# troduction to adoop Storage File ystem

op Storage File System is a distributed file system ned to store and manage large volumes of data ively. It offers high-throughput access to cation data and is suitable for applications that large data sets.

**y mahesh reddy**

ast edited 2 minutes ago


# Understanding HDFS Architecture

### Data Nodes

1

These are the commodity hardware machines where actual data is stored.

### Name Node

2

It is the centerpiece of an HDFS file system. It keeps the directory tree of all files in the file system, maintains and manages the data node and takes care of replication and fault tolerance.

### Secondary Name Node

3

This is not a backup name node but is a helper node for the primary name node. It receives the information from the name node and does the necessary merging for FSimage and edit log, then sends it back to the name node.

# HDFS Commands for File System Operations

### Upload

Upload local files to HDFS.

### Download

Download files from HDFS to the local file system.

### Delete

Delete files in HDFS.

# Moving Data from Local Disk to HDFS


### Packaging Data

Data is staged and packaged for transmission to HDFS.


### Transfer to Hadoop

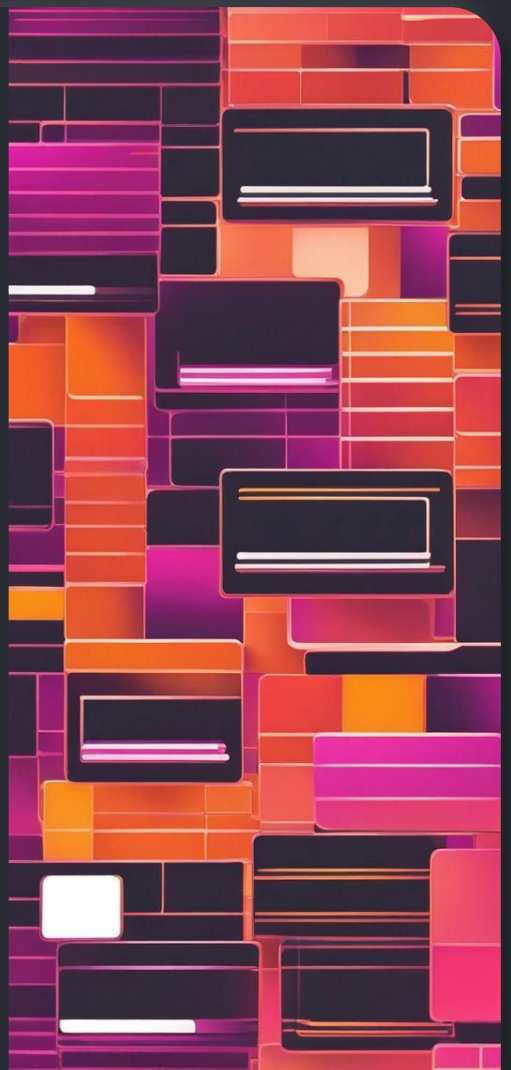
Transfer the data from the local disk to the Hadoop cluster.

3

### Validation

Confirm the successful migration and validate the data in HDFS.

## Getting Data from HDFS to Local Disk



1 **CopyToLocal**

Transfer files from HDFS to the local file system

# Hadoop File Formats

### Parquet

Columnar storage format with efficient data encoding and compression.

### AVRO

Row-based storage format with support for schema evolution.

### ORC

Optimized Row Columnar format with strong compression and indexing.


# Hadoop Data Compression Techniques

# 3x Compression

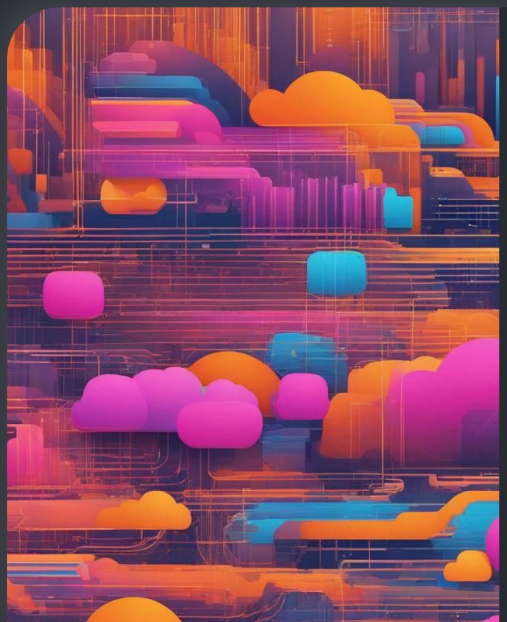
### Compression Ratio

Efficiently compress data to one-third of its original size.

# Snappy

### Fast Compression

High-speed compression and decompression algorithm.



# Conclusion and Best Practices

1

### Best Practices

Implement data replication and backup strategies in HDFS for fault tolerance and resiliency.

### Conclusion

2

Understanding HDFS and its operations is crucial for efficient big data management and processing.

**Like what you created?**

+ Create something else

Back to prompt

Help refine our AI

How satisfied are you with the output?

Hide