NameNode:

1. Namenode manages the filesystem namespace by maintaining the metadata of all the files and directories.
2. Namenode maintains the block level information of stored files.
3. It regulated access of files by clients.
4. Namenode executes file system namespace operation like opening , closing and renaming files and directories.
5. Namenode stores the replication factor of files.

DataNode:

1. Datanode are responsible for serving read and write requests from file system’s clients.
2. Datanode performs block creation , deletion and replication upon instruction from namenode.
3. Datanode are responsible for verifying the data they receive before storing the data and its checksum.
4. Replicas of the file block will be maintained on Datanode to provide fault tolerance.
5. Addition and removal of datanode to cluster can be performed independently.
6. Datanode is responsible to scan through the stored block and send this information to namenode periodically.

Resource Manager:

1. Resource manage is the master that arbitrates all the available cluster resources and helps in managing the distributed application running on yarn system.
2. Resource Manager provide separate interface to serve the client and admin requests.
3. It is responsible for tracking the resources in cluster and job scheduling.
4. It doesn’t track or monitor the application running status.
5. It provides user the information about cluster like status of cluster , metrics on cluster ,scheduler information , information about nodes and information about applications on the cluster.

Node Manager :

1. Node Manager is a Yarn’s per node agent and takes care of the individual compute nodes in the cluster.
2. It keeps on updating Resource manager regarding the availability of available resources.
3. It oversees the container life cycle, monitors resource usage of containers.
4. It provides status of node and information about applications and containers running on that node.
5. Performs the verification and user authorization before launching container to perform the assignment.