Grafana feature deep dives

Carl Bergquist

Alerting

All Core datasources

Alert

State history | Test Rule | Delete

Rule

Name	Frontend request error rate	Evaluate every	1m	For	5m

Conditions

WHEN	avg ()	OF	query (A, 5m, now)	IS ABOVE	50
AND	max ()	OF	query (B, 15m, now)	IS BELOW	50

+

No Data & Error Handling

If no data or all values are null	SET STATE TO	Keep Last State
If execution error or timeout	SET STATE TO	Keep Last State

Alert

Rule

Name	Frontend request error rate	Evaluate every	1m	For	5m

Conditions

WHEN	avg ()	OF	query (A, 5m, now)	IS ABOVE	10

+

No Data & Error Handling

If no data or all values are null	SET STATE TO	No Data
If execution error or timeout	SET STATE TO	Alerting

Alert

State history | Test Rule | Delete

Rule

Name	Frontend request error rate	Evaluate every	1m	For	5m

Conditions

WHEN	avg ()	OF	query (A, 5m, now)	IS ABOVE	10

+

No Data & Error Handling

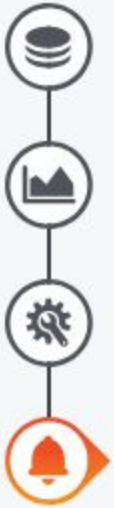
If no data or all values are null	SET STATE TO	No Data
If execution error or timeout	SET STATE TO	Alerting

ts1: [3, 3, 3, 3, 3] => avg() => 3

ts2: [2, 10, 5, 8, 4] => avg() => 5, 8

ts1: 3 > 4

ts2: 5,8 > 4



Alert

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Conditions

WHEN	avg ()	OF	query (A, 5m, now)	IS ABOVE	50
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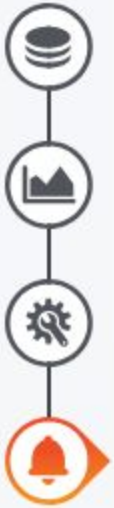

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No Data & Error Handling

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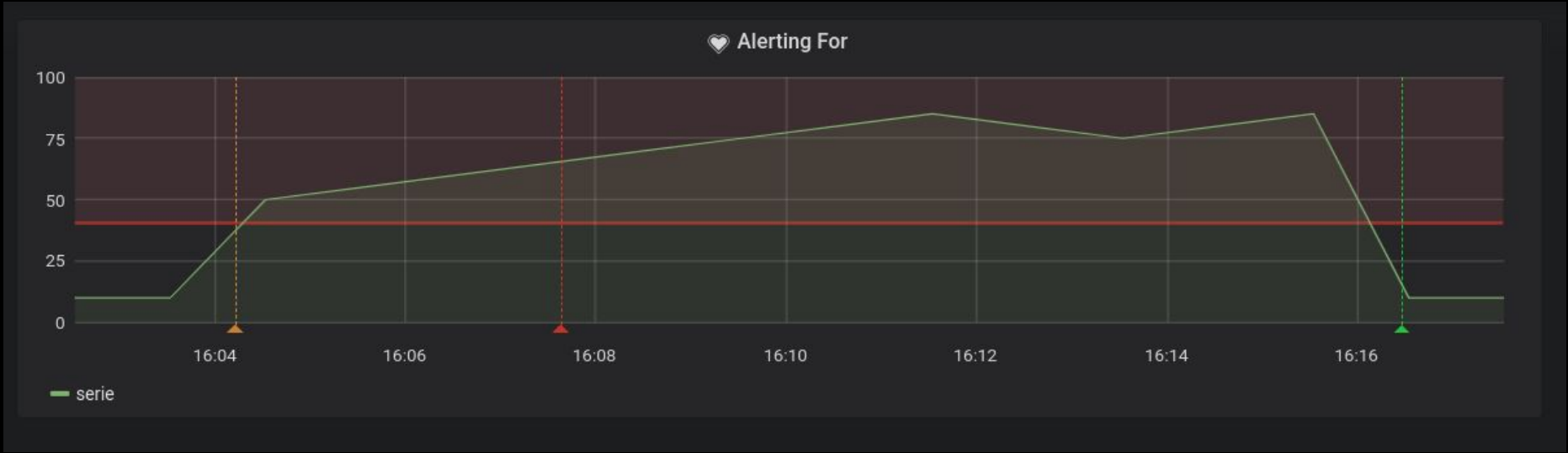
Alert debouncing using `FOR`



Alert

State history | Test Rule | Delete

Test Rule


```
▾ Object
  firing: true
  state: "pending"
  conditionEvals: "true = true"
  timeMs: "1.067ms"
  ▾ matches: Array[2]
    ▾ 0: Object
      metric: "go_goroutines{instance="127.0.0.1:3000", job="grafana"}"
      value: 62.76190476190476
    ▾ 1: Object
      metric: "go_goroutines{instance="localhost:9090", job="prometheus"}"
      value: 103
  ▾ logs: Array[4]
    ▾ 0: Object
      message: "Condition[0]: Query Result"
      ▸ data: Array[3]
    ▾ 1: Object
      message: "Condition[0]: Eval: true, Metric: go_goroutines{instance="127.0.0.1:3000", job="grafana"}, Value: 62.762"
      data: null
    ▾ 2: Object
      message: "Condition[0]: Eval: false, Metric: go_goroutines{instance="127.0.0.1:9100", job="node_exporter"}, Value: 6.429"
      data: null
    ▾ 3: Object
      message: "Condition[0]: Eval: true, Metric: go_goroutines{instance="localhost:9090", job="prometheus"}, Value: 103.000"
      data: null
```

Alert

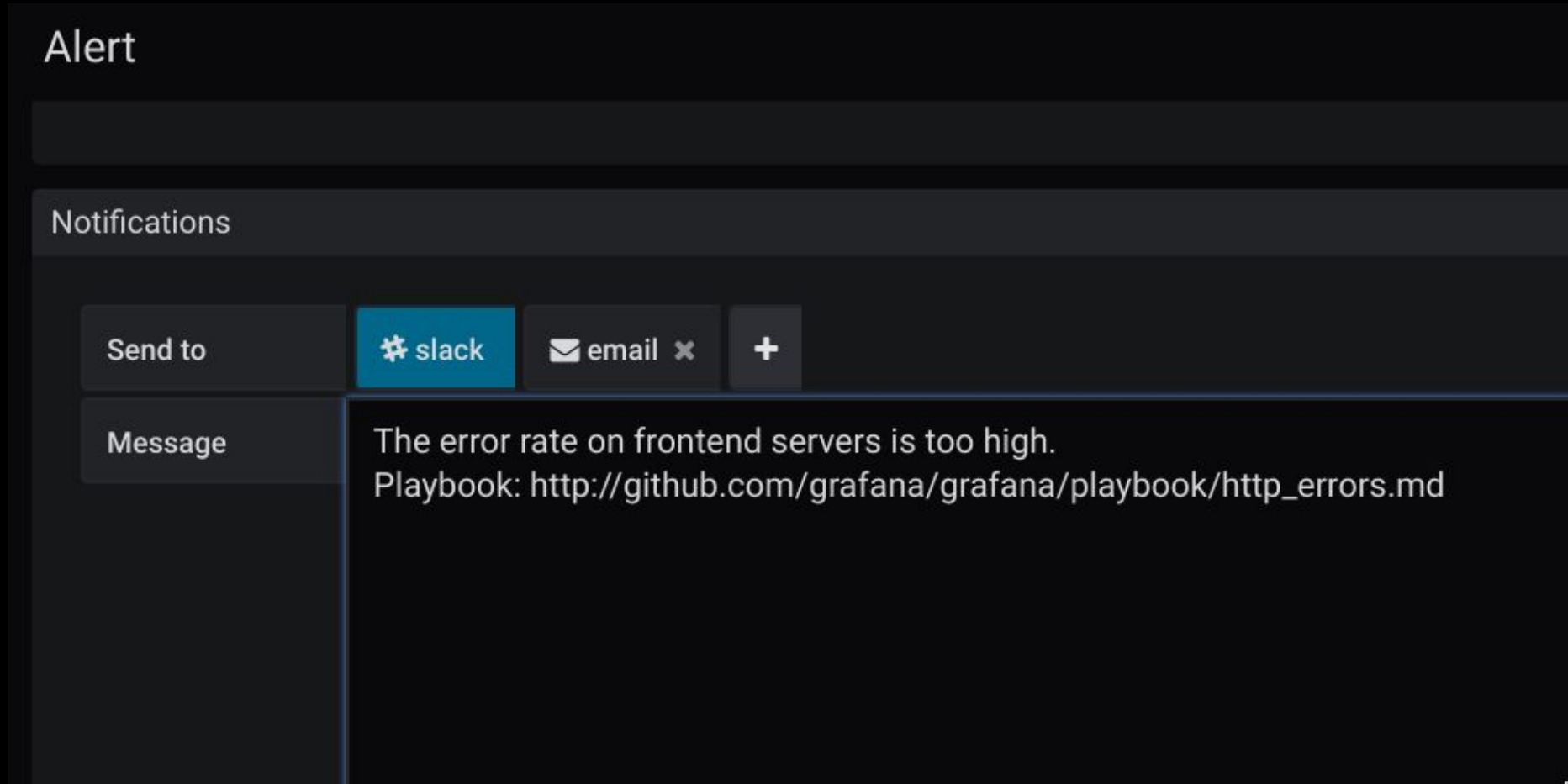
State history | Test Rule | Delete

State history

Last 50 state changes

Clear history

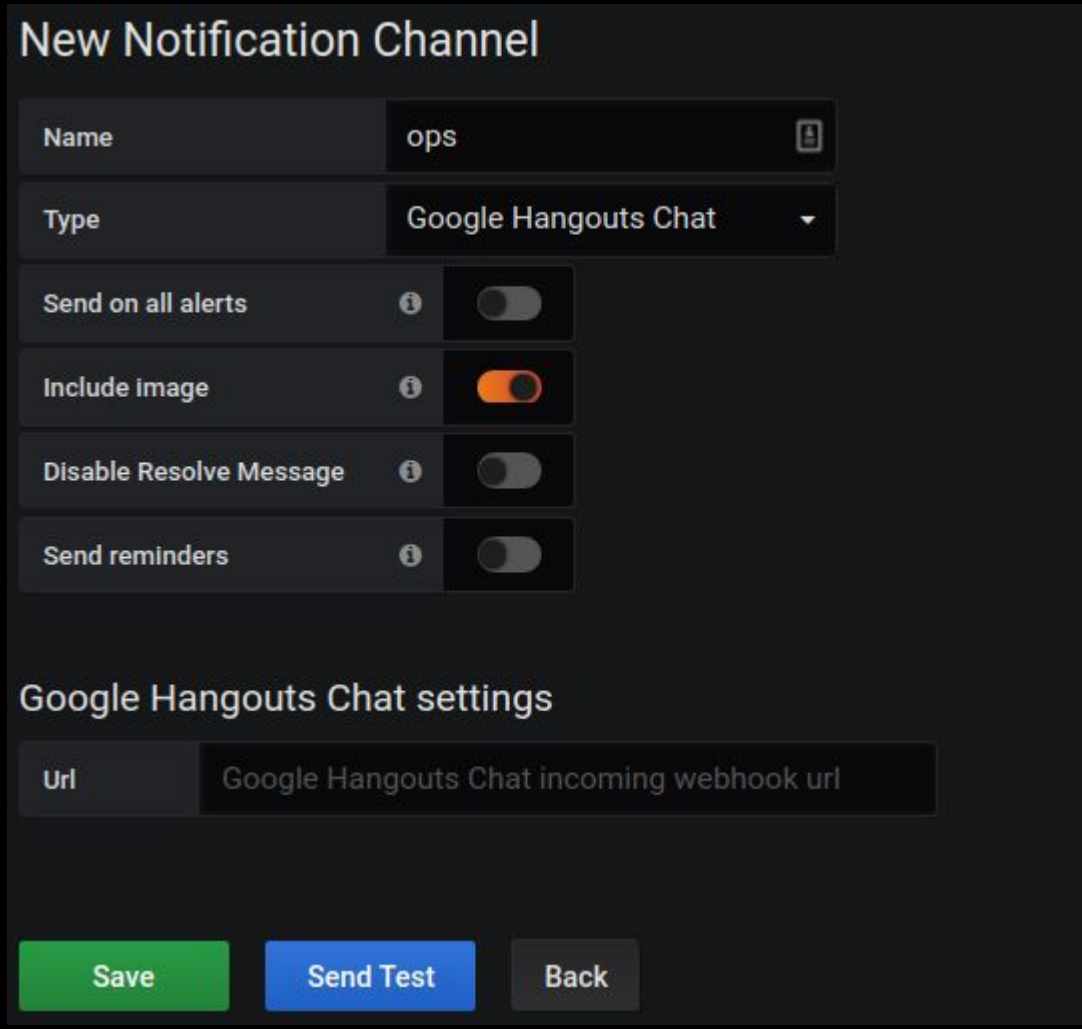
ALERTING	grafana=66.54545454545455, prometheus=95.9090909090909	Feb 15, 2019 13:19:43
PENDING	grafana=61.18181818181818, prometheus=96.9090909090909	Feb 15, 2019 13:18:43
OK		Feb 15, 2019 13:18:33
ALERTING	grafana=71.81818181818181, node_exporter=27.181818181818183, prometheus=113.63636363636364	Feb 15, 2019 11:02:18
PENDING	grafana=70.0909090909091, node_exporter=25.90909090909091, prometheus=115.18181818181819	Feb 15, 2019 11:01:18
OK		Feb 15, 2019 11:00:58


Alert
Notifications
Send to
slack
email
Message
The error rate on frontend servers is too high.
Playbook: http://github.com/grafana/grafana/playbook/http_errors.md

Alert notifications

- Slack
- Email
- Pagerduty
- Webhook
- VictorOps
- Telegram
- Prometheus Alertmanager

And 11 more



Edit Notification Channel

Name	hipchat
Type	HipChat
Send on all alerts	
Include image	
Disable Resolve Message	
Send reminders	
Send reminder every	15m

Alert reminders are sent after rules are evaluated. Therefore a reminder can never be sent more frequently than a configured alert rule evaluation interval.

Grafana LOS ANGELES · 2019 CON

Grafana alerting weakness.

- Visualization queries are not the same as alert queries.
- Hard to collaborate on alert rules
- No Silencing
- No Alert Notification routing
- No load distribution

Provisioning

Datasources

as configuration

```yaml
apiVersion: 1

datasources:
- name: Graphite
  type: graphite
  access: proxy
  url: http://localhost:8080
  jsonData:
     graphiteVersion: "1.1"
```

This datasource was added by config and cannot be modified using the UI. Please contact your server admin to update this datasource.

Name	gdev-loki	Default

HTTP

URL	http://localhost:3100
Whitelisted Cookies	Add Name

Auth

Basic Auth		With Credentials	
TLS Client Auth		With CA Cert	
Skip TLS Verify			

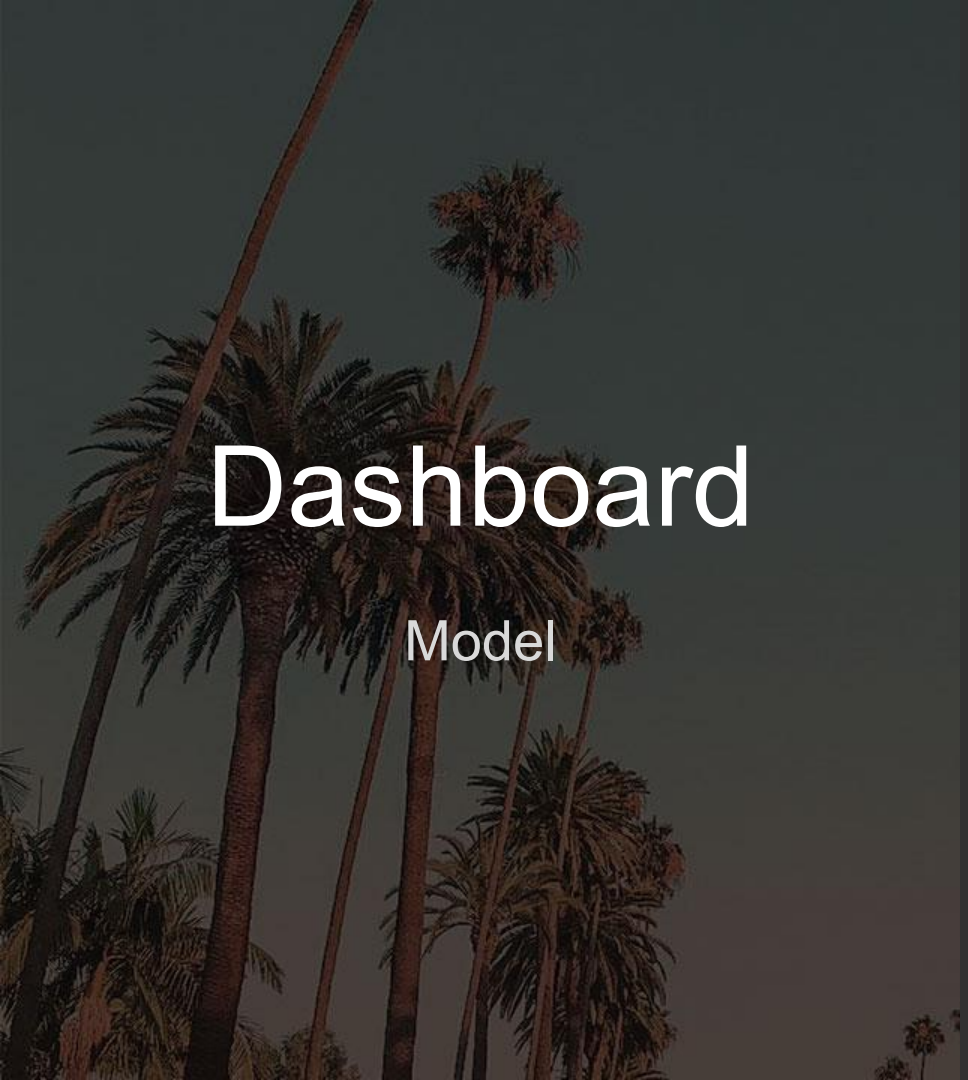
Maximum lines	1000

Test Delete Back

Dashboards

as configuration

```yaml
apiVersion: 1

providers:
- name: default
  folder: 'Great dashboards'
  type: file
  options:
    path: /var/lib/grafana/dashboards
```



Dashboard

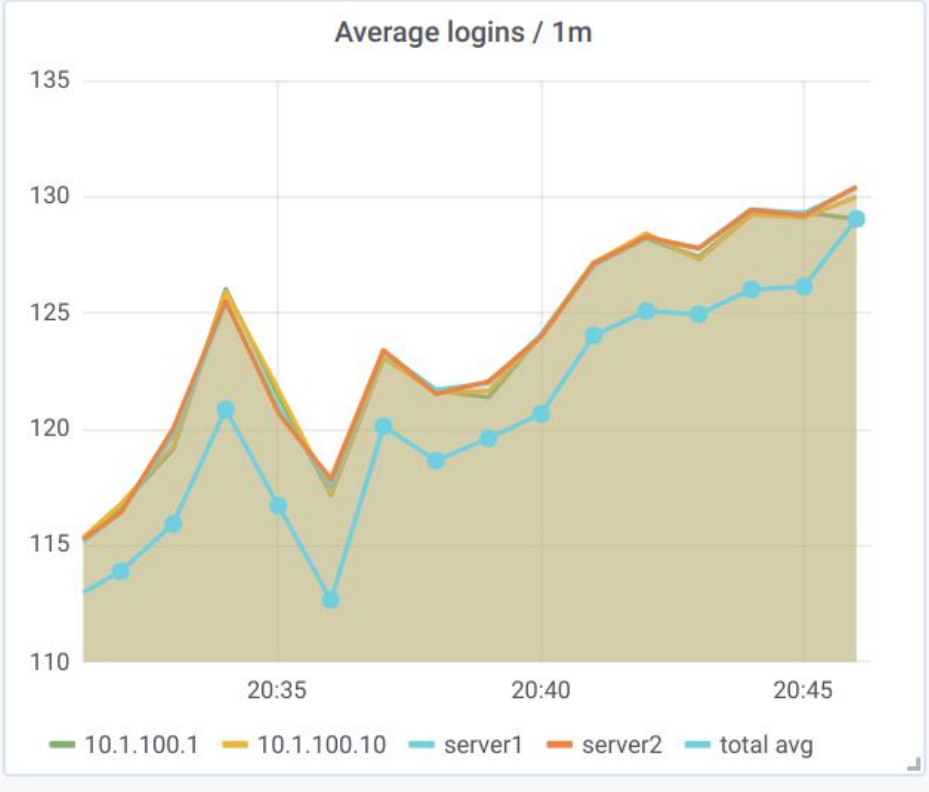
Model

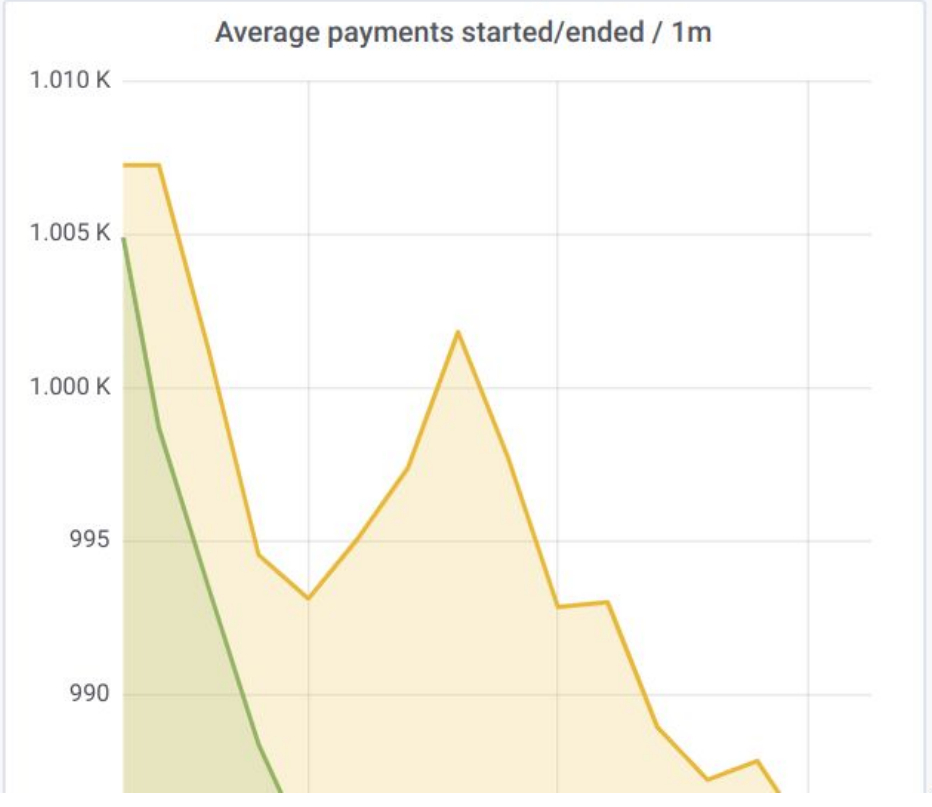
```
{
 "title": "Grafana",
 "uid": "igtbvoldfnjhtgybn",
 "panels": [
  {
   "type": "graph"
  }
 ]
}
```

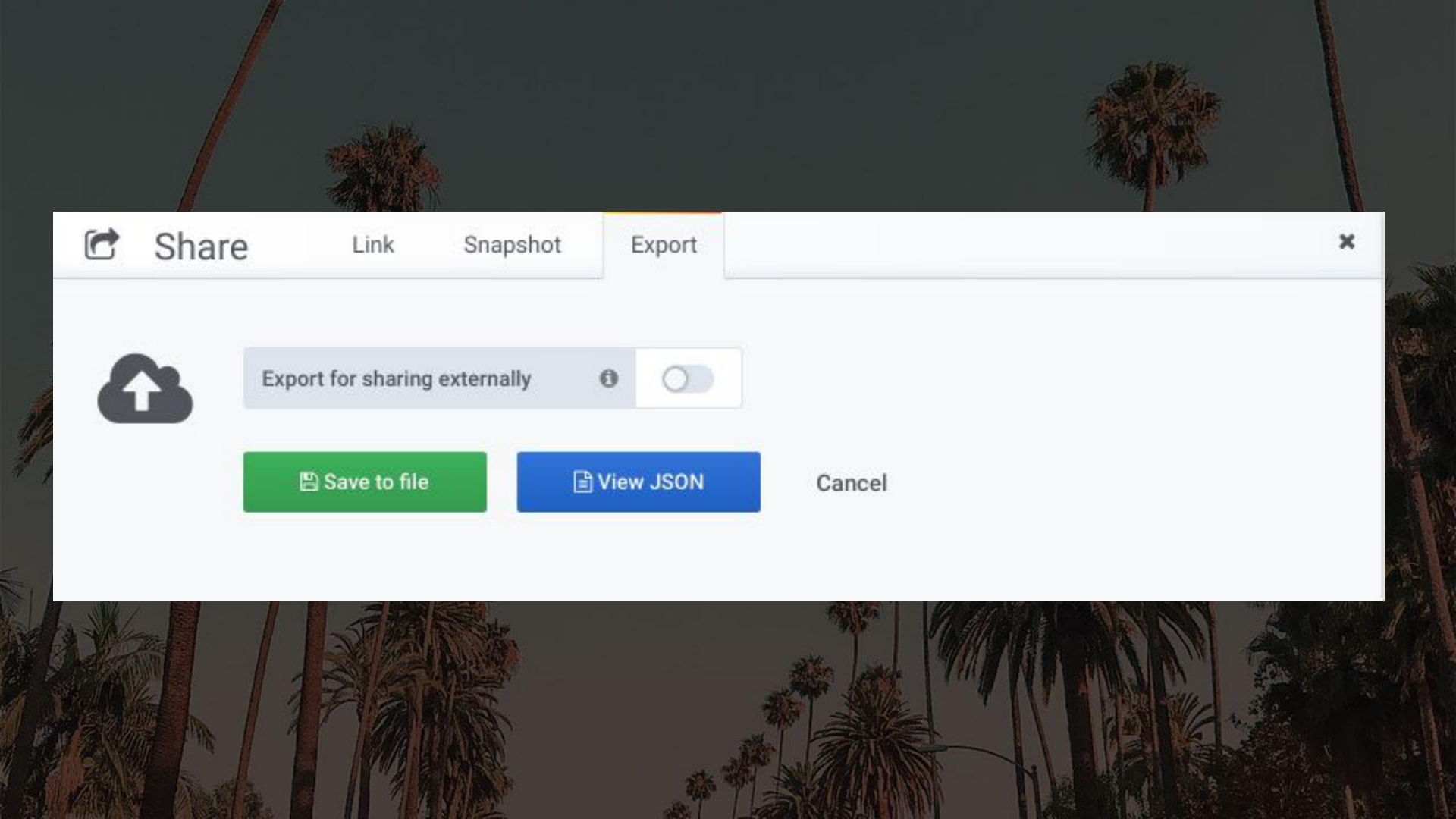
Datasource tests - MySQL

Last 15 minutes

Datacenter America | Hostname All | Summarize 1m






Share
Link
Snapshot
Export
Export for sharing externally
Save to file
View JSON
Cancel

Cannot save provisioned dashboard

This dashboard cannot be saved from Grafana's UI since it has been provisioned from another source. Copy the JSON or save it to a file below. Then you can update your dashboard in corresponding provisioning source.

See documentation for more information about provisioning.


```
{
  "annotations": {
    "list": [
      {
        "builtIn": 1,
        "datasource": "-- Grafana --",
        "enable": true,
        "hide": true,
        "iconColor": "rgba(0, 211, 255, 1)",
        "name": "Annotations & Alerts",
        "type": "dashboard"
      },
      {
        "datasource": "-- Grafana --",
        "enable": true,
        "hide": false
```


Copy JSON to Clipboard | Save JSON to file | Cancel

Alert notifiers

as configuration

```yaml
apiVersion: 1

notifiers:
 - name: default-slack-temp
   type: slack
   is_default: true
   uid: notifier1
   settings:
     recipient: "XXX"
     token: "xoxb"
     uploadImage: true
     url: https://slack.com
```

Ref Notifiers in Dashboards

```
"alert": {
  "notifications": [
    {
      "uid": "notifier1"
    }
  ]
}
```

Permissions

Default roles

- Viewer
- Editors
- Admins
- Grafana Admins

Configuration

Organization: Main Org.

Data Sources | Users | Teams | Plugins | Preferences | API Keys

Search teams

New team

	Name	Email	Members	
	devs		0	
	ops		0	

Dashboards / infra

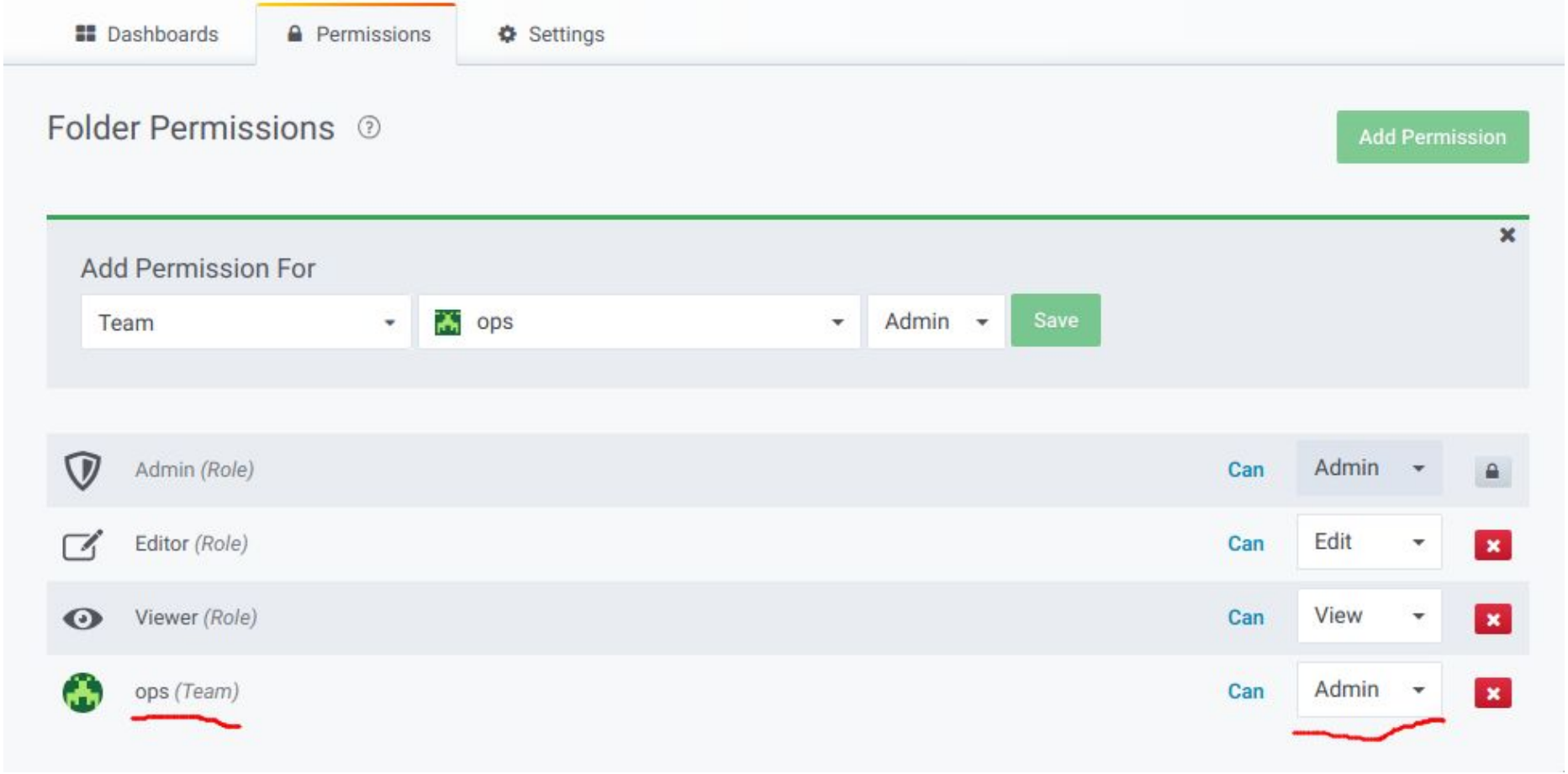
Manage folder dashboards & permissions

Dashboards | Permissions | Settings

Folder Permissions

Add Permission

Admin *(Role)*	Can	Admin	
Editor *(Role)*	Can	Edit	
Viewer *(Role)*	Can	View	


Dashboards
Permissions
Settings
Folder Permissions
Add Permission
Add Permission For
Team
ops
Admin
Save
Admin (Role)
Can
Admin
Editor (Role)
Can
Edit
Viewer (Role)
Can
View
ops (Team)
Can
Admin

Dashboards / infra

Manage folder dashboards & permissions

Dashboards | Permissions | Settings

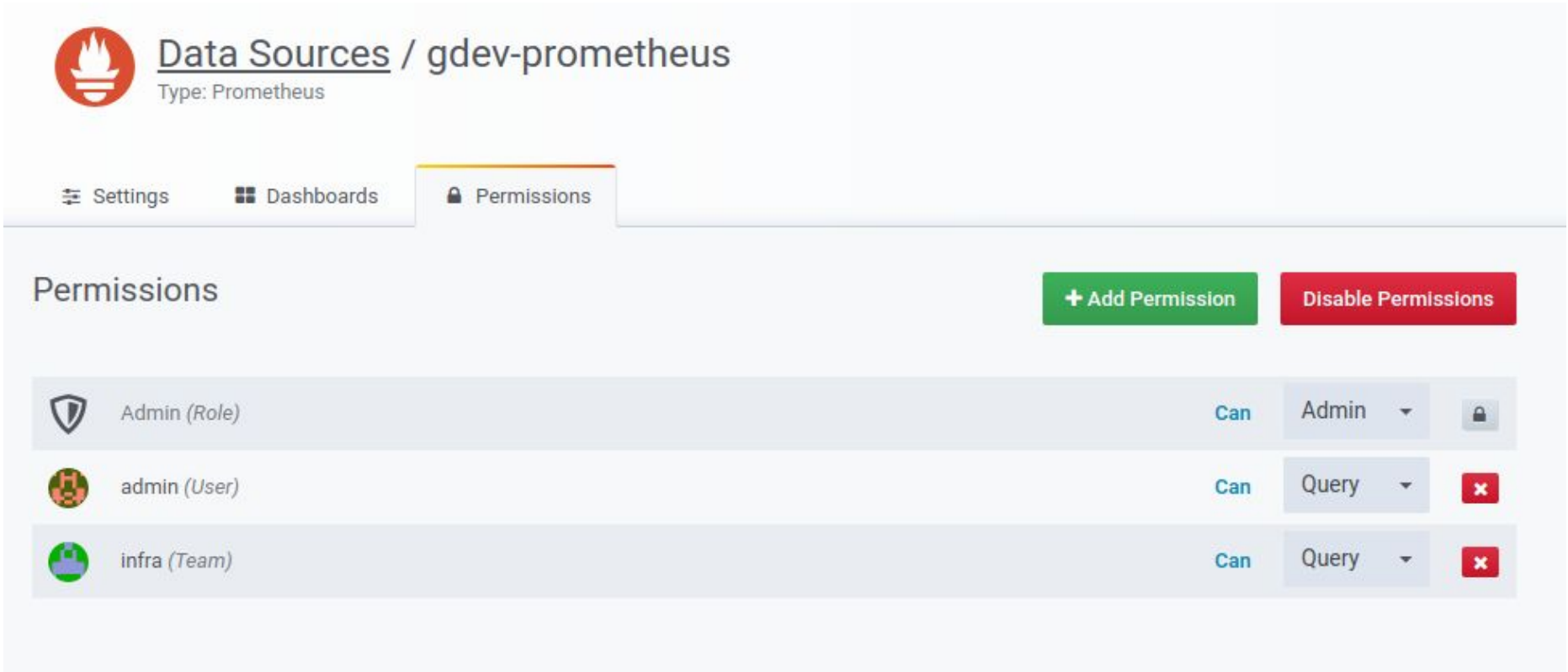
Folder Permissions

Add Permission

Add Permission For

Team | ops | Admin | Save

Admin *(Role)*	Can	Admin	
ops *(Team)*	Can	Admin	



Available in Grafana Enterprise

Tips for production

SQL database

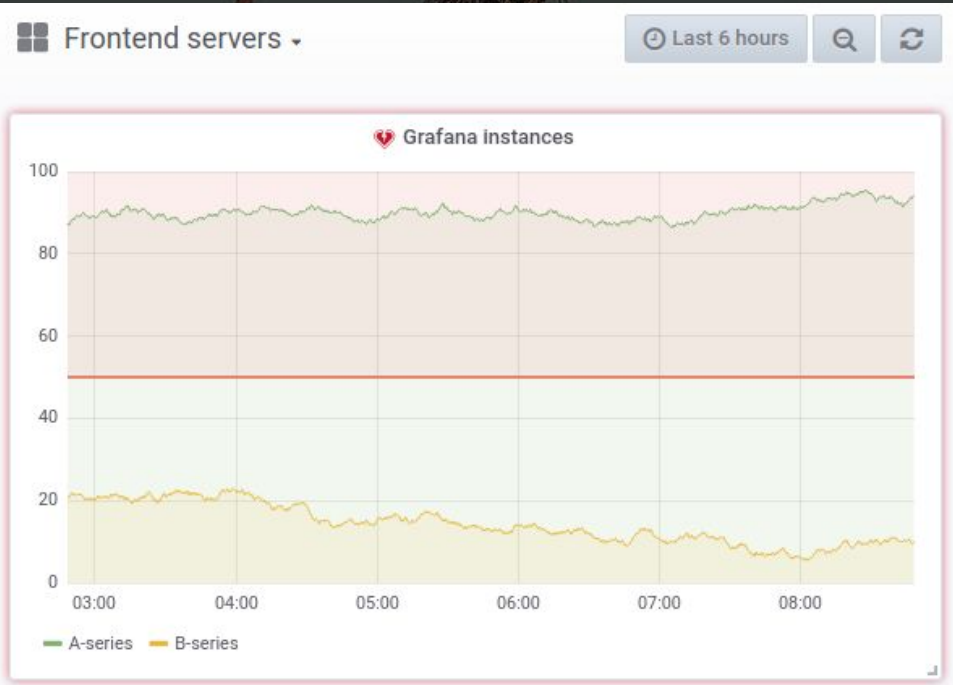
HA mode & Authentication

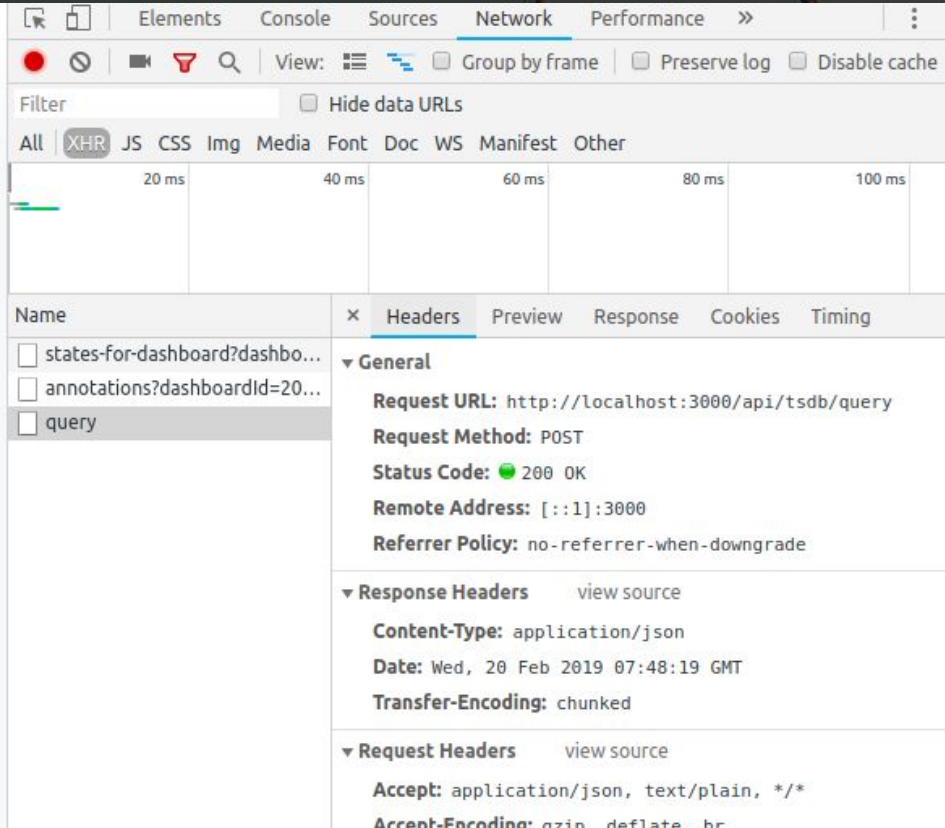
Pick your own secret key

```
[security]
# default admin user, created on startup
admin_user = admin

# default admin password, can be changed before first start of grafana
admin_password = admin

# used for signing
secret_key = SW2YcwTIb9zpOOhoPsMm
```

http://docs.grafana.org/installation/configuration/#secret-key

Viewers can send any query.





Collect metrics from Grafana

```
#################################### Internal Grafana Metrics ###########
# Metrics available at HTTP API Url /metrics
[metrics]
enabled           = true
interval_seconds  = 10

#If both are set, basic auth will be required for the metrics endpoint.
basic_auth_username =
basic_auth_password =

# Send internal Grafana metrics to graphite
[metrics.graphite]
# Enable by setting the address setting (ex localhost:2003)
address =
prefix = prod.grafana.%(instance_name)s.
```

Running public grafana

Gitlab https://dashboards.gitlab.com

Wikimedia https://grafana.wikimedia.org

GitLab Triage

Last 6 hours UTC Refresh every 30

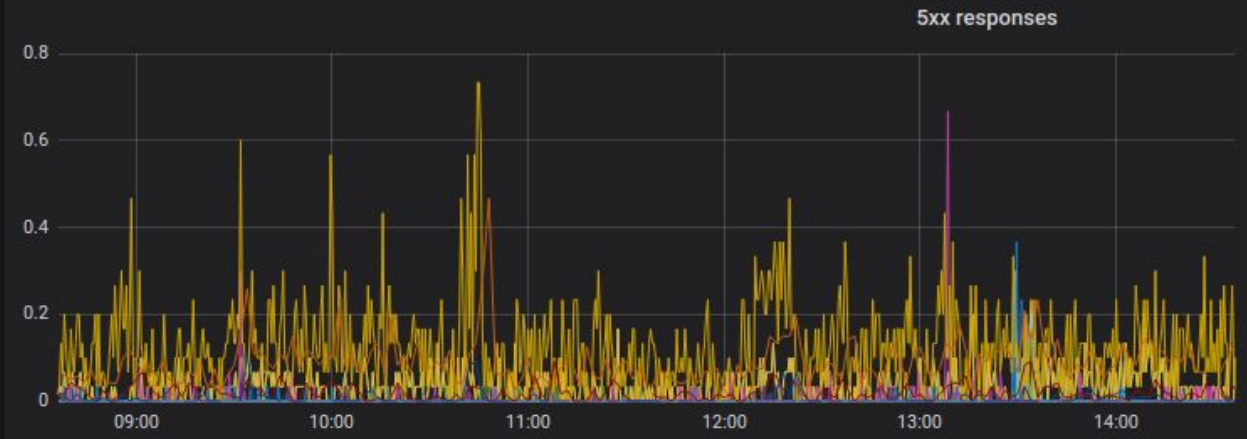
Environment gprd | backend All | stage main | deploy-failure | deploy-gstg | deploy-gprd | deploy-cny

Blackbox Scrape Metrics | Fleet Overview | HAProxy Status | Imported: Sidekiq Jobs | Rails | Sidekiq Stats

Blackbox and Alerts

GitLab.com	Infrastructure	GitLab Registry	Application	GitLab Pages	gitlab.com sig...	gprd Internal LB
UP	7 alerts	UP	0 alerts	UP	UP	UP

HAProxy



	min	max
haproxy 5xx api	0	0.200
haproxy 5xx api_rate_limit	0	0.300
haproxy 5xx canary_api	0	0.267
haproxy 5xx canary_https_git	0	0.200
haproxy 5xx canary_web	0	0.367
haproxy 5xx https_git	0	0.667
haproxy 5xx registry	0	0.033
haproxy 5xx web	0	0.733
SD haproxy 500	0.008	0.467

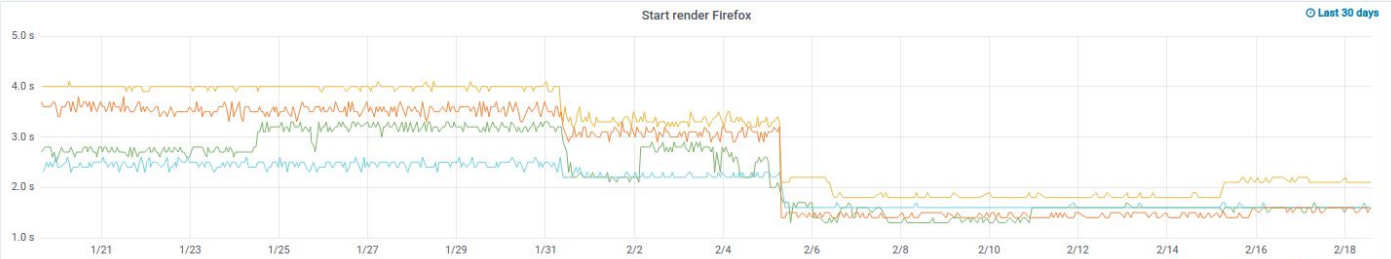
Performance / WebPageTest

Show sync-wikiversions ☐ | Show WebPageTest changes ☑

(1 panel)

Desktop [anonymous]

	min	max	avg	current
Facebook.Chrome	900 ms	1.500 s	1.242 s	1.000 s
Barack_Obama.Chrome	1.000 s	1.700 s	1.262 s	1.000 s
Metalloid.Chrome	800 ms	1.200 s	1.006 s	900 ms
Sweden.Chrome	1.100 s	1.500 s	1.326 s	1.200 s



	min	max	avg	current
Facebook.Firefox	1.300 s	3.300 s	2.359 s	1.600 s
Barack_Obama.Firefox	1.800 s	4.100 s	3.107 s	2.100 s
Metalloid.Firefox	1.600 s	2.600 s	2.094 s	1.600 s
Sweden.Firefox	1.400 s	3.800 s	2.697 s	1.600 s

@carlbergquist
carl@grafana.com