Shifting Enterprise Development into the Fast Lane

DevOps for Enterprise Systems to transform your software delivery capability and deliver business value

ibm.com/devops
SHARE Orlando FI 2015

Presented by:
Rosalind Radcliffe,
Distinguished Engineer
Chief Architect for DevOps and CLM
**Applications** and **teams** move at variable speed

**Rapid iterations**

- Plan
- Develop
- Build
- Test
- Deploy
- Production

**Systems of Engagement**

- Continuous synchronization and planning
- Continuous testing
- Continuous deployment and monitoring

**Slower iterations**

- Plan
- Develop
- Build
- Test
- Deploy
- Production

**Systems of Record**
How Do We Fix The Problem??

Mobile

Analytics    Security    Social

Hybrid Cloud

Data

Apps

ENTERPRISE IT
Infrastructure

PRIVATE CLOUD

PUBLIC CLOUD

Infrastructure

Data

Apps

APIs    APIs

APIs    APIs
How Do We Fix The Problem??
Answer: DevOps → The “How” for Cloud and Mobile

Enables clients to extend enterprise IT assets for digital business transformation at scale & speed

DevOps
Continuous Feedback

Plan
Develop/Test
Deploy
Operate

Integration
Reliability
Availability
Scalability
Performance

Mobile
Analytics
Security
Social

Hybrid Cloud

Data
Apps

PRIVATE CLOUD

 ENTERPRISE IT
Infrastructure

PUBLIC CLOUD

Infrastructure

© IBM Corporation
DevOps is not one of these things... It’s all of them!
‘Lean’ DevOps

The Process
Delayed learning is why waterfall fails

Months or years to learn if ideas/requirements match the market need

Weeks or months to validate code matches original requirements
Lean & Agile are at the heart of IBM’s DevOps approach

- Balance efficiency and effectiveness to deliver the right things right!
Build for success with a closed-loop approach to application delivery

DevOps extends lean and agile practices

DevOps
Continuous feedback and optimization

Lean and Agile principles
Evolution to Continuous Delivery

- Develop
- Build
- Deploy
- Test
- Provision

- Continuous Business Planning
- Continuous User Feedback & Optimization
- Continuous Monitoring
- Continuous Release and Deployment
- Collaborative Development
- Continuous Testing

DevOps
Continuous Feedback
Plan
Develop/ Test
Deploy
Operate
Practices
Standards
Ecosystem
Revitalize Skills! Use modern tools for multiplatform development

Boost developer productivity

• Standardize on common Eclipse-based IDEs for all types of development
• Refactor and extend back-end services and data for optimal mobile experience
• Use code coverage, code governance, and unit test support for improved quality
• Leverage rich program understanding and control flow analysis for onboarding
• Exploit fully integrated source level debugger for increased productivity
• Interactive debugging of your applications
• Root cause analysis of your application failures (abends)
• Management of your application data
• Performance analysis of your applications
• Quality assurance of your applications
Break down silos by moving to an agile team environment

Maximize team productivity

- Manage all types of code from JavaScript to COBOL – mobile to mainframe
- Instant-on, self-serve development capabilities with JazzHub on SoftLayer
- Accelerate agile adoption on the mainframe
- Integrate existing deployment tools
- Enhanced Lifecycle integration adapters for third-party tools

Develop and Test
Testing too little, too late… the Big Bang!
The Shift Left Solution…
Test in small incremental batches
Deploy what is ready, virtualize the rest

Push button deployments to test or production

Continuously test in production-like env.

Integrated with

Deploy what is ready, virtualize the rest

Simultaneously test across multiple test stages

Virtual components

Databases
Mainframe
Third-party Services

Dynamic Infrastructure

Dev QA

z/OS application testing on emulated z System hardware
Application Deployment to Multi-Platform Environments

Develop
- IDE
  - Deliver

SCM
- Request Build

Build
- CI Tool
  - Built Artifacts

Deploy
- System of Engagement
  - Mobile Device

System of Record
- Cloud
- Traditional
- Mainframe
Future made IT operations manage anything from anywhere - with complete visibility across hybrid IT

Optimize decisions with insight from your IT operations

Gain complete visibility and control over apps and infrastructure

Use embedded analytics to solve problems faster or avoid them altogether

Automate and collaborate to focus teams on innovation initiatives

The industry’s most complete visibility – capturing 100% of transactions across the largest number and diversity of things

Advanced Watson analytics - for predictive and historic insight across all IT Operations data

DevOps built for hybrid IT with built-in workload automation and performance management

Provide continuous feedback and monitoring of all infrastructure that affects software delivery

© IBM Corporation 17
The Critical Measure of DevOps Success
The Hidden Factory Opportunity

Hidden Factory = additional value you could create if you eliminated waste and redirected those resources to innovation
It’s all about the people

Building a DevOps Culture grounded in lean and agile principles:

– Everyone is responsible for Delivery
– Common measures of Success
– Don’t under-estimate the value of training and skills enablement!
IBM DevOps – Broad set of DevOps capabilities

Address bottlenecks across the application delivery lifecycle

Plan

Develop / Test

Deploy

Operate

Continuous Business Planning
Rational Team Concert
Rational Doors Next Generation

Collaborative Development
Rational Collaborative Lifecycle Mgt
Rational Developer for System z
Rational Compilers
CICS and PD Tools
Worklight Studio

Continuous Release and Deployment
UrbanCode Release
UrbanCode Deploy
UrbanCode Deploy with Patterns
Cloud Orchestrator

Continuous Monitoring
SmartCloud Application Performance Mgt
Cloud Control Desk
IBM Operational Analytics
Omegamon

Continuous Testing
Rational Quality Manager
Rational Test Virtualization Server
Rational Test Workbench
Rational Test Workbench – Mobile Test Edition
Rational Development and Test Environment for System z

Continuous Customer Feedback & Optimization
Tealeaf CX
Digital Analytics
MobileFirst Platform Quality Assurance

Bluemix DevOps services
Agile planning and tracking
Application auto-scaling
AppScan mobile analyzer
Continuous delivery pipeline
Git hosting

Mobile application security
Mobile data
Mobile quality assurance
Monitor & analytics
Push

Server-side code
Web IDE
DevOps for Enterprise Systems – Key Takeaways

1. DevOps is about transforming application development and delivery in order to accelerate digital innovation. So DevOps is a topic for both business and IT roles in the organization.

2. You don’t buy DevOps, you do DevOps. DevOps is an approach, a mindset – a combination of culture, process and technology (including infrastructure, tools and services).

3. DevOps is not only about the hand-off between Development and Operations. DevOps is about applying lean and agile principles across the application delivery lifecycle (biz-dev-test-deploy-operate) to achieve continuous delivery of digital innovation. Key concepts: automation, feedback loops.
What’s New in DevOps for Enterprise Systems?

- **New Compilers to optimize performance on z13**
  - Enterprise COBOL for z/OS V5.2
  - Enterprise PL/I for z/OS v4.5
  - z/OS XL C/C++ V2R1M1
  - XL C/C++ for Linux on z Systems V1.1

- **Rational Developer on z**
  - Improvements in zUnit Automated Unit Testing Framework for z/OS with Headless code review and code coverage
  - With integrated Debugger, Multiple users can run and debug the same CICS transaction on the same region at the same time

- **Rational Development & Test**
  - Exploit added zEnterprise capability (Parallel Sysplex)
  - New, flexible licensing to support automated testing and variable usage patterns

- **Rational Test Workbench 8.7**
  - Virtualize DB2 on z and PL/1 support

- **UrbanCode Deploy**
  - Simplified z/OS application deployment by providing OOTB support to automate JCL submission and monitoring
  - Plugins for CICS, DB2, and IMS to enable use of predefined actions/steps during the deployment process

- **Rational Team Concert**
  - New component history, change history views, and new search command to find strings in native ISPF
  - Upgraded integration with UC – RTC for z customers to generate deployment packages for UC

- **Secure Managed Cloud Services – RD&T and CLM**
Emerging → Enabling next generation cloud and mobile applications with IBM Bluemix for z Systems

Days vs. months
from idea to running applications

• Delivering full enterprise-level z Systems cloud integration services that are easy to integrate into cloud apps
• Simple to use security services integrated with z Systems
• **IBM SDK for Node.js Version 1.1** for Linux on z Systems
• Linux on z Systems with Node.js performs 29 to 63% higher compared to similarly configured Intel hardware environments

Coming soon

• Advanced encryption and decryption services

2x performance, ½ cost
Next steps
Where can I learn more?
Mobile to Mainframe DevOps for Dummies Book

Author: Rosalind Radcliffe, IBM Distinguished Engineer

Available as ebook and hard copy

• Meet the author while at SHARE

• Book signing at the IBM Booth #312
  Atlantic Hall C
  Monday and Tuesday 6-7:30 PM
  First 250 copies

8 Chapters – 72 pages

1. Understanding the Value of the Mainframe
2. Typical Mainframe Application Development Challenges
3. DevOps and Mainframe: Mission Possible?
4. DevOps Best Practices for z Systems
5. Building for the modern omni channel world
6. DevOps Success Stories in the Enterprise
7. Making a DevOps transition
8. Where DevOps can take you

Why the unique power of the mainframe is perfect for developing hybrid cloud applications
How mobile front ends can rejuvenate those back-end systems to reach new customers
The special considerations of using DevOps to accelerate mainframe software delivery

https://ibm.biz/mmdevops
Resources
Continuing your ‘Understanding DevOps’ journey

For Dummies books:
https://ibm.biz/mmdevops  - NEW
http://ibm.co/devopsfordummies
http://ibm.co/agilefordummies
http://ibm.co/ServiceVirtualizationForDummies http://ibm.co/ARDfordummies

IBM DevOps Page:
http://ibm.com/DevOps

IBM DevOps for Enterprise Systems:
http://bit.ly/1PB02KS
Thank You