



Innovate Summit 2017

Prometheus AlertManager and Long-term Storage

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*clouds, containers, functions,
applications and their management*

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Show of Hands



Prometheus AlertManager



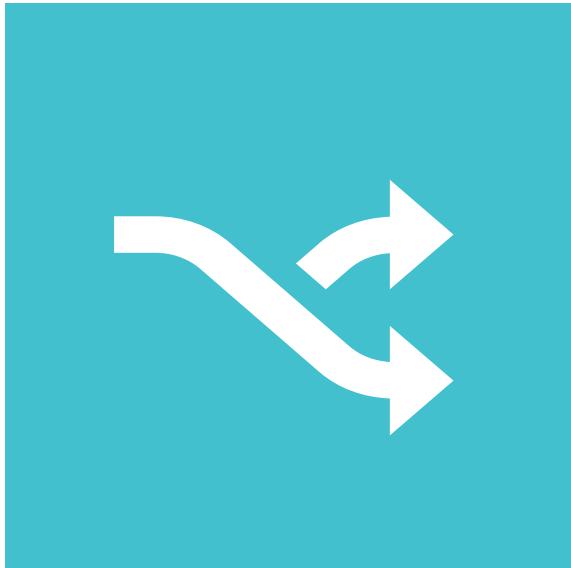
PURPOSE

AlertManager is an alert...

- Ingestor
- Grouper
- De-duplicator
- Silencer
- Throttler
- Notifier

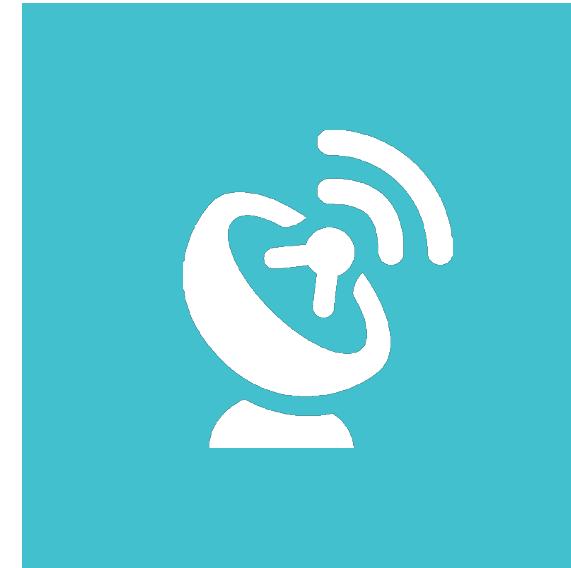
A brief Prometheus AlertManager construct review

ROUTES



Match alerts to their receiver
and how often to notify

RECEIVERS



Where and how to send alerts

A brief Prometheus Alertmanager construct review

MUTING

SUPPRESSING

CORRELATING

- Silencers – match alerts with specific labels and prevent them from being included in notifications
- Inhibitors – suppress specific notifications when other specific alerts are already firing
- Grouping – categorize alerts of similar nature into a single notification

```
group_wait: 30s  
  
group_by: ['alertname', 'cluster']  
  
group_interval: 5m
```

Multiple approaches to suppression



VS

SILENCES

Via ui/api

VS

INHIBITION

global

REPEAT_INTERVAL

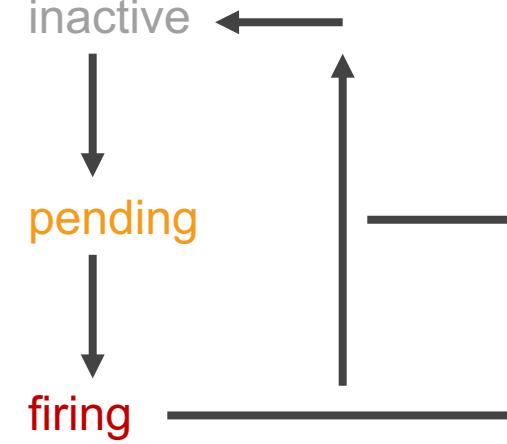
Per route

Alerts a shared construct

PROMETHEUS

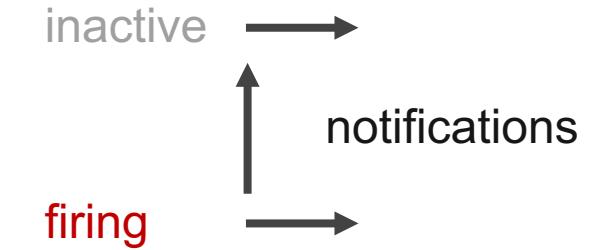
```
ALERT <alert name>
  IF <PromQL vector expression>
  FOR <duration>
  LABELS { ... }
  ANNOTATIONS { ... }
```

STATE TRANSITION



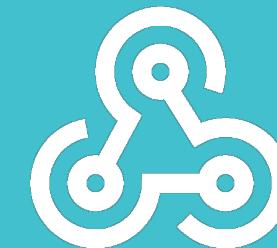
ALERTMANAGER

Is notified when alerts transition state



Supports clients other than Prometheus

Notification Integrations



Notifying to Multiple Destinations

Use **continue** to advance to next receiver.

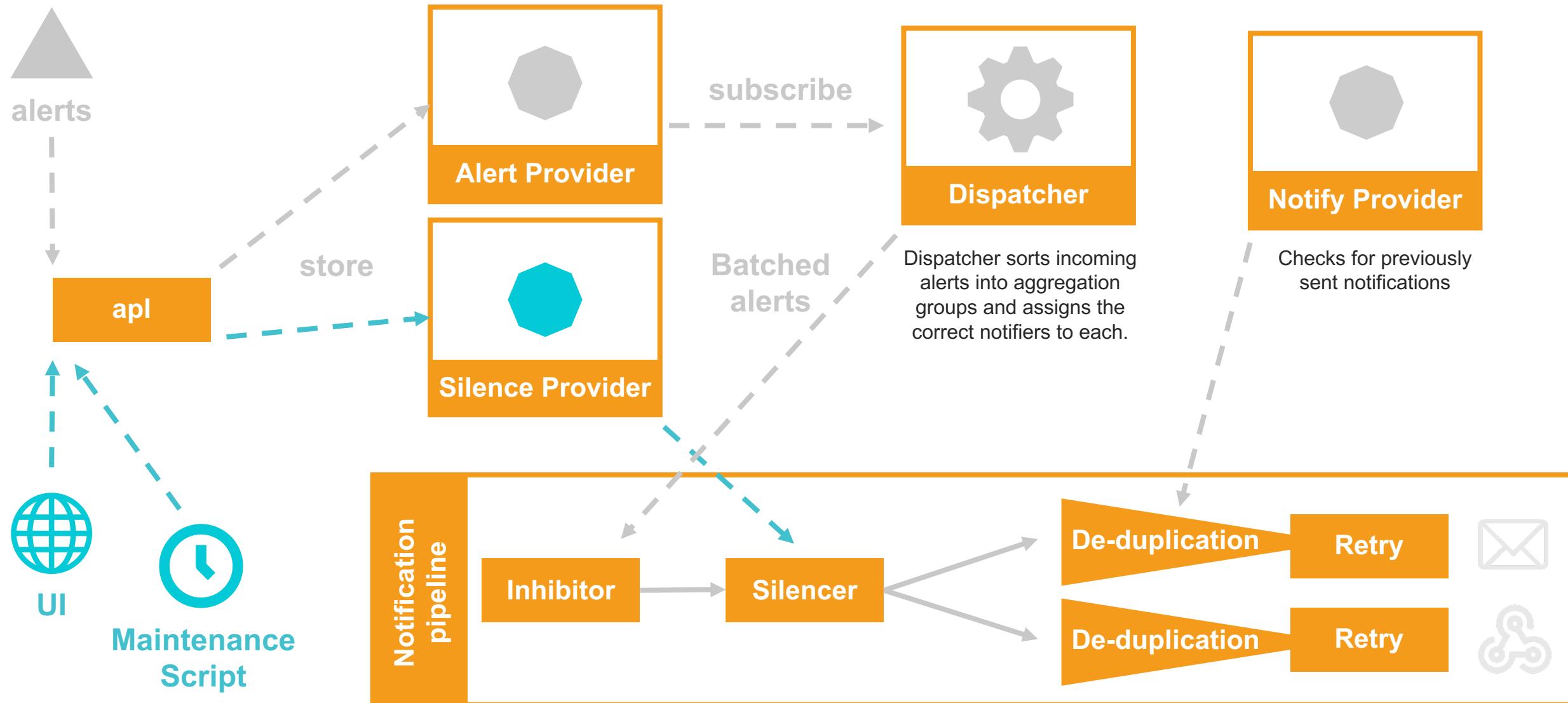
```
route:  
  receiver: ops-team-all  # default  
  routes:  
    - match:  
        severity: page  
        receiver: ops-team-b  
        continue: true  
    - match:  
        severity: critical  
        receiver: ops-team-a  
  
receivers:  
  - name: ops-team-all  
    email_configs:  
      - to: ops-team-all@example.io  
  - name: ops-team-a  
    email_configs:  
      - to: ops-team-a@example.io  
  - name: ops-team-b  
    email_configs:  
      - to: ops-team-b@example.io
```

OR

Use a **receiver** that goes to both destinations.

```
route:  
  receiver: email_webhook  
  
receivers:  
  - name: email_webhook  
    email_configs:  
      - to: 'lee@example.io'  
    webhook_configs:  
      - url: <webhook url here>
```

Non-HA Alertmanager Architecture



Being introduced in 0.5 built atop **Weave Mesh**

With HA, you no longer have to monitor the monitor.

Designed for an alert to be sent to all instances in the cluster.

All Prometheus instances send alerts to all Alertmanager instances.

Guarantees notifications to be sent at least once.

Understanding and Extending Prometheus AlertManager



KubeCon EU 2017

Prometheus Storage Adapters



“An ephemeral sliding window of recent data”

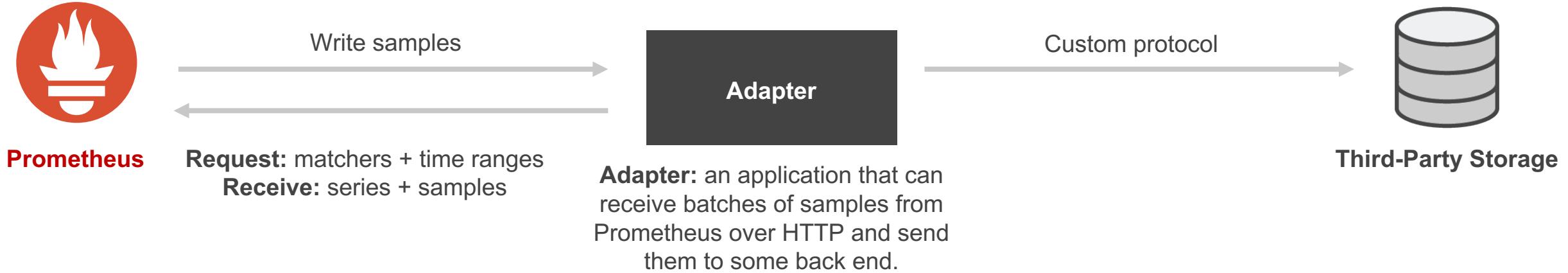
Prometheus stores sample data on disk in a highly optimized custom format based on flat files.

- Efficient
- Tunable
- **NOT** scalable
- **NOT** durable

```
./data/01BKGV7JBM69T2G1BGBGM6KB12  
./data/01BKGV7JBM69T2G1BGBGM6KB12/meta.json  
./data/01BKGV7JBM69T2G1BGBGM6KB12/wal  
./data/01BKGV7JBM69T2G1BGBGM6KB12/wal/000002  
./data/01BKGV7JBM69T2G1BGBGM6KB12/wal/000001  
./data/01BKGTZQ1SYQJTR4PB43C8PD98  
./data/01BKGTZQ1SYQJTR4PB43C8PD98/meta.json  
./data/01BKGTZQ1SYQJTR4PB43C8PD98/index  
./data/01BKGTZQ1SYQJTR4PB43C8PD98/chunks  
./data/01BKGTZQ1SYQJTR4PB43C8PD98/chunks/000001  
./data/01BKGTZQ1SYQJTR4PB43C8PD98/tombstones  
./data/01BKGTZQ1HHWHV8FBJXW1Y3W0K  
./data/01BKGTZQ1HHWHV8FBJXW1Y3W0K/meta.json  
./data/01BKGTZQ1HHWHV8FBJXW1Y3W0K/wal  
./data/01BKGTZQ1HHWHV8FBJXW1Y3W0K/wal/000001  
./data/01BKGV7JC0RY8A6MACW02A2PJD  
./data/01BKGV7JC0RY8A6MACW02A2PJD/meta.json  
./data/01BKGV7JC0RY8A6MACW02A2PJD/index  
./data/01BKGV7JC0RY8A6MACW02A2PJD/chunks  
./data/01BKGV7JC0RY8A6MACW02A2PJD/chunks/000001  
./data/01BKGV7JC0RY8A6MACW02A2PJD/tombstones
```

source: prometheus.io

The solution is a remote storage adapter.



Send Prometheus data to AppOptics

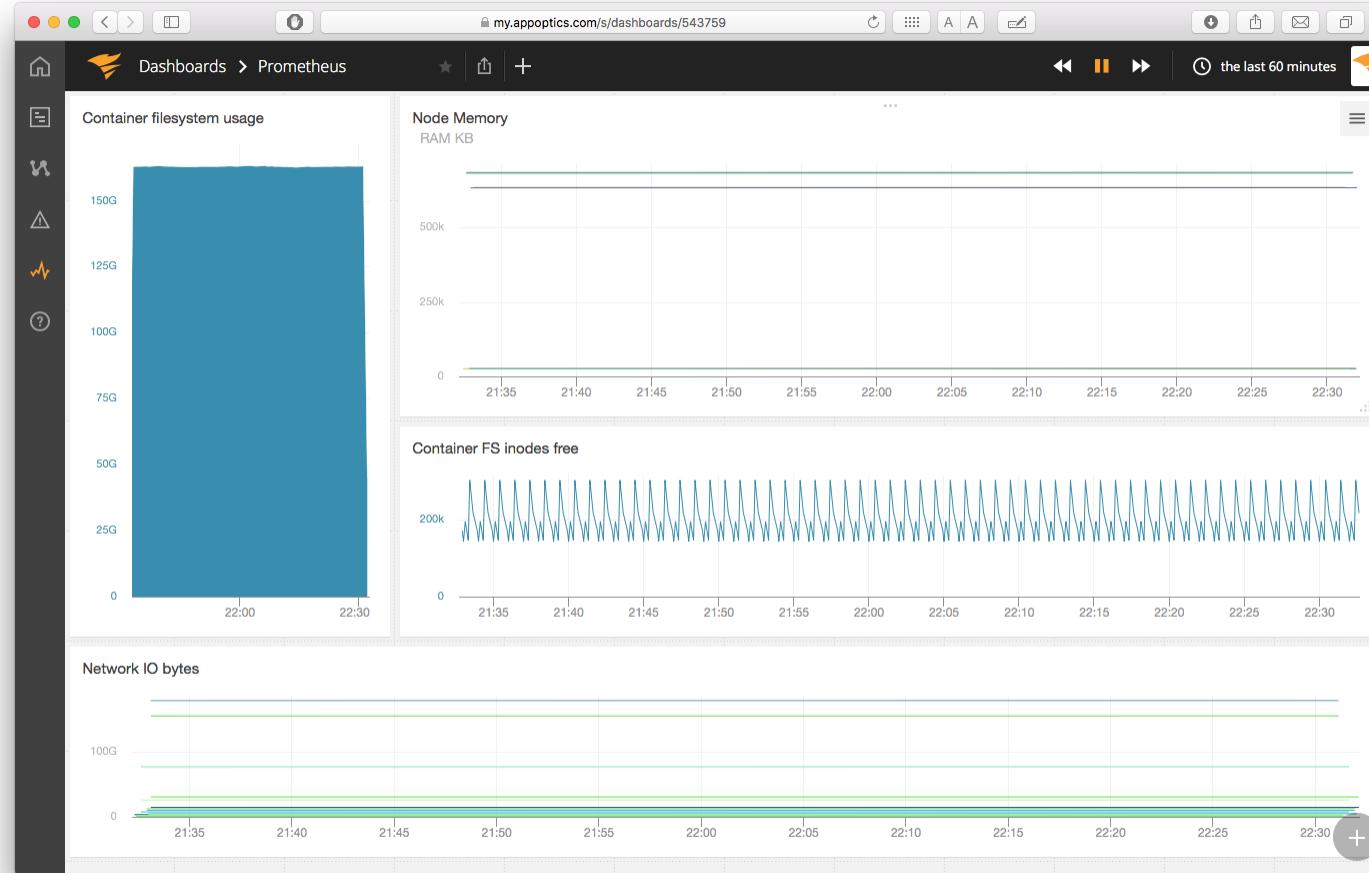


Prometheus



AppOptics Prometheus Storage Integration

solarwinds 



solarwinds  appoptics™



#



IRC: **#prometheus** on [irc.freenode.net](irc://irc.freenode.net/prometheus)

Mailing lists:

- **Prometheus-users** – discussing Prometheus usage and community support
- **Prometheus-developers** – contributing to Prometheus development

@PrometheusIO

Prometheus repositories to file bugs and feature requests



github.com/solarwinds/prometheus2appoptics

hub.docker.com/r/solarwinds/prometheus2appoptics

Thank you!



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