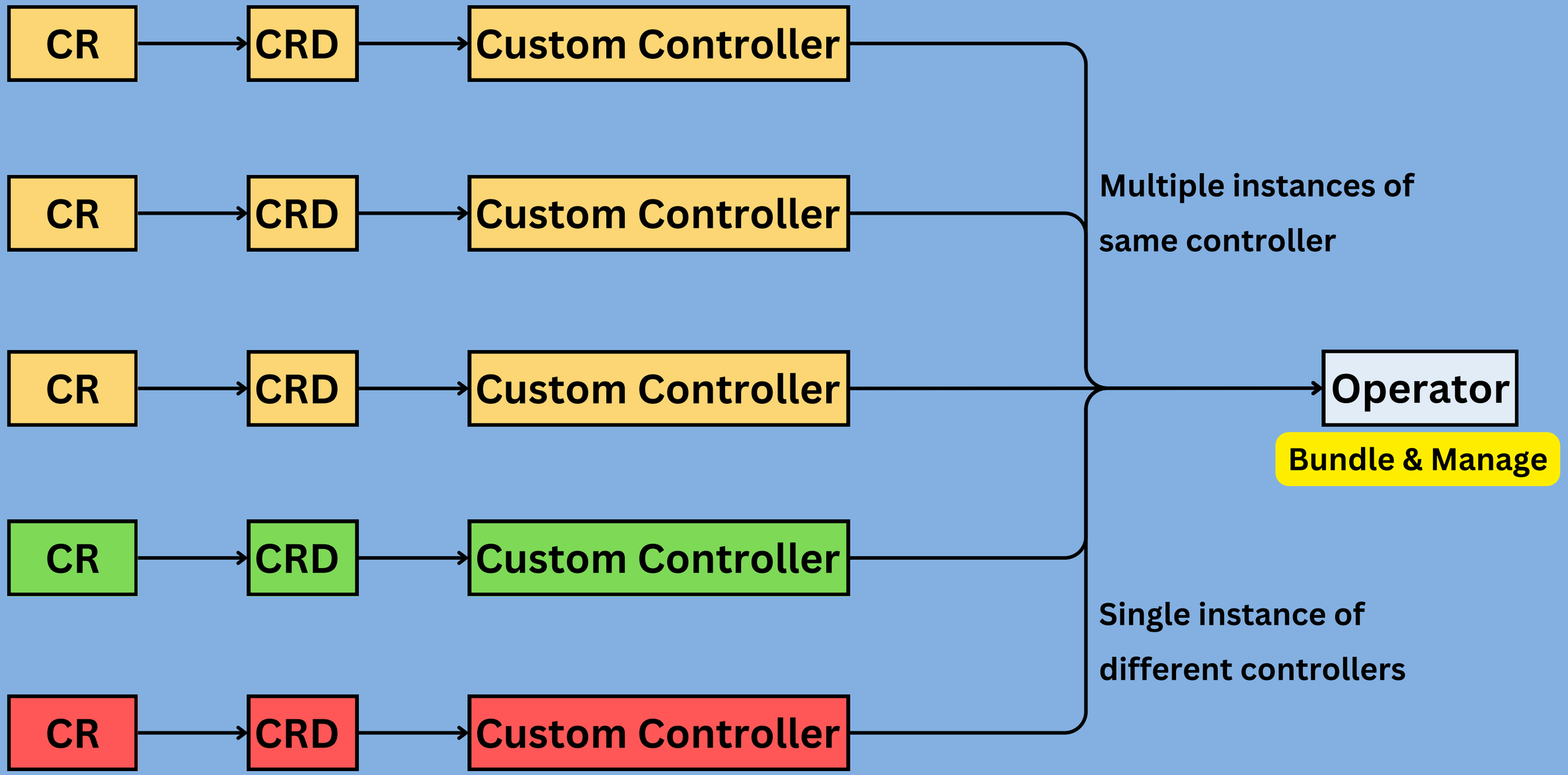

CR
CRD
Custom Controller
CR
CRD
Custom Controller
CR
CRD
Custom Controller
CR
CRD
Custom Controller
CR
CRD
Custom Controller
Multiple instances of same controller
Operator
Bundle & Manage
Single instance of different controllers

Go + Kubebuidler

Custom Controller - ClusterScan

Custom Resource Definition (CRD)

Spec:

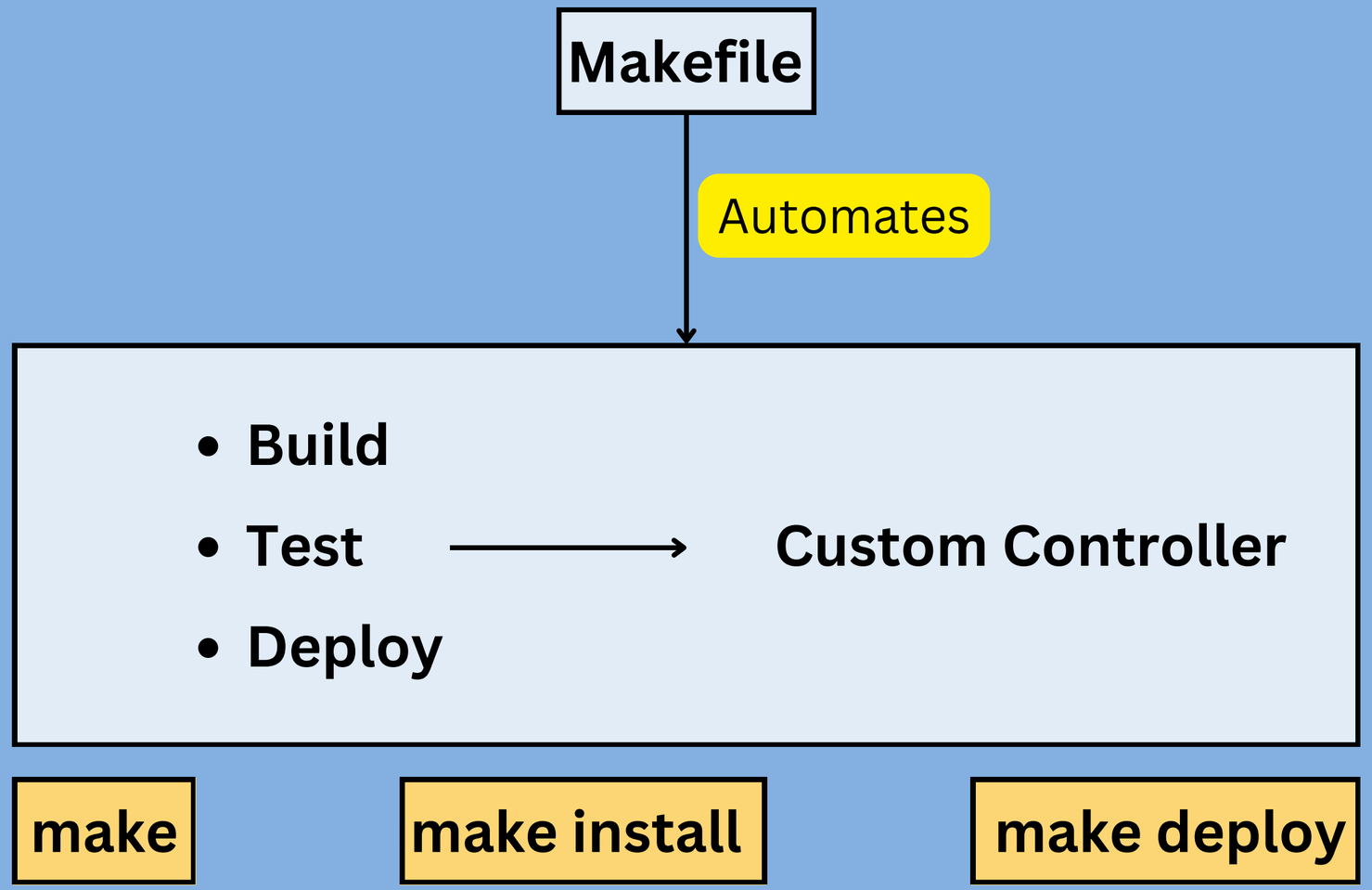
- Schedule
- Job Template

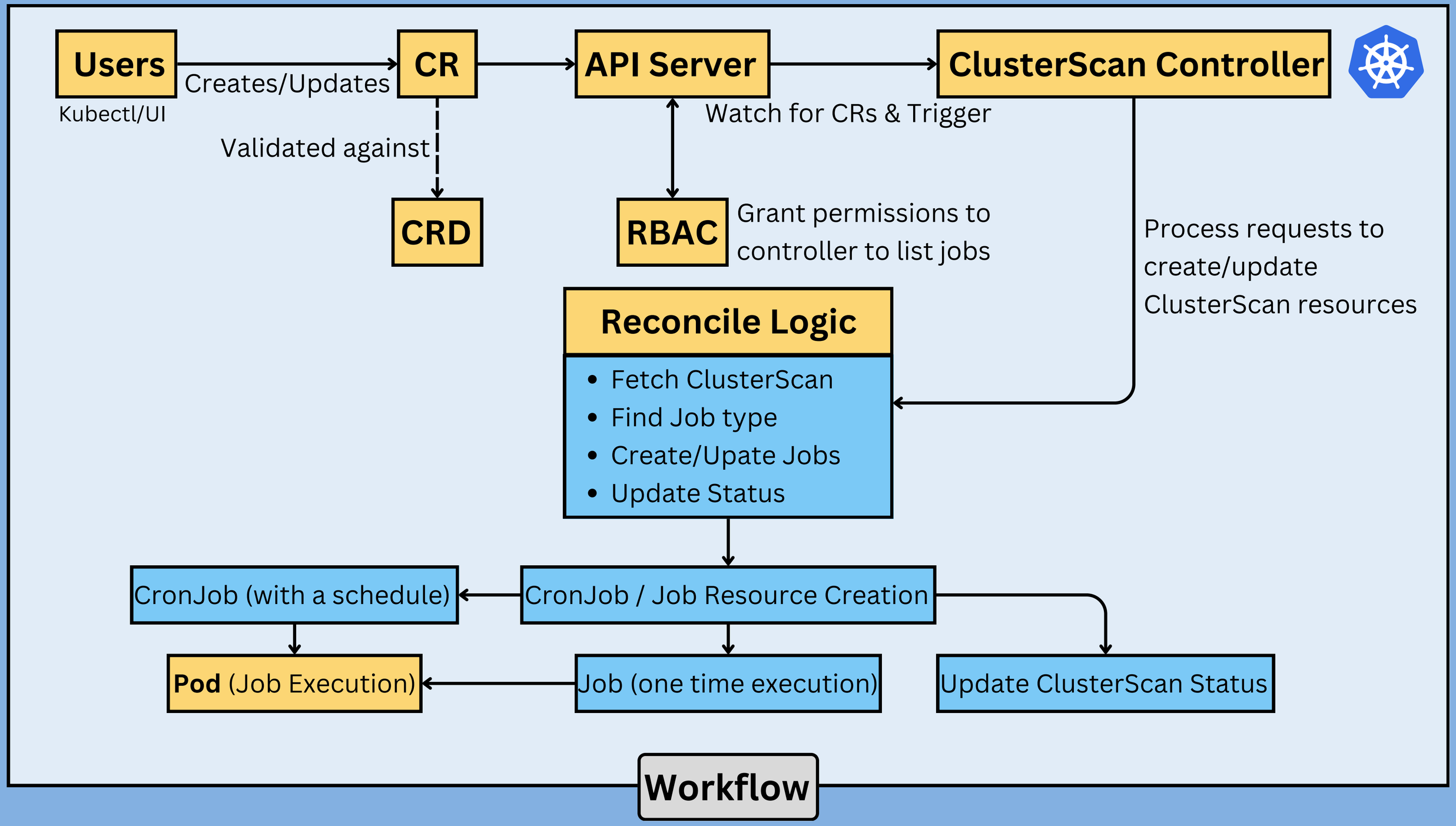
Status:

- Last scan time
- Last scan result

Custom Resource (CR)

kind: ClusterScan


Makefile
Automates
Build
Test
Deploy
Custom Controller
make
make install
make deploy


Users
Kubectl/UI
Creates/Updates
CR
API Server
ClusterScan Controller
Validated against
CRD
RBAC
Watch for CRs & Trigger
Grant permissions to controller to list jobs
Process requests to create/update ClusterScan resources
Reconcile Logic
Fetch ClusterScan
Find Job type
Create/Upate Jobs
Update Status
CronJob (with a schedule)
CronJob / Job Resource Creation
Pod (Job Execution)
Job (one time execution)
Update ClusterScan Status
Workflow

Meeting Take-Home Assignment’s requirements

- Custom Controller - ClusterScan ✅
- Spec and Status ✅
- Jobs (One-time execution) ✅
- Cron Jobs (Scheduled/Recurring Execution) ✅

Excited to contribute to SpectroCloud!!