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Kubernetes-Cluster Design

Production-Grade Container Orchestration

Application Pods

- Application Components and number of replicas

Below are the restriction for K8s

- 5000 Nodes
- 150,000 pods
- 300,000 containers
- 100 pods per node

Resource Requirements

- Processor, HDD and Memory requirement for the cluster.

- Application Data Storage

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Worker Nodes in a Cluster

- Worker node size depends upon pods resource requirements.
- Total Number of Nodes=Maximum Pods per cluster/ Expected Pods per Nodes.
- Plan for the node failure at any point.

Master Node Configuration

1-5 Nodes	2 vCPU/4 GB RAM
6-10 Nodes	2 vCPU/7.5 GB RAM
11 to 100 Nodes	4 vCPU/15 GB RAM
101 to 250 Nodes	8 vCPU/30 GB RAM
251 to 500 Nodes	16 vCPU/30 GB RAM
> 500 Nodes	36 vCPU/60 GB RAM