17:54:55.372 NotebookApp] Kernel started: 71dad27e-e33b-4dec-94d9-7fc81d0c4093
动 [I 19:00:55.355 NotebookApp] Saving file at /01zypy.ipynb
以 [I 19:02:55.486 NotebookApp] Saving file at /01zypy.ipynb
主
```

浏览器访问jupyter

<http://192.168.131.32:8888>



9、Python 虚拟环境包导出

导出包配置文件

pip freeze > requirement

导入包配置文件

pip -r requirement