Kubernetes Cheat Sheet

**Master**
- It is responsible for maintaining the desired state for the cluster you are working on.
- "Master" indicates a set of processes that are used to manage the cluster.
- Contains info, API, scheduler, replication controllers, and master.

**Worker Nodes/Minions**
- Also called as a minion. It contains the services necessary to run the pods that are managed by the master.
- Some services include: container runtime, Kubelet, kube-proxy.
- Contains: Kubelet, cAdvisor, services, pods and containers.

**Features**
- **Automated scheduling:** provides an advanced scheduler that helps launch containers on node pods.
- **Self healing:** reschedule, replace and restart dead containers.
- **Automated rollouts and rollbacks:** supports rollback for systems incase of a failure. Enables rollout and rollback for the desired state.
- **Horizontal scaling:** can scale up and down the app as per required. Can also be automated with CPU usage.
- **Service discovery and load balancing:** uses unique ip and dns name to service containers. This helps identify them across different containers.

**Kubectl Command List**

<table>
<thead>
<tr>
<th>COMMANDS</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kubectl get pods</td>
<td>Lists all current pods</td>
</tr>
<tr>
<td>Kubectl describe pod&lt;name&gt;</td>
<td>Describes the pod names</td>
</tr>
<tr>
<td>Kubectl get rc</td>
<td>List all replication controllers</td>
</tr>
<tr>
<td>Kubectl get rc - name= &quot;namespace&quot;</td>
<td>Lists replication controllers in namespace</td>
</tr>
<tr>
<td>Kubectl describe rc &lt;name&gt;</td>
<td>Shows the replication controller name</td>
</tr>
<tr>
<td>Kubectl get cvc</td>
<td>Lists the services</td>
</tr>
<tr>
<td>Kubectl describe svc&lt;name&gt;</td>
<td>Shows the service name</td>
</tr>
<tr>
<td>Kubectl delete pod&lt;name&gt;</td>
<td>Deletes the pod</td>
</tr>
<tr>
<td>Kubectl get nodes -w</td>
<td>Watch nodes continuously</td>
</tr>
</tbody>
</table>

**Function**
- **exec**: Execute command on service by selecting container.
- **logs**: Get logs from service for a container.
- **run**: Execute command on service by selecting container.
- **describe**: Get configuration
- **get**: Get the configuration
- **create**: Create a service in <manifest>.yaml
- **delete**: Delete a service
- **exec**: Execute command on service by selecting container.
- **describe**: Get configuration
- **get**: Get the configuration
- **create**: Create a service in <manifest>.yaml
- **delete**: Delete a service

**Other Quick Commands**
- **launch pod with a name and an image**: `Kubectl run <name> image=<image>`
- **create a service in <manifest.yaml>**: `Kubectl create -f <manifest.yaml>`
- **scale replication counter to count the number of instances**: `Kubectl scale <replicas>=<count>`
- **map external port to internal replication port**: `Kubectl port-forward <podname> <external port> <internal port>`
- **to stop all pod in <n>**: `Kubectl drain <n> --force`
- **allow master nodes to run pods**: `Kubectl taintnodes --all node-<role.kubernetes.io/master>`
- **output info about a node**: `Kubectl describe node<node>`
- **get cluster information**: `Kubectl version`
- **get configuration**: `Kubectl config view`
- **get cluster information**: `Kubectl cluster-info`

**Key Concepts**
- **Pod**: These are the group of containers.
- **Labels**: These are used to identify the pods.
- **Kubelet**: They are container agents, responsible for maintaining the set of pods.
- **ETCD**: A Metadata service.
- **CAdvisor**: For resource usage and performance stats.
- **Replication controller**: It manages pod replication.
- **Scheduler**: Used for pod scheduling in worker nodes.
- **API server**: Kubernetes API server.

**FURTHERMORE**
- Kubernetes Training
- Kubernetes Architecture
- Kubernetes Concepts
- Kubernetes Features
- Kubernetes Commands
- Kubernetes Cheat Sheet
- Kubernetes Cheat Sheet
- Kubernetes Cheat Sheet
- Kubernetes Cheat Sheet