

## LSI Logic

### PRODUCTION ACCELERATION AND AUTOMATION



The  
Communications  
Company™

#### FAST FACTS

Employees: 3,900  
HQ: Milpitas, CA  
Founded: 1981

LSI Logic is a leading provider of silicon-to-systems solutions that are used at the core of products that create, store, and consume digital information. LSI offers a broad portfolio of capabilities including custom and standard product ICs, host bus and RAID adapters, storage area network solutions, and software applications.

*"In the morning, our builds are more predictable, and they're more accurate. This is because the testing is done at the same time and there are fewer mistakes. Electric Cloud has made my job easier."*

— **Laurent Brack,**  
**Senior Office Manager,**  
**LSI Logic**

#### SITUATION:

Complex products create development bottlenecks.

LSI is in the competitive market of providing products that change the way people around the world create, store, and consume digital information. Because of the company's unparalleled scale for the storage and consumer markets, its products are necessarily complex and must be tested and delivered on a multitude of platforms, creating a challenging software development scenario.

The consumer products engineering team was faced with a particularly complex situation. At any given time, the team was performing between 25 to 50 regular builds, each taking approximately two to three hours, and running smoke tests on each build that could take upwards of six hours. Since software builds alone were taking upwards of three to four days to perform (not including testing) it was impossible for the consumer products team to develop in a truly iterative fashion or to meet its delivery goals.

#### BUSINESS ISSUE:

Build and test more frequently to be more agile.

To maintain aggressive product release schedules, the LSI consumer products engineering team wanted to move toward a daily integration model, integrating, building, and testing 25 to 50 unique software builds every 24 hours.

First, LSI developed an in-house distributed test framework which allowed the company to bring the smoke test time to less than one hour running on 15 machines in their lab, though this did nothing to address the length of the builds themselves. With dozens of builds, each several hours long and entailing approximately 250 to 500 test sessions, the company was nowhere near its daily build goal. "We needed a system that could handle this kind of load while giving

us clear visibility as to what was going on,” said Laurent Brack, Senior Software Manager, Consumer Products Group, LSI Logic. “Past experience has shown us that if something in the process breaks, integration can sometimes take a few days, even a week, as opposed to 24 hours.”

### SOLUTION:

**Faster builds, more scalable test infrastructure.**

In 2005, LSI began to research solutions that could speed build times, test the builds, and provide visibility into the entire software production process. The company first chose ElectricAccelerator® to address the build speed issues within the integration model, succeeding in reducing build times by 7-8x (150 minutes reduced to 20 to 30 minutes). “With ElectricAccelerator we can handle 25 to 35 builds in well under 17 hours. In addition, we’ve been experimenting with 50 builds in that same timeframe and have seen success. We feel it’s just a matter of scaling our build and test clusters, and then 50 builds will be the norm,” added Brack.

While the home-grown distributed test framework brought the smoke test time down to an hour, LSI was still experiencing problems finding tools that could scale to handle the volume of work required for its complex testing needs. Seeing success with ElectricAccelerator, LSI decided to convert its test environment to ElectricCommander®, the Electric Cloud production automation solution. Where their previous environment became overloaded handling just 250 concurrent steps, ElectricCommander was able to schedule and execute more than 1,000 concurrent steps with the same hardware setup, dramatically streamlining and speeding the smoke test process.

Able to easily adapt their existing test scripts to work with ElectricCommander, LSI also took advantage of architectural features such as projects and nested procedures, which simplify the management of large projects and promote reuse. In doing so, they were able to eliminate substantial amounts of redundant code, thereby simplifying and streamlining maintenance of the system.

#### Corporate Headquarters

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The team also took advantage of the ElectricCommander property mechanism, which allows customer-specific data to be stored, organized, and reported on in the system in powerful ways. LSI uses this mechanism to manage metrics gathered during testing, which allows the company to significantly increase the amount of information they can record and report on, and improves their visibility into the testing process.

### RESULTS:

**Greater predictability and efficiency.**

Electric Cloud has enabled a continuous build and test system at LSI that was previously impossible. With ElectricAccelerator and ElectricCommander working simultaneously, LSI can compile and link between 25 to 35 branches or change sets each taking 20 to 30 minutes, and test them all within a day. “In the morning, our builds are more predictable, and they’re more accurate. This is because the testing is done at the same time and there are fewer mistakes. Electric Cloud has made my job easier,” concluded Brack.

### ABOUT ELECTRIC CLOUD

Electric Cloud® is the leading provider of Software Production Management (SPM) solutions. Electric Cloud solutions automate, accelerate, and analyze software build-test-deploy processes to optimize both physical and virtual IT environments. The company’s patented and award-winning products help development organizations to speed time to market, boost developer productivity, and improve software quality. Leading companies across a variety of industries, including semiconductors, enterprise IT, ISVs, mobile devices, and transactional web sites rely on Electric Cloud Software Production Management solutions to transform software production from a liability to a competitive advantage. To learn more please contact Electric Cloud at (408) 419-4300 or [www.electric-cloud.com](http://www.electric-cloud.com).