CLIENT NAME: JB HUNT/PARTNER WITH DELOITTE

J.B. Hunt Transport, Inc. is a Fortune 500 company that specializes in freight shipping for large and small businesses. A top-ranked third party logistics (3PL) provider and one of the largest transportation logistics companies in North America. They provide safe and reliable transportation services for a diverse group of customers throughout the continental United States, Canada and Mexico.

CHALLENGES:

JB Hunt was facing a big data predicament. Their trucks travel roughly 8 million miles per day to deliver their cargo. They needed a method to effectively analyze truck travel patterns to gain an understanding on a myriad of issues including how many "empty miles" were accrued on routes, and subsequently make adjustments for more efficient deliveries. Utilizing their in-house logistics tracking software, JB Hunt had been temporarily storing log files for analyzing and debugging issues. Due to the massive amount of data being pushed into these files, they were only retaining this data for a short duration. Additionally, since the data was unstructured, developers would have to manually extract, parse, and search the data every time they needed to perform an analysis.

A solution was needed to add structure to these data logs, provide the ability to run ad-hoc queries when issues occurred and perform analytics against the data to improve trucking route efficiency. A traditional relational database system would be too resource-intensive due to volume and velocity. Instead, JB Hunt needed a big data solution.

SOLUTIONS:

After obtaining information through our discovery and requirements gathering process, Akvarr architected a big data solution utilizing Hadoop, in conjunction with a combination of other key open-source components, to harness its full potential. In doing so, we created the Map Reduced architecture.

Our solution pre-processes and prepares the data to be consumed, creating a "solution" and "problem" file. These files are then aggregated and distributed. Data was then passed into a sink to process and load it into a Hadoop component, which is then distributed to Solr Cloud and HDFS, respectively. The end result is structured data availability in multiple formats, with flexibility for low latency queries provided through Cloudera Impala and data visualization with OBIEE connectivity.

RESULTS:

With minimal hardware resources and a collection of open-source software requiring no licensing fees, we helped JB Hunt implement the big data solution at a fraction of the cost a traditional relational database solution would have required. Our Hadoop implementation resulted in cost savings of almost $2 million. Also JB Hunt realized an additional benefit in a 20% boost in productivity that was achieved from their new analytical assets.