indium
Make Technology Work

End to End Testing of Network Management Software

QA Services

Success Story

Client

Leader in providing wireless network solutions.

Application Overview

Web-based network management & control application that facilitates integration of network controller with various access points connected across the floor/building. It enables connection of various wireless devices such as laptops, mobiles and tablets to the configured access points for seamless internet connectivity. Its mobile portal enables direct configuration, test, deployment, tracking update and it also supports tailored services to all user segments. The application has cloud-based architecture, so it integrates with enterprise AAA, VPN and other systems and extends support to new network and device technologies as they emerge

Business Challenges

- Limited QA team .
- Inadequate regression time with constant change in product.

Requirement

- To do end to end functionality testing for the Open Mobile Client software, which undergoes frequent updates.
- Test the interoperability of wireless clients with WLAN architecture (APs).
- Test the various authentication modes and across different Access Points with different SD Builds in virtual-cell (VC) and virtual-port (VP) configurations of ESS profiles.
- Ensure compatibility of Laptop Network Interface Cards (NICs), tablets & smart phones, mobile computing devices and other healthcare devices.
- To evaluate the baseline performance for each authentication/ encryption type & roaming behavior.

Testing Challenges

- Unstructured UAT.
- Client had to deploy new features inquired by their existing clients in a rigid time frame.
- Limited QA and no standard documentation.
- Shortage of Devices.

Application
Wireless Network Management Software

Services Offered
New Feature Testing | Interoperability Testing | Build Verification Testing | Regression Testing | CLI Automation

Domain
Networking & Communications

Tools
Automation Tool: SilkTest | Performance Monitoring Tool: JPerf | Defects Reporting: BugNET / Bugzilla | Performance Traffic Generator Tool: IXIA Chariot | Perl scripting, C# & .NET 3.5, WPF, WCF, SQLite database, NAnt for build management, InstallAware

Key Highlights
- Test cycle time was reduced by 40%
- Quick Ramp-up of testing devices from 12 to 100

Our Approach

- Indium software's test approach is to adopt Agile Methodology, conduct functional and regression test automation for new features within the sprint.
- Actively participate in Scrum Meetings by keeping in mind one thing, which is test automation.
- Use of Silk Test - Test Automation tool to test the new features against a huge data set.
- Ensure that there is no lapse in security measures.
- Improve test compliance coverage by identifying and using more devices.

Metrics

- Executed 1500+ regression test scripts.
- Created new 800+ test scripts for newly added features.
- 170 defects were found.

Our Solution

- Automated one of their proprietary command line interfaces using Perl scripting to simplify functional testing.
- Created Perl based XML parsing engine.
- Indium software had setup a 'Spectrum Free' Wi-Fi Lab to perform connectivity/ stability, performance throughput, roaming, web authentication check for interoperability testing across 10 different models of access points.
- Performed compatibility testing for the various platforms and browsers with over 200+ hand held devices.
- Regression being executed 2 times for every build as a continuous quality process for each release.
- Localization testing for the supported foreign languages (including English, French, & German).
- Structured Testing Approach with IEEE 826 Standard Documentation.
- Streamlined UAT and created extensive documentation to achieve the objective of being able to measure test effectiveness/ coverage.

- Indium software provided the client with reports to show device and computer status information, network-use trends, security breaches, availability and uptime information, network baseline information and graphical maps of the network.

Our Value Adds

To Business Operations

- Indium software's team actively took part in scrum meetings to understand the functionality of the application completely and keep pace with the release deadline.
- Tested the app over 200 devices (including Access Points, mobiles and tablets) helped increasing their user base and created happy customers.
- Aligned the testing process of the client and provided extensive documentation of test activities and the relative evidences.

To the Engineering Team

- Fine Tuned the Test Harness and Test Plan as per business requirements.
- Achieved Stable Test Setup for Testing Access Points.
- Streamlined UAT and Created standard UAT process documentation templates including Test Plan, Test Cases and Defect Log Artifacts.
- Provided the client with complete Test Execution and Defect Reports such as Test Results Report, Defect Sheet Report and Test Summary Report.

Devices connected through APs

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