Automated Regression Testing for Argus DBUI using Eggplant

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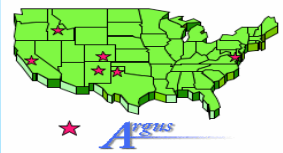
The goal was to create automated regression tests for the Argus Database User Interface (DBUI).

What is Argus ?

Argus is a comprehensive security system (over 1.5 million lines of code!) with three integrated subsystems which are supported by a central computer system. These systems are:

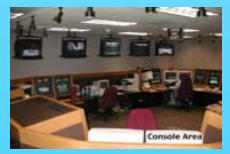
- An automated access control system for personnel and equipment
- An electronic monitoring and alarm system to detect intruders and other unauthorized activities.
- An information presentation system that integrates color map display, radio, and video systems.

In addition to Lawrence Livermore, the Argus system has been installed at four other DOE sites and one DOD site to protect top-priority assets or nuclear material.



What is Argus DBUI ?

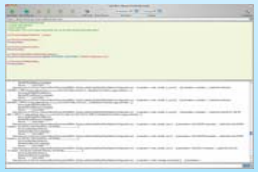
The Argus Database User Interface (DBUI) maintains all the configuration data for an Argus site (with the exception of the physical site maps). This data includes computers, video equipment, consoles, associations, routers, drivers, Argus Field Processors (AFPs), stations, portals, sensors, booths, turnstiles, and remote access panels (RAPs). The DBUI is designed for use by Station Designers, Security Administrators, Maintenance personnel, Video Technicians, and other Viewers.



The highlights of the work accomplished this summer

- A set of easy-to-understand, adaptable scripts were created.
- Testers are now able to write automated tests using high-level primitives (e.g. login, creating transactions, etc.) in spreadsheets without the testers having to write ANY code.
- All seven of the views in Argus DBUI were examined with over 50% of the functionality automated.
- The Station Configuration Example was completely automated to demonstrate end-to-end functionality.

Argus DBUI



Eggplant Output

Conclusions

It was unclear whether or not Eggplant would be the solution to automating regression testing for Argus DBUI. In the past, there were other testing tools that were bought and used to test Argus DBUI, but none of them integrated entirely with it so they were abandoned. Eggplant pleasantly surpassed all expectations as it worked well testing a database-driven application. It was even found to work well locating images that may appear dynamically on the screen.

The scripts written so far provide a great foundation for writing future scripts as they can be easily integrated and modified to adapt to the changing criteria of the application.

There are great benefits using Eggplant for regression testing. A tester can start running regression tests and then be free to do other tasks, thus saving company time and money. Currently, it takes three weeks for regression testing. From our projections, it should take roughly a day to complete these same tests using our automated scripts. Plus, automated regression tests eliminate overlooked errors, find errors in applications faster, and can run overnight so testing can be done 24 hours a day, 7 days a week.

With the success seen so far, there is serious discussion about using Eggplant for regression testing for other applications. Eggplant was even used to test a newly installed Oracle database to prove that the database was functioning correctly.

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