

Installing Anaconda

A Scientific Python Environment

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Why use Anaconda?

- Anaconda is a complete set of python tools (195+ of them) that are useful in one simple and straight forward install (available for Linux, OS X, and Windows).
- This collection of packages are geared towards scientific computing.
- Anaconda is also a powerful and simple package manager - which helps in managing the python ecosystem.

What does Anaconda include?

The packages contained in Anaconda are geared towards scientific computing (data analysis, math, science ...)

All of the essentials (+ a lot more)

- python
- ipython
- matplotlib
- numpy
- pandas

A full list of packages is available at
<http://docs.continuum.io/anaconda/pkg-docs.html>

Where to get Anaconda from?

Available free from <http://continuum.io/downloads>

Note: Continuum will by offer you the option of Python 2.7 or Python 3.5. Given that much of the scientific stack has now been migrated to Python 3 - it is now the best option to go for.

Python 2.7 or 3.5?

Python 2.7

- Pro
 - More packages are available in Python 2.7
 - A lot of examples are written in Python 2.7 syntax.
- Con
 - In maintenance mode - not getting new features as the language develops over time.

Python 3.5 (Best **default** selection)

- Pro
 - Newest version which is the long term future of Python
 - Most of the scientific stack has been ported to Python 3
- Con
 - Sometimes want to use a library which has not been migrated to Python 3 yet. (but can make use of conda environments if needed)

Installation Guides

The following installation guides are available for:

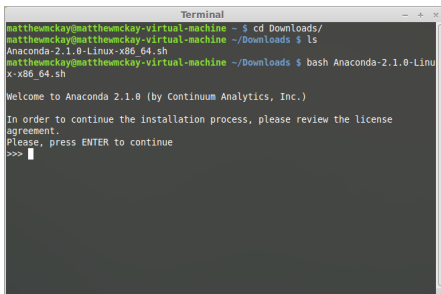
1. Linux¹
2. OS X
3. Windows

¹Ubuntu and its derivatives are largely used by the development team

Linux

Open a terminal and run:

```
bash Anaconda3-2.4.1-Linux-x86_64.sh2
```



```
Terminal
matthewmckay@matthewmckay-virtual-machine ~ $ cd Downloads/
matthewmckay@matthewmckay-virtual-machine ~/Downloads $ ls
Anaconda-2.1.0-Linux-x86_64.sh
matthewmckay@matthewmckay-virtual-machine ~/Downloads $ bash Anaconda-2.1.0-Linux-x86_64.sh

Welcome to Anaconda 2.1.0 (by Continuum Analytics, Inc.)

In order to continue the installation process, please review the license
agreement.
Please, press ENTER to continue
>>> 
```

Press **ENTER** to continue the installation

²This example is run using Linux Mint and images may contain an older version number for Anaconda

Linux

Scroll through the licence terms and conditions. When asked if you approve type **yes**

```
Terminal
The United States currently has embargoes against Cuba, Iran, North Korea,
Sudan and Syria. The exportation, re-exportation, sale or supply, directly
or indirectly, from the United States, or by a U.S. person wherever
located, of any Continuum software to any of these countries is strictly
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with all applicable export regulations for Anaconda.

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ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

Do you approve the license terms? [yes/no]
[no] >>> yes
```

Keep the default install location by hitting **ENTER**. This will setup an **anaconda** directory in your user account.

```
Terminal
=====
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

Do you approve the license terms? [yes/no]
[no] >>> yes

Anaconda will now be installed into this location:
/home/matthewmckay/anaconda

- Press ENTER to confirm the location
- Press CTRL+C to abort the installation
- Or specify a different location below

[/home/matthewmckay/anaconda] >>>
```


Linux

Ensure to type **yes** to prepend the anaconda installation to your **PATH**. This ensures anaconda is the default python library on your system.

Done!

```
Terminal
installing: theano-0.8.0-np19py27_0 ...
installing: tk-8.5.15-0 ...
installing: toolz-0.7.0-py27_0 ...
installing: tornado-4.0.2-py27_0 ...
installing: traits-4.4.0-py27_0 ...
installing: traitsui-4.4.0-py27_0 ...
installing: ujson-1.33-py27_0 ...
installing: unicodesv-0.9.4-py27_0 ...
installing: util-linux-2.21-0 ...
installing: werkzeug-0.9.0-py27_1 ...
installing: xld-0.9.3-py27_0 ...
installing: xlswriter-0.5.7-py27_0 ...
installing: xlw-0.7.5-py27_0 ...
installing: yaml-0.1.4-0 ...
installing: zeromq-4.0.4-0 ...
installing: zlib-1.2.7-0 ...
installing: anaconda-2.1.0-np19py27_0 ...
installing: cache-0.0-x0 ...
Python 2.7.8 :: Continuum Analytics, Inc.
creating default environment...
installation finished.
Do you wish the installer to prepend the Anaconda install location
to PATH in your /home/matthewmckay/.bashrc ? [yes|no]
[no] >>> yes
```

```
Terminal
installing: xld-0.9.3-py27_0 ...
installing: xlswriter-0.5.7-py27_0 ...
installing: xlw-0.7.5-py27_0 ...
installing: yaml-0.1.4-0 ...
installing: zeromq-4.0.4-0 ...
installing: zlib-1.2.7-0 ...
installing: anaconda-2.1.0-np19py27_0 ...
installing: cache-0.0-x0 ...
Python 2.7.8 :: Continuum Analytics, Inc.
creating default environment...
installation finished.
Do you wish the installer to prepend the Anaconda install location
to PATH in your /home/matthewmckay/.bashrc ? [yes|no]
[no] >>> yes

Prepending PATH=/home/matthewmckay/anaconda/bin to PATH in /home/matthewmckay/.
bashrc
A backup will be made to: /home/matthewmckay/.bashrc-anaconda.bak

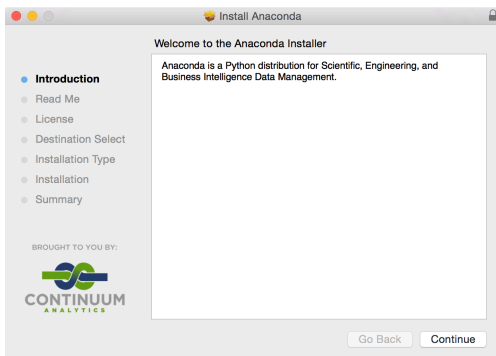
For this change to become active, you have to open a new terminal.

Thank you for installing Anaconda!
matthewmckay@matthewmckay-virtual-machine ~/Downloads $
```

OS X

Click on the downloaded OS package:

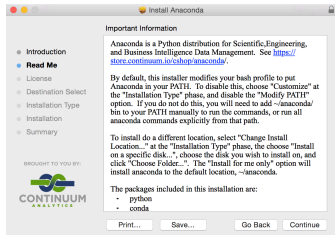
Anaconda3-2.4.1-MacOSX-x86_64.pkg.³



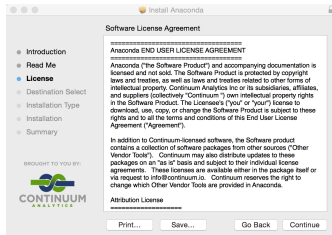
³There is also a non-graphical alternative using Anaconda3-2.4.1-MacOSX-x86_64.sh which is also available on the website. This method of installation is very similar to the Linux instructions¹

OS X

The **README** screen tells you what this installer is about to do. Click on **Continue**



The **LICENSE** provides details of the end user agreement. Once satisfied click on **Continue**

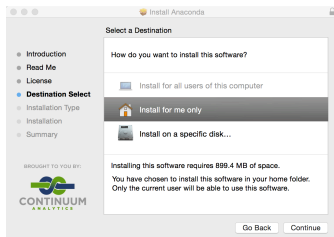
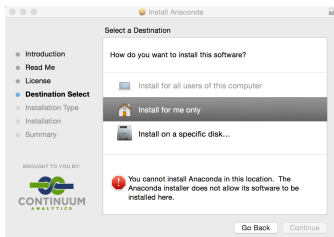


You will need to accept the terms and conditions to continue. Click on **Agree** in the pop up window.

OS X

Install for me only should be selected. Sometimes a bug in the anaconda installer suggests Anaconda cannot be installed to this location. If this occurs **reclick on the Install for Me Only area** and this will dissappear.

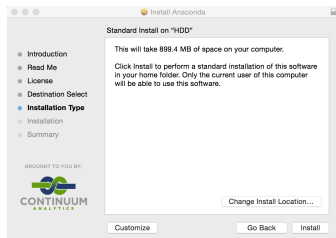
Now it should look more like this - indicating how much space will be used. Click on **Continue**



OS X

Click on **Install**

Done!



Windows

Click on the downloaded installer:

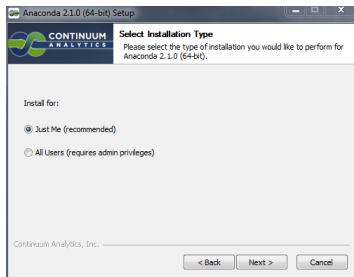
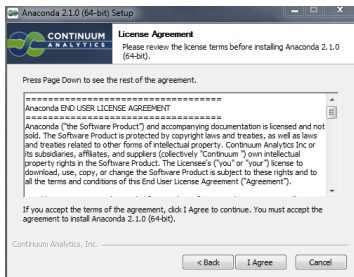
Anaconda3-2.4.1-Windows-x86_64.exe



Windows

Agree to licence terms and conditions.

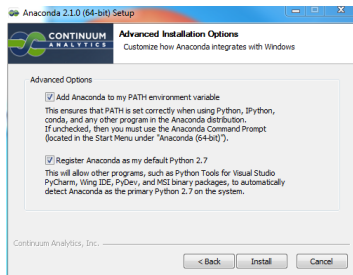
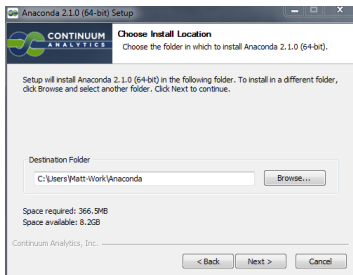
Keep the default selection **Just Me (Recommended)** and click **next**



Windows

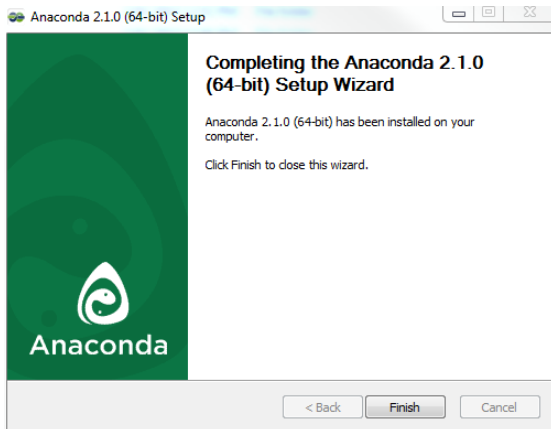
Keep the default location which should be an **Anaconda** folder in your user directory.

Be sure to leave both boxes ticked.



Windows

Done!



Some simple tests

Run these commands in a terminal.

Note: For Windows systems these should be run in a cmd or powershell terminal.

1. Try updating conda by typing: `conda update conda`
2. Try updating the anaconda library by typing:
`conda update anaconda`
3. Open IPython Notebook by typing: `jupyter notebook`. Open a new notebook and try out a few python examples
4. Install QuantEcon library by typing: `pip install quantecon`. Next open an Jupyter notebook and try importing the library using: `import quantecon as qe`

I'm curious - What would be the alternatives?

The alternatives include

- Install python and then all of the packages you wish to use with 'pip' (a python package installer). This requires a lot of setup time and configuration.
- Install another package collection such as Enthought Canopy. (But Anaconda is simpler and is quickly becoming the package manager of choice)