

# PROGRESS<sup>®</sup> ACTIONAL<sup>®</sup> APPLICATION DEVELOPMENT

## SERVICE QUALITY AT RISK

To deliver benefits like lower IT costs, greater revenues, and business agility, first and foremost, service-based applications must execute business transactions successfully. Yet, during production, as transactions execute, there are sporadic process delays, dropped messages, lost orders, or application downtime when services upgrade or change.

What can you do to assure that services and applications are optimized for runtime reliability, integration, performance, and scalability—so that services perform well consistently and business transactions execute quickly without fail? The place to start is pre-production. Quality and performance issues are less costly to fix before they are “baked into” the software. Also, in production these issues result in added IT and support costs, missed revenue, and business interruptions that alienate customers, partners, and channels.

The unique requirements of designing, developing, and deploying Web services, together with the complexities of creating an effective services architecture, present challenges for everyone on a project team. These include heavy reliance

## HIGHLIGHTS

- > *Deliver optimized, high-quality services and distributed applications*
- > *Resolve quality and performance issues during pre-production*
- > *Improve productivity and time-to-market with a collaborative platform*
- > *Perform faster, easier functional, performance, regression, and compliance testing—without deep XML knowledge*
- > *Conduct load testing often in development, to ensure runtime performance and scalability*
- > *Identify bottlenecks prior to production by visualizing services and their interactions across the end-to-end transaction path*

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on XML, difficulties in debugging and testing distributed software, and a heightened need for cross-team collaboration.

## DRIVE QUALITY AND CONFIDENCE FROM THE START

Progress® Actional® Application Development is family a of pre-production tools that make it easier for everyone involved in developing and deploying Web services—regardless of their depth of knowledge of XML—to deliver well-tested, scalable, and policy-compliant services and applications. Robust features allow architects, developers, testers, and business analysts to work together to drive quality, trust, and confidence throughout the service lifecycle—from development to application support and beyond.

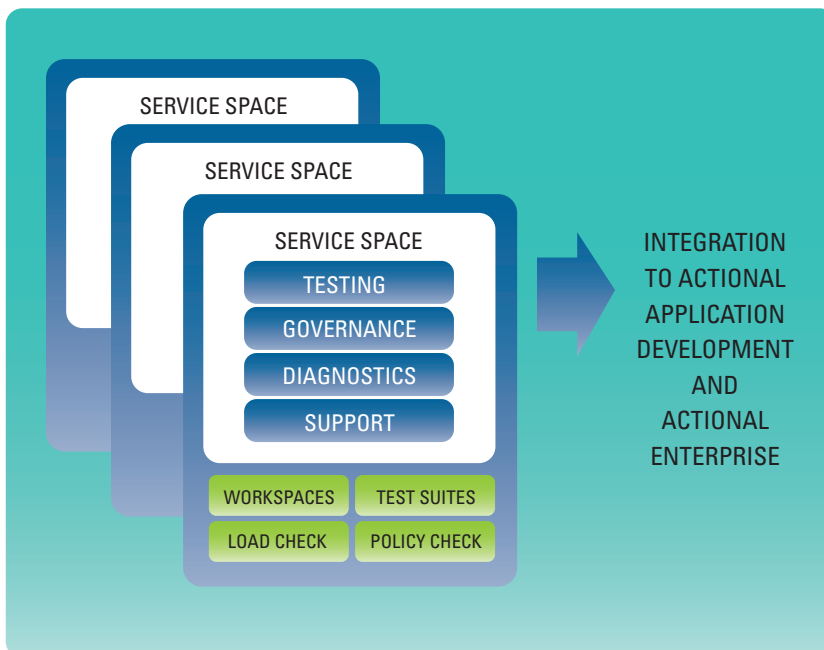
## COLLABORATE ACROSS THE ENTIRE PROJECT TEAM

Actional Application Development tools are designed for the unique requirements of interdependent Web services and SOA and other service-based, distributed applications.

As services are being designed, developed, and tested, project teams can improve the way they work by collaborating and sharing quality-related assets, test results, and compliance policy rules. By leveraging each other's work during development and runtime, pre-production team members can eliminate problems earlier in the lifecycle when they are easier to find and less costly to fix. Integrated collaboration, testing, and compliance tools allow individuals—regardless of their role or degree of XML expertise—to:

- > **Share test suites, load tests, and assets across one or more teams**—so they can leverage each other's work throughout the service lifecycle. Shared assets containing context-rich data, test simulations, compliance rules, artifacts, and more can be used for unit, functional, load, regression, and acceptance testing, without the need for versioning.

- > **Understand service behavior, without writing code or knowing XML**—by “invoking” services and viewing the response in real time using easy-to-understand XML message forms, called “Pseudocode.” Clicking “resend” allows the message to be sent to the server multiple times while making small changes. This makes testing extremely fast and efficient for everyone—without writing a single line of code or requiring deep knowledge of XML. WSDL contracts and REST-style contracts described in Web Application Description Language (WADL) can also be imported, viewed, compared and graphed.



*Service Spaces dramatically improve team collaboration and productivity by allowing everyone on the service team to access test suites, load tests, assets, and artifacts in one shared place.*

- > **Integrate test results within HP Quality Center**—enabling automation of testing across a wide range of application environments. QA engineers and the performance team can retrieve and review test results and re-run tests within HP Quality Center. By leveraging both products through this integration, teams can further increase their visibility into performance and quality.

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## VALIDATE QUALITY, PERFORMANCE, AND SCALABILITY

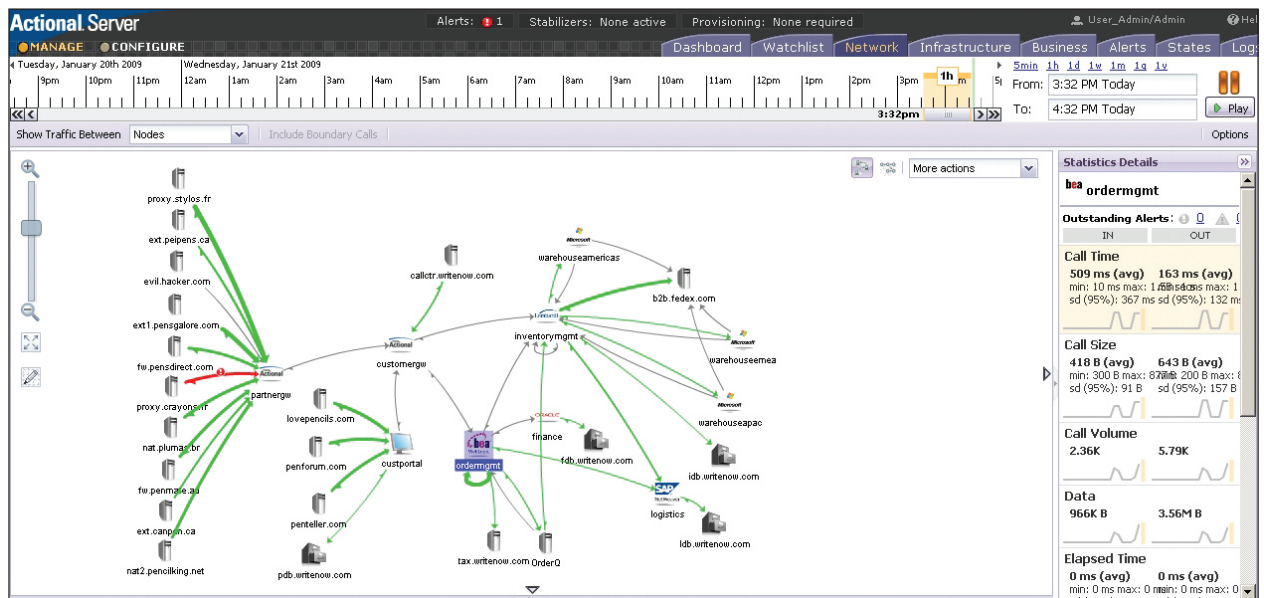
Actional Application Development's comprehensive diagnostic and testing tools help teams to pinpoint problem areas that require early attention. Testing early and often ensures that services are free of architectural issues that can cause transaction failure or downtime and be difficult to find and fix due to system complexities and time-to-market issues. During production, these issues can result in added IT and support costs, missed revenue, and business interruptions.

To mitigate these risks, developers, testers, and QA professionals can use the following features to optimize services and applications for runtime reliability, integration, performance, and scalability:

- > **Easy-to-use, powerful unit, functional, and regression testing**—helps developers and testers to identify and resolve performance problems as services are being created and tested. Users can write test scripts to automate specific functions or run tests during desired timeframes.
- > **Service simulation and scenario testing**—give developers and their managers a deeper, more detailed understanding of Web service behavior, helping them make more effective use of services from the start, with little or no coding. Users can simulate services and replay lists of actions to verify that responses match existing benchmarks. Users can also create scenario tests based on captured or invoked messages or by supplying parameters to powerful templates created directly from a WSDL.
- > **Load testing**—allows members of project teams, without specialized performance and load testing skills, to create load tests for up-to-100 simulated users with no coding required. Actional displays test results in real time and, with the click of a button, generates result reports in PDF format for sharing with team members.

## DIAGNOSE AND REPAIR ISSUES EARLY—WITH END-TO-END TRANSACTION VISUALIZATION

Actional's patented Flow Mapping technology provides 100% transaction visualization across the simulated production environment through automatic discovery and tracking of all nodes across the transaction path without coding. Users can see what's happening and adjust potential problem areas as necessary:



- > **Flow maps**—provide a detailed snapshot of service interactions and dependencies across the end-to-end transaction. They enable developers to optimize services for production by showing how application components are put together and will work. They also foster communication for greater productivity. Actional Application Development also provides statistics on the performance and availability of each service and shows who is using what service. During migration, team members can make sure that only the appropriate people are accessing services in the proper environment.
- > **Fast root cause analysis**—enables team members to diagnose and pinpoint the source of performance issues, bottlenecks, and other problems early (e.g., in integration testing), using flow maps and

service statistics. Users can drill down from the network flow map to a flow map that provides greater detail of the targeted problem area. With this level of visualization they can quickly trace the issue back to its source for repair before the problem becomes a costly production issue.

## BUILD IN DESIGN-TIME GOVERNANCE AND LIFECYCLE POLICY COMPLIANCE

Driving design-time governance and policy enforcement allows architects, testers, and QA professionals to ensure that services comply with industry and corporate standards and will perform well in production. Whether project teams are building a handful of services or laying the foundation for an entire SOA, Actional Application Development promotes a “contract first” approach with powerful tools:

- > **Policy authoring and checking**—allow pre-production teams to create and enforce SOA design standards by combining industry policy sets (e.g., WS-I Basic Profile, WS-Security) with customized organizational best practices. Architects and engineers can author and edit their own corporate policy governance rules and publish individual profiles for other team members to leverage.
- > **Contract annotations**—give individuals the ability to add comments to particular parts of a contract definition to clarify its usage. This turns a WSDL contract into a central point for social interaction and learning about a Web service with higher fidelity and more precise discussion than a typical Word document offers.

## TECHNICAL SPECIFICATIONS

Actional Application Development runs on its embedded JEDI server and uses the Apache Derby database. Web service standards supported are SOAP, REST, and POX. It provides visibility into applications on the following platforms: Oracle WebLogic Server (formerly BEA WebLogic Server), IBM WebSphere, JBoss Server, Oracle Application Server (OAS), Systinet

WASP/J, Microsoft .NET framework, SAP NetWeaver Application Server, Progress® Sonic® ESB, Progress® SonicMQ®, Progress® Artix®, Oracle Service Bus (formerly BEA AquaLogic Service Bus), WebMethods Integration Server, X-broker, and Cisco Reactivity.

## UPDATE TO ACTIONAL® ENTERPRISE

As services move into production, teams can update to Progress® Actional® Enterprise to manage and extend their operational and business visibility and achieve policy-based security and control of services and end-to-end business processes in a heterogeneous runtime environment.

## TAKE THE NEXT STEP

Learn more about how Progress Actional products can deliver value at every stage of SOA adoption. Contact your local Progress Software sales representative or visit: [www.progress.com/actional](http://www.progress.com/actional)

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## PROGRESS SOFTWARE

Progress Software Corporation (NASDAQ: PRGS) is a global software company that enables enterprises to be operationally responsive to changing conditions and customer interactions as they occur. Our goal is to enable our customers to capitalize on new opportunities, drive greater efficiencies, and reduce risk. Progress offers a comprehensive portfolio of best-in-class infrastructure software spanning event-driven visibility and real-time response, open integration, data access and integration, and application development and management—all supporting on-premises and SaaS/cloud deployments. Progress maximizes the benefits of operational responsiveness while minimizing IT complexity and total cost of ownership.

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