User Manual: Markov Approximation Method C++ Library

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This manual explains the installing and use of the Markov Approximation Method C++ Library (MCA++).

Installation

The following installations have been tested only on their counterpart version number (i.e. only on Windows 10, only on Ubuntu 16.04 etc.)

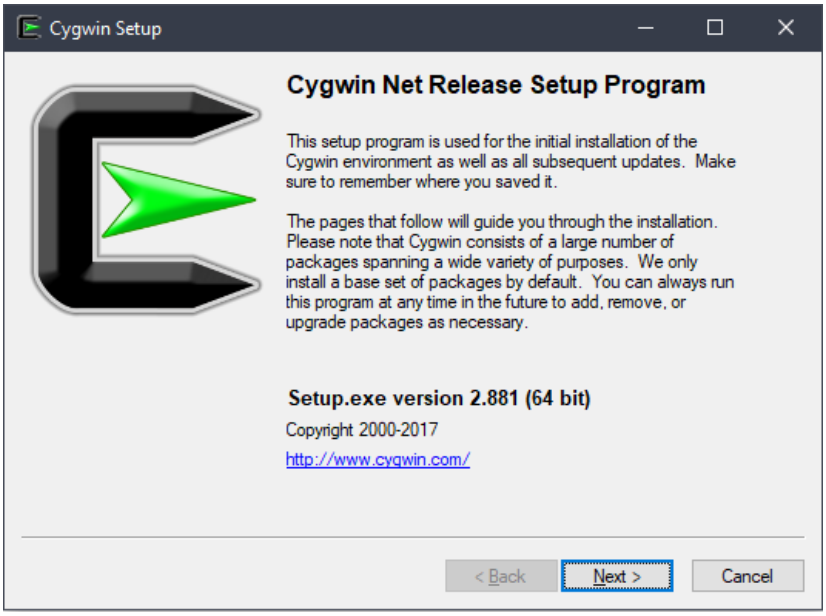
All platforms need the following packages:

- Git (https://git-scm.com/downloads)
- CMake (https://git-scm.com/downloads)
- BLAS (http://www.netlib.org/blas/)
- LAPACK (http://www.netlib.org/lapack/)

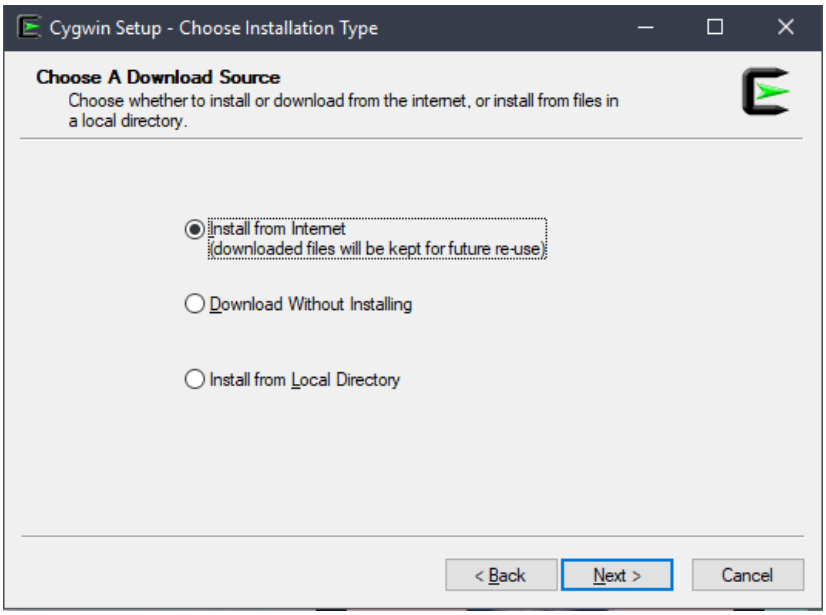
For Windows 10:

To install the necessary files, you will need Cygwin (https://www.cygwin.com/install.html)

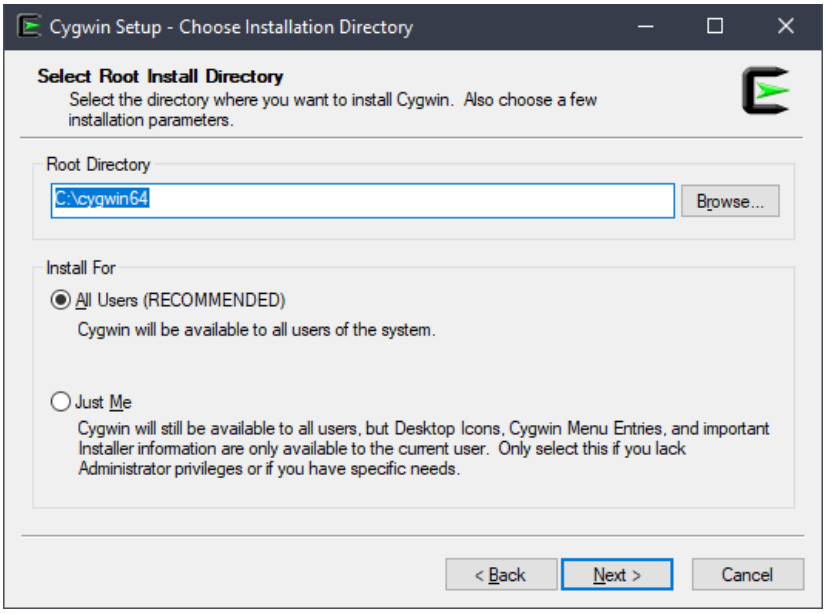
- When you open the setup you will have something like this. Click Next.



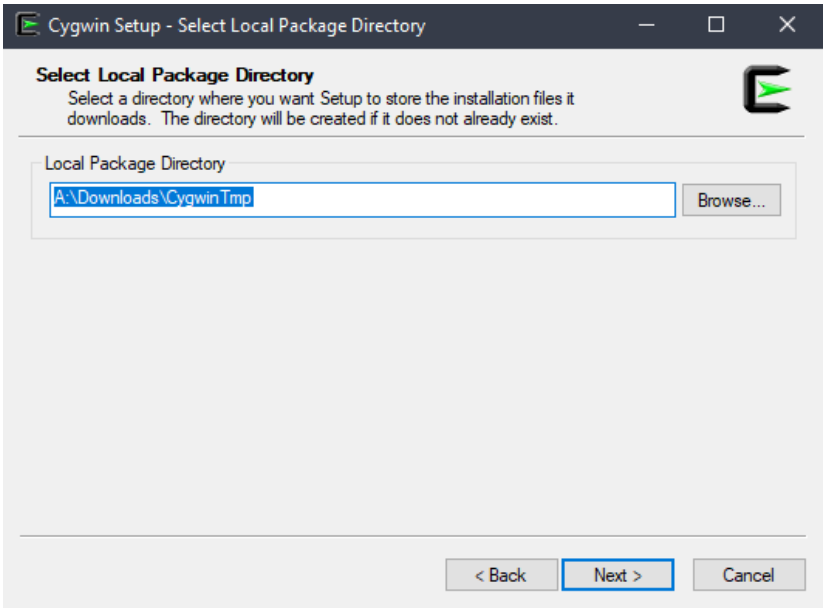
- In the Cygwin installation, choose the download source 'Install from Internet'. Click Next.



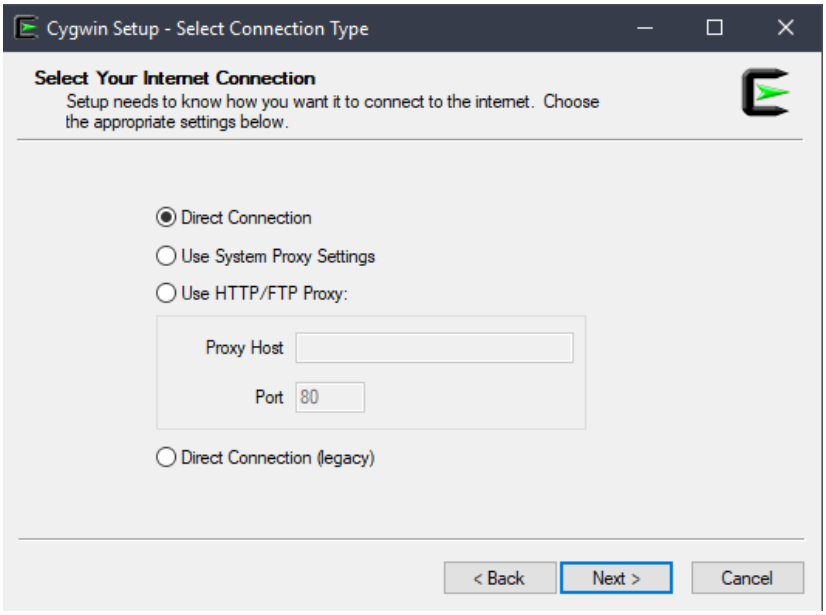
- Select the root directory where you want to install it (and remember this as you may have to add it to your PATH variable later). Click Next.



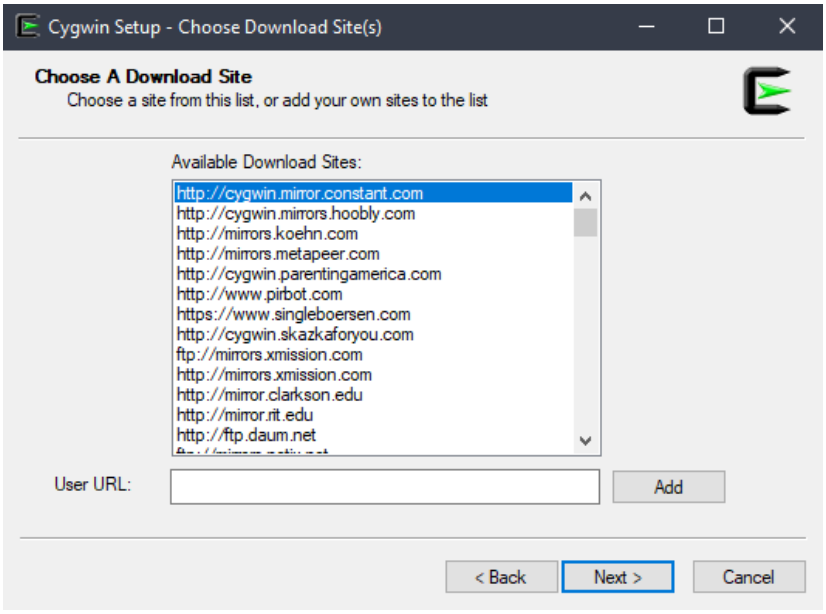
- Select a location to place the temporary downloads (the temporary downloads can be deleted after installation is complete, best to pick somewhere where you will remember to clear it later)



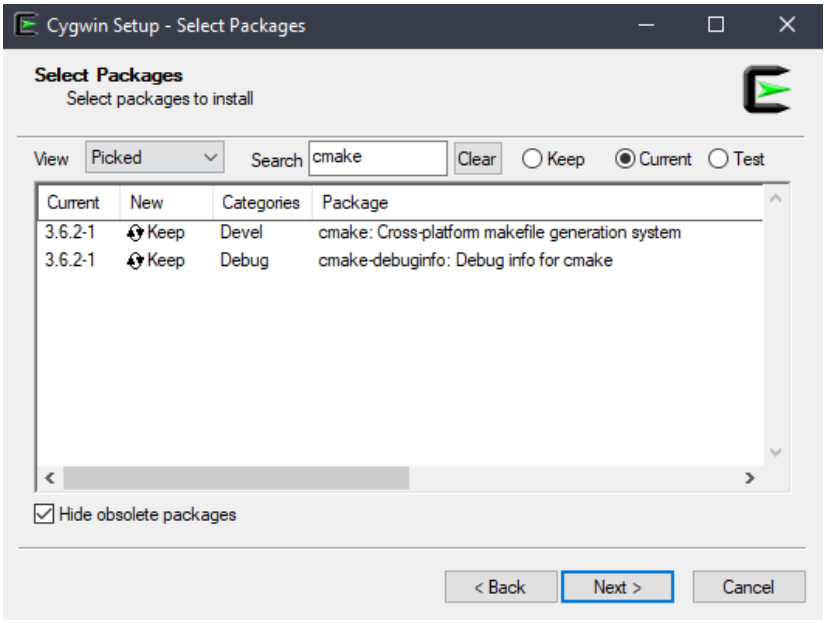
- If you have a proxy to use you can enter those details now, else just leave it as Direct Connection.



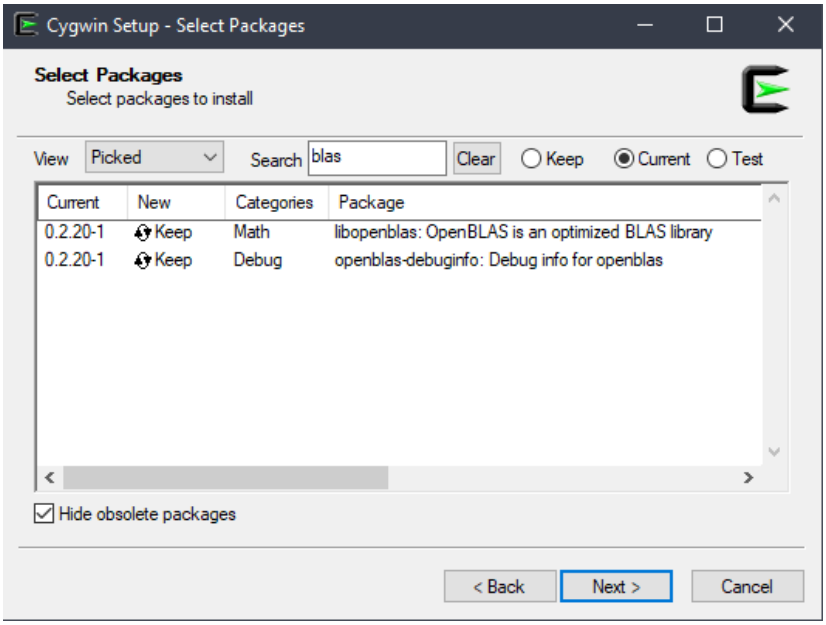
- There are a bunch of different mirrors (or download locations) to choose from, but the only real difference between them is speed and security (due to protocols being used). The most secure are obviously the https, and least secure are ftp. The first one on the list is probably the most reliable.



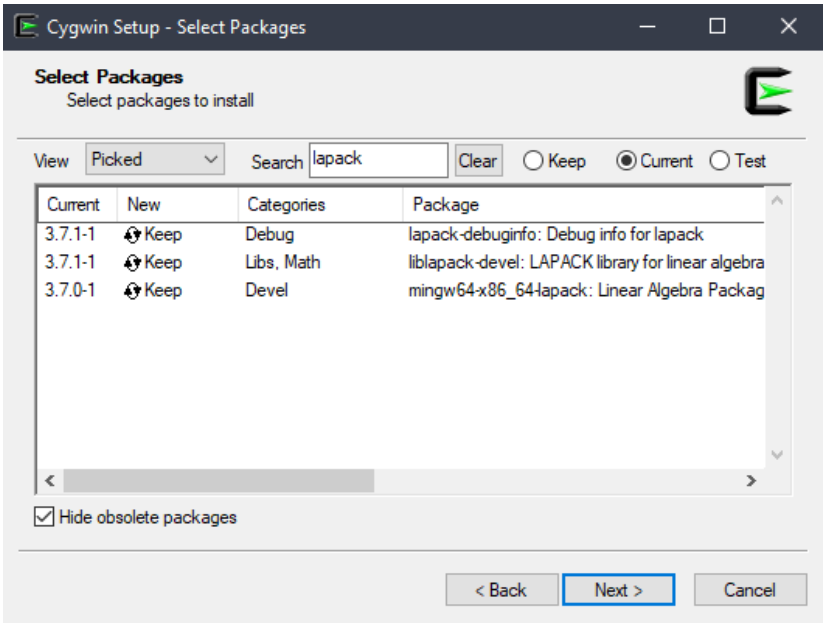
- At the next section, you will be selecting different packages, but don't click the Next button until all packages have been selected. If you forget a package just repeat all processes (because this is how you install new packages to Cygwin anyways)



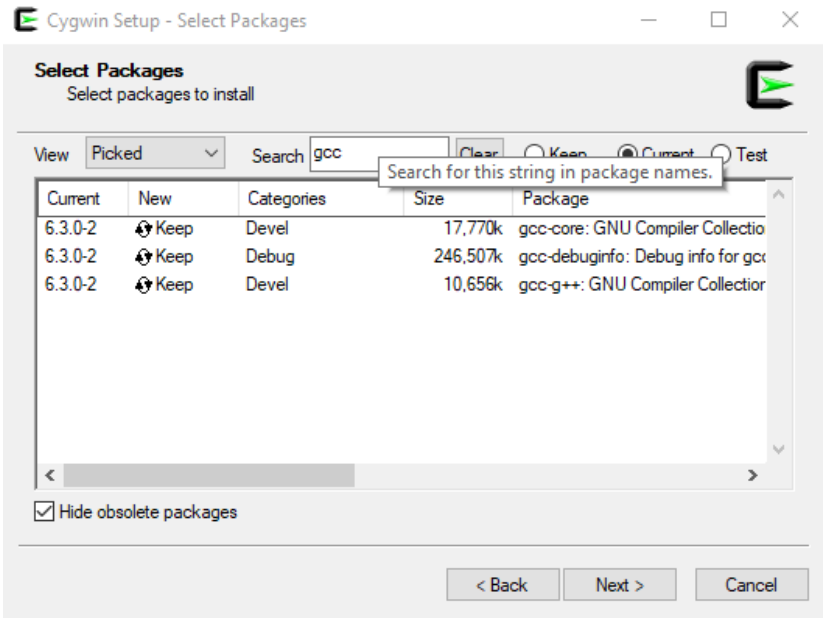
- You need cmake (the cmake-debuginfo is pretty handy too but not necessary). The version you get of cmake may be different, just get the latest version as cmake is backwards compatible. Also note that mine all say “Keep” under the New tab since I already had these packages installed at the time of making this user manual.



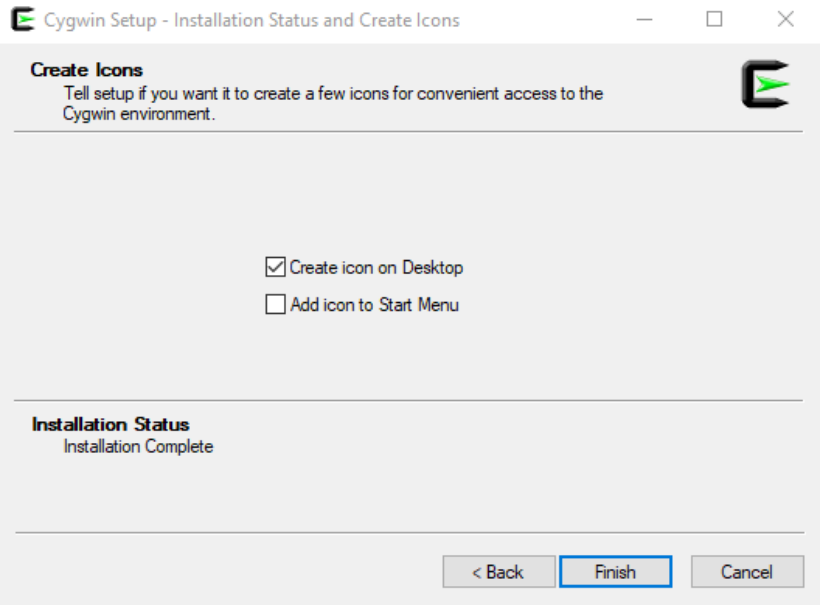
- You need the libopenblas package



- You need the liblapack package. You don't need the mingw version unless you are using MinGW (which is not covered by this user manual)



- You need the gcc, gcc-g++ and gcc-debuginfo packages
- Finally click Next and it will have another screen summarising the components to be installed (including their prerequisite parts), click Next.



- Assuming you didn't have any firewall or permission issues, you should finish with this

MacOS

TODO

Ubuntu 16.04

TODO

The results from the script examples are stored in '.dat' files which can be opened and viewed using Gnuplot (http://www.gnuplot.info/download.html)

To install Gnuplot on Windows: Go to the above download page and click 'Primary download site on SourceForge'. Then on SourceForge click the link next to the "Looking for the latest version?". This will give you the latest installer. Open installer. When you get to the 'Select Additional Tasks' page, under 'Select gnuplot's default terminal:' choose windows. Then follow through with the installation.

To see script results on Windows: In your Cygwin terminal,