Build a software development infrastructure tailored to your business needs
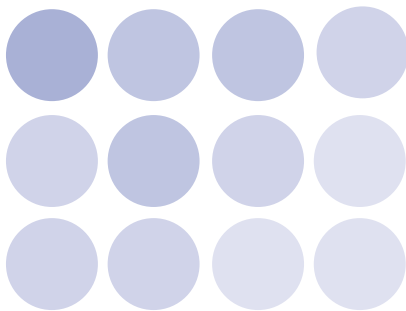
ON DEMAND BUSINESS™

Create requests for proposals tailored to your business needs

IBM defines an On Demand Business as an enterprise whose business processes—integrated end to end across the company and with key partners, suppliers and customers—can respond with flexibility and speed to any customer demand, market opportunity or threat. A crucial step toward becoming an On Demand Business is to implement a software development infrastructure that is proven, open and modular.

The right software development infrastructure can help your organization address critical technology issues, including IT transformation, product life-cycle management and regulatory compliance. It can also help you:
• Improve return on investment (ROI)
• Adopt a business-driven development approach
• Unify business, operations and development teams
• Discover, develop and deploy software assets with speed and quality

It's your business at stake. Make sure that your prospective technology vendor meets your demands. This buyer's guide explores criteria to consider as you create your request for proposal (RFP) and evaluate prospective solutions. It also shows you how the IBM Software Development Platform can help meet your organization's requirements.

A crucial step toward becoming an On Demand Business is to implement a software development infrastructure that is proven, open and modular.
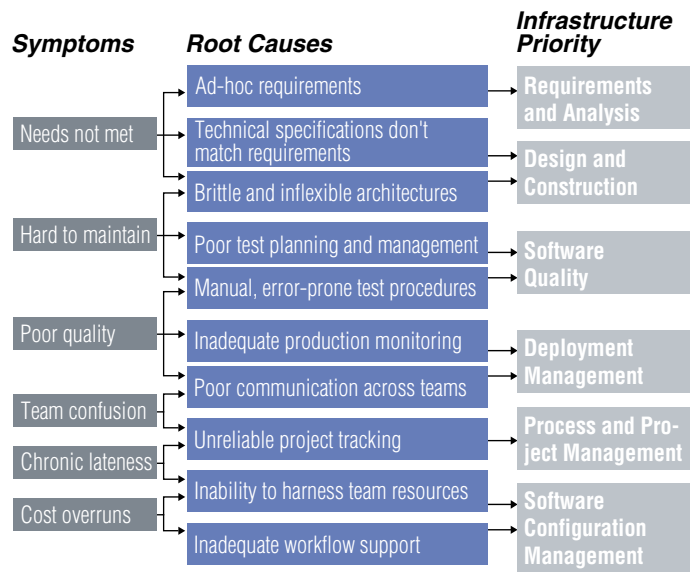
Building your modular software development environment

If you are part of a new team or organization, you may have the luxury of starting from a blank slate as you assemble your software development environment. By outfitting your team with a complete software development environment that installs, works and upgrades together, you can help reduce administrative costs and maximize productivity.

Most organizations, of course, aren't starting anew and can't afford to take a "rip and replace" approach to assembling their development infrastructure. For these teams, a more gradual approach can help resolve urgent problems while continuing to leverage existing infrastructure assets. Analyzing the root cause of persistent software development symptoms will help you better prioritize your infrastructure investments.

An infrastructure that embraces industry standards maximizes your flexibility over the long term. IBM's strategic direction for software tools is based on Eclipse, an award-winning, open source platform for the construction of powerful software development tools and rich desktop applications. Tools based on the Eclipse platform allow you to easily extend and adapt your infrastructure to meet your evolving needs.

Symptoms	Root Causes	Infrastructure Priority
Needs not met	Ad-hoc requirements / Technical specifications don't match requirements	Requirements and Analysis
Hard to maintain	Brittle and inflexible architectures	Design and Construction
	Poor test planning and management / Manual, error-prone test procedures	Software Quality
Poor quality	Inadequate production monitoring	Deployment Management
Team confusion	Poor communication across teams	
Chronic lateness	Unreliable project tracking	Process and Project Management
Cost overruns	Inability to harness team resources	Software Configuration Management
	Inadequate workflow support	

Overall software development infrastructure— sample RFP requirements

How you might describe your business goals to vendors:

- We need to reduce costs by improving both individual and team productivity.
- We want to avoid vendor, tool or technology lock-in.
- We want an environment that will support diverse languages, operating systems and deployment platforms.
- We want to adopt proven software development best practices.

REQUIREMENTS	IBM RESPONSE
Help us improve individual and team productivity to dramatically reduce costs	• Streamline tasks and automate workflow across the development life cycle • Provide role-based tools that optimize individual productivity • Efficiently focus efforts on business-driven development processes • Support service-oriented architectures, patterns and templates to reduce costs
Maximize our flexibility with an open and extensible infrastructure that supports industry standards	• Support leading standards such as Java™, XML, SOAP (Simple Object Access Protocol), Reusable Asset Specification (RAS) and Linux® • Support the industry-standard Unified Modeling Language (UML) 2.0 for specifying, visualizing and constructing software artifacts • Leverage the Eclipse open source platform
Ensure interoperability across diverse languages, operating systems, development and deployment platforms	• An industry leader at integrating distributed and heterogeneous environments • Offer modular components that allow you to leverage existing assets • Support a wide spectrum of programming languages, operating systems and cross-development environments for real-time and embedded system developers
Meet the investment, services and support criteria of a long-term software development partner	• Deliver integrated products, best practices and professional services • A 20-year history of innovation and investment in software development technology • A track record of industry and revenue leadership • Provide global sales, service and 24x7 support

Requirements and Analysis

Reduce project risk with requirements management, use case development, business modeling and data modeling

Studies show that most project failures are related to requirements and analysis shortcomings. Sound requirements and analysis practices help reduce project risk, ensure regulatory compliance, and keep your project running smoothly.

Integrating requirements and analysis with other tools in your development infrastructure saves time and avoids rework. Within the IBM Software Development Platform, requirements are integrated with defect tracking, design and development, and testing tools to jumpstart activities and accelerate results.

Building your requirements and analysis capability

For teams focused on requirements and analysis improvements, a ***requirements management*** solution, such as IBM Rational® RequisitePro® software is often the best place to begin. A requirements management solution helps teams understand and prioritize user needs, effectively scope projects and make the right trade-off decisions.

As project requirements take shape, analysts begin to transform them into a design for a new or enhanced system. Analysts use a ***software modeling*** solution, such as IBM Rational Software Modeler, to document how business processes are performed today and how they could be performed in the future. IBM modeling solutions employ the industry-standard Unified Modeling Language (UML), which provides a critical linkage between what users need (requirements), how they will interact with the proposed system (use cases) and the application components that implement these needs (application architecture).

A server-based ***business process modeling and monitoring*** solution, such as IBM WebSphere® Business Integration Modeler and Monitor, provides a robust framework for analyzing and optimizing business processes. By monitoring business processes in real time as they are performed in work environments, these solutions can analyze complex flows and uncover bottlenecks with a high degree of precision. Users can analyze the ROI of alternative scenarios and even modify business processes interactively to optimize results.

An integral part of any proposed solution is data management—understanding how data will be organized, stored and retrieved throughout the proposed solution. A ***data modeling*** solution, such as IBM Rational Rose® Data Modeler software, allows database designers to create logical and physical views of database schema so that any data access problems can be resolved before deployment.

Today, the vast majority of software projects require integration with existing systems. Thorough asset analysis is a prerequisite to legacy transformation and asset reuse. An ***asset analysis*** solution, such as IBM WebSphere Studio Asset Analyzer, helps teams document their existing systems architecture and understand the impact of a proposed change in heterogeneous environments.
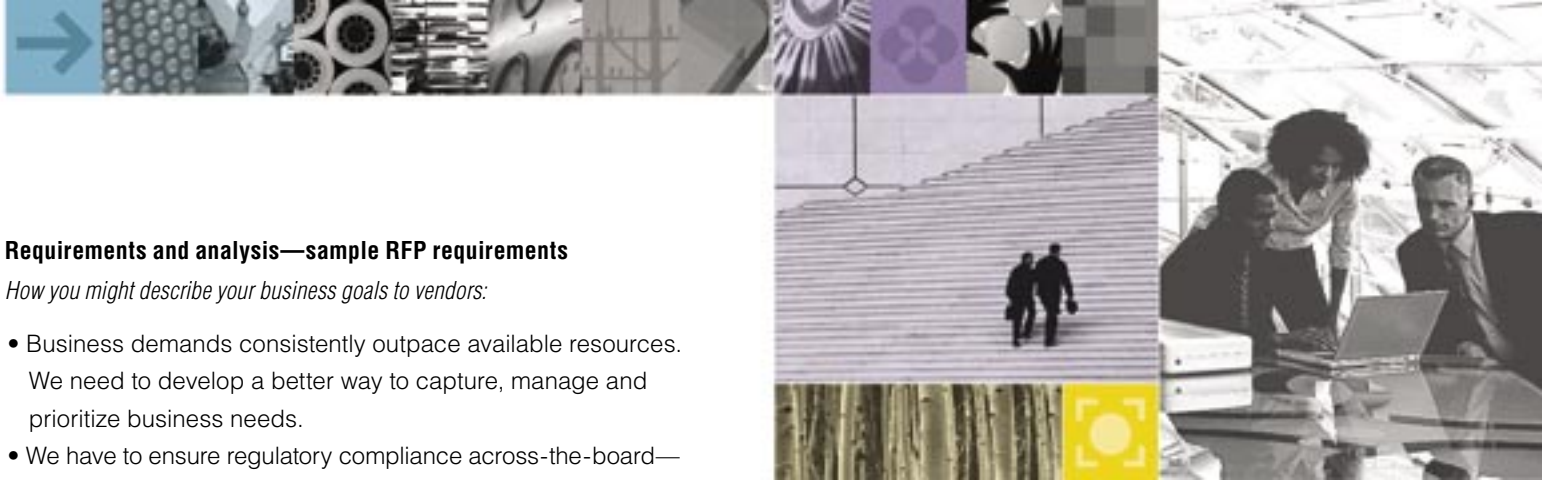
Requirements and analysis—sample RFP requirements

How you might describe your business goals to vendors:

- Business demands consistently outpace available resources. We need to develop a better way to capture, manage and prioritize business needs.
- We have to ensure regulatory compliance across-the-board—without adding more head count.
- Some of our legacy systems are poorly documented or architected. We need to find a better way to leverage and extend these systems as our enterprise architecture evolves.
- We want to reduce the cost of doing business by analyzing and optimizing our business processes.
- When a priority request comes in, we need to be able to act quickly—without destabilizing projects in process.

REQUIREMENTS	IBM RESPONSE
Team-based requirements management accessible to all stakeholders	• Provide business and technology users with a requirements management system optimized for their needs • Support a broad range of databases, with scalability to support future growth • Link requirements with architectural models, enhancement requests and test cases to drive business needs throughout project activities • Enable team members to create, view and modify requirements over the Web
Business-process modeling capabilities to help us analyze and iteratively improve business processes	• Capture business process data in real time to create an accurate picture of processes and costs • Simulate alternative scenarios to uncover weaknesses and highlight improvements • Export business process models to jumpstart application design and development
Software modeling solutions to help us design more robust components that are easier to maintain and reuse.	• Embrace UML 2.0 modeling techniques to visually explore user interactions and application architecture • Use a proven process to design components directly from use cases • Easily package, browse and import assets to enable reuse
Asset analysis capabilities to help us better analyze and utilize assets within legacy systems and packaged applications.	• Analyze the effect of a proposed software change on your enterprise information system • Understand application linkages so analysts can plan, size, schedule and trace changes to systems • Easily extract code for transformation into components or Web services

IBM requirements and analysis solutions include the following products:

IBM Rational RequisitePro

IBM Rational Software Modeler

IBM Rational Rose Data Modeler

IBM WebSphere Business Integration Modeler

IBM WebSphere Business Integration Monitor

IBM WebSphere Asset Analyzer

Design and Construction

Improve the productivity of code-centric, model-driven and rapid application development

Software architects and developers rely on design and construction tools to rapidly transform business requirements into tangible components that can be tested, validated and deployed. Design and construction products fall into two categories: Enterprise IT tools and Technical Development tools.

Enterprise IT tools enable corporate and Web developers to rapidly develop and deploy business applications to enterprise IT environments. Optimized for business extensibility and high ROI, enterprise IT tools leverage feature-rich frameworks to accelerate design through deployment.

Compelling advances in enterprise IT technologies leverage the Java language and Eclipse open source platform. Based on open standards, the Java language offers unparalleled portability across execution environments, operating systems and pervasive devices. Written in the Java language, the Eclipse open source platform is a multi-vendor supported environment for building interoperable software development tools. Tools based on the Eclipse platform, such as IBM Rational Application Developer for WebSphere Software, allow organizations to adapt and extend their development environment with custom and third-party plug-ins.

Technical development tools support teams building some of the most challenging software applications. These tools support teams building event-driven, concurrent and distributed software applications that can be deployed to multiple target environments.

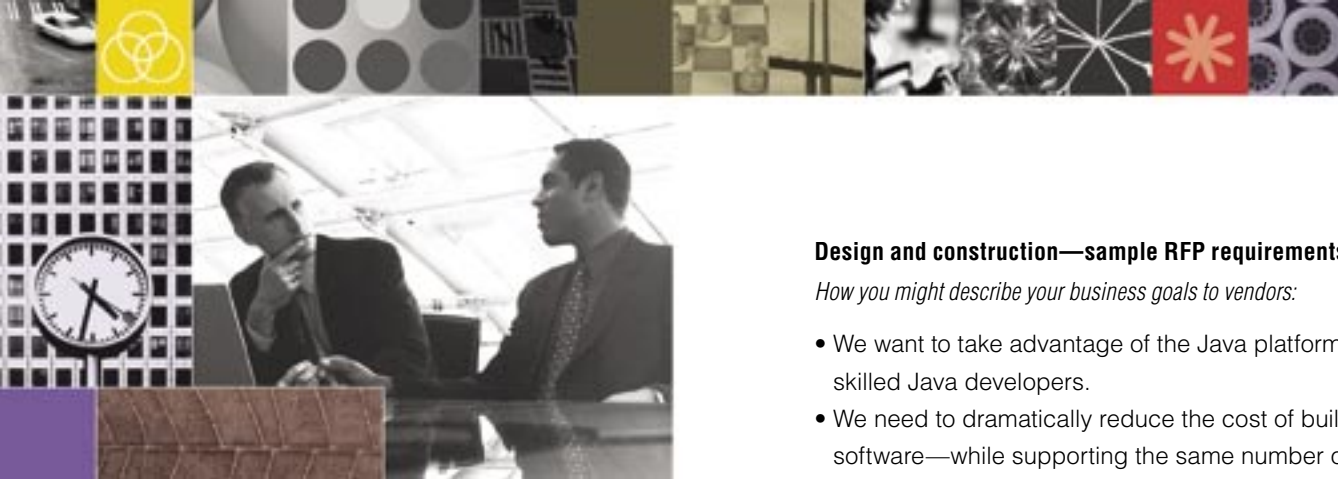**Building your design and construction capability**

The optimal enterprise IT infrastructure supports the heterogeneous development tools, languages and platforms your enterprise uses today, while providing a graduated on-ramp to newer technologies that can dramatically reduce software costs.

For enterprise IT architects and senior developers responsible for specifying and maintaining software architecture, a ***visual design and development*** tool, such as IBM Rational Software Architect, unifies the many activities required to design, validate and communicate application architectures, then quickly translate these designs into Java or C++ components.

Enterprise IT developers who build Web and business applications rely on a comprehensive ***Integrated Development Environment (IDE)*** to build and deploy software. For software developers who are new to Java or who don't need full J2EE™ programming model support, IBM Rational Web Developer for WebSphere Software combines a visual, rapid application development environment with comprehensive unit testing and debugging support. IBM Rational Application Developer for WebSphere Software provides additional features to improve the productivity of experienced Java developers building enterprise applications and Web portals. Both products are optimized for WebSphere software and provide capabilities for development on other technology platforms. IBM WebSphere Device Developer enables developers to extend business applications to wireless devices such as cell phones and PDAs.

A ***real-time and embedded development*** solution, such as IBM Rational Rose Technical Developer software, meets the unique needs of technical development teams by supporting multiple development languages, advanced runtime model execution and streamlined deployment to hundreds of cross-platform environments.

Design and construction—sample RFP requirements

How you might describe your business goals to vendors:

- We want to take advantage of the Java platform, but lack skilled Java developers.
- We need to dramatically reduce the cost of building software—while supporting the same number of projects.
- We would like to extend our applications to wireless and pervasive devices.
- We want to adopt a more rigorous approach to designing and developing software, without locking into proprietary technology.

REQUIREMENTS	IBM RESPONSE
Advanced design and construction capabilities to help architects and senior developers create well-architected applications	• Leverage an open and extensible modeling platform on both Windows® and Linux® platforms • Exploit the latest advances in UML 2 modeling language technology • Review the structure of your applications to correct potential problems • Work more productively in both code-centric and model-centric workflows • Integrate team management functions throughout the life cycle
Rapid application development support for Web, Web services developers and developers with limited Java knowledge	• Build dynamic Web user interfaces with zero coding • Write business logic using 4GL skills • Improve code quality with built-in unit test environment • Optimize deployment to WebSphere environments, while supporting multi-vendor runtimes
Rapid application development support for experienced Java developers building Web, Web services, Java, J2EE and Portal-based applications	• Rapidly build portlets using JSF or Struts frameworks, complete with customized page layout and visual themes and skins • Integrate Crystal Reports into your Web applications • Improve code quality with built-in code and runtime analysis • Protect development assets with built-in version control
Advanced support for developers who build, test, and deploy real-time and embedded applications	• Optimize the development and deployment of event-driven, concurrent and distributed applications • Provide fully automated design-to-code generation in Java, C and C++ • Enable runtime model execution, fully executable code generation and visual debugging • Automatically build drivers, stubs, test harnesses and working test scripts
The ability to extend business applications to wireless and pervasive devices	• Provide a platform for deploying high-value data services on mobile devices • Use standards-based middleware • Deploy to multiple platforms and configurations and millions of devices

IBM design and construction solutions include the following products:

IBM Rational Software Architect

IBM Rational Rose Technical Developer

*IBM Rational Web Developer for
 WebSphere Software*

*IBM Rational Application Developer
 for WebSphere Software*

IBM WebSphere Device Developer

IBM Rational Rose XDE family

IBM Rational Professional Bundle

Software Quality

Improve application functionality, reliability and performance

An organizational commitment to quality speeds development, reduces costs and allows new features to be added with greater ease. Organizations that build in quality from the beginning are able to look forward, innovate and pursue new opportunities. A mature software quality practice empowers organizations to deliver the right amount of functionality, reliability, scalability, maintainability and any other capability required to ensure success.

Building your software quality capability

To find and fix errors earlier in the development life cycle, developers are turning to a new generation of Integrated Development Environments (IDEs) with built-in unit testing and debugging capabilities. *Runtime analysis* allows developers to pinpoint memory leaks, find and fix application performance bottlenecks and visualize the execution flow of code and application threads. *Structural analysis* allows architects to detect, build and maintain an inventory of design patterns and anti-patterns in order to visualize parent/child relationships and validate the architectural integrity of components and systems. *Code review* features scan code to validate compliance with pre-specified rules, such as naming conventions or J2EE best practices. *Component test* capabilities generate unit test stubs, test data and a test harness to speed validation of Web services and Java code. All of these features are available in IBM Rational Application Developer for WebSphere Software and IBM Rational Software Architect; IBM Rational PurifyPlus™ software enables runtime analysis for users of alternative IDEs.

A *manual testing* solution, such as IBM Rational Manual Tester, reduces the impact of software change on testers and business analysts, improving the speed, breadth of coverage and reliability of manual testing efforts.

Functional testing solutions, such as IBM Rational Functional Tester and IBM Rational Robot software, increase tester efficiency by simplifying the creation, maintenance and analysis of automated functional and regression test scripts.

Performance testing solutions, such as IBM Rational Performance Tester, enable testers and performance engineers to validate system performance, determine maximum system capacity and identify and resolve performance problems.

Embedded and real-time testing solutions, such as Rational Test RealTime™ software, help teams overcome the technical challenges associated with validating real-time, event-driven and multithreaded application processes running on multiple target environments.
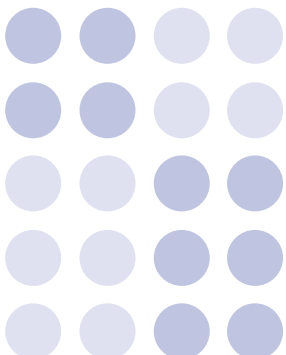
Software quality—sample RFP requirements

How you might describe your business goals to vendors:

- We need to solve quality problems before they affect business performance.
- We need to improve code quality from the beginning— without adding more development resources.
- We want to improve coordination across our distributed test and development teams.
- Our test activities are ad hoc and haphazard. We need to improve coverage and reuse assets.
- We need to improve the responsiveness of our Web-based applications in multiple load scenarios.

REQUIREMENTS	IBM RESPONSE
Comprehensive developer testing and debug optimization capabilities	• Empower developers to detect memory leaks, profile application performance, visualize execution flows and analyze code coverage • Enable data collection and test execution on both local and remote machines, including multiple operating systems, such as Windows, Linux and UNIX • Analyze code to validate against industry and corporate best practices
Functional testing support for practitioners of all skill levels	• Record test scripts resilient to user interface changes • Customize tests using choice of Java or VB.NET • Automate process for enabling data-driven testing • Provide built-in test script versioning • Test application configurations across multiple test lab machines
Performance testing capabilities to validate performance and determine system capacity	• Provide code-free test for the novice/ customization options for the expert • Support large, multi-user tests with custom code insertion, automated data correlation and data generation • Simplify user profiling and test definition • Provide real-time reporting with server resource data correlation
Management of manual testing activities in distributed team environments	• Clearly define test steps with rich test editor • Reduce maintenance costs by sharing test step blocks across tests • Customize to fit personal team vocabulary and processes • Import from multiple preexisting manual test sources
Comprehensive support for testing real-time and embedded software	• Automate test creation, execution and analysis for C/C++, Java and Ada • Pinpoint memory leaks and performance bottlenecks, measure code coverage and visualize execution flow • Execute tests on and collect data directly from the embedded target

IBM software quality solutions include the following products:

IBM Rational PurifyPlus	*IBM Workload Simulator*	*IBM Rational Test RealTime*
IBM Rational Functional Tester family	*IBM Rational Manual Tester*	*IBM Rational Software Architect*
IBM Rational Performance Tester	*IBM Rational Robot*	*IBM Rational Application Developer for WebSphere Software*

9

Deployment Management

Provision, configure, tune and troubleshoot applications

Deployment management solutions provide a managed approach to planning and executing migrations to your production environment. This eases the implementation of coordinated changes to business processes and systems, and helps ensure optimal performance and availability.

Today's complex operating environments, often combining packaged applications, in-house applications, and partner and supplier integrations, typically access multiple tiers of server, network and database resources. While component-based and service-oriented architectures enhance software reuse, they also exponentially increase the number of points of potential failure. As a result, even systems that have been thoroughly tested in the lab can fail to meet user needs in production environments. All too often, business performance suffers as cross-functional teams struggle to find and fix the root cause of the problem.

A closed-loop development cycle provides development, operations and network management teams with a consistent set of correlated data that pinpoints application problems and facilitates their rapid repair and redeployment. By replacing subjective finger-pointing with objective information, the closed-loop development cycle enhances cross-functional communications and improves the quality and availability of deployed applications.

Building your deployment management capability

The ideal deployment management solution maximizes production uptime by supporting a closed-loop development cycle spanning development and operations teams. It should also work with existing operating systems, servers, middleware, development tools, storage and networking devices.

A *heterogeneous monitoring* solution automatically monitors applications and essential system resources across your multiplatform environment to detect potential problems and automate recovery from critical situations. For example, IBM Tivoli® Monitoring for Transaction Performance monitors transactions across multiple tiers in your architecture and can pinpoint exactly where a bottleneck is occurring.

A *server-specific monitoring* tool can provide more detailed analysis by leveraging in-depth knowledge of internal server operations. IBM WebSphere Studio Application Monitor provides detailed, in-depth performance and resource consumption analysis of enterprise applications running on the WebSphere Application Server platform. IBM WebSphere Workload Simulator emulates virtual user traffic flow for accurate load analysis.

Configuration management products, such as IBM Tivoli Configuration Manager, track hardware and software configurations to automate inventory management and verify that users are using approved system configurations.

A *provisioning management* solution, such as IBM Tivoli Provisioning Manager, automates time-consuming and error-prone provisioning and configuration of servers, operating systems, middleware, applications and network devices. Integration with software asset management and test management tools enables the development team to accurately provision the test lab with the latest build, along with the appropriate set of test assets to run manual, functional and load tests.

Deployment management—sample RFP requirements

How you might describe your business goals to vendors:

- We want to help our IT staff anticipate and prevent problems.
- We want to minimize labor costs associated with manual provisioning and inventory management activities. Our IT staff should spend as little time as possible on administrative processes.
- We want to automate the provisioning of the test lab to help ensure that all systems are running the right versions of software required for testing.
- When IT systems don't perform as expected, we need to pinpoint and resolve the problem as quickly as possible to minimize business impact.

> *Deployment management solutions provide a managed approach to planning and executing migrations to your production environment.*

REQUIREMENTS	IBM RESPONSE
Advanced monitoring capabilities that help us anticipate potential problems and diagnose problems	• Provide a centralized view of heterogeneous environments • Monitor essential system resources and detect bottlenecks and potential problems • Automatically recover from critical situations, such as system crashes • Recognize and automate the repair of transaction performance problems
Central management and reporting of configuration activities	• Automatically identify the hardware and software in your environment • Manage distributed servers, host servers, workstations and mobile clients • Remotely deploy, update, track and manage IT assets • Provide customizable reporting and charting
Centralized provisioning of a complete application environment	• Automate the provisioning of a complete operating environment, including operating systems, servers, middleware, applications, power supplies, storage and networking devices • Capture best practices with a graphical interface for creating and editing workflows • Use your existing hardware, software and network devices
The flexibility to manage heterogeneous environments and scale to support future growth	• Manage a heterogeneous environment with one solution • Scale to enterprise computing environments • Choose your database for storing inventory, event and software distribution data • Minimize network bandwidth with compression and checkpoint/restart capabilities

IBM deployment management solutions include the following products:

IBM Tivoli Monitoring

IBM Tivoli Configuration Manager

IBM Tivoli Provisioning

IBM WebSphere Studio Application Monitor

IBM WebSphere Studio Workload Simulator

Process and Project Management
Plan, manage and measure development projects

When software projects go astray, it's typically not because any one individual or discipline is dysfunctional, but because the entire team is disconnected or misaligned. Process and project management tools provide the guidance and unifying tools that can help your team plan, manage and deliver projects with greater predictability.

The foundation of any development practice is a well-understood software development process. Over many years, IBM has been privileged to work with many of the world's leading software development teams on thousands of software projects. Lessons learned from our collective experience have been harvested in the IBM Rational Unified Process® framework, a flexible process framework that can be customized to team- and technology-specific needs.

The best process is one that is a natural extension of your team's workflow. A team platform such as the IBM Rational Team Unifying Platform™ provides teams with a complete team environment for automating and integrating best practices into their daily activities. It also allows teams to track and measure project progress based on actual artifacts instead of subjective opinions.

Building your process and project management capability
A flexible *process platform*, such as the Rational Unified Process, delivers a flexible process framework for defining, delivering and adopting software development best practices. When considering process frameworks, you should choose one that has been field-tested on a wide variety of projects, including enterprise, small, distributed and Web-based projects. The ideal process platform will enable project managers to easily create customized versions tailored for specific tools, technologies or domains. A process with context-sensitive delivery eases adoption by practitioners by allowing them to focus on process guidance relevant to the task they are doing.

A comprehensive *team platform*, such as the IBM Rational Team Unifying Platform, is designed to equip your team with the infrastructure tools, processes and integrations they need to work together more effectively. A comprehensive solution will include integrated support for process guidance, requirements management, software asset management, defect and change tracking, test management and common reporting. By automatically collecting and correlating data gathered from multiple development tools, a team platform can provide managers and team members with accurate, up-to-date status of evolving projects.
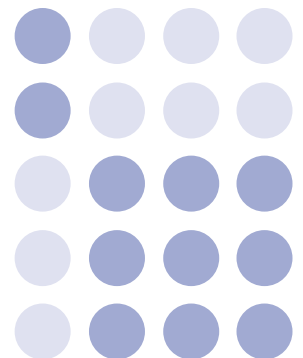
Process and project management—sample RFP requirements

How you might describe your business goals to vendors:

- We need to clearly define the "rules of the road" for our development projects, so that everyone understands their roles and responsibilities.
- We support all sorts of project teams—big, small, formal, informal and distributed. We want to make sure our process doesn't become "shelfware" by making it relevant to developers' specific needs.
- Our estimates of project progress are little more than guesses. We need to more accurately measure true project status.
- We need to improve team performance by automating and accelerating team workflow.
- We need to get new team members up and running more quickly by providing them with tools, guidance and project artifacts they need.

REQUIREMENTS	IBM RESPONSE
A flexible process platform that can be customized to project- and practitioner needs	• Provide a software development process platform that delivers proven best practices and a configurable architecture • Select only the process components you need for each stage of your project • Exchange best practices with peers and industry leaders in an online community
A common team infrastructure that automates and accelerates software development	• Unify your team by providing common access to development assets, communication alerts and workflow processes • Integrate solutions for software asset management, change and defect tracking, test management and reporting • Enable requirements traceability from analysis to testing • Dynamically generate a project Web site and metrics dashboard with data automatically collected from the development environment • Simplify provisioning and license management across the team
Accurate project metrics and reporting	• Provide a single site for team members to access project information • Aggregate information from multiple development tools—including visual modeling, requirements management and testing tools • Integrate with project management tools such as Microsoft Project • Provide dashboard reporting so you can easily monitor trends throughout your project life cycle

IBM process and project management solutions include the following products:

IBM Rational Unified Process　　　　　　　　　　*(includes: IBM Rational RequisitePro, IBM Rational ProjectConsole, IBM Rational ClearCase LT,*
IBM Rational Team Unifying Platform　　　　　　　*IBM Rational ClearQuest, IBM Rational TestManager, IBM Rational SoDA, IBM Rational Unified Process)*

Software Configuration Management

Manage change and complexity with asset management, change tracking and workflow management

Software configuration management products give you the power and flexibility to effectively manage change across your software life cycle. They help you manage changes to software development assets, prioritize and track defects and change requests, and work more collaboratively in team-based environments.

Software configuration management tools fall into two categories. Software asset management tools provide information on changes made, when they were made and by whom. Defect and change tracking tools identify why a change was needed, who requested it and how close it is to being resolved. When used together, these products deliver a complete solution by relating software changes to the request that triggered the change.

A key distinction in software configuration management products is whether they manage change at the asset or activity level. An asset-based approach organizes information at the file level, enabling quick answers to questions such as "What changes were made to file X?" An activity-based approach associates a set of versioned assets with named activities, such as "ISO 9000 compliance". This enables fast answers to questions such as, "What changes need to be migrated to Release B in order to ensure ISO 9000 compliance?" Supporting both approaches provides the greatest insight and clarity into evolving software systems.

Software configuration management products give you the power and flexibility to effectively manage change across your software life cycle.

Building your change management capability

Change Management products deliver a comprehensive solution for collaborative team environments. Where you should start depends on the functionality most critical to your team.

Teams whose most pressing and urgent problems are associated with managing hundreds or thousands of change requests—across multiple projects, versions and platforms—should start with a ***defect and change tracking*** solution, such as IBM Rational ClearQuest® software.

Teams that are challenged by inadequate team coordination, an inability to speed projects through development or inadequate asset security should consider a ***software asset management*** solution, such as IBM Rational ClearCase® software. A comprehensive solution will help your team organize software assets, manage multiple workspaces and tasks, pursue multiple development streams in parallel, reproduce specific releases from the past and enforce site-specific policies.

Software configuration management—sample RFP requirements

How you might describe your business goals to vendors:

- We need to improve the predictability and quality of our software across the board.
- We need to better support project teams that combine on-site, remote, full-time, part-time and/or "virtual" team members.
- We need to protect ourselves from the possibility of a man-made or natural disaster by ensuring that our assets are secure and reproducible.
- We have a poor track record for on-time delivery due to lengthy code freezes and difficult code integrations.
- We need the ability to audit our software process and assets to know who changed what when.

REQUIREMENTS	IBM RESPONSE
Comprehensive version control to ensure the security and integrity of software assets	• Provide version-control for all file system objects, including source code, visual models, binaries, Web artifacts and test suites • Automatically track directory name changes, moves and deletes • Enable parallel development with advanced diff/merge capabilities
Efficient workspace management that provides consistent access to work environments	• Provide rich functionality from your Integrated Development Environment (IDE) • Enable "dynamic views" with transparent access to file versions • Support flexible "snapshot views" for quick and easy remote and disconnected access • Generate personal "to-do" lists to prioritize individual workloads
Accurate build management and secure release management to help ensure easy re-creation of any current or previous software version	• Support make-compatible building tools that read existing Windows and UNIX® makefiles • Create a detailed "bill of materials" that guarantees build reproducibility • Optimize resources and save time by supporting distributed and parallel building with load balancing
Flexible process and workflow support to streamline development and auto-mate organizational procedures	• Provide an out-of-the-box development process that teams can modify to their needs • Enable project leaders to design a custom workflow for each change request type • Support automated asset management routines that monitor changes and notify team members of events
Anytime, anywhere access with cen-tralized reporting and management across heterogeneous software development environments	• Provide universal access through desktop, Web and z/OS® clients • Unify teams distributed across Windows, Linux, UNIX and mainframe operating environments • Provide comprehensive queries, charting and reporting capabilities • Visualize change-related data through distribution, trend and aging charts

IBM software configuration management solutions include the following products:

IBM Rational ClearCase family
IBM Rational ClearQuest family
IBM z/OS SCLM Suite

For more information:

To learn more, contact your local IBM representative or visit our Web site at:

Developers: **ibm.com**/developerworks/platform
IT Managers/Executives: **ibm.com**/software/developmentplatform

IBM. ®