Cloud innovation and automation

Transforming Health and Well-being with Pivotal Cloud Foundry and Dynatrace

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Agenda

• The Death Star & The DEC
• DevOps Accelerated: Pivotal Cloud Foundry
• DevOps Monitored: Dynatrace
• How Monitoring Happens on PCF
• Nancy’s Story
• Looking Ahead: The “110 Plug” and more
Humana’s Monitoring Strategy

• Invest in APM, improve Operations with user experience monitoring (UEM), application monitoring, DCRUM

• Train Development on monitoring capabilities with APM specialist certification program

• Establish a physical space for monitoring collaboration with Operations and Development (the “Death Star”)

• Continually showcase new capability and visibility to leadership
The Digital Experience Center (DEC)

• Healthcare professionals improving peoples' lives through software

• Transforming Humana into a human-centered, tech-driven company

• Developing experience-first healthcare software rapidly, flexibly and iteratively

• Technology incubator for the company, including Pivotal Cloud Foundry (PCF)

http://www.humana.io/
DevOps Accelerated: Pivotal Cloud Foundry (PCF)

• PCF provided a developer-centric platform for the Humana DEC
• Software engineers write & test source code
• Engineers deploy with one command ("cf push")
• Traditional infrastructure is abstracted by the platform
• Typical targets for DevOps (infrastructure automation) no longer exist

here is my source code
run it on the cloud for me
i do not care how

http://www.humana.io/
DevOps Monitored: Dynatrace

- Dynatrace provided a platform for full-stack monitoring
- Operations engineers use same interface for legacy host monitoring as for cloud / containerized workload monitoring
- Developers use same tools as Operations and can more quickly work production issues – together
- Humana built Enterprise PCF platform, instrumented with Dynatrace
Dynatrace for Cloud Foundry

- Fully Automated
- Full Stack
- Powered by Artificial Intelligence

```
$ bosh runtime-config
releases:
  - name: dynatrace-oneagent, version: 0.3.3
addons:
  - name: dynatrace-oneagent-addon
jobs:
  - name: dynatrace-oneagent
    release: dynatrace-oneagent

$ bosh update runtime-config dynatrace-config.yml
$ bosh deploy
```
Nancy’s Story

- Nancy is a lightweight framework for building HTTP-based services on .NET Framework/Core
- Member-facing application experienced performance issues, crashes during Humana’s sales period
- Dynatrace showed 500 errors with a microservice, errors specifically pointed to Nancy framework
- Operations team began to work issue in a traditional manner (Service-Oriented Architecture)
- Time to restore service delayed as old playbooks traversed
- True root cause identified as a PCF bug with a Buildpack
- Application redeployed with new Buildpack to address root cause

https://github.com/nancyfx/nancy
Looking Ahead: The “110 Plug” and more

• Mature the “110 Plug” to make monitoring easy
• Continue to instrument Enterprise PCF & other “cloud-like” and containerized workload
• Put Dynatrace in the hands of software engineers
• Drive full-stack monitoring & tool consolidation
• Integrate with High Performance SDLC and Continuous Delivery pipelines
Questions?