



# ANDROID

## **Background updates lightning talk**

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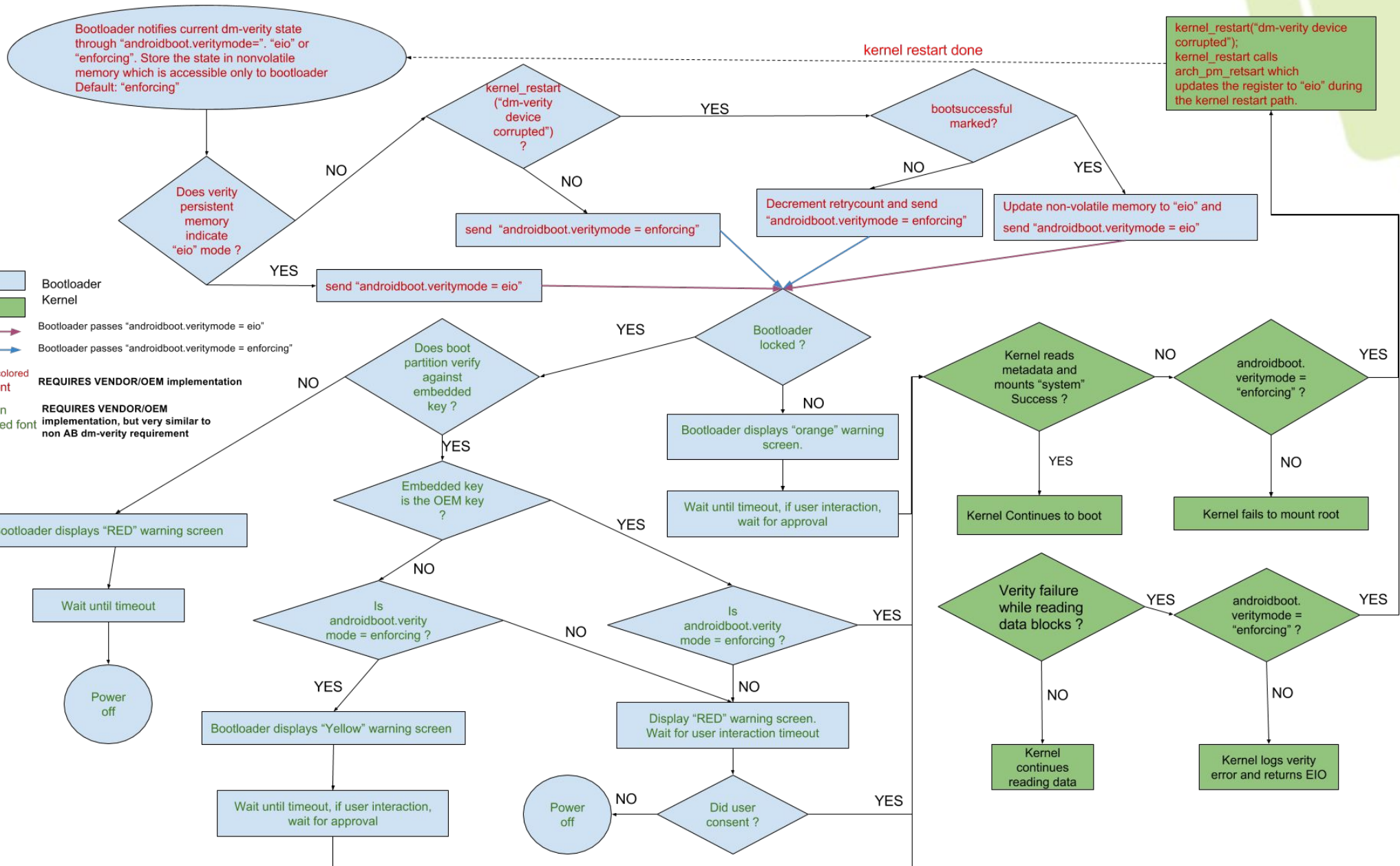
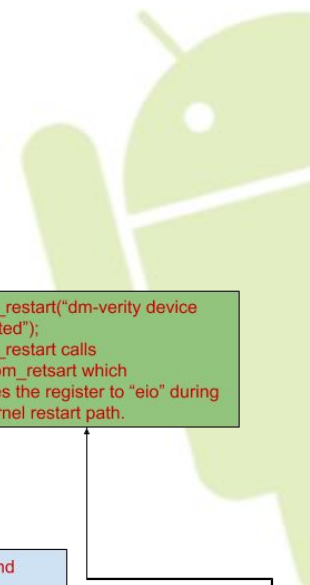
LPC 2016

## Background updates – as an end-user



- Get a notification to apply OTA
- Accept to apply now
- Device reboots
- ... (~1-2 minutes later)
- Voila!

# Background updates – bootloader



## Background updates – disk layout



- Double every partition that could get updated through an OTA
- Each pair should have a common suffix (eg. `_a`, `_b`: `system_a`, `boot_b...`)
- A lot of effort was spent on reducing partition sizes (SquashFS, Play Auto Installs, pre-installs on `_b` partition...)

## **Background updates** – system + kernel



- New boot control HAL to let updater communicate with bootloader
- One kernel patch to allow selecting booting ramdisk or skipping it
- Kernel is mounting rootfs using the root= command line argument
- Android-specific dm-verity patches to verify rootfs (others mounted the old way)

## Background updates – user-space



- Using update\_engine (AKA ChromeOS updater)
- Hooks to perform post install tasks before notification - used for recompiling apps and other misc tasks
- On first boot - verify the whole image, if corrupted go back to the old image: dramatically lower incidence of bricks



**More info at**

**<http://source.android.com/devices/tech/ota/index.html>**