

SETTING UP CYGWIN ON WINDOWS 7

Cygwin is a linux emulator that runs on the Windows operating system. Although Cygwin is not technically an operating system, it allows a windows user to have essentially the same functionality as a linux user.

Installing Cygwin on your Windows PC is usually quite easy, but some anti-virus software can interfere with it. I would first try to install Cygwin with your anti-virus software still running, and if your computer hangs during the install, you should try again with your anti-virus software turned off (for the install). Don't forget to turn it back on afterwards.

Here, I provide directions on how to download and install Cygwin on a Windows PC. On the pictures provided, blue circles indicate places I am highlighting in the tutorial.

1.0 DOWNLOAD CYGWIN FILES TO A LOCAL DIRECTORY

You may need to have administrator access in order to install Cygwin on your PC. I'm not sure because I haven't tried it as a standard user.

The first step is to download the install files onto your computer. These are temporary files, and you can manually delete them after you have installed Cygwin. **I recommend having at least 5 GB available on your hard drive.**

Create a directory to store these temporary files. This directory can be created anywhere. For my install, I created the following:

D:/CygwinInstall-2015-01-08/

Go to the Cygwin website: <http://www.cygwin.com>

From there, click on the link for the installation program. Choose either 32-bit or 64-bit version, depending on your computer. I will assume that you are using a 64-bit computer (which is common for computers purchased within the last few years). See picture on next page.

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What...

...is it?

Cygwin is:

- a collection of tools which provide a Linux look and feel environment for Windows.
- a DLL (cygwin1.dll) which acts as a Linux API layer providing substantial Linux API functionality.

...isn't it?

Cygwin is not:

- a way to run native Linux apps on Windows. You must rebuild your application from source if you want it to run on Windows.
- a way to magically make native Windows apps aware of UNIX® functionality like signals, ptys, etc. Again, you need to build your apps from source if you want to take advantage of Cygwin functionality.

The Cygwin DLL currently works with all recent, commercially released x86 32 bit and 64 bit versions of Windows, starting with Windows XP SP3.

For more information see the [FAQ](#).

Current Cygwin DLL version

The most recent version of the Cygwin DLL is [1.7.27](#). Install it by running [setup-x86.exe](#) (32-bit installation) or [setup-x86_64.exe](#) (64-bit installation).

Use the setup program to perform a [fresh install](#) or to [update](#) an existing installation.

Note that individual packages in the distribution are updated separately from the DLL so the Cygwin DLL version is not useful as a general Cygwin release number.

Commercial Support for Cygwin

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If you are using Internet explorer, you will see a dialog box asking whether you want to run or save the file. Choose Run. If you are using Chrome, you will first download it; then, manually run the setup file.

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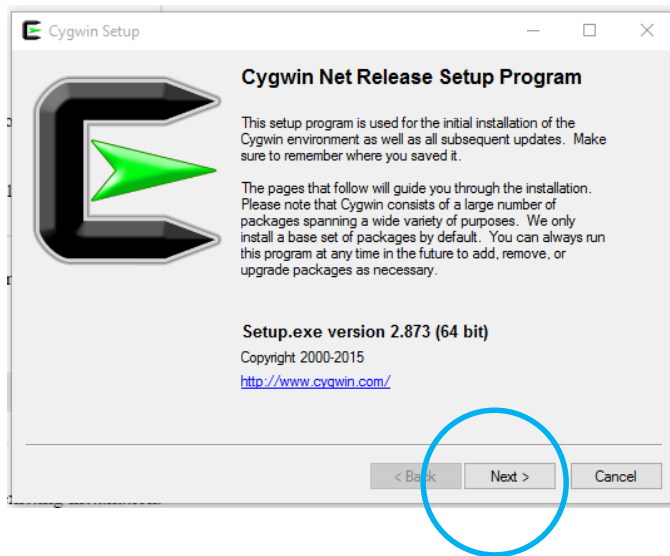
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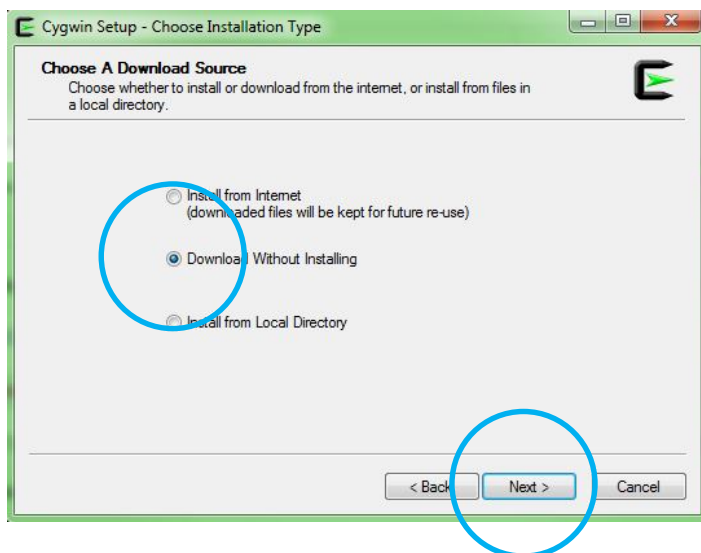
Do you want to run or save setup-x86_64.exe from cygwin.com?

Run Save Cancel X

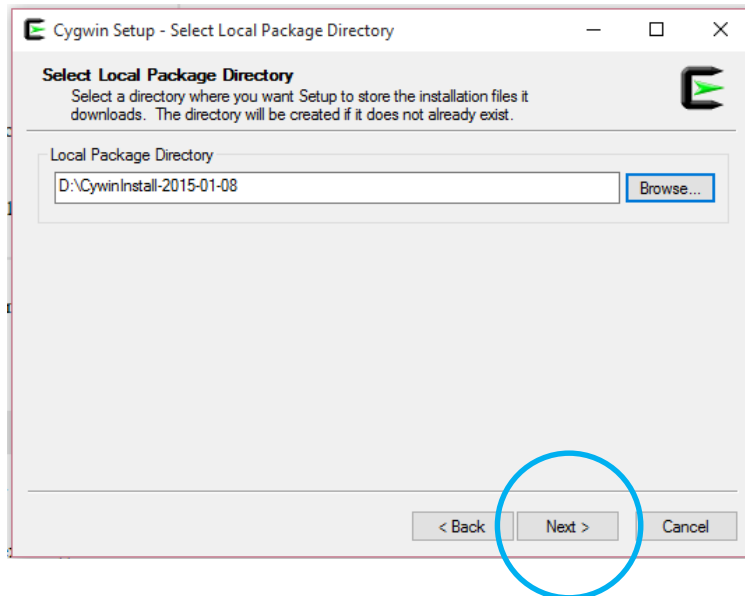
You should see the following pop-up screen. Select Next:



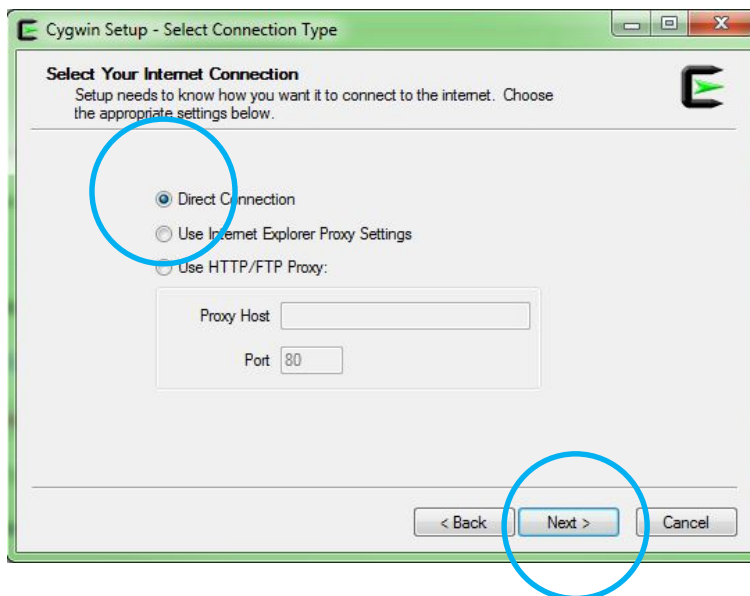
Next, the following dialog box will appear. Choose "Download without Installing" and choose "Next."



Next, you will choose the location of the directory that you created to store the temporary install files. Browse for and select this directory and then, click "Next."



The following screen should appear. Select "Direct Connection" and then, click "Next."



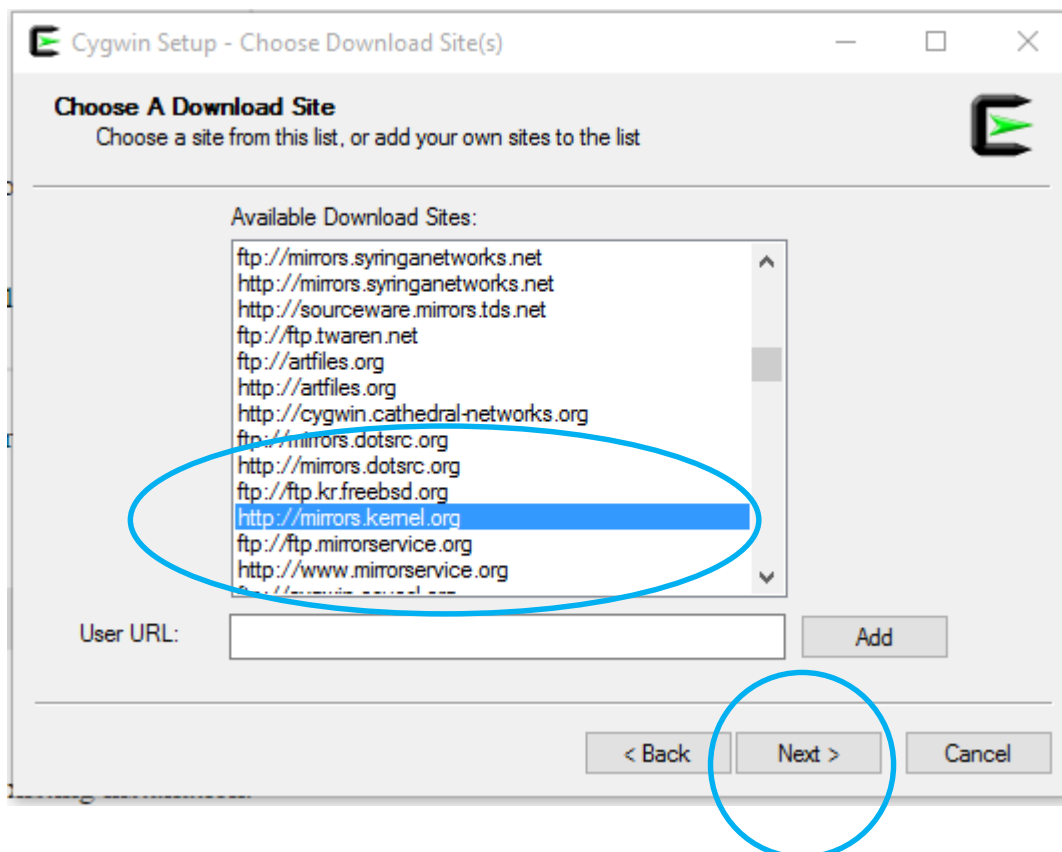
Okay, this next part can be tricky. The cygwin files are available from many different sites called “mirrors”. Supposedly, each mirror contains the exact same files, but I have not found this to be fully true in my experience. Also, some mirrors are much faster than others, and this rarely has anything to do with how far away the mirror site is from your current location.

FYI-The following website provides a list of all of the current mirror sites and their locations.

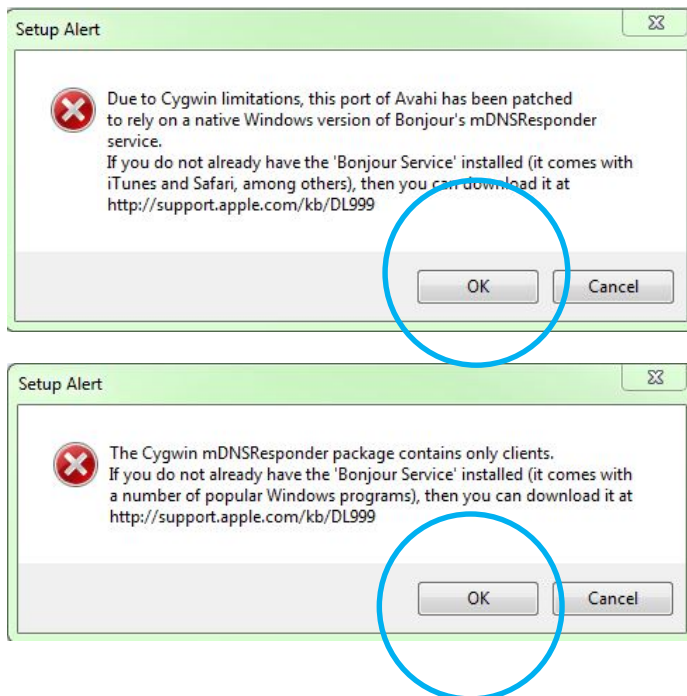
<http://www.cygwin.com/mirrors.html>

In my experience, the site from Palo Alto titled “mirrors.kernal.org” always seems to work well. Scroll down the list, and select “http://mirrors.kernal.org”. Make sure it is the http site (not ftp or rsync). Sometimes though, this site gets hung up, so it may be useful to select 2 of them. You can select another by keeping the control key pressed while you select another. To be safe, lets also choose: <http://mirrors.sonic.net>

Then click “Next”.



If you get alert boxes that resemble the following, go ahead and click “OK.”



Next, the following will appear (see next page). What does this mean? Well, cygwin programs are packaged into collections of “packages”, with each package providing a particular program, set of programs, or functionality. These packages are grouped into the categories shown on the screen. For example, the groups are labeled as Accessibility, Admin, Archive, Audio, Base, Database, etc.

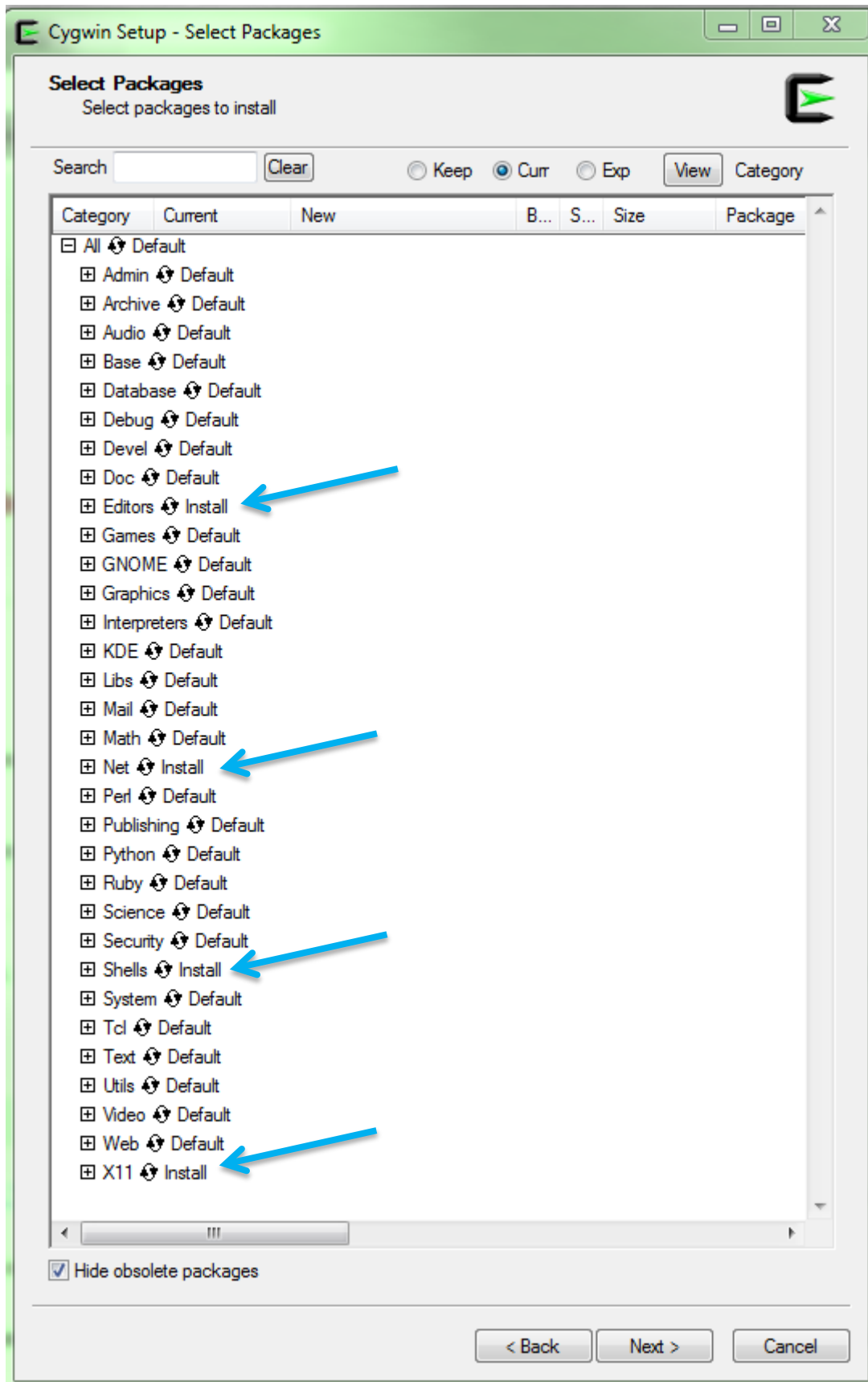
If you wanted to perform a full download of all packages, you would click the word “Default” listed after “All” at the top of the list. The reason we won’t do this is because it would lead to a HUGE install. After you click once, (and perhaps wait a second or two), the words “default” would change to “install”. The possible choices rotate through **default**, **install**, **reinstall**, and **uninstall**.

By default, cygwin will only install the bare minimum of packages with will provide basic operation of the operating system. We will need the default packages plus a few others.


We need to perform a full install of each of the following package groups:

Editors, Net, Shells, and X11

Click the word “Default” after each of the above package groups. **Important note:** After you click “Default”, it may appear that nothing happens. If so, just wait a few seconds, and you will see the word change from “Default” to “Install”. This is often where people screw up the install, because they keep clicking.

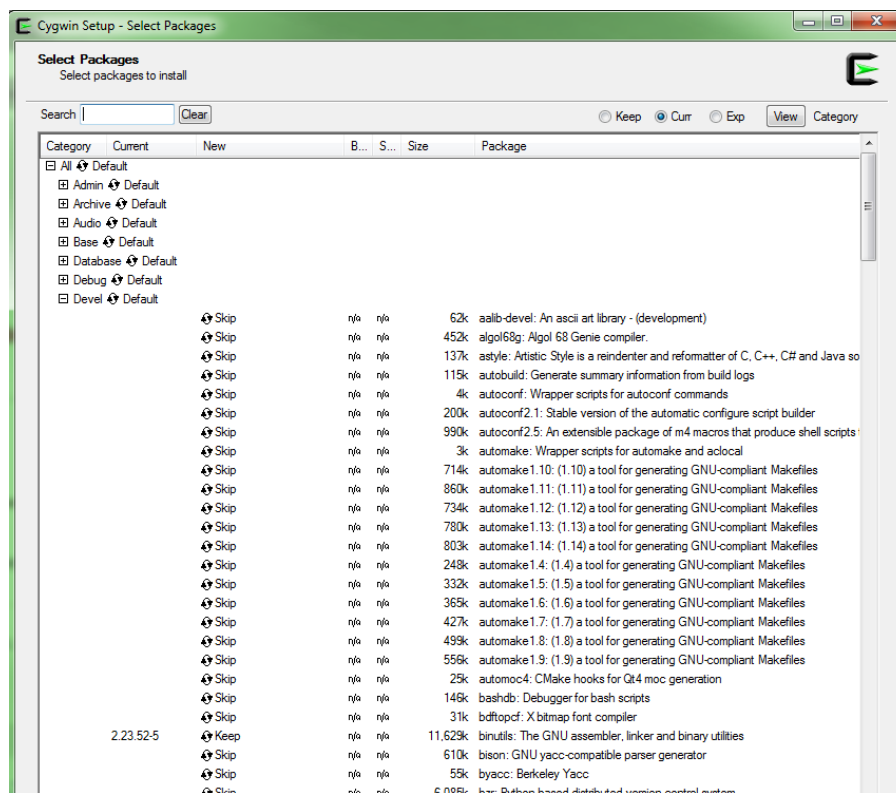


Once, you have made sure **Editors**, **Shells**, **Net**, and **X11** are switched from “Default” to “Install”, we will drop into the **Devel** group to select the sub-packages required for the C-compiler. Click on the “+” before “**Devel**.”



- ☒ Debug Default
- ☒ Devel Default
- ☒ Doc Default
- ☒ Editors Install
- ☒ Games Default
- ☒ GNOME Default
- ☒ Graphics Default
- ☒ Interpreters Default

Once you expand, you should see something like this:



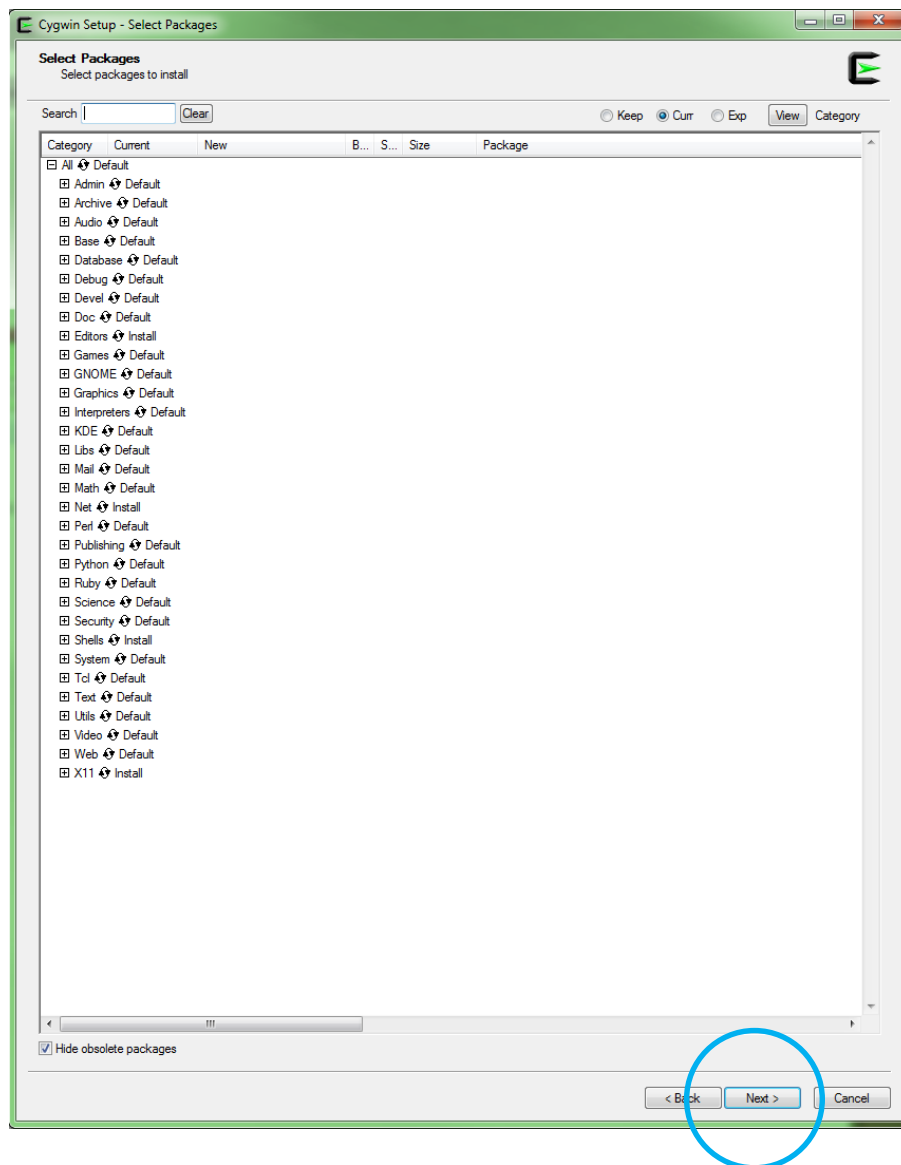
You can add packages by selecting the “Skip” icon, which turns it to some version number. Scroll down and do this for every package that starts with “gcc” (about 10 of them) and “gdb”, and do this for the package called “make.”

	Skip	n/a	n/a	255k	fontspec: X.Org XFont Headers
	Skip	n/a	n/a	1,305k	fossil: DVCS with built-in wiki, http server and issue tracker
	4.9.3-1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13,601k	gcc-ada: GNU Compiler Collection (Ada)
	4.9.3-1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14,795k	gcc-core: GNU Compiler Collection (C, OpenMP)
	4.9.3-1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5,970k	gcc-fortran: GNU Compiler Collection (Fortran)
	4.9.3-1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8,009k	gcc-g++: GNU Compiler Collection (C++)
	4.9.3-1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4,612k	gcc-objc: GNU Compiler Collection (Objective-C)
	4.9.3-1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4,836k	gcc-objc++: GNU Compiler Collection (Objective-C++)
	2.59-2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	425k	gcc-tools-epoch1-autoconf: (gcc-special) automatic configure script builder
	1.9.6-2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	419k	gcc-tools-epoch1-automake: (gcc-special) a tool for generating GNU-compliant M
	2.64-2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	712k	gcc-tools-epoch2-autoconf: (gcc-special) automatic configure script builder
	1.11.6-1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	589k	gcc-tools-epoch2-automake: (gcc-special) a tool for generating GNU-compliant M
	1.0.3-1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6k	gccmakedep: X Makefile dependency tool for GCC
	7.8-2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2,454k	gdb: The GNU Debugger
	Skip	n/a	n/a	24k	gendef: Generates exports definitions by analyzing DLLs.
	Skip	n/a	n/a	1,732k	gettext-devel: GNU Internationalization development utilities
	Skip	n/a	n/a	4,762k	git: Distributed version control system

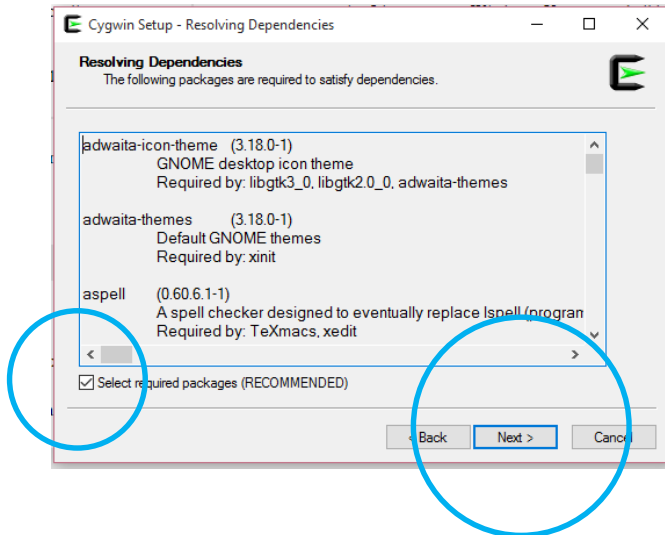
.....

	Skip	n/a	n/a	15k	libvorbis-devel: The Vorbis General Audio Compression Codec (Development)
	Skip	n/a	n/a	111k	libXpm-noX-devel: X.Org X Pixmap library -- no X required (dev)
	Skip	n/a	n/a	1,019k	lokalize: KDE gettext catalog editor
	4.1-1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	414k	make: The GNU version of the 'make' utility
	Skip	n/a	n/a	30k	makedepend: X Makefile dependency tool
	Skip	n/a	n/a	29k	mate-common: Common development files for MATE Desktop packages
	Skip	n/a	n/a	171k	mcpp: C/C++ preprocessor
	Skip	n/a	n/a	1,747k	mercurial: Python based distributed version control system (DVCS)
	Skip	n/a	n/a	5,355k	mingw-binutils: Binutils for MinGW.org Win32 toolchain

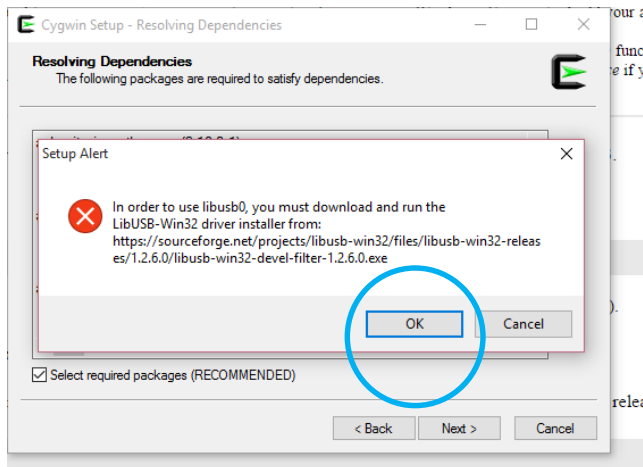
Once you have done this, click Next.



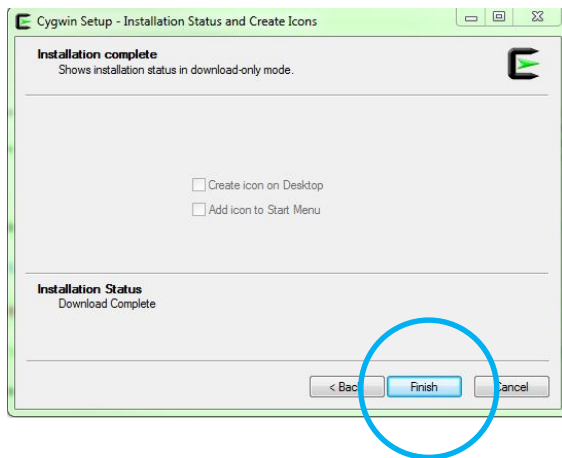
The following page may come up. If so, make sure “Install these packages to meet dependencies” is selected, and click “Next”.



You may get the following pop-up. If so, click ok:



The download will begin, and it usually takes a long time. It could take 10-30 minutes or perhaps more with a fast internet connection. Once it has finished, the following box should come up. Click “Finish.”



2.0 INSTALL CYGWIN

Now, you will need to install Cygwin. You will follow a similar procedure, as before.

Go back to the Cygwin webpage: <http://www.cygwin.com>

From there, click on the link for the installation program. Choose either 32-bit or 64-bit version, depending on your computer. I will assume that you are using a 64-bit computer (which is common for computers purchased within the last few years). See picture on next page.

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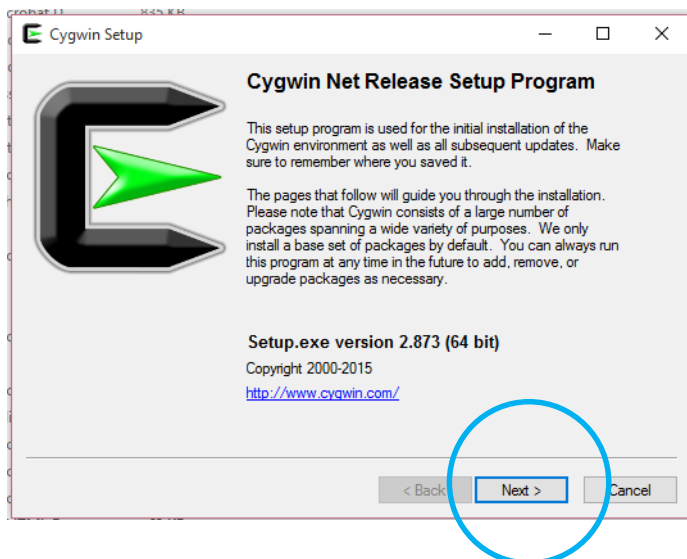
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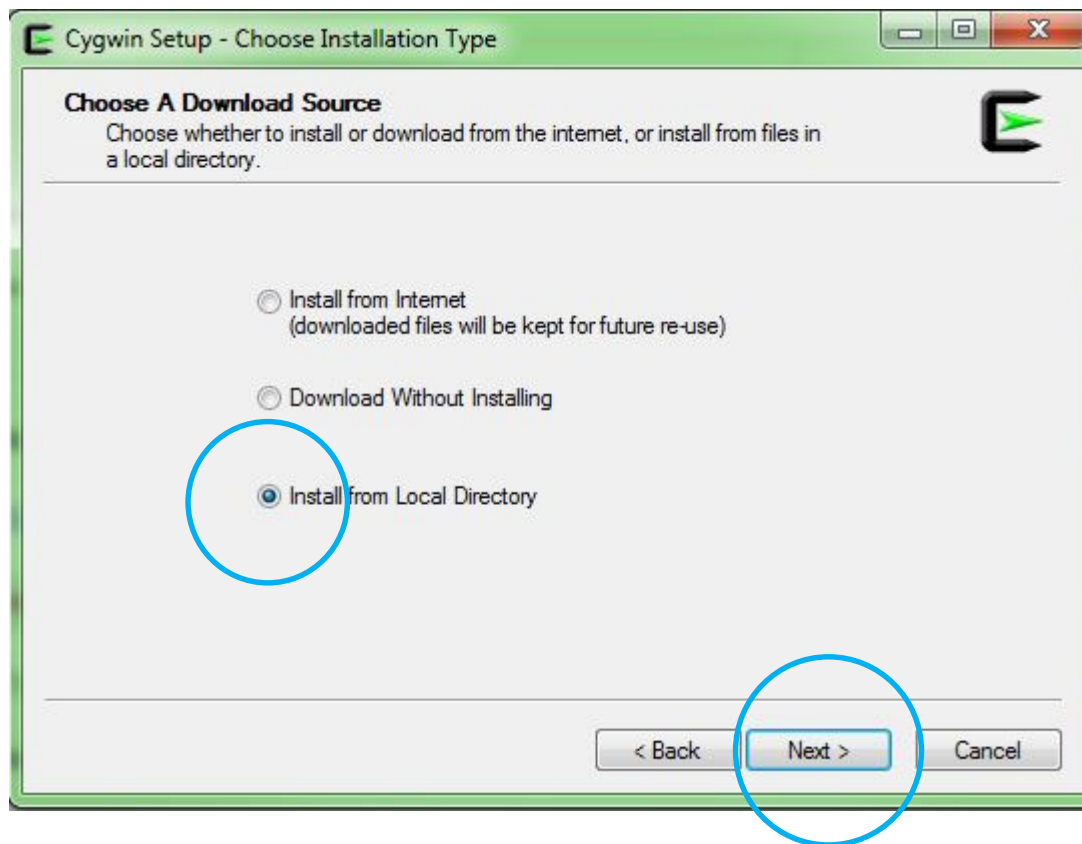
If you are using Internet explorer, you will see a dialog box asking whether you want to run or save the file. Choose Run.



You should see the following pop-up screen. Select Next:



The following should appear. Select “Install from Local Directory” and click “Next.”



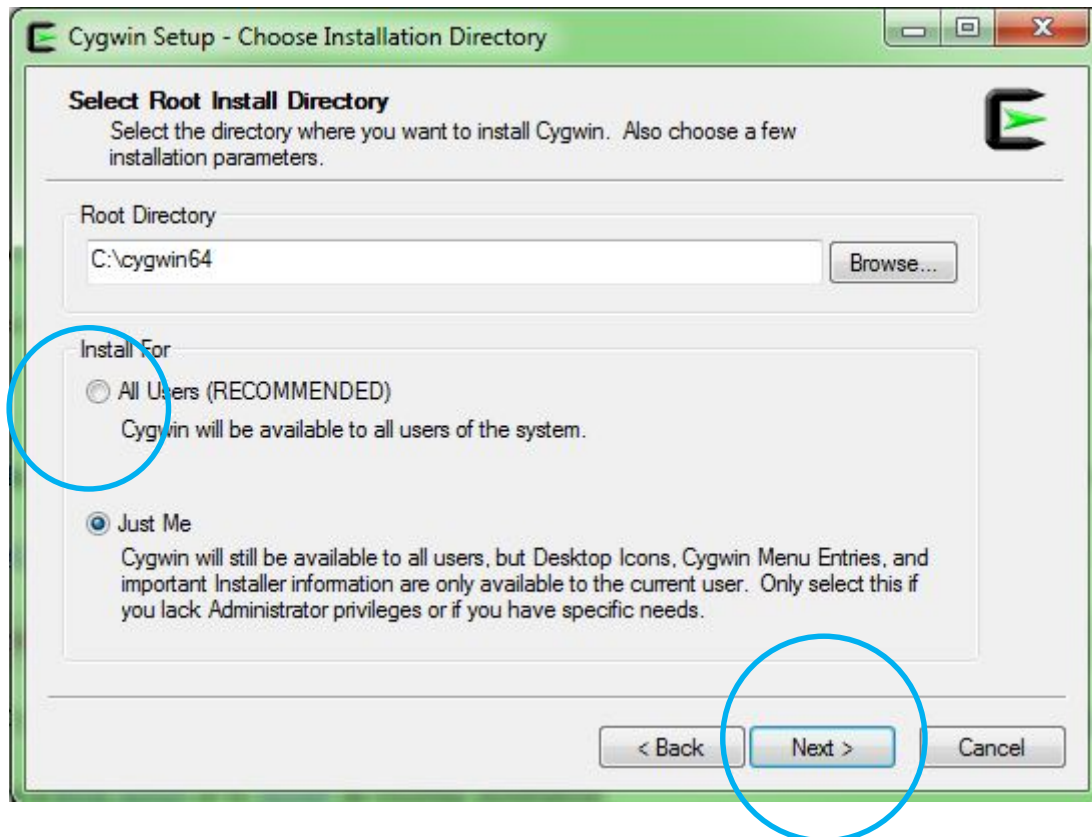
A window will appear that asks which directory to set as the root cygwin directory. This is where cywin will be **installed to**. It **cannot** be the same directory that contains the downloaded files; otherwise, you may have a real mess on your hands.

By default, Cygwin chooses a default directory:

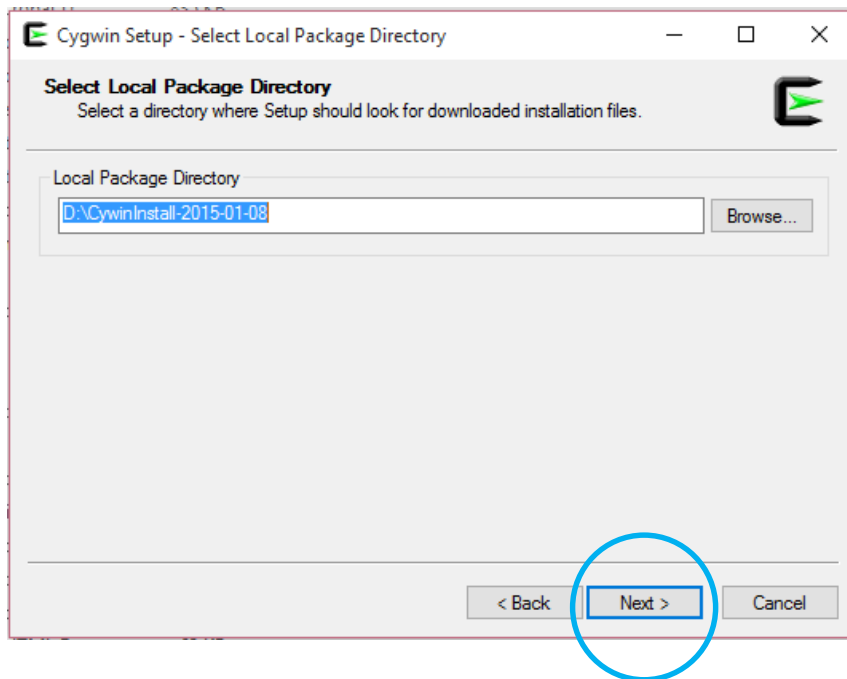
C:\cygwin64 (for the 64-bit version).

You can change the directory, if you would like.

Click “Just Me,” or “All Users”. I prefer “All Users”, but it depends on how you use your machine. Then, click “Next.”



Next, browse for the directory that you downloaded the temporary install files to, and click “Next”.



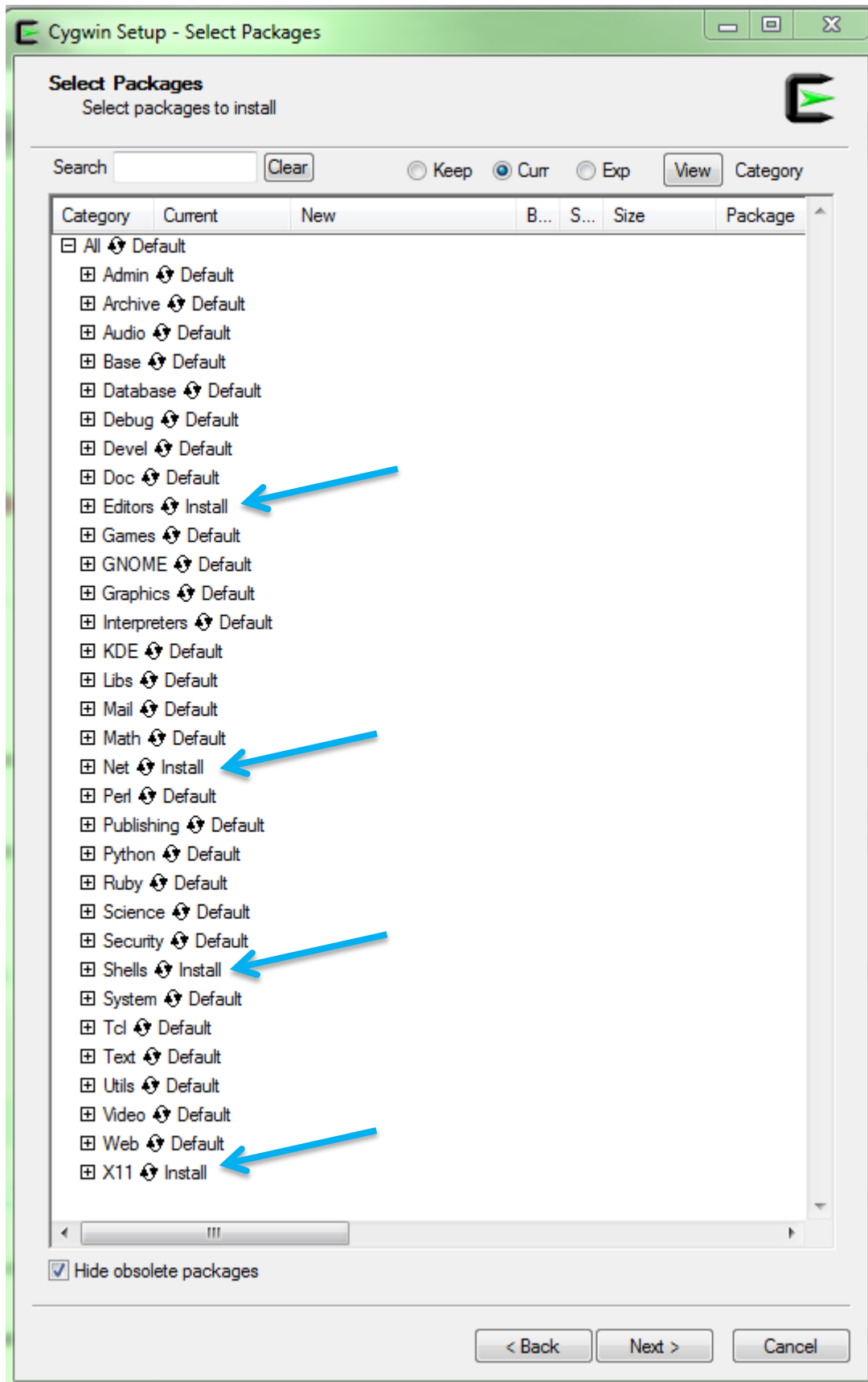
Like before, you will then need to go through and select packages. Same procedure as before.

We need to perform a full install of the following package groups:


Editors, Net, Shells, and X11

Click the word “Default” after each of the above package groups. **Important note:** After you click “Default”, it may appear that nothing happens. If so, just wait a few seconds, and you will see the word change from “Default” to “Install”. This is often where people screw up the install, because they keep clicking.

(See next page)

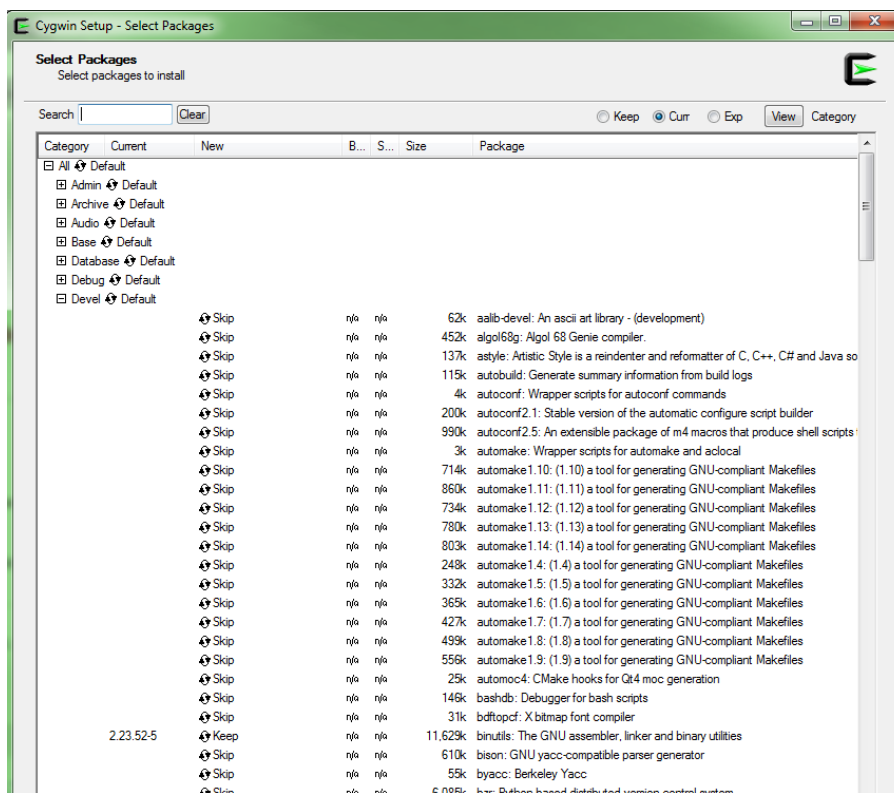


Once, you have made sure **Editors**, **Shells**, **Net**, and **X11** are switched from “Default” to “Install”, we will drop into the **Devel** group to select the sub-packages required for the C-compiler. Click on the “+” before “**Devel**.”



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Once you expand, you should see something like this:

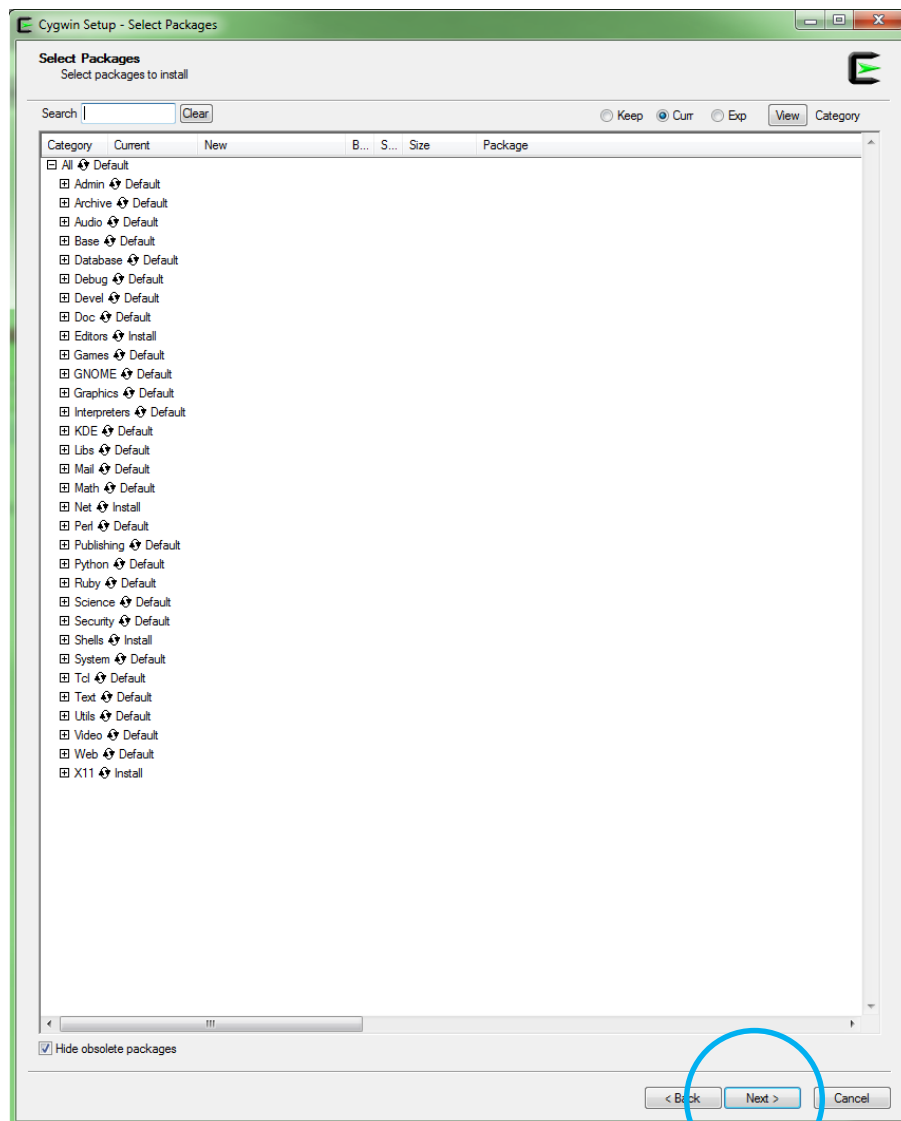


You can add packages by selecting the “Skip” icon, which turns it to something else (maybe a number). In my case, it shows “Keep” because I had already installed these packages.

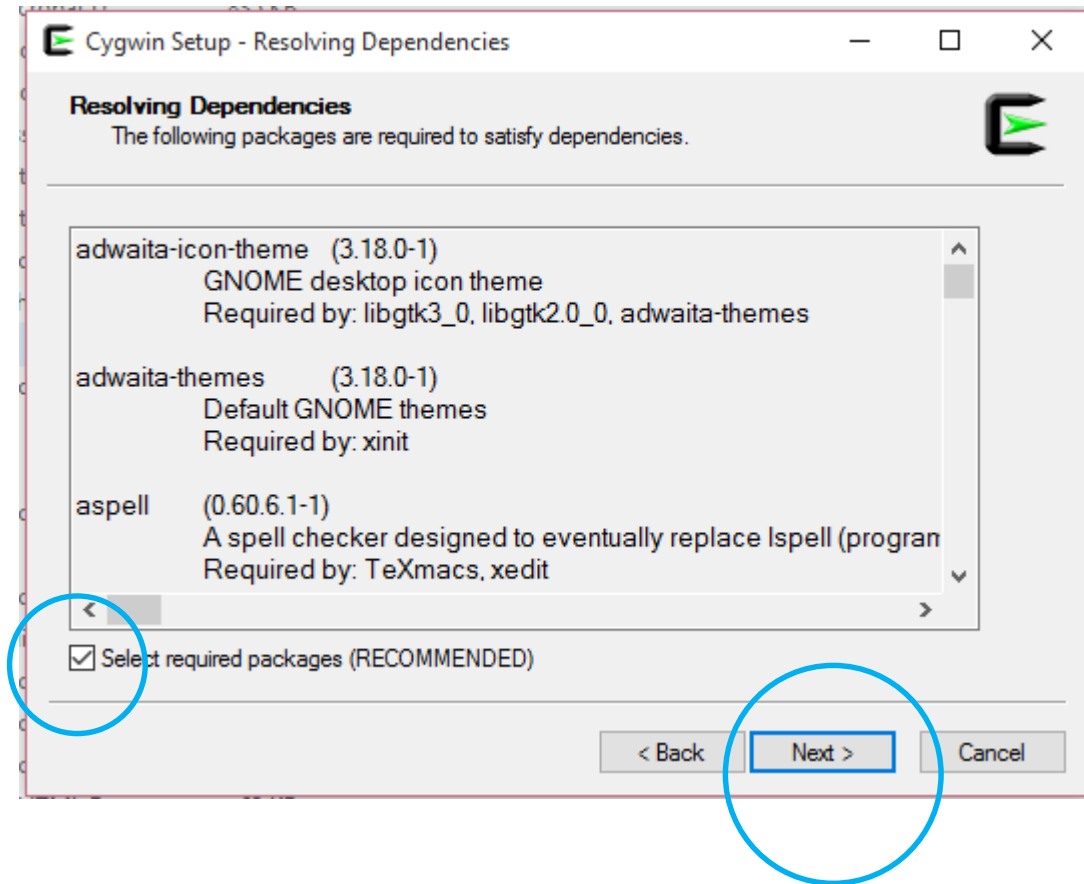
Scroll down and do this for every package that starts with “gcc” (about 10 of them) and “gdb”, and do this for the package called “make.”

		Skip	n/a	n/a	905k	flex: A fast lexical analyzer generator
		Skip	n/a	n/a	2,294k	fossil: DVCS with built-in wiki, http server and issue tracker
4.8.2-1		Keep	n/a	n/a	13,271k	gcc-core: GNU Compiler Collection (C, OpenMP)
4.8.2-1		Keep	n/a	n/a	5,395k	gcc-fortran: GNU Compiler Collection (Fortran)
4.8.2-1		Keep	n/a	n/a	7,365k	gcc-g++: GNU Compiler Collection (C++)
4.8.2-1		Keep	n/a	n/a	4,121k	gcc-objc: GNU Compiler Collection (Objective-C)
4.8.2-1		Keep	n/a	n/a	4,314k	gcc-objc++: GNU Compiler Collection (Objective-C++)
2.59-2		Keep	n/a	n/a	425k	gcc-tools-epoch1-autoconf: (gcc-special) automatic configure script builder
1.9.6-2		Keep	n/a	n/a	419k	gcc-tools-epoch1-automake: (gcc-special) a tool for generating GNU-compla
2.64-2		Keep	n/a	n/a	712k	gcc-tools-epoch2-autoconf: (gcc-special) automatic configure script builder
1.11.6-1		Keep	n/a	n/a	589k	gcc-tools-epoch2-automake: (gcc-special) a tool for generating GNU-compla
1.0.2-1		Keep	n/a	n/a	4k	gccmakedep: X Makefile dependency tool for GCC
7.6.50-4		Keep	n/a	n/a	3,142k	gdb: The GNU Debugger
		Skip	n/a	n/a	24k	gendef: Generates exports definitions by analyzing DLLs.
		Skip	n/a	n/a	2,852k	gettext-devel: GNU Internationalization development utilities
		Skip	n/a	n/a	3,900k	git: Distributed version control system
.....						
		Skip	n/a	n/a	108k	libvala0.20-devel: Compiler for the GObject type system
		Skip	n/a	n/a	1,486k	libvala0.20_0: Compiler for the GObject type system
		Skip	n/a	n/a	16k	libvorbis-devel: The Vorbis General Audio Compression Codec (Development
		Skip	n/a	n/a	36k	libwmf-devel: Windows Metafile library (development)
		Skip	n/a	n/a	111k	libXpm-ppc-devel: X.Org X Pixmap library -- no X required (devel)
4.0-2		4.0-2		n/a	366k	make: The GNU version of the 'make' utility
		Skip	n/a	n/a	30k	makedepend: X Makefile dependency tool
		Skip	n/a	n/a	1,693k	mercurial: Python based distributed version control system (DVCS)
		Skip	n/a	n/a	5,355k	mingw-binutils: Binutils for MinGW.org Win32 toolchain
		Skip	n/a	n/a	519k	mingw-bzip2: Bzip2 for MinGW.org win32 toolchain (util)
		Skip	n/a	n/a	?	mingw-gcc: GNU Compiler Collection
		Skip	n/a	n/a	13,317k	mingw-gcc-core: GNU Compiler Collection (C, OpenMP)

Once you have done this, click Next.

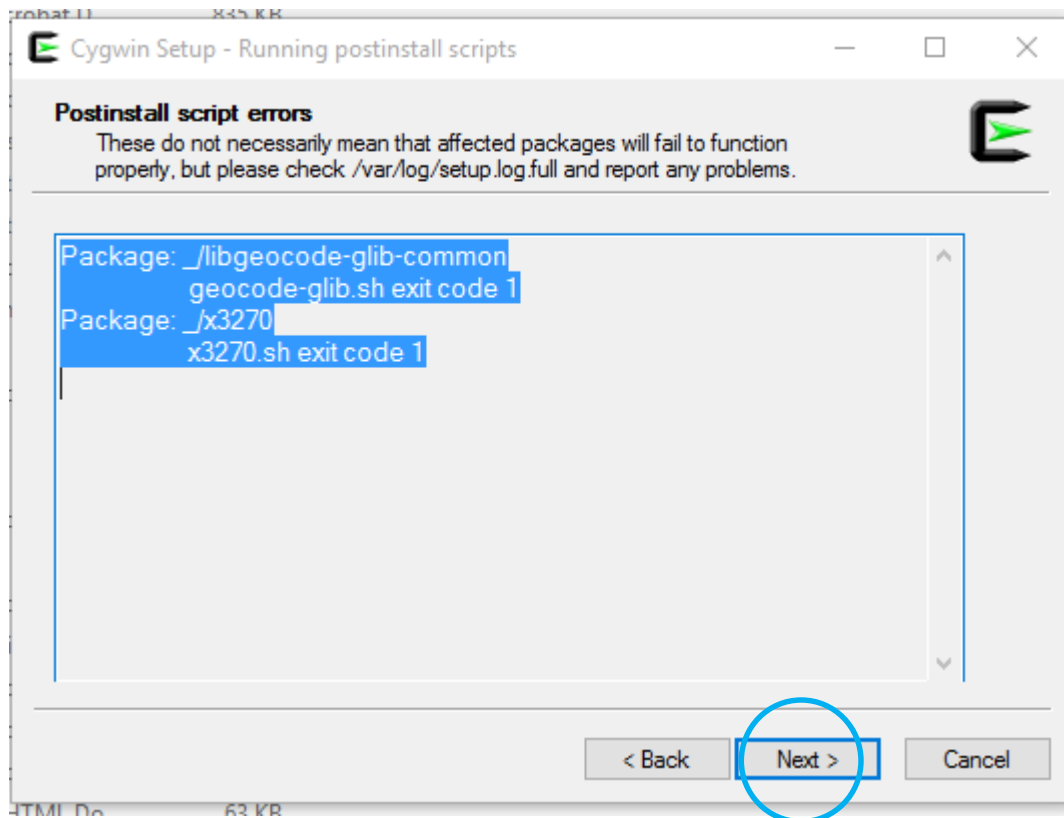


The following page may come up. If so, make sure “Install these packages to meet dependencies” is selected, and click “Next”.

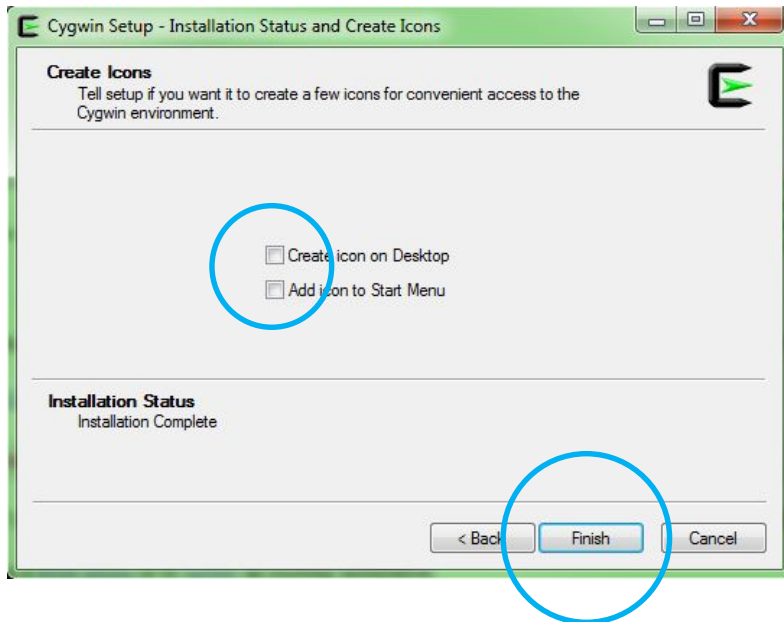


It may take about 30 minutes or so to install Cygwin. Nice time to get a coffee or tea! If you turned your virus protection off, be careful not to download other things or go to suspicious websites while you are waiting!

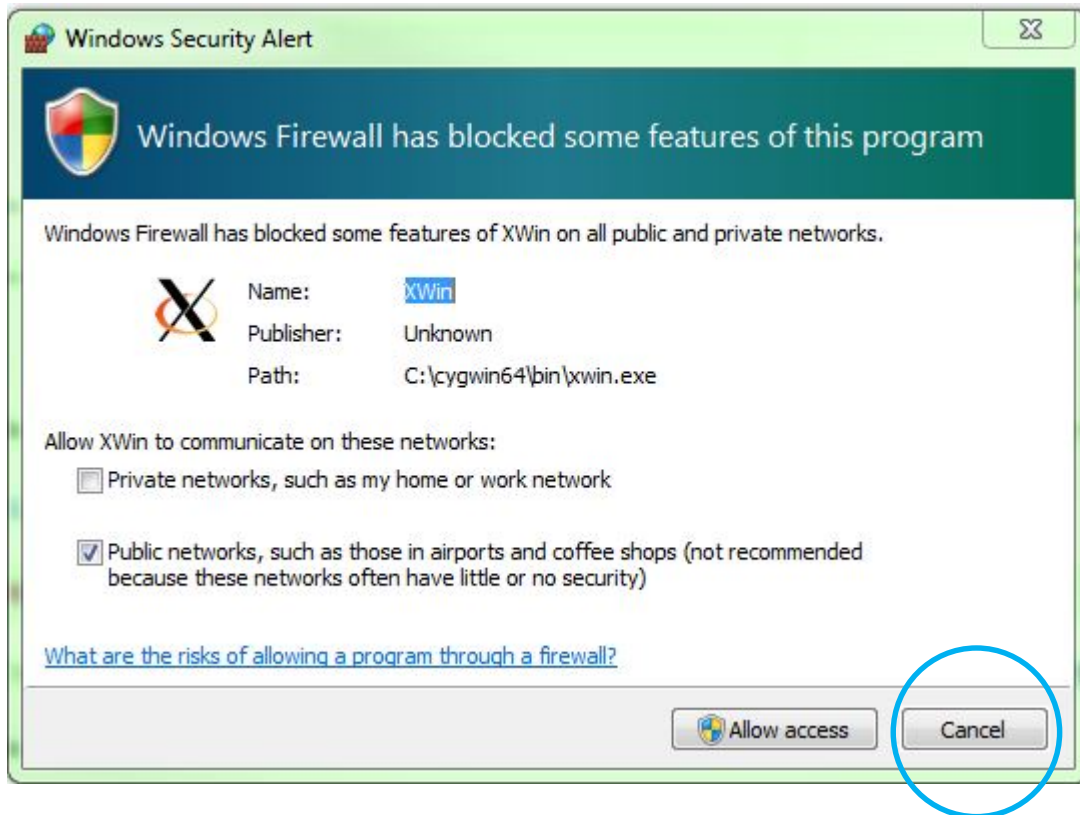
You may get something like this pop-up. If so, just click next (and hope for the best!).



Next, the following page will appear. Unclick “Create icon on Desktop” and click “Finish”. The reason that we don’t want the icon is because it is for the basic Cygwin shell. We will actually be using a different version called “Xwindows”.



The following may appear after you finish the install, or after you try to start Cygwin. I'm not sure what the best practice is for functionality or security, but I typically just click cancel.



Cygwin is now installed. To use Cygwin, one needs to start the “Xwindows environment” by starting the “XWin Server” which will run in the background. The XWin Server should be listed with your other programs from your start Menu (All Programs -> Cygwin-X -> Xwin Server).

Once the Xwin Server is running, you should see its icon in the notification area on the bottom right of your desktop. It is the X with a circle around it.



To open a terminal, right click the icon, and under “Applications”, choose “xterm.”

A new window (called a terminal) should then open. You can open terminals (as many as you’d like).

