Managing Grafana Dashboards With grafonnet and git

Adam Wolfe Gordon
DigitalOcean

PromCon 2019 Munich

How many of you use Grafana?

Is Grafana important to you?

How many of you do code review?

For your application/service/whatever?

How many of you run CI tests?
How many do some kind of CD?

For your application/service/whatever?

How many of you do

code review
CI testing
continuous deployment

on your Grafana dashboards?

We should!

- Grafana dashboards are important.
- We should apply good engineering practices.
    - Version control
    - Code review
    - Continuous integration and deployment
    - Component re-use

How?

- Grafana has an API - so this should be easy.
- But:
  - Grafana’s JSON model isn’t pretty.
  - Dashboards are inherently visual - hard to test/verify.

Solution 1
jsonnet and grafonnet

- jsonnet: JSON templating language.
- grafonnet: Grafana jsonnet library.

- Human-friendly.
- Allows for libraries.

```
local grafana = import 'grafonnet/grafana.libsonnet';
local dashboard = grafana.dashboard;

dashboard.new('My Cool Dashboard')
```

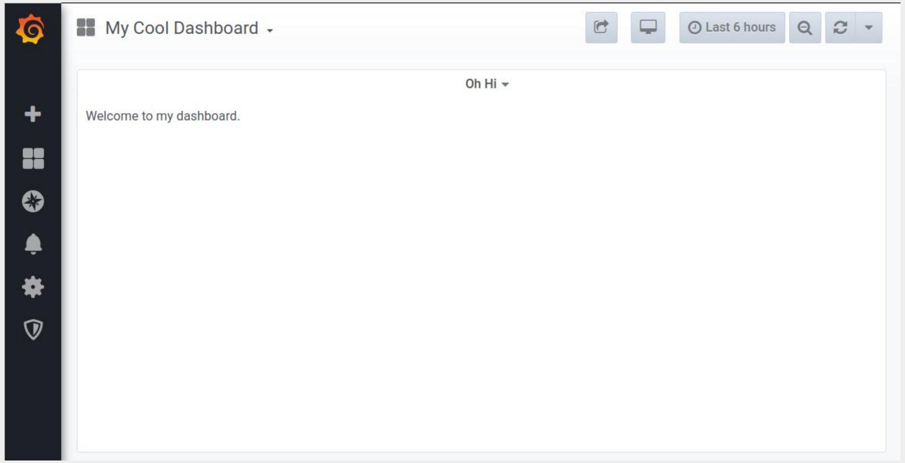
```
{
  "__inputs": [ ],
  "__requires": [ ],
  "annotations": {
     "list": [ ]
  },
  "editable": false,
  "gnetId": null,
  "graphTooltip": 0,
  "hideControls": false,
  "id": null,
  "links": [ ],
  "refresh": "",
  "rows": [ ],
  "schemaVersion": 14,
  "style": "dark",
  "tags": [ ],
  "templating": {
     "list": [ ]
  },
  "time": {
     "from": "now-6h",
     "to": "now"
  },
  "timepicker": {

"refresh_intervals": [
        "5s",
        "10s",
        "30s",
        "1m",
        "5m",
        "15m",
        "30m",
        "1h",
        "2h",
        "1d"
     ],
     "time_options": [
        "5m",
        "15m",
        "1h",
        "6h",
        "12h",
        "24h",
        "2d",
        "7d",
        "30d"
     ]
  },
  "timezone": "browser",
  "title": "My Cool
Dashboard",
  "version": 0
}
```

digitalocean.com

Solution 2
Grafana's Snapshot API

- Grafana can create snapshots.
    - Point-in-time copy of a dashboard.
    - Immutable.
- Not only for existing dashboards!

```
local grafana = import 'grafonnet/grafana.libsonnet';
local dashboard = grafana.dashboard;
local text = grafana.text;
dashboard.new('My Cool Dashboard')
.addPanel(
  text.new(
    title="Oh Hi",
    content="Welcome to my dashboard.",
  ),
  gridPos={x: 0, y: 0, w: 24, h: 10},
)
```



Welcome to my dashboard.

Putting Together the Pieces

- git repository of jsonnet dashboard definitions.
- Script to generate previews.
- CI job to find changes and run the script.
- CD job to publish dashboards on merge.

Demo Time!

https://github.com/adamwg/grafana-dashboards

Questions?

Adam Wolfe Gordon

awg@do.co

https://github.com/adamwg/grafana-dashboards

DigitalOcean

DigitalOcean