CASE STUDY

Efficient Test Practice Reduces Cycle Time by 60%

STAG's re-engineering of test practices and process standardization drives tangible benefits for a global leader in wireless communication, enabling it to achieve 60% reduction in testing cycle time and 30% increase in productivity.

Domain/Category - Mobile / Wireless Telecom

Technology - C++, PERL

CUSTOMER AND PRODUCT BACKGROUND

The customer is the India Development Center (IDC) of a world leader in 3G and next-generation mobile technologies.

The product in question was a video sharing application that was developed at the IDC using C/C++. The application was intended for sharing or storing videos on mobile phones with or without Packet Switched (PS) / Circuit Switched (CS) calls. The application used Session Initiation Protocol (SIP) for signaling and Real Time Protocol (RTP) for streaming.

PROBLEM STATEMENT

The product components from different development centers were integrated at the IDC and then sent out for field-testing at an overseas site. The client discovered that the field-testing QA team spent considerable amount of time detecting system-level defects, leading to an increase in field testing effort and, therefore, delays in product release. The client sought the help of a specialist partner to fix this anomaly immediately and arrest defect escapes to field.

SOLUTION

The STAG team conducted a quick analysis of the existing test process and made the following observations:

- Test cases documented were not exhaustive and repeatable.
- Defects observed were not systematically analyzed.
- 40% of total defects logged were at the unit level.
- The IDC team spent precious time uncovering system level defects.

Test cases added: 340

PERL scripts created: 25
(average lines of code per script – 150)

The STAG team first set up a pragmatic test practice to formally design and document test cases based on specifications/standards for the features to be implemented in every release (weekly) for testing. Clear gate criteria were implemented using sanity tests that ensured good test readiness.

The team introduced the concept of build and release notes, which helped the IDC test team focus, prioritize the testing tasks, and provide essential timely feedback to the development team for quick and measurable progress in product development.

The team added test cases and executed them incrementally for every release. It applied black box techniques and HBT-based BeST techniques to design test cases. The test cases were developed for both the 'use' as well as 'abuse' aspects. The team also developed PERL scripts to detect defects at the SIP level.

The STAG team also set up unit testing practices for key components before releasing the build for system testing. It used Ethereal and log testing tools to detect, localize, and capture protocol issues and attach them with the defects logged to help the development team fix the code quickly.

The team also tracked defects and mapped them to the features, modules, and developers to enable quick resolution. After every release, the team generated a test report that gave clear directions for taking the required corrective actions.

OUTCOME AND VALUE ADDITIONS

Setting up unit level testing resulted in reduction of defects in system testing and eliminated the occurrence of the same defect types in different features. Reduced rework in coding as well as test execution resulted in a 30% increase in productivity. Also, there was a 90% reduction in network independent system level defects to field testing.
The defect identification and fixing cycle was brought down to 2 days from 5 days. Zero defect escape to field contributed to reduction in field testing cycle to 1 day from 3 days for every release. The average defect count reduced from 20 to 12 per release.

Overall, as the focus of defect detection moved from unit level to system level, the testing cycle was reduced to 3 days from 5 days.

CUSTOMER SPEAK

"…We are very pleased with our association with STAG, as they brought about a transformation in our test practices. This resulted in a 60% reduction in testing effort, a 66% reduction in the field testing cycle, and a 30% saving from manpower reduction."

- QA Manager

Visit: www.stagsoftware.com | E-mail: marketing@stagsoftware.com
Bangalore: +91 80 28495574 / 75