

Openlab Workshop on Data Analytics



Friday 16 November 2012 - Friday 16 November 2012

CERN

Scientific Programme

Introduction to Data Analytics and CERN's Use Cases

Decisions are usually taken under a high level of uncertainty and in most of the cases based on intuition instead of facts. This together with some factors as the lack of independence, objectivity or ability to calculate the risks can end in disaster. By data analytics we mean the use of analysis, information and systematic reasoning to guide the decision making process. This session will present an introduction to data analytics from the perspective of decision making, the technologies needed to handle the different nature of the analytics processes you have to face on your daily-based decisions and the need of an analytic framework to make possible the interaction between all of these technologies. In addition, some of the unresolved CERN's use cases will be introduced.

Organization Layer

In the Organization Layer we will present ETL technologies in charge of collecting data from various and heterogeneous data sources and organizing them in different analytics data models. We will present how data Integration tools cover the entire spectrum of velocity and frequency, how they handle extreme and ever-growing volume requirements and how they bridge the variety of data structures.

Analysis Layer

Not one data model fits all different types of analysis. Historical analysis, forward-looking analysis, data exploration, predictive analysis: each Analytics needs a specific structure how to store the information for turning data into insights. In the Analysis Layer we will present how data are stored in different Analytics data models for further analysis and decision-making.

Decision Layer

The Decision Layer is equipped with advanced analytics, in-database statistical analysis, advanced visualization and information discovery, on top of the traditional components such as reports, dashboards, and queries. It allows end-users to be informed, to investigate alerts, explore data, simulate scenarios and, on the basis of these analysis, to support the decision-making process.