Observability Day

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Welcome + Opening Remarks

Observability Day Co-Chairs

CLOUD NATIVE LANDSCAPE

CNCF Graduated

Prometheus

JAEGER

fluentd

CNCF Incubating

cortex

OPENMETRICS

Thanos

OpenTelemetry

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Past, Present and Future

CLOUD NATIVE
COMPUTING FOUNDATION

KubeCon NA 2022 - Detroit
Open Observability Day

KubeCon EU 2023 - Amsterdam
Observability Day

KubeCon NA 2023 - Chicago
Observability Day

KubeCon NA 2024 - Paris
Observability Day

Call for Papers!

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CFP's are now open for 2024 CNCF-Hosted Co-Located Events

19 March 2024, Paris, France

Scan for more information:

CFP Closes: Sunday, 3 December at 11:59pm Central European Time (UTC+1)

CFP Notifications: Monday, 8 January

Schedule Announcement: Wednesday, 10 January

How to take the most of Observability Day ?

Networking: on breaks, say “Hi” and introduce yourself to others.

All **speakers are here to help**, feel free to approach them.

Remember: we are all learning (including speakers)

Speakers: handheld mics up front or get a lapel at the back

Schedule

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9:00am – 9:10am	**Welcome + Opening Remarks, Program Committee Members - Austin Parker, Honeycomb.io: Eduardo Silva, Calyptia: Richard Hartmann, Grafana Labs** *Speakers: Richard Hartmann, Eduardo Silva, Austin Parker*	W176abc
9:15am – 9:40am	**Project Updates** *Speakers: Richard Hartmann, Eduardo Silva, Austin Parker*	W176abc
9:50am – 10:15am	**Business Observability -- FinOps at Grafana Labs - Richard Hartmann, Grafana Labs** *Speakers: Richard Hartmann*	W176abc
10:25am – 10:50am	**Energy Observability Using Kepler: Revolutionizing Cloud Efficiency - Sally OMalley, Red Hat & Marcelo Amaral, IBM** *Speakers: Sally O'Malley, Marcelo Amaral*	W176abc
11:05am – 11:30am	**OTTL Me Why Transforming Telemetry in the OpenTelemetry Collector Just Got Better - Tyler Helmuth, Honeycomb & Evan Bradley, Dynatrace** *Speakers: Tyler Helmuth, Evan Bradley*	W176abc
11:40am – 12:05pm	**Dynamic Sampling in Practice - Kent Quirk, Honeycomb** *Speakers: Kent Quirk*	W176abc
12:10pm – 12:35pm	**Monitoring and Metadata - Exploring Approaches to Attaching Metadata to Logs, Metrics and Traces - Ridwan Sharif, Google** *Speakers: Ridwan Sharif*	W176abc

Schedule

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1:30pm – 1:55pm	**Huddle - Insightful Latency Optimizer for Clusters with Sparse and Complex App Flows - Yash Bhatnagar, Google** *Speakers: Yash Bhatnagar*	W176abc
2:05pm – 2:30pm	**How Prometheus Halved Its Memory Usage - Bryan Boreham, Grafana Labs** *Speakers: Bryan Boreham*	W176abc
2:40pm – 3:05pm	**"How Much Overhead?": How to Evaluate Observability Agent Performance - Braydon Kains, Google Cloud** *Speakers: Braydon Kains*	W176abc
3:15pm – 3:40pm	**Journey from Fluent Bit, Fluentd and Prometheus to OpenTelemetry Collector - Lessons Learned - Marcin "Perk" Stożek, Canonical** *Speakers: Marcin \'Perk\' Stozek*	W176abc
3:50pm – 4:15pm	**Observability Considerations for Infrastructure Cost Optimization - Alolita Sharma, Apple** *Speakers: Alolita Sharma*	W176abc
4:25pm – 4:50pm	**Observe Thy CI/CD Pipelines with OpenTelemetry - Reese Lee, New Relic & Adriana Villela, Lightstep from ServiceNow** *Speakers: Reese Lee, Adriana Villela*	W176abc
5:00pm – 5:05pm	**⚡ Lightning Talk: Unveiling DPDK Application Telemetry: A Path to Traffic Visibility and Monitoring - Jianzhu Zhang, Red Hat** *Speakers: Jianzhu Zhang*	W176abc
5:10pm – 5:20pm	**Closing Remarks, Program Committee Members - Austin Parker, Honeycomb.io: Eduardo Silva, Calyptia: Richard Hartmann, Grafana Labs** *Speakers: Richard Hartmann, Eduardo Silva, Austin Parker*	W176abc

Code of Conduct

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Remember the **Golden Rule**: Treat others as you would want to be treated - with kindness and respect

Scan the QR code to access and review the **CNCF Code of Conduct**:

Captioning and Translations

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ACCESSIBLE VIA WORDLY ON YOUR PERSONAL DEVICE

- **Scan the QR code:**

Choose your language, session ID will auto-populate, and select “Attend.”

- **Captioning will begin when the session does.**

Refreshments and Lunch

Refreshments, snacks and lunch can be found outside the session room in the foyer as well as in Room W183.

Please also join us at the CNCF-Hosted Co-Located Event reception in the foyer from 5:30-7:00PM tonight!

Logistics

Social Media Hashtag **#O11yDay**

Virtual Discussions **#tag-observability** on CNCF Slack

Speakers: Please go to AV Team **5m** before the start of your presentation

Sticker & swag table for sponsors & CNCF projects at the back

Talk Tables

During lunch, we will have **Talk Tables** set up for you to chat about subjects of interest.

Program Committee

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Thank you all !

- Ling Huang
- Bartłomiej Płotka
- Paige Cruz
- Julien Pivotto
- Richard Hartmann
- Austin Parker
- Alolita Sharma
- Eduardo Silva
- Juraci Paixão Kröhling
- Sandeep Chatra Raveesh
- Shishi Chen
- Vijay Samuel

Thank you to our PLATINUM Sponsors!

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CNCF Project Updates

Maintainers updates

Prometheus Project Updates

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November 6, 2023 | Chicago, Illinois

Richard Hartmann
Office of the CTO
Grafana Labs

Growth

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2016	2017	2018	2019	2020	2022	2023
2.8k	16k	54k	242k	571k	774k	868k

Figures from Grafana Labs: count of Grafana installations with a Prometheus datasource
Actual installations likely in the millions to tens of millions

- 91th most starred organization on GitHub (Kubernetes 27th)
- 161 most starred repository on GitHub (Kubernetes 40th)

Native histograms

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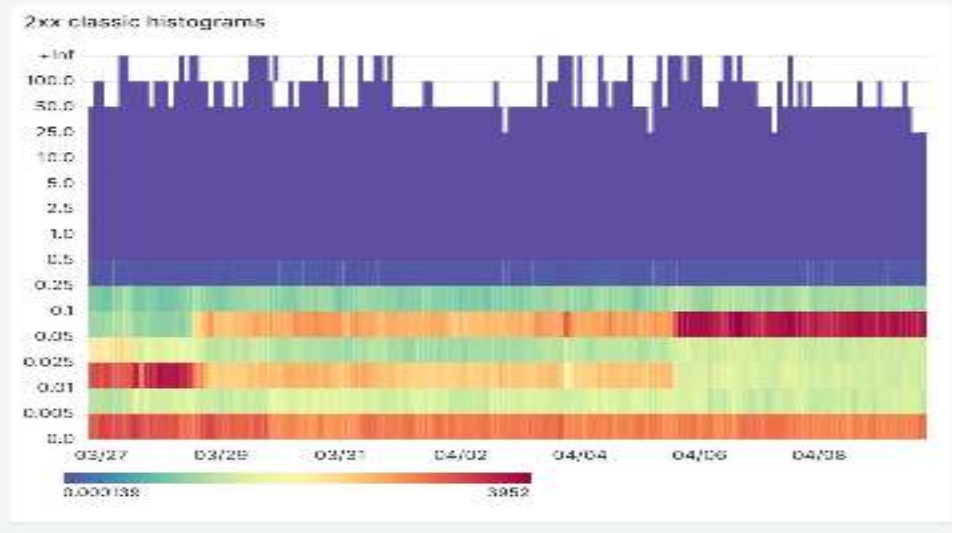

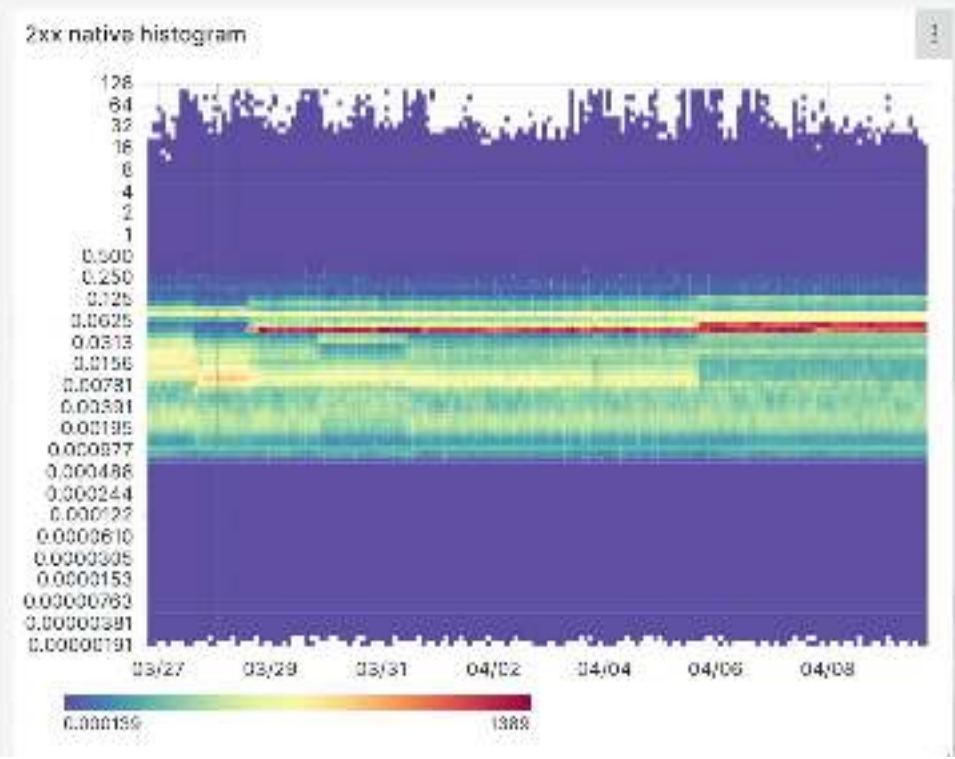

Native histograms

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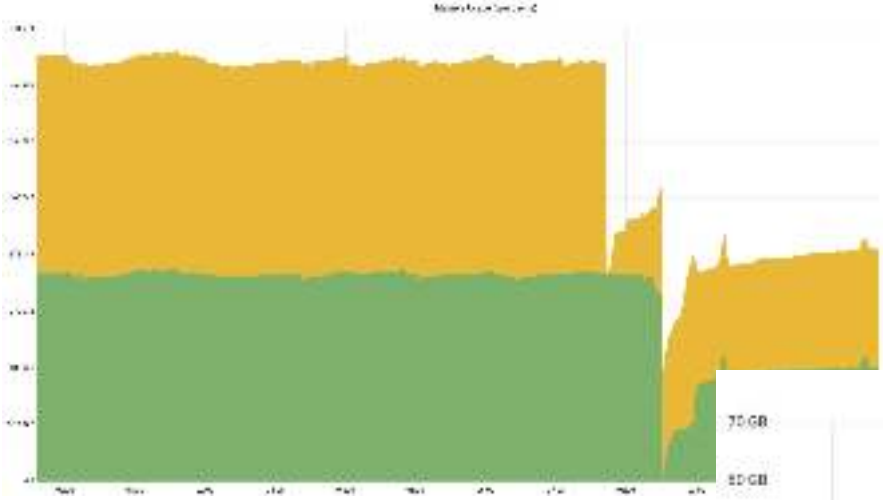
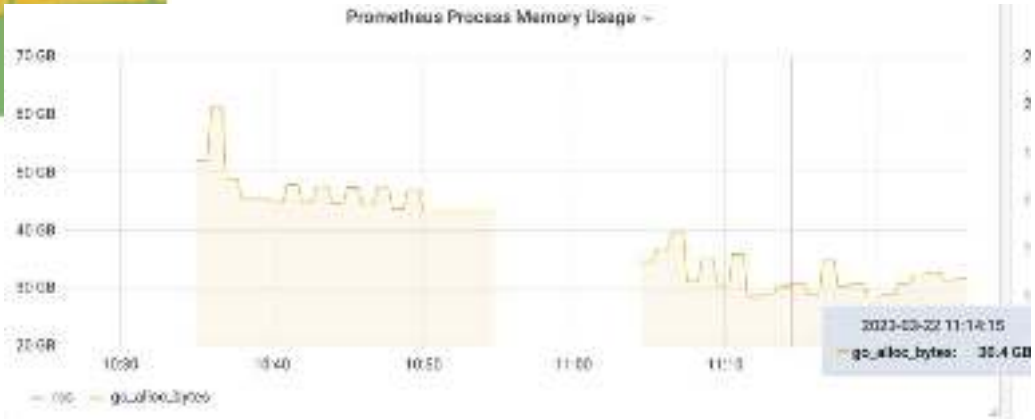
Native histograms

Memory usage



v2.39

v2.44



keep_firing_for

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```
…
# How long an alert will continue firing after the condition that triggered it
# has cleared.
[ keep_firing_for: <duration> | default = 0s ]
…
```

scrape_config_files

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In general: enable more of a building block style configuration

Add ‘`scrape_config_files`’

Split Prometheus scrape configs into multiple files, avoiding having to have really big configuration files.

Also see: snmp_exporter’s new `auth` module

OpenMetrics

OpenMetrics will join Prometheus

OTLP receiver

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Experimental support for receiving OTLP metrics.

Not production ready, needs work on both server side and OTLP client side, but a good step towards supporting OTLP workloads natively.

Alertmanager

Experimental support for receiving OTLP metrics.

Not production ready, needs work on both server side and OTLP client side, but a good step towards supporting OTLP workloads natively.

SNMP Exporter

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- Breaking change: new configuration format.
- The new format splits connection settings from metric details, making it simpler to change authentication without redoing the entire configuration.
- Add the ability to query multiple modules in one scrape.
  - e.g. query at the same time, in the same job, vendor-specific MIB and generic MIB.

Windows Exporter

The Windows Exporter is becoming an Official Exporter.

This was delayed by licensing exceptions, but we are in the final stage.

MySQLd Exporter

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Multi-targets support like blackbox, SNMP, modbus, ipmi, prusa, etc exporters...

You can use a single MySQLd exporter to monitor multiple MySQL-alike servers. Takes a `?target` parameter.

Java client

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- client_java 1.0.0
- OpenTelemetry metrics and tracing support, with native Prometheus API
- Native Histograms

What’s coming

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- New Alertmanager UI
  - New React UI to align with the rest of the Prometheus Ecosystem
- Metadata Improvements
  - Metric type
  - Created time
  - Persisted in TSDB
- Exemplar Improvements
  - Retained by recording rules
  - Persisted in TSBD
- Remote Write v2
  - Transactional remote write
  - Reduce bandwidth

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One more thing…

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We are working on Prometheus 3.0. If you have big audacious goals, now is the time to get in touch.

Fluentd & Fluent Bit

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Eduardo Silva
Founder & CEO
Calyptia

fluentbit

fluentd

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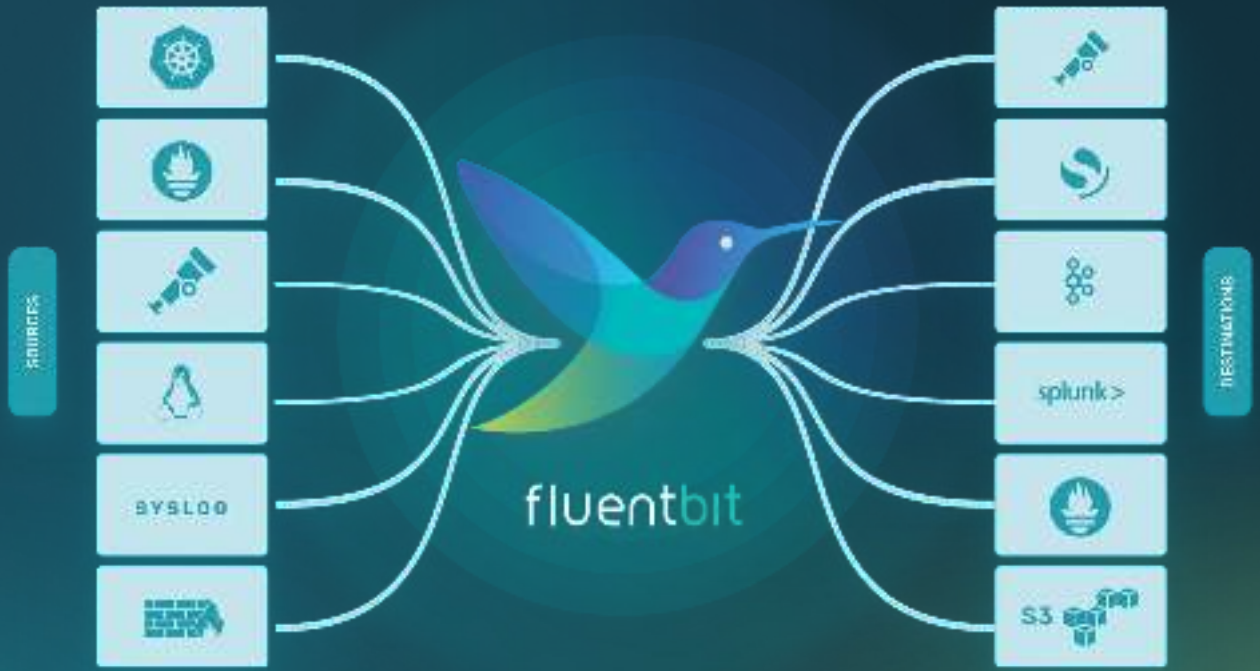


fluentbit

Fluent Ecosystem

- Open Source Observability
- No vendor lock-in
- Telemetry Pipelines

Fluent Bit Ecosystem

Trusted by major Cloud Providers

Amazon Web Services (AWS) | Google Cloud | Microsoft Azure | Oracle Cloud NEW

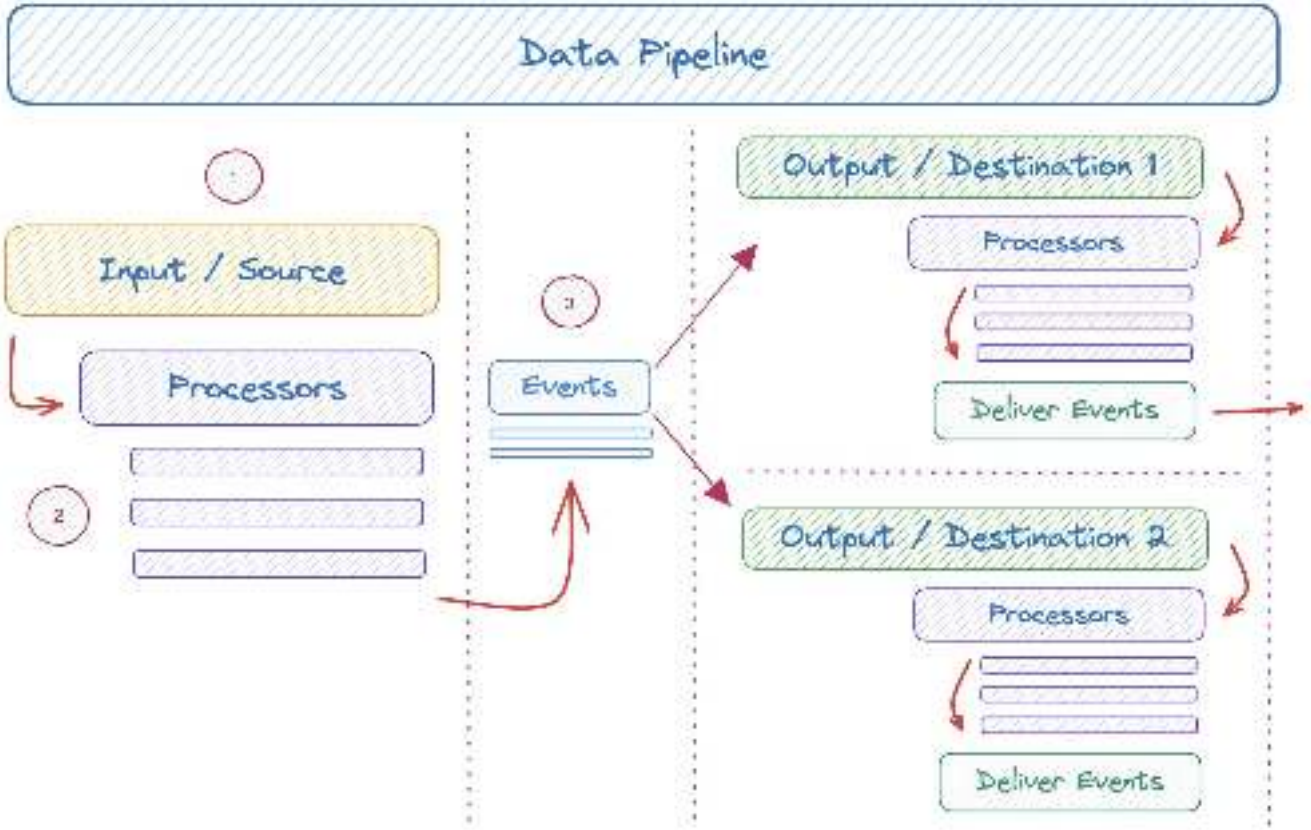
10.9 Billion downloads

Total downloads as of today (Nov 06, 2023)

fluentbit
v2.2

Fluent Bit Pipeline

Collection, Enrichment, Filtering, Routing and Processing

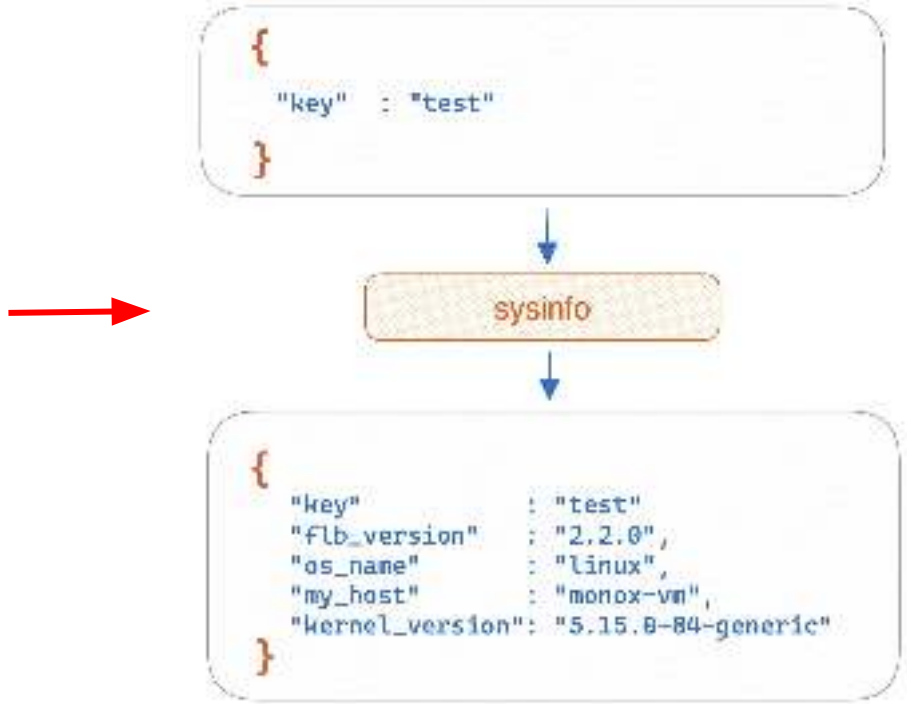


fluentbit

Enrichment: SYSINFO

New filter and processor

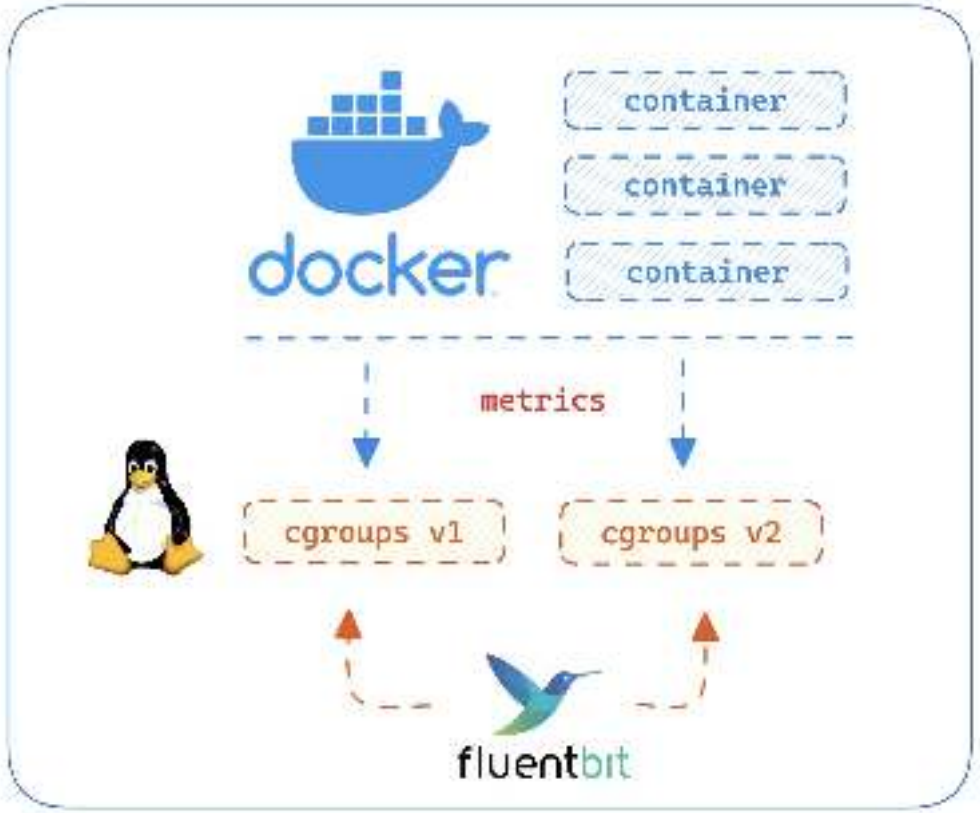
```
pipeline:
  inputs:
    - name: dummy
      dummy: '{"key": "test"}'
      processors:
        logs:
          - name: sysinfo
            hostname_key: my_host
            os_name_key: os_name
            kernel_version_key: kernel_version
            fluentbit_version_key: flb_version
  outputs:
    - name: stdout
      match: "*"

```



Docker Metrics Collector

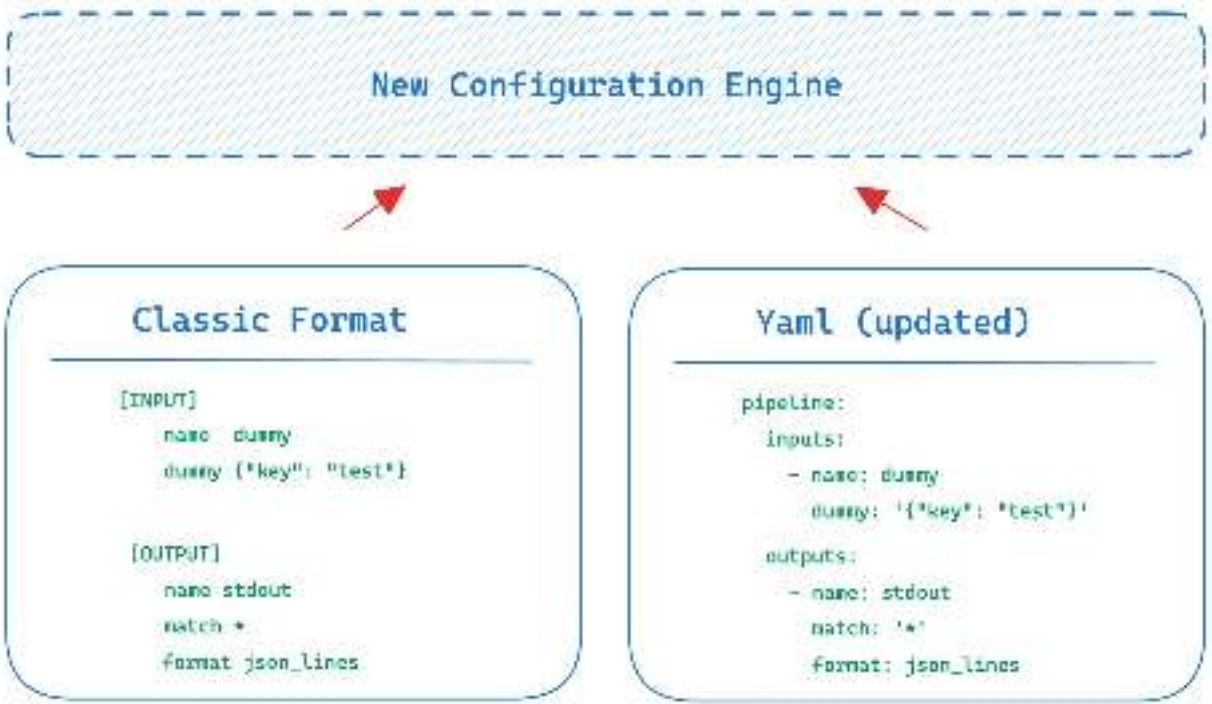
Add support for cgroups v2

Fluent Bit now can scrape Docker container metrics by supporting Linux environments with cgroups v1 or cgroups v2.



Configuration Engine

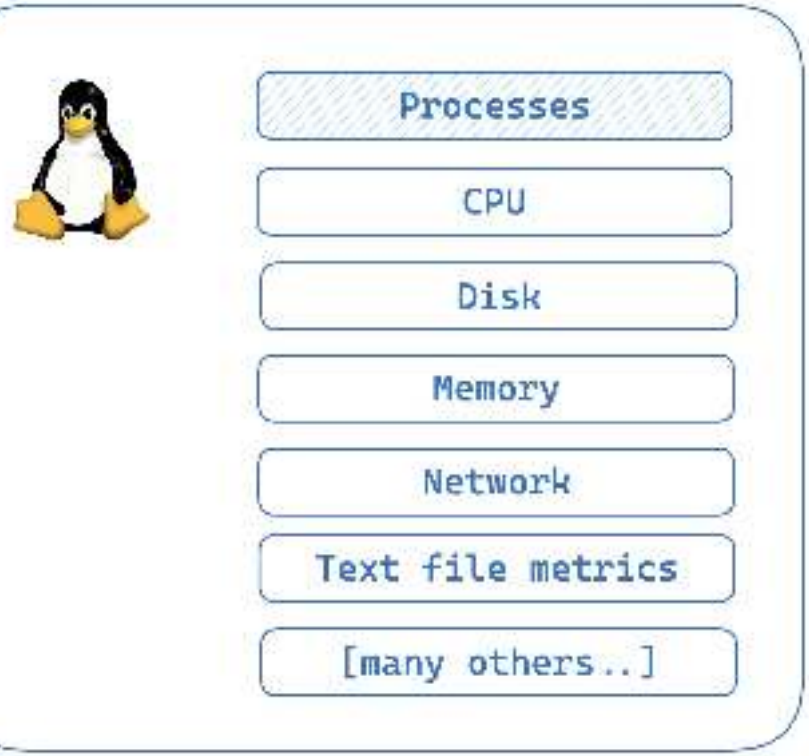
Enhanced Yaml support (idiomatic)



[Linux] Node Exporter Metrics

Collect Linux operating system metrics

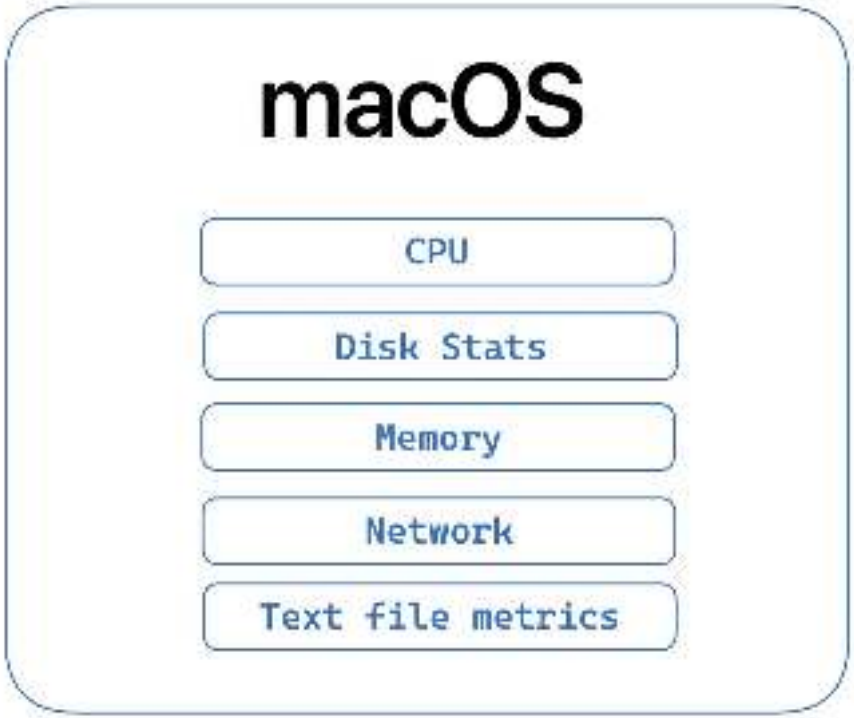
100% Inspired by
Prometheus Node Exporter



[macOS] Node Exporter Metrics

Collect macOS operating system metrics

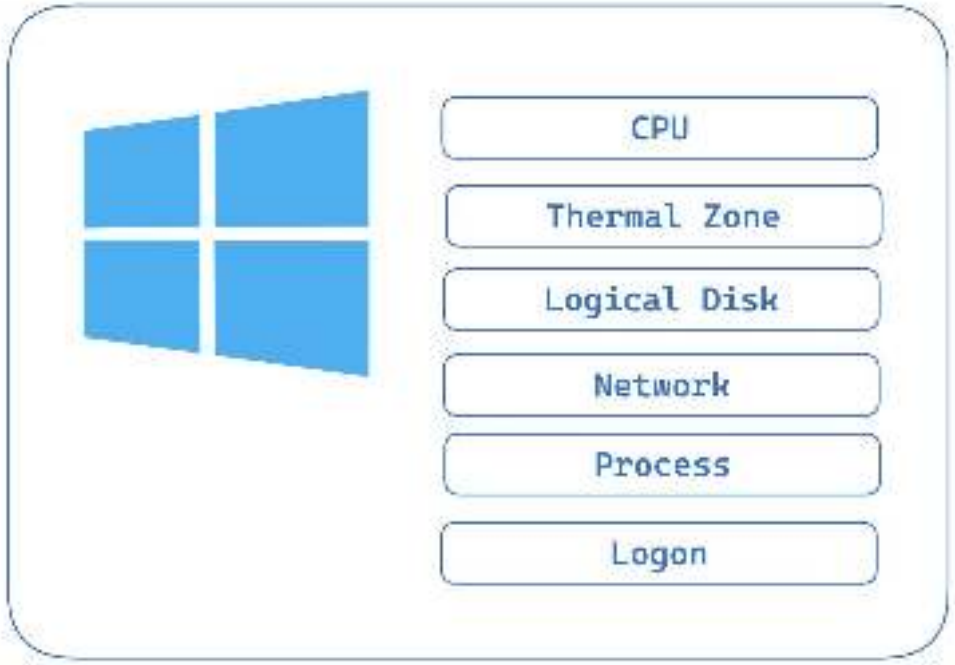
100% Inspired by
Prometheus Node Exporter



[Windows] Node Exporter Metrics

Collect Windows metrics

100% Inspired by **Prometheus Windows Node Exporter**



Grafana Loki

Enhanced connector

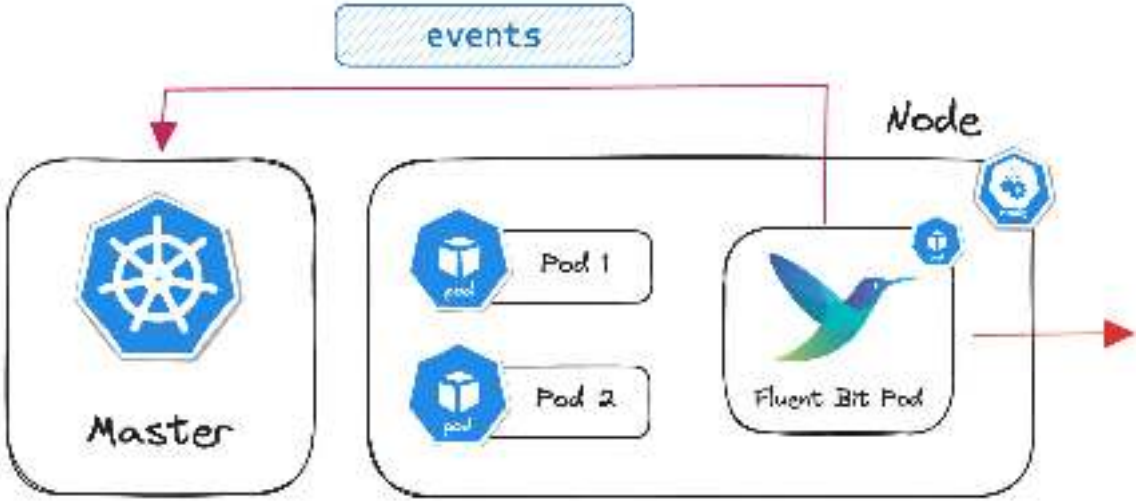
- Deprecating original Loki Golang plugin
- Fluent Bit Loki native integration

Kubernetes Events

Get cluster events

Retrieve Kubernetes Events,

It supports namespace configuration.



Performance Improvement

FS Storage + Checksums ON

When using multiple filters with hybrid mem+fs storage and checksums ON, we accomplish a 6x improvement in performance.

Community Update: new Fluent Bit book

What’s next ?

OpenTelemetry Project Updates

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November 6, 2023 | Chicago, Illinois

Austin Parker
Director of Open Source
Honeycomb

OpenTelemetry Updates

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What's new in OpenTelemetry?

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- Logging GA
  - GA in Java, .NET – other languages soon (Python, JS, etc.)
- Elastic Common Schema alignment
  - Reducing the number of duplicative standards.
- OTLP 1.0
- 2nd highest velocity of CNCF projects (behind k8s)
- All time high in contributors and contributing orgs.

OpenTelemetry Updates

What's new in OpenTelemetry?

- OpenCensus deprecation

OpenTelemetry Updates

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Major Milestones

4/24 The reference candidate is presented for review.

5/8 Teams form, and work begins in all languages.

5/20 Project officially launched at Kubecon Barcelona.

9/6 C#, Golang, Java, NodeJS, and Python reach parity with existing projects.

11/6 OpenTracing and OpenCensus projects are officially sunset.

11/20 Sunset party at Observability Summit, Kubecon San Diego.

Timeline to Convergence

OpenTelemetry Updates

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Timeline to Convergence

2019

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Timeline to Convergence

2019~~19~~23

OpenTelemetry Updates

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You did it!

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- OpenTelemetry has achieved its original vision, set forth in early 2019.
- Traces, metrics, and logs are available in four major languages*
- We'll talk more about the future this week, but for now…

Congratulations!

*Some work non-stable

OpenTelemetry Updates

Visit us at the show!

- **OpenTelemetry Observatory**
- **OpenTelemetry Booth @ Project Pavillion**

Title

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November 6, 2023 | Chicago, Illinois

Speaker Name
Job Title
Company

Title

Speaker Name
Job Title
Company

Speaker Name
Job Title
Company

Speaker Name
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Company

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Closing Remarks