



Fedora Mass Rebuilds

Testing GCC in the wild

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What & why

- rebuild of all Fedora packages; x86_64 only
- test GCC:
 - ICEs
 - wrong-code
 - false positives (-Werror)
 - rejects-valid
 - test new features
- done annually; in December/January/February (~ stage 3)

Nuts and bolts

- 1) Rebuild everything with new GCC
- 2) Rebuild failed builds with old GCC
- 3) Ignore FTBFS with old GCC
- 4) Investigate FTBFS that only happen with new GCC

Analyzing FTBFSs

- the grim^Wfun part
- time-consuming; hard to analyze bugs that are often just UB (hi Perl)
- weirdo codebases (hi Perl again)
- ICEs/-Werror preferred (grep)
- LT0 (extremely hard to reduce)
- flaky tests (races on loaded boxes); ccache
- misusing the preprocessor (remember `cpp -P?` Yes, Perl, you too.)

Analyzing FTBFSs

- ever-increasing number of packages
 - 2008: 5118 packages
 - 2009: 6228 packages
 - 2011: 10404 packages
 - 2012: 11270 packages
 - 2015: 16230 packages
- result: `porting_to.html`

A closer look

- 1) Create repo with SRPMs to rebuild; create a list with SRPMs, split it
- 2) Another repo with newly built GCC and libtool
- 3) Grab a few beefy boxes; set up mock + chroot configs on every box
- 4) A `doit.sh` script (download SRPM, rebuild in mock, save logs)
- 5) Run `doit.sh` N times in parallel on every box, feed it with lists in (1)
- 6) Wait (days/weeks)



THANK-YOU



Be sure to thank your audience
for attending, listening and
participating :-)