



Top Ten Retailer Leverages Login Enterprise to Automate Change Testing

-  Retail
-  North America
-  125,000
-  Electronics

The Challenge

An ever-increasing number of changes to the VDI stack

Per the National Retail Federation list, our client has been one of the Top 10 Retailers in the U.S. for many years. Having used VDI for years to deliver business-critical applications to office and store workers, a series of planned changes were rolled into Production, resulting in unexpected, adverse impacts on business-critical applications. When this occurred many times over a relatively short window despite everyone’s best efforts, the executive team determined a complete overhaul of the VDI Change Management approach was necessary and provided a set of guiding principles of “excellent end-user experience,” “automation everywhere,” and “@ industry speed.” The expectation was that moving from a set of largely manual testing in a best-effort paradigm by a small team to a rigorous testing paradigm driven by technology and measuring user experience would yield drastically different outcomes.

“Our prior approach had carried over from the 1990s, or maybe even earlier,” said the VP of End User Computing, who ultimately had accountability for the transformation. “We held a Change Advisory Board meeting weekly with a large group of individuals all representing changes from their team – network, OS, security, various applications owners, etc. Each change was tested within the constraints of their group, which was running against the previous integration, but rarely together as a group of changes that would essentially comprise a new release.” The executive compared it to a chemist mixing a solution of unmarked chemicals in a lab. Each manufacturer had likely managed their Quality Assurance process to ensure the contents of their bottle were good, but mixing them could create instability or, worst, catastrophic effects. “At the end of the day, our users don’t care about hardware or software providers or what it takes to deliver an application. They measure IT solely on the experience they have with a handful of applications they use all day long, and it comes down to its great, it’s OK, or it’s awful.”

The Solution

Driving a pipeline of changes into a Testing Factory

The client set out to identify how they could develop a Testing Factory capable of rapidly testing updates to an image at an individual component level, then ultimately as a group or release candidate—finally putting stress on that release candidate to understand performance under peak stress conditions. Critical to this design was the ability to drive a pipeline approach through this testing factory, where change candidates could be introduced via a system, then an automation platform used to build a new image on the fly consisting of the initial production build and just this one change candidate. The resulting image could then be tested using a set of smoke and minimal performance tests to determine a deviation away from a standardized tolerance. If none is presented, accept that change candidate for the “integration build.” “With each candidate change cycling through this process via automation, a set of candidate changes quickly mounts up such that within a few days, we’re ready to freeze the list and run a set of integration changes,” said the VP. The set of changes is then applied en-masse to the prior image build. A battery of tests is run against that build, including scale, load, and soak conditions, mirroring various scenarios across the Retail industry around holiday sales and other seasonal events.

Building out a Social Contract with the application owners

Any test is only as good as its design, so it was critical to engage the application and, ultimately, the business owners in this transformation. “They truly understand their applications and business processes better than anyone else, so having them design the application tests to be performed and maintaining those tests as part of their release cycle was critical,” according to the client. Their incentive is that before any change, at any layer in the EUC stack, is deployed into Production, the test will run under various conditions to ensure it meets a set of minimal end-user experience metrics. If it doesn’t, we’ll pull the update for further evaluation. This “social contract” meant that if the application owner would undertake the effort to write the test (or fund the development with a Professional Services company to develop it), they could be assured it would always pass before any change was made to the environment. If, by any chance, something “slipped by,” they could update the test so that it never again happened, and ultimately, the better the test, the better their protection.

“Given Login Enterprise workloads are developed in C#, which was easy for the group to use, this was too tempting an offer for most to pass up, so we ended up with a significant library of tests that now run before every change window.”

Vice President of IT

From a few tests to many for every Patch Tuesday

Before building out a Testing Factory, the client would do their best to engage application owners to do some testing in a sandbox environment, mainly if there was a concern that a given change, might impact their application. In most cases, this resulted in a handful of people doing manual testing for a few hours, if they were lucky. “I support over 20,000 users running about 50 revenue facing applications that support the lifeblood of the business, and I was lucky if I could get half a dozen to do an hour of testing each week,” reported the VP of EUC. “By comparison, we’re now running thousands of tests between individual change tests across dozens of applications to significant scale testing against the resulting release candidate. Our use of automation means we’re doing all of that with the same, or possibly less human capital,” he said. “When the system reports a degraded end-user experience, we can zero in precisely on which change had the impact and extract that from the build, then re-start and measure again, altering the team that put the change forward of its impact and requesting further evaluation before re-submitting.” In the past, the company had fallen victim to the “Law of Unintended Consequences,” where a change in one area manifested as a degraded experience somewhere else. Perhaps a change in the Security layer, resulting in considerably poorer performance of an application start, or an update to an operating system configuration resulting in slower database lookups. Login Enterprise drives testing from an end-user experience perspective, uniquely measuring the time to execute each step in a workflow and managing that workflow through the UI. Testing is done precisely the way a user would, and any degraded experience will be observed accordingly.



TESTING FACTORY

The Results

Confidently managed systems at the bleeding edge of change

With almost every supplier and application team adopting DevOps as the methodology for software updates, the EUC team is inundated with daily change requests. Some nontrivial percentages of these are zero-day sensitive and need to be expedited into Production to ensure the corporation's security. These competing requirements – deal with much more change and, at the same time, go faster, are further exacerbated by the fact that a failure will potentially impact thousands of associates. It's a trifecta of stress. Our client addressed this scenario with a determination to deliver change testing at scale through automation and the breadth of capability of Login Enterprise. By engaging the application owners in a "social contract," the client has created the perfect separation of Church and Stage in their environment. EUC is responsible for running the tests, but the application owner is responsible for designing (and delivering) them. The agreement is that no change will go into Production if the tests don't pass.

Integrating Login Enterprise with other technologies to initially build an image based on a candidate change, automatically configuring and executing tests. Consuming the resulting data to determine the next steps has moved this client from a situation where a small team was conducting a very modest degree of testing, mainly for optics, to a dramatic increase in testing before each release. Leveraging other Login Enterprise capabilities, the client further "verifies" each release within minutes of going into Production. Typically, in the middle of the night, by running Login Enterprise, synthetic users from every store such that if there's a "last inch" issue at one store or another, that can be singled out well in advance of store opening time. If the issue somehow is pervasive despite all the testing, a rollback can similarly be undertaken, and that can, in turn, be validated at each store. "To date, we've seen huge dividends from this integrated approach, with Login Enterprise representing the workhorse of this system. We can finally keep up with the never-ending cycle of changes, moving quickly to get them tested and into Production. We can do that confident that we haven't broken anything, and if we do, we'll know before any user ever sees it".



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About Login VSI

Login VSI maximizes the end-user experience for all digital workspaces. Login Enterprise is an automated testing platform that predicts performance, ensures business continuity and reduces risk.