1)Explain in brief the architecture of Apache Hadoop Yarn

Ans

In YARN the functionalities like resource management and job scheduling are split. The idea is to have a global Resource Manager (*RM*) and per-application Application Master (*AM*). The Resource Manager is the ultimate authority that arbitrates resources among all the applications in the system.

YARN has got two main parts.

1)Scheduler - The Scheduler is responsible for allocating resources to the various running applications by considering all the rules or constraints e.g.number of container to be allotted also the queue. It monitors the status of the application. It does not do anything about the failed application. It just keeps the track of the application failure as well as the hardware failure. The Scheduler performs its scheduling function based on the resource requirements of the applications

2) Applications Manager- It is responsible for accepting job-submissions, negotiating the first container for executing the application specific Application Master and provides the service for restarting the Application Master container on failure. The per-application Application Master has the responsibility of negotiating appropriate resource containers from the Scheduler, tracking their status and monitoring for progress.

YARN also supports the notion of resource reservation via the [Reservation System](http://hadoop.apache.org/docs/current/hadoop-yarn/hadoop-yarn-site/ReservationSystem.html), a component that allows users to specify a profile of resources over-time and temporal constraints

There are different schedulers 1) FIFO Scheduler 2) Capacity Scheduler 3) Fair Scheduler.

Fair Scheduler - Fair scheduling is a method of assigning resources to applications such that all apps get, on average, an equal share of resources over time.

FIFO Scheduler – Scheduling is done according to the sequence of the request.

Capacity Scheduler - The Capacity Scheduler is designed to allow sharing a large cluster while giving each organization a minimum capacity guarantee.

