Test driven Non-Functionals?!

--- Combine Two Big Ideas and What do You Get? ---

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“Test driven development” is Common Practice in Java world

- Test a little, code a little, test, code, ...
- Tools: JUnit, TestNG, Fitnesse, ...
- Libraries: EasyMock, Mockito, ...
- Tests also used in regression testing
- Build never breaks
Advantages of “Test driven development”

• It is clear when the job is done
• Natural contribution to regression tests
• Confident to refactor
• Quality up front
• Testing not pushed against deadline
Test driven Non-Functionals...
Test driven Non-Functionals!

- Need for a scale
- Need for a test
- Tests also used in regression testing
- Tests are automated
- Build never breaks, but less frequent
Experience report: Scalability

- Build a test that measures throughput
- Deploy on single node, measure
- Deploy on two nodes, measure
- On three, measure
- Ultimate test: do results form a “line”?
Setup: 7 machines

- JMeter
- Apache (mod_jk)
- JBoss
- JBoss
- JBoss
- MySQL

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Test: \( \frac{\Delta_1}{\Delta_2} > 90\% \)  
Actual: \( \frac{186}{199} = 93.5\% \)
Handling broken builds

And how to prevent waste
Range test example: Maximum CPU load

Broken!

Waste!

Required by project

Required now

Time
Summary

• Test driven non-functionals is uncommon
• Applicable when automatable
• Should be part of regression test suite
• Prevent waste: use ranges
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