



## Using \*conda to provide python dependencies for esoreflex

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### Using \*conda to provide python dependencies for esoreflex

Whether installed via the package managers (RPM or MacPorts) or via the install script, esoreflex will be configured to use the system python (usually /usr/bin/python), or for MacPorts /opt/local/bin/python3.X). And even for script installations instructions are provided [here](#) to install the required python packages via package managers covering macOS, RPM- and APT-based systems.

But it is possible to configure esoreflex to use any python installation. But note, except in the case of package manager installations, it is the user's responsibility to insure that all the required python packages are installed.

The following is a step-by-step guide to setting up a conda environment for esoreflex.

The following assumes that esoreflex and the pipelines you want are already installed. See the Pipeline pages at <http://eso.org/sci/software/pipelines/index.html> if you need help with that.

Currently ESO provides binary packages for:

- Fedora (usually the 2-4 most recent releases, sometimes minus the absolutely latest release...)
- CentOS 7
- Scientific Linux 7
- macOS 12 on x84\_64

Note that **for other macOS versions and for Apple Silicon Macs**, the MacPorts repository can still be used, but the packages will be built locally on your machine, rather than directly installing the binary packages provided by the ESO package repositories.

If your operating system + version/distribution combination is one of those currently supported by ESO's package repositories then we strongly recommend you use the appropriate package manager (RPM for Linux and MacPorts for macOS) to install the pipelines, esoreflex and workflows. Using the package managers will automatically install all other required software dependencies, including python and the following should *not* (in most cases) be necessary.

Before starting, please note that lines formatted like the following:

ls

mean that you should execute the command (preferably by copy/paste) in a terminal. In general it is safest to copy them line by line, but note some commands are broken onto multiple lines by a '\ ' character at the end of the line, in this case copy/paste all sequential lines ending in '\ ' plus the next line with no '\ ' at the end of the line.

The following assumes that your shell is bash, so if you do not use bash shell, or if you are not sure which shell you use type

bash

Install \*conda

If you don't already have a \*conda installation, we suggest installing miniconda.

Under Linux, miniconda is available via RPM/apt package directly from [conda.io](https://conda.io) (recommended) see:

<https://docs.conda.io/projects/conda/en/latest/user-guide/install/rpm-debian.html>

or via third-party sources (e.g. EPEL).

For macOS it is possible to install miniconda as follows:

```
cd /tmp
MoL=$(uname -s | sed -e 's/Darwin/MacOSX/')
curl -O
https://repo.anaconda.com/miniconda/Miniconda3-latest-${MoL}-x86_64.sh
h
chmod u+x ./Miniconda3-latest-${MoL}-x86_64.sh
./Miniconda3-latest-${MoL}-x86_64.sh
```

**Note, to avoid setting the \*conda environment as your default environment, at the following prompt near the end of the installation:**

```
Do you wish the installer to initialize Miniconda3
by running conda init? [yes|no]
[yes] >>>
```

**Answer no.**

Create an esoreflex conda environment

Now assuming \*conda is already installed, activate if not already activated:

```
eval "$(conda shell.bash hook)"
```

**Note: you may need to specify the full path to conda if it is not in your PATH, e.g. for the above Miniconda installation, \${HOME}/miniconda3/bin/conda.**

Now with conda activated and esoreflex already installed, assuming that the "esoreflex" command can be found in the PATH then do:

```
ESOREFLEX_INSTALL_DIR=$(dirname $(dirname "$(which esoreflex)"))
```

Create a \*conda esoreflex environment -- wxpython is no longer available from the default repos, so we suggest conda-forge:

```
ESOREFLEX_ENV_NAME=esoreflex
conda create -n ${ESOREFLEX_ENV_NAME} -c conda-forge python=3.12
matplotlib wxpython astropy
```

Configure esoreflex to use the esoreflex conda environment

Configure esoreflex to use the esoreflex \*conda environment

```
conda activate ${ESOREFLEX_ENV_NAME}
```

Please follow the instructions below, as appropriate for your operating system/distribution.

## **on Linux:**

### **system-wide:**

```
sudo sed -i \
  -e "s[^esoreflex.python-command=.*[esoreflex.python-
command=${CONDA_PREFIX}/bin/python[" \
  ${ESOREFLEX_INSTALL_DIR}/etc/esoreflex.rc
```

### **personal:**

Use this option only if the system-wide option is not possible (e.g. because you don't have sudo/admin access on your computer).

```
esoreflex -create-config
sed -i \
  -e "s[^esoreflex.python-command=.*[esoreflex.python-
command=${CONDA_PREFIX}/bin/python[" \
  ${HOME}/.esoreflex/esoreflex.rc
```

## **on macOS:**

```
conda install python.app
```

### **system-wide:**

```
sudo sed -i '' \
  -e "s[^esoreflex.python-command=.*[esoreflex.python-
command=${CONDA_PREFIX}/bin/pythonw[" \
  ${ESOREFLEX_INSTALL_DIR}/etc/esoreflex.rc
```

### **personal:**

Use this option only if the system-wide option is not possible (e.g. because you don't have sudo/admin access on your computer).

```
esoreflex -create-config
sed -i '' \
  -e "s[^esoreflex.python-command=.*[esoreflex.python-
```

```
command=$CONDA_PREFIX/bin/pythonw[" \  
  ${HOME}/.esoreflex/esoreflex.rc
```

Install additional/optional packages for particular workflows

### **astrocrappy & PyCosmic for GIRAFFE:**

```
conda install -y scipy
```

```
pip install
```

```
https://files.pythonhosted.org/packages/source/a/astrocrappy/astroc  
rappy-1.0.8.tar.gz
```

```
curl -O ftp://ftp.eso.org/pub/usg/PyCosmic/PyCosmic-0.5.3.tar.gz
```

```
pip install PyCosmic-0.5.3.tar.gz
```

```
rm PyCosmic-0.5.3.tar.gz
```

### **scikit-learn for MUSE-ZAP:**

```
conda install scikit-learn
```

Completing the installation...

Deactivate the conda esoreflex environment:

```
conda deactivate
```

Deactivate the conda base environment (optional):

```
conda deactivate
```

Running day-to-day...

Note, once you've performed the above procedure, you do not need to activate the esoreflex conda or base conda environment to use esoreflex, you can simply execute from any environment.

```
esoreflex
```

Tags

conda

esoreflex