Teradata Aster® Analytics Portfolio

Teradata Aster® Analytics Portfolio provides a suite of ready-to-use, multi-genre advanced analytics™ functions that empowers business users to uncover and operationalize non-intuitive insights. Teradata Aster Analytics includes the Aster Database, Aster Client and the Aster Portfolio that consists of SQL, SQL-MapReduce and Graph functions for multi-genre advanced analytics. These functions provide everything from data acquisition and preparation to analytic modeling and visualization. The analytics portfolio provides new high-value insights for a wide variety of business use cases such as customer churn, social network, path to purchase, marketing attribution, product affinity, fraud, manufacturing optimization, and more. All this is possible in a single environment and through a single query that integrates all the analytic process steps. It is meant for all user types and obviates the need to maintain disparate tools, hire people with niche and expensive skill sets, and maintain silos of metadata.

Teradata Aster Analytics Portfolio— Key Capabilities

Data Acquisition Module
This module includes functions that enable access to multi-structured data stored in Apache™ Hadoop™, Teradata Data Warehouse, Splunk and other data sources.
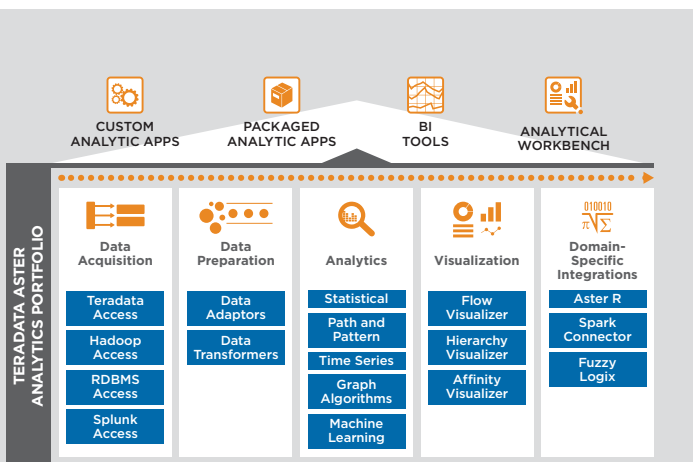

Figure 1. Teradata Aster Analytics Portfolio: Prebuilt multi-genre advanced analytics at scale designed for business analysts and data scientists.

Data Preparation Module
Ready-to-use data adaptors and transformers enable interpretation and preparation of data such as Web logs, XML, emails, and machine logs for analyses. A sample set of included functions provides capabilities such as:

- **Outlier filters** to remove outliers from data
- **Apache™ Log Parser** to support custom log formats from Apache™ Web servers as defined by the user
- **XML Parser** and **JSON Parser** to parse and prepare XML logs generated by applications like Web logs and POS logs at retail stores and outlets
- **Sampling** to execute various sampling techniques for robust statistical analyses
- **Fourier Transforms** to transform sensor data for IoT analytics
- **Fuzzy Logix** to explore and transform structured data with classic statistical techniques

Data transformation functions include *sessionization* and *unpack* to transform complex, unstructured data into meaningful formats suited for analytics.

Analytics Module
This includes a vast array of ready-to-use functions for time series, statistical, text, graph, and SQL analysis in addition to custom SQL, SQL-MapReduce, and Graph analytic functions. A sample set of functions includes:

- **PageRank** assigns importance or influence values to individual nodes in a network which can be used to determine value, importance, or influence of that node
- **nPath™** identifies the most common consumer paths to defined events such as buying a product, abandoning a shopping basket, or closing an account
- **SAX** enables machine data analysis, such as analysis of sensor data in manufacturing, in addition to identifying anomalies in manufacturing processes
- **Confusion Matrix** enables machine learning for quantifying the performance of an algorithm to improve predictive models

- **Single Decision Tree** enables building and applying a single decision tree for classification and identifying important variables that are critical to decision-making

- **Distribution Matching** allows hypothesis testing of data origins from a specific distribution and parametric estimation

- **Symbolic Aggregate Approximation (SAX)** creates symbolic strings from time series data to search for patterns in IoT data

Visualization Module

Visual SQL-MapReduce functions that are massively parallel, in-database, in-process and out-of-the-box, provide novel visualizations to make it faster and easier to discover new insights from big data. They complement existing business intelligence and visualization tools by providing purpose-built visualization capabilities best suited to represent the in-depth insights offered by Teradata's patented SQL-MapReduce framework. A sample set of capabilities includes:

- **Flow Visualizer** to understand the path taken that leads to an outcome such as purchase or downloads

- **Affinity Visualizer** to understand how two sets of seemingly different products or services actually have a close connection and hence can be bundled

- **Hierarchy Visualizer** to organize all discrete entities and interactions into hierarchies to better understand and comprehend the relationships and behaviors

A good visualization (see Figure 2) highlights the solution's ability to be rapidly iterative while quickly zeroing in on the most relevant signals during the discovery process.

For More Information

Teradata Aster Analytics Portfolio can help you take advantage of big data volumes in a fast, efficient, and cost-effective way while you improve your decision-making capabilities and grow a stronger, more productive business. To learn more about Teradata Aster Analytics, contact your local Teradata representative or visit Teradata.com.

Key Benefits

- Introduction of a powerful Graph Engine (SQL-GR™) that enables massively scalable, iterative data processing and includes pre-built Graph functions that are invoked via SQL.

- Expanded library of 100+ pre-built SQL, SQL-MapReduce, and Graph functions for easy and fast analysis via a single statement execution of the analytic process including data acquisition, preparation, analysis, and visualization.

- Visual SQL-MapReduce functions: Massively parallel, in-database, in-process, and out-of-the-box functions that generate compelling visualizations and enable powerful insight discovery.

- Synergistic multi-genre analytics leverage multiple analytical techniques (SQL, MapReduce, statistical, text, and Graph) to unlock new insights.

- Support for in-database text and sentiment analysis, in-database R analytics, and in-database PMML execution via Zementis®.
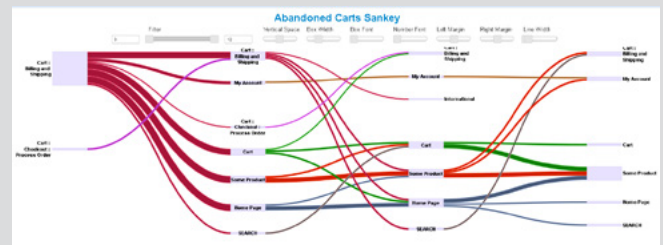

Figure 2. Teradata Aster Visualization.