

Grafana-as-Code

Fully reproducible Grafana dashboards
with Grafonnet

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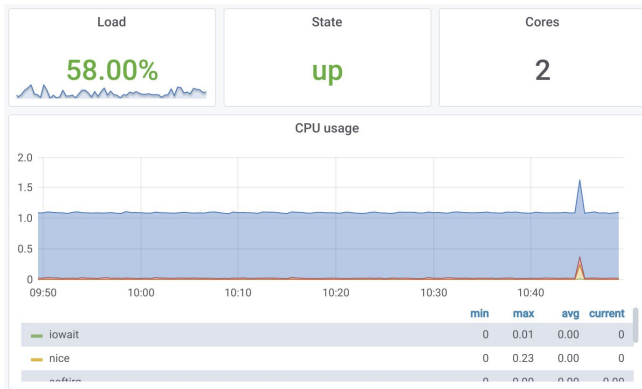


Why

do I need it?

Grafana has rich UI

Leading to
Too many dashboards



- Alerting [demo](#)
- Annotations [annotations](#) [demo](#) [presentation](#)
- Annotations by tag
- Annotations Graphite
- Annotations Image [annotations](#)
- Apache Overview2 [apache](#)
- Bar Gauge [demo](#)
- Big Dashboard [demo](#)
- Big Dashboard Theme [home](#) [presentation](#) [startpage](#)
- Big Dashboard2 [demo](#)
- Big Dashboard244 [home](#) [presentation](#) [startpage](#)

maintenance becomes a **nightmare**

Conflicts

Confusion

Inconsistency

A difficult issue

Getting everyone to
see **the same things**

What

to do about this?

Grafana Provisioning

Browser UI

REST API

Grafana Database

Grafana Terraform Provider

Grafana file provisioning

Grafana dashboards are

JSON

But ...

Templating JSON is no fun

```
{
  "annotations": {
    "list": [
      {
        "builtIn": 1,
        "datasource": "-- Grafana --",
        "enable": true,
        "hide": true,
        "iconColor": "rgba(0, 211, 255, 1)",
        "name": "Annotations & Alerts",
        "type": "dashboard"
      }
    ]
  },
  "editable": true,
  "gnetId": null,
  "graphTooltip": 0,
  "id": 2,
  "links": [],
  "panels": [
    {
      "datasource": null,
      "description": "",
      "gridPos": {
        "h": 8,
        "w": 12,
        "x": 0,
        "y": 0
      },
      "id": 4,
      "options": {
        "fieldOptions": {
          "calcs": [
            "mean"
          ],
          "defaults": {
            "mappings": [],
            "thresholds": {
              "mode": "absolute",

```

How

do can we solve this?

Jsonnet

```
// Line comment
/* Block comment */

// a local variable (not exported)
local greeting = "hello world!";

// the exported/returned object
{
  foo: "bar", // string
  bar: 5, // int
  baz: false, // bool
  list: [1,2,3], // array
  // object
  dict: {
    nested: greeting, // using the local
  }
  hidden:: "incognito!" // an unexported field
}
```

Functions

```
dashboard: new(title, uid):: {  
  title: title,  
  [if uid != '' then 'uid']: uid,  
  panels: [],  
  schemaVersion:20,  
},
```

```
dashboard.new('super dash', 'my-dash');  
  
{  
  "title": "super dash",  
  "uid": "my-dash",  
  "Panels": [],  
  "schemaVersion":20  
}
```

Patches

```
dashboard: {  
  new(title, uid): { ... }  
}
```

```
dashboard.new( ... ) + {  
  schemaVersion: 22,  
}
```

```
{  
  "title": "super dash",  
  "uid": "my-dash",  
  "Panels": [],  
  "schemaVersion":22  
}
```

Imports

```
// dashboard.libsonnet
{
  new(title, uid):: {
    title: title,
    [if uid != '' then 'uid']: uid,
    panels: [],
    schemaVersion:20,
  },
}
// main.jsonnet
local dashboard = import 'dashboard.libsonnet';
deployment.new(...) + {
  schemaVersion: 22,
}
```

```
{
  "title": "super dash",
  "uid": "my-dash",
  "Panels": [],
  "schemaVersion":22
}
```

Ready to use libraries

<https://github.com/grafana/grafonnet-lib>

<https://github.com/grafana/jsonnet-libs>

<https://github.com/search?q=filename:jsonnetfile.json>

Grafonnet

grafana / grafonnet-lib

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Branch: master grafonnet-lib / grafonnet / Create new file Upload files Find file History

RyuCaelum Added gauge libsonnet (#162) Latest commit c459166 4 days ago

..		
alert_condition.libsonnet	Fix typo	16 months ago
annotation.libsonnet	[Fix] Adding support for passing builtIn in annotation	17 months ago
cloudwatch.libsonnet	Fixing cloudwatch target	15 months ago
dashboard.libsonnet	Merge commit 'refs/pull/109/head' of gh:grafana/grafonnet-lib	3 months ago
elasticsearch.libsonnet	Fix elasticsearch parameter order	4 months ago
gauge.libsonnet	Added gauge libsonnet (#162)	4 days ago
grafana.libsonnet	Added gauge libsonnet (#162)	4 days ago
graph_panel.libsonnet	Merge pull request #149 from AechGG/feat/graphpanelfields	2 months ago
graphite.libsonnet	Added support for graphite datasource	17 months ago
heatmap_panel.libsonnet	Add heatmap_panel	7 months ago
influxdb.libsonnet	Reformat jsonnet code using Google internal settings	17 months ago
link.libsonnet	Added missing fields (for example:	16 months ago
pie_chart_panel.libsonnet	feat: formatting changes	2 months ago
prometheus.libsonnet	add hide to prometheus target	5 months ago
row.libsonnet	Reformat jsonnet code using Google internal settings	17 months ago
singlestat.libsonnet	feat: add maxPerRow for single stats (#158)	2 months ago
sql.libsonnet	Reformat jsonnet code using Google internal settings	17 months ago



See it

the future

- ✓ An open source project
- ✓ Go to <https://github.com/grafana/grafonnet-lib>

Thank you! Questions?