



Europe 2018

# Writing kube controllers for everyone

Maciej Szulik / @soltysh



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```

https://github.com/kubernetes/kubernetes/blob/master/pkg/controller/cronjob/cronjob\_controller.go

#### Control loop

```
func (c *Ctrl) worker() {
    for c.processNextItem() {
    }
}
```

```
func (c *Ctrl) processNextItem() {
   item := c.queue.Get()
   err := c.syncHandler(item)
   c.handleErr(err, item)
}
```



#### 30+

## Existing Controllers

Advanced

### Sample controller

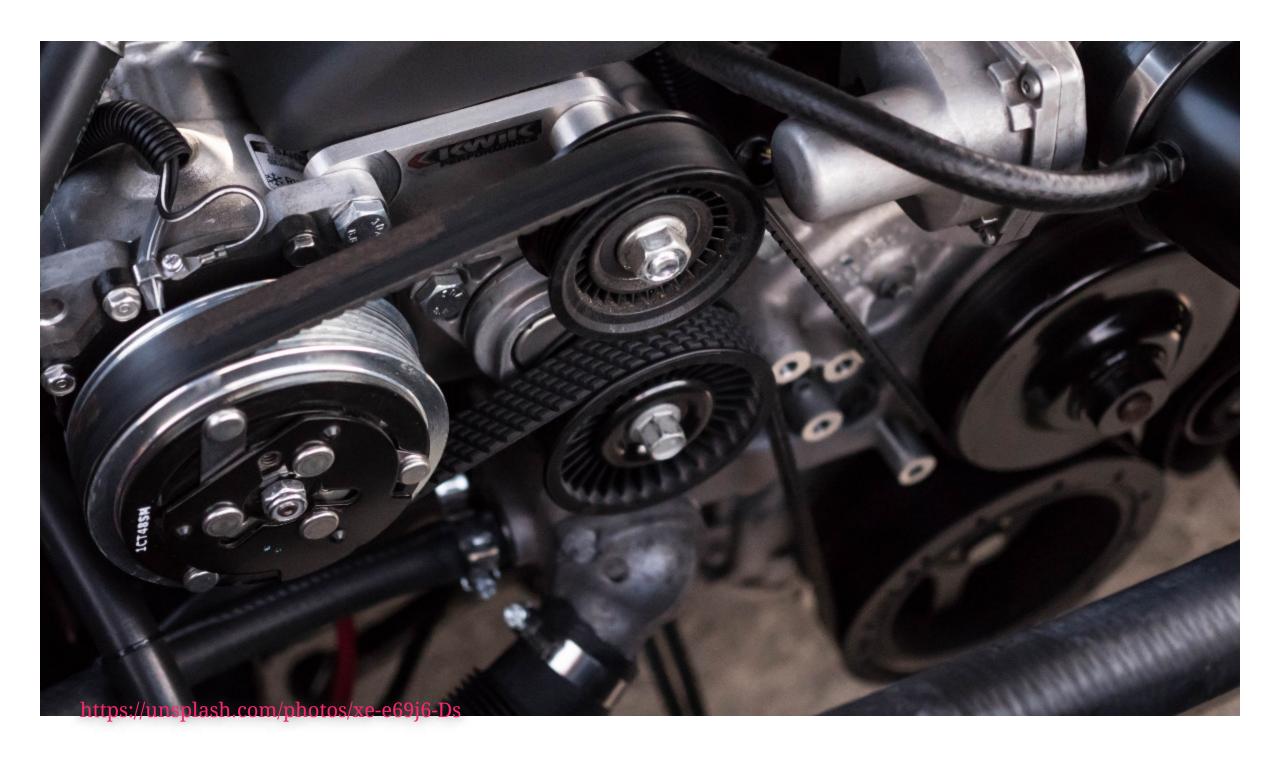
https://github.com/kubernetes/sample-controller/

Entry-level

### kubebuilder

https://github.com/kubernetes-sigs/kubebuilder

Entry-level



#### Control loop

```
func (c *Ctrl) worker() {
    for c.processNextItem() {
    }
}
```

```
func (c *Ctrl) processNextItem() {
   item := c.queue.Get()
   err := c.syncHandler(item)
   c.handleErr(err, item)
}
```

#### Queue

```
queue = workqueue.NewNamedRateLimitingQueue(
    workqueue.DefaultControllerRateLimiter(),
    "foos"),
```

### Shared informers

podInformer = InformerFactory.Core().V1().Pods()

#### Shared informers - listers

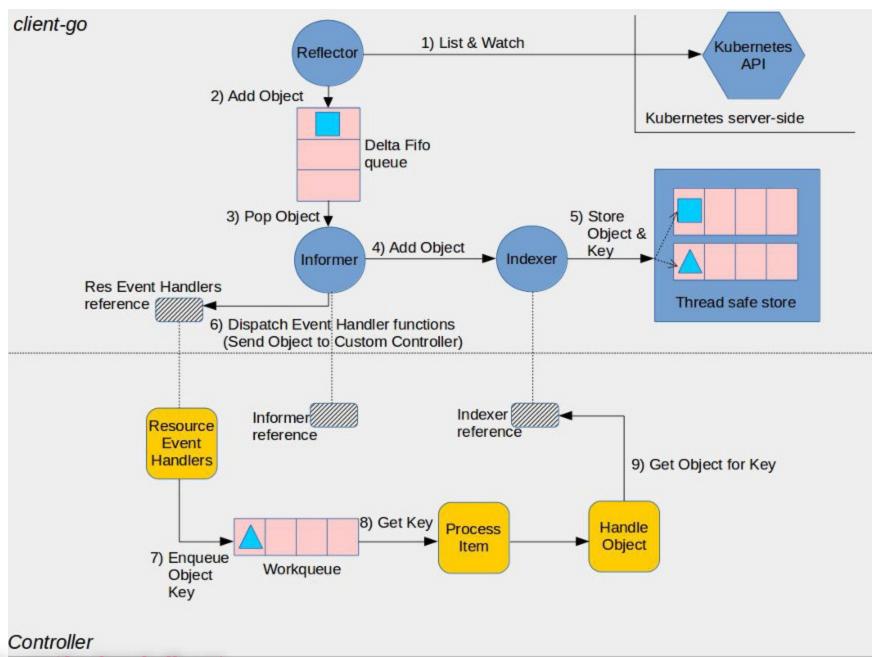
podStore = podInformer.Lister()

#### Shared informers - event handler

```
podInformer.Informer().AddEventHandler(
    cache.ResourceEventHandlerFuncs{
        // react to newly added object
        AddFunc: func(obj interface{}) {},
        // react to update to the object
        UpdateFunc: func(old, cur interface{}) {},
        // react to object removal
        DeleteFunc: func(obj interface{}) {},
```

#### SyncHandler

```
func (c *Ctrl) syncHandler(key string) error {
  // Convert into a distinct namespace and name
  ns, name, err := cache.SplitMetaNamespaceKey(key)
  // Get the object
  podTmp, err := c.podsLister.Pods(ns).Get(name)
  // !!! IMPORTANT !!!
  pod := podTmp.DeepCopy()
  // ... your logic goes here ...
  return nil
```



# Controller ground rules

https://github.com/kubernetes/community/blob/master/contributors/devel/controllers.md

