

Title:

ROOT/PROOF Tutorial

Author:

Jan Fiete Grosse-Oetringhaus, CERN PH/ALICE
Marco Meoni, CERN PH/ALICE

Abstract:

The Parallel ROOT Facility, PROOF, enables the interactive analysis of distributed data sets in a transparent way. It exploits the inherent parallelism in data sets of uncorrelated events via an architecture that optimizes I/O and CPU utilization in heterogeneous clusters with distributed storage. Furthermore, it allows to exploit the full potential of multi-core machines.

The first part of the tutorial starts with a short introduction to ROOT and some tools for fast data analysis and visualization on a desktop machine. Participants will learn how to layout, compile and use a self-defined event class for analysis data stored as ROOT trees in ROOT files. These are used in general as a basis for analysis on a desktop or on a PROOF cluster. The ROOT selector framework will be discussed in detail.

The main part of the tutorial explains the advanced architecture of PROOF and its usage for tree-selector based analyses.

In practical exercises participants will be guided to run interactive analyses using an existing PROOF cluster and a distributed dataset. Emphasis is the practical usage of PROOF rather than administrative aspects.