



Pivotal

PCF Operations Workshop – Patching and Upgrades

<Presenter>

<Title>

Operations Workshop Agenda

- PCF Introduction
- Services Overview
- Platform Installation & Setup
- Role Based Access Control
- Platform & Application Scaling
- Platform & Application Health
- **Patching & Upgrades**
- Authentication and Authorization
- Advanced BOSH

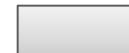
Platform Upgrades and Patches

- BOSH executes **Canary-style deployments** to minimize downtime
 - Also known as rolling upgrades
- A select number of “canary” VMs from the new release are deployed
- BOSH verifies new VMs have been deployed successfully
- Remaining VMs are deployed only if the upgrade of canary VMs succeeded
 - Otherwise the upgrade is halted

Upgrade and patch with rolling “canary” deploys



A,B,M,N,X,Y - Application instances



- VM prior to update

Upgrade and patch with rolling “canary” deploys



Apps redeployed to clear VMs

Upgrade and patch with rolling “canary” deploys



Update introduced. If the tests pass, keep going

Upgrade and patch with rolling “canary” deploys



Apps redeployed to updated VMs



Upgrade and patch with rolling “canary” deploys



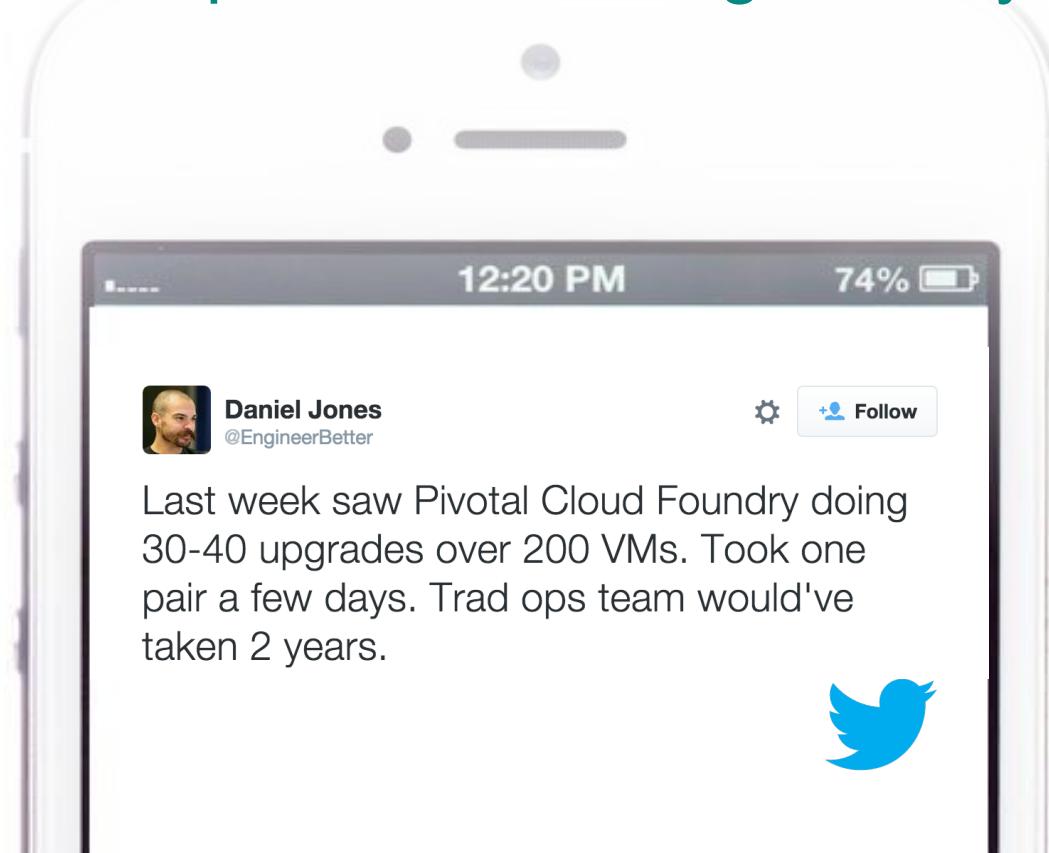
Remaining VMs updated same way

Upgrade and patch with rolling “canary” deploys



Automated, No downtime
Atomic rolling update

Upgrade and patch with rolling “canary” deploys



Elastic Runtime Patching

- The Elastic Runtime (ERT) needs a new stemcell to be applied for a proper upgrade
- The stemcell can easily be selected and applied from the ERT's Setting tab.

The screenshot shows the Pivotal Elastic Runtime Installation Dashboard. The 'Settings' tab is active. On the left, there is a sidebar with various configuration options: Assign AZs and Networks, Domains, Networking, Application Containers (selected), Application Developer Controls, Authentication and Enterprise SSO, Databases, Internal MySQL, File Storage, System Logging, Custom Branding, Apps Manager, and Email Notifications. The 'Application Containers' option is expanded, showing it requires BOSH stemcell version 3215 ubuntu-trusty and provides a link to 'Using light-bosh-stemcell-3215-aws-xen-hvm-ubuntu-trusty-go_agent.tgz'. A large 'Import Stemcell' button is prominently displayed in the center of the page under the 'Stemcell' heading. At the bottom, a footer bar includes the text 'PCF Ops Manager v1.7.0.0; ©2013-2016 Pivotal Software, Inc; All Rights Reserved.' and links to 'API Docs' and 'End User License Agreement'.

Canary-Style Deployment: Implications

- Elastic Runtime can be upgraded to new versions with no application downtime
 - “Apply changes” does not mean “wait for it to finish”
 - You will have limited ability to deploy applications during Elastic Runtime upgrades
- Installing or modifying other tiles does not affect the Elastic Runtime
- For the ops team- upgrade the system during working hours!