Hadoop assessment questions

What is Default replication factor and how will you change it at file level?

The replication factor is **3** by default. By using **setrep** command to change the replication factor for files that already exist in HDFS.

Why do we need replication factor > 1 in production Hadoop cluster?

With the replication factor we specify our data redundancy requirements. The keyspace level is convenient so we don't have to repeat that requirement for every column family we create (and possibly forget).

How will you combine the 4 part-r files of a mapreduce job?

A combiner does not have a predefined interface and it must implement the Reducer interface's reduce() method. A combiner operates on each map output key. It must have the same output key-value types as the Reducer class.

What are the Compression techniques in HDFS and which is the best one and why?

GZIP, BZIP2, LZO**,** SNAPPY**.**Snappy is the best choice to keep the data compressed, if you want to further add another compression encoding it won't help you save space as it is already compressed. It'll only increase the overhead of decompressing if you want to read in future. Better go with the snappy compression itself.

How will you view the compressed files via HDFS command?

We use **SHELL** command to HDFS file is compressed

What is Secondary Namenode and its Functionalities? why do we need it?

The Secondary NameNode is a helper to the primary NameNode(Backup node) .As the NameNode is the single point of failure in HDFS, if NameNode fails entire HDFS file system is lost. So in order to overcome this, Hadoop implemented Secondary NameNode. The main function of secondary Namenode is to store a copy of FsImage file and edits log file**.**

What is Backup node and how is it different from Secondary namenode?

Backup Node in hadoop is an extended checkpoint node that performs checkpointing and also supports online streaming of file system edits.But unlike Secondary NameNode or Checkpoint Node, the Backup node does not need to download fsimage and edits files from the active NameNode to create a checkpoint, as it already has an up-to-date state of the namespace in it's own main memory.

What is FSimage and editlogs and how they are related?

FSImage file contains all the information about modifications/changes made across the cluster ever since the nameNode was started. It is stored in HardDisk memory. EditLog also has metadata about modifications however it has only recent changes (usually past 1 hour). It is maitained in RAM.

What is default block size in HDFS? and why is it so large?

The default size of a block in HDFS is 128 MB (Hadoop 2. x) and 64 MB (Hadoop 1. x) which is much larger as compared to the Linux system where the block size is 4KB. The reason of having this huge block size is to minimize the cost of seek and reduce the meta data information generated per block

How will you copy a large file of 50GB into HDFS in parallel?

DistCp (distributed copy) is a tool used for large inter/intra-cluster copying. It uses MapReduce to effect its distribution, error handling and recovery, and reporting. Distcp is for copying large amounts of data to and from Hadoop filesystems in parallel.

What is Balancing in HDFS?

The HDFS Balancer is a tool for balancing the data across the storage devices of a HDFS cluster. The HDFS Balancer runs faster, though it can also be configured to run slowly. We can also specify the source datanodes, to free up the spaces in particular datanodes. We can use a block distribution application to pin its block replicas to particular datanodes so that the pinned replicas are not moved for cluster balancing.

What is expunge in HDFS ?

Expunge command is used to empty the trash in hadoop file system. Its syntax is – Shell. $ hadoop fs -expunge.