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## Mobile data and individual client diagnostic acquisition from pgws call analysis utilizing spark and the hadoop ecosystem

**Wilbert A. McClay**

Northeastern University, USA

IntroPro/DirecTV Corporation, USA

Individual Client Diagnostics, is an account specific event log to diagnose customer experience from PGWS call analysis. The meaning of a PGW call is to perform policy enforcement, packet filtering for each DirecTV user, charging support, lawful interception and packet screening. Another key role of the PGW is to act as the anchor for mobility between 3GPP and non-3GPP technologies such as WiMAX and 3GPP2 (CDMA 1X and EvDO). Thus, the acquisition of the PGW calls within the Kafka API demonstrates the objective of the DirecTV Mobile Diagnostics project. The Spark Dstream is connected to a HBase/Websocket to IMAP with a projection into HBase. The big data analytics and diagnostics component will rely heavily upon the aggregation windows return, which prescribes how IMAP wants the PGWS call data lucidly defined. The Spark analytics machine learning analysis post Kafka API inspection of key-value pair analysis from IMAP PGWS Request and Response Data demonstrate the following statistical results utilizing Spark machine learning library (MLlib), SparkR and SparkSQL, projected into HBase as a column family architecture.

### Biography

Wilbert McClay, PhD., has served as Managing Technical Scientist at Aerospace Corporation; and Principal Investigator, Visiting Scientist, and Signal Processing Engineer at Lawrence Livermore National Laboratory. He brings expertise in developing machine learning algorithms, signal processing, and image processing; advanced systems processing across multiple platforms; advanced radar signal processing; and developing Bayesian Networks for tracking and detection of brain waves utilized on the Brain Computer Interface (BCI) Project. At Southern University he taught courses in Electrical Engineering and currently at Northeastern University serves as CyberSecurity, Brain Computer Interface, and Big Data (Hadoop, MapReduce, and NoSql databases) researcher. Additionally while acquiring his 2nd Master's in Information Assurance at Northeastern University in Boston, Massachusetts, Wilbert has worked extensively as a Big Data Hadoop Architect/Developer Contractor for top Fortune 500 media corporations such as NBC Universal and DirecTV.

[mcclay.w@husky.neu.edu](mailto:mcclay.w@husky.neu.edu)

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