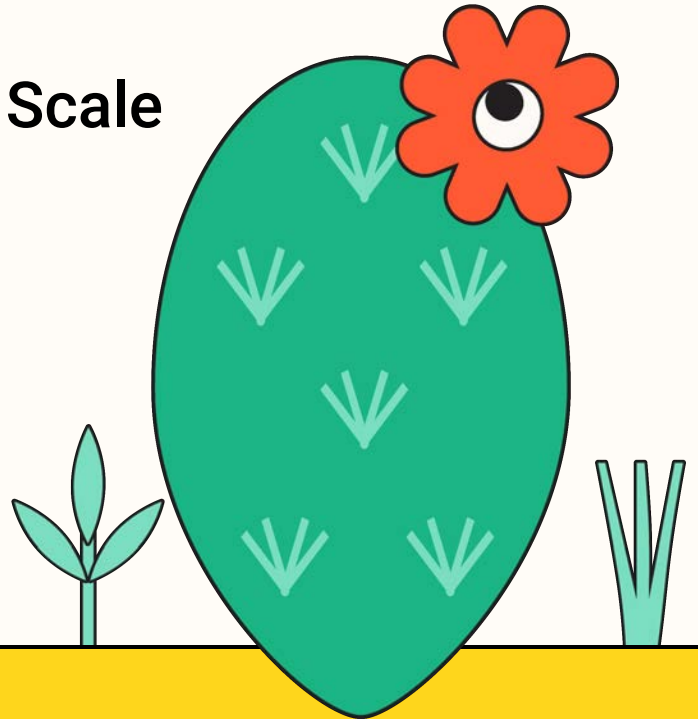
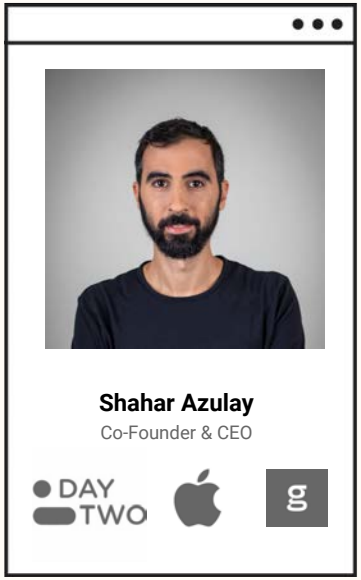
groundcover

Cloud-Native Observability at Scale

Conf42 Kube Native October 2022

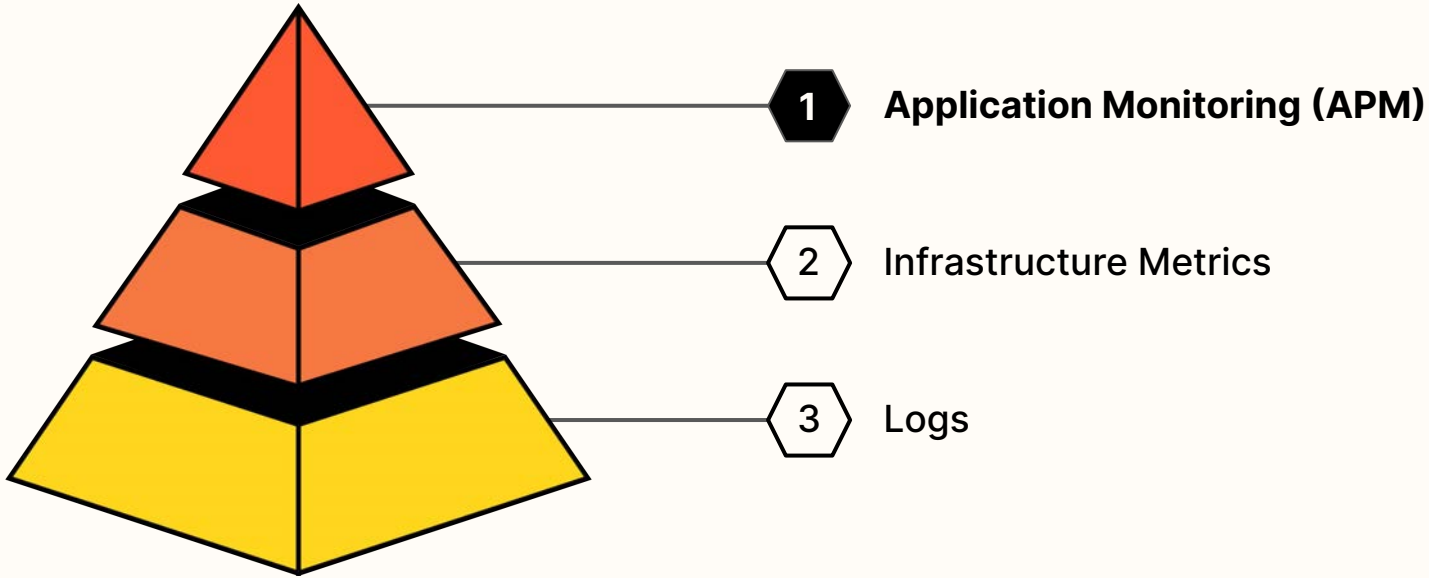


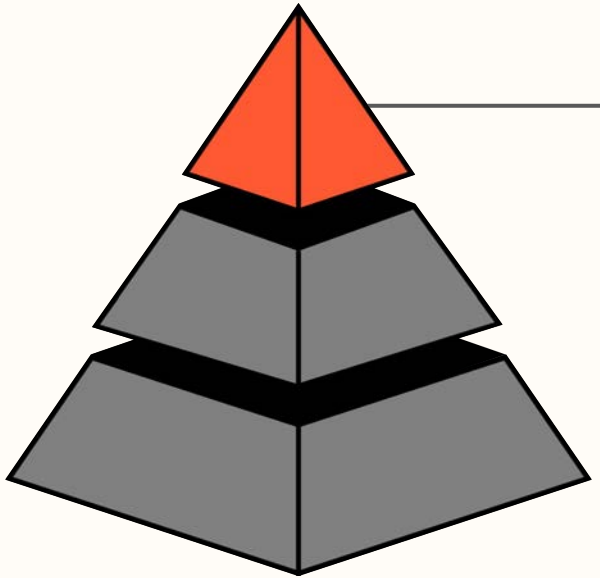


Shahar Azulay

Co-Founder & CEO

Cyber R&D Group Leader @ MOD
Head of Research @ DayTwo
ML Manager @ Apple
CEO @ groundcover


1
Application Monitoring (APM)
2
Infrastructure Metrics
3
Logs



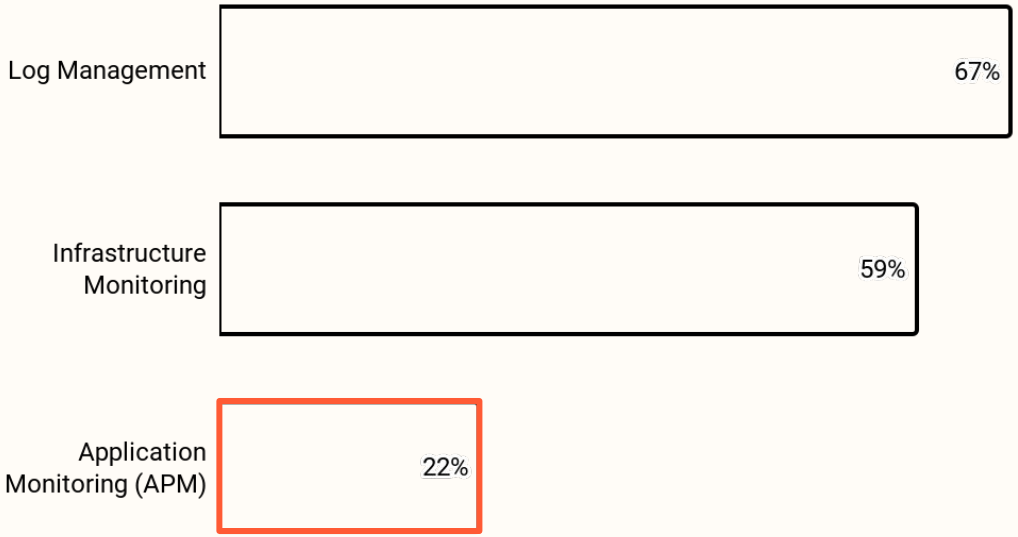
1 **Application Monitoring (APM)**

- **Trace captures** for troubleshooting
- **Application metrics** (“golden signals”)

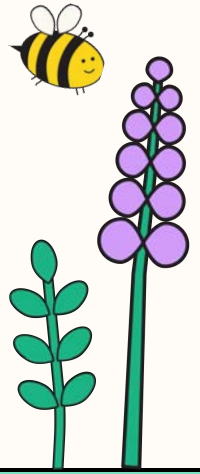
” If you can only measure four metrics of your user-facing system, focus on the four golden signals. ”

Google, SRE book

Reality says different.

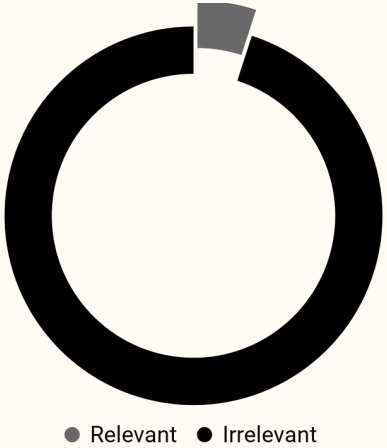


BUT WHY?



Don’t scale

Storing huge amounts of irrelevant data for the little insight you need, making costs unbearable



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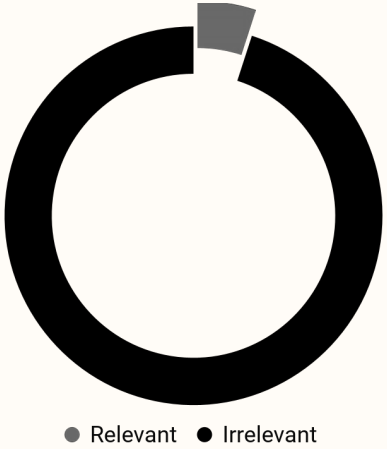
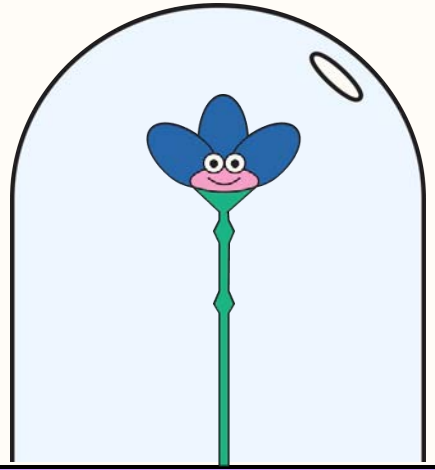
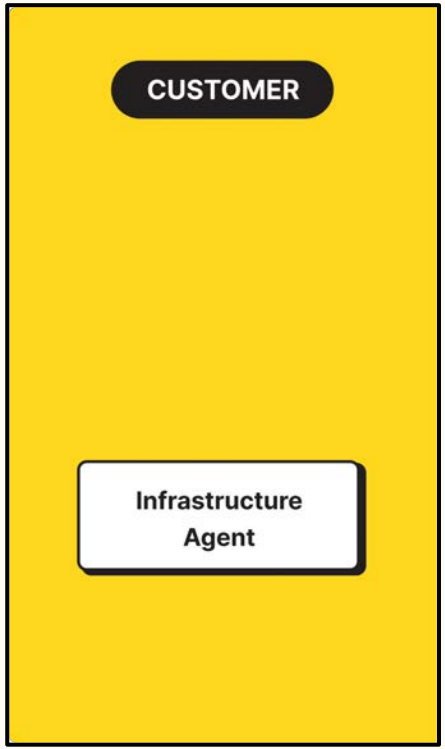


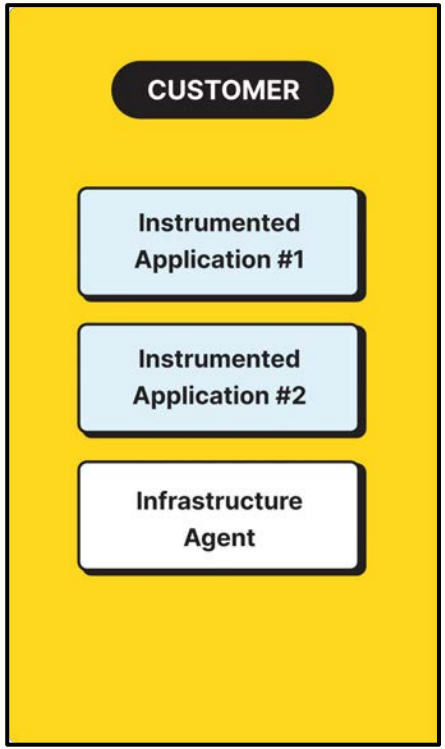
Don’t scale

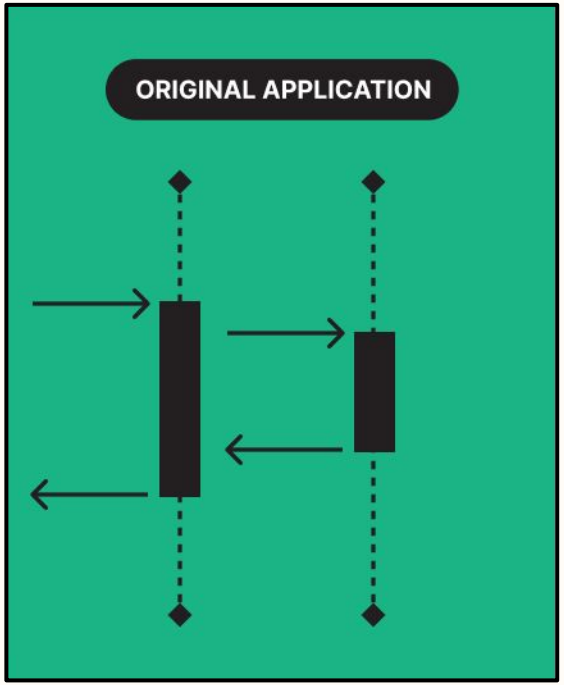
Storing huge amounts of irrelevant data for the little insight you need, making costs unbearable

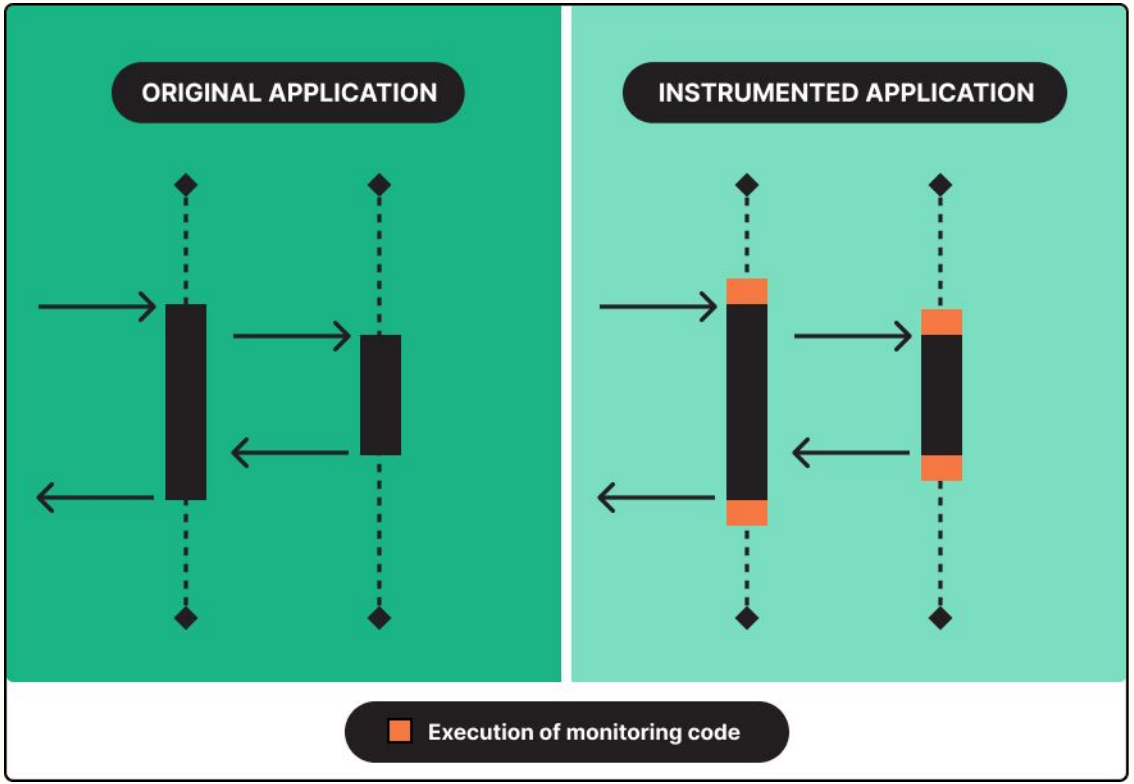
THE TALE OF THE CENTRALIZED ARCHITECTURE

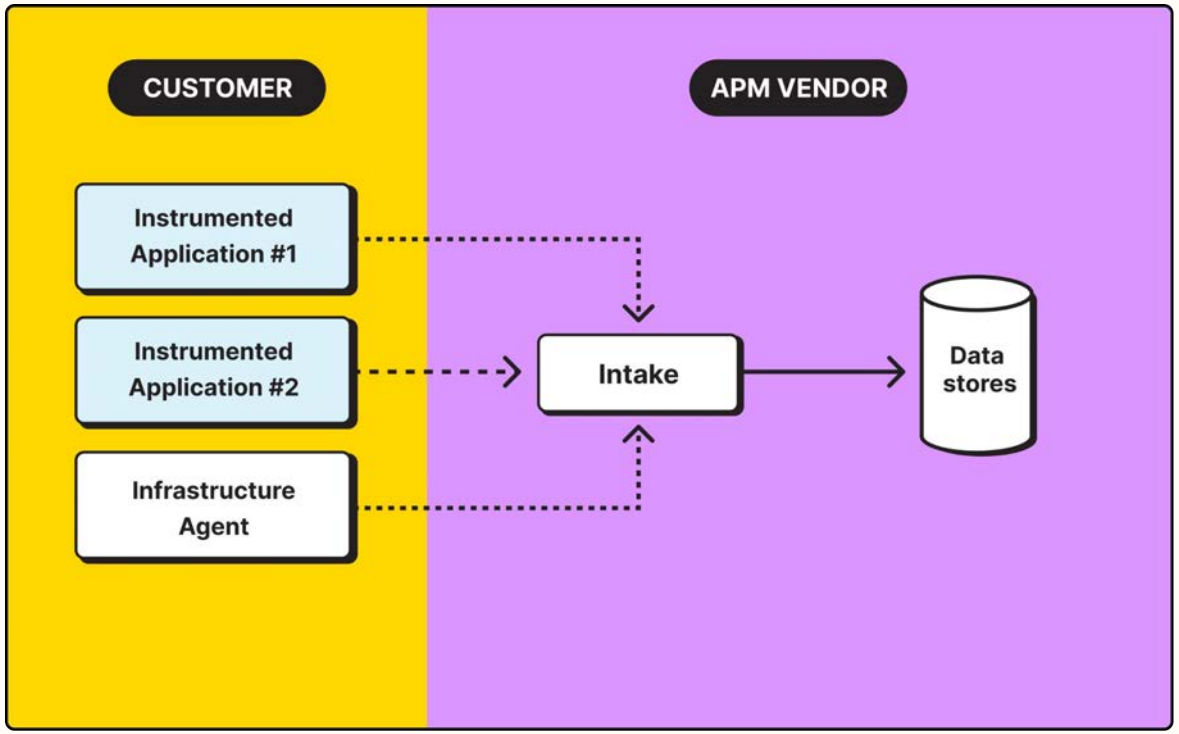


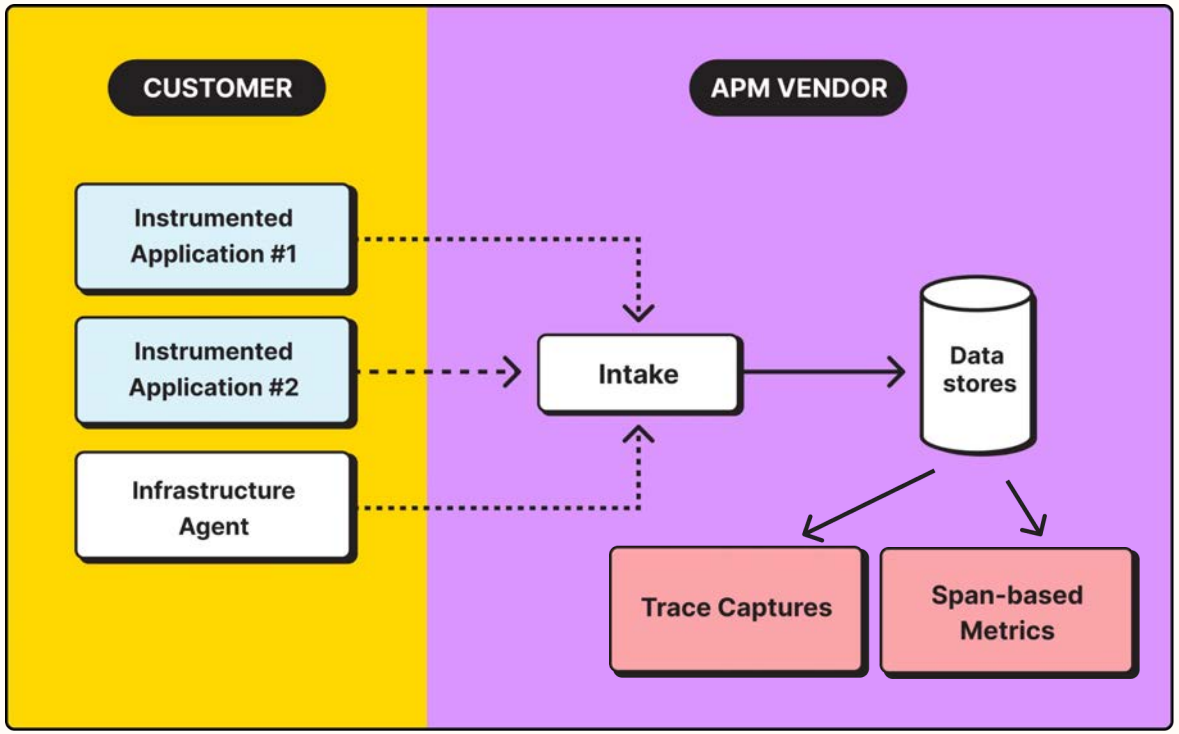

CUSTOMER
Infrastructure Agent


CUSTOMER
Instrumented Application #1
Instrumented Application #2
Infrastructure Agent


ORIGINAL APPLICATION

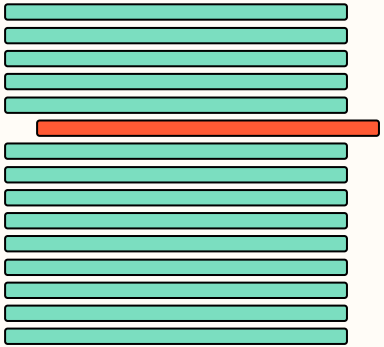

ORIGINAL APPLICATION
INSTRUMENTED APPLICATION
Execution of monitoring code


CUSTOMER
APM VENDOR
Instrumented Application #1
Instrumented Application #2
Infrastructure Agent
Intake
Data stores


CUSTOMER
APM VENDOR
Instrumented Application #1
Instrumented Application #2
Infrastructure Agent
Intake
Data stores
Trace Captures
Span-based Metrics

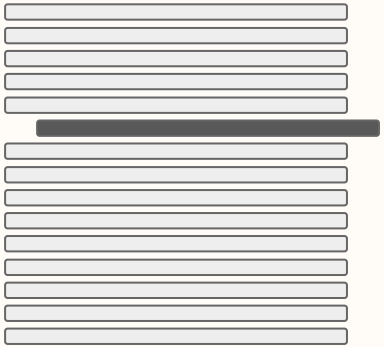
It creates a major debt towards scale.

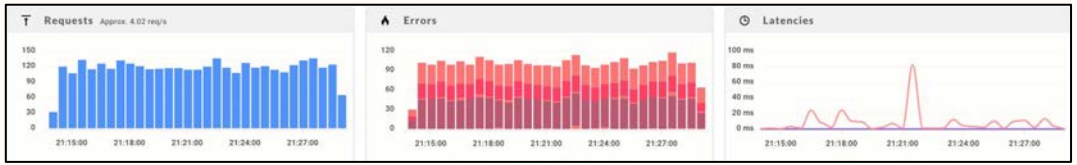
You store raw data.



It creates a major debt towards scale.

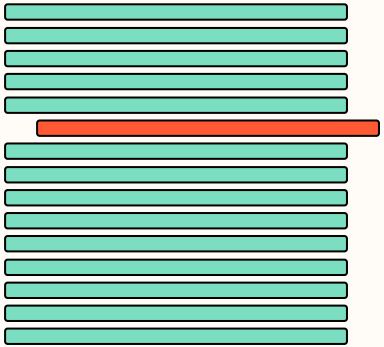
But you really want **digested insights.**





It creates a major debt towards scale.

Data is collected with **equal depth**.



It creates a major debt towards scale.

But **not** everything is equally important.

That’s the visibility depth - cost tradeoff.

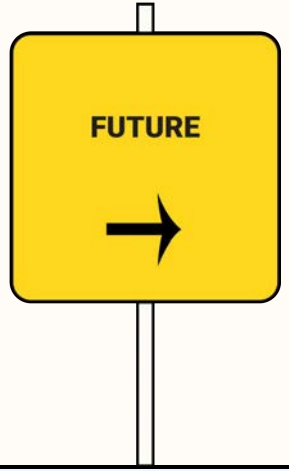
That's the visibility depth - cost tradeoff.

"Let's store only warning logs and up"

"Remove that metric, the cardinality is killing us"

"Let's reduce sampling rate to 1%, we pay too much for tracing"

EDGE OBSERVABILITY



From instrumentation to eBPF

“The next Linux superpower”

From instrumentation to eBPF

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An **Out-of-band** Agent

From instrumentation to eBPF

“The next Linux superpower”

An **Out-of-band** Agent

1 Zero application overhead

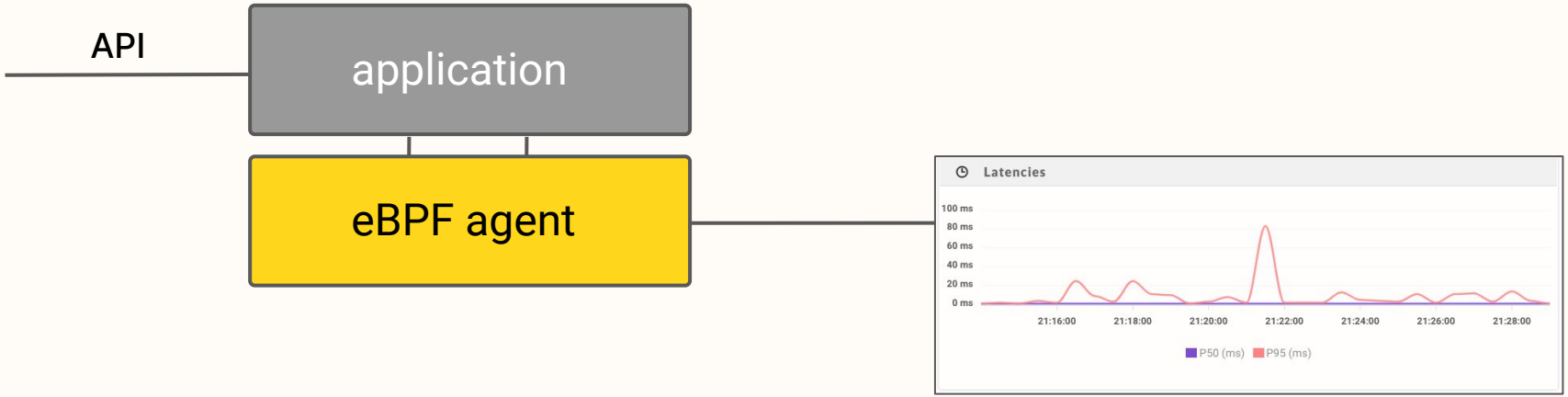
From instrumentation to eBPF

"The next Linux superpower"

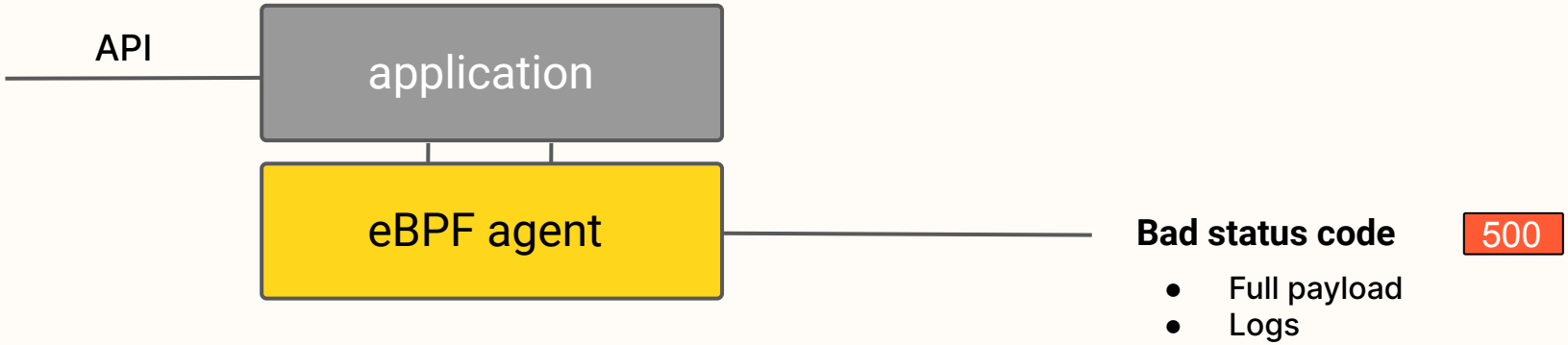
An **Out-of-band** Agent

1. Zero application overhead
2. Distributed decision making

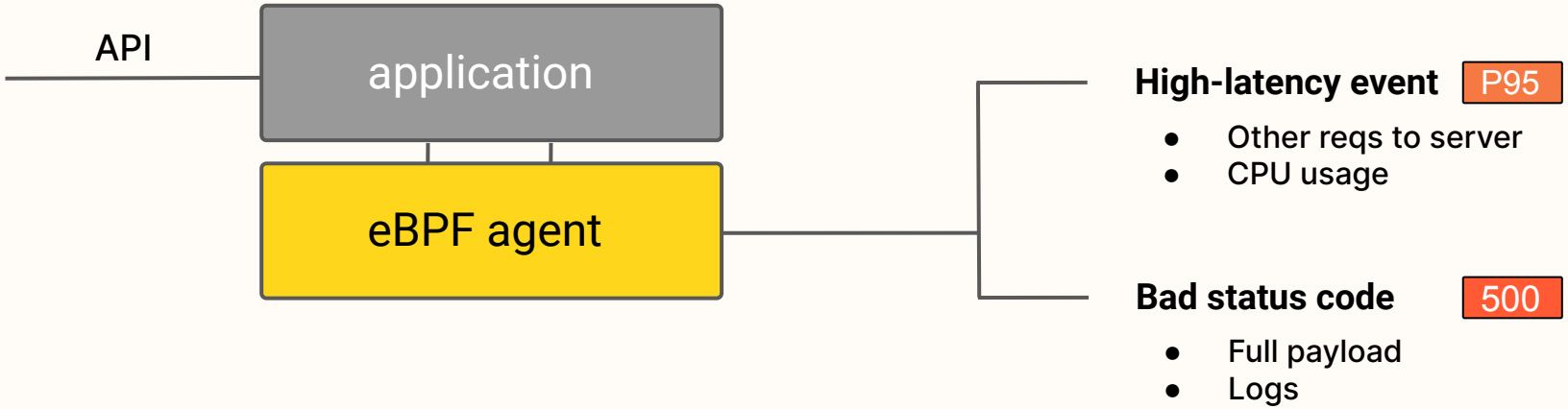
In-host span-based metrics



Variant-depth capturing



Variant-depth capturing



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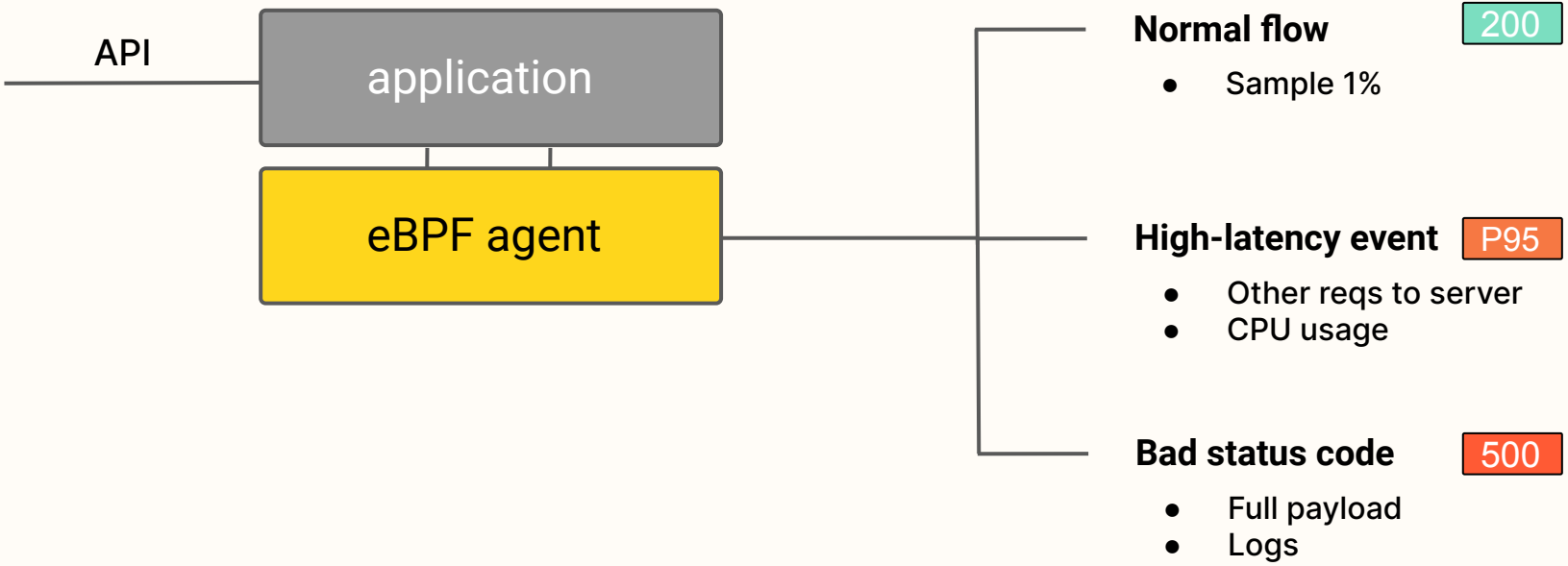

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This is our current reality.

- **eBPF instrumentation**
  - Immediate time-to-value
  - Out-of-band deployment
- **Edge-based observability**
  - Built for scale
  - Breaks all tradeoffs

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Ping us Anytime.

join our community Slack!

https://www.groundcover.com/join-slack

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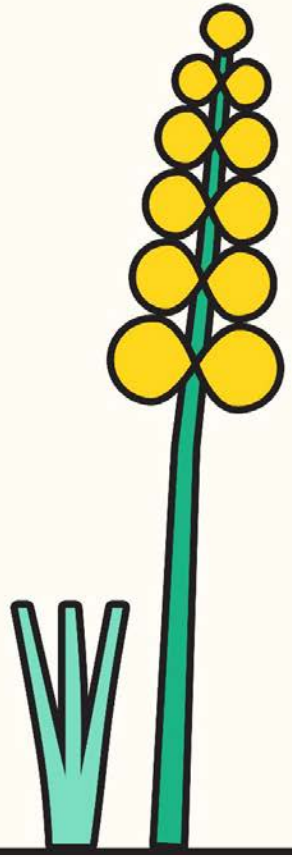
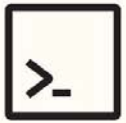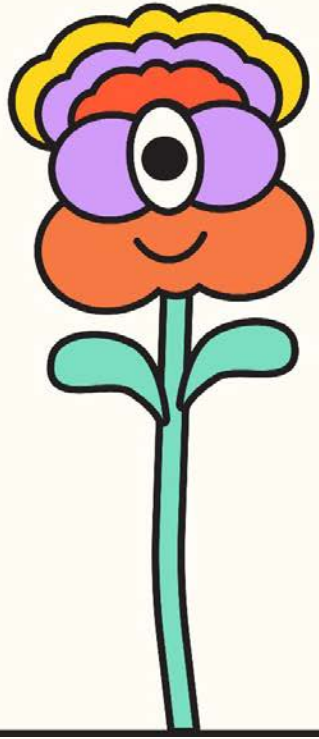
Thank you.