DLI Accelerated Data Science Teaching Kit

Lecture 12.4 - Learn More About HBase

HBase's "History"

Hadoop & HDFS based on...

- 2003 Google File System (GFS) paper
  https://research.google.com/archive/gfs.html
- 2004 Google MapReduce paper ← Designed for batch processing
  https://research.google.com/archive/mapreduce.html

HBase based on ...

- 2006 Google Bigtable paper
  https://research.google.com/archive/bigtable.html

↑

Designed for random access

RDBMS vs HBase

How are they different?

- Hbase when you don’t know the structure/schema
- HBase supports sparse data
  - many columns, values can be absent
- Relational databases good for getting “whole” rows
- HBase: keeps multiple versions of data
- RDBMS support multiple indices, minimize duplications
- Generally a lot cheaper to deploy HBase, for same size of data (petabytes)

More topics to learn about

Other ways to get, put, delete... (e.g., programmatically via Java)

- Doing them in batch

A lot more to read about cluster administration

- Configurations, specs for master (name node) and workers (region servers)
- Monitoring cluster's health

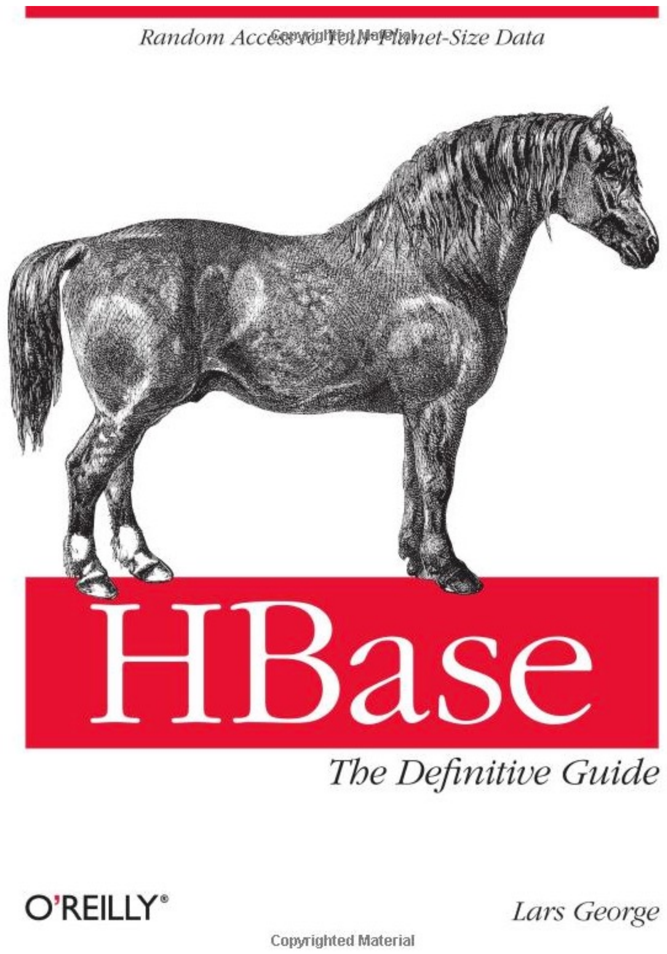
"Bad key" design (http://hbase.apache.org/book/rowkey.design.html)

- monotonically increasing keys can decrease performance

Integrating with MapReduce

Cassandra, etc.

https://db-engines.com/en/system/Cassandra%3BHBase



DLI Accelerated Data Science Teaching Kit

Thank You