CASE STUDY

Reducing regression test time by 90%

STAG's smart automation approach enables a leading software provider of on-demand enterprise compliance management solutions to reduce regression test time by 90% and cut down the number of QA releases by six times.

Domain - Governance/ Risk/Compliance

Technology - Net, MSSQL, IIS, Windows 7, IE6, 7, and 8, QTP, and QC

CUSTOMER AND PRODUCT BACKGROUND

The customer is a leading software provider of on-demand enterprise governance, risk and compliance (GRC) management solutions that are used by clients in highly regulated industries, such as life sciences, healthcare, financial services, insurance, manufacturing, and energy. The industries use these solutions to minimize their exposure to compliance-related risks and optimize business performance.

The product in question is a web-based audit management system that supports 22 languages. It streamlines and integrates all aspects of the internal audit process, including risk assessment, scheduling, planning, execution, review, report generation, trend analysis, committee reporting, and storage, and also improves the efficiency of the audit workflow, thereby enabling auditors to spend more time providing value-added services and decreasing the amount of time spent in documentation and review.

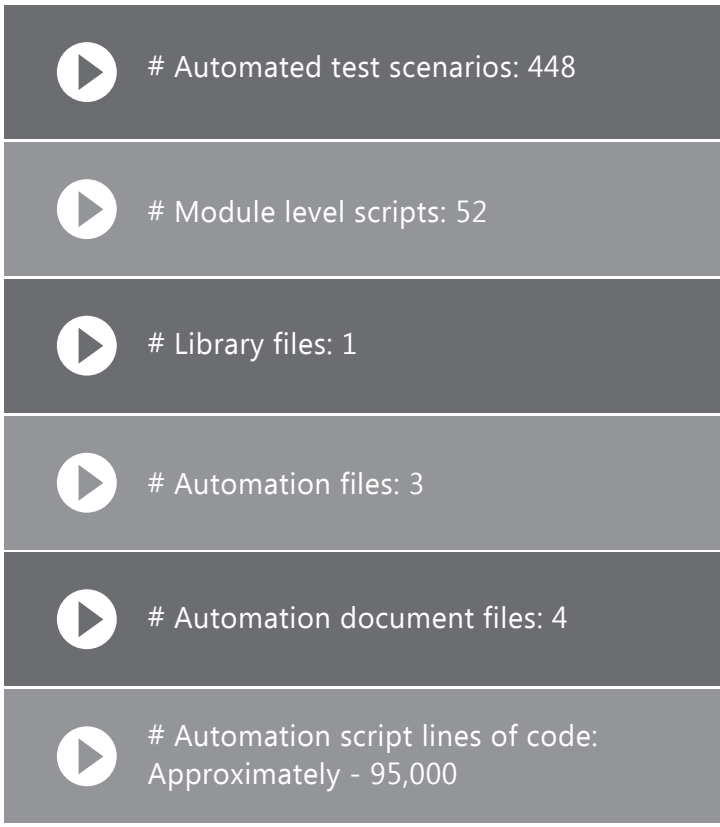
PROBLEM STATEMENT

The product was becoming increasingly complex due to the inclusion of additional functionality and also an increase in browser and language support due to market considerations. The test automation coverage was highly inadequate, resulting in severe quality issues. Another problem was the presence of legacy test cases that had not been updated for the past two years. Besides, the entire application was developed using .Net and had a number of application objects that had limited support from the QTP tool that was used by the customer.

SOLUTION

A 4-member STAG team initiated a Knowledge Transfer plan that would enable rapid understanding of the product and also the test assets, which would help set up a good baseline for test automation.

On the basis of the HBT-based principles of automation, the STAG team adopted a keyword data driven architecture, with the objective that all future maintenance and extension of the automation suite would be handled easily by the customer's QA team. The STAG team used QTP and QC toolsets to develop and manage the automation scripts. The architecture designed was compatible with the Quality Centre-enabled data drive, and allowed for scheduling and execution of the test scripts from Quality Centre. The solution also provided multi-browser support – including multiple versions of the IE browser as well as other browsers – and multilingual testing; the latter was enabled by externalizing the UI control information into multiple language property files.



Another issue was that the dynamic nature of the product meant the existence of some customized and non-standard UI controls, such as WebTreeView, Web Frames, and customer table grids. The STAG team was able to resolve this issue by using smart workarounds. The problem of a dynamic UI was resolved using descriptive programming, and the customized UI controls were mapped using the mapping feature of QTP.

In all, the STAG team automated 4 modules and 64 sub-modules, and automated 448 test scenarios. Most of the existing test cases were improved for completeness and adequacy, while some were removed to avoid redundancy issues. The test cases were categorized into appropriate levels for better organization and maintenance.

OUTCOME AND VALUE ADDITIONS

By developing an effective automation framework, the STAG team was able to ensure test enhancement and optimization, with strict emphasis on sustainability and repeatability. Automated regression testing also enabled the customer to achieve major as well as patch releases in a planned manner.

The STAG team was able to make quite a few value additions in the process as well, a major one being a drastic reduction in the number of QA releases, from around 15-20 to just 3. It was also able to bring about a significant reduction in the regression cycle time: bringing down the number of manual testing hours from 220 to 23 meant a staggering 90% reduction. Besides, proper organization of the test assets allowed easy maintainability and also scalability on demand.

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