

Get something new everyday

- Staging Project for openSUSE

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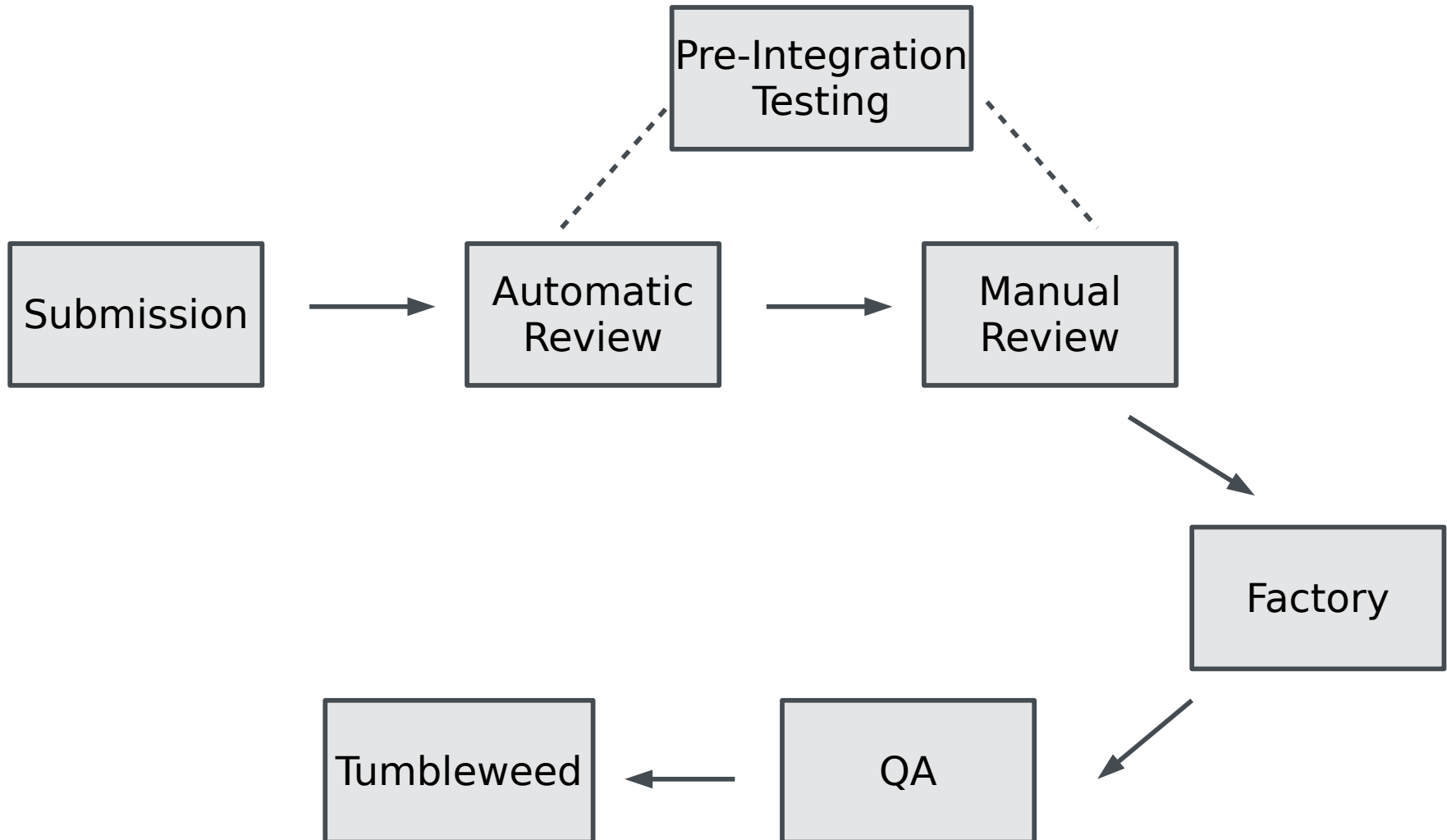


Agenda

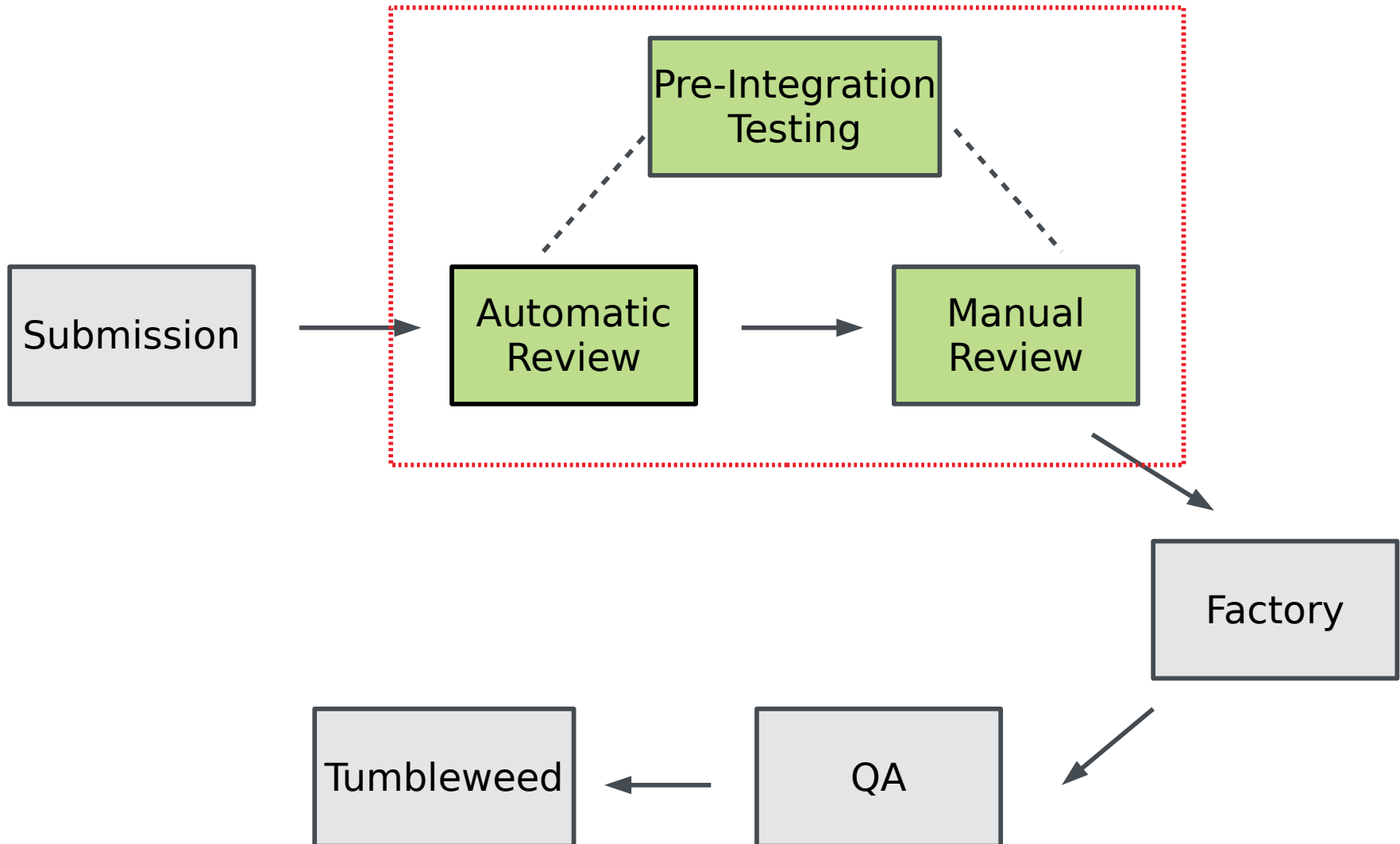
- Basic workflow
- Staging Project setup
- Dashboard
- Tools
- Case study

Basic Workflow

Factory development model



Factory development model



The review process

- Factory-Auto: checks basic rules and adds additional reviewers
- Legal-Auto: checking if the license of the package is in the permitted license database
- Review Team: human check of the request
- Repo-Checker: a more in depth automatic check
- Factory-Staging: review by Staging Master (manually and assisted by repochecker and openQA)

Pre-Integration testing: RepoChecker

- Build result verification of submission
- The binaries installable
- Check the conflicts with other packages
- Check the build cycle in Factory
- Check the validation of *deletereq* request
- Leave the comment on the request once found an issue
- `osc check_repo` command

Pre-Integration testing: openQA

Currently the test plan covering...

- Normal installation
- Installation on RAID partition(software RAID)
- Installation with cryptlvm enabled
- Installation on UEFI environment
- Boot succeeded after the system installed by above way
- MinimalX/GNOME/KDE environment work
- Update system to current staging

Staging Project Setup

Rings

	Description	Packages
Ring-0	The bootstrap cycle of factory	102
Ring-1	Based on bootstrap and building minimalX DVD	1043
Ring-2	A pretty much complete DVD	937

Staging Project project setup

```
<link project="openSUSE:Factory:Rings:0-Bootstrap"/> # depends  
<link project="openSUSE:Factory:Rings:1-MinimalX"/>
```

```
<repository name="standard" rebuild="direct" linkedbuild="all">  
  <path project="openSUSE:Factory:Staging:A"  
repository="bootstrap_copy"/>  
  ...  
</repository>  
<repository name="images" rebuild="direct" linkedbuild="all">  
  <path project="openSUSE:Factory:Staging:A"  
repository="standard"/>  
  ...  
</repository>  
<repository name="bootstrap_copy">  
  <path project="openSUSE:Factory:Staging" repository="standard"/>  
  ...  
</repository>
```

Staging Project project setup

```
<link project="openSUSE:Factory:Rings:2-TestDVD"/>
```

```
<repository name="standard" rebuild="direct" linkedbuild="all">  
  <path project="openSUSE:Factory:Staging:A"  
repository="standard"/>  
  ...  
</repository>  
<repository name="images" rebuild="direct" linkedbuild="all">  
  <path project="openSUSE:Factory:Staging:A:DVD"  
repository="standard"/>  
  ...  
</repository>
```

Stagings

- openSUSE:Factory:Staging:A
- openSUSE:Factory:Staging:A:DVD
- openSUSE:Factory:Staging:B
- openSUSE:Factory:Staging:B:DVD
- openSUSE:Factory:Staging:C
- openSUSE:Factory:Staging:C:DVD
- ...
- openSUSE:Factory:Staging:J
- openSUSE:Factory:Staging:J:DVD

Support packages

- Test-DVD-ppc64le: puts a .kiwi file, in order to generating the relevant ISO file.
- Test-DVD-x86_64: puts a .kiwi file, in order to generating the relevant ISO file.
- bootstrap-copy: aggregate the bootstrap packages from Ring-0. not in :DVD.

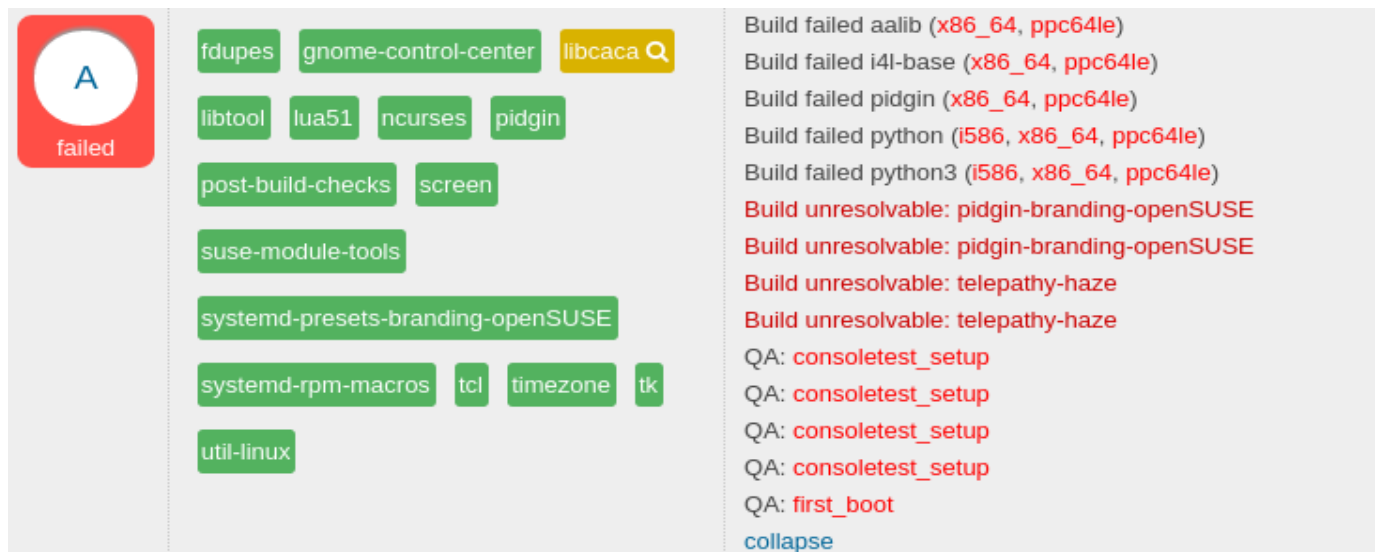
The adi Staging (Ad-Interim)

- Mainly for *non-rings* packages submission
- Ensure the package can built against Factory
- RepoChecker is involved
- It can not handle *deletereq* request!

Dashboard

Adding request to staging

- osc staging select LETTER REQUESTS



The screenshot displays the OBS staging interface. On the left, a red square icon with a white circle containing the letter 'A' and the word 'failed' below it indicates the build status. To the right of this icon, a list of packages is shown in green boxes: fdupes, gnome-control-center, libccata (with a magnifying glass icon), libtool, lua51, ncurses, pidgin, post-build-checks, screen, suse-module-tools, systemd-presets-branding-openSUSE, systemd-rpm-macros, tcl, timezone, tk, and util-linux. On the far right, a list of build failures is displayed in red text, including 'Build failed aalib (x86_64, ppc64le)', 'Build failed i4l-base (x86_64, ppc64le)', 'Build failed pidgin (x86_64, ppc64le)', 'Build failed python (i586, x86_64, ppc64le)', 'Build failed python3 (i586, x86_64, ppc64le)', 'Build unresolvable: pidgin-branding-openSUSE', 'Build unresolvable: pidgin-branding-openSUSE', 'Build unresolvable: telepathy-haze', 'Build unresolvable: telepathy-haze', 'QA: consoletest_setup', 'QA: consoletest_setup', 'QA: consoletest_setup', 'QA: consoletest_setup', 'QA: first_boot', and 'collapse'.

Staging Dashboard

openSUSE Build Service > Projects > openSUSE:Factory > Staging projects

mlin7442 (223 tasks) | Home Project | Logout

Project	Requests	Problems
B acceptable	autoconf automake bison build-compare coreutils cracklib gettext-runtime intltool sed	✓
G testing 88%	doxygen libdatrie tevent	✓
C building 99%	PackageKit autostart2 couchdb dmidecode glew harfbuzz libevdev libinput linuxrc mariadb net-snmp obs-service-format_spec_file perl-XML-LibXML python-lxml syslinux ...3 more	✓
E building 99%	NetworkManager NetworkManager-gnome NetworkManager-pptp NetworkManager-vpnc apache2-mod_auth_ntlm_winbind btrfsprogs gnu-efi http-parser kfilemetadata5 libEMF libgit2 ⚙️ openjpeg2 php5 xterm	✓
H building 95%	kernel-source	Build failed installation-images-openSUSE (i586, x86_64)

Legend

Requests

- Ready
- In review
- Obsolete
- Untracked

Projects

- Building
- Testing
- Review
- Acceptable
- Unacceptable
- Failed

Reviews

- Source Review
- Installation Check
- Legal Review

Infos

Empty Projects:

none

Backlog:

- Mesa
- audit
- bash
- cdrtools
- colord
- eigen3
- ... 27 more

Tools

osc staging command

- accept: accept all requests in Staging:<LETTER>
- check: shows all staging projects status
- cleanup_rings: try to cleanup rings content and print out problems
- freeze: rebase the sources of the project's links
- list: dump the requests what open review by factory-staging
- select: add requests to the project
- unselect: remove requests from the project ie. pushing them back to the backlog

<https://github.com/openSUSE/osc-plugin-factory>

osc check_repo command

- Behind of RepoChecker
- Download the needed binaries
- Execute *installcheck* against binaries
- Execute *findfileconflicts* against binaries
- Build result in devel project verification
- Check new cycle created
- Can force skip review by --skip argument
- Can force skip cycle check by --skipcycle argument

ISO file generating

- Mirrored the binaries from OBS project
- Execute rpm2solv against all binaries and generate the solv file
- There are 2 testcase files as template represents the basic requirement of packages
- Adds the declare statement of solv file to the correspond testcase
- Execute testsolv against testcase then get the packages list(or detect the problem)
- Parsing the packages list above and add to kiwi file
- Update the kiwi file back to Test-DVD-{\$arch} on OBS

openQA




Testing on openQA

Test result overview

Overall Summary of [Staging Projects](#) build 209.2

Passed: **3** Failed: **1**

Flavor: Staging-DVD





Test	x86_64
RAID1	
cryptlvm	 boot_encrypt
minimalx	
rescue_system	

Test result overview

Overall Summary of [Staging Projects](#) build 387.2

Passed: **1** Soft Failure: **1** Failed: **2**

Flavor: Staging2-DVD

Test	x86_64
gnome	 first_boot
kde	 amarok firefox_audio 6 more
miniuefi	
update_staging	

Check the status

```
m1in@innoko:~> osc staging check A
-- FAILED Project openSUSE:Factory:Staging:A still needs attention
- libcacca: Missing reviews: opensuse-review-team
- Following packages are broken:
  python (standard): failed
  python3 (standard): failed
  python (standard): failed
  python3 (standard): failed
  python (standard): failed
  python3 (standard): failed
- openQA's overall status is failed for https://openqa.opensuse.org/tests/82027

-- For subproject openSUSE:Factory:Staging:A:DVD
- Following packages are broken:
  aalib (standard): failed
  i4l-base (standard): failed
  pidgin (standard): failed
  pidgin-branding-openSUSE (standard): unresolvable
  telepathy-haze (standard): unresolvable
  aalib (standard): failed
  i4l-base (standard): failed
  pidgin (standard): failed
  pidgin-branding-openSUSE (standard): unresolvable
  telepathy-haze (standard): unresolvable
- openQA's overall status is failed for https://openqa.opensuse.org/tests/82179
m1in@innoko:~> osc staging check B
++ Acceptable staging project openSUSE:Factory:Staging:B
```

Case Study

Successful Cases

- New cycle added
- File conflicts
- Build failures
- Missed requirement
- Featurea is broken, caught by openQA
- etc.

Failure Case 1

- Old binaries tainted the other packages build, bad packages didn't triggered rebuild on OBS somehow. See the failure after merge to Factory.
- Example: kdebase4-runtime with new NM

Failure Case 2

- Staging Project didn't test Live ISO boot, and even didn't generate the LiveISO there.
- Example: the changes in wodim caused TW snapshot can not boot on USB stick.
- Bug:
https://bugzilla.opensuse.org/show_bug.cgi?id=939456

Failure Case 3

- The feature test doesn't covered by openQA
- Example: yast2 software manager crashed in UI mode
- Bug:
https://bugzilla.novell.com/show_bug.cgi?id=941398

Failure Case 4

- Dependency submission didn't put in the same staging, after merge both to Factory, the issue appears.
- Example: PkgA build requires PkgB, and both have new changes and submit to Factory, they are put in different staging, **unluckily** both are built successfully in their staging, after merge them to Factory, PkgA fails to build with PkgB.
- Rarely happens!

Q&A

Thank you!





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