

A unified service creation environment
To support your business objectives



Rational software

Implementing an infrastructure for fast delivery of high-quality, next-generation communications products and services.





Can you launch and take down services fast enough to survive in today's communications marketplace?

In the rapid-fire world of communications product delivery, it's difficult, if not impossible, for anyone to predict the next killer application. Just a few years ago, cutting-edge services included call forwarding, speed calling, text messaging and downloadable games. All are now mainstream services offered by most communications service providers. What is impressive as a service today will no longer be hot tomorrow, so how do you remain competitive in a world filled with similar products?

The answer begins with an effective service creation strategy that enables quality products to be more easily launched and retired. New product concepts can be brought to market, and if they are successful, customers will be attracted and retained. If new product ideas are not successful, they can be easily retired and replaced with other new products. Unfortunately, for many communications service providers, the cycle from product concept to product delivery takes too long and costs too much—often taking 12 to 18 months or more to deliver a new product to market.

Having a product delivery infrastructure that enables you to respond quickly to this pressure and to new opportunities is your best bet for long-term survival. The right infrastructure

should enable you to define, develop and deploy reliable, high-quality services—including customized, composite business services and short-term specialty and promotional services—using a scale of weeks, not months. And it should provide the ability to retire obsolete services within a matter of hours or days rather than weeks. Essentially, the right infrastructure addresses the end-to-end product delivery lifecycle, not just the development phase.

IBM Rational® software helps communications service providers and suppliers build an agile, responsive service creation environment that can provide these capabilities. The integrated products in the modular, open IBM Rational Unified Service Creation Environment solution help drive all of the activities required to manage the creation and delivery of new and enhanced next-generation service applications—across all stakeholder roles at every phase of the product delivery lifecycle. It enables a team approach, with the goal of accelerating time to market of differentiating services, lowering development and management costs and improving quality. Best of all, you can focus on solutions to meet current challenges and easily integrate additional solutions as your product delivery environment evolves.

Accelerate service creation with effective governance of distributed product delivery projects

One way to speed service creation is to aggregate generic building blocks into high-value combinational services. A typical combinational service might be a salesforce automation solution that combines such building blocks as voice conferencing, messaging, secure interactive data access and a location-based service. These building blocks can be created, sourced from partners or purchased from vendors. To enable this rapid combinational service assembly, communications service providers and suppliers are transforming their development and deployment approaches to maximize reuse of existing assets. They're also becoming more reliant on third-party application providers.

The challenge, then, is to build an infrastructure that supports a complex array of development and delivery activities, many of which are conducted in parallel by different teams in different locations and organizations. These activities can include:

- Developing services and service components in-house.
- Outsourcing development of custom services.
- Deploying and integrating commercial off-the-shelf (COTS) applications from independent software vendors (ISVs).
- Exposing and reusing existing service capabilities.
- Assembling components into composite services.





The IBM Rational Unified Service Creation Environment can help multiple service project teams—whether they are in-house or within product delivery partner organizations—to synchronize their efforts and streamline component integration and deployment. As an integral part of the IBM Rational solution, the IBM Rational Unified Process® (IBM RUP®) methodology provides best practices for delivering software products, including cross-team communication and collaboration that transcends geographic and temporal boundaries. RUP provides a collection of out-of-the-box processes that you can customize and combine with your existing processes to address a diverse set of project needs and development styles. You're free to select and deploy only the process components you need for each stage of your project, and then publish them on your company's intranet, Web site or both.

With RUP, you're able to support virtually any type of development effort—from agile and iterative projects using very light process guidance, to more formal and regulated processes. You can adapt the process to the size and distribution of the project team, to the disparate systems and complexity of the applications being developed, and to compliance requirements. The Rational Unified Process library includes processes for service-oriented architecture (SOA) development, COTS or package application assembly and IP Multimedia Subsystem (IMS) development.

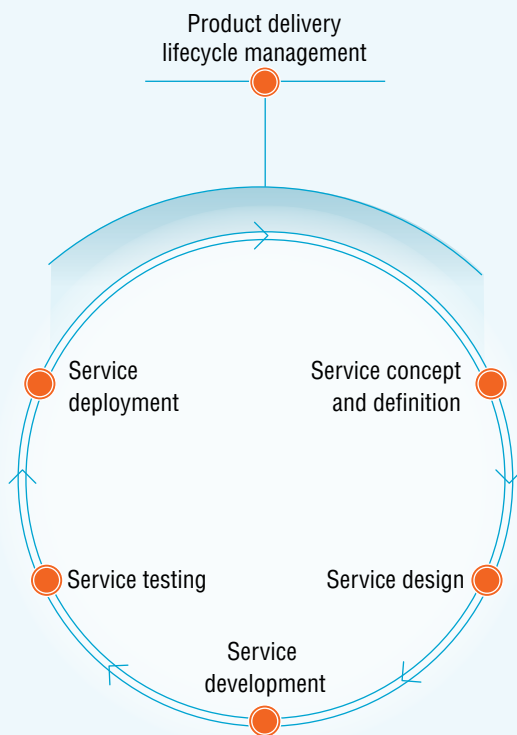
All component products in the IBM Rational Unified Service Creation Environment are designed to support RUP, helping global organizations accelerate time to market, lower costs and improve quality for their complex, next-generation services. The iterative, proven methodology provides best practices for achieving the control and efficiency that organizations need to effectively govern the business process of service creation and ensure rapid product delivery. With common metrics that provide ongoing visibility into project progress, and a consistent way to measure quality across teams, managers can unify the effort, ensuring that all components of complex, composite services stay aligned with the service architecture and interoperate effectively. And tightly integrated requirements management and change management capabilities provide product delivery lifecycle tracking and traceability to help ensure that the service each project team creates is the service that stakeholders specify.

Align and integrate key activities within every phase of the product delivery lifecycle

By supporting a lifecycle approach to service creation, the integrated IBM Rational Unified Service Creation Environment products help you align IT, line-of-business and network teams so that all can work together more efficiently and effectively.

For each new service offering, this can involve supporting and coordinating the activities of distributed teams engaged in:

- Defining requirements and designing the service.
- Developing, testing and integrating the software and systems.
- Managing changes during development and deployment.
- Managing ongoing changes.
- Optimizing the new service based on how it is received in the marketplace.



Product delivery lifecycle management

- Improve the business process of delivering new products and services to market
- Manage and control the solution architecture in the face of continuous change
- Increase flexibility through SOA

Service concept and definition

- Move from the whiteboard to common, understood priorities and requirements
- Model and analyze service options and associated business returns

Service design

- Refine the service definition to include detailed requirements aligned with *your* architecture

Service development

- Buy or build new software components
- Expose existing capabilities
- Choreograph composite services
- Integrate with Business Support Systems/Operational Support Systems (BSS/OSS)

Service testing

- Verify the performance and reliability of the service

Service deployment

- Simplify handoffs to the service deployment and management team to speed time to market
- Manage ongoing changes

IBM Rational Unified Service Creation Environment products span all phases of the product delivery lifecycle, and support every role.



Service concept and definition

The product concept typically begins with the marketing professionals who define strategies for addressing evolving marketplace demands. These marketing professionals and other business users describe the initial service concept and translate that concept into requirements that will be understandable and accessible to all team members responsible for creating a deployable service.

With an IBM Rational solution, business users can place business, functional and technology requirements into a shared repository that supplies ongoing traceability and tracking throughout the service creation lifecycle. Built-in model-based design capabilities allow analysts to visualize service options and compare the associated business returns. The analysts can also run what-if scenarios on preferred models to make decisions on functionality trade-offs. Executives and managers can use comprehensive portfolio management capabilities to evaluate the evolving project against competing projects, so that stakeholders can properly assess its alignment with business priorities and potential payback—and allocate resources accordingly.

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- IBM Rational RequisitePro®
 - IBM WebSphere Business Modeler
 - IBM Rational Portfolio Manager

eTOM/SID support



Service design

Architects are the main players within the service design phase. They specify the detailed requirements that align with the existing architecture into which the new service components will be implemented. IBM Rational design solutions include modeling tools that support the specific design requirements of communications service providers and suppliers. Prebuilt TeleManagement Forum (TMF)-specified Shared Information Data (SID) models help accelerate integration with business and operations support systems. And a domain-specific extension for Session Initiation Protocol (SIP) and converged SIP-HTTP servlets support the design of next-generation services.

With these and other IBM Rational model-based design capabilities, architects can communicate requirements in a clear, unambiguous visual form to internal and external development teams, ISVs and other stakeholders. Incorporating the industry standard Unified Modeling Language (UML), these models allow the architect to manage the solution architecture throughout the product delivery lifecycle. They also support efficient, flexible integration of composite services and components with back-end business and operational support systems.

In addition, IBM Rational design tools help architects manage a next-generation, service-oriented network infrastructure that can speed integration and minimize deployment challenges when new services are ready for prime time. Such a well-managed infrastructure helps maximize reuse and clearly specifies how to fit new components into the existing architecture.

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- IBM Rational Software Architect
 - IBM Rational Data Architect
 - IBM Rational Asset Manager

NGOSS/SID, IMS and SIP modeling

IBM Rational Unified Service Creation Environment products span all phases of the product delivery lifecycle, and support every role.



Service development

The service development phase can involve any or all of the traditional service creation activities, including service component development by in-house teams and external suppliers; integration and deployment of COTS software; exposure of existing services and enablers; and assembly of components into composite services. IBM Rational products can provide core support across the board, with visual development techniques, automated code generation and analysis, and continuous monitoring and control mechanisms.

Because IBM Rational software is built on the open source Eclipse platform, developers get a flexible and extensible integrated development environment (IDE) that accommodates a wide variety of code assets. These include tooling and products from IBM and its Business Partners for SIP, Diameter, Parlay, Parlay X, Voice XML, Business Process Execution Language (BPEL), Web services, Enterprise Java™ Beans (EJB), device development and other technologies.

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- IBM Rational Application Developer
 - IBM WebSphere Integration Developer
 - IBM WebSphere Telecom Web Services Server
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IMS, SIP, Parlay, Parlay X, Voice XML, Java APIs for Integrated Networks (JAIN), Java EE 2, Microsoft® .NET and other tooling



Service testing

Development and testing teams verify the functionality, reliability and performance of a new service during each iteration. Typically, they use automated and manual testing to assess the operation of individual components and the assembled composite service. The iterative process enables teams to pinpoint serious performance problems early on, while they are relatively inexpensive to correct and before they can slow down or abort operations in a run-time environment. Traceability to the original requirements and design models helps accelerate the correction of any defects discovered during testing. New extensions to the IBM Rational quality management platform enable the integrated testing of SIP-based applications/components within this environment.

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- IBM Rational Performance Tester
 - IBM Rational Functional Tester
 - IBM Rational Manual Tester
 - IBM Rational ClearQuest®
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SIP application testing



Service deployment

Deployment managers assume responsibility for a service once testers give it their seal of approval. Automated IBM Rational build and release capabilities can streamline and simplify the handoff process by providing distributed access to the deployment-ready service. And information sharing between service creation and service management teams helps ensure that design and development decisions take operating parameters into account. So when the service is good to go, service management teams can quickly integrate it with back-end operational support systems and speed it to launch.

With an iterative development approach, the deployment phase is an integral part of the service creation lifecycle. In a production environment, IBM automated monitoring and reporting capabilities can pinpoint areas for improvement or correction that the service creation team can quickly address to fine-tune performance and increase user satisfaction. In addition, IBM Rational automated tools can make it fast and easy to retire obsolete services and store their component parts for reuse.

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- IBM Rational Build Forge®
 - IBM Tivoli® Composite Application Manager
 - IBM Tivoli Netcool® software
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IMS and legacy service management



Overall product delivery lifecycle management

Those involved in managing a service creation effort at any level can call upon a core strength of the IBM Rational Unified Service Creation Environment: its integrated product delivery management capabilities. With IBM Rational software, internal and external stakeholders can gain top-down and bottom-up visibility into the project performance and solution architecture, including a consolidated view of existing assets that are available for reuse and their associated usage parameters. They can more effectively manage requirements and changes, bypassing the confusion that often characterizes the creation process for complex services. Managers at multiple levels and locations can ensure alignment of people, process and priorities across the product delivery lifecycle to reduce risk, project complexity and delivery time.

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- IBM Rational Method Composer with RUP for IMS
 - IBM Rational ClearCase®
 - IBM Rational ClearQuest
 - IBM Rational Portfolio Manager
 - IBM Rational Asset Manager
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Encourage innovation with an open infrastructure foundation

The short and ever-changing lifecycles of next-generation communications services put a premium on responsiveness and speed to market, while maintaining or even improving service quality. Using proprietary software and hardware that must be developed and validated in a linear fashion can slow down the delivery process and drive up costs. Open standards-based systems can streamline the entire process by enabling better utilization of your own development resources and by making it easier to reuse available assets from a larger network of suppliers, including the open source community.

The Eclipse-based IBM solution is truly open and not dependent upon any specific deployment architecture, development platform or application programming interface (API). It offers end-to-end support for composite service creation, regardless of the target run-time environment. Instead of learning individual tools for different deployment platforms, team members can leverage common skills and a familiar user interface to develop a wide range of new applications—helping your organization stay on top of its game.

Another advantage is the ability to tap into the constant innovation occurring within the Eclipse open source community. IBM Rational developers are able to seamlessly incorporate many of these advances into our product offerings, and our strong partner ecosystem is constantly supplementing and enhancing these offerings with a rich array of innovative options.



Boost quality and shorten delivery cycles with asset-based service creation

The IBM Rational Unified Service Creation Environment now includes IBM Rational Asset Manager, a new product that provides a searchable repository for both active and retired service assets. It gives organizations shared access to all reusable modular service components. Detailed identifiers describe the composition of each asset as well as compatible platforms and environments. Designers and developers can quickly locate exactly the right building blocks for reuse in new services, saving enormous amounts of programming time by leveraging service elements that have already been thoroughly reviewed and field-tested.

These detailed identifiers also enable Rational Asset Manager to maximize reuse potential for services under development by enforcing composition and environment requirements, such as standards adherence. This ability to enforce requirements not only can help you dramatically compress development and deployment schedules, it can translate into greater return on your investments in software components, application models, data, code, patterns, frameworks, templates, testing protocols, development techniques and best practices.

Furthermore, Rational Asset Manager software allows you to track and govern the use of active services by ISVs and other external providers, helping to ensure that your services are compatible with partner and third-party vendor platforms and environments. To speed changes, Rational Asset Manager integrates with IBM WebSphere® Service Registry and Repository software, so you can update every instance of an active service via a single entry.

Fit the solution to the challenge

With the Rational Unified Service Creation Environment products, you can go far beyond simply compressing service creation schedules. Through a combination of improved life-cycle management and asset-based development capabilities, the IBM Rational solution can help you streamline the entire delivery process, reduce software bugs and lower ongoing service management costs. More important, it can improve governance for higher returns on your technology investments overall. Projects are kept on track, on time and on budget, with improved progress visibility, requirements traceability, schedule predictability and management metrics.

Because the Rational Unified Service Creation Environment products are modular and based on open standards, you have full flexibility to select the scope of the solution to address your current and future development challenges. No matter where you decide to start, you can gain measurable results quickly, without sacrificing quality or the flexibility you need to scale as your environment changes.





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Find out more

To learn more about how IBM Rational software can help you build the infrastructure you need to deliver and retire high-quality services quickly and efficiently, contact your IBM representative today. Or visit us online at:

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