Windows Just Got Chocolatey (Package Management)

Rob Reynolds, Puppet Labs
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• Developer at Puppet Labs

• Creator of Chocolatey

• Background in .NET development (ASP.NET MVC, JavaScript, C#, Windows services, MSMQ)

• Co-wrote and maintained infrastructure framework known as the Chuck Norris Framework

• Doing the hard work for Puppet on Windows so you don’t have to
Agenda

• What is Chocolatey?
• Windows 10 Built-in Package Manager
• Building on Windows Ecosystem
• A history and the future of Chocolatey
• Configuration Management
Binary Package Manager for Windows

- Behaves much like Yum
- Uses NuGet packaging framework + PowerShell for automation scripts
- CLI tool - choco.exe
- GUI - ChocolateyGUI
- Allows non-centralized/private repositories
- Microsoft validated - there will be a OneGet provider
chocolatey.org (Community Repo)

- Community Feed / Community Maintained
- Moderated as of October 2014
- A couple people have downloaded packages (1 yr ago at 5 Million)
- Organizations should not depend on community b/c trust and control

2,938 unique packages 33,144,406 total downloads
But Windows 10 has a Package Manager Built-in!
Sort of...
OneGet aka PowerShell PackageManagement

- Package Management may be a misnomer
- OneGet is **NOT** a package manager. It’s a package manager *aggregator*.
- The PowerShell Provider *is* included.
- It knows how to bootstrap providers.
- Chocolatey will have a provider for OneGet.
Building on an Existing Windows Ecosystem
Windows Software Ecosystem

- State of The Union:
- Thousands of existing installers and archive files
- It’s like the ultimate Wild West for a packaging system
Unify the Windows Packaging Ecosystem?
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Unify the Windows Packaging Ecosystem?
Unify the ecosystem

• You’d need something that abstracts (builds on top of) the existing ecosystem and provides a single unifying interface

• Failed package managers for Windows have left a trail attempting to ignore the above and build a new standard

• “Ain’t nobody got time for that!”
Keep it Simple S___
How not to KISS

- Make it complicated
- Unnecessarily complex
- Over-engineer
- Magpie
How to KISS

- “Simple ain’t easy” - Thelonious Monk
- Complex ≠ Complicated
- Introduce Complexity only when necessary
- Resist the urge to magpie
Building a Community

• Foster friendliness and a helpful attitude
• Document, document, document
• Business friendly
• Open Source
• Community Package Repository
• Make the UX Simple
• Did I mention document? Because reasons.
The NuGet Packaging Framework
NuGet - 2010

• NuGet is the package manager for the Microsoft development platform including .NET.

• I was on the team that brought about the “Nu” part. We started working on the NuGet team in 2010.

• Not the first FOSS project for Microsoft (WiX and Orchard), but perhaps one with the biggest contributions.

• Looking back it’s completely different now with everything Microsoft being open-sourced and they are really trying not to be evil.
NuGet as a Framework

- Packaging
- Decentralized
- Describe dependencies
  - Version ranges
- No conflicts, provides
- Not architecture specific
- No signing
Tell Me More About Chocolatey

ANOTHER PACKAGE MANAGER FOR WINDOWS?

I'M SURE IT WILL WORK THIS TIME
It started as a thought experiment.
ANOTHER PACKAGE MANAGER FOR WINDOWS?

I'M SURE IT WILL WORK THIS TIME

Seriously, did you ever look at the source?!
What I Wanted in 2011

- Pairing / troubleshooting experience - No Notepad++?
- Experience with silent installers
- Existing?
- How to globalize?
Experiment in March 2011

- Building onto NuGet
- Packages tagged “chocolatey” on nuget.org (until Sep 2011)
- Concepts of KISS packaging
- Building on an existing ecosystem
- Focus on UX
The Experiment Was Built In PowerShell

- PowerShell
- Built with PowerShell as a programming language?!
- Always felt like I was relearning PowerShell
And Then... Community

- Somewhere along the line came the community
- Design or Sheer Luck?
- Maybe it was the semi-okay Documentation?
- 1. Gnomes. 2. ??? 3. Profit!
Automatic packages

• Built with Ketarin to check for updates and push up newer versions of packages automatically

• Some folks have taken advantage of that

559 Packages in Queue
432 Packages
891,306 Downloads of dtgm’s packages
Microsoft Got Involved

- Validated the idea in 2014
- Announced OneGet
- Talked about integration
- The OneGet boot strapper will bring Chocolatey to Windows seamlessly the first time you ask for it, as if it was built-in.
Ensuring Chocolatey for the Long Term
The Long Overdue Rewrite - 2014

• Started March 2014, first release in 0.9.9 in March 2015.

• C# - b/c already wrote production code while learning language

• Why?
  • Maintainability
  • Speed
  • Better library support
  • Strong techniques for security
  • Because pro/business
Kickstarter - October 2014

- Started planning in June
- Introduces the ideas of Chocolatey for Business
- Pro/Business Version to offer additional features
- Longevity of Chocolatey itself

Chocolatey: The Alternative Windows Store - Like Yum/Apt-Get

The world needs an alternative Windows Store. Chocolatey is thriving as that store. Help us make The Chocolatey Experience a reality!

Created by Rob Reynolds

1,044 backers pledged $51,071 to help bring this project to life.
Moderation of Community Packages

• Introduced for more predictability
• Package quality
• Safety and Security
• Starting to build trust in community repository, but still quite a long way to go
Extending NuGet

- Enhanced nuspec with provides, conflicts, replaces (although choco doesn’t know what to do with those yet)

- Will be enhancing further: architecture, os versions, etc

- NVRA (name version release architecture)

- Package signing (PGP) / Security Enhancements
More Future Enhancements

• More security and traceability

• Try to maintain good balance of KISS while introducing necessary complexity

• Chocolatey for Business / Enterprise General Availability
Using Chocolatey
Creating Packages

- `choco new -h`
- Create organizational templates!
- `*.nuspec`
- `chocolateyInstall.ps1`
- Other resources like binaries / config files, etc
Hosting Your Own Packages

- With Puppet - chocolatey/chocolatey_server module
- Non-Windows Hosting
  - Artifactory
  - Sonatype Nexus
- NuGet Gallery proper
- ProGet / MyGet
Configuration Management
CM Integrations

Questions?

• Join the newsletter for announcements - [https://chocolatey.org/#newsletter](https://chocolatey.org/#newsletter)
• ferventcoder { twitter, github, gmail}