Learning promQL

I have a 2 node kubernetes cluster.

We are using the below values

For counter metrics , you will be more interested in rate of change per second

For gauge metrics , we would like to aggregate by sum, avg, min,max

Aggregate or Sum the rate of CPU in idle mode per instance for a period of 5 minutes

sum by (instance)(rate(node\_cpu\_seconds\_total{mode="idle"}[5m]))

Percentage of Idle CPU

(sum by (instance)(rate(node\_cpu\_seconds\_total{mode="idle"}[5m])))/ (sum by (instance)(rate(node\_cpu\_seconds\_total[5m])))

Percentage of User CPU

(sum by (instance)(rate(node\_cpu\_seconds\_total{mode="user"}[5m])))/ (sum by (instance)(rate(node\_cpu\_seconds\_total[5m])))

Percentage of system CPU

(sum by (instance)(rate(node\_cpu\_seconds\_total{mode="system"}[5m])))/ (sum by (instance)(rate(node\_cpu\_seconds\_total[5m])))

API server Request Duration

sum by (group) (rate(apiserver\_request\_duration\_seconds\_count[5m]))

Other Queries

sum by (group,namespace) (rate(apiserver\_request\_duration\_seconds\_sum[1d])/rate(apiserver\_request\_duration\_seconds\_count[1d]))

Learning about K8s API Server

sum by (namespace,instance) (rate(apiserver\_request\_duration\_seconds\_count[5m]))

Total Number of requests received by API Server per instance

sum by (instance) (apiserver\_request\_total)

Apiserver requests where status code is not 200 or 201

(apiserver\_request\_total{code!~"200|201"})

Apiserver requests where status code is 500 or something like 500,502,503,504 etc

(apiserver\_request\_total{code=~"50\*"})

The same query as above, but aggregated by iinstance

sum by (instance)(apiserver\_request\_total{code=~"50\*"})

Aggregate by namespace and code

sum by (namespace,code) (rate(apiserver\_request\_total[5m]))

Aggregate configmap by namespaces and pod

sum by (namespace, pod) (kube\_configmap\_info)

All pods by images

sum by (image) (kube\_pod\_container\_info)

All containers in a waiting state

kube\_pod\_container\_status\_waiting!=0

The rate of container restarts in pod aggregated by namespace

sum by (namespace)(rate(kube\_pod\_container\_status\_restarts\_total[5m]))