

Linux Kernel Quality (LKQ)

Plan of Record (5 Oct 2020 - 4 Apr 2021)

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Next Cycle: Summary

- Continue testing LTS, Stable, Mainline and -next upstream kernels as well as Android Common kernels
- Devices under test will be increased to include both the Qualcomm 845c and NXP iMx8mn boards
- More tests are planned including filesystem, kdump, and networking unit tests in addition to real time (RT) kernel trees testing and the start of graphics stack testing through the IGT test suite
- Improving our ability to auto-generate precise, clear and focused reports is a key deliverable we want to achieve
- We will be spending some investigative effort on identifying the most efficient way to scale our QEMU testing (Cuttlefish is a possibility in the future) in order to dramatically speed our testing and bisection

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Next Cycle: Planned

PMWG Board Farm ([LKQ-10](#))

- [LKQ-284](#) - Add system suspend/resume measurement in WA

Kernel testing improvements ([LKQ-113](#))

- [LKQ-45](#) - Enable boot testing for allmodconfig arm64 and x86_64 builds in qemu

Support bisection in LKFT ([LKQ-124](#))

- [LKQ-291](#) - LKFT: Create automated build bisection

LKFT Reporting 2.0: Better Scale, Quality, and Efficiency ([LKQ-127](#))

- [LKQ-123](#) - Support patterns for LKFT reporting
- [LKQ-288](#) - LKFT: Implement stable sanity report
- [LKQ-289](#) - LKFT: Implement stable report
- [LKQ-290](#) - LKFT: Create a regression finder

LKFT CI 2.0: Scale builds and decrease build and test turnaround time ([LKQ-162](#))

- [LKQ-133](#) - Add kselftest build to LKFT 2.0/tuxbuild

Linux LTS, Stable, mainline, and next kernels triage ([LKQ-184](#))

- [LKQ-172](#) - Test LTS 4.4 kernel releases
- [LKQ-173](#) - Test LTS 4.9 kernel releases
- [LKQ-174](#) - Test LTS 4.14 kernel releases
- [LKQ-175](#) - Test LTS 4.19 kernel releases
- [LKQ-176](#) - Test upstream stable kernel releases
- [LKQ-177](#) - Test upstream Mainline kernel tree
- [LKQ-178](#) - Test linux-next upstream kernel tree
- [LKQ-181](#) - Test LTS 5.4 kernel releases

Allow kernel developers to validate their trees with LKFT ([LKQ-203](#))

- [LKQ-293](#) - Make LKFT available to Linux kernel developers

Test realtime kernel builds ([LKQ-257](#))

- [LKQ-278](#) - Add realtime kernel trees to LKFT
- [LKQ-281](#) - LKFT: Add build testing to RT trees
- [LKQ-282](#) - LKFT: Add boot testing to RT trees

Increase LKFT LTS Tests from 20,000 to 40,000 tests per run ([LKQ-271](#))

- [LKQ-43](#) - Fill in LTP coverage for syscalls
- [LKQ-254](#) - Evaluate db845 board for inclusion in LKFT
- [LKQ-258](#) - Package Android's Kernel Networking Unit Tests for OE/LKFT
- [LKQ-261](#) - Investigate LTP Kdump tests for inclusion into LKFT
- [LKQ-276](#) - Implement XFStests in LKFT
- [LKQ-285](#) - Add imx8mn-ddr4-evk to LKFT
- [LKQ-286](#) - Implement i-g-t testing on db845 in LKFT
- [LKQ-297](#) - Implement i-g-t testing on iMX8mq in LKFT

Scale testing using QEMU ([LKQ-296](#))

- [LKQ-298](#) - Scale testing using QEMU on X86
- [LKQ-299](#) - Scale testing using QEMU on Arm
- [LKQ-300](#) - Investigate scalable deployment of QEMU test targets

Remaining effort for 31 planned epics: 19.5 engineer months

Supplementary Information



PMWG Board Farm ([LKQ-10](#)) - has planned epics

- [LKQ-7](#) - Add full CI loop for kernelci build in PMWG farm

Back port needed fixes to LTS kernels ([LKQ-42](#))

- [LKQ-12](#) - Checking vendor trees for stable backports

Kernel testing improvements ([LKQ-113](#)) - has planned epics

- [LKQ-44](#) - Randconfig build testing

Kernel testing for server and Intel 0-day alternative ([LKQ-118](#))

- [LKQ-114](#) - Add Server HW to LKFT as a remote lab
- [LKQ-115](#) - Identify relevant tests from the LKP test suite
- [LKQ-116](#) - Detail current Intel 0-day tests

Support bisection in LKFT ([LKQ-124](#)) - has planned epics

- [LKQ-292](#) - LKFT: Create automated test bisection

Linux LTS, Stable, mainline, and next kernels triage ([LKQ-184](#)) - has planned epics

- [LKQ-163](#) - LKFT project progress visualization
- [LKQ-164](#) - Add LKFT stats to lkft.linaro.org

Test using debug configurations ([LKQ-188](#))

- [LKQ-186](#) - Identify and enable additional kernel debug options
- [LKQ-187](#) - Investigate in-kernel tests

LKFT Tooling Improvement and Maintenance ([LKQ-234](#))

- [LKQ-272](#) - Implement build records in qa-reports for LKFT 2.0

Increase LKFT LTS Tests from 20,000 to 40,000 tests per run ([LKQ-271](#)) - has planned epics

- [LKQ-117](#) - Investigate adding LKP tests into LKFT
- [LKQ-249](#) - Investigate mmtests for inclusion into LKFT
- [LKQ-262](#) - Investigate LTP network tests (single host) for inclusion into LKFT
- [LKQ-264](#) - Test KVM on an Arm host system
- [LKQ-265](#) - Consider safeside for inclusion as a new testsuite
- [LKQ-266](#) - Investigate adding KUnit to LKFT
- [LKQ-267](#) - Investigate vdsotest for inclusion in LKFT
- [LKQ-268](#) - Introduce CoreSight support to LKFT

Previous Cycle Summary



Last Cycle: Key Achievements

LCG Testing Activities on Android ([LKQ-6](#))

- [LKQ-3](#) - Triage activities from week to week for the Android Common Kernel Testing in LKQ

Kernel testing for server and Intel 0-day alternative ([LKQ-118](#))

- [LKQ-283](#) - Create OE root file system for ThunderX2

Setup and configure members remote labs ([LKQ-125](#))

- [LKQ-119](#) - Setup NXP Remote lab
- CANCELLED - [LKQ-120](#) - Setup TI remote lab

LKFT Reporting 2.0: Better Scale, Quality, and Efficiency ([LKQ-127](#))

- [LCG-2429](#) - Auto-generate Android Common kernel test results
- [LKQ-122](#) - Reproduce LKFT's kselftest report using squad-client

LKFT CI 2.0: Scale builds and decrease build and test turnaround time ([LKQ-162](#))

- [LKQ-128](#) - Enable kernelci access for x15
- [LKQ-152](#) - qemu_arm64: Migrate LKFT workload from ci.linaro.org to ci.lkft.org
- [LKQ-154](#) - x15: Migrate LKFT workload from ci.linaro.org to ci.lkft.org
- [LKQ-155](#) - qemu_x86_64: Migrate LKFT workload from ci.linaro.org to ci.lkft.org
- [LKQ-156](#) - qemu_i386: Migrate LKFT workload from ci.linaro.org to ci.lkft.org
- [LKQ-157](#) - qemu_arm: Migrate LKFT workload from ci.linaro.org to ci.lkft.org

LKFT Tooling Improvement and Maintenance ([LKQ-234](#))

- [LKQ-231](#) - Yocto-compatible version of meta-lkft
- [LKQ-232](#) - Create Poky root file systems
- [LKQ-233](#) - Build LKFT rootfs in LKFT 2.0
- [LKQ-273](#) - LKFT: Update LTP release 20200515
- [LKQ-280](#) - Convert LKFT LAVA jobs from LXC to Docker

Increase LKFT LTS Tests from 20,000 to 40,000 tests per run ([LKQ-271](#))

- [LKQ-248](#) - Investigate adding XFStests into LKFT
- [LKQ-252](#) - Investigate LTP tracing test cases for LKFT test plan improvement
- [LKQ-255](#) - Implement i-g-t testing in LKFT
- [LKQ-263](#) - Investigate LTP kernel crypto tests for inclusion into LKFT
- [LKQ-279](#) - Add LTP controllers and cgroup tests

Last Cycle: Delayed

Increase LKFT LTS Tests from 20,000 to 40,000 tests per run ([LKQ-271](#))

- [LKQ-276](#) - Implement XFStests in LKFT - 2020.07 → 2020.10