

jgreg

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Background

- Test harness for JDK unit and regression tests
- Started in 1997
- Over 10,000 tests (Aug 2012)

Requirements

- Easy to develop and run tests
- Support different kinds of tests:
 - compiler, runtime, applets, ...
- Support “extreme” tests
 - System.exit, security managers, etc
- Extensible

Why not JUnit ... ?

- `jtreg` predates most other test harnesses
- Started in 1997, for JDK 1.1

Why not JCK?

- JCK is designed as a conformance test suite
- Different design constraints

jtreg Features

- Multiple operating modes
 - *othervm*: each test in its own JVM
 - maximum isolation, high overhead
 - *samevm*: all tests in the same JVM
 - low overhead, minimal isolation
 - *agentvm*: combination of above

Runtime tests

- Tests pass if they don't throw an exception
- Tests are automatically compiled as needed
- Can specify security manager or policy
- Can specify need for necessary JVM opts

Compiler tests

- Positive tests: should compile
- Negative tests: should not compile
- Limited golden file support to check errors
- Augmented in JDK 6 for anno processing tests

Shell tests

- Execute shell script
- Provides way to run arbitrary series of commands
- More useful in early days, while platform evolving
- Hard to test and maintain for all platforms
- Recommended to use Java code instead

Golden file tests

- Golden file tests are typically fragile and often contain transient info such as date, time and file paths
- Deliberately minimal support, for compiler tests only

Reporting

- Flexible reporting to console
 - none, summary, verbose
- Plain text, HTML and XML reports
- XML reports compatible with continuous build and test systems like Hudson

Test Selection

- Can specify subsets of tests to be run
- Can specify list of tests not to be run

Not so good

- Poor IDE integration
- Each test is typically its own package root
 - IDEs typically prefer a single package root

Recent features

- Concurrent test execution in separate JVMs
- TestNG support
- Subdirectories can be marked as containing TestNG-style tests

References

- <http://openjdk.java.net/jtreg/>
- <http://openjdk.java.net/projects/code-tools/jtreg/>
- <https://wikis.oracle.com/display/OpenJDK/jtreg>