Let’s Talk Kselftest

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What is Kselftest?
Regression Test Suite for

Kernel Developers

Kernel Users
What kind of tests?

White and black box

Unit and functional

Hardware dependent

Stress and performance
Rationale for adding tests ...

Feature focused

Bug fix focused

Sub-system specific
Kselftest is not for testing ...

Specific workloads

Specific applications
Individual Test tree ...

Main test (Target)

sub-test

Test

Individual Test Cases
Who are the authors?

- Kernel Developers
- Kernel Users
Who are the users?

Kernel Developers

Kernel Users
Patch flow ...

- Linus's git
- net git
- linux-kselftest git
- mm git
- x86 git

Patches
Linux release qualification ...

- Linaro Test Farm
- 0-day Rings
- Kernel CI Rings?
Linux releases qualified ...

Linux mainline

Linux Stable Releases

Linux Next
Kselftest evolution ...

Depth and breadth in target areas

Framework improvements
Kselftest Components ...

Kselftest framework

Common infrastructure

Individual tests
Kselftest Framework ...

Interfaces for reporting results

Pass/Fail/Skip counts

Pass/Fail/Skip messages
Common Infrastructure ...

Building tests

Running tests

Reporting results
Common Infrastructure ...

Run script generation

Installation tools

Packaging tools
Kselftest default run …

Runs non-destructive tests

Run as root for best coverage

Run mainline tests on stables
Kselftest use-cases ...

Kselftest from same Linux 4.19 git repo

Linux 4.19 kernel

Kselftest from mainline latest

Stable release

Install and run Kselftest on a target
Kselftest stress tests ...

Could change system state

Require reboot in some cases

User beware!!
Reporting Results ... 

Test Anything Protocol 13

Simple text based reporting
Reporting Results ...

Aids in ...

Detecting run to run regressions

Result parsing with parsers
Where are the sources?

Linux kernel source tree

```
linux-kselftest git on kernel.org
```

Patchwork - linux-kselftest
Where are the documents?

Linux kernel source tree

Samsung Open Source Group blogs
Challenges ...

Balance kernel developer and user requirements.
Challenges ...

Balance Kselftest run-time and coverage.
Next Steps ...

Continue to increase coverage

Driver coverage is weak
Next Steps ... 

Improve framework

Improve infrastructure
109 year old Alfie Date from Australia spends his time knitting sweaters for injured penguins!!
Thank You!