# Part I: Installing Cygwin on Windows

Windows does not come with many of the command line tools available to Linux and OSX based systems. In order to use Calibre DRC, we need 'ssh' and 'scp' installed on Windows and available from the command line.

1. [Download](#) the Cygwin installer. Choose setup-x86_64.exe for 64-bit versions and setup-x86.exe for 32-bit.
2. Run the setup executable
3. Click "next" through the first five screens, leaving the defaults.
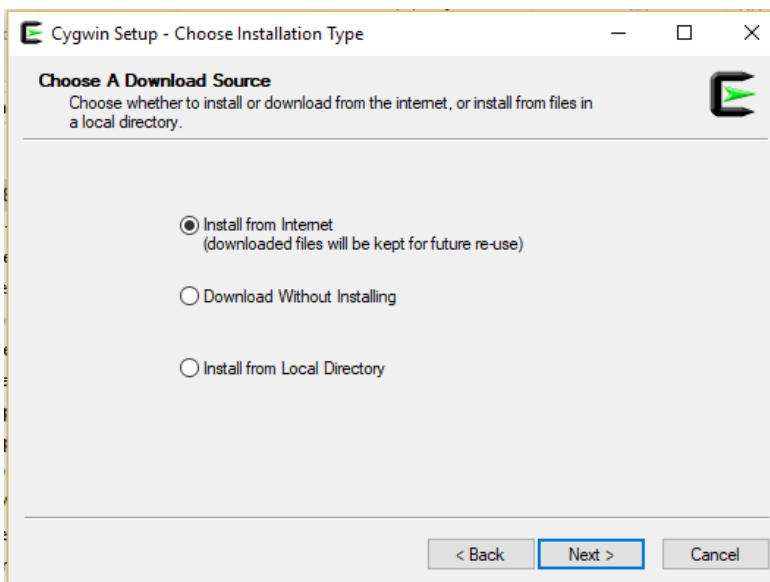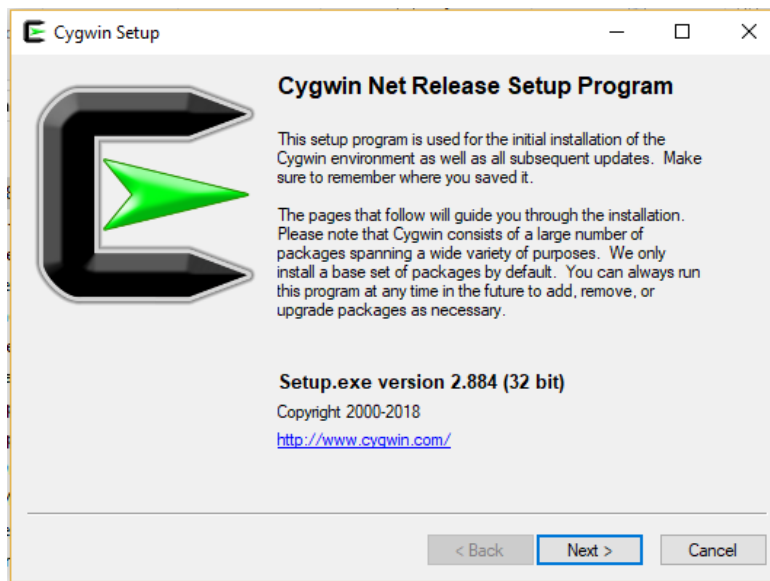
Cygwin Setup - Choose Installation Directory

Select Root Install Directory
Select the directory where you want to install Cygwin. Also choose a few installation parameters.

Root Directory

C:\cygwin64   Browse...

Install For

◉ All Users (RECOMMENDED)
Cygwin will be available to all users of the system.

○ Just Me
Cygwin will still be available to all users, but Desktop Icons, Cygwin Menu Entries, and important Installer information are only available to the current user. Only select this if you lack Administrator privileges or if you have specific needs.

< Back   Next >   Cancel

Cygwin Setup - Select Local Package Directory

Select Local Package Directory
Select a directory where you want Setup to store the installation files it downloads. The directory will be created if it does not already exist.

Local Package Directory

C:\Users\bpoul\Downloads   Browse...

< Back   Next >   Cancel

Cygwin Setup - Select Connection Type

Select Your Internet Connection
Setup needs to know how you want it to connect to the internet. Choose the appropriate settings below.

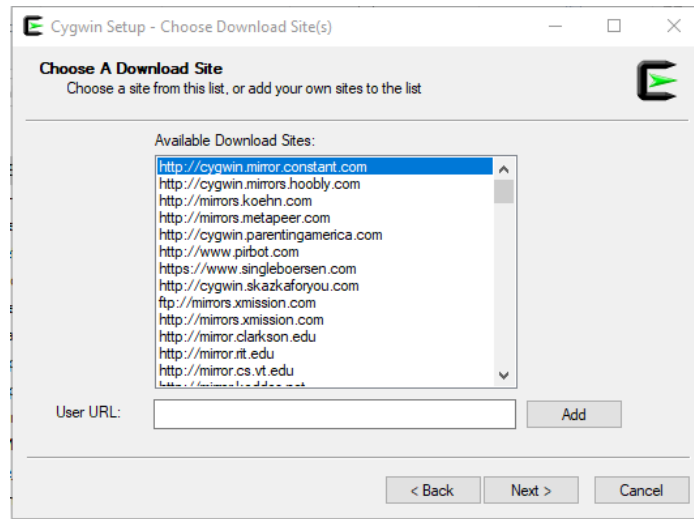◉ Use System Proxy Settings
○ Direct Connection
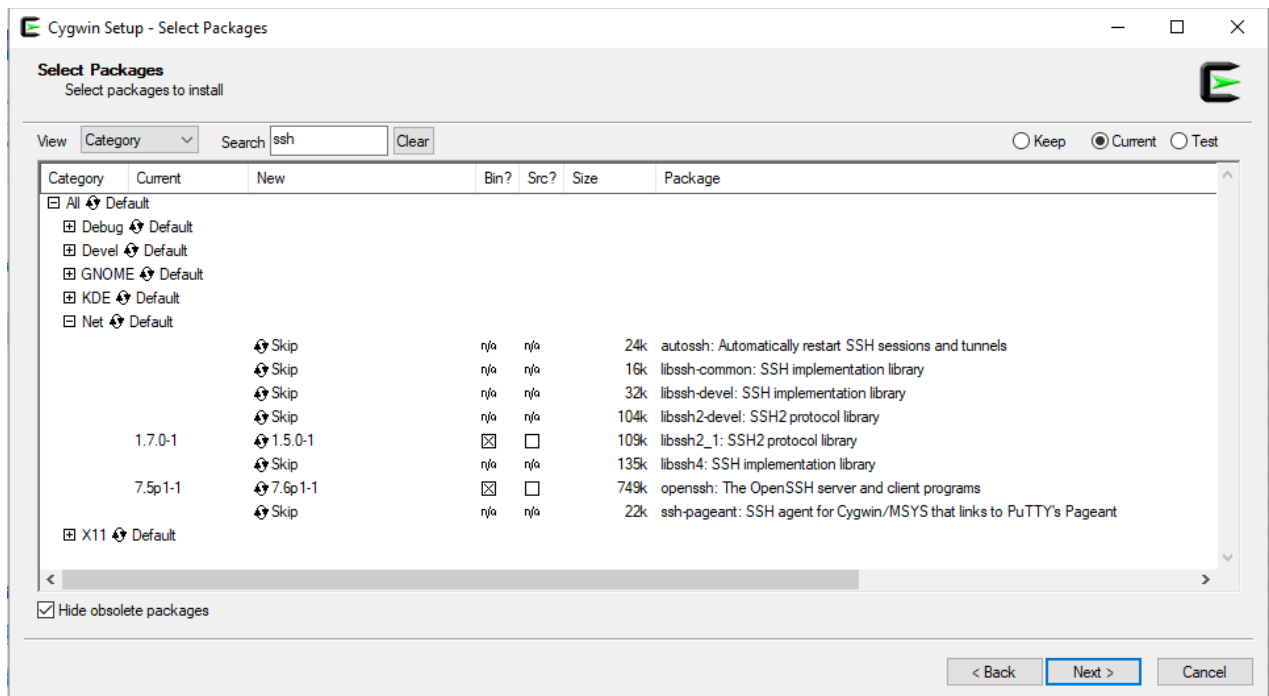○ Use HTTP/FTP Proxy:

Proxy Host
Port   80

○ Direct Connection (legacy)

< Back   Next >   Cancel

4. Select the first mirror from the Download Site list and hit "next"

5. In the Select Packages screen:
   a. Search for 'ssh'
   b. Expand the Net tab (making sure View is set to Category)
   c. Click the refresh sign ONCE beside the two libraries
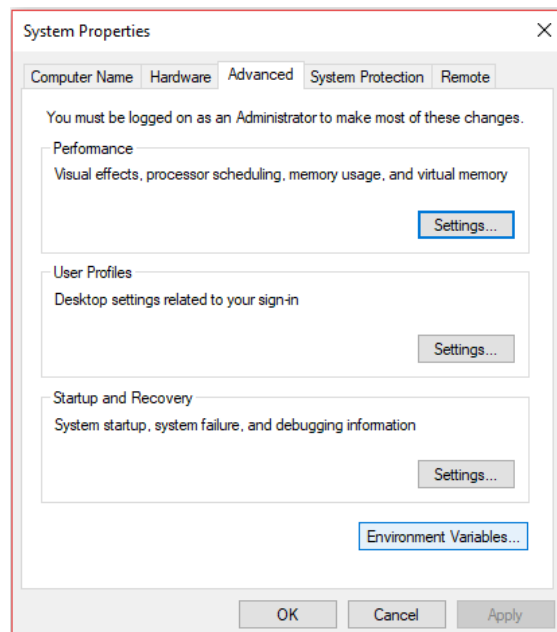   i. libssh2_1
      ii. openssh
   d. Click next

6. Click next on the resolving dependencies screen and wait for the installation to finish
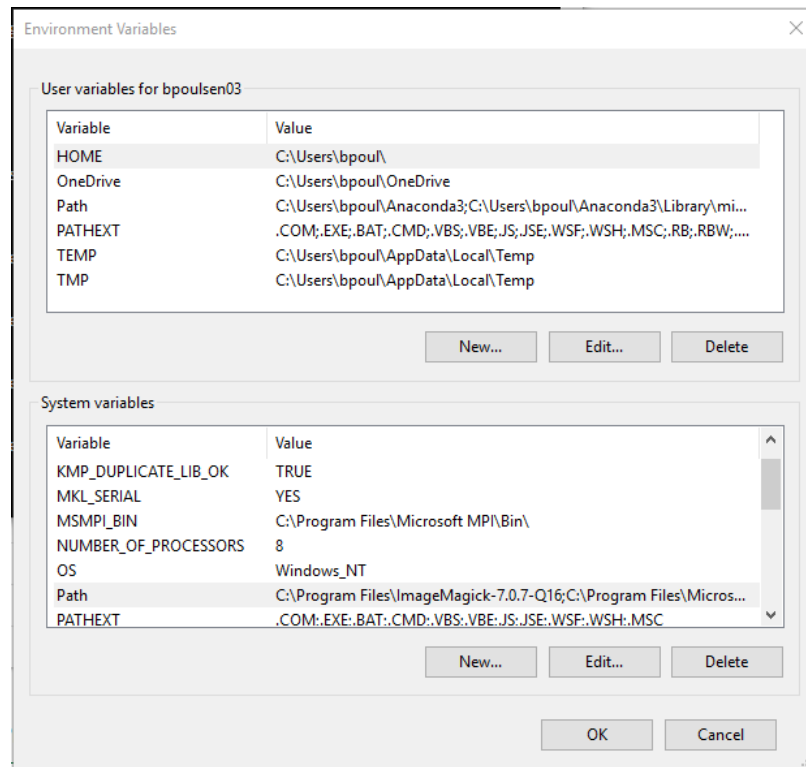7. Click finish, adding icons if you want

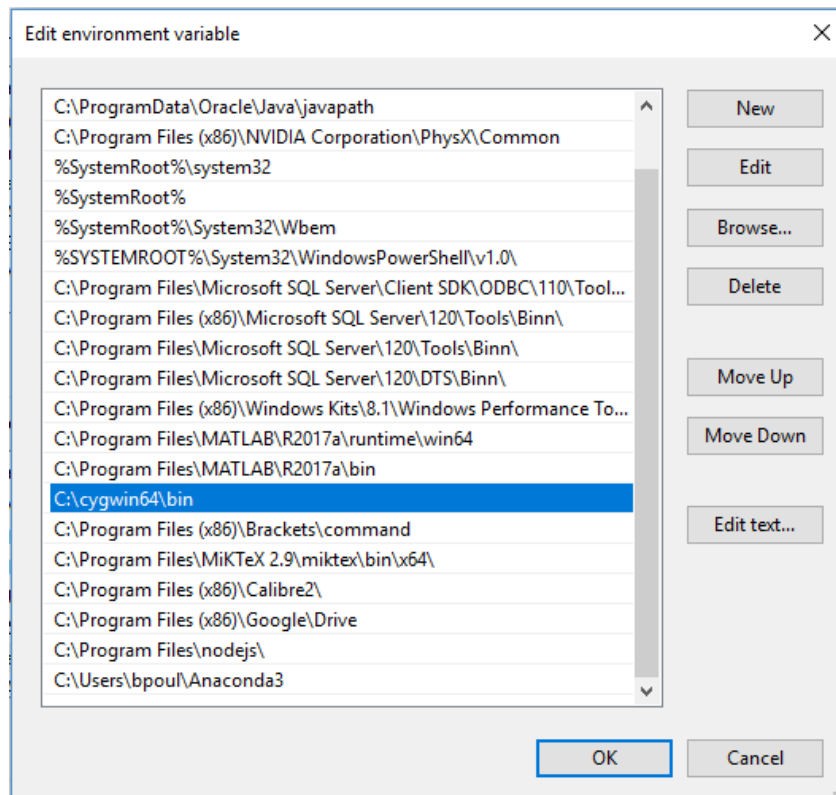8. In the windows search bar type "Edit the system environment variables"
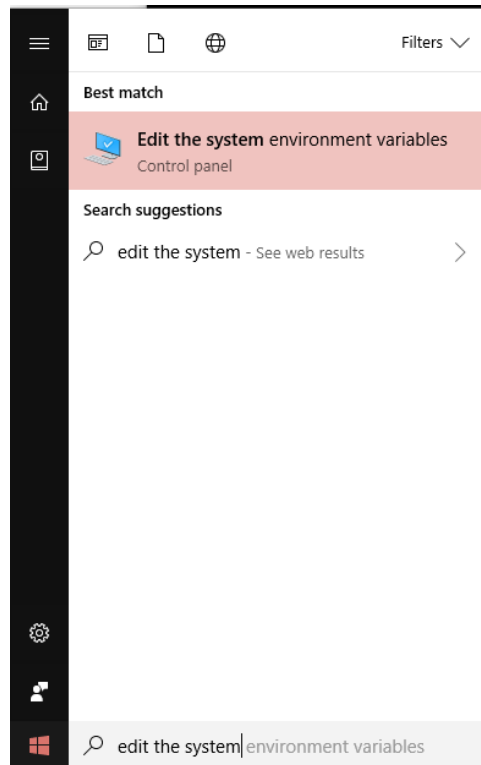
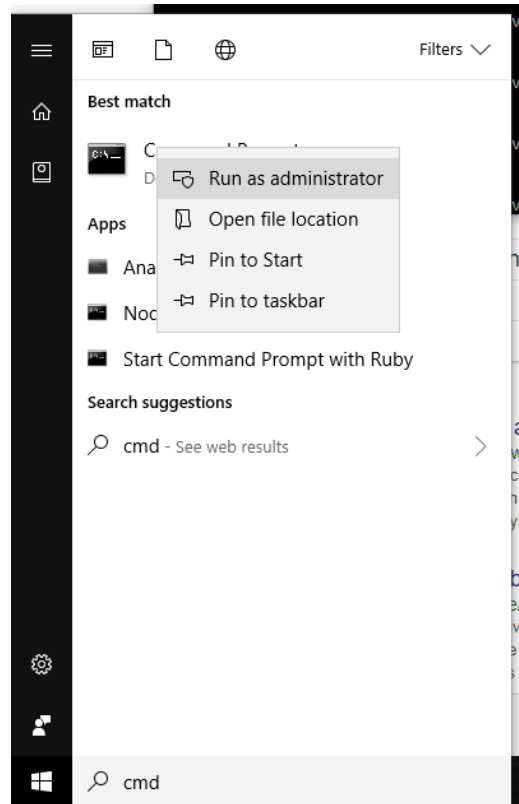9. Select "Environment Variables…" in the lower right corner

10. Find "Path" in the **System variables** list and hit "Edit"

11. Hit "New" and enter the path "C:/cygwin64/bin

12. Click OK on all three windows to close them.
13. Open the start menu, search 'cmd', right click and open as administrator

14. Type in the following command and hit enter. This creates a softlink between your windows home folder and Cygwin (replace cygwin64 with cygwin if on a 32-bit system)

```
[cwd] > mklink /d C:/cygwin64/home/%USERNAME% C:/%HOMEPATH%
```

15. Close the shell. You now have (most) regular Linux commands in Windows! (e.g. ls, cat, ssh, scp, etc.)

Part II: Passwordless Login Procedure on Windows

1. Open a terminal
2. Execute the following command

```
[cwd] > key-gen -t rsa
```

3. Hit enter three times, so the default name is used and no password is created
4. Execute the following commands, replacing "user@ip" with the username and IP of the server

```
[cwd] > cd C:%HOMEPATH%\.ssh
[cwd] > cat id_rsa.pub | ssh user@123.456.789.123 "cat >> path/to/home/.ssh/authorized_keys
```

5. You will have to enter a password this time
6. Close the shell, passwordless login should now be working!

Part III: Creating a Config File for KLayout (All Systems)

1. Create a configuration file
   a. Windows

```
[cwd] > touch C:%HOMEPATH%\.ssh\config
```

   b. Linux

```
[cwd] > touch ~\.ssh\config
```

2. Open this file in any editor of your choosing
3. Enter the following configuration

```
Host          drc
HostName      123.456.789.123
Port          22
IdentityFile  C:/Users/bpoul/.ssh/id_rsa
User          username_on_server
```

4. Remember to replace the contents after HostName, Port, and User with the correct information of the server. If on Linux replace the location of IdentityFile with ~/.ssh/id_rsa
5. Save and close. KLayout can now find the configuration with the name "drc" for Calibre!

KLayout

When clicking on the Calibre DRC button, you should now see the following popup. Here is an example of what was entered to use a CMC NDN Cloud Linux instance.