

3 Applications

3.1 Qiime

“*QIIME (canonically pronounced “chime”) stands for Quantitative Insights Into Microbial Ecology. QIIME is an open source software package for comparison and analysis of microbial communities, primarily based on high-throughput amplicon sequencing data (such as SSU rRNA) generated on a variety of platforms, but also supporting analysis of other types of data (such as shotgun metagenomic data).*”

Dependencies for all Qiime versions

```
# apt-get install python-dev libncurses5-dev libssl-dev libzmq-dev libgs10-dev
openjdk-6-jdk libxml2 libxslt1.1 libxslt1-dev ant git subversion build-essential
zlib1g-dev libpng12-dev libfreetype6-dev mpich2 libreadline-dev gfortran unzip
libmysqlclient18 libmysqlclient-dev ghc sqlite3 libsdl2-dev
```

Useful package

```
# apt-get install python-biopython
```

We report installation steps from Qiime 1.5.0 for history, while it's possible to start with Qiime 1.7.0 skipping previous versions.

We followed Qiime GitHub page (<https://github.com/qiime/qiime-deploy>) for all versions.

You may install more than one version of QIIME on your system.

3.1.1 Qiime 1.5.0

```
# mkdir /usr/share/qiime_software
# cd /root/
# git clone git://github.com/qiime/qiime-deploy.git
# git clone git://github.com/qiime/qiime-deploy-conf.git
# cd qiime-deploy
```

Run deployment script

```
# python qiime-deploy.py /usr/share/qiime_software/ -f /root/qiime-deploy-
conf/qiime-1.5.0/qiime.conf --force-remove-failed-dirs
```

result

```
...
DEPLOYMENT SUMMARY
Packages deployed successfully:
data-lanemask, rtax, clearcut, cdbtools, raxml, ampliconnoise, chimeraslayer,
vienna, infernal, data-core, fasttree, pplacer, python, parsinsert, blast, muscle,
rdpclassifier, drisee, cdhit, uclust, pyzmq, SQLAlchemy, tornado, cytoscape,
setuptools, numpy, MySQL-python, mpi4py, biom-format, mothur, pycogent, pynast,
pprospector, sphinx, ipython, matplotlib, qiime, r, gg_otus
Packages skipped (assumed successful):
Packages failed to deploy:
```

Installation check with errors

```
$ print_qiime_config.py -t
...
=====
FAIL: test_denoiser_supported_version (__main__.Qiime_config)
denoiser aligner is ready to use
=====
Traceback (most recent call last):
  File "/usr/share/qiime_software/qiime-1.5.0-release/bin/print_qiime_config.py", line 536, in
    test_denoiser_supported_version
    "which components of QIIME you plan to use.")
AssertionError: Denoiser flowgram aligner not found or not executable.This may or may not be a problem depending
on which components of QIIME you plan to use.
=====
FAIL: test_mothur_supported_version (__main__.Qiime_config)
mothur is in path and version is supported
=====
Traceback (most recent call last):
```