Large Scale Deployments for Automated Testing

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Automated testing in Linaro

- Introduction To LAVA
- How does LAVA deploy test images?
- What if the board gets bricked?
- Connectivity
- Physical Deployment
- Administration
- Staging Instances
- Large Scale Deployments going forward

Introduction to LAVA

- The Linaro Automated Validation Architecture
- First implementation started in late 2010
- Second iteration development - LAVA V2 started 2014
- Rolled out fully in 2017 in LAVA Lab, Cambridge

LAVA Device Challenges

- Power on Boot
- Unique device identification
- Serial Connectivity

What if the board gets bricked?

- Power Control
- Ethernet controlled relays for push button emulation
- Re-flash firmware
- Board dependent
- Solder mods mean solution doesn’t scale well

LAVA Devices - Connectivity

- Quality cables
  - Worth the extra money - massively reduces test failures
- USB Hubs
  - Have to have individual port power control

LAVA - Physical Deployment

- Wide range of form factors
- Up to medium size - use monitor shelves
- Some come in cases
- Otherwise re-factor into 1u case
- Multiple boards per case

LAVA - Administration

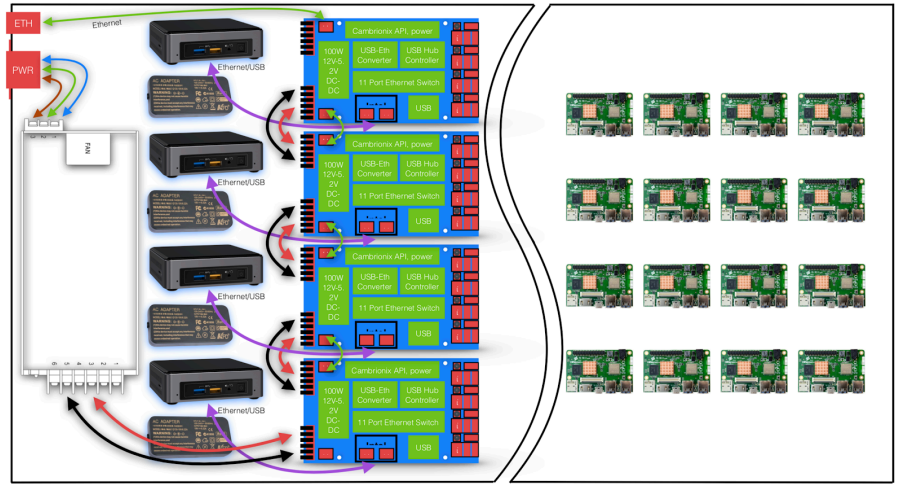
- Configuration Management
- Salt
    - Server and LAVA configuration
    - Git repo - https://git.linaro.org/lava/lava-lab.git
- Ansible
    - User account management
    - Git repo - https://git.linaro.org/lab-cambridge/lab-ansible.git/
- VPN access
    - Required for LAVA hacking sessions and direct board interaction
    - develop-lxc script in lava-lab repo allows users to interact with a DUT

LAVA - Staging Instances

- Very important for testing out new releases of LAVA
- Key to testing out new firmware/ bootloaders

LAVA - Large Scale Deployments

- Working with 3rd party to fit up to 16 of the 96boards CE form factor in 1u



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