***FreeFalcon6 source code build manual with Microsoft Visual Studio 2010+2013***

* **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. Slight changes may apply for a different OS.**
* **This guide assumes installation of Microsoft Visual Studio 2010 Professional** **and Microsoft Visual Studio 2013 Professional. Other versions may be different.**
* **This guide assumes you do not have any of the components you are going to install, already installed.**
* **Whenever you get instructions to choose an installation folder, do not select a long or deep path. This is proven to cause the sim to crash!!!**
* **Read the manual several steps ahead, before you actually act.**
* **Before you begin, make a full system image backup of your system drive. Trying to uninstall the development components will not work, because many folders and registry settings will stay and interfere in case you need to reinstall everything. Using Macrium Reflect is recommended.**

**DOWNLOAD SECTION**

1. Please download all these files. You can download them all at once to save time. You can even install components, while other components still downloads. All downloads are in the order of their installation.
   1. Download all 5 parts of **FreeFalcon6** installer from here:
   2. <http://www.mediafire.com/download/fht1chqt4is56y3/FF6Installer.part1.rar>
   3. <http://www.mediafire.com/download/weu8ioyh2dk47wq/FF6Installer.part2.rar>
   4. <http://www.mediafire.com/download/x84imkuaxpkaa1b/FF6Installer.part3.rar>
   5. <http://www.mediafire.com/download/s1o3k3dnayeisha/FF6Installer.part4.rar>
   6. <http://www.mediafire.com/download/v243nbhhksynfiz/FF6Installer.part5.rar>
2. Download **display.dsp** and **viper.pop** files here: <http://ge.tt/2oS3Hgz1?c>
3. Download **Windows DirectX SDK 8.1** from here: <http://www.darwinbots.com/numsgil/dx81sdk_full.exe>
4. Download **Microsoft Visual Studio 2010** **Professional** free 30 days trial version from here: <http://download.microsoft.com/download/D/B/C/DBC11267-9597-46FF-8377-E194A73970D6/vs_proweb.exe>
5. Download **Windows SDK 7.1** from here: <http://www.microsoft.com/en-us/download/confirmation.aspx?id=8279>
6. Download **Microsoft Visual Studio 2010 Service Pack 1** from here: <http://www.microsoft.com/en-us/download/confirmation.aspx?id=23691>
7. Download **Microsoft Visual C++ 2010 Service Pack 1 Compiler Update for the Windows SDK 7.1** from here**:** <http://www.microsoft.com/en-us/download/confirmation.aspx?id=4422>
8. Download **Microsoft Visual Studio 2013 Professional** free 90 days trial version from here: <http://go.microsoft.com/?linkid=9832345&clcid=0x409>
9. Download **WiX Toolset** from here: <https://wix.codeplex.com/releases/view/115492>
10. Download **GitHub for Windows** from here: <https://github-windows.s3.amazonaws.com/GitHubSetup.exe>
11. Download **Microsoft Visual Studio 2013 Professional** settings file here: <http://ge.tt/4bGuYq02/v/0?c>
12. Download **Microsoft Visual Studio 2013 Professional** breakpoints file: <http://ge.tt/5utGZq02/v/0?c>

**INSTALL SECTION**

1. Wait for all 5 **FreeFalcon6 .rar** parts to finish downloading before proceeding to the next step.
   1. Decompress the **part1.rar** file, using your favorite decompressor (**WinZip**, **WinRar** etc…).
   2. Do not decompress other **.rar** parts. The decompressor will take care of that automatically.
   3. After the decompressor finishes, you can delete the **.rar** files to save disk space.
   4. Run the **freefalcon6.0\_installer.exe**.
   5. Continue and select a folder to install. Keeping the default installation path is preferable.
   6. Continue and make sure all 4 checkboxes are selected.
   7. At the last screen, uncheck the box **Launch FreeFalcon6 Config Editor**.
   8. Click **Finish**.
   9. Do not run **FreeFalcon6**. We want the sim to stay as default for the initial debugging.
   10. Copy **display.dsp** and **viper.pop** files to your **FreeFalcon6\config** folder. Default is **C:\FreeFalcon6\config**.
2. Run the **Windows DirectX SDK 8.1** installer **dx81sdk\_full.exe**.
   1. Select your favorite decompression folder.
   2. Click **Unzip**.
   3. Wait for the **Unzip** to finish.
   4. Click **Close** to close the **Unzip**.
   5. Browse to the decompression folder**/DXF**.
   6. Run the **setup.exe**.
   7. Continue and select a folder. Keeping the default installation path is preferable.
   8. Continue until you get to the list of components to install.
   9. Uncheck the top 4 checkboxes (samples and documentations).
   10. Finish the installation.
3. Run **Microsoft Visual Studio 2010 Professional** installer **vs\_proweb.exe**.
   1. Continue and select a folder. Keeping the default installation path is preferable.
   2. Click **Custom** and click **Next >**.
   3. Uncheck everything.
   4. Check only the **Visual C++** group.
   5. Continue and wait patiently for the web installer to finish as it will take time!
   6. Do not install the documentation, just exit the installer.
   7. Do not delay the next step, as **Windows Update** may install an update that will mess up your installation!
4. Run the **Windows SDK 7.1** installer **winsdk\_web.exe**.
   1. Continue and select your favorite installation folders. Keeping the default is preferable.
   2. Continue until you get to the list of components to install.
   3. Uncheck the following checkboxes: **Samples**, entire **.NET Development** group, **Microsoft Help** **System**, **Application** **Verifier** and **Windows Performance Toolkit**.
   4. Continue the installer and wait for it to finish. This is a web installer so it will take time!
5. Run **Microsoft Visual Studio 2010 Service Pack 1** installer **VS10sp1-KB983509.exe**.
   1. Continue and wait for the web installer to finish as it will take some time!
   2. Finish the installation.
   3. Run **Microsoft Visual C++ 2010 Service Pack 1 Compiler Update for the Windows SDK 7.1** installer **vc-compiler-kb2519277.exe**.
   4. Finish the installation.
6. Run **Microsoft Visual Studio 2013 Professional** installer **vs\_professional.exe**.
   1. Continue until the components selection menu.
   2. Uncheck everything.
   3. Check only **Microsoft Foundation Classes for C++**.
   4. Click **INSTALL**.
   5. This is a web installer so wait patiently for the installation to finish.
   6. An automatic installation of **Windows Phone 8.1 Emulators** will begin. Cancel it because you do not need it.
   7. Do not click **LAUNCH**, just exit the installer.
7. Install **WiX Toolset** installer **wix**xx**.exe**.

**REPOSITORY SECTION**

1. Sign up for **GitHub** here: <https://github.com/> if you already have an account, sign in and go to step 21.
   1. Complete the email verification.
   2. Setup all **GitHub** settings to your liking.
2. Run **GitHub for Windows** installer **githubsetup.exe**.
   1. If you get a security warning, approve it.
   2. This is a web installer so wait for it to finish.
   3. **GitHub for Windows** will run automatically so just sign in and confirm the email setting.
   4. The **Find local repositories** window opens. Click **Skip**.
   5. The **Get started by adding a repository** window opens. Disregard and click the **settings** icon at the top right.
   6. Click **Options** and set whatever you like. Click **Update**.
3. 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 repository.
   3. Save that new **URL** in your browser’s bookmarks.
   4. Click the **Clone in Desktop** button at the lower right of the screen.
   5. Check the box and 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. Choosing **D:\** is great. After few seconds the repository will be cloned to your drive.
   8. Wait for the repository download to finish.

**CONFIGURE SECTION**

1. To setup the environment variable of the **DirectX 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** and close all windows.
2. Go to **Control Panel - Windows Update** and search for new updates.
   1. Install all the optional updates. This will install all the critical and important updates too.
   2. Restart your computer so the changes will take effect.
   3. Run **Windows Update** for the second time, search for new updates and install everything.
   4. Restart your computer so the changes will take effect.
   5. Repeat running **Windows Update** until no updates are left to install.
   6. If any updates were installed, restart your computer.
3. Run **Microsoft** **Visual Studio 2013**.
   1. Skip the sign in, you can do that later.
   2. In the **Development Settings** pull down menu choose **Visual C++**.
   3. Click **Start Visual Studio**.
   4. If you get an error about **applying your selected settings**, click **Close**. Run **Microsoft** **Visual Studio 2013**.
4. Click **TOOLS – Import and Export Settings**.
   1. Click **Import selected environment settings**.
   2. Click **Next >**.
   3. Click **No, just import new settings, overwriting my current settings**.
   4. Click **Next >**.
   5. Click **Browse**.
   6. Select the **exported-**yyyy-mm-yy**.vssettings** file you downloaded before.
   7. Click **Open**.
   8. Click **Next >**.
   9. Click **Finish**.
   10. Click **Close**.
5. Click **FILE – Open – Project/Solution**.
   1. Browse to your repository folder\**freefalcon-central\src\FreeFalcon.sln** and click **Open**.
   2. In your **Solution Explorer** window, scroll down to the **FFViper** project and click to select it.
   3. Right click it and select **Set as StartUp Project**.
6. Click **VIEW - Property Manager**. If you don’t find it, try **VIEW -** **Other Windows - Property Manager**.
   1. 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 to the left of the **Debug | Win32** line.
   4. Under the **Debug | Win32 line**, Select the line **Microsoft.Cpp.Win32.user**.
   5. Right click it and select **Properties**.
   6. In the left pane, the **Common Properties** menu will be open. Select **VC++ Directories**.
   7. In the right pane, select the **Include Directories** line.
   8. Copy this: **$(IncludePath);$(DX81\_SDK)Include (without the space) to replace whatever is in that line.**
   9. In the right pane, select the **Library Directories** line.
   10. Copy this: **$(LibraryPath);$(DX81\_SDK)Lib (without the space) to replace whatever is in that line.**
   11. Click **OK** to close the main window.
7. In the **Property Manager**, select the **Debug | Win32** line and scroll a bit down.
   1. Hold your keyboard **Ctrl** key and select the **Release** **| Win32** line**.** Now both lines are selected**.**
   2. Right click it and select **Properties**.
   3. In the left pane, the **Common Properties** will be open. Select **Debugging**.
   4. In the right pane, select the **Working Directory** line.
   5. Click the little down arrow in the right and select **Browse** from the menu.
   6. Select the root folder of your **FreeFalcon6** sim you installed earlier. Default is **C:\FreeFalcon6**.
   7. Click **OK** to close the properties window.
8. In the **Property Manager**, select only the **Debug** **| Win32** line.
   1. Right click it and select **Properties**.
   2. In the left pane, the **Common Properties** will be open. Select **Debugging**.
   3. In the right pane, select the **Commands Arguments** line.
   4. Add this command: **-window** and click **OK**. This will make the sim run in a window instead of full screen, for easy debugging.
   5. Click **FILE - Save All**.
   6. Quit **Microsoft Visual Studio 2013.** You will be prompted to save your changes, so approve it.

**BUILD SECTION**

1. Run **Microsoft Visual Studio 2013**. Your project will be loaded automatically.
2. Do notuse **BUILD – Clean Solution**. This will cause a 1024\*768\*16 resolution bug!
3. Click **BUILD - Rebuild Solution**.
   1. This will take time. You should get the following result:

67>Build FAILED.

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

* 1. The entire code should compile with only 2 errors. Those errors are due to the **Wix** project and will be fixed once the sim 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**.

**RUN SECTION**

1. Click **DEBUG - Start Debugging** to run the sim.
   1. If you get a message: **These projects are out of date**, check the **Do not show this dialog again** checkbox and click **Yes**.
   2. If you get a message: **Requested unavailable resolution 1024x768x16** do this:
      1. Click **DEBUG – Stop Debugging.**
      2. Quit **Microsoft Visual Studio 2013**.
      3. Browse to your repository**\freefalcon-central\build\x86\debug\_win32\ffviper\FFViper.exe**.
      4. Right click **FFViper.exe** and select **Troubleshoot compatibility**.
      5. Click **Try recommended settings.**
      6. Click **Test the program**.
      7. The sim will launch in full screen.
      8. Do not try to play or change settings. Just click **Eject** to exit the sim.
      9. Click **Next**.
      10. Click **Yes, save these settings for this program**.
      11. Click **Close the troubleshooter**.
      12. Run **Microsoft Visual Studio 2013**.
      13. Go to step 35 and try again.
   3. Make sure you do not get any assertions, exceptions or CTD’s until you see the **UI.**
   4. If the bottom line of the **UI** is too down, drag the window a bit up to see it.
   5. Do not try to play or change settings. Just click **Eject** to exit the sim.
2. Click **DEBUG – Windows – Breakpoints**.
   1. Click the **Import breakpoints from a file** menu button.
   2. Select the **breakpoints.xml** file you downloaded before.
   3. Click **Open**. Now you have all **CALLBACK** breakpoints already set for you.
   4. Quit **Microsoft Visual Studio 2013**.
3. This is a good time to make a full system image backup of your system drive. Trying to uninstall the development components will not work, because many folders and registry settings will stay active and interfere in case you need to reinstall everything.
4. Now you can install any help files you may need.
5. Uninstall any components you do not need. Make sure it does not affect **FreeFalcon6**, by rebuilding the entire project, after each component removal.
6. Now you are ready to start fixing bugs!
7. If you have any feedback about this guide, or think it can be done better, please email me: [dannycoh@gmail.com](mailto:dannycoh@gmail.com)