
REAWNZ

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ANSIBLE AT REANNZ

FINDING A MIDDLE PATH

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REANNZ

INTRODUCTION

ANSIBLE AT REANNZ

- Material Covered
- Initial State
- First Steps
- Configuration
- Deployment
- Future Work

INITIAL STATE

WHERE WERE YOU IN 2016?

- Systems
  - 40 VMware guests across two data centres
    - Based on a static Ubuntu 14.04 golden image
  - 30 Hardware OOB systems
    - Based on a static Ubuntu 12.04 golden image
  - 4 Hardware systems
    - Hand built on Ubuntu 12.04
  - 10 Hardware perfSONAR appliances
    - Build from perfSONAR ISO on Centos

WHERE WERE YOU IN 2016?

- System Management
  - Partial Coverage by Salt
    - Only covered some of the fleet
    - Only covered user accounts and upgrades
  - Couldn’t Build New Systems With It
  - Didn’t Touch Hand Built Systems

INITIAL STATE

GOALS

- 100% Coverage
- No Golden Images
- Agentless System
- Active Development
- Juniper 1st Class Citizen
- ”Cattle Not Pets”

THE FIRST DEPLOYMENTS

- What Should Be In Your Baseline?
  - Accounts And Groups
    - Add / Remove / Alert
  - Firewalling
    - Ooooo…. That gets hard quickly

THE FIRST DEPLOYMENTS

- Replacement OOB Systems
- ~28 Sites
- Addressing Varies By Site, Otherwise ~Identical

CONFIGURATION

HOW FAR DO YOU GO IN AUTOMATING THINGS?

- What Do You Always Automate?
- What Do You Never Automate?
- What Falls In The Middle?

ANSIBLE BEST PRACTICE

- Ansible Best Practice Documents – Use Them!
- Setting Variables
  - At last count, there's 22 places to set variables. Don't use them all
- Secrets Management – Ansible Vault
  - Now can use multiple vaults with different passwords

CONFIGURATION

SOFTWARE ECOLOGY

- GIT / GOGS
- SSH
- Foreman
- Slack

DEPLOYMENT

THE BUILD PROCESS

”Hardware”	Initial Build	Configuration
Standard Hardware	Foreman	Ansible
Exotic Hardware	Linux ISO	Ansible
VMware Guests	Foreman	Ansible
LXC Guests	Golden Image*	Ansible

REUSABLE CODE

- Backend Agnostic
  - There's no change in code from VMware to LXC
  - The same code can be used if we migrate to a public cloud
- Proof Of Concept Tuakiri Migration Into VMware
  - Stack of services, with multiple release environments
  - Lends itself particularly well to Ansible

SUCCESS STORIES – FLEET MANAGEMENT

- ~160 Systems Baselined, Patched, and Rebooted each week
  - ~50 OOB / perfSONAR servers
  - ~10 other hardware servers
  - ~60 VMware guests
  - ~25 LXC guests
- Full patch and baseline run takes ~2-3 hours, with 1 hour of artificial pacing delay included. Reboots take 2 hours with pacing
- Could probably be scheduled to run without supervision now

SUCCESS STORIES – REMOTE BUILD/CONFIGURATION

- Distance is not a problem
- 27 PoPs around New Zealand, Sydney, Portland, and Seattle
- Hardware installed to overseas PoPs, then imaged remotely
- Systems managed in exactly the same way as local systems

PATHS NOT TAKEN (YET)

- Ansible Tower / AWX
- CI / CD Stack
- Autoscaling
- Universal Playbooks – Ubuntu only

WHAT'S NEXT?

- Migration to Ubuntu 18.04 LTS
  - systemd
- Retirement of last remaining pre Ansible servers
- Public Cloud - if required

THE END

QUESTIONS?

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