**Spanner**

Test Conditions

* Invoked by functions
* Multiple sessions
* 200 – 1000 Operations per Session
* 20 GB records loaded

**Test 1:** 100 % writes - One insert per operation.

P.S. The recommended Max CPU Usage for a single region cluster is 75 % while for Multi region setup it is 45%

**Test 2:** 100 % writes - Five inserts per batch operation.

**Test 3:** Real time use case (mix primary key snapshots, secondary index reads, inserts and single row updates) - One insert per operation.

**Cost comparison**

Data Points:

1. Write performance per node is not crossing 2000 TPS.
2. Adding more nodes doesn’t linearly increase the performance.
3. However, with more nodes, CPU usage remains under recommended limit.
4. Read performance remain same for Multi region but Write performance degrades.
5. Multi Region setup is much more expensive but has better fault tolerance with data in 3 different regions and replication factor of 4.