PAPER REVIEW
Bigtable: A Distributed Storage System for Structured Data

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1. **Motivation**

   Huge amounts of data is produced every day. It is of utmost importance to devise a way to store this data efficiently and structurally. Bigtable aims to solve this problem. Additionally, it aims to assist Google in Big Data Analytics.

2. **Design**

   Bigtable is designed to give reliability and to scale to petabytes of data. Bigtable provides dynamic control over data model such as format and layout. Data is indexed using rows and columns. With the help of these design aspects the goal is to create high throughput data storage system

3. **Method**

   The bigtable is a map. The map is indexed by a row key, column key and a timestamp. Row key in the table are arbitrary strings up to 100 bytes of lengths, the changes here are done atomically. The rows are dynamically partitioned. Column keys are grouped in column family(basic unit of access control). All data stored in a column family are of the same type. Each cell can have multiple version of the same data which is distinguished with the time stamp. The master server maintains the location of these tablets. Various methods such as locality of groups, compression, caching and bloom filters are used to refine the data to provide low latency and high throughput

4. **Performance**

   To check the performance the following setup was used: N tablet servers to measure the performance where N was varied. The machine was arranged in two level tree shaped switched network with approximately 100-200 Gbps of aggregate bandwidth. Throughput is increases linearly as you scale from 1 to 500 systems. Performance does not increase linearly.

5. **Conclusion**

   Bigtable provides a throughput and low latency with the help of the design and the methods used. It serves it objective of storing large amount of data in a structured way. It has already been used in Google Earth and Google Analytics.

6. **Comments**

   Bigtable seems to have an interesting designing aspect which does not only make the storing of huge data into more structured way but also provides low latency and good performance.