

A decorative graphic in the top left corner consists of several overlapping circles of various colors (yellow, orange, red, purple, blue) that are divided into segments, resembling a stylized sunburst or a cluster of data points.

Enterprise DevOps: Trends in Continuous Software Delivery

Speaker Name and Title



A new wave of business opportunities & IT challenges



Platforms



accelerates its reporting process from 20 days to several hours and cuts reporting costs by 50 percent



Analytics, Mobile, Social, & Cloud



Customer Insight through Social Analytics increased Site revenue from product recommendations **by 70%**

Transaction Systems



Dedicated Systems
Single Database
Managed one Solution

Web, e-business and SOA



Multiple Applications
Some shared data
Post Processing in Warehouses
Batch Processing
Time to Business Action

Interconnected Solutions

Action at real time speeds
Processing occurs NOW !!!
Business impact visualized
Action taken immediately
Strategic and Tactical differentiator

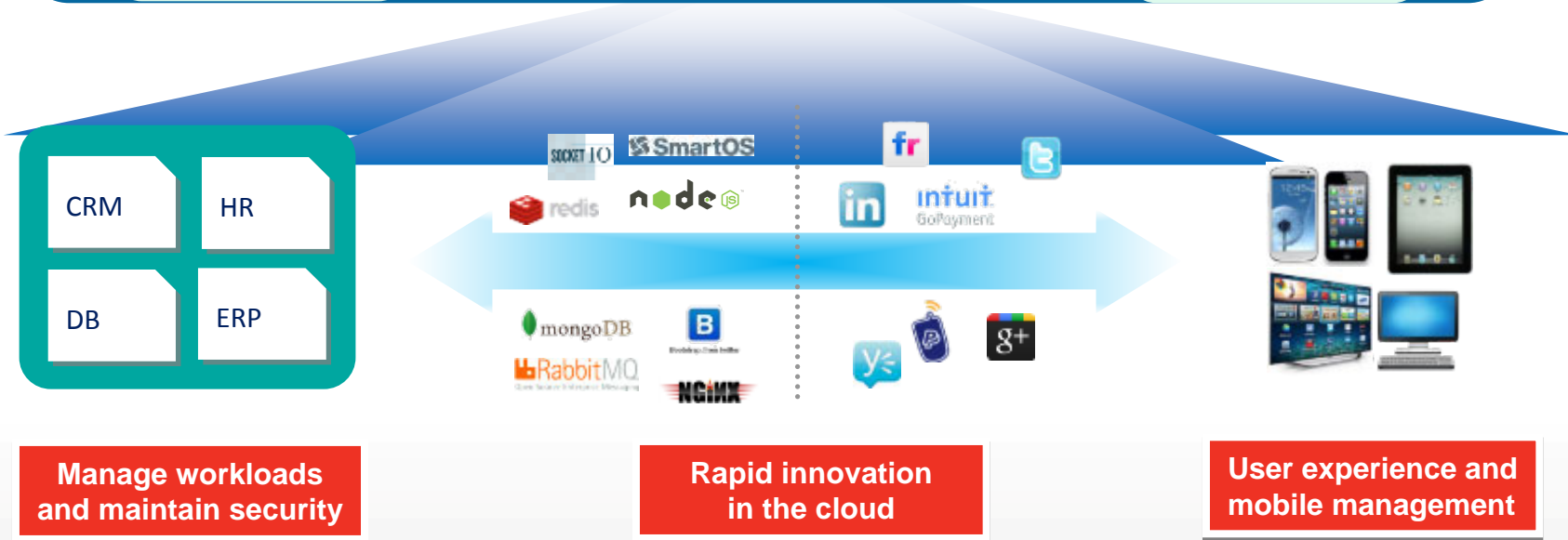
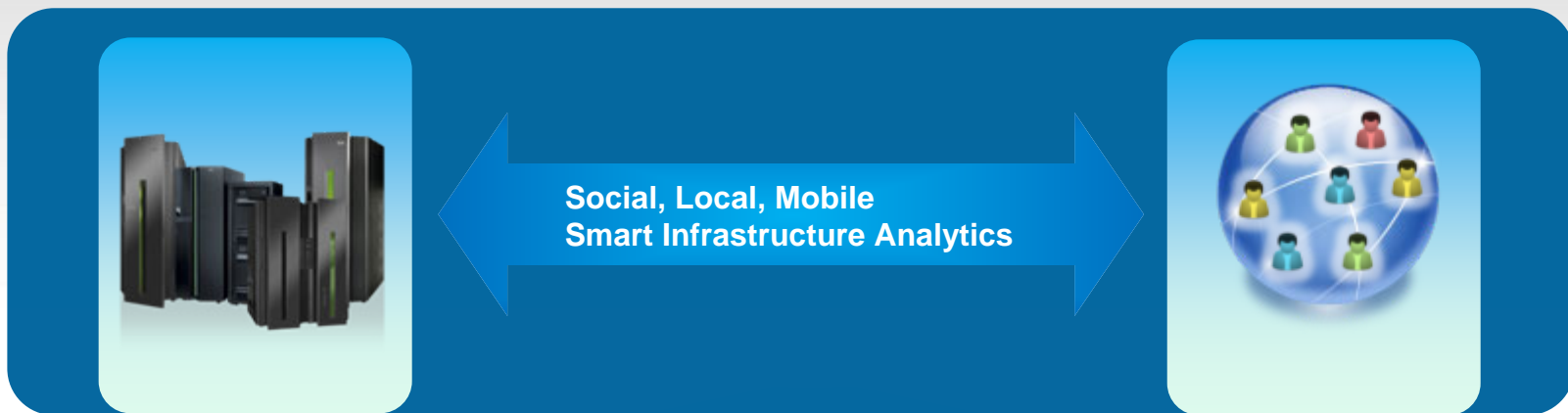
1960-

1990-

2010-

Time

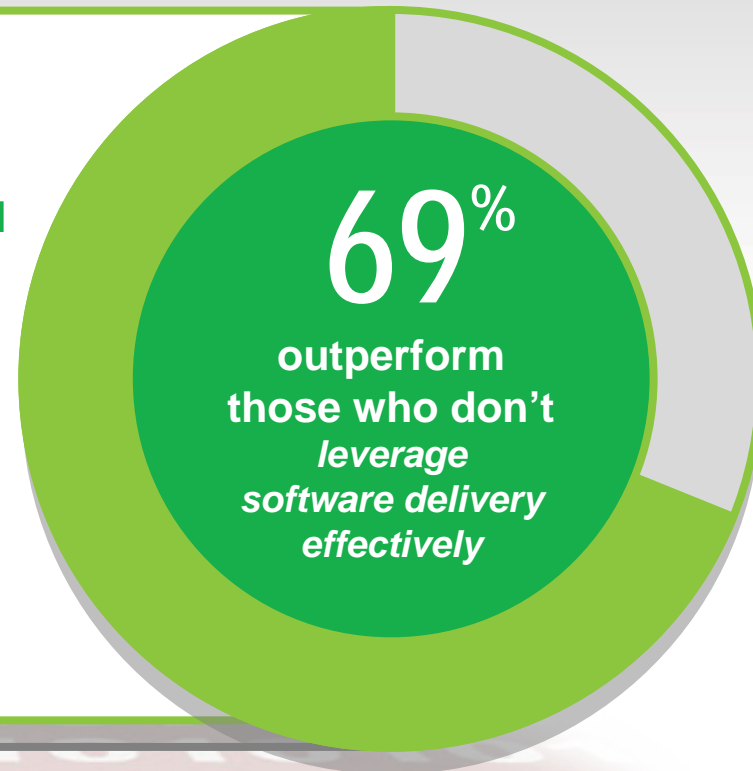
New era systems integrate existing systems of record with new client-facing systems of engagement



Software delivery is critical to success



But only...





And a lack of continuous delivery impacts the entire business



CHALLENGES

Costly, error prone manual processes and efforts to deliver software across an enterprise

Slow deployment to development and test environments leave teams **waiting and unproductive**

Upgrade risk due to managing multiple application configurations and versions across servers

Customers



Business Owners



Development/
Test



Operations/
Production



Software glitch costs major trading firm **\$440 million in 45 minutes**

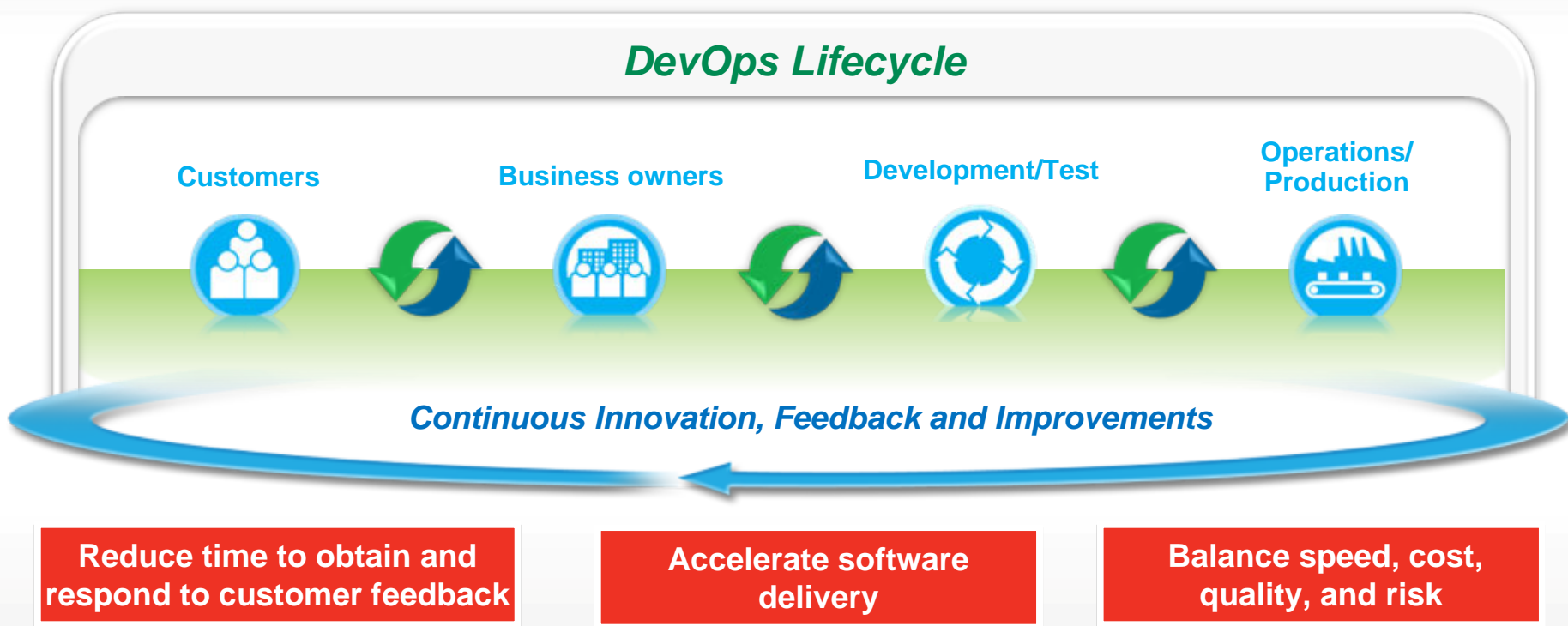
Major telecom provider paid out **\$2.7 million to 47,000 customers** overcharged after a software glitch

A bad software upgrade at a global bank left **millions unable to access money for four days**

An approach for continuous delivery of software-driven innovation

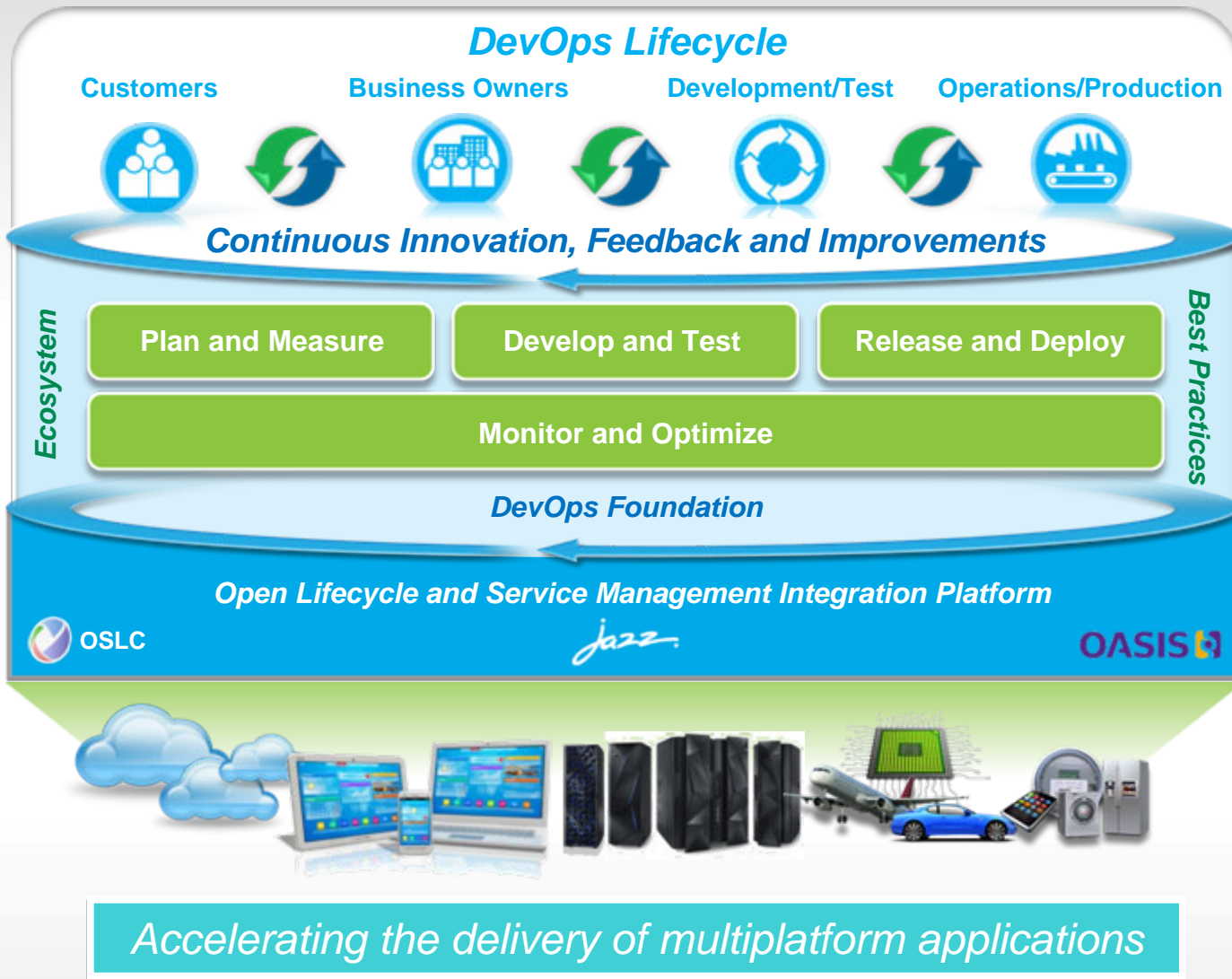
dev-ops *noun* \dev-äps\

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

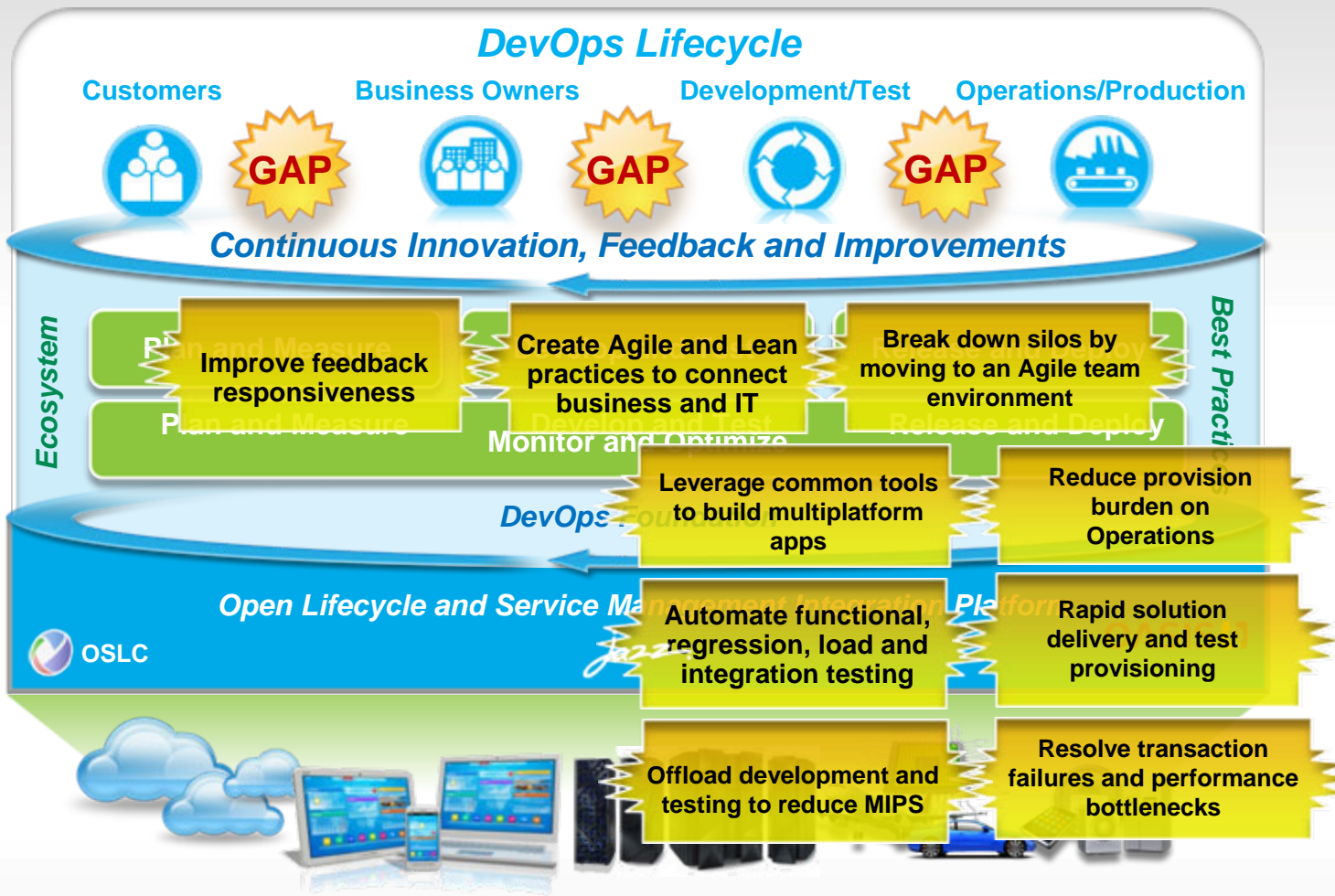




IBM DevOps solution



DevOps in a multiplatform development environment

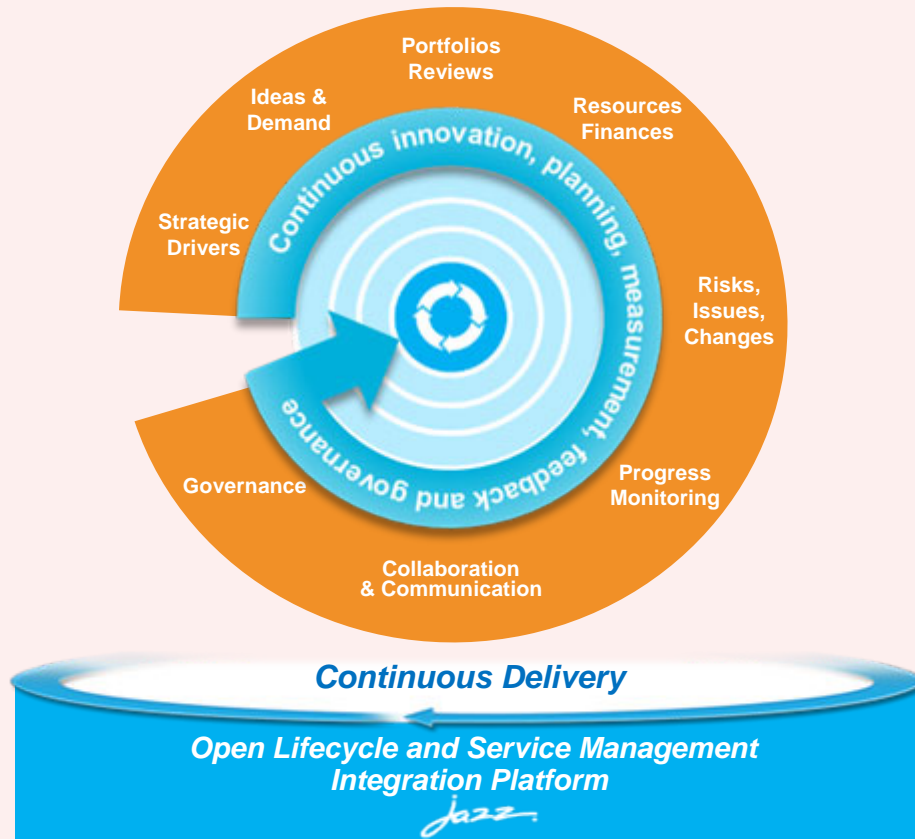


Bottlenecks in software delivery can result in long delays, unnecessary costs, and waste of resources



Create Agile and Lean practices to connect business and IT

Improve visibility and transparency



Rational Focal Point

Enabling you to...

- Better align investment decisions with value and organizational strategies and priorities
- Plan releases predictably driven by the needs of the business
- Gain control of development initiatives by improving visibility and transparency
- Provide proactive portfolio evolution and delivery governance



Leverage common tools to build multiplatform apps

Boost developer productivity



**Rational Developer for the Enterprise
IBM Worklight for MobileFirst platform**

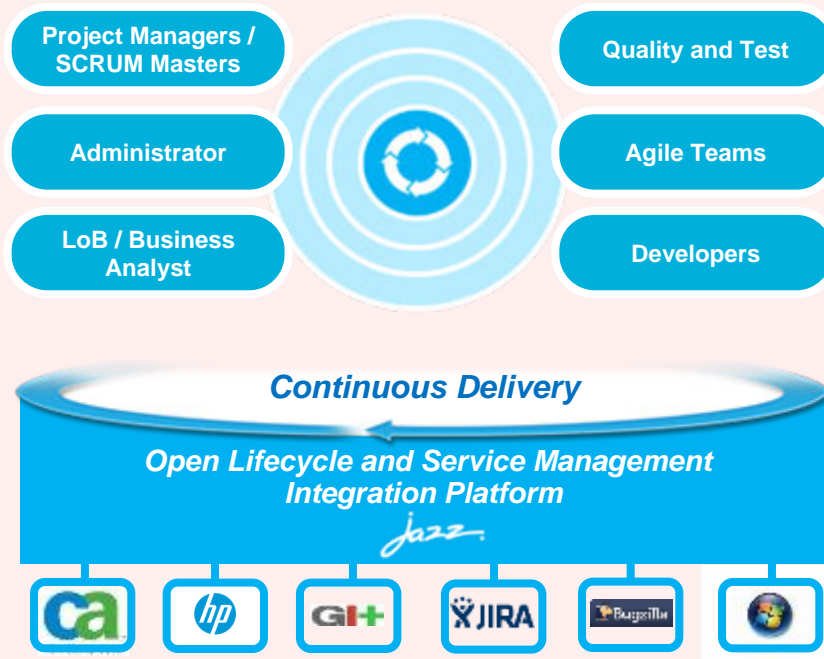
Enabling you to...

- Leverage common Eclipse-based IDEs for all types of development
- Access broad coverage of runtimes, languages, compilers, and platforms
- Access via cloud-based environments like SmartCloud Enterprise+ (SCE+)
- Create agile services from existing mainframe assets



Break down silos by moving to an Agile team environment

Maximize team productivity



Rational Team Concert
Rational Requirements Composer
Rational Quality Manager

Enabling you to...

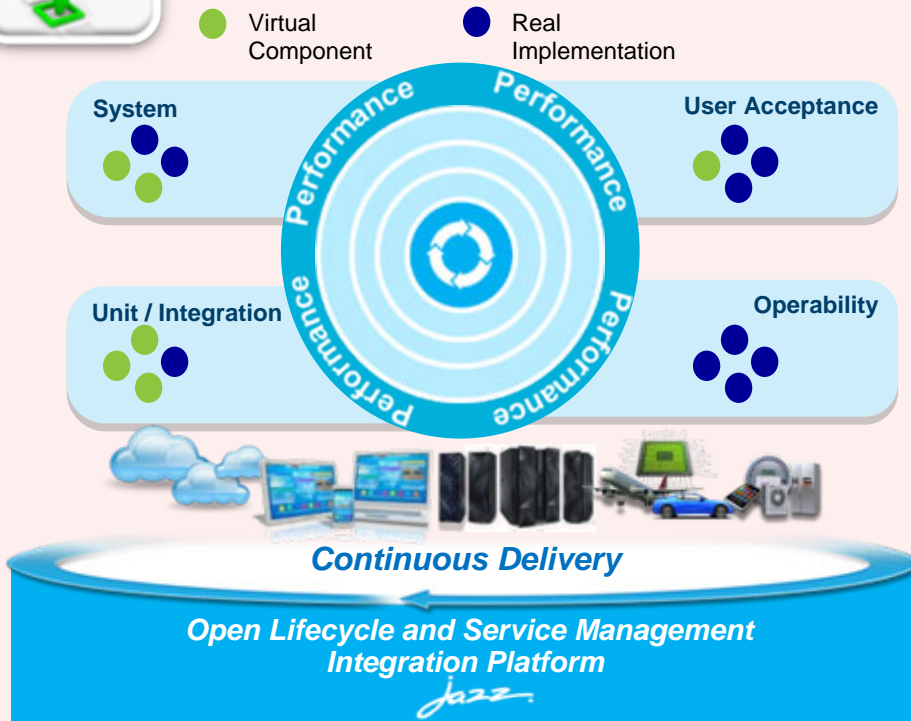
- Manage all types of source - JavaScript to COBOL
- Create work items spanning technologies and solutions
- Accelerate agile adoption on the mainframe
- Integrate existing SCMs and deployment tools, e.g. ChangeMan and Endeavor
- Use Lifecycle integration adapters for third-party tools



Automate functional, regression, load, and integration testing



Improve application quality



Rational Test Workbench
- leveraging Green Hat Technology

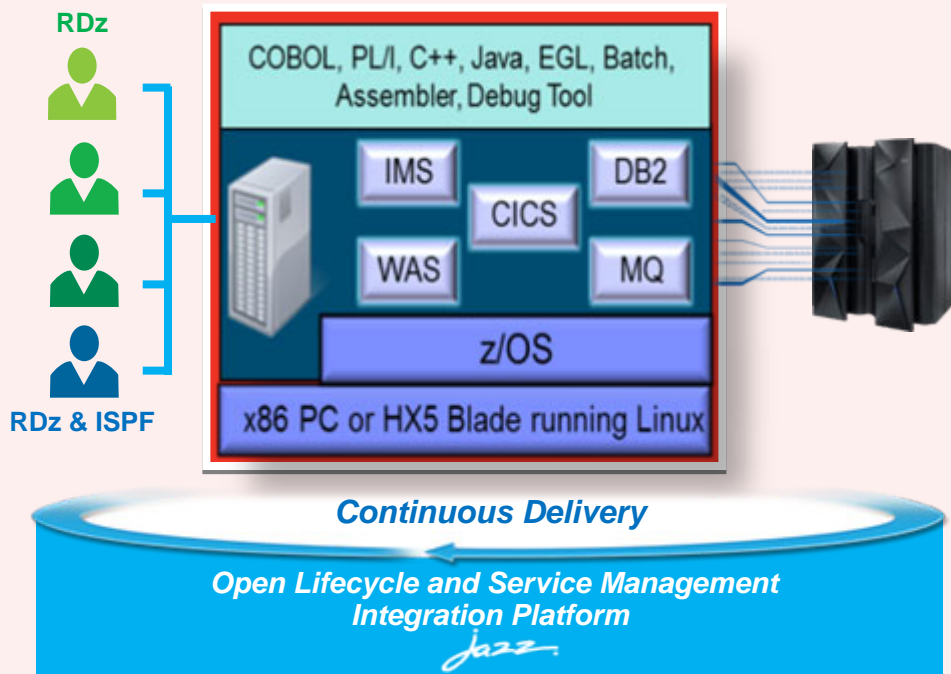
Enabling you to...

- 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



Offload development and testing to reduce MIPS

Improve development flexibility



Rational Development 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

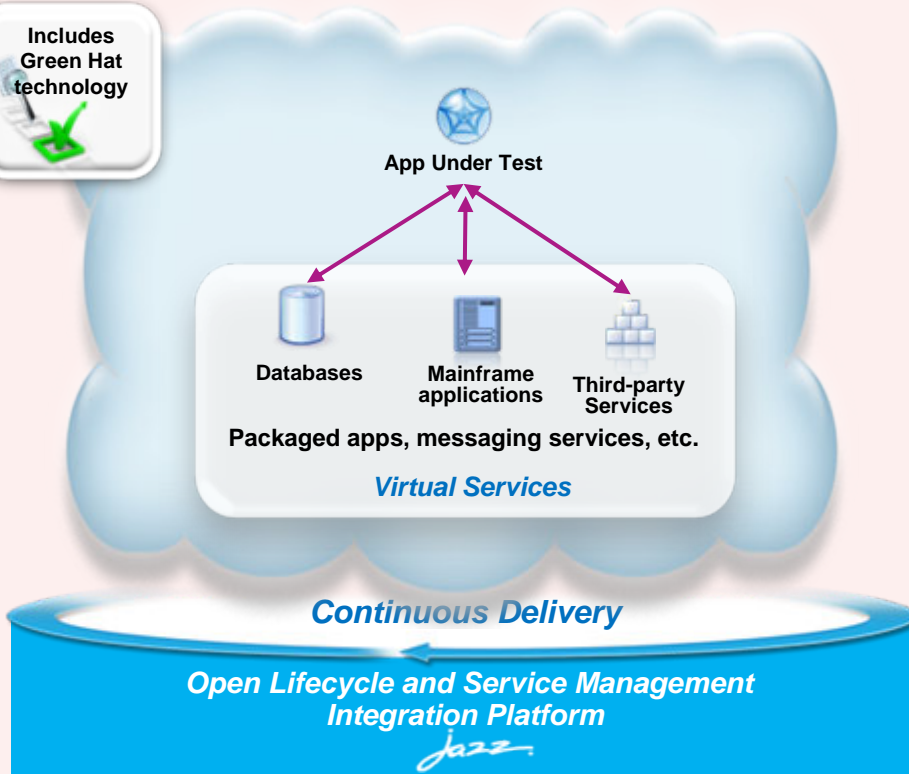
- System z Development and Test Solution



Reduce provisioning burden on Operations

Maintain test LPARs effectively

Includes
Green Hat
technology



Rational Test Virtualization Server
- leveraging Green Hat technology

Enabling you to...

- Test in isolation with 'stubbed' or 'mock' services

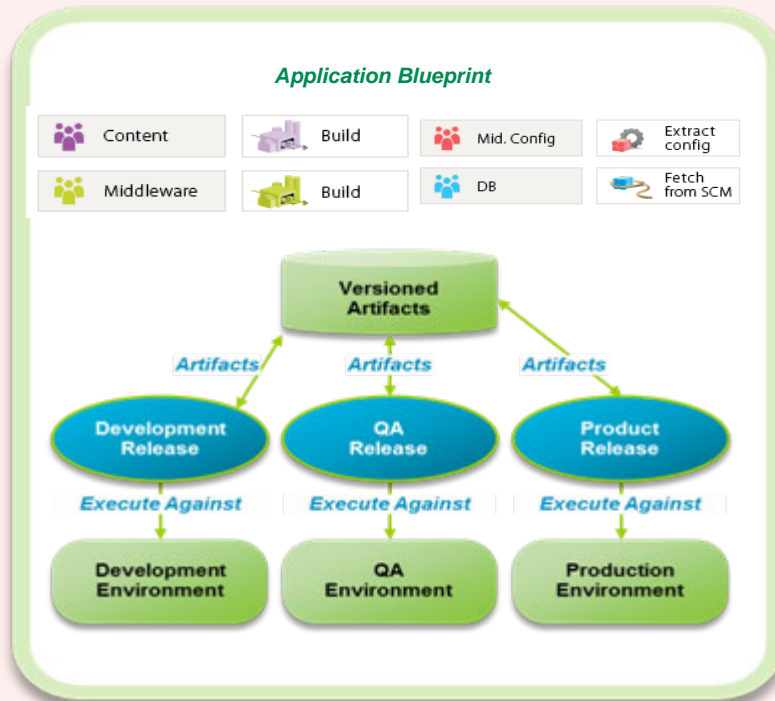
New Virtualize CICS applications inside the mainframe and Java applications in the JVM

- Reduce development dependency on operations
- Minimize subsystem dependency during testing
- Reduce infrastructure costs and free up MIPS for production use



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

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

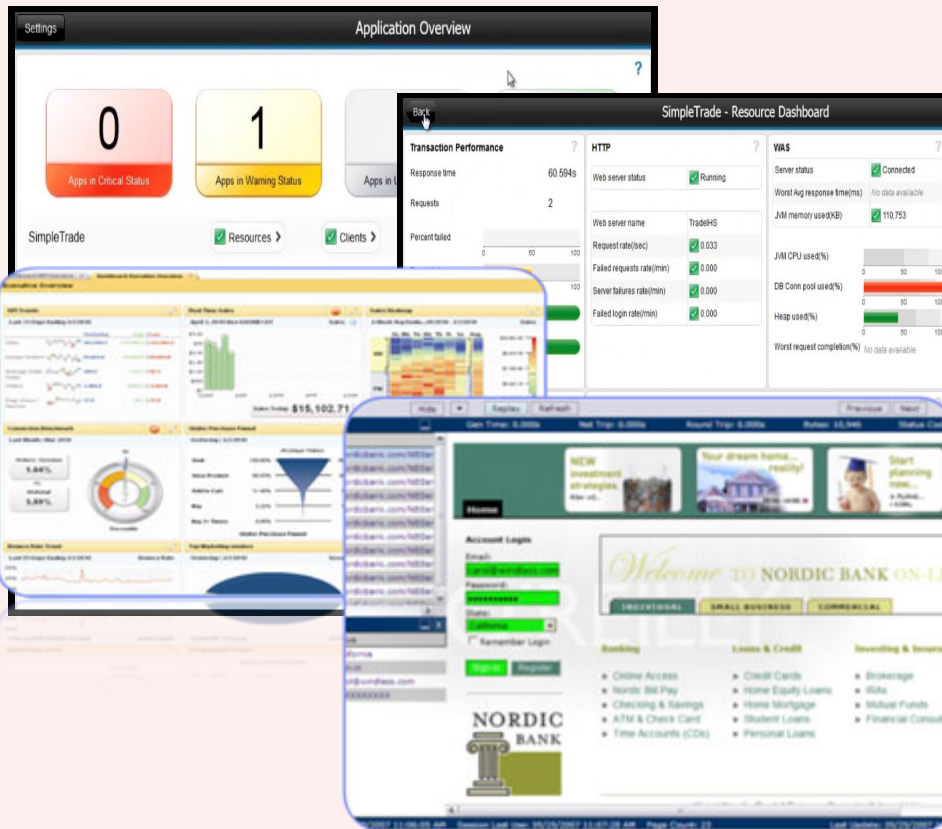
Support mainframes using zLinux and z/OS native agent for Java applications

- Orchestrate and automate the deployment and management of applications, middleware configuration, and databases



Manage and optimize application and infrastructure performance

Gain actionable insights



IBM SmartCloud Application Performance Management IBM SmartCloud Control Desk

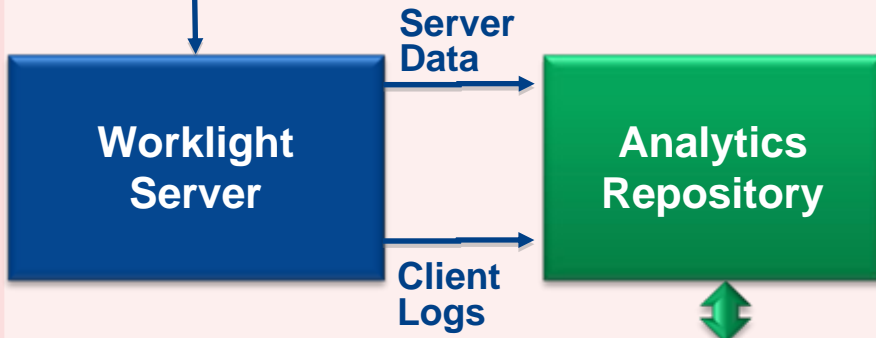
Enabling you to...

- Collaborate between development and operations with centralized incident management and tracking
- Quickly determine the root cause of critical cross-platform applications
- Easily determine application health and quickly isolate the source of any issues



Improve feedback responsiveness

Analyzing the customer experience challenges



Interact with the data



IBM Tealeaf
IBM Digital Analytics

Enabling you to...

- Increase visibility into the actual customer experience
- Quickly diagnose and resolve issues
- Easily quantify business impacts
- Perform real-time customer analytics

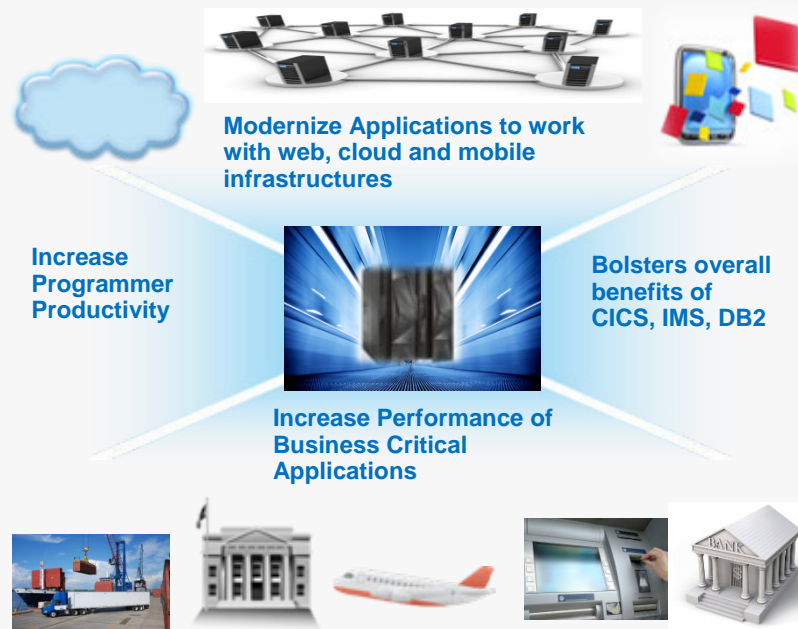


Enterprise COBOL for z/OS v5.1

The key to supercharging IBM System z Applications

- Advanced technology designed to optimize COBOL programs and fully exploit z hardware
 - Delivers greater than 10% performance improvement over Enterprise COBOL v4 for well structured, CPU-intensive batch applications on System z¹
 - Many numerically intensive programs have shown performance increases greater than 20%¹
 - Maintains compatibility with previous COBOL releases
- New programming and application modernization capabilities
 - Enables users to deliver enhancements to business critical applications quicker with less cost and lower risk
- Allows users, who implement sub-capacity tracking, to reduce administrative overhead
- Supports the ecosystem of COBOL development tools supplied by IBM and ISVs

where Tradition Meets Innovation...



"Our testing of COBOL V5 shows a significant performance improvement for math. As a financial services company with a continually narrowing batch window, that improvement is very important to us. It will help us meet our Service Level Agreements and reduce cost driven by CPU utilization."

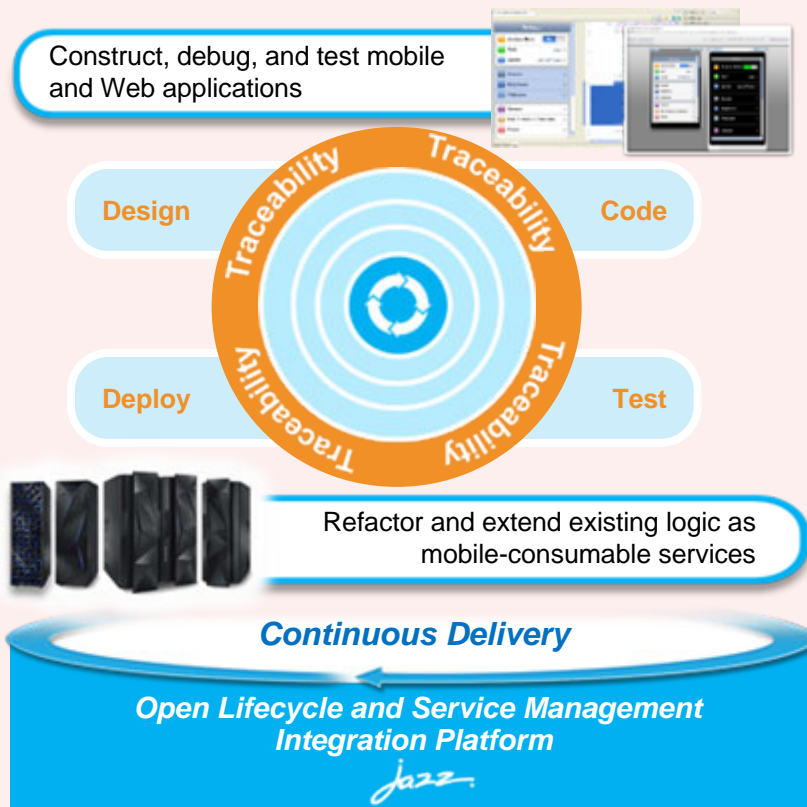
Michael A Todd, Software Architect

DEVELOPER VALUE



Develop and test capabilities for mobile applications

Accelerate mobile application development



Rational Test Workbench
IBM Worklight for MobileFirst platform
Rational Business Developer
Rational Application Developer
Rational Developer for the Enterprise

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



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 solutions and is continuing to invest and improve upon these solutions
- DevOps is just as relevant, if not more so, for System z as it is for distributed environments

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Enterprise DevOps: Trends in Continuous Software Delivery

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Useful Links

- **IBM DevOps**
 - <http://www.ibm.com/ibm/devops/us/en/>
- **IBM BlueMix, JazzHub, and DeveloperWorks**
 - <http://www.ibm.com/developerworks/labs/>
- **DevOps for Dummies book**
 - https://www14.software.ibm.com/webapp/iwm/web/signup.do?source=swg-rtl-sd-wp&S_PKG=ov18162
- **DeveloperWorks DevOps site**
 - <https://www.ibm.com/developerworks/devops/>
- **IBM SmartCloud Enterprise with Rational software**
 - http://www-935.ibm.com/services/us/en/cloud-enterprise/contracts/ibm_productimages.html
- **Collaborative Lifecycle Management**
 - <http://www.ibm.com/software/rational/alm/collaborate/>
- **Rational Focal Point**
 - <http://www.ibm.com/software/awdtools/focalpoint/>
- **IBM Solution for System z Development**
 - <http://www.ibm.com/software/rational/integrated/systemz-development/>
- **Rational Developer for the Enterprise Information:**
 - <http://www.ibm.com/software/products/us/en/dev-enterprise>
- **Our information**
 - email: hahnt@us.ibm.com, radclif@us.ibm.com,
 - LinkedIn: <http://www.linkedin.com/profile/view?id=171477>, www.linkedin.com/profile/view?id=7611285
 - Twitter: @hahntj, @RosalindRad
 - Blogs: <https://www.ibm.com/developerworks/mydeveloperworks/blogs/applicationmodernization>
 - <https://www.ibm.com/developerworks/community/blogs/multiplatformdevelopment/?lang=en>



Questions



Thank You

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