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# What's Bad Telemetry Anyway?



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# Nice to meet you!



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- CNCF Ambassador
- Organizer OTel Night Berlin
- Emeritus: OTel Collector, Jaeger, ...
- Telemetry Drops
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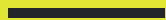
# Agenda



- Telemetry?
- Instrumentation
- Telemetry!
- Bad Telemetry...
- Fixing it



# Telemetry?





“

**Data that is generated by your application,  
informing its internal state.**



# Telemetry

- Logs
- Metrics
- Traces (spans!)
- Events
- Profiles
- ...



# Instrumentation





“

**Code that generates telemetry from our programs,  
with the purpose of enabling humans and agents to  
understand application behavior at runtime.**



# New Log Record

```
logger.Info("Starting Gaps 🦋",  
|   zap.String("version", version), zap.String("commit", commit), zap.String("date", date),  
|   )
```

# New Span

```
ctx, span := d.tracer.Start(ctx, "consume og.*.in.otlp.>", trace.WithSpanKind(trace.SpanKindConsumer))  
defer span.End()
```

# Recording a metric

```
// Record error metrics with error type
p.operationDuration.Record(ctx, duration.Seconds(), metricOpts,
    metric.WithAttributes(subjectAttr, attribute.String("error.type", "send_failed")))
```



# Telemetry

However...

- It's tedious
- Learning curve
- Developers don't typically like instrumentation alongside "business" code
- ...



Side note

Telemetry IS **business** code!



# Telemetry!





# Telemetry!

We **train** our developers, they fall in love with instrumentation, and then:

- Instrument all method calls
- Use inconsistent attribute names and values for the same things
- Reinvent the semantic conventions wheel
- ...



# Telemetry!

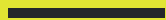
We **don't train** our developers and we provide them with tools like:

- Java Agents
- .NET
- eBPF
- ...





# Bad Telemetry...





## Bad Telemetry

- Auto-capture is dangerous
  - URL queries often contain PII (SSNs) and sensitive information (access tokens)
  - Command-line arguments might contain passwords (JVM trust store passwords!)
- Records too much
  - Do I need to know about every single lock made by my DB queries?
- Useless data
  - Health-checks, static assets, ...



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# Bad Telemetry

GET / [REDACTED]	
▼ Tags	
client.address	[REDACTED]
http.request.method	GET
http.response.status_code	200
http.route	[REDACTED]
k8s.cluster.name	[REDACTED]
network.peer.address	[REDACTED]
network.peer.port	60160
network.protocol.version	1.1
otel.scope.name	io.opentelemetry.tomcat-10.0
server.address	[REDACTED].br
span.kind	server
thread.id	49
thread.name	http-nio-8080-exec-8
url.path	[REDACTED]
url.query	cpf=[REDACTED]9
url.scheme	https
user-agent.original	Postman/1.3.5
➤ Process: container.id = a9aeb2264432fbc2b7773f40389bd303b542de256d47f27f8e41f90bbca751cf   deployment.en	

# Bad Telemetry

[illegible]



# Fixing it





## Fixing it

- At the source!
- At the Collector





# Takeaways





## Takeaways

- Bad Telemetry is inevitable in the journey for great observability
- Train your developers, it provides the best ROI for your observability
- Use tools that can help you find bad telemetry
  - Weaver can help!
  - Instrumentation Score can guide!
  - OllyGarden can automate!
- Fix your bad telemetry, either directly at the source, or before it hits your backend



# Questions and Answers



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# Obrigado!



Let's keep in touch!

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