Red Hat
OpenShift

Logging, Monitoring and Performance

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Agenda

- Logging in OCP
  - Logging Components & Architecture
  - Logging from UI
  - Hands on
- Metrics in OCP
  - Metrics Components & Architecture
  - Metrics in UI
  - Hands on
- Stretch assignment
  - Autoscale application based on metrics
- MicroService Scale and Performance Testing
  - About Perf and Scale testing
  - Introduction to example application and test use cases
  - Demo

OpenShift Logging

An integrated solution for exploring and corroborating application logs

Observability via log exploration with EFK

Components

- **Elasticsearch:** a search and analytics engine to store logs
- **Fluentd:** gathers logs and sends to Elasticsearch.
- **Kibana:** A web UI for Elasticsearch.

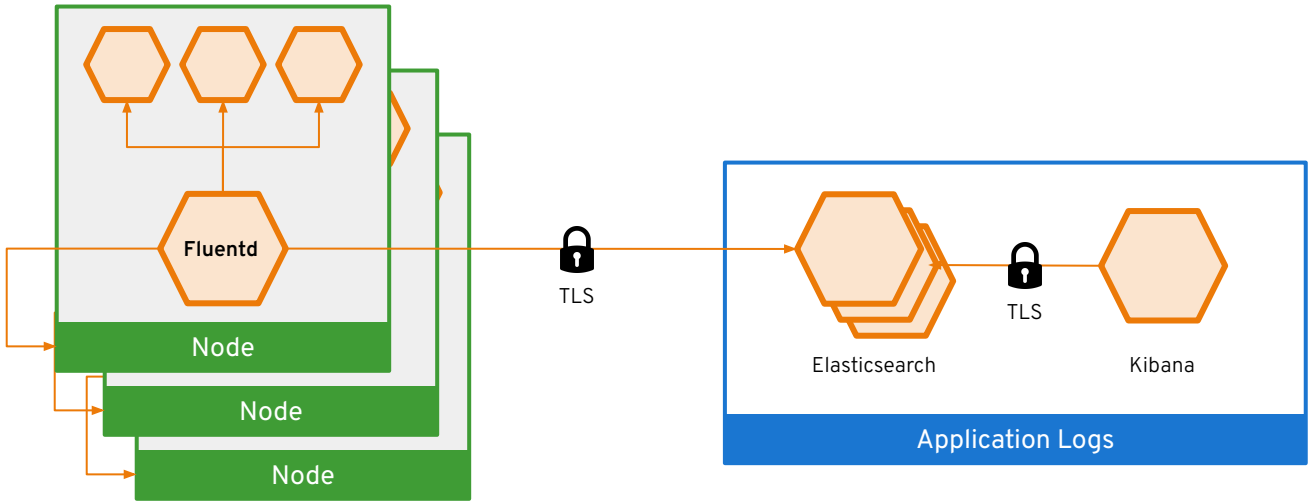
Access control

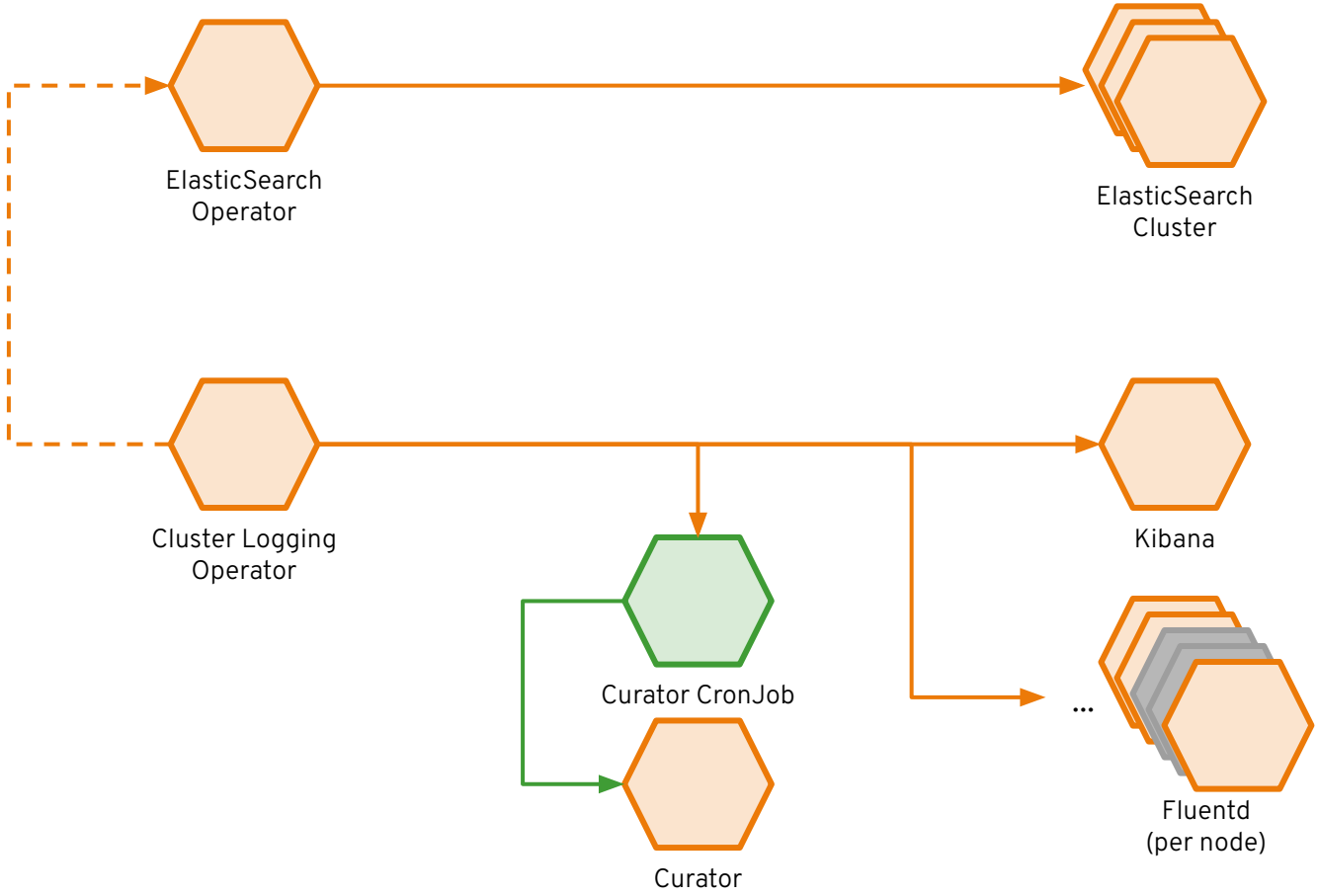
- Cluster administrators can view all logs
- Users can only view logs for their projects

Ability to forward logs elsewhere

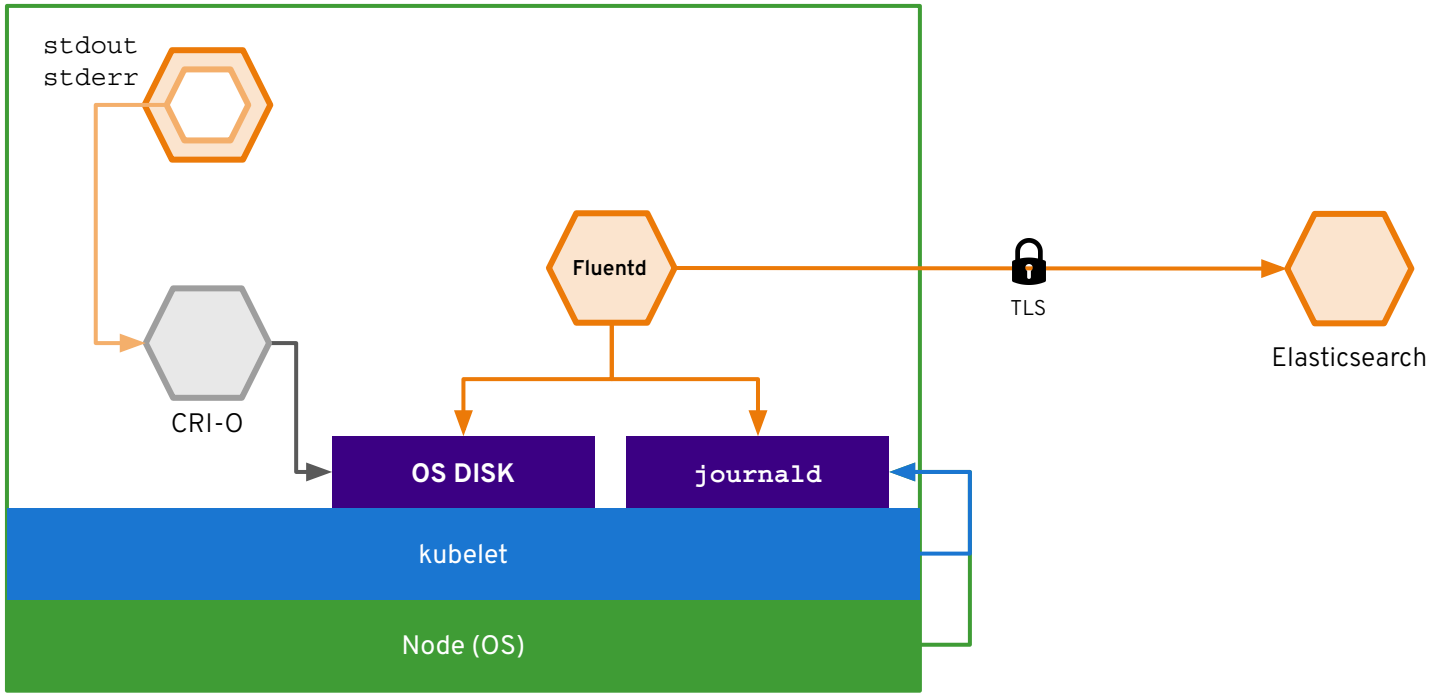
- External elasticsearch, fluent, syslog, cloudwatch, loki, kafka, …

Log data flow in OpenShift

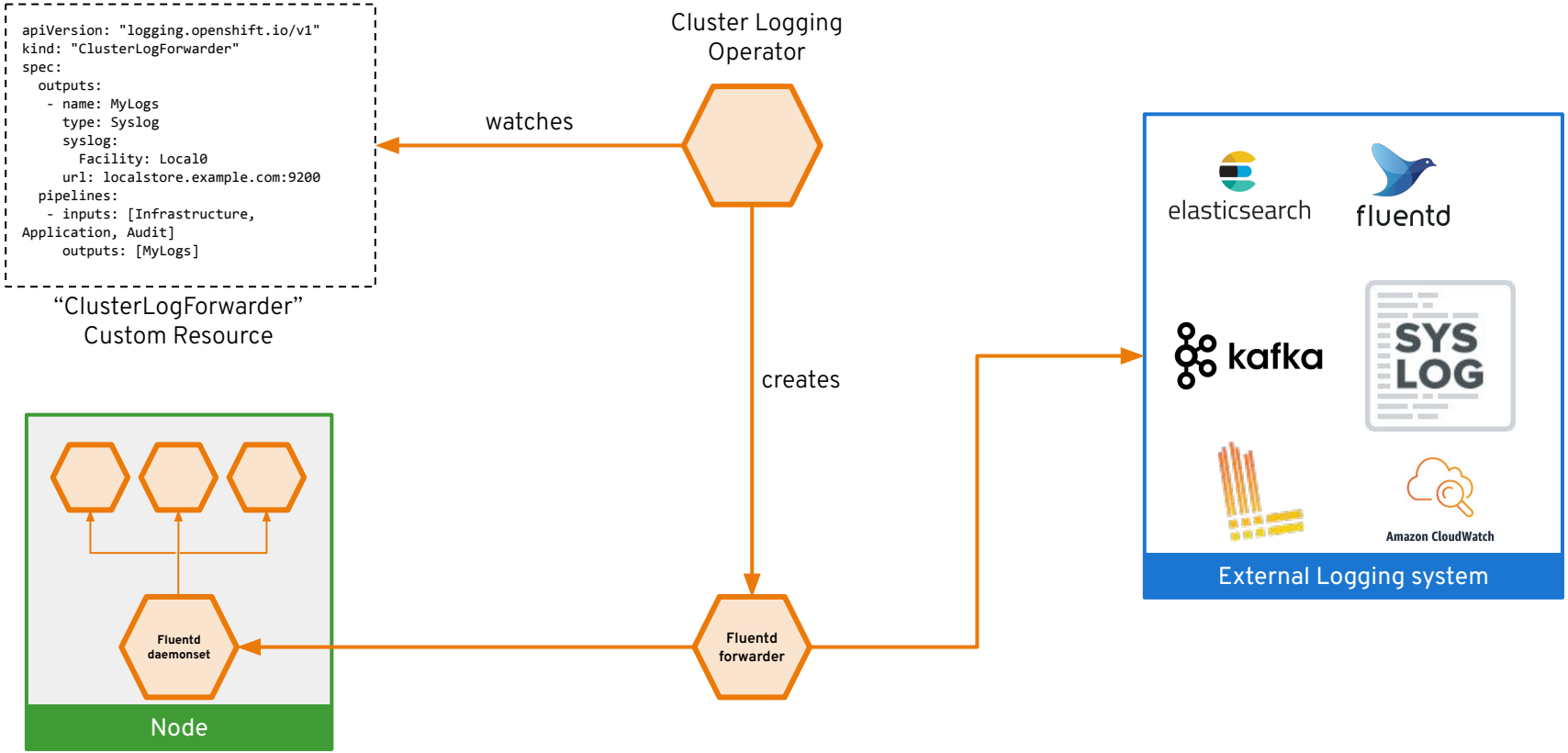



ElasticSearch
Operator
ElasticSearch
Cluster
Cluster Logging
Operator
Kibana
Curator CronJob
...
Curator
Fluentd
(per node)

Log data flow in OpenShift



Secure Log Forwarding to 3rd party



OpenShift Monitoring

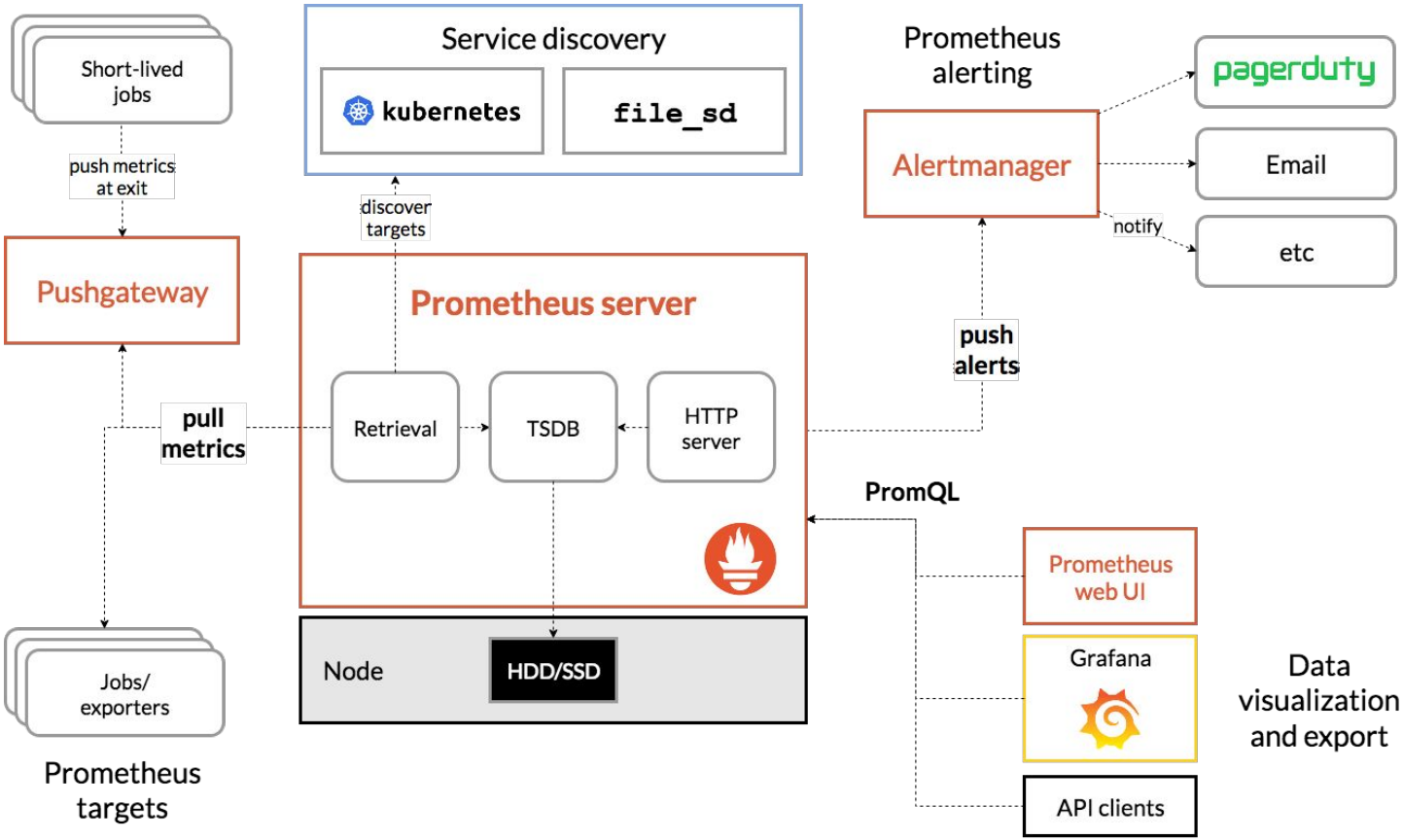
An integrated cluster monitoring and alerting stack

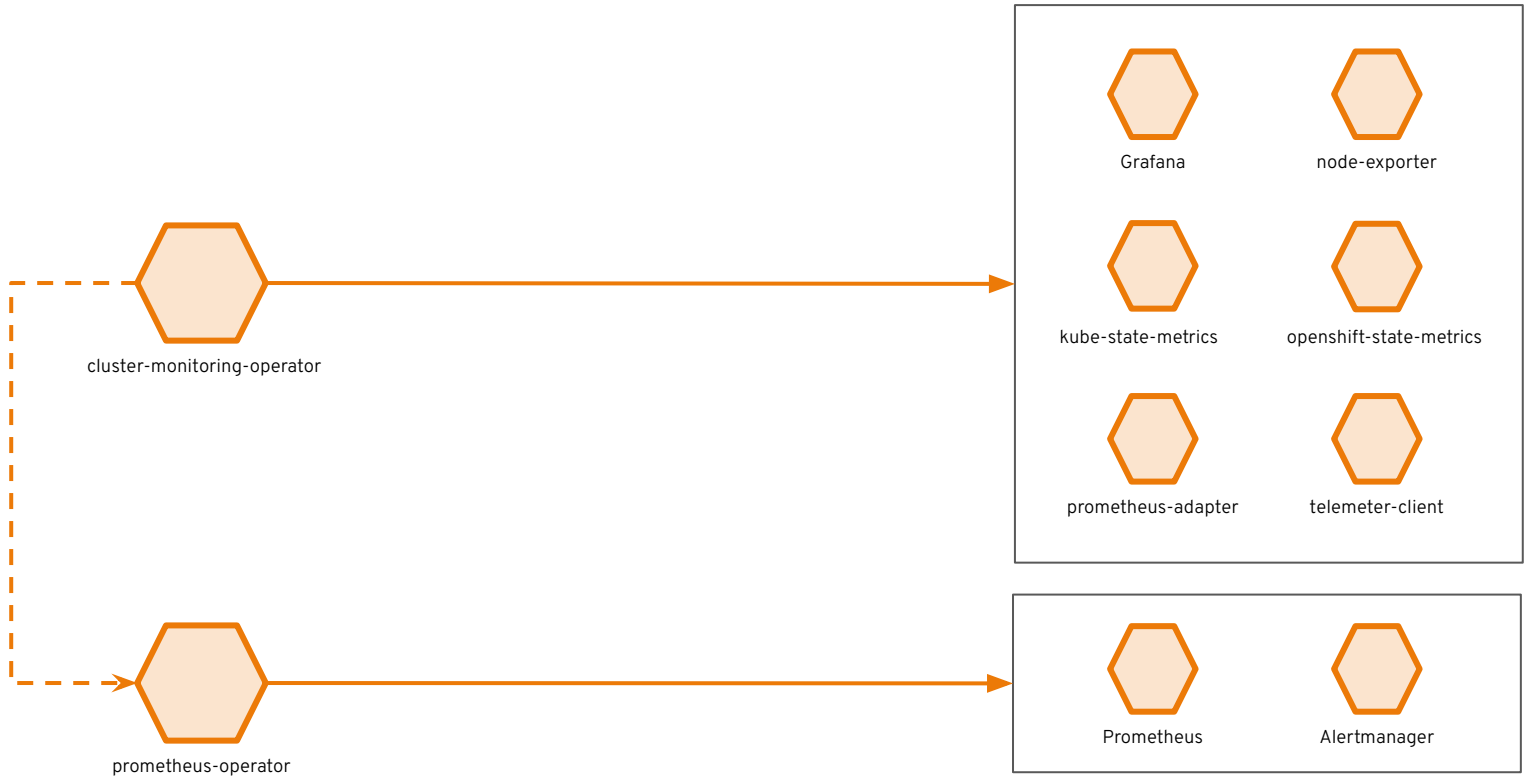
OpenShift Cluster Monitoring

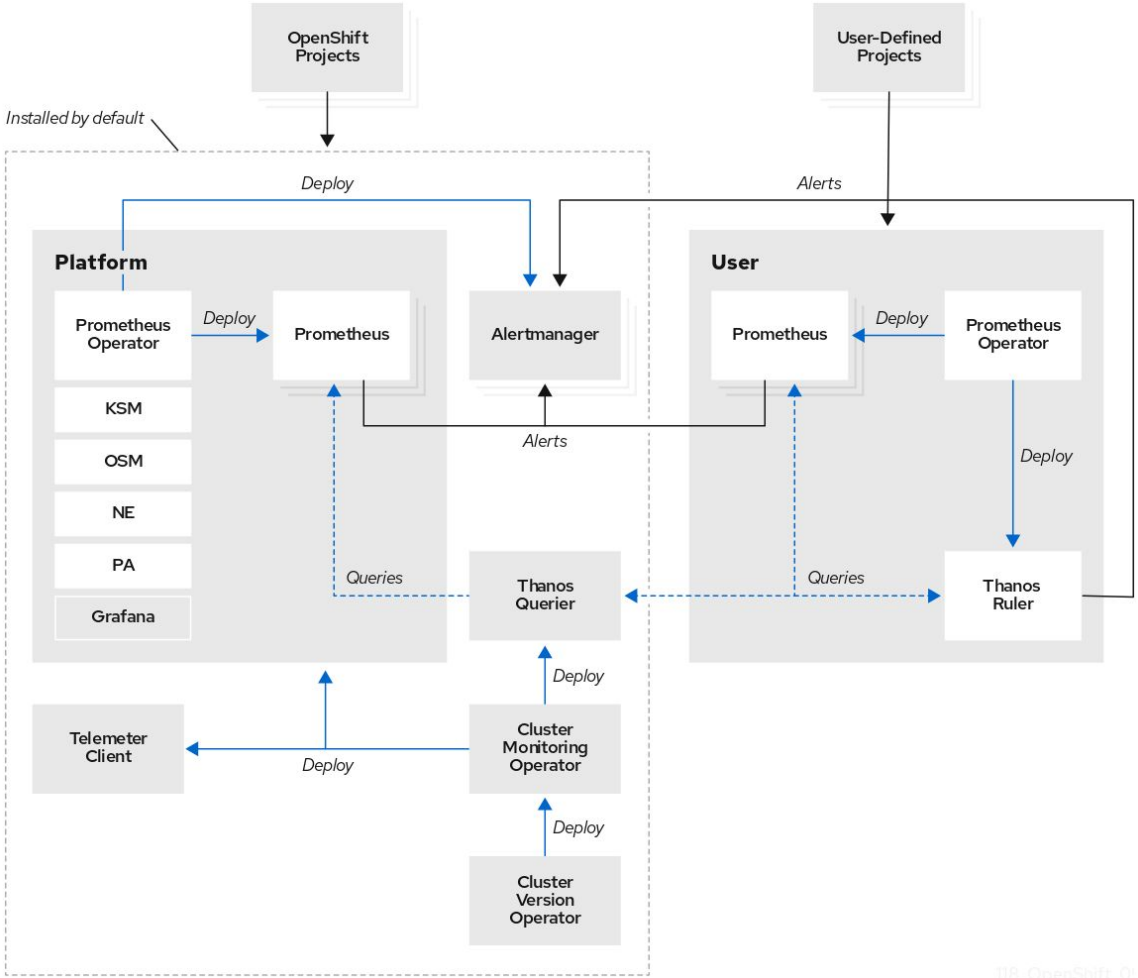
Metrics collection and storage via Prometheus, an open-source monitoring system time series database.

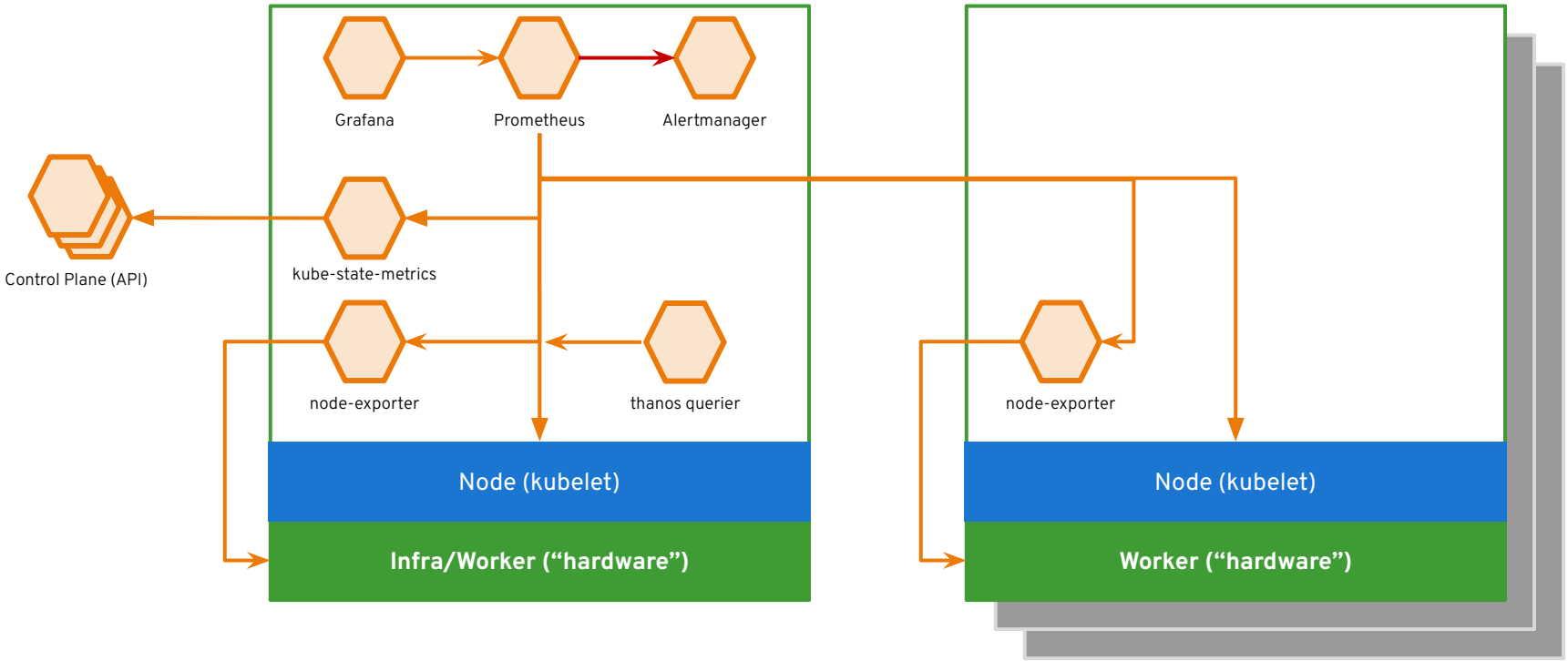
Alerting/notification via Prometheus' Alertmanager, an open-source tool that handles alerts send by Prometheus.

Metrics visualization via Grafana, the leading metrics visualization technology.


Short-lived jobs
push metrics at exit
Pushgateway
Jobs/ exporters
Prometheus targets
Service discovery
kubernetes
file_sd
discover targets
Prometheus server
pull metrics
Retrieval
TSDB
HTTP server
Node
HDD/SSD
Prometheus alerting
Alertmanager
pagerduty
Email
etc
notify
push alerts
PromQL
Prometheus web UI
Grafana
API clients
Data visualization and export


Grafana
node-exporter
kube-state-metrics
openshift-state-metrics
prometheus-adapter
telemeter-client
cluster-monitoring-operator
prometheus-operator
Prometheus
Alertmanager


OpenShift Projects
User-Defined Projects
Installed by default
Deploy
Alerts
Platform
Prometheus Operator
Deploy
Prometheus
Alertmanager
KSM
OSM
NE
PA
Grafana
Alerts
Queries
Thanos Querier
User
Prometheus
Deploy
Prometheus Operator
Deploy
Queries
Thanos Ruler
Deploy
Telemeter Client
Deploy
Cluster Monitoring Operator
Deploy
Cluster Version Operator


Grafana
Prometheus
Alertmanager
Control Plane (API)
kube-state-metrics
node-exporter
thanos querier
node-exporter
Node (kubelet)
Infra/Worker (“hardware”)
Node (kubelet)
Worker (“hardware”)