K8s extension

ZCloud

K8s extensibility

- No hidden API

- OpenAPI

  - REST style api

  - Language agonastic

Basic

- Core resource management

  - Namespace

  - Pod, Deployment, Daemonset, Statefulset

  - Service, Ingress

  - Serviceaccount

Resource

- Schema

  - Version

  - Attributes

  - Default value and validation

  - Conversion between version

  - Backend storage and storage version

# Resource oriented pattern

- Resource & controller

  - Create resource to describe what user want

  - Controller monitor the resource lifecycle

  - Resource describe what user want

  - Controller try to reconcile current state with what user want

  - Controller is running in a loop

Customize request lifecycle

- Web-hook

  - pre/post- CRUD on runtime business logic

  - Modify the resource on the fly
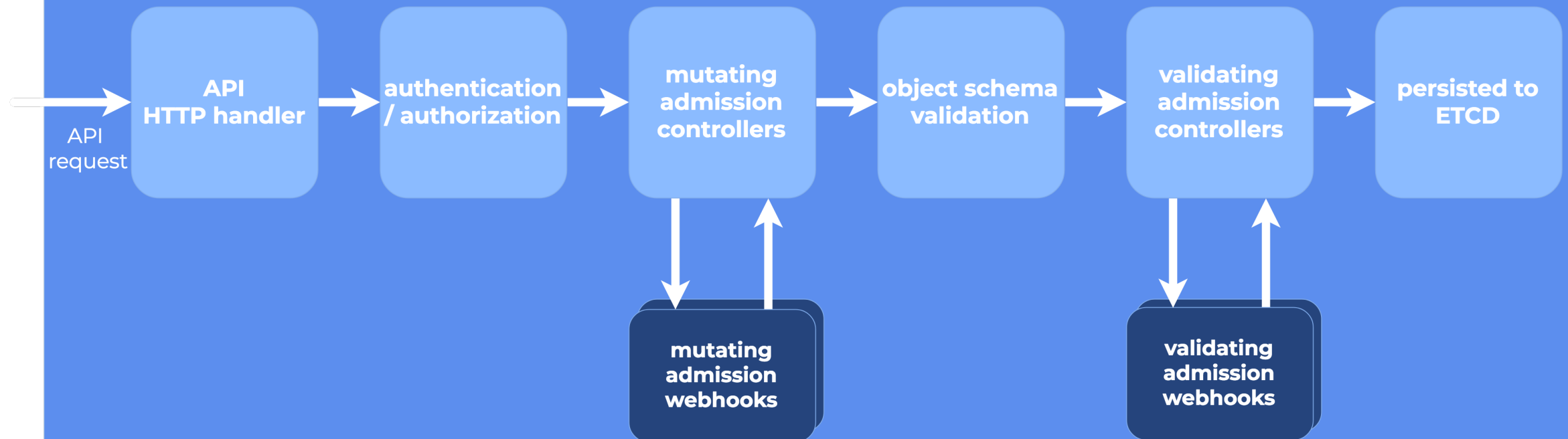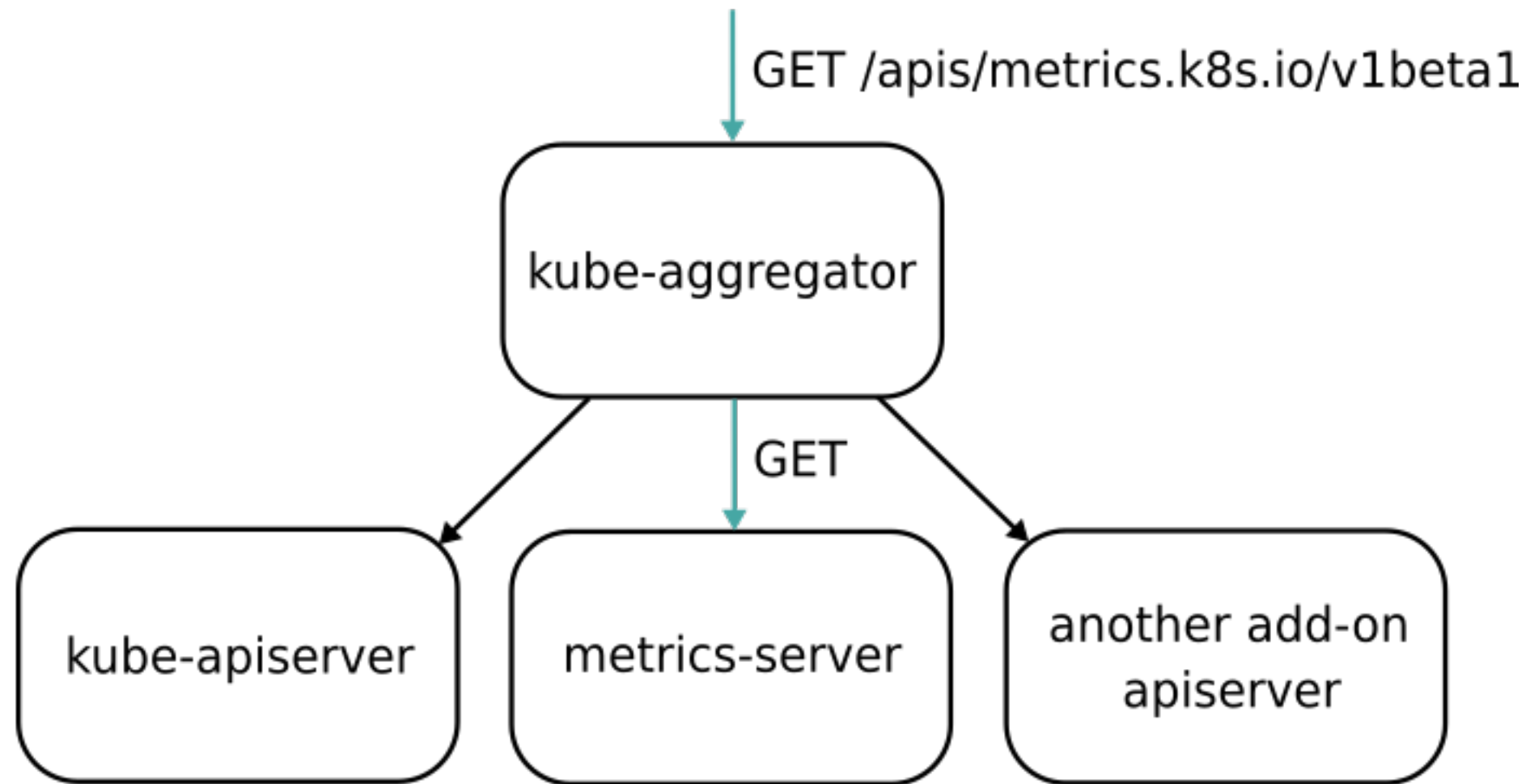
CRD

- Customer resource definition

- Dynamic created

- Managed by API server like other core resource

Aggregated api

- Customize storage

- More actions except CRUD

GET /apis/metrics.k8s.io/v1beta1

kube-aggregator

GET

kube-apiserver

metrics-server

another add-on apiserver

Next

- Advanced resource management

  - ResourceVersion

  - Generation

  - OwnerReferences

  - Initializers

  - Finalizers

Next

- CRI: container runtime interface (runtime & image)

- CNI: container network interface

- CSI: container storage interface