

# SETTING UP LENDING AND EDGE IN VISUAL STUDIO

## OVERVIEW

As a developer, you will need to set up Lending and EDGE in Visual Studio Professional in accordance with UWM standards and guidelines.

**NOTE:** While Visual Studio 2022 is available for download, users can run into a lot of errors so for now it is best to work out of Visual Studio 2019.

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\*\*INTERNAL USE ONLY\*\*

## INSTALLATIONS

There are four applications you will need to install. These installations are important to ensure solutions run correctly and to prevent errors later down the road.

### INSTALL MICROSERVICE CERTS

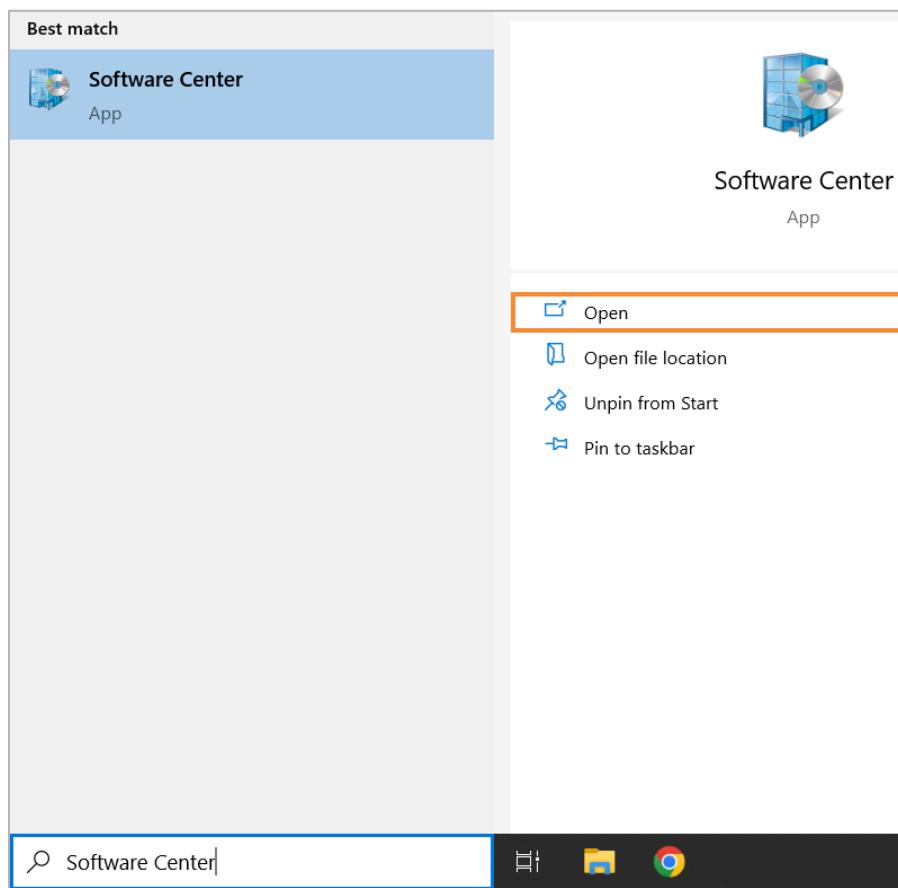
1. In the task bar, click your cursor in the **search bar**



2. Type in the search bar: **Software Center**



3. Click **Open**



\*\*INTERNAL USE ONLY\*\*

#### 4. Sort by Application name: A to Z

Sort by: Most recent ▾

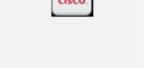
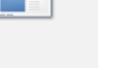
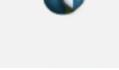
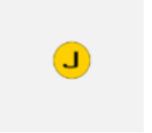
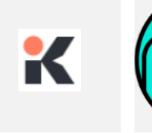
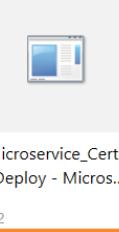
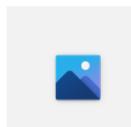
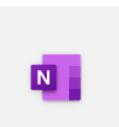
- Application name: A to Z**
- Application name: Z to A
- Oldest
- Most recent
- Publisher name: A to Z
- Publisher name: Z to A
- Status

	Office 365				
Protect VPN Protect Networks	Office 365 5-22	Zoom 5.11.4 Zoom 5.11.4	Finesse 91.12 Firefox 91.12	Dell Command Update 4.5 Dell 4.5	Underwriting Signatures UWM 5.17.22

#### 5. Scroll down and click **Microservice\_Certs\_Deploy**

**NOTE:** If you are missing Microservice\_Certs\_Deploy [click here](#)

Filter: All ▾ Sort by: Application name: A to Z ▾

							
File Transfer JK	FileTransfer UWM 5.0	Finesse 91.12 Firefox 91.12	GIT Github 2.22.0	Git Config - Install 1.1	GitKraken 8.4 Axosoft, LLC 8.4.0	GlobalProtect VPN Palo Alto Networks 5.2.9	Google Chrome Google 96.0.4664.93
							
Hyperion Interactive Report... Oracle 11.1.2.2	Intel® Graphics Command Center INTEL CORP	Jabra UWM_Users	Krisp Krisp.ai 1.24.1	Logitech Options Logitech 9.6	Logitech Options Logitech 1.22	Logitech Unifying App Logitech 2.50.25	Microservice_Certs_Deploy - Micros... 1.2
							

6. Click **Install**

Applications > Application details

Microservice\_Certs\_Deploy - Microservice\_Certs\_Deploy

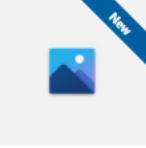
**Install**

**INSTALL ABCPDF SOFTWARE**

1. While still in the Software Center, scroll down and click on
- ABCpdf.NET 10.1 x64**

All Required

Filter: All Sort by: Most recent

 New	 New	 New	 New	 New	 New	 New	 New
Microsoft Photos Microsoft Current	Windows Terminal Microsoft Current	Ubuntu Canonical Group Lim... Current	Power Apps Microsoft Current	Intel® Graphics Command Center Intel Current	Windows Voice Recorder Microsoft Current	GdPicture.NET 14 PSPDFKit 14.0.0.46	ABCpdf .NET 10.1 x64 webSupergoo 10.1.15

2. Click
- Install**

Applications > Application details

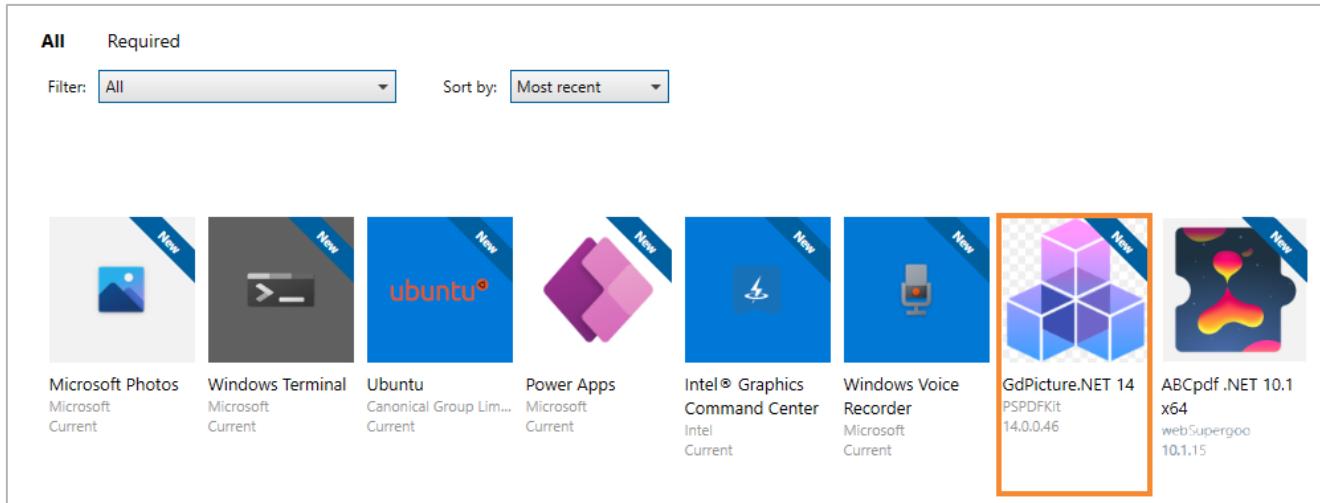
ABCpdf .NET 10.1 x64  
Published by webSupergoo

**Install**

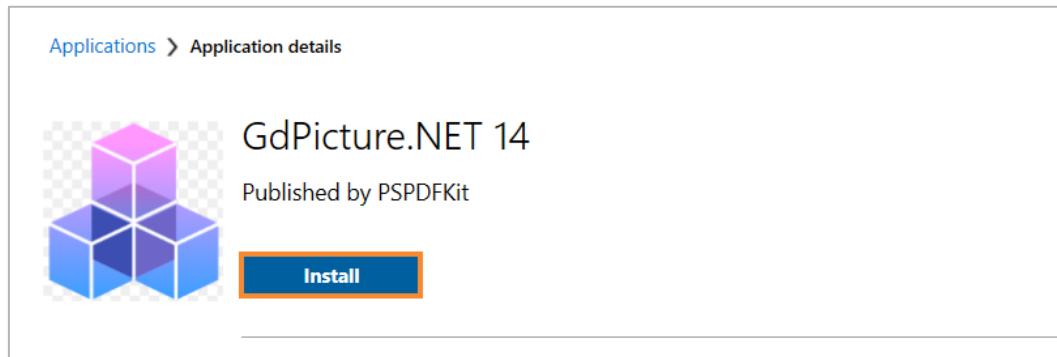
\*\*INTERNAL USE ONLY\*\*

## INSTALL GDPICTURE SOFTWARE

1. While still in the Software Center, scroll down and click on **GdPicture.NET 14**



2. Click **Install**

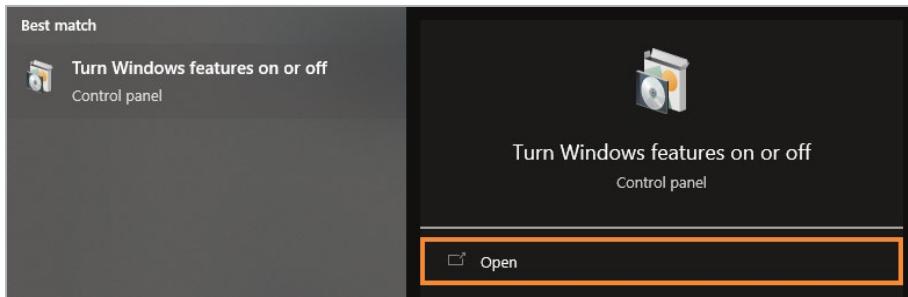


## INSTALL MICROSOFT MESSAGE QUEUE (MSMQ)

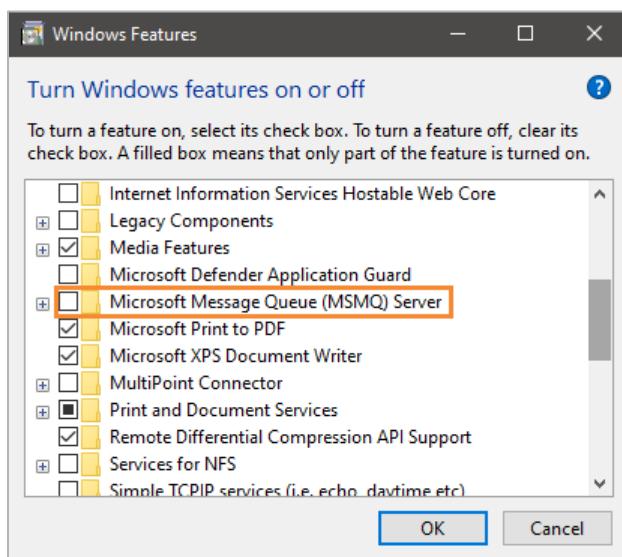
1. In the taskbar, search **Turn Windows features on or off**



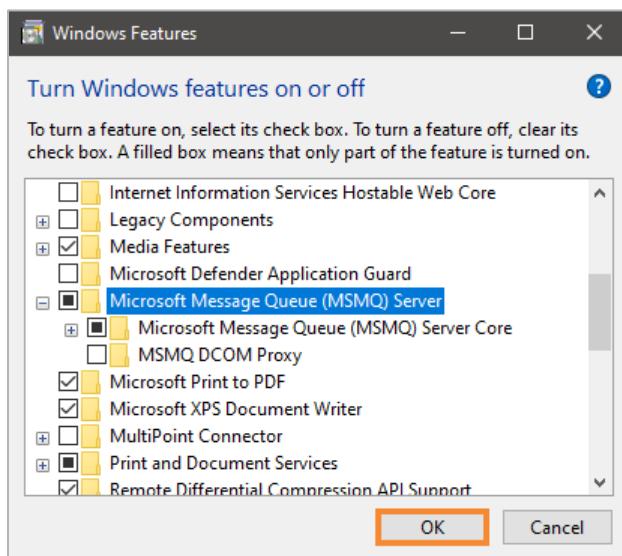
2. Click **Open**



3. Scroll down and select **Microsoft Message Queue (MSMQ) Server**



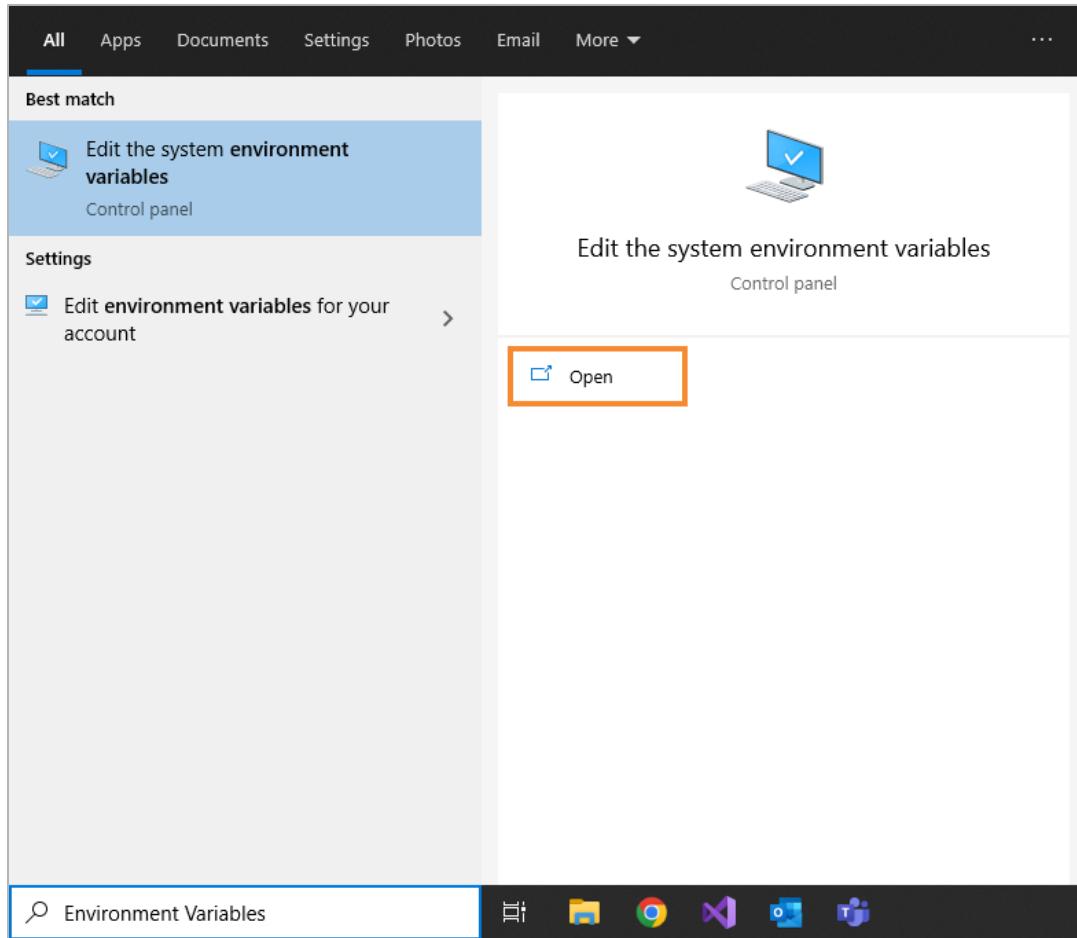
4. Click **OK**



## SET ENVIRONMENT VARIABLE

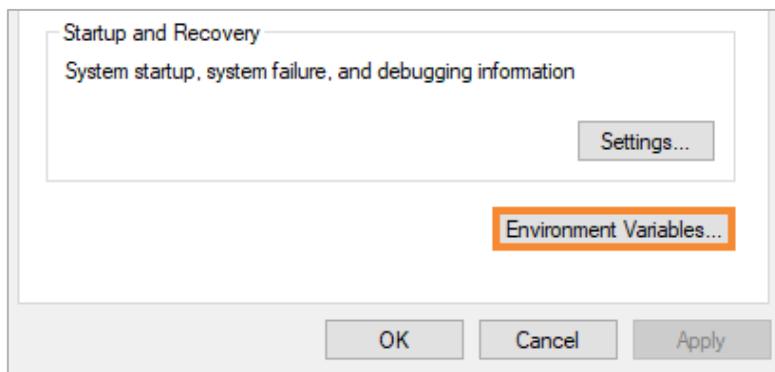
Setting environment variables provide a way to set application execution parameters. This step is to ensure the run level is set to local.

### 1. Open Environment Variable



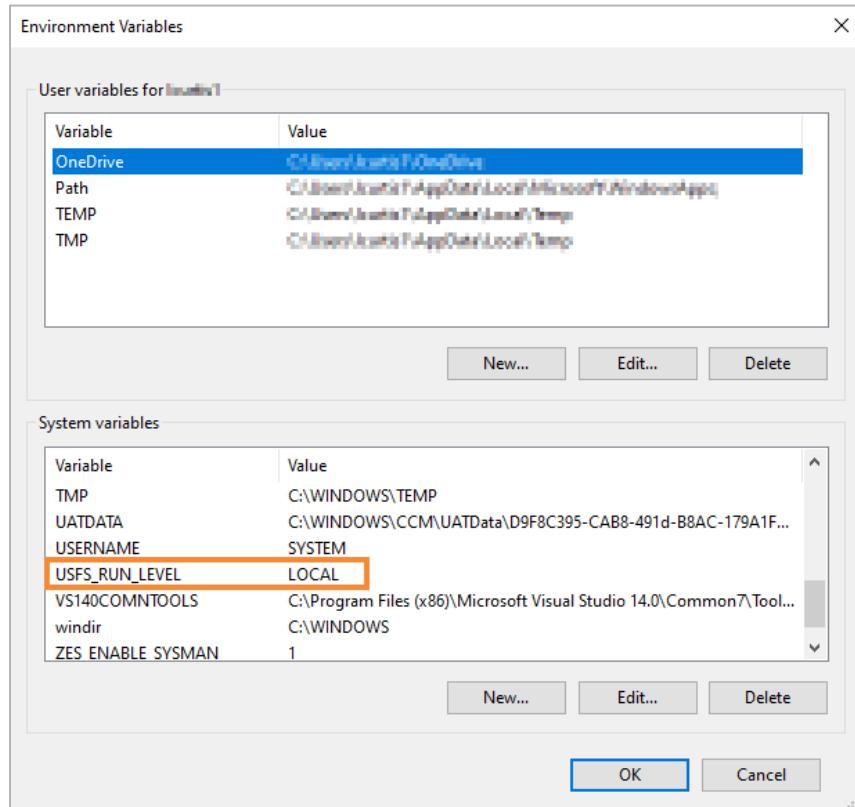
\*\*INTERNAL USE ONLY\*\*

### 2. Click Environment Variables

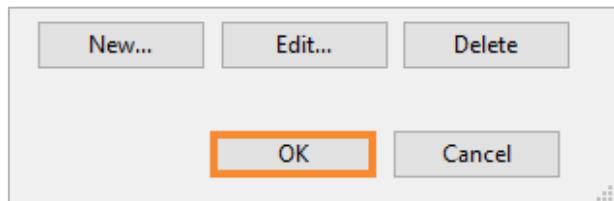


3. Under system variables, scroll down to check that **USFS\_RUN\_LEVEL** is set to the value **LOCAL**

**NOTE:** If you do not see USFS\_RUN\_LEVEL [click here](#)



4. Click **OK**



# UPDATE CONFIG FILES

Updating the config files establishes connections to the UWM development database.

# COPY CONNECTION STRINGS

1. Go to [Bitbucket](#)<sup>1</sup> to obtain the connection strings

Bitbucket Your work Projects Repositories

Miscellaneous Projects / nupack-usfs-connection-strings

Connection Strings

Source

release/latest ... nupack-usfs-connection-strings / Development / Usfs.ConnectionStrings.config

Blame Raw file

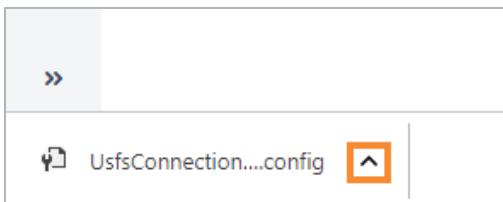
Source view Diff to previous History 17.24 KB

```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <connectionStrings>
3   <add name="AllConnectionString" connectionString="LDAP://choremortgage.com/>
4   <add name="AddressStandardization" connectionString="server=T801VDSQ001;database=AddressStandardization;integrated security=true;" providerName="System.Data.SqlClient"/>
5   <add name="ApilManagementConfiguration" connectionString="server=T801VDSQ001;database=InternalApplicationData;integrated security=true;" providerName="System.Data.SqlClient"/>
6   <add name="ApilManagementLog" connectionString="server=T801VDSQ001;initial catalog=OJ_Metric;integrated security=true;" providerName="System.Data.SqlClient"/>
7   <add name="ApilManagementLog2" connectionString="server=T801VDSQ001;initial catalog=OJ_Metric;integrated security=true;providerName='System.Data.SqlClient';logFile='ApilManagementLog';providerName='System.Data.SqlClient' />
8   <add name="AplicationServer" connectionString="data source=.SQLEXPRESS;integrated Security=SSPI;attachDBfilename=|DataDirectory|\apilserver.mdf;User Instance=true" providerName="System.Data.SqlClient" />
9   <add name="ArchitectureP0K" connectionString="Server=T801VDSQ001;Database=ArchitectureSandbox;Integrated Security=True;" providerName="System.Data.SqlClient"/>
10  <add name="AppState" connectionString="server=S01VDSQ003.SIGNALR;database=AppState;integrated security=true;" providerName="System.Data.SqlClient"/>
11  <add name="AppStateShared" connectionString="server=S01VDSQ003.SIGNALR;database=AppState;integrated security=true;" providerName="System.Data.SqlClient"/>
12  <add name="AppStateShared2" connectionString="server=S01VDSQ003.SIGNALR;database=AppState;integrated security=true;" providerName="System.Data.SqlClient"/>
13  <add name="AppStateShared3" connectionString="server=S01VDSQ003.SIGNALR;database=AppState;integrated security=true;" providerName="System.Data.SqlClient"/>
14  <add name="ASPM" connectionString="server=T801VDSQ001;database=ASPM;integrated security=true;trust server=true;providerName='System.Data.SqlClient' />
15  <add name="BVT1" connectionString="server=S01VDSQ047H01;database=BVT1;integrated security=true;" providerName="System.Data.SqlClient"/>
16  <add name="BuildInfo" connectionString="server=T801VDSQ001;database=BuildInfo;integrated security=true;" providerName="System.Data.SqlClient"/>
17  <add name="BeSmarterConnection" connectionString="be-smarter.com/">
18  <add name="Budgeting" connectionString="server=T801VDSQ001;database=BUDGETING;integrated security=true;" providerName="System.Data.SqlClient"/>
19  <add name="BusinessRules" connectionString="server=T801VDSQ001;database=BusinessRules;integrated security=true;" providerName="System.Data.SqlClient"/>
20  <add name="CommunicationPreferences" connectionString="server=T801VDSQ001;database=CommunicationPreferences;integrated security=true;" providerName="System.Data.SqlClient"/>
21  <add name="ConfigurationOverrides" connectionString="server=T801VDSQ001;database=InternalApplicationData;integrated security=true;" providerName="System.Data.SqlClient"/>
22  <add name="CRN" connectionString="server=T801VDSQ001;database=CRN;integrated security=true;" providerName="System.Data.SqlClient"/>
23  <add name="DataAuditing" connectionString="server=S01VDSQ001;database=DataAuditing;integrated security=true;" providerName="System.Data.SqlClient"/>
24  <add name="DataAuditLog" connectionString="server=T801VDSQ001;database=DataAuditLog;integrated security=true;" providerName="System.Data.SqlClient";maxBufferSize=32768;useResultSetCache=false;activeResultSets=True;Application Name=EntityFramework"/>
25  <add name="Dfif" connectionString="server=T801VDSQ001;database=Integ_Dfif;integrated security=true;" providerName="System.Data.SqlClient"/>
26  <add name="DeploymentAP" connectionString="server=T801VDSQ001;database=Integ_Prod;integrated security=true;" providerName="System.Data.SqlClient"/>
27  <add name="Destiny" connectionString="server=T801VDSQ001;database=Integ_Prod;integrated security=true;" providerName="System.Data.SqlClient"/>
28  <add name="Destiny_Shore" connectionString="server=T801VDSQ001;database=Integ_Prod;integrated security=true;" providerName="System.Data.SqlClient"/>
29  <add name="DestinyReplication" connectionString="server=T801VDSQ005;database=Integ_Prod;integrated security=true;" providerName="System.Data.SqlClient"/>
30  <add name="DestinyTest" connectionString="server=T801VDSQ001;database=destiny_node;integrated security=true;" providerName="System.Data.SqlClient"/>
31  <add name="DeveloperX" connectionString="server=T801VDSQ001;initial Catalog=DeveloperX;integrated security=true;" providerName="System.Data.SqlClient"/>
32  <add name="DestinyPartialContainer" connectionString="metadata=res://*/OJDestinyPartial.csdl|res://*/OJDestinyPartial.ssdl|res://*/OJDestinyPartial.msl|provider connection string="Data Source=T801VDSQ001;Initial Catalog=Int_OJ_Metric;Provider=System.Data.SqlClient;Provider Connection String="providerName='System.Data.SqlClient' />
33  <add name="IncomeCalculator" connectionString="metadata=res://*/OJMIncomeCalculator.csdl|res://*/OJMIncomeCalculator.ssdl|res://*/OJMIncomeCalculator.msl;providerName='System.Data.SqlClient';provider connection string="Data Source=T801VDSQ001;Initial Catalog=OJM_IncomeCalculator;Provider=System.Data.SqlClient;Provider Connection String="providerName='System.Data.SqlClient' />
34  <add name="M0BAContainer" connectionString="metadata=res://*/M0BA.csdl|res://*/M0BA.ssdl|res://*/M0BA.msl;providerName='System.Data.SqlClient';provider connection string="Data Source=T801VDSQ001;Initial Catalog=M0BA;Provider=System.Data.SqlClient;Provider Connection String="providerName='System.Data.SqlClient' />
35  <add name="OJS" connectionString="server=T801VDSQ009;initial catalog=OJS_Dm_Architecture;integrated security=true;" providerName="System.Data.SqlClient"/>
36  <add name="OJSSteam" connectionString="server=S01VDSQ001;initial catalog=OJS_Dm_Architecture;integrated security=true;" providerName="System.Data.SqlClient"/>
37  <add name="DocumentMetadata" connectionString="Data Source=T801VDSQ009;Initial Catalog=Document_Dm_Staging;integrated security=true;" providerName="System.Data.SqlClient"/>
```

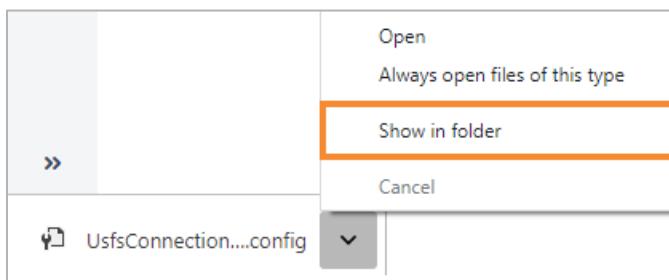
- ## 2. Click **Raw file**

A screenshot of a GitHub commit history. At the top, there's a search bar with the placeholder "Search for code, commits or repositories...". To the right of the search bar are icons for help, issues, and profile. The main area shows a single commit by "Mike Parallel" with the commit hash `1afb16a3cc9` and the date `22 Sep 2022`. Below the commit, there are two buttons: "Blame" and "Raw file", with "Raw file" being highlighted by a red box.

3. At the bottom of your browser, click **the caret** on the downloaded file

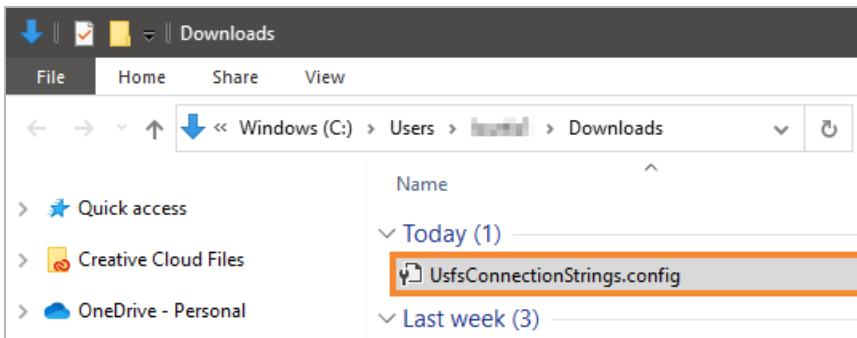


4. Click **Show in folder**



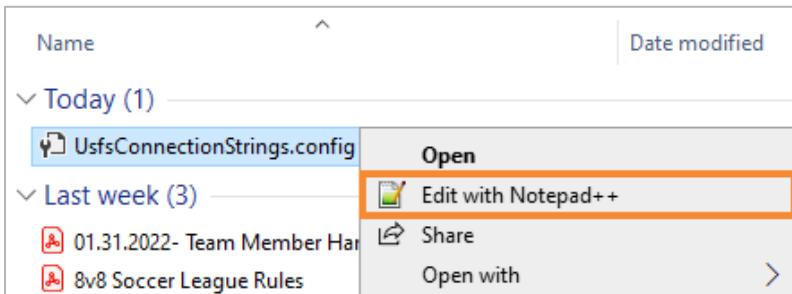
## EDIT USFSCONNECTIONSTRINGS.CONFIG FILE

1. After clicking show in folder, right click **UsfsConnectionStrings.config**

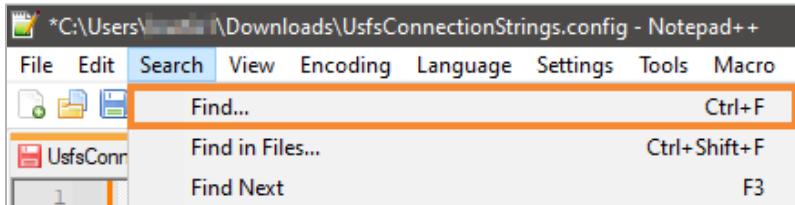


2. Edit with **Notepad++**

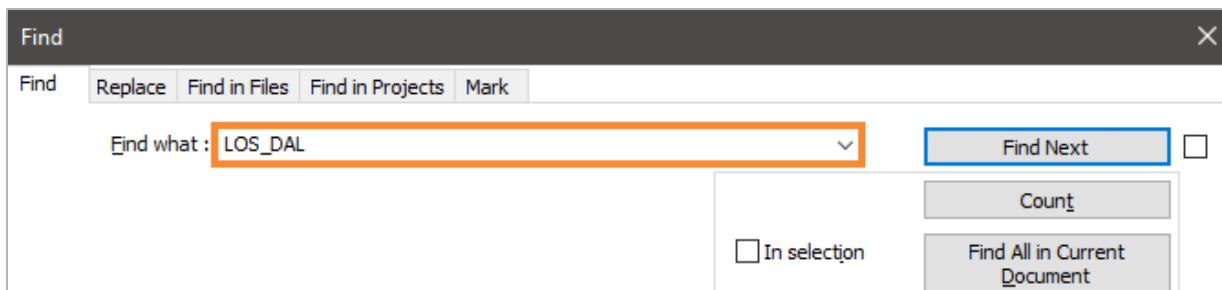
**Note:** If you do not have Notepad++, you can install it via the Software Center



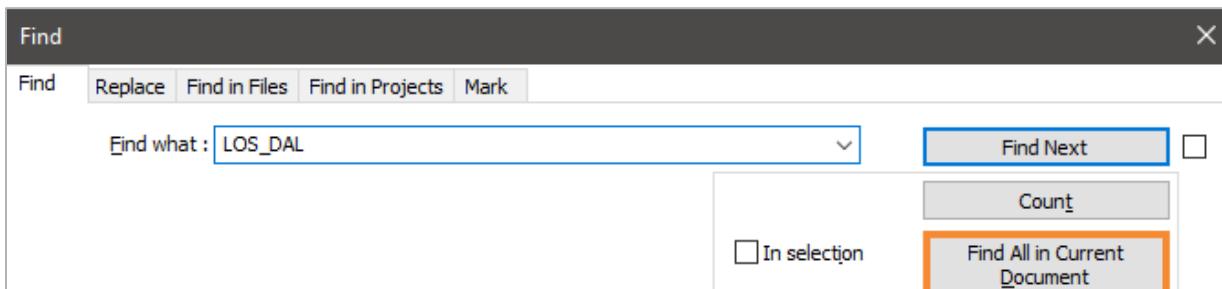
3. In Notepad++ click **Search > Find**



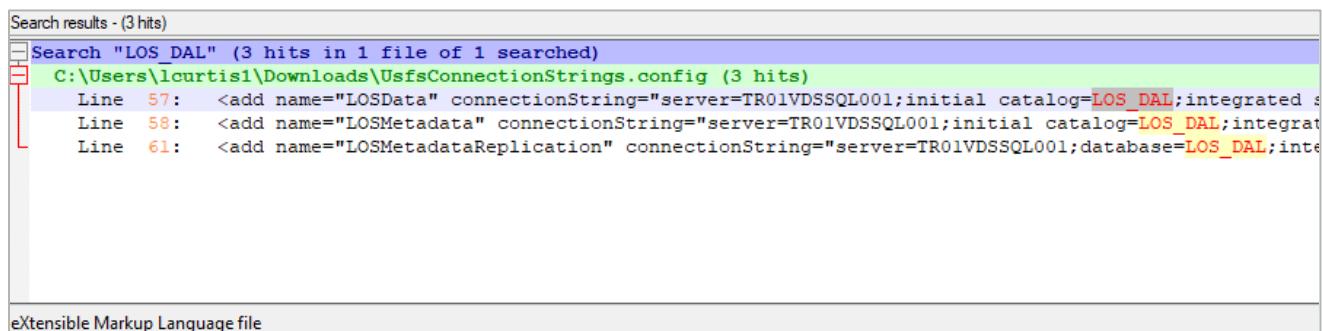
4. In the Find what box, type **LOS\_DAL**



5. Click **Find All in Current Document**



6. Use the search results bar at the bottom to easily find each instance containing LOS\_DAL



7. After each LOS\_DAL, add **\_Team#\_Dev**

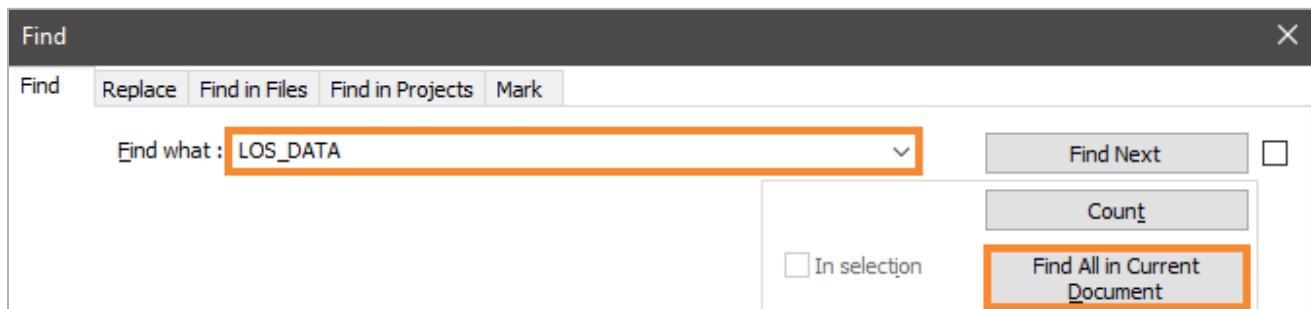
**NOTE:** For this screenshot we will use Team10 as an example. When you are doing this, ensure to add your own team number. Ask your team lead if unsure or [click here](#)<sup>2</sup>

```

56   <add name="LocalSqlServer" connectionString="data source=.\SQLEXPRESS;Integrated Security=SSPI;AttachDBFile=1;Initial Catalog=master;User ID=sa;Password=Pa$$w0rd;Min Pool Size=10;Max Pool Size=100;Connection Timeout=30;"/>
57   <add name="LOSDatas" connectionString="server=TR01VDSSQL001;initial catalog=LOS_DAL_Team10_Dev;integrated security=SSPI;User ID=sa;Password=Pa$$w0rd;Min Pool Size=10;Max Pool Size=100;Connection Timeout=30;"/>
58   <add name="LOSMetadata" connectionString="server=TR01VDSSQL001;initial catalog=LOS_DAL_Team10_Dev;integrated security=SSPI;User ID=sa;Password=Pa$$w0rd;Min Pool Size=10;Max Pool Size=100;Connection Timeout=30;"/>
59   <add name="LOSFramework" connectionString="server=TR01VDSSQL001;initial catalog=LOS_Data;integrated security=SSPI;User ID=sa;Password=Pa$$w0rd;Min Pool Size=10;Max Pool Size=100;Connection Timeout=30;"/>
60   <add name="LOSDataReplication" connectionString="server=TR01VDSSQL001;database=LOS_Data;integrated security=SSPI;User ID=sa;Password=Pa$$w0rd;Min Pool Size=10;Max Pool Size=100;Connection Timeout=30;"/>
61   <add name="LOSMetadataReplication" connectionString="server=TR01VDSSQL001;database=LOS_DAL_Team10_Dev;integrated security=SSPI;User ID=sa;Password=Pa$$w0rd;Min Pool Size=10;Max Pool Size=100;Connection Timeout=30;"/>
62   <add name="LQReview" connectionString="server=TR01VDSSQL001;database=LQReview;integrated security=true;"/>

```

8. Use the Find tool again to search for **LOS\_DATA**



9. After each LOS\_DATA, add **\_Team#\_Dev**

**NOTE:** For this screenshot we will use Team10 as an example. When you are doing this, ensure to add your own team number. Ask your team lead if unsure or [click here](#)<sup>2</sup>

```

57   <add name="LOSDatas" connectionString="server=TR01VDSSQL001;initial catalog=LOS_DAL_Team10_Dev;integrated security=SSPI;User ID=sa;Password=Pa$$w0rd;Min Pool Size=10;Max Pool Size=100;Connection Timeout=30;"/>
58   <add name="LOSMetadata" connectionString="server=TR01VDSSQL001;initial catalog=LOS_DAL_Team10_Dev;integrated security=SSPI;User ID=sa;Password=Pa$$w0rd;Min Pool Size=10;Max Pool Size=100;Connection Timeout=30;"/>
59   <add name="LOSFramework" connectionString="server=TR01VDSSQL001;initial catalog=LOS_Data_Team10_Dev;integrated security=SSPI;User ID=sa;Password=Pa$$w0rd;Min Pool Size=10;Max Pool Size=100;Connection Timeout=30;"/>
60   <add name="LOSDataReplication" connectionString="server=TR01VDSSQL001;database=LOS_Data_Team10_Dev;integrated security=SSPI;User ID=sa;Password=Pa$$w0rd;Min Pool Size=10;Max Pool Size=100;Connection Timeout=30;"/>
61   <add name="LOSMetadataReplication" connectionString="server=TR01VDSSQL001;database=LOS_DAL_Team10_Dev;integrated security=SSPI;User ID=sa;Password=Pa$$w0rd;Min Pool Size=10;Max Pool Size=100;Connection Timeout=30;"/>

```

10. Navigate to **Line 21**

**NOTE:** It may be a slightly different line for you, look for InternalApplicationData in the code

```

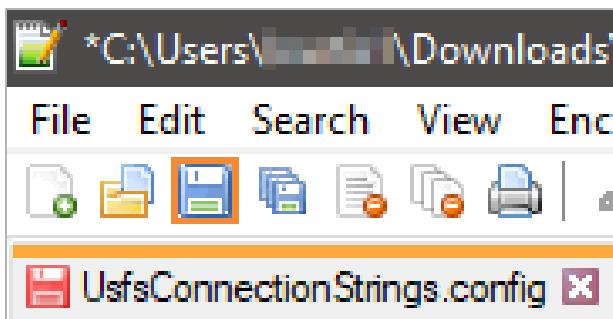
19   <add name="C"/>
20   <add name="C"/>
21   <add name="C"/>
22   <add name="C"/>
23   <add name="D"/>

```

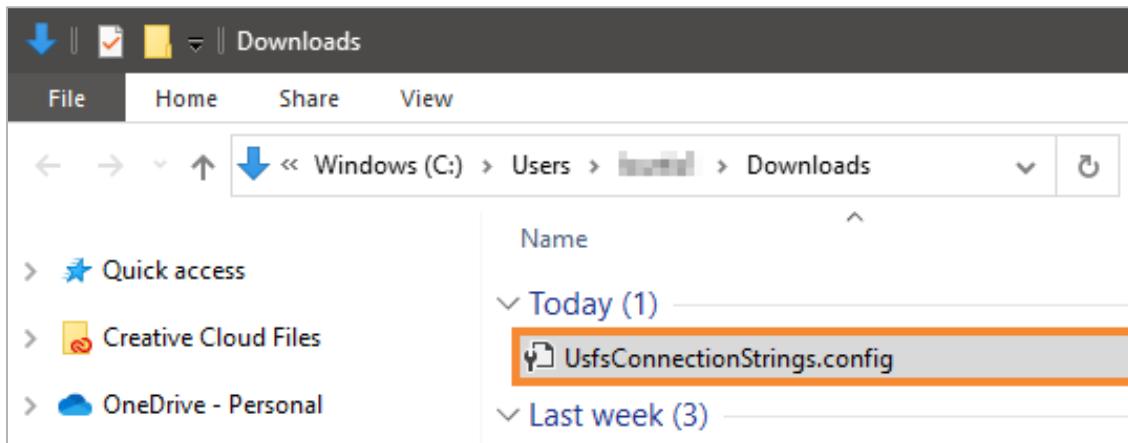
11. On line 21, after InternalApplicationData, add **\_Team#\_Dev**

```
10 <add name="BusinessEventLogging" connectionString="server=S01VDSDBAUD01;database=Integra_production_applog;integrated security=true;" providerName="System.Data.SqlClient"/>
11 <add name="CapitalMarkets" connectionString="server=TR01VDSQL001;database=CapitalMarkets;integrated security=true;" providerName="System.Data.SqlClient"/>
12 <add name="CommunicationPreferences" connectionString="server=TR01VDSQL001;database=CommunicationPreferences;integrated security=true;" providerName="System.Data.SqlClient"/>
13 <add name="ConfigurationService" connectionString="server=TR01VDSQL001;database=InternalApplicationData_Team10_Dev;integrated security=true;" providerName="System.Data.SqlClient"/>
14 <add name="CRM" connectionString="server=TR01VDSQL001;database=CRM;integrated security=true;" providerName="System.Data.SqlClient"/>
15 <add name="DataAuditing" connectionString="server=S01VDSDBAUD01D;database=DataAuditing;integrated security=true;" providerName="System.Data.SqlClient"/>
16 <add name="DataRepository_Connection_Test" connectionString="Data Source=TR01VDSQL001;Initial Catalog=YourIdea;Integrated Security=True;"/>
17 <add name="DataRepository_Connection_UAT" connectionString="Data Source=TR01VDSQL001;Initial Catalog=YourIdea;Integrated Security=True;"/>
18 <add name="DataRepository_Connection_Prod" connectionString="Data Source=TR01VDSQL001;Initial Catalog=YourIdea;Integrated Security=True;"/>
19 <add name="DataRepository_Connection_SIT" connectionString="Data Source=TR01VDSQL001;Initial Catalog=YourIdea;Integrated Security=True;"/>
20 <add name="DataRepository_Connection_UAT" connectionString="Data Source=TR01VDSQL001;Initial Catalog=YourIdea;Integrated Security=True;"/>
21 <add name="DataRepository_Connection_Prod" connectionString="Data Source=TR01VDSQL001;Initial Catalog=YourIdea;Integrated Security=True;"/>
22 <add name="DataRepository_Connection_SIT" connectionString="Data Source=TR01VDSQL001;Initial Catalog=YourIdea;Integrated Security=True;"/>
23 <add name="DataRepository_Connection_UAT" connectionString="Data Source=TR01VDSQL001;Initial Catalog=YourIdea;Integrated Security=True;"/>
24 <add name="DataRepository_Connection_Prod" connectionString="Data Source=TR01VDSQL001;Initial Catalog=YourIdea;Integrated Security=True;"/>
25 <add name="DataRepository_Connection_SIT" connectionString="Data Source=TR01VDSQL001;Initial Catalog=YourIdea;Integrated Security=True;"/>
```

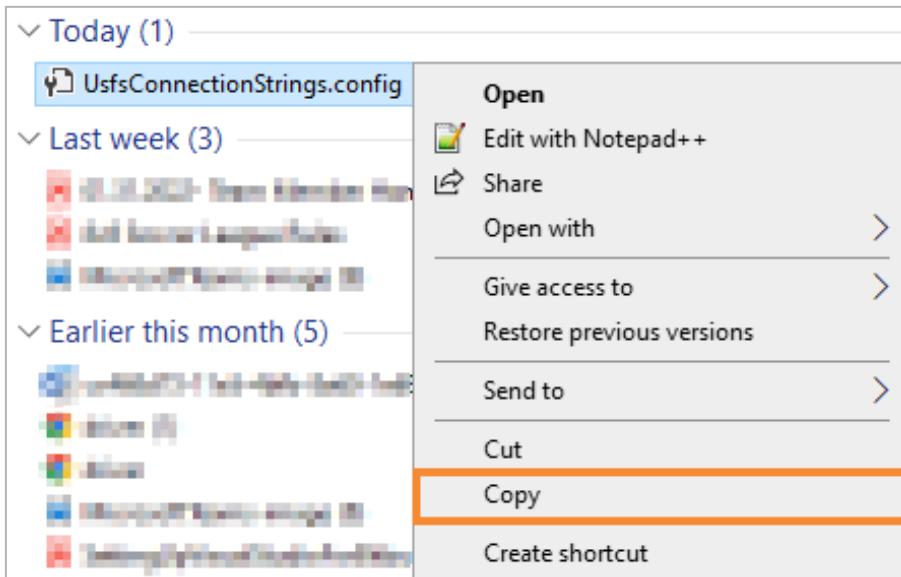
12. Click **Save icon** (or press CTRL+S)



13. Navigate back to the **File Explorer** to locate the config file you just saved

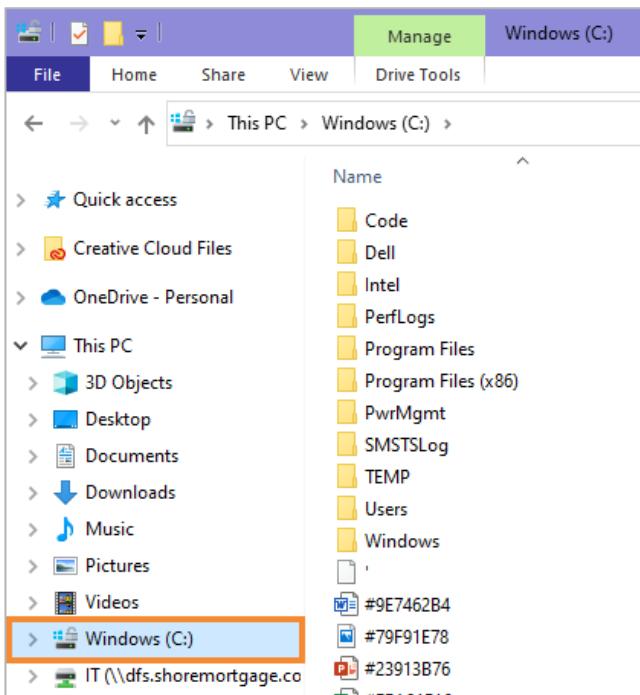


14. Right click to copy the **config** file

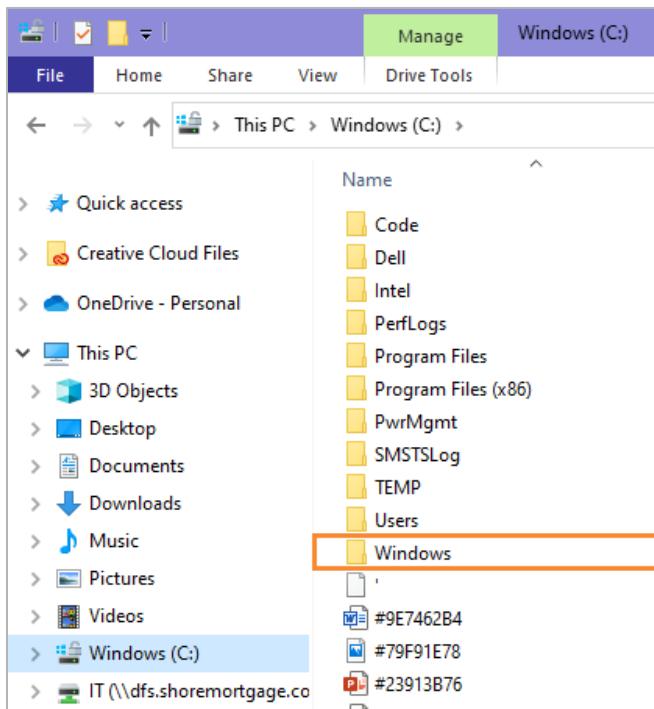


## PASTE CONNECTION STRINGS INTO CONFIG FOLDERS

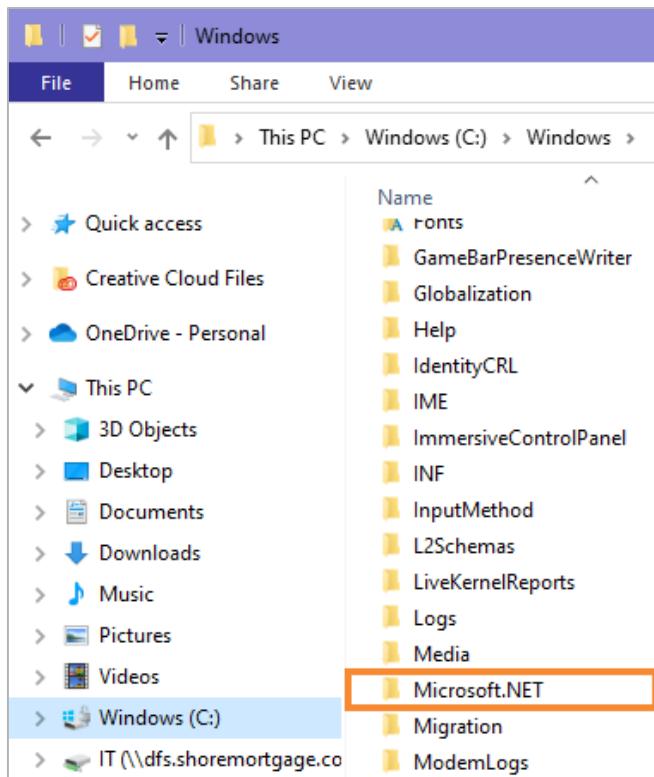
1. Open the **(C:) Drive**



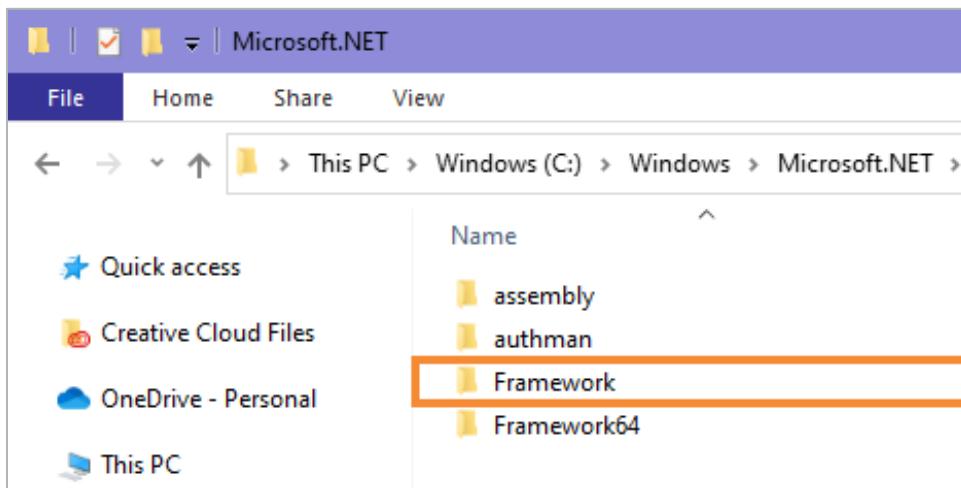
2. Scroll down and open **Windows** folder



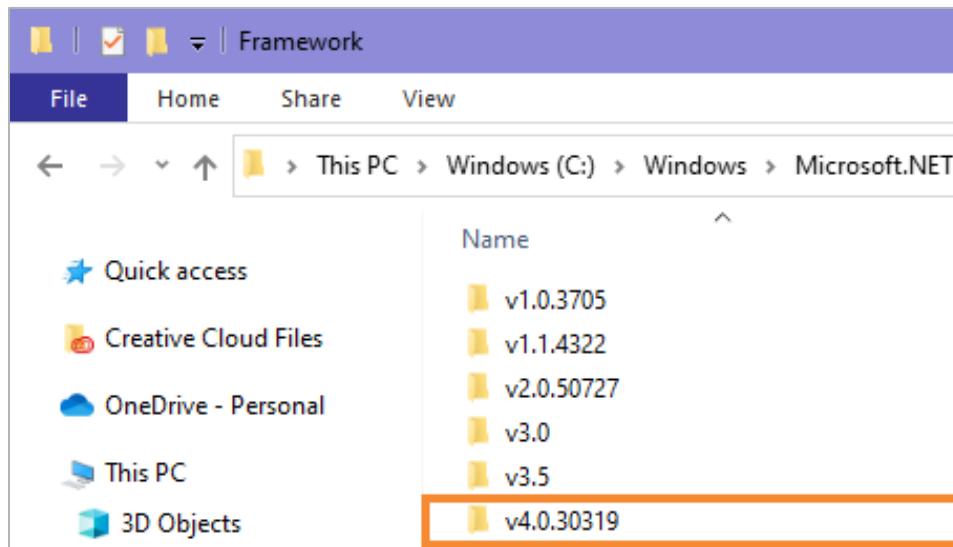
3. Scroll down and open **Microsoft.NET** folder



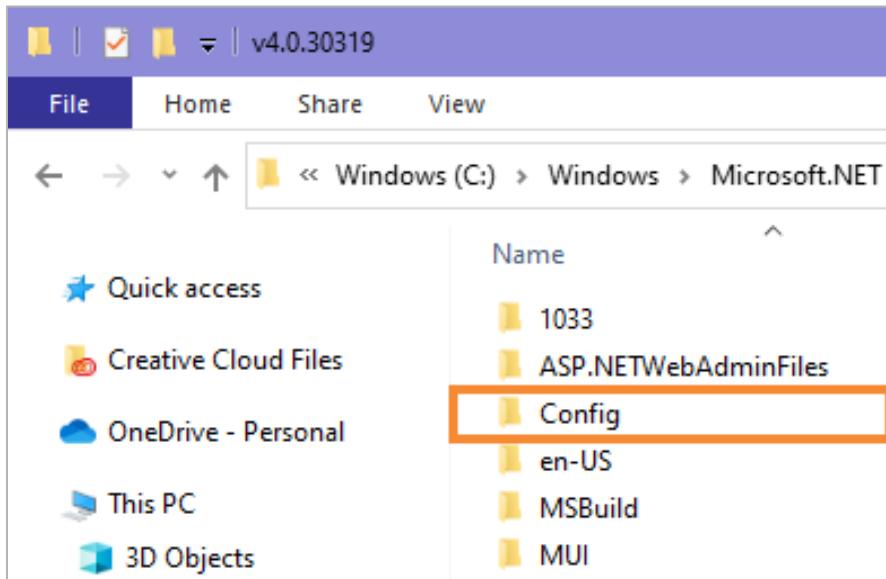
4. Open **Framework** folder



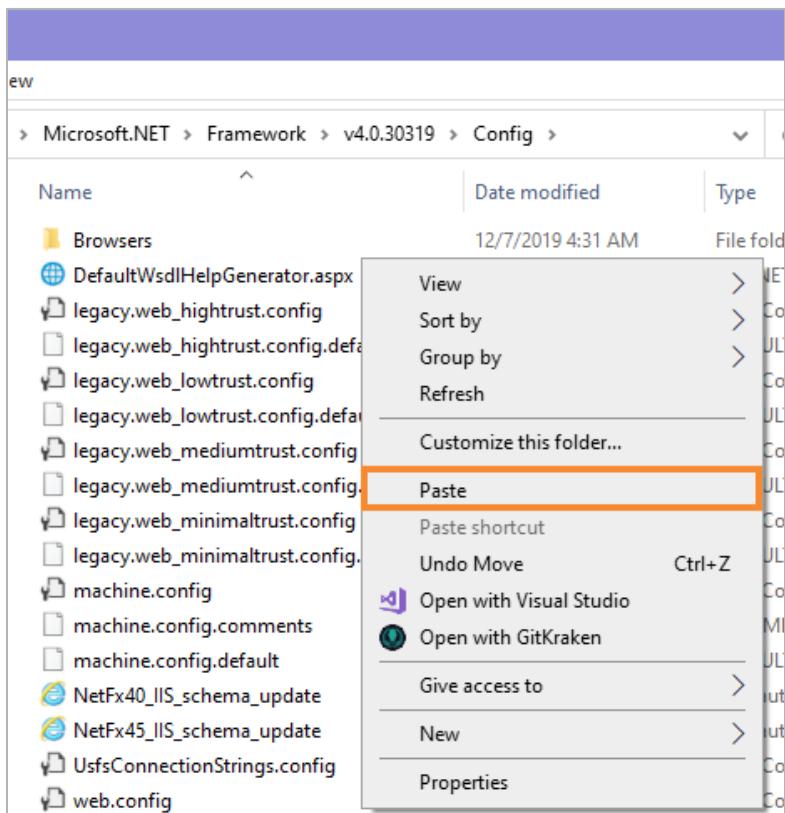
5. Open **v4.0.30319** folder



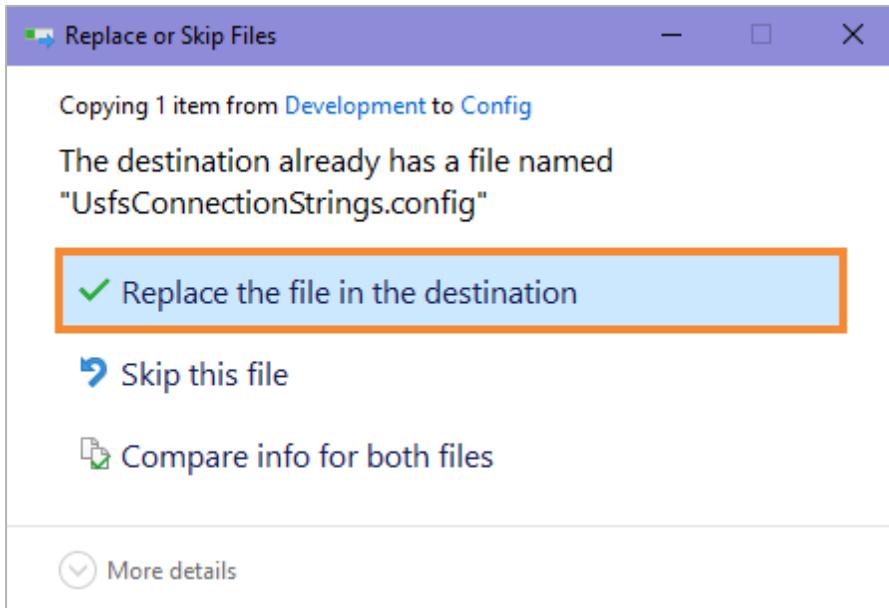
6. Open **Config** folder



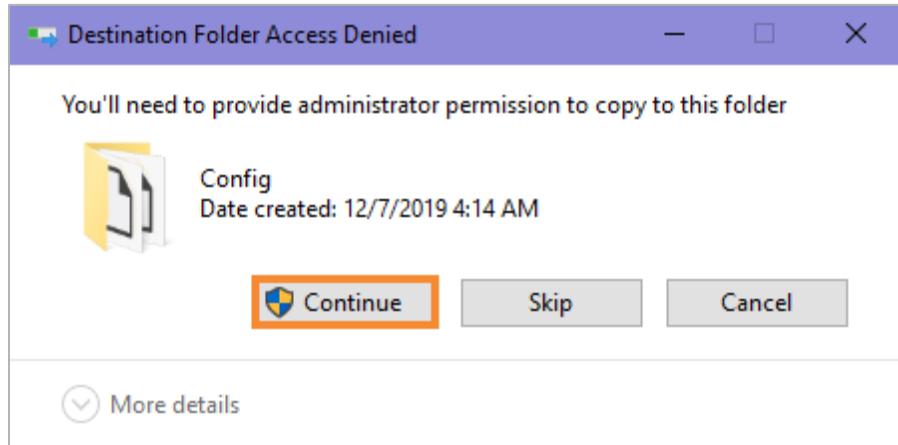
7. Right click and **Paste** (Remember, you are pasting the config file that was copied earlier)



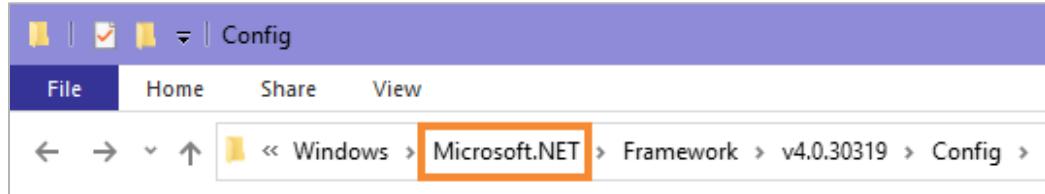
8. Click **Replace the file in the destination**



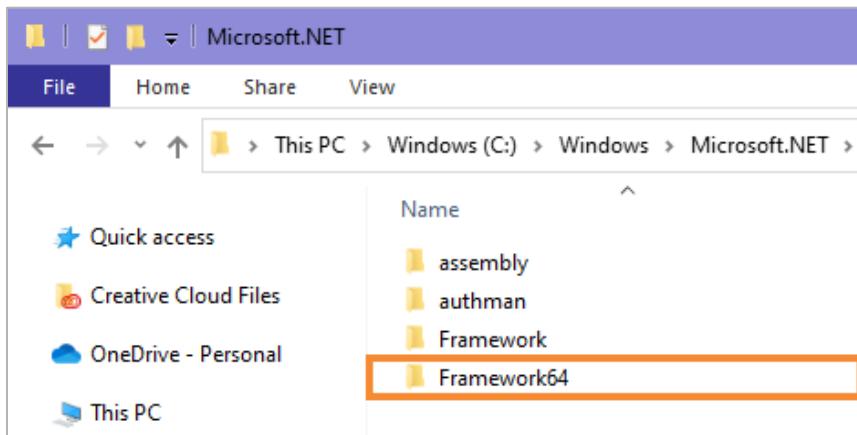
9. Click **Continue**



10. In the File Explorer navigation bar, click back to the **Microsoft.NET** folder



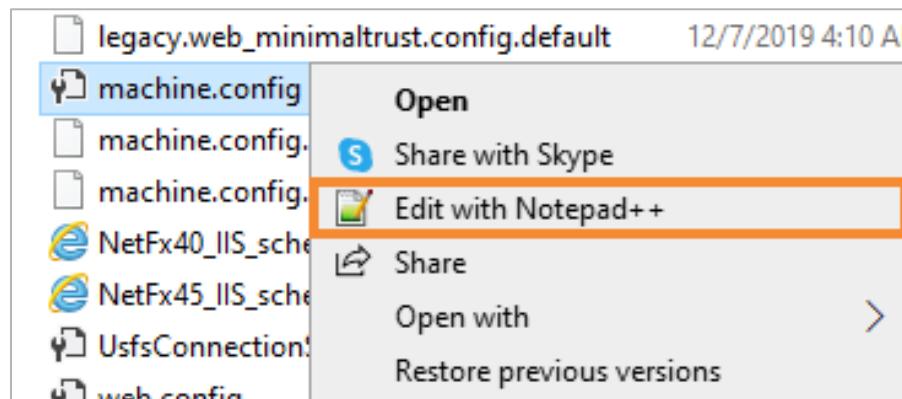
11. Repeat steps 5-9 in the **Framework64** folder (The config file you edited needs to be pasted into both the Framework and Framework64 config folders)



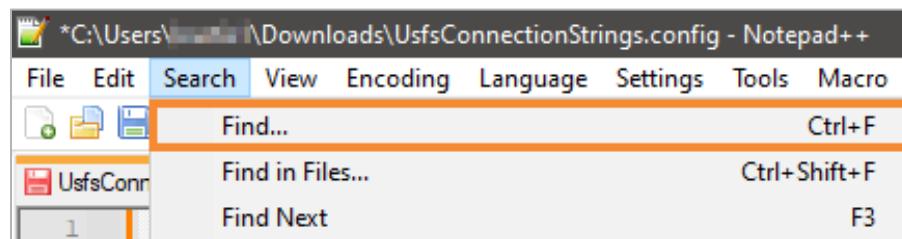
## EDIT MACHINE.CONFIG FILE

1. In the Framework64 folder, right click the **machine.config** file

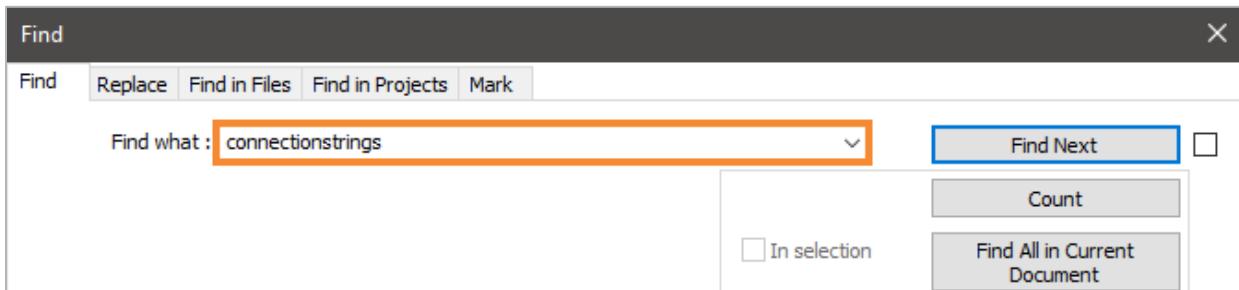
**File path:** C:\Windows\Microsoft.NET\Framework64\v4.0.30319\Config



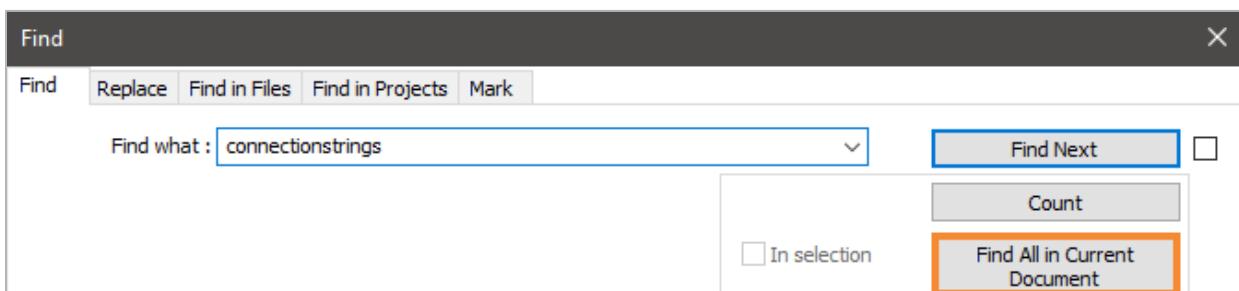
3. In Notepad++ go to **Search > Find**



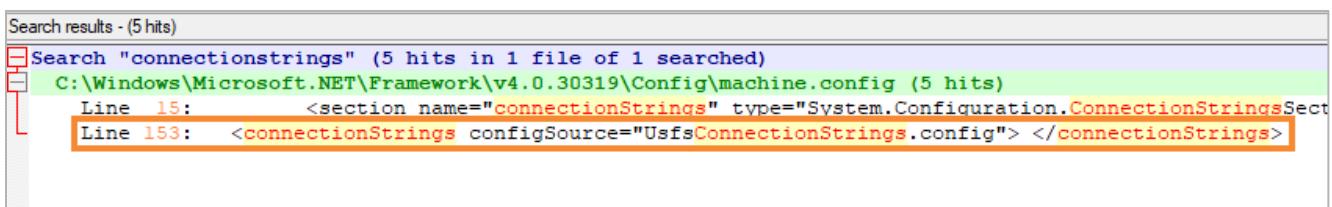
4. In the Find what box, type **connectionstrings**



5. Click **Find All in Current Document**



6. Double click the **second line** containing connectionstrings



7. Replace this line with: **<connectionStrings configSource="UsfsConnectionString.config"></connectionStrings>**

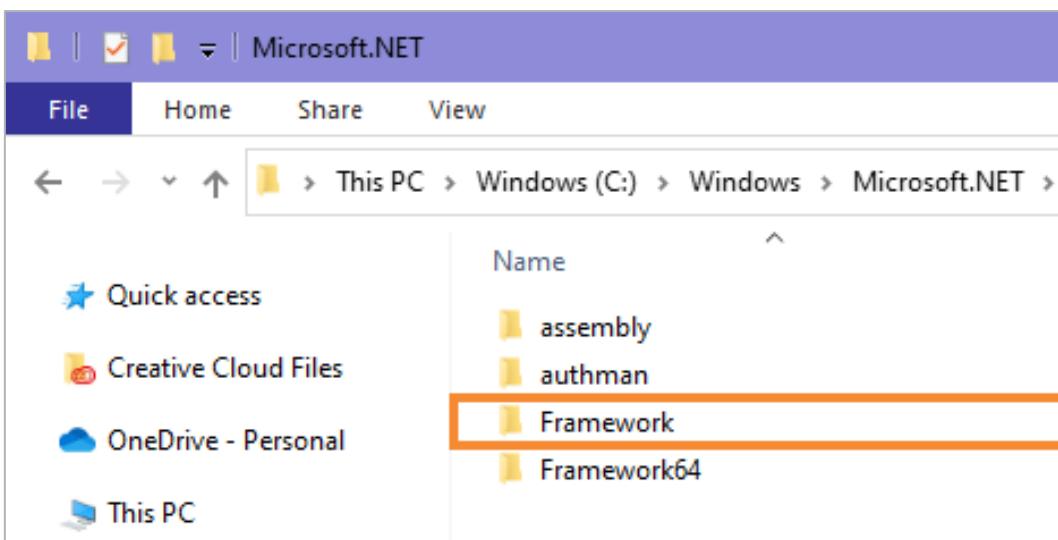


8. Click **Save**



9. Repeat steps 1-9 in the **Framework folder**

**File path:** C:\Windows\Microsoft.NET\Framework\v4.0.30319\Config



\*\*INTERNAL USE ONLY\*\*

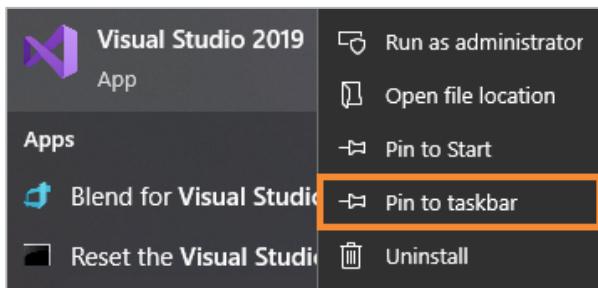
## SET VISUAL STUDIO TO OPEN AS ADMIN

Follow the steps below to open Visual Studio as an admin. You should always open the application as an admin.

1. Search **Visual Studio 2019**



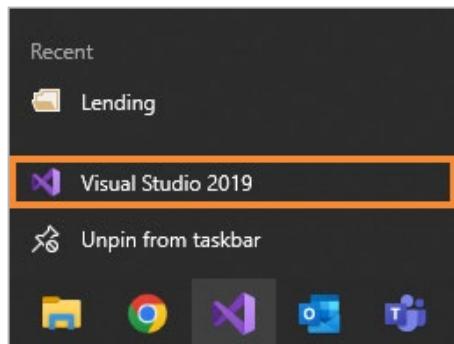
2. Right click and click **Pin to taskbar**



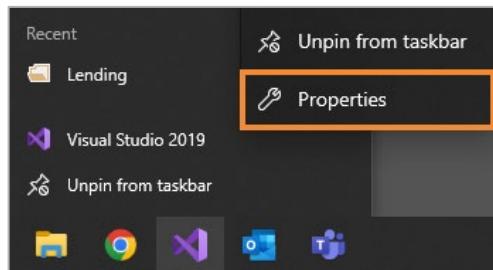
3. Now that Visual Studio is pinned to the taskbar, right click the **Visual Studio** icon

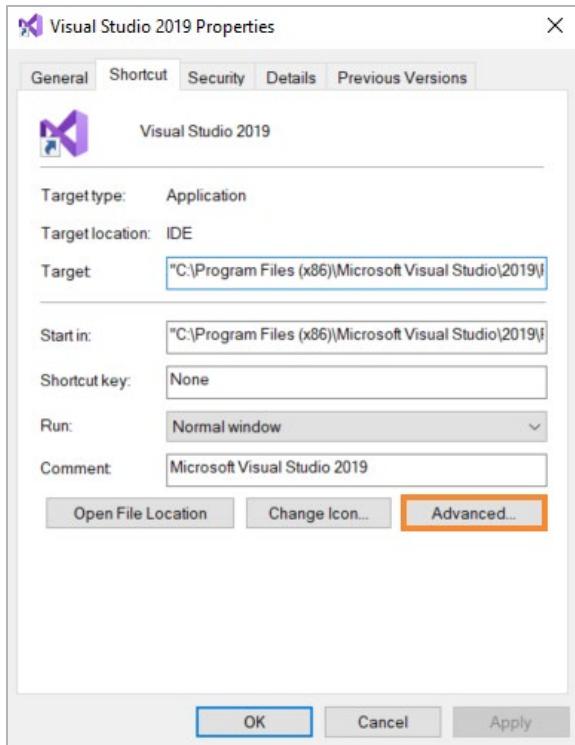
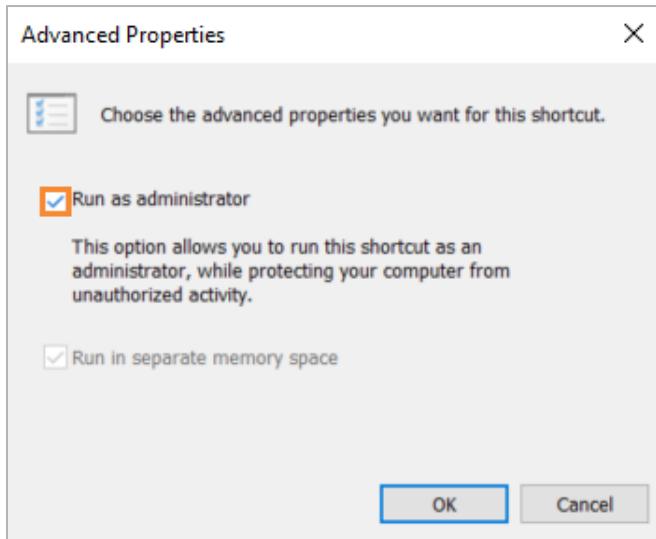


4. Right click **Visual Studio 2019**

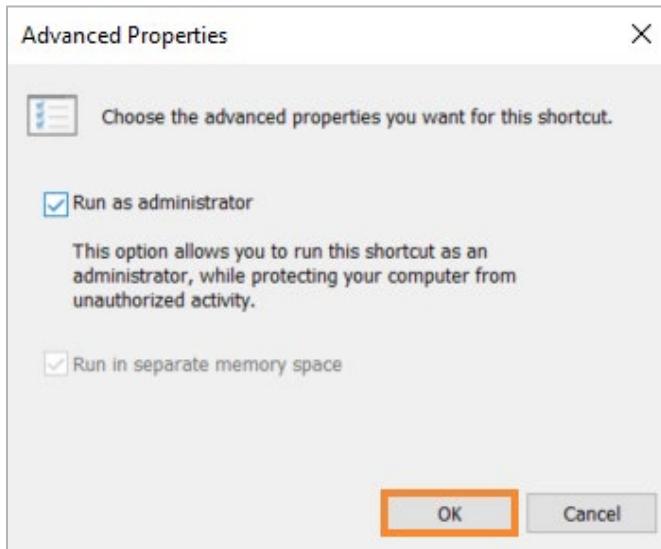
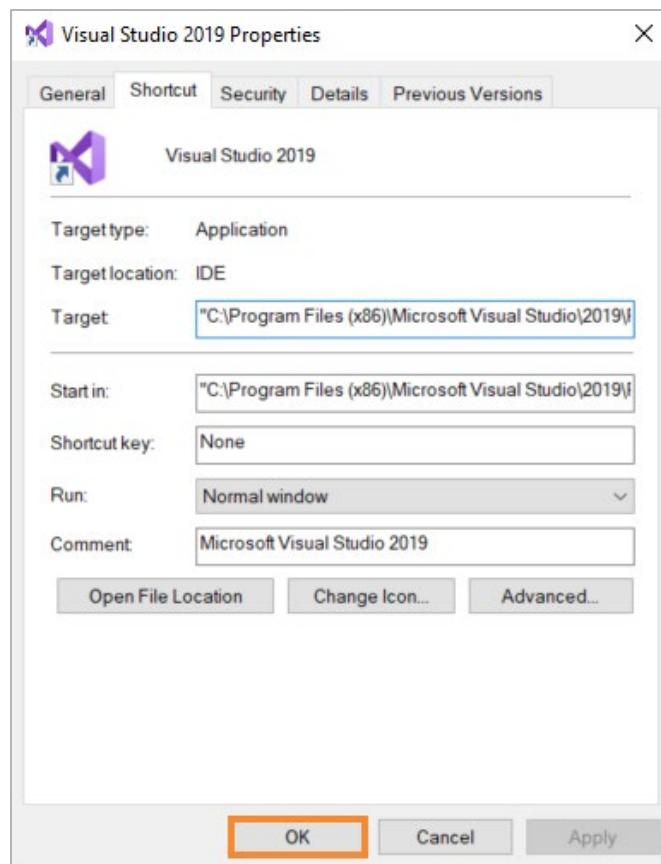


5. Click **Properties**



6. Click **Advanced**7. Check **Run as Admin**

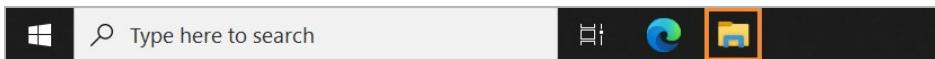
\*\*INTERNAL USE ONLY\*\*

8. Click **OK**9. Click **OK**

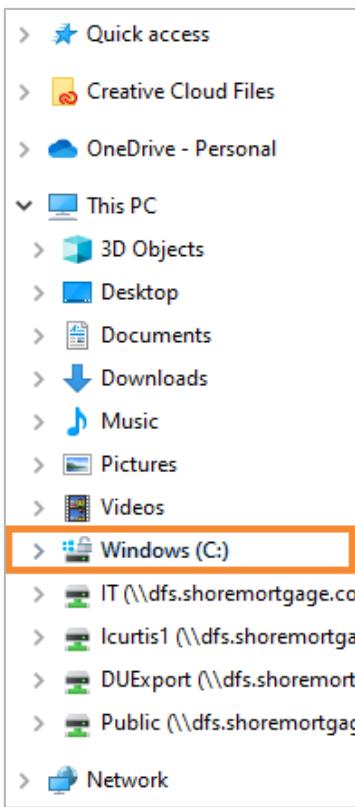
## CREATE LOCAL FOLDERS

Follow the steps below to create the files that Visual Studio will point to locally.

1. On the taskbar, open the **File Explorer**



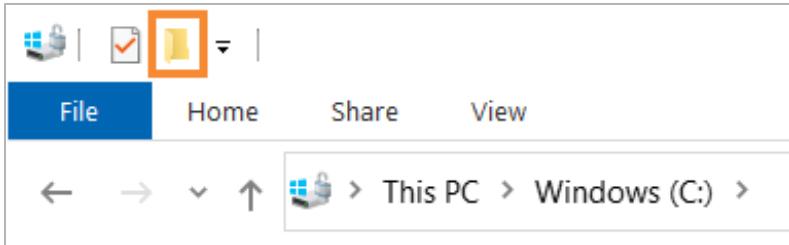
2. Select **Windows (C:)**



\*\*INTERNAL USE ONLY\*\*

3. Inside the (C:) Drive, create a **New Folder**

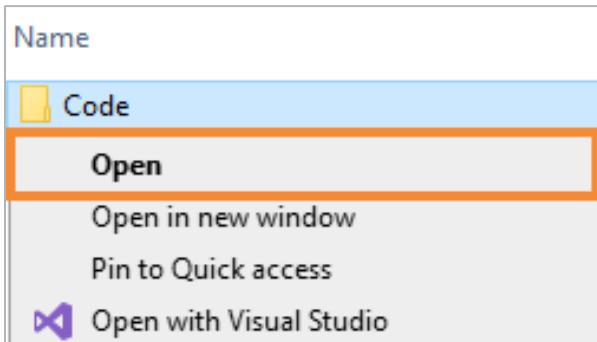
**NOTE:** If you already have a Code folder created in the (C:) drive, skip to step 5 of this section



4. Label this folder **Code**

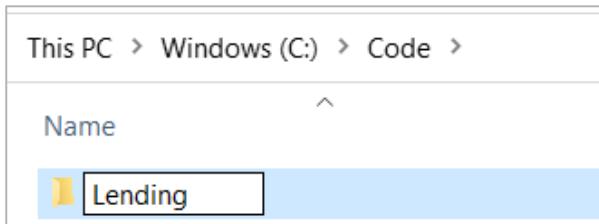


5. Right click and **Open** the Code folder you created

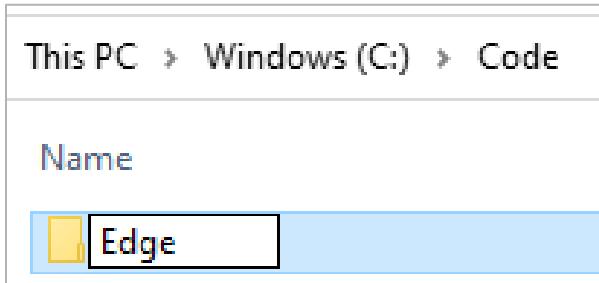


6. In the Code folder, create another New Folder based on which repository you will be pulling from. The folder will be used in later steps.

- If working in Lending, create a folder called **Lending**



- If working in Edge, create a folder called **Edge**

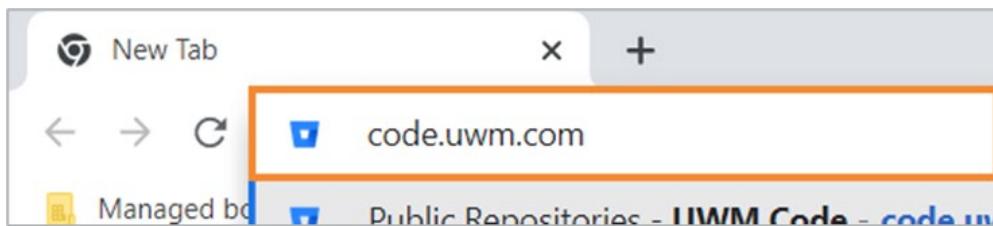


## CREDENTIAL MANAGEMENT

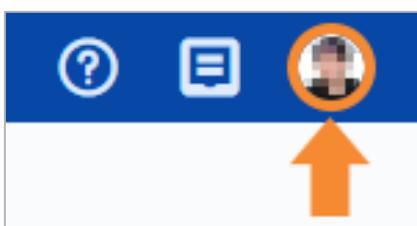
Credential management is important to maintain the security of sensitive information within our organization. The following steps will walk you through how to set up your own credentials to help UWM maintain a standard for security.

### CREATE A TOKEN ON BITBUCKET

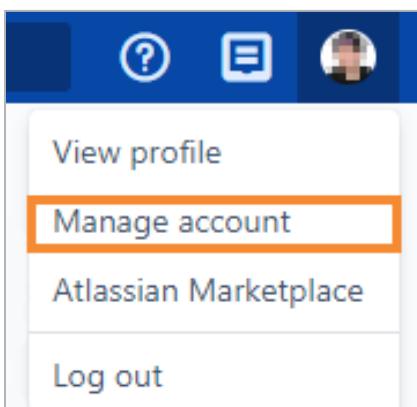
1. Navigate to [code.uwm.com](https://code.uwm.com)<sup>3</sup>



2. Click your **Account icon** in the upper right corner

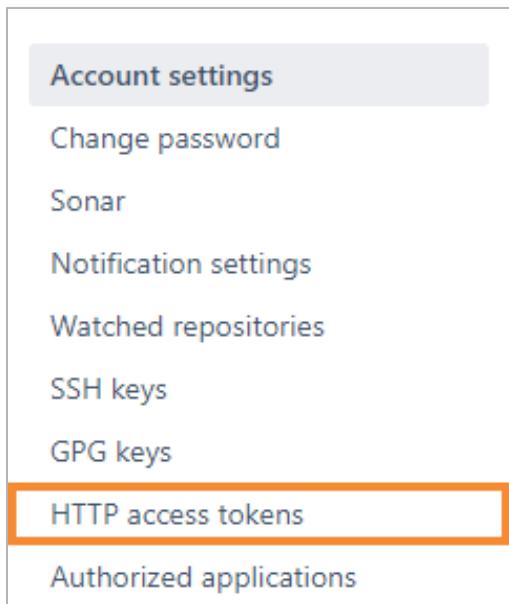


3. Click **Manage account**

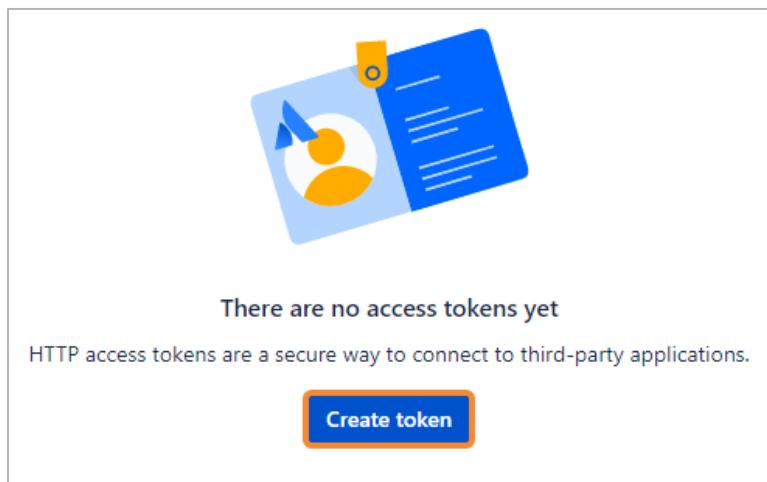


\*\*INTERNAL USE ONLY\*\*

4. Click **HTTP access tokens** under Account settings on the left-hand side



5. Click **Create token**



6. Create the token

1. **Name** your token

**NOTE:** A token name can be whatever you want but it's recommended that it reflects the environment where it will be used. Example: "laptop-VisualStudio"

2. Set Project permissions to **Project admin**
3. Set Repository permissions to **Repository admin (inherited)**
4. Set Expire to **Do not expire**
5. Click **Create**

### Create an access token

Token name 1

Permissions

Tokens are like another password, so their permissions will default to the level of access you have. Because of this, it is recommended that you restrict the token's permission to the level it will need.

Project permissions 2

Repository permissions 3

This access token will allow the supplied third-party application to:

- Create and fork repositories
- Update project settings and permissions
- Update repository settings and permissions
- Push to repositories and perform pull request actions
- Pull and clone repositories

Expiry 4

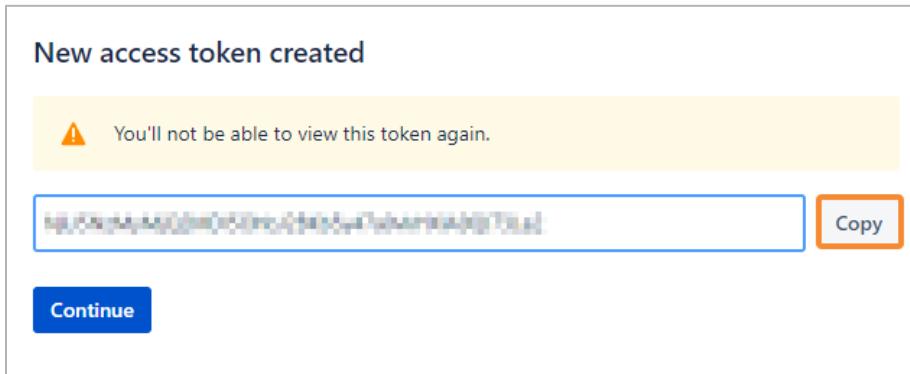
For added security, you can set this token to automatically expire. If you set an expiry date, you won't be able to edit it once you've created the token.

Do not expire  Expire automatically

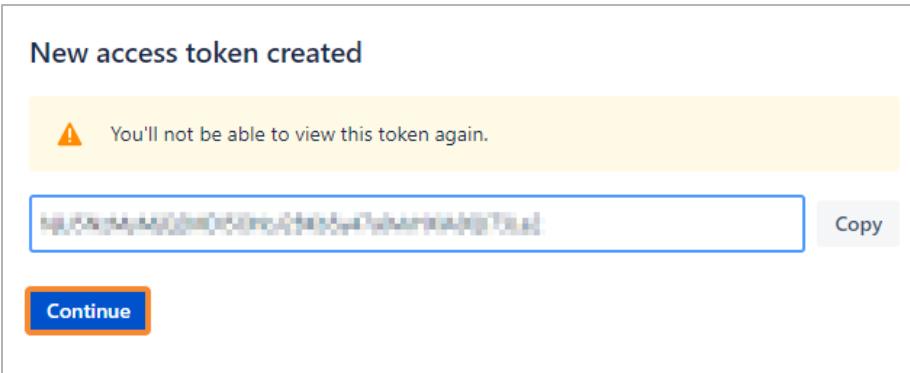
**Create** **Cancel** 5

7. **Copy** your access token and save it to a safe location.

**NOTE:** You will not be able to access this token again and you will need it for a later step



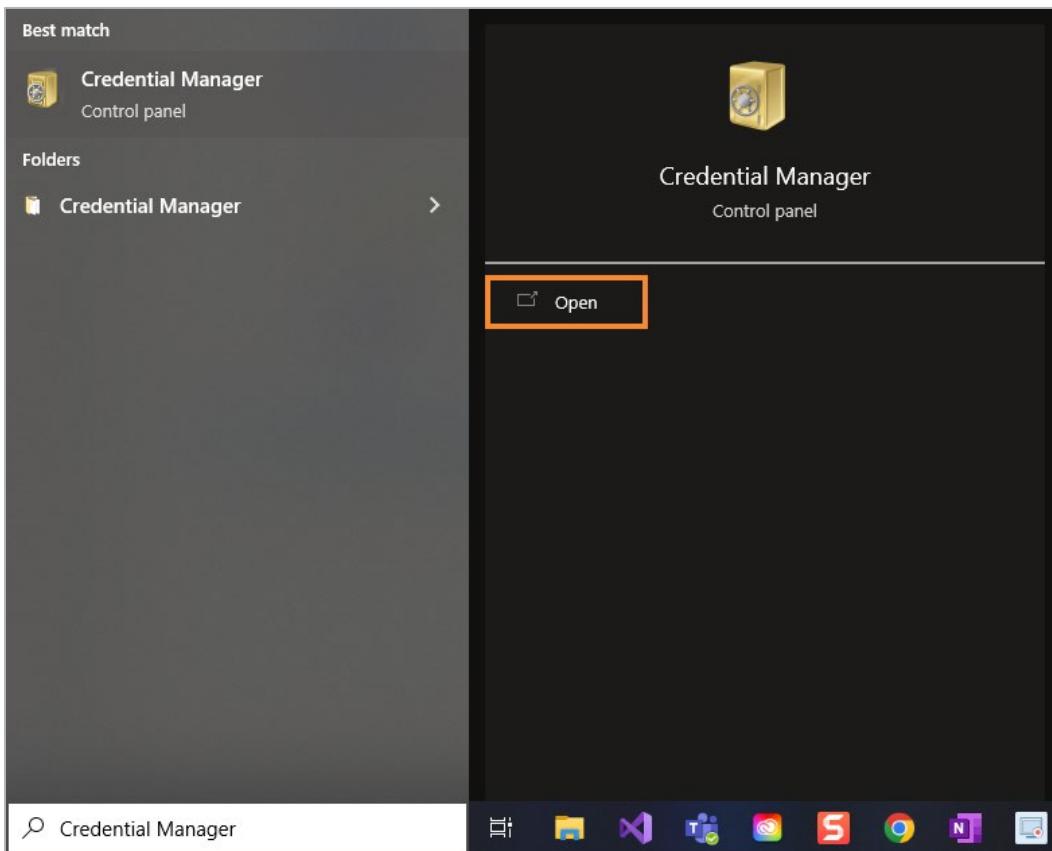
8. After saving your access token, click **Continue**



## ADD A GENERIC CREDENTIAL

1. Taskbar search **Credential Manager**



2. Click **Open**

\*\*INTERNAL USE ONLY\*\*

3. Click **Windows Credentials**

The screenshot shows the 'Manage your credentials' window. It displays two main sections: 'Web Credentials' (with a globe and padlock icon) and 'Windows Credentials' (with a computer monitor and padlock icon). The 'Windows Credentials' section is highlighted with an orange border. Below these sections, there's a 'Web Passwords' section with the message 'No web passwords.'

4. Click **Add a generic credential**

**Manage your credentials**

View and delete your saved logon information for websites, connected applications and networks.

 **Web Credentials**
 **Windows Credentials**

[Back up Credentials](#) [Restore Credentials](#)

Windows Credentials	<a href="#">Add a Windows credential</a>
No Windows credentials.	

Certificate-Based Credentials	<a href="#">Add a certificate-based credential</a>
No certificates.	

Generic Credentials	<a href="#">Add a generic credential</a>
ACDC.com website acc prep (234099706380427204491...)	Modified: 6/30/2022
Adinker App Info (234099706380427204491...)	Modified: Today
Adobe App Info (234099706380427204491...)	Modified: Today
Adobe App Info (234099706380427204491...)	Modified: Today
Adinker App Info (234099706380427204491...)	Modified: Today
Adobe App Info (234099706380427204491...)	Modified: Today
Adinker App Info (234099706380427204491...)	Modified: Today

5. Fill out the credential information

1. Enter **https://code.uwm.com** as Internet or Network address
2. Enter your **UWM username** (without the email address @)
3. Use the access token you created as the **password**
4. Click **OK**

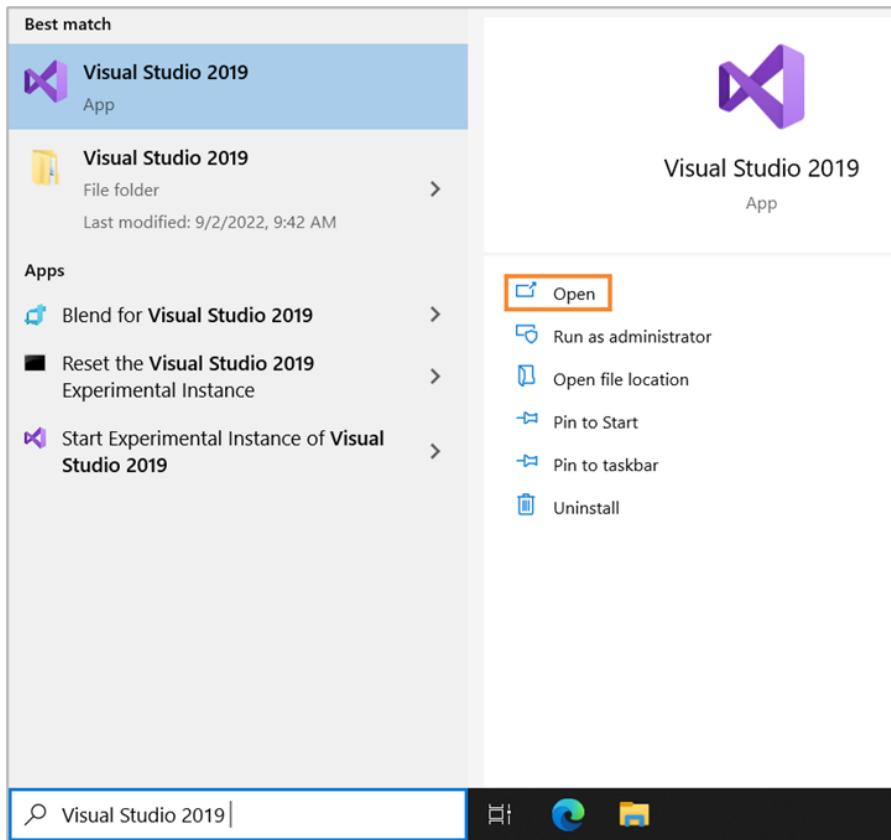
Type the website address and your credential information

Make sure that the user name and password that you type can be used to access the location.

Internet or network address:	<input type="text" value="https://code.uwm.com"/>	1
User name:	<input type="text" value="lsmith11"/>	2
Password:	<input type="password" value="*****"/>	3
		4
<input type="button" value="OK"/>		<input type="button" value="Cancel"/>

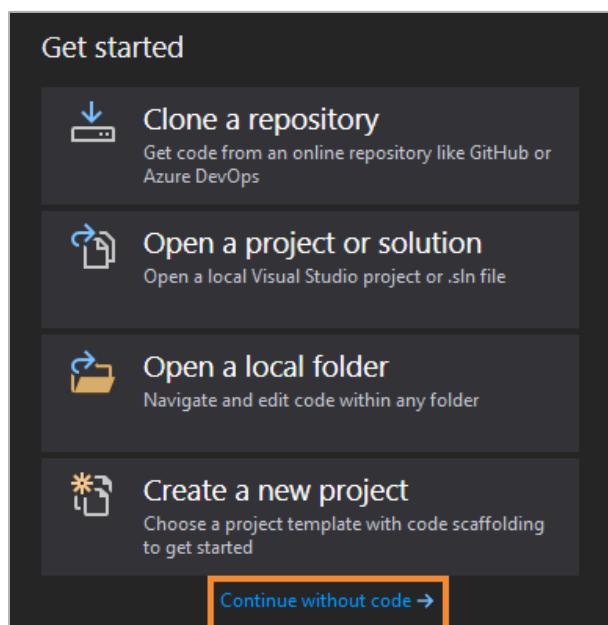
## SET SECURE CHANNEL

### 1. Open **Visual Studio 2019**

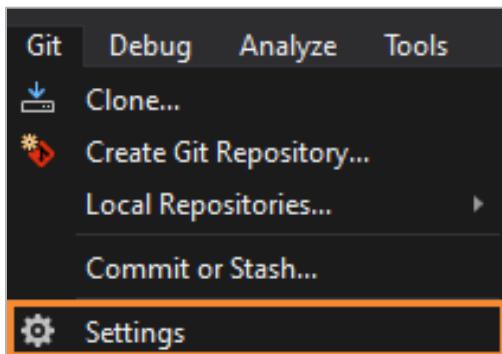


\*\*INTERNAL USE ONLY\*\*

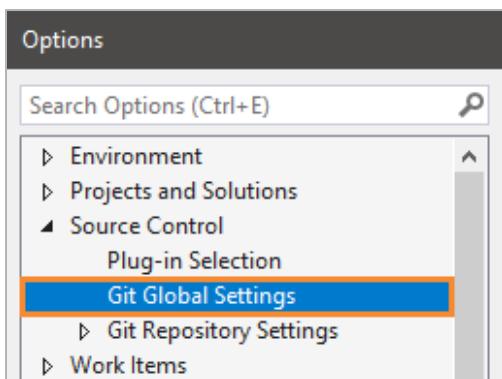
### 2. Click **Continue without code**



3. Click **Git > Settings**

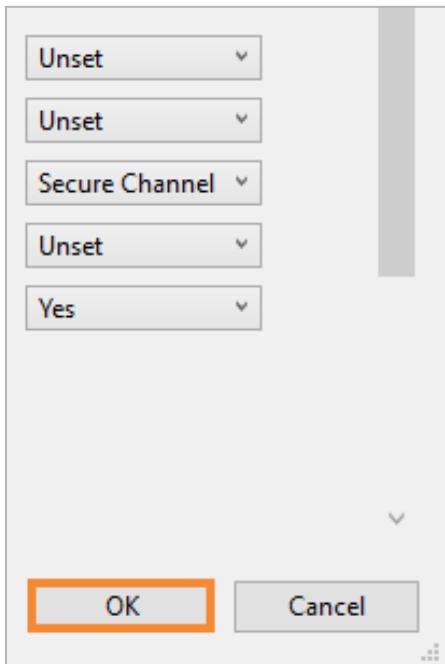


4. Click **Git Global Settings** (if not already selected)



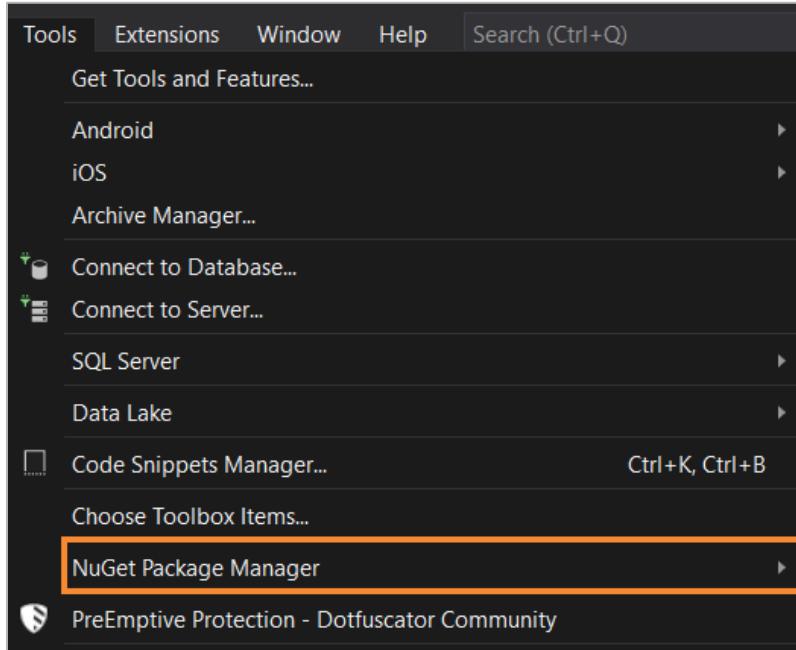
5. Change Cryptographic network provider to **Secure Channel**

Prune remote branches during fetch: Rebase local branch when pulling: Cryptographic network provider: Credential helper: Close open solutions not under Git when opening a repository:  <input type="checkbox"/> Enable download of author images from 3rd party source <a href="#">Clear image cache</a> <input checked="" type="checkbox"/> Commit changes after merge by default <input type="checkbox"/> Enable push --force-with-lease <input checked="" type="checkbox"/> Open folder in Solution Explorer when opening a Git repository <input type="checkbox"/> Automatically load the solution when opening a Git repository	<input type="button" value="Unset"/>  <input type="button" value="Unset"/>  <input type="button" value="OpenSSL"/> <input type="button" value="Unset"/> <input type="button" value="Yes"/>  <input type="button" value="Unset"/>  <input type="button" value="Unset"/>  <input type="button" value="Secure Channel"/> <input type="button" value="OpenSSL"/> <input type="button" value="Secure Channel"/> <input type="button" value="Unset"/>
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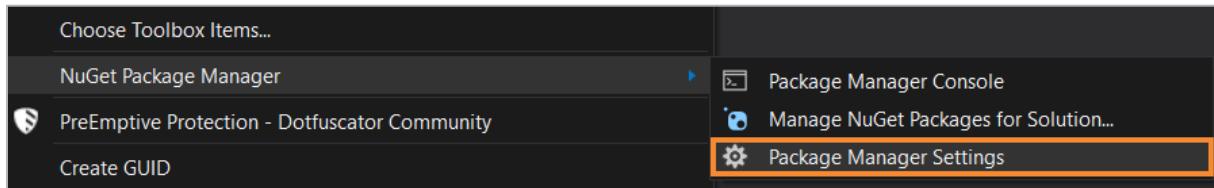
6. Click **OK**

## ADJUST NUGET PACKAGES

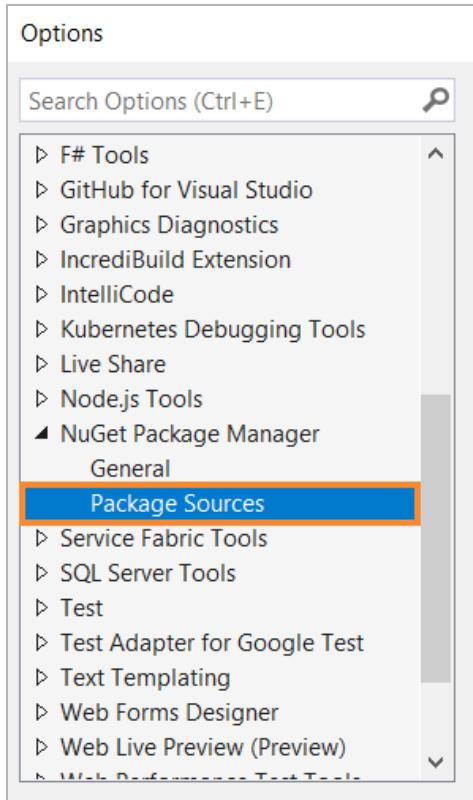
Our applications depend on internal NuGet packages, this is where we establish the connection to the correct NuGet Package repository.

1. Go to **Tools > NuGet package manager**

2. Select **Package Manager Settings**

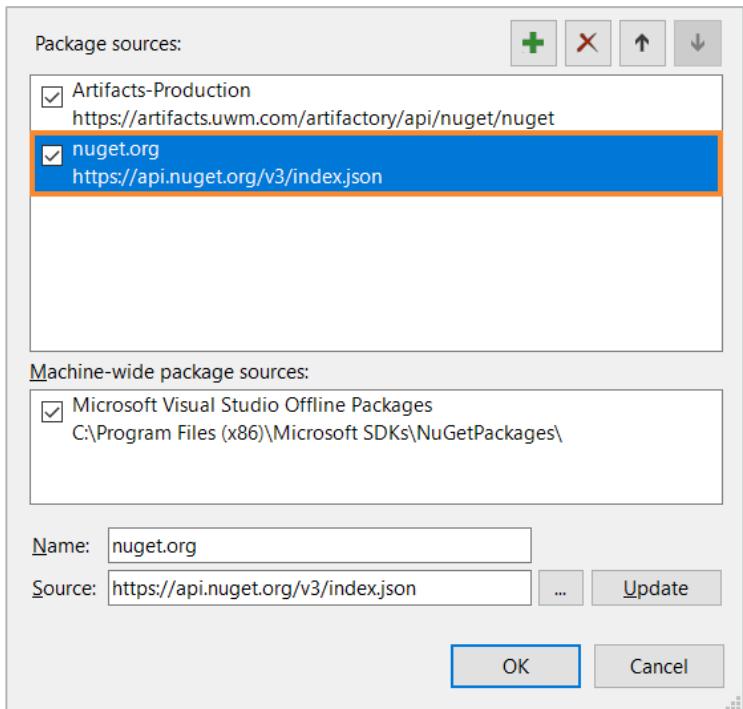


3. Under NuGet Package Manager, select **Package Sources**

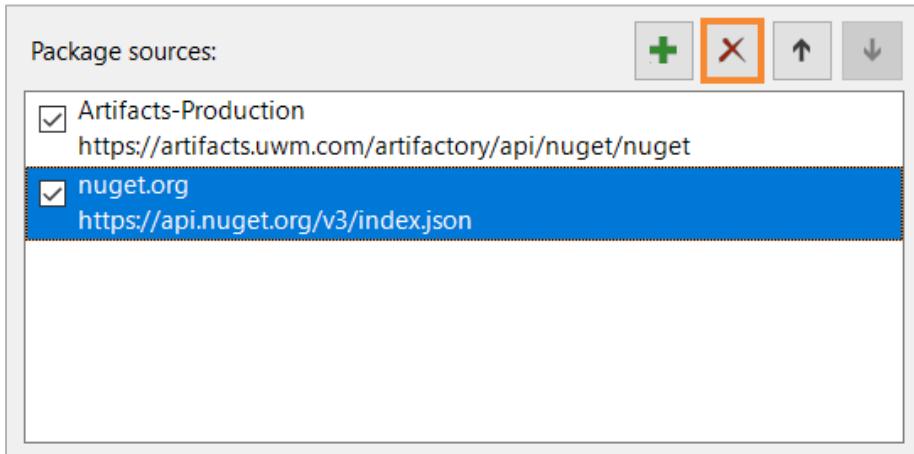


\*\*INTERNAL USE ONLY\*\*

4. Select **NuGet.org**

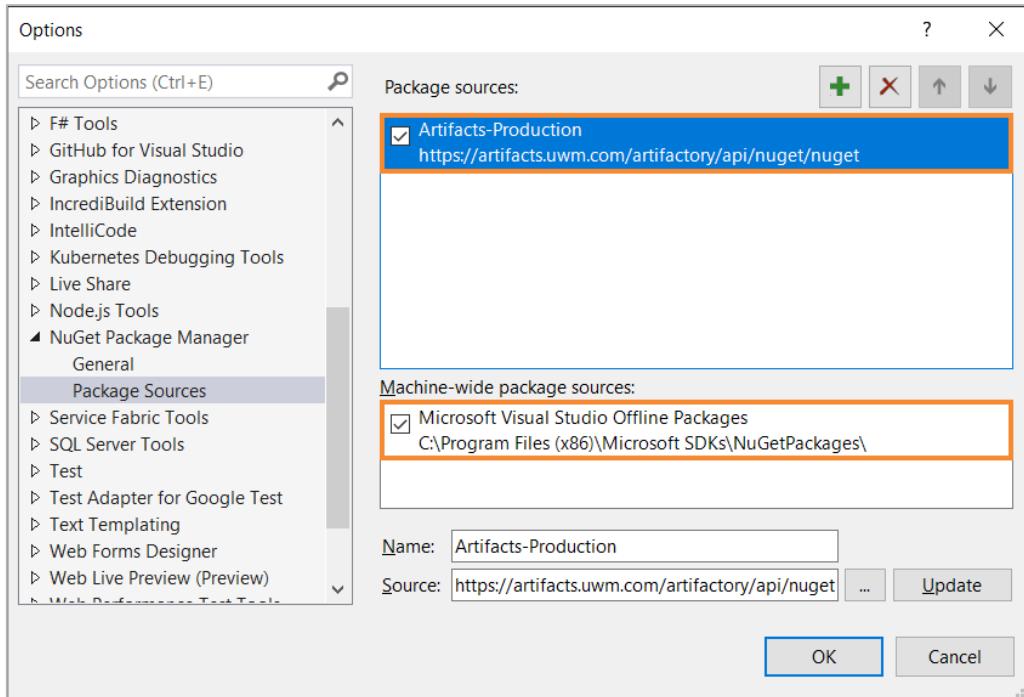


5. Click on the **X** to remove nuget.org



6. Ensure the only two sources left are **Artifacts-Production** and **Microsoft Visual Studio Offline Packages**

**NOTE:** If Artifacts-Production is missing [click here](#)



7. Click **OK**



## NAVIGATE TO THE RELEVANT REPOSITORY

Select which repository you need to set up — Lending or Edge. Clicking on the relevant tile will take you to the necessary page.

**LENDING**

**EDGE**

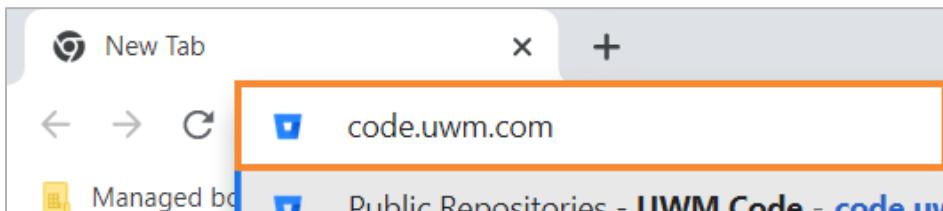
\*\*INTERNAL USE ONLY\*\*

## CLONE LENDING REPOSITORY

Retrieving a copy of the source code for Lending.

### NAVIGATE TO CODE.UWM.COM

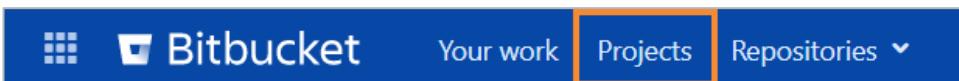
1. In your web browser, navigate to [code.uwm.com](https://code.uwm.com)<sup>3</sup>



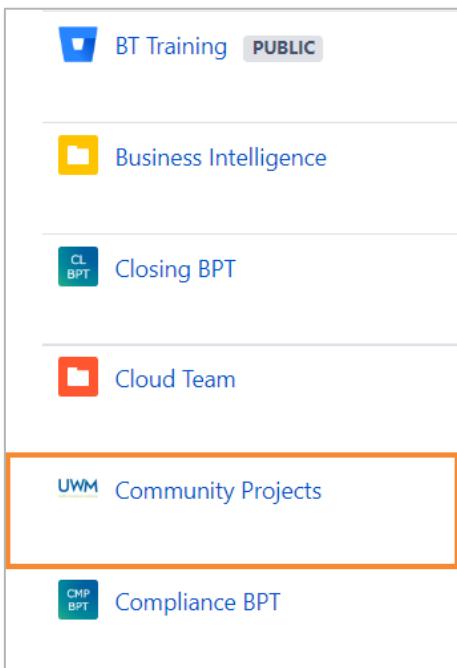
2. **Login** if you are not already



3. Click on **Projects**



4. Scroll down and click on **Community Projects**



5. Scroll down and click on **Lending**

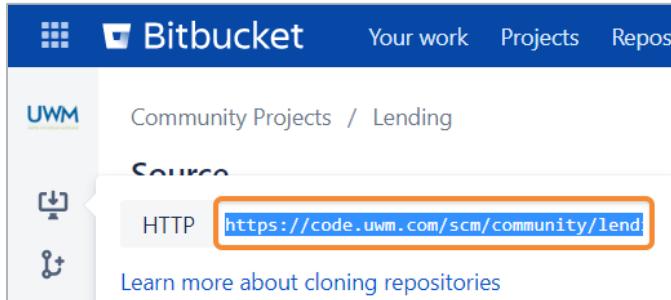
The screenshot shows a list of repositories in a Bitbucket interface. The repositories listed are: application-aspnet-realec, application-aspnet-risk, application-aspnet-secdry, application-aspnet-sffamb, application-aspnet-shrmge, application-aspnet-uscan, application-aspnet-uwm, application-aspnet-uwmcar, application-aspnet-vndint, Archived\_application-aspnet-uclose, Edge, Lending, nupack-product-server, service-csharp-loandatatranslation, service-csharp-loanimport, service-csharp-loanintegration, and service-csharp-prdprcng. The 'Lending' repository is highlighted with an orange border.

6. On the left-hand side, click on the top icon to **Clone**

The screenshot shows the Bitbucket Source interface. The 'Source' tab is selected. The repository 'Lending' is visible in the list. A download icon is highlighted with an orange border on the left sidebar.

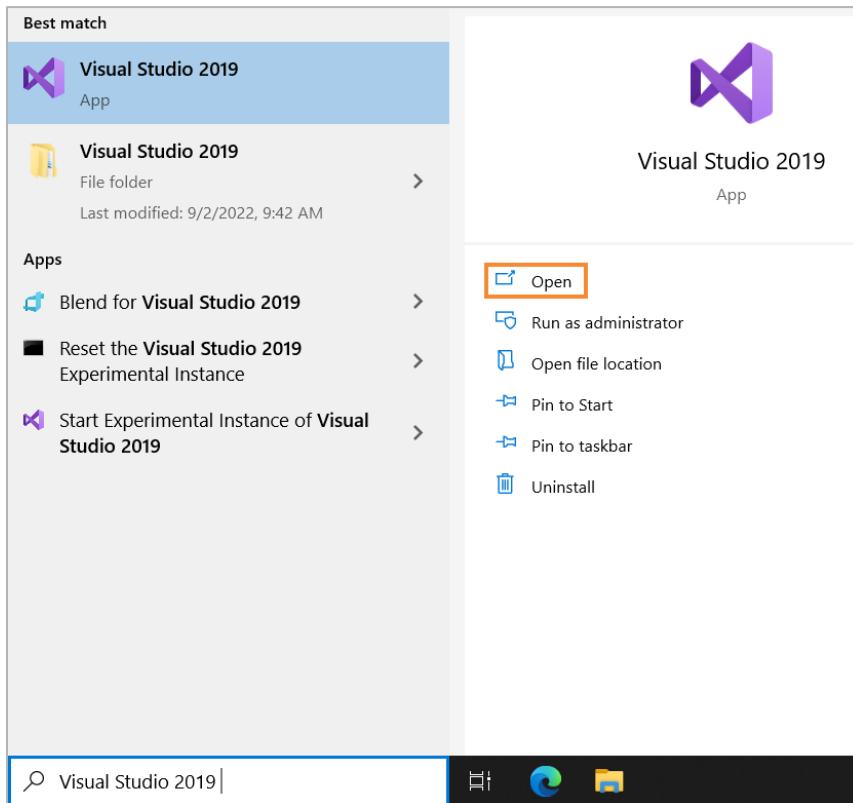
\*\*INTERNAL USE ONLY\*\*

7. CTRL + C to **Copy**



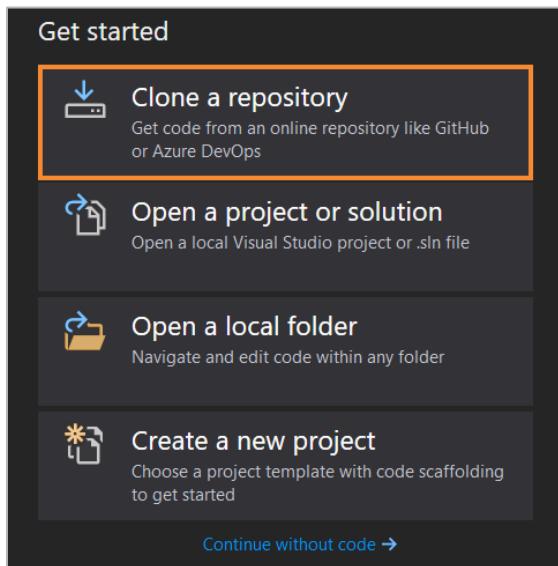
## INSERT REPOSITORY LOCATION

1. **Open** Visual Studio Professional 2019 (close and reopen if it was already open)

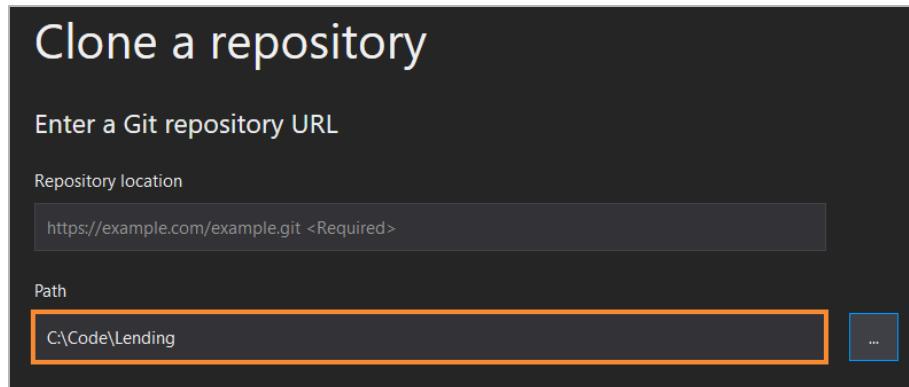


\*\*INTERNAL USE ONLY\*\*

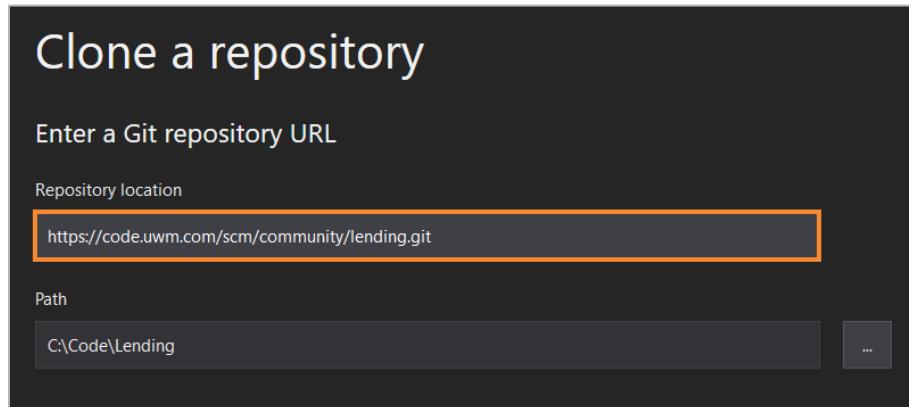
2. Click **Clone a repository**



3. Change Path to **C:/Code/Lending**

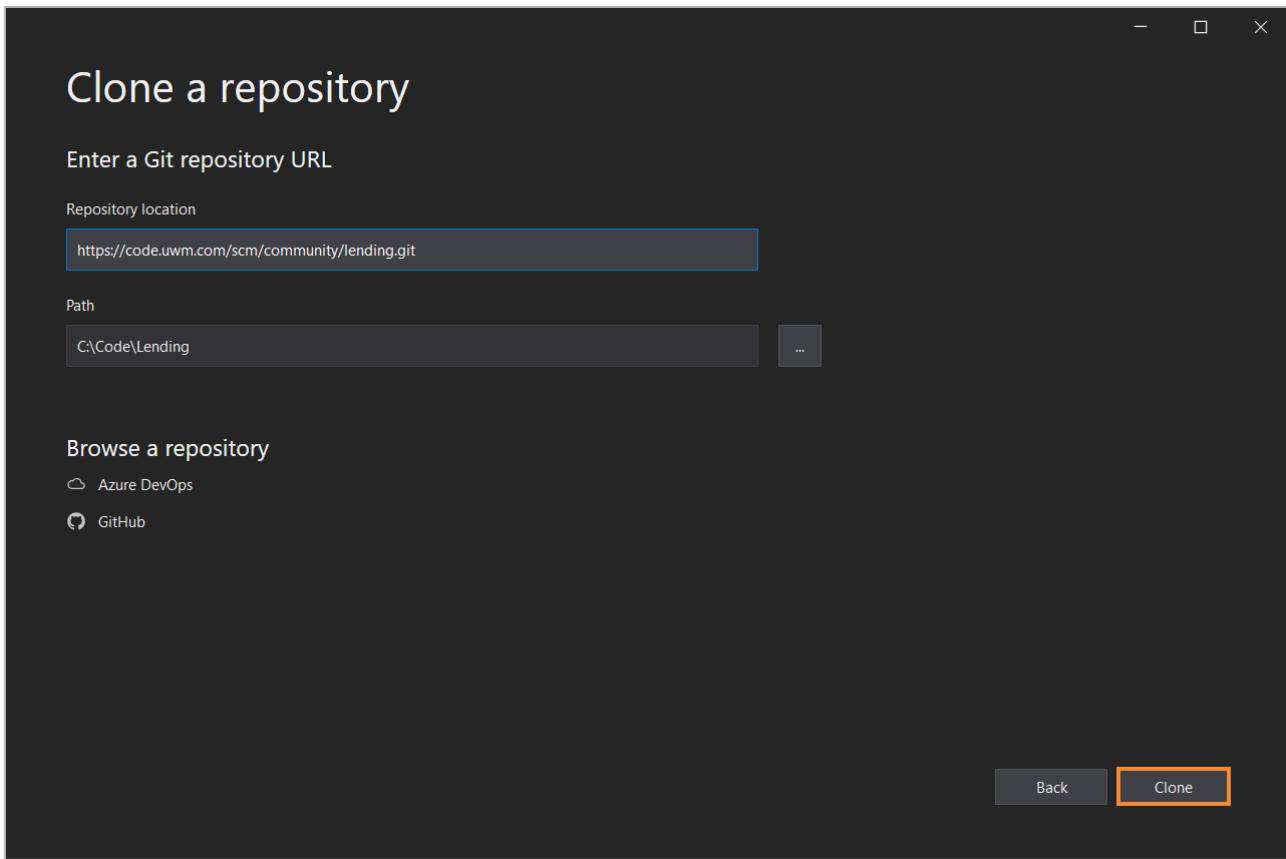


5. In the box labeled Repository location, CTRL + V to **paste** the cloned path



6. Click **Clone**

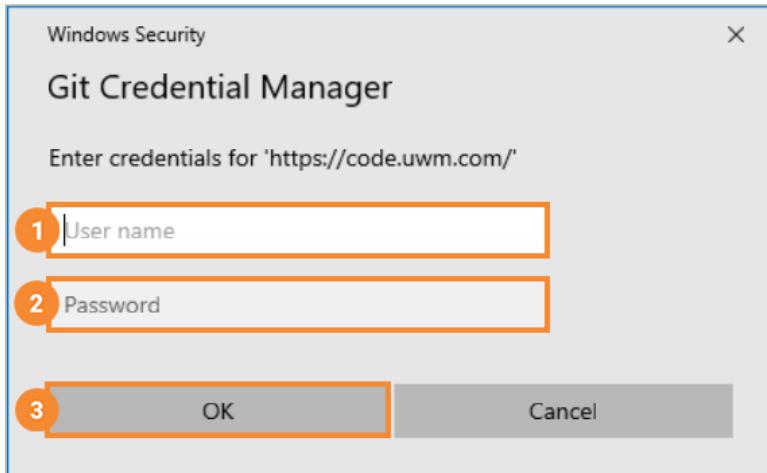
**NOTE:** If you are prompted with a "Git failed with a fatal error" pop up [click here](#)



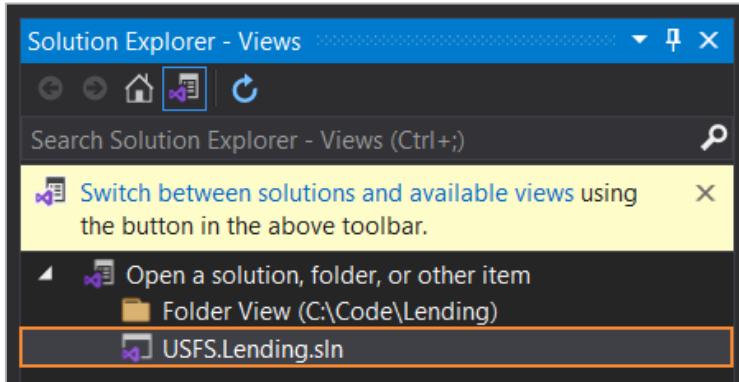
\*\*INTERNAL USE ONLY\*\*

7. The Git Credential Manager may show up, if it doesn't, you can skip this step:

1. Enter **UWM Username**
2. Enter **UWM Password**
3. Click **OK**

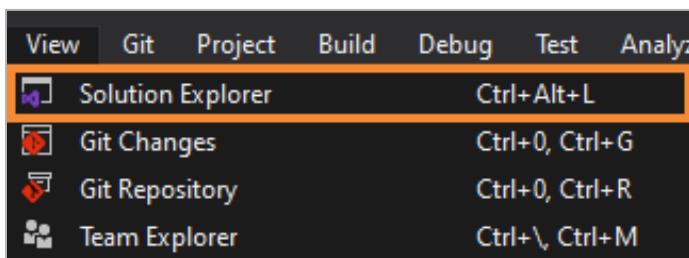


8. In the solution explorer, double click **USFS.Lending.sln**

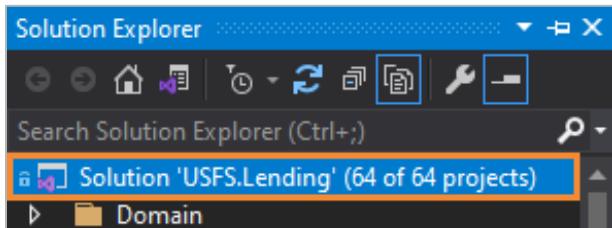


## RESTORE NUGET PACKAGES

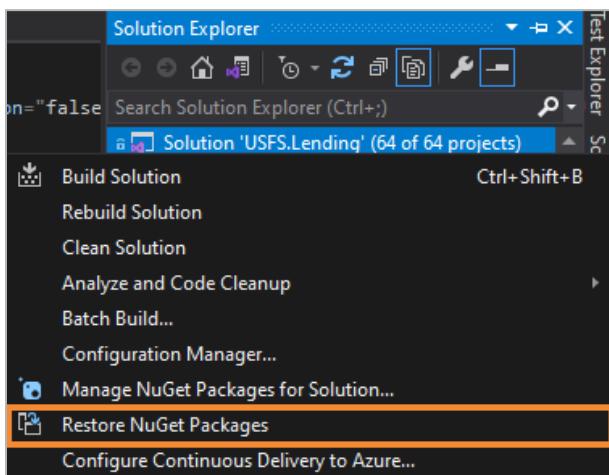
1. Open the Solution Explorer from **View > Solution Explorer**



2. Right click **Solution 'USFS.Lending'**



### 3. Click **Restore NuGet Packages**

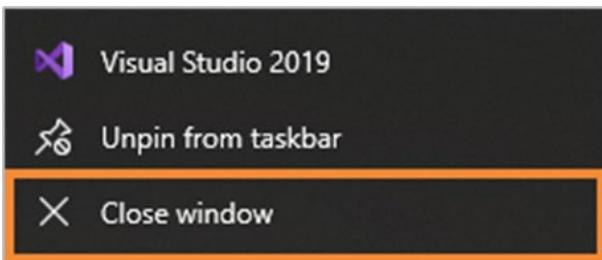


## RUN LENDING LOCALLY

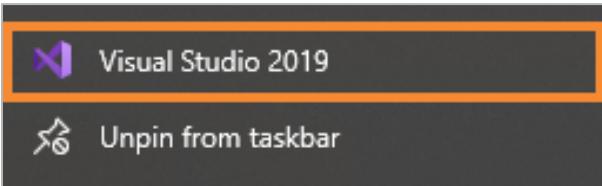
Run an instance of Lending on your own local machine to test that your project is configured correctly.

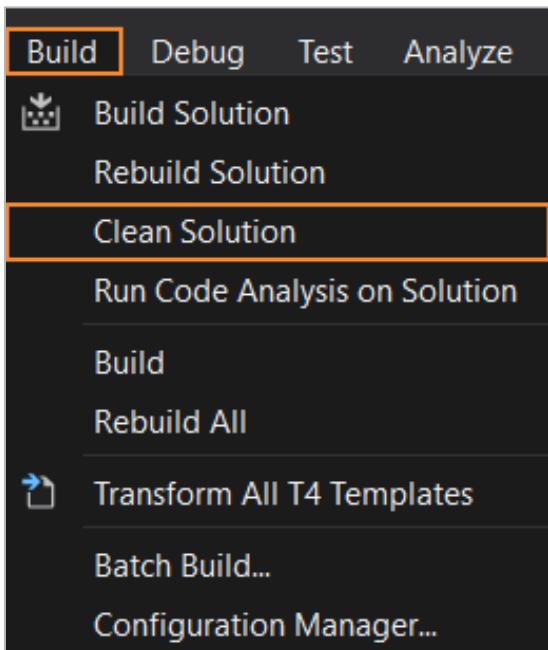
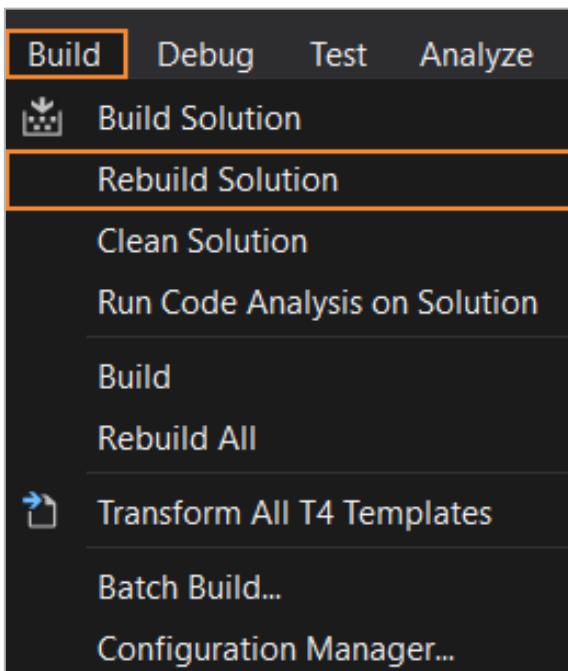
### CLEAN AND REBUILD

#### 1. Close **Visual Studio**

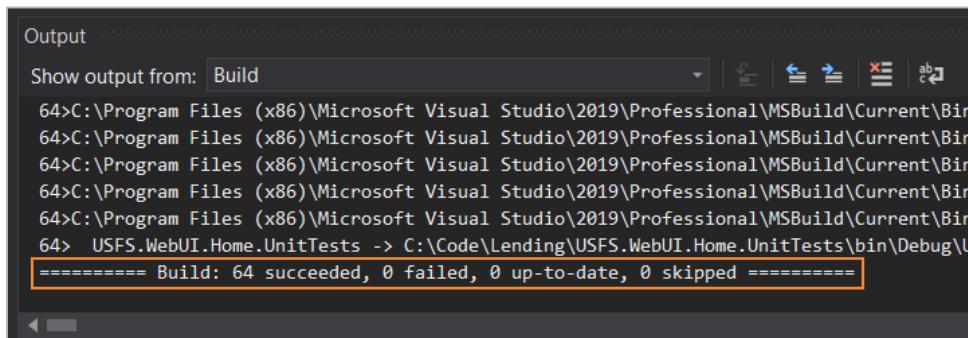


#### 2. Reopen **Visual Studio**



3. Go to **Build > Clean Solution**4. Go to **Build > Rebuild Solution**

5. Let the build run, check that the build solution succeeded after it finishes

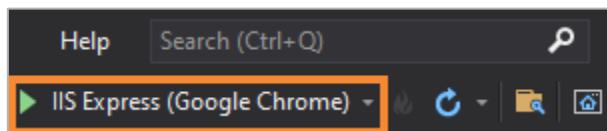


```

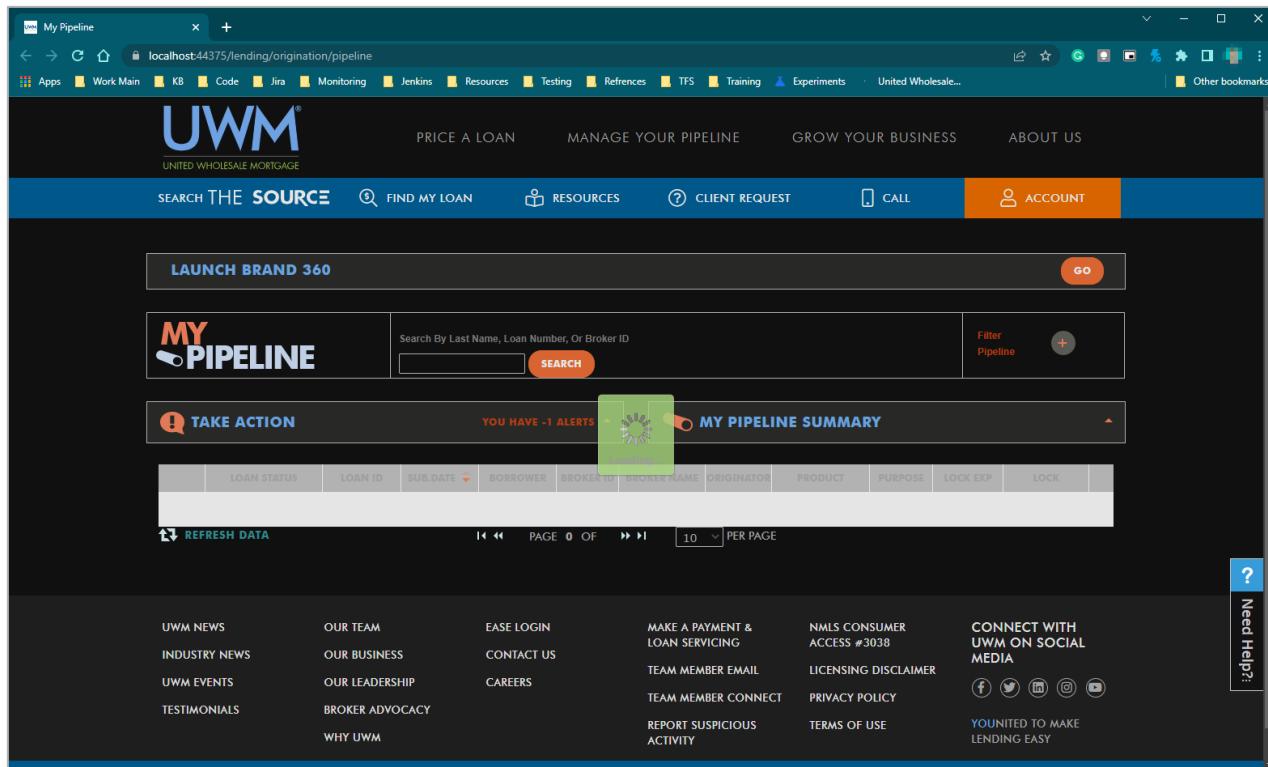
Output
Show output from: Build
64>C:\Program Files (x86)\Microsoft Visual Studio\2019\Professional\MSBuild\Current\Bin
64> USFS.WebUI.Home.UnitTests -> C:\Code\Lending\USFS.WebUI.Home.UnitTests\bin\Debug\U
===== Build: 64 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
  
```

## RUN IIS EXPRESS

1. Click **IIS Express**



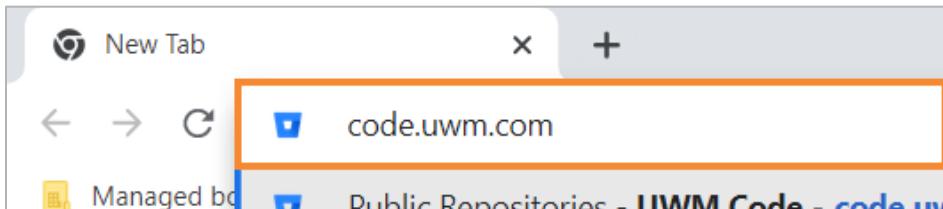
2. If successful, your pop-up window should look similar to this:



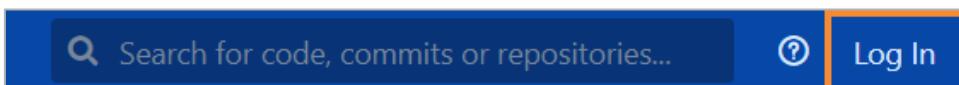
## CLONE EDGE REPOSITORY

NAVIGATE TO CODE.UWM.COM

8. In your web browser, navigate to [code.uwm.com](https://code.uwm.com)<sup>3</sup>



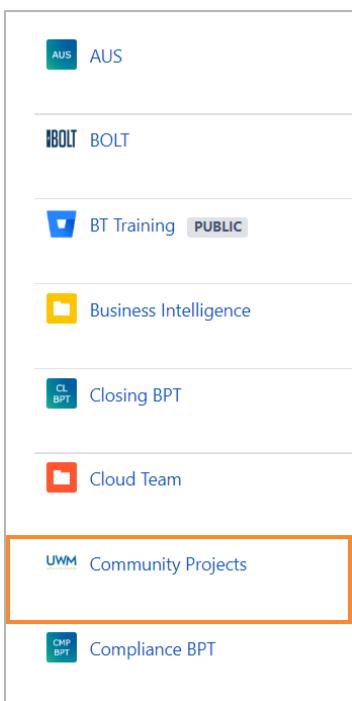
9. **Login** if you are not already



10. Click on **Projects**



11. Scroll down and click on **Community Projects**



12. Scroll down and click on **Edge**

Filter repositories by name

- application-aspnet-realec
- application-aspnet-risk
- application-aspnet-secdry
- application-aspnet-sffamb
- application-aspnet-shrmge
- application-aspnet-uscan
- application-aspnet-uwm
- application-aspnet-uwmcar
- application-aspnet-vndint
- Archived\_application-aspnet-uclose
- Edge** (highlighted)
- Lending
- nupack-product-server
- service-csharp-loandatatranslation
- service-csharp-loanimport
- service-csharp-loanintegration
- service-csharp-prdprcng

13. On the left-hand side, click on the top icon to **Clone**

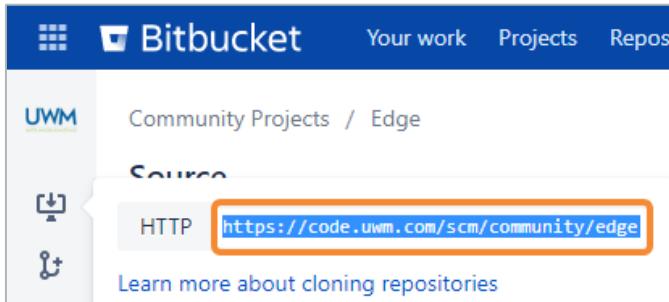
Bitbucket Your work Projects

UWM Community Projects / Edge

Source

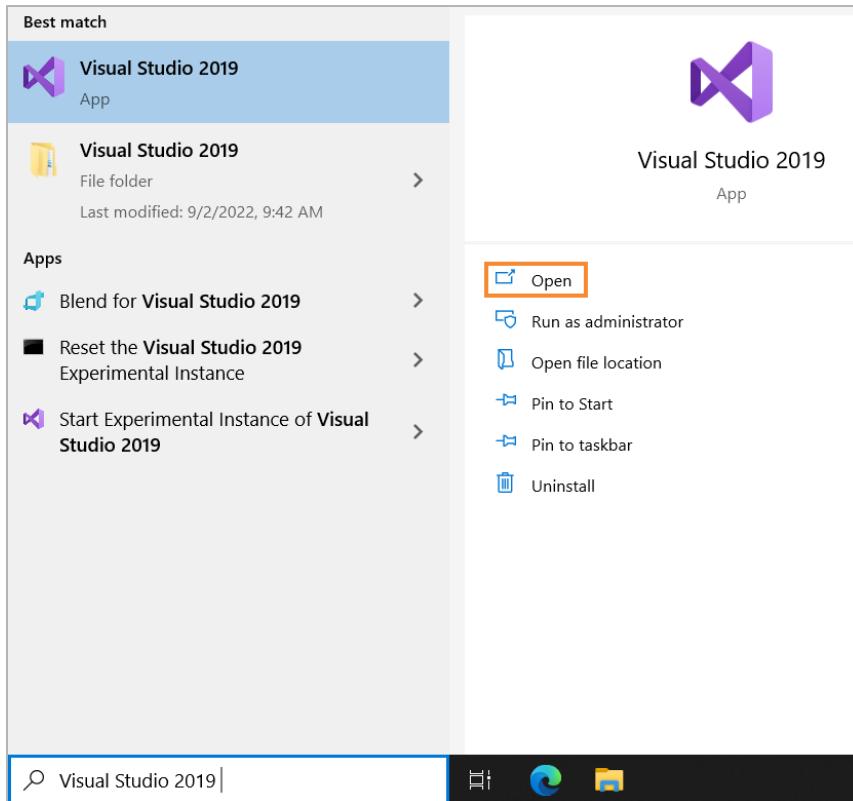
Clone develop ... Edge /

#### 14. CTRL + C to **Copy**



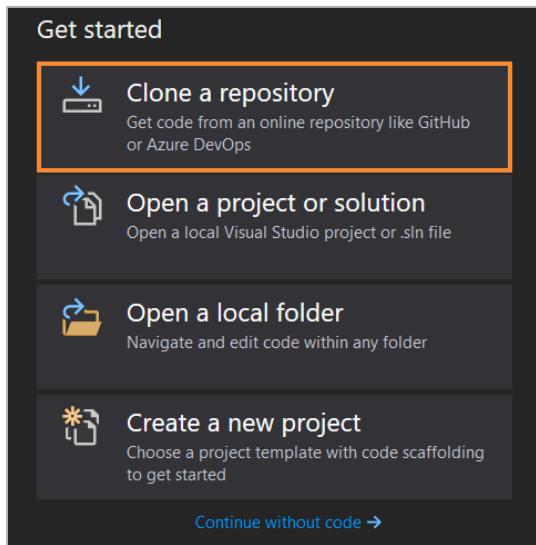
## INSERT REPOSITORY LOCATION

4. **Open** Visual Studio Professional 2019 (close and reopen if it was already open)

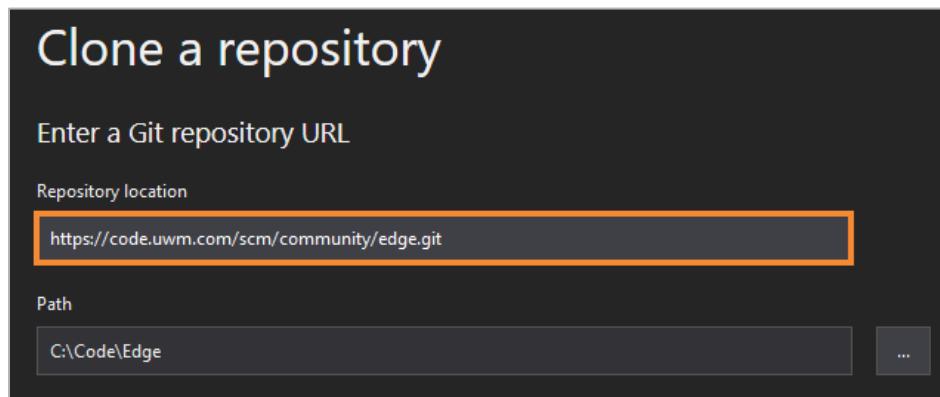


\*\*INTERNAL USE ONLY\*\*

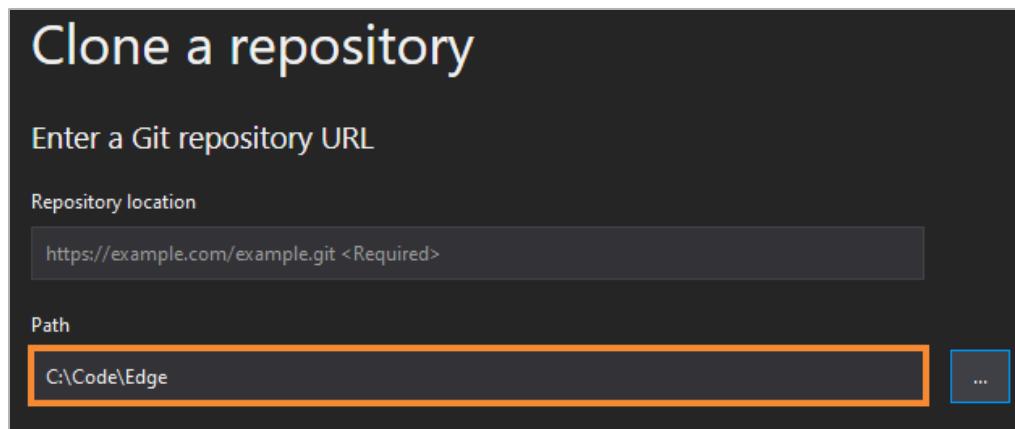
5. Click **Clone a repository**



6. Change Path to **C:/Code/Edge**

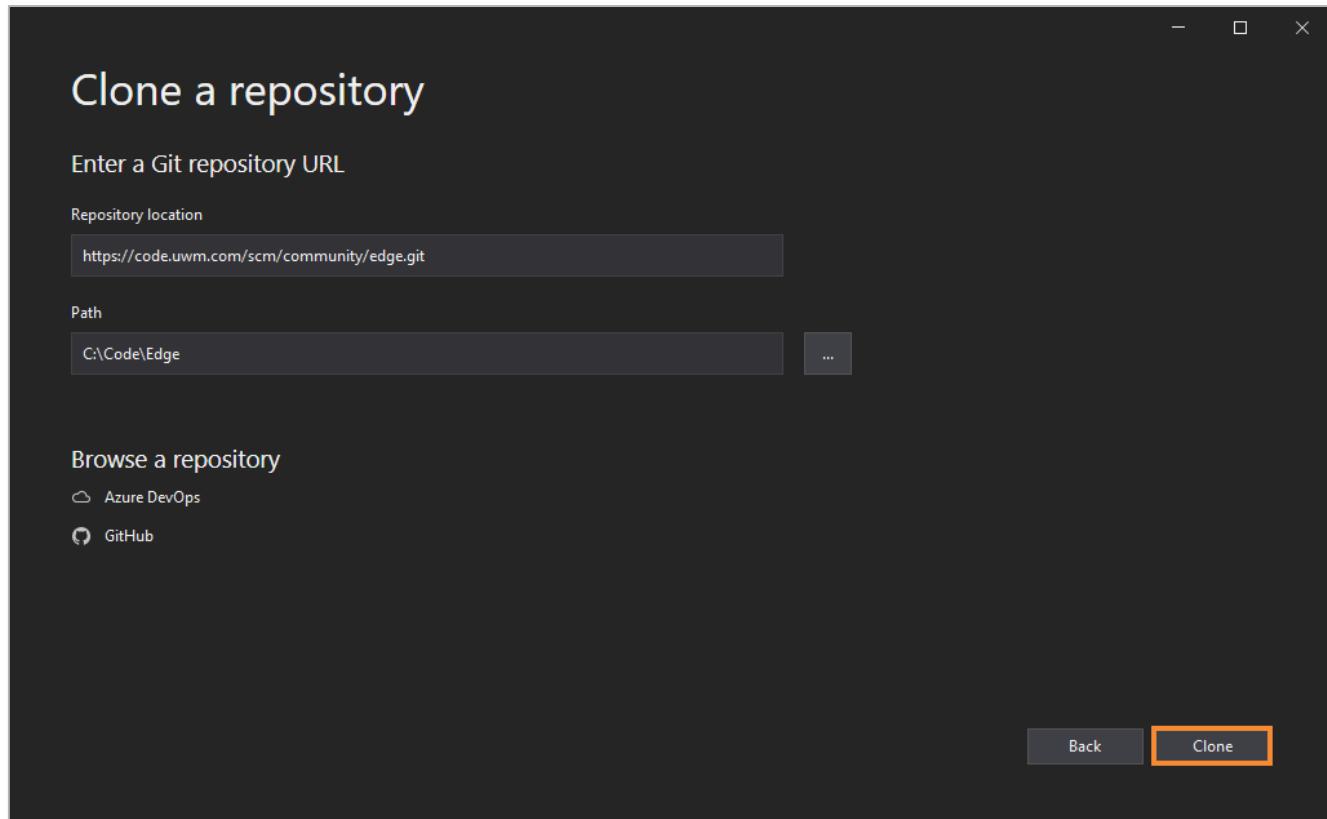


7. In the box labeled Repository location, CTRL + V to **paste** the cloned path



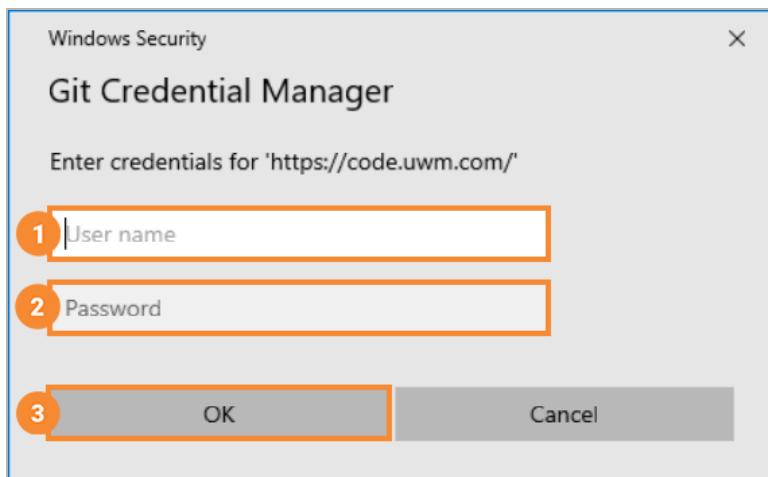
8. Click **Clone**

**NOTE:** If you are prompted with a "Git failed with a fatal error" pop up [click here](#)

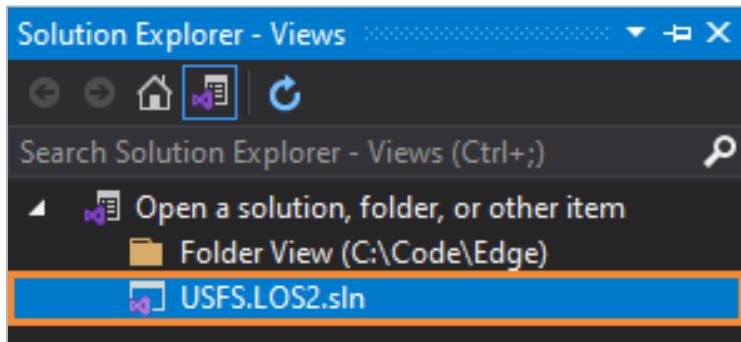


9. The Git Credential Manager may show up, if it doesn't, you can skip this step:

1. Enter **UWM Username**
2. Enter **UWM Password**
3. Click **OK**

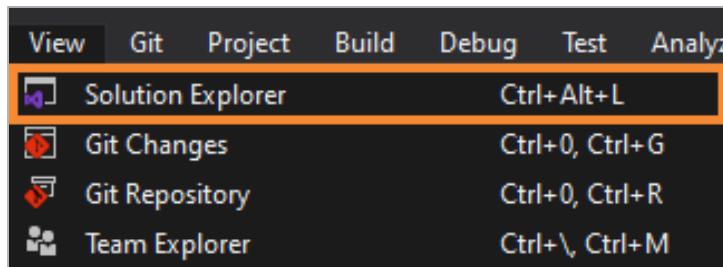


10. In the solution explorer, double click **USFS.LOS2.sln**

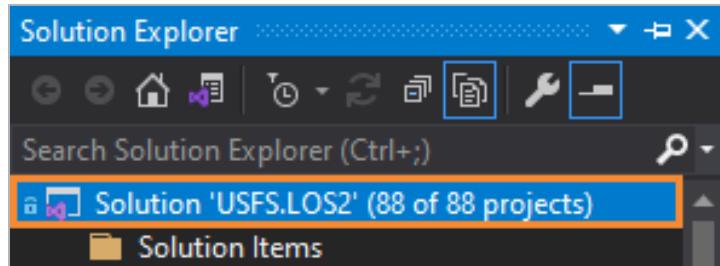


## RESTORE NUGET PACKAGES

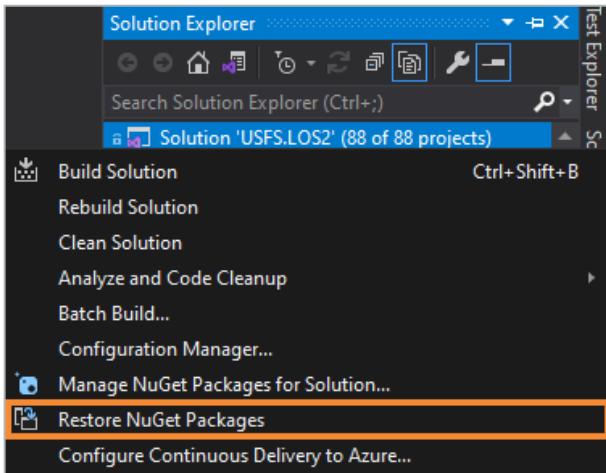
4. Open the Solution Explorer from **View > Solution Explorer**



5. Right click **Solution 'USFS.LOS2'**



6. Click **Restore NuGet Packages**

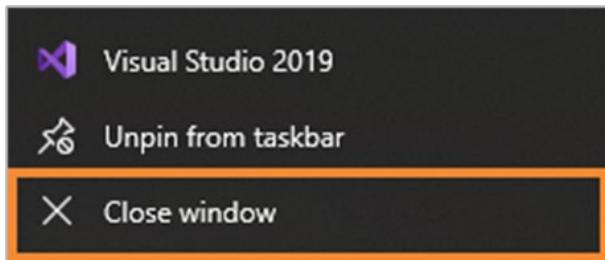


## RUN EDGE LOCALLY

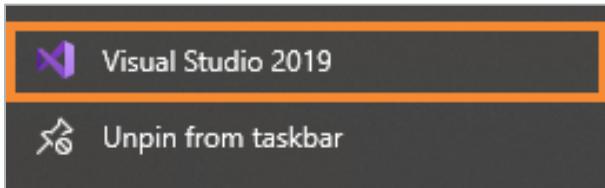
Run an instance of Edge on your own local machine to test that your project is configured correctly.

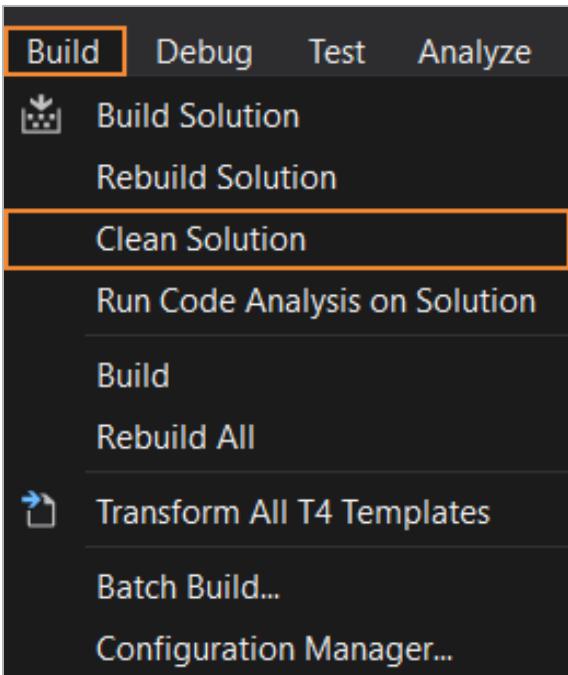
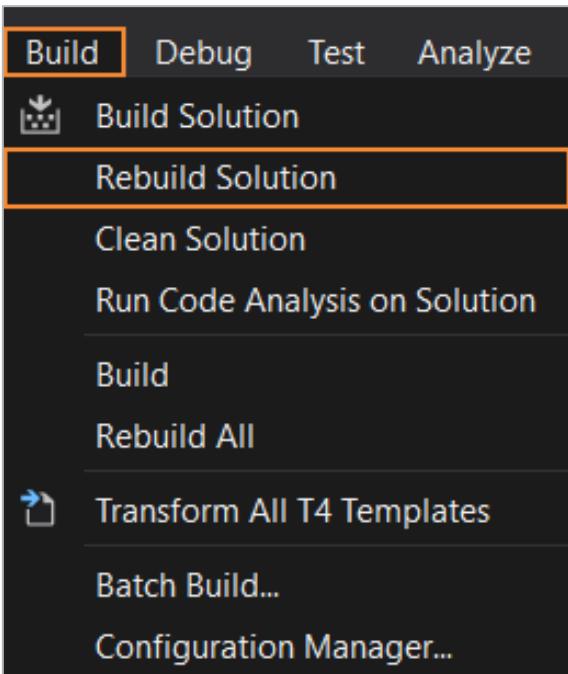
### CLEAN AND REBUILD

3. Close **Visual Studio**

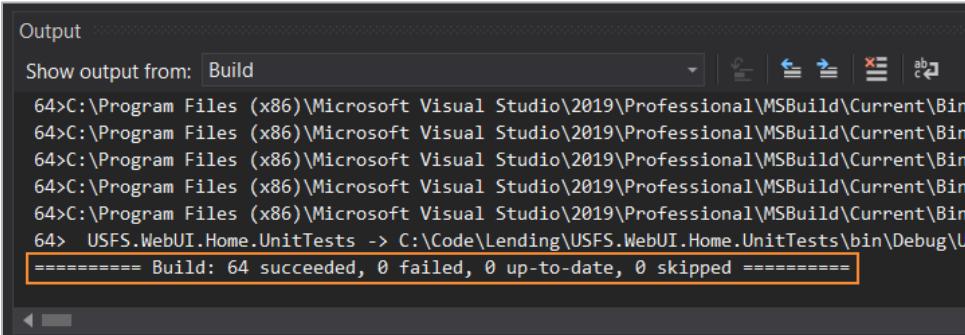


4. Reopen **Visual Studio**



6. Go to **Build > Clean Solution**7. Go to **Build > Rebuild Solution**

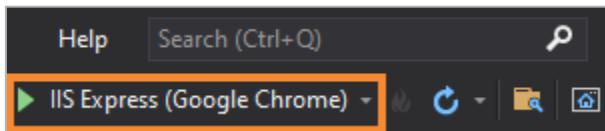
8. Let the build run, check that the build solution succeeded after it finishes



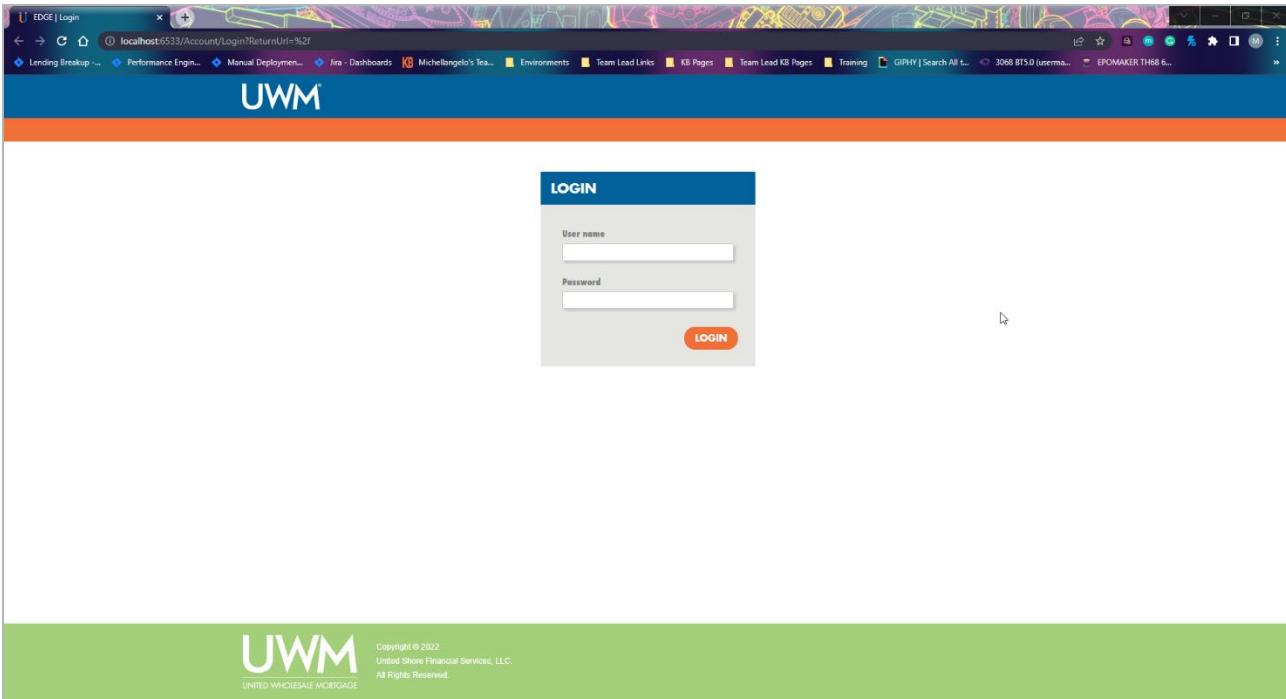
```
Output
Show output from: Build
64>C:\Program Files (x86)\Microsoft Visual Studio\2019\Professional\MSBuild\Current\Bin
64> USFS.WebUI.Home.UnitTests -> C:\Code\Lending\USFS.WebUI.Home.UnitTests\bin\Debug\U
===== Build: 64 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
```

## RUN IIS EXPRESS

3. Click **IIS Express**



4. If successful, your pop-up window should look similar to this:



## TROUBLESHOOTING

This section is used to fix errors that you may run into while setting up Visual Studio for Lending

### INSTALL VISUAL STUDIO 2019

Visual Studio should come preinstalled on developer laptops, but if it is not, follow the steps below to install it on your company issued laptop.

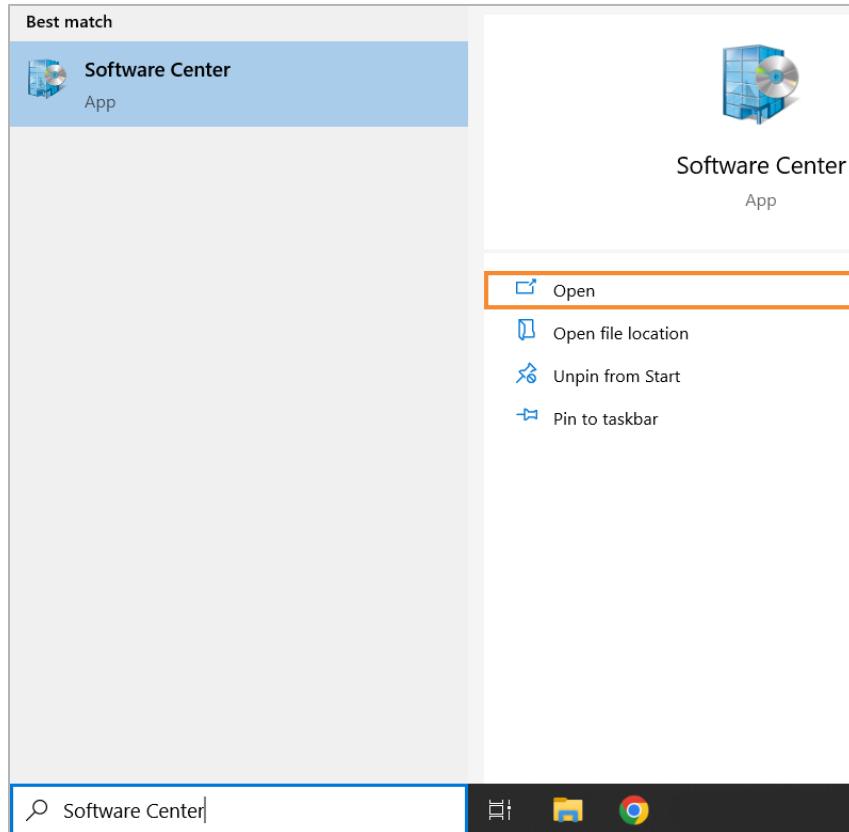
1. In the task bar, click your cursor in the **search bar**



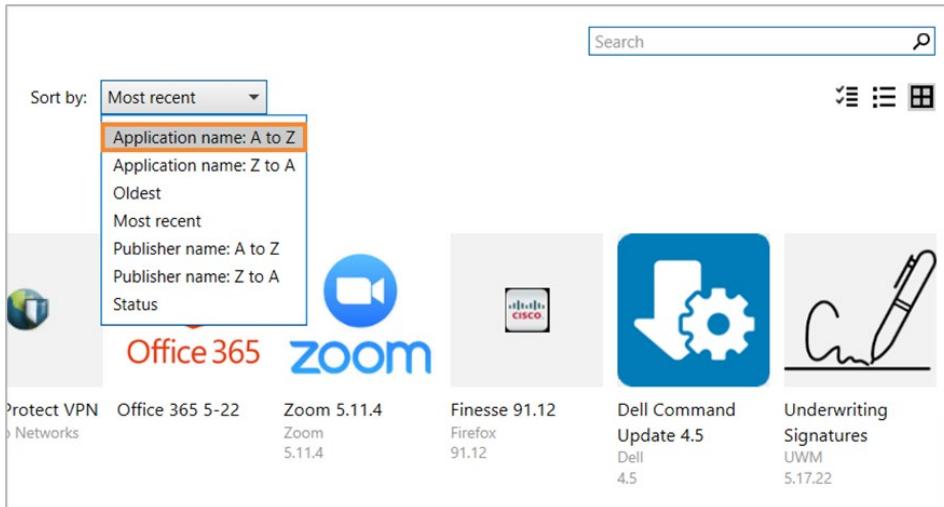
2. Type in the search bar: **Software Center**



3. Click **Open**



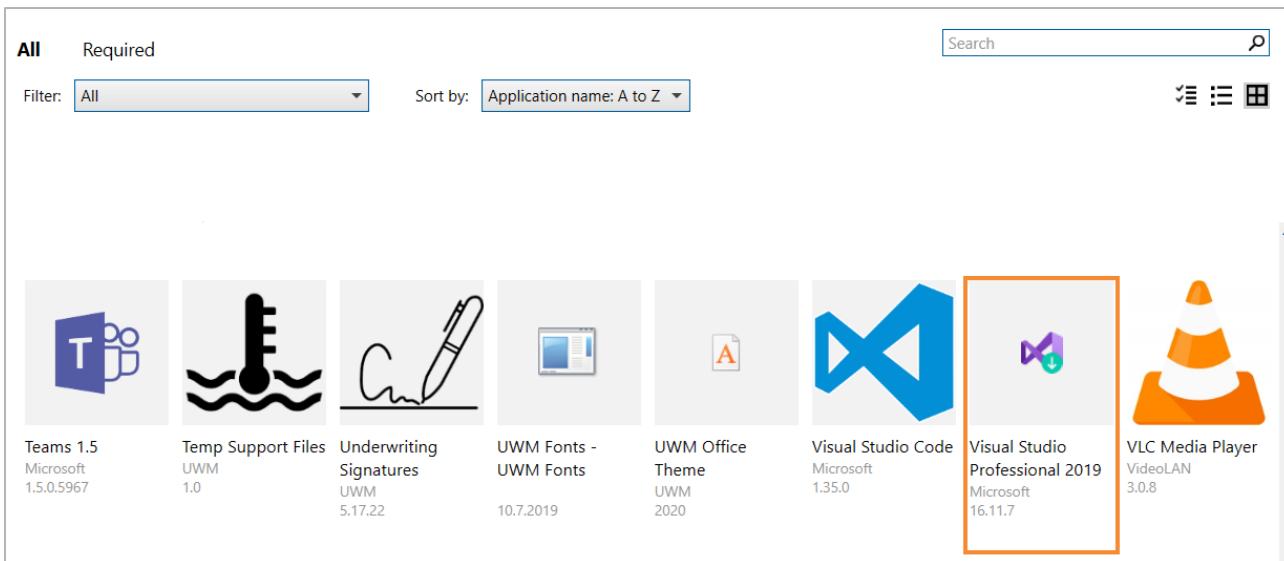
4. Sort by: **Application name: A to Z**



Sort by:

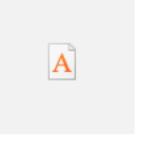
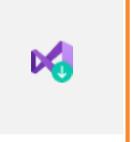
 Protect VPN	 Office 365	 Zoom	 Finesse 91.12	 Dell Command Update 4.5	 Underwriting Signatures UWM 5.17.22
Protect Networks	5-22	5.11.4	Firefox 91.12	Dell 4.5	

5. Scroll down to **Visual Studio Professional 2019** and click the program

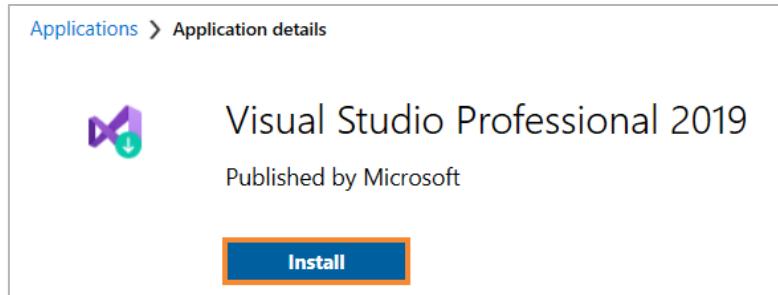


All Required

Filter:  Sort by:

 Teams 1.5 Microsoft 1.5.0.5967	 Temp Support Files UWM 1.0	 Underwriting Signatures UWM 5.17.22	 UWM Fonts - UWM Fonts 10.7.2019	 UWM Office Theme UWM 2020	 Visual Studio Code Microsoft 1.35.0	 Visual Studio Professional 2019 Microsoft 16.11.7	 VLC Media Player VideOLAN 3.0.8
--	--	---	---	---	---	---	---

6. Click **Install**



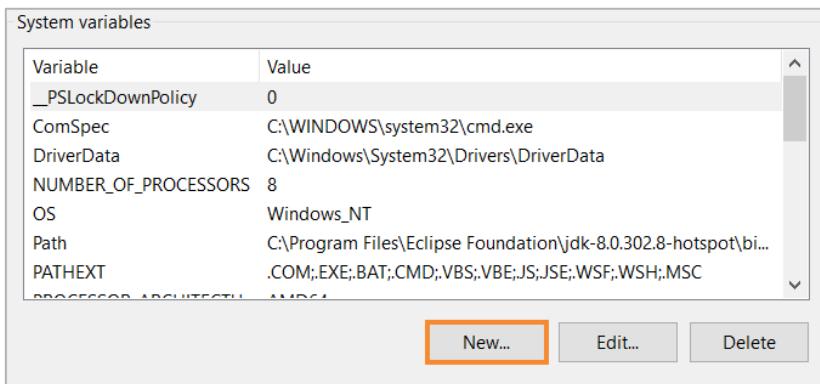
Applications > Application details

 Visual Studio Professional 2019

Published by Microsoft

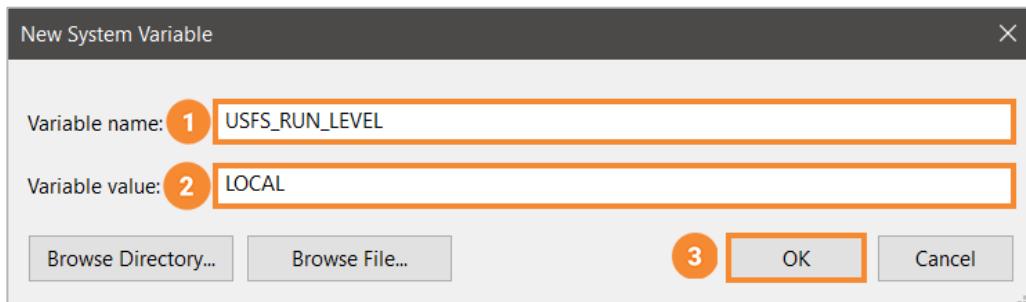
## MISSING LOCAL CREDENTIAL

1. Click **New**

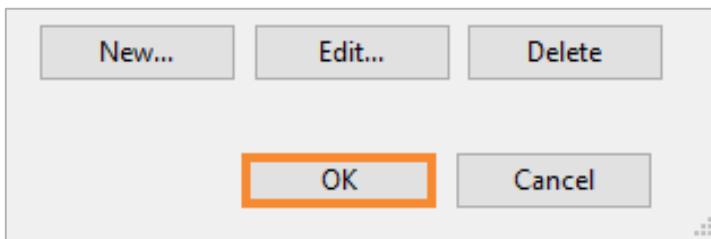


2. Fill out form

1. In Variable name type **USFS\_RUN\_LEVEL**
2. In Variable value type **LOCAL**
3. Click **OK**



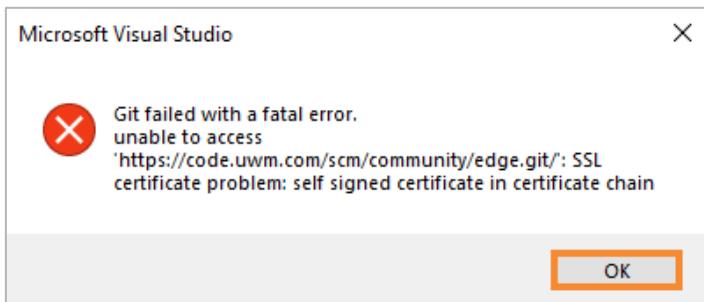
3. Click **OK**



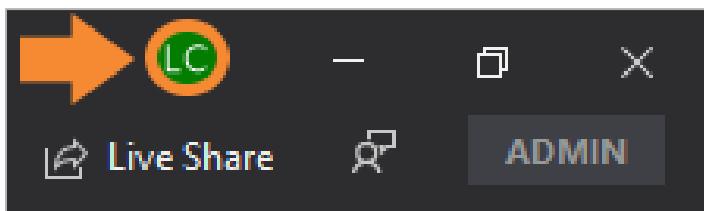
4. Click here to return to the next step

## GIT FAILED WITH A FATAL ERROR

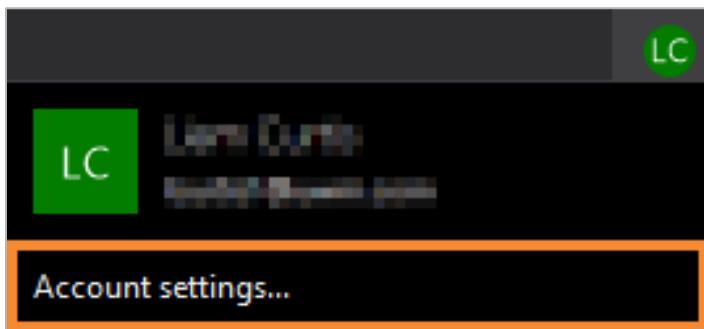
1. Click **OK**



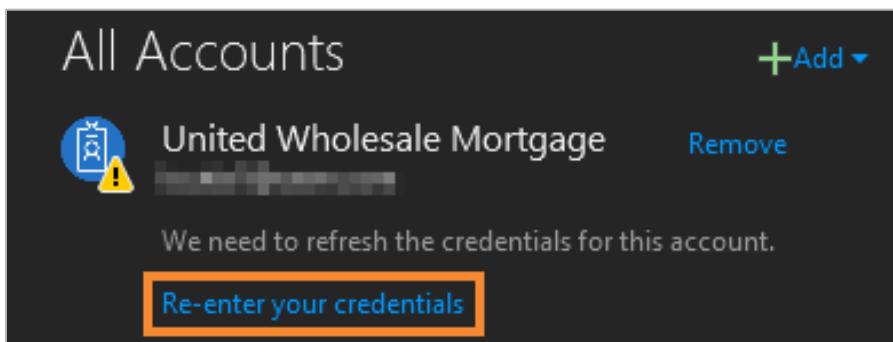
2. Click your **account in the upper right**



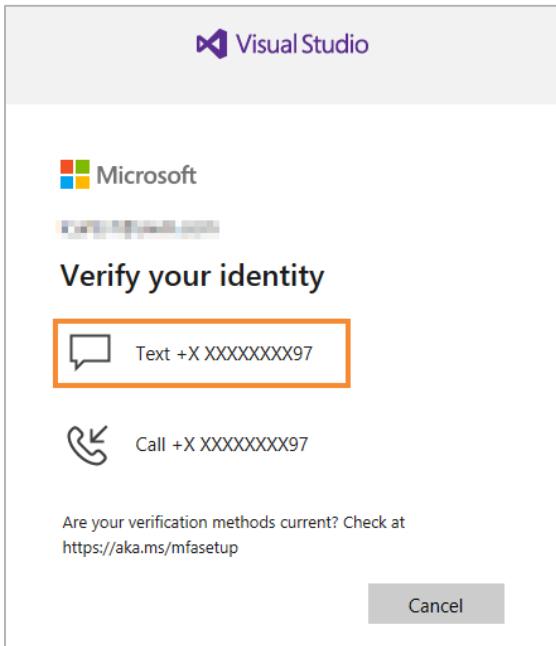
3. Click **Account settings**



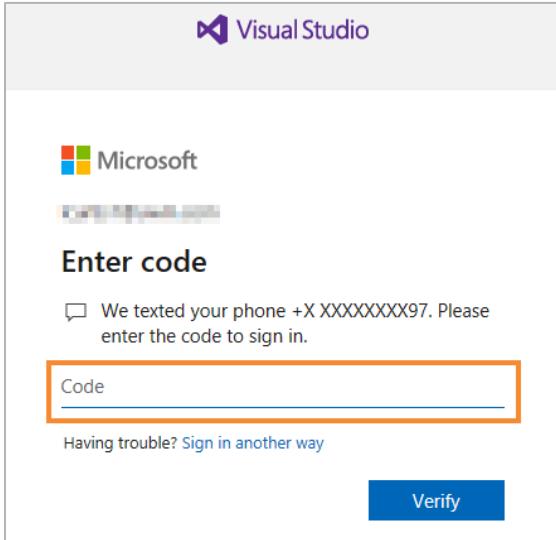
4. Click **Re-enter your credentials**



5. Verify your identity



6. Enter code

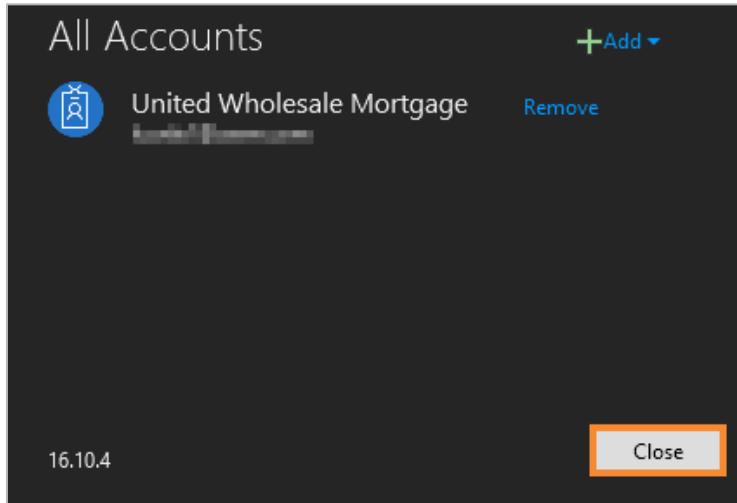


7. Click Verify

**NOTE:** You may have to enter code and verify twice



8. Click **Close**

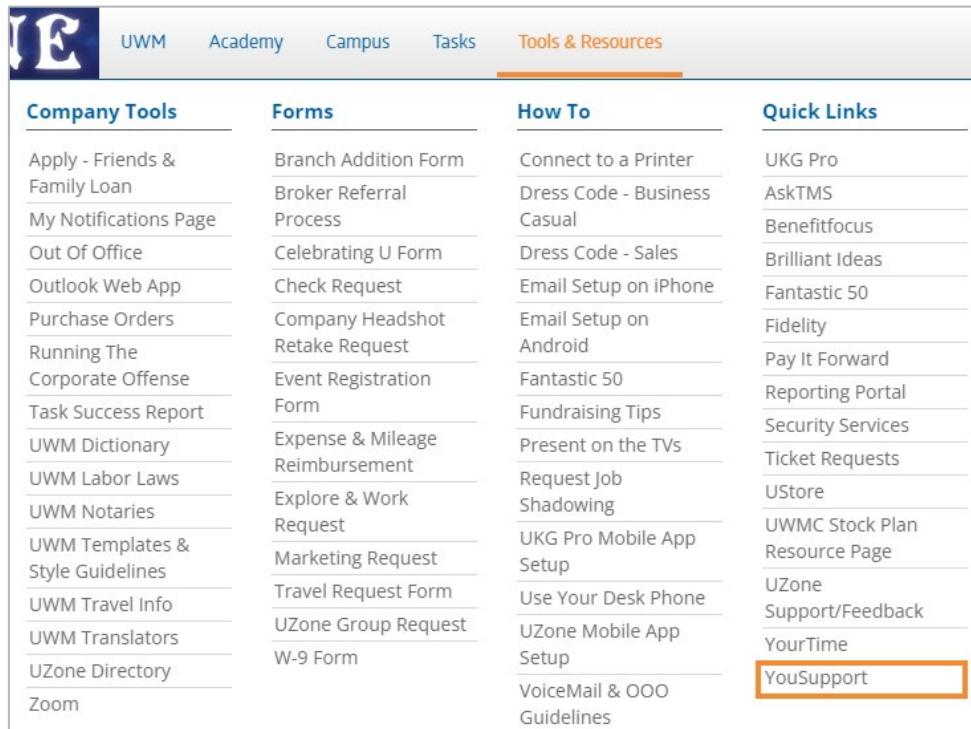


9. Relaunch Visual Studio and try **cloning the repository** again. Click [here](#) to return to the next step

## MISSING MICROSERVICE CERTS IN SOFTWARE CENTER

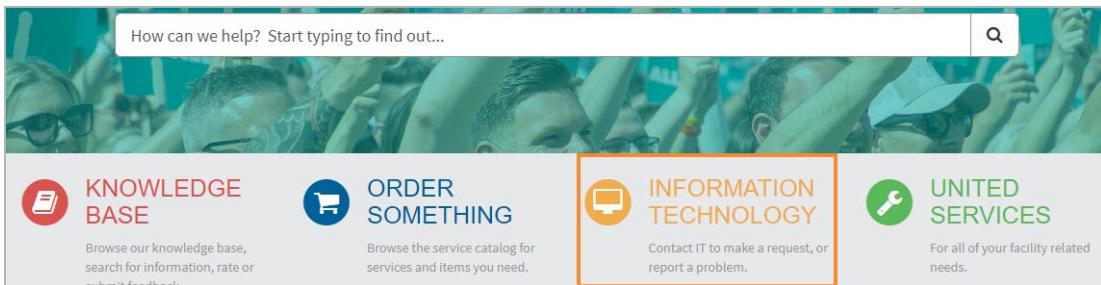
If you are missing the microservice certs in the Software Center, you must go to YouSupport to request the correct certs. The following steps will outline how to request them, as they are needed before continuing.

1. Navigate to **YouSupport** on Uzone

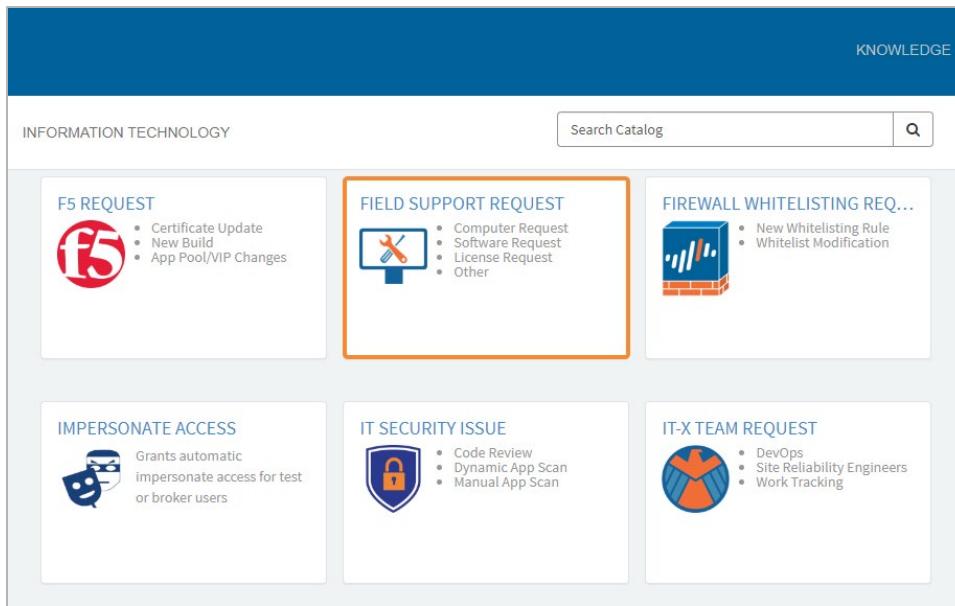


Company Tools	Forms	How To	Quick Links
Apply - Friends & Family Loan	Branch Addition Form	Connect to a Printer	UKG Pro
My Notifications Page	Broker Referral Process	Dress Code - Business Casual	AskTMS
Out Of Office	Celebrating U Form	Dress Code - Sales	Benefitfocus
Outlook Web App	Check Request	Email Setup on iPhone	Brilliant Ideas
Purchase Orders	Company Headshot	Email Setup on Android	Fantastic 50
Running The Corporate Offense	Retake Request	Fantastic 50	Fidelity
Task Success Report	Event Registration Form	Fundraising Tips	Pay It Forward
UWM Dictionary	Expense & Mileage Reimbursement	Present on the TVs	Reporting Portal
UWM Labor Laws	Explore & Work Request	Request Job Shadowing	Security Services
UWM Notaries	Marketing Request	UKG Pro Mobile App Setup	Ticket Requests
UWM Templates & Style Guidelines	Travel Request Form	Use Your Desk Phone	UStore
UWM Travel Info	UZone Group Request	UZone Mobile App Setup	UWMC Stock Plan Resource Page
UWM Translators	W-9 Form	VoiceMail & OOO Guidelines	YourTime
UZone Directory			YouSupport
Zoom			

## 2. Click **Information Technology**

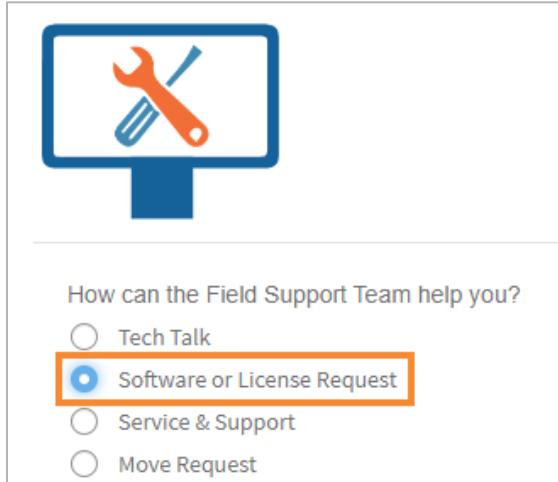


## 3. Scroll down and click on **Field Support Request**



The screenshot shows the 'INFORMATION TECHNOLOGY' section of the service catalog. It includes a search bar and several request types: F5 REQUEST, FIELD SUPPORT REQUEST, FIREWALL WHITELISTING REQUEST, IMPERSONATE ACCESS, IT SECURITY ISSUE, and IT-X TEAM REQUEST. The 'FIELD SUPPORT REQUEST' option is highlighted with an orange border.

## 4. Select **Software or License Request**



The screenshot shows the 'FIELD SUPPORT REQUEST' form. At the top is a logo of a wrench and screwdriver. Below it is a question: 'How can the Field Support Team help you?'. There are four options with radio buttons: 'Tech Talk', 'Software or License Request' (which is selected and highlighted with an orange border), 'Service & Support', and 'Move Request'.

5. Click **Next**

How can the Field Support Team help you?

- Tech Talk
- Software or License Request
- Service & Support
- Move Request
- Furniture Request
- Request New IT Equipment
- Loaner Laptop
- Computer Hardware Issues

**Next**

6. Click **Add**

### Software Request



User Location Asset

Add	Remove All	
Actions	Requested For	Request

7. Fill out the form

1. Fill in **your name** (the form will expand once your name is filled in)
2. Fill in **your computer ID** (on the Property of UWM IT sticker on your laptop)
3. Fill in which **building you are located**
4. Type and select "**Microservice**"

ADD ROW

\* Requested For

**1** [REDACTED]

Requested For Leader

[i] [REDACTED]

\* Computer

**2**

\* In which building?

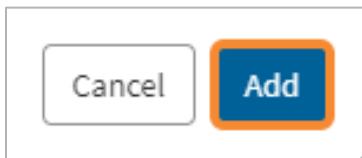
**3** [REDACTED]

\* Please select the software/license needed

**4**

Cancel Add

8. Click **Add**



\*\*INTERNAL USE ONLY\*\*

## 9. Fill out additional information

User Location Asset

<a href="#">Add</a>	<a href="#">Remove All</a>					
Actions	Requested For	Requested For Leader	Computer	In which building?	Please select the software/license needed	Is Approved?
	John Smith	John Smith	Computer	Building	Microservice	No

\* Do we need additional information to process your request?

Who else needs to know about this?

Add attachments

## 10. Click **Next**

[Previous](#) [Next](#)

## 11. Click **Submit**

FIELD SUPPORT REQUEST

Describe Needs
 Choose Options
 Summary

Order Guide Details	Quantity	Total Price	Recurring
Software Request	---	---	---

[Edit Options](#) [Submit](#)

12. A field tech will be assigned to your case and will help you install the Microservice Certs

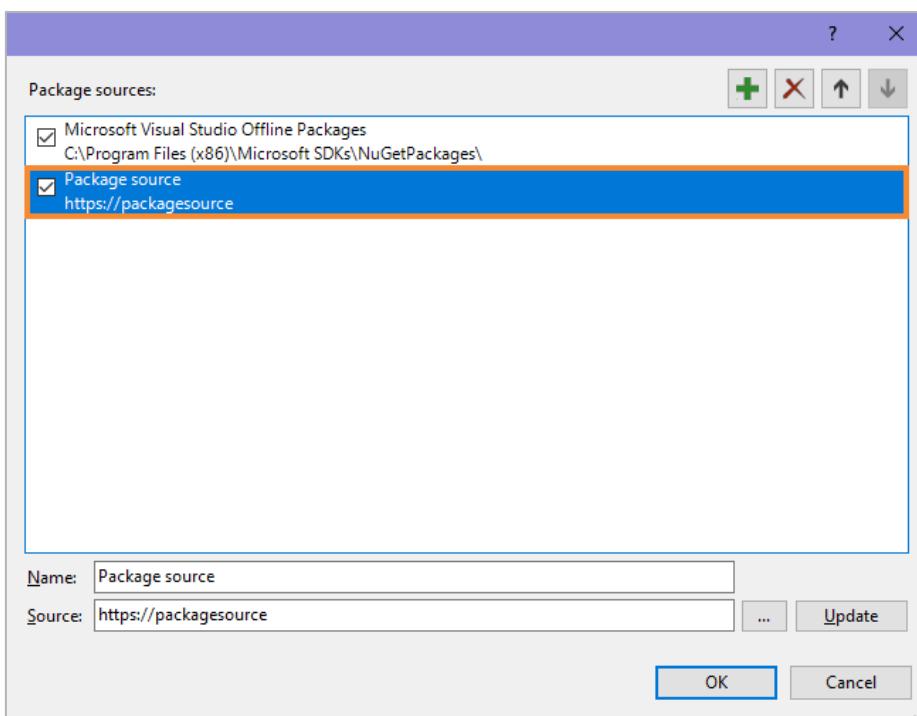
13. Click here to return to the next step

## ADD ARTIFACTS-PRODUCTION PACKAGE SOURCE

- Click the **green +** to add a new package source

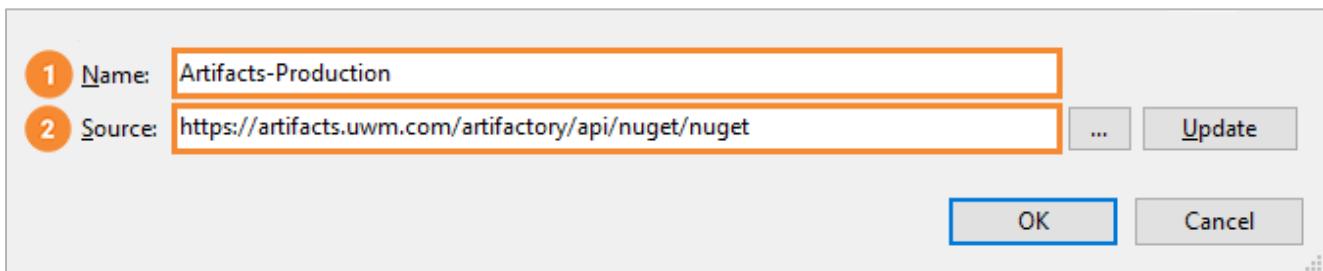


- Select new **Package source**

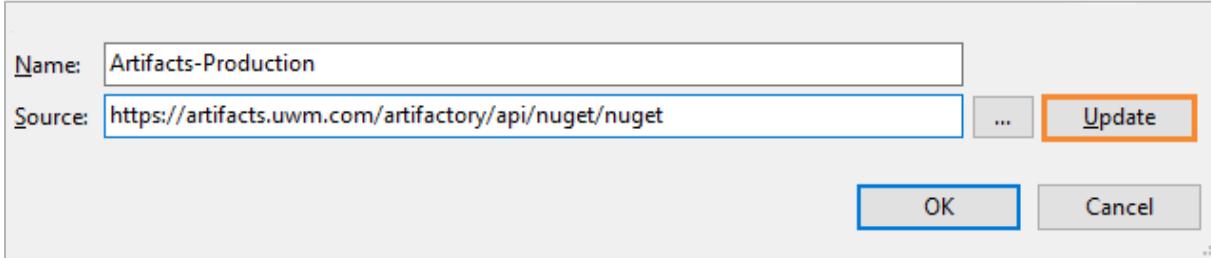


- You are going to manually add the package source

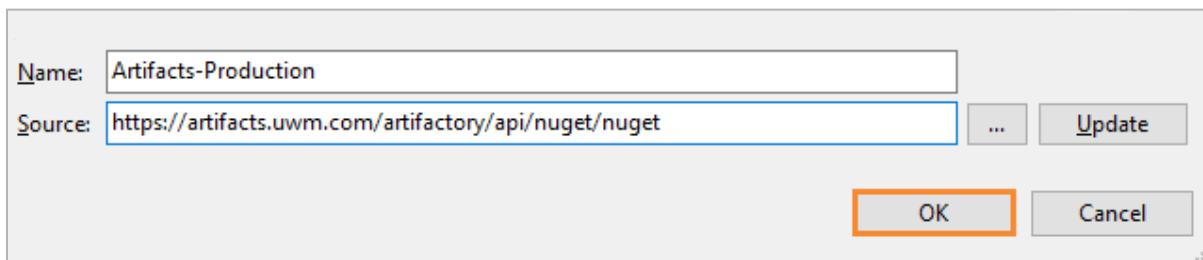
- In the **Name** box type: Artifacts-Production
- In the **Source** box copy and paste: <https://artifacts.uwm.com/artifactory/api/nuget/nuget>



4. Click **Update**



5. Ensure Artifacts-Production is checked, click **OK**



6. Click here to return to the next step

## DOCUMENT HYPERLINKS

<sup>1</sup><https://code.uwm.com/projects/MISC/repos/nupack-usfs-connection-strings/browse/Development/Usfs.ConnectionStrings.config>

<sup>2</sup><https://kb.uwm.com/pages/viewpage.action?spaceKey=DEV&title=App+Dev+Team+Environments+By+Team>

<sup>3</sup><https://code.uwm.com/dashboard>

If you have any questions or concerns,  
please reach out to IT Training at [ITTraining@uwm.com](mailto:ITTraining@uwm.com)