The Real Cost of Maintenance

A WHITE PAPER

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How Your Salesforce Test Automation Solution Vendor Can Save You Time and Money by Providing Three Essential Services

Many business leaders are surprised to learn that maintenance is the most expensive cost associated with Salesforce ownership. Salesforce delivers three major updates per year with hundreds of new features. These greatly improve functionality — but require businesses to conduct extensive testing to ensure all features function properly and integrate across applications.

Most organizations start out testing Salesforce manually because manual tests are easy to set up and run. But manual testing is extremely repetitive and prone to human error, which results in heavy maintenance and rework.

> Organizations spend countless hours reworking tests that break due to Salesforce release updates. Try our **ROI Calculator** to find out how much your business can save by switching to Provar.

When the search begins for a test automation solution, technology leaders — particularly those who've not done test automation before — may find any solution appealing, just as any shiny, new car might look attractive to someone who desperately needs a vehicle. However, whether purchasing a car or a test automation solution, it's important to take a broader perspective. Consider how viable the product is and how well it will meet long-term needs.

This white paper reveals the true cost of Salesforce maintenance and explains how test automation vendors can save customers time and money by preemptively identifying release updates, allocating a dedicated team of experts, and providing comprehensive release notes and continued education to help prepare customers for future changes.

How Much Is Maintenance Costing Your Team?

Salesforce delivers seasonal releases three times per year in spring, summer, and winter — plus, time-based features and weekly patches. While the customer relationship management (CRM) platform has a reputation for being straightforward to learn and intuitive to use, keeping up with the Salesforce release

cadence can be a major challenge.

Although some changes are imperceptible to end users, most have the potential to impact Salesforce customers adversely. An overlooked change could easily disrupt a business process, leading to errors and potential downtime that are likely to be far more costly than the cost of finding and fixing a broken test.

59% of organizations deploy a new software build daily.

The Salesforce platform has a lot of moving parts. While some Salesforce changes have little or no impact on test scripts, many have the potential to carry significant consequences across a broad range of tests. When tests break, it takes organizations weeks to rework them. This disrupts business and leads to high maintenance costs. Dynamic elements — such as app pages, visibility criteria, and CSS/DOM changes — make some Salesforce features more challenging to test, driving costs even higher.

Thorough Salesforce testing is critical because a high-severity system error can cost companies many hours of downtime and millions of dollars.[1]

When Salesforce releases an update, organizations must prioritize testing, regardless of whether they're ready to incorporate changes. Testing needs could be as simple as smoke tests and exploratory tests, or as complex as full regressions, depending on what changed.

Salesforce test maintenance comprises a wide range of tasks, including

- Monitoring test results over time to keep a historical record of passes and failures, so teams know which tests are most likely to break

- Prioritizing test cases based on risk and coverage, so failures can be addressed in a sequence, beginning with the most critical tests

- Inspecting detailed test reports to track failure messages and assess test case flow, and then communicating the results to the team

- Updating tests to add or remove steps, fixing broken steps by debugging failures, or improving performance

Skipping any of the above tasks diminishes the value of test automation. When a test isn't properly maintained, it will eventually become obsolete, exposing the organization to security threats and other risks.

[1] "Lessons Learned From the Salesforce Outage." Devops.Com. June 17, 2019. https://devops.com/lessons-learned-from-the-salesforce-outage/

Salesforce customers can expect a **5%** test breakage rate.

On average, Salesforce customers experience 5 significant test breakages for every 100 tests. The time to fix each failure varies depending on the scope and other factors. If the errors are fairly obvious, a team might be able to fix them all in just a few hours. But if complex rework is required, the task could take several days.

Similarly, the time to execute 100 test cases is also incredibly variable. It depends on the length and structure of each test. On average, it takes five to ten minutes to execute one automated test case. So, 100 test cases could require up to 1,000 minutes of execution time. However, using API-based testing could reduce the time from several minutes to a few seconds per test.

Ideally, organizations will reach a point where they need to perform update tasks only for major releases. This is where a modern test automation tool can help. Read on to learn how the three essential Salesforce maintenance services Provar provides save organizations time and money.

1. Preemptively identify significant Salesforce release updates that are likely to break tests

Salesforce frequently updates its Document Object Model (DOM) programming interface.[2] The DOM enables users to create custom HTML and CSS for their pages. When Salesforce originally introduced the Shadow DOM, they promised to update all their platforms, but this process is still underway.[3]

The heavy DOM structure Salesforce uses makes it challenging for automated testing tools to function properly. Test teams must update tests for every Salesforce release. Tests built on the DOM are inherently fragile and require more maintenance.

Additionally, Salesforce uses metadata to define the form and structure of pages, including page layouts, objects, and field definitions. Because metadata changes less frequently than rendered page sources, tests based on metadata are much more resilient. Automated testing solutions that use metadata to build tests streamline maintenance and help ensure successful Salesforce adoption. Provar performs robust testing on many Salesforce features using metadata.

A test automation vendor should have a dedicated engineering team that reviews every Salesforce release in advance and identifies any significant changes that could break test scripts. By conducting comprehensive analysis and testing well before Salesforce releases an update, the vendor can ensure their test automation solution is prepared for the next Salesforce release. This helps mitigate risks before Salesforce updates even make it to customers.

Since 2018, Provar has partnered with Salesforce to test releases before anyone else sees them. We provided preliminary feedback on changes that can cause tests to break and share the impact plus potential bugs before each new release reached the pre-release and sandbox preview stages. As part of this process, we run daily regression tests on Salesforce pre-release, sandbox, and production environments to cover the weekly Salesforce patch cycle and report any issues we find to Salesforce. We also update our solution to prepare for the next Salesforce release in time for customers to maximise their use of the Sandbox Preview window.

Provar combines our thorough regression impact with information from the draft release notes before the sandbox preview begins. We then prioritize both the discovered and announced changes, focusing first on Priority 1 changes that will surely affect test execution and those that carry the potential to affect testing. New features that we consider customers are likely to start using are accelerated through our product backlog process.

Next, we test the Salesforce changes that either will or could affect test mapping and creation. We consider these as Priority 2 changes and try to incorporate as many as possible into our current release, adding the rest to our product roadmap for planned delivery in future Provar releases.

[2] "Introduction to the DOM." MDN Web Docs by Mozilla. https://developer.mozil-la.org/en-US/docs/Web/API/Document_Object_Model/Introduction

[3] "Shadow DOM." Salesforce Lightning Web Components Dev Guide. https://develop-er.salesforce.com/docs/component-library/documentation/en/lwc/lwc.create_dom
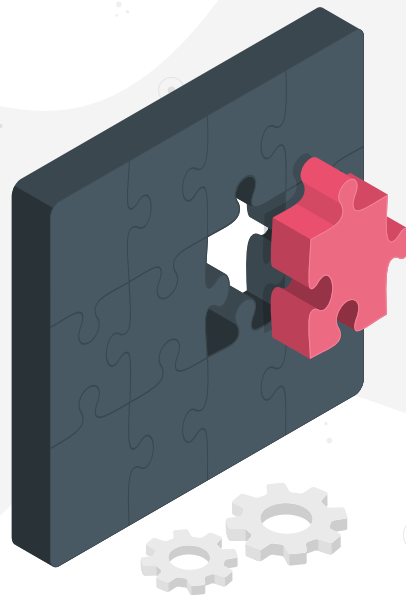
2. Have a dedicated team to resolve pain points, so your teams don't have to

Provar's experts spend hours reviewing Salesforce release notes and testing major Salesforce releases and customizations. Our engineers perform a wide range of testing, so business customers can be productive quickly when Salesforce delivers a new release.

Provar conducts many different types of tests for specialized needs, such as:
- Unit testing
- Functional testing
- Integration testing
- Regressing testing

Provar's customers enjoy a significant reduction in test maintenance time and automation. Salesforce itself is probably the best example of the tangible cost savings a company can realize by investing in a test automation solution that prioritizes reducing maintenance. Because Salesforce has partnered with Provar, one Salesforce team uses Provar to test upcoming releases.

Within six months of adopting Provar, the Salesforce Business Technology team saw an 88% reduction in test maintenance time per FTE for each QA sprint. Prior to Provar, it took 2 dedicated quality engineers 80 hours each to update test cases on Selenium. But with Provar Automation, on average, an engineer could complete a QA sprint in about 10 hours.

> "We were spending **30** to **40%** of our time continually redoing our automation test scripts in Selenium. With Provar, we were able to drastically reduce that entire maintenance effort, so it's been a really big win for us."
> —Ben Kim, Senior Manager, Software Engineering at Salesforce

On top of this impressive reduction in test maintenance time, Salesforce experienced an extraordinary improvement in automation time. Previously, Salesforce engineers had spent 12 weeks testing scripts in Selenium. But with Provar, they completed the same set of tests in a week. Plus, whereas Selenium only covered user interface (UI) testing, Provar testing included both UI and API tests.

Overall, the Salesforce Business Technology team increased their automation productivity by a factor of 12. Provar enabled the team to pare three months of testing down to a week. Not only was the Provar testing more comprehensive, but it also freed up engineering time and resources. With Provar, testing required only one quality assurance engineer instead of two, and the engineer was able to write all the scripts within the same week.

Other Provar customers enjoy similarly impressive results, although their success metrics vary depending on each organization's needs and focus. One finding is clear: Provar saves time. For example, Millsapps, Ballinger & Associates (MB&A) reported a 60% reduction in time testing major Salesforce releases and a 60% reduction in time maintaining tests related to Salesforce releases. MB&A also saw an overall 45% reduction in testing time across the board.

Provar also enables customers to increase the scope of their testing efforts significantly. For example, MB&A reported major improvements in quality, with approximately 50% fewer bugs and an 80% reduction in customer support tickets. The company realized these gains while accelerating its release schedules by two weeks. With Provar, MB&A can perform 30% of its tests earlier in the software development life cycle.

> "After switching to Provar, we've definitely seen a reduction in bugs and have produced exceptionally clean releases as a result of using Provar's test automation instead of relying on manual testing alone. It's been a complete game-changer for us in terms of delivering quality products for the SalesforceApp exchange." —Sean Parker, Product Owner, Millsapps, Ballinger & Associates

3. Provide comprehensive release notes and continued education so customers can prepare for future Salesforce updates

Does your test automation vendor provide comprehensive release notes to inform you about upcoming Salesforce changes that are likely to break test scripts? Does your vendor explain, in advance, what changes they're making to their test automation solution to mitigate those risks and minimize business disruption? And is that documentation readily available in advance, so you have enough time to prepare for an upcoming Salesforce release?

A test automation vendor should provide documentation to customers before each Salesforce release. At Provar, we let our customers know what's coming well in advance, so they have plenty of time to prepare. Our DOM spreadsheets detail which areas to watch.

We can provide comprehensive documentation because our team of experts has a unique understanding of Salesforce and early access to Salesforce releases. Plus, Provar technology is strong enough to analyze and work intuitively with Salesforce's metadata.

Besides providing documentation for high-priority Salesforce changes, Provar also provides information on lower-priority changes that are unlikely to require testing and those that don't impact Provar's platform. Because these topics might interest some customers, we cover them in our webinars, videos, and blogs, and on our Twitter page.

Deeper application insights

Provar's customers not only get better software faster, but they also get more and deeper application insights, so they can be better informed and better prepared long before they receive a new Salesforce release. Instead of struggling to get up to speed on the latest Salesforce changes, customers can focus on testing, enabling them to discover and resolve issues much earlier in the DevOps cycle.

Comprehensive release notes

Because transparency is key to reducing the time and costs associated with Salesforce maintenance, we provide a preview of upcoming changes as soon as possible. Comprehensive release notes and extensive education help our customers gain confidence. Having access to thorough documentation and training saves Salesforce business users days of valuable time because they no longer waste precious hours scouring the internet for the details they need.

Excellent customer service

You're not just investing in the product when you purchase a test automation solution. You're also investing in the people behind the product. At Provar, our team of experts helps your team become productive quickly. We provide world-class customer service, including Provar customer success team demos, deep testing expertise, extensive product knowledge, and fast response to service requests.

Education

Provar also provides continuing education through the University of Provar. Customers have access to self-paced courses and resources that are developed by our team of content creators and in-house subject-matter experts. By completing a series of interactive lessons, you can learn about Provar essentials and advanced features. Lessons cover topics such as debugging Provar tests, CI/CD integration, test automation, and more — all to help you shift your testing left.

Community

Our customers have the option to join the Provar Community forum where they can connect with other Provar customers and share knowledge and best practices for test automation, team processes, and more. Those who join gain access to a wealth of custom APIs and new resources to help maximize their use of Provar.

Save on Salesforce Maintenance with Provar

Buyer beware: not all test automation vendors provide the three essential services that reduce the cost of maintenance. It's up to business leaders to be cautious and exercise due diligence when evaluating test automation tools.

A test automation solution that's backed by a dedicated team of experts who can preemptively identify significant changes in forthcoming updates and provide thorough documentation and training is essential to mitigating the risk of test failures — and the business consequences that result. Provar Automation will always prioritize these three essential services to reduce your maintenance costs.

Provar is the only code-free, integrated automation testing tool designed specifically for Salesforce. G2 recognized Provar as one of the top 50 development products in 2022, with nearly 60% of G2 reviewers giving us a 5-star rating.[4] Provar's unique metadata integration, strong technical support, and comprehensive customer education make it easy to build and maintain Salesforce test scripts.

Looking for a Salesforce test automation solution with a proven track record of success? **Connect with our team for a Provar demo today.**

[4] https://www.g2.com/products/provar/reviews