


Accelerate Software Innovation Through Continuous Quality





Software quality is recognized
as the #1 issue IT executives
are trying to mitigate.



Enterprise organizations strive to accelerate the delivery of a compelling user experience to their customers in order to drive revenue. Software quality is recognized as the #1 issue IT executives are trying to mitigate.

QA teams know they have issues and are actively looking for solutions to save time, increase quality, improve security, and more. The most notable difficulties are in identifying the right areas to test, the availability of flexible and reliable test environments and test data, and the realization of benefits from automation.

You may be facing many challenges with delivering software to meet the high expectations for quality, cost, and schedule driven by the business. An effective software testing strategy can address these issues.

If you're looking to improve your software quality while achieving your business goals, Parasoft can help.

With over 30 years of making testing easier for our customers, we have the innovation you need and the experience you trust. Our extensive continuous quality suite spans every testing need and enables you to reach new heights.

QUALITY-FIRST APPROACH

You can't test quality into an application at the end of the software development life cycle (SDLC). You need to ensure that your software development process and practices put a priority on quality-driven development and integrate a comprehensive testing strategy to verify that the application's functionality meets the requirements.

Shift testing left to the start of your development process to bring quality to the forefront.

- » Reduce the time and cost of testing to minimize business risks.
- » Identify, mitigate, and resolve defects earlier in the pipeline.
- » Increase confidence to accelerate the delivery of high-quality software.

The Fitch Solutions team introduced quality gates to ensure the quality of code merged into the main production branch. Their testing approach and improved quality directly resulted in significantly reduced downtime.

DEVELOP A TEST STRATEGY

When you're dealing with increasingly complex applications, your testing requirements become more complex. You must test many different interfaces for the application, such as mobile, web, and APIs.

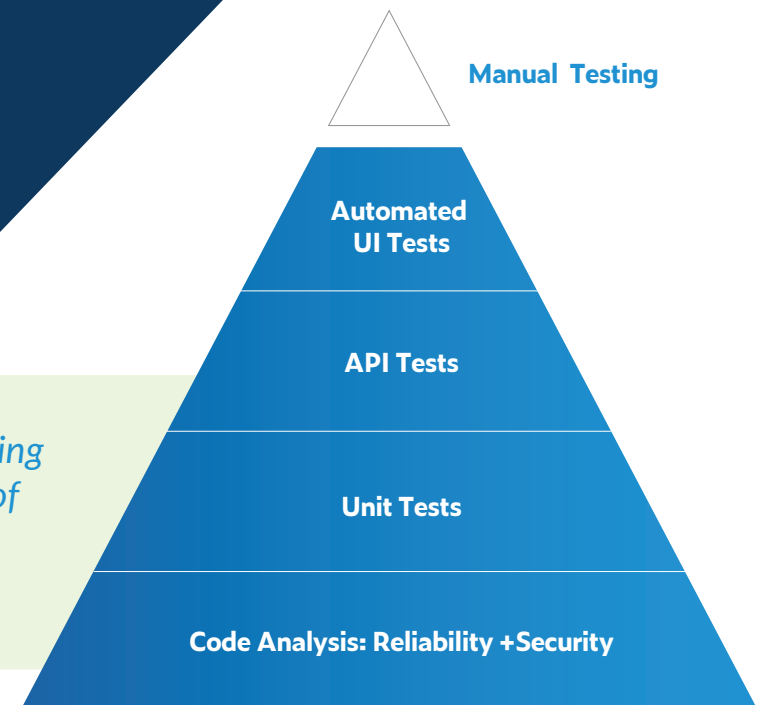
As you move up the testing pyramid and increase your testing maturity level to scale with your organization, you need to optimize your workflow to accommodate and manage all these interfaces with an integrated tool suite.

To validate your end-to-end application experience, you need an omni-channel testing solution that incorporates:

- » Compliance testing with SAST and coding standards.
- » Test scenario generation for functional unit, API, and UI testing.
- » Test maintenance and self-healing to avoid unnecessary build failures.
- » Test reusability for security, load, and performance testing.
- » Test environment management for complex systems.
- » Smart test execution to identify which tests to execute and deliver rapid feedback.
- » Integration with CI/CD pipeline for continuous testing.

"If you can dream it, you can build it. We essentially went from being untestable to testable to now having a thriving demand for more of these capabilities."

—Ryan Papineau, senior software engineer at [Alaska Airlines](#)



LEVERAGE TEST AUTOMATION

How do you achieve your software quality targets? Manual testing is often used extensively for software validation. While it does have its place, it shouldn't be the primary method your team uses because it doesn't fully cover the application's internal operations, it's inherently time-consuming, and may only find issues late in the dev cycle.

By automating your unit, API, and UI testing activities, you can quickly create new test scenarios, easily maintain those tests, and reuse the functional tests for nonfunctional testing.

Functional testing validates the business workflows from the individual unit components, through the APIs, and all the way to the user interface. You need to understand how the different components in your architecture are communicating with each other and be able to test for each type of interaction, both in isolation and in conjunction with other components.

Test automation simplifies the AI-powered creation of test scenarios for each level and reduces the effort and cost to increase the overall test coverage of your applications.

"We used to need two weeks to performance test the code once we got it in our staging environments. We shrunk that to just two or three days. Our tests are now more predictable, more consistent, and more representative of what would be seen in production."

—Frank Jennings, director of TQM performance testing at [Comcast](#)



A woman with short blonde hair and glasses is looking intently at a screen. The image is overlaid with a blue diagonal band and various digital graphics, including glowing lines, a speech bubble icon, and a hexagonal grid pattern. The overall theme is technology and data.

MANAGE COMPLEX TEST ENVIRONMENTS

As you incorporate test automation into your frontend application testing, you also need to consider the backend systems. You may be accessing third-party systems that require access fees, incomplete or inaccessible applications, or services with unpredictable or unreliable behavior, over which you have no control.

To mitigate those constraints, you can create virtual services that respond in a controlled manner with appropriate behavior, data, and performance characteristics for your testing scenario. Simulating a system constraint enables you to proceed with early-stage validation, saving time and reducing costs, by building a reusable sandbox.

- » Link the frontend and backend test flows together with test data management using an environment-based approach.
- » Create a library of test artifacts, including the test data, API tests, and virtual services, to obtain a complete view of your environment.
- » Execute the tests with virtual assets and data in disposable test environments to increase test coverage.

“For [ING Mortgages Netherlands], service virtualization was the vehicle for faster test delivery. Using service virtualization, we didn’t compromise on quality... and more than anything, it put data at the heart of our test strategy.”

—Herminio Vazquez, IOVIO consultant for ING Mortgages Netherlands

MAKE TESTING CONTINUOUS

You can implement continuous testing by integrating your test strategy into your continuous integration and delivery processes. Your team will be able to find and fix defects earlier in the development cycle, reducing the time between discovery and remediation.

With requirements aligned to the test flows, you can verify that your user stories are covered by your test cases. The test impact analysis ensures that you'll know which subset of tests must execute to validate the latest code changes.

Continuous testing is a key part of enabling true end-to-end testing for your application software. With this automated testing strategy integrated into your CI/CD workflow, your application testing is more complete, enabling shorter test cycles and high-quality deliveries.

Sabre achieved their application and API testing goals with integrated automated testing tools that significantly reduced the time needed to deploy services and ensured these services meet reliability, availability, and functional requirements.

INTRODUCING THE PARASOFT CONTINUOUS QUALITY SUITE FOR ENTERPRISE APPLICATIONS

The Parasoft continuous quality suite addresses all these needs and much more. Reduce the complexity and technical burden associated with testing by using an integrated and automated testing suite. Shift left your testing processes with Parasoft's comprehensive and integrated solution for cross-functional teams.

PARASOFT JTEST

Achieve high code coverage with JUnit and accelerate the delivery of secure and reliable Java applications. Integrating into your existing toolchain, Parasoft Jtest is the most complete continuous testing solution for Java developers. With comprehensive static application security testing (SAST), deep code analysis, and JUnit creation capabilities, Jtest provides everything an enterprise needs to accelerate the delivery of high quality and secure business-critical software.

PARASOFT SOATEST

Simplify functional API testing and improve software quality using test automation enhanced with AI and ML to create and maintain API tests within your CI/CD pipeline. Parasoft SOAtest identifies what tests to execute for validating code changes and adjusts tests as APIs change. The Parasoft smart API test generator monitors interactions with your application's UI and creates codeless API test scenarios that can be reused for both functional and nonfunctional security, load, and performance testing.

"Parasoft's continuous testing shines in API testing, service virtualization and integration testing, and the combined automation context."

—The Forrester Wave™: Continuous Functional Test Automation Suites 2020

PARASOFT VIRTUALIZE

When access to data and services is limited, test anything anytime with realistic virtual services that simulate the real thing on demand. Create and deploy test environments with synthetic data when dependent systems are inaccessible, uncontrollable, or nonexistent. Parasoft Virtualize eliminates testing bottlenecks by helping developers and testers deploy virtual test environments with services and data sets that behave like production systems, at a fraction of the cost of actual infrastructure.

PARASOFT CTP

Manage test environments and dependencies by orchestrating test execution, virtual services, and test data within the CI/CD pipeline. Parasoft Continuous Testing Platform (CTP) provides a unique environment-based approach to testing. CTP combines the tests, endpoints, and associated data necessary to quickly deploy and execute automated tests directly from the browser or as an automated job as part of the CI/CD workflow.

PARASOFT SELENIC

Rectify instabilities during execution of Selenium tests with self-healing, reduce test maintenance with AI-derived recommendations, and create more robust UI tests. Parasoft Selenic simplifies Selenium test creation using the page object model by recording manual interactions with the user interface, generating consistent and stable tests that will keep the CI pipeline flowing.

PARASOFT DTP

View a centralized dashboard of application quality, security, and compliance with detailed reports and advanced analytics. Build a strategy from actionable reports that can trigger events based on findings. Parasoft Development Testing Platform (DTP) provides a single source of truth across testing practices. DTP integrates with existing development ecosystems to provide insightful summaries for each build, each team, and the entire enterprise.



ACHIEVE YOUR GOALS

Take the next step toward reaching your business and technical goals. Organizations that deliver secure, reliable, and scalable software ahead of their competitors will be well poised to gain the biggest share of the market.

Our portfolio supports several critical process improvement needs across the SDLC, helping organizations succeed in their development efforts. This includes:

- » Complete test automation support for static analysis, unit testing, API testing, UI testing, security testing, and load/performance testing
- » Reporting and intelligent analytics for immediate insights on coverage, compliance, and quality
- » Test environment management and simulation to streamline application testing

“...clients looking for a genuine partner in testing, with strong and long-living roots in the testing space and complex technical systems to test, should take a serious look at Parasoft.”

—The Forrester Wave™: Continuous Functional Test Automation Suites 2020

PARTNER WITH PARASOFT

Learn how our automated software testing solutions can increase your application quality while meeting tight deadlines and budgets. Although implementing automated testing will incur an upfront technical infrastructure cost, the ROI of time saved, productivity gained, and quality improved will more than offset any tool expense, and the efficiency benefits vastly outweigh any technical challenges. If you need assistance calculating a projection for cost savings or cost avoidance for your organization, we would be happy to help you.

[Reach out to our experts.](#)

ABOUT PARASOFT

Parasoft helps organizations continuously deliver quality software with its market-proven, integrated suite of automated software testing tools. Supporting the enterprise, embedded, and IoT markets, Parasoft's technologies reduce the time, effort, and cost of delivering secure, reliable, and compliant software by integrating everything from deep code analysis and unit testing to web UI and API testing, plus service virtualization and complete code coverage, into the delivery pipeline. Bringing all this together, Parasoft's award winning reporting and analytics dashboard delivers a centralized view of quality enabling organizations to deliver with confidence and succeed in today's most strategic ecosystems and development initiatives — security, safety-critical, Agile, DevOps, and continuous testing.