

Chapter 1

Secure Data Aggregation Scheme

The goal of this thesis is to examine secure data aggregation schemes for various distributed systems.

Many modern world system designs are distributed in nature. The system design includes small, individual components doing their tasks precisely and lots of these components synchronize with all other components to complete the bigger task.

All the large internet companies process massive amounts of data also known as “Big Data” in real time applications. These include batch-oriented jobs such as data mining, building search indices, log collection, log analysis, real time stream processing, web search and advertisement selection on big data. To achieve high scalability, these applications distribute large input data sets over many servers. Each server processes its share of the data, and generates local intermediate results. The set of intermediate results contained on all the servers is then aggregated to generate the final result. Often the intermediate data is large so it is divided across multiple servers which perform aggregation on a subset of the data to generate the final result. If there are N servers in the cluster, then using all N servers to perform the aggregation provides the highest parallelism. [?]

Many applications of sensor networks are inherently distributed in nature. For example, scientific data collection, building health monitoring, building safety monitoring systems are distributed systems. Write an example how data aggregation happens in one particular application. [?]

The application design architecture for the Internet of Things is distributed as well. Write an example how data aggregation happens in one particular application. [?]

1.1 Network topology

Write about how all thses distributed systems can be classifieds into general tree structure.

1.1.1 Related work

Talk about existing aggregation schemes.

Subsubsection heading

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