

Overview of openQA

The heart of openSUSE's automated
Testing

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Testing openSUSE releases ...

- ▶ NET images
- ▶ DVD images
- ▶ Live images
- ▶ Biarch DVD
- ▶ Rescue CD



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- ▶ Rescue CD
- ▶ USB
- ▶ DVD
- ▶ Desktop
- ▶ Laptop
- ▶ UEFI
- ▶ Legacy



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- ▶ GNOME
- ▶ KDE
- ▶ textmode
- ▶ RAID
- ▶ LVM
- ▶ ext4
- ▶ btrfs
- ▶ LUKS
- ▶ ...



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- ▶ ...

... needs automation!

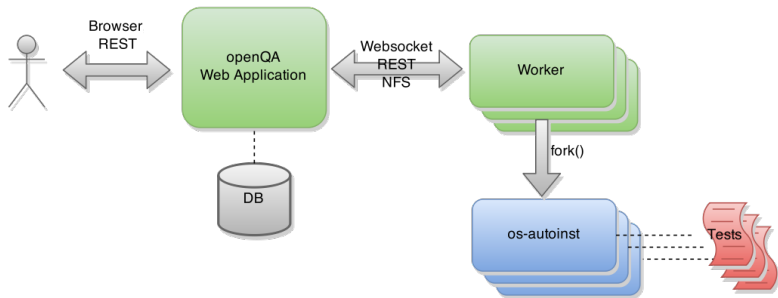


Basic Ideas

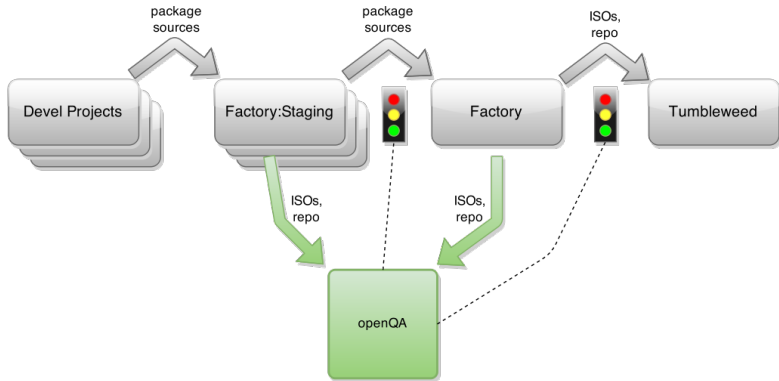
- ▶ test full stack: bootloader, installer, desktop, apps
- ▶ use image recognition to "see like a human"
- ▶ act (keyboard, mouse) on the image seen
- ▶ use virtualization
- ▶ parallelize
- ▶ report!



Architecture



openQA in openSUSE



A Job in openQA

A job ...

- ▶ is a set of tests to run
- ▶ has a state (running, scheduled, cancelled, ...)
- ▶ has a result (passed, failed)
- ▶ has settings
 - ▶ machine settings (disk size, CPU, ...)
 - ▶ media/product settings (ISO name, repo to use, ...)
 - ▶ test suite settings (Desktop, partitioning, ...)



openQA welcome screen

openQA

Logged as Inussel ([manage API keys](#) | [admin](#) | [Logout](#))

Welcome to openQA

Life is too short for manual testing!

[Learn more »](#)



openSUSE Tumbleweed

[Build20150425](#) (2 days ago)

100 passed

5

[Build20150423](#) (4 days ago)

99 passed

6

[Build20150422](#) (5 days ago)

99 passed

6

openQA build overview

Test result overview

Overall Summary of **openSUSE Tumbleweed** build 20150425

Passed: **74** Soft Failure: **26** Failed: **5**












Flavor: DVD

Test	i586	x86_64
RAID0	-	Ⓒ ●
RAID1	-	Ⓒ ●
RAID10	-	Ⓒ ●
RAID5	-	Ⓒ ●
cryptlvm	Ⓒ ● <code>yast2_bootloader</code>	Ⓒ ●
dual_windows8	-	Ⓒ ●
ext4	Ⓒ ●	Ⓒ ●
gnome	Ⓒ ● <code>gnucash</code>	Ⓒ ● <code>gnucash</code>
gnome@Laptop_32	Ⓒ ● <code>gnucash</code>	-
gnome@Laptop_64	-	Ⓒ ● <code>gnucash</code>

openQA test results

Results for opensuse-Tumbleweed-DVD-i586-Build20150425-cryptlvm

Result: **passed** finished 2 days ago (36:50 minutes)

Test	Result	References
isosize !	passed	
bootloader ✎	passed	     
welcome ✎	passed	 
good_buttons ✎	passed	
installation_mode ✎	passed	

openQA test result details



Screenshot [Needles editor](#) [Source code](#)

Candidate need: 100%: partitioning-windows-20140904 ▾




Suggested
Partitioning

100%

- Shrink Windows partition /dev/sda2 to 22.84 GiB
- Create extended partition /dev/sda3 (26.82 GiB)
- Create swap volume /dev/sda5 (1.46 GiB)
- Create root volume /dev/sda6 (10.66 GiB) with btrfs
- Create volume /dev/sda7 (14.70 GiB) for /home with xfs
- Create subvolume boot/grub2/i386-pc on device /dev/sda6
- Create subvolume boot/grub2/x86_64-efi on device /dev/sda6
- Create subvolume opt on device /dev/sda6
- Create subvolume srv on device /dev/sda6
- Create subvolume tmp on device /dev/sda6
- Create subvolume usr/local on device /dev/sda6
- Create subvolume var/crash on device /dev/sda6
- Create subvolume var/lib/mailman on device /dev/sda6
- Create subvolume var/lib/named on device /dev/sda6
- Create subvolume var/lib/postgresql on device /dev/sda6
- Create subvolume var/log on device /dev/sda6
- Create subvolume var/opt on device /dev/sda6
- Create subvolume var/spool on device /dev/sda6
- Create subvolume var/tmp on device /dev/sda6

Needle Editor

Actions



Name:

partitioning-windows-201504

Tags:

☒ partitioning-windows


Add



Properties:

☐ workaround

JSON:

```
{
  "tags": [
    "partitioning-windows"
  ],
  "properties": [],
  "area": [
    {
      "height": 53,
      "width": 393,
      "xpos": 86,
      "type": "watch",
      "xpos": 369
    }
  ]
}
```

 Change Match Level




Screenshot

Needles editor

Source code

Screens/Needle	Image	Areas	Matches	Tags
screenshot	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
100%: partitioning-windows-20140904				



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- Create subvolume var/crash on device /dev/sda6
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- Create subvolume var/log on device /dev/sda6
- Create subvolume var/opt on device /dev/sda6
- Create subvolume var/spool on device /dev/sda6
- Create subvolume var/tmp on device /dev/sda6

Test API


```
use base "basetest";
use strict;
use testapi;

sub run {
    # wait for bootloader to appear
    assert_screen "bootloader", 30;

    # "Install" is second option
    if (!get_var('LIVETEST')) {
        send_key "down";
    }

    # press enter to boot current entry
    send_key "ret";

    # wait for the desktop to appear
    assert_screen "desktop", 300;
}
```



Advanced Features

- ▶ interactive needling mode
- ▶ real hardware testing
- ▶ multi machine support



Future Plans

- ▶ disk images, autoyast profiles etc as result
- ▶ enhance multi machine networking
- ▶ even more support for hardware testing
- ▶ get rid of NFS
- ▶ more application testing
- ▶ do actual releases



Summary

- ▶ state of the art web app
- ▶ test framework for fully automated OS and application testing
- ▶ visual documentation of test result, including video
- ▶ log files for failures
- ▶ simple API for tests
- ▶ remote controllable via REST API



Get it

Web site <http://os-autoinst.github.io/openQA/>

Code <https://github.com/os-autoinst>

openQA documentation, server, worker

os-autoinst isotovideo tool and the API for tests.

os-autoinst-distri-opensuse openSUSE tests

os-autoinst-needles-opensuse openSUSE needles

RPMs <https://build.opensuse.org/project/show/devel:openQA>



Contact

- ▶ openSUSE project management tool
<https://progress.opensuse.org/projects/openqav3>
- ▶ #openSUSE-factory IRC channel at Freenode
- ▶ opensuse-factory@opensuse.org





Questions?

Join the conversation,
contribute & have a lot of fun!
www.opensuse.org

Thank
you.



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