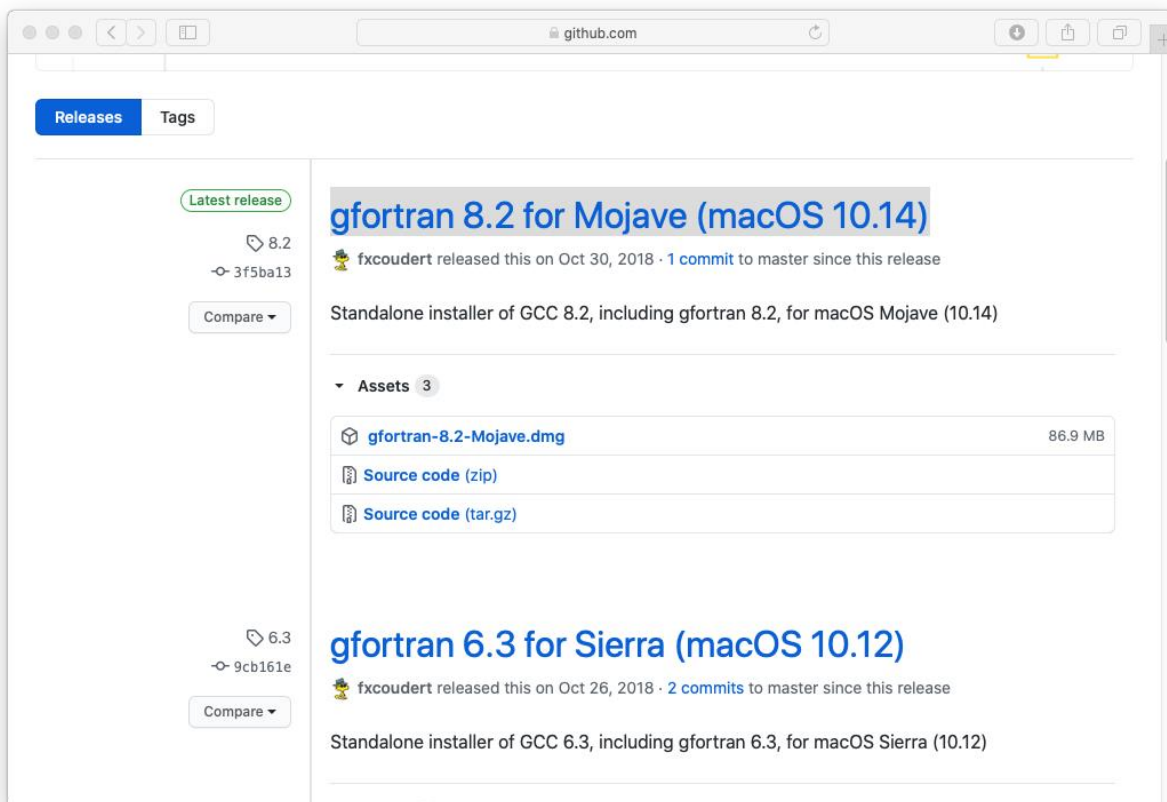


# Bellhop Macintosh Installation

- **Note:** I know gfortran is now part of gcc but newest `at` version still only works with older gfortran compilers. If you have Catalina as well, don't worry this will still work on Mojave as well as on Catalina. I had tested it.
- Go to this link: <https://github.com/fxcoudert/gfortran-for-macOS/releases>
- Download <https://github.com/fxcoudert/gfortran-for-macOS/releases/tag/8.2>

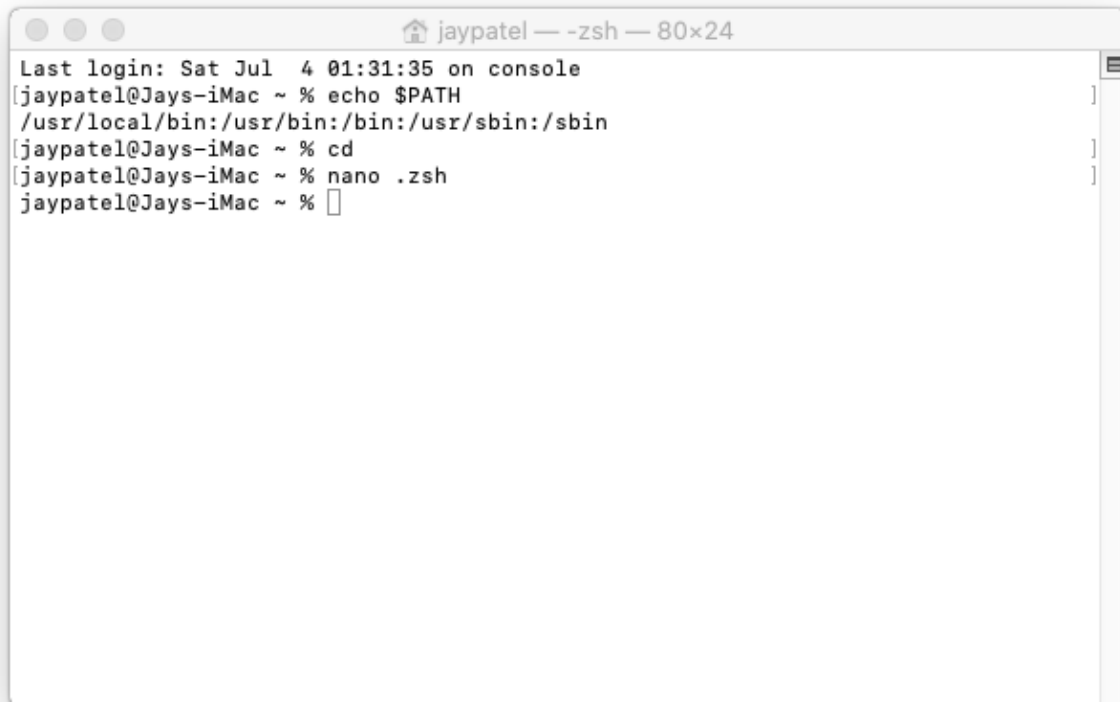


- Install the downloaded gfortran-8.2-Mojave.dmg, this compiler is being used by the at to create binaries for your MacOS.
- Go to the path where you extracted 'at' folder. (In Mac you don't need windows binary, you need to compile using gfortran compiler.)
- Execute the following commands in the at folder.  
**make clean**  
**make all**  
**sudo make install**

A terminal window titled 'at - zsh - 102x26' showing a user navigating through a file system. The user starts in the 'Downloads' directory, lists files, and then enters the 'at' directory. The 'ls' command in the 'at' directory shows a list of files and subdirectories including 'Bellhop', 'Krakel', 'Kraken', 'KrakenField', 'LICENSE', 'Makefile', 'Matlab', 'RAM', 'RAM off oalib', 'RAM\_ljh', 'Scooter', 'at\_init\_matlab.m', 'bin', 'doc', 'index.htm', 'misc', 'tests', and 'tslib'. The user then enters a comment and two 'zsh: command not found' messages.

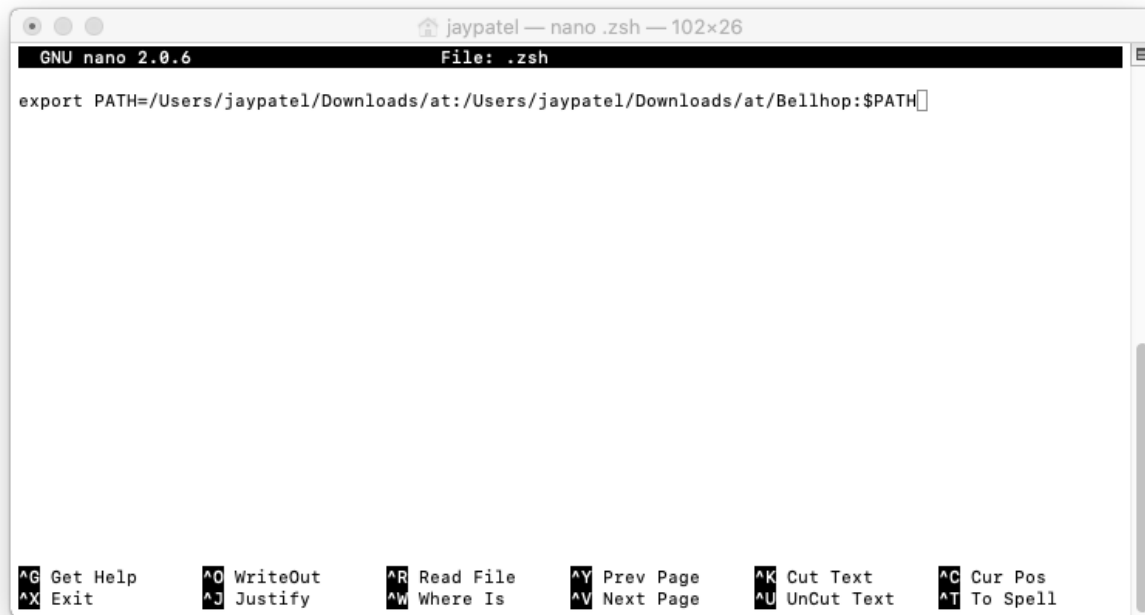
```
[jaypatel@localhost ~ % cd Downloads
[jaypatel@localhost Downloads % ls
at
at-2
[jaypatel@localhost Downloads % cd at
[jaypatel@localhost at % ls
Bellhop          Makefile          Scooter           misc
Krakel           Matlab            at_init_matlab.m tests
Kraken           RAM               bin               tslib
KrakenField      RAM off oalib     doc
LICENSE          RAM_ljh           index.htm
[jaypatel@localhost at % # Please do make clean here
zsh: command not found: #
[jaypatel@localhost at % # Please do sudo make install after that
zsh: command not found: #
jaypatel@localhost at %
```

- Once you installed. Close all the terminals.
- Open new terminal. Do as follows:
- In your terminal, type this:  
**echo \$PATH**
- Above command give you current path in your zsh file, If you have one.
- Add bellhop to your zsh file. You can use these commands in terminal:  
**cd**  
**nano .zsh**

A terminal window titled 'jaypatel — zsh — 80x24' showing the following commands and output:

```
Last login: Sat Jul 4 01:31:35 on console
[jaypatel@Jays-iMac ~ % echo $PATH
/usr/local/bin:/usr/bin:/bin:/usr/sbin:/sbin
[jaypatel@Jays-iMac ~ % cd
[jaypatel@Jays-iMac ~ % nano .zsh
[jaypatel@Jays-iMac ~ % ]
```

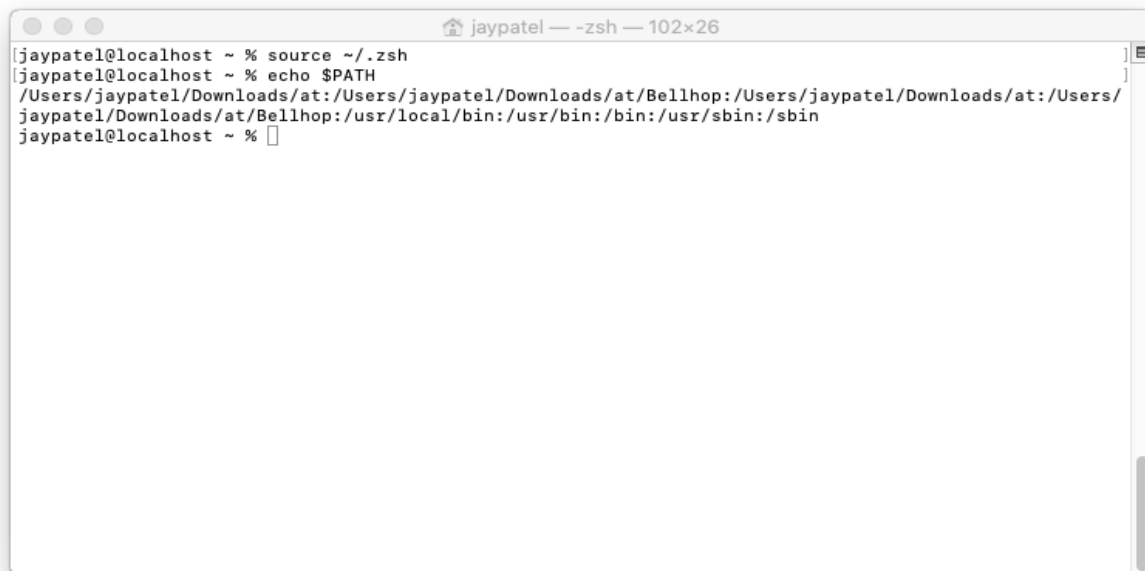
- Please note that there is no Bellhop in the path right now, so we are going to add that by adding the following line in the .zsh file, Copy and paste below list (change the path accordingly)  
**export**  
**PATH=your\_local\_macOS\_path/at:your\_local\_macOS\_path/at/Bellhop:\$PATH\$**
- For me, it was:  
**export**  
**PATH=/Users/jaypatel/Downloads/at:/Users/jaypatel/Downloads/at/Bellhop:\$PATH\$**
- Refer the screenshot below for more details.
- Once you're done, press ctrl+X and it will ask you do you want to save your file, type Y and press enter and it will save the path successfully.
- And now source ~/.zsh to your terminal using this command :  
**source ~/.zsh**  
**echo \$PATH**



The screenshot shows a nano editor window titled "jaypatel — nano .zsh — 102x26". The editor is open to a file named ".zsh" and contains the following text:

```
export PATH=/Users/jaypatel/Downloads/at:/Users/jaypatel/Downloads/at/Bellhop:$PATH
```

At the bottom of the window, there is a status bar with various keyboard shortcuts: **^G** Get Help, **^X** Exit, **^O** WriteOut, **^J** Justify, **^R** Read File, **^W** Where Is, **^Y** Prev Page, **^V** Next Page, **^K** Cut Text, **^U** UnCut Text, **^C** Cur Pos, **^T** To Spell.



The screenshot shows a terminal window titled "jaypatel — -zsh — 102x26". The terminal displays the following commands and output:

```
[jaypatel@localhost ~ % source ~/.zsh
[jaypatel@localhost ~ % echo $PATH
/Users/jaypatel/Downloads/at:/Users/jaypatel/Downloads/at/Bellhop:/Users/jaypatel/Downloads/at:/Users/
jaypatel/Downloads/at/Bellhop:/usr/local/bin:/usr/bin:/bin:/usr/sbin:/sbin
jaypatel@localhost ~ %
```

- This means your acoustic toolbox and bellhop.exe are in path's now.
- And now source ~/.zsh to your terminal using this command :

**source ~/.zsh**



The screenshot shows a terminal window titled "jaypatel — -zsh — 102x26". The terminal displays the following commands and output:

```
[jaypatel@localhost ~ % source ~/.zsh
[jaypatel@localhost ~ % echo $PATH
/Users/jaypatel/Downloads/at:/Users/jaypatel/Downloads/at/Bellhop:/Users/jaypatel/Downloads/at:/Users/
jaypatel/Downloads/at/Bellhop:/Users/jaypatel/Downloads/at:/Users/jaypatel/Downloads/at/Bellhop:/Users/
jaypatel/Downloads/at:/Users/jaypatel/Downloads/at/Bellhop:/usr/local/bin:/usr/bin:/bin:/usr/sbin:/sb
in
jaypatel@localhost ~ %
```

# Install Jupiter notebook

Execute following commands in your terminal :

```
sudo -H python3 -m pip install jupyter
```

# Install `ARLPY`

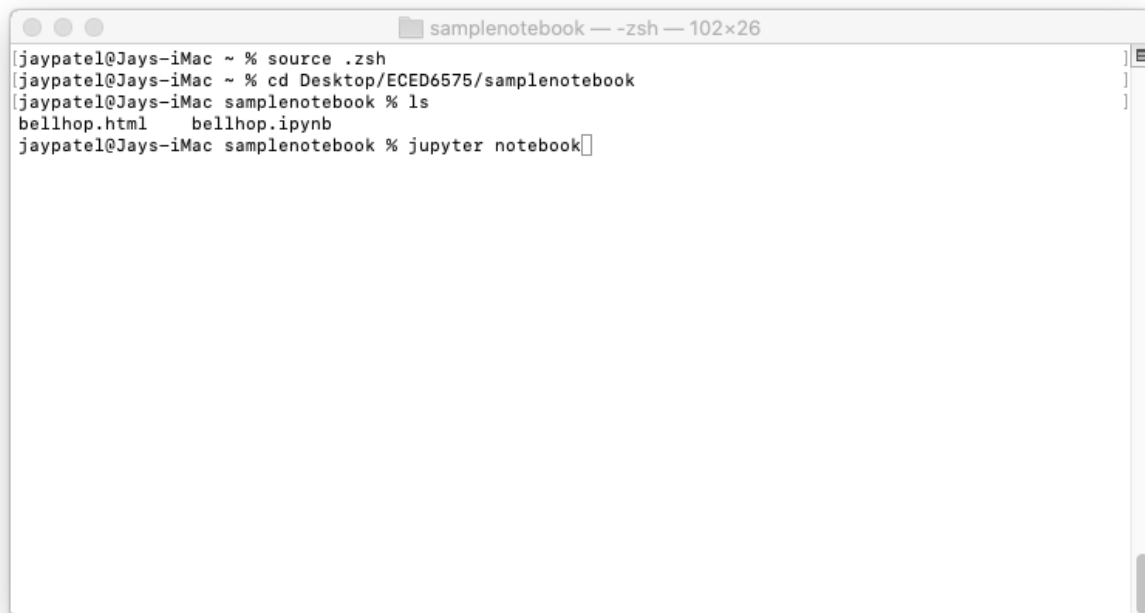
Execute following commands in your terminal :

```
sudo -H python3 -m pip install arlpy
```

Once finish, go to your terminal and cd into your folder where you put bellhop.ipynb and open

Jupyter notebook using following command :

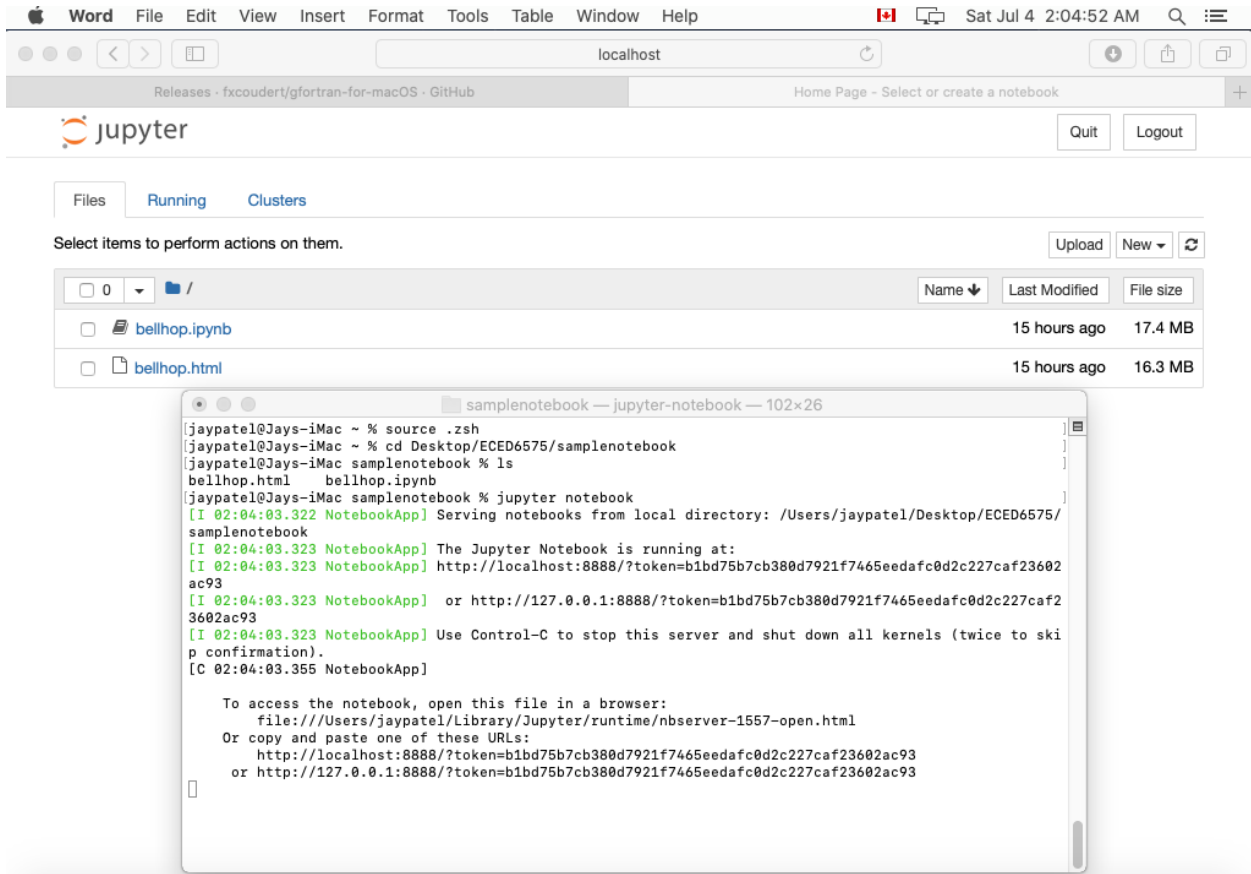
```
jupyter notebook
```

A screenshot of a macOS terminal window titled "samplenotebook --zsh-- 102x26". The terminal shows the following commands and output:

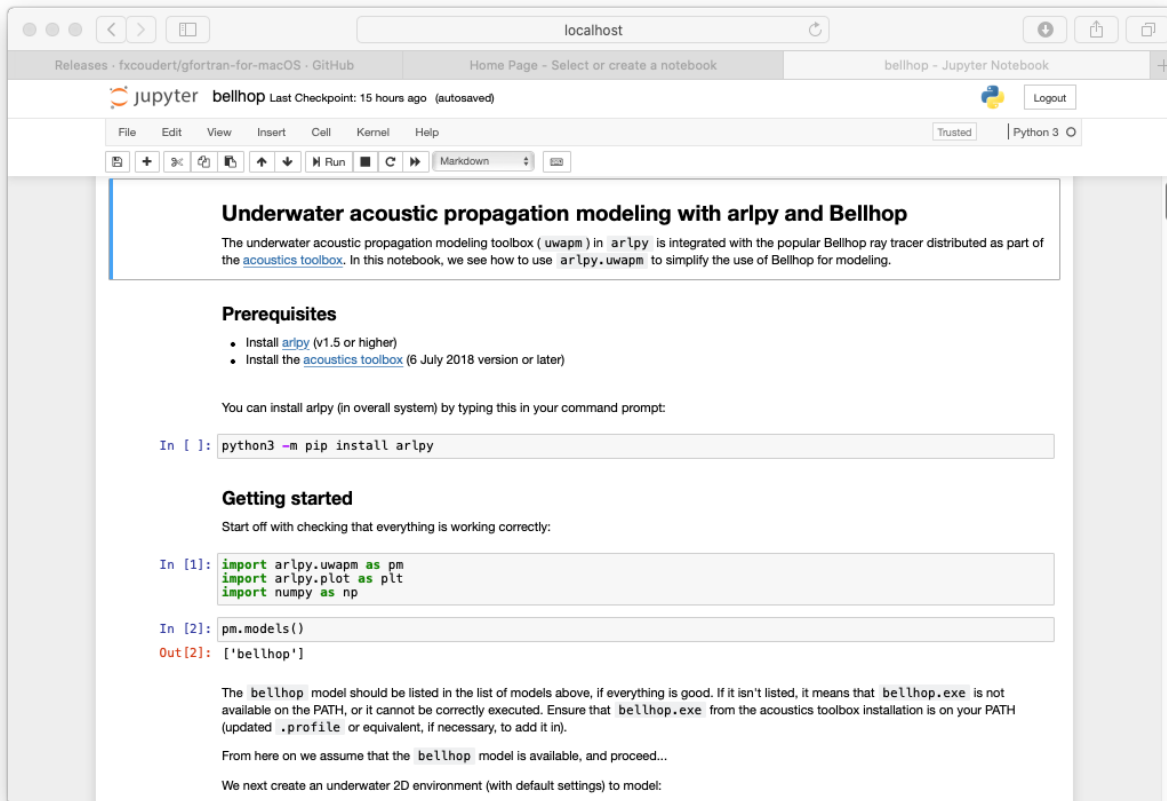
```
[jaypatel@Jays-iMac ~ % source .zsh ]
[jaypatel@Jays-iMac ~ % cd Desktop/ECED6575/samplenotebook ]
[jaypatel@Jays-iMac samplenotebook % ls ]
bellhop.html  bellhop.ipynb
[jaypatel@Jays-iMac samplenotebook % jupyter notebook ]
```

This will launch your default browser and you can just click on the bellhop.pynb and open that.

Start running your code.



This will fire up python sample notebook for bellhop.



## # Troubleshoot:

1. If you have running into a problems that said permission denied, check the folder properties to make sure the user logged in has sufficient right to execute any exe files.