Yarn is the Platform which supports map reduce and other application like messaging etc;

* Yarn mainly consists of Resource Manager(allocation of resources) and Application Master(managing and monitoring Map reduce and other application)
* It is responsible for allocating data nodes to a job and for running application
* Resource Manager has two main components: Scheduler and Applications Master.

**Scheduler**

* The Scheduler is responsible for allocating resources to the various running applications subject to familiar constraints of capacities, queues etc.
* The Scheduler is pure scheduler in the sense that it performs no monitoring or tracking of status for the application.
* Also, it offers no guarantees about restarting failed tasks either due to application failure or hardware failures.
* The Scheduler will perform scheduling function based on requirements of the resource for applications. it does the process based on abstract notion for resource *Container* which will incorporate elements memory, cpu, disk etc.
* But for version 1, it will support only memory .

**Application Master**

* Single application execution will take place. It asks for containers for Resource Manager and will execute specific programs (like Java class main) on containers which are obtained.
* Application Master knows its logic for application and according to that it makes its framework-specific. Map Reduce framework will provide its own implementation for Application Master.

**Node Manager** (many per cluster)

* It acts as slave of the infrastructure. Initially , it make himself as Resource Manager. and will sends an heartbeat to Resource Manager.
* Node Manager offers resources to cluster. It is YARN per-node agent, and takes care of the individual compute nodes in a Hadoop cluster.
* It will include up-to date Resource Manager (RM) details ,overseeing container’s life-cycle management, monitoring resource usage (memory, CPU) of individual containers and auxiliary services which is exploited by different YARN applications

**Container**

* It will represents **collection of physical resources**. As well it includes CPU cores, disk along with RAM.
* When application is to get submitted to YARN, then the Yarn Client will allocate a separate container from Resource Manager, in parallel its Application Master will run.