



オブザーバビリティの哲学



Richard "RichiH" Hartmann

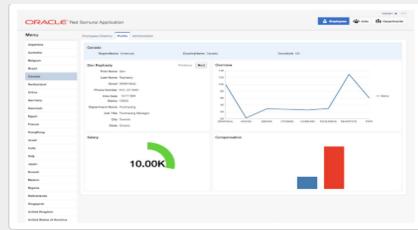
経歴

- Grafana Labs シニア・デベロッパープログラム・ディレクター
- Prometheus チームメンバー(CNCF 卒業プロジェクト)
- OpenTelemetry 投票メンバー(CNCF インキュベーションプロジェクト)
- 過去の経歴:
 - CNCF 運営委員会
 - CNCF 技術監督委員会
 - CNCF Observability 技術諮問グループ 議長
- 参加者100名から18,000名規模のカンファレンス運営を支援
 - DENOG, DebConf, FOSDEM, CCC, GrafanaCon, PromCon

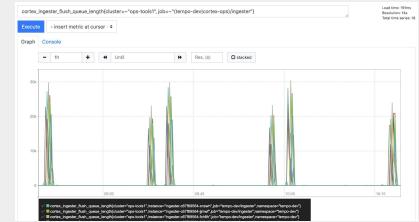
私たちが直面する現実：

散在するシステム、散在するデータ。

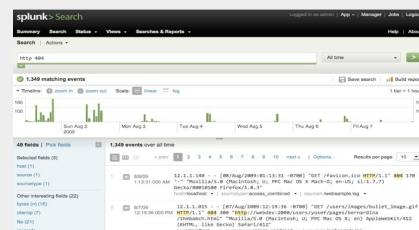
ORACLE®



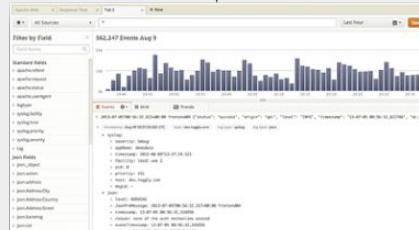
APPDYNAMICS



Grafana



splunk>

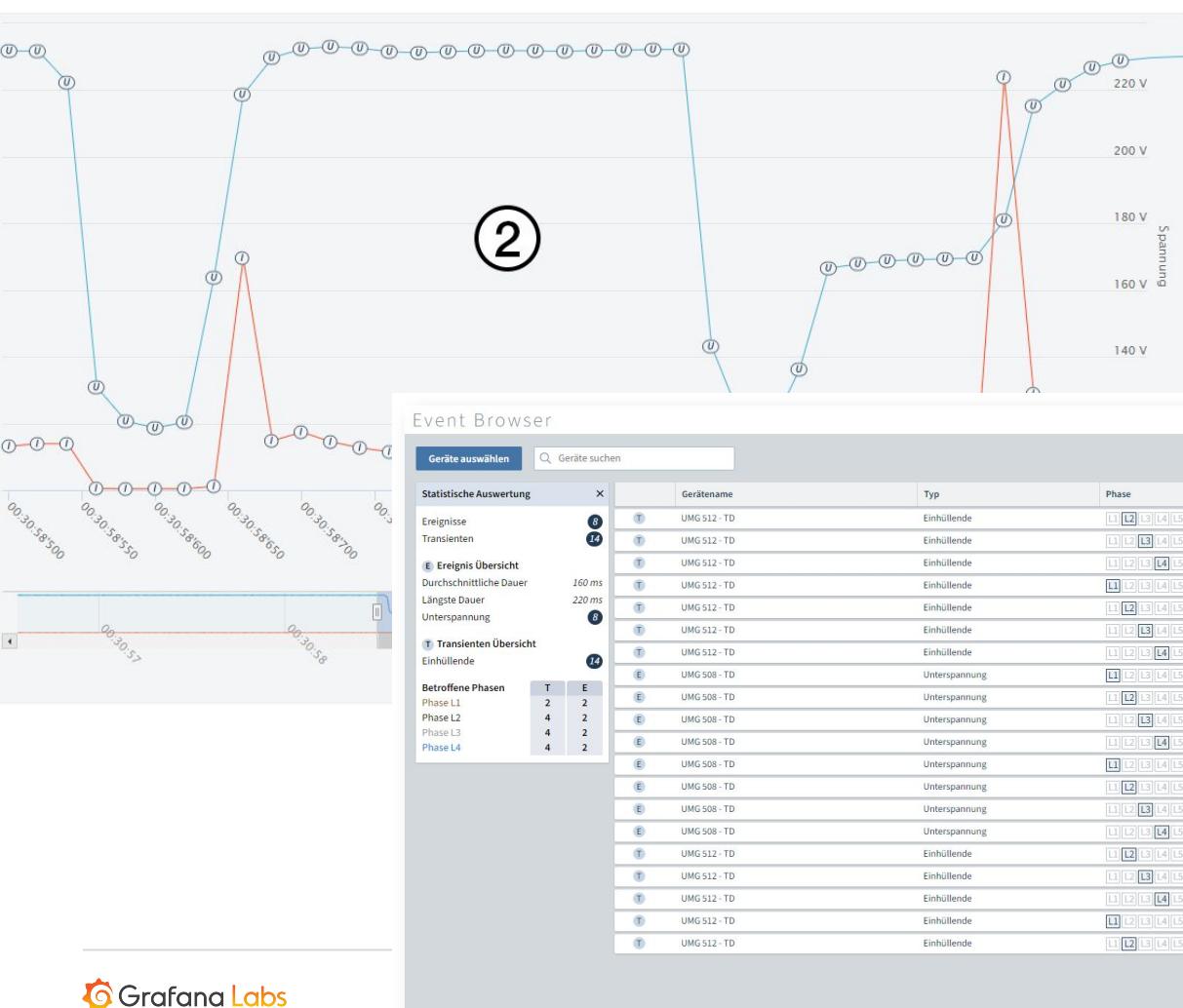


elasticsearch

基本的に立ち返る

改めて考えてみましょう

人類はデータとどう向き合ってきたか



2

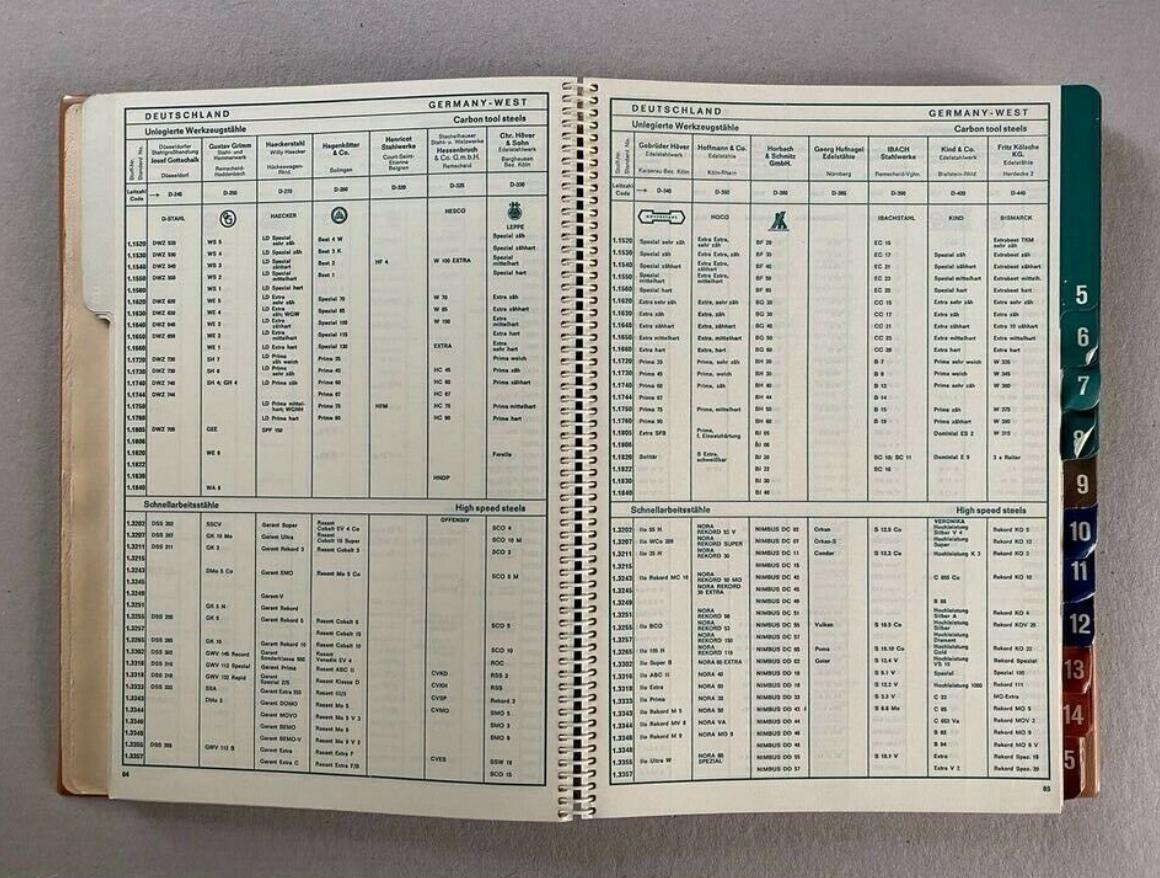
Event Browser

Geräte auswählen

Geräte suchen

Statistische Auswertung		
Ergebnisse	8	8
Transienten	14	14
E Ereignis Übersicht		
Durchschnittliche Dauer	160 ms	
Längste Dauer	220 ms	
Unterspannung	8	8
T Transienten Übersicht		
Einheitlinie	14	14
Betroffene Phasen		
Phase L1	2	2
Phase L2	4	2
Phase L3	4	2
Phase L4	4	2

Gerätename	Typ	Phase	Start ▾	Ende	Dauer	Wert
UMG 512 - TD	Einhüllende	[L1][L2][L3][L4][L5][L6]	19.12.2019 01:15:40'663
UMG 512 - TD	Einhüllende	[L1][L2][L3][L4][L5][L6]	19.12.2019 01:15:40'663	Analysieren
UMG 512 - TD	Einhüllende	[L1][L2][L3][L4][L5][L6]	19.12.2019 01:15:40'663	Analysieren
UMG 512 - TD	Einhüllende	[L1][L2][L3][L4][L5][L6]	19.12.2019 01:15:39'345	Analysieren
UMG 512 - TD	Einhüllende	[L1][L2][L3][L4][L5][L6]	19.12.2019 01:15:39'345	Analysieren
UMG 512 - TD	Einhüllende	[L1][L2][L3][L4][L5][L6]	19.12.2019 01:15:39'345	Analysieren
UMG 512 - TD	Einhüllende	[L1][L2][L3][L4][L5][L6]	19.12.2019 01:15:39'345	Analysieren
UMG 508 - TD	Unterspannung	[L1][L2][L3][L4][L5][L6]	19.12.2019 00:30:58'979	19.12.2019 00:30:59'199	220 ms	117.836 V (MIN)
UMG 508 - TD	Unterspannung	[L1][L2][L3][L4][L5][L6]	19.12.2019 00:30:58'979	19.12.2019 00:30:59'199	220 ms	117.806 V (MIN)
UMG 508 - TD	Unterspannung	[L1][L2][L3][L4][L5][L6]	19.12.2019 00:30:58'979	19.12.2019 00:30:59'199	220 ms	117.825 V (MIN)
UMG 508 - TD	Unterspannung	[L1][L2][L3][L4][L5][L6]	19.12.2019 00:30:58'979	19.12.2019 00:30:59'199	220 ms	117.830 V (MIN)
UMG 508 - TD	Unterspannung	[L1][L2][L3][L4][L5][L6]	19.12.2019 00:30:58'959	19.12.2019 00:30:58'659	100 ms	118.640 V (MIN)
UMG 508 - TD	Unterspannung	[L1][L2][L3][L4][L5][L6]	19.12.2019 00:30:58'959	19.12.2019 00:30:58'659	100 ms	118.612 V (MIN)
UMG 508 - TD	Unterspannung	[L1][L2][L3][L4][L5][L6]	19.12.2019 00:30:58'959	19.12.2019 00:30:58'659	100 ms	118.622 V (MIN)
UMG 508 - TD	Unterspannung	[L1][L2][L3][L4][L5][L6]	19.12.2019 00:30:58'959	19.12.2019 00:30:58'659	100 ms	118.631 V (MIN)
UMG 512 - TD	Einhüllende	[L1][L2][L3][L4][L5][L6]	19.12.2019 00:28:40'553	Analysieren
UMG 512 - TD	Einhüllende	[L1][L2][L3][L4][L5][L6]	19.12.2019 00:28:40'565	Analysieren
UMG 512 - TD	Einhüllende	[L1][L2][L3][L4][L5][L6]	19.12.2019 00:28:40'565	Analysieren
UMG 512 - TD	Einhüllende	[L1][L2][L3][L4][L5][L6]	19.12.2019 00:28:40'130	Analysieren
UMG 512 - TD	Einhüllende	[L1][L2][L3][L4][L5][L6]	19.12.2019 00:28:40'130	Analysieren



185 Remained on boat "Bob John Loveland" of St. Petersburg 3-10-1889
Accompanied with two men from Bob St. Steamer "Bob John" and his party landing at the
mouth of the river just back of Lucy's
Cottage during 1889

January 1st 19th
Received 1000 hours from W.L. - No communication
from S.Y. & R.W. until first light and 2 radios
not found here and four others destroyed. 10
WP

Montgomery
Continued from page one the northern roads &
as far as Akron where we had all four
body and engine in good shape 1000 miles
since last time along the road and
in good condition. Leaving Akron with 1000 miles
of road to travel. At mid way took
a long cuttings at Shuster & after 2nd cut
on a long hillside. Long 125-118

Tuesday, Jan 15
Continued from home & set up another station at
St. L's on the shore line near the point and
where we were stuck up last afternoon
and took a lot of the little best looking
birds. The best to judge by blood
at least - the new station at St. L's
is a good one. We have found the best and
most numerous birds here this afternoon during
our walk about in these mountains.

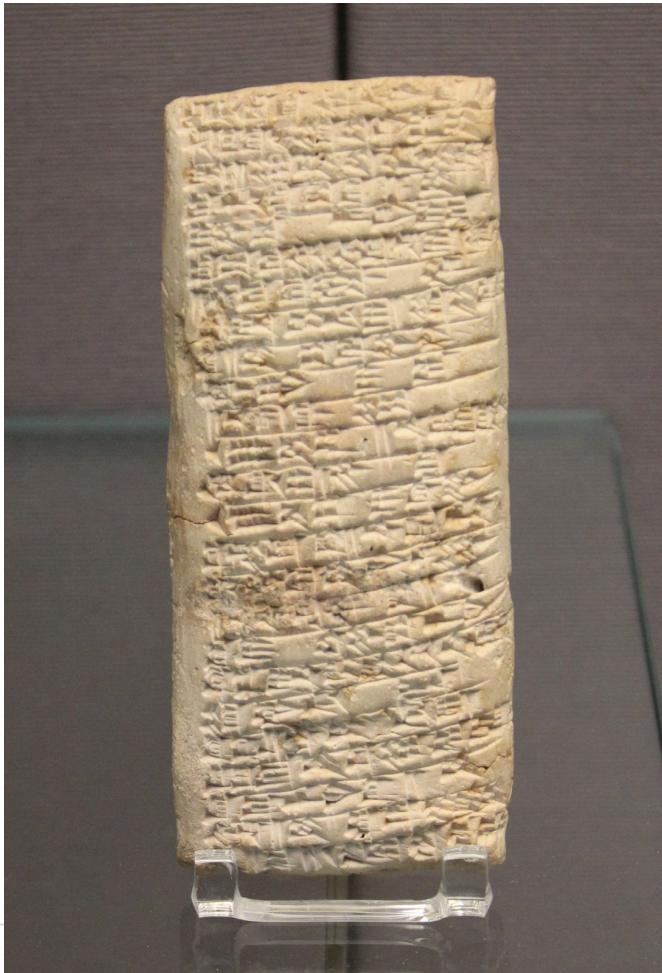
first breeding pair hatched on the 10th instant
Wednesday 11th 1863
continued to have very fair weather. The birds
of course of course think this would be time
to mate and took them along with
the boat. Found a pair of them
in later part of the day and
of getting over the white feathered
they were made up but the feathers were
then while all other country you can imagine
81 1863

Wednesday, Oct. 15.
Getting along fine, have my day with Sherry, 11
books kept Sherry 1 Little book Sherry 11
new Sherry while one Sherry has been sent to them
from N.Y. can't say anything about Sherry as

Wetley 3-26
Received five hours from C.W. during 3-26 and all
as stated and the same letters are ~~now~~ being
re-sent to Bishop & Addis of Licks Sat 3-26
by 12 M.

Antennae from same and this male. Length 1.7 mm.
Antennae 1.7 mm. long, 0.96 mm. thick.

Wednesday Sept. 11 Long 189.8
Wind from N.E. blowing S.W. 10-12
m.p.h. and we try to take the ship leeward of and
15 miles from Mariana Islands to the Caroline Islands
which are further west continuing here right back
and we anchor about 6 p.m. Lat 8° 58'
Long 122.8





人類は数千年にわたり、
詳細な記録を重要な事象や数値へと繰り返し
集約し、最適化してきました。

何度も、何度も、繰り返し



成熟したあらゆる業界では、数値を最優先します。

この観点から見ると、
ログを優先する(logs-first)ITは、
まだ十分に成熟しているとは言えません。



66

[...] オブザーバビリティ [...] は真実への近似であり、これは未知量を決定するのに絶対的に必要な数よりも多くの観測を適切に組み合わせることによつてのみ、これを達成できる。

カール・フリードリヒ・ガウス(Carl Friedrich Gauß), 1809

66

オブザーバビリティとは、システムから出力される情報の知識から、その内部の状態をどれだけうまく推論できるかの尺度である。

◆◆

Rudolf Emil Kálmán(ルドルフ・エミル・カルマン), 1960



+ Pyroscope



Grafanaは、世界で最も人気のある運用ダッシュボード技術です

100万件以上の
アクティブなGrafana
のインストール数
現在も増加している

2,500万人以上の
ユーザー
グローバルコミュニティ
で活動・参加



6,000社以上の顧客
著しいエンタープライズ分野
での成長

6万以上のGitHubスター
Grafanaの採用と開発が加速



Our big tent philosophy



2025年 Gartner® Magic Quadrant™ for Observability Platforms におけるリーダー企業



Gartner®, Magic Quadrant™ for Observability Platforms, By Gregg Siegfried, Matt Crossley, Padraig Byrne, Andre Bridges, Martin Caren, 7 July 2025

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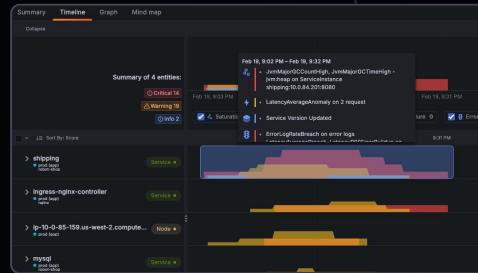
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Adaptive Telemetry

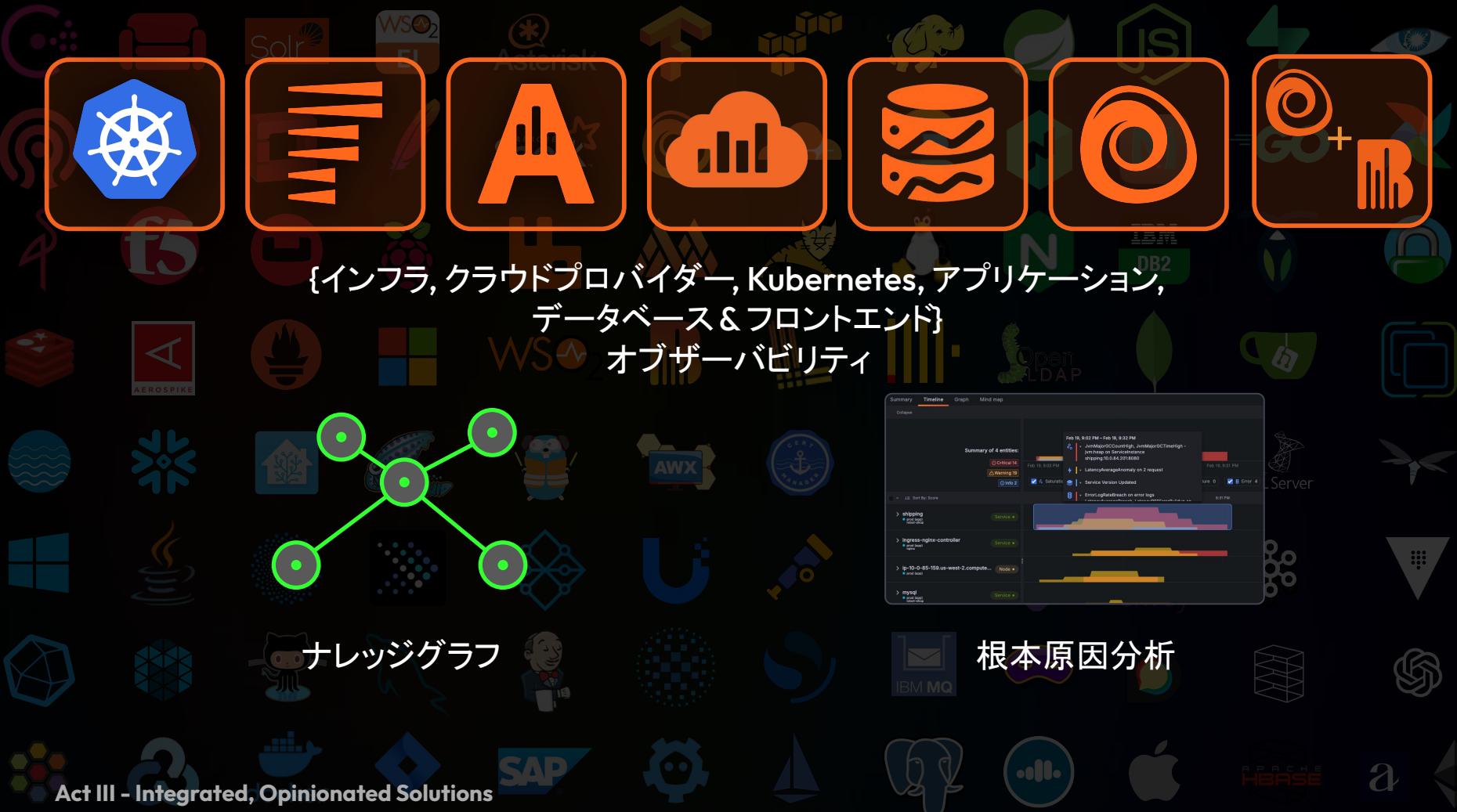




{インフラ, クラウドプロバイダー, Kubernetes, アプリケーション,
データベース&フロントエンド} オブザーバビリティ



根本原因分析



実務で使えるAI

★Grafana Assistant

The screenshot displays the Grafana Assistant interface, which is a purpose-built **agentic LLM assistant** for Grafana. On the left, a dark-themed panel shows a conversation history:

- A user prompt: "can you fix this dashb|"
- A response from the AI: "Add context to improve results"
- Buttons for "Deep Investigation" and "Review my prompt".

Below this is a navigation bar with "Previous investigations", "Settings", and "Review my prompt" buttons.

On the right, a light-themed Grafana dashboard titled "Query Recent Loki Errors" is shown. It includes a search bar, a sidebar with "run Loki query", and a main chart area titled "Error count over time by service". The chart shows error counts in events per second (evt/s) over time, with several series plotted in yellow and green. The legend includes:

- {service_name="MultiHTTP Complex Check"}
- {service_name="Validate homepage"}
- {service_name="Validate logi"}
- {service_name="alloy-logs"}
- {service_name="checkoutservice"}
- {service_name="ditto-django-frontend-client"}

At the bottom, a footer states: "Find and read all previous investigations", "Configure your Assistant", and "Review your prompt and suggest improvements".



Native **Kubernetes** support



Share and reuse
pipelines

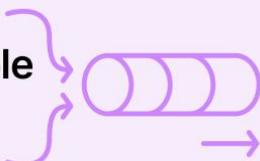
Production-ready
dashboards + alerts



Centralized
configuration
support



Programmable
pipelines



Grafana Alloy



Clustering
support



Logs



Metrics



Traces



Profiles

138

components



LGTM
オープン



Big tent
コンポーネザブル(構成
可能)



Grafana Cloud
より使いやすく



play.grafana.org





Thank you!

chaos.social/@RichiH
github.com/RichiH/talks

