openQA

• automated testing tool
  – full stack testing (from installation to applications)
  – tests “human codepath” (VNC I/O)
  – virtual and real SUTs (QEMU VMs, IPMI, s390)
  – powerful reporting (logs, screenshots, video)

• https://os-autoinst.github.io/openQA/
• https://openqa.opensuse.org/
• https://build.opensuse.org/project/show/devel:openQA
architecture
tests

• test code
  – testapi (openQA DSL /perl/)
  – https://github.com/os-autoinst/os-autoinst-distri-opensuse

• needles
  – reference images + metadata

• nothing is installed on SUT
What's new - frontend
## Test result overview

This page lists 46 automated test results from the last 36 hours.

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Welcome to openQA
Life is too short for manual testing!

openSUSE Leap
Build0200 (5 days ago)
Build0198 (6 days ago)
Build0196 (7 days ago)

openSUSE Leap Staging Projects
Build68.3 (1 day ago)
Build29.1 (about 10 hours ago)
Build14.2 (3 months ago)

openSUSE Tumbleweed
Build20151003 (about 14 hours ago)
Build20151002 (a day ago)
Build20150927 (7 days ago)

openSUSE Tumbleweed AArch64
Build20150919 (10 days ago)

openSUSE Tumbleweed PowerPC
Build20150920 (11 days ago)
What's new - backend
networking

- QEMU user mode network
networking

- QEMU user mode network
- TAP devices
- VDE (Virtual Distributed Ethernet)
- Open vSwitch
test dependencies

• chained dependency /serial/
  – test suite run time optimization
  – asset reuse
test dependencies

- chained dependency /serial/
- parallel dependency
  - HA, client-server services
  - beware minimal worker count!
test dependencies

• chained dependency /serial/
• parallel dependency
• combination of both
test dependencies

- chained dependency /serial/
- parallel dependency
- combination of both
- concept of child and parent job
multi-machine tests

• mmapi
  - querying child/parent job state

• lockapi
  - synchronization primitive
asset creation

• assets = test resources
  – ISO, HDD image, REPO, files
asset creation

- assets = test resources
  - ISO, HDD image, REPO, files

- successful test job can generate new HDD asset
  - using test variables:
    PUBLISH_HDD_$i
    STORE_HDD_$i
asset creation

• assets = test resources
  – ISO, HDD image, REPO, files
• successful test job can generate new HDD asset
• manual upload of file assets
  – using testapi
    upload_asset()
remote workers

- scaling out
- s390, ppc, x86 workers under one OpenQA
- REST & WebSockets communication
- shared storage (r/o)
  - tests assets
  - outsource integrity assurance
worker classes

• differentiating workers
  – worker class (worker property) needs to match worker class (test variable)

• describes HW capabilities
  – CPU arch, available memory, …

• custom configuration
  – network
worker classes – for test development

• using common openQA admin node
• use local worker
  – custom worker class (e.g. “my_worker”)
  – don't use shared storage or you will break tests for others
  – manually sync assets
• run developing tests with custom worker class
preforking – going multiprocess

• scaling up
• WebUI/API
• standalone WebSockets server
• standalone Scheduler
• DBus IPC
  – org.opensuse.openqa.Scheduler
  – org.opensuse.openqa.WebSockets
extensions (WIP)

• enable/disable various codepaths
  – configured in openqa.ini
  – out-of-tree extension support

• interface
  – register($reactor)
  – listen for Mojolicious events for callbacks

• DBus IPC as first (in-tree) openQA extension
database support

- SQLite
- PostgreSQL
- MySQL/MariaDB
authentication plugins

• build-in
  – openID 2.0
  – iChain
  – Fake
    – for development and demo purposes only!

• plugin interface
  – auth_login, auth_logout, auth_configure
background tasks /GRU/

• results maintenance
  - compacting screenshots
  - erasing old results and assets

• “source service” for ISO images
  - tests with ISOURL test variable
future

• libvirt
• real HW testing without IPMI
• integration with other tools
• better scheduler
contacts

• IRC
  freenode #opensuse-factory

• email
  opensuse-factory@opensuse.org

• issues
  https://progress.opensuse.org/projects/openqav3/

• code
  https://github.com/os-autoinst/openQA
  https://github.com/os-autoinst/os-autoinst
Questions?
Have a Lot of Fun, and Join Us At:

www.opensuse.org
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