***How to build FreeFalcon6 source code***

* **Do not try to outsmart this guide. All instructions are there for a reason.**
* **The order of installation is crucial to the success of the entire process!**
* **This guide assumes a PC with Windows 8.1. If you have a different OS, slight changes may apply.**
* **This guide assumes your PC is not used for other development work, otherwise be careful.**
* **This guide assumes installation of Microsoft Visual Studio 2010 Ultimate. Other versions are different.**
* **Whenever you are instructed to choose an installation folder, do not select a deep or a long path.**
* **This is proven to cause the sim to crash!!!**

1. Before installing anything new, you must uninstall all related previous components. If your PC doesn’t have some or none of those components, it’s OK.
   1. Restart your computer. When it loads again, do not run any development related program.
   2. Put your **Visual Studio** disk in your optical drive or mount the image.
2. Go to **Control Panel – Programs and Features.** Uninstall all versions of the following programs:
   1. **GitHub**.
   2. **WiX Toolset**.
   3. **Microsoft Visual Studio 2010 Service Pack 1**.
   4. **Microsoft Visual Studio 2010 Ultimate - ENU**.
   5. **DirectX 8.1 SDK**.
   6. All **Microsoft Visual Studio** components.
   7. All **Microsoft Visual C++2010** components.
   8. **Microsoft Windows SDK for Windows 7 (7.1)**.
   9. **Web Deployment Tool**.
   10. **WCF RIA Services**.
   11. **Microsoft Visual F#**.
   12. All **Microsoft Sync** components.
   13. All **Microsoft Silverlight SDK** components.
   14. **Microsoft Team Foundation Server**.
   15. **Microsoft Help Viewer**.
   16. **Application Verifier**.
   17. **Debugging Tools for Windows**.
   18. **Dotfuscator Software Services - Community Edition**.
   19. **FreeFalcon6**.
   20. All **Microsoft ASP.NET** components.
   21. **Microsoft Windows Performance Toolkit**.
   22. All **Visual Studio** components.
   23. Restart your computer.
3. Make sure you can see **hidden** and **system** files, including protected operating system files. Browse into all folders of your drive **C:** and delete any remaining files and folders of the above programs. This list is partial and assumes default installation paths.
   1. Your **GitHub** repository.
   2. **C:\Program Files\Common Files\microsoft shared\VS7Debug**
   3. **C:\Program Files\Microsoft Help Viewer**
   4. **C:\Program Files (x86)\Common Files\Microsoft Shared\VS7Debug**
   5. **C:\Program Files (x86)\Common Files\Microsoft Shared\VsDeploy**
   6. **C:\Program Files (x86)\Common Files\Microsoft Shared\VSTA**
   7. **C:\Program Files (x86)\Common Files\Microsoft Shared\VSTO**
   8. **C:\Program Files (x86)\Microsoft SDKs.**
   9. **C:\Program Files (x86)\Microsoft Visual Studio 10.0**
   10. **C:\ProgramData\Microsoft\HelpLibrary**
   11. **C:\ProgramData\Microsoft\VisualStudio**
   12. **C:\ProgramData\Microsoft\VSA**
   13. **C:\ProgramData\Microsoft Visual Studio**
   14. **C:\Users\**YourUserName**\.ssh**
   15. **C:\Users\**YourUserName**\AppData\Local\GitHub**
   16. **C:\Users\**YourUserName**\AppData\Local\Microsoft\HelpLibrary**
   17. **C:\Users\**YourUserName**\AppData\Local\Microsoft\MSBuild**
   18. **C:\Users\**YourUserName**\AppData\Local\Microsoft\VisualStudio**
   19. **C:\Users\**YourUserName**\AppData\Local\Microsoft\VSA**
   20. **C:\Users\**YourUserName**\AppData\Local\Microsoft\VSCommon**
   21. **C:\Users\**YourUserName**\AppData\Local\Team Foundation**
   22. **C:\Users\**YourUserName**\AppData\Roaming\GitHub**
   23. **C:\Users\**YourUserName**\AppData\Roaming\Microsoft\VisualStudio**
   24. **C:\Users\**YourUserName**\AppData\Roaming\Microsoft\VSA**
   25. **C:\Users\**YourUserName**\Documents\GitHub**
   26. **C:\Users\**YourUserName**\Documents\Visual Studio 2008**
   27. **C:\Users\**YourUserName**\Documents\Visual Studio 2010**
   28. **C:\Users\**YourUserName**\.gitconfig**
   29. **C:\Users\Default\AppData\Local\Microsoft\VisualStudio**
   30. **C:\Users\Default\AppData\Local\Microsoft\VSA**
   31. **C:\Users\Default\AppData\Roaming\Microsoft\VisualStudio**
   32. **C:\Users\Default\AppData\Roaming\Microsoft\VSA**
   33. **C:\Users\Default\Documents\Visual Studio 2008**
   34. **C:\Users\Default\Documents\Visual Studio 2010**
   35. **C:\Config.Msi**
   36. Delete icons in your **desktop** and remove groups in your **start menu**.
4. Run **Disk Cleanup**.
   1. Choose **Drive C:**.
   2. Click the **Clean up system files** icon.
   3. Select **Drive C:**.
   4. Select all checkboxes.
   5. Select **OK** and wait for the operation to finish.
   6. Empty your **Recycle Bin**.
   7. Restart your computer.
5. Run an uninstaller and registry cleaner utility do delete any remaining debris. **CCleaner** is great and can be downloaded from here: <https://www.piriform.com/ccleaner/download/professional>
   1. Run scans multiple times until all scans return no results.
   2. Restart your computer so all registry changes will apply.
6. Download all 5 parts of **FreeFalcon6** installer from here:
   1. <http://www.mediafire.com/download/fht1chqt4is56y3/FF6Installer.part1.rar>
   2. <http://www.mediafire.com/download/weu8ioyh2dk47wq/FF6Installer.part2.rar>
   3. <http://www.mediafire.com/download/x84imkuaxpkaa1b/FF6Installer.part3.rar>
   4. <http://www.mediafire.com/download/s1o3k3dnayeisha/FF6Installer.part4.rar>
   5. <http://www.mediafire.com/download/v243nbhhksynfiz/FF6Installer.part5.rar>
   6. Wait for all 5 parts to finish downloading before proceeding to the next step.
   7. Decompress the **part1.rar** file, using your favorite decompressor (**WinZip**, **WinRar** etc…).
   8. Do not decompress other **.rar** parts. The decompressor will take care of that automatically.
   9. After the decompressor finishes, you can delete the **.rar** files if you need to save disk space.
7. Run the **freefalcon6.0\_installer.exe**.
   1. Continue and select a folder to install. Keeping the default installation path is preferable.
   2. Continue and make sure all 4 checkboxes are selected.
   3. At the last screen, uncheck the box **Launch FreeFalcon6 Config Editor**.
   4. Click **Finish**.
   5. Do not run **FreeFalcon6!** We want the sim to stay with all its defaults for the initial debugging!
   6. Download **display.dsp** and **viper.pop** files here: <http://ge.tt/2oS3Hgz1?c>
   7. Copy those 2 files to your **FreeFalcon6** **/config** folder. Default is **C:\FreeFalcon6/config**.
8. Download **Windows SDK 7.1** from here:

<http://www.microsoft.com/en-us/download/confirmation.aspx?id=8279>

* 1. Run the **winsdk\_web.exe**.
  2. Continue and select your favorite installation folders. Keeping the default is preferable.
  3. Continue until you get to the list of components to install.
  4. Select all checkboxes. You will be able to uninstall unneeded components later.
  5. Continue the installer and wait for it to finish. This is a web installer so it will take time!
  6. Help installation will run automatically. Skip it, we will do that later.

1. Download **Windows SDK 8.1** from here: <http://www.darwinbots.com/numsgil/dx81sdk_full.exe>
   1. Run the **dx81sdk\_full.exe**.
   2. Select your favorite decompression folder.
   3. Click **Unzip**.
   4. Wait for the **Unzip** to finish.
   5. Click **Close** to close the **Unzip**.
   6. Browse to the decompression folder.
   7. Browse to the **DXF** folder.
2. Run the **setup.exe**.
   1. Continue and select a folder. Keeping the default installation path is preferable.
   2. Continue until you get to the list of components to install.
   3. Select all checkboxes. You will be able to uninstall unneeded components later.
   4. Finish the installation.
3. To setup the environment variable of the **DX SDK**, go to **Control Panel – System - Advanced system setting – Advanced - Environment Variables**.
   1. In the lower pane, click **New**.
   2. Copy this **DX81\_SDK** (make sure not to copy the space) to the variable name box.
   3. Copy this **C:\DXSDK\** (make sure not to copy the space) to the variable value box.
   4. Click **OK**.
   5. Restart your computer.
4. Download **Microsoft Visual Studio 2010** from your favorite source. Not the **Express** version.
   1. If you want the free 30 days trial version (not tested and not guaranteed to work), try this: <http://go.microsoft.com/?linkid=9709949>
   2. Run **Setup.exe**.
   3. Continue and select a folder. Keeping the default installation path is preferable.
   4. Select **Full**. You will be able to uninstall unneeded components later.
   5. If you get any compatibility error, disregard by clicking **Close**.
   6. Wait patiently for the installation to finish.
   7. Don’t install the documentation, you can always do that later.
   8. Exit the installer.
5. Download **Microsoft Visual Studio 2010 Service Pack 1** from here: <http://www.microsoft.com/en-us/download/confirmation.aspx?id=23691>
   1. Run **VS10sp1-KB983509.exe**.
   2. Continue and wait for the installer to finish. This is a web installer so it will take some time!
   3. Finish the installation.
6. Download **Microsoft Visual Studio 2010 Service Pack 1 update** from here<http://www.microsoft.com/en-us/download/confirmation.aspx?id=4422>
   1. Run **vc-compiler-kb2519277.exe**.
   2. Finish the installation.
   3. Restart your computer.
7. Go to **Control Panel - Windows Update** and search for new updates.
   1. Install all the optional updates. This will install all the critical/important updates too.
   2. Restart your computer.
   3. Run **Windows Update** for the second time, search for new updates and install everything.
   4. Restart your computer.
   5. Repeat running **Windows Update** until no updates are left to install.
   6. If any updates were installed, restart your computer.
8. Download **WiX Toolset** from here: <https://wix.codeplex.com/releases/view/115492>
   1. Install **wix38.exe**.
9. Sign up for **GitHub** here: <https://github.com/>
   1. Complete the email verification.
   2. Setup all **GitHub** settings to your liking.
10. Download **GitHub for Windows** here: <https://github-windows.s3.amazonaws.com/GitHubSetup.exe>
    1. Run **githubsetup.exe**.
    2. If you get a security warning, approve it.
    3. This is a web installer so wait for it to finish.
    4. **GitHub for Windows** will run automatically so just sign in and confirm the email setting.
    5. The **Find local repositories** window opens. Click **Skip**.
    6. The **Get started by adding a repository** window opens. Disregard and click the **settings** icon at the top right.
    7. Click **Options** and set whatever you like. Click **Update**.
11. **Git** defaults to generating **CR** and **LF** automatically. This is known to cause errors.
    1. Run **Git Shell** from your desktop or here: **Start menu – Programs – GitHub, Inc** group.
    2. In the command line, paste this command: **git config --global core.autocrlf false** and press **ENTER**.
    3. To make sure it works, paste this command: **git config --global core.autocrlf** and press **ENTER**. The result should be **false**.
    4. Close **Git Shell**.
12. Browse to this repository: <https://github.com/FreeFalcon/freefalcon-central>
    1. Make sure you are logged in by looking at your username at the top right of the screen.
    2. Click the **Fork** button in the top right. This will create your own playground.
    3. Save that new **URL** in your browser’s bookmarks.
    4. Click the **Clone in Desktop** icon at the lower right of the screen.
    5. Approve the security warning.
    6. After few seconds, a window will appear asking you where to save the repository.
    7. Choose a folder (not too deep!!!) and after few seconds the repository will be cloned to your drive.
    8. Wait for the repository download to finish.
    9. Restart your computer.
13. Run **Visual Studio 2010**.
    1. Choose your default environment settings: **Visual C++ Development Settings**.
    2. Click **Start Visual Studio**.
    3. Go to **Tools - Options**.
    4. In the left pane, the **Environment** menu will already be open. Select **Startup**.
    5. In the right pane, open the top pull down menu and select **Load last loaded solution**.
    6. Click **OK**.
14. Click **File – Open - Project/Solution**.
    1. Browse to your repository.
    2. Browse to **freefalcon-central/src/FreeFalcon.sln** and click **Open**.
    3. In your **Solution Explorer** window, scroll down to the **FFViper** project and click to select it.
    4. Right click it and select **Set as StartUp Project**.
15. Click **View - Other Windows - Property Manager**. If you don’t find it, try **View -** **Property Manager**.
    1. After few seconds, scroll down in your **Property Manager** window, to the **FFViper** project.
    2. Click the little arrow to its left. This will open two options.
    3. Click the little arrow of the **Debug | Win32**.
    4. Under **Debug | Win32**, Click the line **Microsoft.Cpp.Win32.user**.
    5. Right click it and select **Properties**.
16. In the left pane, select **VC++ Directories**.
    1. In the right pane, select the **Include Directories** line.
    2. Copy this **$(IncludePath);$(DX81\_SDK)Include (without the space) to replace whatever is in that line.**
    3. In the right pane, select the **Library Directories** line.
    4. Copy this **$(LibraryPath);$(DX81\_SDK)Lib (without the space) to replace whatever is in that line.**
    5. Click **OK** to close the main window.
    6. Click **File - Save All**.
    7. Quit **Visual Studio 2010.**
    8. You will be prompted to save your changes, so approve it.
17. Run **Visual Studio 2010**. Your project will be loaded automatically.
    1. Your **Property Manager** window should be open and the **FFViper** project should be open.
    2. Select the **Debug | Win32** line and scroll a bit down.
    3. Hold the **Ctrl** key and select the **Release** **| Win32** line**.** Now both lines are selected**.**
    4. Right click it and select **Properties**.
    5. In the left pane, the **Common Properties** will be open. Select **Debugging**.
    6. In the right pane, select the **Working Directory** line.
    7. Click the little down arrow in the right and select **Browse**.
    8. Select the root folder of your **FreeFalcon6** sim you installed before. Default is **C:\FreeFalcon6**.
    9. Click **OK**.
18. Select only the **Debug** **| Win32** line. Right click it and select **Properties**.
    1. In the left pane, select **Debugging**.
    2. In the right pane, select the **Commands Arguments** line.
    3. Add the command **-window** and click **OK**. This will make the sim run in a window for easy debugging.
    4. Click **File - Save All**.
19. Click **Build - Rebuild Solution**.
    1. This will take time. You should get the following result:

**========== Rebuild All: 66 succeeded, 1 failed, 0 skipped ==========**

* 1. The entire code should compile with only 2 errors. Those are related to **WiX** for the **Release** branch and will be fixed once the code is ready to be released.
  2. If you get a lot of errors, it means you did not follow the instructions precisely!

1. At certain screen resolutions, the sim will occupy the entire height of the screen. This will make switching between the sim’s **UI** buttons very difficult. Right click your **taskbar** and select **Properties**. Check the **Auto-hide the taskbar** box. Click **OK**.
2. Click **Debug - Start Debugging** to run the sim.
3. Now you can install any help files you may need.
4. Uninstall any components you do not need. Make sure it does not affect **FreeFalcon6**, by rebuilding the entire project, after each component removal.
5. Now you are ready to start fixing bugs!
6. If you have any feedback about this guide, please email me: [dannycoh@gmail.com](mailto:dannycoh@gmail.com)