

# PYTHON PACKAGE MANAGEMENT WITH PIP-TOOLS

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# HOW PYTHON PACKAGE MANAGEMENT IS DONE TODAY

# TOOLS OF THE TRADE

- pip
- virtualenv
- requirements.txt

# PIN THE TOP-LEVEL DEPENDENCIES

```
# requirements.txt
```

```
django==1.8.18  
django-rest-framework==3.5.3  
django-extensions==1.7.5  
requests==2.18.3
```

```
$ pip install -r requirements.txt
```

# **ISSUE WITH THAT APPROACH IS THAT IT CAN BE NON-DETERMINISTIC**

This is because you did not pin sub-dependencies

# **MOST COMMON SOLUTION FOR DETERMINISTIC BUILDS**

```
$ pip freeze > requirements.txt
```

```
# requirements.txt
```

```
certifi==2017.7.27.1
```

```
chardet==3.0.4
```

```
Django==1.8.18
```

```
django-extensions==1.7.5
```

```
django-rest-framework==3.5.3
```

```
idna==2.5
```

```
requests==2.18.3
```

```
six==1.10.0
```

```
urllib3==1.22
```



# **ISSUE WITH THAT APPROACH IS THAT YOU NOW HAVE TOP-LEVEL DEPENDENCIES MIXED WITH SUB-DEPENDENCIES**

This will make you life much harder to deal with  
upgrades/removals of dependencies

# THE SOLUTION: PIP-TOOLS

```
$ pip install pip-tools
```

pip-tools = pip-compile + pip-sync

# CREATE A REQUIREMENTS.IN

Only include top-level dependencies

```
# requirements.in  
  
django==1.8.18  
django-rest-framework==3.5.3  
django-extensions==1.7.5  
requests==2.18.3
```

```
$ pip-compile requirements.in
```

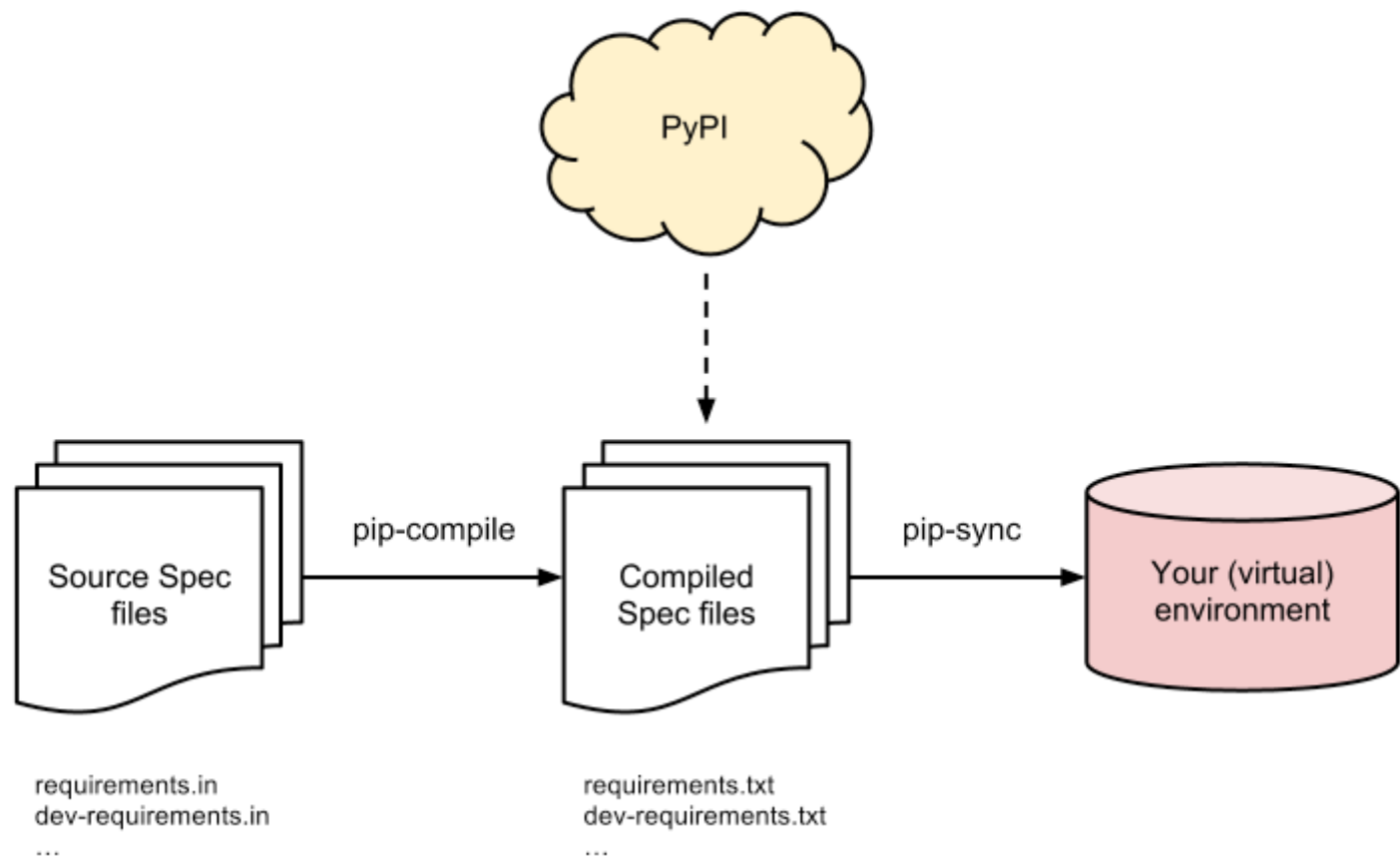
```
#
# This file is autogenerated by pip-compile
# To update, run:
#
#     pip-compile --output-file requirements.txt requirements.in
#
certifi==2017.7.27.1      # via requests
chardet==3.0.4           # via requests
django-extensions==1.7.5
django==1.8.18
django-rest-framework==3.5.3
idna==2.5                 # via requests
requests==2.18.3
six==1.10.0               # via django-extensions
urllib3==1.22             # via requests
```

# PIP-SYNC

`pip-sync` ensures that your virtualenv is synced with your `requirements.txt` and removes everything else. This is important so you don't accidentally have other packages in your virtualenv that may have forgotten to be uninstalled.

```
$ pip-sync requirements.txt
```





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