

CCM Benchmarking

We run benchmarks on a cluster of 3 machines to compare performance of different indexes (CAM/CCM/NONE) with compaction policie BASIC (index-compaction) under write-only workload. We focus on small data (25B values), zipfian distribution of keys, async wal modes.

Hardware: 4 HDD machines, each with 24GB RAM, 12 cores, 1 master, 2 RS, 1 YCSB client

Cluster settings

HDFS is deployed on 3 machines (3-way replication);

HBase: 1 master, 2 region servers with the following setting:

16GB heap, from which 40% allocated to memstore and 40% to block cache (default values), alternatively 16GB is used for off-heap (+on-heap part).

GC: export HBASE_OPTS="-XX:+UseG1GC"

Additional global parameters:

```
<property>
  <name>hbase.hstore.flusher.count</name>
  <value>10</value>
</property>
<property>
  <name>hbase.hstore.blockingStoreFiles</name>
  <value>25</value>
</property>
```

ON-HEAP RESULTS

	NO MSLAB		MSLAB
CCM (2% active segment)	---		35349.6127
CAM (2% active segment)	35400.26154		33041.59005
NONE	34154.2391		33596.76543
CCM (10% active segment)	---		37764.83685

OFF-HEAP RESULTS (always with MSLAB)

NONE	34475.62573
CAM (2% active segment)	35303.85494
CCM (10% active segment)	37386.24462