Moving Development Workloads to the Cloud

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Agenda

Introduction | Benefits | Risks | Approach | Conclusion

Introduction

Introduction

What This Is

- Brief overview of some Pros and Cons for moving development workloads to the Public Cloud (AWS, Azure, etc.)
- High-level recommendation for a standardized approach to get started

What This Is NOT

- A full presentation of cloud offerings
- A silver bullet

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Why Listen to Me?

- West Point graduate
- Led 50+ teams, sized from 3 to 150+
- DevOps Coach
- Multiple DevOps transformations at household name clients
- "Honest broker"

What is DevOps?

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DevOps is a Transformation

People

Culture

Training

Expert Help

Process

Workflow

Automation

Tools

SCM/VCS

Pipelines

Testing

Config

Etc...

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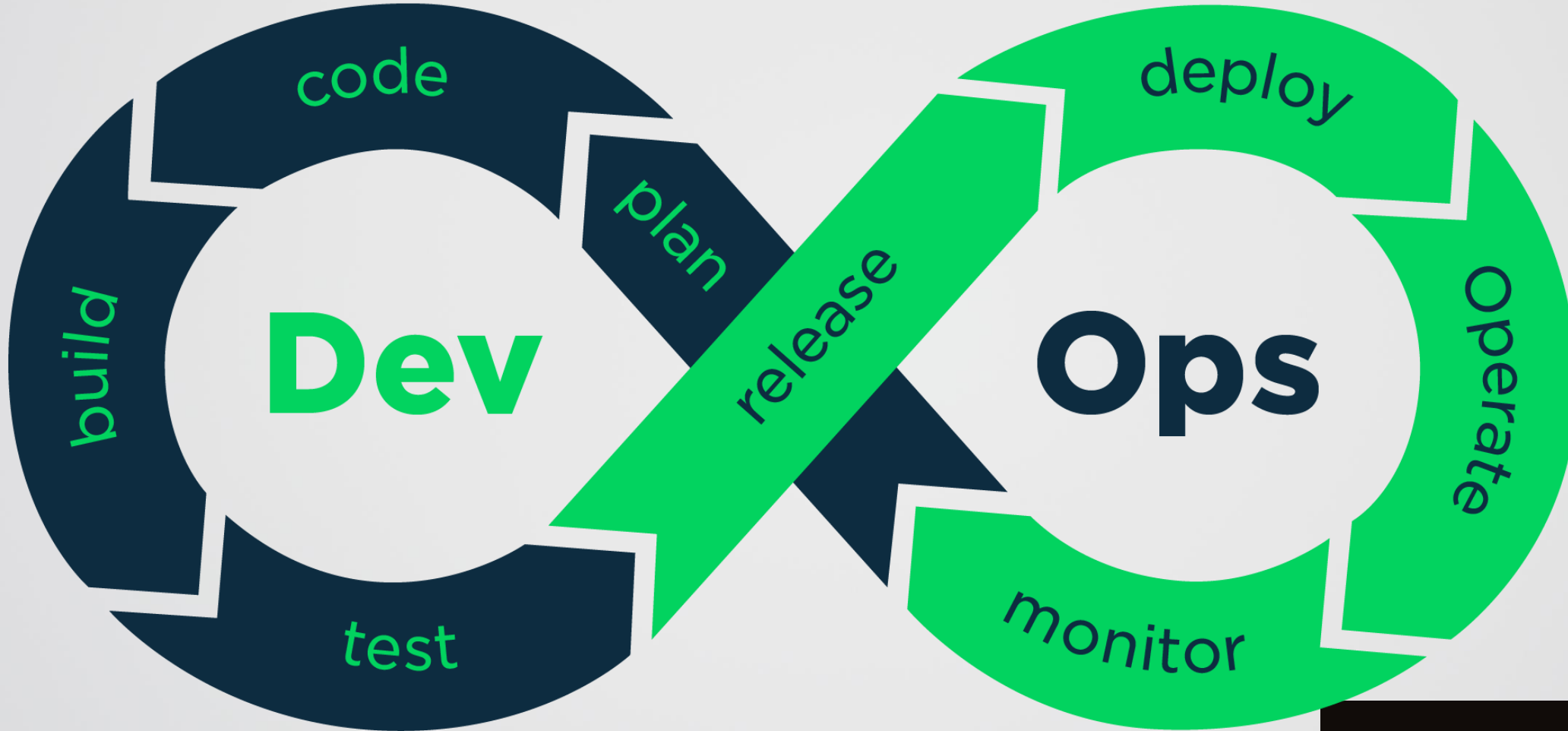
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Collaborate → Build → Test → Deploy → Run

Collaborate

Application Lifecycle Mgmt.
JIRA · mingle · Trello · Visual Studio Team Foundation Server · PivotalTracker · Basecamp · PHABRICATOR · asana

Communication & ChatOps
slack · Atlassian HipChat · #irc · flowdock · Microsoft Teams · RYVER · Mattermost · ROCKET.CHAT · COG v0.5 · Nestor · LITA · HU-BOT

Knowledge Sharing
github:pages · jekyll · Confluence · HUGO · Read the Docs · Markdown · apiblueprint · RAML · FLARUM · graphviz · OPEN API INITIATIVE · Discourse · reddit

Build

SCM/VCS
git · SUBVERSION · mercurial · GitHub · Gogs · Atlassian Bitbucket · GitBucket · GitLab

CI
wercker · snap · TeamCity · Jenkins · Bamboo · drone.io · circleci · go Continuous Delivery · Travis CI · CODESHIP

Build
sbt · Gradle · GRUNT · docker · .js · Maven · Gulp · Nant · APACHE ANT · PACKER · MSBuild · Leiningen · Rake

Database Management
DBmaestro DevOps for Database · DBDeploy · Flyway by ClusterHQ · redgate · Flocker by ClusterHQ · LIQUIBASE

Test

Testing
Test Automation Selenium · Se · Jasmine · MOCHA · GAUNTLT · OWASP ZAP · Gatling STRESS TOOL · JUnit · KARMA · FitNesse · Nunit · Qu QUnit js unit testing · Test NG · cucumber · Galen Framework · .js · LOAD IMPACT · APACHE JMeter · BlazeMeter · pytest · SERVERSPEC · Browsersync · Pa11y · specflow Cucumber for .NET · Newman · xUnit.net

Deploy

Deployment
Octopus Deploy · XL DEPLOY · RUNDECK · Capistrano · urban{code} · NOLIO · SSH · JUJU · ElasticBox · Spinnaker

Config Mgmt./Provisioning
puppet labs · CHEF · ANSIBLE · SALTSTACK · CFEngine · PowerShell DSC · VAGRANT · TERRAFORM

Artefact Management
DOCKERHUB · docker REGISTRY · QUAY by CoreOS · Bower · JFrog Artifactory · python Package Index · nuget · archiva · npm · Sonatype Nexus

Run

Cloud / IaaS / PaaS
amazon web services · Dokku · Flynn · heroku · Microsoft Azure · CLOUD FOUNDRY · Google Cloud Platform · Rackspace · openstack · DEIS · appfog · OPENSHIFT · Engine Yard

Orchestration & Scheduling
MESOSPHERE · MARATHON · docker SWARM · kubernetes by Google · Nomad · RANCHER · MESOS

BI / Monitoring / Logging
logstash · elasticsearch · splunk> · Vector · kibana · DATADOG · ZABBIX · APPDYNAMICS · GROK · ZIPKIN · Google Analytics · x-pack · SENTRY · VIZCERAL · Prometheus · New Relic · dynatrace · PINPOINT · Runscope · sensu · Atlas · RIEMANN · APImetrics Intelligent API Monitoring · Grafana · RAYGUN · STATSD · graphite · Airbrake.io · Rollbar · beats · pagerduty · OpsGenie · Keen IO · MOOG

WORKED FINE IN DEV

OPS PROBLEM NOW

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I DON'T ALWAYS TEST MY CODE

BUT WHEN I DO I DO IT IN PRODUCTION

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Benefits

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Speed

- Speed of Deployment

- Speed of Operation
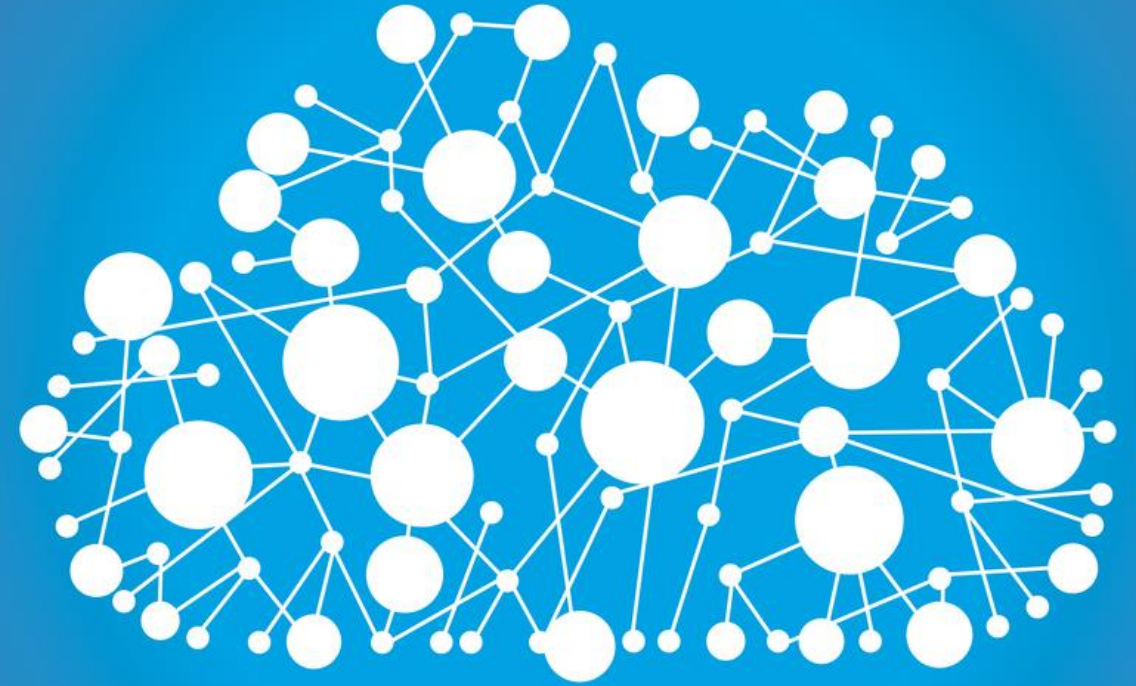
- Speed of Scalability

- Speed of Failure

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Increased Agility

- Faster development cycles

- Prevalent feedback loops

- Pay for only what you use

- Foster creativity & experimentation

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Cloud Ops is Awesome!

- Services – IaaS, PaaS, CaaS

- Tools – Proprietary, OSS

- Automation Enablement

- Deployment Flexibility

Risks

Risks

- Forfeiture of control

- Cultural shift

- Cost and ROI

- Lag in upskilling

- Business value articulation

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Approach

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Transformation Order of Operations

- **Win:** This means deliver MEASURABLE BUSINESS VALUE

- **Don't Overthink It:** Fix what hurts the most

- **Leadership and Culture:** Champion the DevOps mindset and The 3 Ways of DevOps

  - Flow – accelerate delivery of work from Dev to Ops to Business to Customer
  - Feedback – increase safety, reliability and predictability
  - Continuous Learning & Experimentation – high-trust culture and scientific approach

- **Maximum Overdrive:** Automate everything you can

Recommended Approach

- Make an informed decision to choose the right first project; balance fixing what hurts the most with starting off with a definitive win.

- Go all-in with the latest Tooling
  - Cloud Services – Go after a **CLOUD NATIVE** application/system running under Platform as a Service and/or Container as a Service
  - Use everything you can: SCM/Repos, Work Management, Build/Release Pipelines, Automated Testing, etc.
  - Automation is King – CI/CD/CD, Resource Deployment, Config, Testing

- Favor additional feedback loops early on

- Invest in experts; make them deliver training

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Conclusion

DevOps is a Transformation

People
Process
Tools

Leadership
&
Culture

Communication

Build a Culture of Excellence

- Excellence in DevOps, as all things, can start anywhere in the organization and radiate out.

- Build empowered, self-organizing teams.

- Hoard blame.

- Share credit.

More Information

www.transphormtech.com

- Technology Transformation Advisory Services

www.mack24x7.com

- Leadership and Technology Blog

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