Persistent Test Automation Framework (PTAF) for Android

The Android market is steadily growing and given its rapid adoption, many device manufacturers are not only migrating their existing devices onto the Android platform, but also launching new Android devices with differentiating functionality and features. In the process of ensuring complete compatibility with the Android platform, ODMs have an ardent need for a testing framework, which includes test cases covering the entire spectrum from applications to device drivers. While few of these test cases are covered by Android’s Compatibility Testing Suite (CTS) and other open source test-suites, additional custom test cases need to be developed.

The use of disparate test-suites creates a pressing need for a tool that can not only run test cases from multiple suites using a single unified interface, but additionally gather results from individual test-suites and present them to the user in an integrated dashboard. In order to perform comprehensive testing on the Android platform, test requirements need to be correlated with the test cases through a management system and test execution needs to be integrated with a bug tracking mechanism.

Persistent’s Test Automation Framework (PTAF) for Android is an all encompassing end-to-end solution – from test case management to report presentation – in an automated work flow.

Features

- Unified work flow including requirement management, test plan selection, test execution and reporting
- Automated test execution that does not require manual user intervention
- Modular design enables replacement of a single component without affecting the remaining system
- Extendable design accommodates additional test-suites utilities (open-source or custom)
- Leverages and integrates test-suites/test-cases from open source (e.g. CTS, LTP, etc.)
- Single UI executes disparate test-suites
- Collects and processes results from multiple test-suites and stores data in the database
- Integrated reporting engine provides customizable graphical reports and analytics
- Reports can be exported in different formats (e.g. XLS, CSV, etc.) for easy integration with 3rd party analytical tools

Testing Areas

- Compliance
- Functional Requirements
- User Interface (UI)
- Applications
- System Frameworks
- Middleware
- Performance
- Networking and Telephony Stacks
- Board Support Package, Device Drivers
- Stress and Stability

Snapshot

- 22,000+ Tests Executed
- ~90% Automation
- ~13,000 Compatibility Test Suite tests
- ~4,000 Automated Testing Framework tests
- ~1,300 Linux Test Projects tests
- ~700 Open-source tests
- ~3,000 Custom tests
Scope and Coverage

User and Use cases

<table>
<thead>
<tr>
<th>Module</th>
<th>Typical Users</th>
<th>Purpose</th>
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<tbody>
<tr>
<td>Test Case Generation</td>
<td>QA Engineers, Developers</td>
<td>- Design and develop test cases</td>
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<td>- Generate test cases based on models</td>
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<td>Test Case Management</td>
<td>QA Engineers, Developers</td>
<td>- Build test plans</td>
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<td>- Build test scripts for automatic execution</td>
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<tr>
<td>Test Case Execution</td>
<td>QA Engineers, Developers</td>
<td>- Schedule test execution</td>
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<td>- Automated/Manual test execution</td>
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<td>- Monitor test execution</td>
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<td>- Collect logs and data for debugging</td>
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<td>Bug Tracking</td>
<td>QA Engineers, Developers</td>
<td>- Detailed information about bugs/Issues</td>
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<td>- Track activities related to bugs</td>
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<td>Report Generation</td>
<td>Release Managers, Product Managers, Senior Management</td>
<td>- Generate reports related to bugs and fixes trends, comparison between software releases, identification of hotspot areas</td>
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<td>Analytics</td>
<td>Release Managers, Product Managers, Senior Management</td>
<td>- Generate report for product readiness, software and platform stability, project monitoring</td>
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Why Persistent

- Testing Competency Center with 750+ QA professionals
- In-house Android Center of Excellence
- Experience in integration testing of various modules such as GSM/ GPRS/EDGE/3G, audio, graphics and multimedia
- Strong knowledge of the Linux Kernel and firmware

About Persistent Systems

Persistent Systems (BSE & NSE: PERSISTENT) builds software that drives our customers’ business; enterprises and software product companies with software at the core of their digital transformation. For more information, please visit http://www.persistent.com

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