DTarray_pro installation and basic usage

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Contents

1 Introduction

`DTarray_pro` extracts Uniprot ID numbers, molecular weights, and spectral counts from `.dtafilter` files stored in the working directory. Protein data is combined into one dataset and written to the working directory as a tab delimitated text file (.tsv). This document will describe how to install the latest version of `DTarray_pro` step by step. Some experience using a unix shell is assumed.

2 Installation

`DTarray_pro` is hosted at GitHub, which is a free hosting service for distributed version control in software development. The latest stable version of `DTarray_pro` will be posted at https://github.com/ajmaurais/DTarray_pro/releases

2.1 Download and unpack DTarray_pro archive file from GitHub

- Navigate to the releases tab on the `DTarray_pro` GitHub page.
- The files for the latest release should be at the top of the page.
- Download the file: `Source code (tar.gz)` for the latest release, to you computer.
- `DTarray_pro` expects to be installed in `~/local`. The program needs data stored in text files in `~/local/DTarray_pro-1.7.4/db` for some features to work. First make the directory `~/local` on your `pleiades` account if it doesn't already exist.
- Transfer the source code archive (should be named something like `DTarray_pro-1.7.4.tar`) to your `pleiades` account using your FTP client of choice.
- The source code archive has to be unpacked before you can access it. To unpack the `.tar` type the following commands in your terminal.

```
$ cd ~/local
$ tar -xfv DTarray_pro-1.7.4.tar
```

- As a result, a new directory should be created in `/local` named `DTarray_pro-1.7.4`
- Once you have unpacked the archive, you no longer need the `.tar` file and can delete if of you wish.

2.2 Build DTarray_pro executable

- Before you can use `DTarray_pro`, you have to build the executable from source. Fortunately `DTarray_pro` is configured to work with a build automation tool called `make` so the process should be straightforward.
- To build `DTarray_pro` run the folowing commands in your terminal.

```
$ cd ~/local/DTarray_pro-1.7.4/
$ ./configure
$ make
```

- After you have run `make`, there should be several new files in the `DTarray_pro-1.7.4` directory. If everything worked, the executable file should be located at `DTarray_pro-1.7.4/bin/DTarray`

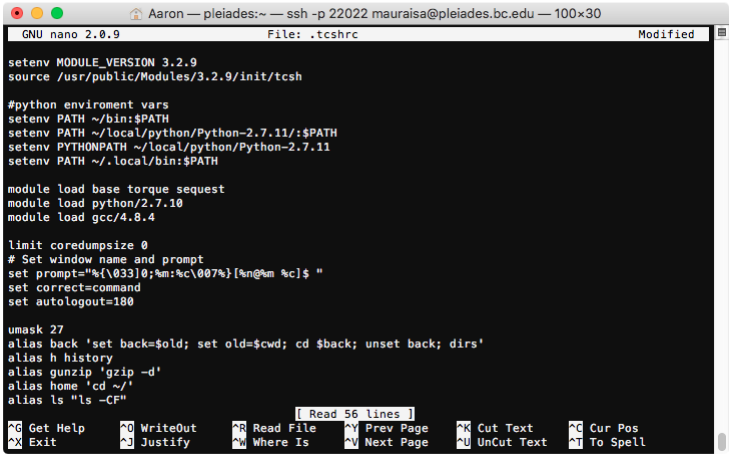
2.3 Adding a shortcut for DTarray_pro (optional)

To run `DTarray_pro` you have to navigate on your terminal to a folder which contains DTASelect-filter files then type the full path to the executable file relative from the directory you are currently in. Its possible to install a program system wide so you don't have to type the path every time, but without administrative privileges, its a bit complicated. A workaround is to create a shortcut or alias to the executable file. This section will explain how to add an alias for `DTarray_pro` to your shell profile on `pleiades`

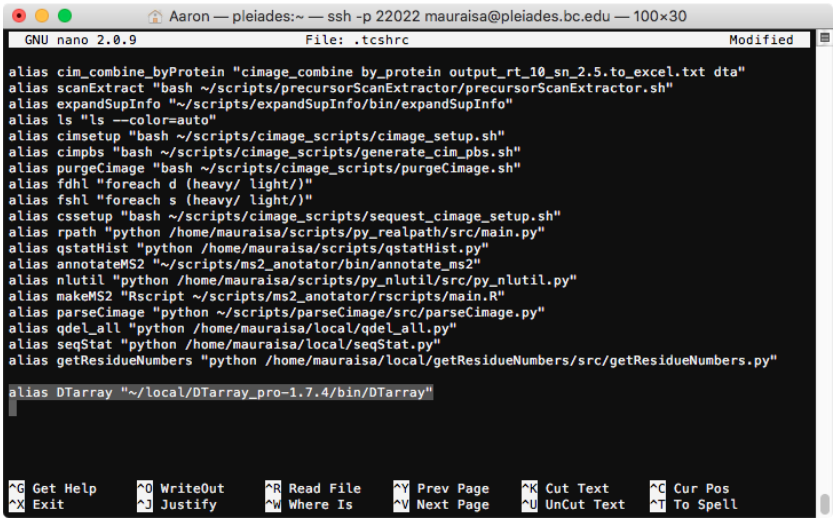
- To add an alias for `DTarray_pro`, you will have to edit your shell profile, which is a file stored in your home directory named `.tcshrc`.
- To edit your shell profile, you will use a command line text editor called `nano`. To open `.tcshrc` in `nano`, type:

```
$ cd
$ nano .tcshrc
```

- After starting `nano`, your terminal window should look something like this:



- Scroll to the bottom of the file and add the line:
  `alias DTarray "~/local/DTarray_pro-1.7.4/bin/DTarray"`



- To save and exit the file, hit `^+ X`. A dialog should show up at the bottom which says:

```
Save modified buffer (ANSWERING "No" WILL DESTROY
   CHANGES) ?
```

- Hit `y`
- Next a dialog should show up at the bottom which says

```
File name to write: .tcshrc
```

- Hit `enter` to exit.
- Finally you have to tell the computer to reload your shell profile after you have modified it with the command:

```
$ source .tcshrc
```

- You can test your alias by typing the following command from your home directory:

```
$ DTarray --version
```

- If the alias is recognized by the computer, it should display something like:

```
DTarray_pro 1.7
Last git commit: Sat Sep 22 20:28:17 2018
git revision: 04
   d30f4fd7790abfca60197d85cefc9d2a877cfc
```

3 Usage