

License to Observe

Why observability solutions need agents

September 28, 2024



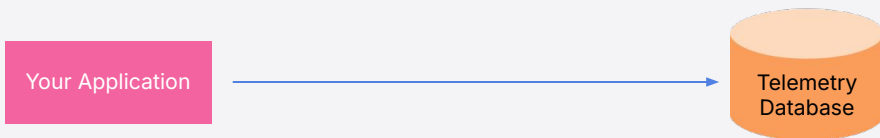
Dominik Süß
DevEx Engineer



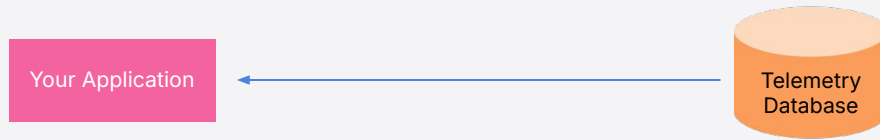
Just give me the
data



Just send it, bro!



Just pull it



But what if...



There is!



THE END

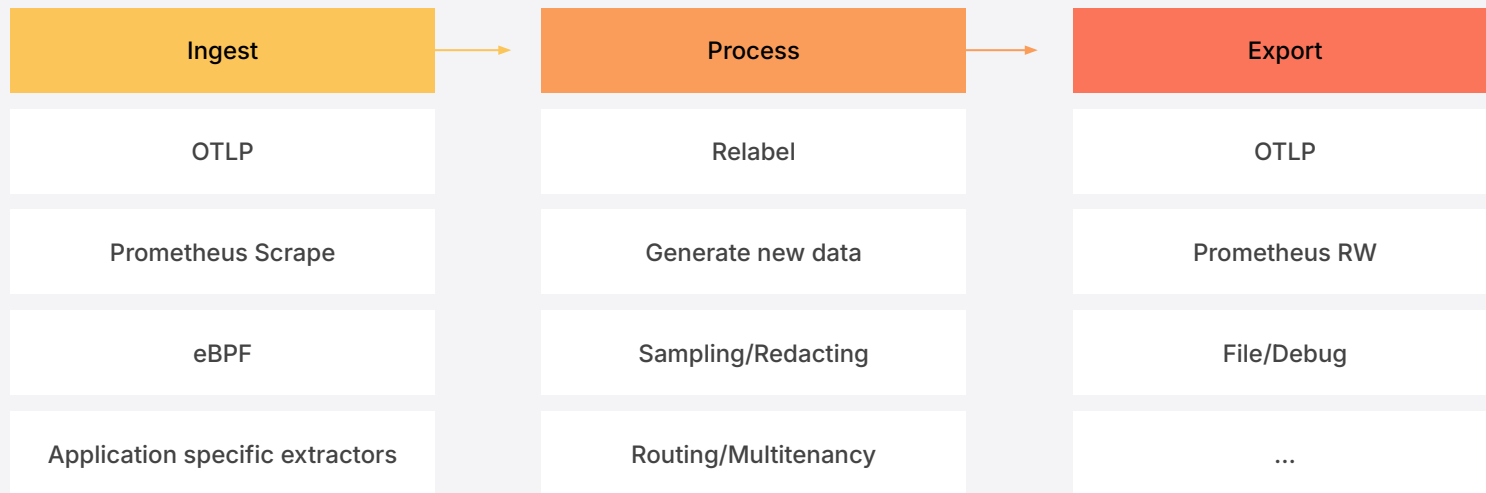


Protocols & Terminology

- Telemetry → Logs/Metrics/Traces/Profiles
- OpenTelemetry (OTel) → Set of standards for telemetry data
- OpenTelemetry Protocol (OTLP) → Specific transport protocol for telemetry
- OpenTelemetry SDK → Language specific instrumentations



What do they do?



How are they configured

```
1 receivers:
2   otlp:
3     protocols:
4       grpc:
5       http:
6
7 processors:
8   memory_limiter:
9   batch:
10
11 exporters:
12   otlp:
13     endpoint: otelcol:4317
14
15 extensions:
16   health_check:
17   pprof:
18   zpages:
19
20 service:
21   extensions: [health_check, pprof, zpages]
22   pipelines:
23     traces:
24       receivers: [otlp]
25       processors: [batch, memory_limiter]
26       exporters: [otlp]
27     metrics:
28       receivers: [otlp]
29       processors: [batch]
30       exporters: [otlp]
31     logs:
32       receivers: [otlp]
33       processors: [batch]
34       exporters: [otlp]
```



Instrumenting



Instrumenting the Application

Metrics

- Push/Pull
- Delta/Cumulative
- Prometheus/OTeL

Logs

- File/Network
- JSON/logfmt

Traces

- Tail/Head Sampling

Client/Collector Enrichment



Instrumenting the Application in Kubernetes

Metrics

- Push/[Pull](#)
- Delta/[Cumulative](#)
- [Prometheus](#)/OTeL

Logs

- [File](#)/Network
- JSON/[logfmt](#)

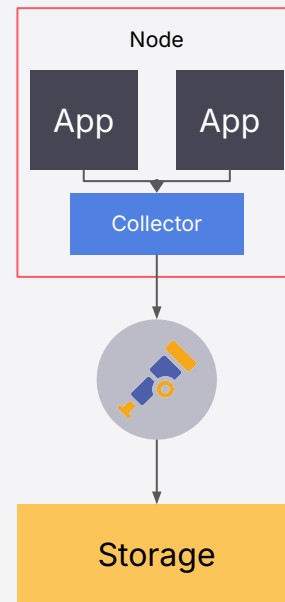
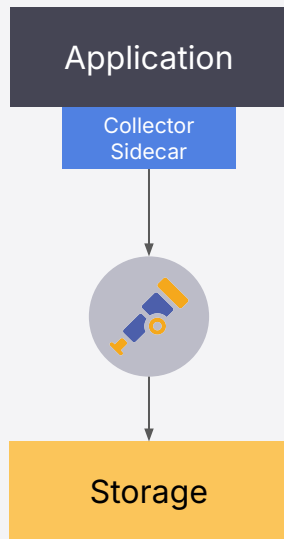
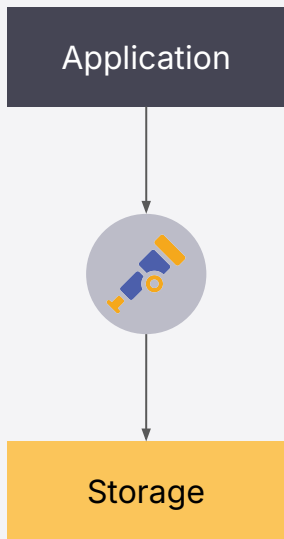
Traces

- [Tail](#)/Head Sampling

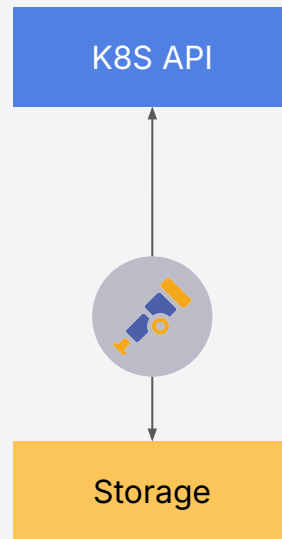
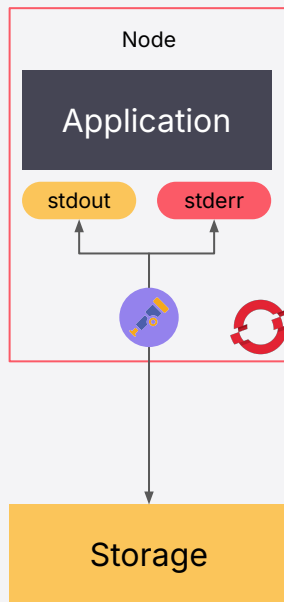
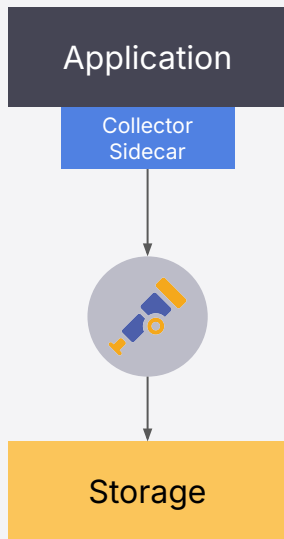
Client/[Collector](#) Enrichment



Deployment Strategies

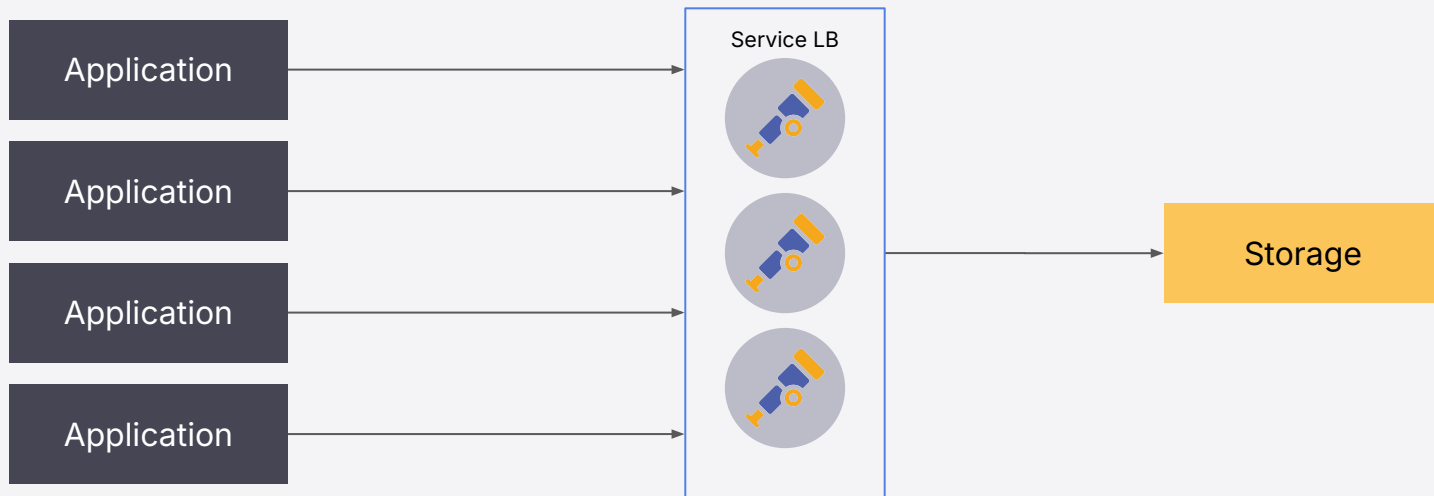


Collecting Logs



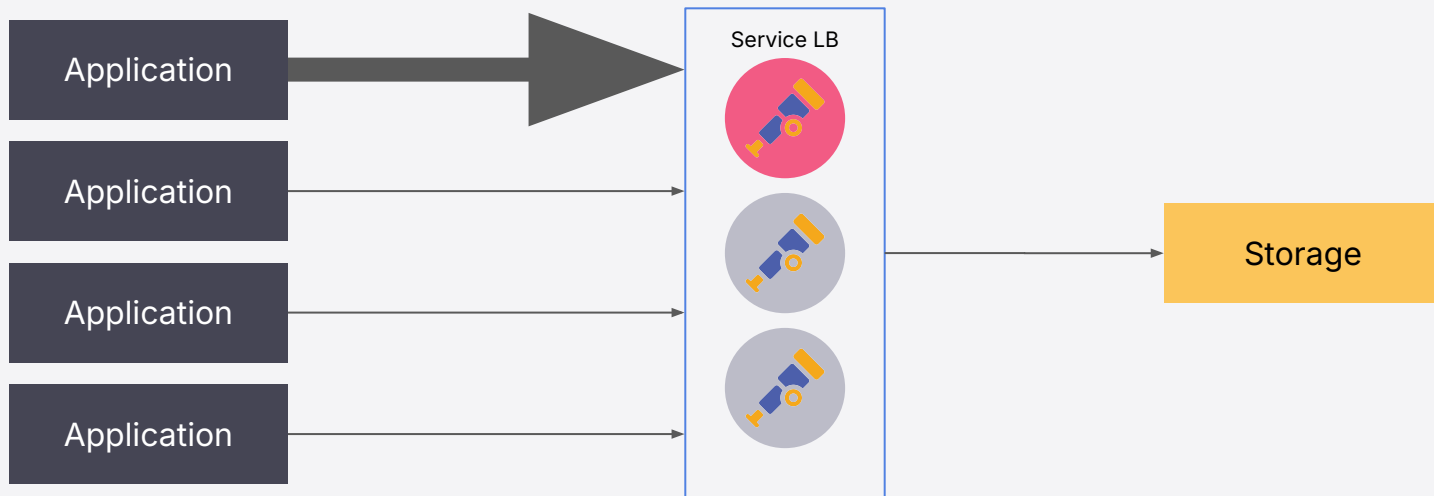
Scaling Strategies - for metrics/logs/traces

push



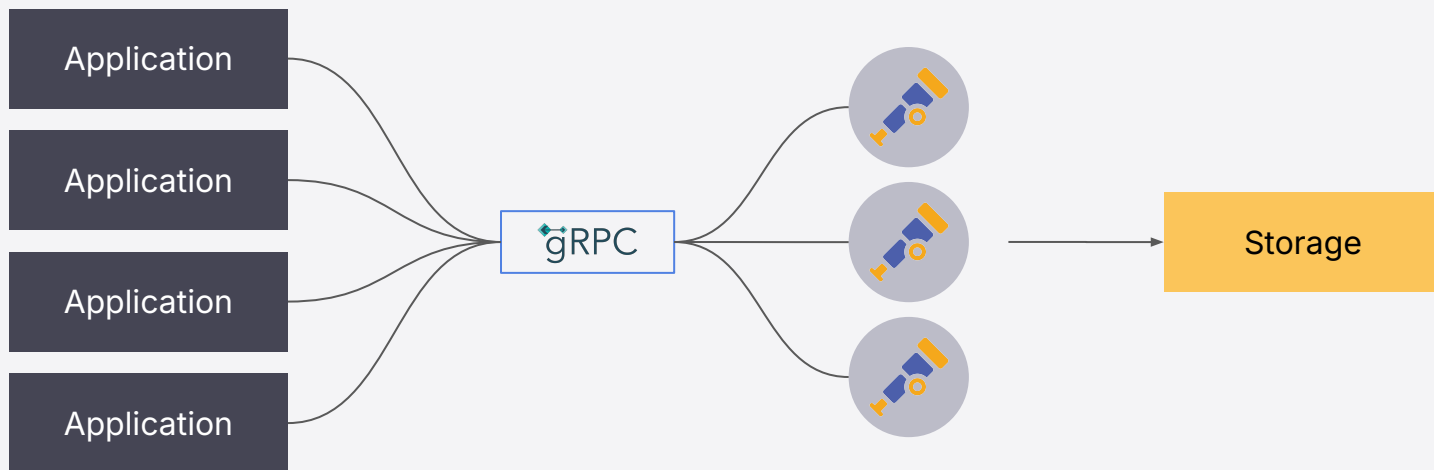
Scaling Strategies - for metrics/logs/traces

push



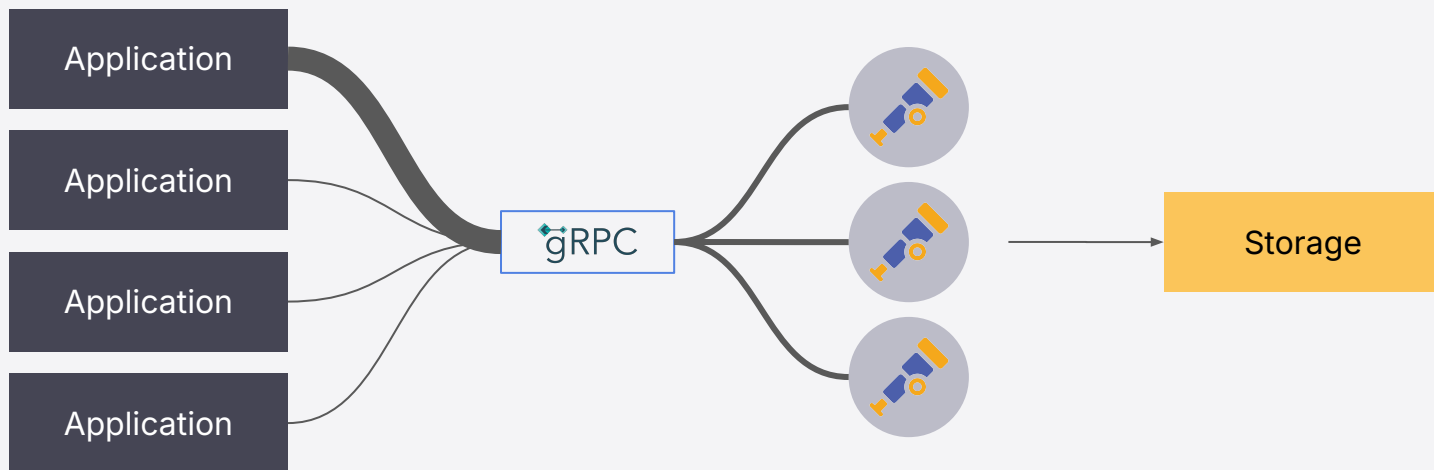
Scaling Strategies - for metrics/logs/traces

push



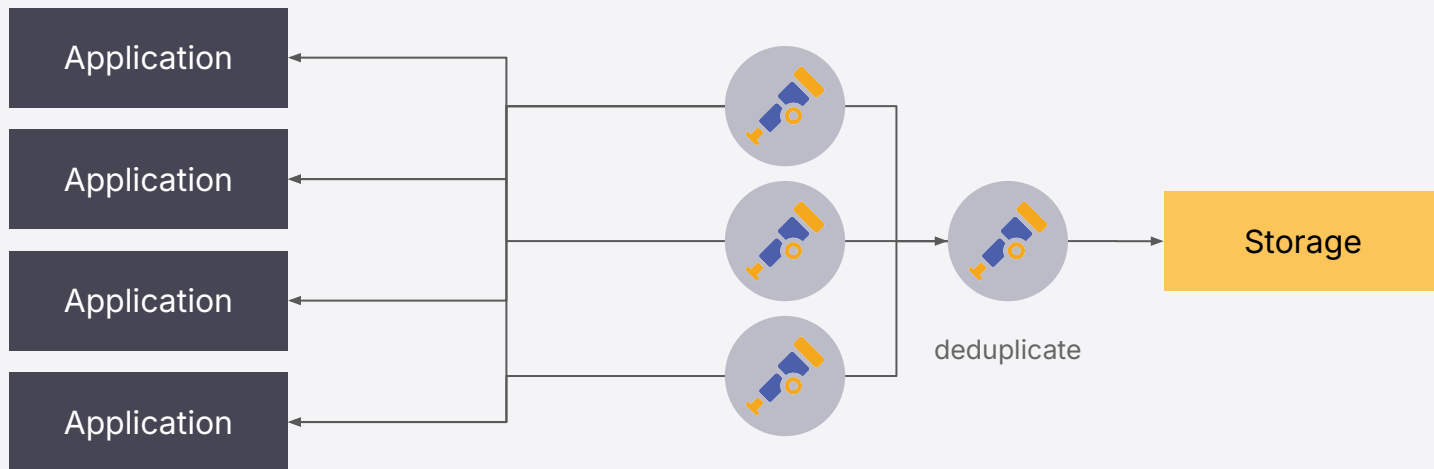
Scaling Strategies - for metrics/logs/traces

push



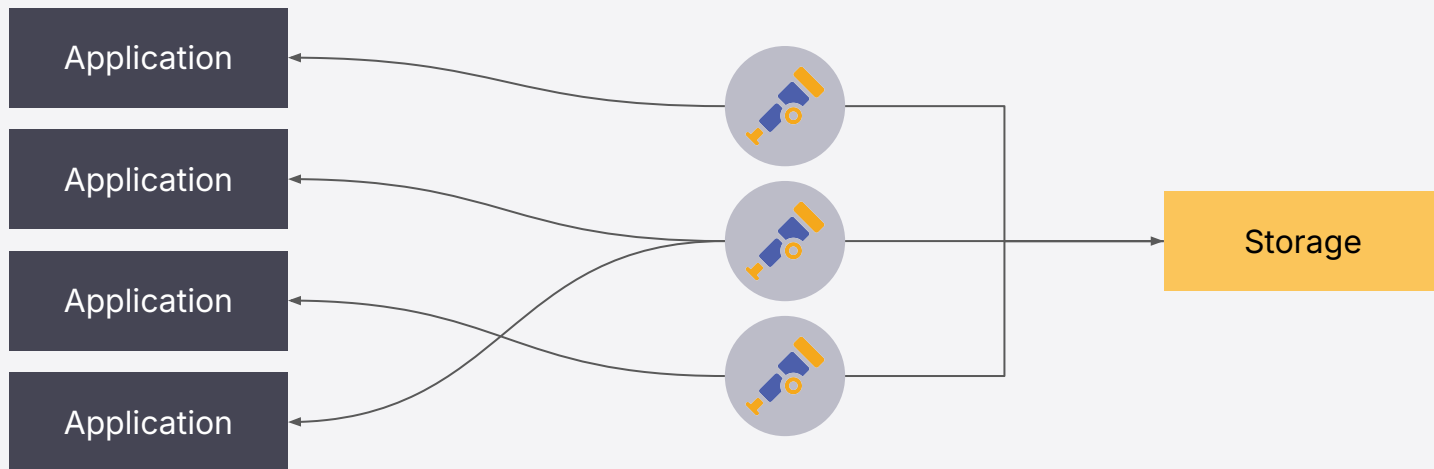
Scaling Strategies - for metrics

pull



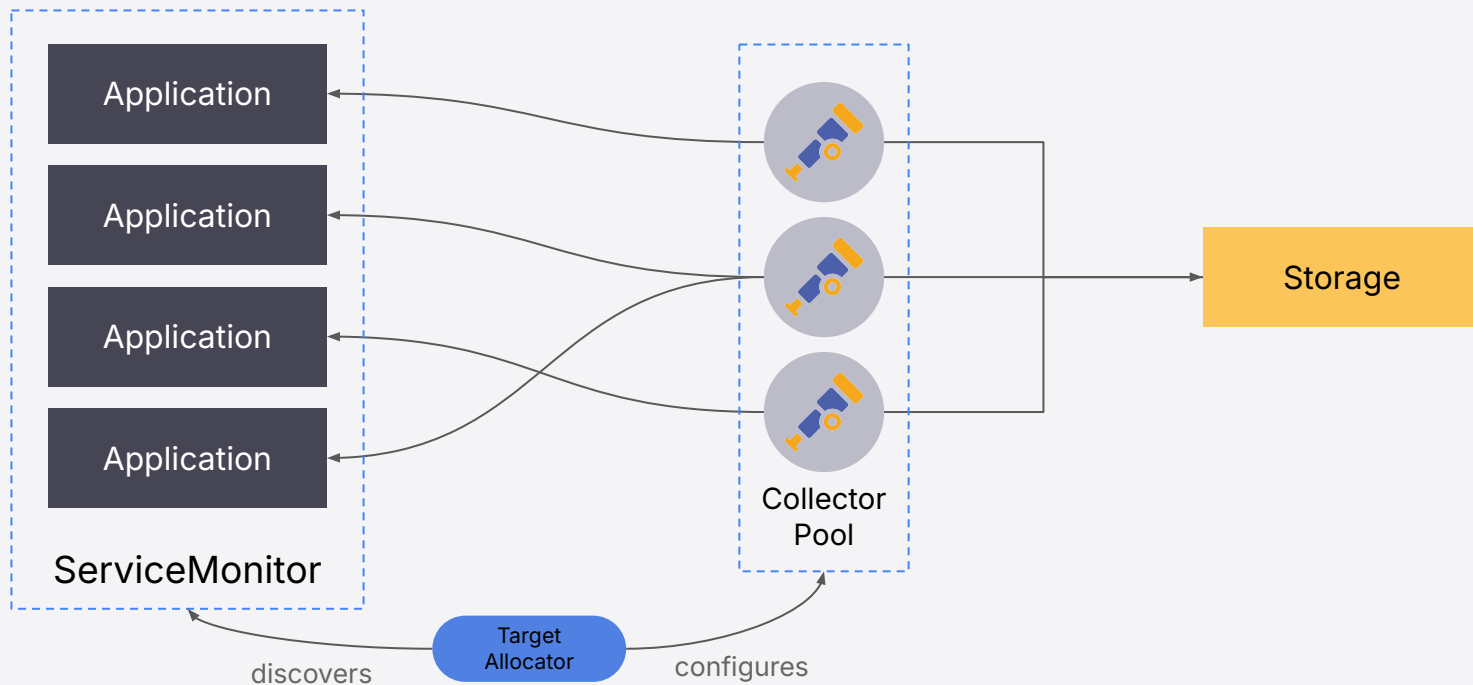
Scaling Strategies - for logs

pull



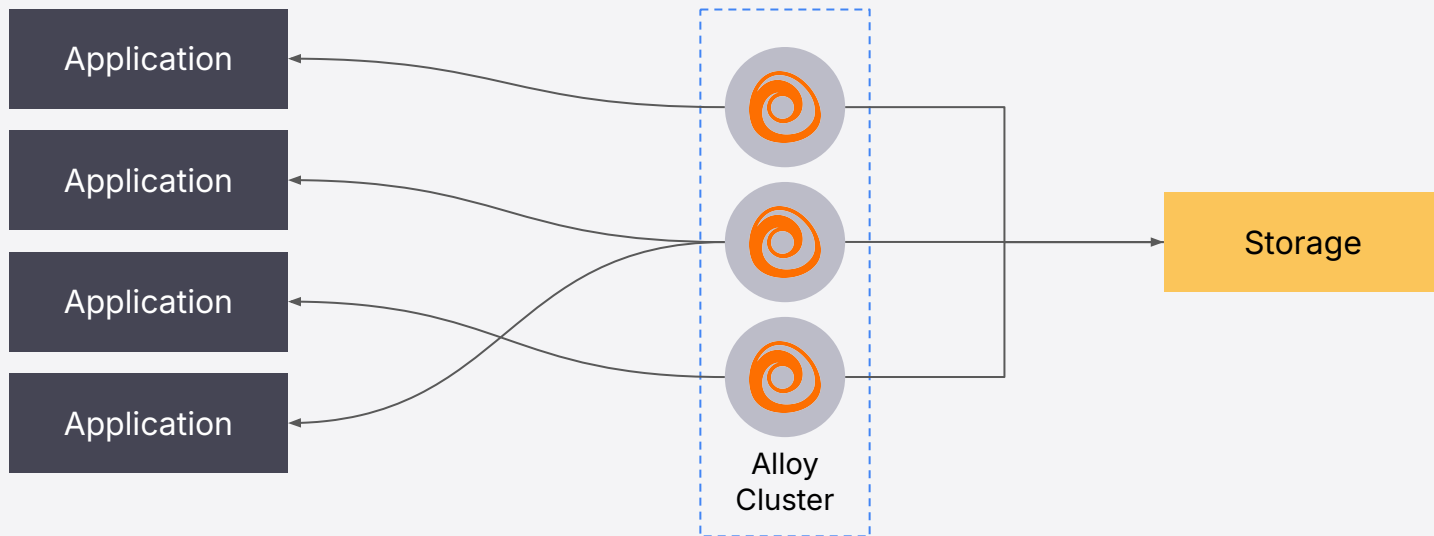
Scaling Strategies - for metrics

pull



Scaling Strategies - for metrics

pull



Recommendations



Recommendations

Separate telemetry types

- Node log collection
- Cluster Metrics
- Load Balance Traces

Chain collectors

- Multitenancy
- Team separation

Keep consistent

- Avoid excessive conversions
- Establish label conventions

Instrument early

- Start projects with O11Y in mind
- Focus on traces first



Thanks for participating!

Have more questions?

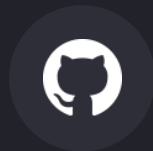
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