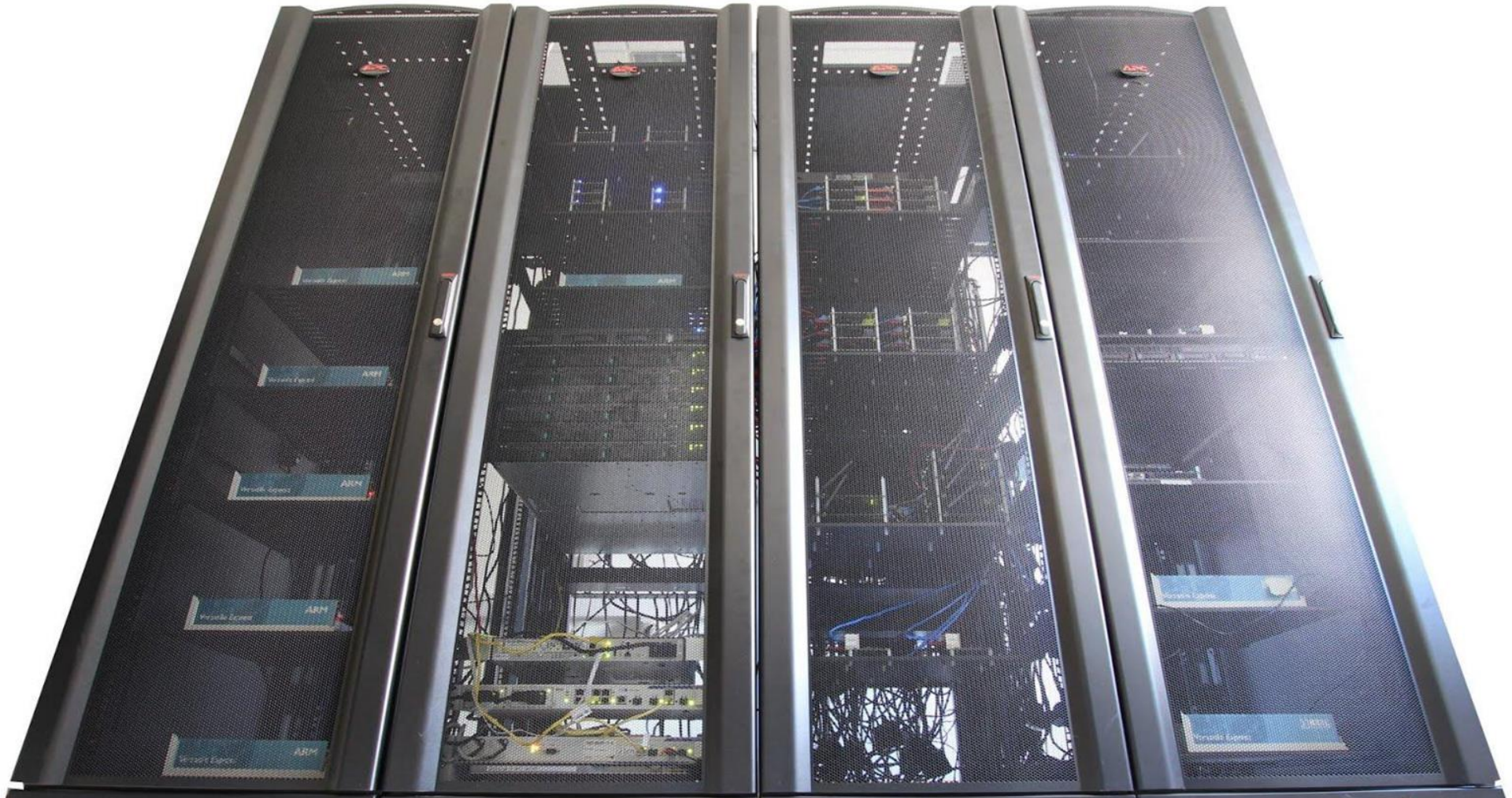
LAVA Workshop @ LCA 13
LAVA Overview

Dave Pigott – March 2013



LAVA Workshop

- Day 1 – Tuesday
  - Introduction
  - An overview of LAVA - Dave Pigott
  - A LAVA Success Story - Tyler Baker
- Day 2 – Wednesday
  - Grand Ballroom B, 4pm-6pm
  - Hands-On LAVA
  - Installing LAVA - Antonio Terceiro
  - Test Suites - Senthil Kumaran
- Day 3 – Thursday
  - Grand Ballroom C&D
  - Open Q&A Session – Kate Stewart

LAVA Hands On – Wednesday 4pm - 6pm

- Requirements
- Laptop

At least 4GB Ram

Virtualisation support (i.e. Intel i3-i7)

- Software

VirtualBox 4.1 or later (Linux, Windows and OS X supported https://www.virtualbox.org/

LAVA VM Image http://deb.li/lavavm

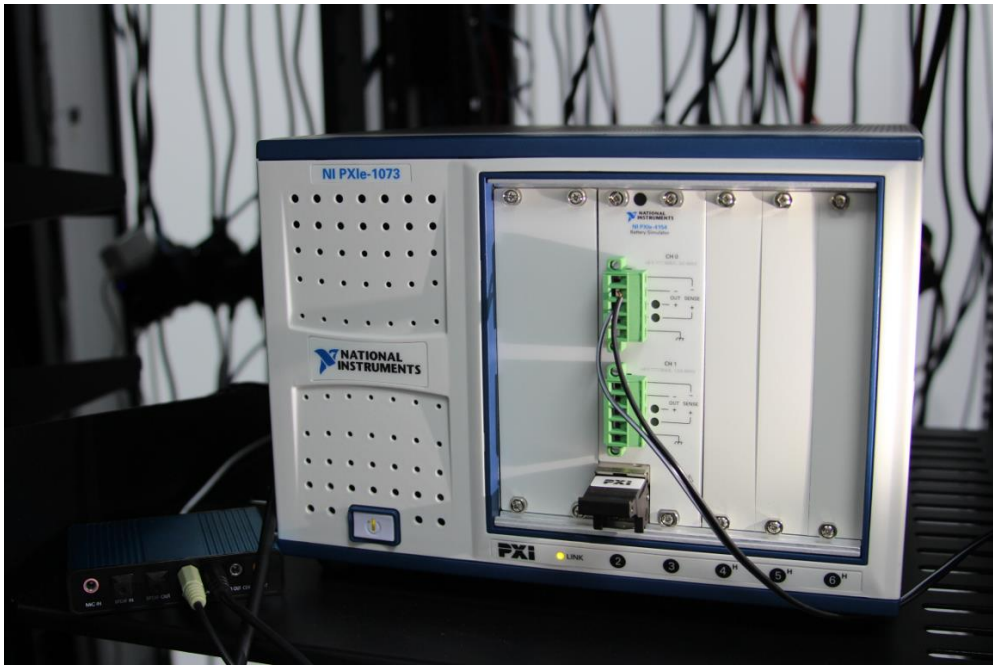
- Limited space, but some spaces available
- E-mail lca13-lava@linaro.org and turn up

Linaro Open Source Testing & Validation

- Open Source Software traditionally has limited testing
- LAVA – Linaro Automated Validation Architecture
- Lab is populated by Linaro member hardware
- Provides Members:
  - Continuous Integration for daily build & testing
  - Smoke, System and Regression testing
  - Web dashboard for results and trends
  - Measures distribution quality & trends
- Framework is open source
- Linaro maintaining large and expanding farm of latest Member SoC boards, servers,models and consumer devices

LAVA – Why LAVA?

- Validate Linaro Engineering output
- Test Linaro Engineering output on a diverse range of member hardware
- Support automated kernel testing
- Ensure a device can be bricked, including the bootloader, and resurrected without manual intervention
- No assumptions of special capabilities

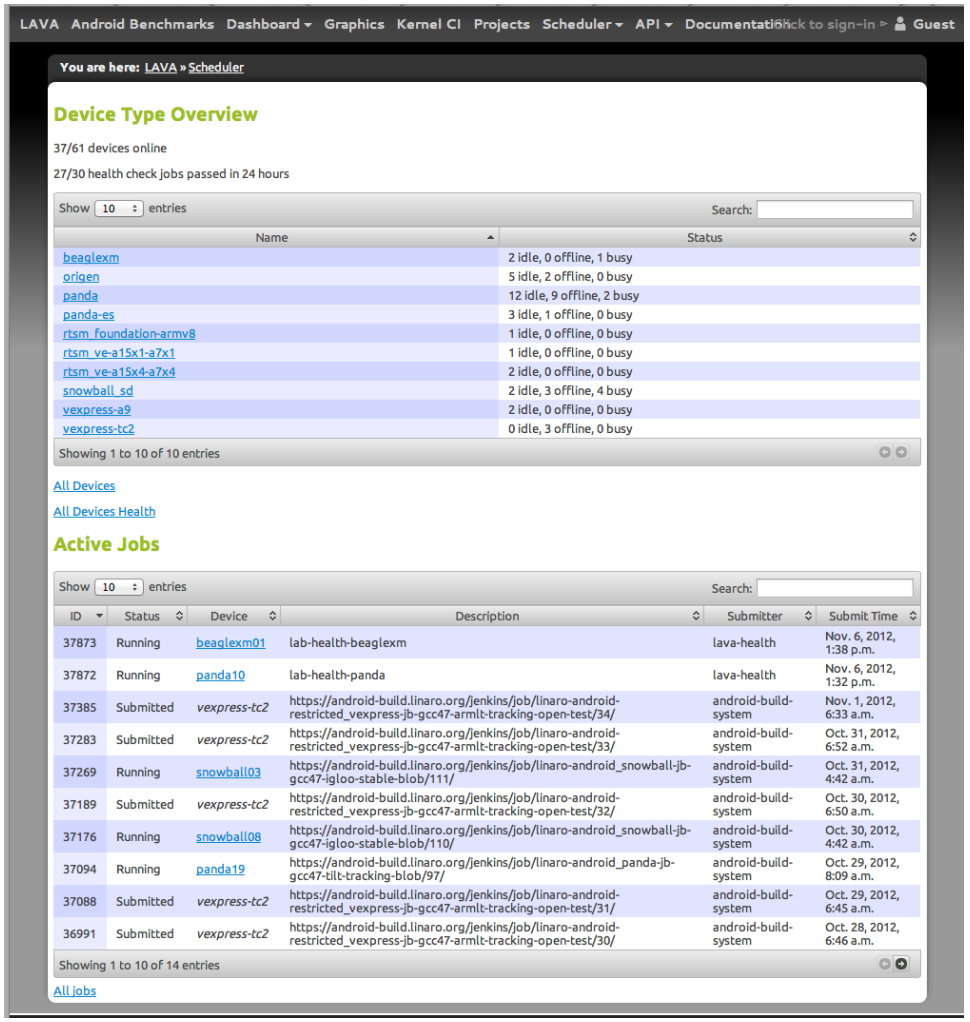


LAVA – What it is

- A framework for testing software on member hardware
- Accepts "jobs" to perform on target device types
- Jobs produce result bundles
- LAVA itself is an enabler - we do not define the tests that can be run
- A black box to CI - all devices have the same LAVA interface
- A cloud like solution for ARM devices

LAVA – What can I do with it?

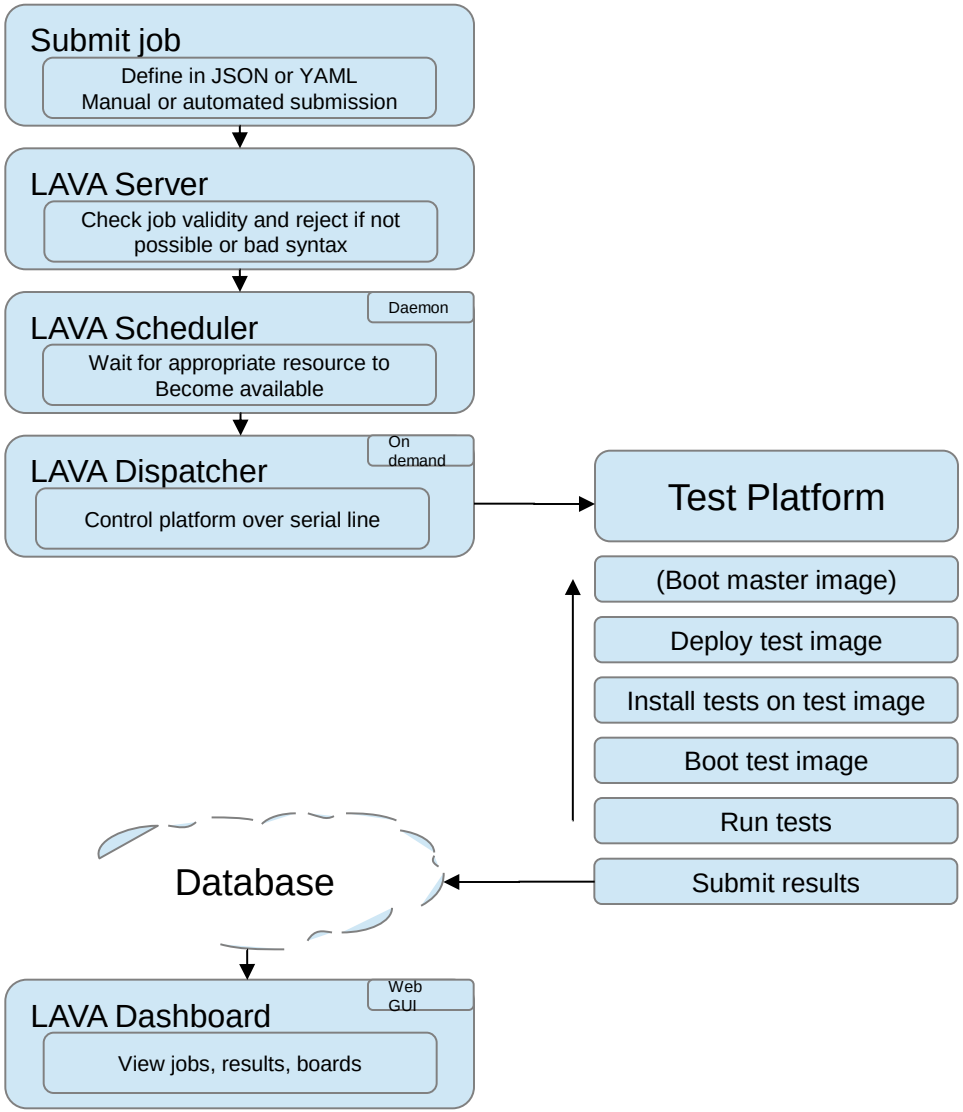
- Submit jobs that will be run on a selected device with user selected combination of kernel and system image
- Run user selected and defined tests on that image
- Can execute anything - e.g. toolchain submission



LAVA Reliability

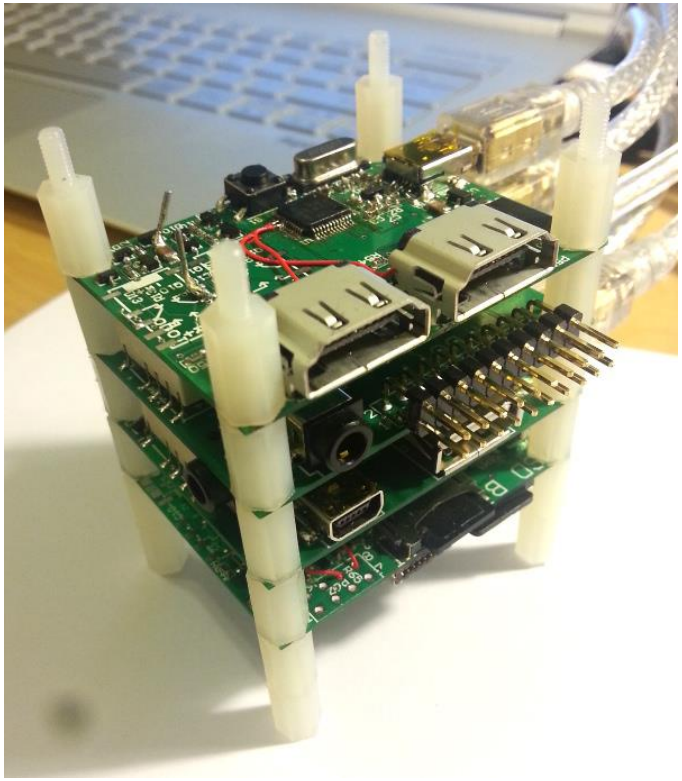
- Must be confident that if a job fails it is most likely the job and not LAVA
- Health checks run once every 24 hours
- If a board fails it is taken offline
- Reliability now 99%

LAVA Workflow



Different ways to use LAVA

- LAVA as a service
- LAVA as a product
- LAVA for developers
- Easy deployment - lava-deployment-tool
- lava-test-shell



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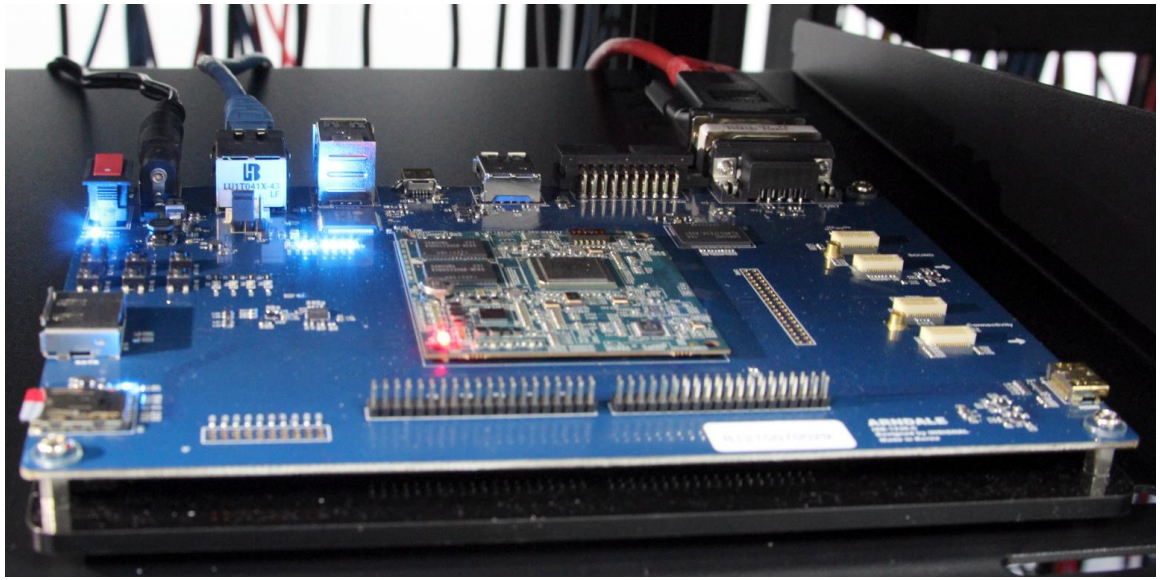
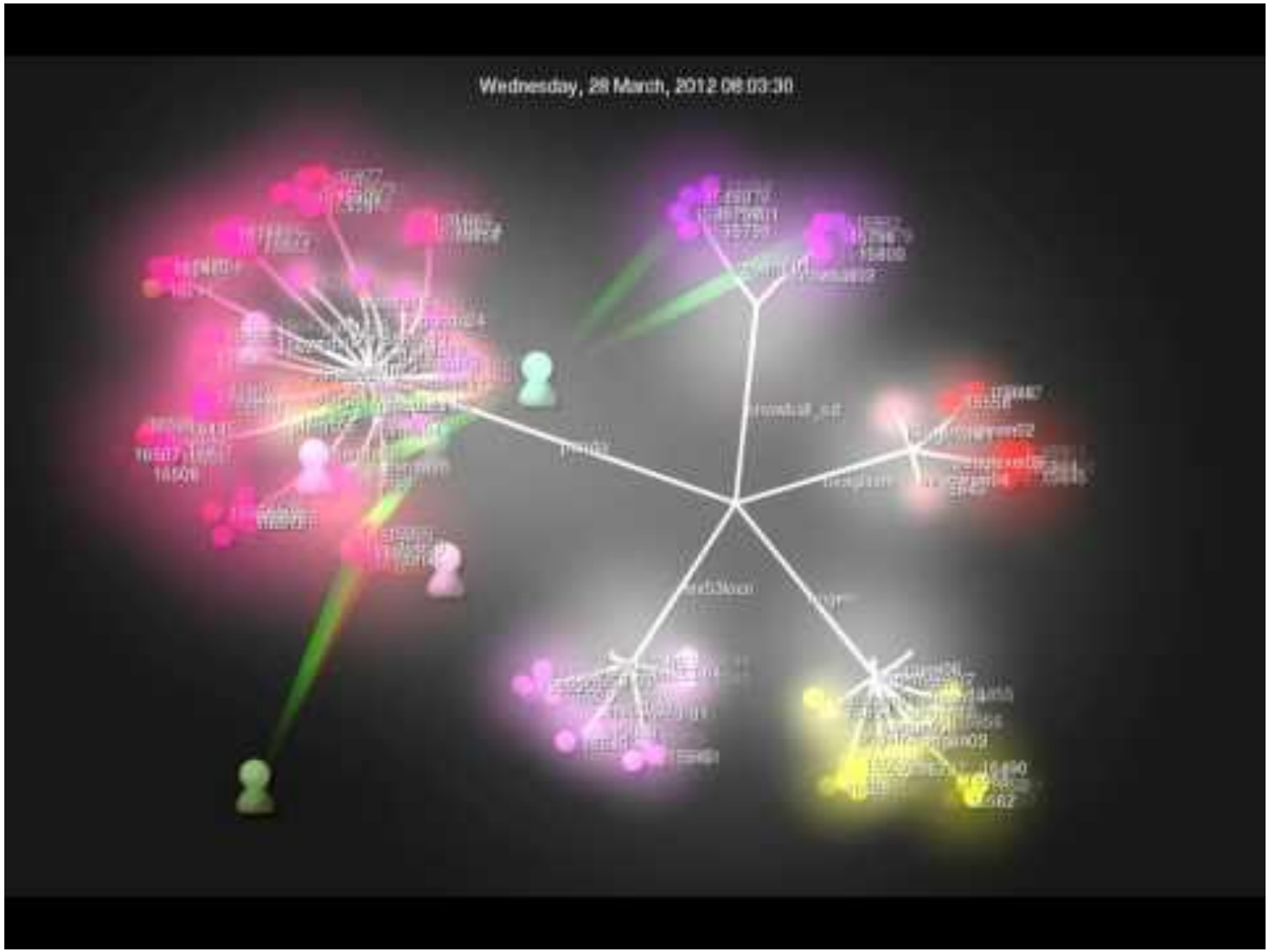


LAVA Lab Inventory

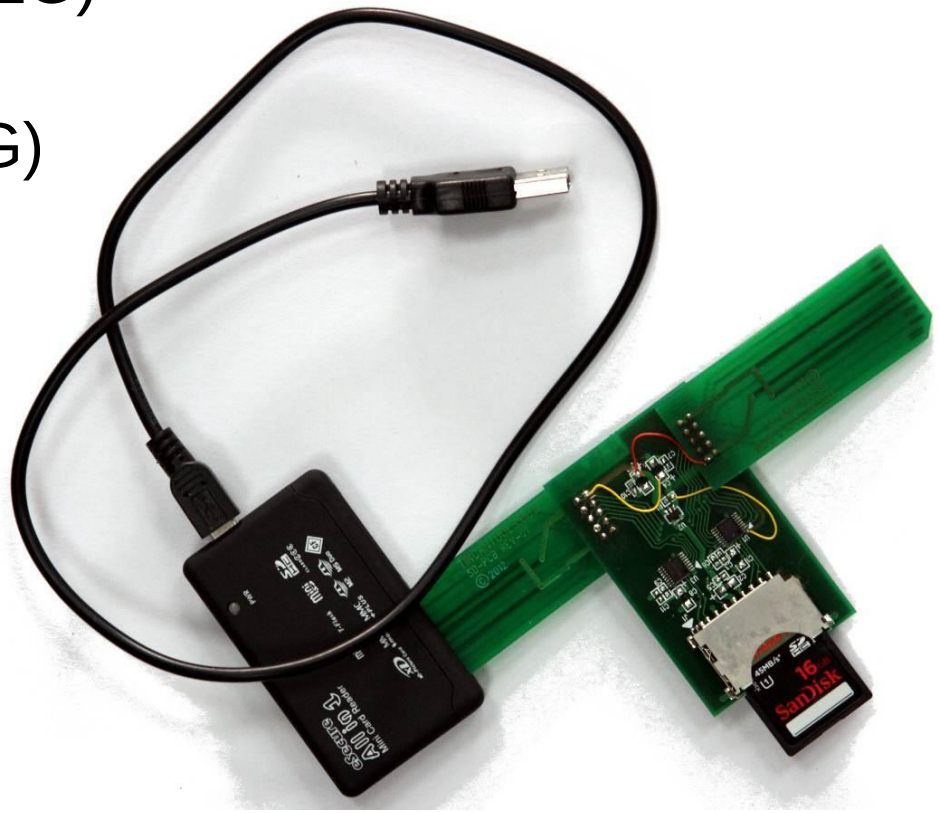
- 87 Devices & 276 ARM CPUs
  - 4 TI Beagleboards
  - 30 TI Panda 4430s
  - 14 TI Panda 4460s
  - 10 ST-Ericsson Snowball PDKs
  - 10 Samsung Origens
  - 4 Samsung Quad Core Origens
  - 5 Samsung Arndale boards
  - 2 ARM Versatile Express a9s
  - 1 ARM Versatile Express a5
  - 4 ARM Versatile Express TC2s
  - 2 Calxeda 96 CPU Servers
  - 1 Samsung Galaxy Nexus

LAVA Lab Usage



Future plans

- Bootloader testing with SD-MUX
- Test suite helper tool
- LAVA Lmp
- Linaro Enterprise Group (LEG) adding servers to farm
- Linaro Network Group (LNG) support plans



Summary

- LAVA usage is growing
- LAVA interest is growing
- LAVA lab expanding
- Enough requirements to keep us busy for a long time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