

Continuous Lifecycle / Mannheim / 15.11.2023

Observability in Java

INNOQ



MICHAEL VITZ
SENIOR CONSULTANT

MICHAEL VITZ

Java Champion

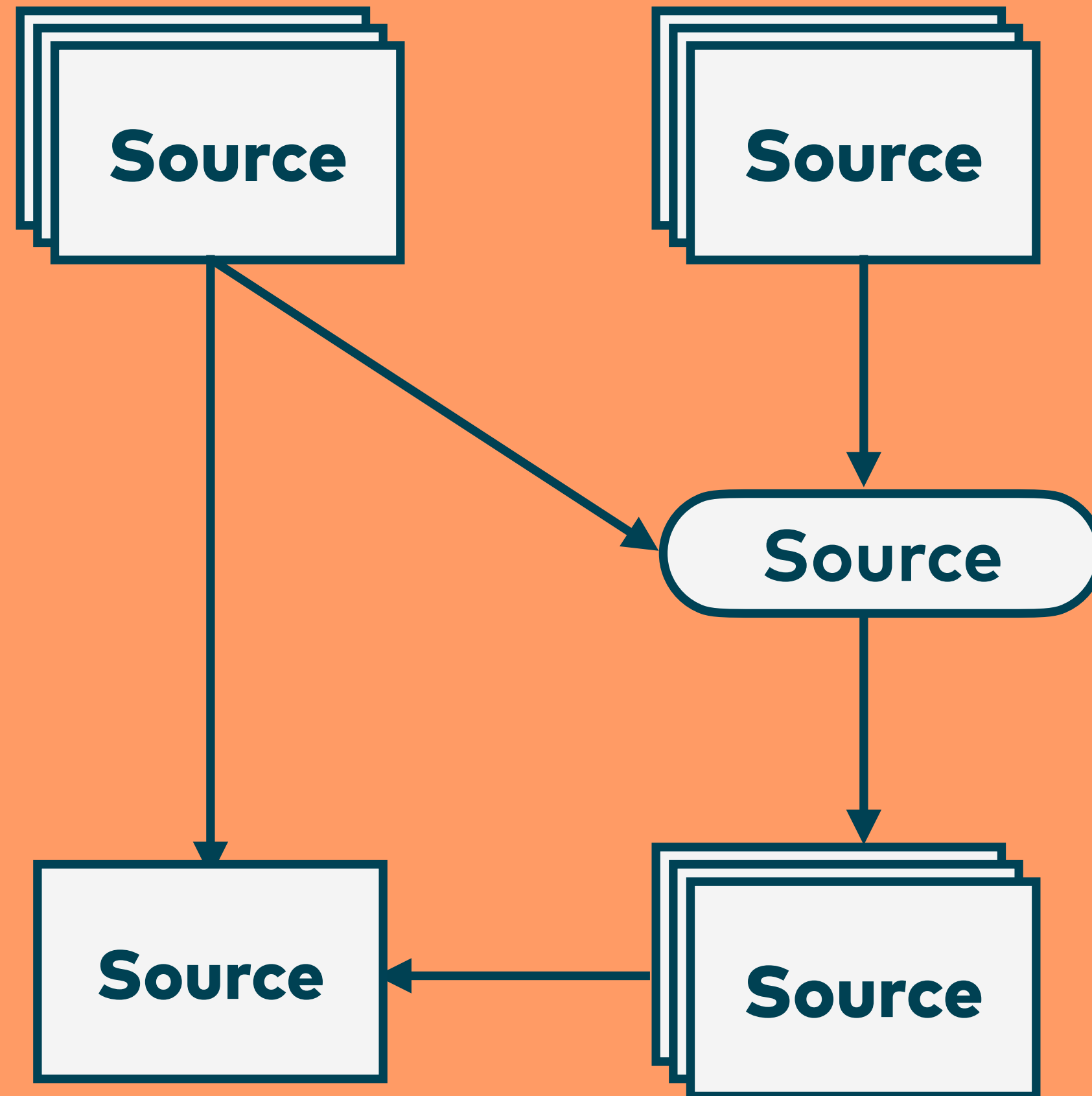
Senior Consultant @ INNOQ

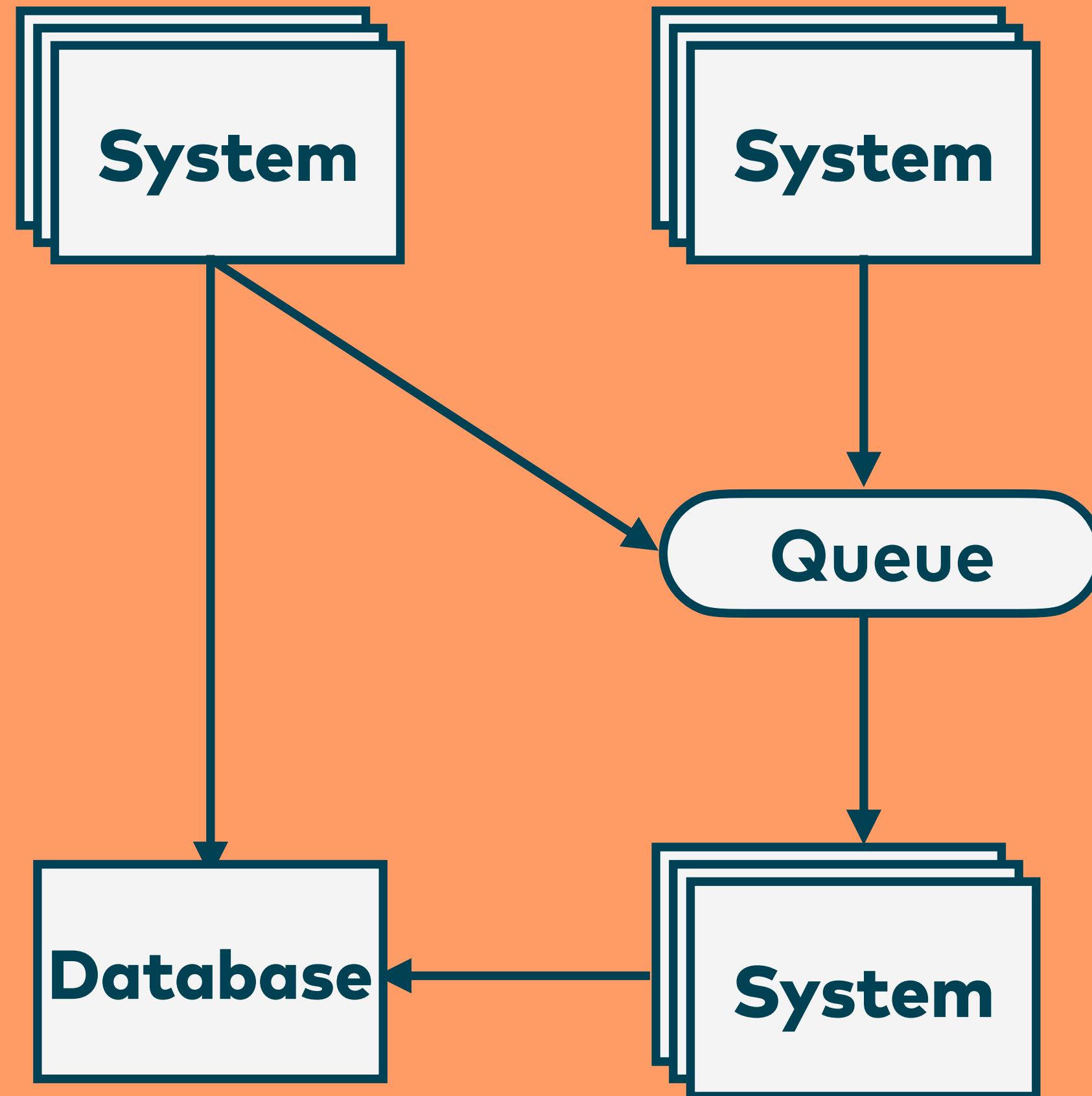


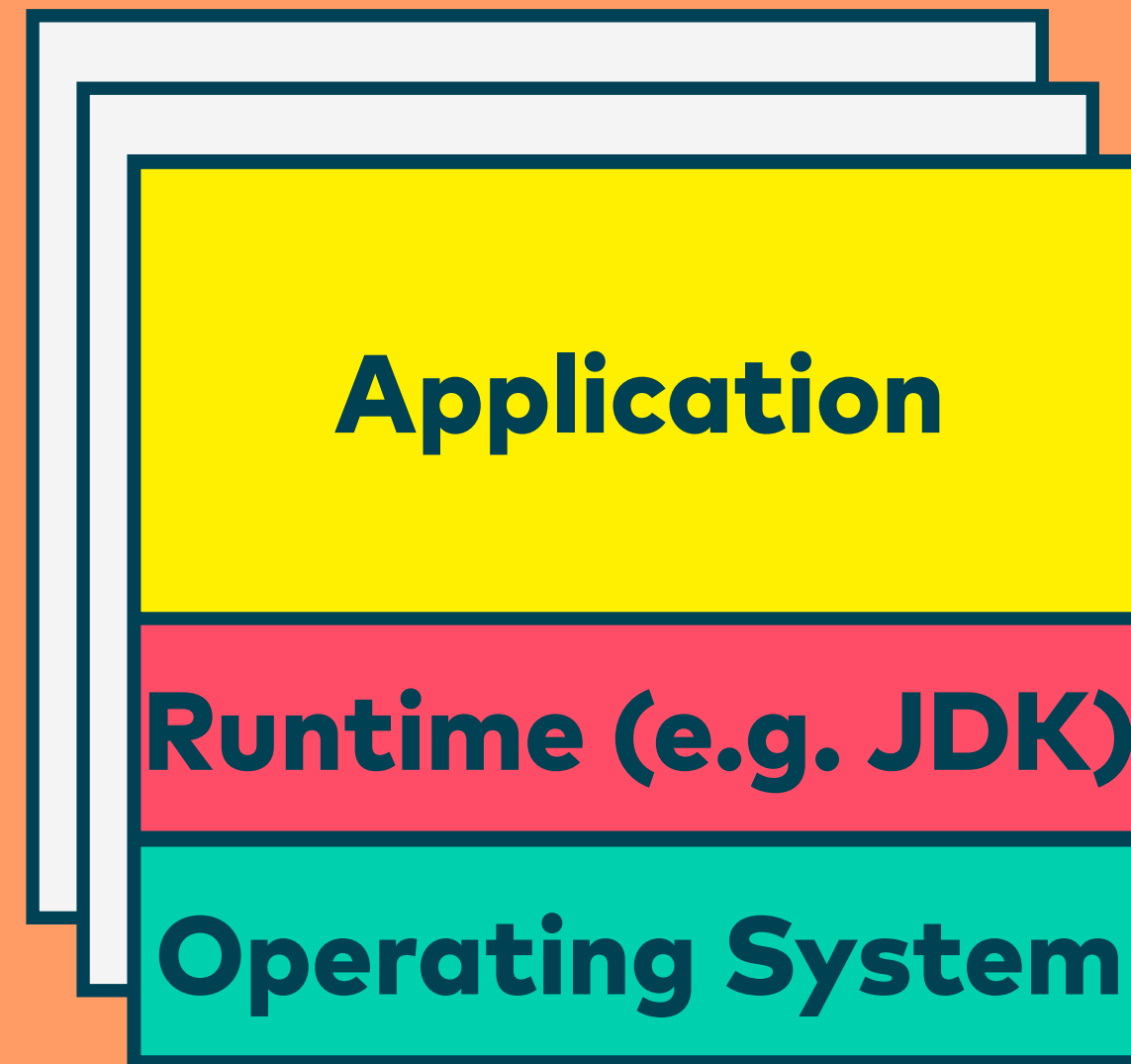
A lateral X-ray of a human skull, showing the profile of the cranium and facial bones. A ruler is visible in the upper right corner, indicating a scale of approximately 30 units. The word "Observability" is overlaid in orange text across the center of the image.

Observability

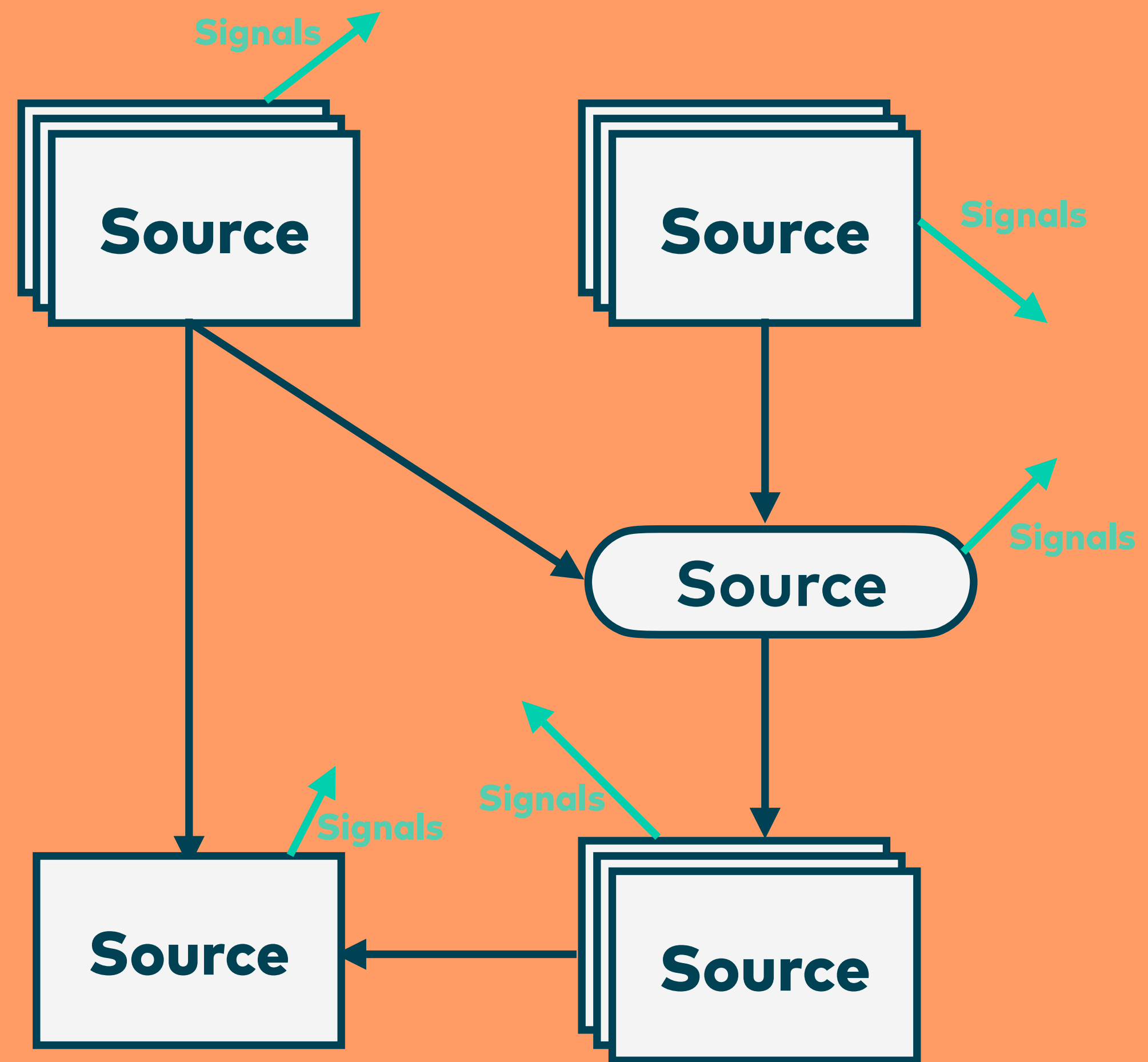
Sources

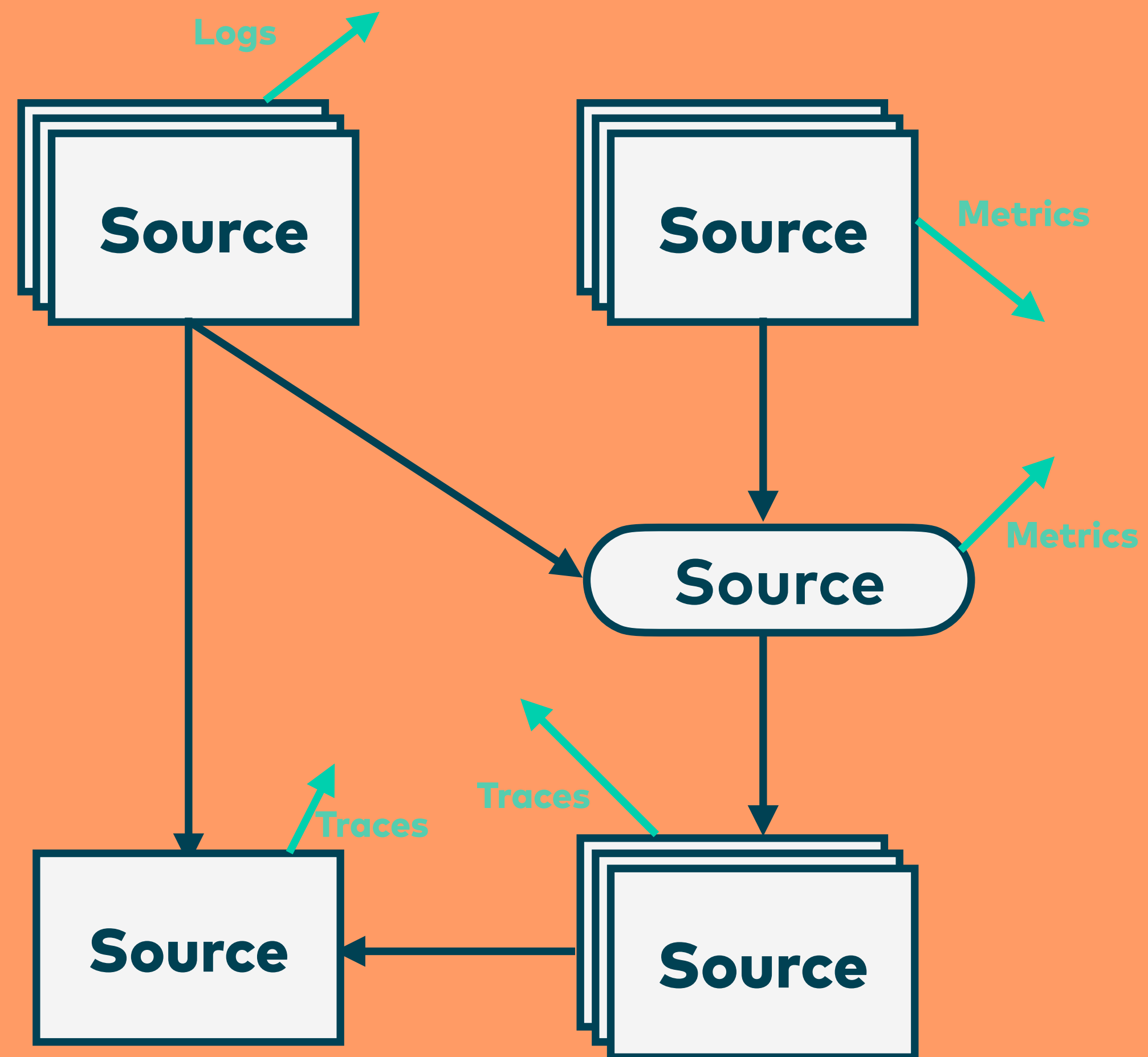




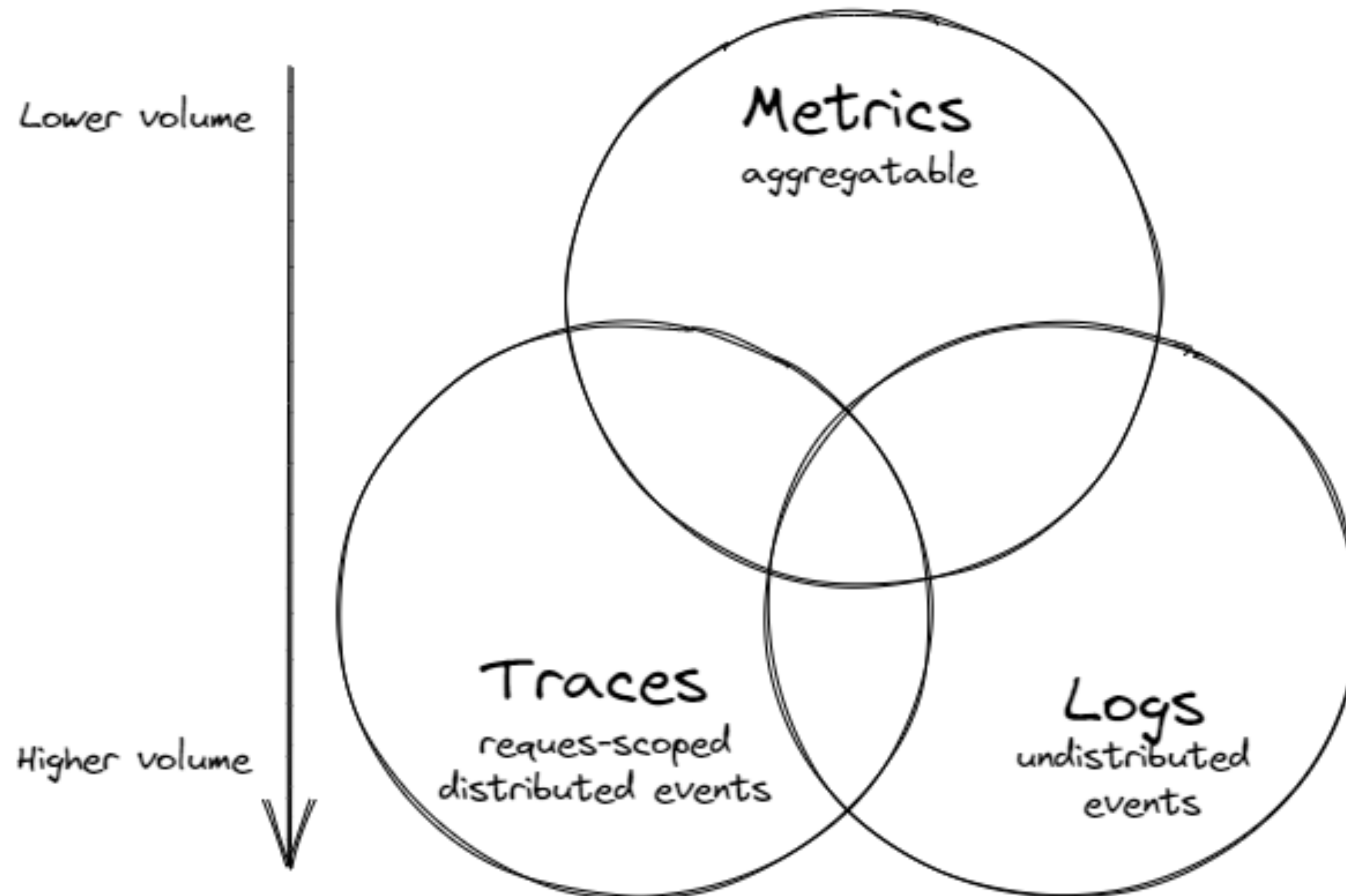


Signals

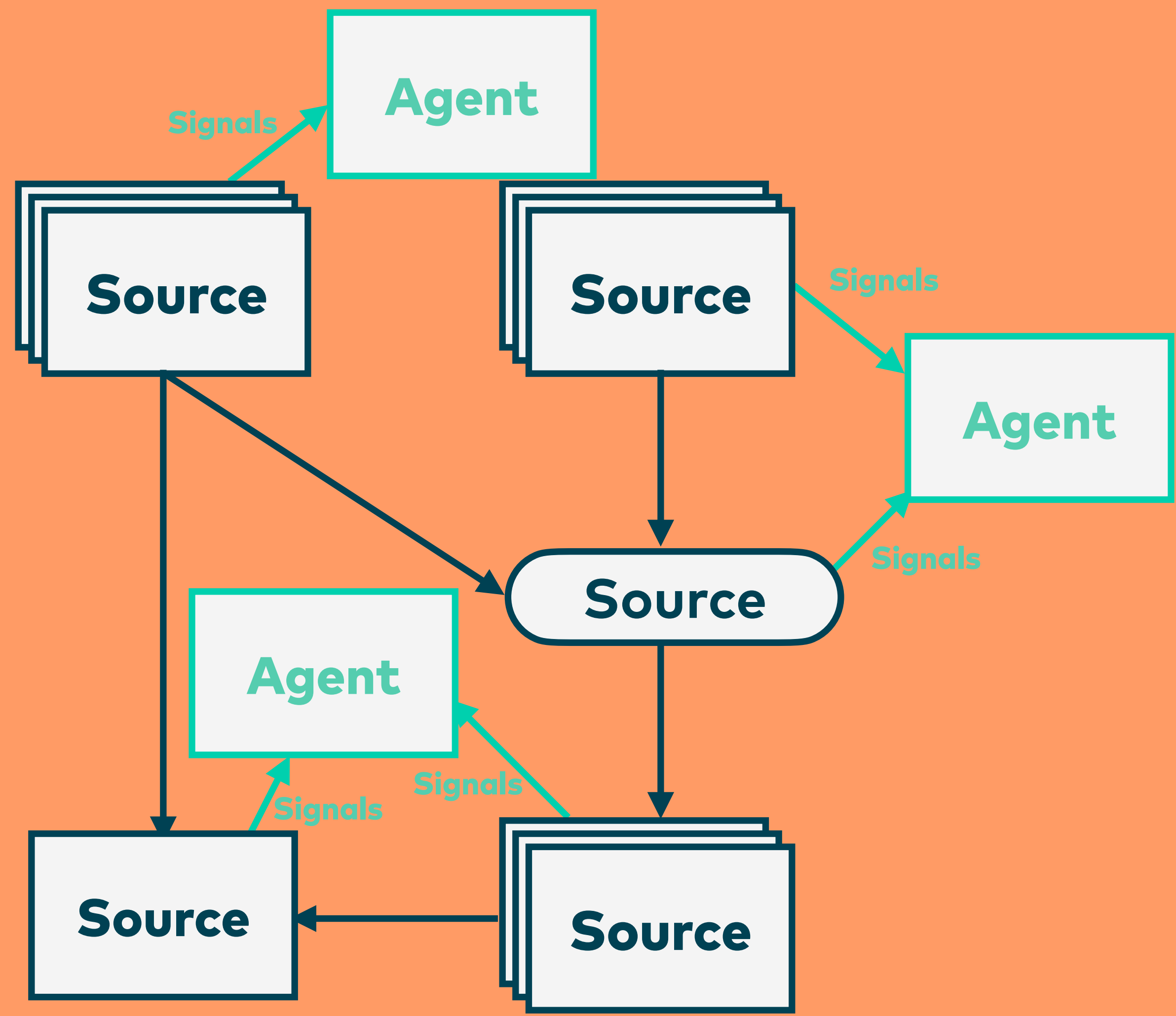




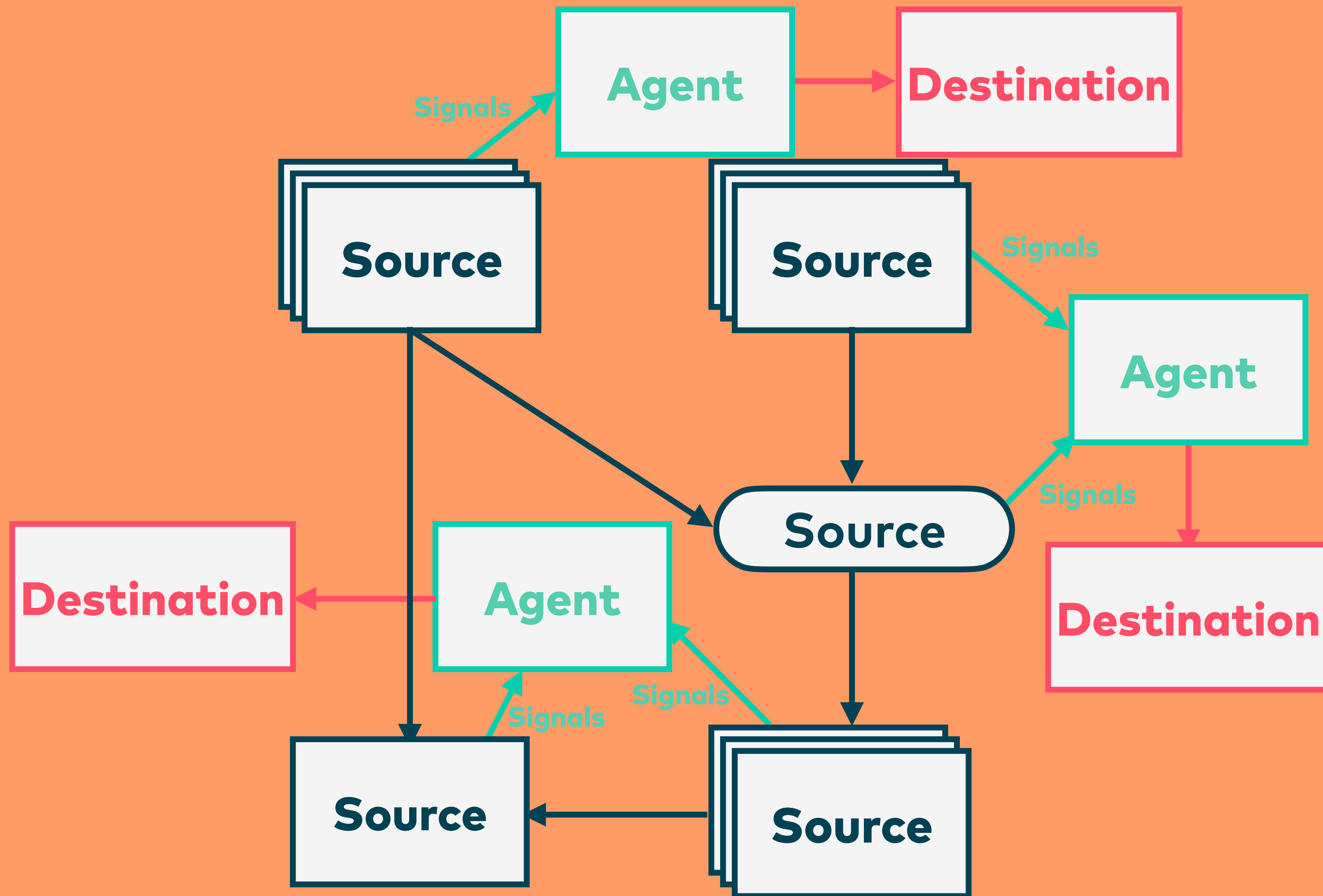
Primary Signals



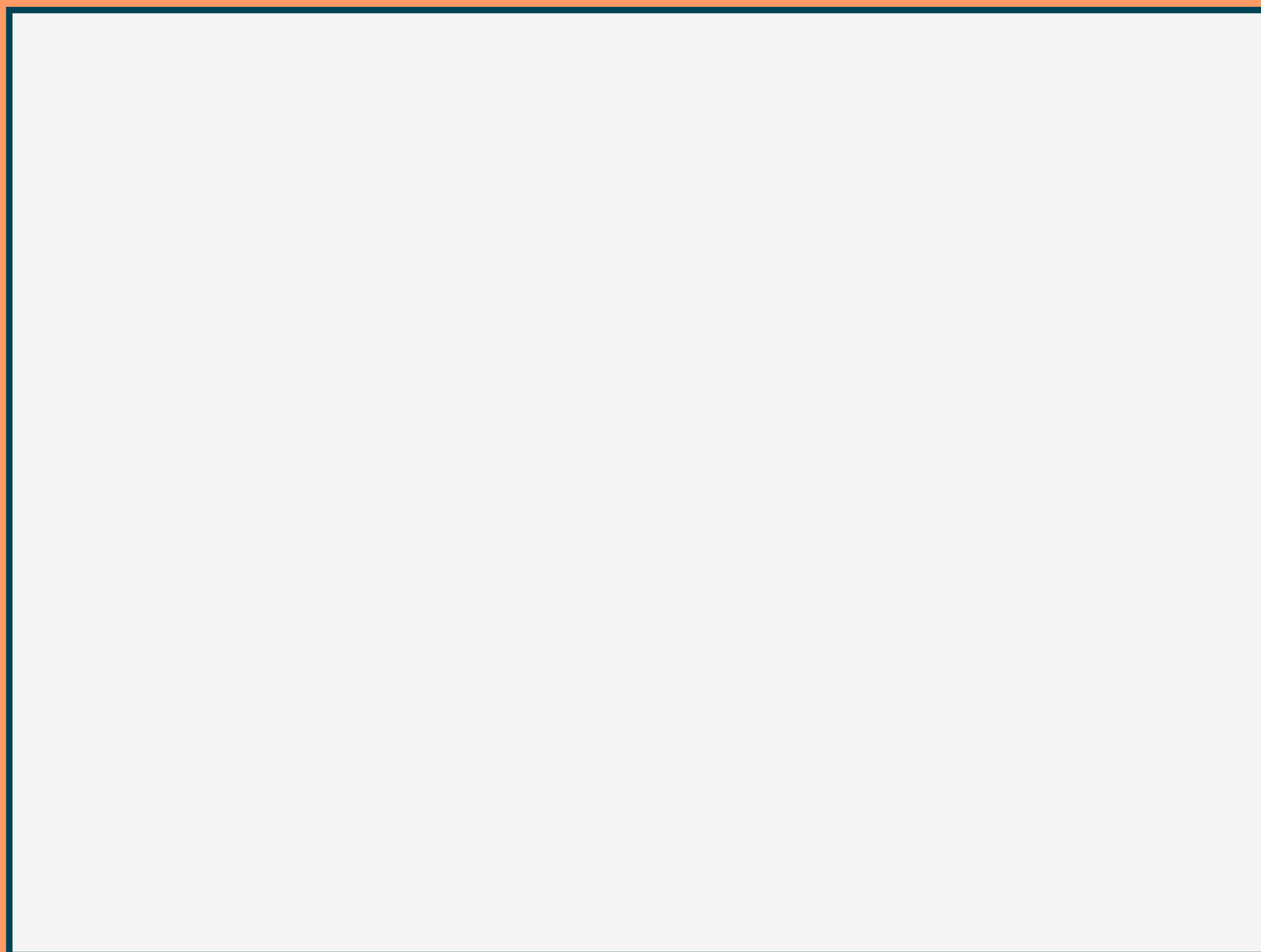
Agents



Destinations



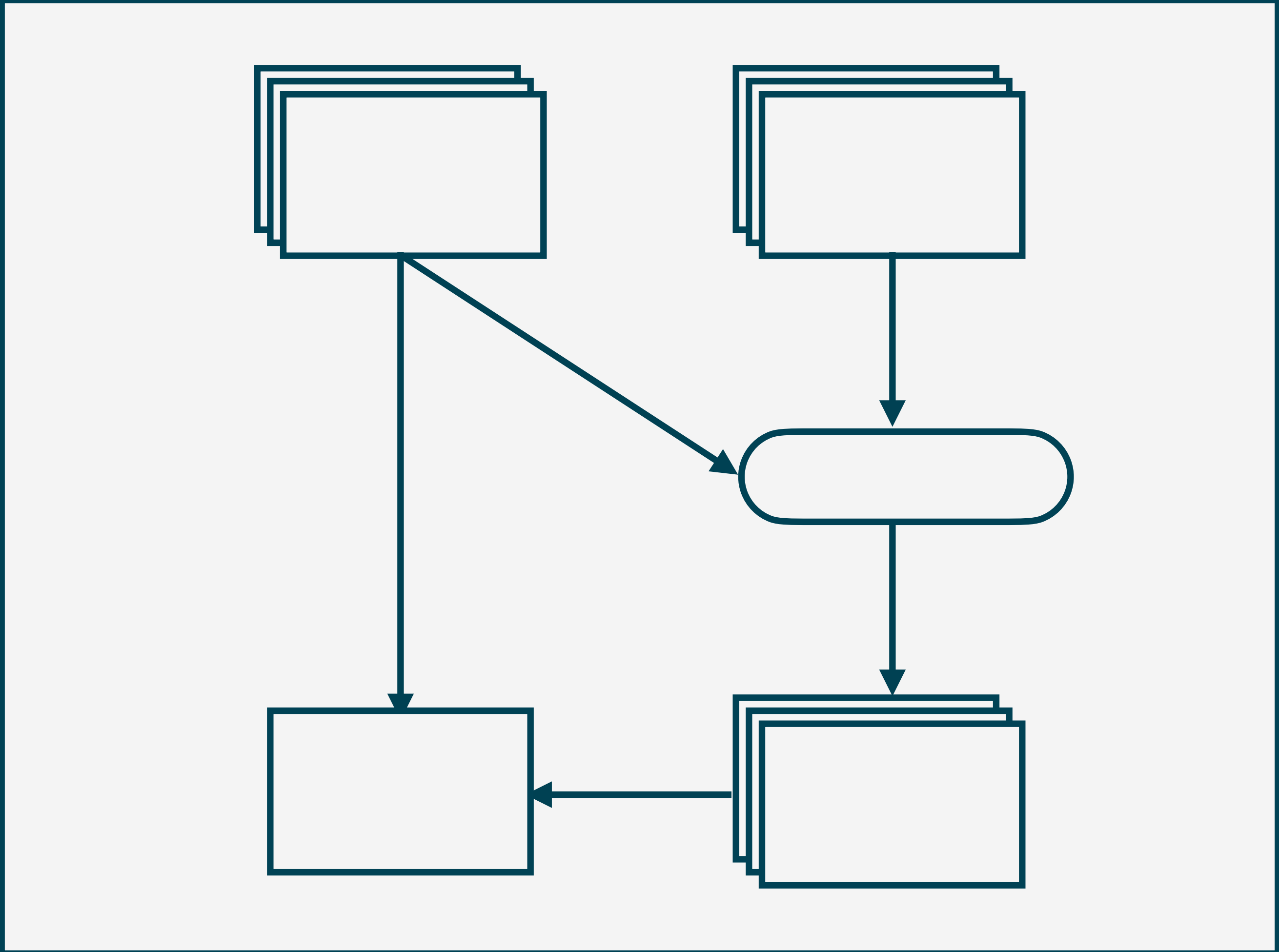






```
ssh user@some_server
```

```
cat /var/logs/myapp.log | grep ERROR
```



DevOps & Shift Left

Logging

Logback

SLF4J

Log4j



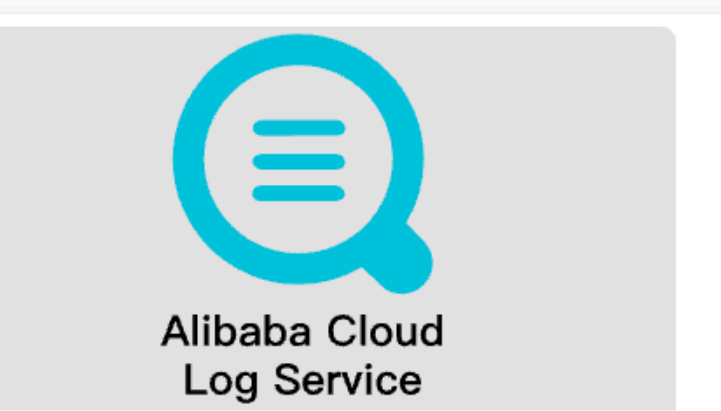
```
LOGGER.debug("The calculated value is: {}", value);  
LOGGER.info("Cleanup job started");  
LOGGER.warn("Geocoding service is not reachable falling back to ...");  
LOGGER.error("Unable to detect geo location because address is invalid");
```



```
try (var ignored = MDC.putCloseable("tenantId", tenantId)) {  
    LOGGER.info("Updating session {}", v("sessionId", sessionId));  
}
```



```
{  
  "timestamp": "2023-06-22T16:05:35.910522+02:00",  
  "@version": "1",  
  "message": "Started Application in 4.32 seconds ...",  
  "logger_name": "de.mvitz.tnhh.backend.Application",  
  "thread_name": "main",  
  "level": "INFO",  
  "level_value": 20000,  
  "app": "backend"  
}
```



Alibaba Cloud Log Service
Alibaba Cloud
MCAp: \$233.4B



DataSet
Scalyr
Funding: \$27.6M



Elastic
Elastic
★ 63,438
MCAp: \$5.8B



Fluentd
Cloud Native Computing Foundation (CNCF)
Funding: \$3M
★ 11,914



Grafana Loki
Grafana Labs
★ 18,861
Funding: \$535.2M



Graylog
Graylog
★ 6
Funding: \$27



Funding: \$31.8M



Loggie
NetEase
★ 938
MCAp: \$60.3B



Loggly
Loggly
Funding: \$47.4M



Logiq
Logiq.ai
Funding: \$1.8M



Logstash
Elastic
★ 13,408
MCAp: \$5.8B



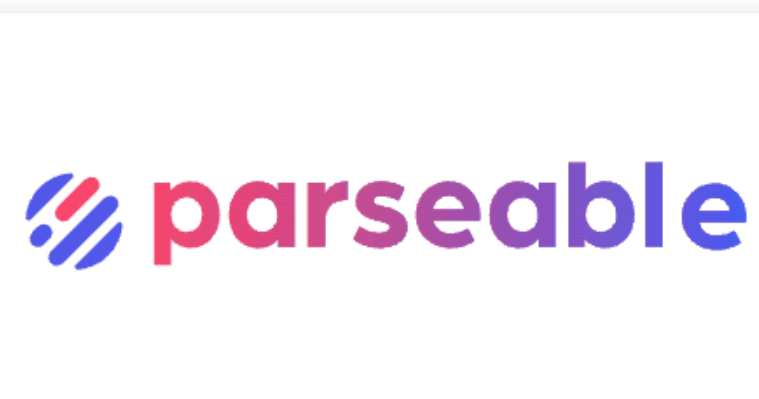
Funding: \$108



★ 6,761
MCAp: \$1.1T



Pandora2.0
Qiniu
Funding: \$396.9M



Parseable
Parseable
★ 1,076



Rizhiyi
Rizhiyi
Funding: \$11.4M



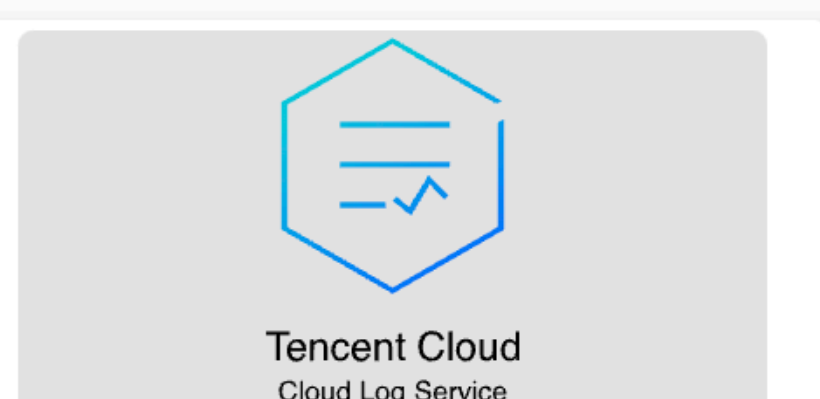
Sematext
Sematext



MCAp: \$1



MCAp: \$1.5B



Tencent Cloud Log Service
Tencent
MCAp: \$425.4B



Trink.io
Trink.io

Metrics

Micrometer

Dropwizard Metrics

Eclipse Microprofile Metrics





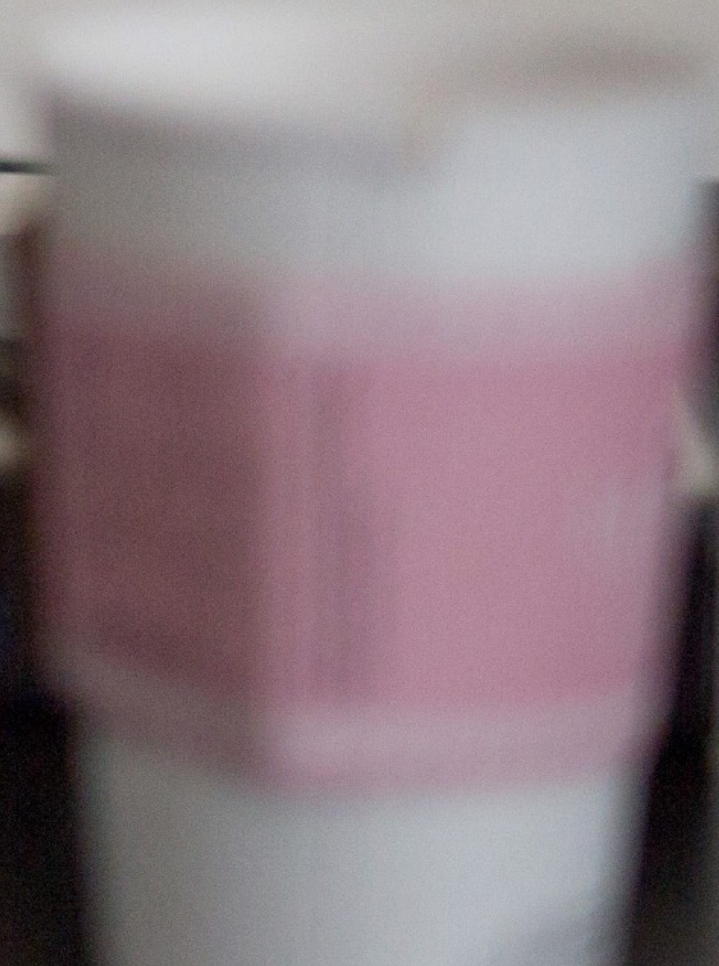
Suiza
kg/cm²



Сделано в СССР



FUNDAMENTALS OF CORPORATE FINANCE




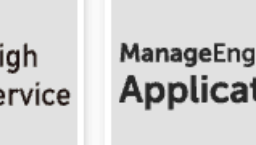




















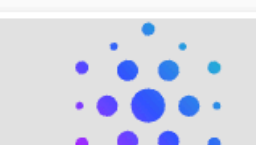


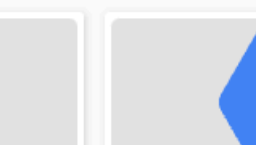









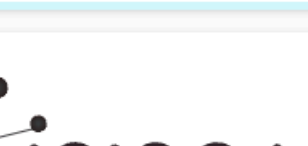

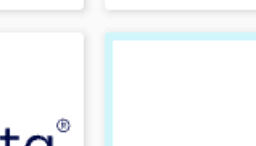
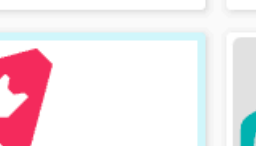











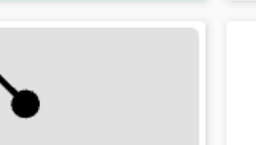





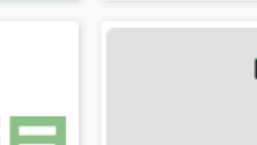
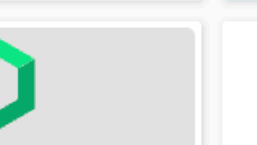










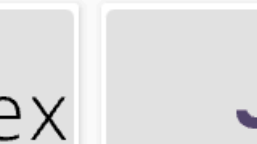







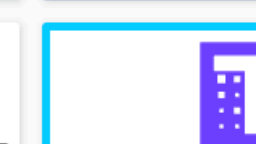



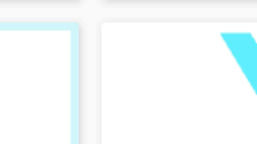






USE

RED

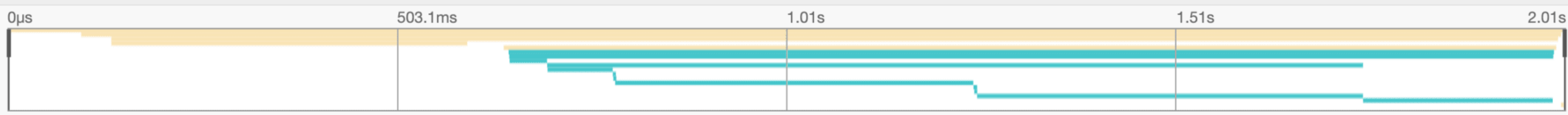
Push

Pull

 Amazon CloudWatch <small>Amazon CloudWatch</small> <small>Amazon Web Services</small> <small>MCap: \$1.1T</small>	 APPDYNAMICS <small>AppDynamics</small> <small>AppDynamics</small> <small>Funding: \$364.5M</small>	 Application High Availability Service <small>Application High Availability Service</small> <small>Alibaba Cloud</small> <small>MCap: \$233.4B</small>	 ManageEngine Applications Manager <small>ManageEngine</small> <small>ManageEngine</small>	 AppNeta <small>AppNeta</small> <small>AppNeta</small> <small>Funding: \$63.2M</small>	 appoptics <small>AppOptics</small> <small>SolarWinds</small> <small>MCap: \$1.4B</small>	 AppSignal <small>AppSignal</small> <small>AppSignal</small>	 Aternity <small>Aternity</small> <small>Riverbed Technology</small> <small>Funding: \$28.4M</small>	 Azure Monitor <small>Azure Monitor</small> <small>Microsoft</small> <small>MCap: \$2.1T</small>	 beats <small>Beats</small> <small>Elastic</small> <small>★ 11,613</small> <small>MCap: \$5.8B</small>	 bluemattador <small>Blue Mattador</small> <small>Blue Mattador</small> <small>Funding: \$3.1M</small>	 botkube <small>Botkube</small> <small>Kubeshop</small> <small>★ 1,742</small>	
 catchpoint <small>Catchpoint</small> <small>Catchpoint</small> <small>Funding: \$49.8M</small>	 centreon <small>Centreon</small> <small>Centreon</small> <small>★ 30</small>	 checkmk <small>Checkmk</small> <small>tribe29</small> <small>★ 999</small>	 chronosphere <small>Chronosphere</small> <small>Chronosphere</small> <small>Funding: \$342.5M</small>	 CloudHealth <small>CloudHealth Technologies</small> <small>CloudHealth Technologies</small> <small>Funding: \$85.7M</small>	 Cloudwise <small>Cloudwise</small> <small>Cloudwise</small> <small>Funding: \$241M</small>	 cortex <small>Cortex</small> <small>Cloud Native Computing Foundation (CNCF)</small> <small>★ 5,046</small> <small>Funding: \$3M</small>	 DATADOG <small>Datadog</small> <small>Datadog</small> <small>MCap: \$20.9B</small>	 DeepFlow <small>DeepFlow</small> <small>Yunshan Networks</small> <small>★ 826</small> <small>Funding: \$26M</small>	 dynatrace <small>Dynatrace</small> <small>Dynatrace</small> <small>MCap: \$12.2B</small>	 epsagon <small>Epsagon</small> <small>Epsagon</small> <small>Funding: \$30M</small>	 falcon <small>Falcon</small> <small>Xiaomi</small> <small>★ 7,056</small> <small>MCap: \$37.4B</small>	
 FLOWMILL <small>Flowmill</small> <small>Flowmill</small>	 FONIO <small>Fonio</small> <small>Cloud Native Computing Foundation (CNCF)</small> <small>★ 399</small> <small>Funding: \$3M</small>	 foresight <small>Foresight</small> <small>Thundra</small> <small>Funding: \$4M</small>	 Google Stackdriver <small>Google Stackdriver</small> <small>Google</small> <small>MCap: \$1.4T</small>	 Gradle <small>Gradle Enterprise</small> <small>Gradle Inc.</small> <small>Funding: \$54.7M</small>	 Grafana <small>Grafana</small> <small>Grafana Labs</small> <small>★ 54,952</small> <small>Funding: \$535.2M</small>	 Grafana Mimir <small>Grafana Mimir</small> <small>Grafana Labs</small> <small>★ 3,058</small> <small>Funding: \$535.2M</small>	 Grafana Phlare <small>Grafana Phlare</small> <small>Grafana Labs</small> <small>★ 2,034</small> <small>Funding: \$535.2M</small>	 graphite <small>Graphite</small> <small>Graphite</small> <small>★ 5,648</small>	 观测云 <small>Guance Cloud</small> <small>Guance Cloud</small> <small>Funding: \$70.6M</small>	 HEADLAMP <small>Headlamp</small> <small>Cloud Native Computing Foundation (CNCF)</small> <small>★ 1,035</small> <small>Funding: \$3M</small>	 Honeybadger <small>Honeybadger</small> <small>Honeybadger</small>	
 HUBBLE <small>Hubble</small> <small>Cloud Native Computing Foundation (CNCF)</small> <small>★ 2,621</small> <small>Funding: \$3M</small>	 ICINGA <small>Icinga</small> <small>Icinga</small> <small>★ 1,834</small>	 influxdata <small>InfluxData</small> <small>InfluxData</small> <small>★ 25,283</small> <small>Funding: \$200.9M</small>	 INSPEKTOR GADGET <small>Inspektor Gadget</small> <small>Cloud Native Computing Foundation (CNCF)</small> <small>★ 1,403</small> <small>Funding: \$3M</small>	 INSTANA <small>Instana</small> <small>Instana</small> <small>Funding: \$57M</small>	 IRONdb <small>IronDB</small> <small>Circonus</small> <small>Funding: \$16.8M</small>	 K8SGPT <small>K8sGPT</small> <small>k8sgpt-ai</small> <small>★ 2,539</small>	 KEPLER <small>Kepler</small> <small>Cloud Native Computing Foundation (CNCF)</small> <small>★ 503</small> <small>Funding: \$3M</small>	 kiali <small>Kiali</small> <small>Red Hat</small> <small>★ 3,082</small> <small>MCap: \$114.6B</small>	 kuberhealthy <small>Kuberhealthy</small> <small>Cloud Native Computing Foundation (CNCF)</small> <small>★ 1,681</small> <small>Funding: \$3M</small>	 LeanIX <small>LeanIX Value Stream Management (VSM)</small> <small>LeanIX</small> <small>Funding: \$119.9M</small>	 LinDB <small>LinDB</small> <small>LinData</small> <small>★ 2,656</small>	
 LogicMonitor <small>LogicMonitor</small> <small>LogicMonitor</small> <small>Funding: \$142.9M</small>	 logz.io <small>Logz.io</small> <small>Logz.io</small> <small>Funding: \$121.9M</small>	 M3 <small>M3</small> <small>Uber</small> <small>★ 4,407</small> <small>MCap: \$63.4B</small>	 mackerel <small>Mackerel</small> <small>Hatena</small>	 MICROMETER <small>Micrometer</small> <small>VMware</small> <small>★ 3,956</small> <small>MCap: \$55B</small>	 Nagios <small>Nagios</small> <small>Nagios</small> <small>★ 1,253</small>	 NETDATA <small>Netdata</small> <small>Netdata</small> <small>★ 62,665</small> <small>Funding: \$34.7M</small>	 Netis <small>Netis</small> <small>Netis Technologies</small> <small>★ 920</small>	 new relic <small>New Relic</small> <small>New Relic</small> <small>MCap: \$5B</small>	 NexClipper <small>NexClipper</small> <small>NexCloud</small> <small>★ 559</small>	 Nightingale <small>Nightingale</small> <small>Didi Labs</small> <small>★ 6,293</small>	 NODESOURCE <small>NodeSource</small> <small>NodeSource</small> <small>Funding: \$33.4M</small>	
 OPENMETRICS <small>OpenMetrics</small> <small>Cloud Native Computing Foundation (CNCF)</small> <small>★ 2,044</small> <small>Funding: \$3M</small>	 OPENTSDb <small>OpenTSDB</small> <small>OpenTSDB</small> <small>★ 4,821</small>	 opstrace <small>Opstrace</small> <small>Opstrace</small> <small>★ 1,212</small>	 OverOps <small>OverOps</small> <small>OverOps</small> <small>Funding: \$49.5M</small>	 PIXIE <small>Pixie</small> <small>Cloud Native Computing Foundation (CNCF)</small> <small>★ 4,494</small> <small>Funding: \$3M</small>	 Prometheus <small>Prometheus</small> <small>Cloud Native Computing Foundation (CNCF)</small> <small>★ 47,774</small> <small>Funding: \$3M</small>	 Promscale <small>Promscale</small> <small>Timescale</small> <small>★ 1,324</small> <small>Funding: \$181.1M</small>	 replex <small>Replex</small> <small>Replex</small> <small>Funding: \$4.2M</small>	 ROOKOUT <small>Rookout</small> <small>Rookout</small> <small>Funding: \$28.4M</small>	 Sensu <small>Sensu</small> <small>Sensu</small> <small>★ 875</small> <small>Funding: \$12.5M</small>	 SENTRY <small>Sentry</small> <small>Sentry</small> <small>★ 33,961</small> <small>Funding: \$217M</small>	 SIDEKICK <small>Sidekick</small> <small>Thundra</small> <small>★ 1,663</small> <small>Funding: \$4M</small>	
 SignalFx <small>SignalFX</small> <small>Splunk</small> <small>MCap: \$15.1B</small>	 Skooner <small>Skooner</small> <small>Cloud Native Computing Foundation (CNCF)</small> <small>★ 1,092</small> <small>Funding: \$3M</small>	 SOSIVIO <small>Sosivio</small> <small>Sosivio</small> <small>Funding: \$6.2M</small>	 StackState <small>StackState</small> <small>StackState</small> <small>Funding: \$13M</small>	 sysdig <small>sysdig</small> <small>Sysdig</small> <small>★ 7,226</small> <small>Funding: \$729.5M</small>	 Thanos <small>Thanos</small> <small>Cloud Native Computing Foundation (CNCF)</small> <small>★ 11,639</small> <small>Funding: \$3M</small>	 听云 <small>Tingyun</small> <small>Tingyun</small> <small>Funding: \$135.6M</small>	 trickster <small>Trickster</small> <small>Cloud Native Computing Foundation (CNCF)</small> <small>★ 1,872</small> <small>Funding: \$3M</small>	 VECTOR <small>Vector</small> <small>Timber</small> <small>★ 13,281</small> <small>Funding: \$5.8M</small>	 VICTORIA METRICS <small>VictoriaMetrics</small> <small>VictoriaMetrics</small> <small>★ 8,367</small>	 virtasant <small>Virtasant</small> <small>Virtasant</small>	 WAVEFRONT <small>Wavefront</small> <small>VMware</small> <small>MCap: \$55B</small>	
 weave scope	 Whatan	 ZABBIX										

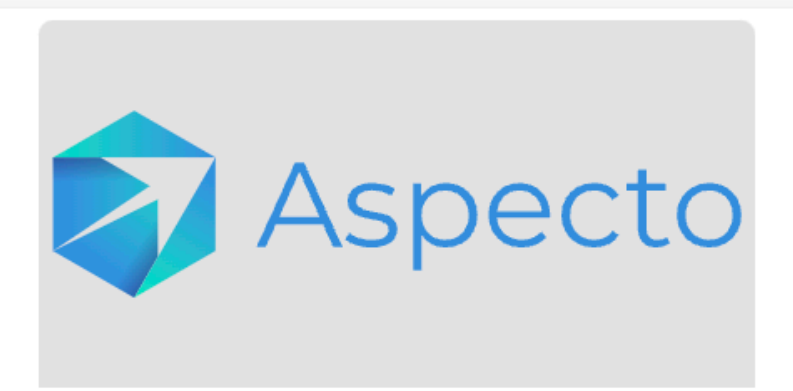
Tracing

Trace Start August 16 2022, 10:51:37.629 | Duration 2.01s | Services 2 | Depth 9 | Total Spans 19



Service & Operation table with columns for service name and operation name, and a timeline view showing duration bars for each operation.

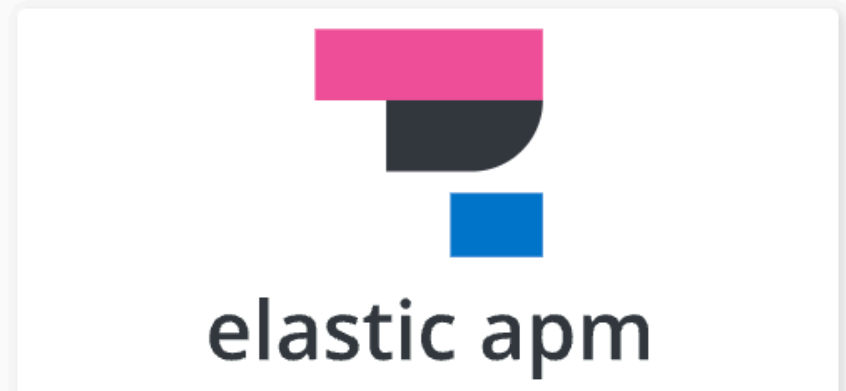
Observability and Analysis - Tracing (18)



Aspecto
Aspecto



EaseAgent ★ 516
MegaEase, Inc.



Elastic APM ★ 1,093
Elastic MCap: \$5.8B



Grafana Tempo ★ 2,922
Grafana Labs Funding: \$535.2M



Helios ★ 1,000
Helios Funding: \$5M



Honeycomb ★ 1,000
Honeycomb Funding: \$148.9M



Jaeger ★ 17,481
Cloud Native Computing Foundation Funding: \$3M (CNCF)



LightStep ★ 1,000
LightStep Funding: \$70M



OpenTelemetry ★ 607
Cloud Native Computing Foundation Funding: \$3M (CNCF)



OpenTracing ★ 3,459
Cloud Native Computing Foundation Funding: \$3M (CNCF)



Pinpoint ★ 12,712
Pinpoint



SkyWalking ★ 21,668
The Apache Software Foundation



SOFATracer ★ 1,047
Ant Group MCap: \$233.4B



Spring Cloud Sleuth ★ 1,687
VMware MCap: \$55B



TelemetryHub by Scout APM ★ 1,000
TelemetryHub by Scout APM Funding: \$8M



Teletrace ★ 535
Cisco MCap: \$190.8B



Tracetest ★ 504
Kubeshop



Zipkin ★ 16,118
Zipkin



Thanks! Questions?



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LinkedIn [michaelvitz](https://www.linkedin.com/in/michaelvitz)



<https://www.innoq.com/de/talks/2023/11/observability-in-java/>

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