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How to Update All Python Packages

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With Python, the best practice of pinning all the packages in an environment at a specific version ensures that the environment can be reproduced months or even years later.

> Pinned packages in a requirements.txt file are denoted by ==. For example, requests==2.21.0. Pinned packages should never be updated except for a very good reason, such as to fix a critical bug or vulnerability.

> Conversely, unpinned packages are typically denoted by >=, which indicates that the package can be replaced by a later version. Unpinned packages are more common in development environments, where the latest version can offer bug fixes, security patches and even new functionality.

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deployment is located in a virtual environment, you should use the Pipenv package manager to update all Python packages.

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NOTE: be aware that upgrading packages can break your environment by installing incompatible dependencies. This is because pip and pipenv do not resolve dependencies, unlike the ActiveState Platform. To ensure your environment doesn't break on upgrade, you can sign up for a free ActiveState Platform account and import your current requirements.txt, ready to be upgraded.

Python Package Upgrade Checklist

In general, you can use the following steps to perform a package upgrade:

1. Check that Python is installed

Before packages can be updated, ensure that a Python installation containing the necessary files needed for updating packages is in place by following the steps outlined in <Installation Requirements>

2. Get a list of all the outdated packages

To generate a list of all outdated packages:

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Depending on your operating system or virtual environment, refer to the following sections.

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Update all Python Packages on Windows

The easiest way to update all packages in a Windows environment is to use pip in conjunction with Windows PowerShell:

1. Open a command shell by typing 'powershell' in the Search Box of the Task bar

2. Enter:

```
pip freeze | %{$_.split('==')[0]} | %{pip install --upgrade $_}
```

This will upgrade all packages system-wide to the latest version available in the Python Package Index (PyPI).

Update all Python Packages on Linux

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To upgrade all packages using pip with awk on Ubuntu Linux:

```
pip3 list -o | cut -f1 -d' ' | tr " " "\n" | awk '{if(NR>=3)print}' | cut -d' ' -f1 | xargs -n1 pip3 in
```

Updating Python Packages on Windows or Linux

Pip can be used to upgrade all packages on either Windows or Linux:

1. Output a list of installed packages into a requirements file (requirements.txt):

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

2. Edit requirements.txt, and replace all '==' with '>='. Use the 'Replace All' command in the editor.

3. Upgrade all outdated packages:

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The easiest way to update unused packages (i.e., packages that don't require a specific version) in a virtual environment is to run the following Python script that makes use of pip:

```python
import pkg_resources
from subprocess import call


for dist in pkg_resources.working_set:
    call("python -m pip install --upgrade " + dist.<projectname>, shell=True)
```

Updating all Packages in a Pipenv Environment

The simplest way to update all the unpinned packages in a specific virtual environment created with pipenv is to do the following steps:

1. Activate the Pipenv shell that contains the packages to be upgraded:

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pipenv update WHY ACTIVESTATE   PRODUCTS ⌄   ENTERPRISE ⌄   PRICING   RESOURCES ⌄

Modern way to manage Python packages – ActiveState Platform

The ActiveState Platform is a cloud-based build automation and dependency management tool for Python. It provides dependency resolution for:

> Python language cores, including Python 2.7 and Python 3.5+

> Python packages and their dependencies, including:

> > Transitive dependencies (ie., dependencies of dependencies)
> > Linked C and Fortran libraries, so you can build data science packages
> > Operating system-level dependencies for Windows, Linux, and macOS
> > Shared dependencies (ie., OpenSSL)

The ActiveState Platform is the only Python package management solution that not only resolves dependencies but also provides workarounds for dependency conflicts.

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creating a Python version with all the packages you need. The Platform will automatically pick the right package versions for your environment to ensure security and reproducibility.

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Watch this tutorial to learn how to use the ActiveState Platform to create a Python 3.9 environment, and then use the Platform's Command-Line Interface (State Tool) to install and manage it.

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- **Critical**

CVE-2021-29921 ↗

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- **Medium**

CVE-2020-14422 ↗

certifi	☂	2020.6.20 ⌄	● 0 CVEs	🗑
cython	☂	0.29.6 ⌄	● 0 CVEs	🗑
requests	☂	2.7.0 ⌄	● 1 CVE ›	🗑
setuptools	☂	45.2.0 ⌄	● 0 CVEs	🗑
urllib3	☂	1.25.8 ⌄	● 1 CVE ›	🗑
wheel	☂	0.34.2 ⌄	● 0 CVEs	🗑

Platforms   **Change**

Linux Glibc 2.28 ⓘ
x86 · 64-bit

Windows 10 ⓘ
x86 · 64-bit

Dependencies 13
Automatically added to support requested packages & platforms.

Python

toml	☂ 0.10.2	● 0 CVEs	Choose different version
wincertstore	☂ 0.2	● 0 CVEs	Choose different version

Other

bzip2	☂ 1.0.8	● 0 CVEs	Choose different version

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Windows

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```
powershell -Command "& $([scriptblock]::Create((New-Object Net.WebClient).DownloadString('https://platf
```

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Linux

```
sh <(curl -q https://platform.activestate.com/dl/cli/install.sh) --activate-default ActiveState-Labs/Py
```

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Now you can run *state install <packagename>.* Learn more about how to use the State Tool to manage your Python environment. Or sign up for a free demo and let us show you how it can help improve your dev team's workflow by compiling Python packages and resolve dependencies in minutes.

Recommended Reads

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RELATED LINKS

⟩ **How to Download Python Packages**

⟩ **How To Install Python Packages Using A Script**

⟩ **How To List Installed Python Packages**

⟩ **Understanding Python Packages**

⟩ **Learn More About ActivePython**

Frequently Asked Questions

＋ Can I pip update all Python packages?

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+ Can I use pip to update Python?

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