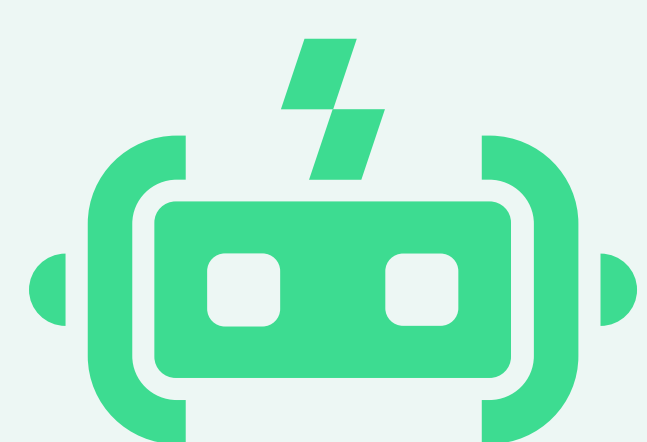


Elevating Software Quality:

The Enterprise Guide to Continuous Testing



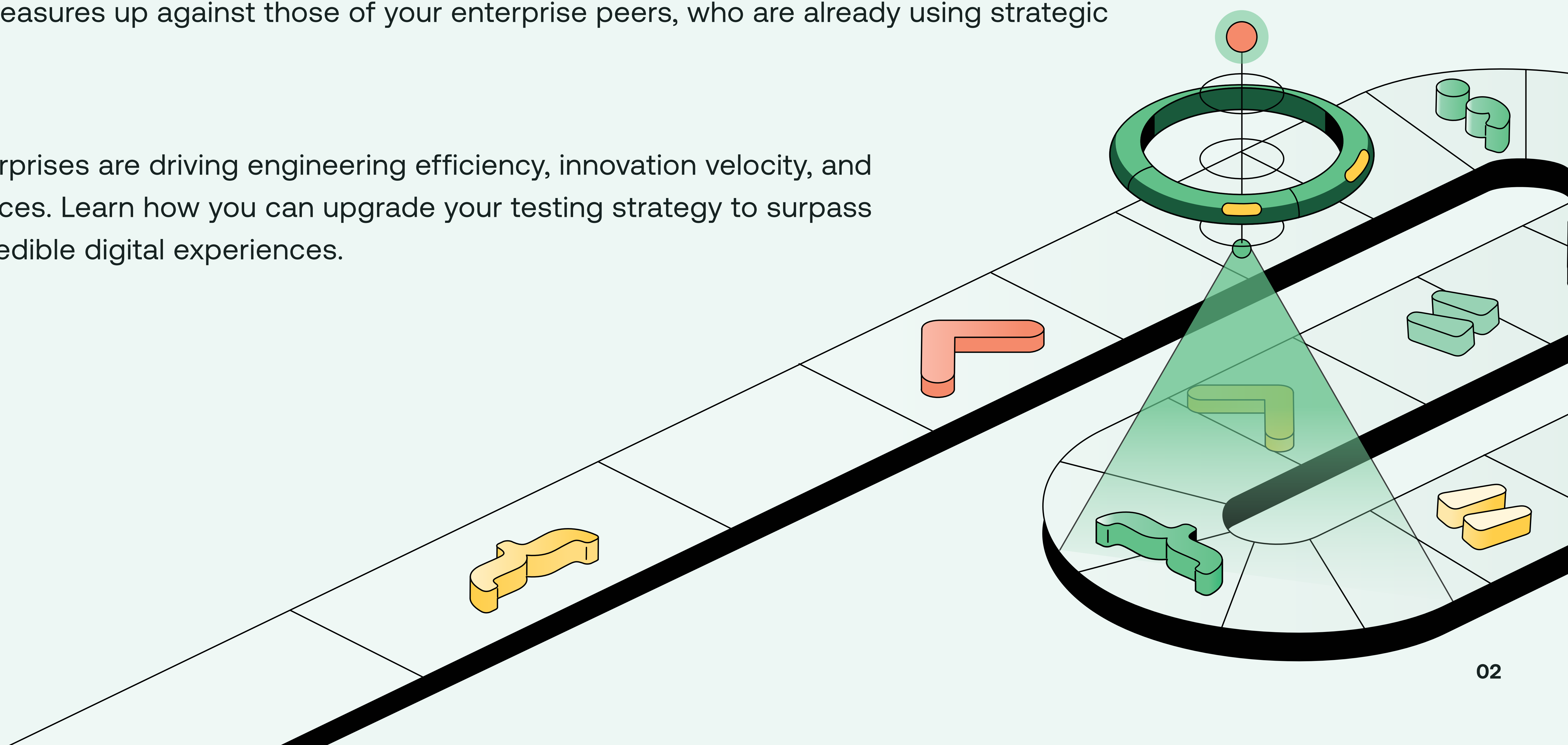


As a technical enterprise leader, your teams are responsible for building the most valuable web and mobile experiences on the market. The urgency to develop and release software quickly is more pressing than ever, driven by the high expectations of your customers. It's essential that your software not only reaches the market quickly but also upholds the highest quality across all stages of development and deployment.

But you can't achieve this with outdated testing methods. Staying competitive, retaining customers, and driving revenue all hinge on a strategic approach to testing—one that supports continuous quality and provides rapid feedback across the software development lifecycle (SDLC).

Are you wondering how your testing strategy measures up against those of your enterprise peers, who are already using strategic testing to ensure quality digital experiences.

This guide offers insights into how leading enterprises are driving engineering efficiency, innovation velocity, and minimizing risks through effective testing practices. Learn how you can upgrade your testing strategy to surpass industry standards and consistently deliver incredible digital experiences.



Why DevOps speeds require flexible test infrastructure with unified quality management

Limited testing environments can stagnate projects and threaten test stability, significantly impacting the developer experience with increased dev effort and low sprint scope (dev productivity) to ship on time. In worst cases, devs may ship without testing sufficiently or testing at all. Without centralized quality management to provision any mix of flexible test infrastructure (public or private real devices and emulators or simulators with ARM support), limited testing environments pose additional challenges including:



Limited Device Access

As mobile apps and responsive web design become normal, testing on real devices is critical. However, many teams only have access to a few physical devices for testing, if any at all. This makes it nearly impossible to test on the thousands of Android and iOS device types, sizes, and operating system versions in use today.



Inconsistent and Complex Test Environments

Some software testing tools and even local testing environments are difficult to configure and maintain. Different operating systems, browsers, and device types each require a specific setup, and keeping them all up to date is time-consuming. This often leads to inconsistencies that produce false test results.





Limited Geographic Coverage

When attempting to scale parallel testing, many teams struggle to test from different locations around the world, due to the limitations of the software testing tool in use (i.e., geolocation mocking). This prevents them from identifying issues that only appear in certain regions or on specific networks.



Long Test Cycles

Relying on physical devices and local test environments often means long testing cycles. Configuring environments, executing tests, and analyzing results can take days or even weeks. This delays releases and slows down development.



Inefficient CI/CD Pipelines

Managing the compute workloads of automated testing via CI/CD platforms is far less efficient and reliable than using an all-in-one quality management platform with flexible test orchestration capabilities to support a much wider range of use cases-and do so more efficiently.

To overcome these challenges and release with confidence, large organizations are embracing enterprise-grade unified testing platforms that are scalable, dependable and secure. Explore what the gold standards are for an enterprise-ready testing platform.

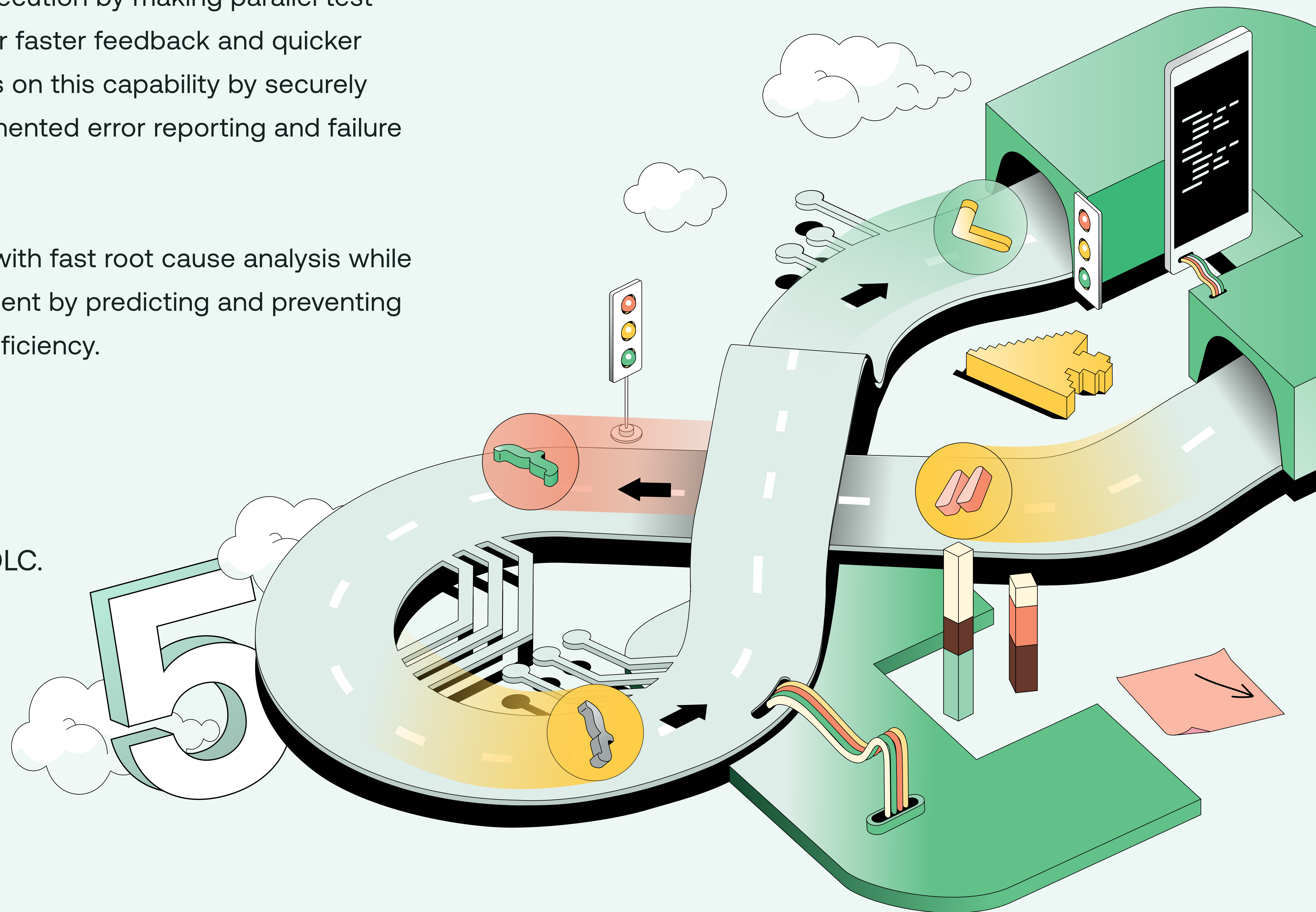


Meeting the Gold Standards in Automated Web and Mobile App Testing

The Selenium and Appium projects revolutionized test execution by making parallel test execution highly scalable, reducing overall testing time for faster feedback and quicker releases. A unified and continuous testing platform builds on this capability by securely extending observability into production to power AI-augmented error reporting and failure pattern analysis.

In this way, developers may find and fix problems easier with fast root cause analysis while development team leaders simplify continuous improvement by predicting and preventing errors. Now, teams can rethink regression and iteration efficiency.

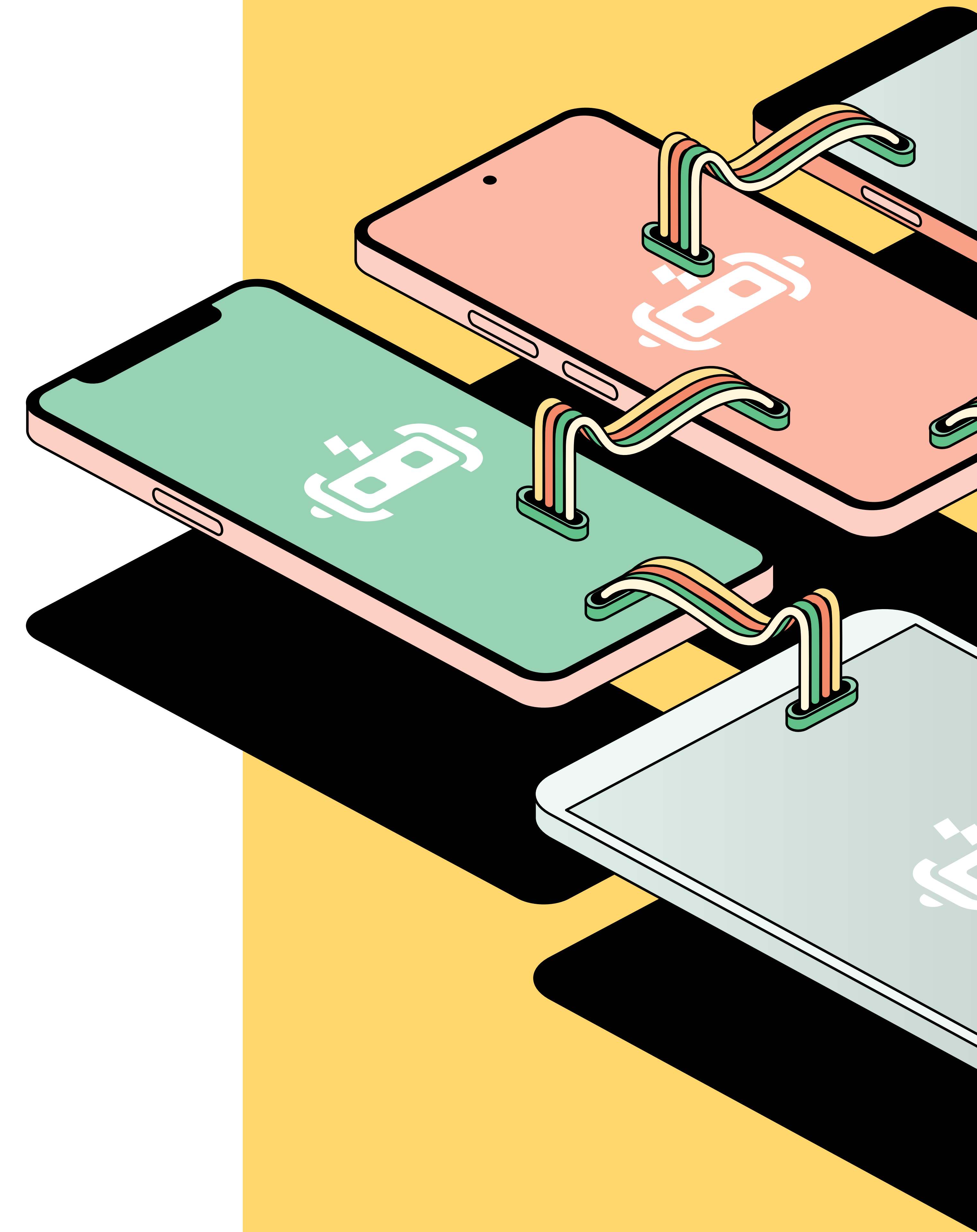
Here are **five must-haves for enterprises to drive continuous quality** at speed and at scale in their SDLC.



Choice of Public or Private Real Devices

Shipping mobile updates faster—whether to reduce UX friction or go to market faster than a competitor—is the #1 differentiator for most mobile apps. Over half of users will abandon an app for poor UX and/or performance. An automated testing platform helps you mitigate this risk by accelerating secure mobile testing with a dedicated pool of private devices that eliminate delays due to session acquisition, teardown, cleaning (as with public real devices), and team management tasks such as device allocation.

Additionally, private devices allow teams to customize setups with preserved settings, enabling devs to validate advanced mobile use cases ranging from Android Talkback to Apple Pay Support, MDM, cellular connectivity (deactivated WiFi), geolocation mocking, and much more. The right platform helps team leaders to easily provision workloads between public and private devices for optimal quality at speed and cost of quality.



Mobile Emulators and Simulators Expand Test Coverage

Shift-left is a popular term in DevOps. In the Agile world, it's a great methodology for performing tests earlier in the development lifecycle to identify issues before they hinder development. Spin up emulators and simulators before a device is even launched to the public or before an app has been built for early smoke and sanity testing. Remediating issues in the later stages of the SDLC is difficult and expensive. Emulators and simulators are a way to stay one step ahead of potential disaster. Emulators for Android and simulators for iOS supplement real device testing to get more coverage per test sprint – more bang for your buck – and minimize the risk of breaking changes, performance issues, and escaped defects. Enterprises must validate both INTEL and ARM architecture across real devices and simulators.

The Benefits Of Emulators And Simulators Include:

Better Test Coverage

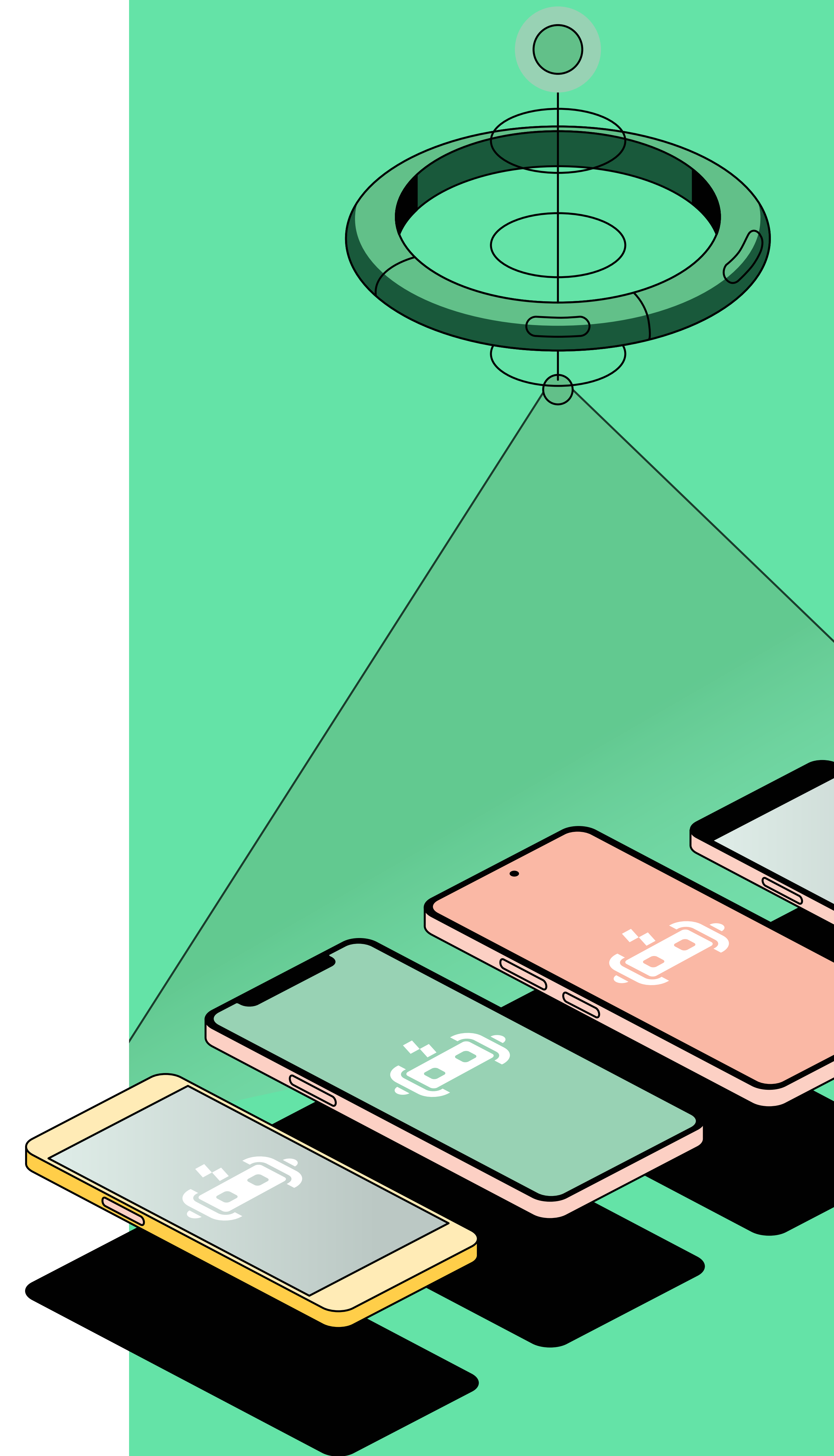
Highly scalable and efficient, emulators and simulators can efficiently cover more scenarios in test sprints to ensure test stability and non-flakiness. Real devices and emulators and simulators with centralized quality management is key, making it easy to know when, where, and how to improve DevOps Research and Assessment (DORA) metrics.

Faster Development Cycles

When you can detect issues earlier, you can dedicate more time to improving the quality of your app and ultimately reduce build times leading to faster development cycles. With fast root-cause analysis and proactive remediation, your development cycles run fast and efficiently at any scale.

Better Cost of Quality

If your team is massively scaling parallel testing, control your cost of quality by moving workloads from real devices to emulators or simulators. Support both INTEL and ARM architecture for test cases requiring modern silicon.



Security, Compliance, and Accessibility

A testing platform must be certified and audited to meet the strictest regulations, including industry-leading compliance certifications such as SOC2/3, ISO 27701/27001, GDPR, and CCPA. Also critical is being KY3P compliant – a requirement by many global banking, financial services, and insurance companies of their vendors. Enterprise-ready means that teams have a trusted partner to consolidate tools on a platform.

Commitment to security and corporate responsibility provides extra peace of mind that your sensitive information is protected. What does this look like in practice?

Network Isolation

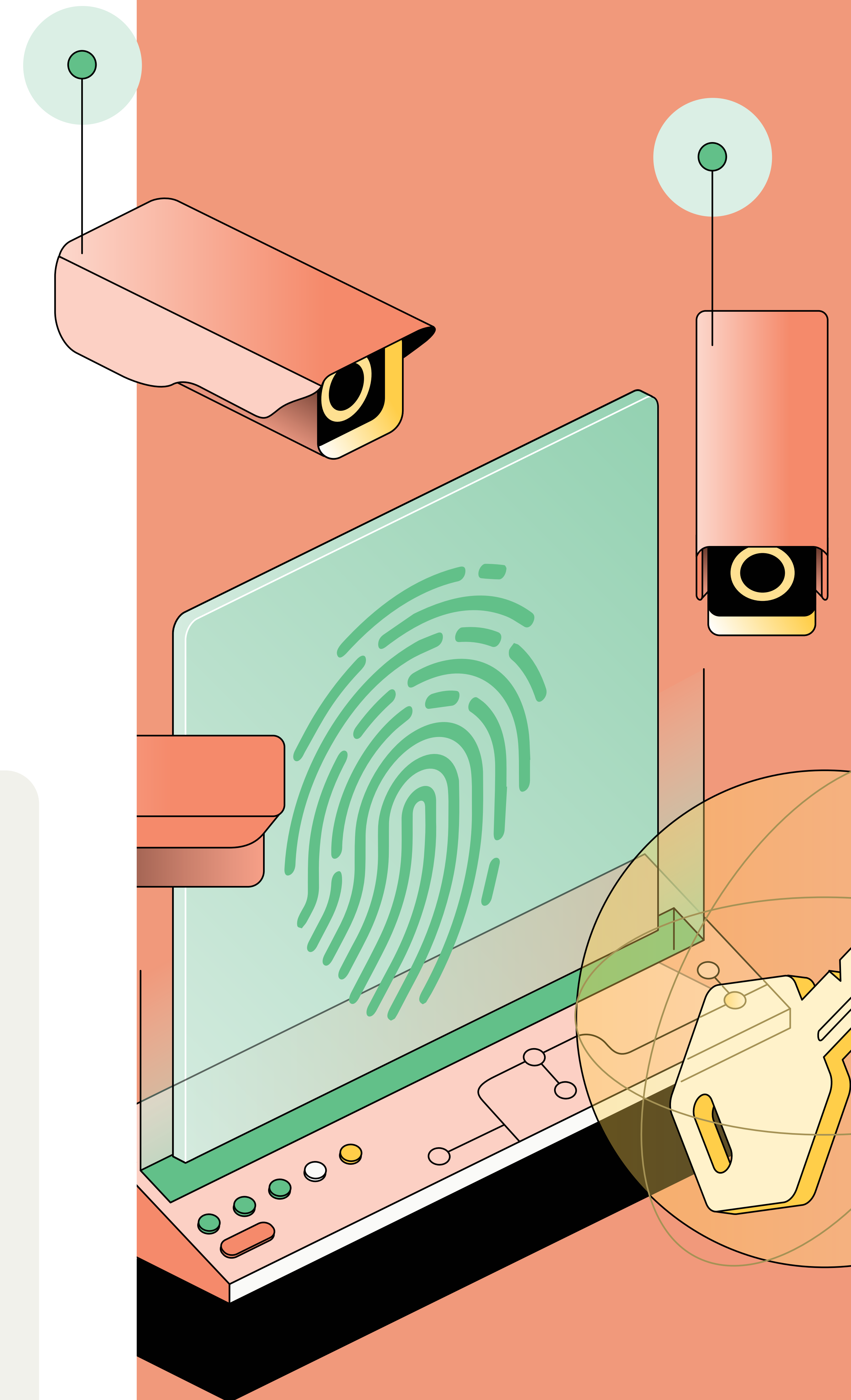
Preventing unauthorized access to the network by ensuring that data communication within the platform remains secure, thus keeping your data safe from external threats. Think of a cloud testing environment as a secure bubble around your tests, preventing unauthorized access and data breaches.

Data Encryption

Most testing tools offer VPN tunnels and should have high-availability and super efficient HTTP/2 tunnels that are robust enough to handle high volumes of parallel testing with minimal latency. Test behind the firewall at massive speed, scale, and security.

Access Control/Authentication and Authorization

Authorization policies such as MFA and user lifecycle management add an extra layer of security beyond passwords. The access rights are provisioned according to need-to-know, need-to-have, or need-to-do principles. Regular access rights reviews are conducted, making it much harder for unauthorized access.



Enterprise Partnership

What an enterprise partnership ultimately means is that there is an accelerated feedback loop between your needs and the vendor, creating a more tailored experience. A renowned commitment to enterprise partnership stands out with the following outcome-driven support and services:

Improve DORA Metrics

Integrating a scalable test infrastructure with enterprise support and services enables delivery of custom solutions that help you transform testing into a competitive differentiator with faster innovation and minimized risk of escaped defects.

Optimize Test Strategies

Modernizing your test strategy in partnership with testing experts and services teams allows your organization to handle the velocity and massive scale of regressions, mobile development, web accessibility compliance, and much more. Make the most of AI-augmented testing with smarter, faster insights and more effective continuous improvement.

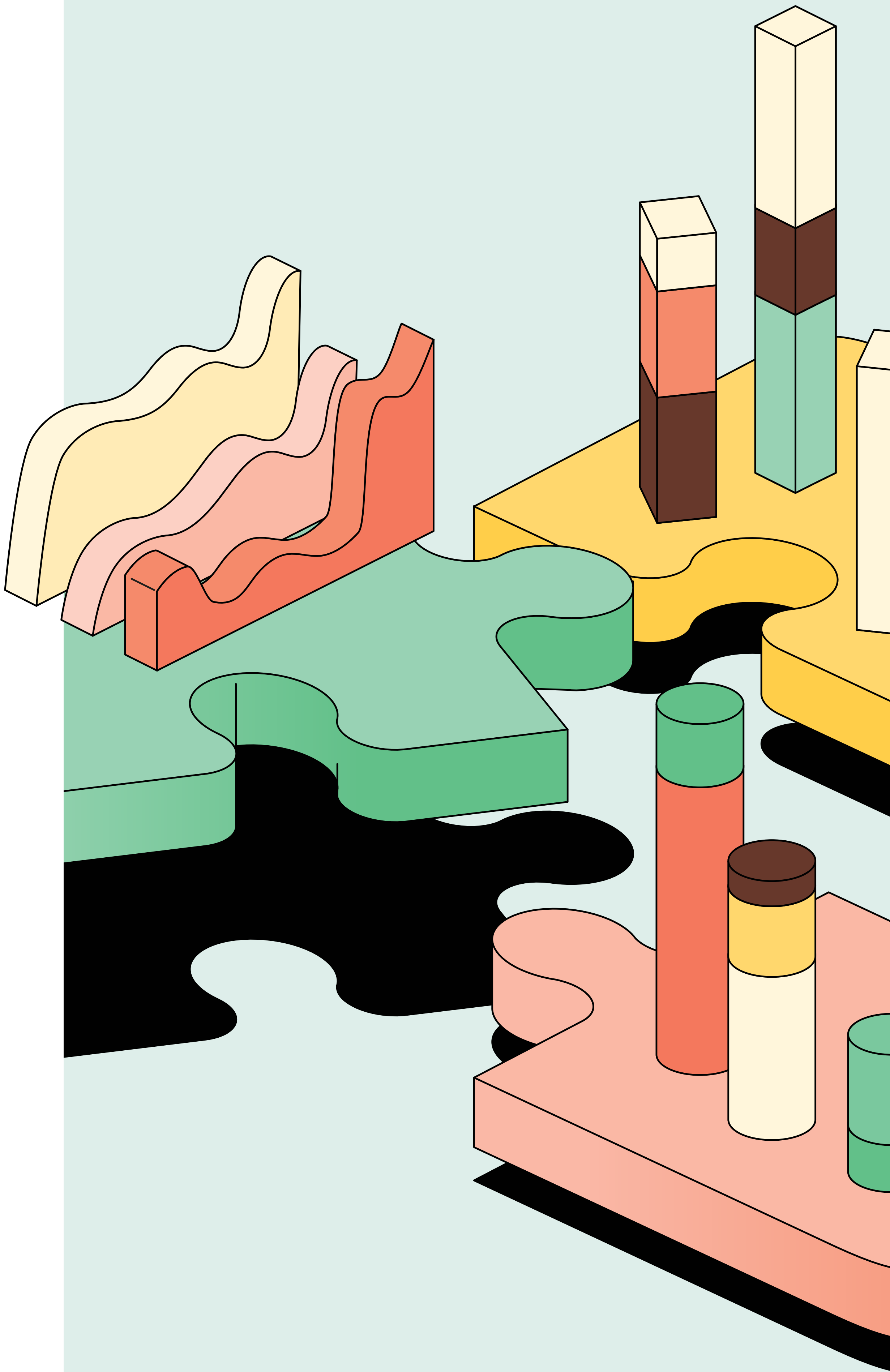
Optimize Cost of Quality At Scale

With a true partnership, development and quality teams gain observability and AI-powered insights along with expert support and services to know the best ways to provision flexible test infrastructure for optimal coverage. Minimize the risk of bottlenecks, breaking changes, and escaped defects.



Walmart adopted continuous testing best practices to execute more than 50K automated tests per day and **save \$750K man hours** on manual testing.

[LEARN MORE →](#)



Breadth of Device, OS, and Browser Combinations

Forget juggling tools - instead, seamlessly integrate mobile emulators, simulators, and a Real Device Cloud (RDC), all on a single, unified platform.

1. Test Everything

Validate across a vast range of devices, browsers, and OS versions, ensuring a flawless user experience for everyone.

2. Support ARM

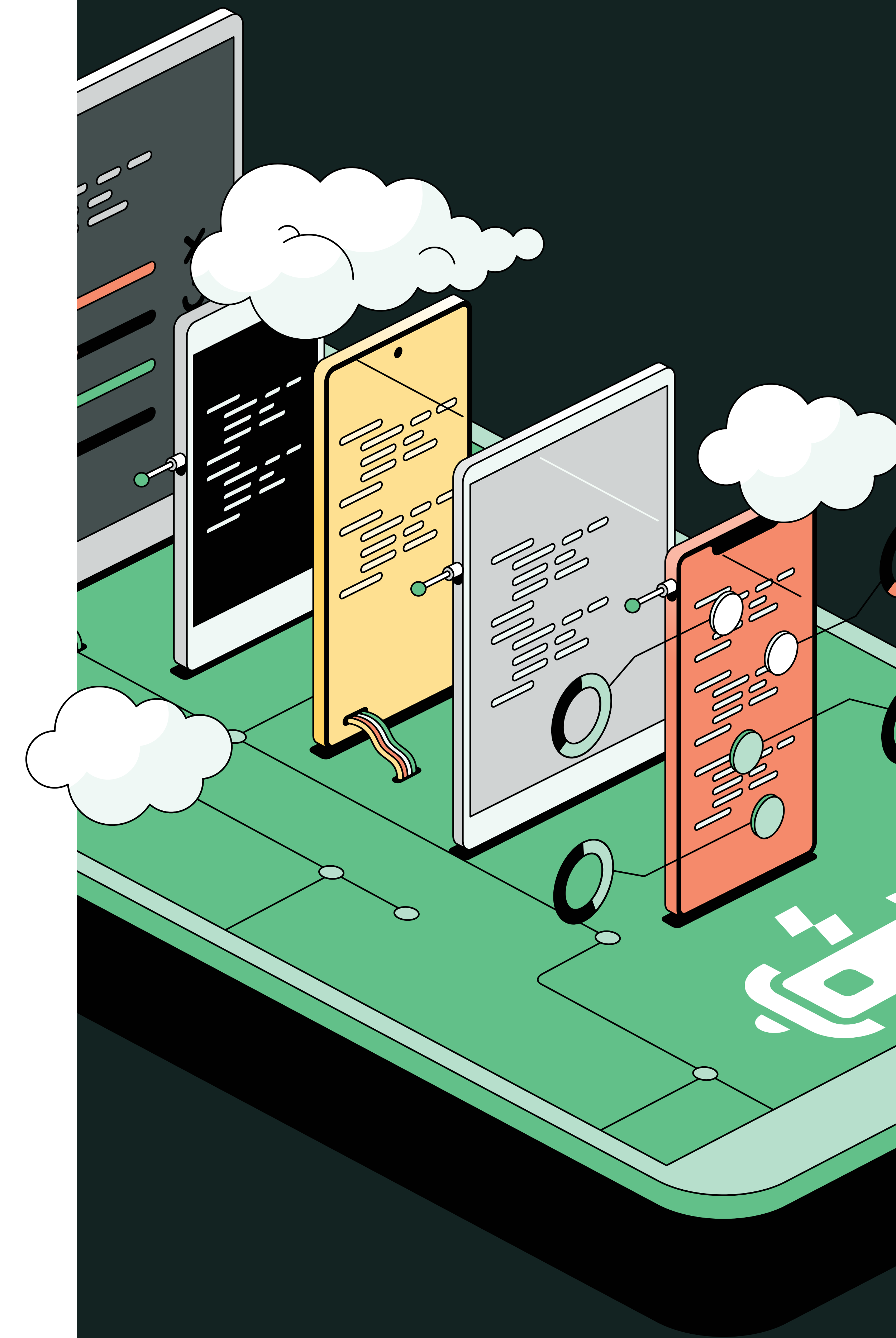
Test with cutting-edge features and upcoming software updates for a future-ready app.

3. Manage Quality

Achieve continuous quality throughout the SDLC with simplified management of all types of testing in the modern testing pyramid (web, mobile and mobile native apps). Optimize regression efficiency, automate accessibility compliance, and orchestrate test workloads (via Docker containers) to accelerate remote test executions and manage centralized test environments for a wide range of use cases.

4. Optimize Any Framework

Bring any workload with any framework and programming language to massively scale parallel testing and concurrency with big, complex test suites; look for native support of Selenium, Playwright, Appium, Cypress, WDIO, Espresso, and other frameworks.



The Enterprise-Ready Journey to Continuous Quality

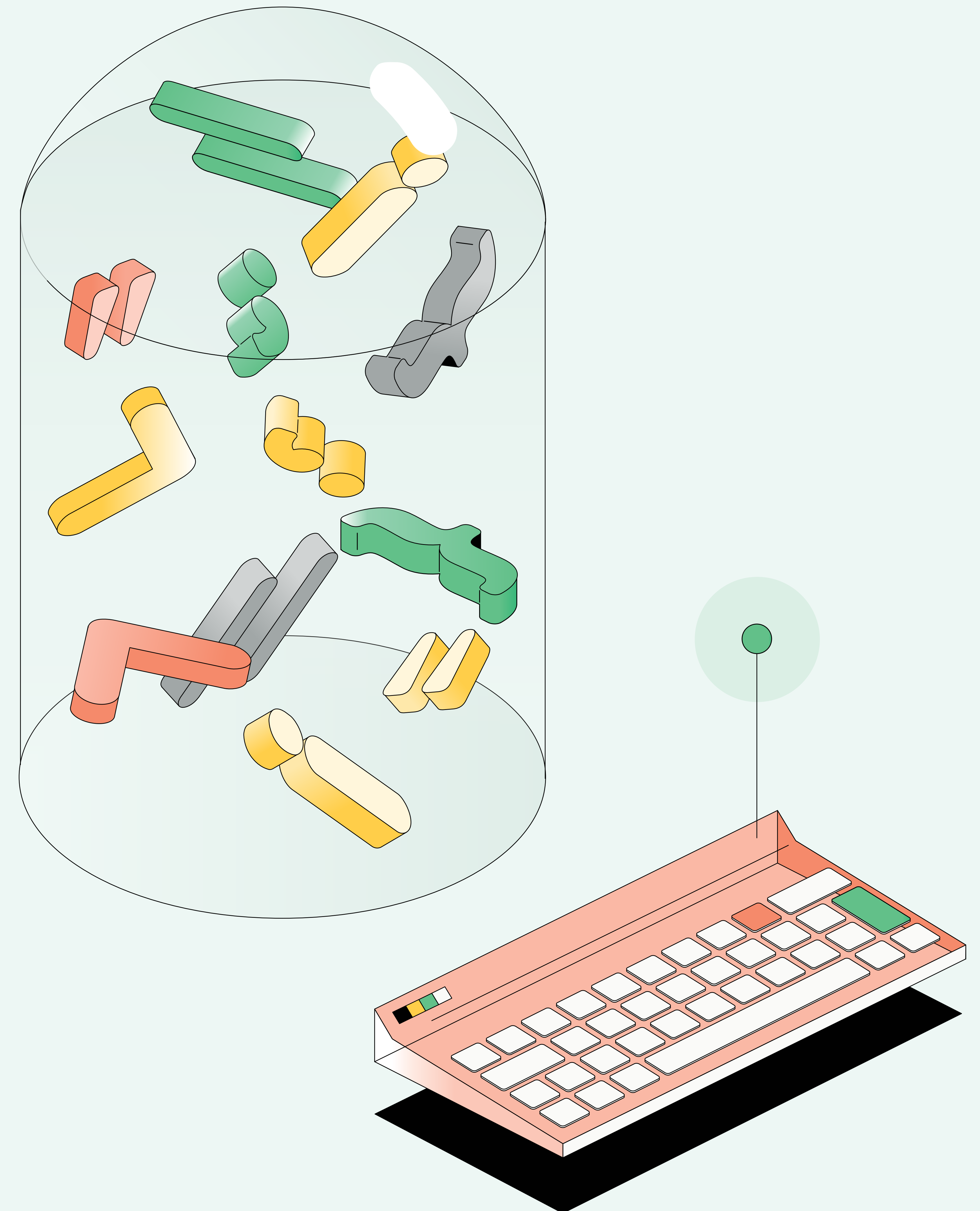
Juggling disparate yet limited testing tools and environments is exhausting. It's not an exaggeration to say that a one-stop automation shop with on-demand engineering and customer success support is core to your journey to continuous quality.

To recap, an enterprise-ready testing platform should provide:

01. The ability to choose between public and private devices
02. Mobile Emulators and Simulators for expanded test coverage
03. A certified and audited platform
04. Enterprise partnership for a more tailored support experience
05. Unmatched breadth of coverage on a unified platform

Ready to explore continuous testing done right in your enterprise?

[TALK TO A TESTING EXPERT TODAY →](#)





About Sauce Labs

Sauce Labs is the leading cloud-hosted platform for automated testing of web and mobile applications, enabling fast delivery of high-quality software across the development lifecycle. Founded by the creators of Selenium, Sauce Labs has been the testing leader for over 15 years and now runs over 1 billion tests annually. Trusted by Fortune 500 companies like Toyota, Walmart, Verizon, Gannett, and Fidelity Investments, its scalable, secure platform supports testing across thousands of operating systems, browsers, and devices while meeting the highest compliance standards.

hi@saucelabs.com

www.saucelabs.com