Steps for manual deployment to a VM

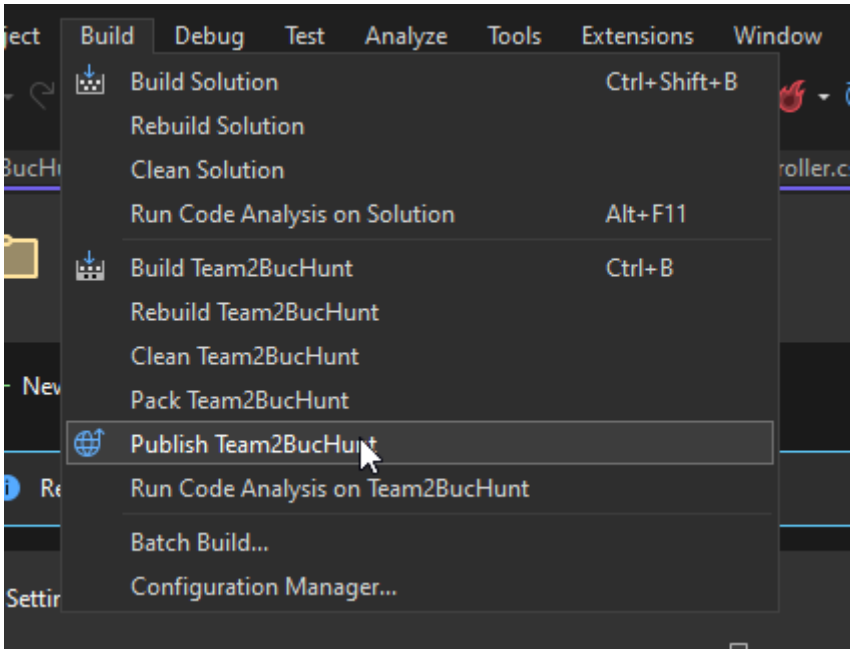
Target Audience: Developers
Keywords: Deployment, VM, ASP.NET
Summary: Steps for manual deployment of an ASP.NET app to a Windows Server 2019 virtual machine.

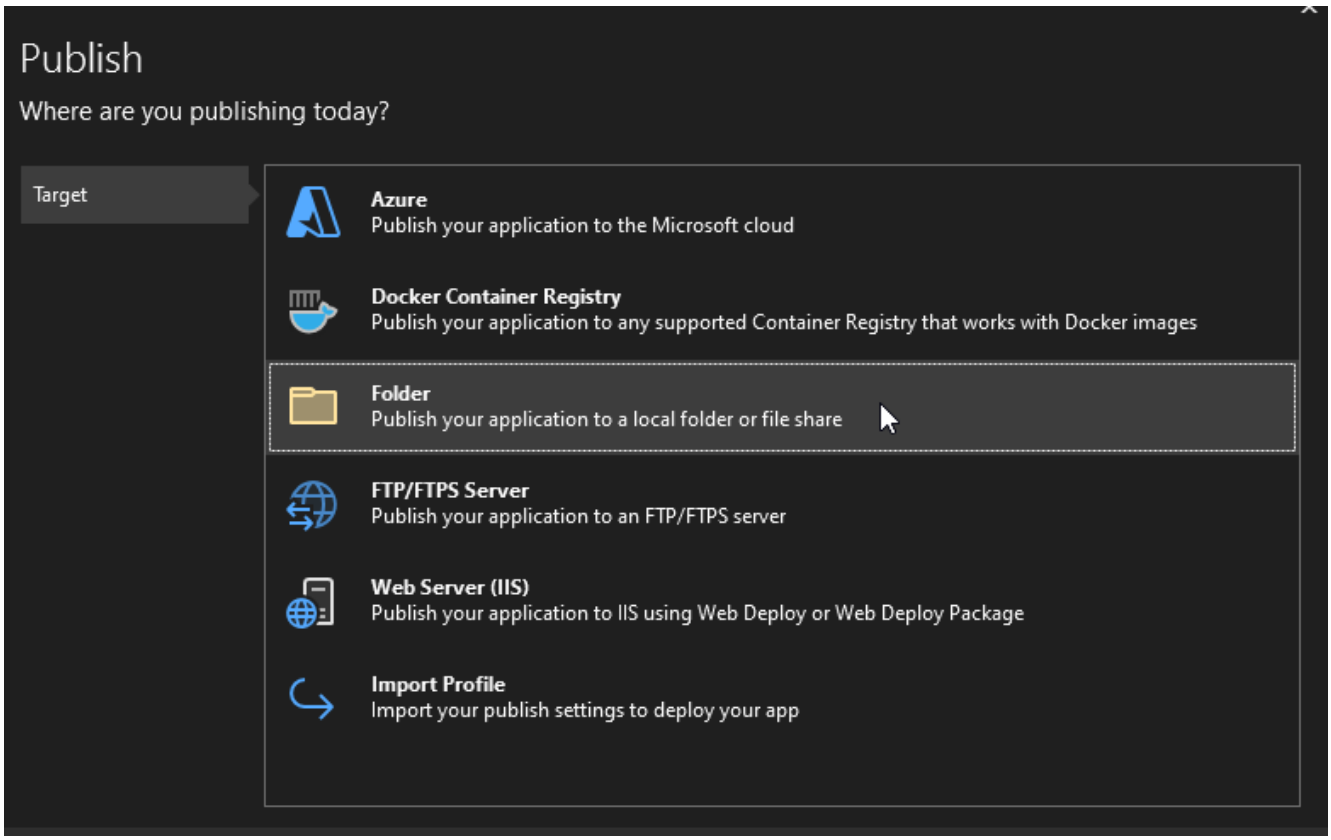
Prepwork Notes

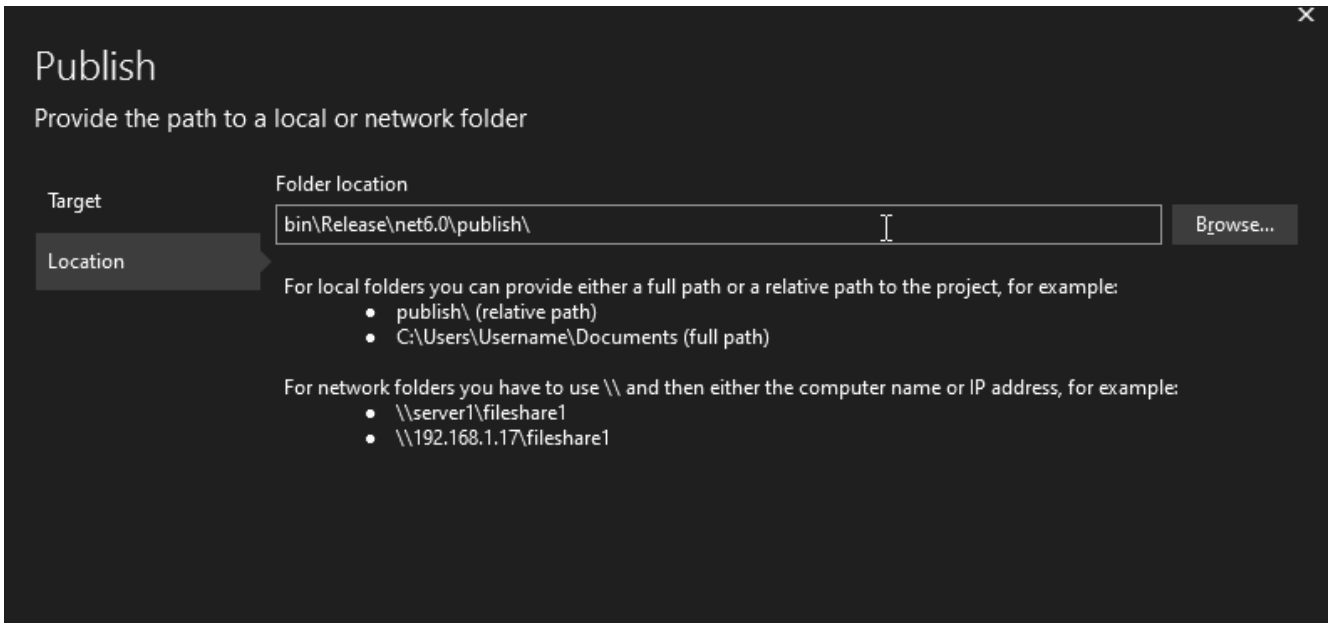
- These deployment steps use ASP.NET Core's built-in Kestrel server to launch and serve the application. I originally attempted to instead have the app running via IIS, but kept running into problems and assumed that Kestrel would be easier to implement (and it was).
- The VM had IIS installed by default, and it already had a default website configured to run on port 80. I disabled this website to free up port 80.
- I'm not sure if it was strictly needed, but I opened port 80 in the firewall for any application.
- I installed .NET Runtime 6.0 and the .NET Core Hosting Bundle on the VM to allow for framework-dependent publishing that will use the VM's .NET installation instead of needing to bundle the required libraries along with the application. The alternative to framework-dependent publishing would be to select "self-contained" and choose the correct target runtime for the VM -- framework-dependent sidesteps needing to select a target runtime and also results in a smaller filesize.

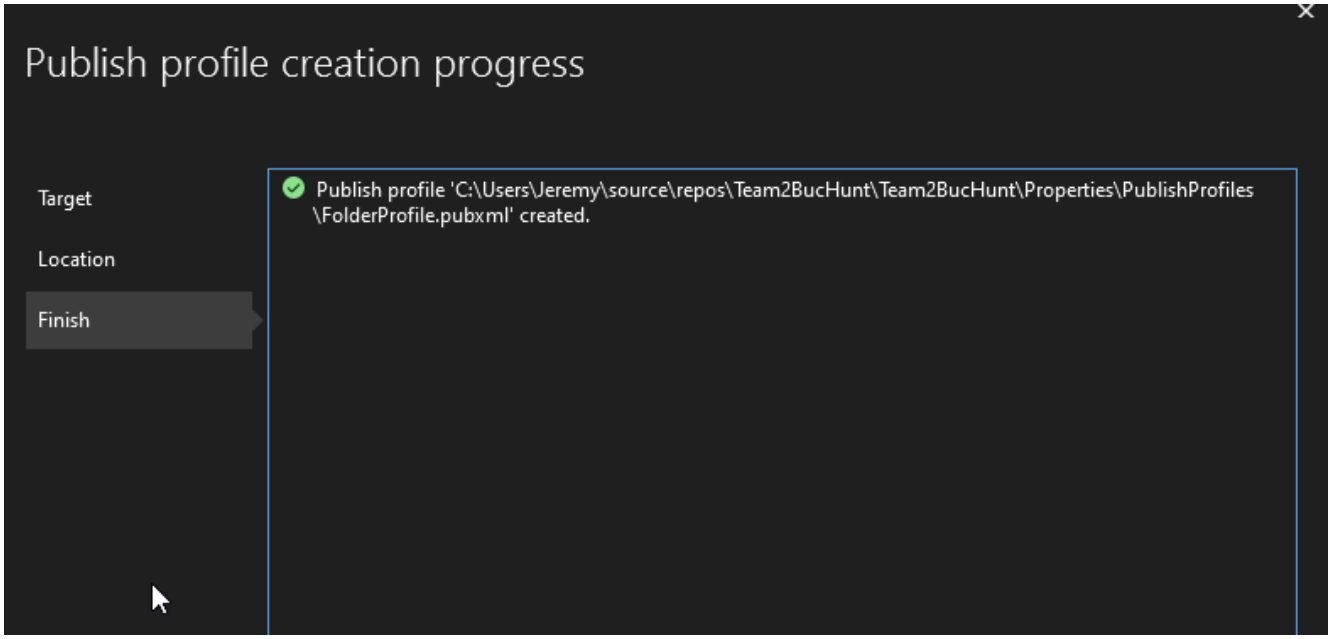
Deployment Steps

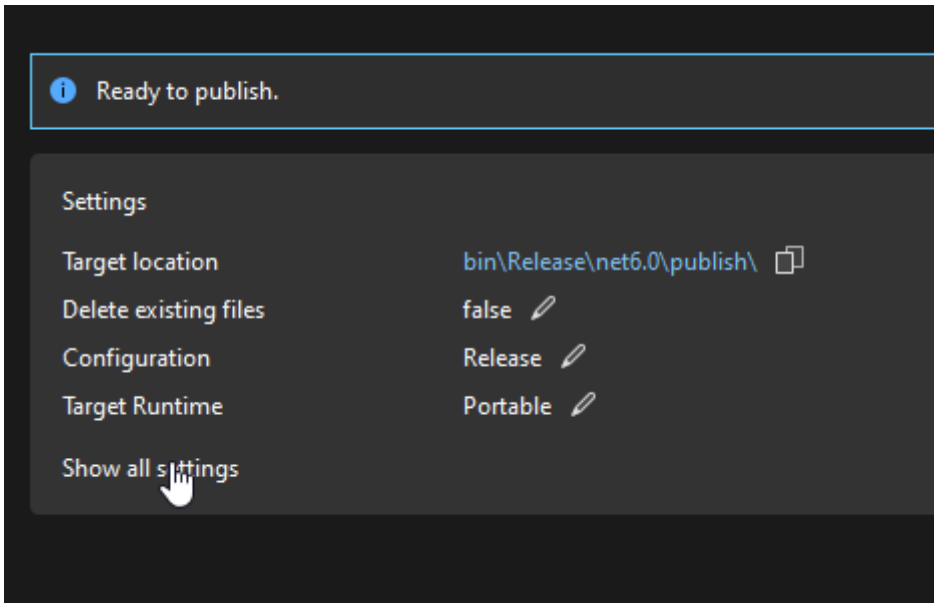
1. Publish the project in Visual Studio. (Also possible to do this via command line)

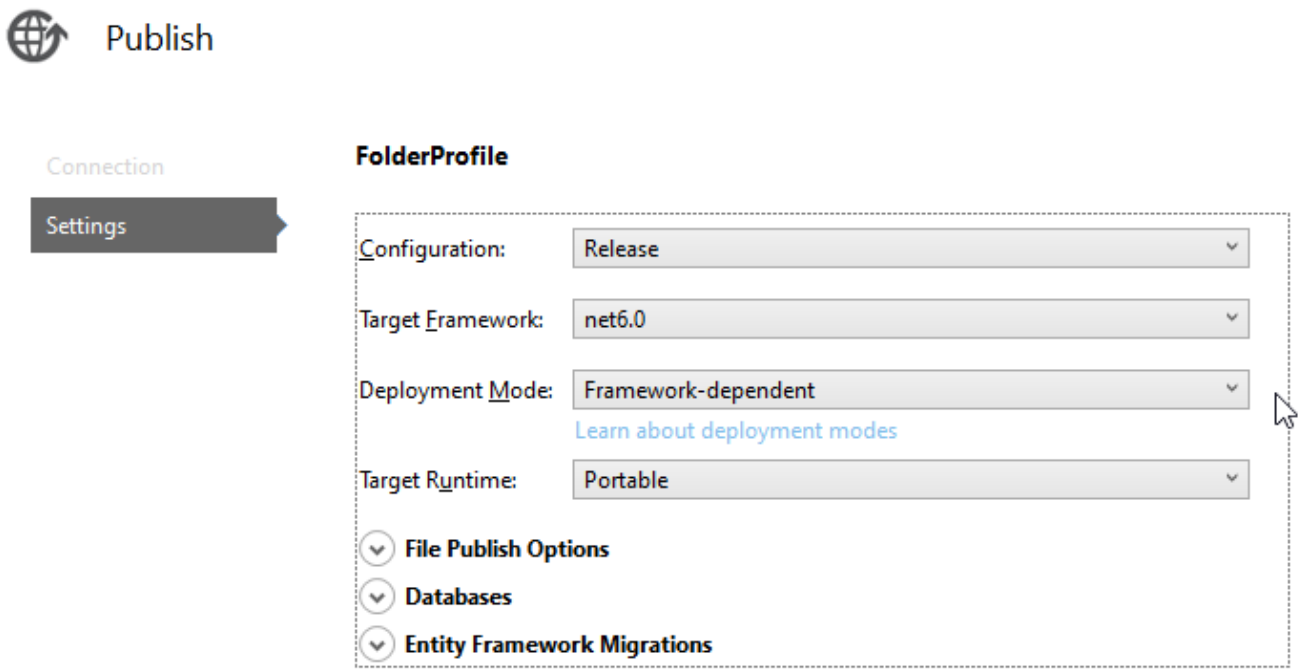


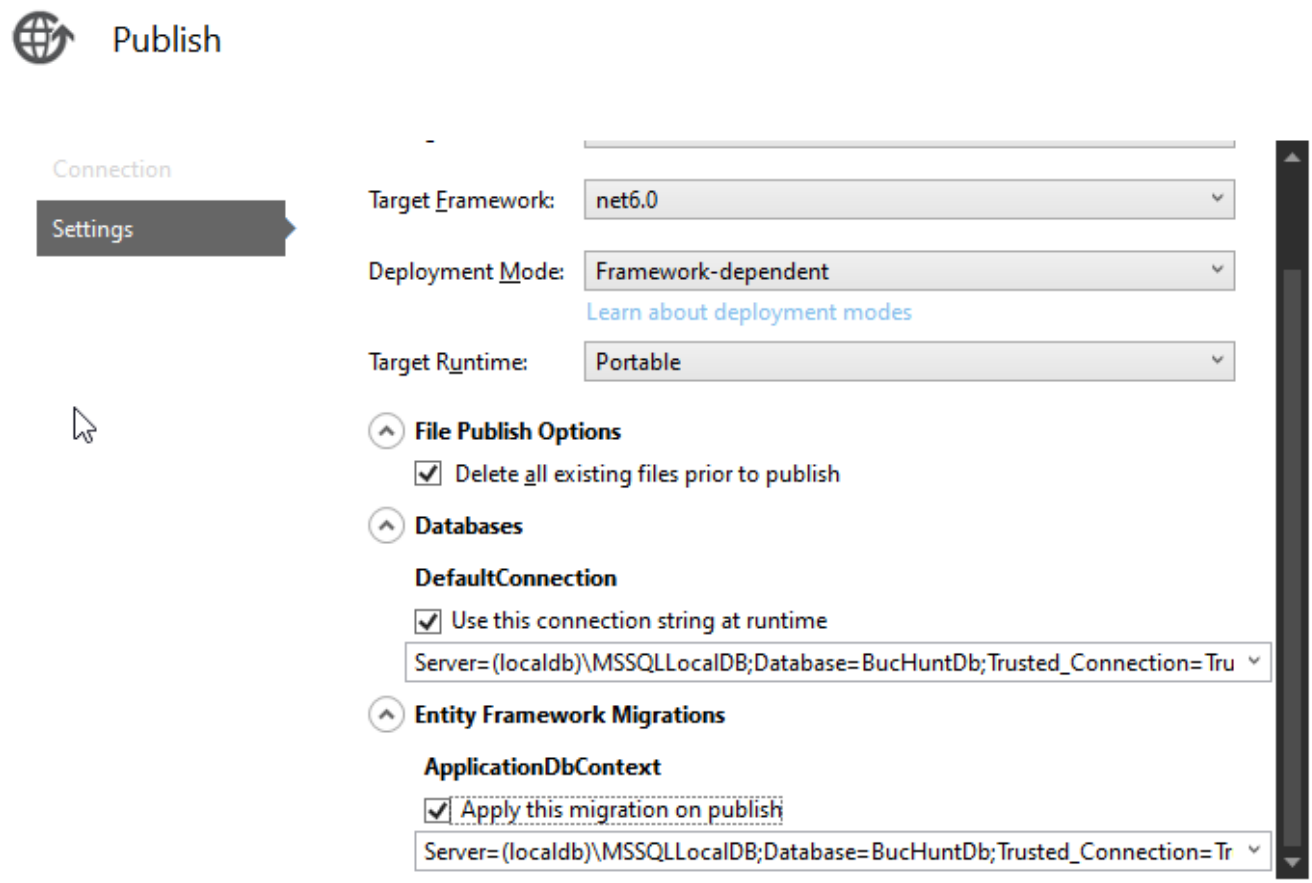

Publish
Where are you publishing today?
Target
Azure
Publish your application to the Microsoft cloud
Docker Container Registry
Publish your application to any supported Container Registry that works with Docker images
Folder
Publish your application to a local folder or file share
FTP/FTPS Server
Publish your application to an FTP/FTPS server
Web Server (IIS)
Publish your application to IIS using Web Deploy or Web Deploy Package
Import Profile
Import your publish settings to deploy your app

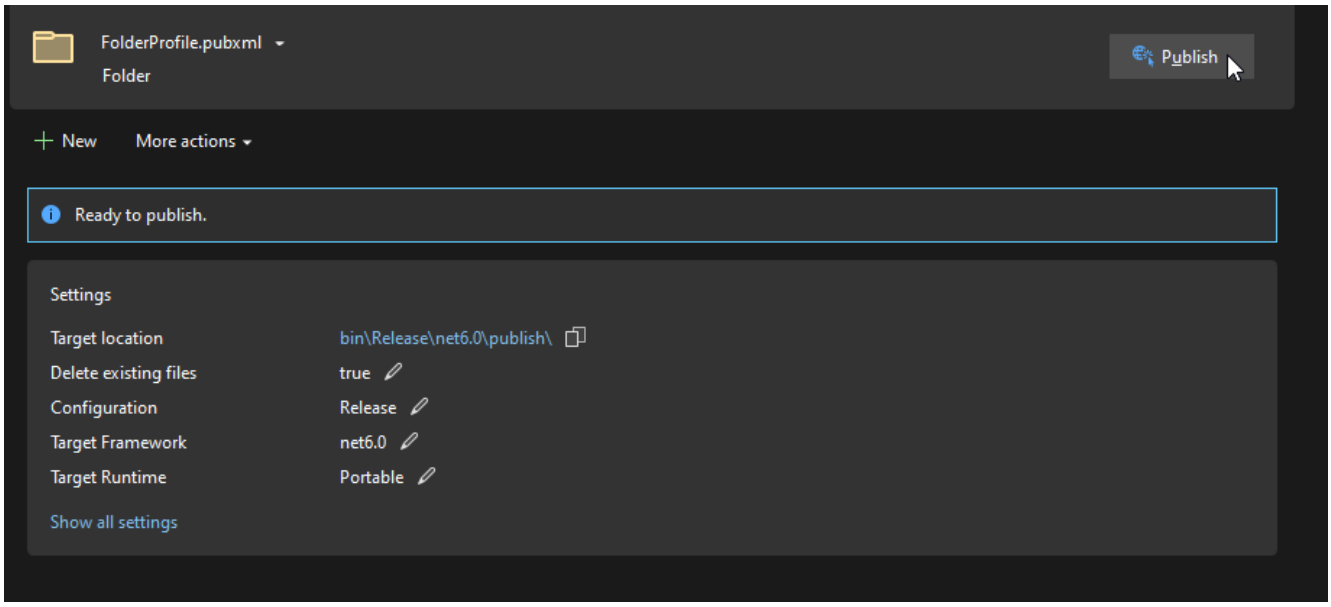

Publish
Provide the path to a local or network folder
Target
Location
Folder location
bin\Release\net6.0\publish\
Browse...
For local folders you can provide either a full path or a relative path to the project, for example:
publish\ (relative path)
C:\Users\Username\Documents (full path)
For network folders you have to use \\ and then either the computer name or IP address, for example:
\\server1\fileshare1
\\192.168.1.17\fileshare1

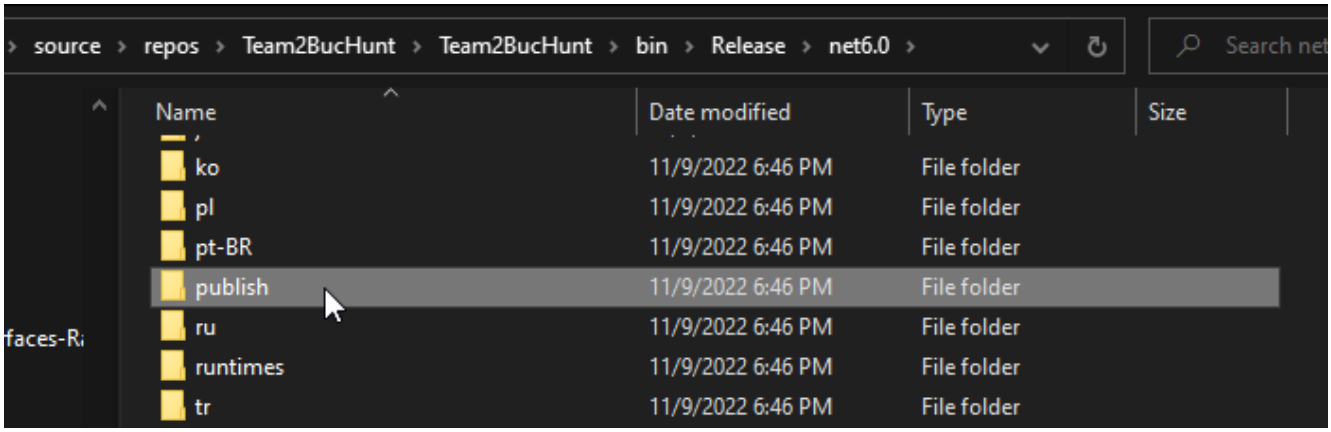

Publish profile creation progress
Target
Location
Finish
Publish profile 'C:\Users\Jeremy\source\repos\Team2BucHunt\Team2BucHunt\Properties\PublishProfiles\FolderProfile.pubxml' created.


Ready to publish.
Settings
Target location
bin\Release\net6.0\publish\
Delete existing files
false
Configuration
Release
Target Runtime
Portable
Show all settings


Publish
Connection
Settings
FolderProfile
Configuration:
Release
Target Framework:
net6.0
Deployment Mode:
Framework-dependent
Learn about deployment modes
Target Runtime:
Portable
File Publish Options
Databases
Entity Framework Migrations





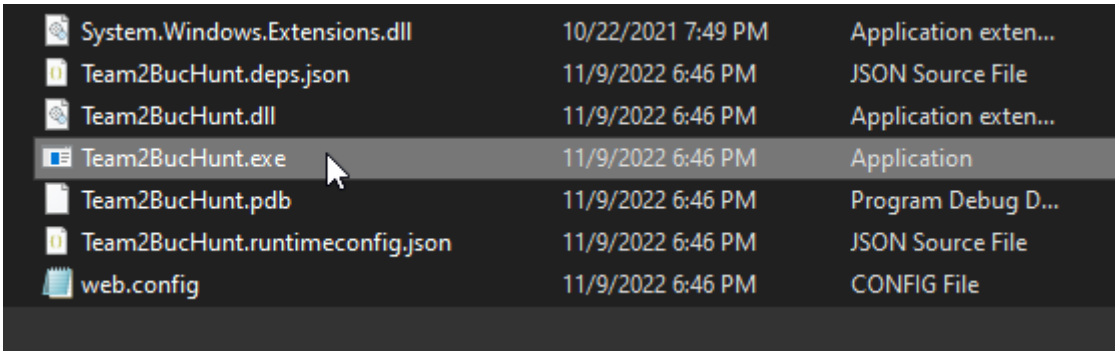


2. Access the virtual machine via the Remote Desktop Protocol application while on ETSU's network.

3. Copy the publish folder over to the VM.

- This can be done with ctrl-c on your local machine to copy, and ctrl-v in the RDP window to paste.
- It may take a minute or so to copy over the files depending on size.

4. Start the application from within the VM.
    - Inside the folder there should be an executable file:



    - Open an instance of command prompt within the folder, and then enter the filename of the executable, followed by the --urls option and the correct URL to receive requests on; the full command should look like `{executable filename} --urls http://*:80`
    - `http://*:80` tells the application to listen to any registered URL on port 80. The application by default only listens to localhost:5000, so if you don't pass the --urls option then the application will not be able to receive requests from external clients.
    - Exceptions that occur during the application's execution will be logged in the command prompt instance.

Once running, the site should be accessible via any computer on the ETSU network by going to the IP address of the VM in a browser.