NuGet Packages

Referencing .NET and Native Libraries

Summary

1. What is NuGet?
2. Why should you care?
3. What is a NuGet package?
4. What happens when you install a NuGet package?
5. Demos
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What is NuGet?

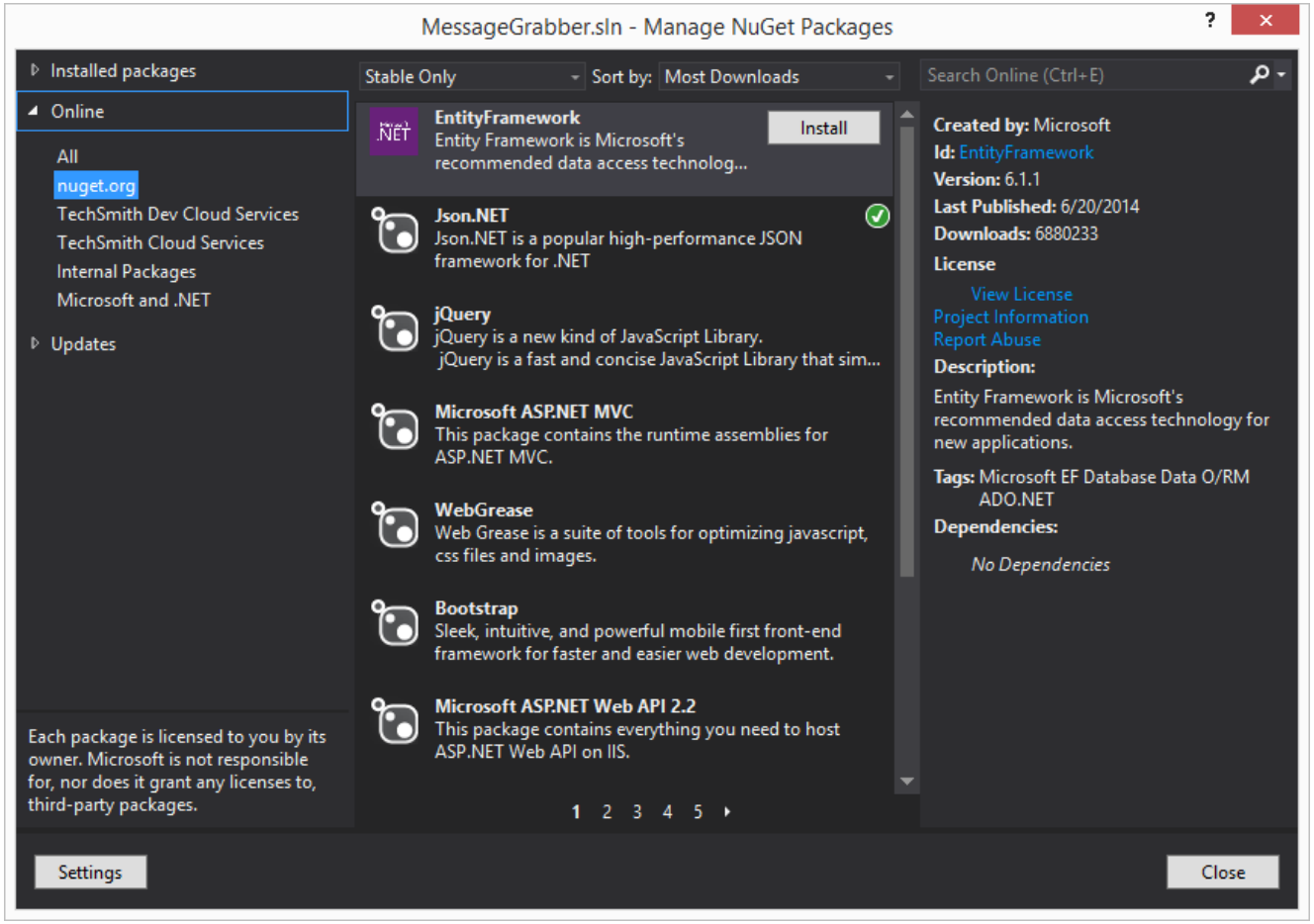
What is NuGet?

- A Visual Studio extension
- A package manager that helps manage external assembly references
- It allows you to search for, install, uninstall, and update external references (NuGet Packages) in your solutions and projects

Why should you care?

- Pretty much an industry standard, especially for .NET
- Most Microsoft dev teams at TSC are already using NuGet.
- We are currently moving most, if not all, of our Common code to NuGet packages

What does NuGet look like?



What is a NuGet package?

- A .nupkg file
- Mostly contains DLLs and metadata
- Often contains source code and debug symbols

What happens when you install a NuGet package?

.NET

1. The package is downloaded to a “packages” folder next to your solution

2. References to the package’s DLLs are added to one or more projects automatically

What happens when you install a NuGet package? (cont.)

Native (C++)

1. The package is downloaded to a “packages” folder next to your solution

2. Project include directories, library directories, and .lib dependencies are set automatically at build / link time

Demos

Pros

- One place to manage almost all of your referenced assemblies
- You can clearly see which projects reference which packages
- Dependencies are clearly shown

Pros (cont.)

- Updates are easy to see and install
- You don’t get updates unless you explicitly choose to update
- Dependencies are referenced automatically
- Binaries don’t need to be in source control

Pros (cont.)

- The solutions and projects control what versions of libraries they pull down instead of the build system
  - This makes setting up up builds way simpler

- Less things to worry about when adding references
  - Most of the complicated or tedious things are done automatically

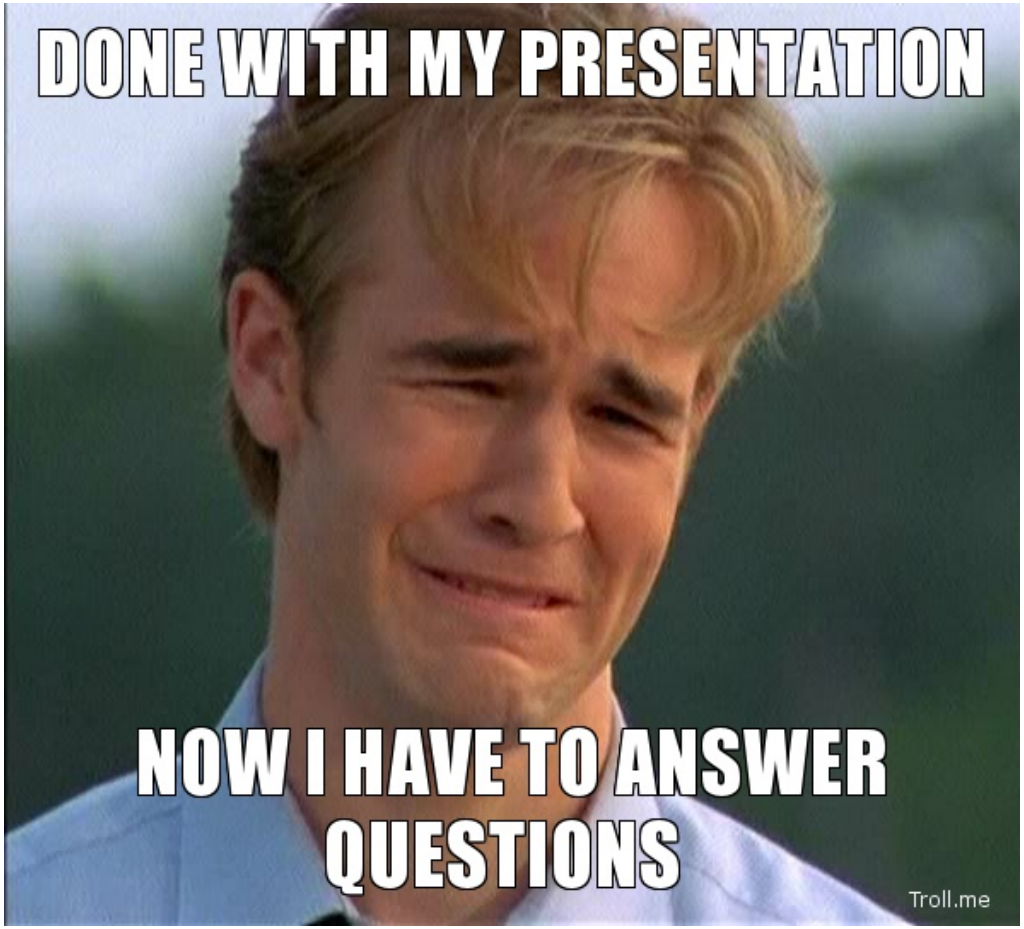
Cons

- Initial dev work for a NuGet or rapid changes may be slightly inconvenient
  - Extra step to create NuGet package
- C++ CLI projects cannot reference .NET NuGet packages
  - You can still add a reference manually
- Referencing different versions of the same NuGet package can be confusing

Other comments

- Always manage packages from the solution level
- Packages can include a PowerShell file that is executed on package installation

Questions?


DONE WITH MY PRESENTATION
NOW I HAVE TO ANSWER QUESTIONS
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