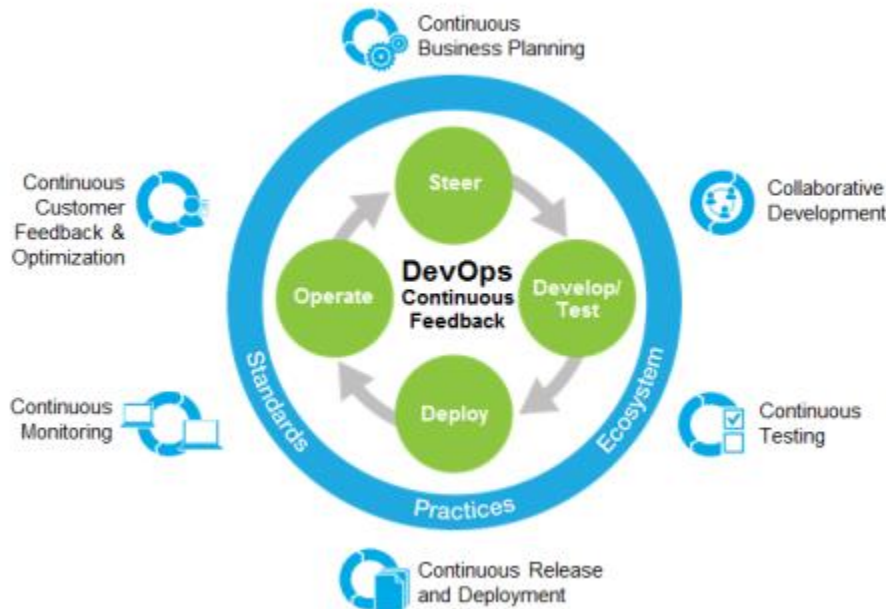


# DevOps on IBM z Systems eGuide

*Deliver at Speed. Respond at Speed. Transform for Speed.*



## Optimize and increase speed

Achieving continuous software delivery that enables you to seize market opportunities and reduce time to customer feedback

**Prioritized investments. Collaborative effort. Proven performance.**

Today's enterprise applications are complex. While they provide users with a modern interface that can fit literally into the palm of their hands, applications still need to access back-end systems and operational databases, as well as integrate with third-party application programming interfaces (APIs), to provide the business functionality customers demand.

DevOps is an approach for software delivery based on "lean" and "agile" principles, in which all stakeholders — from line of business to development, quality assurance and operations — collaborate to deliver software more efficiently based on a continuous feedback loop. Adopting DevOps capabilities and principles can result in applications that are more efficient and effective, with continuous process improvement, while helping ensure that the changes and enhancements to the software are based on real customer feedback.



Using a DevOps approach, Nationwide improved code quality by 50% and reduced system downtime by 70% – increasing their agility and responsiveness to customers.



# Balance speed of software delivery with confidence

“Delivering at the speed of business” means doing things right. To do things right, software delivery teams need to work collaboratively towards a unified goal and make adjustments based on customer feedback along the way.

## Collaborative steering products from IBM.

**Continuous business planning** brings business strategy and customer feedback into the development lifecycle using actual measured progress and customer requirements. It helps to ensure that your enterprise investment choices stay aligned with your organization’s needs. Lean principles help teams start small for identifying the outcomes and resources needed to test their business vision and value.

Continuous business planning enables you to:

- Align investment decisions with value and organizational strategies and priorities.
- Gain control of development initiatives by improving visibility and transparency.
- Provide a governance model adapted to multi-supplier sourcing structure.



## [Rational Team Concert](#)

[Download](#)

Steer team collaboration through the entire lifecycle with increased speed, visibility, agility and predictability at lower cost.

## [Rational DOORS Next Generation](#)

[Download](#)

Articulate your business requirements and collaboratively steer your team, your customers, and the business in the right direction.

## [IBM Collaborative Lifecycle Management \(CLM\)](#)

Keep your focus on your business and reduce your costs by leveraging a managed, virtual private cloud environment to deploy CLM. Let our IBM team remotely oversee, support and monitor 24x7 availability.

## Resources

[Steer on ibm.com](#)

[Continuous business planning on ibm.com](#)

[Demo: Delivery management: Connecting strategy and delivery using both Rational Focal Point and Rational Team Concert.](#)

# Increase sharing, transparency, and speed

Integrated development and test environments to improve client productivity and speed while minimizing risk

## Deliver quality software faster by streamlining development and accelerating testing.

Maintaining a competitive advantage requires the continuous innovation of ideas and the ability to translate them into products and services that bring value to your customers. Collaborative development and continuous testing support the evolution of a business idea into a high quality software solution by applying lean principles, facilitating collaboration among all stakeholders, and striking the optimal balance between quality and time to market.

By establishing a solid development and testing strategy, organizations can remove unnecessary project risk, reduce costs and ensure their teams stay productive.



**Collaborative development** Speed up and unify software development activities across diverse geographies, processes, platforms, and tools. Achieve better software quality, speed, and security at lower cost, while freeing up resources with test automation and service virtualization.

Collaborative development helps to:

- Minimize delays, quality issues and budget overruns through in-context team collaboration.
- Provide lifecycle traceability across disciplines, and real-time planning and development.
- Facilitate more frequent team integrations and automatic builds so that typical integration issues are identified and fixed earlier.

**Continuous testing** is a critical part of the handoff between development and IT operations. Successful Agile teams using DevOps practices fully integrate testing into their software development lifecycle. Continuous testing provides project teams with continuous feedback and enables them to test earlier, with greater coverage removing traditional testing bottlenecks such as unavailable test environments.

IBM's comprehensive continuous testing solution covers UI and integration [Test Automation](#), performance testing and [Service Virtualization](#), ensuring that customers can approach all of their DevOps testing challenges with confidence.

## Collaborative development and continuous testing products from IBM:

### [Rational Developer family](#)

[Download](#)

Provides rich capabilities for developing, unit testing, debugging, analyzing, modernizing, and optimizing applications.

### [Rational Team Concert](#)

[Download](#)

Provides a lean collaborative lifecycle management solution in a single integrated product supporting all popular platforms.

### [IBM DevOps Services for Bluemix](#)

Empowers teams to collaborate to rapidly develop and deploy mobile and web apps in the cloud with integrated agile planning, building, coding, and deploying with a push of a button to the IBM Bluemix cloud platform.

### [Security AppScan](#)

[Download](#)

Automates application security testing by scanning applications, identifying vulnerabilities, and generating reports with recommended fixes.

### Resources

[Develop/Test on ibm.com](#)

[Collaborative development on ibm.com](#)

[Continuous testing on ibm.com](#)

[Service virtualization on ibm.com](#)

[Test automation on ibm.com](#)

[Video: Liberate mainframe development teams with Rational Development and Test Environment for System z.](#)

[Whitepaper: Productive, Lean, modern, agile. How IBM Rational can transform your mainframe software delivery](#)

### [Rational Development and Test Environment for System z](#)

Provides an environment for mainframe application development and testing without the need for System z mainframe hardware.

### [Rational Test Workbench](#)

Enables significantly reduced test cycle times, moving integration testing earlier in the development lifecycle.

### [Rational Test Virtualization Server](#)

Accelerates the delivery of complex test environments, and enables completion of integration testing earlier and more often.

### [Rational Quality Manager](#)

[Download](#)

Provides a collaborative and customizable solution for test planning, workflow control, tracking, and metrics reporting.

### [Rational Lifecycle Integration Adapters](#)

[Download](#)

Extends the Rational application lifecycle management (ALM) solution with integrations to a number of third-party tools.

### [InfoSphere Optim Test Data Management](#)

Optimizes and automates test data management to reduce cost, accelerate application delivery, and lower risk.



# Release better software more often

Deliver software to customers — or internal users — faster and more frequently with better quality, lower cost, and reduced risk.

## Enable frequent application delivery at reduced cost and risk.

IBM Release and Deployment Solutions enable greater speed and frequency for the delivery of complex mobile, cloud, web-based and traditional applications with reduced cost and risk and increased quality. By applying release management and automation, you can reduce deployment times, streamline the deployment process, and reduce production outages.

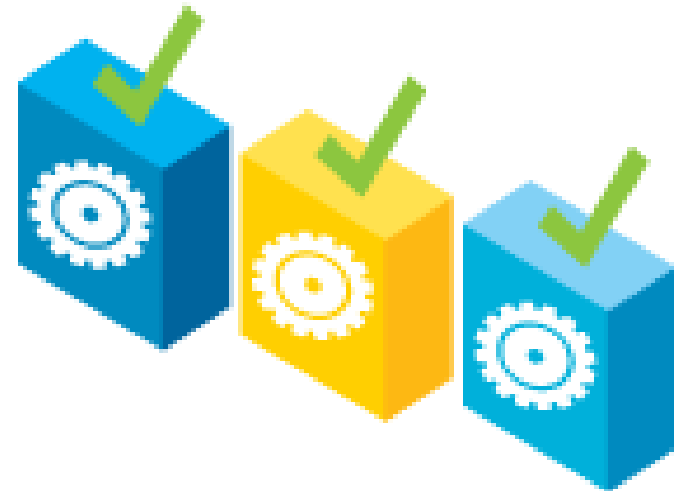
Our solutions drive down costs and reduce waste by eliminating errors and rework; speed time to market through automated, repeatable deployment processes; and reduce risk by delivering higher quality application releases with increased compliance and transparent end-to-end processes.



Fidelity Worldwide Investment releases software in hours versus days

**Continuous release and deployment** practices help organizations relieve bottlenecks for accelerated application delivery and help to decrease time to feedback. [IBM UrbanCode Release](#), and [IBM UrbanCode Deploy](#) solutions provide these capabilities, with the successful implementation of continuous release and deployment practices.

Continuous release and deployment practices help to drive down costs and reduce waste by eliminating errors and rework with an accelerated time to market using automated, transparent, repeatable deployment processes.



## Continuous release and deployment products from IBM:

### UrbanCode Release

Manage the release of complex interdependent applications, infrastructure changes, and simultaneous deployments with this release management and coordination platform. The results will be quicker releases, improved communications, and less risk associated with your releases.

### UrbanCode Deploy

Deliver as often as you like, to as many servers as needed, on demand and on schedule. UrbanCode Deploy orchestrates and automates the deployment of apps, middleware configuration, and database changes into development, test, and production environments.

### Cloud Orchestrator

Orchestrate the development, deployment and management of enterprise clouds.



*Vissensa can match the right workload to the right platform to maximize performance for diverse client environments, at an attractive price – boosting client value and Vissensa's competitive edge.*



### Resources

[Continuous release and deployment on ibm.com](#)

[Video: Multi-platform Deployment Automation with IBM UrbanCode](#)

[Demo: From BlueMix to Mainframe with IBM UrbanCode Deploy](#)

[Blog: DevOps for Enterprise Systems](#)

[Demo: SmartCloud Orchestrator overview](#)

[Video: IBM SmartCloud Orchestrator: Advancing the Cloud to Drive Innovation](#)

[Video: Driving Interoperability with IBM SmartCloud Orchestrator and OpenStack](#)



# Understand and include the customer's perspective

Continuous Monitoring, customer feedback and optimization

## Understand and accommodate the user's perspective.

Achieve higher service levels with improved visibility and continuous feedback across the software lifecycle. Gather visual evidence to understand the full context of your web or mobile users' experience, and then analyze their behavior and pinpoint their struggles so you can prioritize improvements.

Manage and optimize application and infrastructure performance in traditional IT, virtualized, cloud, and hybrid environments. Gain the visibility, control, and automation you need to manage complex and interdependent applications throughout your enterprise.



**Continuous monitoring** helps you to manage and optimize application and infrastructure performance in traditional IT, virtual, cloud and hybrid environments. This automated process helps you to gain the visibility and control you need for managing complex and interdependent applications across your enterprise.

Continuous monitoring solutions enable testers, developers and operations to:

- Receive early feedback, resulting in lower costs of errors and change.
- Help steer projects toward successful completion with better application visibility.
- Manage and optimize application and infrastructure performance in traditional IT, virtualized, cloud and hybrid environments.

## Continuous customer feedback and optimization

Is helping organizations achieve higher service levels with improved visibility and continuous feedback across the software lifecycle. Gathering visual evidence helps them to understand the full context of their web or mobile users' experience, by analyzing their behavior and pinpointing their pain points.

Continuous customer feedback and optimization solutions enable you to:

- Apply customer feedback during both pre- and post-production phases.
- Maximize the value of every customer visit, helping to ensure that more transactions are completed successfully.
- Gain immediate visibility into the sources of customer issues that may affect their behavior and impact business.



## Continuous monitoring, customer feedback and optimization products from IBM:

### [SmartCloud Application Performance Management](#)

Manage and optimize application and infrastructure performance in traditional IT, virtualized, cloud, and hybrid environments. Gain the visibility, control, and automation you need to manage complex and interdependent applications throughout your enterprise.

### [SmartCloud Monitoring - Application Insight](#)

[Download](#)

Monitor the real-time performance and availability of your app. Embed monitoring capabilities during the development process, so you can understand the users' experience once your app is deployed to the cloud.

### [SmartCloud Analytics - Log Analysis](#)

[Download](#)

Apply automated analysis to gain actionable insights, rapidly and reliably, from terabytes of unstructured data produced by infrastructure and apps.

### [SmartCloud Control Desk \(Try it in the sandbox\)](#)

Reduce costs and service disruptions with automated service management. The common control center lets you manage business processes for both digital and physical assets, is mobile-accessible, and integrates with social media and development tools.

### [Digital Analytics](#)

Gain insight by analyzing your marketing touch points across web, mobile, and social channels, and by reviewing benchmarks on comparative performers. Then go from insight to personalized marketing action with just a few clicks.

### [Tealeaf CX](#)

Capture and visualize your users' digital interactions on your web properties, so you can detect signs of struggle and correct areas of weakness.



### Resources

[Continuous monitoring on ibm.com](#)

[Continuous customer feedback and optimization on ibm.com](#)

[Demo: Troubleshooting an application](#)

[Whitepaper: Ovum Matrix: Selecting an APM solution](#)



# Experience the difference with IBM DevOps.

## Take the next step.

Explore more content at IBM developerWorks. Access the links below to try free evaluation software and learn how to apply DevOps key principles and best practices.

[Steer](#)

[Develop/Test](#)

[Deploy](#)

[Operate](#)

### Connect with the IBM DevOps Community:

[IBM DevOps Overview](#)

[IBM Enterprise Modernization Overview](#)

[DevOps with IBM z Systems](#)

[developerWorks DevOps digest](#)

[DevOps practices self assessment](#)

[DevOps for Enterprise Systems blog](#)

[Best Practices for Adopting a DevOps Approach with System z](#)

→ *Watch the video*

Sanjeev Sharma, IBM Worldwide Lead – DevOps Technical Sales, explains next steps for implementing DevOps based on your organization's needs.

**DevOps:  
Where to Start**  
by Sanjeev Sharma



### Resources

#### Popular trial software

[Rational Developer for System z](#)

[Rational Team Concert](#)

[Security AppScan](#)

[SmartCloud Analytics - Log Analysis](#)

[SmartCloud Monitoring](#)

[More trial software](#)

