DevOps: What is This Puppet You Speak Of?

Rob Reynolds

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Rob Reynolds

- Developer at puppet labs
- Creator of Chocolatey
- Making your Windows world a better place
- Enjoys long walks on the beach…
- @ferventcoder

Agenda

- DevOps?
- Puppet?
- Windows Module Pack
- Other Windows Modules
- Demo
- Questions

DevOps?

DevOps Borat
@DEVOPS_BORAT
Following
To make error is human. To propagate error to all server in automatic way is #devops.

DevOps?

- Source control
- Continuous Integration
- Testing infrastructure
- agile practices (little “a” agile)
- Part of project team

DevOps?

- Fancy term for collaboration
- Developers / QA / Operations
- The Phoenix Project

Why Automation?

- “I must have missed that step”
- “I didn’t realize we were deploying that”
- “I sort of followed your instructions, but I knew what I could skip”
- “You need how many machines by when?”
- “I’m setting up a new machine – see you in a few days!”
- “Something has changed on this server”

Why Automation?

You ever hear any of that from a machine?

Why Automation?

Machines are much more reliable at scriptable tasks

Why Automation?

Puppet?

- “Puppet is IT automation software that helps system administrators manage infrastructure throughout its lifecycle, from provisioning and configuration to orchestration and reporting. Using Puppet, you can easily automate repetitive tasks, quickly deploy critical applications, and proactively manage change, scaling from 10s of servers to 1000s, on-premise or in the cloud.”

tl;dr - Puppet?

- Infrastructure as Code
- Provisioner
- Server Automation / Assurance
- Reduce Configuration Drift
- The original desired state configuration
- Automate repetitive tasks
- Reports

Puppet

- Created in 2005 by Luke Kanies
- Runs almost everywhere
  - Most Linux distributions - CentOS, Debian, Fedora, Mandriva, Oracle Linux, RHEL, Scientific Linux, SUSE and Ubuntu
  - Unix systems - Solaris, BSD, Mac OS X, AIX, HP-UX
  - Microsoft Windows
  - Network Switches / Routers / Devices

Puppet – Windows Platforms

- Servers: Windows Server 2003+
- Desktops: Windows Vista+
- Puppet comes as x86 or x64
- Windows since 2011

How Does Puppet Work?

How Does Puppet Work?

- Describe your infrastructure as code
- Test your infrastructure
- Keep your environments in sync

Untitled-1 - Visual Studio Code

File Edit View Goto Help

presentation.pp C:\code\mine\puppet-windows-presentation\Presentation

```
file {'c:/temp/testfile.txt':
  ensure  => 'file',
  content => 'test file',
}

package {'git':
  ensure  => latest,
}

service {'WebClient':
  ensure  => 'stopped',
  enable  => 'manual',
}

acl {'c:/temp':
  permissions => [
   { identity => 'Administrators', rights => ['full'] },
   { identity => 'Users', rights => ['read','execute'] }
  ],
}
```

Puppet – Resource Types & Providers

- Fundamental Building Blocks
- Type is Package
- Provider is Chocolatey

Puppet – Resource Types & Providers

Puppet – Resource Types

Puppet – Resource Providers

Puppet – Manifests

- Puppet script file aka Manifest
- *.pp files
- Puppet Language
- Can include / require other *.pp files
- Can make up modules

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Puppet – Modules

- Collections of manifests, files, custom facts, types and providers, etc
- Best way to extend core Puppet
- The Forge – 150+ Windows
- More on Github

- `<MODULE NAME>`
  - `manifests`
  - `files`
  - `templates`
  - `lib`
  - `facts.d`
  - `tests`
  - `spec`

Anatomy of a Puppet Run

Who Uses Puppet?

Windows Module Pack

- Registry
- PowerShell
- Reboot
- ACLs
- Windows Features
- IIS

Other Notable Windows Modules

- Chocolatey Provider Module
- PowerShell DSC Module
- Active Directory Module
- Windows Firewall
- Windows Environment

Core *Nix Resources

- augeas
- computer
- cron
- exec
- file
- filebucket
- group
- host
- interface
- k5login
- macauthorization
- mailalias
- maillist
- mcx
- mount
- nagios_command
- nagios_contact
- nagios_contactgroup
- nagios_host
- nagios_hostdependency
- nagios_hostescalation
- nagios_hostextinfo
- nagios_hostgroup
- nagios_service
- nagios_servicedependency
- nagios_serviceescalation
- nagios_serviceextinfo
- nagios_servicegroup
- nagios_timeperiod
- notify
- package
- resources
- router
- schedule
- scheduled_task
- selboolean
- selmodule
- service
- ssh_authorized_key
- sshkey
- stage
- tidy
- user
- vlan
- yumrepo
- zfs
- zone
- zpool

Windows Resources

- file
- user
- group
- scheduled_task
- package
- service
- exec
- host
- reboot
- acl
- windowsfeature
- windows_env
- iis:manage_site
- registry_key
- registry_value
- More w/modules

Demos

How do I learn Puppet?

- https://learn.puppetlabs.com
- Learning VM
- Self-paced training

Questions / Reference

- https://puppetlabs.com
- https://docs.puppetlabs.com
- https://docs.puppetlabs.com/windows
- https://forge.puppetlabs.com/puppetlabs/windows

- @ferventcoder