**FAIR - SCHEDULER**

1. cluster should be efficiently utilized

2. resources can be controlled by the administrators proportionally

3. shorter jobs which take less resources can also exist with the longer jobs

pool = queue

default queue is root.username

we need to create **fair-scheduler.xml**

submit a job to specific queue by giving -D mapreduce.job.queuename=<queuename>

**CAPACITY SCHEDULER**

100 % of the resources

20% - DEV

5% financial

5% marketing

10% retail

20% - QA

60% - PROD

**ENABLING SCHEDULERS**

**yarn-site.xml**

For fair scheduler

<property>

<name>yarn.resourcemanager.scheduler.class</name>

<value>org.apache.hadoop.yarn.server.resourcemanager.scheduler.fair.FairScheduler</value> </property>

<property>

<name>yarn.scheduler.fair.allocation.file</name>

<value>/home/hadoop/hadoop/etc/hadoop/fair-scheduler.xml</value>

</property>

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===========================Fair scheduler - allocations file ==============================

<?xml version="1.0"?>

<allocations>

<queue name="Dev">

<minResources>1000mb, 1 vcores</minResources>

<maxResources>5000mb, 1 vcores</maxResources>

<maxRunningApps>10</maxRunningApps>

<weight>2.0</weight>

<schedulingPolicy>fair</schedulingPolicy>

</queue>

<queue name="QA">

<minResources>1000mb, 1 vcores</minResources>

<maxResources>5000mb, 1 vcores</maxResources>

<maxRunningApps>10</maxRunningApps>   
<schedulingPolicy>fair</schedulingPolicy>

</queue>

<queue name="PROD">

<minResources>1000mb, 1 vcores</minResources>

<maxResources>5000mb, 1 vcores</maxResources>

<maxRunningApps>10</maxRunningApps>

<weight>2.0</weight>

<schedulingPolicy>fair</schedulingPolicy>

</queue>

<user name="hadoopDev1">

<maxRunningApps>10</maxRunningApps>

</user>

<user name="hadoopDev2">

<maxRunningApps>5</maxRunningApps>

</user>

<userMaxAppsDefault>5</userMaxAppsDefault>

<defaultQueueSchedulingPolicy>fair</defaultQueueSchedulingPolicy>

</allocations>

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Run job like this :-

yarn jar /home/hadoop/hadoop/share/hadoop/mapreduce/examples.jar wordcount –Dmapreduce.job.queuename=root.PROD /input/names.txt /out

**For capacity scheduler**

<property>

<name>yarn.resourcemanager.scheduler.class</name>

<value>org.apache.hadoop.yarn.server.resourcemanager.scheduler.capacity.CapacityScheduler</value>

</property>

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<property>

<name>yarn.scheduler.capacity.root.queues</name>

<value>retail,marketing,finance,default</value>

<description>

The queues at this level (root is the root queue).

</description>

</property>

<property>

<name>yarn.scheduler.capacity.root.default.capacity</name>

<value>10</value>

<description>Default queue target capacity.</description>

</property>

<property>

<name>yarn.scheduler.capacity.root.retail.capacity</name>

<value>25</value>

<description>Default queue target capacity.</description>

</property>

<property>

<name>yarn.scheduler.capacity.root.marketing.capacity</name>

<value>30</value>

<description>Default queue target capacity.</description>

</property>

<property>

<name>yarn.scheduler.capacity.root.finance.capacity</name>

<value>35</value>

<description>Default queue target capacity.</description>

</property>

<property>

<name>yarn.scheduler.capacity.root.default.state</name>

<value>RUNNING</value>

<description>

The state of the default queue. State can be one of RUNNING or STOPPED.

</description>

</property>

<property>

<name>yarn.scheduler.capacity.root.retail.state</name>

<value>RUNNING</value>

<description>

The state of the default queue. State can be one of RUNNING or STOPPED.

</description>

</property>

<property>

<name>yarn.scheduler.capacity.root.marketing.state</name>

<value>RUNNING</value>

<description>

The state of the default queue. State can be one of RUNNING or STOPPED.

</description>

</property>

<property>

<name>yarn.scheduler.capacity.root.finance.state</name>

<value>RUNNING</value>

<description>

The state of the default queue. State can be one of RUNNING or STOPPED.

</description>

</property>