

# Dependencies

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Flow ships with tasks that do not have all of their dependencies included. On startup Flow will attempt to install the dependencies, but not every system is equipped to install them.

In the case of any difficulties, it is highly recommended to instead use a docker deployment (cluster installations may require singularity instead, which is somewhat still a work-in-progress)

## CNVkit

Requires Python 2.7 or later.

On startup Flow will attempt to install additional python packages using the command `pip install --user cnvkit==0.9.5`

Requires R 3.2.3 or later.

On startup Flow will attempt to install additional R packages.

There are cascading dependencies, but you can view the core libraries in `partek_flow/bin/cnvkit-0.8.5/install.R`

If these packages can't be built locally, it may be possible for the user to download them from us (see below).

## DESeq2

Requires R 3.0 or later.

On startup Flow will attempt to install additional R packages.

There are cascading dependencies, but you can view the core libraries in `partek_flow/bin/deseq_two-3.5/install.R`

If these packages can't be built locally, it may be possible for the user to download them from us (see below).

RcppArmadillo may also have dependencies on multi-threading shared objects that may not be on the `LD_LIBRARY_PATH`

The recommendation is to copy those .so files to a folder and make sure it is available from the `LD_LIBRARY_PATH` when the server/worker starts.

Additional dynamic libraries (such as `libxml2.so`) may be missing and we can provide a copy appropriate for the target OS.

## HTSeq

Requires Python 2.7 or 3.4 or above

On startup Flow attempts to install using pip

## MACS3

Requires python 3.0 or above

`pip install --user numpy==1.19.5 Cython==0.29.30 cykhash==2.0.0 macs3==3.0.0a7`

## Python

If there are any conflicts with preinstalled python packages, Flow should be configured to run with its own virtual environment:

```
pip install virtualenv  
virtualenv ~/.partekflow/.local  
source ~/.partekflow/.local/bin/activate
```

```
pip install HTSeq==0.11.0  
pip install cnvkit==0.9.5
```

or

```
wget customer.partek.com/python-dependencies.zip  
unzip -d ~/.partekflow/ python-dependencies.zip
```

## R

R can usually be installed from the package manager. If the user installs Flow via apt or yum it should already be installed.

For older operating systems R is not available and will need to be installed from [source](#)

Currently, we offer a set of R packages compatible with some versions of R

- [3.2.3](#)
- [3.4.0](#)
- [3.4.3](#)

Extract this file in the home directory. (Make .R a symlink if the home directory doesn't have enough free space)

These packages include the dependencies for both CNVkit and DESeq2

When running R diagnostic commands outside flow, it can simplify things if the environment includes a reference to the ~/.R folder:

```
export R_LIBS_USER=$HOME/.R
```

or load

```
.libPaths("~/R")
```

```
in ~/.Rprofile
```

list loaded packages:

```
(.packages())
```

get the version:

```
packageVersion("packageName")
```

```
R_HOME=/path/to/R
```

## Variant Effect Predictor

This is a compiled Perl script (so it has no direct dependency on Perl itself) we have had one report (istem.fr) of it failing to run.

## DECoN

DECoN comes pre-installed in the flow\_dna container

[registry.partek.com/flow\\_dna](http://registry.partek.com/flow_dna)

Documentation on installing DECoN is available here:

<https://github.com/RahmanTeam/DECoN/blob/master/DECoN-v1.0.2.pdf>

DECoN requires R version 3.1.2

It must be installed under /opt/R-3.1.2 or set the DECON\_R environment variable to its folder

```
wget http://cran.wustl.edu/src/base/R-3/R-3.1.2.tar.gz
```

```
tar xzf R-3.1.2.tar.gz
```

```
cd R-3.1.2
```

```
./configure --with-x=no && make
```

Download DECoN

<https://github.com/RahmanTeam/DECoN/archive/refs/tags/v1.0.2.zip>

and install it under /opt/DECoN or set the DECON\_PATH environment variable to its folder

You may need to add

```
symlink.system.packages: TRUE
```

```
to Linux/packrat/packrat.opts
```

see also: [Minimum System Requirements](#)

## Additional Assistance

If you need additional assistance, please visit [our support page](#) to submit a help ticket or find phone numbers for regional support.



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