



Chocolatey

The **package manager** for Windows

Easily Manage Software on Windows with Chocolatey

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@ferventcoder



Rob Reynolds

- Senior Software Engineer at Puppet 
- Creator and Founder of Chocolatey 
- Enjoys long walks on the beach and designing solutions that make hard things easy
- Co-wrote infrastructure framework known as the Chuck Norris Framework
- Over 10 years experience in infrastructure automation
- Obsesses over user experience





Agenda

- The Story of Windows Automation
- Windows Software Ecosystem
- Chocolatey
- Announcements





Questions at the End

- Lots to cover
- Write your question(s) down





Everybody Stand Up

- Sit down if
 - You've never used Chocolatey
 - You started in Chocolatey with 0.9.9.x
 - 0.9.8.3x
 - 0.9.8.24
 - 0.9.8.x
 - Who is left?





**Let's talk about a story...
possibly your story**





The Story of Modern Automation for Windows







You probably use or have used traditional tools





Traditional Tools

- Manual Configuration
- Golden Images
- Endpoint management tools
- SCCM / GPO
- Not necessarily bad, just are harder to fit into modern automation





Modern Automation

- Feature-Rich
- Infrastructure as Code
- Source Control
- Testable Infrastructure
- Reporting
- Centralized Management





More Modern Automation Tools

- Puppet (Config Management)
- PowerShell DSC
- PowerShell



Power scale





So you settled on Puppet





Puppet + Other Tools

- Puppet - Harness PowerShell
- Puppet - Harness PowerShell DSC
- Puppet and SCCM (GPOs, WSUS server)
- Use the complements where they are strong



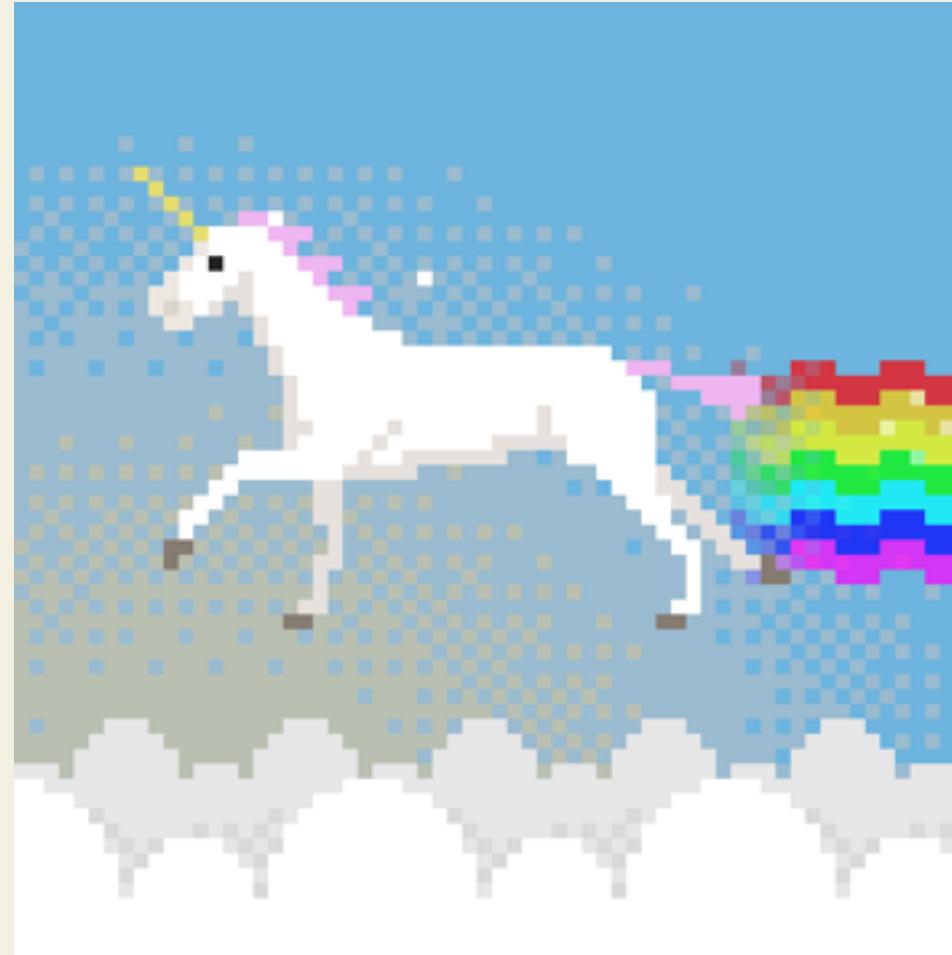


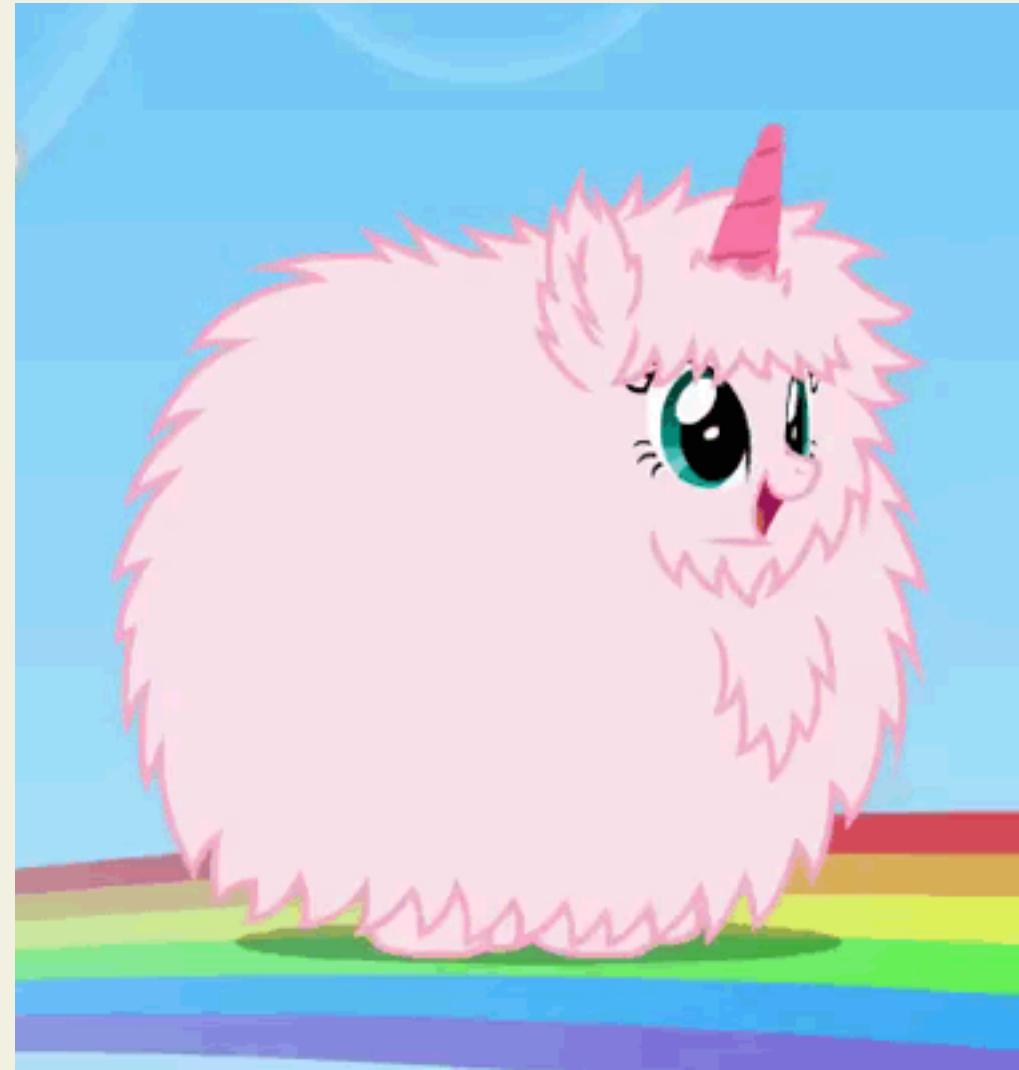
So you modernized your Windows automation

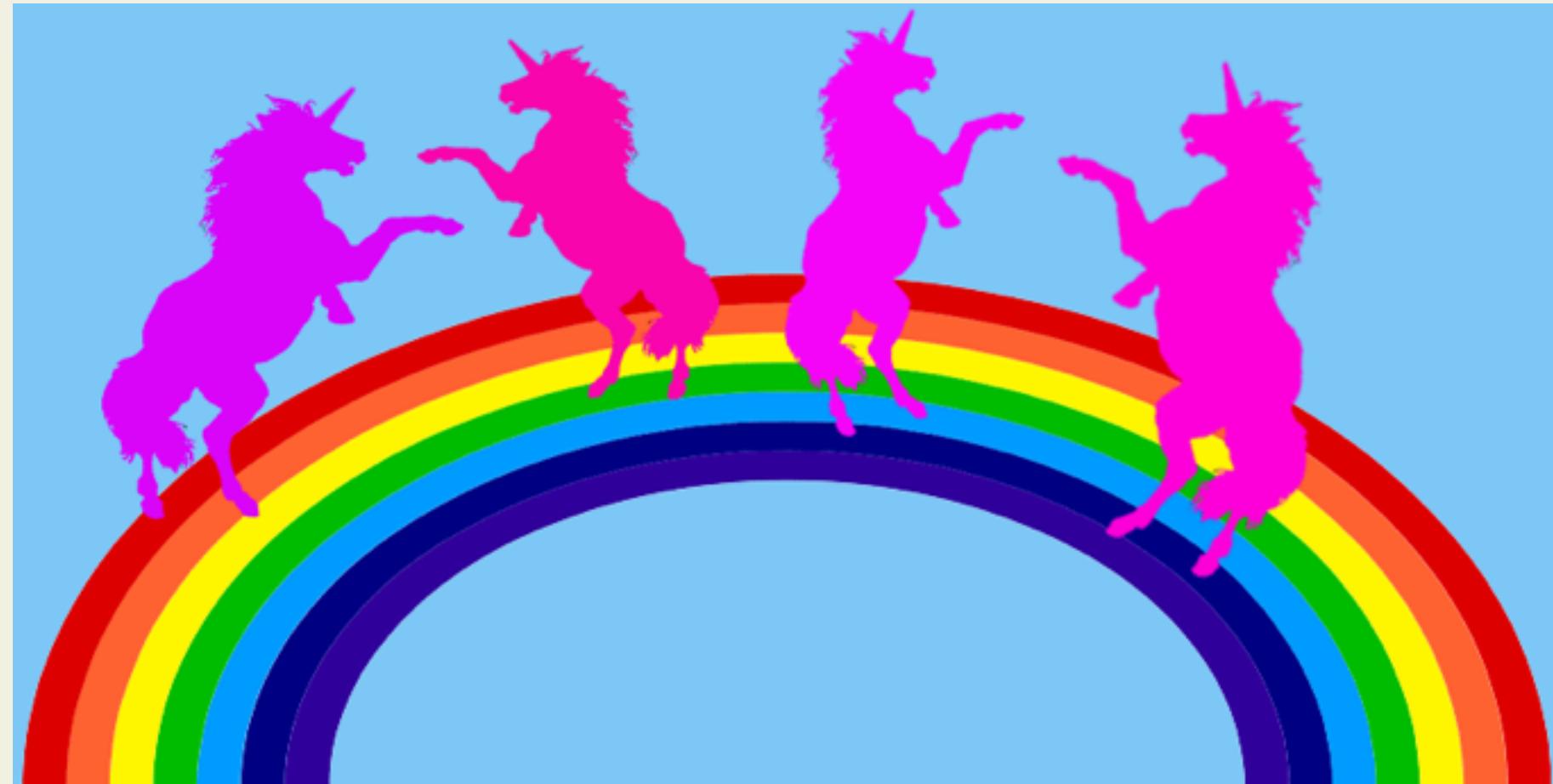


And it was great. Rainbows and Unicorns









Something wasn't quite right...





Automating Windows software installation was still hard...





Software management may account for 50-90% of your automation





**Traditionally Windows was
designed with Visual
Interfaces (GUIs) in mind.**





**There is no place more evident of
that still than with the Windows
Software Installer ecosystem**





Windows Software Ecosystem

- Over 20 installer formats and thousands of installers in the wild
- Zips and other archive formats
- Software installers are messy
- It's like the Wild West



**“There has to be a better
way”**





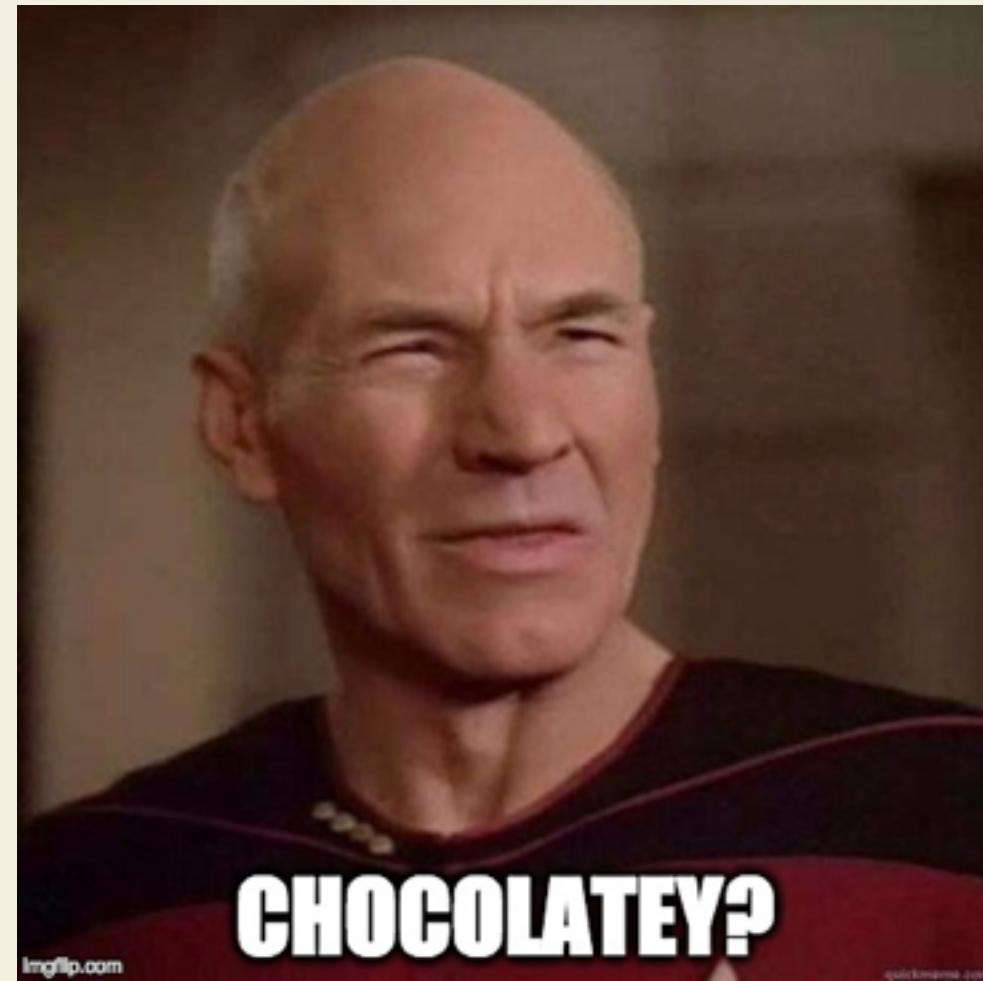
So you went looking for a solution

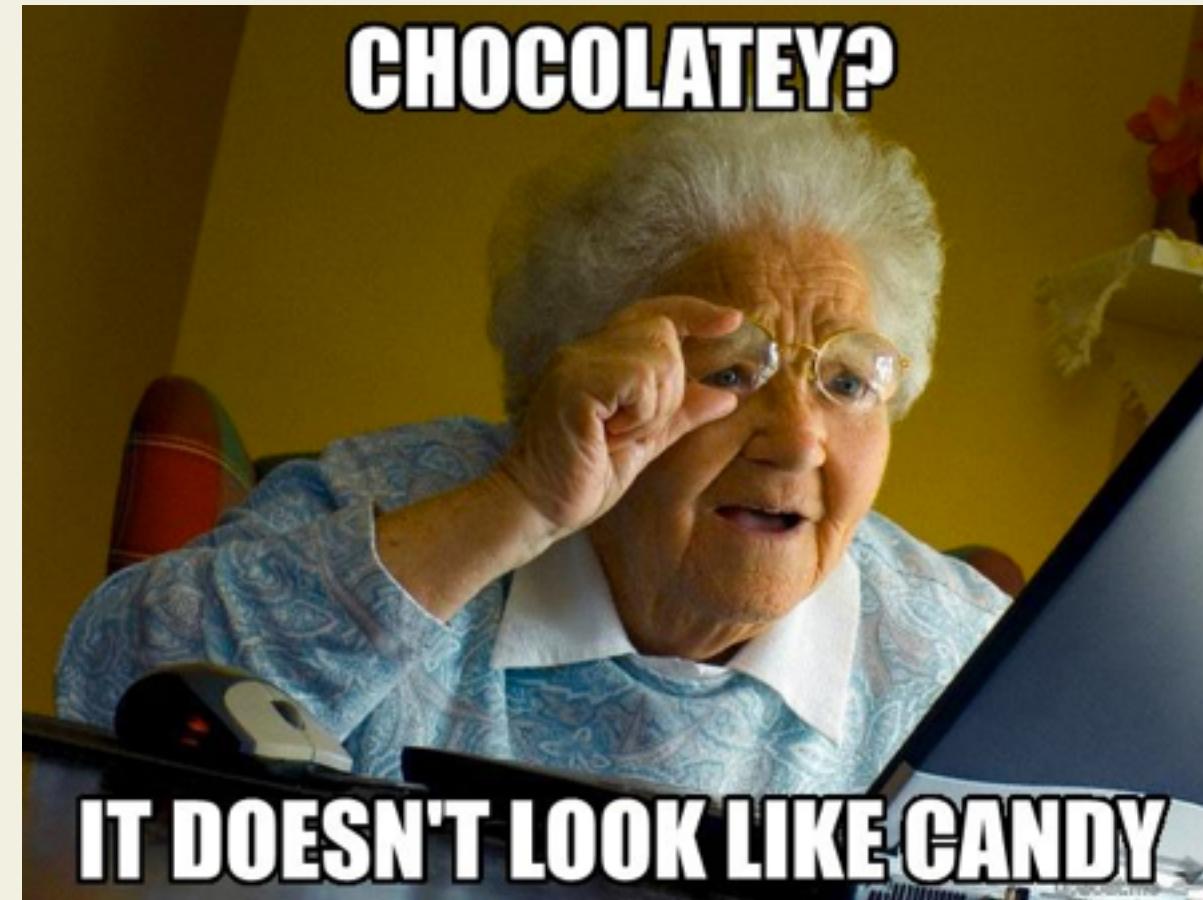




And you heard of this sweet
tool that manages software.









Chocolatey - Sane Software Management

- Easily manage the software lifecycle
- Native installers, zips, binaries
- PowerShell module simplifies work
- Packages are independent building blocks
- Integrates with configuration management
- Business friendly features





Chocolatey - The Approach

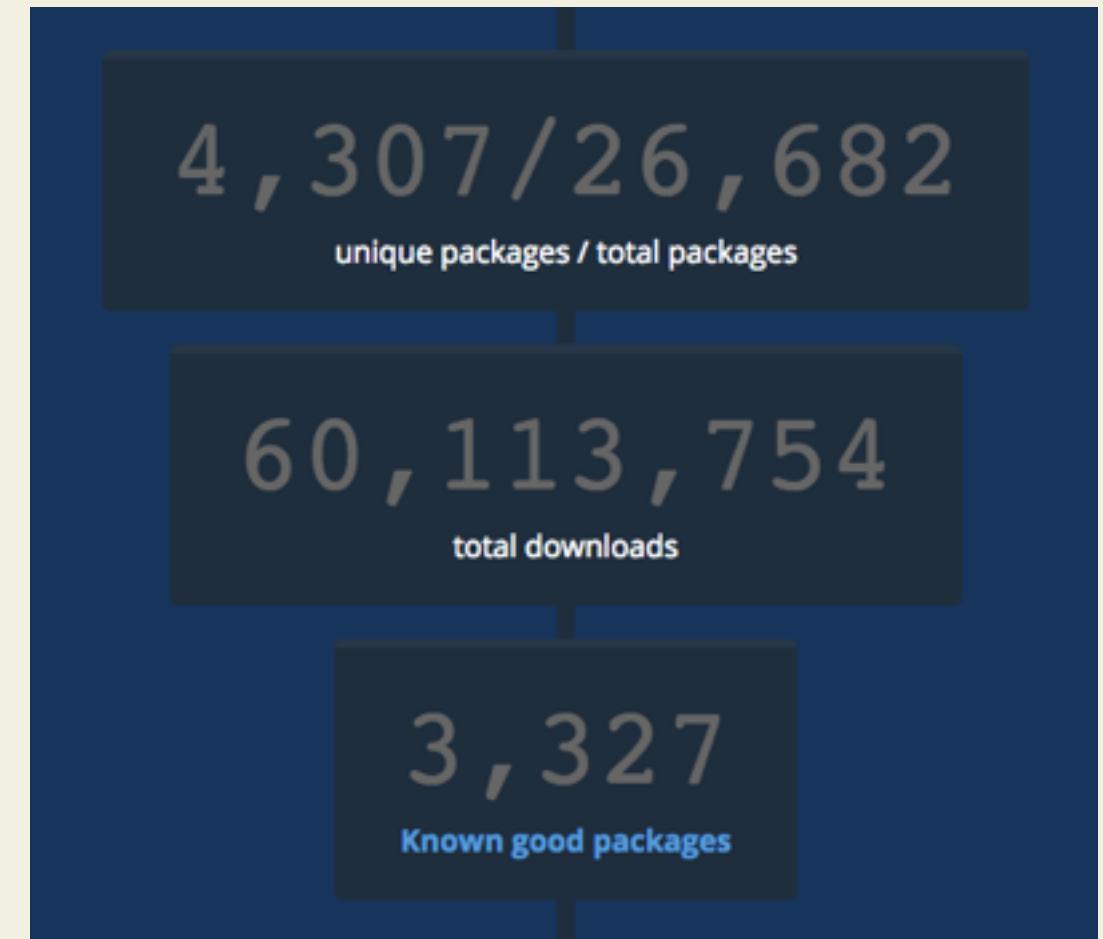
5+ years - proven technology

- Single, unifying interface - control the chaos
- Decentralized - multiple places to get packages, including internal
- PowerShell
- Flexible
- Secure
- Reliable



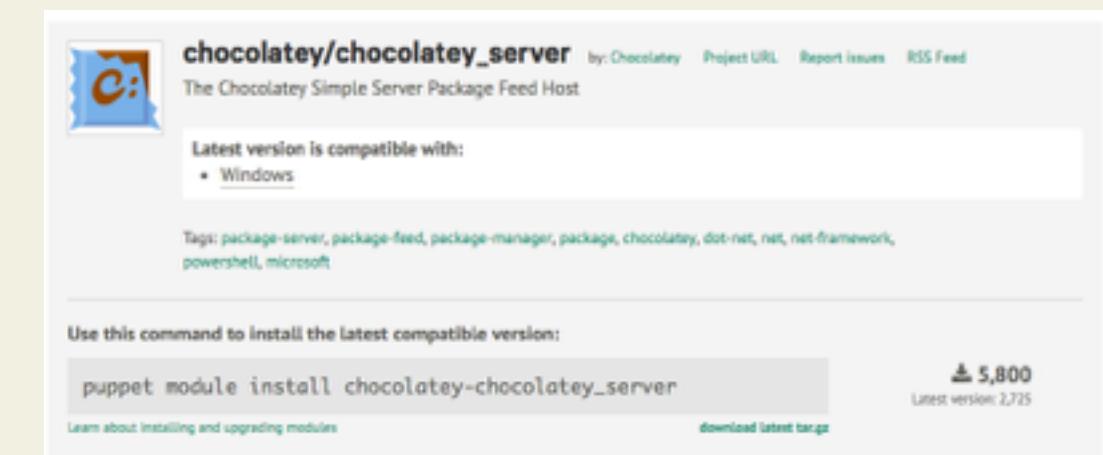
Community Package Repository

- <https://chocolatey.org/packages>
- Community Feed / Community Maintained
- Moderated as of October 2014
- Everything goes through VirusTotal
- Organizations Should Not Depend b/c Trust and Control



Hosting Your Own Package Server

- <https://chocolatey.org/docs/how-to-host-feed>
- Non-Windows Hosting
 - Artifactory 
 - Sonatype Nexus 
 - NuGet Gallery proper 
 - ProGet / MyGet 
 - NuGet.Server / Chocolatey.Server
 - Puppet - chocolatey/chocolatey_server module





Chocolatey Packages

- Zip files + Versioning, Dependencies & PowerShell
- Metadata - Software Information / Package Information
- PowerShell - <https://chocolatey.org/docs/helpers-reference>
 - 30+ Built-in functions - turn hard tasks into 1 liners
 - Handle additional missing installer logic (like add to PATH)
 - Add options missing from installer arguments
- Files - drop in binaries, native installers





Creating Packages

- <https://chocolatey.org/docs/create-packages>
- choco new
 - Generates package files with most of the work done
 - Create your own packaging templates!





**But wait, you have
Chocolatey for Business**



Package Builder





Package Builder

- Package Builder automatically creates high quality packaging from an installer/zip in 5-10 seconds
- Determines everything necessary for silently installing software
- Supports passing urls (and checksums) - downloads files first
- Allows customization
- Supports exe, msi, 7z, zip, msu, and msp files





How does it work?





Package Internalizer





Package Internalizer

- Take advantage of existing packages without dependency on the internet
- Downloads existing package and all remote resources
- Recompiles package to use those internal resources
- Option to download and point to other locations
- Ability to host packages on private internal repositories





Package Synchronizer





You detect a theme for feature names





Package Synchronizer

- Chocolatey maintains state based on packages. System state can be manipulated outside of Chocolatey
- Any Chocolatey command will trigger synchronization in Chocolatey for Business
- Package Synchronizer syncs with manual software removal
- Syncs w/software that automatically upgrades, such as Chrome





How does it work?





ReactionGIFS.me



Other Enhancements





Other Enhancements

- <https://chocolatey.org/docs/release-notes-licensed>
- Auto-uninstaller more effective thanks to more checks and Package Synchronizer
- Install/upgrade passing secrets
- Uninstall non-Chocolatey managed software
 - Similar to built-in provider but '**Git ***'



 puppet +





puppetlabs/chocolatey

- <https://puppet.com/blog/puppet-supported-module-chocolatey>
- Everything from **chocolatey/chocolatey** - drop in replacement
 - package resource
 - ensure Chocolatey install
- Full configuration for Chocolatey
 - chocolateysource
 - chocolateyconfig
 - chocolateyfeature



Chocolatey Provider is Supported!





Install Chocolatey

```
include chocolatey

# OR

class {'chocolatey':
  chocolatey_download_url => 'http://url/to/chocolatey.nupkg',
  use_7zip                => false,
}
```

- Install and initial configuration
- Point to internal resources





Package Resource

```
package {'name_of_package':  
  provider          => chocolatey,  
  ensure            => absent, installed, latest, '1.0.0', held  
  source             => 'https://some_odata_feed/;c:\\local;\\some\\network\\share',  
  install_options   => ['-installArgs', "'", 'addtl', 'args', "'"],  
  uninstall_options => ['-uninstallargs', "'", 'addtl', 'args', "'"],  
}  
}
```

- installable, uninstallable, upgradeable, versionable, holdable, install_options, uninstall_options
- Still later: virtual_packages





Chocolatey Package Resource

```
# built-in Windows provider
package { "Git version 2.6.1":
  ensure  => installed,
  source   => 'C:\temp\Git-2.6.1-32-bit.exe',
  install_options => ['/VERYSILENT']
}

# chocolatey provider
package { 'git':
  ensure  => latest,
}
```

- Built in provider requires manifest maintenance
- Package resource default to provider => chocolatey for Windows.
- Platform agnostic packaging





chocolateysource

- Disable/remove default community repository
- Add your own sources
- user/password protected as well
- puppet resource chocolateysource

```
chocolateysource {'chocolatey':  
  ensure => disabled,  
}  
  
chocolateysource {'internal_server':  
  ensure => present,  
  location => 'http://somewhere/internal',  
  priority => 1,  
}
```





chocolateyconfig

- Set config settings
- Full list available by choco config list or puppet resource chocolateyconfig

```
chocolateyconfig {'cacheLocation':  
  value => 'c:\ProgramData\choco-cache',  
}  
  
chocolateyconfig {'commandExecutionTimeoutSeconds':  
  value => '2700',  
}
```





chocolateyfeature

- Enable/disable features
- Full list available by choco feature list or puppet resource chocolateyfeature

```
chocolateyfeature {'checksumFiles':  
  ensure => enabled,  
}  
  
chocolateyfeature {'useFipsCompliantChecksums':  
  ensure => enabled,  
}
```





Demo



Announcements





Roadmap

- WSA support / Windows Nano Support
- More Security / More UX
- Package enhancements
 - Package signing / security enhancements
 - Extend Nuspec further - name, version, release, architecture



Package Builder



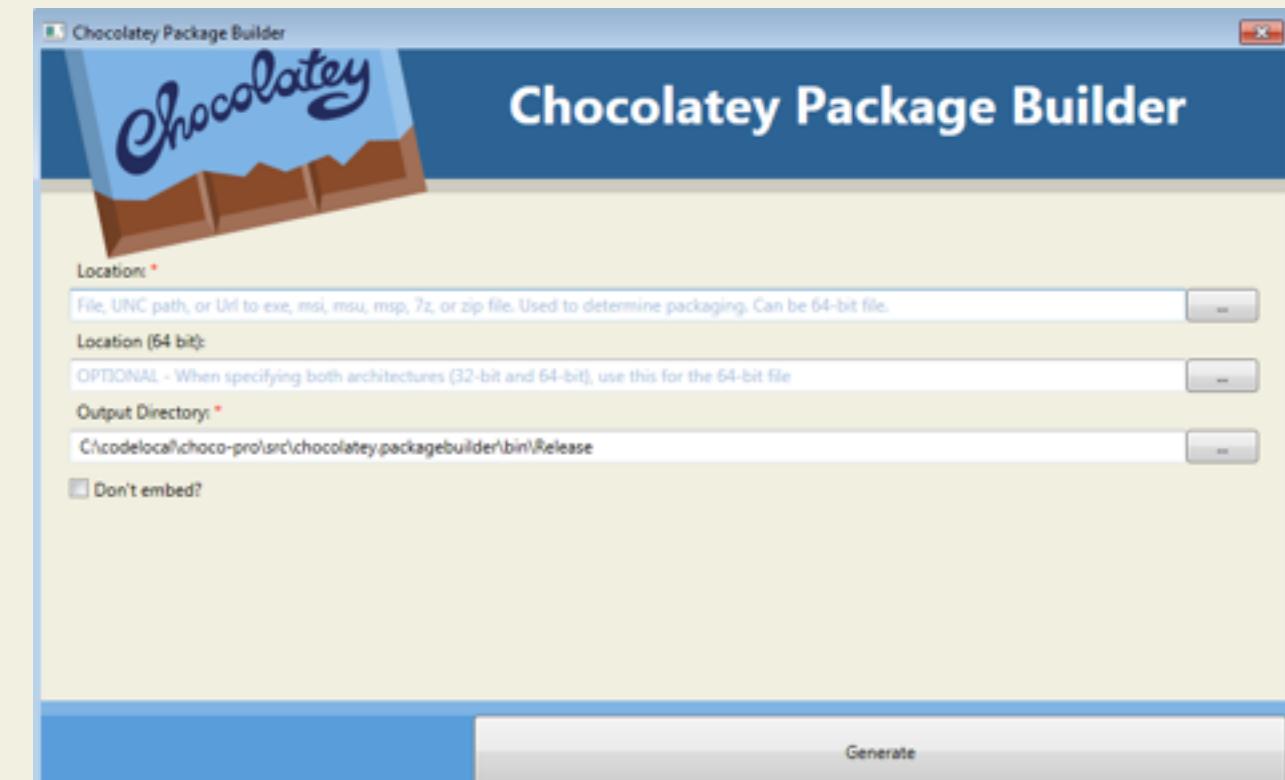


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b/c Demo



Package Builder vNext

- choco new —from-programs-and-features
 - Currently supports MSI
 - Support for other types will come later
- Package Builder visual interface
 - Transition from existing tools/processes



Package Internalizer





Package Internalizer

- Also a visual interface
- Provides a better transition towards command line interfaces





Package Synchronizer





Package Synchronizer v2

- Bring software not managed with Chocolatey into managed packages
- **choco sync**
- Find existing packages
- Optionally generate packages for sync



Package Modernizer





Package Modernizer

- You have existing packages
- Bring them up to best practices
- Modernizer will upgrade packaging files in place
- choco modernize



Self-Service Install (Non- Administrators)





Self-Service Installer

- 1st feature not named Package *
- Non-admins can choose what to install
- Runs as an administrative background service
- Also choco upgrade all on your schedule





Questions





- Rob
- @ferventcoder
- ferventcoder at gmail



Evaluate Chocolatey for Business in your environment - special discount until December 31, 2016 for Puppet Enterprise customers
(mention PuppetConf2016) - <https://chocolatey.org/compare>

