BusinessConnect
A New Era of Smart

Mobile DevOps: Test and Deploy

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Mobile is the next evolution for connecting to the Data Center

91%

Mobile users keep their device within arm's reach 100% of the time

75%

Mobile shoppers take action after receiving a location based message

96%

Year to year increase in mobile cyber Monday sales between 2012 and 2011

90%

Users use multiple screens as channels come together to create integrated experiences

900%

Increase of global machine-to-machine connections by 2022 (2 billion in 2011 to 18 billion at the end of 2022)

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Mobile is changing the way information is used

Information developed and controlled by users for mobile devices

Information developed using multiple platforms and transformed into web services

Information restricted and developed in the data center

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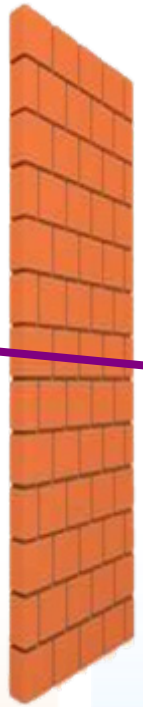
System z bridges Systems of Record and Systems of Engagement

Systems of Engagement

Mobile Apps

Siloed Dept. Apps



Systems of Record

Cloud APIs

Systems of Engagement are cloud-based, decentralized, support rapid app development.

Linux on IBM System z®

z/OS®

Systems of Record are well integrated, trusted repositories.

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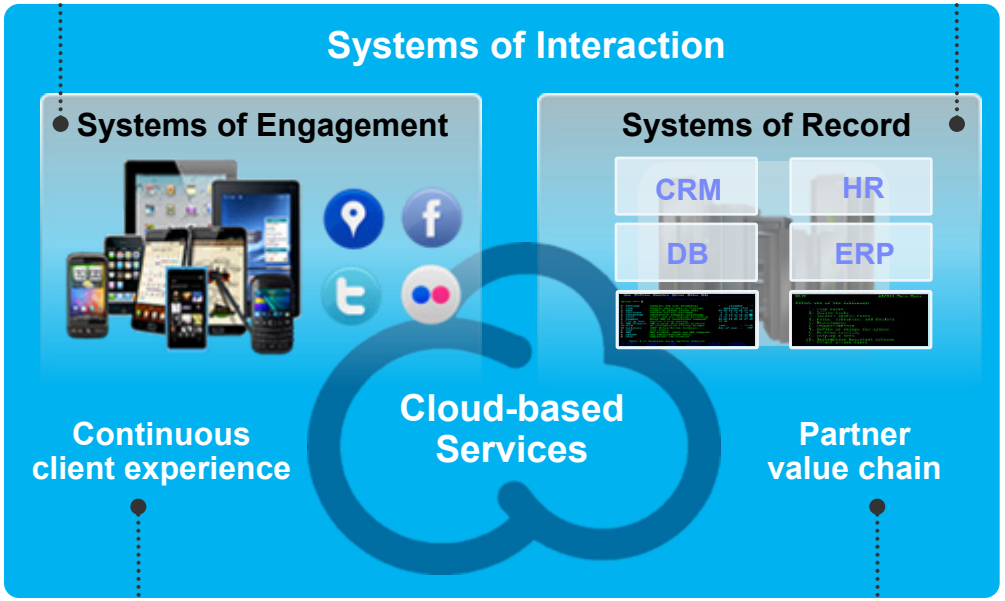
A lack of continuous delivery impacts the entire business enterprise in the new reality of "Systems Of Interaction"

Line-of-business
Takes too long to introduce or make changes to mobile apps and services

Operations
Rapid app releases impact system stability and compliance

>70%
of budgets devoted to maintenance and operations

4-6 weeks
to deliver even minor application changes to customers



>45%
of customers experience production delays

>50%
of outsourced projects fail to meet objectives

Development/Test
Speed mismatch between faster moving front office and slower moving back office systems, delaying time to obtain feedback

Suppliers
Delivery in the context of agile

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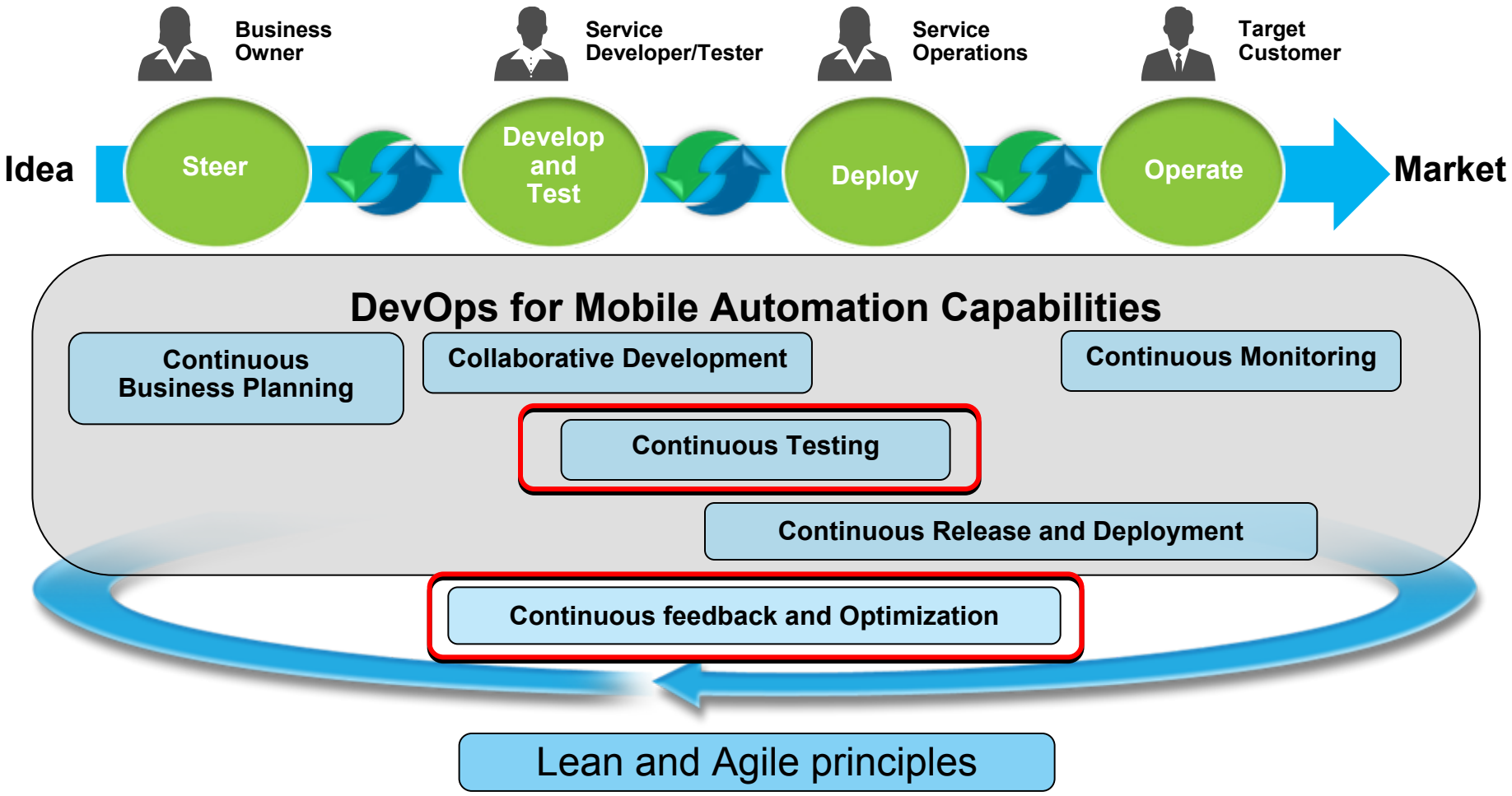
DevOps for mobile automation for demanding Agile schedules

Continuously Deliver High Quality Mobile Apps, Rapidly Respond to Feedback



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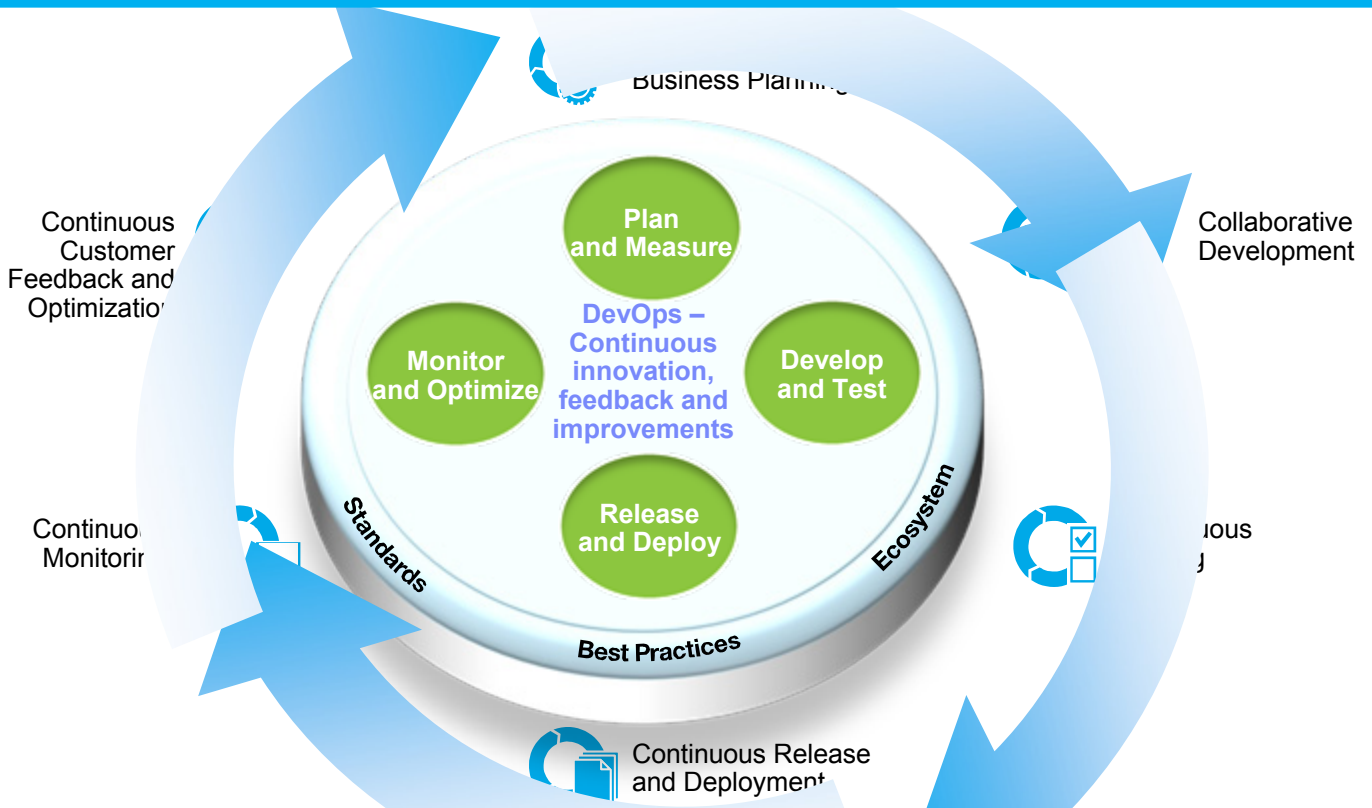
IBM DevOps point of view

Enterprise capability for continuous software delivery that enables clients to seize market opportunities and reduce time to customer feedback



Accelerate software delivery – *for faster time to value*

Balance speed, cost, quality and risk – *for increased capacity to innovate*

Reduce time to customer feedback – *for improved customer experience*

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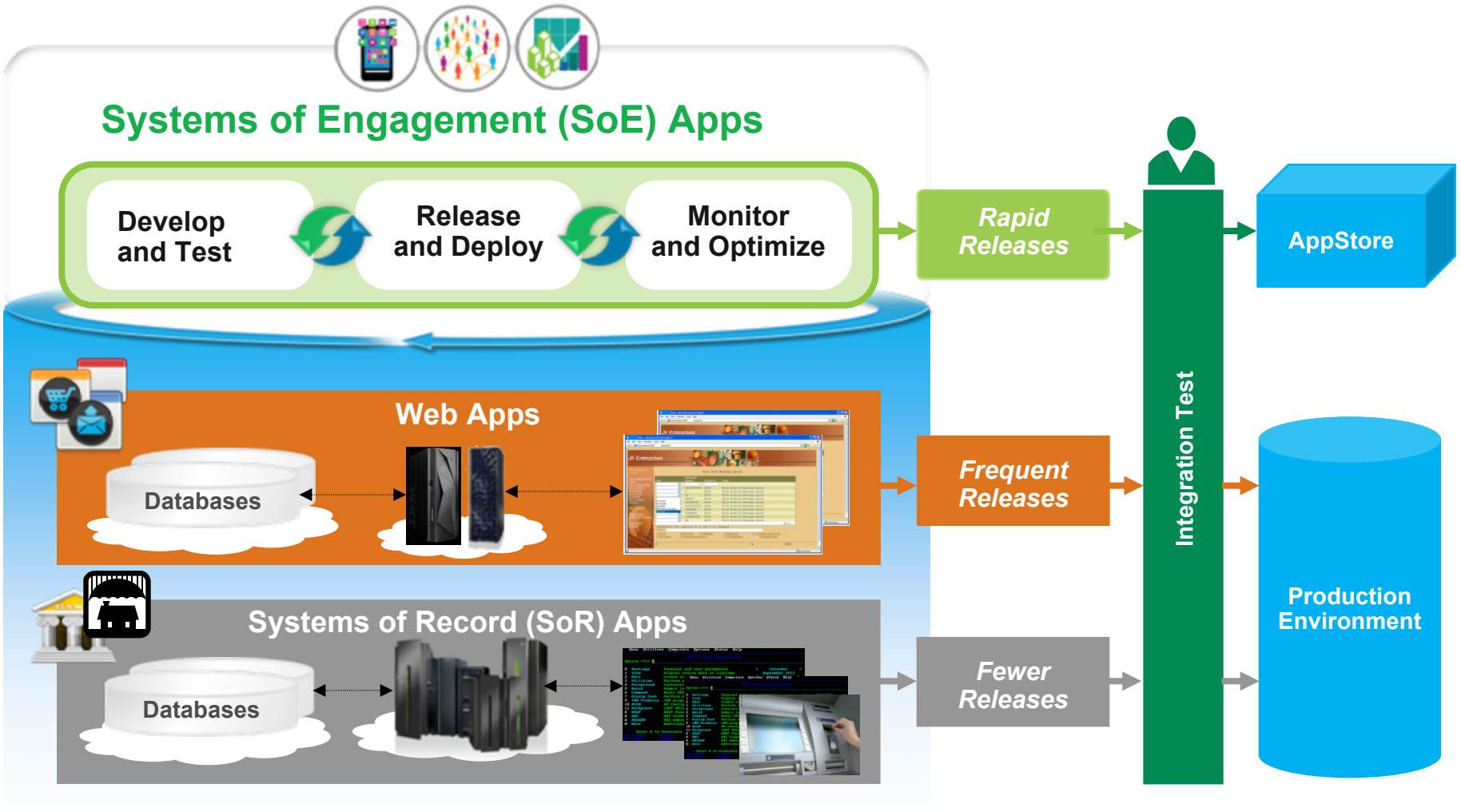
The need: Integrate systems of engagement with systems of record

By bringing together the culture, processes, and tools across the entire software delivery lifecycle – spanning mobile to mainframe platforms



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Realities of testing mobile enterprise applications

Given…

Unlimited Time and Budget	Reality of speed and budget limitations
Test all Use Cases	• Analyze risk and prioritize test cases based on business impact • Automate where possible
Test on all devices/carrier/OS permutations	• Prioritize by business impact • Leverage crowd-sourced testing • Leverage device cloud
Test on production systems	• Leverage service virtualization early • Then use production as it becomes feasable

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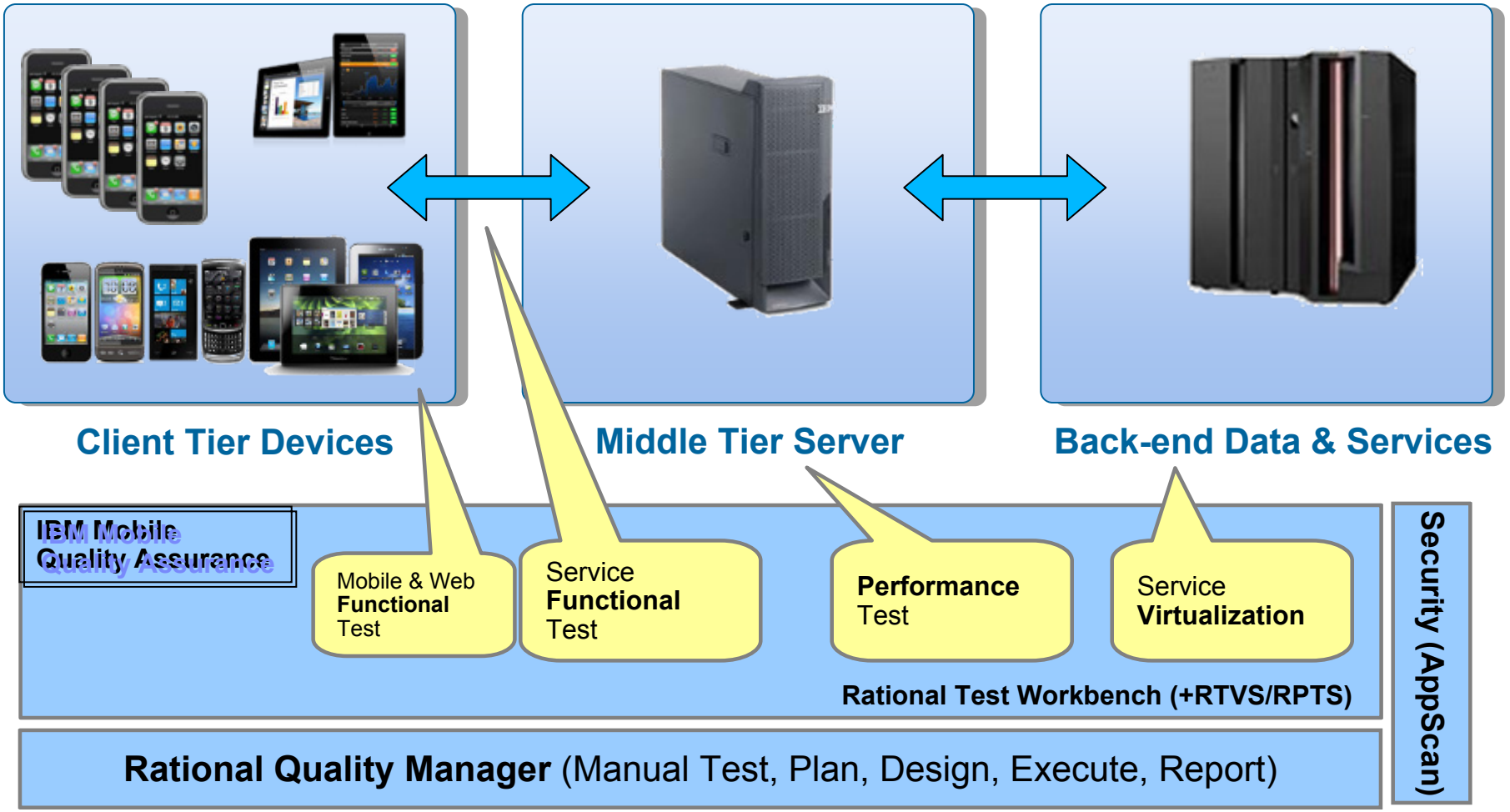
Continuous Testing involves much more than just the mobile front-end

Industry standard: "FURPS" (Functionality, Usability, Reliability, Performance…) testing helps you answer the question, "Are we REALLY ready to release this mobile app?"



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What do mobile testers need?

TEST MANAGEMENT

Test planning, reporting, and dashboarding

Test case/suite/environment construction

Integration with ALM

Integration with multiple execution engines

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Automated Mobile App Functional Testing

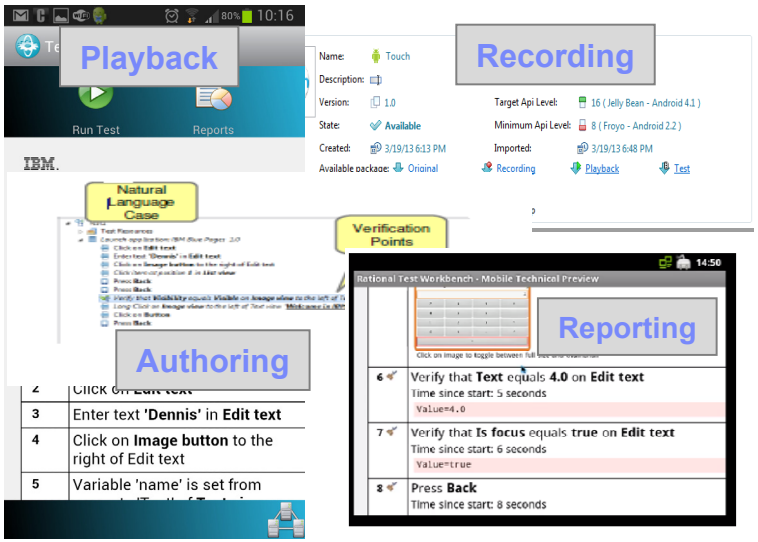
IBM Rational Test Workbench

Comprehensive
- Android and iOS, Native, hybrid, and web

Complete
- Record, edit, and run on mobile devices

Resilient
- Same test runs across multiple devices

Simple
- Natural language scripts for developers and non-developers alike
- Leverage production-like environments using virtualized services



"Being agile, we are developing tests as we write our code, so automating the functional tests of our mobile apps and using them for regression on multiple platforms makes our team much more productive!" ---- Mobile developer.

Shifting mobile testing to the left: test earlier, more often, for less.

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Virtualized back-end services maintain agility

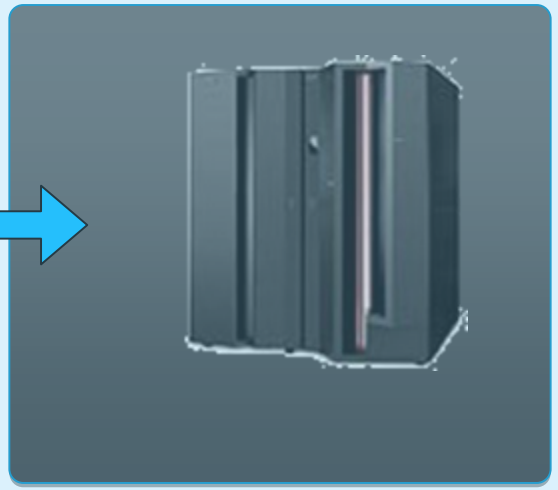
Mobile development team can meet aggressive schedules and reduce MIPS usage on enterprise systems

Rational Test Workbench

Service Virtualization support for isolating mobile client tier

Client Tier Devices
UI Testing

For focused automated mobile client tier functional testing, use Service Virtualization to simulate the mobile middle tier and back office systems.



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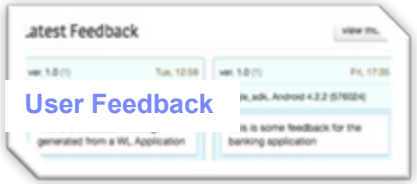
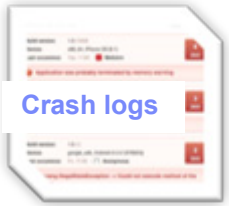
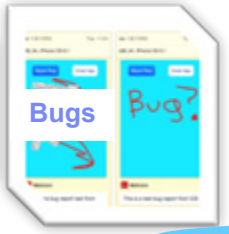
Continuously Deliver High Quality Mobile Apps and Reduce Time to Feedback





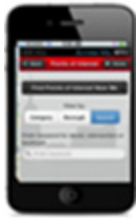
4 Crash log reporting



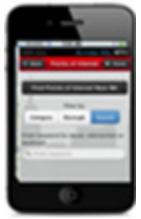
5 Sentiment Analysis

1 Over the air build distribution

2 In app bug reporting



3 In app user feedback



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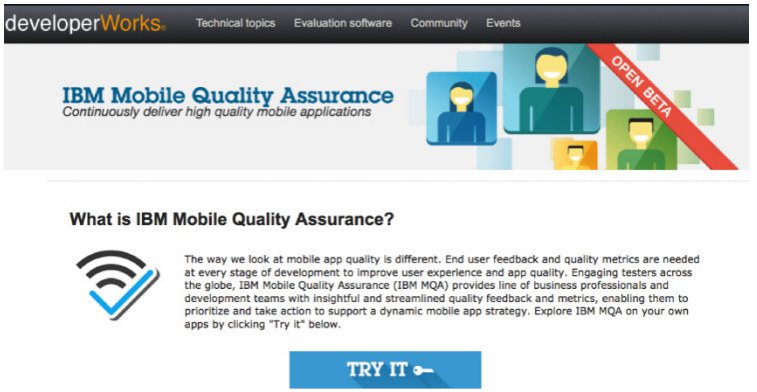
IBM Mobile Quality Assurance *Open Beta*



Features/Business Value

- **Sentiment analysis –** mine app ratings and reviews to respond to issues before they go viral
- **Evidence-based Prioritization –** Enable business and IT to collaborate on mobile strategy and user experience
- **Over the air app distribution** – get the latest in the hands of testers as soon as it is available
- **Frictionless bug reporting –** spend every minute on testing latest and greatest builds, not the hassles
- **In-app crash reporting** – rapid understanding of why an app fails

What's New

- End user feedback and quality metrics available at every stage of development
- App quality assurance in a fragmented and complex environment

Client Benefits

- **Improve Mobile App Quality** with holistic visibility into user experience, including bugs, crashes, feedback, and user sentiment.

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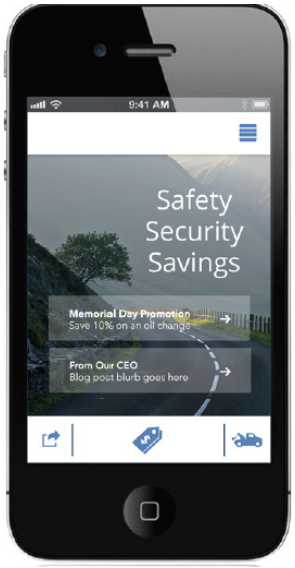
Success Story: IBM Rational Test Workbench
https://www.youtube.com/watch?v=Ua_zQRput5U

Build
Develop and run applications



FIMC
OUTSTANDING SERVICE SINCE 1974
Innovative Marketing Solutions
Expert Customer Care

PointSource

Challenges

The competitive nature of the insurance industry demands innovative methods to serve customers and increase brand loyalty.

Solution

IBM Worklight and IBM Rational Test Workbench were used to rapidly develop and test a mobile application that delivered valued services, integrated seamlessly into backend systems, and featuring a stunning, intuitive design.

Benefits

"PointSource's ability to translate our business objectives into a mobile strategy enabled us to deliver a solution that adds value to our existing customers. PointSource also identified ways for us to optimize for ***faster, higher quality delivery with IBM tools for the mobile development lifecycle.****"*

— Scott Liberatore
President/CEO FIMC

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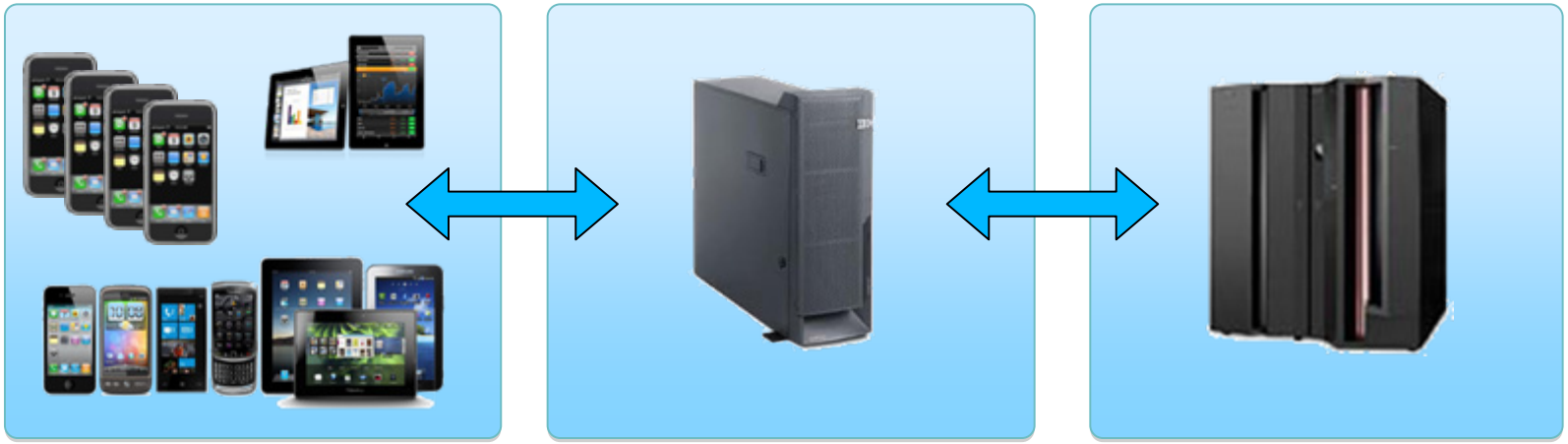
IBM MobileFirst quality solutions

RQM

- Test Planning
- Configuration testing
- Test Construction
- Test Execution
- Team Collaboration
- Reporting & Dashboard

IBM MQA

- Sentiment Analysis
- In-app crash reports
- Over-the-air app distribution
- Frictionless bug reporting



Client Tier Devices | **Middle Tier Server** | **Back-end Data & Services**

RTW/RTVS

- Automated Functional Test of Mobile Apps
- Simulation of mid-tier or backend systems
- Test automation of mid-tier or back-end systems

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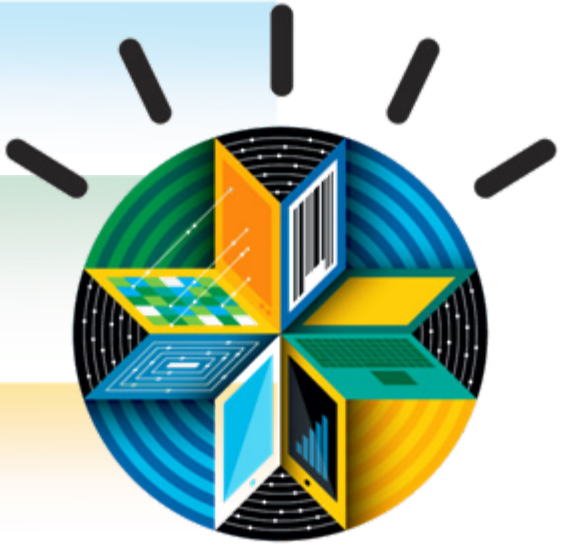
Increase your Mobile app testing velocity

1. Download the free IBM Worklight Developer Edition: ibm.com/developerworks/mobile/worklight
2. Take part in the IBM Mobile Quality Assurance open beta: https://ibm.biz/mobilequalitycloud
3. Learn more: ibm.com/mobilefirst
4. IBM Rational Test Workbench: http://ibm.co/15WWBUu



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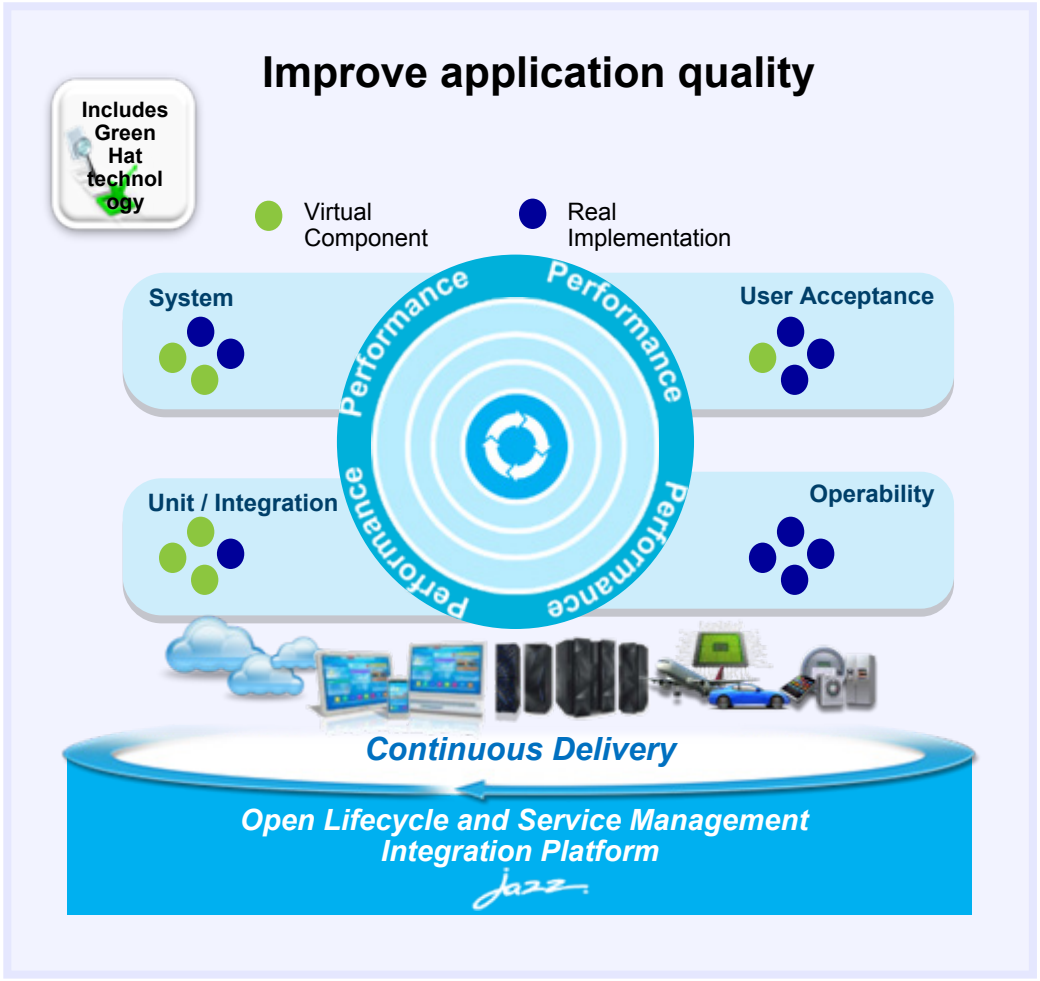
Automate functional, regression, load, and integration testing



Rational Test Workbench
- leveraging Green Hat Technology
IBM Fault Analyzer for z/OS

Enabling you to…

- Fully embrace automated testing
- Create test automaton of native and hybrid mobile and mainframe applications
- Run automated tests to validate builds
- Take advantage of over 70 technologies and protocols out of the box

19
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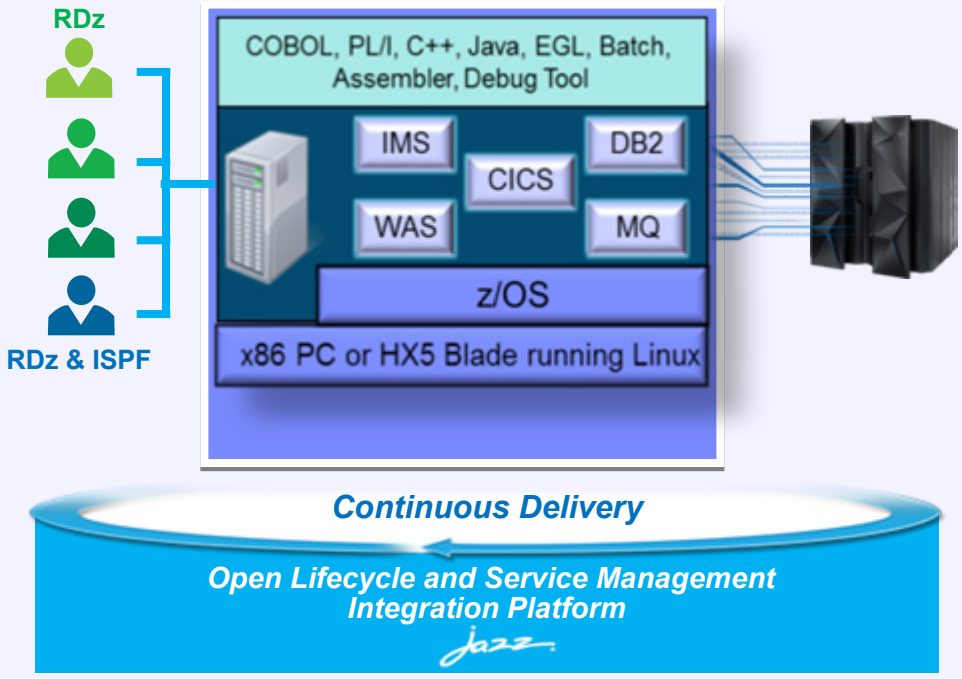
Offload development and testing to reduce MIPS

Improve development flexibility



Rational Developer and Test Environment for System z

Enabling you to…

- Liberate developers to rapidly prototype new applications
- Develop and test System z applications anywhere, anytime
- Free up mainframe development MIPS for production workload
- Eliminate costly delays by reducing dependencies on operations staff

New

Try latest middleware, including CICS 5.1, IMS 12.1, and WebSphere 8.5

- System z Development and Test Solution

Note: This Program is licensed only for development and test of applications that run on IBM z/OS. The Program may not be used to run production workloads of any kind, nor more robust development workloads including without limitation production module builds, pre-production testing, stress testing, or performance testing.

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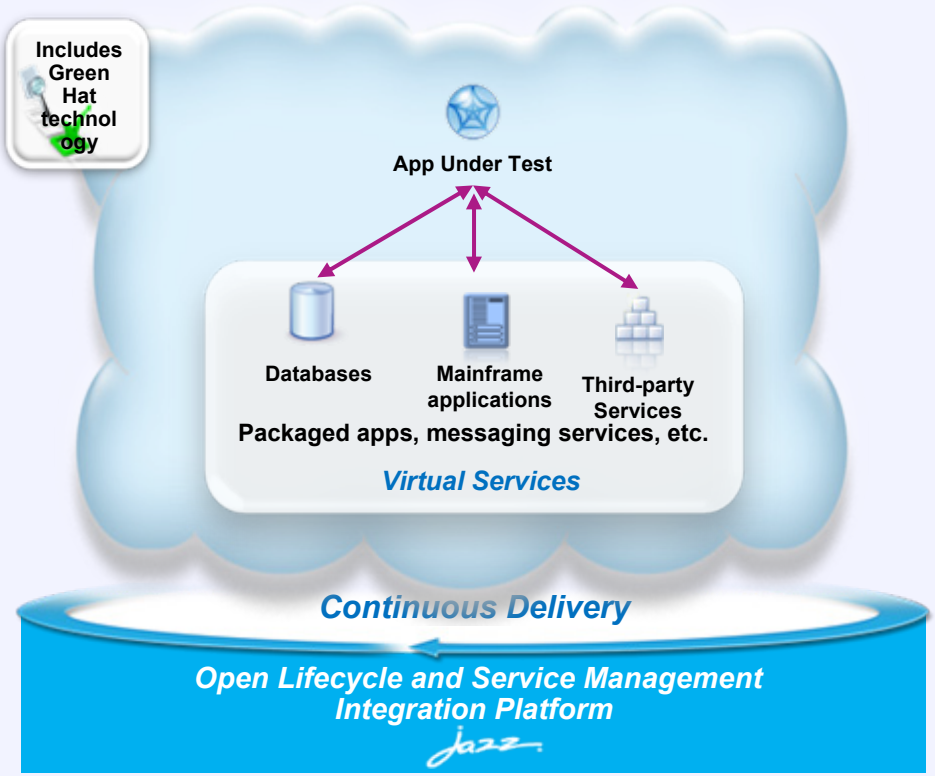
Reduce provisioning burden on Operations

Maintain test LPARs effectively



Rational Test Virtualization Server - leveraging Green Hat technology

Enabling you to…

- Test in isolation with ‘stubbed’ or ‘mock’ services

New

- Virtualize CICS applications inside the mainframe and Java applications in the JVM
- Reduce development dependency on operations
- Minimize subsystem dependency during testing
- Reduce infrastructure costs and free up MIPS for production use

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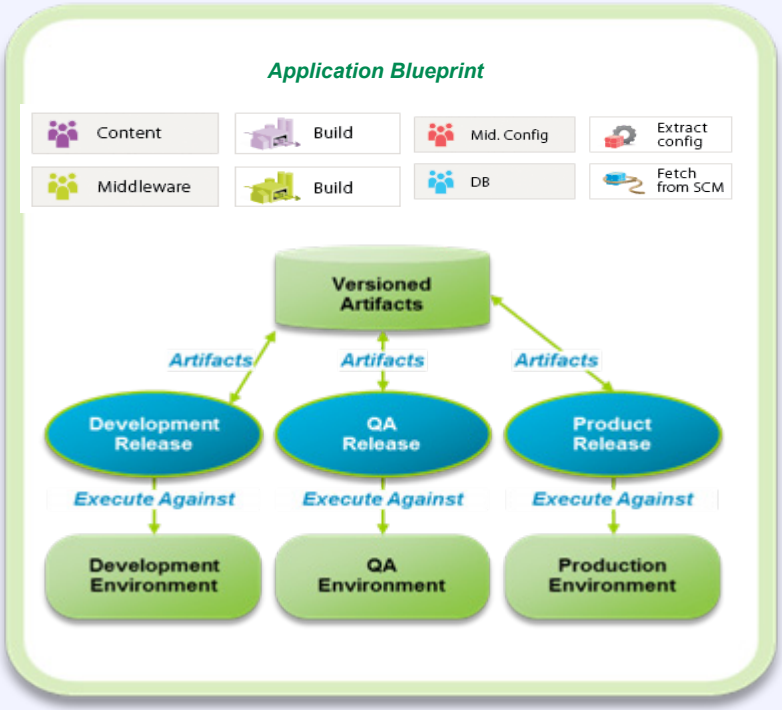
Rapid solution delivery and test provisioning

Deliver test environments in minutes



urban{code}

An **IBM** company

IBM UrbanCode Deploy
IBM UrbanCode Release
IBM SmartCloud Orchestrator
CICS Deployment Assistant
CICS Configuration Manager

Enabling you to…

- Provision consistent images for test environments, reduce rework, and speed redeploy of application changes
- Quickly deploy multiple test instances in minutes versus hours or days

New

- Support mainframes using zLinux and z/OS applications
- Orchestrate and automate the deployment and management of applications, middleware configuration, and databases

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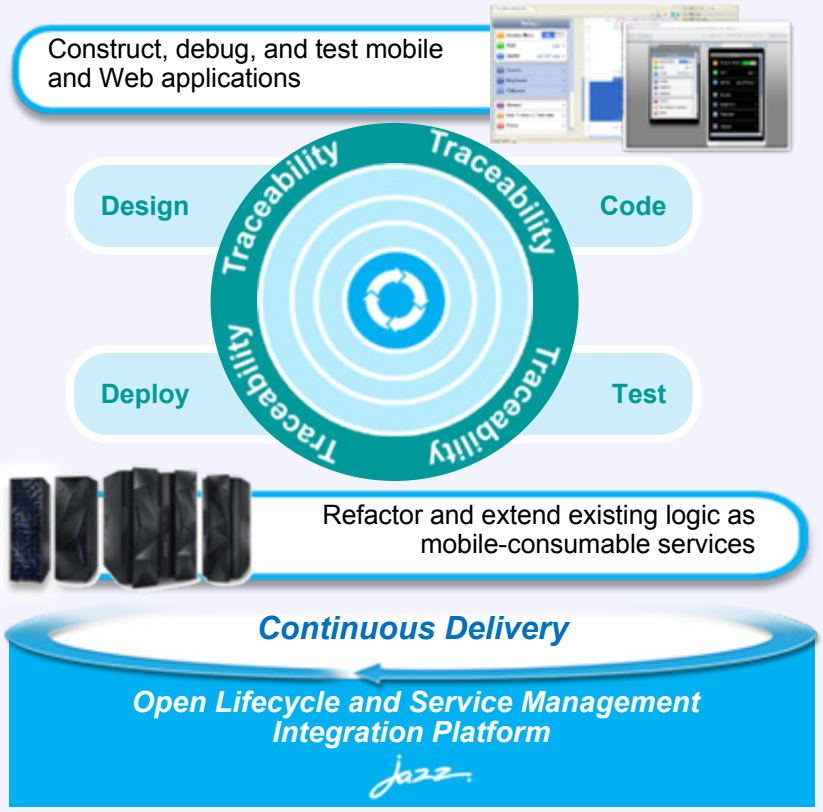
Develop and test capabilities for mobile applications

Accelerate mobile application development



IBM Worklight for MobileFirst platform
Rational Application Developer
Rational Developer for the Enterprise
CICS Interdependency Analyzer
CICS Performance Analyzer
IBM Debug Tool for z/OS
Application Performance Analyzer for z/OS

Enabling you to…

- Quickly design, code, build, test, and deploy mobile apps that run on a wide variety of mobile platforms
- Refactor and extend existing back-end services to provide an optimal mobile experience

New

- Stub out back-ends to simplify test and development

New

- Automate testing for native and hybrid mobile apps

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HALKBANK

25 years of continuous operation
On CICS®, DB2®, and System z®

DevOps

"Using Rational products for all of our cross-platform development saves time, keep our lives simple, and gives us flexibility in the application development process"

Ayhan Yalkut, System z Manager, Halkbank.

Mobile

"Mobile banking is a fast growing channel for Halkbank. As for all other channels, we run the transactions themselves on our CICS and DB2 for z/OS systems, which helps to ensure the highest levels of performance, availability and security"

Solution

IBM CICS Transaction Server
IBM CICS Interdependency Analzer for z/OS
IBM CICS Performance Analyzer
IBM CICS Transaction Gateway for z/OS
IBM Rational COBOL Runtime
IBM Rational Team Concert

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Client Successes with DevOps

laminarmedica
insulated shipping systems

Laminar Medica reduced new product development time and costs by 25%, contributing to 10% increase in competitive wins

SIBRA
Ingenieurgesellschaft für Datentechnik mbH
Germany

SIBRA GmbH keeps a vital project within budget and on time

Nationwide®
On Your Side™

Nationwide improved code quality 50%, reduced end-user downtime by 70%, and increased on-time delivery 90%

A healthcare information provider cuts deployment time down to minutes

sandhata™
we integrate your business

Sandhata increased productivity 100%, and added tens of millions in new revenue

IBM

IBM CICS development team simplifies software builds and helps support agile development, improve collaboration

Sky Bet monitors the online customer experience to increase overall revenues

招商銀行
CHINA MERCHANTS BANK

China Merchants Bank profits from a unified collaboration platform

IBM Watson team is reducing delivery cycles from 9 weeks to 3 weeks, & has achieved zero maintenance window downtime

inter
VERSICHERUNGSGRUPPE

INTER Versicherungsgruppe increases productivity in application development

AON Integramark

Aon Integramark establishes a dynamic SOA environment that automates data synchronization

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Summary

- There are challenges to delivering software-driven innovation
- Disruptive technologies are driving greater need to innovate
- DevOps is critical to your success
- IBM has first class DevOps solution and is continuing to invest and improv upon these solutions
- DevOps is just as relevant, if not more so, for the Mainframe as it is for mobile, cloud, and distributed platforms

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www.ibm.com/devops

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