

## Lucent Technologies

### FAST FACTS

#### Company

Lucent Technologies designs and delivers the systems, software and services for next-generation communications networks utilized by service providers and enterprises.

#### Industry

Government

#### Geography

Telecommunications

#### Challenges

- Transition from a manual to an automated testing environment to improve application quality
- Move the QA process upstream in the development cycle
- Maintain test cycle flexibility

#### Solution

- Borland® SilkTest®

#### Results

- Reduction in testing time of 98%—from 36 hours to 24 minutes
- Improved software quality through the ability to proactively find and resolve software discrepancies prior to release
- Tighter collaboration between development and QA

### COMPANY

Lucent Technologies designs and delivers the systems, software and services for next-generation communications networks utilized by service providers and enterprises. Lucent, whose products are backed by the research and development talent of Bell Labs, is headquartered in Murray Hill, New Jersey.

Lucent's Internet Protocol Services Product Group (IPSPG), located in Malvern, Pennsylvania, offers Internet Protocol (IP) network administration software—called QIP—specifically for IP name and address management. The software enables automatic authentication and assignment of IP addresses to network users. The QIP application is targeted at the enterprise-level corporate and service provider markets.

### CHALLENGES

Lenny Roselli, a senior QA engineer at Lucent, described the complex technical environment: "QIP is written in C++. We have to support about 17 different environments and we support Sybase® and Oracle® databases. For GUIs, it's Motif, Windows NT® and our own Web client, which is a limited GUI for Web access. And finally, for Web servers, we support Netscape, Netscape Apache and Internet Explorer."

Lucent's goal was to transition from a manual to an automated testing environment, while moving the QA process upstream in the development cycle.

### SOLUTION

The IPSPG division initially evaluated five different regression test tools, but the search ultimately narrowed to Borland and one other competitor. Roselli, who managed the Borland® SilkTest® QA automation project, explained why Borland SilkTest was selected, "There were four major reasons why we selected Borland SilkTest. First was its flexible scripting language, Borland® 4Test®. I could develop my own classes and methods, then use those in my test scripts. Borland was the only vendor that offered such a powerful scripting language. Second, with SilkTest I could develop data-driven scripts to effectively test our application. With the other products I had to hard-code my data—which means data does not change from test cycle to test cycle—and that is not acceptable. Third, the flexibility is outstanding. For the occasional instances when there isn't a specific feature within Borland SilkTest to handle every single testing need, the tool is so flexible that we've always been able to come up with creative solutions for our testing challenges. Finally, because of the object-oriented architecture of Borland SilkTest, test scripts are easily maintained when something in the application changes."

Borland SilkTest fits into Lucent's QA/development environment with ease. "Because SilkTest offers such a powerful scripting language," Roselli said, "an application need not be finished before we begin the test creation process. We can start writing test scripts as soon as the development specification is complete. With a record-and-playback tool, we wouldn't be able to work closely with development early on in the software engineering process. Instead, we'd have to wait for the entire development cycle to be complete before beginning the test creation process, since the record-and-playback tool requires a finished application against which to record tests. But with Borland SilkTest, by the time software development is complete, the tests have also been created; we are ready to start the QA testing process immediately."

“Automation has been a lot of hard work, but Borland has provided us the tools to be so much more productive in our QA process. We have the results to prove it.”

— Lenny Roselli, Senior QA Engineer, Lucent Technologies

## RESULTS

Borland SilkTest has saved a significant amount of development and testing time. Roselli described an example from QA automation before and after metrics analysis: “One of our 270 testing routines used to take 36 hours to run through manually. Borland SilkTest runs that same routine in 24 minutes. The productivity increases within QA have been amazing. Now when we release, we have such a high level of confidence in the quality and integrity of our product—without having to spend our entire lives in the lab.

“Another experience that comes to mind was a major bug that Borland SilkTest uncovered that otherwise would have gone undetected,” continued Roselli. “We had a callout in one of our new routines that turned into a major performance issue. It was discovered with Borland SilkTest due to the speed of the automation against the routine. Manual testing would never have uncovered it—because human hands cannot enter data as quickly as Borland SilkTest can generate it. We could have potentially shipped the release and not known about the bug until our customers found it. That incident alone provided us instant payback on our SilkTest investment.”

Another positive change for Lucent is the teamwork that has evolved between development and QA. “The ability to work so closely with development throughout the entire development process has been a big win,” explained Roselli. “The two groups now collaborate on many technical issues, and QA has gained tremendous credibility and visibility within the organization. Borland 4Test offers a clear advantage here because it is so C-like that our developers can easily work with me to help resolve development/testing issues. They can look at the code used in my scripts and replicate the bug without my assistance. This is yet another example of Borland SilkTest freeing up QA resources for other tasks.”

Roselli has received glowing reviews from everyone who sees what’s been accomplished with Borland SilkTest. Mike Dooley, Lucent’s VP of Development, even stopped by for a test automation demonstration and walked away truly impressed: “With Borland SilkTest, we are able to develop and test our QIP product line in record time.”

“Automation has been a lot of hard work,” concluded Roselli, “but Borland has provided us the tools to be so much more productive in our QA process. We have the results to prove it.”

Borland is the leading vendor of Open Application Lifecycle Management (ALM) solutions - open to customers' processes, tools and platforms - providing the flexibility to manage, measure and improve the software delivery process.