Grafana Plugins, Past and Future

Plus New Cloud Data Sources

Daniel Lee, Grafana Labs

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Agenda

- Cloud Datasources
- Google Stackdriver presentation - Joy Wang
- Oracle Cloud Infrastructure presentation - Mies Hernandez van Leuffen
- Community Plugins
- Future of Grafana Plugins

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Grafana Now Supports The 3 Major Clouds

- Grafana Labs uses all 3 clouds and so do lots of Grafana users
- Avoid vendor lock-in - hybrid/multi-cloud
- Fits with our core vision to democratize metrics
- Helping teams better understand their systems by unifying, visualizing, and analyzing their measurement data - wherever it comes from

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Supported Cloud Datasources

- AWS Cloudwatch
  - Created in 2015 by Mitsuhiro Tanda
- Azure Monitor
  - First as a plugin. Included in Grafana 6.0 as a core data source
- Google Stackdriver
  - Released as beta for 5.3. Officially released in Grafana 6.0

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Introduction to Azure Monitor

- Supports 4 Azure Services
  - Azure Monitor
  - Application Insights
  - Azure Log Analytics
  - (Application Insights Analytics)
- Support for:
  - Infrastructure metrics
  - application metrics
  - log-based metrics

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Azure Monitor - Why move it to Core Grafana?

- Azure is used by lots of Grafana users
- The Grafana team is committing to a higher level of support
- Gets Grafana Alerting

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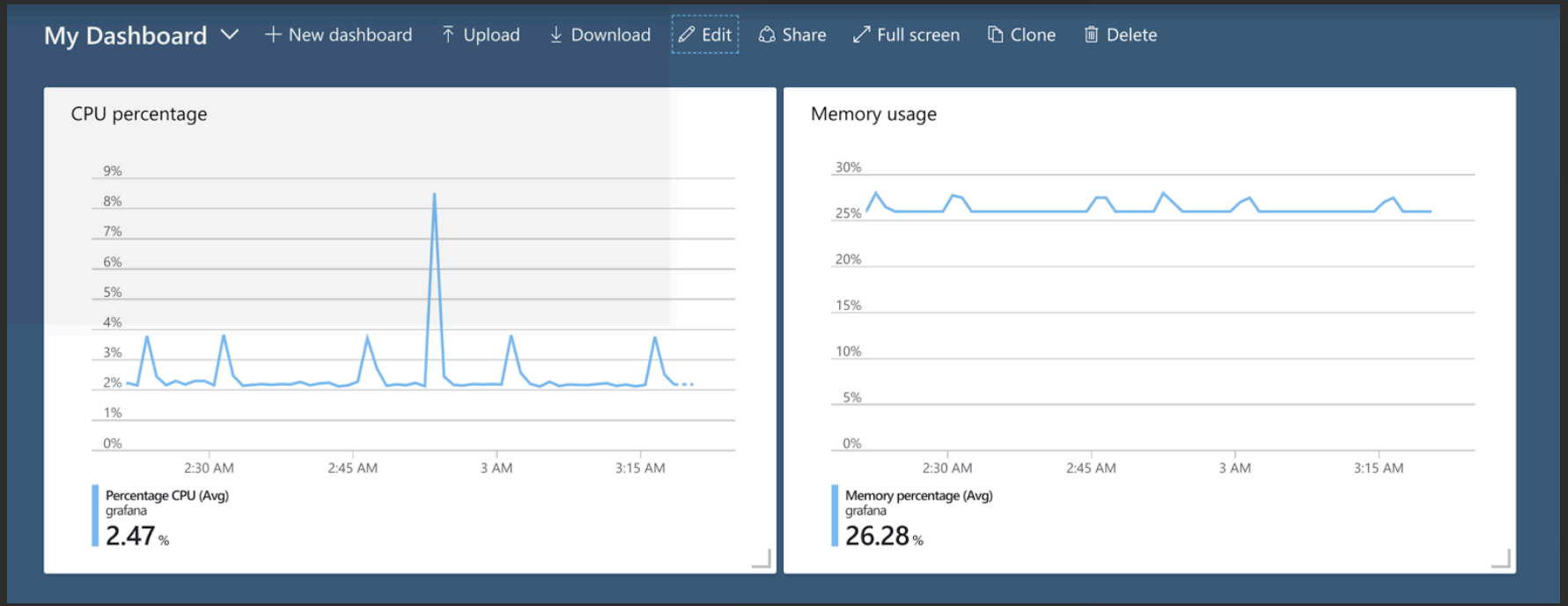
Azure Monitor in Grafana

Please welcome Brendan Burns from Microsoft

Azure Portal



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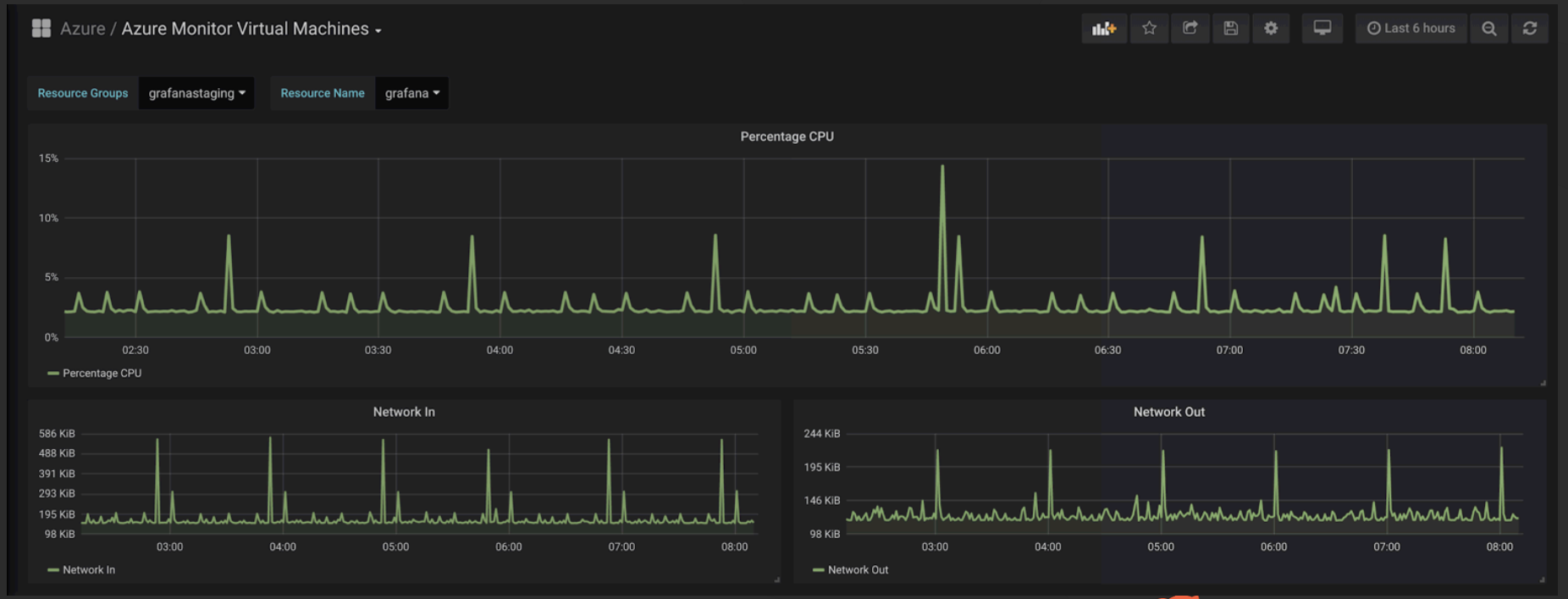
Azure Monitor Dashboard in Grafana



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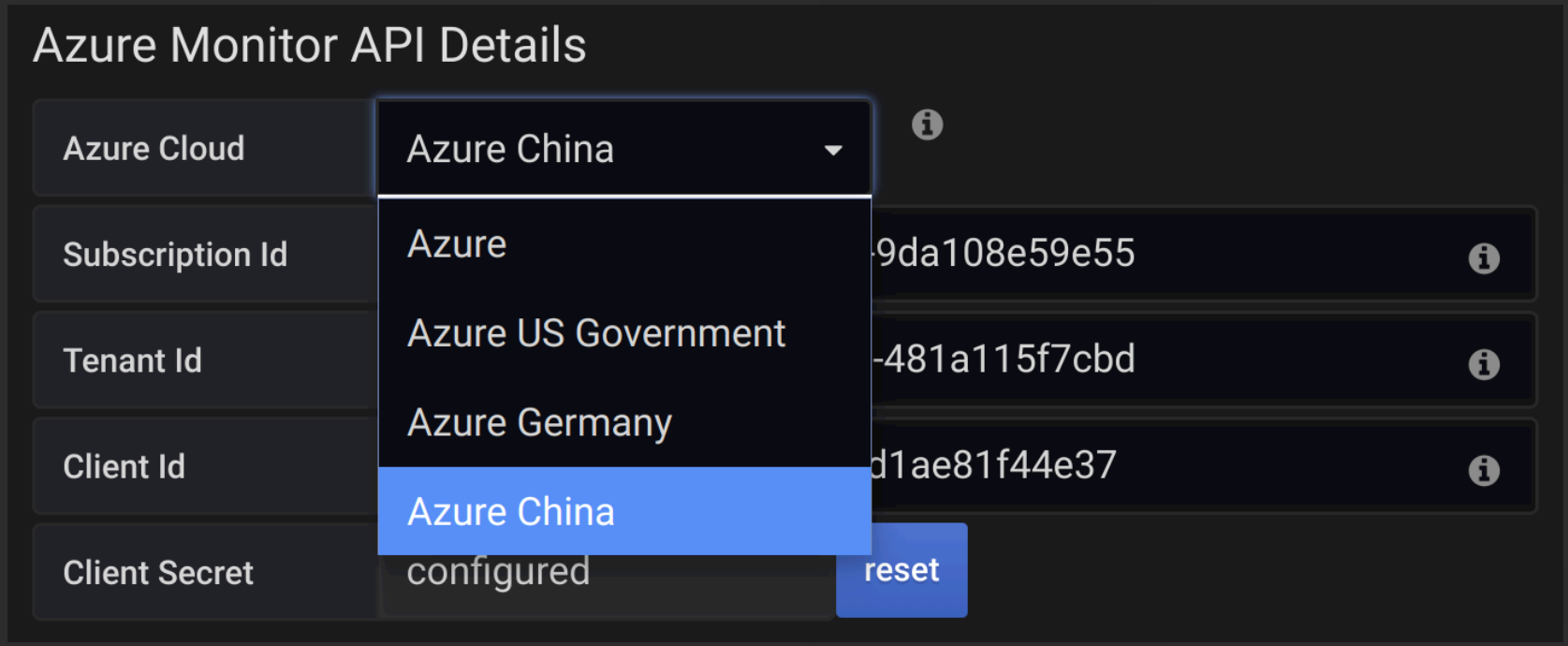
Azure Monitor - Support for multiple clouds



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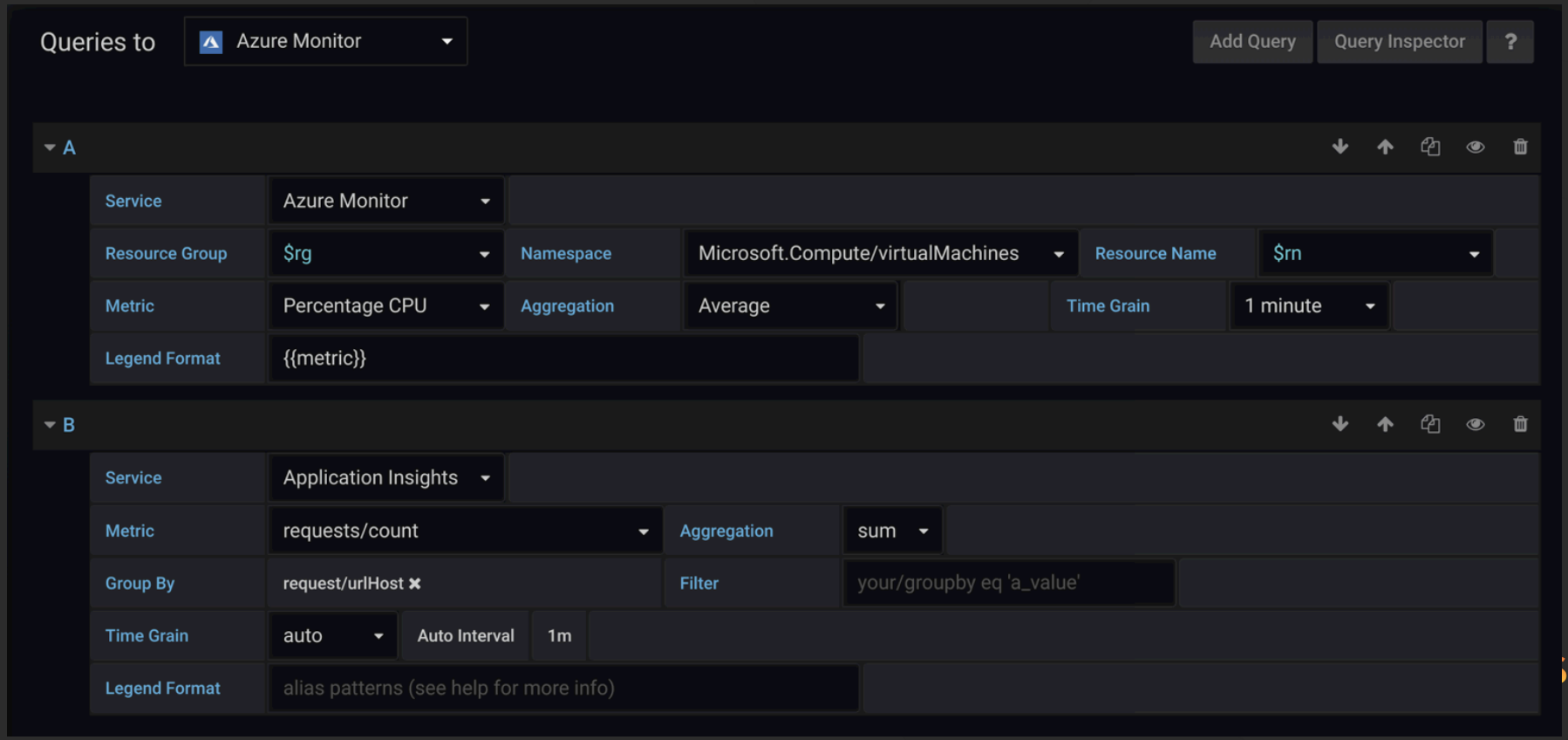
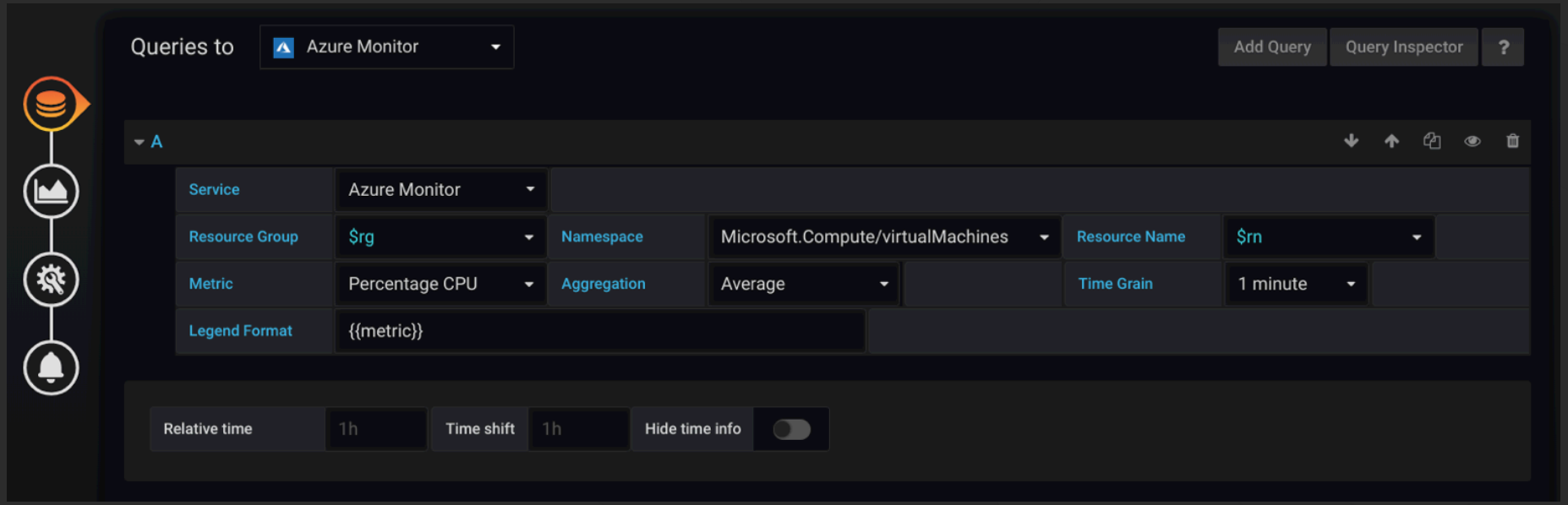
Azure Monitor - Mix queries from the services



Azure Monitor Query Editor



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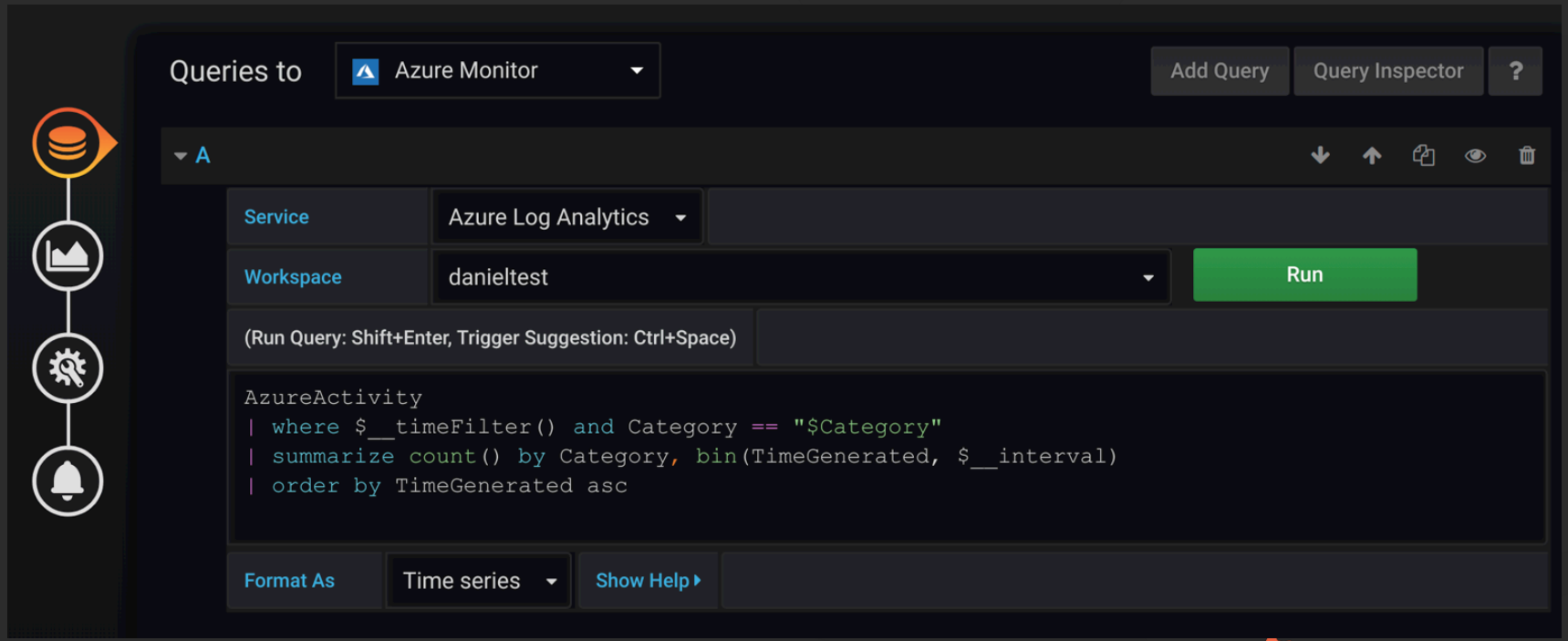
Azure Log Analytics Query Editor



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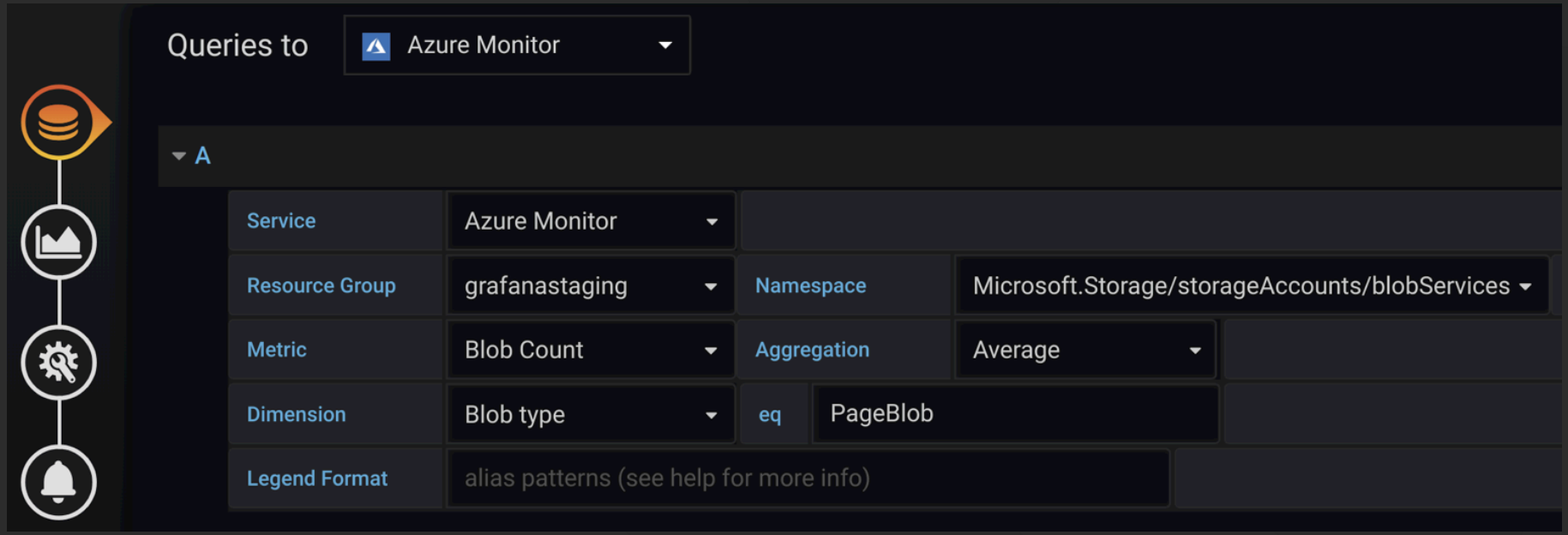
Azure Monitor - Dimension Filtering



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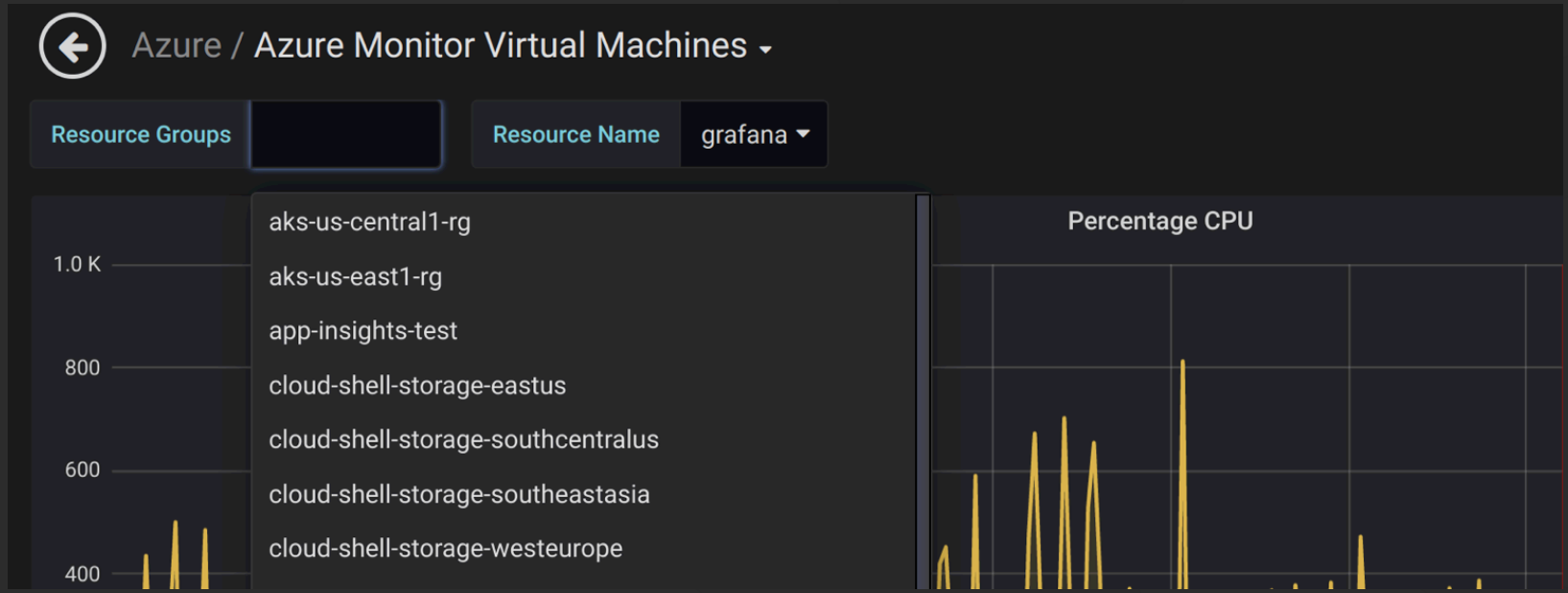
Azure Monitor - Templating



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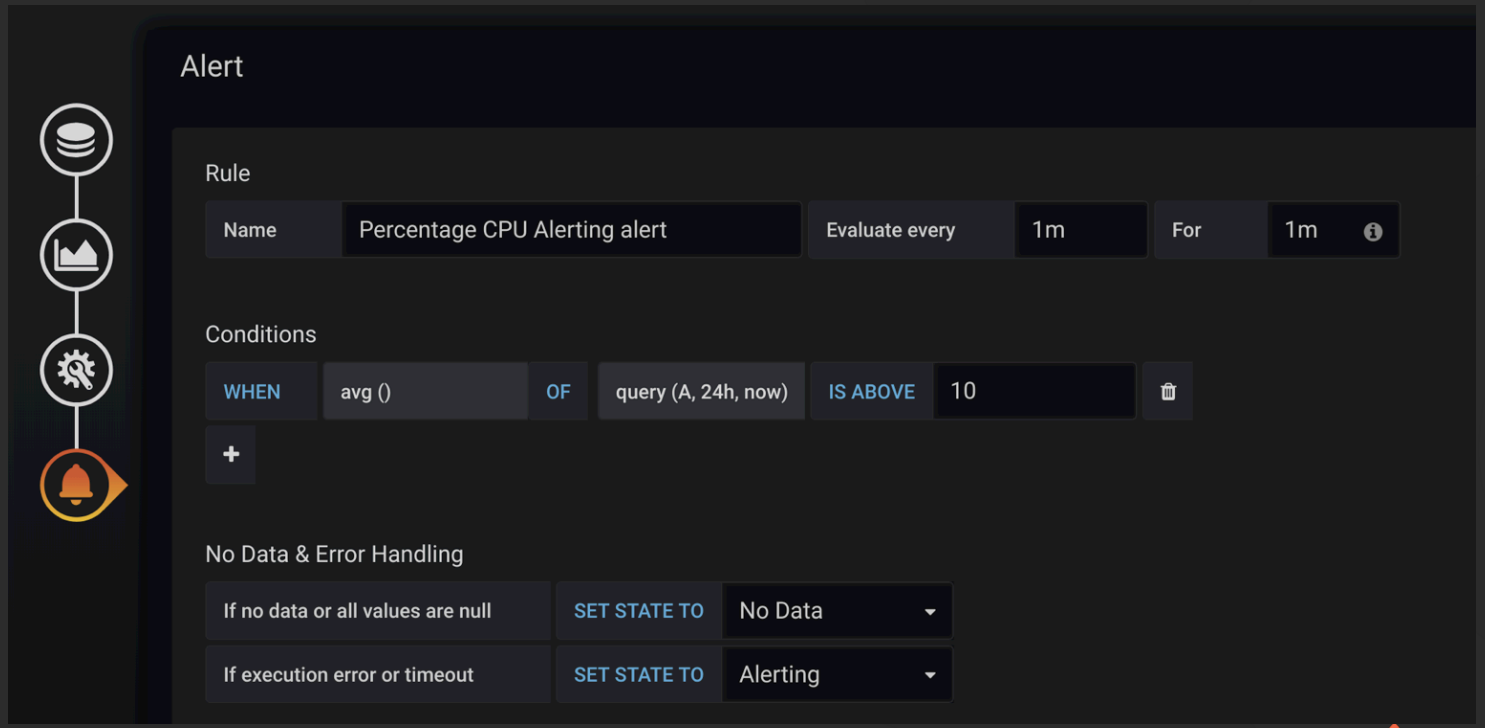
Azure Monitor service has alerting



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Azure Monitor - Provisioning

```yaml
apiVersion: 1

datasources:
  - name: gdev-azureMonitor
    type: grafana-azure-monitor-datasource
    access: proxy
    jsonData:
      azureLogAnalyticsSameAs: false
      cloudName: azuremonitor

      clientId: 999b7ed8-1aed-486e-9789-819770bbb999
      subscriptionId: 99993801-6ee6-49de-9b2d-9106972f9999
      tenantId: 9993f661-a933-4b3f-8176-51c4f982e999

      appInsightsAppId: DEMO_APP

      logAnalyticsClientId: 9992db7c-6f6f-4e88-93d9-9ae126c0a999
      logAnalyticsDefaultWorkspace: 9991b44e-3e57-4410-b027-6cc0ae6de999
      logAnalyticsSubscriptionId: 99993801-6ee6-49de-9b2d-9106972f9999
      logAnalyticsTenantId: 9993f661-a933-4b3f-8176-51c4f982e999

    secureJsonData:
      clientSecret: MyVerySecretClientSecret

      appInsightsApiKey: DEMO_KEY

      logAnalyticsClientSecret: MyVerySecretLogAnalyticsClientSecret
```

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Stackdriver in Grafana

Please welcome Joy Wang from Google

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Stackdriver

Stackdriver is a broad suite of products to improve the development experience on GCP as well as other cloud environments:

Monitoring

- Platform, system, app, and custom metrics
- Uptime/health checks
- Dashboards and charts
- Alerts and notifications

Logging

- Platform, system, app, and audit logs
- Log search/view/filter
- Logs-based metrics
- Error notification and Dashboard

APM

- Trace - Latency analysis across distributed apps
- Profiler - CPU and memory profiling
- Debug - In production debug and conditional snapshots

IRM

- Command and control system for incidents
- Team collaborations
- Post-mortems and communications
- Incidents repository

Why Did We Build the Plugin Together

We Hear Our Users' Feedback And We Took Actions

We  Open Source

We Learn From The Community

We Continuously Improve

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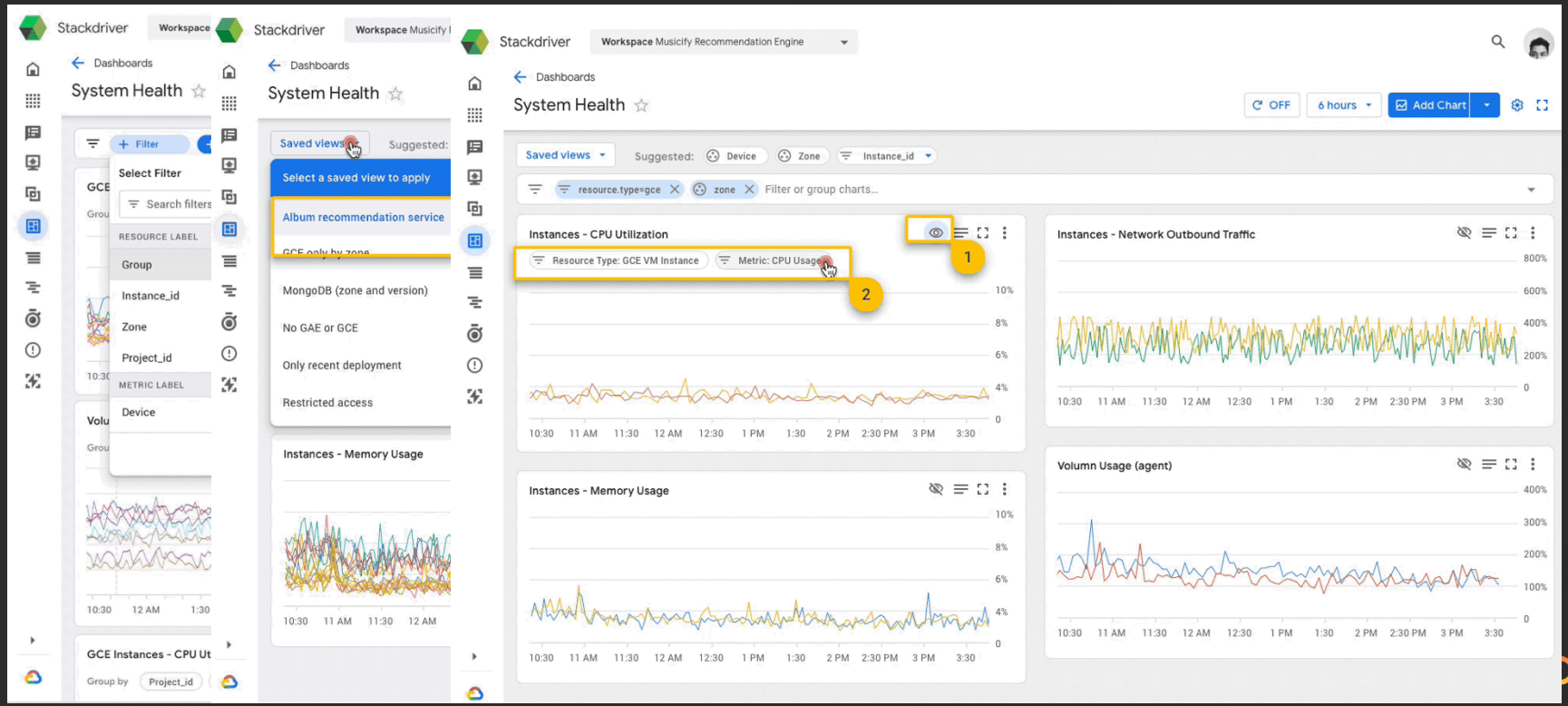
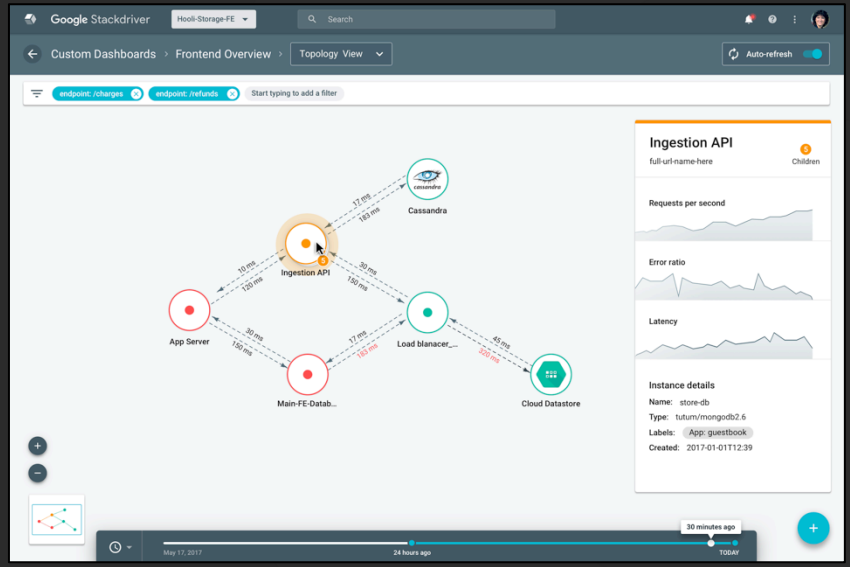
Stackdriver and Grafana Stackdriver Plug-in

Stackdriver Dashboard Next Steps



Stackdriver Monitoring Also Introducing

- Kubernetes monitoring
- Expanded multi-cloud and hybrid observability
- Metric query language
- SLO monitoring
- Service graph and service dashboard
- APIs for everything
- Metric granularity and retention



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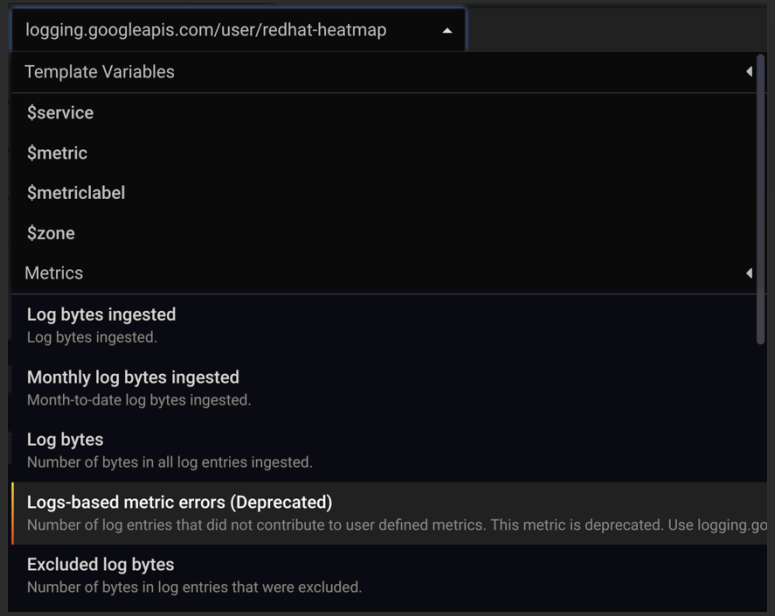
Stackdriver in Grafana

- Great to work with Google
- 1st datasource in React
- Can use Grafana alerting



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Oracle Cloud Infrastructure Datasource

Please welcome Mies Hernandez van Leuffen from Oracle

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ORACLE

Cloud Native Labs

Oracle Cloud Infrastructure Data Source for Grafana

Micha “mies” Hernandez van Leuffen
VP of Solution Development
@mies

#OracleCloudNative

cloudnative.oracle.com

Safe Harbor

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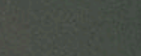
About me and Oracle Cloud Native Labs

- Founder and CEO of Wercker; container native CI/CD
- VP of Solution Development at Oracle Cloud Native Labs
- Build customer-deployable cloud native/container native solutions to bridge the gap between Oracle Cloud Infrastructure (OCI) and open source communities.

http://cloudnative.oracle.com


Oracle Cloud Infrastructure

Oracle Cloud Native Framework – Open **and** Integrated

Oracle Cloud Infrastructure Data Source for Grafana

- Data Source plug-in for the OCI Monitoring Services APIs
- Visualize data and metrics related to OCI resources
- Current metrics available:
  - Compute Agent, Block Store, LBaaS, VCN (Virtual Cloud Network)
- Supports local installation (Mac, Linux), Kubernetes & VM-based installation
- Easy configuration and setup

OCI Monitoring Services:

Telemetry service for operations staff, dashboard developers, and SRE, providing:

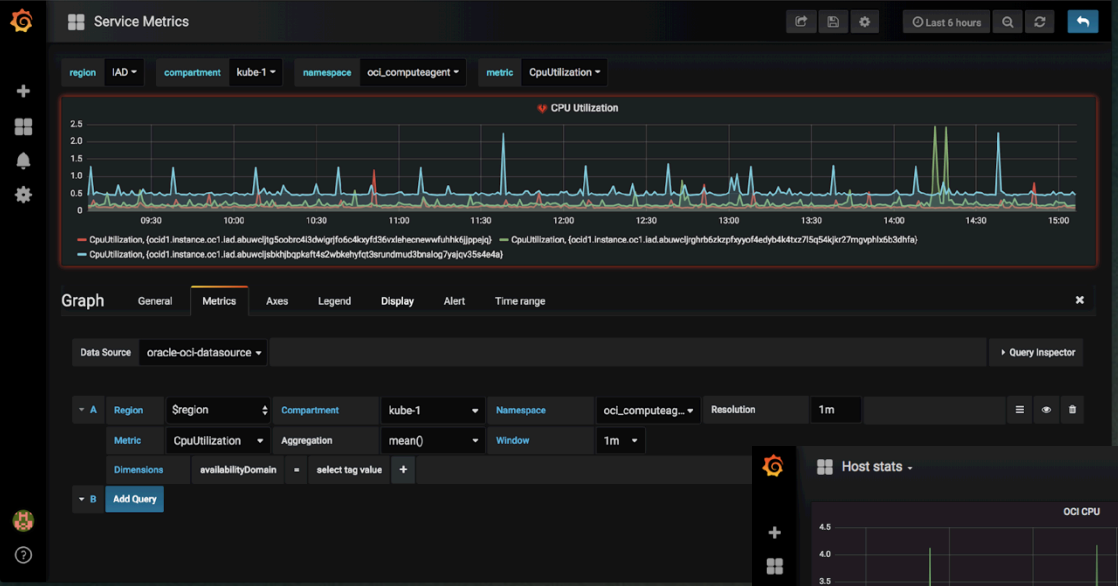
- Out of the box aggregated metrics for OCI services and resources
- Discover and retrieve metrics from Public Monitoring API
- Pre-configured dashboards in OCI console for visualization

https://www.trybooster.com/

Available in Grafana Marketplace and OSS at: https://github.com/oracle/oci-grafana-plugin

Docs : https://github.com/oracle/oci-grafana-plugin/tree/master/docs

Oracle Cloud Infrastructure Data Source for Grafana



Come see more dashboards at the booth!

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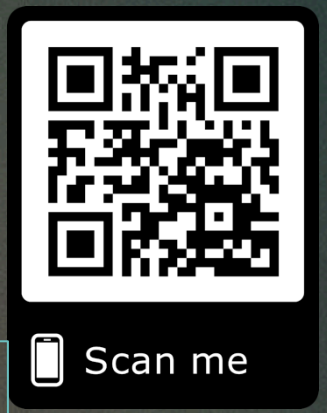
Scan QR code, or go to

http://bit.ly/Oracle-CNL-GrafanaCon19

https://cloud.oracle.com/en_US/tryit - 300 Hours Free!



Grafana Plugins - Year in Review

- Lots of new plugins
- Lots of updates and improvements to existing plugins

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So Many New Plugins - Datasources

- LinkSmart SensorThings (IOT)
- JSON (fork of the SimpleJson DS)
- Warp10 (IOT TSDB)
- Akumuli (new TSDB)
- DarkSky (weather)
- MetaQueries
- SumoLogic
- Thruk (Nagios, Icinga)

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So Many New Plugins - Panels

- ePict
- Statusmap
- Singlestat Math
- Windrose
- Boom table for Graphite
- Parity Report
- Traffic Lights
- Radar Graph
- SVG
- Multistat
- Annotations List

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Community Plugin Highlights - Zabbix Datasource

- Zabbix supports loadable modules
- Allows real-time history export into different databases
- InfluxDB added as Direct DB Connection datasource to plugin
- Can query history data directly from InfluxDB
- A big thanks to Gleb Ivanovsky for his Zabbix InfluxDB module - effluence

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Zabbix - new Problems Panel

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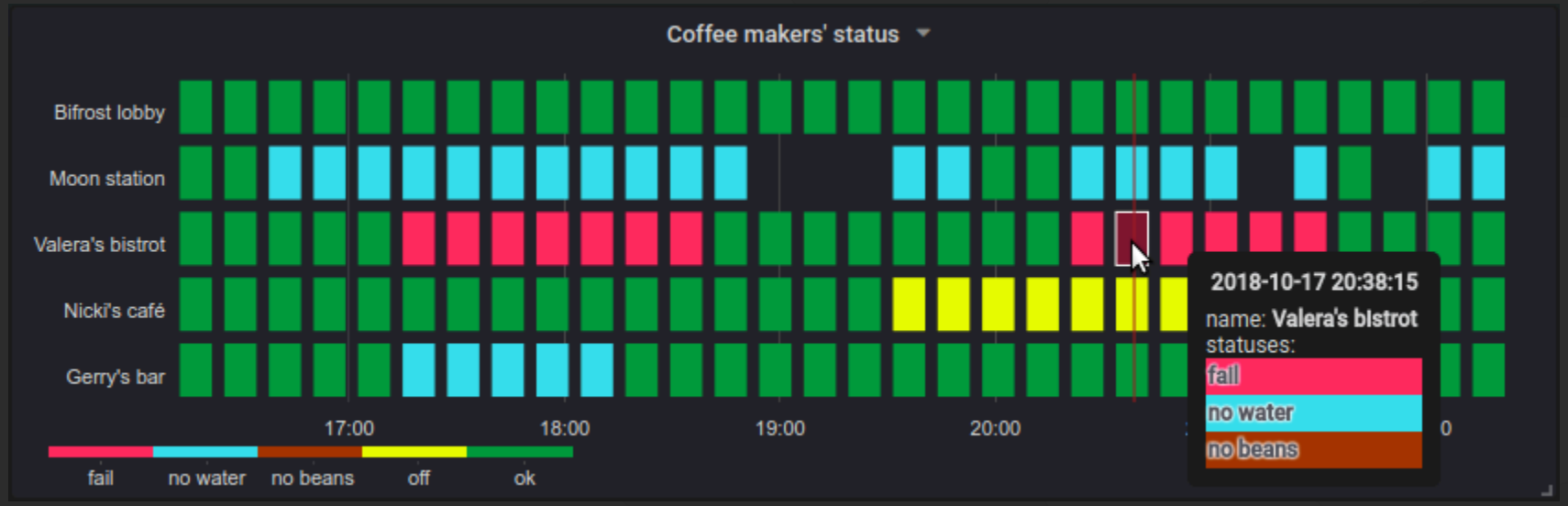
Multistat Panels - Statusmap



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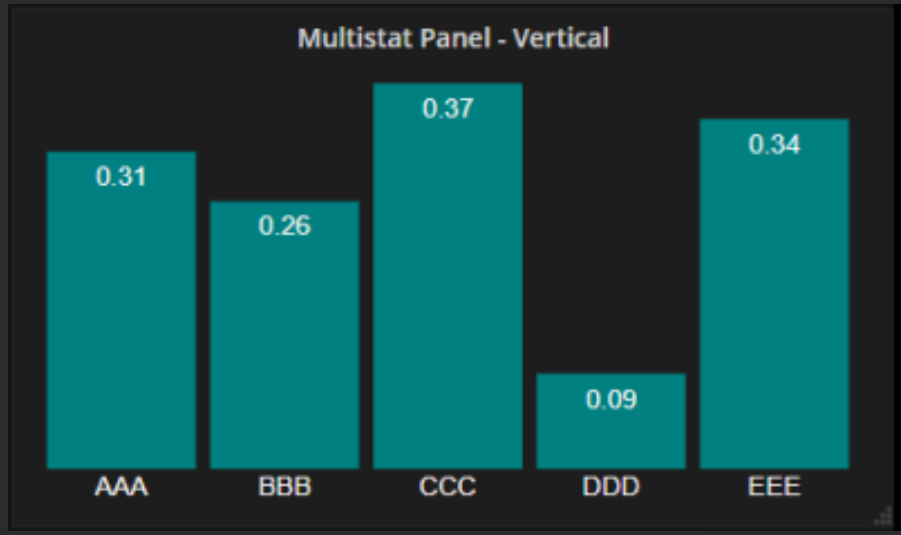
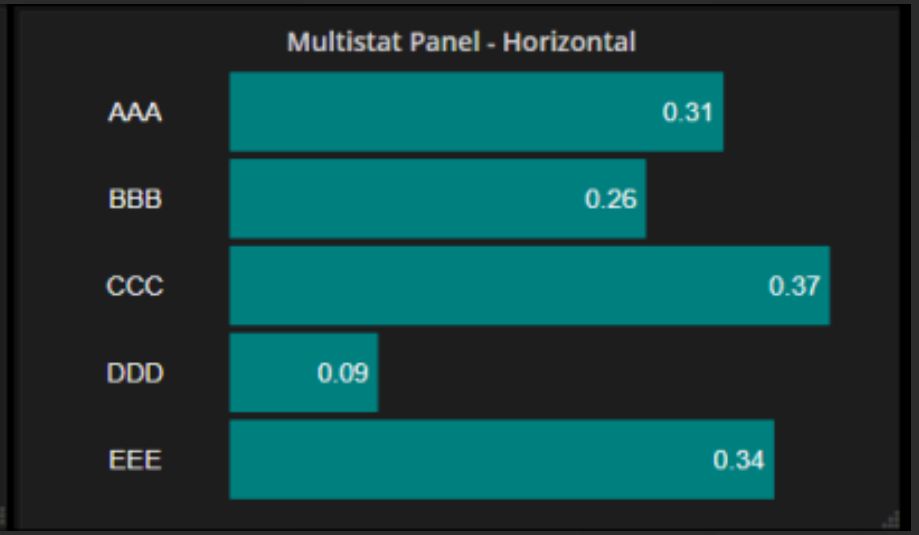
Multistat Panels - Multistat





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Multistat Panels - Parity Report

NETWORK REPORT

Name	Difference	Equation
Check 1	99.99%	23.96 GB = 2.00 MB
Check 3	77.27%	5.00 MB = 22.00 MB
Check 4	76.74%	5.00 MB = 21.50 MB
Check 2	60%	5.00 MB = 2.00 MB
Check 5	60%	5.00 MB = 2.00 MB
Check 6	60%	5.00 MB = 2.00 MB

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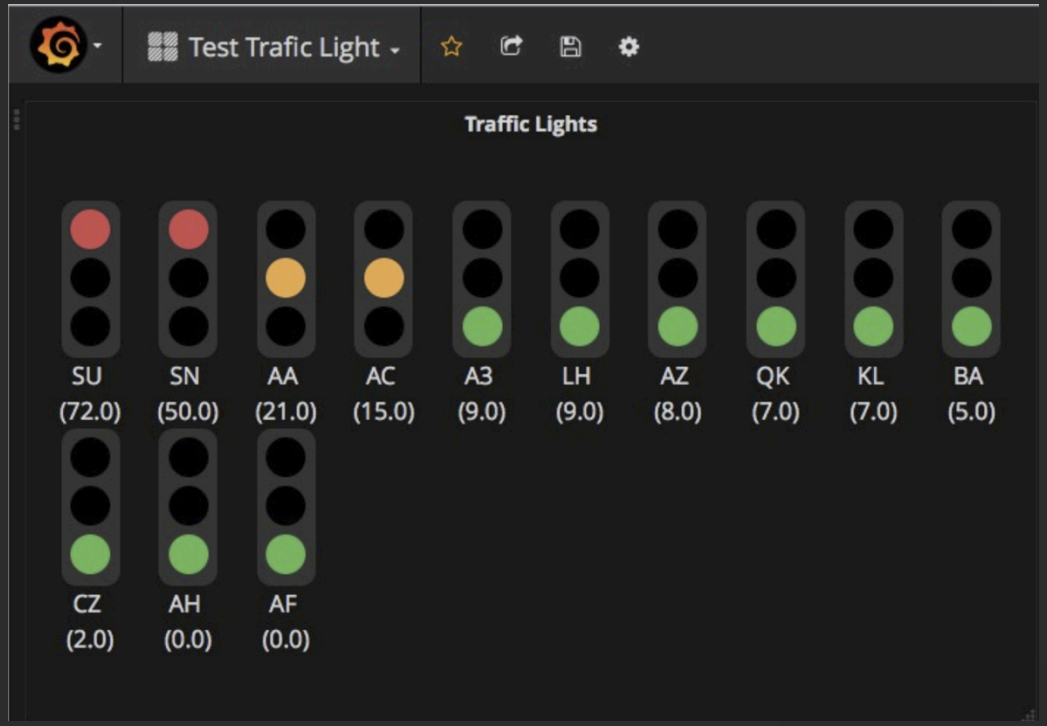
Multistat Panels - Traffic Lights



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Multistat Panels - Boom Table

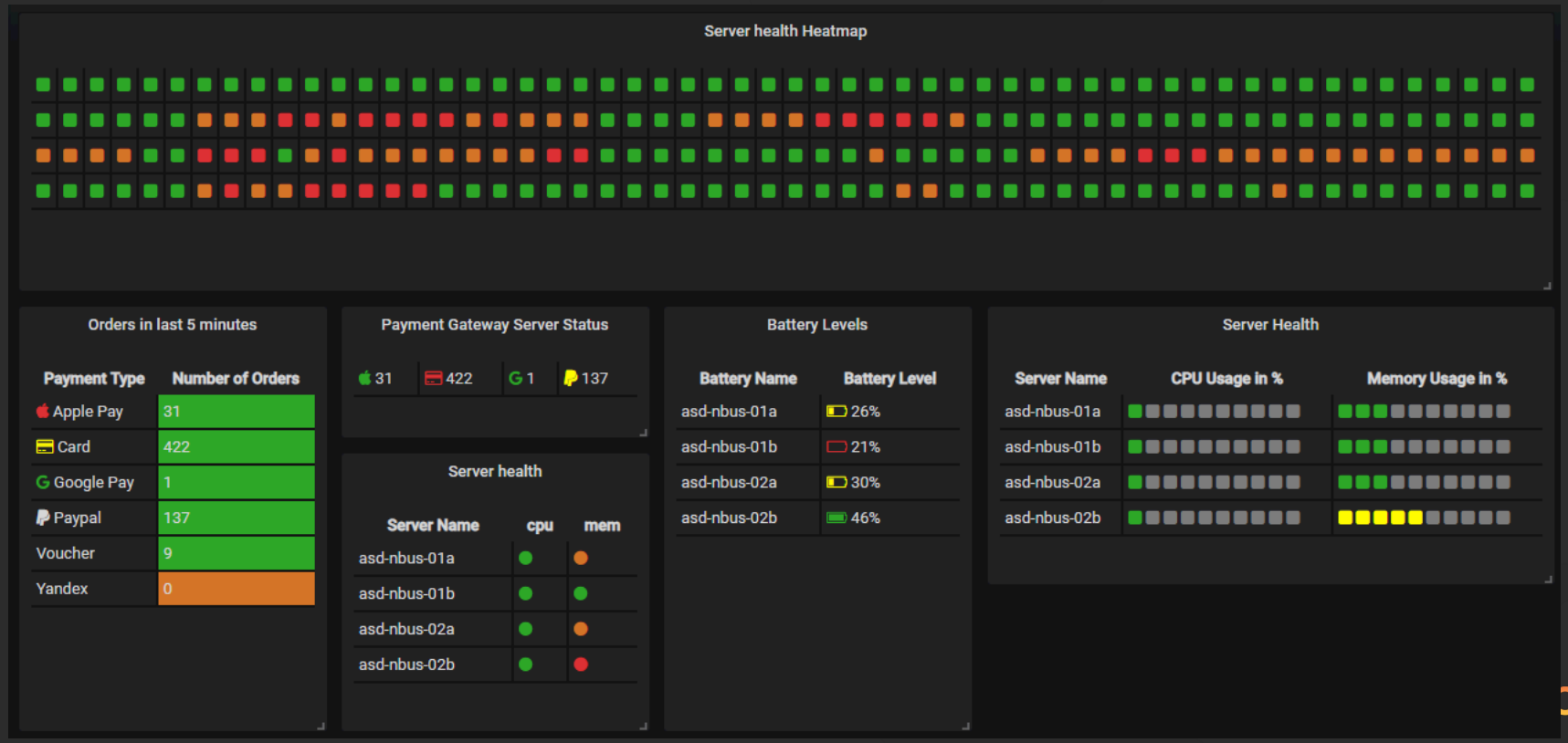
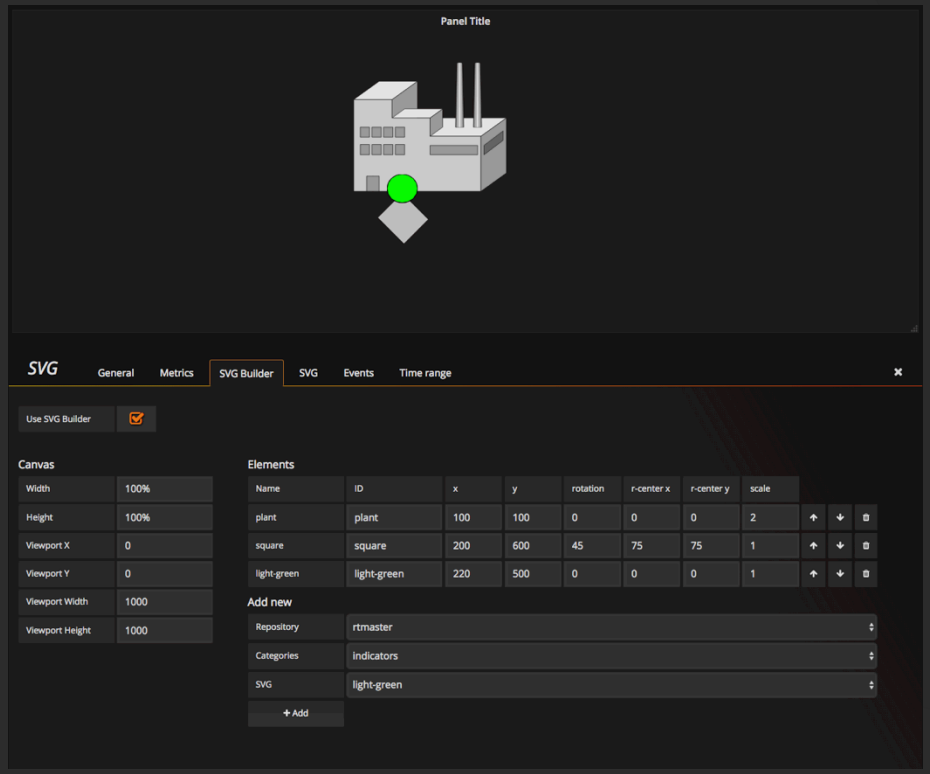
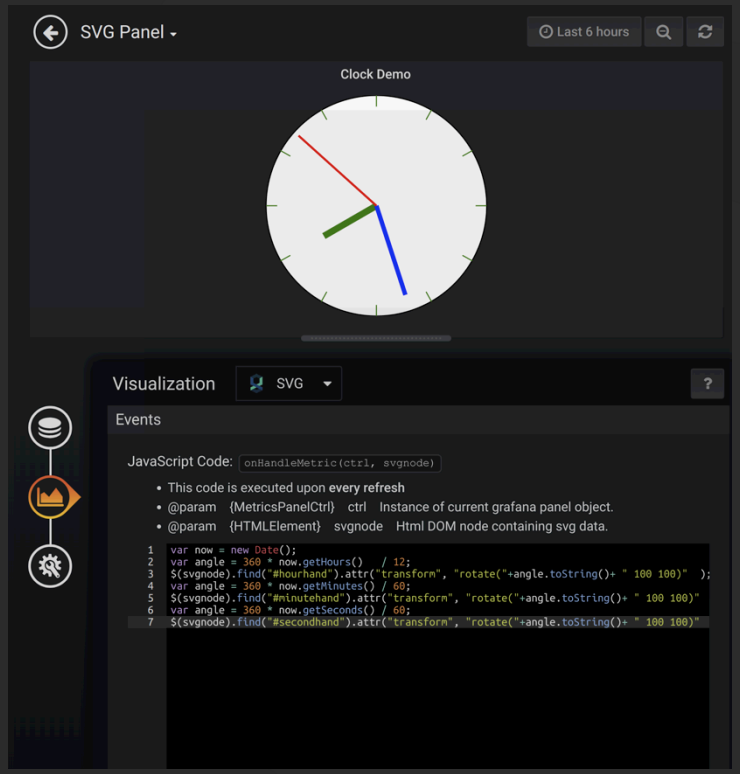
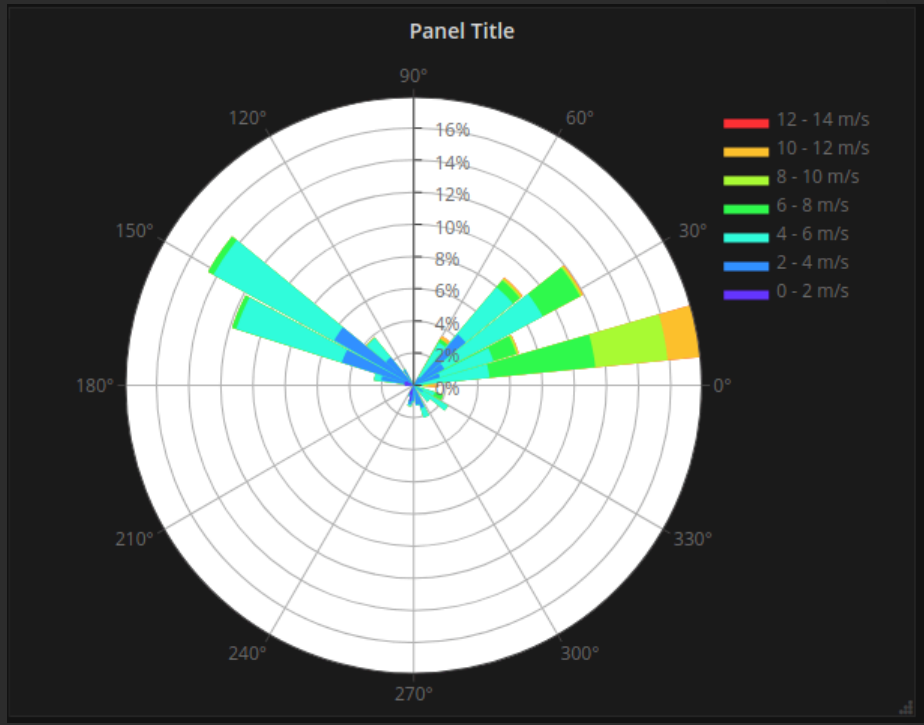


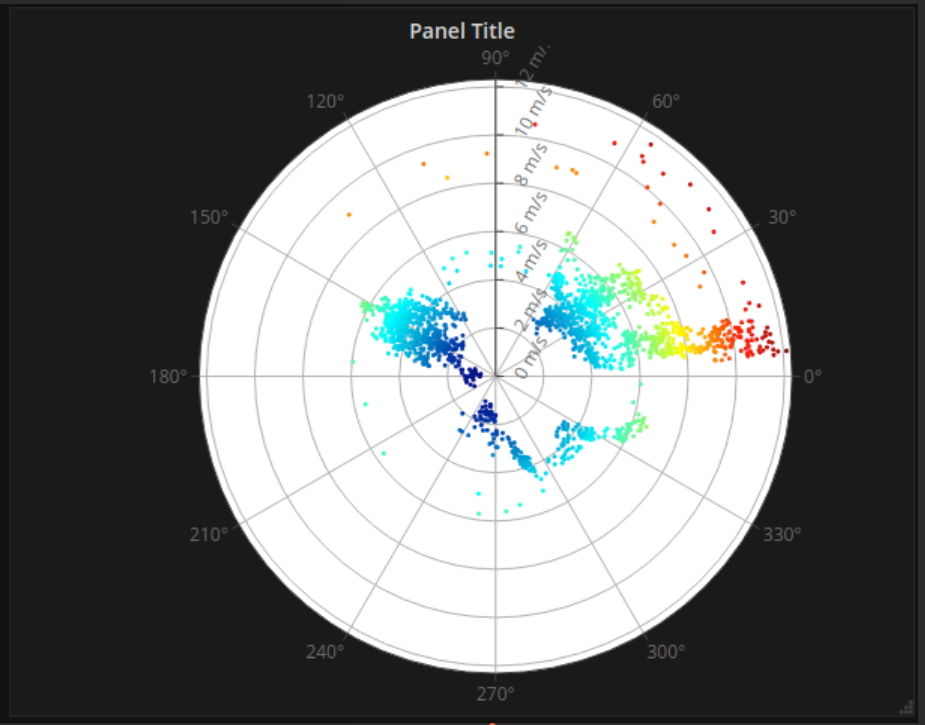
Image Panels - SVG





Weather - Windrose Panel





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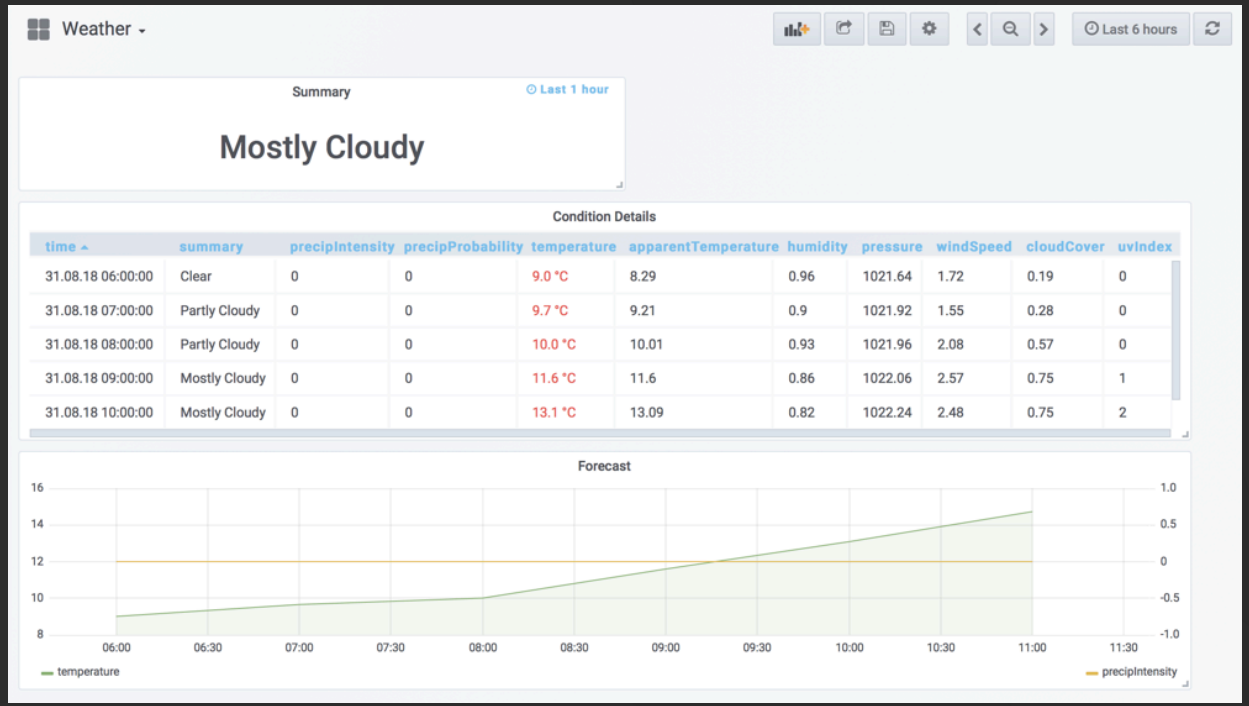
Weather - Darksky Datasource



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New Plugins From Grafana Labs

- Azure Data Explorer Datasource
- Polystat Panel
- Flux (InfluxDB) Datasource
- Sensu App

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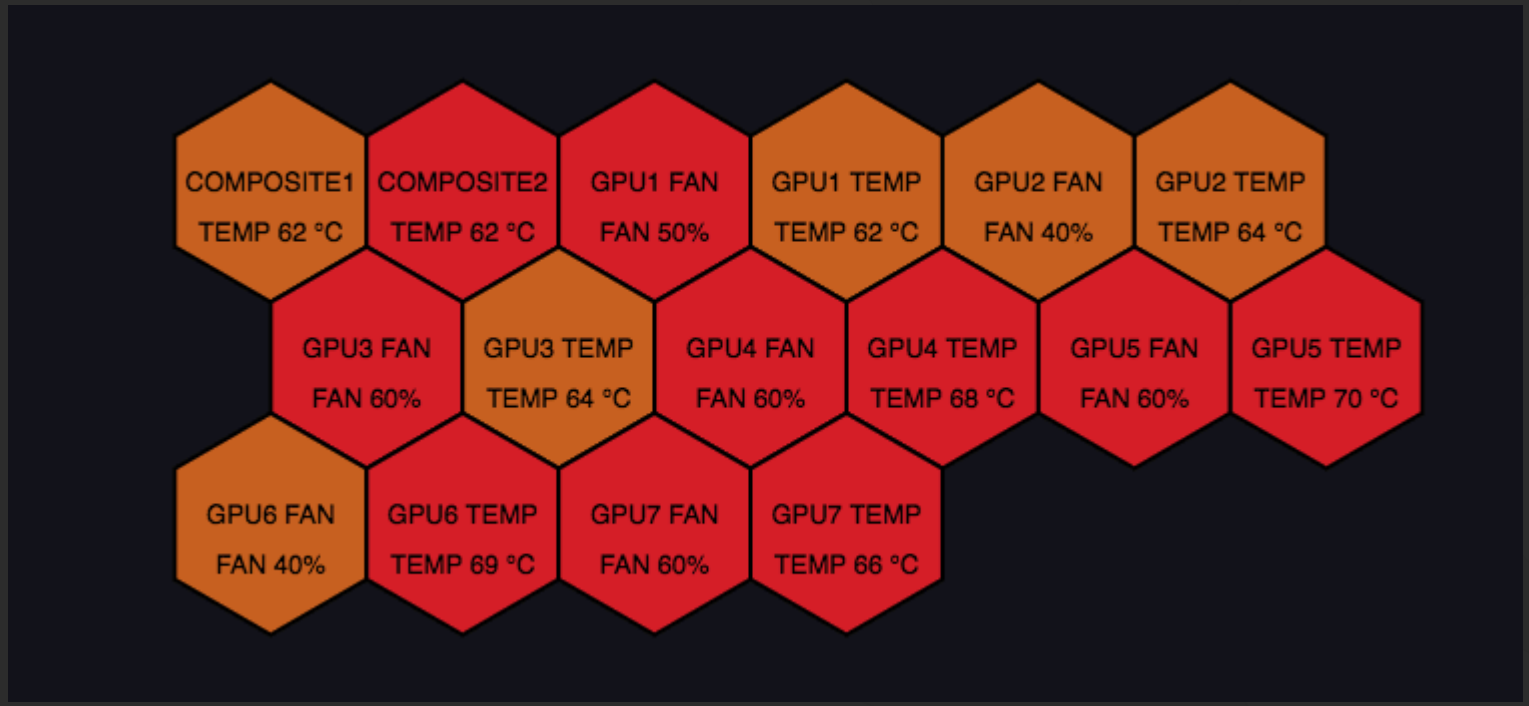
Polystat Panel



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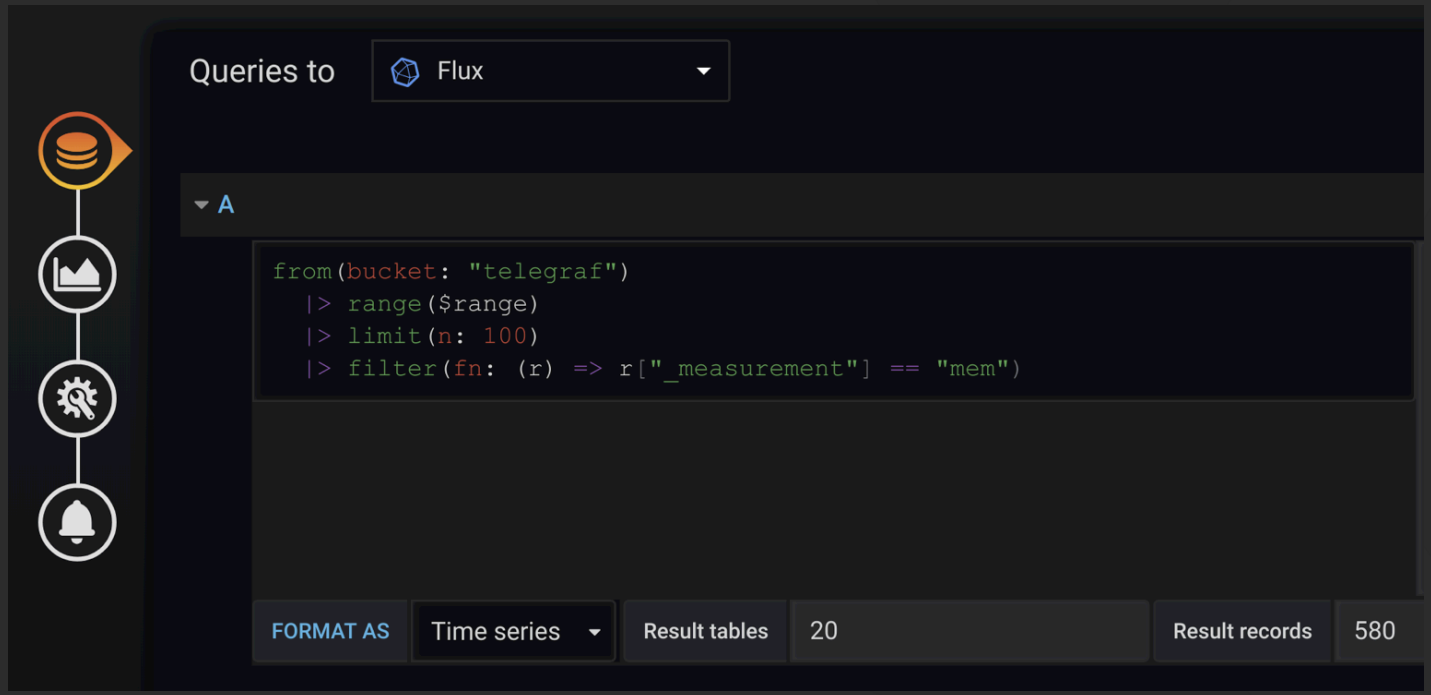
Flux Datasource



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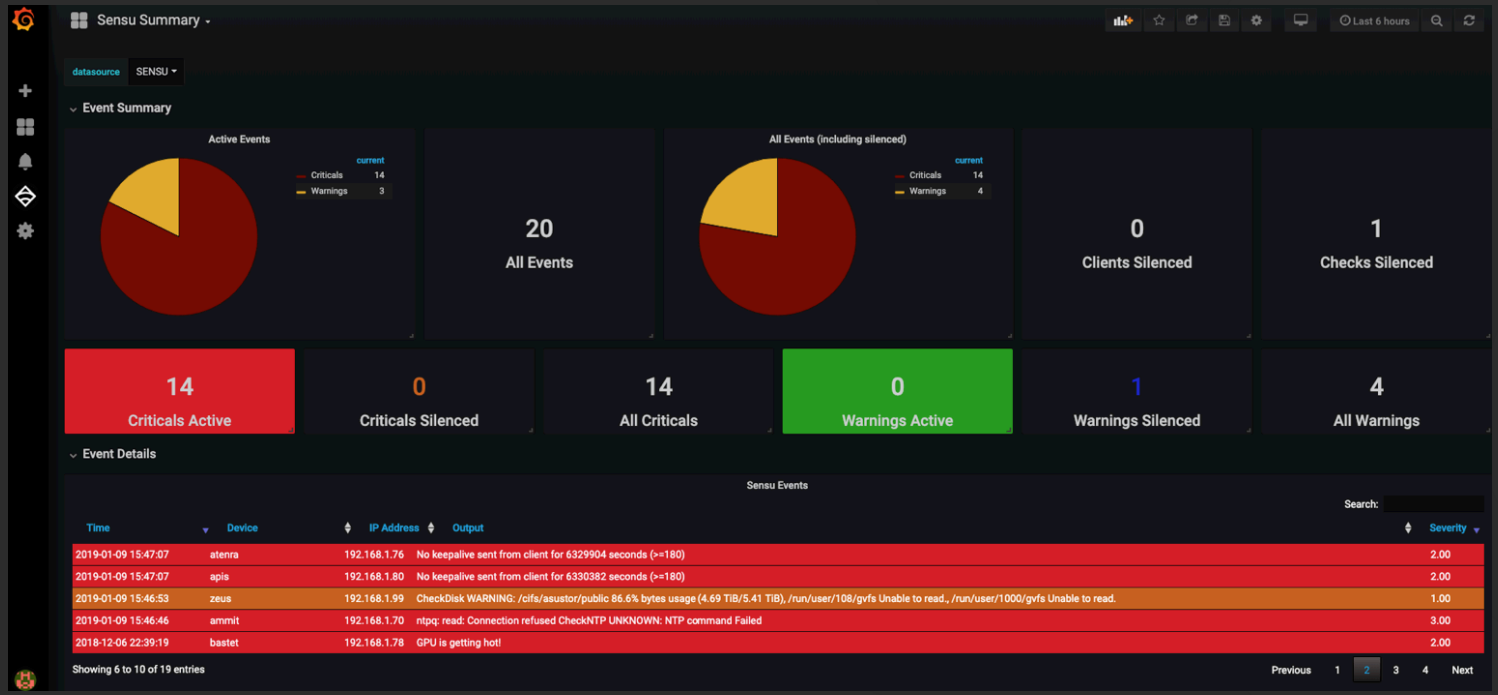
Sensu App



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Improvement areas for Plugin Development

- Plugins have been a huge success but...
- Datasources can’t use Grafana alerting
- Lack of reusable components
- Lack of TypeScript typings
- No rules or guidance on building plugins
- Grafana is being converted to React, what happens with plugins?

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The Future of Plugins - Backend Plugins

- Hooks and extension points are incredibly useful
- Currently all plugins are frontend only
- New backend plugins
  - Backend component for datasource plugins
  - Alert Notifiers
  - Pluggable alerting engine

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Our not-so-secret secret

- Backend plugins for datasources is already in Grafana
  - but not quite ready
  - Documentation needs to be written
  - Continuous Integration for binaries (Linux, Darwin and Windows)
  - Some plugins are already using this feature:
    - Oracle OCI Datasource
    - Consul Datasource
    - AWS Cloudwatch Logging Datasource

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The Future of Plugins - React and @grafana/ui

- New UI component library being created while migrating Grafana to React
- Used for building Grafana and for React plugins
- Published to npm as an alpha last week

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Build your own React plugin - Gauge Component

```tsx
import React, { PureComponent } from 'react';
import { Gauge, PanelProps } from '@grafana/ui';

interface Options {
  serverName: string;
}

interface Props extends PanelProps<Options> {}

export class Panel extends PureComponent<Props> {
  render() {
    const { options, width, height } = this.props;
    return (
      <div>
        <h2>Server {options.serverName}</h2>
        <Gauge
          value={10}
          width={width}
          height={height}
          minValue={0}
          maxValue={100}
          />
      </div>
    );
  }
```

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Work with us on plugins

- Plugins are a huge part of Grafana's future
- We want to build a larger plugins community
- Want to improve existing plugins (including core plugins)
- (And we're hiring - we are remote-first and focused on open-source)

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Summary

- All major cloud providers have support in Grafana
- Loads of great plugins to help you integrate with Grafana and visualize your data
- React plugins and the @grafana/ui library will make creating plugins easier
- New hooks and plugin types coming for the Grafana backend

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Workshops Tomorrow

- Extending Grafana
- Torkel and Peter will demonstrate the new @grafana/ui library

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