Migrating to the pipeline

Using the new dispatcher design
Migrations have begun!

- Overview
- What can LAVA now do for me?
- Redesigning your tests
- Timescales
- Working with the new dispatcher
Overview

● New framework now in production & Debian
  ○ validation.linaro.org - 2016.2

● Evaluate test objectives & re-design
  ○ Defaults and assumptions removed
  ○ Test writer given more rope
  ○ Submissions must be explicit

● Base for future development

● New structures for results and charting
What is pipeline LAVA able to do?

- QEMU
- U-Boot
- iPXE
- LXC
- ADB & fastboot
- UEFI Menu
  - (certain devices only)
- Secondary connections
- Secondary media
- VLANd

- BBB, Panda, Cubietruck, Arndale
- x86
- Nexus4, 9 & 10
- Mustang & HiKey
- Pending: FVP models, VE/Juno and D02
Redesigning your tests

- Talk to us & coordinate via Steve
  - Crazy ideas, things you’ve never been able to do in LAVA, workarounds you want to avoid
- Look at the objective of the test
  - Ignore the old methods
- New frontends
  - Customised data extraction and improved feedback
  - Possible bisect support
Timescales

- **During 2016**
  - Migration of validation.linaro.org to pipeline jobs only
  - Complete device coverage
  - Complete job coverage

- **During 2017**
  - Block submission of old dispatcher jobs
  - Deletion of all bundles and reports, deletion of job data resulting from JSON submissions.
  - Removal of old dispatcher codebase
Working with the new dispatcher

- Deploy, boot & test
- Pipeline structure of each job is exposed
- Protocols
- Queries & Charts
- Timeouts
- Basis for active development
  - Docs and use cases needed
A simplified pipeline

1 - deploy
   1.1 - download initramfs, kernel, dtb
   1.2 - apply LAVA test shell scripts to ramdisk

2 - boot
   2.1 - interrupt U-Boot and send commands

3 - test

4 - finalize
Protocols

● Whenever a shell is not available or appropriate
● Accessed from the dispatcher codebase
  ○ Specific API support
● API calls can be made outside the test shell
● Used for the Multinode coordinator, VLANd and ADB - more are likely.
Be explicit in your test job - 1

- Use comments
- How to deploy
  - tmpfs, tftp, fastboot
  - os
- Timeouts
  - job
  - action
  - connection
Be explicit in your test job - 2

● **Boot method:**
  ○ U-Boot, iPXE, fastboot

● **Commands:**
  ○ NFS, ramdisk

● **Compression**
  ○ ramdisk-header

● `bootz` or `bootm`

● **Prompts**
Adding Resources

- All config is in the database
  - XMLRPC, Web UI or YAML download.
- Test Plan
  - Used to create use-case documentation
- Standard images and functional tests
- LAVA user mailing list
- Similar job queries
Changes in support

- Removing hidden magic
  - NFS rootfs needs to be packaged at /
  - Prompts must be declared in advance
  - Specify compression methods explicitly
  - Specify bootz or bootm

- No ‘target’ in submission, device-type only
  - Use device tags
Ongoing Development

- Pipeline is the base for future development
- Submission schema will have small changes
  - Bug fixes and additional support
- Subscribe to the support mailing lists
  - lava-announce (read only)
  - linaro-validation
  - lava-users
  - Mailman lists @ lists.linaro.org
Questions

● For specific advice for your team, talk to us
  ○ *Before* you start writing new jobs so that your needs can be coordinated with the needs of other teams
  ○ Tell us what you would like to do as well as what you need to do

● Arrange a meeting where desirable
  ○ at BKK16 or via hangouts after return