

RD51 E-School

Session: Readout form FPGA to Online

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Introduction

The session will introduce the RD51 E-School participants to the main concepts of on-line data acquisition at both hardware and software level. The SRS System and its usage in the TOTEM Experiment will be presented as well as the DATE DAQ framework developed by the ALICE Collaboration.

During the afternoon training session students will learn how to install, configure and run DATE - a distributed readout system able to scale from a small laboratory set-up to a large size experiment system. SRS systems will be provided during the training session to run live test using the prepared software installation.

The goal of the session is to introduce students to the usage of on-line software and hardware and allow them to build a full set-up. The DAQ software will be installed on a virtual machine running on the students' laptop.

Hardware requirements

The session participants should have a laptop meeting the following requirements:

1. 64-bit CPU with virtualization support;
2. Ethernet wired connection;
3. If possible, wi-fi connection registered at CERN.

Session requirements

The session participants should be familiar with Linux system environment and have a basic knowledge of bash commands.

The participants need to prepare their laptop installing the VirtualBox virtualization software before attending the workshop.

How to install VirtualBox

To install VirtualBox follow the steps:

1. Go to <https://www.virtualbox.org/wiki/Downloads> and download the software version suited for your system (Windows, Linux, MAC OS X);
2. Run the installer;
3. Start VirtualBox;

4. Check that your machine is enabled for virtualization technology. Reboot the machine and enter the BIOS settings at boot time. The “virtualization technology” flag in the BIOS system settings tab must be enabled (BIOS menus are different each other, in case of troubles, please contact us in advance).
5. One week before the session, a link to the Virtual Machine image will be provided to the participants. Students should download the image before the workshop.