DECICE

INTRODUCTION TO KEY TECHNOLOGIES III: PROMETHEUS

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Core Concepts

- A metrics-based monitoring and alerting stack
- Tracking and exposing metrics (instrumentation)
- Collecting metrics
- Storing metrics
- Querying metrics for alerting, dashboarding, and more

What We Can Monitor?

- Hosts
  - Bare metal, VM, edge devices
- Network Devices
  - Switches, routers, firewalls
- Prometheus-compatible applications
  - Docker, Kubernetes
- Third-party services
  - Redis, Postgres etc.
- Custom Prometheus node-exporter implementations
  - Writing your own exporter

Outline

Monitoring Requirements in DECICE

- Lots of metrics
- Timestamps
- Service discovery
- Easy configuration

Comparison

Prometheus

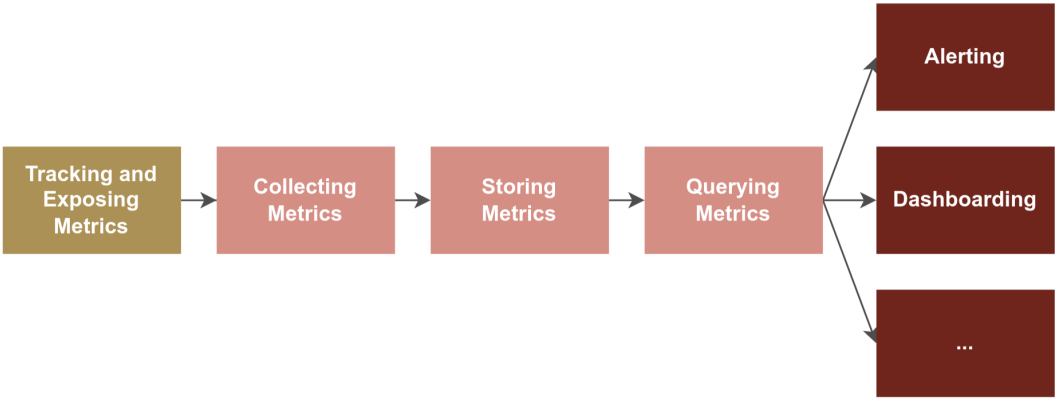
- Open source and mature CNCF solution
- Query language (PromQL)
- Service discovery
- Pull based system

ELK Stack

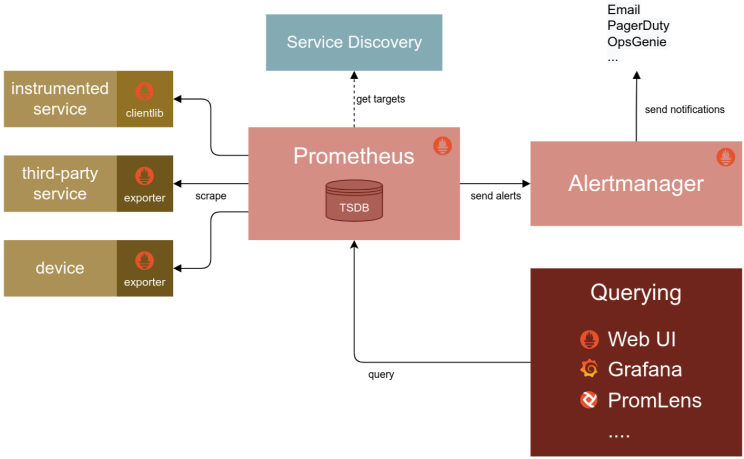
- Ability to scale vertically/horizontally
- Better at log management
- Memory intensive
- Hard to maintain reliability

Outline

Workflow


Tracking and Exposing Metrics
Collecting Metrics
Storing Metrics
Querying Metrics
Alerting
Dashboarding
...

Architecture



Outline

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