

Thanos



Long Term Retention Data Monitoring with Thanos and Prometheus Stack for Kubernetes



\$kubectl get information

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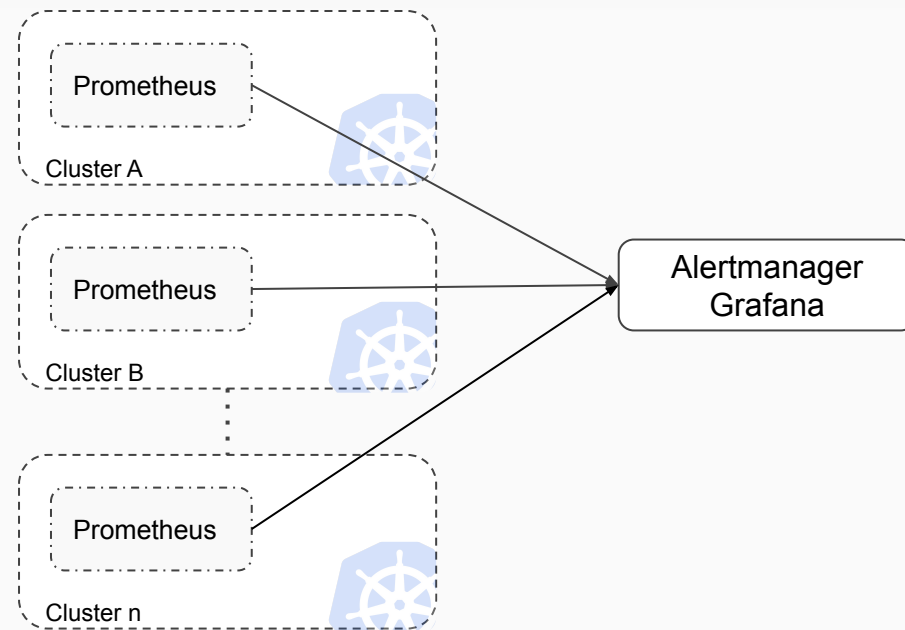
Medium: <https://medium.com/@apurvbhandari>



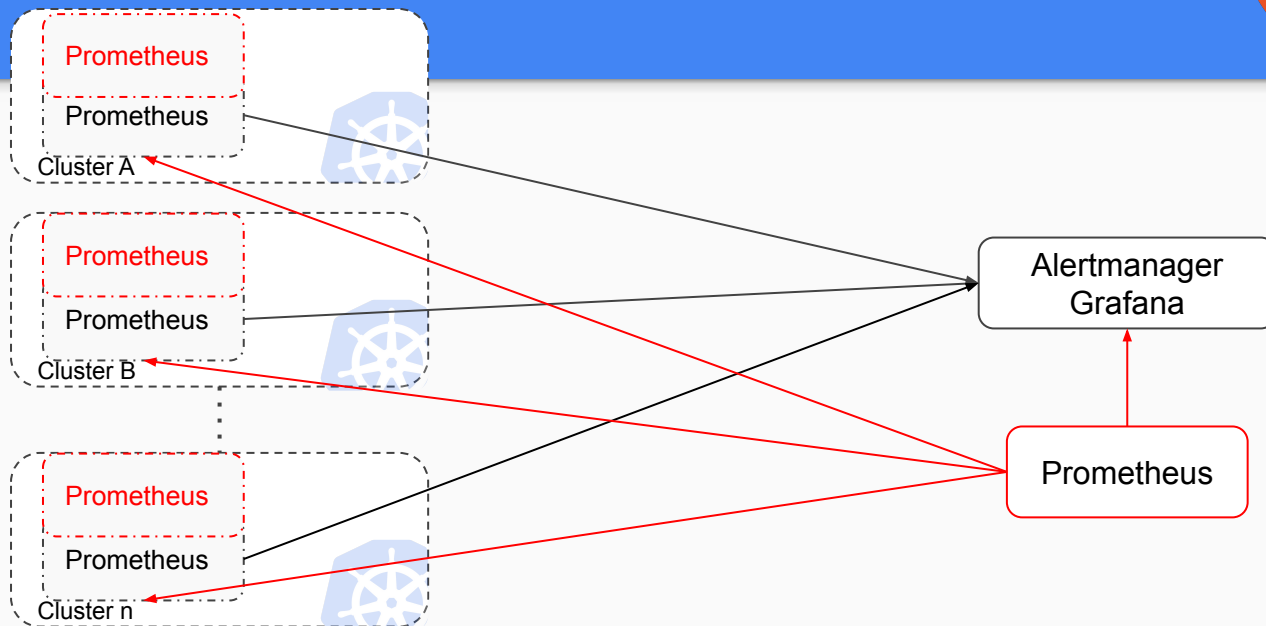
Prometheus 2.0



- Reliable operational model
- Powerful query language
- Scraping capabilities
- Local metric storage



HA Prometheus



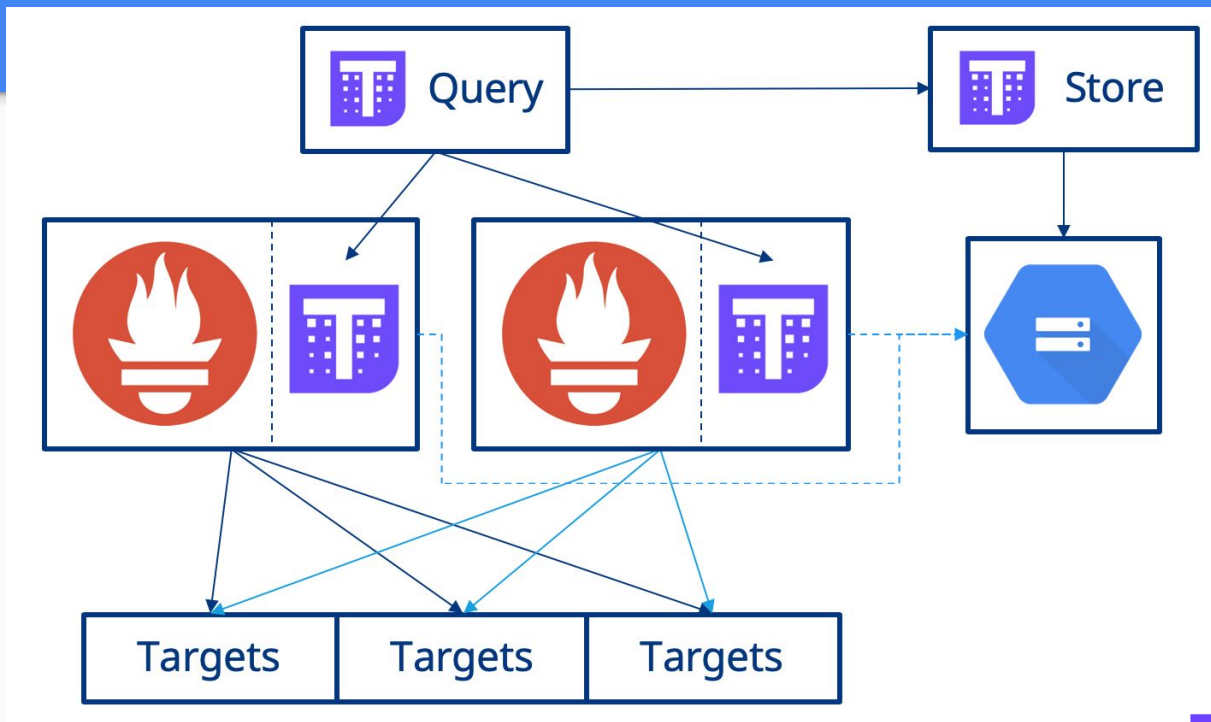
Metric Retention

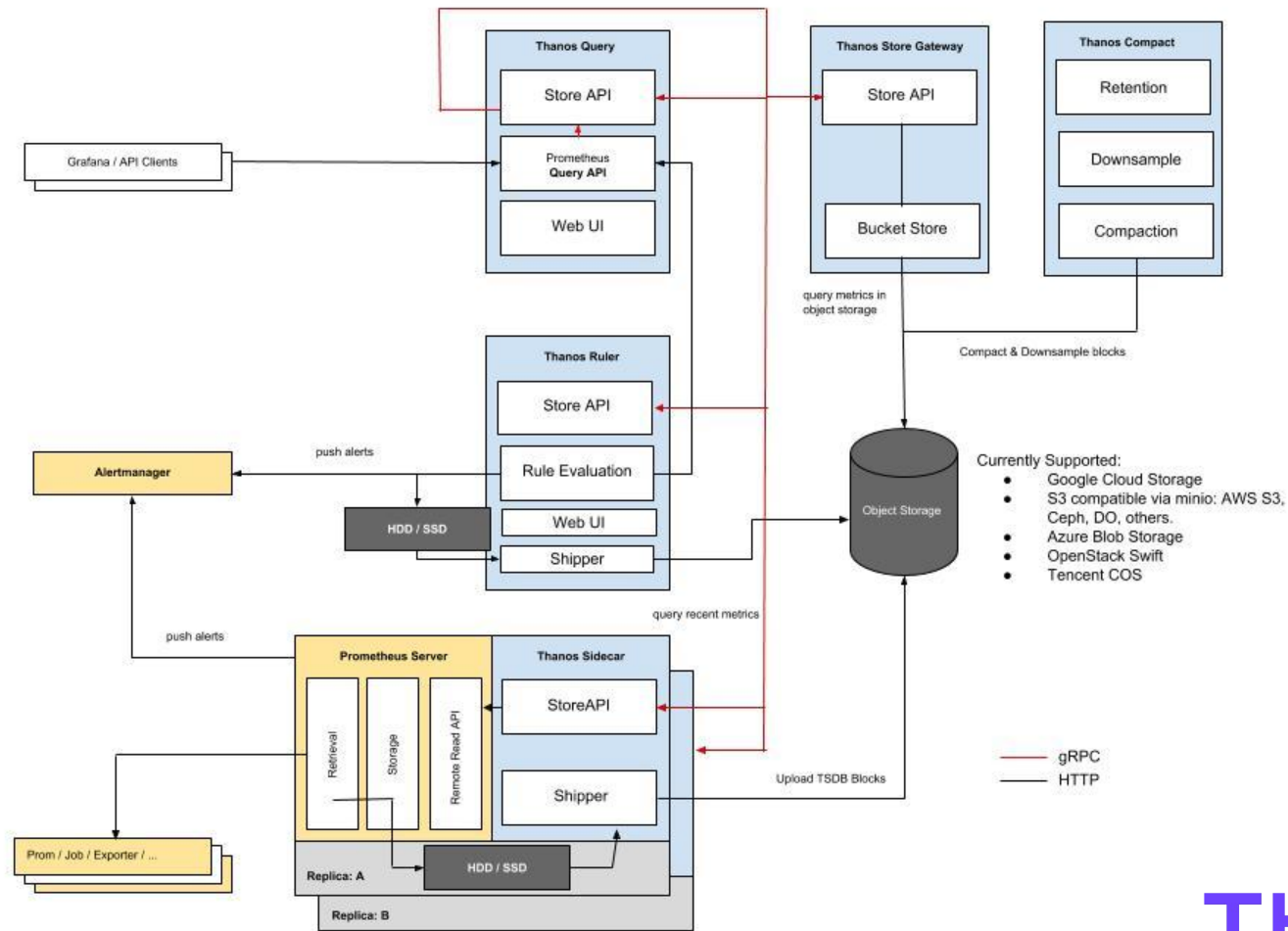


How can we do long retention

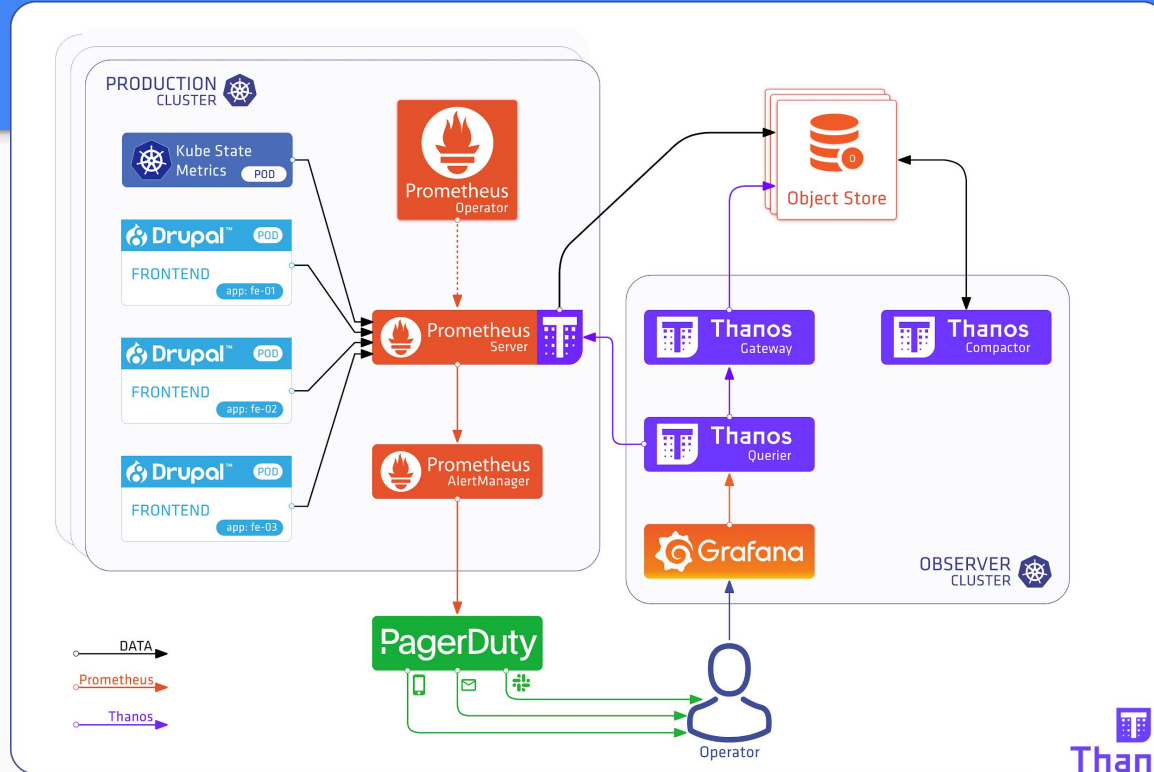
- Upgrade prometheus 2.0?
- Switch to SSD?
- Vertical scaling of SSD?
- Cost, backup ?
- Want instant result?

Architectural Overview





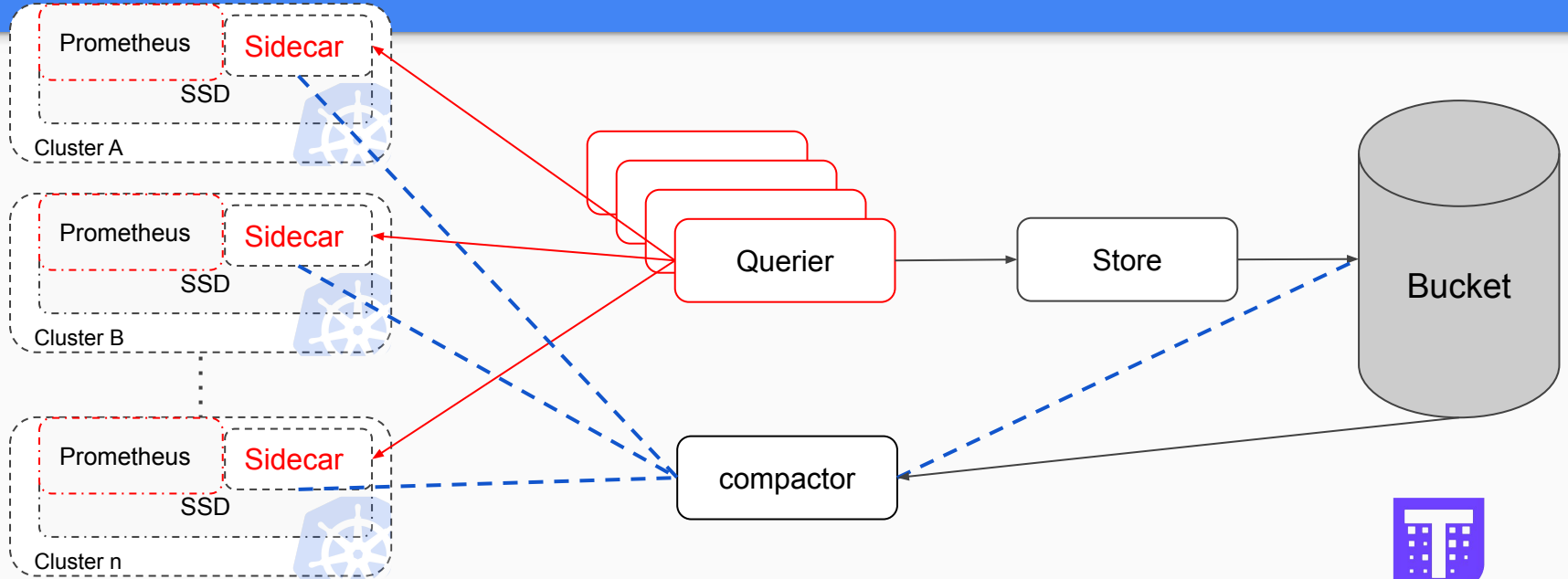
Metrics Flow



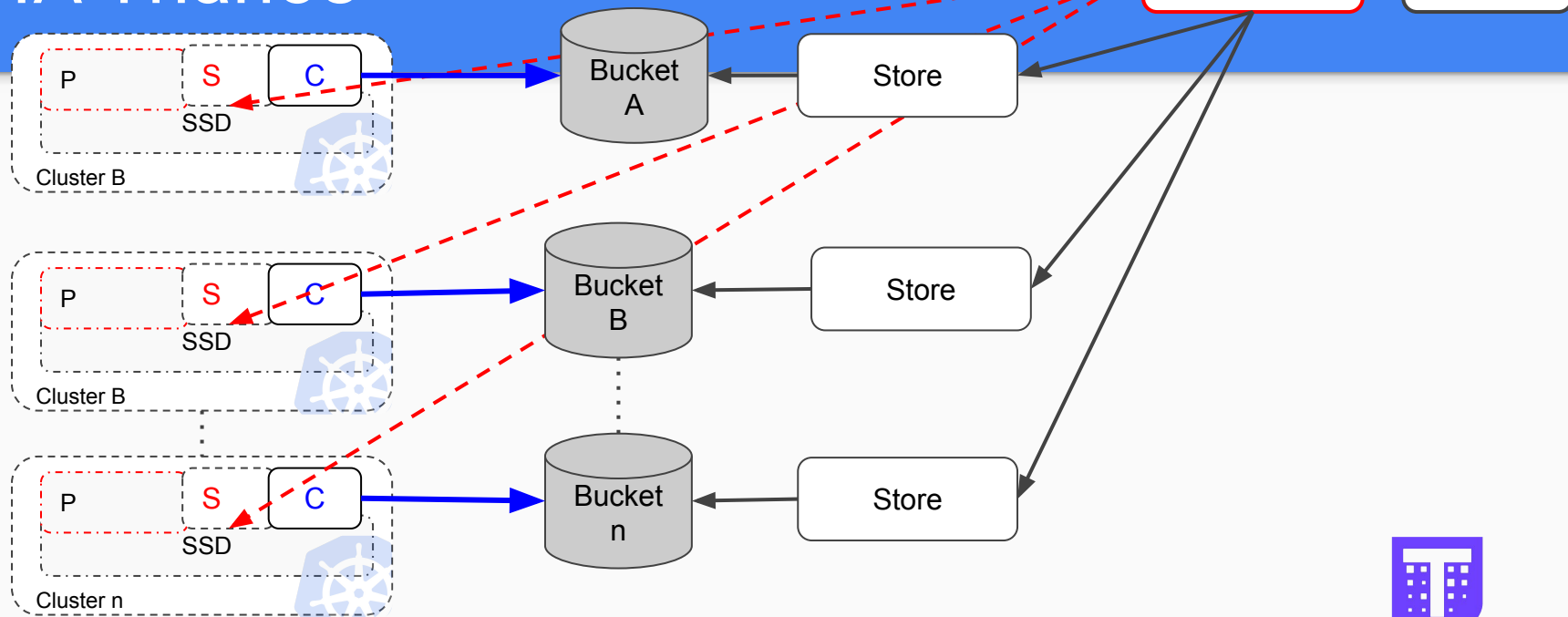
Apurva Bhandari



HA Thanos



HA Thanos



Upgrading to Thanos

1. Download latest prometheus and thanos if installing on Stand
2. Backup data of existing prometheus data
3. Upgrade prometheus to latest if you are using <Prometheus 2.2
4. Add external label to prometheus.yaml
5. Change or Add
`--storage.tsdb.max-block-duration=2h \`
`--storage.tsdb.min-block-duration=2h`
6. Create Bucket yaml and Bucket
7. Start sidecar and compactor with prometheus
8. Give access/permission to bucket
9. Start store and query on thanos server on server side

Metrics Response

The image displays two screenshots of monitoring dashboards. The top screenshot is from Prometheus, and the bottom is from Thanos. Both show the same query: `hystrix_fallback_total{event="fallback_success",group="PageBean",key="postPage",service="homepage_production_service"}`. The Prometheus interface shows a simple 'Execute' button and a graph area. The Thanos interface includes additional options like 'deduplication' and 'partial response', and a 'Only raw data' dropdown. Both show a graph with a single data point at the end of the time range.

Prometheus Alerts Graph Status ▾ Help

Enable query history [Try experimental React UI](#)

```
hystrix_fallback_total{event="fallback_success",group="PageBean",key="postPage",service="homepage_production_service"}
```

Execute - insert metric at cursor - ▾

Graph Console

- 1w + ◀ Until ▶ Res. (s) stacked

Load time: 10926ms
Resolution: 2419s
Total time series: 61

Thanos Graph Stores Status ▾ Help

Enable query history

```
hystrix_fallback_total{event="fallback_success",group="PageBean",key="postPage",service="homepage_production_service"}
```

Execute - insert metric at cursor - ▾ deduplication partial response

Graph Console

- 1w + ◀ Until ▶ Res. (s) stacked Only raw data ▾

Tue, 21 Apr 2020 17:35:22 GMT

Load time: 4332ms
Resolution: 2419s
Total time series: 61

Takeaway

- Leveraging Prometheus 2.0 storage format
- One Single Dashboard for all Prometheus
- Long term retention of your data for monitoring
- Cost optimization
- Fast metrics result
- Deduplication and merging of metrics collected from Prometheus HA pairs
- Downsampling historical data
- Minor releases every 6 weeks
- Thanos is a CNCF Sandbox project

Links

- https://prometheus.io/docs/prometheus/latest/getting_started/
- <https://github.com/thanos-io/thanos/blob/master/docs/getting-started.md>
- <https://github.com/grafana/grafana>
- <https://banzaicloud.com/blog/hands-on-thanos/>
- Start trial on : <https://katacoda.com/thanos/courses/thanos>
- Try kube-thanos: <https://github.com/thanos-io/kube-thanos>
- Thanos Story : <https://improbable.io/blog/thanos-prometheus-at-scale>



Thanos

Thanos : Endgame Monitoring

Thank You



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