PerfCells: A case study in achieving clean performance test results

By

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Performance is key for quality.
Inconsistent results makes it hard to do performance testing well.
The real problems are hard to find
What if you could eliminate the haystack?
First, an overview of our performance engineering system

- Planning
- Instrumentation
- Testing
- Analysis
Planning - Key customer scenarios
Planning - Metrics
Instrumentation – Inserting code markers
Testing - Manual
Testing - Automation
Analysis – Processing the results
The problem: Lots of noise in the system.
Unexplainable variations in results led to wasted time and effort
Needed a quick fix
Decided to focus only on large anomalies
The long term solution
Brainstorming
Realization: We had conflicting goals

Prevent regressions however small.

Verify that real world performance goals were being met.
The solution: Perf cells
Key point: one machine
Advantages - Isolated
Advantages - Reliable behavior
Advantages - Easy management
Advantages - Scale Out
Our results

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A = Excellent • B = Good • C = Satisfactory • N = Needs Improvement
U = Unsatisfactory • I = Insufficient / Incomplete

Student: ________ Grade: ________ Year: ________
Histogram of elapsed times from tests on pre-production topology
Histogram of elapsed times from tests on a PerfCell
Key Takeaways

- Steady losses add up.
- PerfCells increased test sensitivity.
- Allowed us to accept variability in real world testing.
Some possible improvements

- Test builds simultaneously
- Partition tests
- PerfCells in the cloud
Credits

My co-authors Marcelo and Shirley.
Our reviewers Bob and Mano
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