How to Create, Build and Debug .NET 8.0 Plugin for AutoCAD 2025 (VS 2022)

The Codename for next release of AutoCAD is Venn, the alphas are available in

1. AutoCAD Venn alphas have started and they already support .net6.
2. AutoCAD Venn betas and the final release is targeted to support .net8.

Create .NET 8.0 Plugin from Scratch

Prerequisites

- Visual Studio 2022 with the **.NET desktop development** workload installed. The .NET 8 SDK is automatically installed when you select this workload.
- Microsoft® Visual Studio® 2022 version 17.8.0 must be used when compiling ObjectARX projects for use with AutoCAD 2025.
- Applications that require the use of Microsoft .NET should target the 8.0 version.

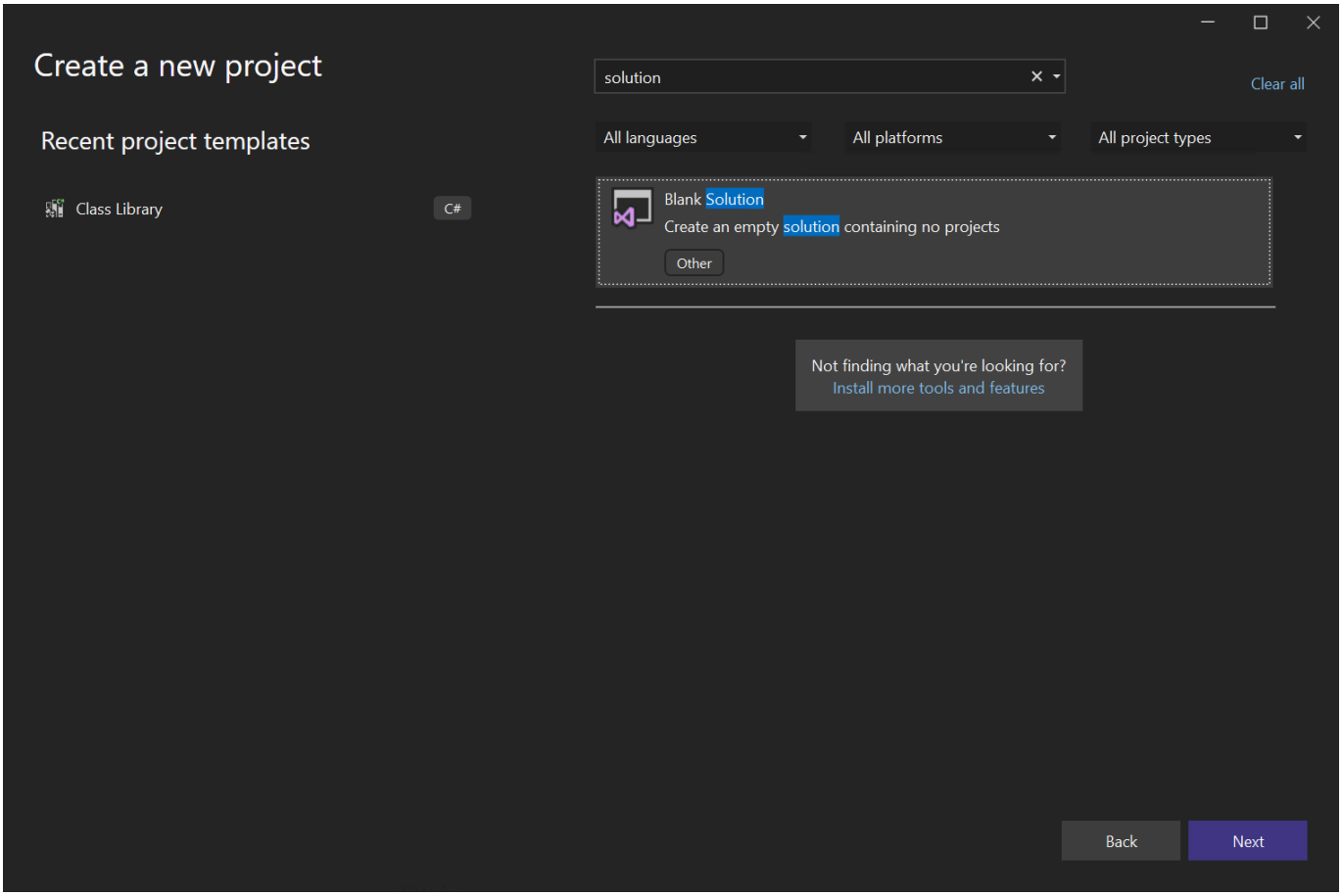
  For more information, see Install the .NET SDK with Visual Studio.

Create a solution

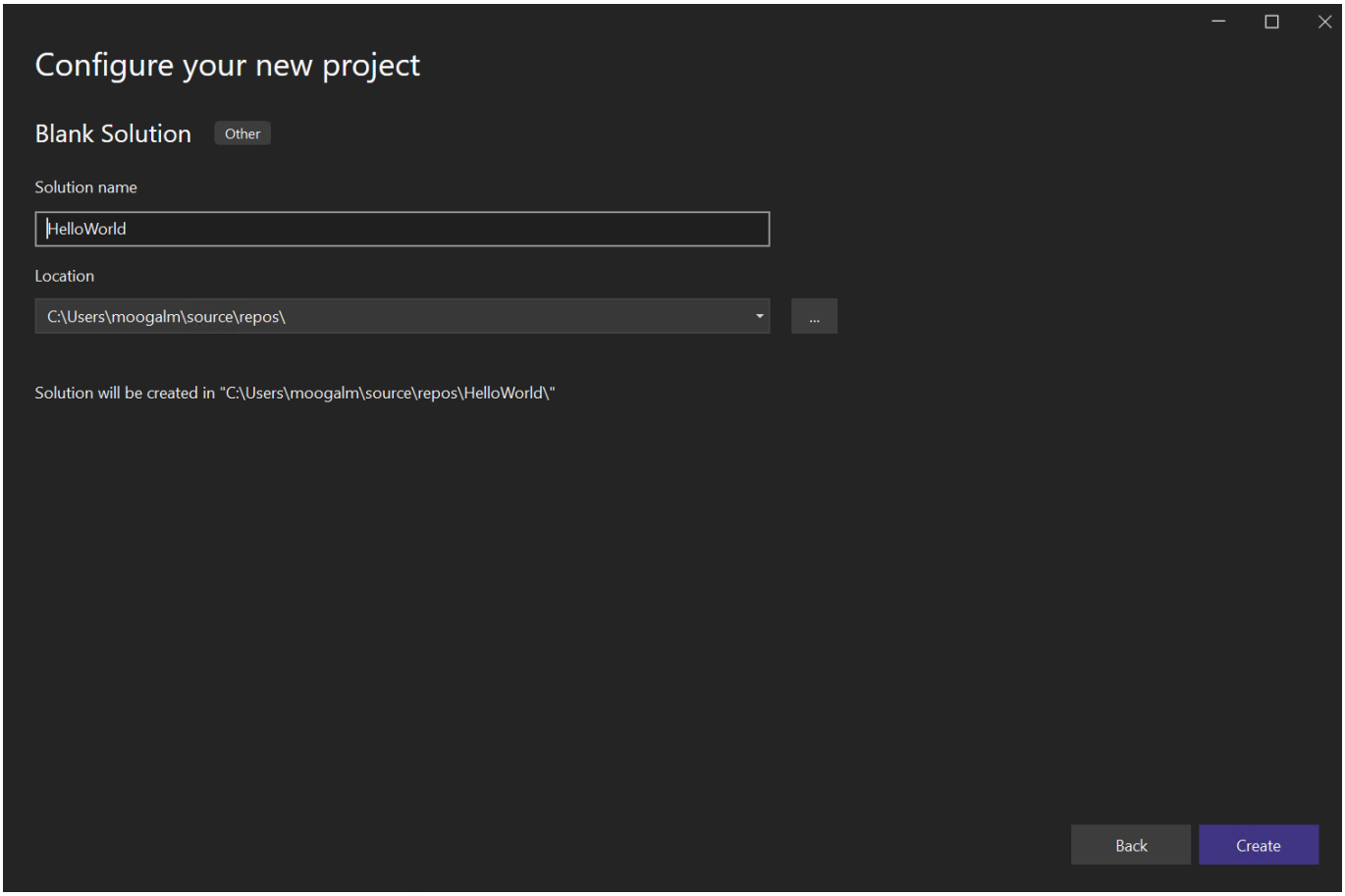
Start by creating a blank solution to put the class library project in. A Visual Studio solution serves as a container for one or more projects. You'll add additional, related projects to the same solution.

To create the blank solution:

1. Start Visual Studio.
2. On the start window, choose **Create a new project**.
3. On the **Create a new project** page, enter **solution** in the search box. Choose the **Blank Solution** template, and then choose **Next**.



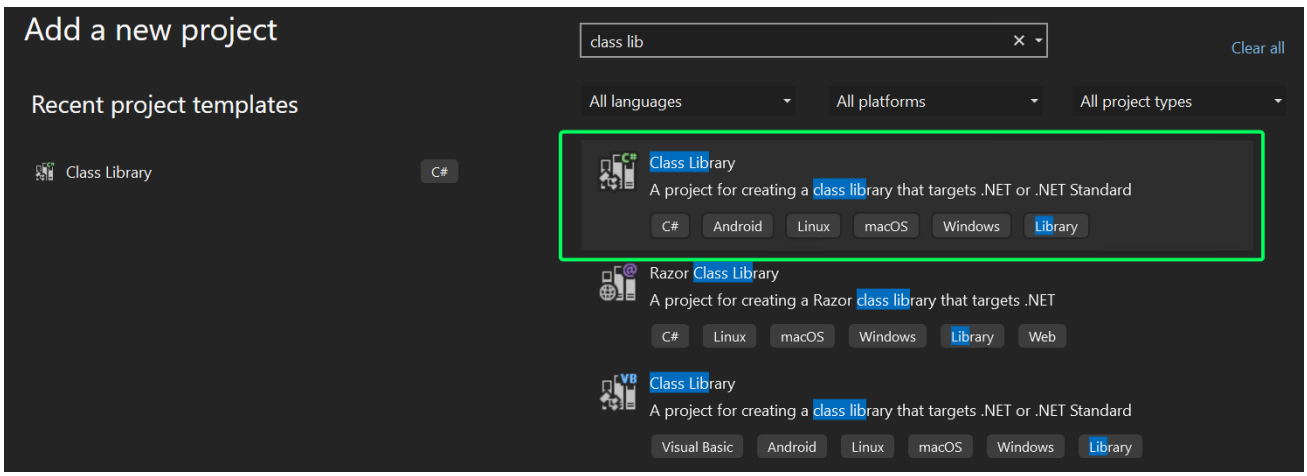
4. On the **Configure your new project** page, enter **ClassLibraryProjects** in the **Solution name** box. Then choose **Create**.



Create a class library project

1. Add a new .NET class library project named "HelloWorldCmd" to the solution.

    - Right-click on the solution in **Solution Explorer** and select **Add** > **New Project**.
    - On the **Add a new project** page, enter **library** in the search box. Choose **C#** or **Visual Basic** from the Language list, and then choose **All platforms** from the Platform list. Choose the **Class Library** template, and then choose **Next**.



- On the **Configure your new project** page, enter **HelloWorldCmd** in the **Project name** box, and then choose **Next**.
- On the **Additional information** page, select **.NET 8 (Long Term Suport)**, and then choose **Create**.

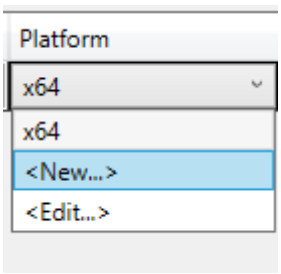
2. Check to make sure that the library targets the correct version of .NET. Right-click on the library project in **Solution Explorer**, and then select **Properties**. The **Target Framework** text box shows that the project targets .NET 8.0.

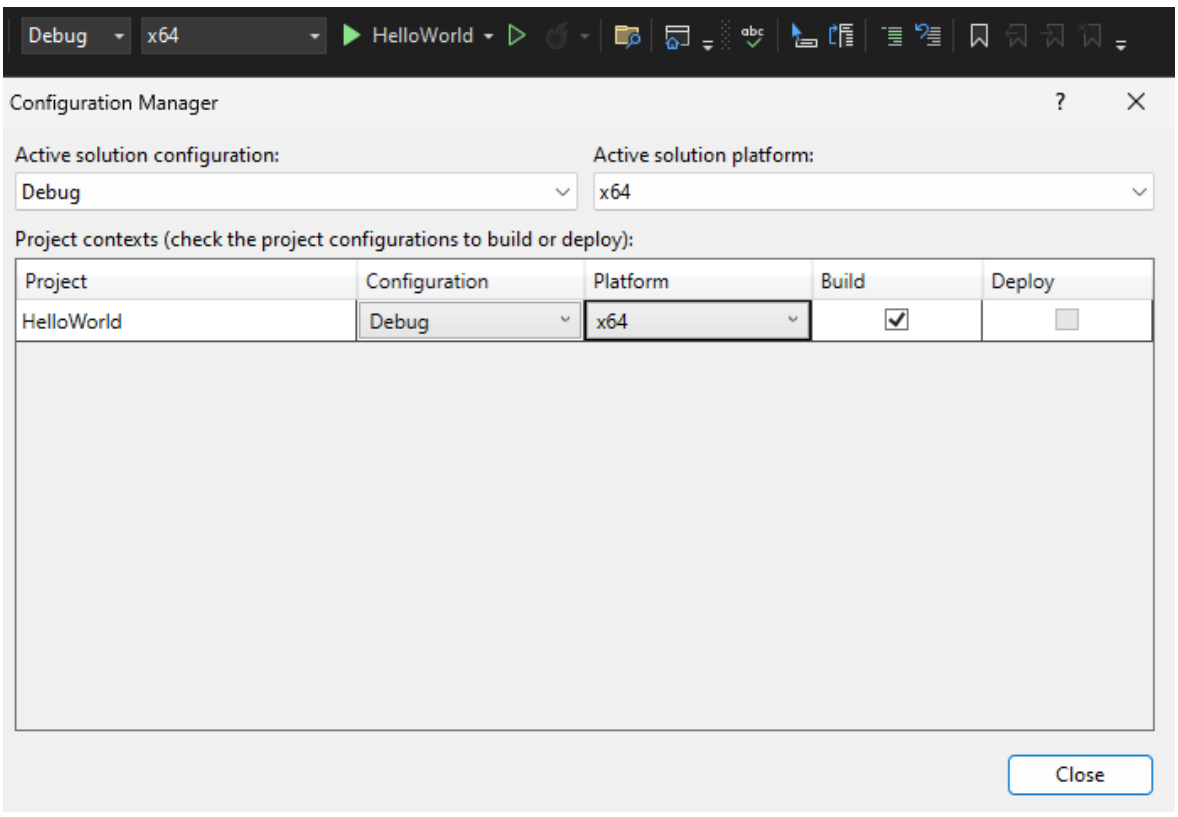
3. Find **Platform target**, select `x64` from the dropdown menu.

    1. If you're using Visual Basic, find **Target CPU** [Compile - General- Options], select `x64` from the dropdown menu.

    2. Change `Debug` type to `x64` from

        - If it doesn't exist, click on Create New from `Platform` in `Configuration`





4. Right-click on the library project in **Solution Explorer**, and then select **Edit Project File**. Replace with following contents, to avoid Version Conflicts error between .NET 4.8 and NET 8.0, we need to add following.

```
<FrameworkReference Include="Microsoft.WindowsDesktop.App"/>
```

```
<Project Sdk="Microsoft.NET.Sdk">

  <PropertyGroup>
    <TargetFramework>net8.0</TargetFramework>
    <Platforms>x64</Platforms>
  </PropertyGroup>
  <ItemGroup>
  <FrameworkReference Include="Microsoft.WindowsDesktop.App" />
  </ItemGroup>
</Project>
```

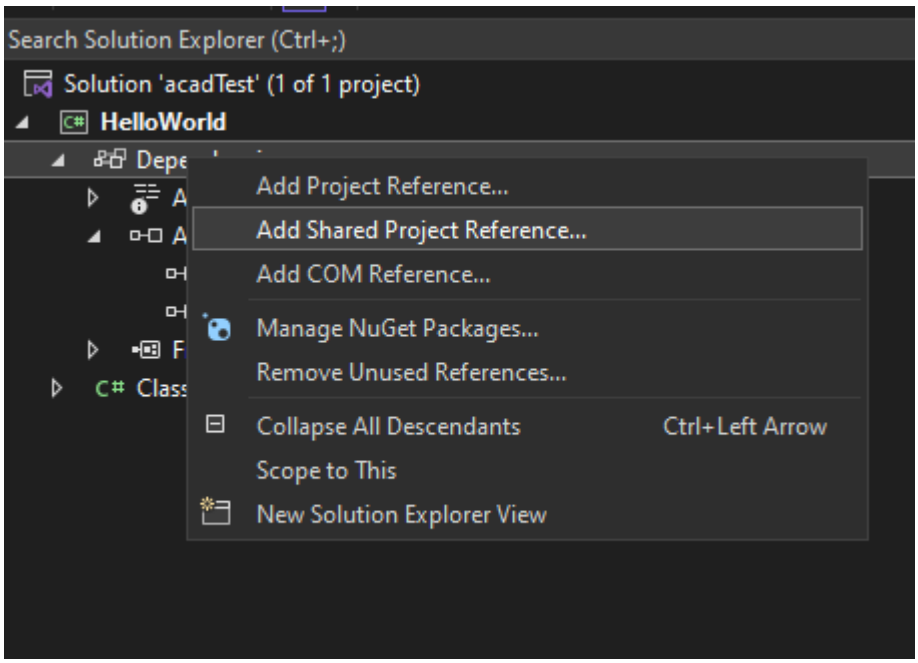
5. Save and close the project file (*.csproj /.vbproj*).

6. Open the class1.cs and replace the code with the following code.

```
using Autodesk.AutoCAD.ApplicationServices.Core;
using Autodesk.AutoCAD.DatabaseServices;
using Autodesk.AutoCAD.EditorInput;
using Autodesk.AutoCAD.Runtime;
using Document = Autodesk.AutoCAD.ApplicationServices.Document;

/*
You need to add
 - accoremgd.dll,
 - acdbmg.dll & acmgd.dll
 references from ~\ObjectARX 2025\inc\
*/

[assembly: ExtensionApplication(typeof(HelloWorldCmd.Class1))]
[assembly: CommandClass(typeof(HelloWorldCmd.TestCommands))]
namespace HelloWorldCmd;
public class Class1 : IExtensionApplication
{
    public void Initialize()
    {

    }

    public void Terminate()
    {

    }
}

public class TestCommands {

    [CommandMethod("Hello")]
    public static void Hello()
    {
        Document doc = Application.DocumentManager.MdiActiveDocument;
        if(doc is null) return;
        Editor ed = doc.Editor;
        ed.WriteMessage("Hello World");
    }
}
```

7. Adding AutoCAD References

- In **Solution Explorer**, right-click the **References** or **Dependencies** node, and then choose **Add Shared Project Reference** from the context menu. (You can right-click the project node and select **Add** from the fly-out menu to choose from these options, too.)



- **Reference Manager** opens and lists the available references by group. Click Browser and go to ObjectARX 2025 folder [Ex: C:\ARX2025\inc]

  Add `accoremgd.dll` , `acdbmgd.dll` and `acmgd.dll` from `C:\ARX2025\inc`

8. Right-click on the library project in **Solution Explorer**, and then select **Build**

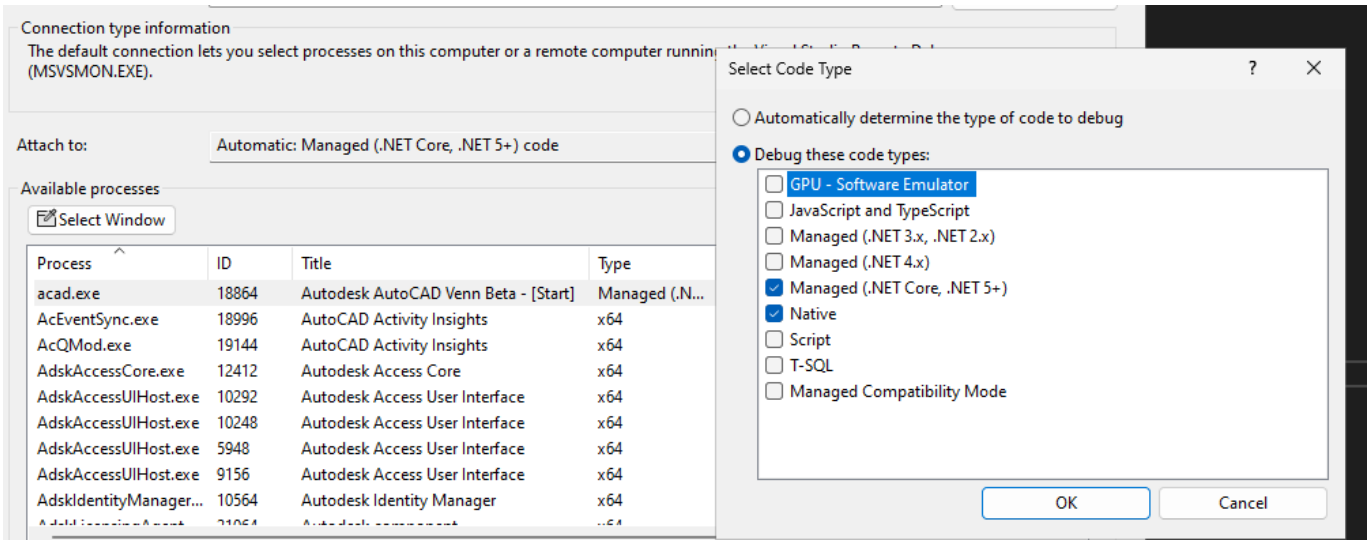
Debugging

Launch AutoCAD Venn Beta from Start Menu

Attach to AutoCAD Running Process.

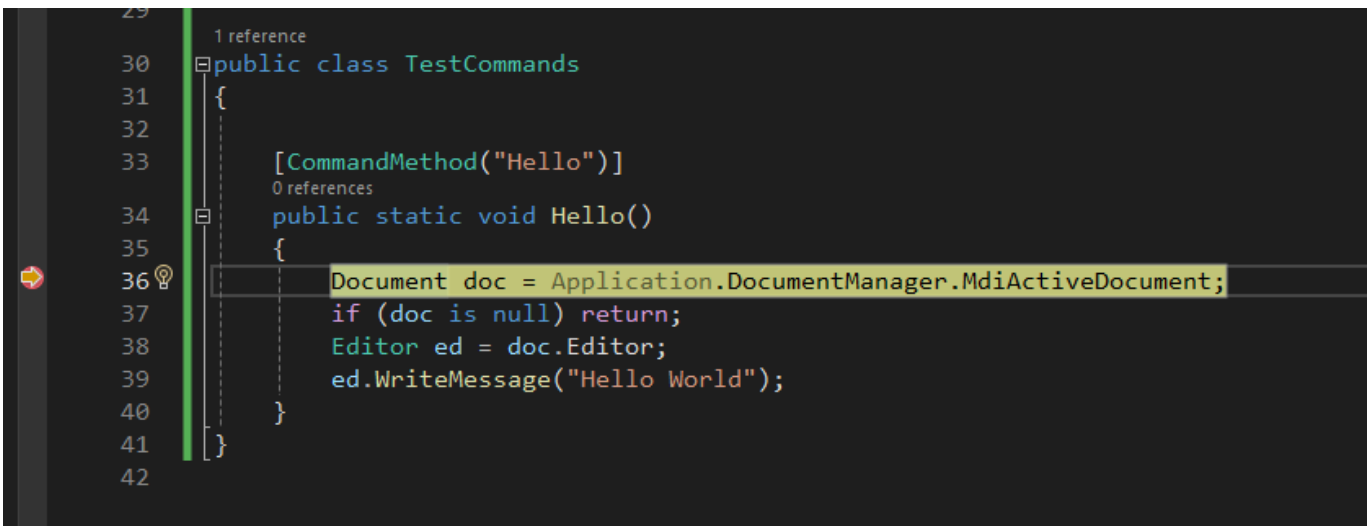
- In Visual Studio, select **Debug** > **Attach to Process** (or press **Ctrl**+**Alt**+**P**) to open the **Attach to Process** dialog box.
- Select `Attach To`
  - To select code types manually:
    1. Click **Select**.
    2. In the **Select Code Type** dialog box, select **Debug these code types**.
    3. Select the code types
       - Managed (CoreCLR) - .NET Core
       - Native - C/C++
    4. Select **OK**.

- Pick `acad.exe`



- In the AutoCAD Command Line,

  ```
  NETLOAD "HelloWorldCmd.dll"
  Hello
  ```



```
1 reference
30  public class TestCommands
31  {
32
33      [CommandMethod("Hello")]
        0 references
34      public static void Hello()
35      {
36          Document doc = Application.DocumentManager.MdiActiveDocument;
37          if (doc is null) return;
38          Editor ed = doc.Editor;
39          ed.WriteMessage("Hello World");
40      }
41  }
42
```

```
NETLOAD
Command: HELLO
Hello World
```