

# How to Create, Build and Debug .NET 8.0 Plugin for AutoCAD 2025

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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

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Note: This instruction should be followed in `[Visual Studio Developer Command Prompt]` ([Command-line shells & prompt for developers - Visual Studio \(Windows\) | Microsoft Learn](#))

### Create a solution

Start by creating a blank solution to put the class library project in. A solution serves as a container for one or more projects.

```
mkdir AcadNetTest
cd AcadNetTest
dotnet new sln
```

```
The template "Solution File" was created successfully.
```

### Create a class library project

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

1. In the terminal, run the following command to create the library project:

```
dotnet new classlib -o HelloWorld
```

The `-o` or `--output` command specifies the location to place the generated output.

The terminal output looks like the following example:

The template "Class Library" was created successfully.

Processing post-creation actions...

Running 'dotnet restore' on E:\data\HelloWorld\HelloWorld.csproj...

Determining projects to restore...

Restored E:\data\HelloWorld\HelloWorld.csproj (in 80 ms).

Restore succeeded.

2. Run the following command to add the library project to the solution:

```
dotnet sln add HelloWorld\HelloWorld.csproj
```

Project `HelloWorld\HelloWorld.csproj` added to the solution.

3. Check to make sure that the library targets .NET 8.0. In **Explorer**, open *HelloWorld/HelloWorld.csproj*.

The `TargetFramework` element shows that the project targets .NET 8.0.

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

  <PropertyGroup>
    <TargetFramework>net8.0</TargetFramework>
  </PropertyGroup>
</Project>
```

Now 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>
```

4. Launch AcadNetTest solution and replace the code with the following code.

```
devenv AcadNetTest.sln
```

```

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

    public void Terminate()
    {
    }
}

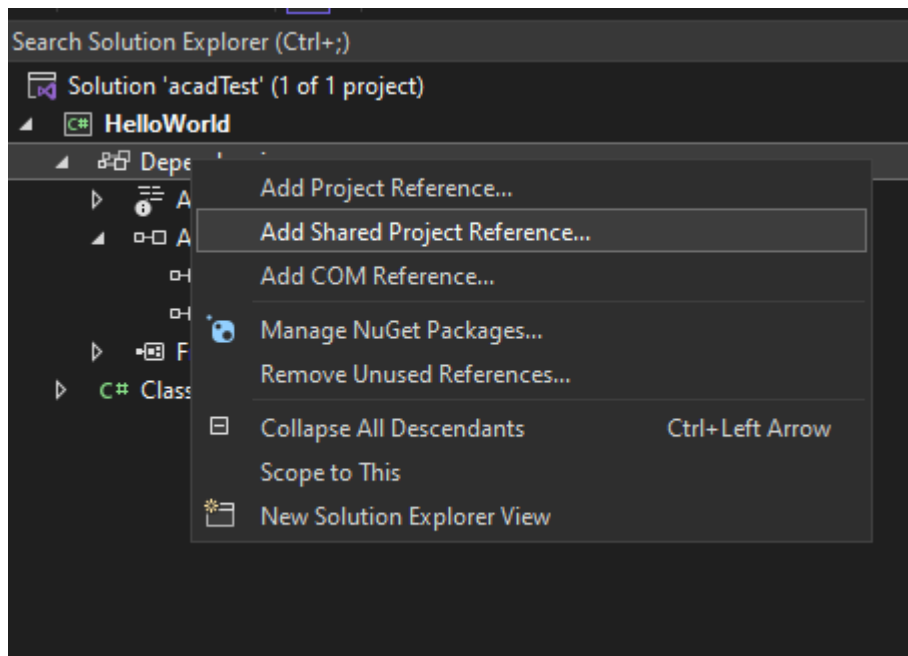
public class TestCommands {

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

```

## 5. Adding AutoCAD References

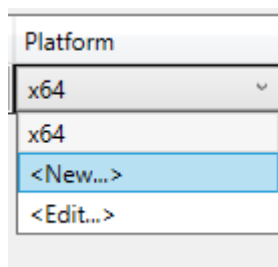
- In **Solution Explorer**, right-click the **References** or **Dependencies** node, and then choose **Add Shared Project Reference** from the context menu. (You can right-click the project node and select **Add** from the fly-out menu to choose from these options, too.)

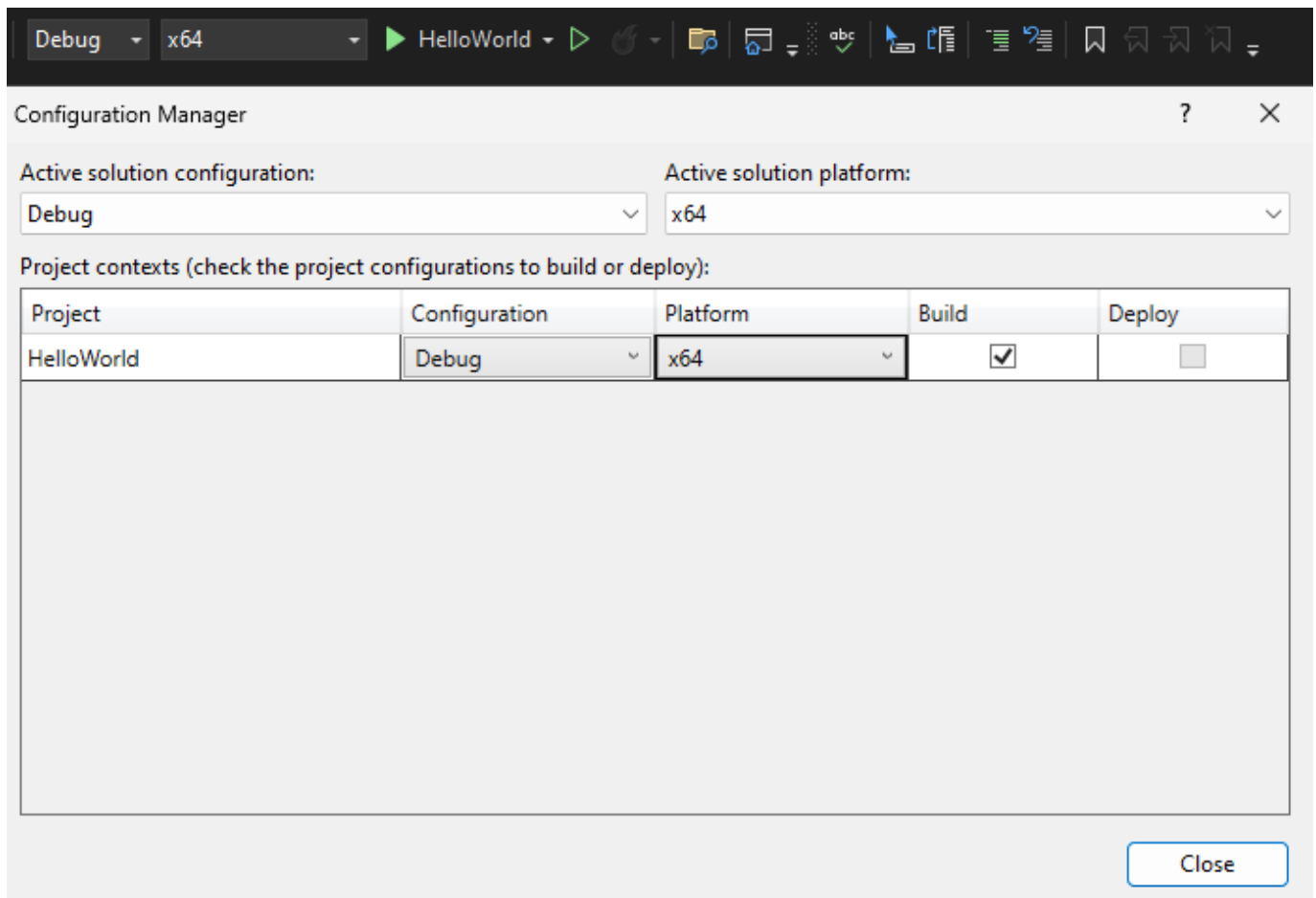


- **Reference Manager** opens and lists the available references by group. Click **Browser** and go to ObjectARX 2025 folder [Ex: C:\ARX2025\inc]

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

- Change `Debug` type to `x64` from
  - If it doesn't exist, click on **Create New** from `Platform` in `Configuration`





## 6. Save and Build

```
dotnet build HelloWorld.csproj -a win-x64 -c Debug
```

```
MSBuild version 17.8.3+195e7f5a3 for .NET
Determining projects to restore...
Restored C:\Temp\acadTest\HelloWorld\HelloWorld.csproj (in 151 ms).
HelloWorld -> C:\Temp\acadTest\HelloWorld\bin\Debug\net8.0\win-win-x64\HelloWorld.dll

Build succeeded.
    0 Warning(s)
    0 Error(s)

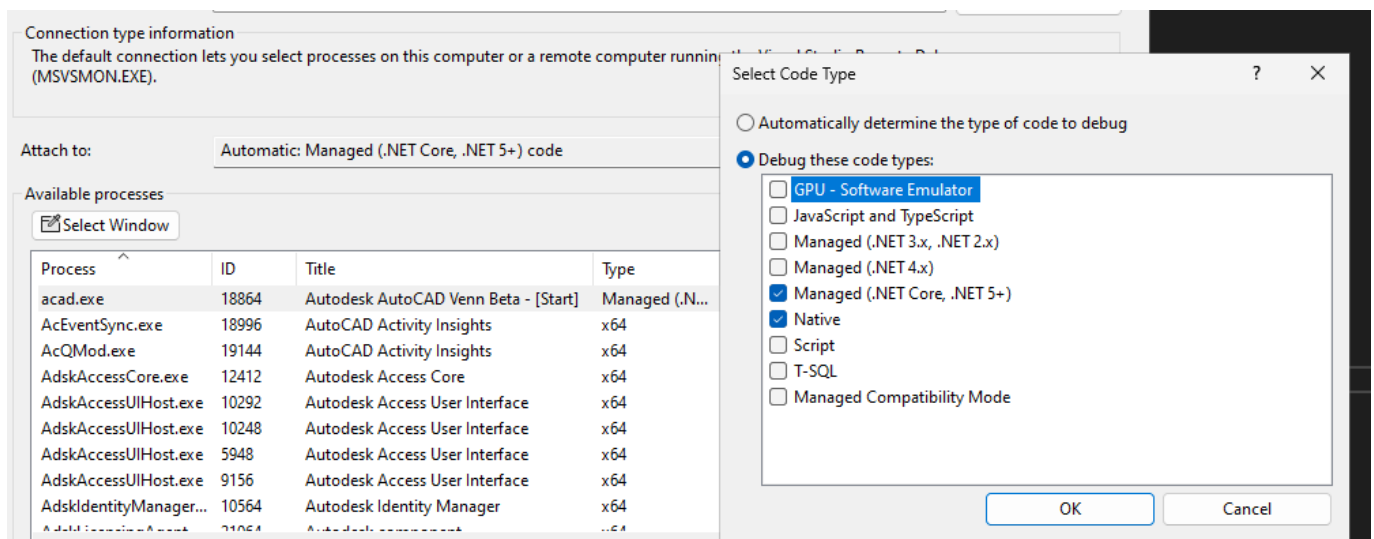
Time Elapsed 00:00:01.48
```

## 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 "HelloWorld.dll"
```

```
Hello
```

```
29 1 reference
30 public class TestCommands
31 {
32
33     [CommandMethod("Hello")]
34     0 references
35     public static void Hello()
36     {
37         Document doc = Application.DocumentManager.MdiActiveDocument;
38         if (doc is null) return;
39         Editor ed = doc.Editor;
40         ed.WriteMessage("Hello World");
41     }
42 }
```

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