Enhancing the Testing of CERN's Linux Software Building Service And Improving Monitoring

Zeynep Öztürk

IT-CD-CLI

CERN openlab

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Supervisors

Marta Vila Fernandes

Alex Irribaren

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The Project

Improving the testing setup to automate and verify the most common Koji operations for every new release, ensuring smooth and reliable upgrades.

Definitions

What is Koji?

- Koji is a system for building and tracking RPMs.
- Koji organizes packages using tags.

What is Tag?

- A tag is the repository name that will contain the packages that are associated it.

Package: myrpm
Build: myrpm-1.1-29.el9
RPM: myrpm-1.1-29.el9.x86_64.rpm
Tag: mytag9al-testing

Definitions

What is Koji Tester?

- Koji Tester is a GitLab project that contains a pipeline that helps to test Koji operations when there is a Koji upgrade.

- This pipeline contains different tests: RPM builds, cloud image builds, and docker image builds for the supported OS at CERN.

Challenges

1) Add a tag structure in kojitest environment for the OS supported at CERN.

2) Remove tests for deprecated OS.

3) Create a pipeline schedule that triggers the pipeline every day.

4) Create alerts integrated with the Linux Mattermost alert channel.

Supported OS by the CERN Linux team

- Alma8
- Alma9
- RHEL8
- RHEL9

Challenges

Challenge 1:

Adding new tag structures for Alma8, RHEL8 and RHEL9

The Tag Structure

mytag8al-build
alma8-cern
cern8al-stable
buildsys8al-stable
alma8-defaults

KOJI_PROFILE = kojitest

koji -p $KOJI_PROFILE

Challenge 2:

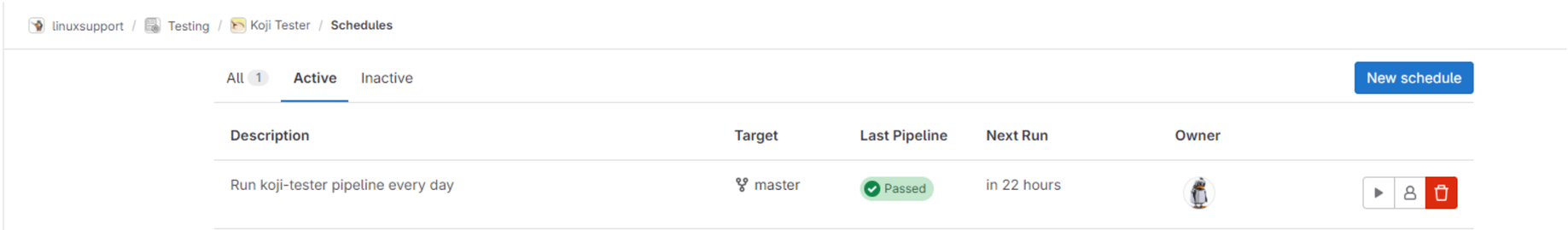
Removing deprecated OS

```
19
20  # cloud image builders
21  koji-image-build:
22    extends: .test
23    trigger:
24      project: linuxsupport/koji-image-build
25      forward:
26        yaml_variables: true
27        pipeline_variables: true
28
29  # test cs8 docker image
30  cs8-base:
31    extends: .test
32    trigger:
33      project: linuxsupport/cs8-base
34      forward:
35        yaml_variables: true
36        pipeline_variables: true
37
38  # test alma9 docker image
39  alma9-base:
40    extends: .test
41    trigger:
42      project: linuxsupport/alma9-base
43      forward:
44        yaml_variables: true
45        pipeline_variables: true
46
47  # test alma8 docker image
48  alma8-base:
49    extends: .test
50    trigger:
```

Challenges

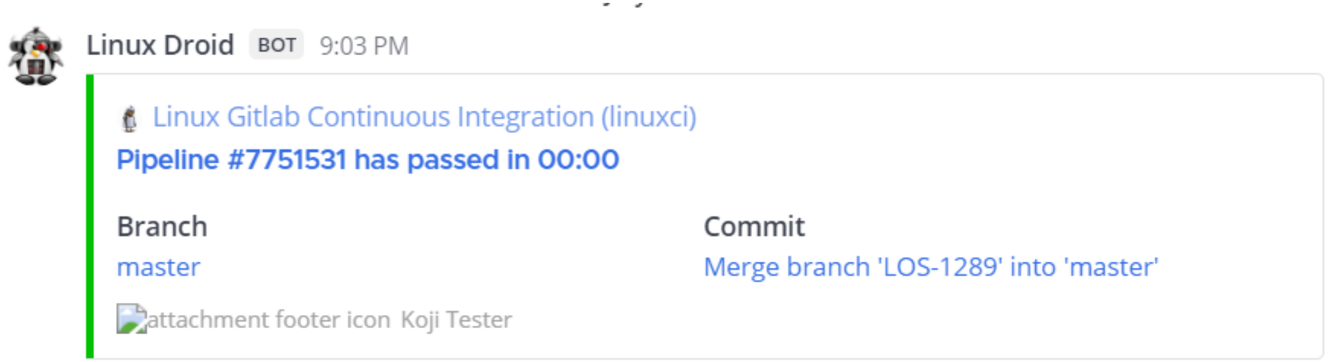
Challenge 3:

Creating pipeline schedule

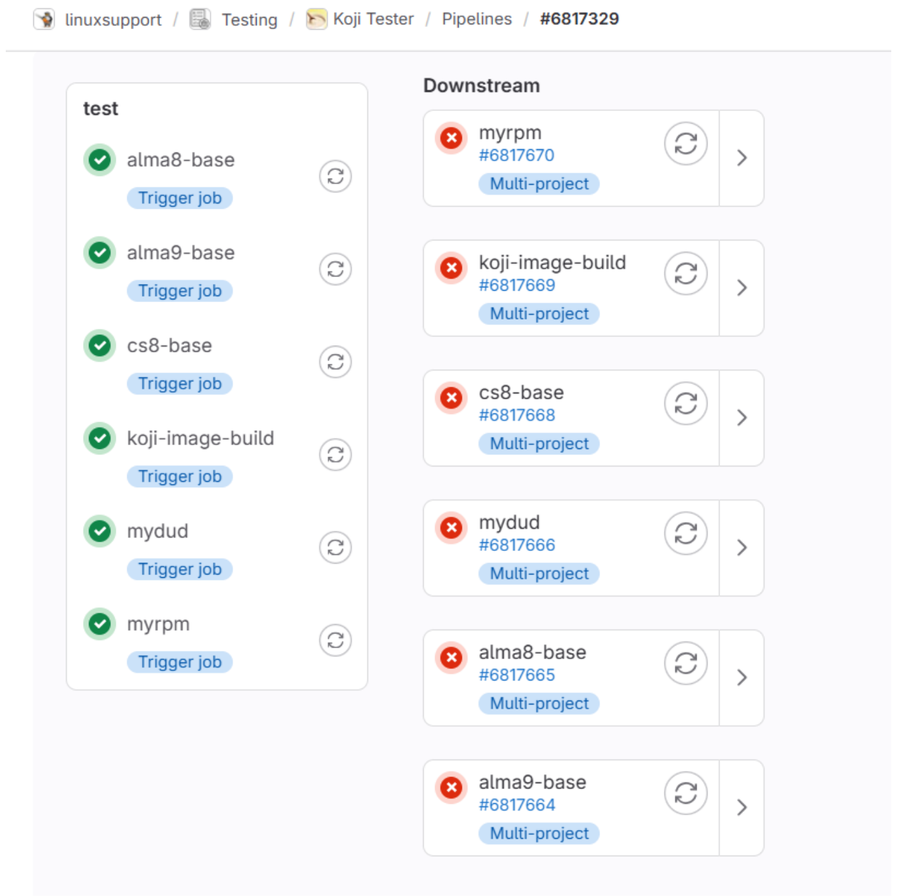


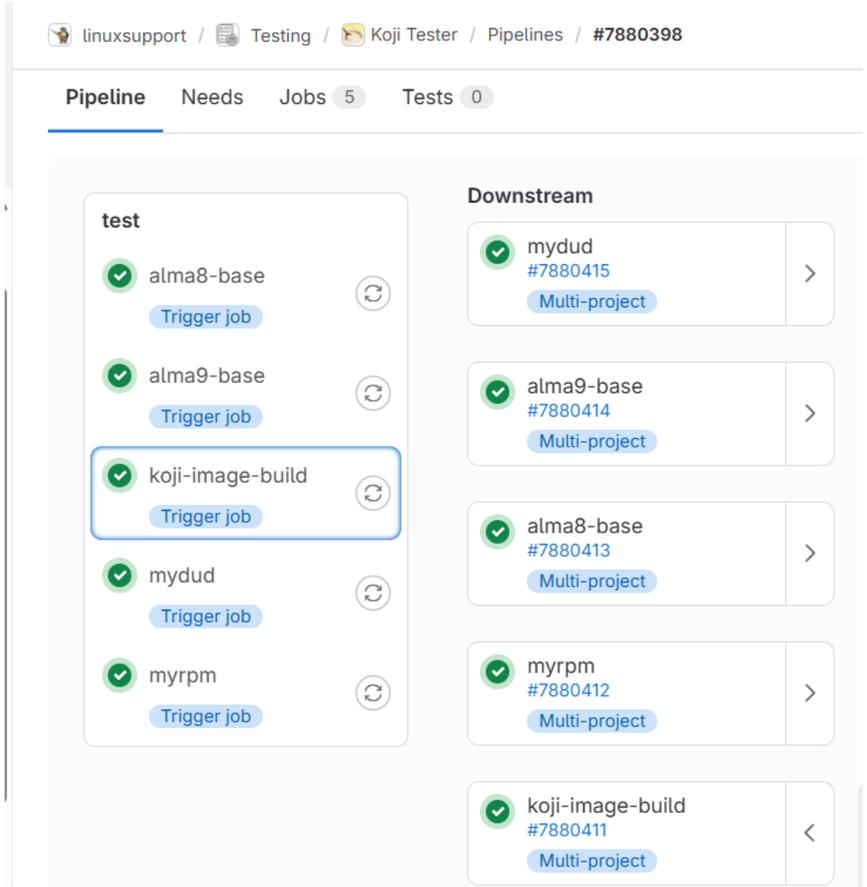
Challenge 4:

Creating alerts for Mattermost



Conclusion


linuxsupport / Testing / Koji Tester / Pipelines / #6817329
test
alma8-base
Trigger job
alma9-base
Trigger job
cs8-base
Trigger job
koji-image-build
Trigger job
mydud
Trigger job
myrpm
Trigger job
Downstream
myrpm
#6817670
Multi-project
koji-image-build
#6817669
Multi-project
cs8-base
#6817668
Multi-project
mydud
#6817666
Multi-project
alma8-base
#6817665
Multi-project
alma9-base
#6817664
Multi-project


linuxsupport / Testing / Koji Tester / Pipelines / #7880398
Pipeline
Needs
Jobs 5
Tests 0
test
alma8-base
Trigger job
alma9-base
Trigger job
koji-image-build
Trigger job
mydud
Trigger job
myrpm
Trigger job
Downstream
mydud
#7880415
Multi-project
alma9-base
#7880414
Multi-project
alma8-base
#7880413
Multi-project
myrpm
#7880412
Multi-project
koji-image-build
#7880411
Multi-project

Monitoring

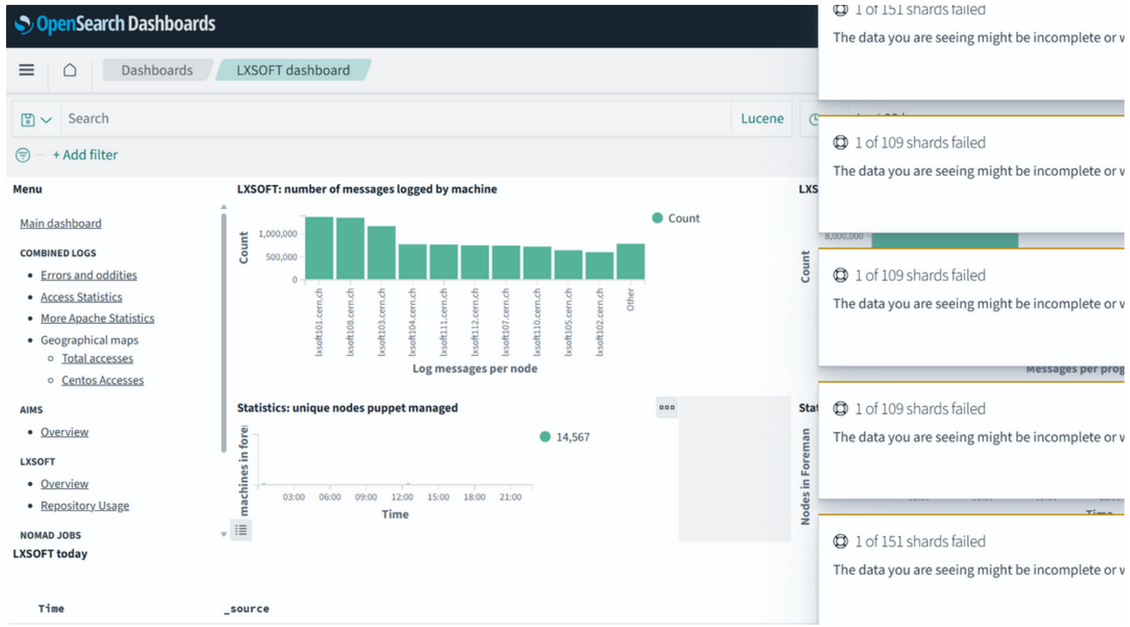
Moving from OpenSearch to Grafana:

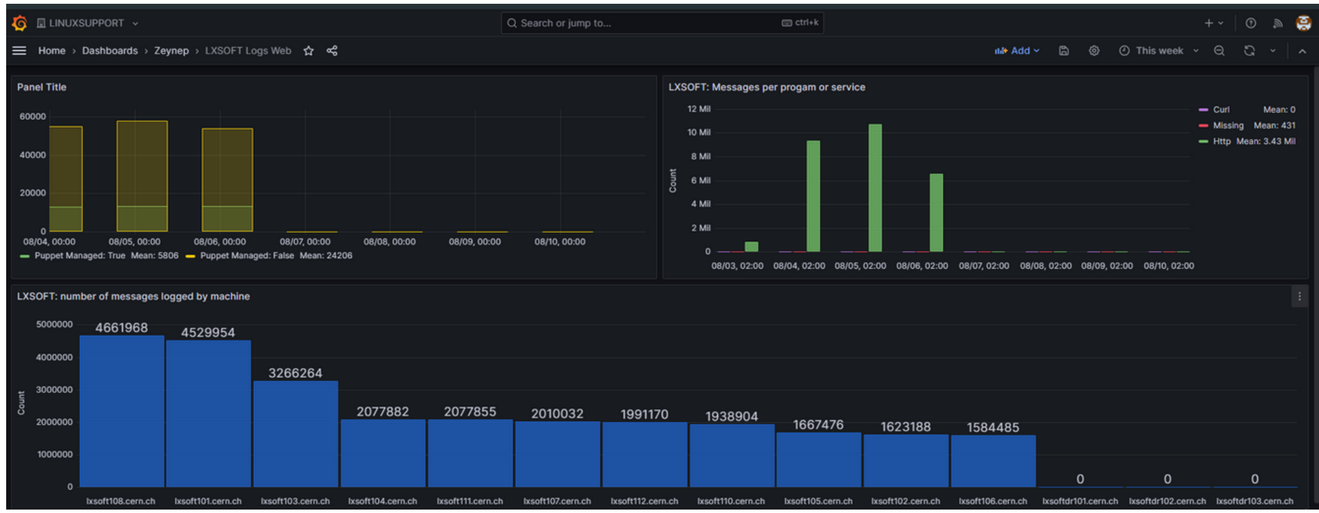
Creating dashboards to monitor Nomad jobs and https://linuxsoft.cern.ch/ accesses

This is a big project that includes reviewing and migrating 27 Opensearch dashboards to Grafana.

2 of 27 have been migrated so far

Conclusion


OpenSearch Dashboards
Dashboards
LXSOFT dashboard
Search
Lucene
+ Add filter
Menu
Main dashboard
COMBINED LOGS
Errors and oddities
Access Statistics
More Apache Statistics
Geographical maps
Total accesses
Centos Accesses
AIMS
Overview
LXSOFT
Overview
Repository Usage
NOMAD JOBS
LXSOFT today
LXSOFT: number of messages logged by machine
Count
Log messages per node
Statistics: unique nodes puppet managed
14,567
Time
Time
_source
1 of 151 shards failed
The data you are seeing might be incomplete or v
1 of 109 shards failed
The data you are seeing might be incomplete or v
1 of 109 shards failed
The data you are seeing might be incomplete or v
1 of 109 shards failed
The data you are seeing might be incomplete or v
1 of 151 shards failed
The data you are seeing might be incomplete or v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Add
This week
Panel Title
Puppet Managed: True Mean: 5806
Puppet Managed: False Mean: 24206
LXSOFT: Messages per progam or service
Curl Mean: 0
Missing Mean: 431
Http Mean: 3.43 Mil
LXSOFT: number of messages logged by machine
4661968
4529954
3266264
2077882
2077855
2010032
1991170
1938904
1667476
1623188
1584485
lxsoft108.cern.ch
lxsoft101.cern.ch
lxsoft103.cern.ch
lxsoft104.cern.ch
lxsoft111.cern.ch
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Thank You

ozturkzeynep929@gmail.com | zeynep.ozturk@cern.ch