

Installing resources for native-compiled npm modules (e.g. npm mongodb module)

- Some modules require native compilation (they must be compiled once downloaded)
- Typically this involves having a C++ compiler, Python 2.7.x compiler and the npm global utility node-gyp.
- Here I go through the steps I used to set up my laptop to be able to use the latest npm mongodb driver by having the required resources to compile the code.

Components needed

- For install on Windows 8.1 machine.
- Visual Studio 2013
- Microsoft Windows 7 SDK
- Python 2.7.x
- npm node-gyp

Components needed npm node-gyp modules at:

<https://www.npmjs.com/package/node-gyp>

- On Windows:
 - **Python** (**v2.7.3** recommended, v3.x.x is **not** supported)
 - Make sure that you have a PYTHON environment variable, and it is set to drive:\path\to\python.exe not to a folder
 - Windows XP/Vista/7:
 - Microsoft Visual Studio C++ 2013 (**Express** version works well)
 - If the install fails, try uninstalling any C++ 2010 x64&x86 Redistributable that you have installed first
 - If you get errors that the 64-bit compilers are not installed you may also need the **compiler update for the Windows SDK 7.1**
 - Windows 7/8:
 - Microsoft Visual Studio C++ 2013 for Windows Desktop (**Express** version works well)
 - All Windows Versions
 - For 64-bit builds of node and native modules you will **also** need the **Windows 7 64-bit SDK**
 - You may need to run one of the following commands if your build complains about WindowsSDKDir not being set, and you are sure you have already installed the SDK:

```
call "C:\Program Files\Microsoft SDKs\Windows\v7.1\bin\Setenv.c
call "C:\Program Files\Microsoft SDKs\Windows\v7.1\bin\Setenv.c
```

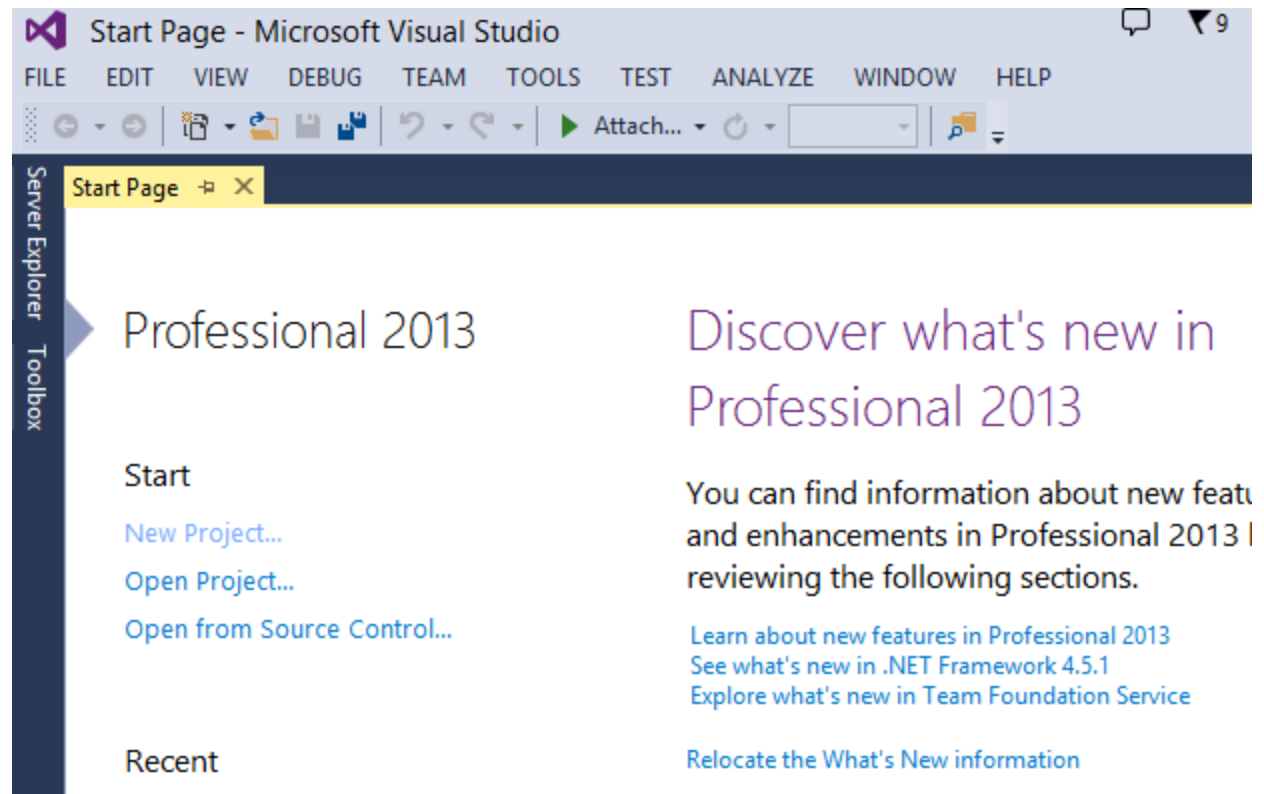


For linux, and Mac (not used here as we are doing Windows 8.1 example)

- On Unix:
 - `python` (v2.7 recommended, v3.x.x is **not** supported)
 - `make`
 - A proper C/C++ compiler toolchain, like **GCC**
- On Mac OS X:
 - `python` (v2.7 recommended, v3.x.x is **not** supported) (already installed on Mac OS X)
 - **Xcode**
 - You also need to install the Command Line Tools via Xcode. You can find this under the menu Xcode -> Preferences -> Downloads
 - This step will install `gcc` and the related toolchain containing `make`

Installing Microsoft Visual Studio 2013.

- Software obtained from MSDN (Dreamspark) downloads available to all student.
- Product has lic key which is required after 30 day trial period expires.

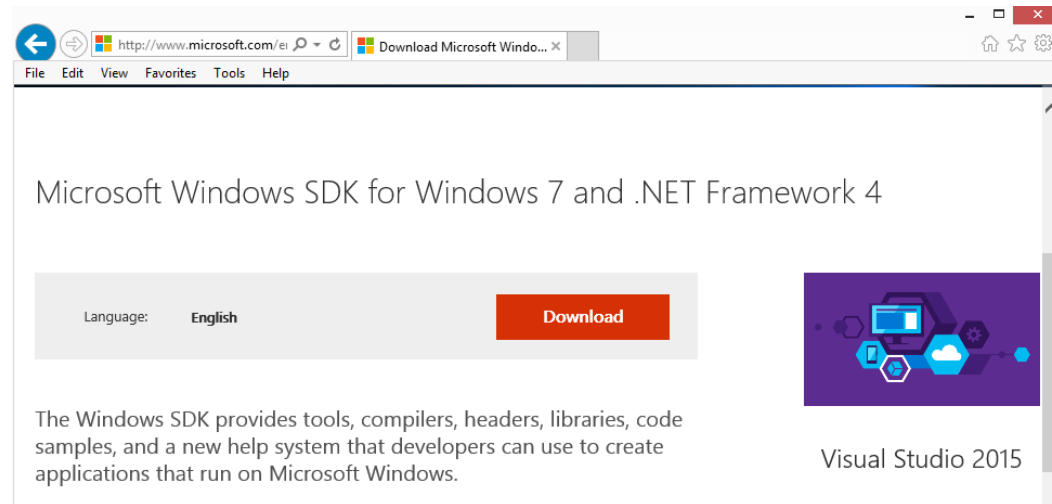


Installing Windows 7 SDK on Windows 8.1 machine

- Notes
- Obtained from:
<http://www.microsoft.com/en-us/download/details.aspx?id=8279>
- I had to remove Visual Studio 2010 redistributable using control panel in order to be able to install Windows 7 SDK.
- (Presumably because the version I had was more recent than the one it was trying to install)
- Alternatively, one should be able to "uncheck" the installation of the VS 2010 redistributable.

Installing Windows 7 SDK on Windows 8.1

- Obtained from:
<http://www.microsoft.com/en-us/download/details.aspx?id=8279>
- I had to remove Visual Studio 2010 redistributable using control panel in order to be able to install Windows 7 SDK.(Presumably because the version I had was more recent than the one it was trying to install)
- Alternatively, one should be able to "uncheck" the installation of the VS 2010 redistributable.



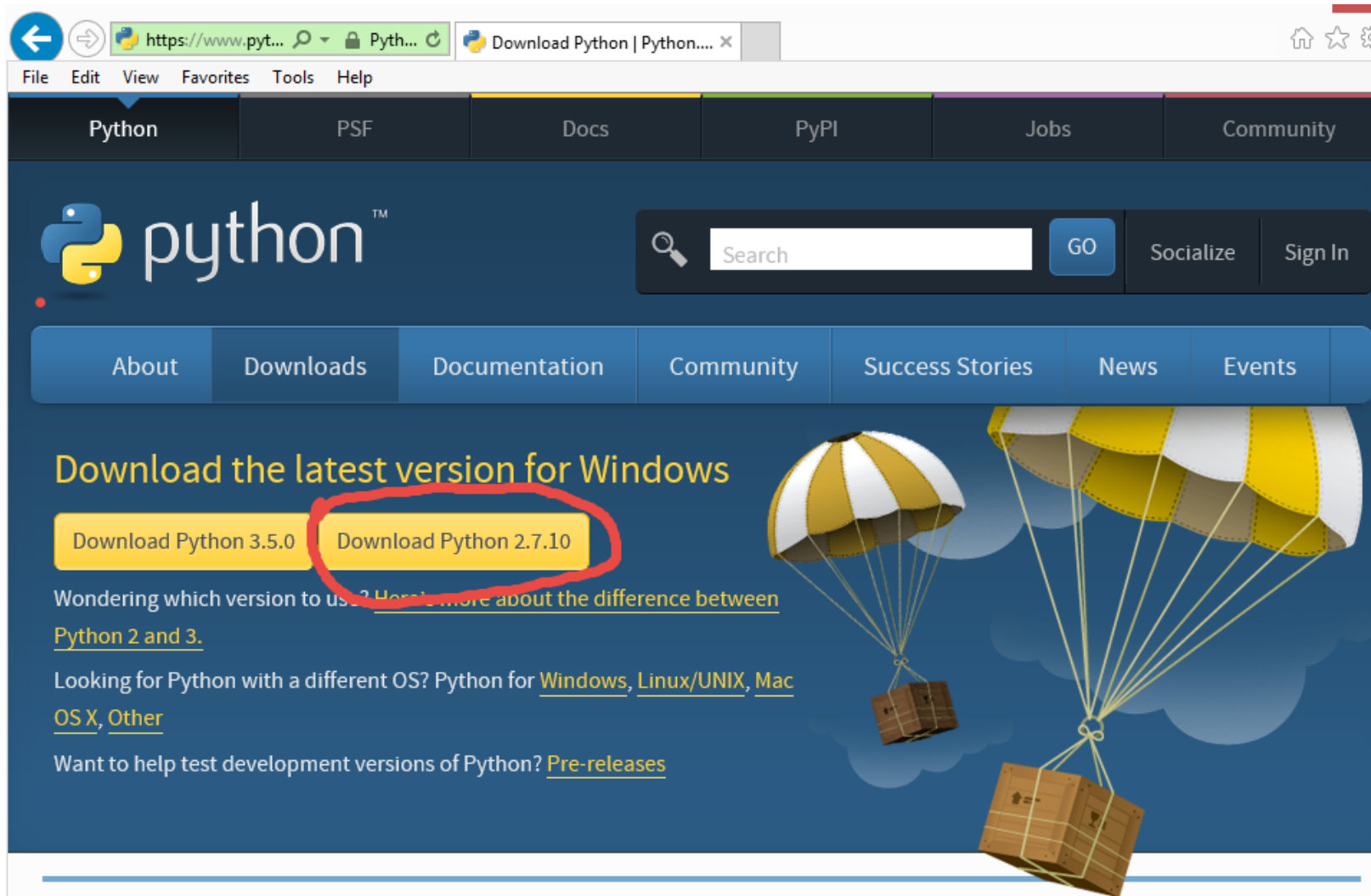
Installing

Python 2.7.X on Windows 8.1

Windows 7 SDK on Windows 8.1

Note Python 3.x is not considered compatible

Install Python 2.7.X on Windows 8.1



Installing Python2.7.x on Windows 8.1

- From <https://www.python.org/download/releases/2.7.6> download appropriate Python 2.7.6 Windows Installer.
- Run the file
- Select install for all users or install just for me, click Next
- You'll see it installs under the C:\Python27 folder, click Next
- Click Next again for the 'Customize Python' step
- Click Finish
- Open Control Panel, then System
- Click 'Advanced system settings' on the left
- Click the 'Environment Variables' button
- Under 'System variables' click the variable called 'Path' then the 'Edit...' button. (This will set it for all users, you could instead choose to edit the User variables to just set python as a command prompt command for the current user)
- Without deleting any other text, add C:\Python27; (include the semi-colon) to the beginning of the 'Variable value' and click OK.
- Click OK on the 'Environment Variables' window.

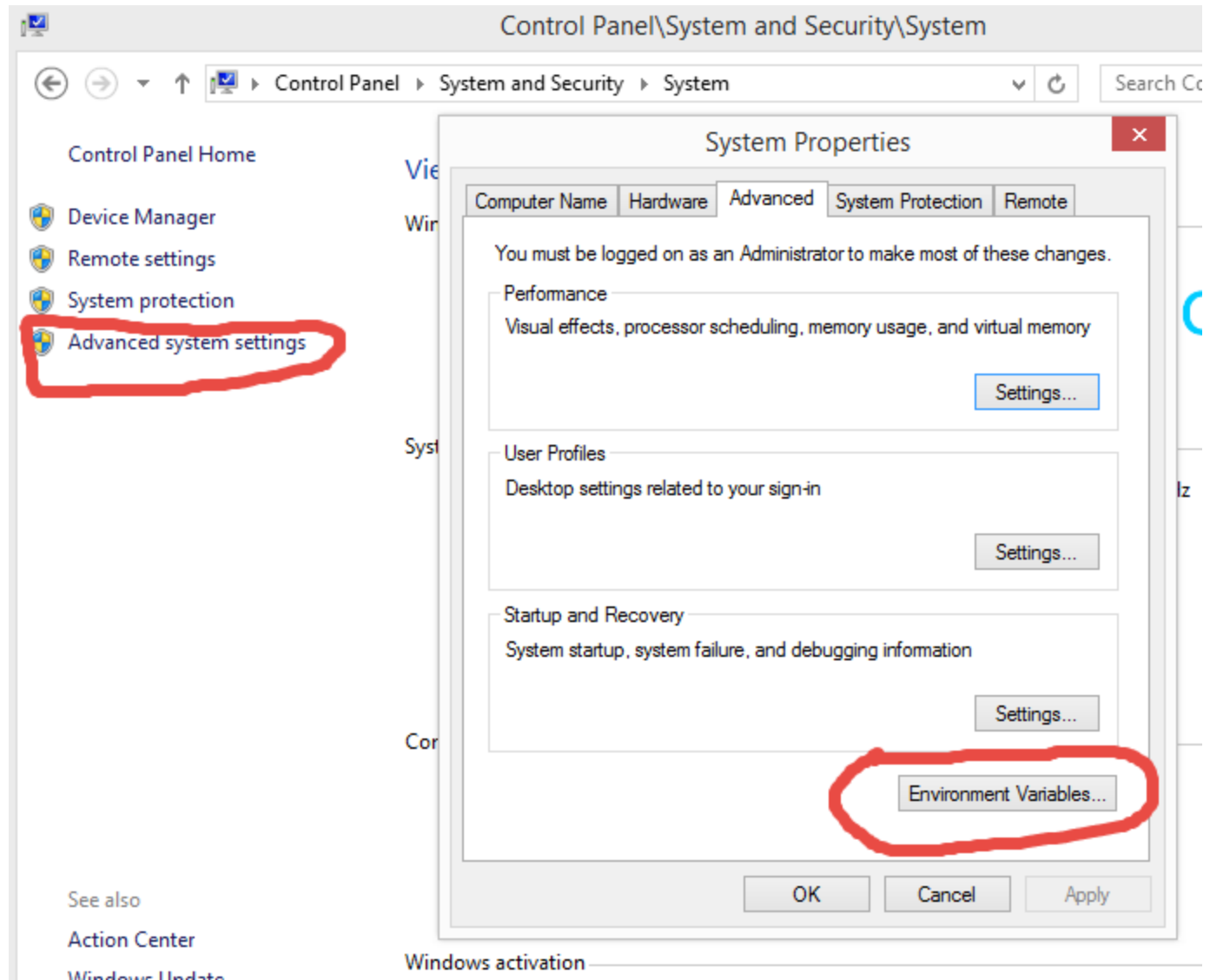
Components needed npm node-gyp modules at: <https://www.npmjs.com/package/node-gyp>

- On Windows:
 - **Python** (v2.7.3 recommended, v3.x.x is **not** supported)
 - Make sure that you have a PYTHON environment variable, and it is set to drive:\path\to\python.exe not to a folder
 - Windows XP/Vista/7:
 - Microsoft Visual Studio C++ 2013 (**Express** version works well)
 - If the install fails, try uninstalling any C++ 2010 x64&x86 Redistributable that you have installed first
 - If you get errors that the 64-bit compilers are not installed you may also need the **compiler update for the Windows SDK 7.1**
 - Windows 7/8:
 - Microsoft Visual Studio C++ 2013 for Windows Desktop (**Express** version works well)
 - All Windows Versions
 - For 64-bit builds of node and native modules you will **also** need the **Windows 7 64-bit SDK**
 - You may need to run one of the following commands if your build complains about WindowsSDKDir not being set, and you are sure you have already installed the SDK:

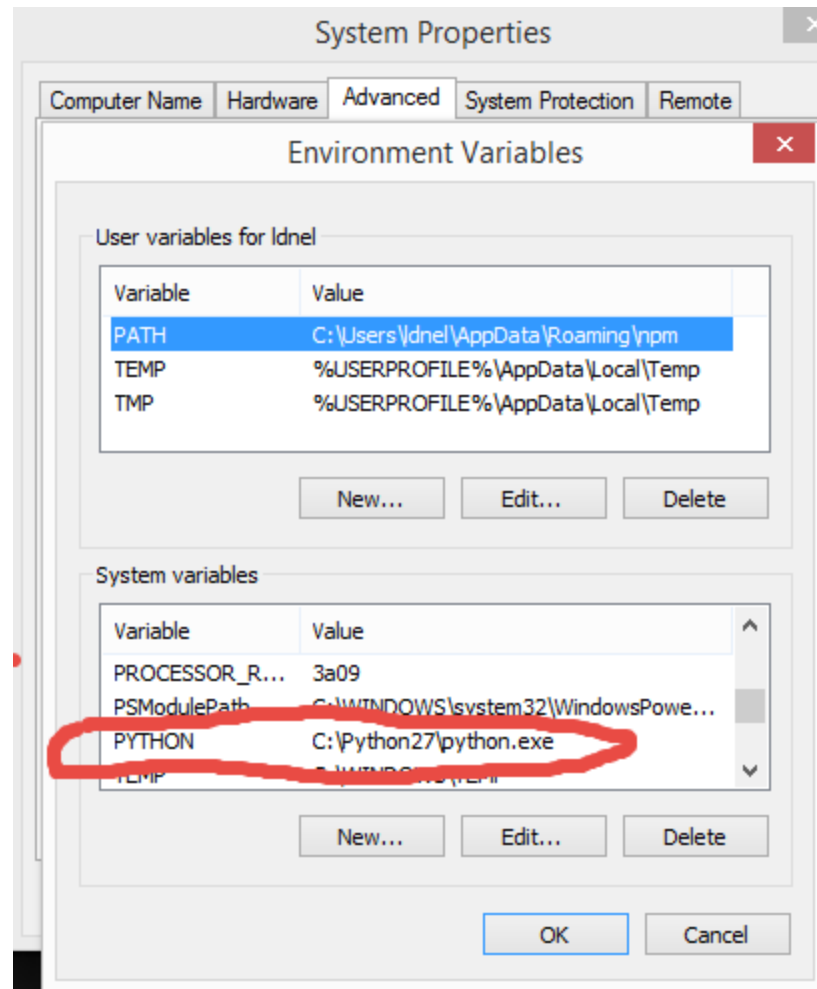
```
call "C:\Program Files\Microsoft SDKs\Windows\v7.1\bin\Setenv.c
call "C:\Program Files\Microsoft SDKs\Windows\v7.1\bin\Setenv.c
```



Set paths for Python



Set paths for Python



Installing npm node-gyp module

This is the utility that builds (compiles) native npm modules by invoking the necessary installed compilers.

(Make sure to install node-gyp with `-g` option)

```
npm install -g node-gyp
```

npm install -g node-gyp

```
c:\>npm install -g node-gyp
C:\Users\ldnel\AppData\Roaming\npm\node-gyp -> C:\Users\ldnel\AppData\Roaming\npm\node_modules\node-gyp\bin\node-gyp.js
node-gyp@3.1.0 C:\Users\ldnel\AppData\Roaming\npm\node_modules\node-gyp
├── graceful-fs@4.1.2
├── semver@5.0.3
├── fstream@1.0.8 (inherits@2.0.1)
├── nopt@3.0.6 (abbrev@1.0.7)
├── osenv@0.1.3 (os-tmpdir@1.0.1, os-homedir@1.0.1)
├── tar@2.2.1 (inherits@2.0.1, block-stream@0.0.8)
├── mkdirp@0.5.1 (minimist@0.0.8)
├── minimatch@1.0.0 (sigmund@1.0.1, lru-cache@2.7.0)
├── path-array@1.0.0 (array-index@0.1.1)
├── which@1.2.0 (is-absolute@0.1.7)
├── glob@4.5.3 (inherits@2.0.1, inflight@1.0.4, once@1.3.2, minimatch@2.0.10)
├── rimraf@2.4.3 (glob@5.0.15)
├── npmlog@1.2.1 (ansi@0.3.0, are-we-there-yet@1.0.4, gauge@1.2.2)
├── request@2.65.0 (aws-sign2@0.6.0, forever-agent@0.6.1, caseless@0.11.0, string_decoder@0.0.5, oauth-sign@0.8.0, tunnel-agent@0.4.1, isstream@0.1.2, json-stringify-safe@5.0.1, extend@3.0.0, node-uuid@1.4.7, qs@5.2.0, tough-cookie@2.2.1, combined-stream@1.0.5, http-signature@0.11.0, mime-types@2.1.7, form-data@1.0.0-rc3, bl@1.0.0, hawk@3.1.1, har-validator@2.0.2)
c:\>
```

Finally ready to install the npm mongodb driver

```
npm install mongodb
```

```
> npm install mongodb
npm WARN package.json mongodb_access@1.0.0 No description
npm WARN package.json mongodb_access@1.0.0 No repository field.
npm WARN package.json mongodb_access@1.0.0 No README data
/
> bson@0.2.22 install C:\Carleton\2406fall2015\tutorials\Tutorial08 -Native NPM
compile\demo_code\node_modules\mongodb\node_modules\bson
> (node-gyp rebuild 2> builderror.log) || (exit 0)

> if not defined npm_config_node_gyp (node "C:\Program Files\nodejs\node_modules\npm\bin\node-gyp-bin\..\..\node_modules\node-gyp\bin\node-gyp.js" rebuild ) else (node rebuild )
^CTerminate batch job (Y/N)? y
>
```

I had to manually terminate the batch job which is probably trying to rebuild node, However the mongodb driver did install.

After this I was able to do tutorial 08 with the latest npm mongodb driver

If any of you have corrections or other suggestions for setting up a native compile environment for (Windows, Unix, Mac) please email me your procedures or corrections and I can post them for others to benefit from.

ldnel@scs.carleton.ca