Testing of Valgrind RPMs in RHEL

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introduction

- Quality Engineer at Red Hat; testing of toolchain in RHEL
- I will be talking from my point of view
- overview
  - types of tests I do
  - what they are trying to achieve
  - what bugs I often hit
  - ideas I have for improvement
  - Q/A + Discussion

types of tests I do (1)

- sanity tests
  - need to be **quick** and **easy to review**
  - does it work at all? (memcheck)
  - do other tools work? gdb server? client requests?
  - run few system programs under valgrind
- stress tests
  - some **real world** usage
  - might be **time consuming** and **not so easy to review**
  - output with/without valgrind should be the same
    - picture transformation, audio encoding/decoding, compression
  - firefox, openoffice

types of tests I do (2)

- testsuite
  - each arch supported
  - for installed packages
  - comparative mode
  - a lot of failures :(
- regression tests
  - various bugs from the past

what they are trying to achieve

- the point is not just to find bugs
  - verification of fixes
  - regression avoidance
  - catching crashes of any kind
- much better to tests final packages
- being **fast** and **clear** is preferable

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what bugs I often hit

- packaging problems
  - selinux; rpm scriptlets
  - rebuild troubles
- false positives
- crashes
  - bad instructions on the input
  - bad instructions on the output
  - hitting various limits
- behaviour of client program is changed
- typos in documentation

ideas for improvement

- some of our self-contained test cases could go to the testsuite
- comparing output (stress testing)
  - various compiler flags; brand new instructions; auto-vectorization
- testsuite could have less failures
  - preferably none if that is even feasible?
  - blacklist of "bad" cases?
- ability to automatically decide performance regression
- reuse gcc (or any other) testsuite in comparative mode

Q/A; discussion

questions? suggestions?