

Alcatel-Lucent Division Increases Automation and Productivity with Fanfare

Alcatel-Lucent | Case Study

EXECUTIVE SUMMARY

CUSTOMER

Alcatel-Lucent's Access Networking Division (AND) develops the Litespan access platform, an advanced fiber-optic (SONET)-based digital loop carrier.

BUSINESS CHALLENGE

Alcatel-Lucent AND needed a testing solution that required less manual intervention than its homegrown automation system and could scale testing to keep pace with increasing device complexity.

SOLUTION

Alcatel-Lucent AND chose FanfareSVT to help reduce manual intervention, increase its effectiveness reaching the required test coverage for regression, and further automate interoperability testing.

RESULTS

- Increased automation by 50%, with 60% of testing now automated (up from 40%)
- Reduced regression test cycle window by up to 50%
- Reduced interoperability test setup time by 67%, with 20% of overall testing time now used for setup (down from 60%)
- Achieved 100% coverage for interoperability testing, in a third of the previous duration
- Experienced a 12-fold improvement in productivity for interoperability testing
- Reduced defect resolution time from 7 days to one day in some instances
- Completed planned validation testing early, allowing test activity to extend 40% beyond the baseline



Alcatel-Lucent is a leading manufacturer of telecommunications equipment worldwide. The Access Networking Division (AND), located in Petaluma, California, develops the Litespan access platform, a fiber-optic (SONET)-based digital loop carrier (DLC) that carries telephone traffic beyond the pairs of copper wires that originate in the telephone company's central office. Considered the world's most widely deployed integrated DLC with digital subscriber line (DSL), Litespan was due for a major release. Faced with an aggressive release schedule and a competitive marketplace, Alcatel-Lucent AND needed a more effective testing solution. Alcatel-Lucent AND chose FanfareSVT® to help reduce manual intervention, increase its effectiveness reaching the required test coverage for regression, and further automate interoperability testing.

THE NEED TO REDUCE MANUAL INTERVENTION, INCREASE EFFECTIVENESS

Alcatel-Lucent AND had an extensive and mature homegrown test automation system; however, it required a substantial amount of manual intervention. This fact began to concern François Piccin, the system verification manager in charge of software testing and wireline DLC business system product validation. His team was in the midst of preparing for the next major Litespan release. "I was concerned about our effectiveness in light of our release goals and this new product," said Piccin. "We were embarking on one of the most significant releases in our division's history, and we needed to get to market first."

Piccin also recognized that devices were growing increasingly complex, which meant that testing requirements were skyrocketing. Not to mention that customers maintained high expectations for quality and performance. Piccin began to look more closely at the current testing environment. "We realized that the ratio of automated testing to manual testing was 40 to 60. And the effectiveness of the 40 percent that was automated was not meeting my expectations," said Piccin.

Another key issue was test coverage effectiveness. According to Piccin, it was taking the team too long and costing too much in resources to achieve 100 percent test coverage at regression. The current testing tool did not have any command line interface (CLI) or SNMP testing capability, and testers needed extensive scripting knowledge to contribute to the automation process. Likewise, much of the interoperability testing was being performed manually, further adding to the drain on resources and time. "The development cycle on the new release was nearly 12 months. To meet this deadline using our current testing platform, we would have needed 40 percent more resources," said Piccin. "Clearly, we needed a better solution."

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A SMOOTH MIGRATION TO FANFARESVT

After carefully evaluating FanfareSVT®, Piccin and his team were ready to migrate to this testing solution and focus on getting out the new release of Litespan. “The decision to go with FanfareSVT was not difficult,” said Piccin. “None of the other solutions that we considered had the flexibility or the adaptability that we needed.”

FanfareSVT is an enterprise-class, automated testing solution designed for QA and product acceptance organizations. With FanfareSVT, expert and novice testers can test complex equipment and systems accessed through multiple interfaces, CLI, SNMP, embedded Web interfaces, Tel, and other protocols; perform analysis and parsing for pass-fail criteria; manage test equipment; and build maintainable, portable tests.

Within five months, Piccin and his team had transferred all of their existing automation test suites to FanfareSVT. In addition, FanfareSVT integrated well with Alcatel-Lucent AND’s existing testing processes and infrastructure, which included a testing facility in Bangalore, India.

To ensure a smooth transition to this solution, Alcatel-Lucent AND engaged Fanfare training services. “Fanfare’s experts provided our team with deep product knowledge,” said Piccin. “Thanks to them, the entire process of migrating and adopting FanfareSVT was easy, and our technical engineers were excited to start using it.”

ACHIEVING PRODUCTIVITY GAINS IN INTEROPERABILITY AND REGRESSION TESTING

Since migrating to FanfareSVT, Alcatel-Lucent AND has experienced a significant increase in its level of automation. “With FanfareSVT, we are now at about 60 percent automation. And we can execute the 60 percent automation, plus the 40 percent manual, in four months,” said Piccin. “Previously, it took us up to eight months to accomplish the same amount of testing.”

FanfareSVT has had a particularly dramatic impact on the team’s interoperability testing. “Prior to using this solution, our engineers spent months manually creating test scripts—a process that was time-consuming and resource intensive,” said Piccin. “With FanfareSVT, what used to take three people one year now can be accomplished by one person in four months. We are now able to execute 4,000 test cases with one person assisting the system. That’s a 12-fold improvement in productivity.”

Piccin also has streamlined interoperability testing processes, while increasing coverage. Prior to FanfareSVT, 60 percent of the test time was used for lab and test setup/configurations. “With FanfareSVT in place and some changes to the lab, we have reduced setup time from 60 percent to 20 percent. In addition, we have achieved 100 percent coverage on our interoperability testing and in a third of the time previously required,” said Piccin.

Alcatel-Lucent AND also experienced productivity improvements in its regression system. First, the team was able to easily transfer 6,000 test cases in six months to this

new system to meet its regression testing timeline. This allowed the team to leverage all of its existing assets with FanfareSVT and focus efforts on moving forward with testing, rather than spending time recreating assets that were lost. Second, the automated scripting feature with FanfareSVT has saved Alcatel-Lucent AND so much time, that the organization has been able to free up its resources to focus on other tasks.

FINDING DEFECTS EARLIER AND RESOLVING THEM FASTER

FanfareSVT has enabled Alcatel-Lucent AND to introduce automation earlier in the test cycle, providing added efficiency. “With FanfareSVT, we were able to test more and earlier on the right thing,” said Piccin. “For the first time, we could perform automation on the fly with new content as part of our sanity tests, and we were able to execute several hundred test cases in two hours as the load was generated. And after code was frozen, we continued this process as we were doing bug fixing.”

Alcatel-Lucent AND also can now identify defects earlier in the product lifecycle. With FanfareSVT, the team can take a test-driven approach to development by developing tests in parallel with the code. Recently, they had 200 to 300 test cases ready for sanity testing before a product was even ready for validation. This approach enables a faster time to market because engineers do not need to wait for the product before beginning test generation, and critical defects can be caught earlier, when they are less time-consuming to fix.

With FanfareSVT, Piccin and his team have managed to improve the defect reparation process and reduce time to resolution. Prior to FanfareSVT, bugs were reported to R&D and often difficult to reproduce. As a result, it could take up to 10 days to resolve a bug. With FanfareSVT, testers have a way to communicate to developers where the problem is, developers can easily reproduce the bug, and both groups can then work together to fix it. “With FanfareSVT, critical bugs now can be fixed in as little as one day,” said Piccin. “Plus, communication between testers and developers has significantly improved.”

By using FanfareSVT, Piccin’s team finished 10 working days ahead of its deadline for validation testing, leaving more time for additional field and scenario testing before shipping the product. “We certainly had process impact and quality impact with Fanfare earlier in the cycle. By finishing our validation testing early, we had the opportunity to do 40 percent more testing than our original baseline had called for,” said Piccin. “As a result, we learned valuable information about the system that allowed us to greatly improve quality and ensure customer satisfaction.”

Piccin is pleased with the returns his team has reaped with FanfareSVT and through their efforts to simplify processes internally. “I know that I was aggressive in my goals for migrating to a new testing solution while trying to prepare a critical release for the market,” said Piccin. “But the collaboration with Fanfare proved to be a key to our success. They gave us the support we needed to ensure a smooth migration and take automation to the next level in our organization.”

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ABOUT FANFARE

Fanfare provides software solutions to high-tech equipment manufacturers and service providers that simplify and accelerate device and system testing. Developers and testers create and share automated tests that control and analyze results from multiple devices, traffic generators, and applications while automatically documenting each test with pass-fail criteria. With Fanfare solutions, companies can move along the path toward automation while accelerating QA cycles, reducing time to market, and increasing the quality of released products. Industries such as communications, aerospace and defense, consumer electronics, automotive, industrial, and medical devices have benefited from Fanfare products.

FOR MORE INFORMATION

To learn more about Fanfare, visit www.fanfaresoftware.com.

THE FANFARE GROUP, INC.
1091 N. SHORELINE BLVD.
MOUNTAIN VIEW, CA 94043

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