Prometheus–Powered Insight: Monitoring Koji's performance

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Linux at CERN

The CERN Linux team is responsible for:
- ❏ Defining the Linux strategy for the organization;
- ❏ Providing support for package and image building;
- ❏ The deployment and operation of the supported Linux distributions on servers and managed desktops.
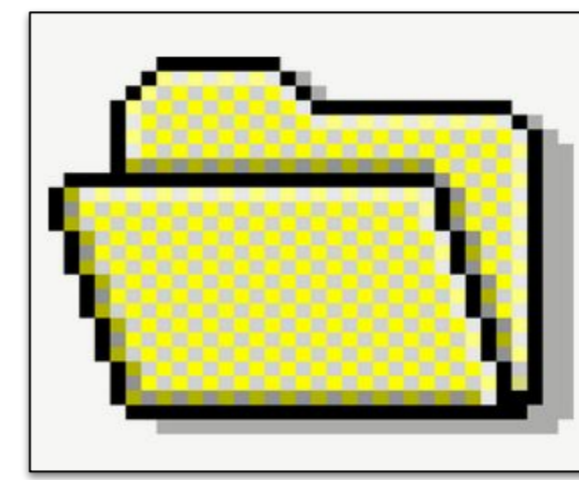
Linux operating system is heavily used at CERN for different use cases, including the CERN experiments, accelerators and IT.
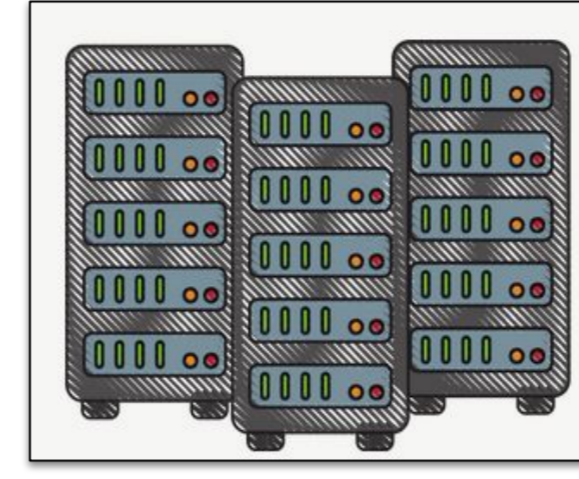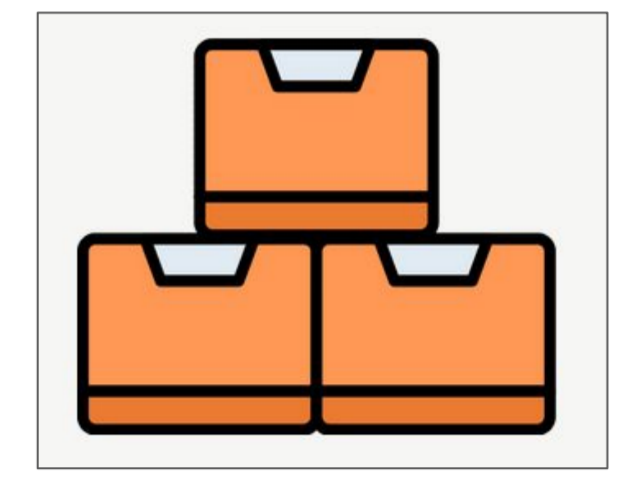
~13200 hosts in the Data Center

~10500 hosts outside the DC

~2700 internal repositories

~8200 internal packages

邾 Koji build system at CERN

- ❏ Koji is an open source tool for building and tracking binary RPMs, Cloud and Docker images. The user submits a source RPM or a git path, and Koji builds a binary RPM associated to a tag. It supports building for multiple architectures.
- ❏ It organizes packages using tags, and the CERN tags in Koji have a corresponding repository on http://linuxsoft.cern.ch/internal/repos.
- ❏ Our goal is to export the Koji information to /metrics endpoint to be fetched by the Prometheus server.

Prometheus: Improving monitoring

- ❏ Prometheus can be used to monitor a service like Koji. In general, Prometheus scrapes metrics data from HTTP endpoints.
- ❏ Advantages: easy to use and integrate into Grafana, flexible, good performance, quite popular in the community.
- ❏ Counter and Gauge Prometheus metric types used: Returns the Koji tasks (total, succeed, fail, etc.) per channel, method, and tag; Report the number of Koji builders, the capacity, the load, and if the hosts are ready and enabled.

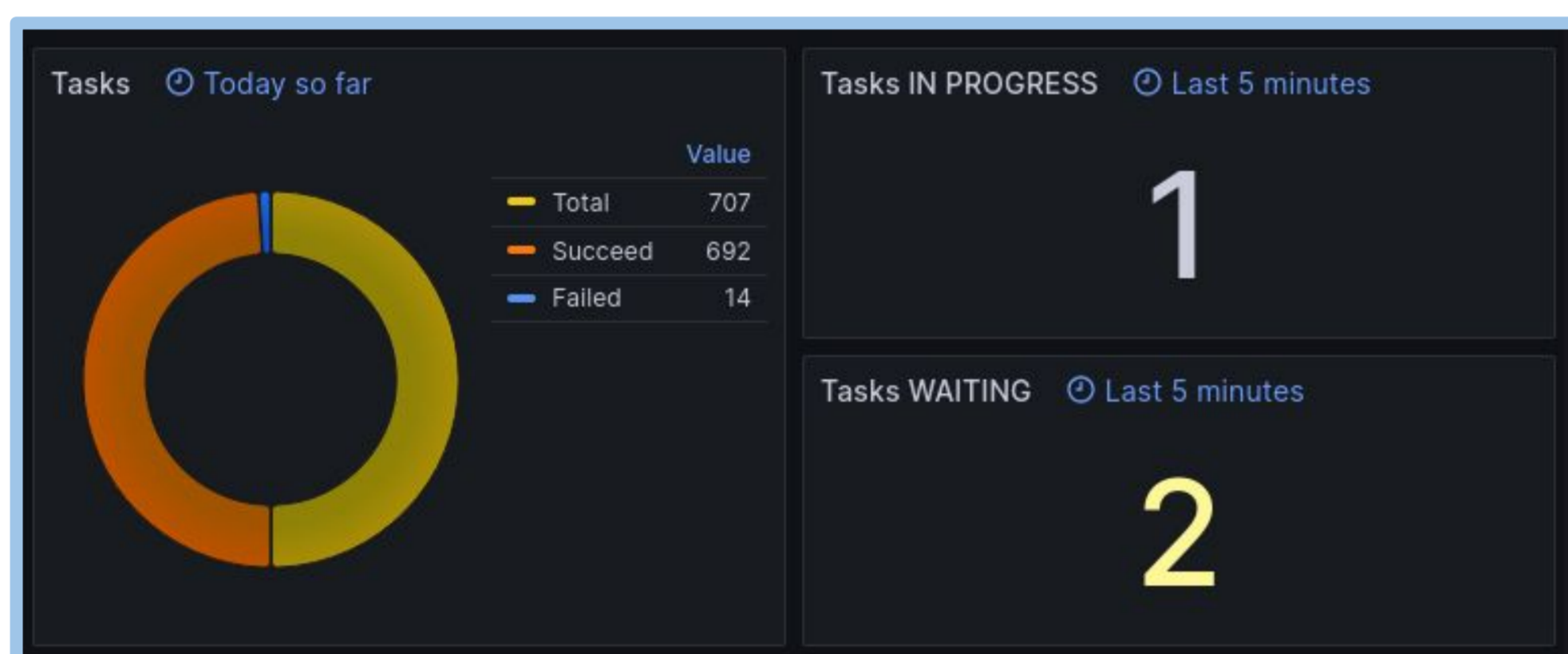邾 Koji — web servers → publish metrics → https://koji.cern.ch/metrics ← scrapes — Prometheus ← query — Grafana visualize — alert → Mattermost

Grafana – Koji's metrics visualizations and alerting

Tasks ⏱ Today so far

	Value
Total	707
Succeed	692
Failed	14

Tasks IN PROGRESS ⏱ Last 5 minutes
1

Tasks WAITING ⏱ Last 5 minutes
2

- ❏ The total number of tasks per day that succeeded and failed; and the number of waiting and in progress tasks in the last 5 minutes.

Alerts:

- ❏ Task load
- ❏ Koji builder giving updates but disabled
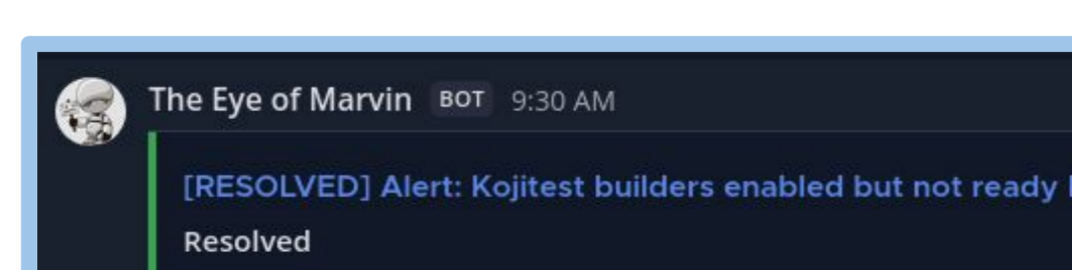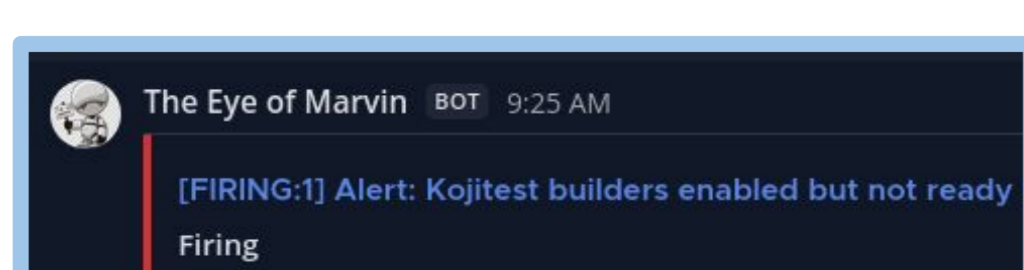- ❏ Koji builder enabled and ready but not giving updates in the last minute
- ❏ Koji builder enabled but not ready

The Eye of Marvin BOT 9:25 AM
[FIRING:1] Alert: Kojitest builders enabled but not ready
Firing

The Eye of Marvin BOT 9:30 AM
[RESOLVED] Alert: Kojitest builders enabled but not ready
Resolved

Load of Koji builders
- ❏ The maximum capacity and load per Koji builder

Task load
- ❏ The task load

TOTAL tasks per channel
TOTAL tasks per channel - cumulative
- ❏ Number of tasks and cumulative tasks per channel

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