LAVA – The Linaro Automated Validation Architecture

Dave Pigott – November 2012

Why Linaro?

- Increased need for shared ARMv7/v8 development
- Fragmented ARM Linux in different industry segments
- OEM and distribution ready software stacks
- Place for ARM licensees to safely work together on new open source technology development
  - Very strong engineering team
  - Significant pieces of upstream plumbing merged
  - Roadmap of technology development published

Linaro Overview

- Linaro is a not for profit engineering company that delivers core Linux technology for the benefit of members

Our key goals:

- Use shared investment to provide high ROI to members
- Accelerate time to market for member products
- Reduce fragmentation and resulting costs
- Work closely with ARM to deliver Linux software and tools for new ARM technology – big.LITTLE, server, ARMv8
- Make ARM a leading architecture in open source

Linaro: Proven Success in Linux

- #3 contributor to Linux Kernel 3.5
- High quality ARM GCC toolchain
- Device Tree for ARM
- Facilitated arm-soc sub-architecture maintainers group
- Common kernel memory management framework (UMM)
- Continuous Integration testing using LAVA test and validation platform on member hardware

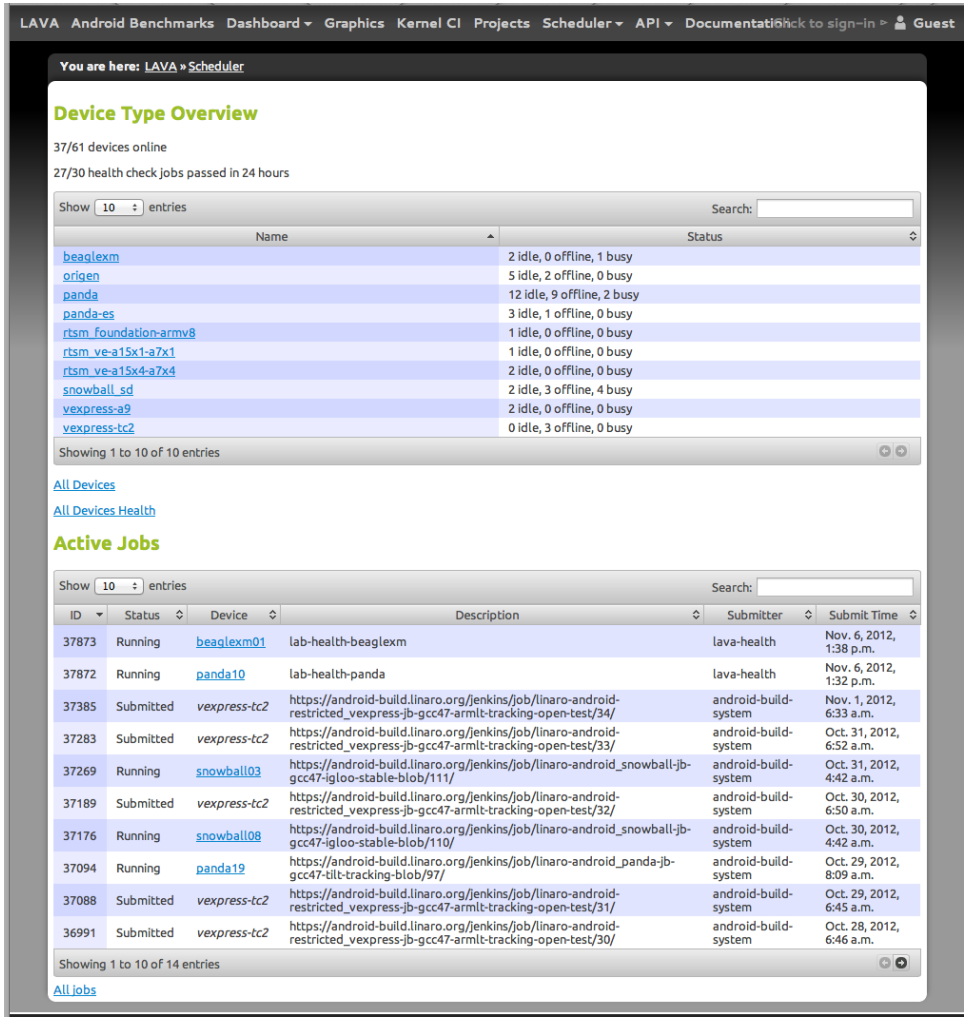
ARM freescale semiconductor HISILICON IBM LG Electronics SAMSUNG Texas Instruments

Linaro Open Source Testing & Validation

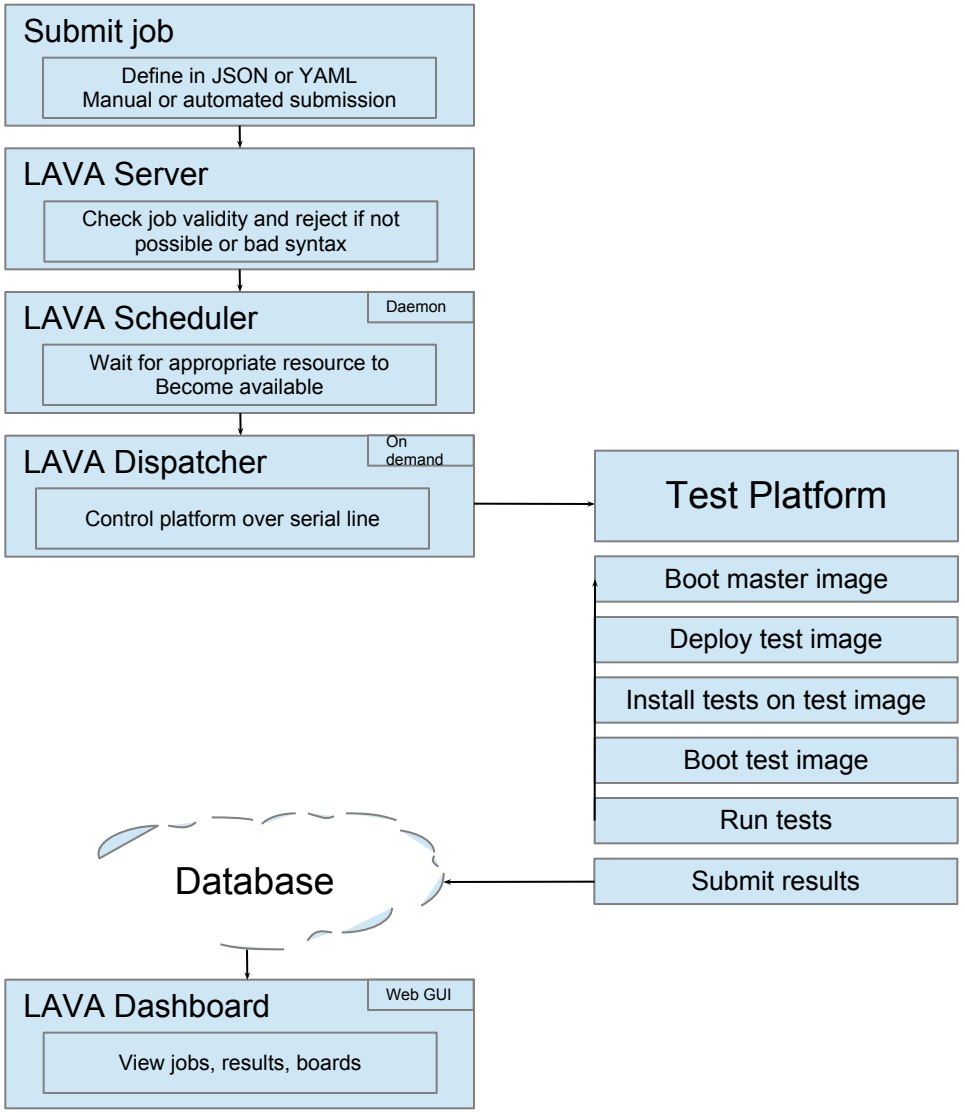
- Open Source Software traditionally has limited testing
- LAVA – Linaro Automated Validation Architecture
- Populated only by Linaro members hardware
- Provides Members
  - Continuous Integration for daily build & testing
  - Smoke, System and Regression testing
  - Web dashboard for results and trends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

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



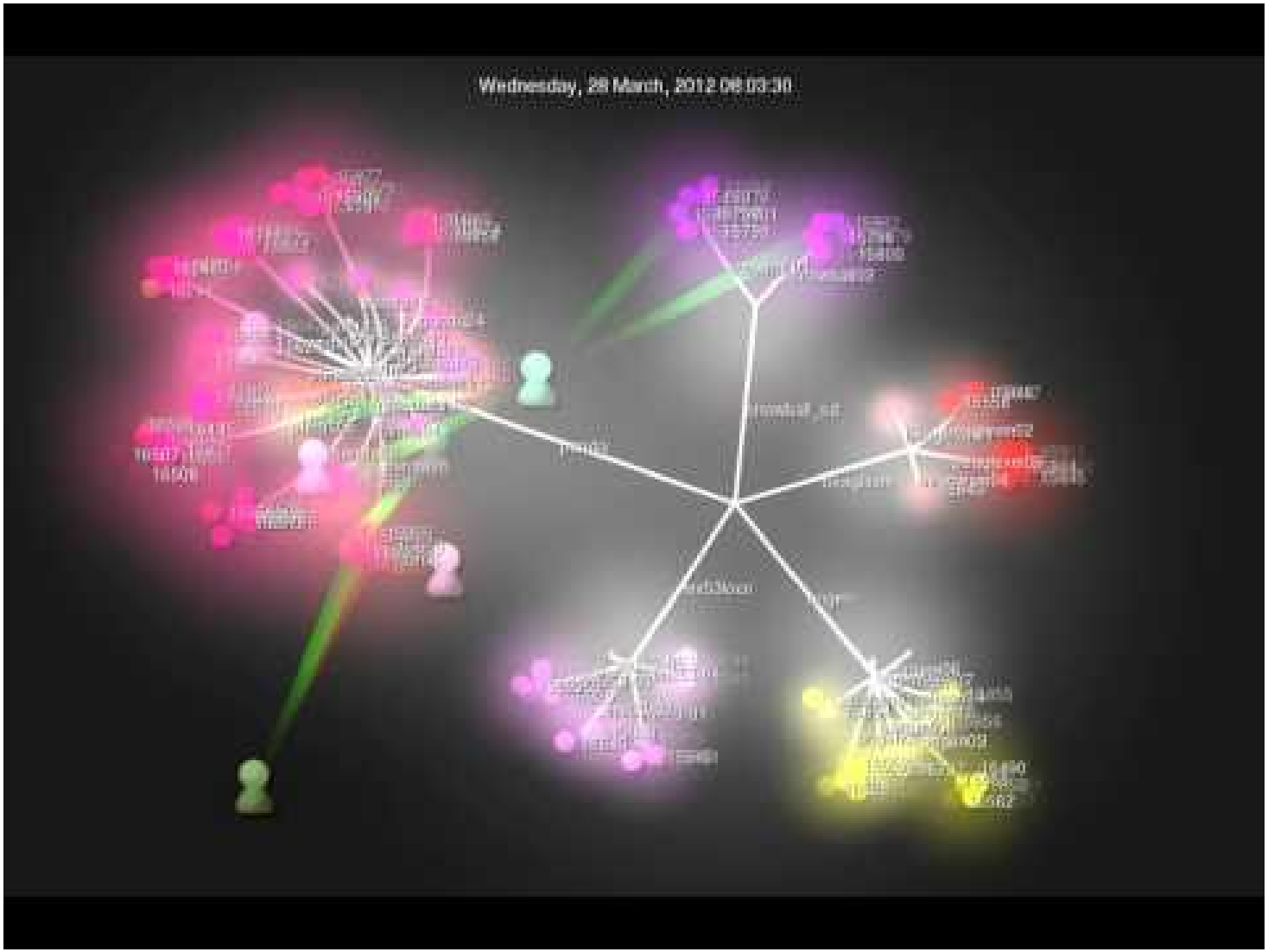
LAVA Workflow



The Farm

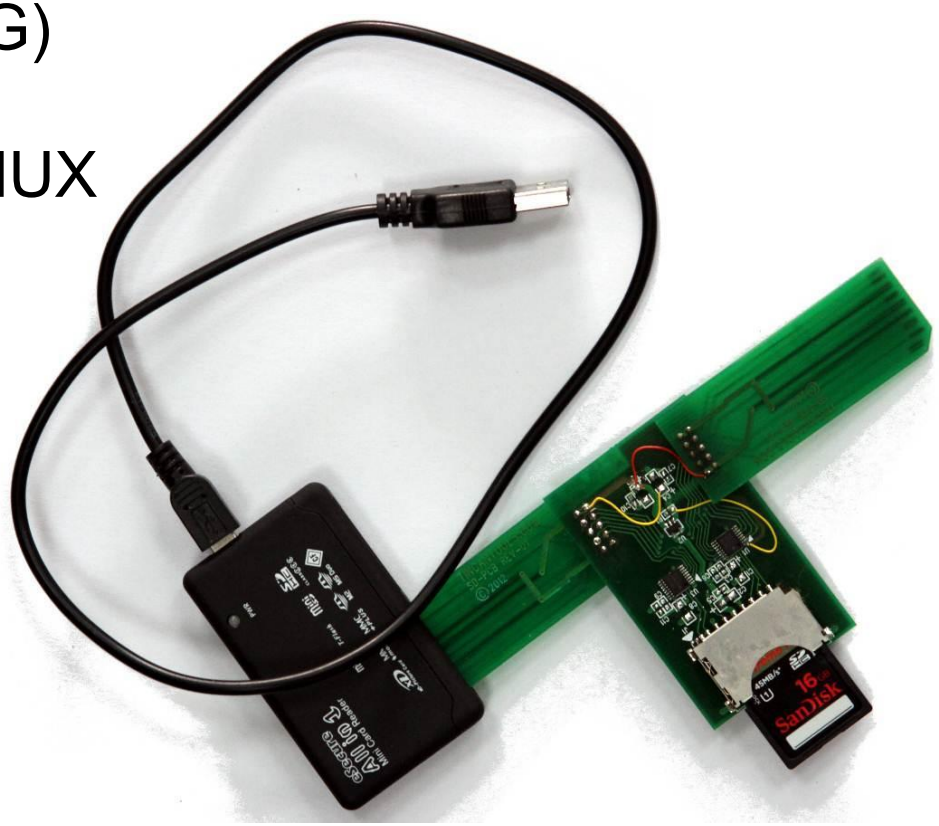
- LAVA lab is populated by member hardware
- Includes VExpress, TC2 and FastModels (big.LITTLE, v8)
- Developers have set up "LAVA@home"
- Members are working on private deployments

LAVA Lab Usage



Plans

- Extending test capabilities
- Power management
- Audio capture and validation
- Support for consumer devices
- Linaro Enterprise Group (LEG) adding servers to farm
- Bootloader testing with SD-MUX



Summary

- LAVA usage is growing
- LAVA interest is growing
- LAVA lab expanding
- Enough requirements to keep us busy

Q&A

Linaro Connect: connect.linaro.org

- Linaro Community Technical Conference held 3x per year
- Agree technical priorities & deliver on roadmap for ARM open source
  - Focus on member requirements
- 300 attendees from 80 companies
- Week-long event
  - Up to 95 morning sessions
  - 5 afternoons of hacking in working groups

Dates	Location
4 – 8 Mar 2013	**Hong Kong**
24 – 28 Jun 2013	EU (TBC)
Oct 2013	US (TBC)