

# #monitoring



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My favourite question is “yes, but why?”









# What am I going to cover today?

1. Monitoring - why and what?
2. Prometheus - an introduction
3. Demo
4. Alerting - best practices



# Why monitor?



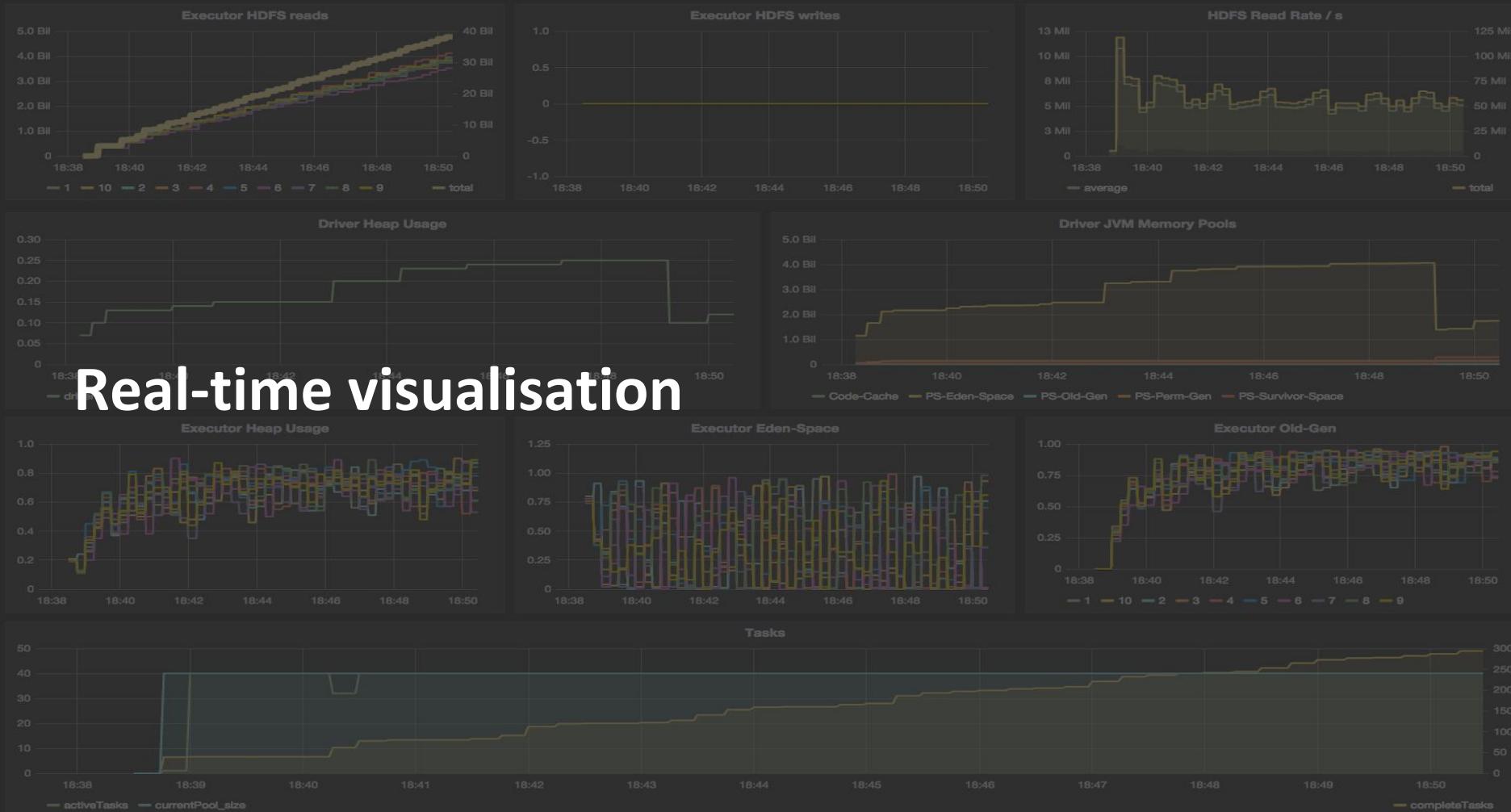


# Analyse long term trends

A close-up photograph of a red fire alarm button. The word "FIRE" is printed vertically in white capital letters on the left side of the button. The button itself is a light gray color with a slightly recessed circular center. The background is dark and out of focus.

# Pro-active alerting

application\_ID: application\_1443599818521\_3111 ▾





Data-driven decisions



What is broken & why is this?

# What to monitor?



# Hosts

CPU, memory, I/O, Network, File System

The background of the slide features a dense, sprawling stack of shipping containers in various colors like blue, red, green, and white, filling the entire frame. They are stacked in multiple layers, creating a complex geometric pattern.

# Containers

CPU, memory, I/O, Restarts

# Applications

Throughput, Latency

# The Four Golden Signals



# Latency

The time taken to serve a request.

# Traffic

A measure of how much demand is being placed on the system.

# Errors

The rate of requests which fail (e.g. HTTP 400s)

404

This is not the  
web page you  
are looking for.



A close-up photograph of a glass filled with red wine. The wine is shown in motion, swirling around the glass, which creates a dynamic, flowing effect. The color of the wine is a rich, deep red, with some lighter, almost orange, highlights where it catches the light. The glass itself is clear and appears to be a standard wine glass.

# Saturation

How full your service is.

# Prometheus



# Prometheus

Greek god who was the protector and benefactor of mankind

# Prometheus



- Heavily inspired by Borg
- Built by ex-googlers at Soundcloud
- Pull-based (scrapes at regular intervals, no direct access to system )
- A multitude of possible integrations
- 2nd project donated to the CNCF

# What is Prometheus?

- Monitoring system and time-series database
- Instrumentation
- Metrics collection and storage
- Querying
- Alerting
- Visualisation (using a tool like Grafana)

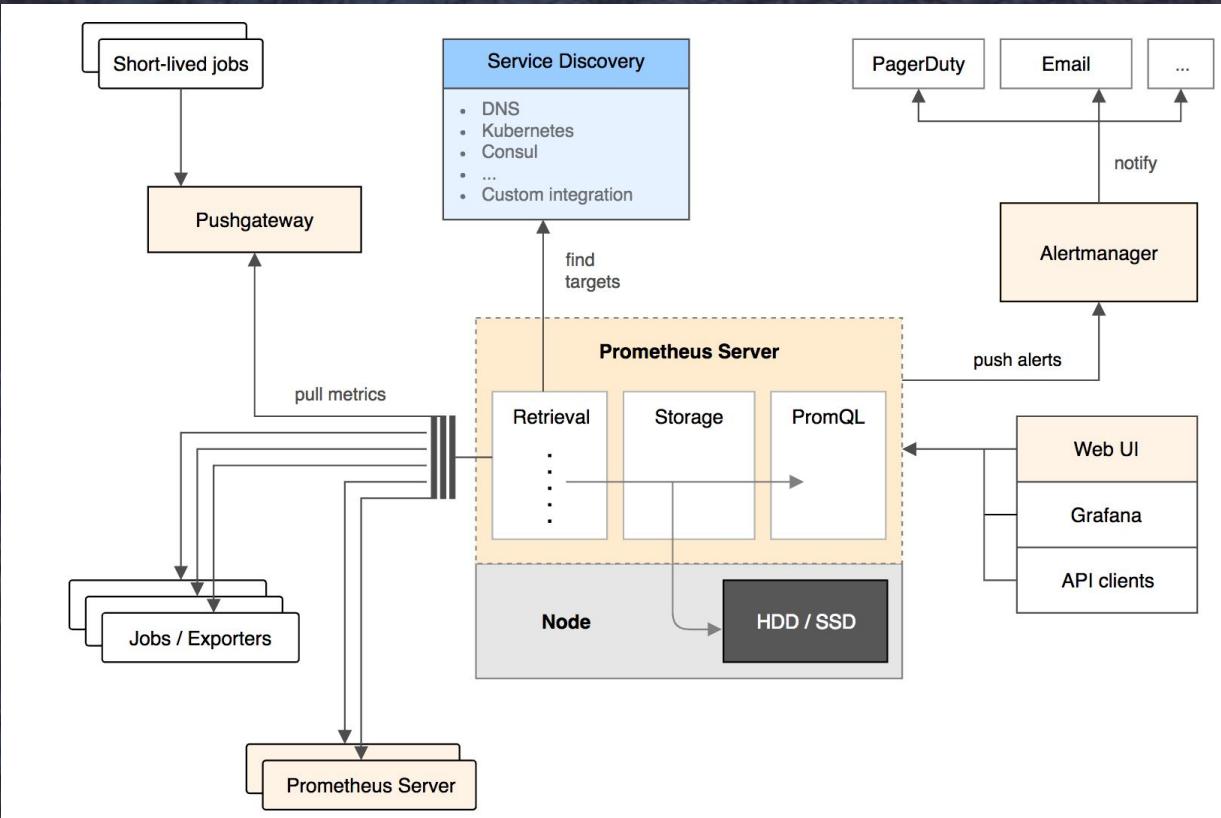
# Prometheus focuses on

- Operational systems monitoring
- Dynamically changing cloud-native environments
- Providing a standardised way to collect application metrics in Kubernetes.

# Prometheus does not do ...

- Logging (use the EFK stack)
- Request tracing (use a tool like Zipkin or OpenTracing)
- “Magic” anomaly detection
- Durable long-term storage
- Automatic horizontal scaling

# Prometheus architecture





# Prometheus Query Language (PromQL)

- Non-SQL query language
- Better for metrics consumption
- Only does reads

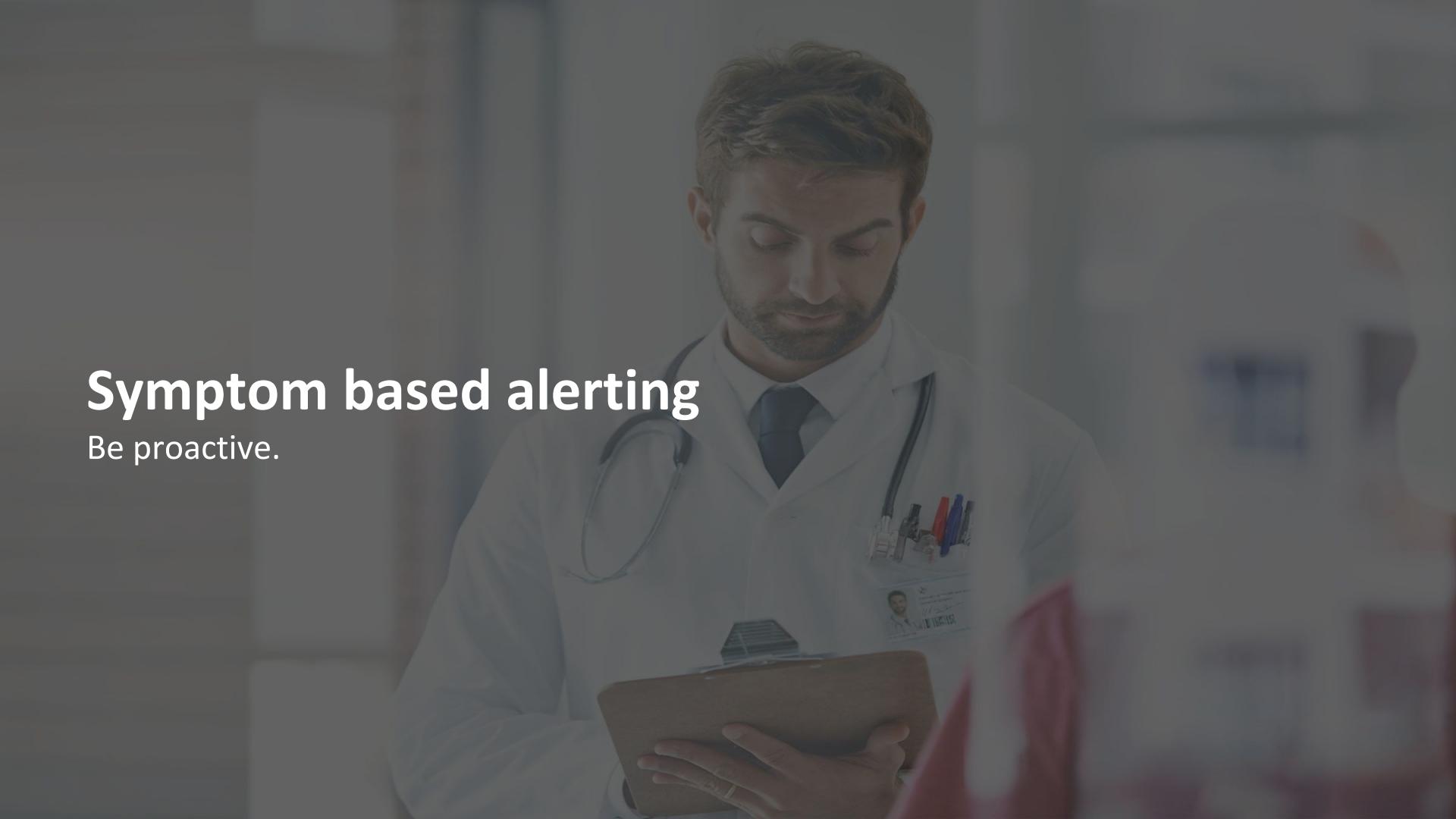


## Demo time

<https://github.com/swade1987/google-developer-group-demo>

# Alerting tips



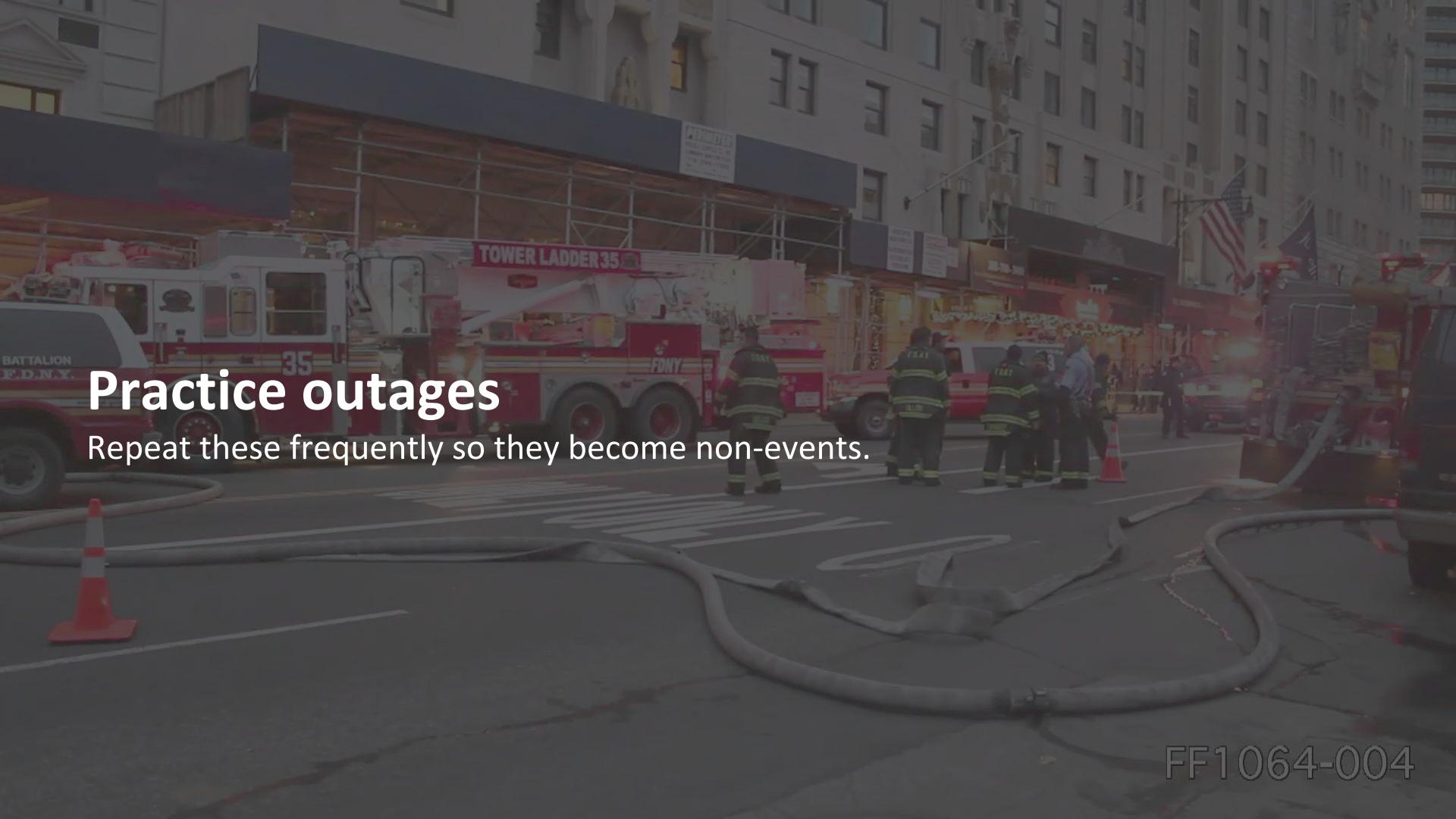
A doctor with light brown hair and a beard, wearing a white lab coat and a stethoscope, is looking down at a clipboard he is holding with both hands. He appears to be reviewing patient information. The background is a blurred hospital or clinic setting.

# Symptom based alerting

Be proactive.

## Provide runbooks

Keep them concise but accurate

A photograph of a fire scene in a city. In the foreground, a red and white FDNY fire truck is parked on a street. The words "TOWER LADDER 35" are visible on its side. Several firefighters in dark uniforms with reflective stripes are standing near the truck. A large, coiled grey hose lies across the asphalt. In the background, there's a multi-story building under construction with scaffolding. An American flag is flying from a pole. The overall atmosphere is one of an active emergency response.

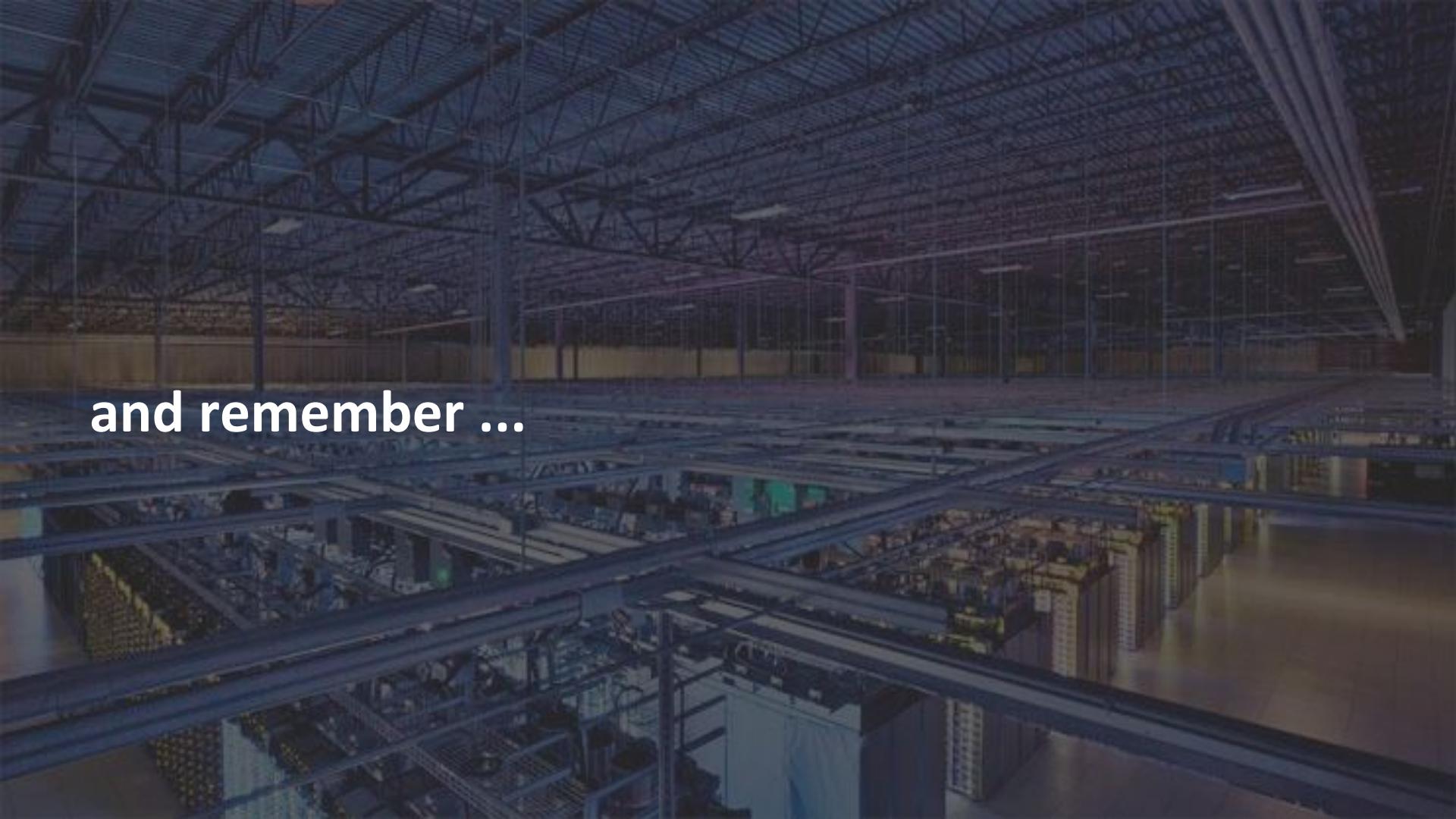
# Practice outages

Repeat these frequently so they become non-events.

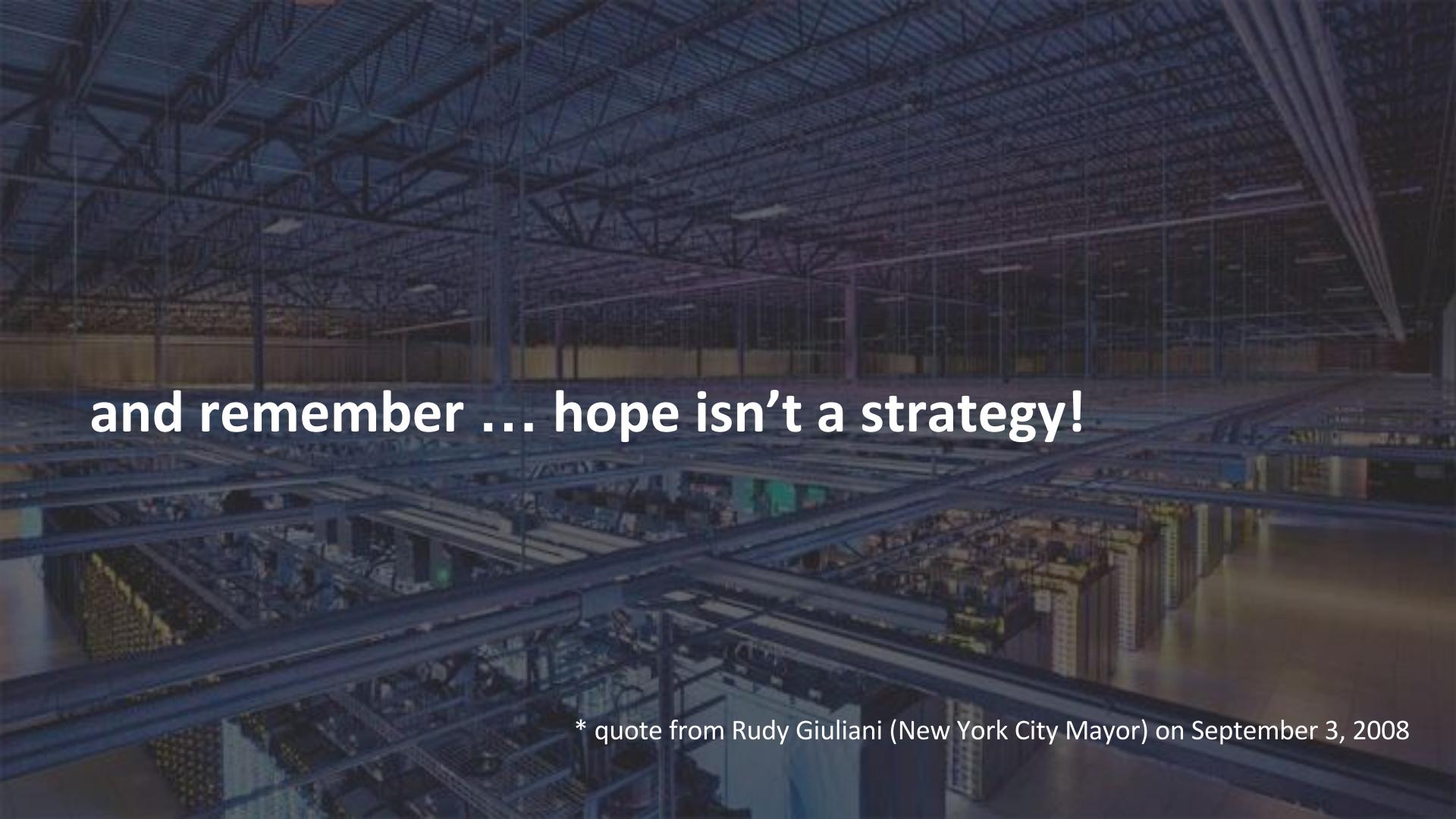
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A photograph of two firefighters in a smoky, outdoor environment. One firefighter is in the foreground on the left, wearing a dark uniform and a helmet with a headlamp, holding a fire extinguisher. Another firefighter is partially visible behind him on the right. The scene is filled with smoke and fire, with palm trees visible in the background.

**Start being proactive, stop being firefighters**

A nighttime aerial photograph of a complex highway interchange with multiple levels of roads and overpasses. The scene is illuminated by streetlights and the headlights of moving vehicles, creating a grid-like pattern of light against the dark sky. In the background, there are some buildings and a body of water.

and remember ...

The background of the slide is a photograph of a city at night, likely New York City, showing a complex network of elevated highways and skyscrapers. The lights from the buildings and traffic create a grid-like pattern against the dark sky.

and remember ... hope isn't a strategy!

\* quote from Rudy Giuliani (New York City Mayor) on September 3, 2008

# THANK YOU



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<https://github.com/swade1987/google-developer-group-demo>

<https://github.com/apprenda/kismatic/>