



# Monitoring and Alerting with Prometheus and Grafana

24 March 2020



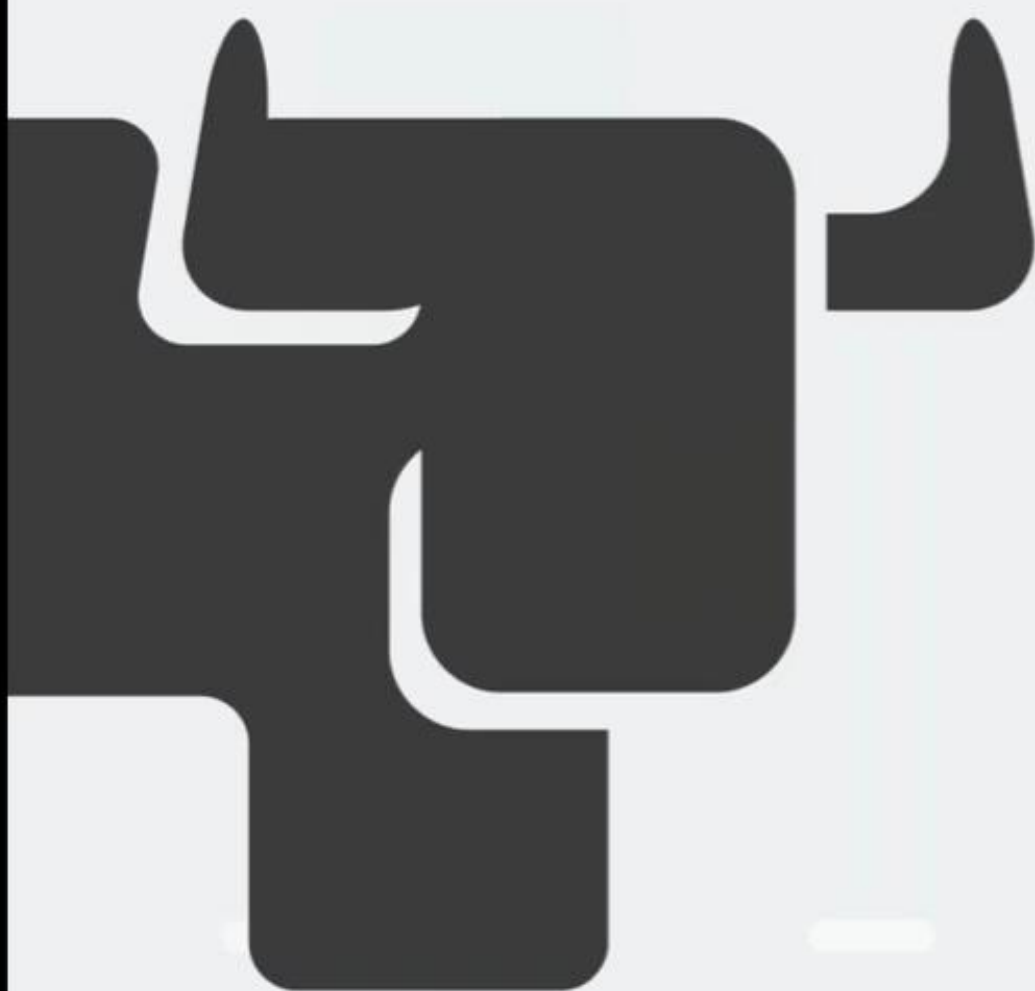
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## Rancher Master Class Series:

- 60 – 75 Minutes
- Questions are always welcome
- Use the questions tab to write your questions
- We may respond to all, so mark your question as private if needed.

# This session is being recorded!



Introducing Rancher's New Multi-Tenant Prometheus Support

RANCHER

#RancherMeetup • December 19, 2018

0:05 / 1:39:01

### Online Meetups and Webinars

Rancher Labs - 1 / 37

- ▶ December 2018 Online Meetup: Introducing Rancher's New Multi-Tenant Prometheus Support
- 2 November 2018 Online Meetup: Building an Application Catalog with Rancher Labs
- 3 October 2018 Online Meetup: Migrating from Rancher 1.6 to Rancher 2.0
- 4 September 2018 Online Meetup: Understanding Storage Options for Rancher Labs
- 5 August 2018 Online Meetup: Building a CI/CD Pipeline with Kubernetes and Rancher Labs
- 6 June 2018 Online Meetup: Kubernetes Networking Master Class

<http://youtube.com/c/rancher>

# Join the conversation on Slack

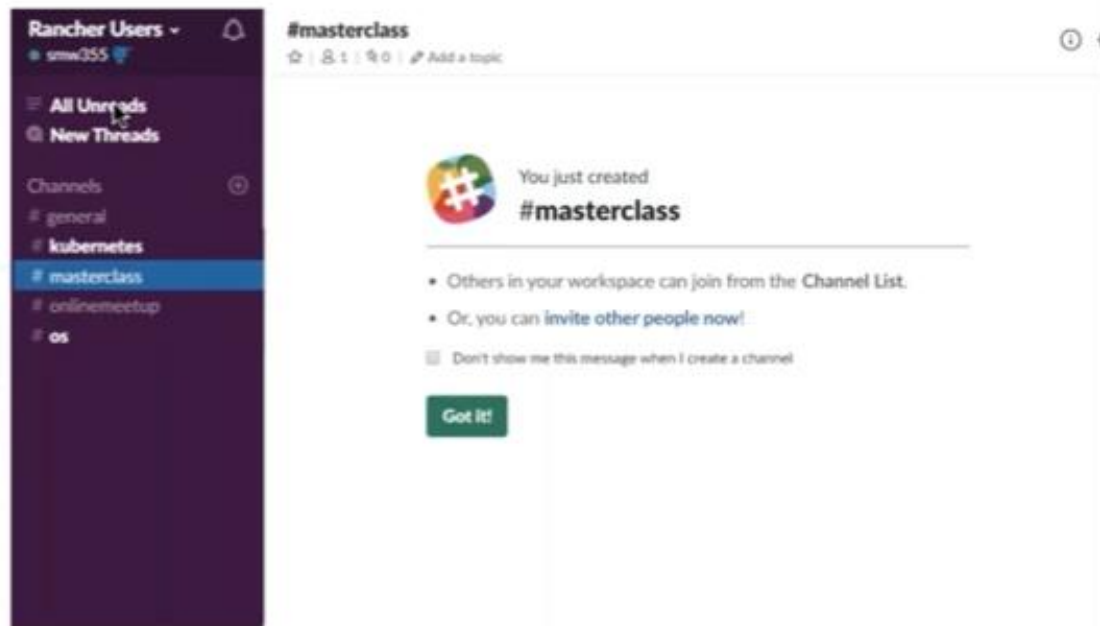


Join **Rancher Users** on Slack.  
132 users online now of 8266 registered.

**GET MY INVITE**

[or sign in.](#)

<http://slack.rancher.io>



The screenshot shows a Slack workspace named "Rancher Users". The left sidebar lists channels: #general, #kubernetes, #masterclass (selected), #onlinemeetup, and #os. The main area shows the #masterclass channel with a message: "You just created #masterclass". Below the message are two bullet points: "Others in your workspace can join from the Channel List." and "Or, you can [invite other people now!](#)". There is also a checkbox option "Don't show me this message when I create a channel" and a "Got it!" button.

[#masterclass](#)





# Monitoring and Alerting With Prometheus & Grafana

Eamon Bauman  
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03/24/2020

## Prometheus & Grafana – What Are They?

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### Basic concepts

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### Deploy Prometheus & Grafana

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### Rancher Monitoring

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Here's what we're doing today.

# Prometheus & Grafana – what are they?

- Prometheus – Time-series database and monitoring system
  - Stores “metrics” over a period of time
  - Allows for querying of metrics using expressive language (PromQL)
  - Generates alerts based on criteria
  - Exports metrics from nodes (in Kubernetes)
- Grafana – Visualization tool
  - Build visualizations of Prometheus metrics
  - Import other data sources (e.g. Elasticsearch, MySQL) and visualize
  - Create complex visualizations from several data sources
  - Compile visualizations into dashboards and other groupings



# Prometheus

- Time-series database
  - Tracks changes to a metric over time
- Collects metrics from many sources
  - Clients
  - Exporters
    - Kubernetes
    - Nodes
- Generates alerts based on criteria
  - Criteria are called “rules”
  - “Receivers” are where the alerts go

# Grafana

- Build visualizations of Prometheus metrics
  - Connect Grafana to Prometheus
  - Build visualizations using PromQL queries
- Build visualizations of other metrics
  - Connect Grafana to other sources (e.g. MySQL)
- Combine data sources to build complex visualizations

## Deploying Prometheus & Grafana

Super easy – Helm charts!

# Configuring Prometheus & Grafana

.....not so super easy.

# Raise your right hand

... and repeat after me

I, Webinar Attendee, do solemnly swear  
not to hold Eamon Bauman responsible  
for any mishaps that occur during this live demo.

**So Helm me Kubernetes**



# What did we just do?

- Deployed Prometheus
  - Explored basics of the tool
  - Saw how Kubernetes metrics were auto-imported
  - Discussed how alerts could be created
- Deployed Grafana
  - Explored the dashboard
  - Connected Grafana to Prometheus
  - Added our first visualization

# Let's deploy Prometheus And Grafana!

(from scratch)

# What would we still need to do?

- Prometheus
  - Wire up metric sources from other things
    - kube-state-metrics
    - Custom sources
  - Build alerting rules
- Grafana
  - Build all visualizations
  - Build all dashboards
  - Integrate with other data sources

# Rancher Monitoring

- Rancher...
- ...deploys Prometheus and related exporters (node, kube state)
- ...deploys Grafana and wires up the Prometheus data source\
- ...configures visualizations in Grafana
- ...configures dashboards in Grafana
- ...imports visualizations into the Rancher UI
- ...makes available alerting configurations via Rancher UI/API
  
- All with three clicks.

## Rancher Monitoring

Telling is nice. Showing is better.

Demo time!



# Rancher Monitoring - Recap

- Rancher deploys Prometheus & Grafana
- Rancher sets up metrics and visualizations on your behalf
- Visualizations are imported into the Rancher UI
  - Cluster-level
  - Workload-level
- You can configure alerting rules and notifiers in the Rancher UI/API
- You can enable *Monitoring* in the Cluster or Project context

## Where to learn more / get more help?

- Rancher Users' Slack: <https://slack.rancher.io/>
- Rancher Forums: <https://forums.rancher.com/>
- GitHub Repo: <https://github.com/rancher/rancher>



# Thank you!

Find me on GitHub – ebauman