BUILDING AN OPEN SOURCE FRAMEWORK FOR TEST AUTOMATION

Test Automation is hard.

The open source CPAN TAF addresses typical complaints by establishing design principles.

Challenge	Design Principle
Lacks consistency between test cases	**Reliable. Reusable. Repeatable. Universal.**
Hard to debug	
Unpredictable	**Independent and Adaptive.** ■ Independent of test type (unit, functional, UI, performance). ■ Independent of test content. ■ Independent of testing tool.
Too complicated to run	**Web Interface for everyone.**
Hard to know execution status	**Access from anywhere.** **Remote execution.** **Real-time results and status.**
Difficult to expand	**Architected to accomodate different tasks, tools and scales.**

Other Impediments to Successful Test Automation

Treating It Just Like Development

Test automation's differences from development:

- Different life cycle.
- Different execution environment.
- Different methods of execution.

Misunderstandings

- Unrealistic expectations of ROI in early stages of automation.
- Test automation is viewed as a spare-time activity.
- Test automation is assumed to be simply record-and-playback.

Management Issues

- Test automation often runs over budget and schedule.
- Development team must buy in.

Staffing Issues

- Lack of QA-specific experience and skills.
- High turnover.

Gap Between Code Bases of Developers and QA

- Tests gets out of sync with code base.
- GUI testing tool is technologicallys behind GUI technology.
- GUI is unstable while being tested.

Test Suite Issues

- Tests are difficult to maintain and manage.
- Test results are hard to understand.

CPAN TAF

PRINCIPLE-DRIVEN APPROACH

Flexible

Supports a wide range of approaches to test suite creation.

Supports management of different types of tasks.

Open source allows for expansion by any developer.

Platform & Language Independent

Cloud based: execution and access is distributed.

Runs on:

- WindowOS.
- LinuxOS.

Automation instructions can be written in any language.

- Java, C, Python, Perl, shell, Expect, etc.

Extensible and Integratable

Supports other automation tools.

Easy

Easy to set up.

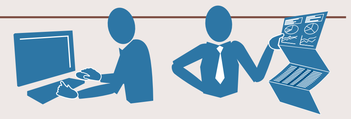
- Easy to install from internet.
- Peer-to-peer —server is optional.

Easy to run and view results via web access.

Easy to develop test suite.

- Quick start development of test cases by following test bed examples.
- Copy and paste hidden code from web page in UI.

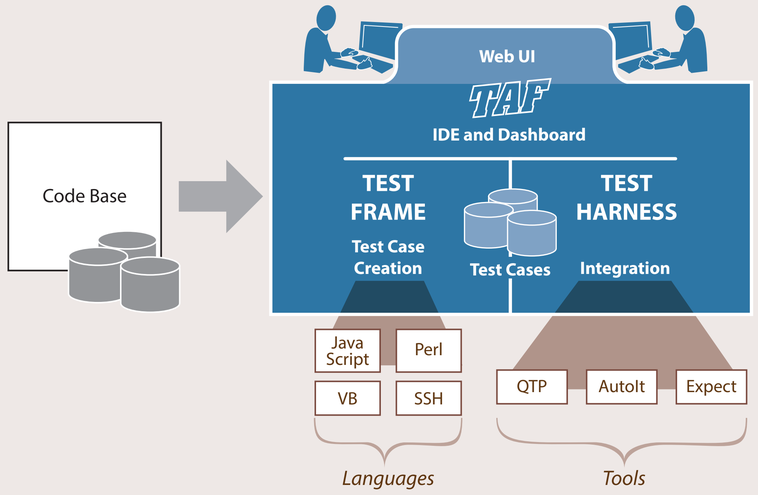
Collaborative



Supports different types of users by providing different interfaces:

- User mode (web UI) for Developer and Tester and Manager.
- Developer mode (command line) for QA Engineer creating automated tests.

Share execution controls and test results anywhere in the world.



- GUI Test
- Functional Test
- Performance Test
- Defect Certification
- Build Push/Installation
- Equipment Monitor
- Test Environment Monitoring
- Quality Method: Requirements Mapping
- Quality Method: Test Case Metrics
- Progress Report

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DESIGNED FOR REAL-WORLD WORKFLOW

A Dashboard for Execution and Results Reporting

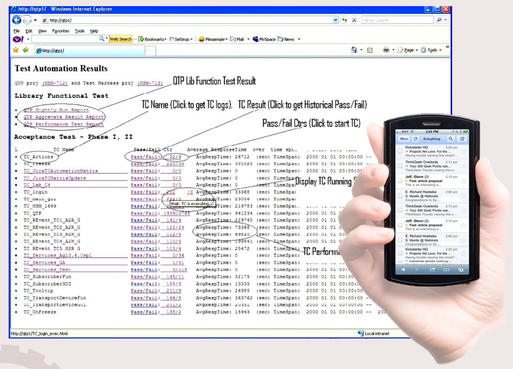
Web access (cross-browser) to a shared dashboard.

Execution Tools

- Start and stop execution of test suite or individual test cases.
- Pre-record day-to-day tasks and schedule automatic launch.
- Supports repetition of test runs.
- Supports longevity testing (24/7 execution).

Results & Status Reporting

- Captures test runs' timestamp, duration, pass/fail, logs and related web resources.
- Displays real-time status.
- Saves and displays tests' historical information.



An IDE for Test Case Development

QA Engineers can develop complete test suites.

Start with the test bed — a batch/shell script that generates generic test suite or test case. Copy and paste code provided by IDE.

Use it as an educational tool: learn by doing and own the suite.

Future Development

Goals for our Open source Developers

- Remote launch via GMail.
- Integration with Google Earth.
- Integration with Amazon Web Services.
- Results delivery via email.
- Support for integration with more frameworks.
- Enhance user experience by using HTML5.