



Cluster and Application Monitoring with Prometheus

By @mxinden



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Why Monitoring?

- Alerting
- Autoscaling
- Long-term trends

Alerting

What is Prometheus?



- Open Source Monitoring
- Built at Soundcloud
- Inspired by borgmon

What is Prometheus?



- Pull-based
- Multi-Dimensional
- ***Metrics***, **not** logging, **not** tracing
- No magic!

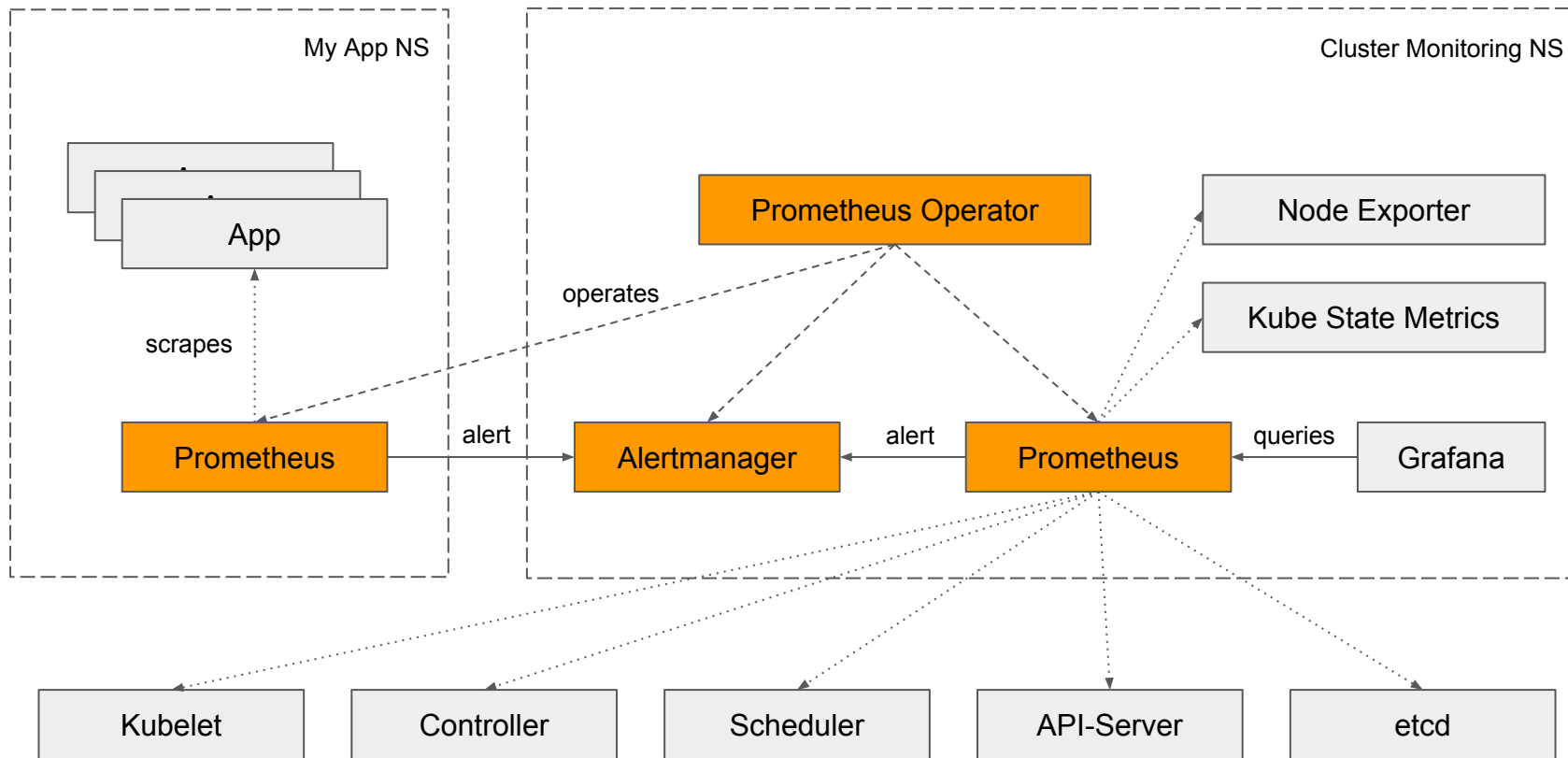
Projects

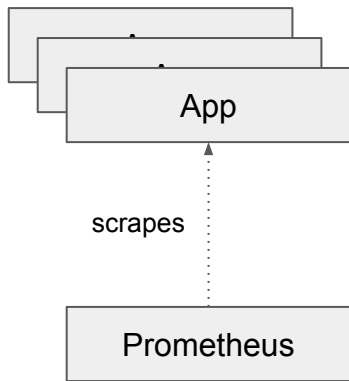
Upstream (Core)

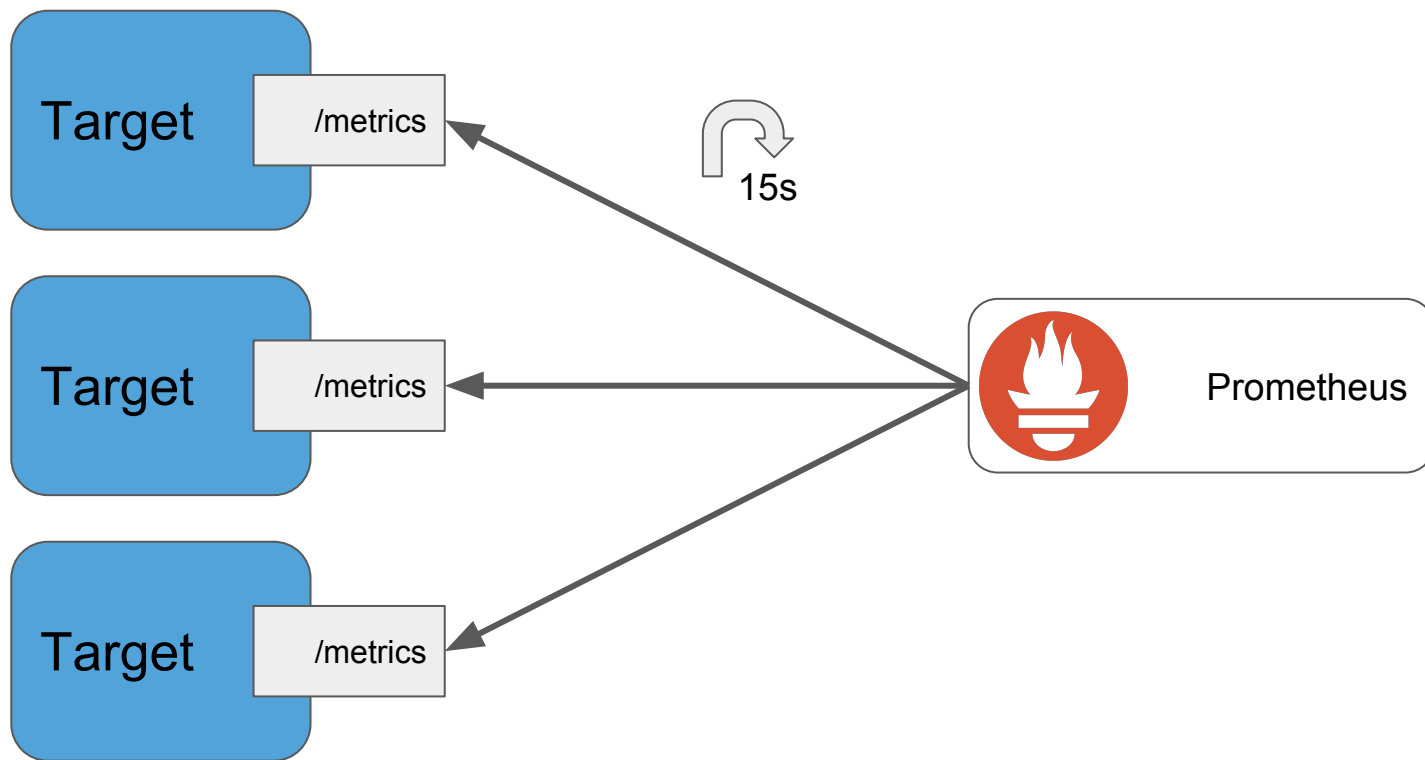
- Prometheus
- Alertmanager
- Node Exporter

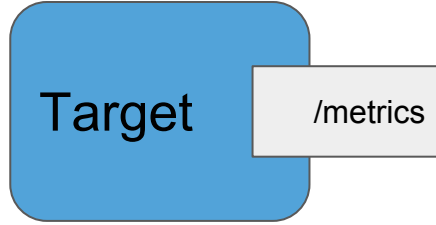
Kubernetes Integration

- Prometheus Operator
- Kube Prometheus
- Kube State Metrics
- Monitoring Mixins









```
http_requests_total{code="200",path="/status"} 8
```

Current percentage of HTTP errors across all service instances?

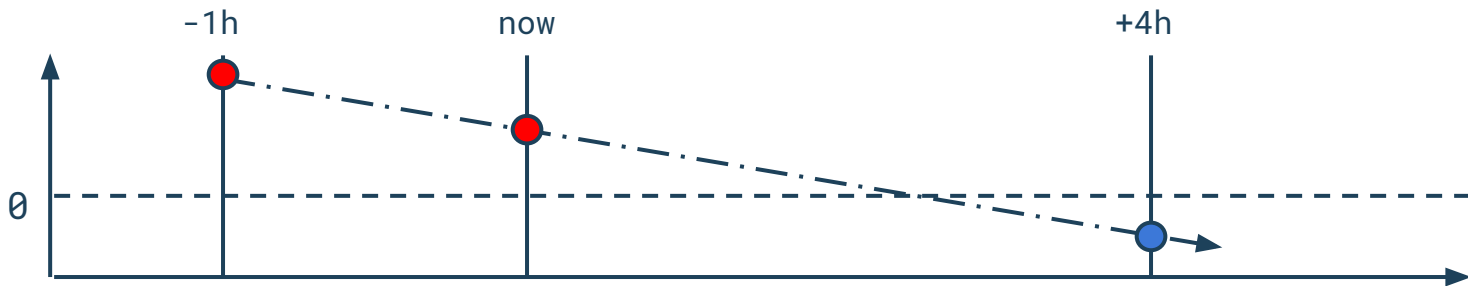
```
sum by(path) rate(http_requests_total{status="500"}[5m]))  
/ sum by(path) rate(http_requests_total[5m]))
```

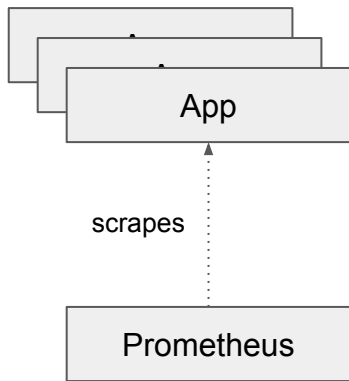
{path="/status"}	0.0039
{path="/"}	0.0011
{path="/api/v1/topics/:topic"}	0.087
{path="/api/v1/topics"}	0.0342

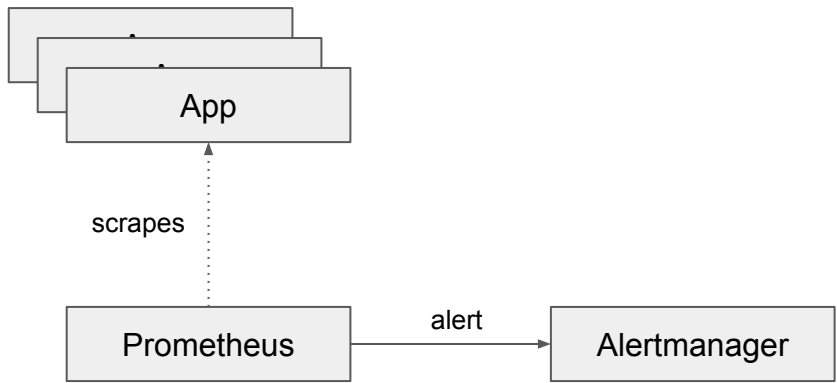
Is any disk about to run full within 4 hours?

ALERT DiskWillFillIn4Hours

IF `predict_linear(node_filesystem_free[1h], 4*3600) < 0`

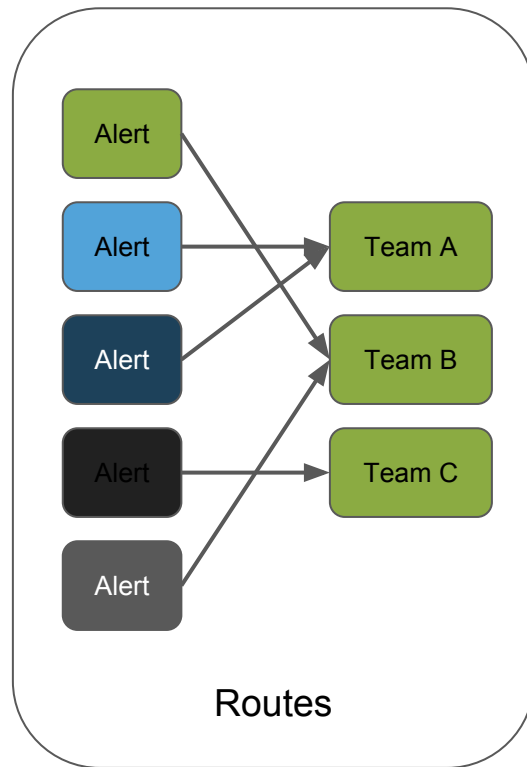
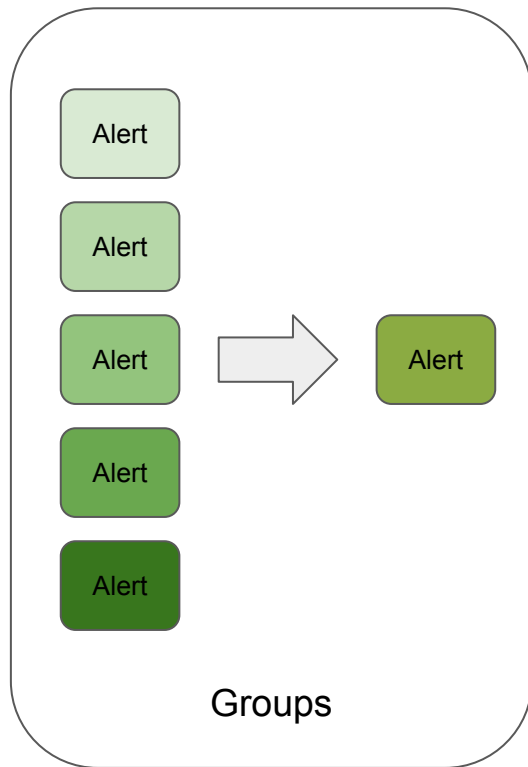
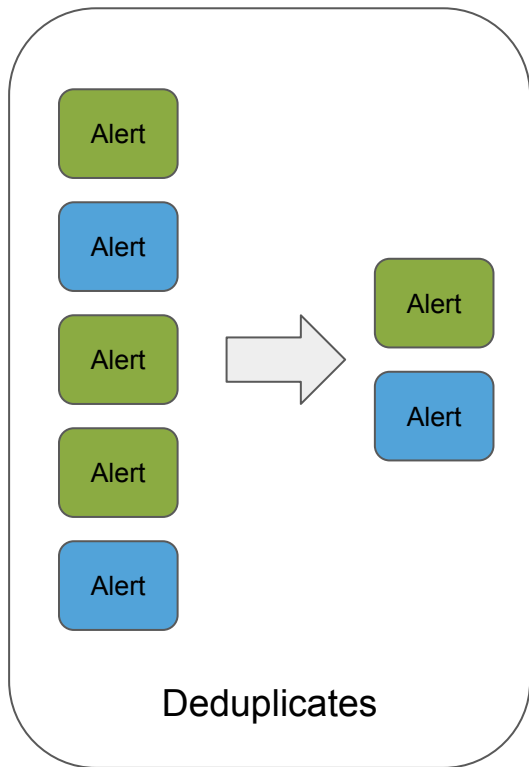


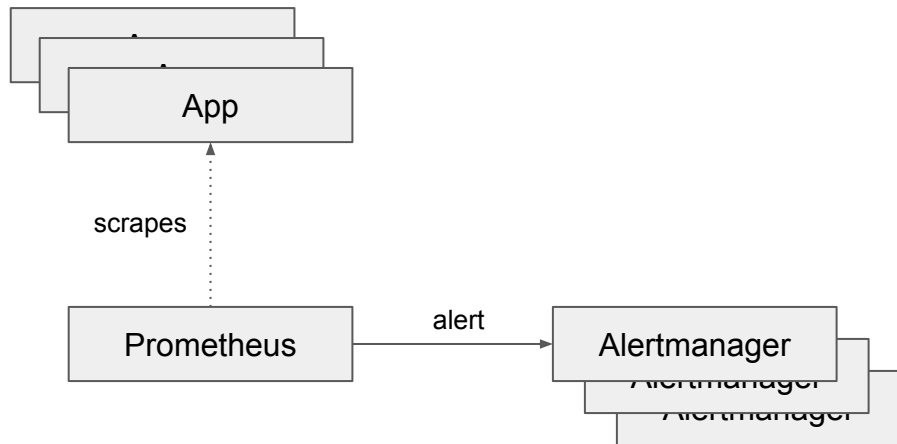


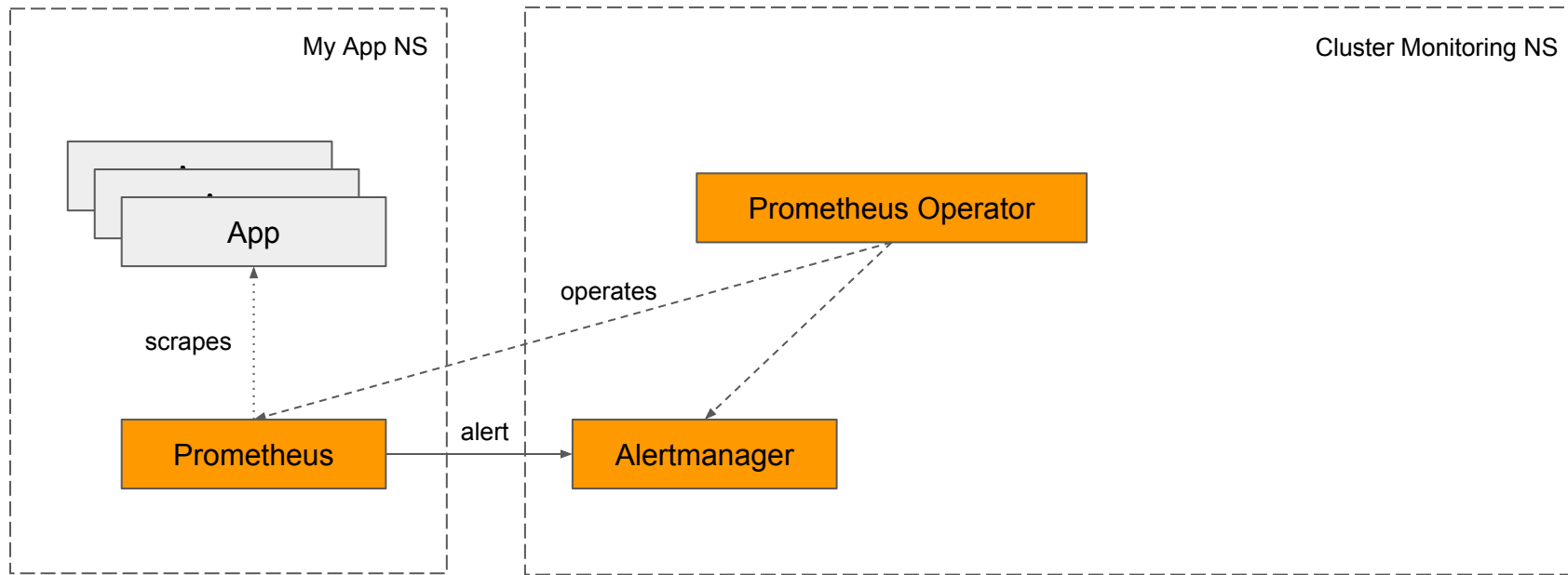


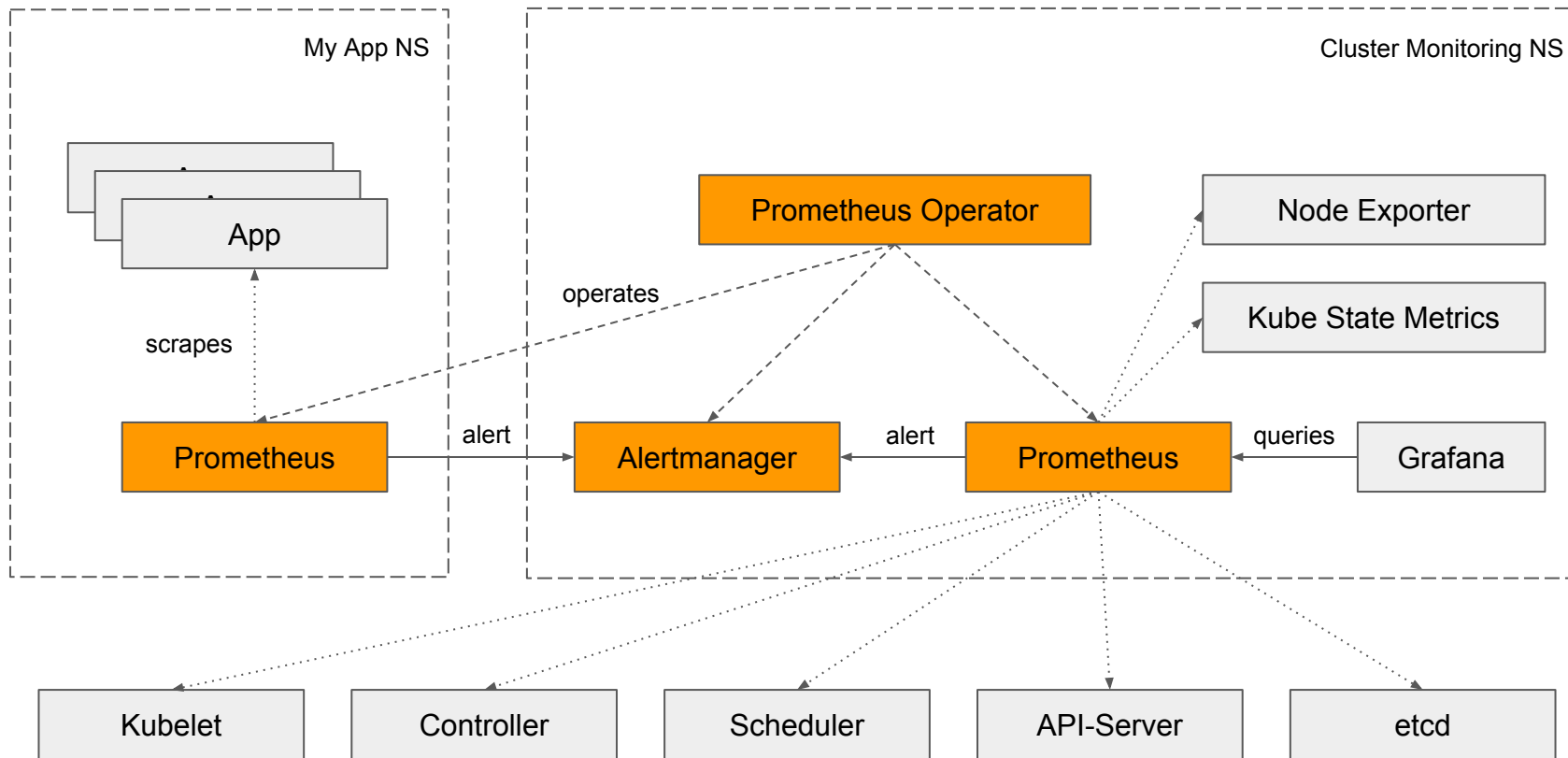


Alertmanager

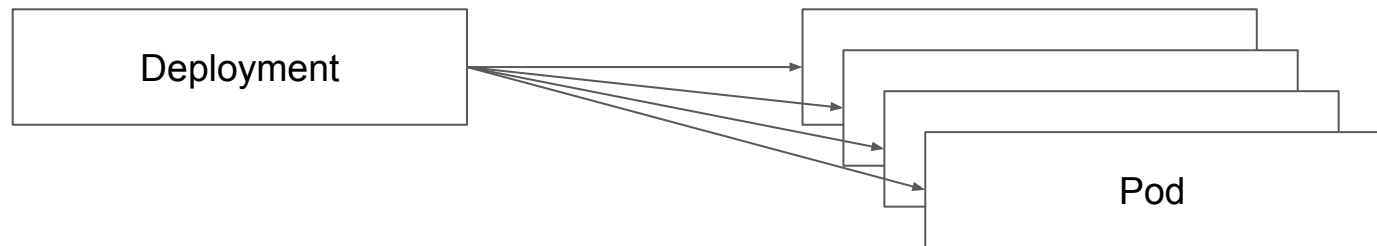


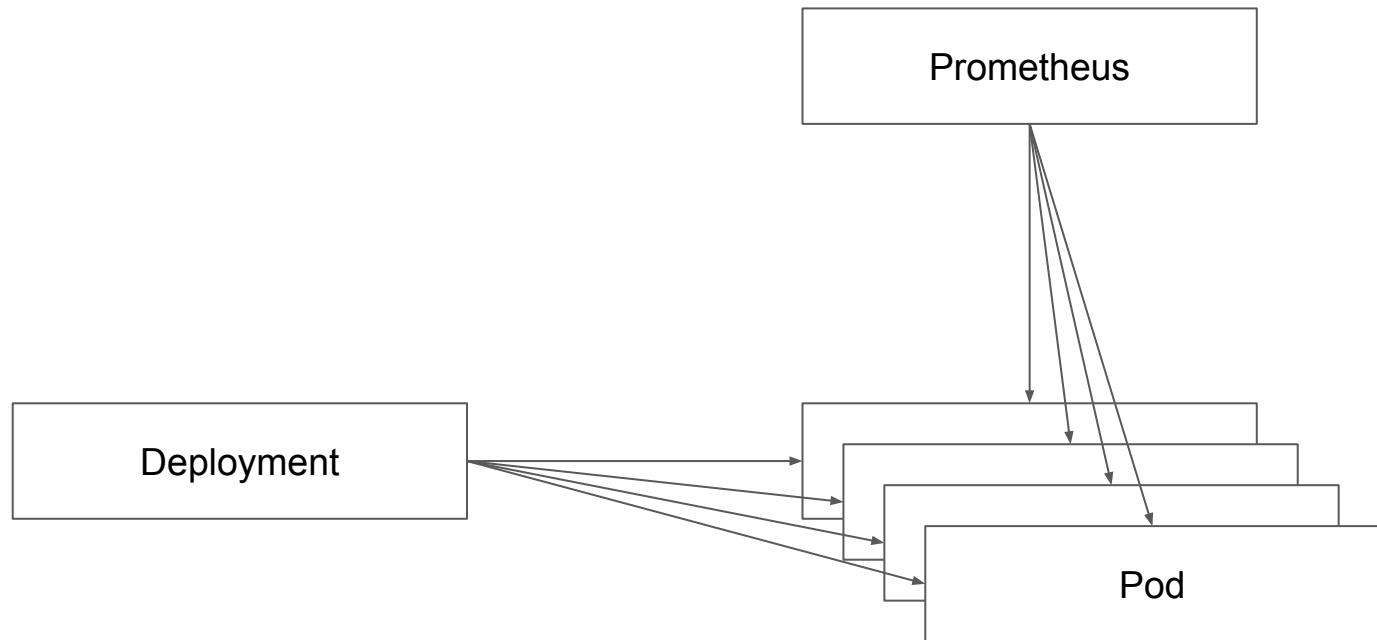


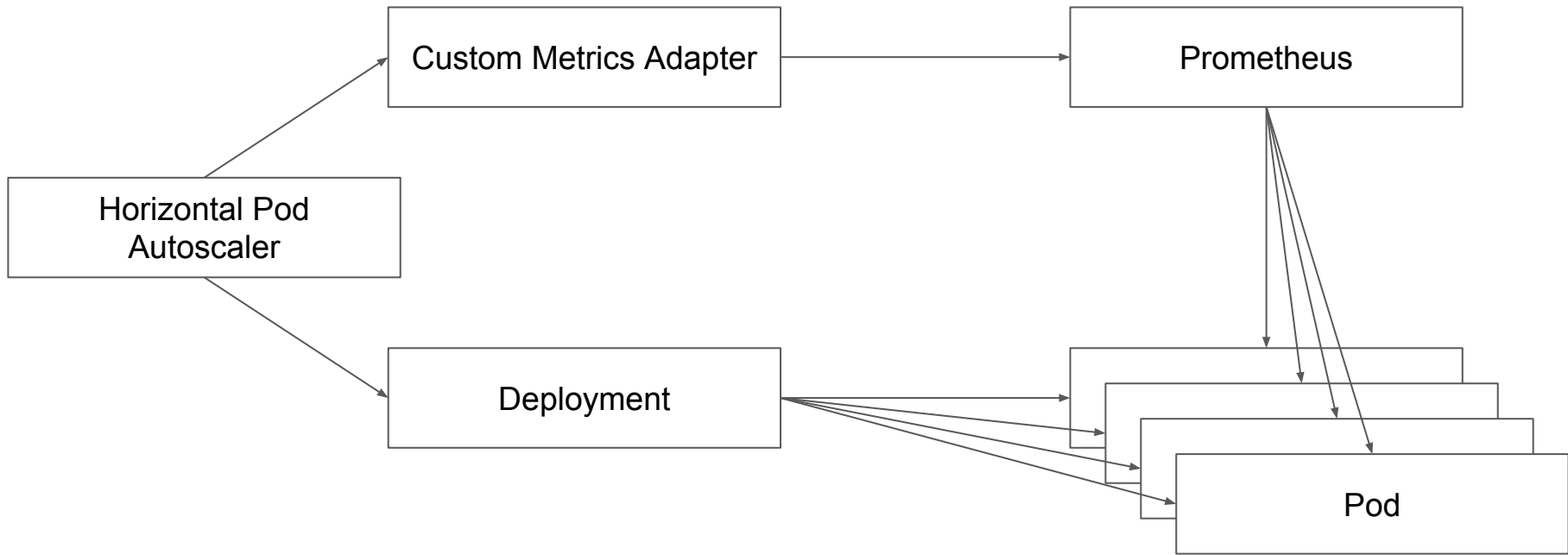




Autoscaling



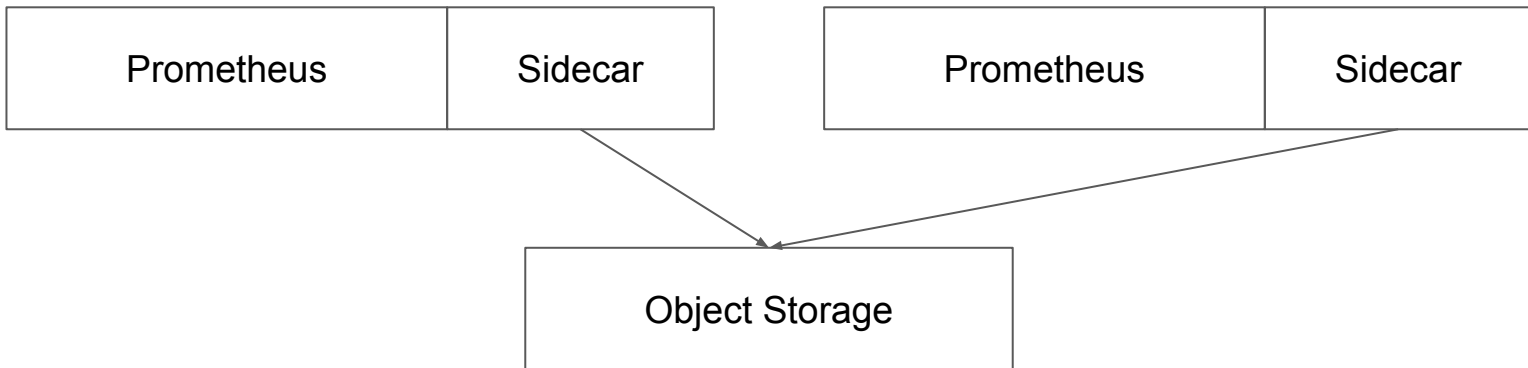


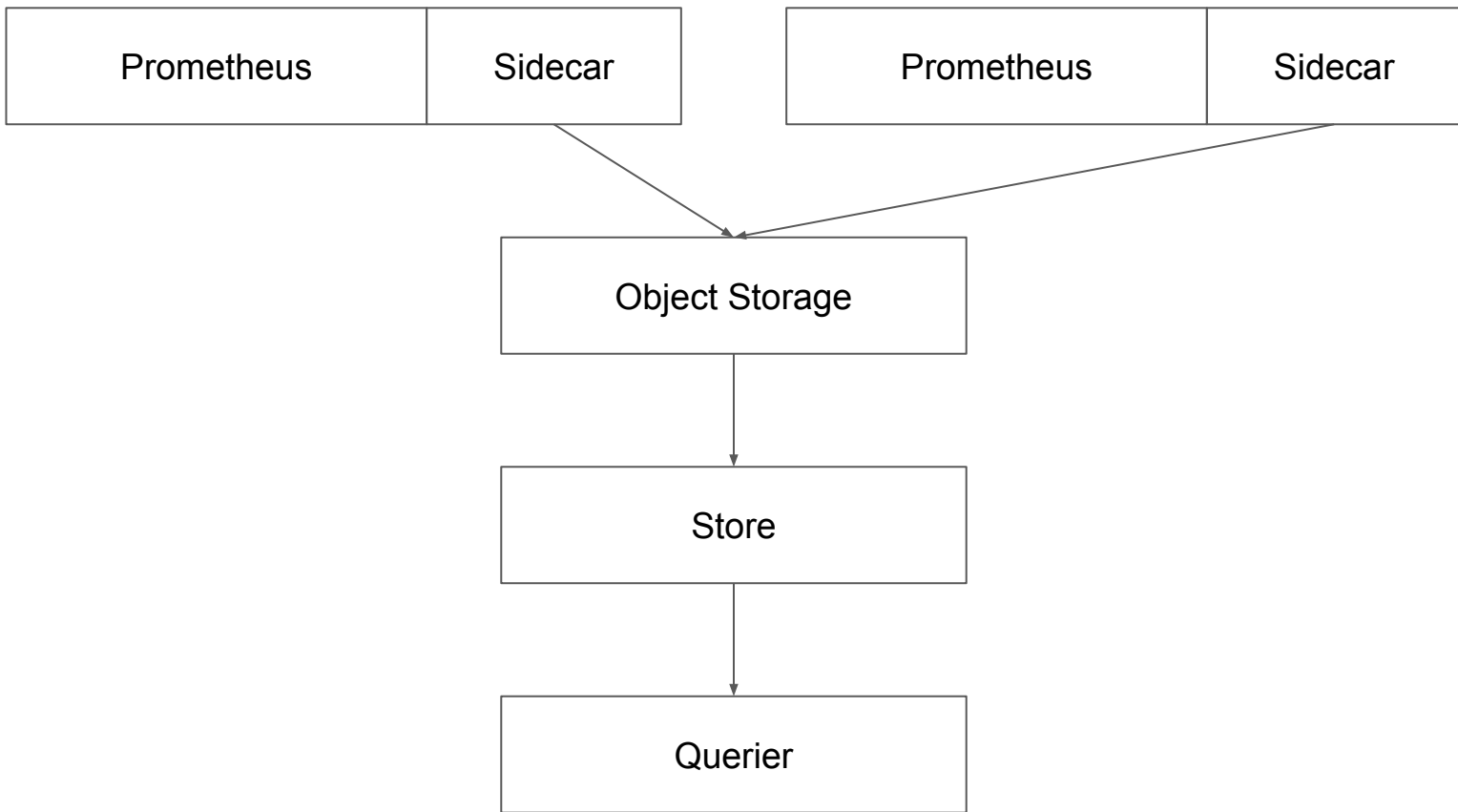


Long-Term Trend

Prometheus

Prometheus





Recap

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Where to go from here?

prometheus.io/

github.com/coreos/prometheus-operator

github.com/DirectXMan12/k8s-prometheus-adapter

github.com/improbable-eng/thanos



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