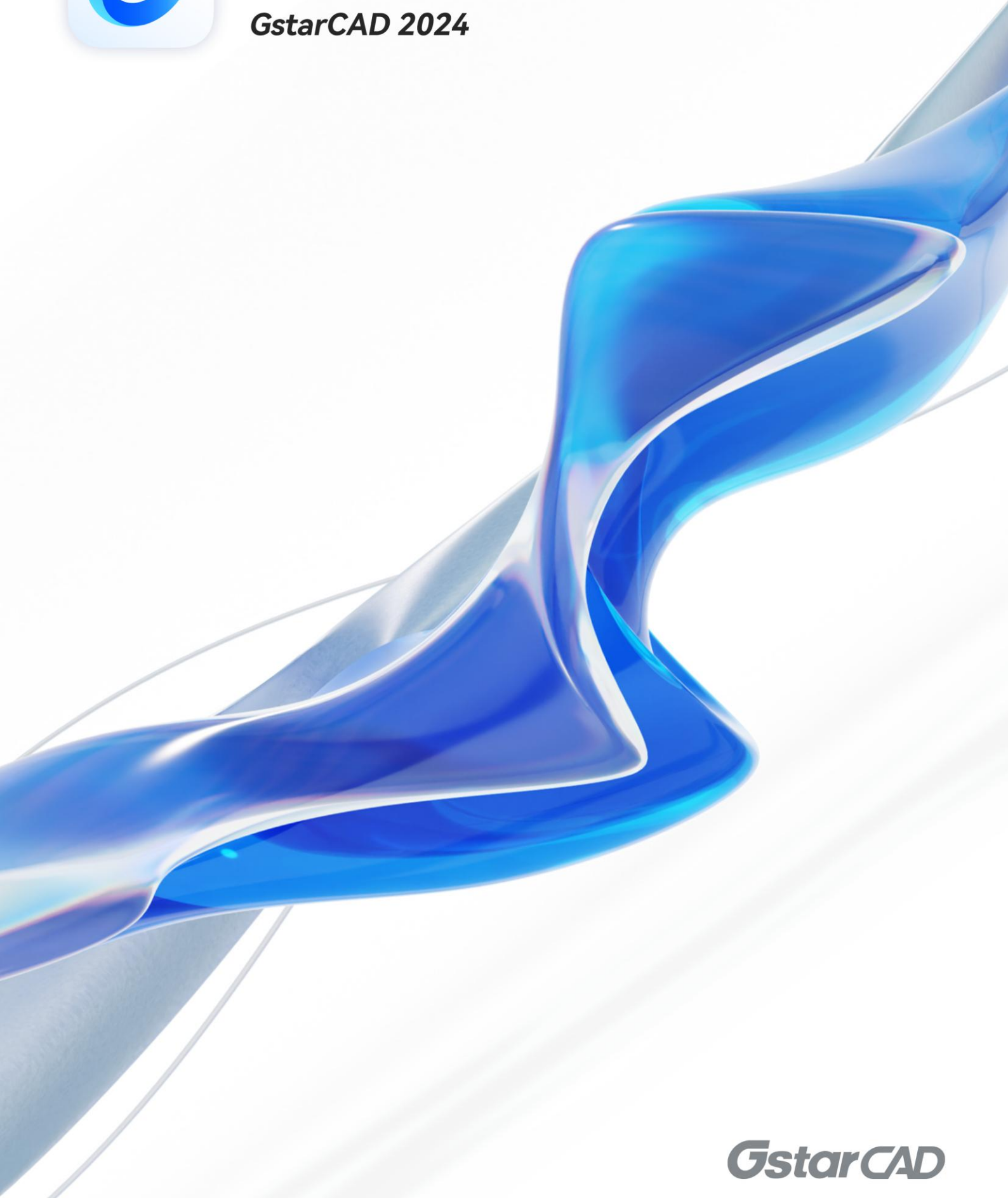




# **.NET Upgrade Guide**

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**GstarCAD 2024**



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# 1. Introduction

This document illustrates how to upgrade and adapt the .NET project/application to GstarCAD 2024 from old versions of GstarCAD.

## 2. Programming Environment

- Microsoft® Visual Studio Enterprise 2017 (Version 15.9.17)
- Windows SDK 10.0.17763.0
- CPU:
  - Basic: 1.6 GHz CUP
  - Recommended: 3.0 GHz CPU and above
- RAM:
  - Basic: 2 GB
  - Recommended: 8 GB and above
- Operation System (OS)
  - Windows 11
  - Windows 10 (version 1507 and above):
    - Home, Professional, Education and Enterprise (not support LTSC and Windows 10 S)
  - Windows 8.1 (with 2919355 update):
    - Core, Professional and Enterprise
  - Windows 7 SP1 (with the latest update):
    - Home, Professional, Enterprise and Ultimate
- Monitor Resolution:
  - 1028x800 and above true color display, including 4K (3840x2160) display
- GstarCAD SDK 2024
- GstarCAD 2024
- .NET Framework 4.8 and above

### 3. Install GstarCAD SDK

Download GstarCAD SDK ('GRXSDK.ZIP' file) from GstarCAD website:

<https://www.gstarcad.net/download/>

Unzip GRXSDK.ZIP file to the local disk (e.g. 'C:\grxsdk') and there will be 5 directories generated (in 'C:\grxsdk') which are: **arx**, **inc**, **inc-x64**, **lib-x64** and **utils**.

**arx** contains the header files, library files and sample programs used for porting ARX programs to GRX programs. It contains the following directories:

- **Inc:** Header files used for porting from ARX to GRX
- **inc-x64:** Files used by COM and .NET (for 64-bit)
- **lib-x64:** GRX libraries (for 64-bit)
- **Samples:** Sample projects, including Dotnet, fact\_dg, HelloADS, HelloA and SimplePalette.
  - **Dotnet:** .NET programming samples
    - 1) **Addline:** .NET programming sample of adding solid lines
    - 2) **Hello:** .NET programming sample of outputting prompt information
    - 3) **Vbhello:** Sample of .NET programming with VB .NET
  - **fact\_dg:** Sample of LISP function definition
  - **HelloADS:** Sample of ADS programming
  - **HelloARX:** Sample of GRX programming
  - **SimplePalette:** Programming sample of how to create a set Palette windows
- **Utils:** Directory contains sub-directories of GRX extended applications, including APIs for extended function development, e.g. BREP for boundary representation.

**Inc:** Header files used for programming the GRX

**inc-x64:** Files used by COM and .NET (for 64-bit)

**lib-x64:** GRX libraries (for 64-bit)

**Utils:** Directory contains subdirectories of GRX extended applications, including APIs for extended function development, e.g. BREP for boundary representation.

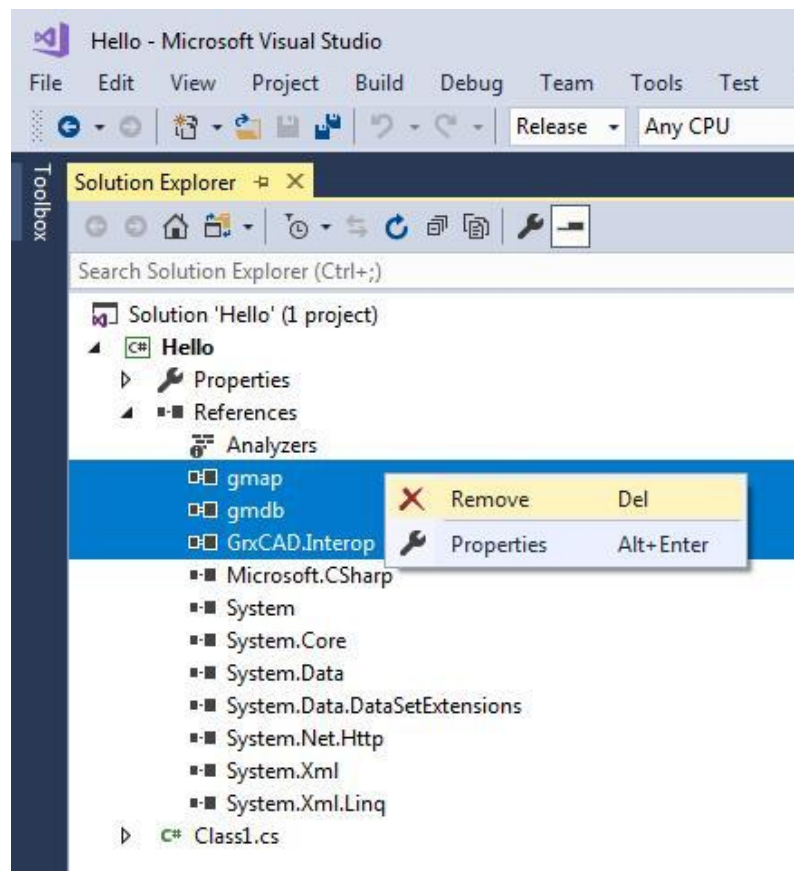
## 4. Visual Studio 2017 C# .NET Program Upgrade Process

The following illustrates the upgrade process by taking the 'Hello' project as an example, and assumes that the GstarCAD SDK is installed in 'C:\grxsdk'.

### 4.1. Change Reference File

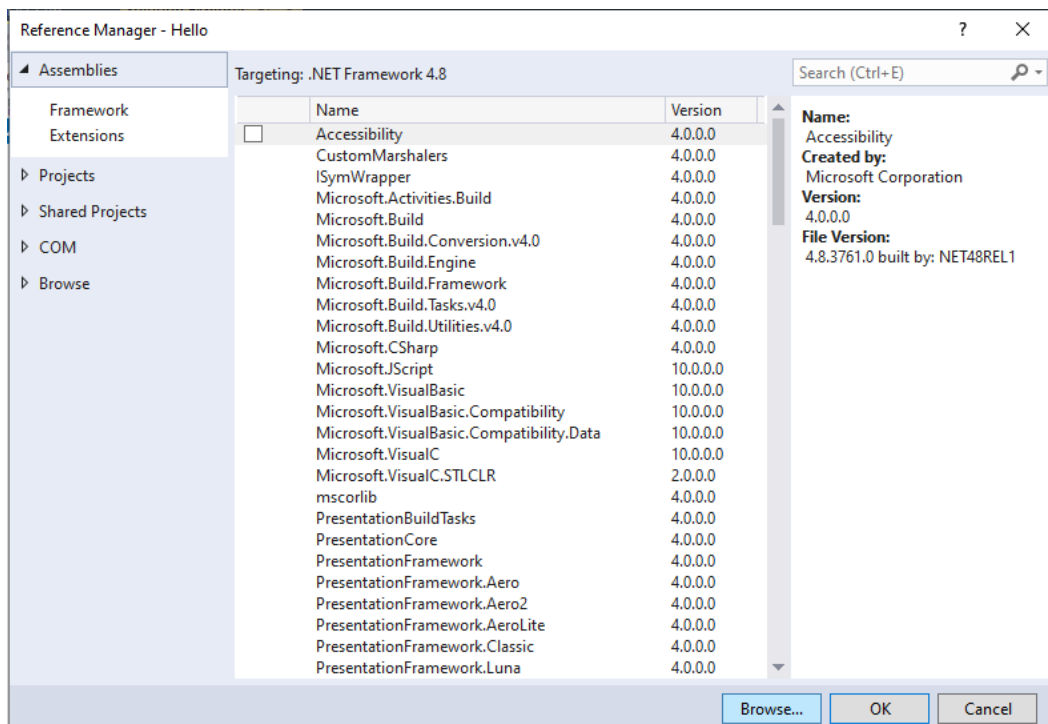
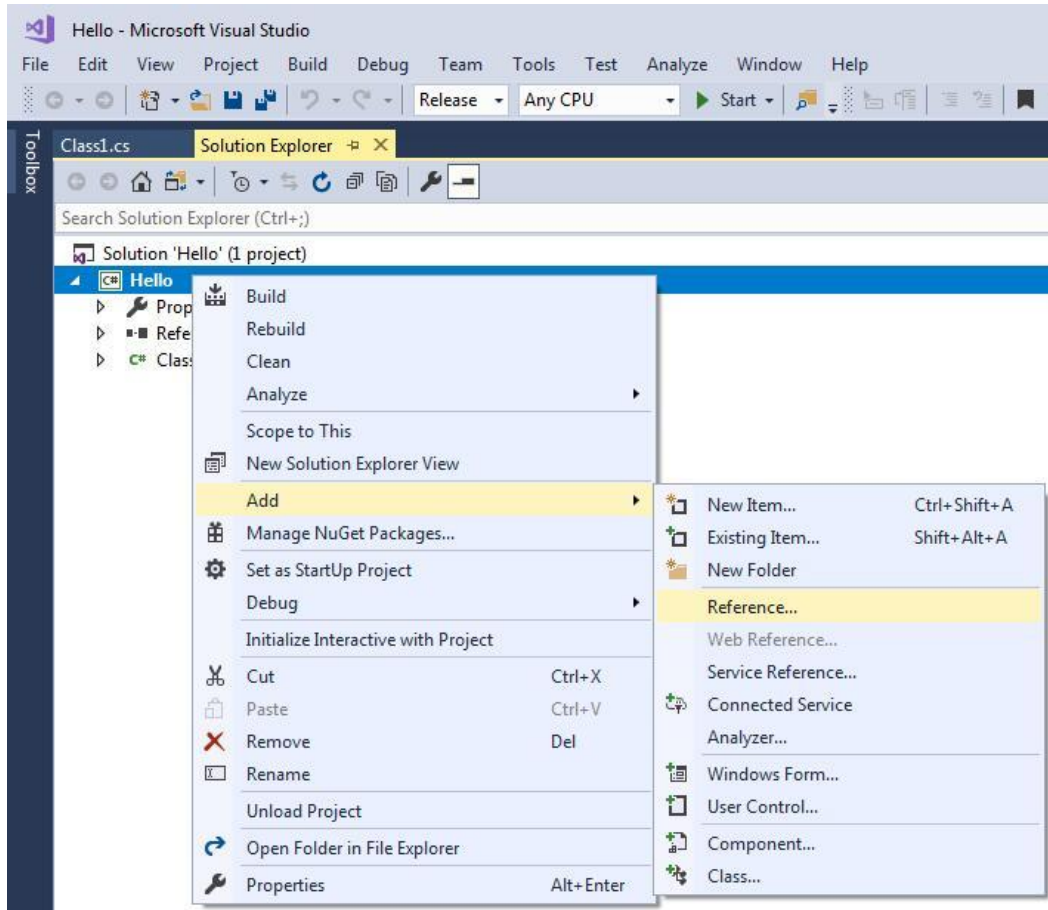
#### 4.1.1. Remove Reference

From **Solution Explorer** of Visual Studio 2017, find project 'Hello' and remove relevant reference files of previous version of GstarCAD, as shown below.



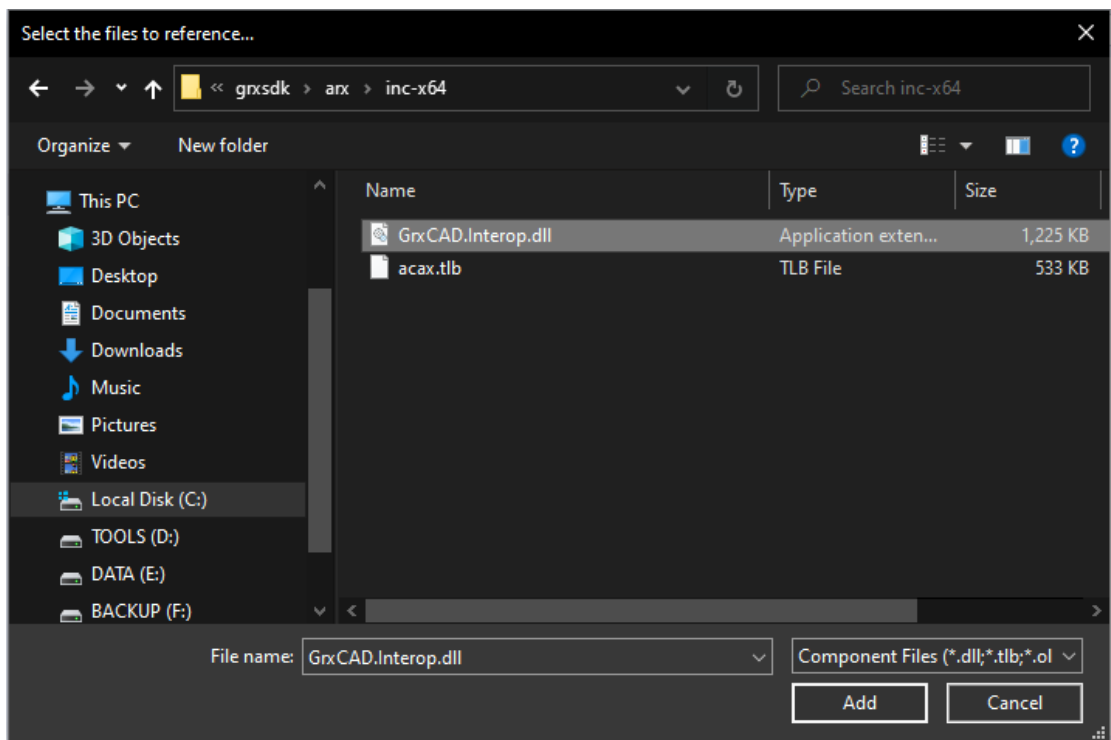
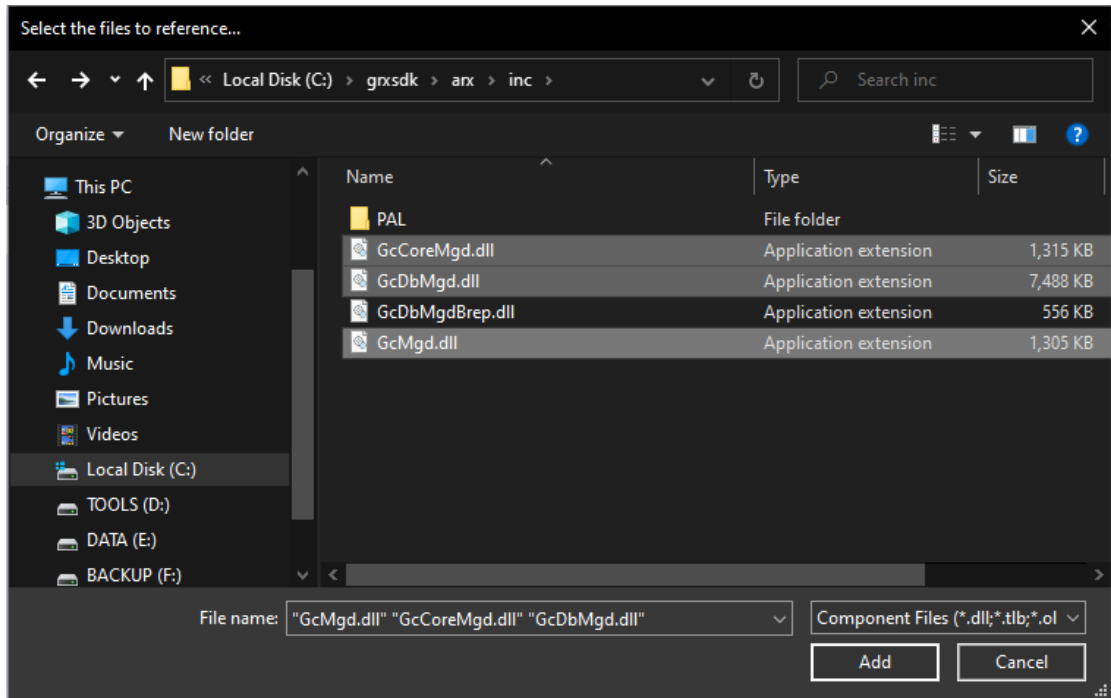
#### 4.1.2. Add Reference

In **Solution Explorer** of Visual Studio 2017, right-click on project 'Hello' and select **Add Reference**. After the **Reference Manager** dialog window pops out, click **Browse...** button as shown below.

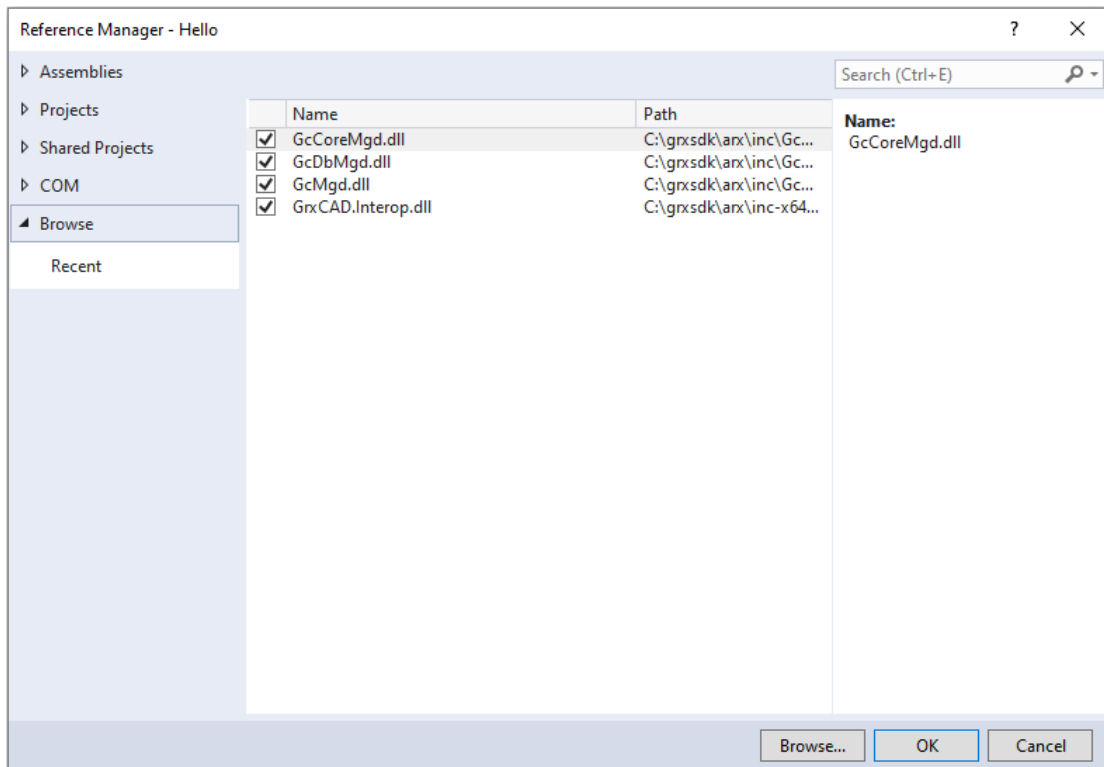


### 4.1.3. Load Reference File

From the installation path of GstarCAD SDK, e.g. 'C:\grxsdk', select 'GcCoreMgd.dll', 'GcDbMgd.dll' and 'GcMgd.dll' in '\arx\inc' and 'GrxCAD.Interop.dll'(or 'acax.tlb') in '\arx\inc-x64', and add them by clicking **Add** button.

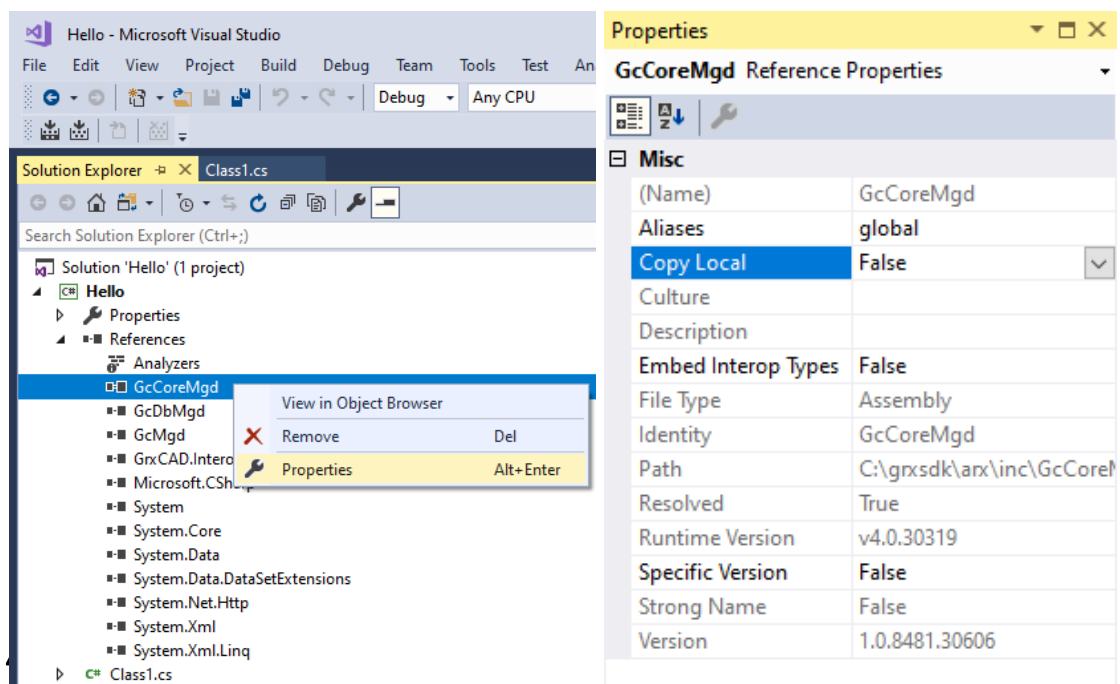




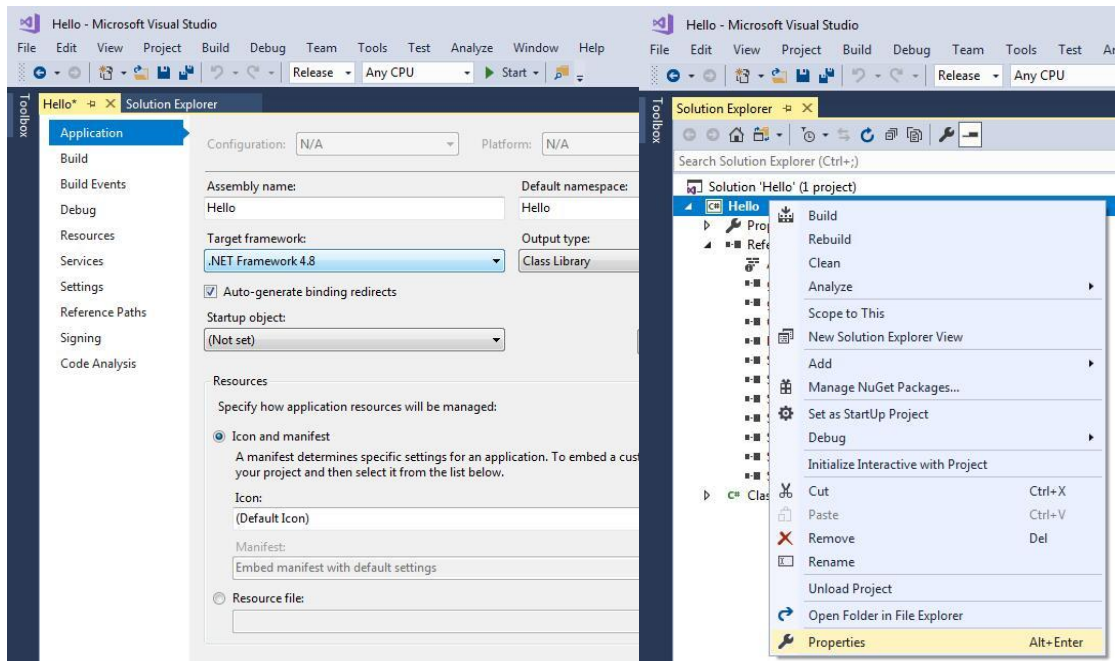


**NOTE:** 'GcCoreMgd.dll', 'GcDbMgd.dll' and 'GcMgd.dll' must be added while 'GrxCAD.Interop.dll' (or 'acax.tlb') is optional (needed when COM is used in the program).

After adding the files, right-click added 'GcCoreMgd.dll', 'GcDbMgd.dll' and 'GcMgd.dll' files one by one and select **Properties** at the context menu, the **Reference Properties** palette pops up. Set the value of **Copy Local** property to **False**. The following screenshot shows how to change **Copy Local** property of 'GcCoreMgd.dll'.



In **Solution Explorer** of Visual Studio 2017, right-click on project '*Hello*' and select **Properties**. After the dialog window pops out, select **Application** and change the **Target framework** to **.NET Framework 4.8** from the pull-down list.



### 4.3. Compile Program

In Visual Studio 2017, click **Build**→**Build Solution** to regenerate the DLL file in corresponding directory. Run GstarCAD and input '*netload*' at command line, select the relative DLL file from **Select .Net Assembly** dialog window and click **Open** button to load it.

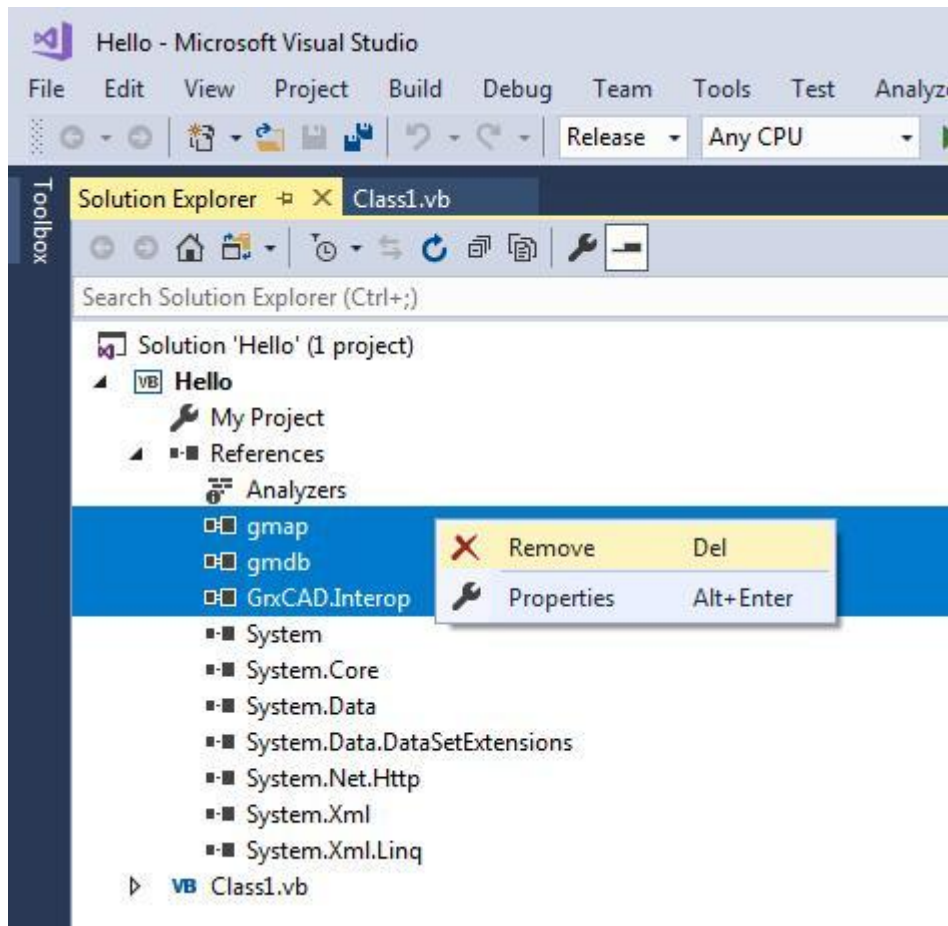
## 5. Visual Studio 2017 VB .NET Program Upgrade Process

The following illustrates the upgrade process by taking the 'Hello' project as an example, and assumes that the GstarCAD SDK is installed in 'C:\grxsdk'.

### 5.1. Change Reference File

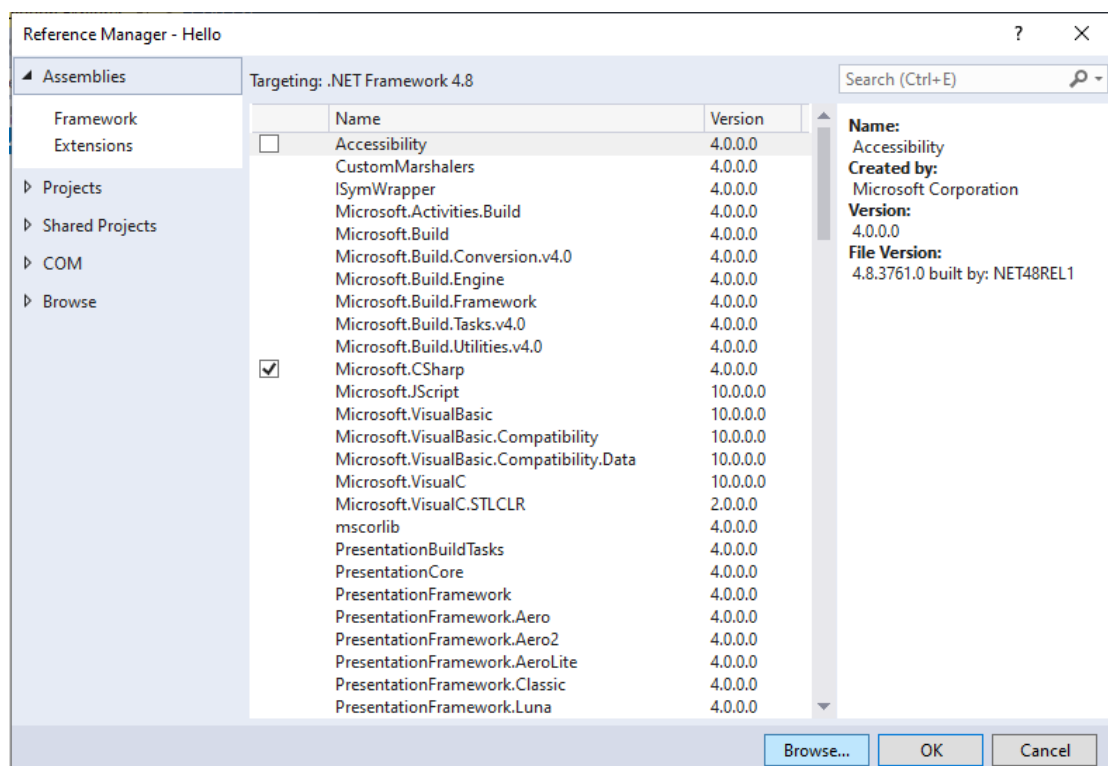
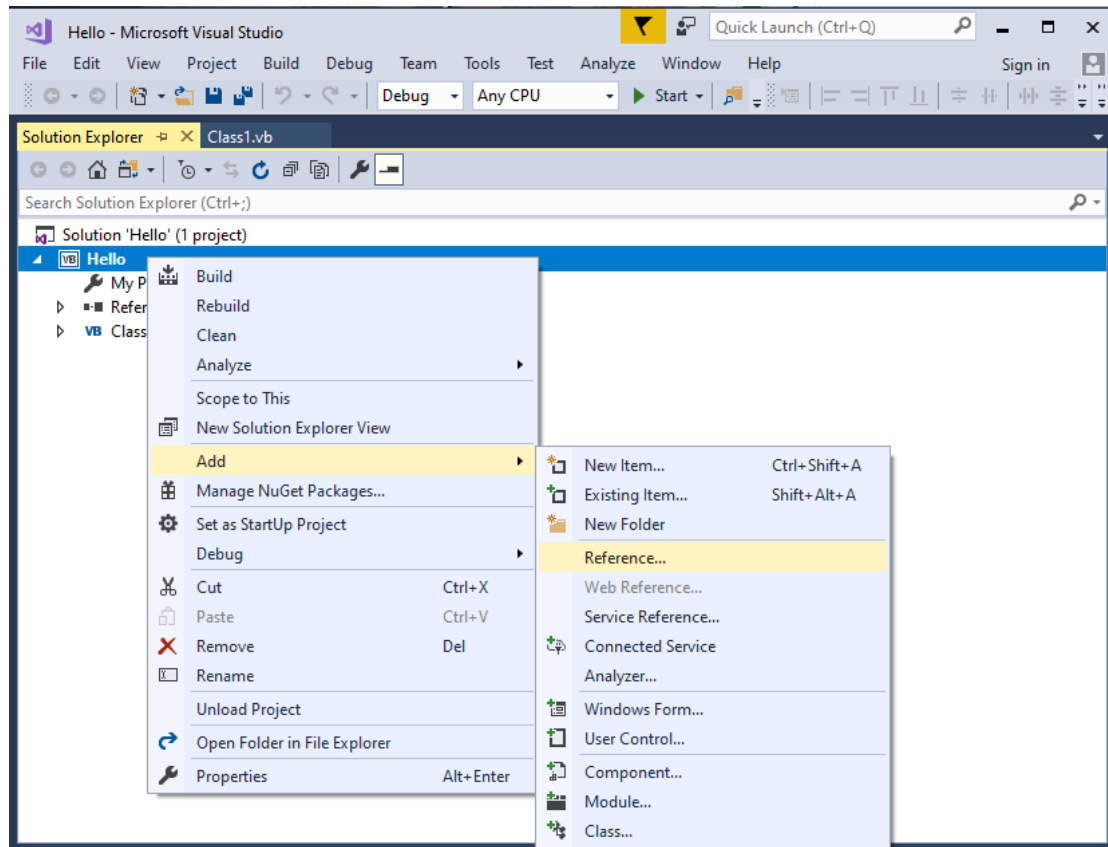
#### 5.1.1. Remove Reference

From **Solution Explorer** of Visual Studio 2017, find project 'Hello' and remove relevant reference files of previous version of GstarCAD, as shown below.



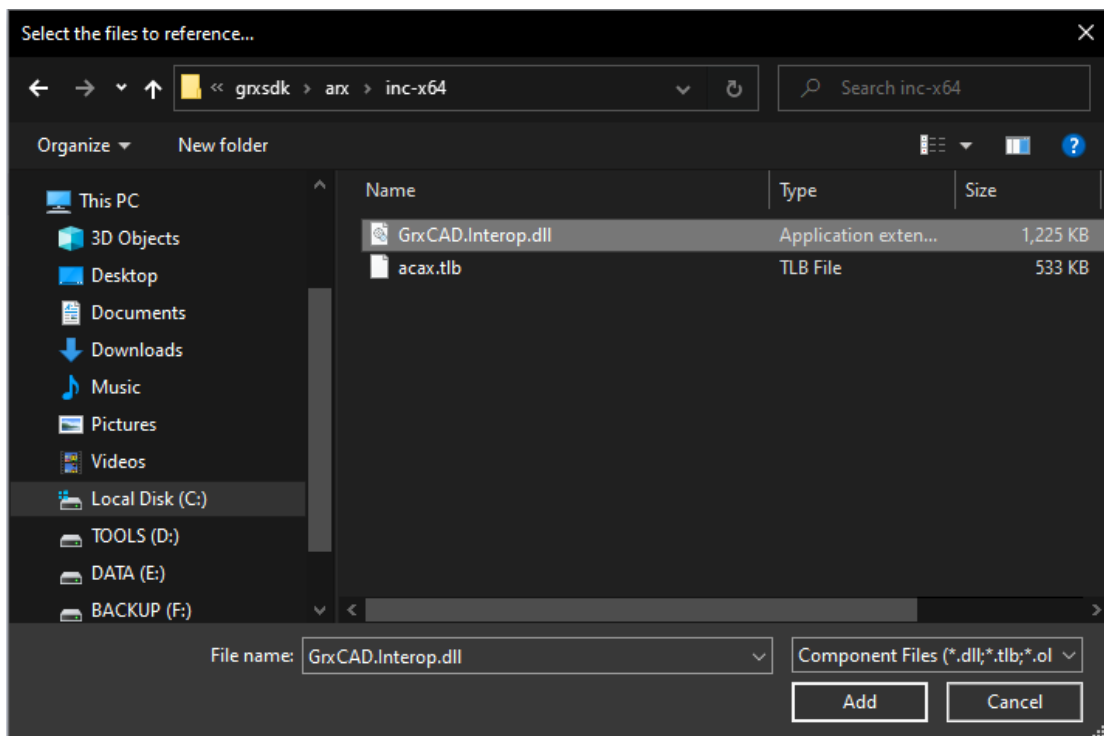
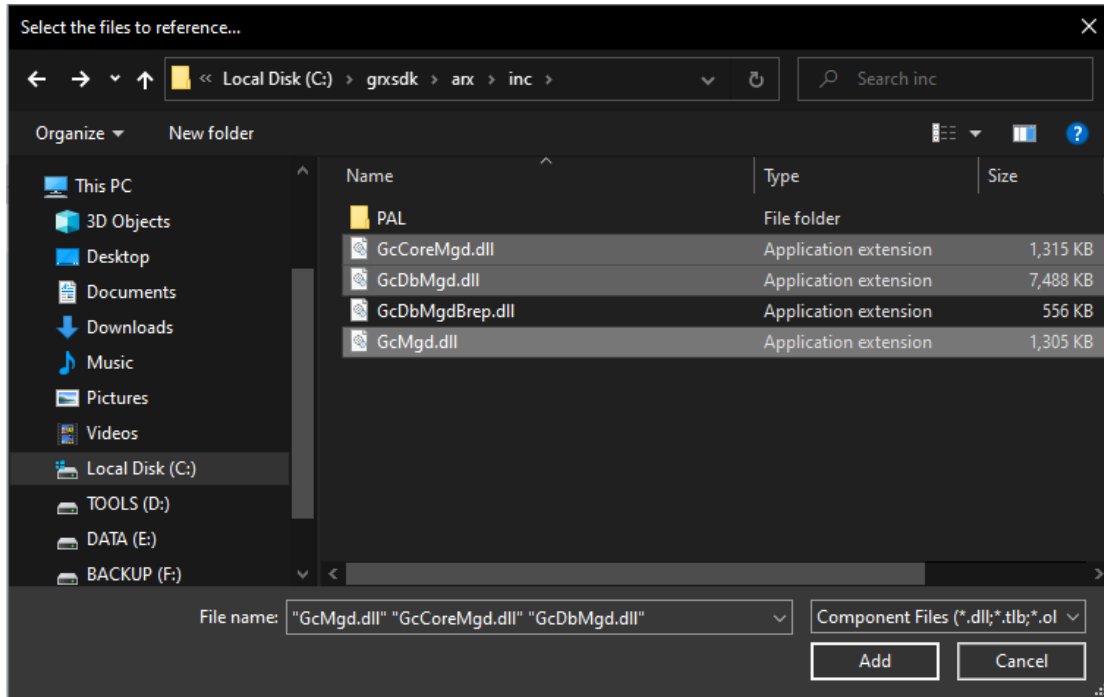
### 5.1.2. Add Reference

In **Solution Explorer** of Visual Studio 2017, right-click on project 'Hello' and select **Add Reference**. After the **Reference Manager** dialog window pops out, click **Browse...** button as shown below.



### 5.1.3. Load Reference File

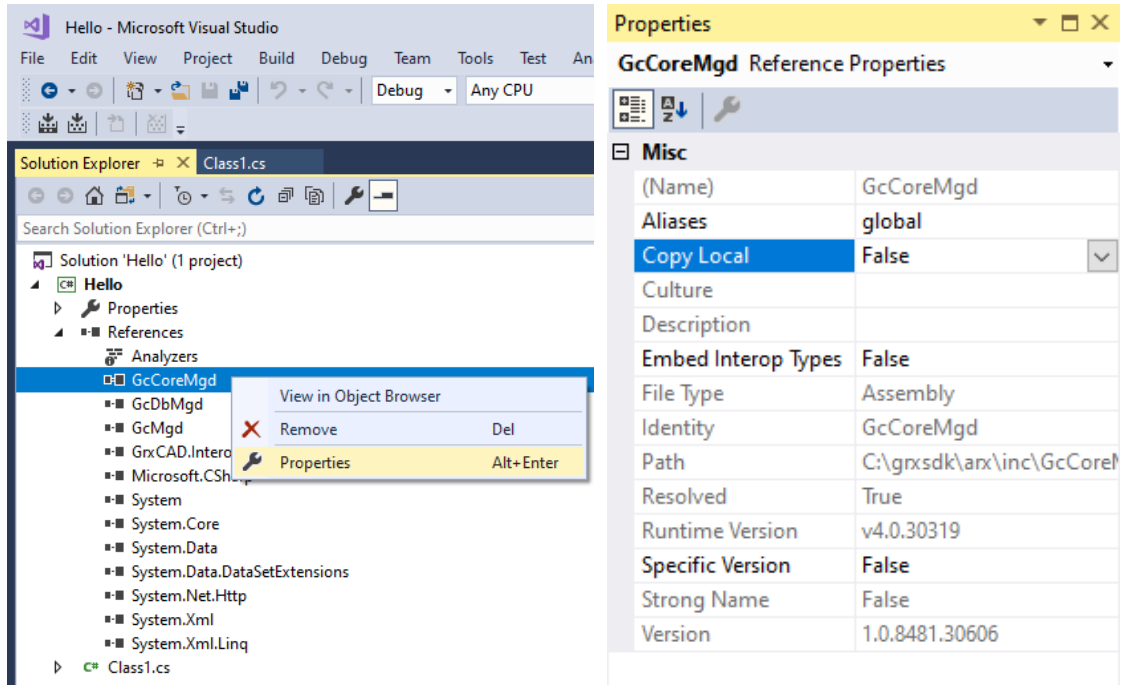
From the installation path of GstarCAD SDK, e.g. 'C:\grxsdk', select 'GcCoreMgd.dll', 'GcDbMgd.dll' and 'GcMgd.dll' in '\arx\inc' and 'GrxCAD.Interop.dll' or 'acax.tlb' in '\arx\inc-x64', and add them by clicking **Add** button.



**NOTE:** 'GcCoreMgd.dll', 'GcDbMgd.dll' and 'GcMgd.dll' must be added while 'GrxCAD.Interop.dll' (or 'acax.tlb') is

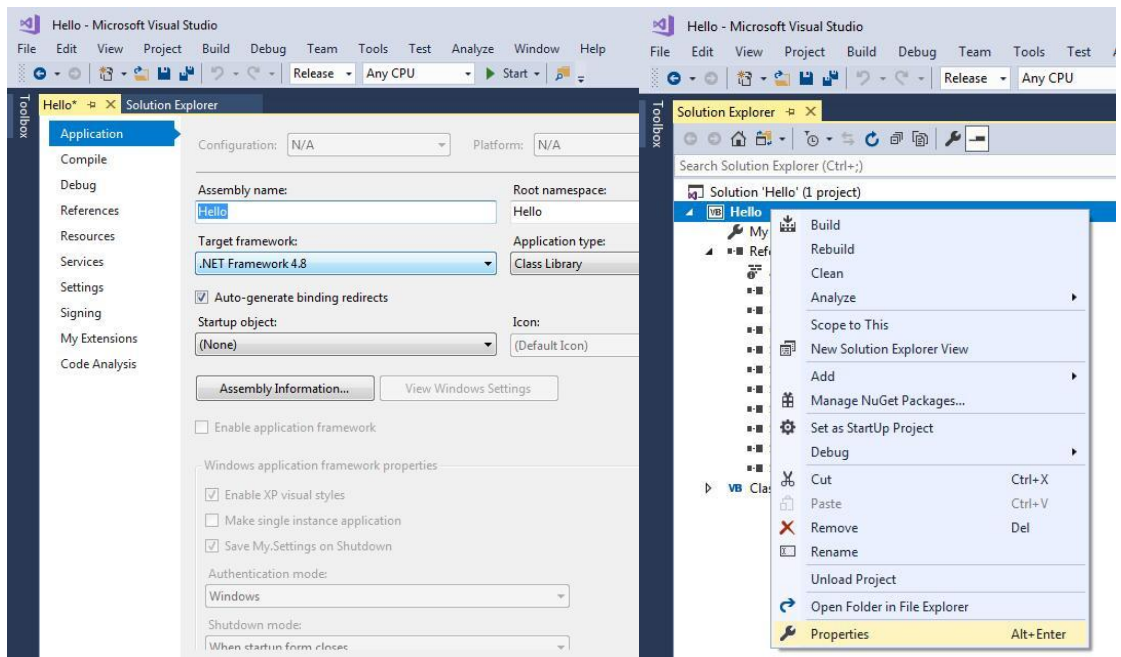
optional (needed when COM is used in the program).

After adding the files, right-click added '*GcCoreMgd.dll*', '*GcDbMgd.dll*' and '*GcMgd.dll*' files one by one and select **Properties** at the context menu, the **Reference Properties** palette pops up. Set the value of **Copy Local** property to **False**. The following screenshot shows how to change **Copy Local** property of '*GcCoreMgd.dll*'.



## 5.2. Change Target Framework

In **Solution Explorer** of Visual Studio 2017, right-click on project '*Hello*' and select **Properties**. After the dialog window pops out, select **Application** and change the **Target framework** to **.NET Framework 4.8** from the pull-down list.



### 5.3. Compile Program

In Visual Studio 2017, click **Build**→**Build Solution** to regenerate the DLL file in corresponding directory. Run GstarCAD and input '*netload*' at command line, select the relative DLL file from **Select .Net Assembly** dialog window and click **Open** button to load it.

## 6. Copyright

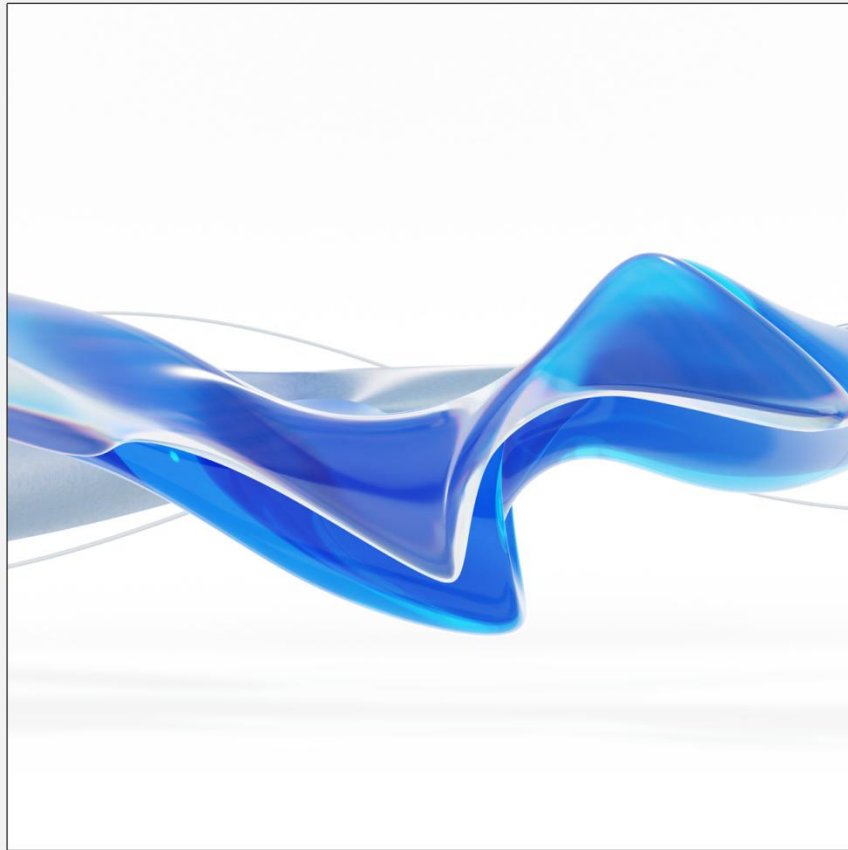
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**GstarCAD 2024**



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