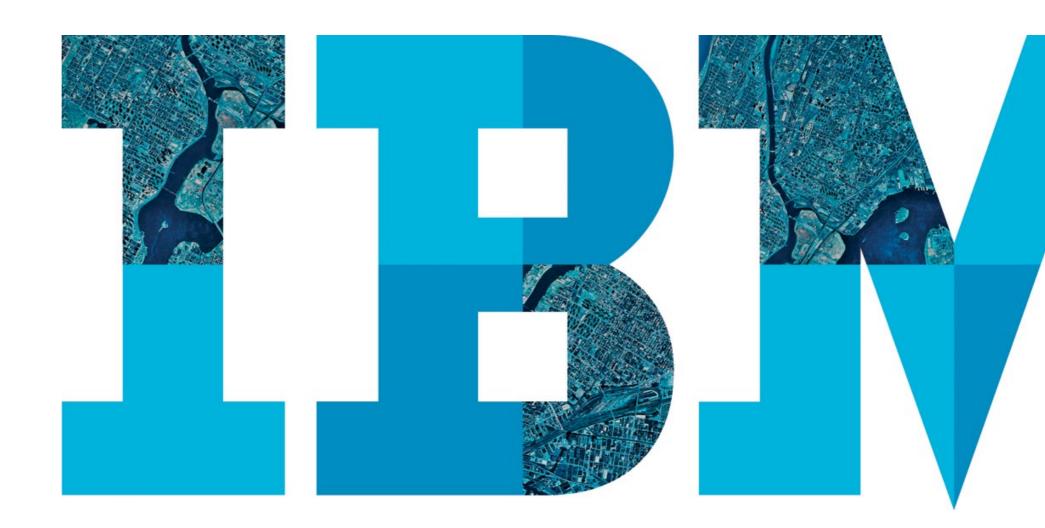# Supercharging
IBM Tivoli software

IBM Rational solutions for helping optimize your investments

IBM

1

Develop and deliver high-performing services

IBM Tivoli Composite Application Manager

2

Improve quality and deploy applications with greater speed

IBM Tivoli Provisioning Manager and IBM Tivoli Application Dependency Discovery Manager

3

Manage risk and impact of change

IBM Tivoli Change and Configuration Manageament Database

4

Achieve faster resolution

IBM Tivoli Service Request Manager

5

Optimize web security

IBM Tivoli security solutions

Develop and deliver high-performing services:

Overview

Improving service quality and managing risk in the face of cost-cutting pressures has become an ongoing expectation. Development and operations teams face hurdles as they work to effectively drive system repair cycles to optimize server and web application performance and scalability. Delays in identifying, isolating, diagnosing and resolving issues affect service quality, productivity, time to market—and customer satisfaction. Lack of real data to test actual application usage creates an inability to ensure scalability in development. IBM Tivoli® Composite Application Manager software provides your operations teams with invaluable insight for monitoring application responses, understanding transaction flows, and monitoring and diagnosing infrastructure performance. But frequent bottlenecks to resolution may occur when non-network-related issues need to be passed to overstretched development teams.

- Could your organization benefit from a clear path to issue resolution, catching performance problems earlier in the testing phase, faster root-cause analysis or reduced production outages? Check out IBM Rational® Performance Tester software.

- Is your IT system inflexible and unresponsive compared to the demanding needs of your business? Learn how to deliver high-performing services and software at the speed of your business with IBM Rational Application Developer for WebSphere® Software solutions.

Use real monitoring data from operations in application performance assessments to understand resource capacity and optimize service performance before services get to production.

Overview

- *IBM Rational Performance Tester*

IBM Rational Application Developer for WebSphere Software

Develop and deliver high-performing services:

IBM Rational Performance Tester

IBM Rational Performance Tester software is a performance testing tool used to identify the presence and cause of system performance bottlenecks. It provides test teams of virtually all skill levels with automated performance testing capabilities to validate the scalability of web- and server-based applications — before a system goes live. It can also help speed resolution and restore service delivery when production problems do occur. The integration of Tivoli Composite Application Manager software with Rational Performance Tester software enables quality assurance teams to replicate "real world" production environments to identify bottlenecks and pinpoint the root cause of performance issues. Faster, more accurate diagnosis speeds test cycles, restores service delivery and delivers better performing systems.

Help reduce operational costs and optimize application performance.
- Reduce load testing complexity and provide flexible workload scheduling and reporting capabilities.
- Analyze the locations and root causes of application performance bottlenecks.
- Enable experts to work more efficiently using an innovative, no-code approach to performance testing that masks code but exposes underlying details.
- Attain flexible modeling and emulation of diverse user populations.

Improve customer satisfaction and speed resolution and service delivery.
- Identify the locations and root causes of performance problems in hardware and software using live monitoring data.
- Optimize scalability and improve service performance by reusing test scripts and monitoring data to validate applications for production.
- Measure performance results against business objectives and provide reports to stakeholders.

↘ **Learn more: ibm.com/software/awdtools/tester/performance**

CASE STUDY:
Automotive subsidiaries

Challenge
The development team for a pair of automobile subsidiaries in the United States could not simulate expected product user load and sought a solution for fast root-cause analysis and reduced production outages. The small team could not spend too much time on performance issue resolution.

Solution
The company implemented IBM Tivoli Composite Application Manager software to track and measure response times along with IBM Rational Performance Tester software to simulate loads and import log–trace data from the Tivoli software for root-cause analysis.

Benefits
- Discovered Java™ Platform, Enterprise Edition (Java EE) performance issues in proof of concept, resulting in immediate payback
- Optimized performance of production systems

↘ Want proof? Read more case studies.

Develop and deliver high-performing services:

IBM Rational Application Developer for WebSphere Software

Delivering high-performing services that enable business growth requires that attention be paid at the service development stage. Using performance-enhancing best practices and leveraging platform and run-time-specific customizations can improve the availability and user experience with the system. The IBM Rational Application Developer for WebSphere Software environment is an acclaimed Java enterprise application development environment that allows developers to profile, analyze and improve the software and services they produce even before code gets to a formal test stage.

Enhance service reliability and usability.
- Use application profiling and analysis tools that allow developers to examine the execution of services down to the line of code, study memory use and tweak the implementation to enhance reliability and performance.
- Follow industry best practices and automated code analysis to facilitate compliance with standards and provide security and audit readiness.
- Generate code models to visually examine service implementation and detect possible improvements.

Improve IT responsiveness to enable business responsiveness.
- Use accelerated service development tools to reduce manual coding and risk.
- Boost IBM WebSphere Application Server capabilities through customized development for feature packs.
- Enable agility through an integrated environment for service design, development, profiling and test.

⬐ **Learn more: ibm.com/**software/awdtools/developer/application

CASE STUDY:

European media services company

Challenge
To optimize the delivery of information services, the media services company needed to support rapid application development and effective collaboration. It sought a solution to help speed the development of IBM WebSphere Portal applications.

Solution
The company deployed an IBM Rational Application Developer for WebSphere Software and IBM Rational Enterprise Generation Language solution for developing WebSphere Portal applications.

Benefits
- Doubled productivity levels
- Enabled faster development of new services for customers

⬐ Want proof? Read more case studies.

5

IBM

Improve quality and deploy applications with greater speed:

Overview

Close integration across operations and development is important to optimizing the infrastructure to support business strategies and keep costs in check. IBM Tivoli Application Dependency Discovery Manager software and IBM Tivoli Provisioning Manager software help you understand configurations, map applications and changes in production, and accelerate mass software provisioning. Integrating Tivoli software with Rational software can help you mirror test environments to production environments across test iterations and increase the accuracy of deployment planning. It can also help you ensure that all components are properly deployed on the right machines and improve the precision and repeatability of deployments. Moreover, Rational software can help you get more out of investments by helping to prevent delays and costs associated with a lack of transparency between disciplines.

- Could your teams benefit from improved test lab organization and management, including streamlined discovery and provisioning of test lab and production environments? Check out IBM Rational Quality Manager software.

- Do you need to overcome productivity losses associated with manual, repetitive processes and regulatory compliance mandates? Check out IBM Rational Build Forge® software.

- Do development and operations teams need help communicating deployment requirements, suffer from incomplete deployments and need help mitigating late deployment challenges? Check out IBM Rational Software Architect software.

Test lab management can account for 30 to 40 percent of a test team's time, according to IBM internal research.

**2 Improve quality and deploy applications
with greater speed**

Overview

• *IBM Rational Quality Manager*

IBM Rational Build Forge

IBM Rational Software Architect

Improve quality and deploy applications with greater speed:

IBM Rational Quality Manager

IBM Rational Quality Manager software helps organizations optimize project quality with a single, shared test management hub that provides integrated life-cycle support across virtually any platform and type of testing. With IBM Rational Quality Manager software, you can cut risk and cost with collaboration; speed time to market by automating error-prone activities; and improve the quality of your applications by proactively managing with real-time, fact-based insights.

Leveraging the test lab management capabilities of IBM Rational Quality Manager software and Tivoli Provisioning Manager software enables test teams to request a test environment that is automatically sent to a provisioning system that is then built and ready for testing. Integration with Tivoli Application Dependency Discovery Manager software can provide test teams with visibility into enterprise resources that can be leveraged in the test lab. With this integration and hub from which to configure, build and optimize the utilization of your test lab environment, you can save on lab overhead, infrastructure and duration costs for greater efficiency and productivity while containing complexity.

Discover and catalog test systems automatically.
- Automatically discover test lab resources in the data center and add them to a central inventory, capturing their attributes (e.g., hardware, operating system, installed software).
- Manage requests, reservations and scheduling for test lab resources (physical and virtual).

Provision test systems with the applications and data required to run tests.
- Increase productivity and reduce time to market by automating test machine setup and teardown, helping testers focus more on finding defects.
- Automatically deploy and control test execution on specified test configurations (e.g., functional automation, performance, security, web services, organization specific).
- Optimize lab utilization through pattern analytics to help reduce test infrastructure cost.

⬲ **Learn more: ibm.com**/software/rational/offerings/quality

CASE STUDY:
Fujitsu New Zealand

Challenge
To help ensure software quality and meet customer demands for requirements traceability and timely progress reports, Fujitsu New Zealand needed to automate its labor-intensive, manual test management processes.

Solution
The client implemented Rational Quality Manager software to plan tests, manage test assets, enable requirements-based testing and improve collaboration across the testing team. The software also gave the client the ability to offer its customers view-only access to Rational Quality Manager assets, providing an up-to-date view of project progress that included reports detailing tested and to-be-tested requirements.

Benefits
- Reduced test management time by an estimated 20 percent
- Reduced time spent tracing requirements to test cases by 60 percent
- Improved insight into all aspects of the testing process, enabling managers to make better-informed decisions, allocate resources, improve predictability and mitigate business risk

⬲ Read the entire case study.

2 **Improve quality and deploy applications with greater speed**

Improve quality and deploy applications with greater speed:

IBM Rational Build Forge

IBM Rational Build Forge software is an adaptive execution framework that enables development teams to standardize and automate repetitive tasks and optimize hardware resources to improve software quality. Combining the powerful automation engine of Rational Build Forge software with the provisioning capabilities of Tivoli Provisioning Manager software allows users to leverage existing work artifacts and investments in the context of both the development and operations environments. This capability helps reduce the costs associated with moving these assets while helping to increase the overall deployment speed and accuracy as well as team member efficiency.

Help lower costs and reduce risk.
- Automate manual, error-prone deployment tasks.
- Help optimize the processing of application-related artifacts, whether those artifacts are source code modules, application metadata or even configuration customization related to the application.
- Maintain a comprehensive audit trail, helping to reduce the cost of compliance.

Automate handoffs between teams.
- Virtually eliminate wait times between disparate teams.
- Help ensure consistency across global teams.
- Enforce standards across the enterprise.

Apply the correct information to the right place at the right time.
- Consistently apply data in a reliable and repeatable manner.

↘ **Learn more: ibm.com**/software/awdtools/buildforge

According to a Hurwitz and Associates survey, Rational Build Forge users increase the speed of development cycles by 110 percent, on average.[1]

2 Improve quality and deploy applications with greater speed

Improve quality and deploy applications with greater speed:

IBM Rational Software Architect

IBM Rational Software Architect software is a comprehensive architecture, design and construction solution that allows solution architects to simplify the complexity of IT while managing its scalability and flexibility in the face of business changes. It provides architects with robust support for a wide variety of tasks including software solution design and the management of architectures to help ensure stable, robust software that keeps the business running efficiently. Integrate with IBM Tivoli Asset Discovery software to capture infrastructure specifications that improve communication between development and operations teams and reduce deployment risks. This also helps ensure that software solutions are designed to deploy correctly—the first time, every time—with smart tools for discovering and representing infrastructure, modeling current and planned deployments, and creating best practices configuration templates.

Help deploy software solutions smoothly the first time, every time.
  • Define the infrastructure requirements of your software with smart deployment planning tools that let you model the actual capabilities of your infrastructure.

Manage your software and IT complexity, and lower maintenance and development costs.
  • Control your IT using industry best practices and focus on reuse of existing assets.
  • Let the business drive IT — trace business needs to prioritize IT spend.

Deliver applications that scale and address business objectives.
  • Leverage automation to support innovation initiatives.
  • Free up overhead with pattern reuse and analysis.

Decrease learning curves and lessen the need for specialized training.
  • Automate design, delivery and testing with visual construction tools.

➤ **Learn more: ibm.com/software/awdtools/swarchitect**

CASE STUDY:

European airport

Challenge
To improve customer satisfaction and support growth, a European airport needed to improve its baggage handling system. It sought a way to integrate a new baggage control system with systems for passenger check-in and real-time flight information.

Solution
The airport leveraged IBM Rational solutions, including Rational Software Architect software, to build an integrated bag tracking and sorting system.

Benefits
• Reduced delayed or misplaced luggage by 60 percent
• Improved luggage transfer time by 22 percent
• Reduced operational costs by more than 40 percent

➤ Want proof? Read more case studies.

2 Improve quality and deploy applications with greater speed

Manage risk and impact of change:

Overview

Getting optimal business value from the applications and software assets you've already made a substantial investment in requires ongoing orchestration between business, operations and development teams. IBM Tivoli Change and Configuration Management Database software already helps your operations teams catalog, track and automate your IT management infrastructure, yet you may still need better visibility and traceability into business transformation and software development projects.

The complexities of modern organizations, the intricacy and size of applications, and miscommunication between business leads in operations and IT experts can result in undertakings that fall short of business objectives. It is important to extend the benefits of your Tivoli software further with an infrastructure that connects business and development to help ensure that services are updated, managed and delivered properly back to operations.

- Do you need help understanding the effect that operational changes will have on your business strategy, process and infrastructure? Check out IBM Rational System Architect software, which provides top-down, bottom-up visibility and collaboration across your enterprise.

- Do you struggle to manage service evolution and understand the effect of development change? Check out IBM Rational Asset Manager software.

"**Rational System Architect helped us reduce our application inventory by nearly 40 percent over three years and assisted us in optimizing our operations for the business.**"

— Chief architect of a world-class communications services provider

"**Rational Asset Manager [software] has enabled our strategic reuse program and is an integral aspect of our portfolio asset management strategy.**"

— CTO of a major systems integrator

3 Manage risk and impact of change

Overview

- *IBM Rational System Architect*

IBM Rational Asset Manager

Manage risk and impact of change:

IBM Rational System Architect

For organizations going through mergers or acquisitions, consolidation, or cost reduction initiatives, Rational System Architect software provides the capabilities to support transformation planning, IT investment management and impact analysis to manage the risks in the execution of these initiatives. For organizations with the goals of streamlining their business and turning strategy into execution, Rational System Architect software provides the capabilities for decision support, process optimization and integration into solution delivery to enable them to efficiently reach these goals.

Improve operational planning and support transformation management.
- Help realize the desired return on operational investments.
- Drive operation "current state" toward a targeted "future state."
- Gain insight into the effect of operational changes on the business.

Create business planning and IT alignment.
- Align operational changes with business and enterprise architecture.
- Gain an understanding of whether cloud deployments are addressing business needs.

Synchronize the IT architecture.
- Harvest and maintain enterprise architecture IT assets from Tivoli Change and Configuration Management Database and Tivoli Application Dependency Discovery Manager software.

⬊ **Learn more: ibm.com/software/awdtools/systemarchitect**

⬊ **View a demo**

CASE STUDY:

Australian energy provider

Challenge
An Australian energy provider needed to reduce the time and effort it took to complete analysis required for technology investment decisions and to mitigate the risks associated with loss of intellectual property when transitioning operations to an outsourced IT support model.

Solution
The provider continued its investment in Rational System Architect software to define and capture business processes across the enterprise, import supporting IT systems, and use the resulting architecture to ensure that changes to operations are aligned with the company's strategy.

Benefits
- Identified systems for acquisition and decommissioning
- Aligned technology investment decisions with business strategy
- Effectively managed the transition to outsource IT services

⬊ Want proof? Read more case studies.

3 Manage risk and impact of change

Overview

IBM Rational System
Architect

- *IBM Rational Asset
  Manager*

Manage risk and impact of change:

IBM Rational Asset Manager

IBM Rational Asset Manager software enables development teams to identify, manage and govern the design, development and consumption of software assets. With the help of Rational Asset Manager software, teams can reduce application backlogs and more effectively reuse assets, helping to improve business flexibility and responsiveness. Linking Rational Asset Manager software with Tivoli Change and Configuration Management Database software is designed to provide the organization with full visibility and seamless management of assets from development to deployment. The solution can help reduce unexpected costs, application behavior and outages by helping you understand the effect of operational change on business and technical assets and manage that change across development and operations.

Linking Rational Asset Manager software with Tivoli Change and Configuration Management Database and Tivoli Application Dependency Discovery Manager software connects live operations with an enterprise architecture planning environment. This facilitates a true connection of business and IT.

Improve project timeliness and support innovation with asset-based development, warehousing and best practices.
- Direct team members to the latest and approved version of assets.
- Automatically track what is used to build software, what the effect of change is to operations and what is deployed into production to isolate where defects are occurring.
- Simplify asset synchronization and traceability between development and operations.

Support security-rich communication across disparate teams and reduce rework.
- Gain a framework that allows teams to define, create, share and manage assets across the organization in a security-rich manner.
- Facilitate seamless asset management from development to operations and back.

Mitigate risks and lower costs of addressing compliance mandates.

⊾ **Learn more: ibm.com**/software/awdtools/ram

⊾ **View a demo**

CASE STUDY:

Large Spanish retail bank

Challenge
Significant business growth necessitated a modern development environment that could support more flexible operations. The bank had thousands of unique software assets to track and manage and needed to improve its ability to communicate and track development for processes.

Solution
The bank implemented IBM Rational Asset Manager software to support asset and IT component reuse, IBM Rational Functional Tester software to automate regression testing processes and IBM Rational Team Concert™ Standard software.

Benefits
- Improved asset reuse
- Reduced subcontractor development costs
- Decreased testing costs

⊾ Want proof? Read more case studies.

3 **Manage risk and impact
  of change**

IBM

Achieve faster resolution:

Overview

Inevitably, development and operations teams need to coordinate actions. Typically this is done through service request tickets. IBM Tivoli Service Request Manager software provides an efficient means for tracking help requests, but when tickets are passed over to the development team — which often happens using untracked emails — they may require manual entry, resulting in backlogs and potential data entry errors. What's more, the disconnect between operations and development means that operations teams can't easily track the status of defects affecting production systems.

- Do you need to automate the process of pushing service requests to development and back? Check out IBM Rational ClearQuest® software.

13

**4 Achieve
  faster resolution**

Overview

• *IBM Rational ClearQuest*

Achieve faster resolution:

IBM Rational ClearQuest

IBM Rational ClearQuest change management software helps you manage the software life cycle more effectively. Development teams can use it to track bugs and enhancement requests, and automated workflows can help you control and enforce development processes while strengthening communication. Integrating Rational ClearQuest software with Tivoli Service Request Manager software can help you automatically synchronize trouble tickets produced on the operations side with development's bug-fix tracker. As a result, issues may be passed along more quickly with fewer errors and full traceability across the entire process.

Enhance project visibility and control with real-time, consolidated reporting and process enforcement.
- Gain the ability to customize and enforce consistent development processes.
- Check the status of virtually any defects affecting production in operations or development.

Help improve software quality with automated workflows.
- Reduce errors by automating interactions among development and operations, disparate project functions, and groups.
- Leverage built-in defect and change tracking capabilities.

Reduce backlog with streamlined team communication and coordination with automated workflows.
- Automated workflows and email notification help ensure that appropriate team members are quickly notified of action items.
- Automate submissions of operations service requests to development.
- Instantly notify development teams of problems found in production for faster resolution.

↘ **Learn more: ibm.com**/software/awdtools/clearquest

CASE STUDY:

IBM Global Account

Challenge
The IBM Global Account division needed to deliver software projects to operations on time and within budget with greater reliability. It also needed to ensure that business-critical applications met user requirements and performance criteria. Finally, it needed a common worldwide development environment.

Solution
IBM Global Account implemented a set of IBM Rational tools to support comprehensive integration, including IBM ClearQuest software for defect management, along with modeling, requirements gathering, configuration and change management tools.

Benefits
- US$3.145 million in productivity savings and cost avoidance in 2008

↘ Want proof? Read more case studies.

**4 Achieve
   faster resolution**

Optimize web security:

Overview

IBM Tivoli offerings for network security provide powerful protection for enterprise resources. Extend IBM Tivoli solutions with Rational security offerings to protect your web applications, which are among the most targeted attack points for increasingly enterprising hackers around the world. This is no coincidence as the use of web applications to interact and work with employees, partners and customers continues to grow. Given the monetary and brand-related costs to being hacked, web security is an essential component of cost and risk optimization. IBM Rational AppScan® software can help keep your web applications ahead of security threats.

- Could you save a lot of money by addressing web application vulnerabilities in development before they get to operations? Check out IBM Rational AppScan Source Edition software.

- Do you need help finding and prioritizing web application security issues? Check out IBM Rational AppScan software for help automating the process.

- If you want to reduce up-front investment costs and hasten time to value of a Rational AppScan software solution, check out IBM Rational AppScan OnDemand software.

According to an IBM Internet Security Systems X-Force® research and development team report, 50.4 percent of all vulnerabilities disclosed in the first half of 2009 were web application vulnerabilities.[2]

Optimize web security:

IBM Rational AppScan Source Edition

IBM Rational AppScan Source Edition software is a static analysis security testing application that enables you to identify vulnerabilities within your source code early in the development life cycle. The solution can help you better understand threat exposure to help reduce overall organizational risk. It also helps facilitate a partnership between development and security teams by providing each with role-specific, right-time information.

Reduce vulnerabilities early in the software delivery life cycle.
• Gain a comprehensive approach to source code analysis, providing fast scans of complex applications.
• Discover actionable, prioritized information for addressing vulnerabilities.

Rely on consistent, efficient policies throughout the enterprise.
• Automate testing for rapid and thorough quality checks.
• Gain the ability to set and enforce consistent policies.
• Acquire a centralized policy and assessment database for metrics and reporting.

Learn more: ibm.com/software/rational/products/appscan/source

CASE STUDY:
Egyptian IT services firm

Challenge
The firm sought a way to reduce risk in its custom-built software applications that were delivered to a global client base.

Solution
The firm implemented Rational AppScan Source Edition software. Analysts and developers use the solution for one-click access to confirmed vulnerabilities as well as for compliance validation.

Benefits
• Helps eliminate security flaws before software is shipped
• Supports customization of requirements based on customer needs
• Enables analysts to add policy-specific items to analyses

Want proof? Read more case studies.

5 Optimize web security

Optimize web security:

IBM Rational AppScan

IBM Rational AppScan software provides comprehensive security capabilities — including scanning, reporting and fix recommendations — for complex web applications. Use the software to automatically scan and test for common web application vulnerabilities in web applications, including those highlighted by the Web Application Security Consortium.

Find and fix web application security issues.
- Gain support for broad application coverage, including integrated web services scanning, JavaScript execution (including asynchronous JavaScript and XML, or AJAX) and parsing.

Assess and remediate security vulnerabilities.
- Address scripting and buffer overflow and gain intelligent fix recommendations to ease remediation.
- Get advanced remediation capabilities, including a comprehensive task list necessary to fix issues uncovered during the scan.

↘ **Learn more: ibm.com**/software/awdtools/appscan

CASE STUDY:

National air navigation services provider

Challenge
To stay ahead of emerging risks and maintain a security-rich flow of business-critical information across internal stakeholders and airline customers, a national air navigation services provider needed to adopt the latest web application security technology.

Solution
The provider adopted a comprehensive solution — based on IBM Rational AppScan software — that automates security and compliance-related issue testing of its core web applications and that easily integrates into its software development life cycle.

Benefits
- Enhanced the security of web applications through best practices such as regular scanning for vulnerabilities throughout the software life cycle
- Provided ease of use and clear fix recommendations, resulting in quick developer acceptance and improved productivity

↘ Want proof? Read more case studies.

**5 Optimize
web security**

Optimize web security:

IBM Rational AppScan OnDemand

IBM Rational AppScan OnDemand software is a software-as-a-service (SaaS) version of IBM Rational AppScan software. Because you can quickly and cost-effectively achieve actionable results, it is designed to provide a great way to bolster web application security — without the need for infrastructure investments. The hosted solution is run by an experienced team of security and compliance experts from IBM. The service also gives you access to the IBM team for a set number of hours each month, so you can benefit from its expertise on industry best practices and get help interpreting scan results and learning valuable remediation tips.

Gain support for comprehensive testing of applications.
• Test either preproduction or production applications up to a specified number of pages.

Get a periodic assessment of application security.
• Understand improvements to your security posture over time based on tracking by the IBM team, helping you communicate findings to stakeholders throughout the organization.
• Leverage guidance from IBM experts as they explain and decipher findings to ease the remediation process.

Maintain consistency with monthly scans.
• Rely on proven IBM processes that help keep security on track through regular scanning and updates.

⊿ **Learn more: ibm.com**/software/awdtools/appscan/ondemand

Reduce online cost and risk without in-house resources using one of the fastest routes to actionable information.

18

IBM

1 Hurwitz & Associates, *The Evolution of Build and Release Management for Effective Software Delivery: A Customer Survey with Case Studies*, Judith Hurwitz and Robin Bloor, October 2007, ftp://ftp.software.ibm.com/software/rational/web/whitepapers/WP-Rational_Build_Forge_Customer_Study_Oct2007.pdf

2 IBM Global Technology Services, *IBM Internet Security Systems™ X-Force® 2009 Mid-Year Trend and Risk Report*, August 2009.

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