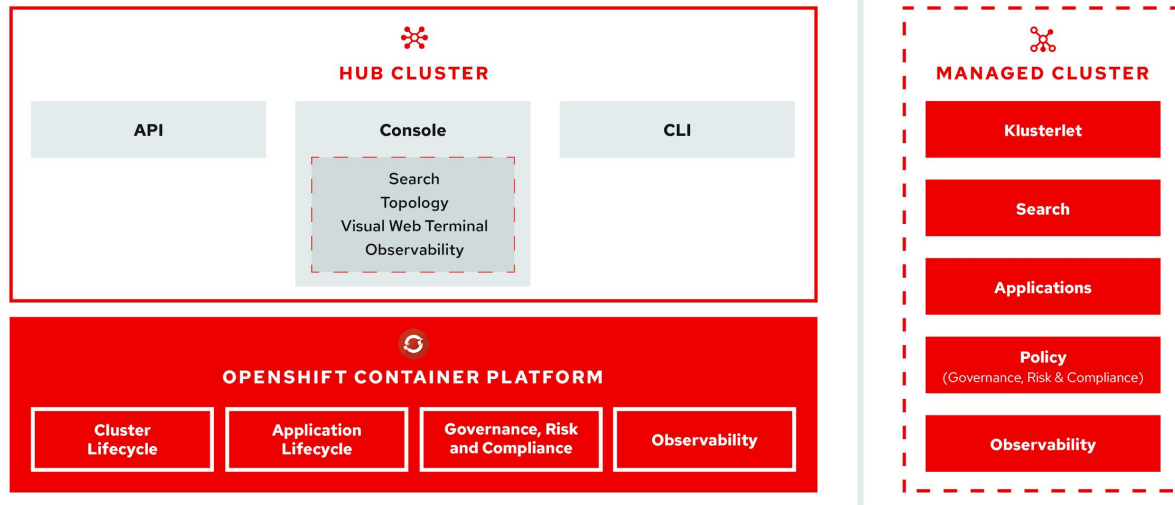


RHACM Observability

THE TEAM

Nomenclature/Concepts



Hub Cluster

- Central Controller that runs multi-cluster control plane
- Always a OCP cluster
- Installs OCP Console extension

Managed Cluster

- Cluster under management
- OCP or *KS (AKS/EKS/IKS/GKE)

Klusterlet

- Runs on Managed Cluster
- Pulls and applies prescriptions from Hub cluster

Work - Dispatches resources from hub cluster to managed clusters by writing a ManifestWork resource into Cluster namespace

Add-ons

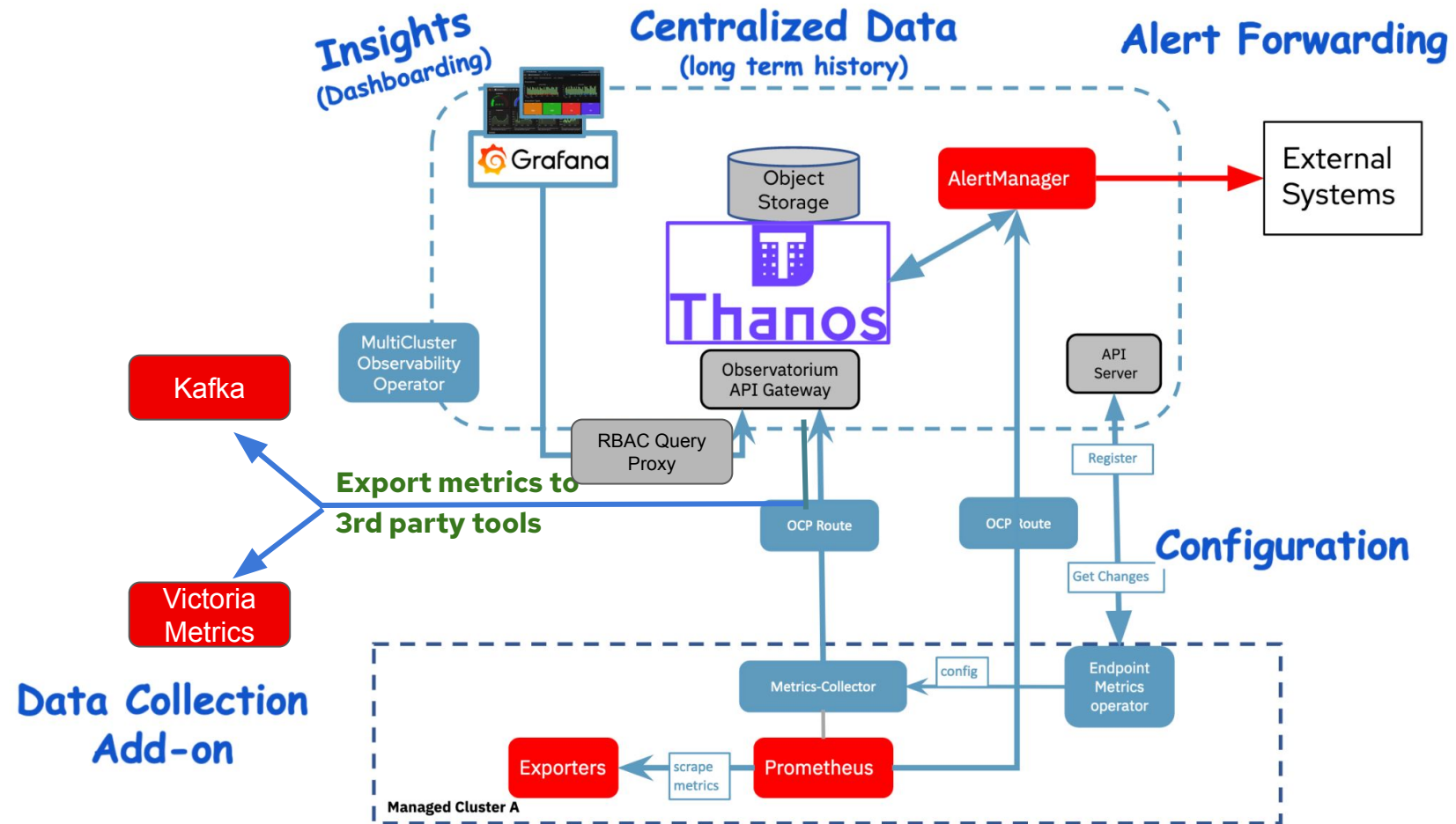
- RHACM functions are structured as Klusterlet add-ons
- Observability on managed cluster is a add-on

Observability

Components/Architecture

Components:

- ▶ Hub side
 - MultiCluster observability operator
 - Observatorium/Thanos
 - Grafana
 - AlertManager
- ▶ Managed cluster side
 - Endpoint operator
 - Metrics collector
 - Prometheus and exporters



Source Code Repos

Repo	Description
<u>Multicluster-observability-operator</u> <ul style="list-style-type: none">• Metrics Collector (forked telemeter client)• Operators<ul style="list-style-type: none">◦ MultiClusterObservability◦ Endpoint Operator• RBAC Query Proxy• Grafana Dashboard loader• Observability E2E tests	Repo containing most source code
<u>Observatorium-operator</u> <u>grafana</u> <u>observatorium</u> <u>thanos</u> <u>kube-thanos</u>	Maintenance forks
<u>kube-state-metrics</u> <u>kube-rbac-proxy</u> <u>node-exporter</u> <u>prometheus-alertmanager</u> <u>Prometheus</u> <u>Prometheus-operator</u>	Used by *-KS cluster deployments only

Enabling Observability

MultiCluster Observability Operator (Hub)

- Installed by default in RHACM Namespace
- Watches for MultiClusterObservability (MCO) and activates Observability stack
- Centrally controls Observability configuration/lifecycle management for the entire fleet
- Includes
 - MCO Controller
 - Placement Controller

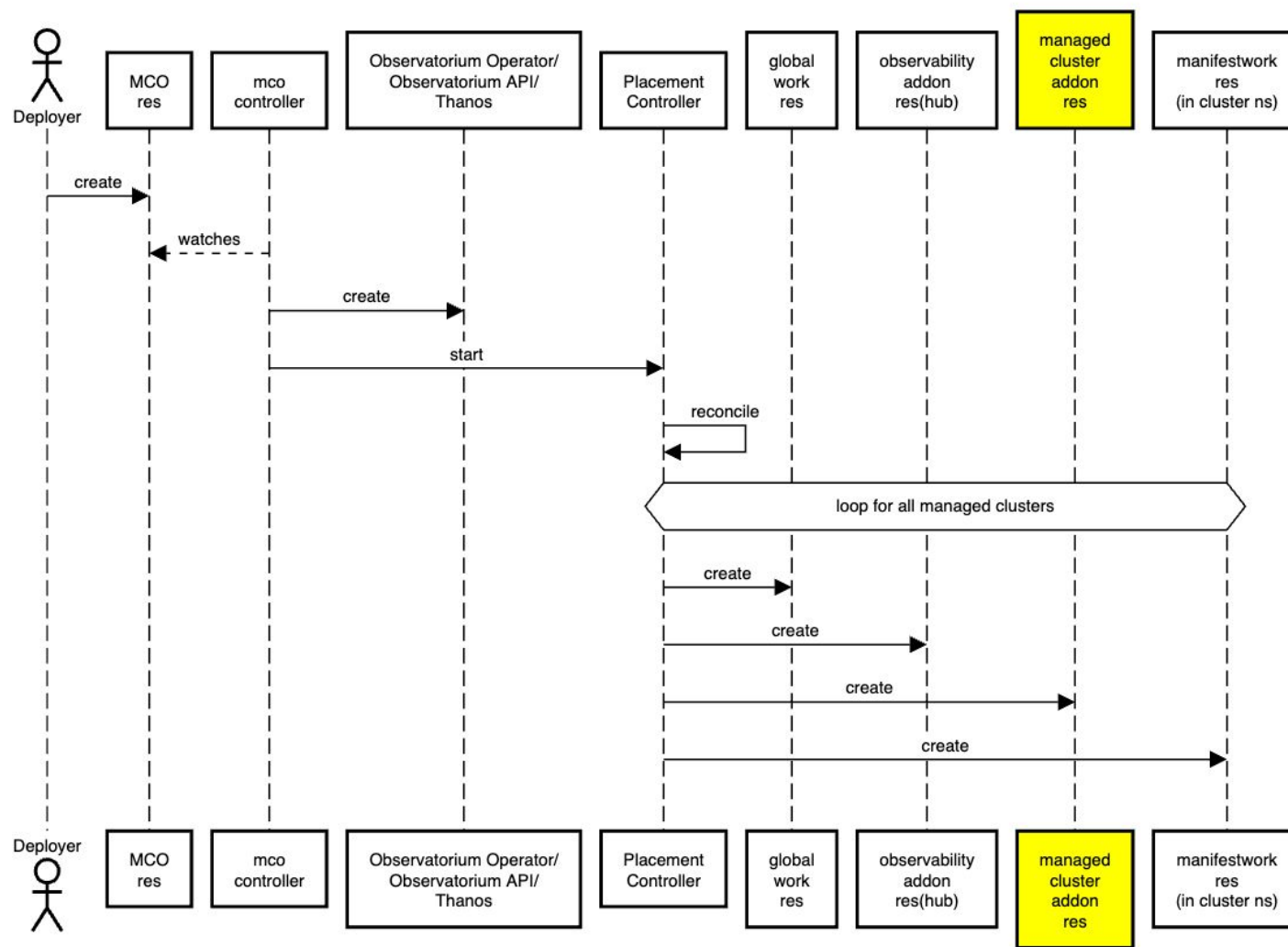
MCO Controller deploys

- Observatorium API & Thanos
- Starts Placement Controller

```
apiVersion: observability.open-cluster-management.io/v1beta2
kind: MultiClusterObservability
metadata:
  name: observability
spec:
  enableDownsampling: true
  observabilityAddonSpec:
    enableMetrics: true
    interval: 300
  storageConfig:
    alertmanagerStorageSize: 1Gi
    compactStorageSize: 100Gi
    metricObjectStorage:
      key: thanos.yaml
      name: thanos-object-storage
    receiveStorageSize: 100Gi
    ruleStorageSize: 1Gi
    storageClass: gp2
```

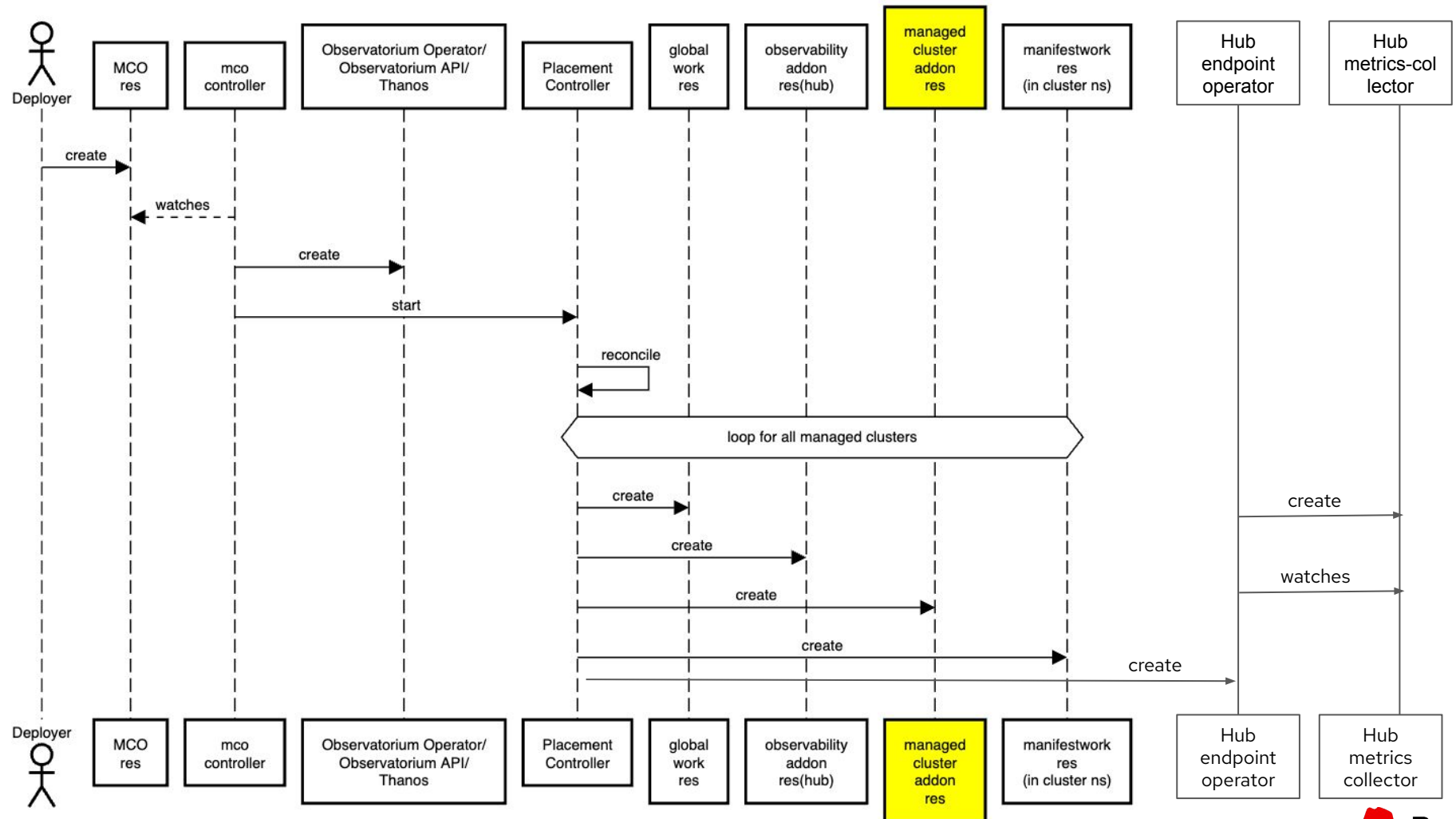
Bootstrap Sequence

Observability Bootstrapping (Hub)



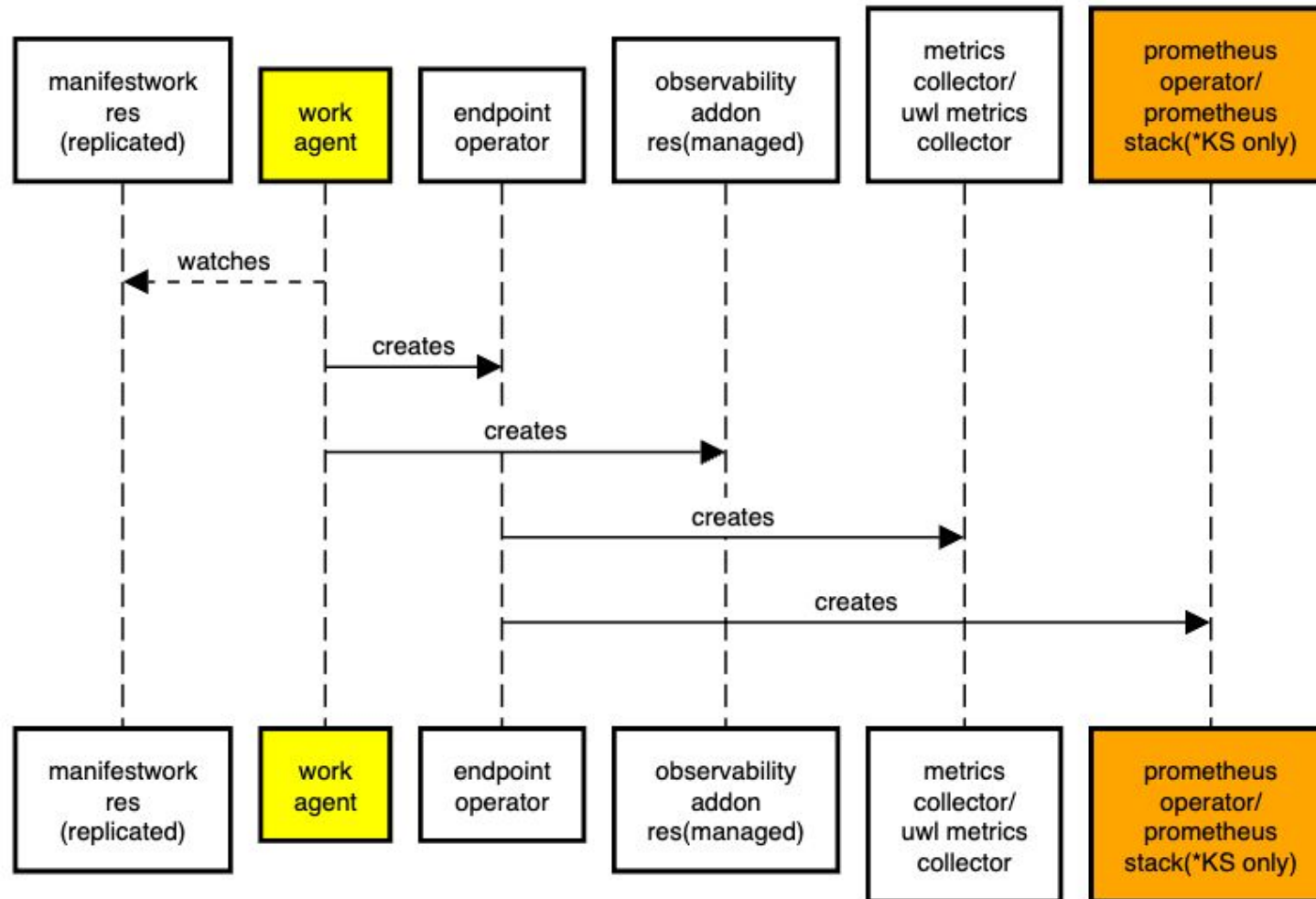
New Bootstrap Sequence

Observability Bootstrapping (Hub)

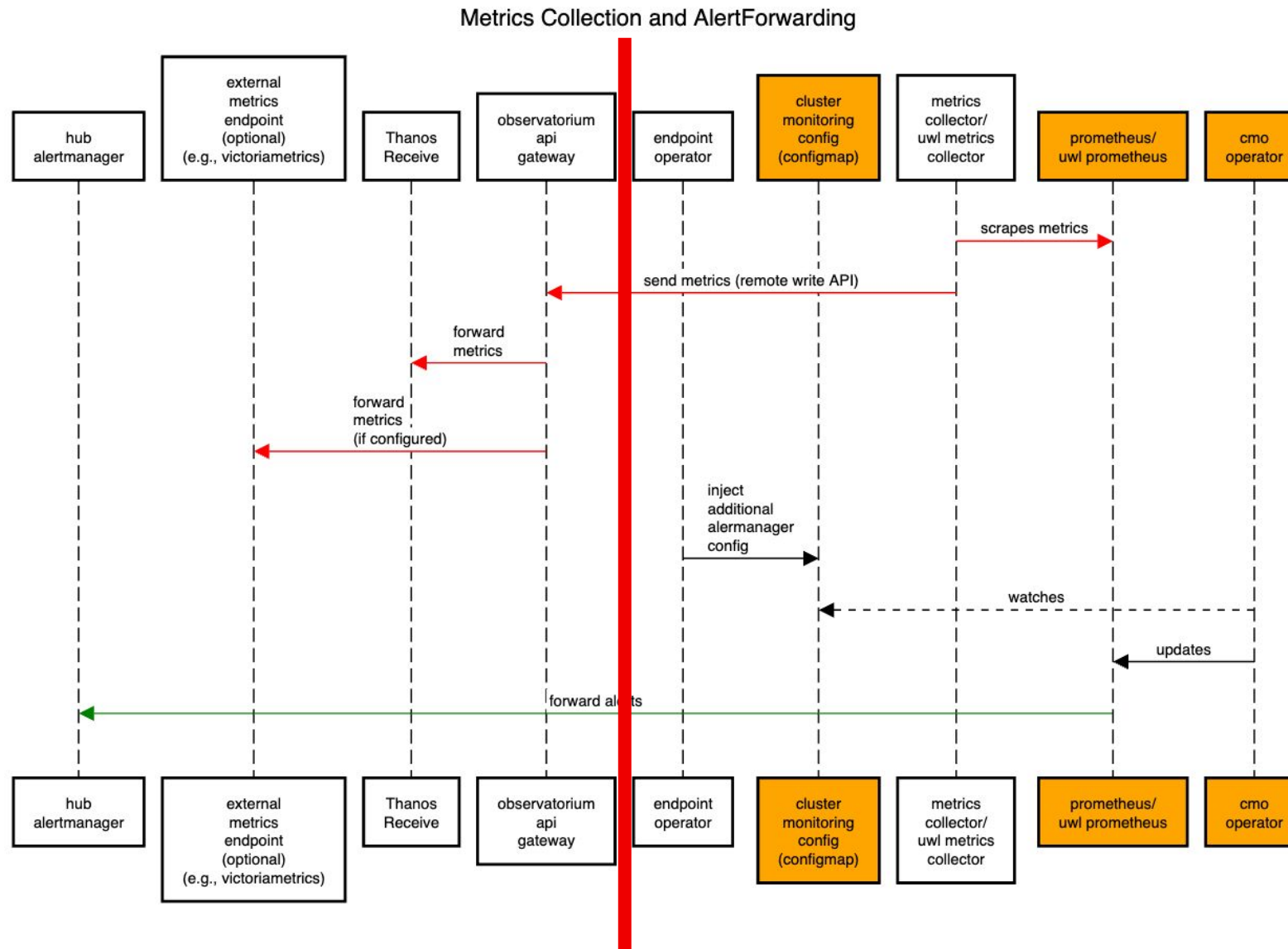


Bootstrap Sequence (contd..)

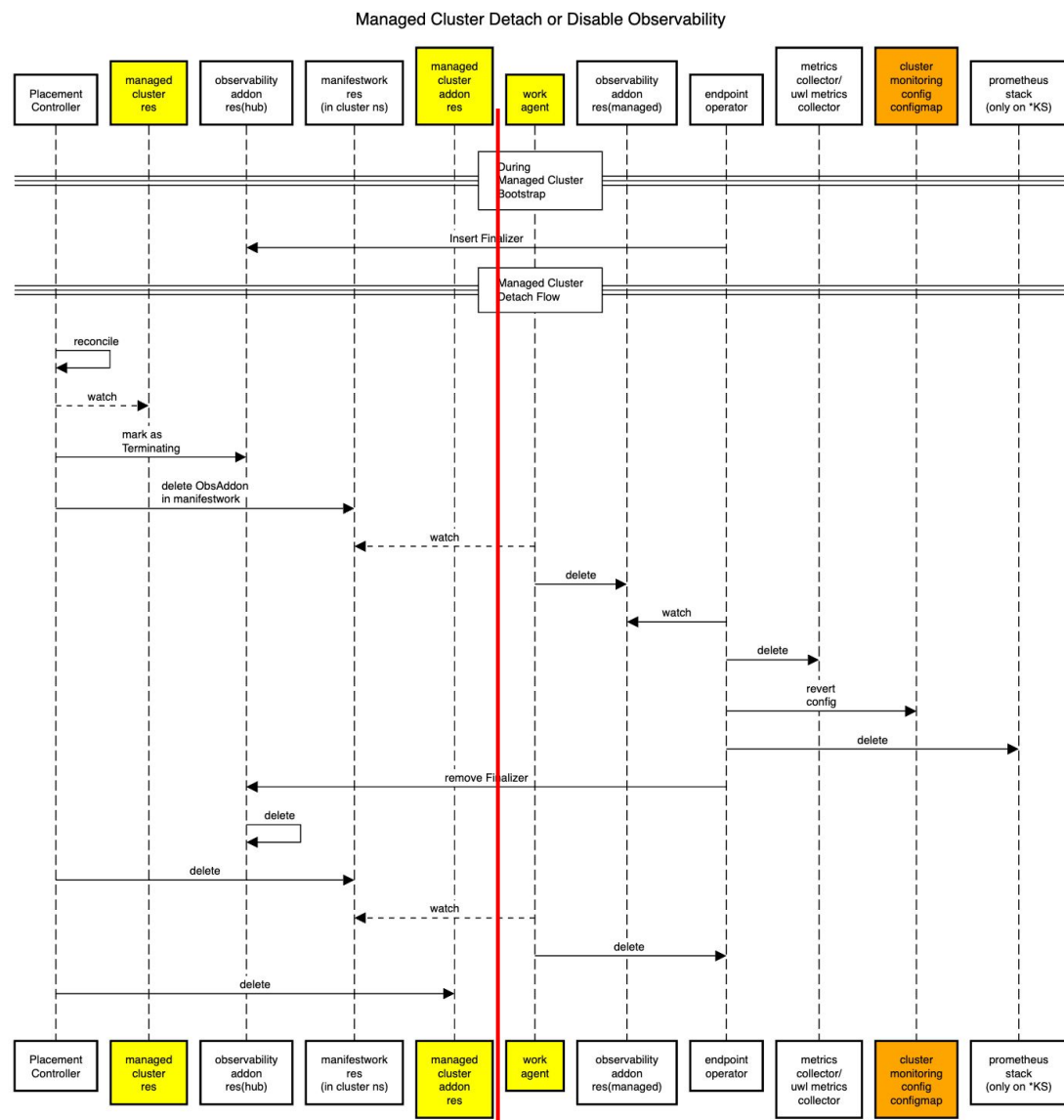
Observability Bootstrapping (Managed Cluster)



Metrics Collection and Alert Forwarding

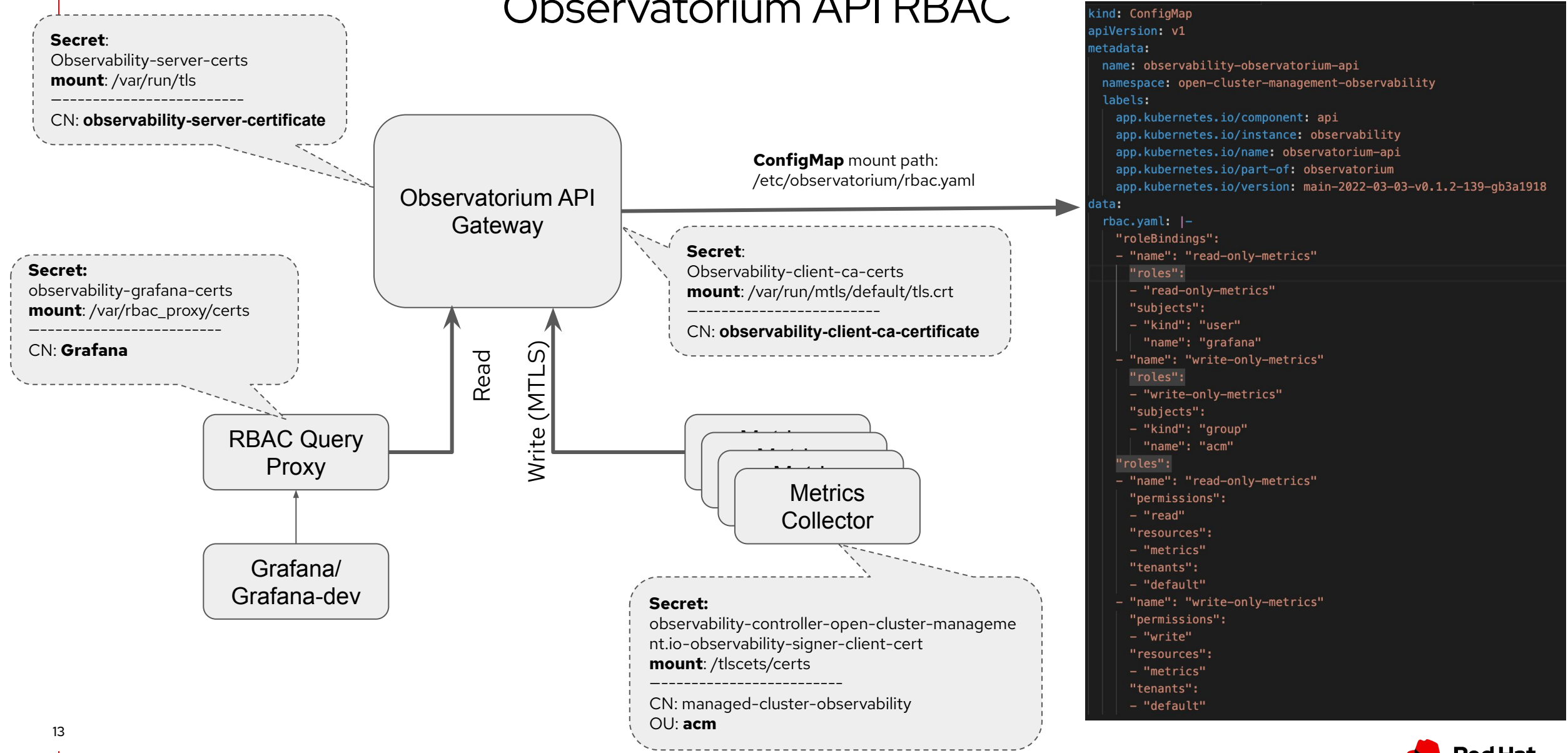


Managed Cluster Delete/Disable Observability

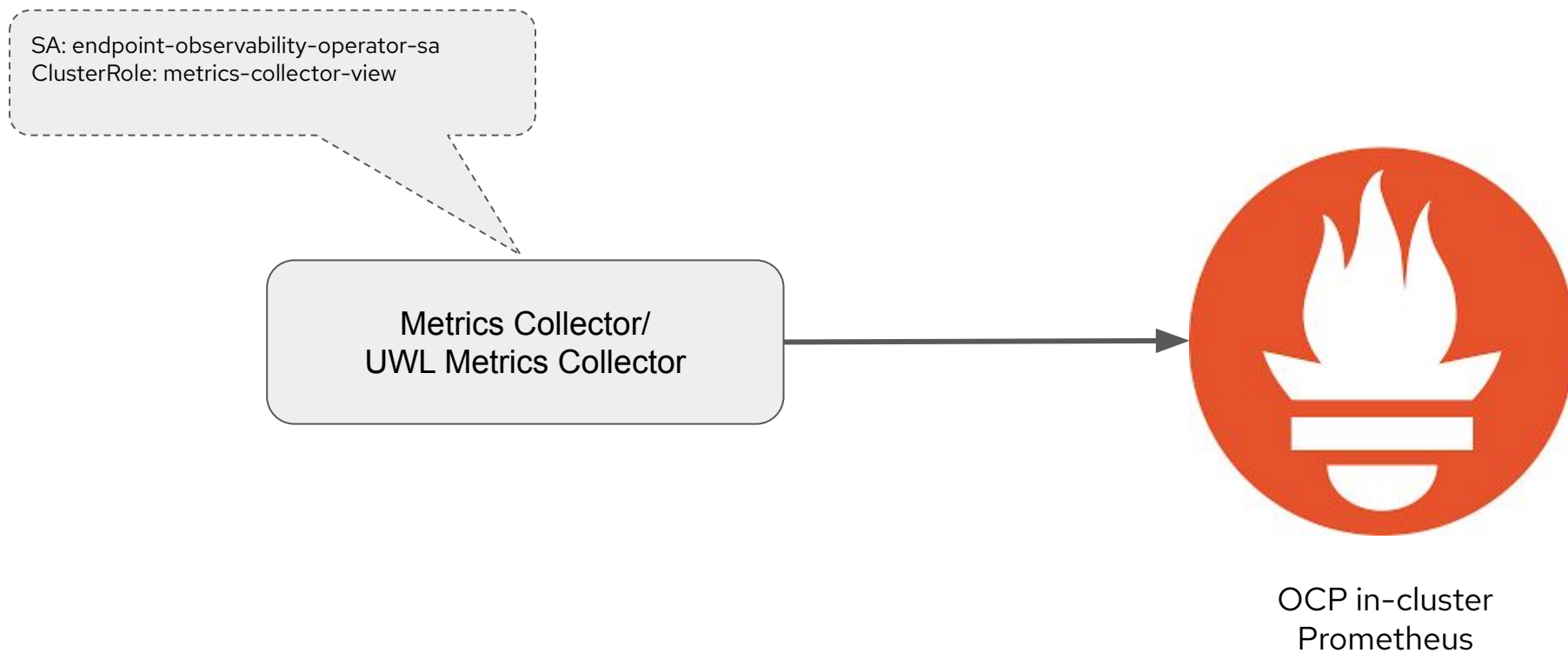


ACM Observability RBAC

Observatorium API RBAC



Metrics Collector RBAC



Installing & Configuring ACM, Observability

Collective Cluster

- Claiming clusters
- Github Observability Group

Installing ACM

- GA builds From Operator Hub
- Developer builds - [deploy](#)
- ACM UI plugin

Importing a managed cluster

- Klusterlet Add-ons & Status

Configuring Observability

- Grafana Dashboards

Hub self management

Enabling/Disabling Observability

- Via MCO custom resource
- Via "observability=disabled" label on **managedcluster** object

Special annotations:

- mco-pause
- mco-[image-key]-image override
- mco-disable-alerting
- Cluster-service-version replacement for MCO image

Testing and Debugging

Pull Request tests

- SonarCloud code Analysis
 - ci/prow/images
 - ci/prow/tests-unit
 - ci/prow/test-e2e
-
- Ginkgo Focus

For each release, ACM CICD team builds downstream images out of "release-2.x" branch (e.g., release-2.9 right now)

After PR merge, the "main" branch is fast-forwarded to current active development branch

Thank you

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