

# Transforming software delivery with cloud



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### Cloud: An opportunity

The world is changing. A new reality is emerging for organizations of every size from every part of the planet. It is called *the cloud*—a profound evolution of IT with revolutionary implications for business and society, creating new possibilities and enabling more efficient, flexible and collaborative computing models. The term “cloud,” however, holds different meanings to different audiences.

Although we cannot interpret every organization’s understanding or use of cloud computing, what we can do is shine a light on how the cloud can be used to streamline and enhance the work of software developers and delivery professionals. In this paper, we will explain how the cloud and IBM can help you overcome challenges, take action to ensure security, meet goals rapidly and improve efficiency in your software delivery environment.

### Increasing pressures from many directions

The world is becoming increasingly instrumented, interconnected and intelligent. In turn, software development and delivery teams are being asked to respond to changes in the marketplace more quickly—but with fewer resources and while delivering more value.

Moreover, geographically dispersed teams are being pressured to deliver new and innovative products to the marketplace faster and faster, which makes it difficult for developers and delivery

professionals to create quality software quickly and efficiently. Developers and delivery professionals in smaller organizations must “wear multiple hats”—performing administrative duties in addition to managing an ever-expanding technology infrastructure that supports an increasing number of business responsibilities. As a result, IT staffs spend more time maintaining the technology environment and less time developing applications.

In addition, many developers, delivery professionals and IT managers are challenged with:

- Reducing the capital and operational expense of IT systems and resources
- Managing time and cost configurations
- Better managing and increasing the utilization of a sprawling IT environment caused by years of software investments
- Quickly deploying IT assets to support rapidly changing and new project needs
- Governing software best practices for corporate governance and dealing with concerns regarding regulatory and security compliance

### Rising above the challenges with new delivery models

To overcome development obstacles, developers and delivery professionals need new ways to work more efficiently. One solution is a dynamic, agile infrastructure that can respond to rapid marketplace changes and evolving business requirements. To address the needs of today’s demanding software and delivery expectations, IBM® Rational® solutions and capabilities are now available on both private and public cloud infrastructures. This capability set provides both comprehensive Application Lifecycle Management (ALM), which you can provision as a service on the cloud, and design and development environment solutions that are available as a virtual developer desktop on the cloud. These services provide you with tooling that is specifically designed to handle different workloads and development and delivery activities.

### Why Rational cloud-based solutions?

Rational cloud-based solutions can help your IT staff:

- Set up and tear down development and test environments rapidly
- Learn how to use the cloud faster
- Count on IBM support from your project launch through project completion
- Take advantage of prescriptive best practices
- Customize environments “on the fly” to meet your specific needs
- Gain peace of mind with enhanced application-level security

Based in part on the IBM Jazz™ technology platform, these cloud-based solutions can help transform software delivery by making it more collaborative, productive and transparent. Exceptionally attuned to global and distributed teams, Jazz is designed to transform how people work together to build software. You can think of the Jazz platform as an extensible framework that dynamically integrates and synchronizes people, processes and assets associated with software development and delivery projects.

For infrastructure, Rational cloud-based solutions for ALM use IBM SmartCloud Enterprise—a security-rich, dynamically provisioned and scaled run-time virtual server environment—one that is well-suited for development and test activities and other dynamic workloads. This combination of solutions and infrastructure can provide nearly everything you need to develop and test applications on the cloud while helping developers, delivery professionals, testers and IT managers enhance their capabilities. IBM SmartCloud Enterprise also integrates with

other middleware solutions from IBM to provide a comprehensive development and test environment. Rational ALM solutions can be provisioned in minutes on the IBM SmartCloud Enterprise (see Figure 1).

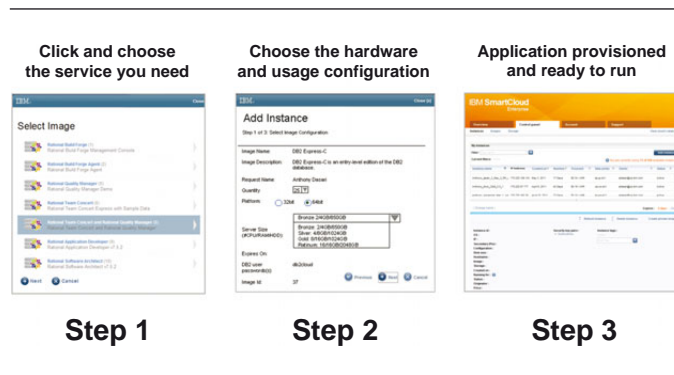


Figure 1: Provision Rational ALM solutions in minutes on the IBM SmartCloud Enterprise

You can also deploy Rational Software cloud-based solutions for ALM on private cloud infrastructures such as the IBM CloudBurst™ appliance, the IBM Smart Business Development and Test cloud or engage IBM Global Technology Services to deliver the services in a private cloud on your premises with special cloud-based enablement services.

Virtual developer desktop solutions capitalize upon the rich features of IBM Smart Business Desktop and IBM Smart Business Desktop on the IBM cloud offerings to enable cloud provisioning of Rational desktop offerings such as IBM Rational Application Developer software and IBM Rational Software Architect. IBM Smart Business Desktop cloud offerings encompass a variety of virtual environments that are designed to help you gain flexibility and customization for your team while transitioning away from an environment that is expensive, hardware-laden and nonvirtual.

With the Jazz platform at its core and the agile infrastructure provided by IBM Cloud and other cloud infrastructure options, Rational cloud-based solutions provide a number of benefits to organizations and enable solutions for the entire software delivery life cycle to be provisioned in the cloud (see Figure 2).

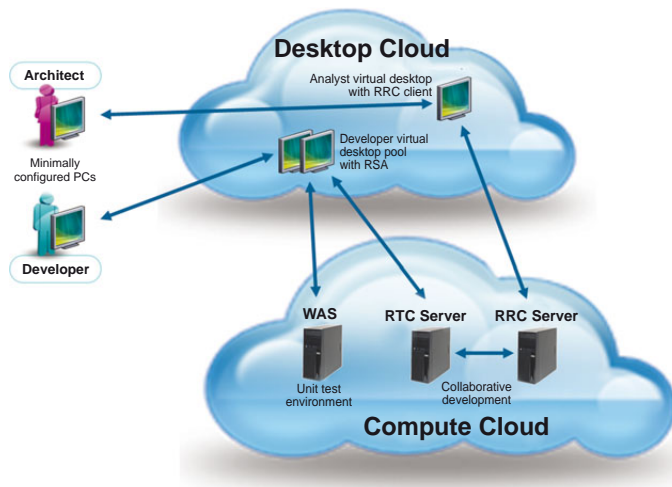


Figure 2: Provision solutions for your entire software delivery life cycle in the cloud with IBM Rational

### Lower deployment costs

Because these Rational solutions provision IBM software on the cloud only when it is needed—like a lease or rental—they can help significantly reduce software licensing costs by providing an effective way to manage license usage more effectively.

### Simplify and streamline large software deployments

Rational Software cloud-based solutions include best practices and proven methodologies to help organizations improve internal processes and the efficiency of test environments. IBM research has shown that these services can reduce IT labor costs by more than 50 percent as a result of fewer labor hours spent configuring, operating, managing and monitoring test environments.

### Improve resource utilization and flexibility

By providing scalability and on-demand provisioning, Rational Software cloud-based solutions improve server and resource utilization, thereby reducing administrative costs and labor. To boost software utilization, these services support virtualization, standardization, automation and self-service provisioning.

### Respond faster to organizational demands

Organizations can speed time-to-market for new applications and technology using Rational Software cloud-based solutions. Developers and delivery professionals can quickly acquire, install, configure and manage the environments that are needed to develop, test, pilot and deploy applications—and your professionals can then break down the environments just as quickly when they are no longer needed.

You can provision software delivery capabilities as preconfigured services in the cloud in just minutes. When running in the virtual server environment, those services can then take advantage of the elastic computing capabilities of the environment, including load testing or builds. Examples of services on the cloud include:

- Collaborative application management
- Quality management
- Test management
- Test lab management
- Requirements definition and management
- Performance measurement and management
- Delivery automation

You can also manage assets, comprehensive portfolios and web application security in less time and with less effort than traditional deployments.

## Standardizing and centralizing ALM and developer desktops

Rational Software cloud-based solutions provide a comprehensive, “instant on” collaborative environment for software and systems delivery in enterprises. Software development and delivery teams gain the benefits of an integrated collaborative ALM environment by means of self-service server provisioning. In addition, Rational cloud-based solutions dramatically reduce the upfront costs of deploying an ALM platform. Using integrated virtual images based on best practices can reduce labor, installation and configuration costs, which can ultimately lower total cost of ownership (TCO).

Rational cloud-based solutions optimize IT resource usage with virtualized builds, development and test infrastructure and dynamic resource provisioning. Organizations can enhance quality management and improve performance monitoring—actions that help to manage risk and drive better governance by means of standardized services in a centralized development and test cloud.

By selecting IBM Rational virtual developer desktop solutions, IT owners are better able to centralize delivery of desktop tools to large, globally distributed teams. This centralized delivery eliminates the need for user installation and maintenance, which can lead to reduced maintenance and installation costs. Furthermore, the ability to centrally apply patches, deliver consistent tools and capabilities and easily introduce or shut down services can lead to markedly improved IT governance. And organizations can realize a faster time-to-value with easier rollouts of role-based desktops built with the right hardware and software, and with the right profiles for enterprise compliance.

Rational cloud-based solutions offer real value differentiators—such as industry standards and best practice methodologies—that developers, delivery professionals and IT managers can use. The IBM Rational Lab Services team can help you identify and target the best workloads to deploy to the cloud and

recognize areas in which your organization will likely achieve the greatest return on investment (ROI). The IBM team can also help by providing metrics and assessments using systematic approaches to help drive greater value in software development and delivery. All of this is backed by the breadth of knowledge of IBM Global Technology Services experts, which can help you set up and manage private cloud implementations quickly.

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### Success study: Financial institutions improve software delivery with an IBM cloud solution

A group of major financial institutions was struggling to provide resources to application developers and delivery professionals to keep up with demand for improved, innovative services. Increasing costs, manual processes, limited visibility into processes and collaboration over the telephone all made it difficult to keep up with and support the needs of their organizations. Working with IBM, these institutions gained a virtual loaner program in an IBM cloud computing center. They now deploy an enterprise cloud that dynamically manages development and delivery resources and improves utilization of the infrastructure.

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## Concluding thoughts on the cloud

Although the “buzz” around cloud computing can be confusing, if you look at it as it pertains to software development and delivery workloads, the concept and benefits become clear. A cloud provides developers and delivery professionals with a centralized, standardized ALM platform that can easily scale and change to address your specific needs at virtually any point. By approaching development and delivery in a cloud environment, teams can improve software quality, reduce costs and risks, speed time to market, and free developers and delivery professionals to focus on their core competencies.

## For more information

To learn more about Rational cloud-based solutions, please contact your IBM marketing representative or IBM Business Partner, or visit the following website:

[ibm.com/software/rational/info/cloud-services](http://ibm.com/software/rational/info/cloud-services)

Additionally, financing solutions from IBM Global Financing can enable effective cash management, protection from technology obsolescence, improved total cost of ownership and return on investment. Also, our Global Asset Recovery Services help address environmental concerns with new, more energy-efficient solutions. For more information on IBM Global Financing, visit: [ibm.com/financing](http://ibm.com/financing)



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