VIM Desktop SDK – My First Plug-in

About VIM and the VIM Desktop Application SDK

The VIM Desktop Application SDK (https://github.com/vimaec/vim-desktop-sdk) is a C# API for writing plug-ins that can automate the VIM Windows Desktop application and add new functionality.

VIM (Virtual Information Modeling) is both a platform and open file-format designed especially for the efficient interchange of BIM and 3D data into virtual environments and real-time engines running on multiple platform

The VIM Desktop Application is a WPF .NET application with an integrated high-performance rendering engine built from the ground up using the state of the art Vulkan API and is designed especially for large scale architectural projects.

SDK Requirements

The following are required to get started building an SDK:

- **Visual Studio Community 2019** – download for free at https://visualstudio.microsoft.com/vs/community/
- **VIM Desktop Application** – register for a free account at https://portal.vimaec.com

Creating VIM Plug-ins: in a Nutshell

A VIM plug-in is any class that has the `[VimPlugin]` attribute and implements the `IVimPlugin` interface from the Vim.Desktop.Api.dll assembly. VIM plug-ins are loaded from .NET assemblies whose name matches the pattern `*.Plugin.dll` and that resides in the `%userprofile%\VIM\Desktop Plugins` folder. On assembly (class library) may contain multiple plug-ins.

VIM Libraries

The VIM API SDK consists of most file in the VIM Desktop Application folder (e.g. C:\Program Files (x86)\VIMaec LLC\VIM\Viewer) that match the pattern “Vim.*.dll”. These are all “managed” libraries (aka .NET Assemblies), meaning that they are .NET Class Libraries.

Here is the full list:

- Vim.BFast.dll
- Vim.Buffers.dll
- Vim.DotNetUtilities.dll
- Vim.G3d.dll
- Vim.Geometry.dll
- Vim.LinqArray.dll
- Vim.Math3d.dll
- **For internal use only:** Vim.Collaboration.Client.dll
- **For internal use only:** Vim.Collaboration.Core.dll

The IVimPlugin Interface

The VIM Desktop application communicates with the plug-in by calling functions exposed by the plug-in by implementing the `IVimPlugin` interface. These are:

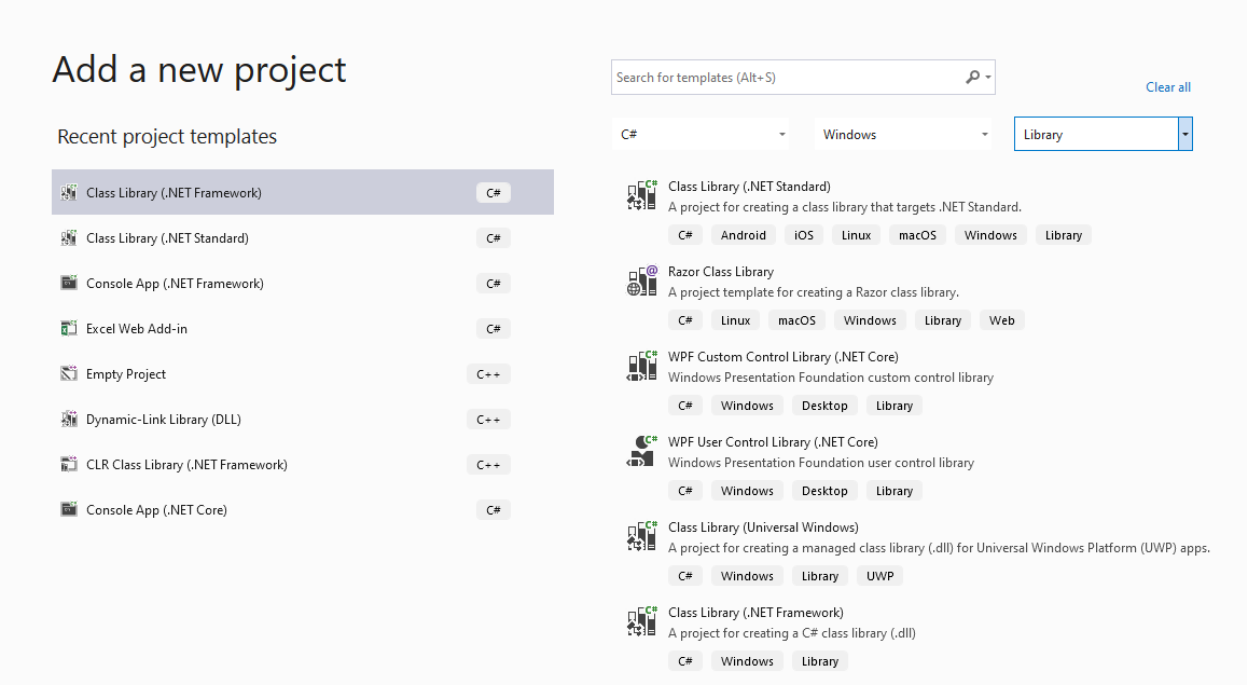
- **void Init(IVimApi api)** – Called when the plug-in is initialized
- **void OnOpenFile(string fileName)** – Called when a new VIM file is loaded
- **void OnCloseFile()** – Called when a VIM file is unloaded
- **void OnFrameUpdate(float deltaTime)** – Called on each frame

For more information on the API see the file “DesktopApi.cs” on the VIM Desktop Github repository: https://github.com/vimaec/vim-desktop-sdk

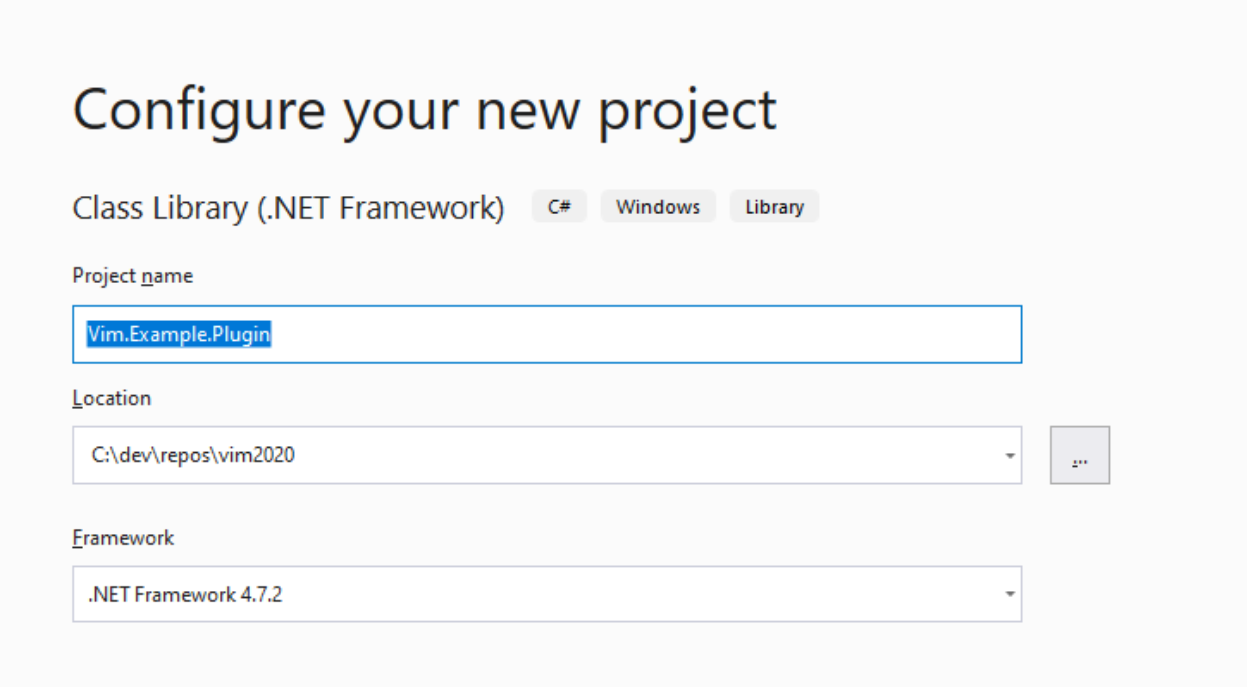
My First VIM Plug-in

The following are detailed step-by-step instructions creating a plug-in.

Open Visual Studio Community 2019. Add a new project. Choose “Class Library (.NET Framework) C#”. Look for Language = C#, Platform = Windows, Type = Library.

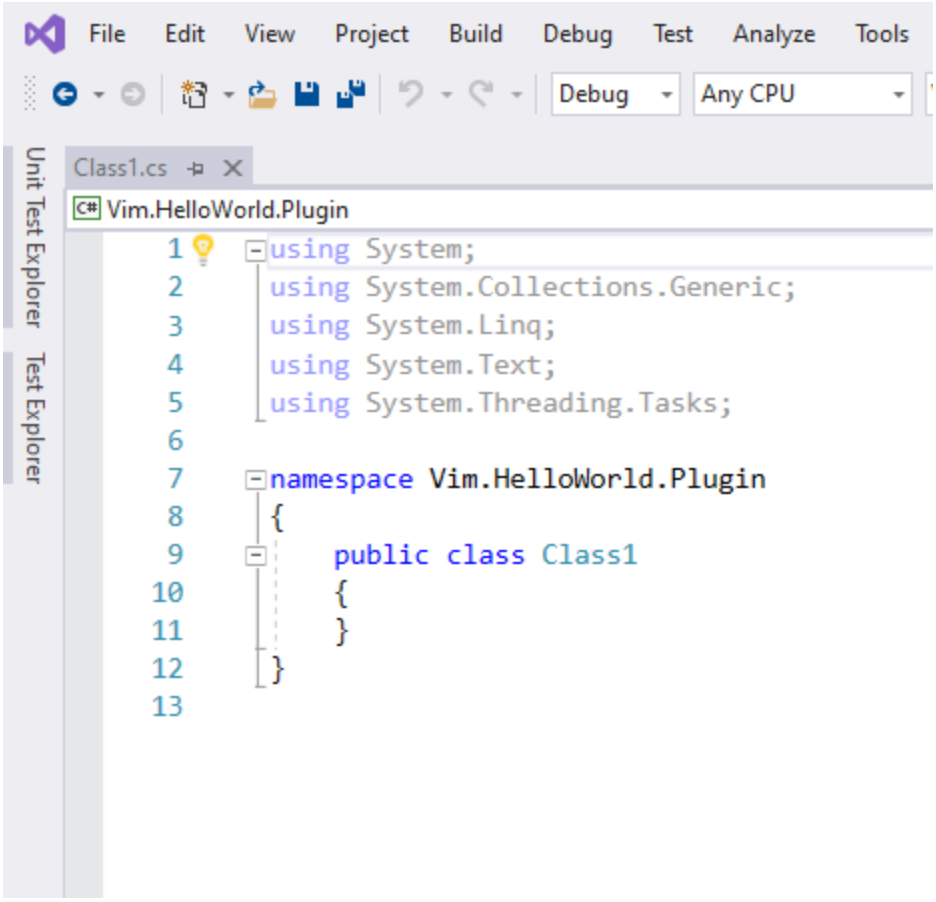


Configure your new project:

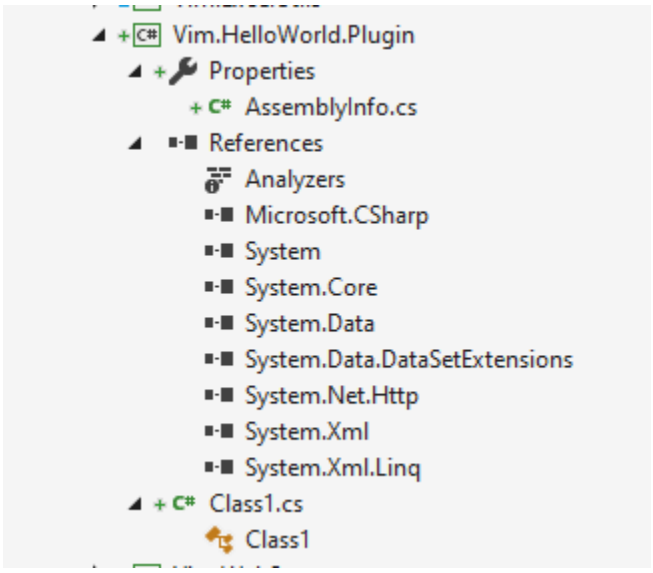


Choose .NET Framework 4.7.2. Make sure your name ends with ".Plugin". Oterwise, you will have to set the assembly name manually to be named to end with ".plugin". VIM plugins are scanned from the %userprofile%\VIM\Desktop Plugins folder for all DLLs with the pattern "*.plugin.vim".

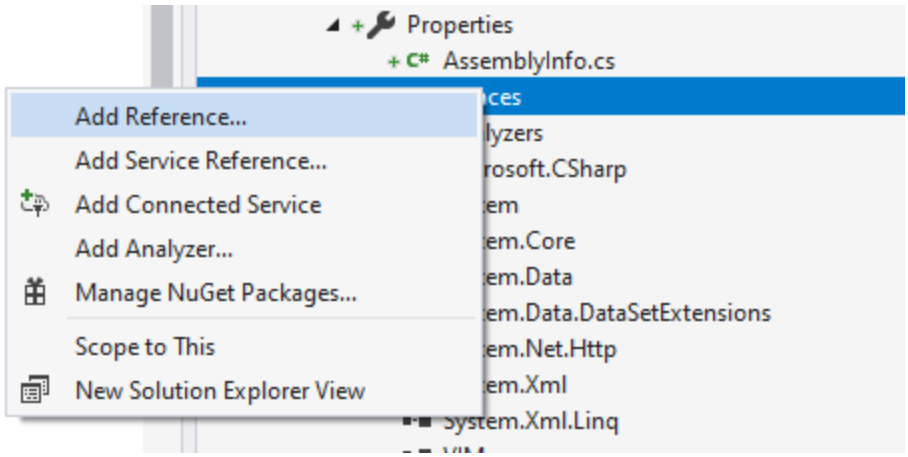
Here is the code view:



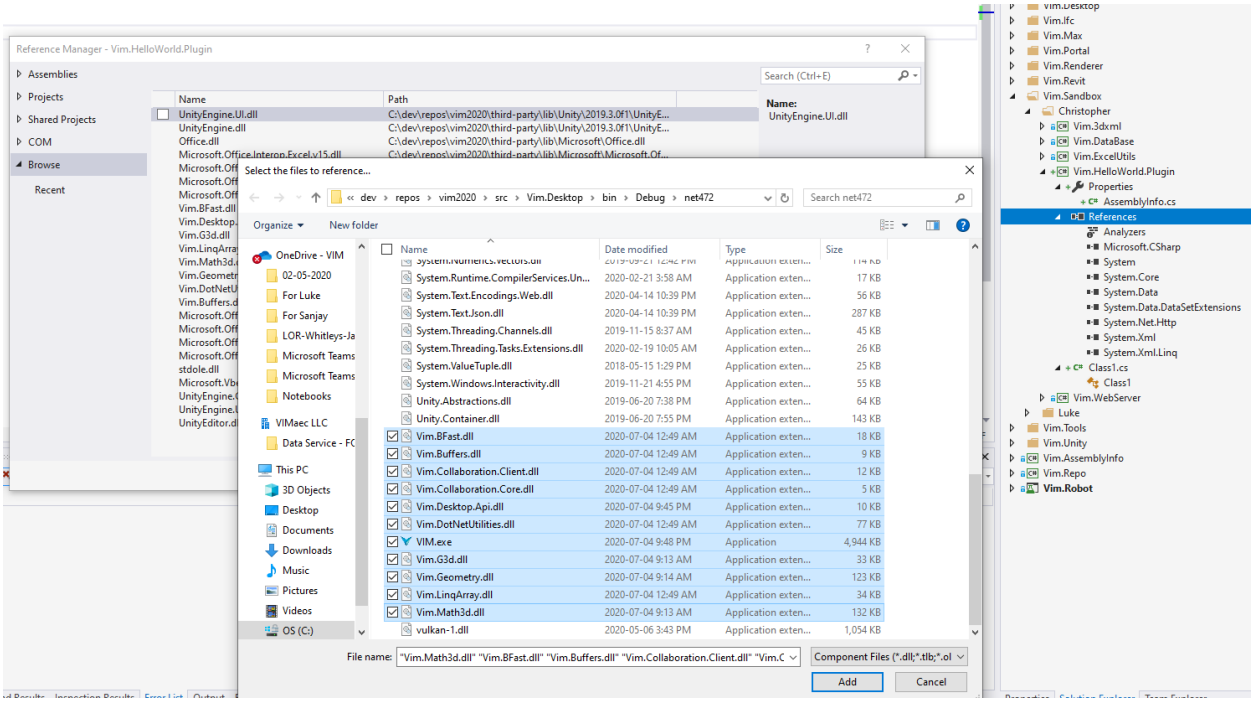
Here it the solution folder:



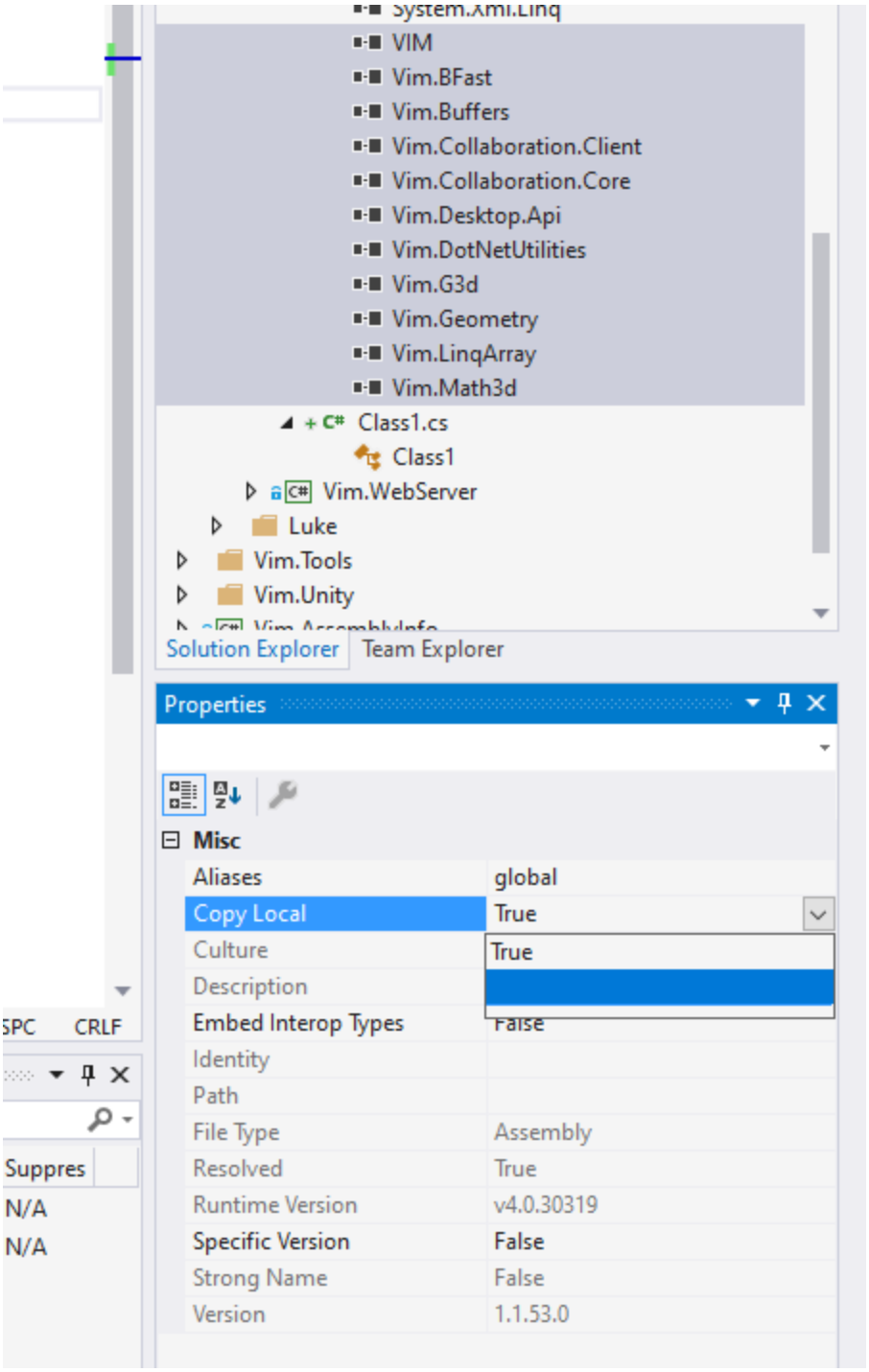
Now you will have to add some references:



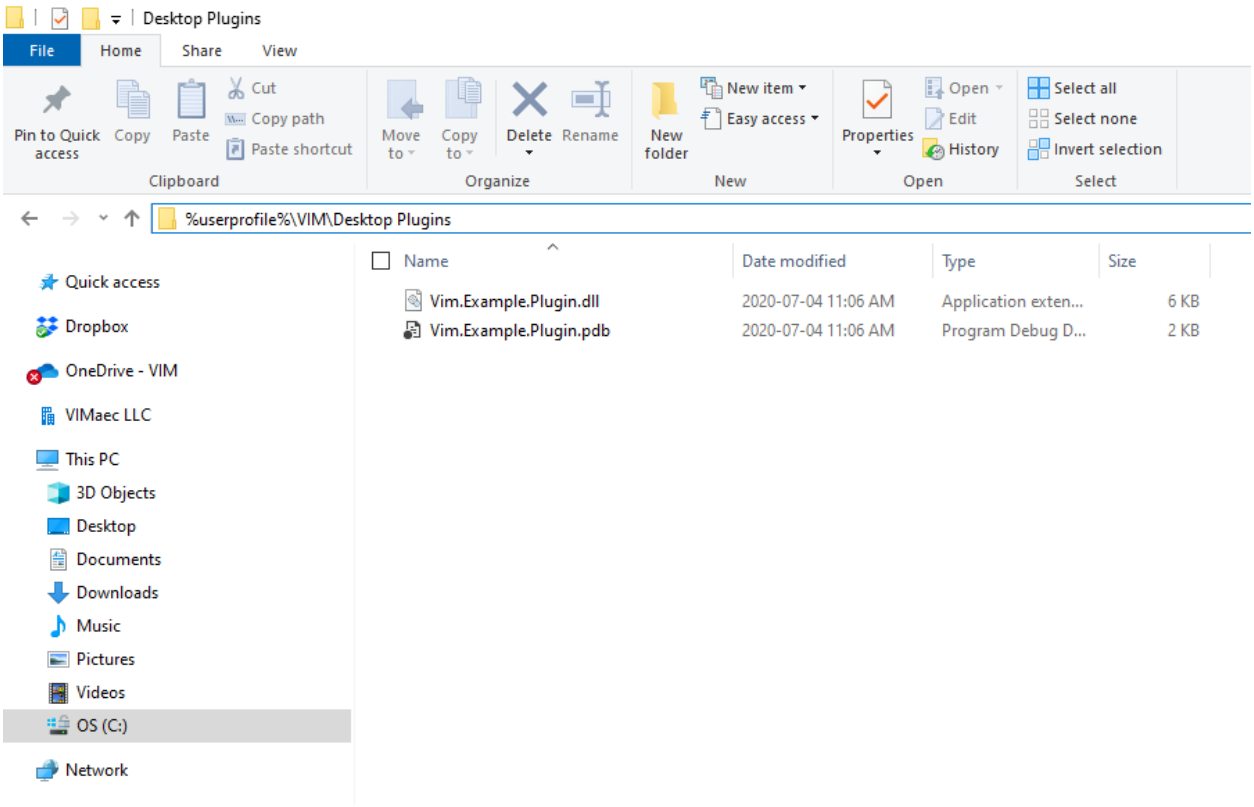
Use the browse setting and go to C:\Program Files (x86)\VIMaec LLC\VIM\Viewer. Choose all files starting with `Vim`.



Select all references in the solution viewer. Turn Off “Copy Local”. This prevents all of the DLLs from getting copied to the output folder.



Go to project settings and change the output folder:


Desktop Plugins
File
Home
Share
View
Pin to Quick access
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
%userprofile%\VIM\Desktop Plugins
Quick access
Dropbox
OneDrive - VIM
VIMaec LLC
This PC
3D Objects
Desktop
Documents
Downloads
Music
Pictures
Videos
OS (C:)
Network
Name
Date modified
Type
Size
Vim.Example.Plugin.dll
2020-07-04 11:06 AM
Application exten...
6 KB
Vim.Example.Plugin.pdb
2020-07-04 11:06 AM
Program Debug D...
2 KB