## **Kubernetes Workload Resources**

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We use workload resources to manage a set of pods. These workload resources have a functionality to make sure that the right number of right kinds of pods are running, which we specify. We tend to use workload resources because incase of some fatal error, if the node is down, then the pods also seem to go down. Whereas if we use workload resources, we don’t have to manage these workload resources directly.

Kubernetes provides us with several in-built workload resources:

* Replication Controller, is used to run multiple replicas of pods.
* ReplicaSet, is a better version of replication controller with similar functionality.
* Deployment, also uses ReplicaSet in the backend with additional functionality to roll-back or roll-out.
* DaemonSet, used to ensure that a pod is running in every node. This can be useful for monitoring applications or such which needs the logs of every node all the time.
* StatefulSet, unlike the above resources, isn’t used for stateless applications. It is used for stateful applications.
* Job and CronJobs, are used to run batch operations such as backups or restores. Jobs are to run a specific task whereas a cron job is to run a specific task at a specific time/interval.
  + An additional functionality of jobs is “Auto clean-up for finished jobs” which removes the jobs that have performed their tasks.

Every workload resource we use is ultimately used to create a pod. All that it differs is in the functionality of the resources.

Note: A pod is also a workload(stand-alone) whereas a workload resource is used to create a pod/bunch of pods.