

There are a variety of different ways to edit files on the zoo, but the majority of students use one of the following methods.

1. **SSH into zoo and edit via Vim / Emacs**
2. **Use Sublime text (or similar text editor) and SFTP**
3. **Use Sublime text and use Cyber Duck to transfer files**

This instruction sheet will cover how to install Sublime Text and use SFTP to transfer files easily onto the zoo's server (e.g. option #2).

Use the following [link](#) to download Sublime Text.

Sublime text is a very popular text editor that comes with syntax highlighting for many of the common languages. SFTP stands for Secure File Transfer Protocol. This means that you will be able to edit files using Sublime Text on your computer, but when you press save, they will be transferred into a folder on the zoo's server. This is **highly recommended** over editing on your local computer and **scp**ing (transferring) the files onto the zoo server because it minimizes human error!

1. Download Sublime Text

This link takes you to Sublime Text 2, but you can also download Sublime Text 3 (which is in Beta). Click on the relevant link (depending on whether you have a Mac, Linux, or Windows operating system) to download the editor. Click on the file downloaded, and it will open up a wizard to install the application.

2. Install Package Control

Sublime Text allows you to install packages (or add-ons) to the application. We will be using package control to add SFTP functionality. To install, try typing in `ctrl+`` or `view -> show console`. Once you have reached the menu, paste in the command listed at the following [link](#). Note that there is a different text to be pasted in depending on whether you have installed Sublime Text 2 vs Sublime Text 3. SF

Alternatively, if you type in `ctrl + shift + p` (for Windows and Linux) or `cmd + shift + p` (for Mac), search for Package Control: Install Package Control and click on that!

3. Install Package SFTP

If you have a Windows and Linux, type in `ctrl + shift + p`. If you have a Mac, type in `cmd + shift + p`. Then, search for Package Control: Install Package, then search for SFTP and click the first answer that comes up.

4. Set up SFTP Zoo Server

Once you have set up SFTP, you need to add in the relevant information that allows your computer to make a connection to the zoo's server. In Sublime Text, click on `File -> SFTP/FTP -> Setup Server`. A file like the first picture below should pop up.

1

Note: When it says <x>, actually type in x!!

Fill out the relevant information information below with your zoo login information.

`"host": "node.zoo.cs.yale.edu"`

`"user": "<username/netID>"`

`"password": "<netID password>"` ****Uncomment this line if you don't want to type in your password every time you start using SFTP**

`"remote_path": "/home/accts/<netID>"` ****or whatever directory you use the most on the zoo!**

Then save the file and name it whatever you want! To see an example file that is filled out, see the later pages.

5. Set-up Connection Multiplexing

******Note that this is a recent (Fall 2020) change due to the addition of Duo 2-factor authentication to the Zoo login process. Note also that this is also a hack/workaround because afaiK, the Sublime SFTP plugin cannot yet handle 2-factor authentication.******

******EDIT: NEVER MIND, you can just VPN into the school network and log in normally... I'm dumb.******

First, run `mkdir -p ~/.ssh/tmp`.

Then, modify the file `~/.ssh/config` to add the following two lines at the beginning of the file (or create a new file with that name and *just* the following three lines if the file does not yet exist):

```
host *  
    ControlMaster auto  
    ControlPath ~/.ssh/tmp/%h_%p_%r
```

For those interested in what this does, it essentially allows connections to be reused (i.e. multiplexed), so that the Duo 2-factor authentication only needs to occur once for multiple connections to the Zoo to be set up. Ergo, once you SSH into the Zoo for the

first time on your terminal (via the 2-factor authentication process), and leave your terminal logged in, you can use SFTP on Sublime to piggy-back that same connection and log into the Zoo without the 2-factor authentication.

6. Using SFTP

To use SFTP, click **File -> SFTP/FTP -> Browse Server**. Click on the name that you used to save your server configuration file. You should see a menu similar to the third picture below which depicts the file system on your zoo server. Create a file by logging onto the zoo (by SSHing in) and typing in **touch <filename>** in the relevant directory. You will then be able to see that file in the menu on Sublime Text. To edit a file, click on it and select **edit**. When you SAVE the file, it will be uploaded onto the zoo's server. Then, you can run your program from the terminal (after you have SSHed into the zoo). Don't forget to save your file though! Hope that helps - please post on Piazza if you have questions.

Pictures

File that should pop up after clicking "Setup Server":

```
1 {
2     // The tab key will cycle through the settings when first created
3     // Visit http://wbond.net/sublime\_packages/sftp/settings for help
4
5     // sftp, ftp or ftps
6     "type": "sftp",
7
8     "sync_down_on_open": true,
9     "sync_same_age": true,
10
11     "host": "example.com",
12     "user": "username",
13     //"password": "password",
14     //"port": "22",
15
16     "remote_path": "/example/path/",
17     //"file_permissions": "664",
18     //"dir_permissions": "775",
19
20     //"extra_list_connections": 0,
21
22     "connect_timeout": 30,
23     //"keepalive": 120,
24     //"ftp_passive_mode": true,
25     //"ftp_obey_passive_host": false,
26     //"ssh_key_file": "~/.ssh/id_rsa",
27     //"sftp_flags": ["-F", "/path/to/ssh_config"],
28
29     //"preserve_modification_times": false,
30     //"remote_time_offset_in_hours": 0,
31     //"remote_encoding": "utf-8",
32     //"remote_locale": "C",
33     //"allow_config_upload": false,
34 }
35
```

Example File:

```
1 {
2   // The tab key will cycle through the settings when first created
3   // Visit http://wbond.net/sublime_packages/sftp/settings for help
4
5   // sftp, ftp or ftps
6   "type": "sftp",
7
8   "sync_down_on_open": true,
9   "sync_same_age": true,
10
11  "host": "node.zoo.cs.yale.edu",
12  "user": "abc123",
13  "password": "netIDPassword!",
14  //"port": "22",
15
16  "remote_path": "/home/accts/abc123",
17  //"file_permissions": "664",
18  //"dir_permissions": "775",
19
20  //"extra_list_connections": 0,
21
22  "connect_timeout": 30,
23  //"keepalive": 120,
24  //"ftp_passive_mode": true,
25  //"ftp_obey_passive_host": false,
26  //"ssh_key_file": "~/.ssh/id_rsa",
27  //"sftp_flags": ["-F", "/path/to/ssh_config"],
28
29  //"preserve_modification_times": false,
30  //"remote_time_offset_in_hours": 0,
31  //"remote_encoding": "utf-8",
32  //"remote_locale": "C",
33  //"allow_config_upload": false,
34 }
35
```

Choosing which file to edit:

```
1 {
2   // The [input field] created
3   // Visit node.zoo.cs.yale.edu:/home/accts/slr63/cs323/ for help
4
5   // sftp
6   "type":
7     • Folder actions
8     • Up a folder
9     pset1/
10    roman.shanellelang.slr63/
11
```