# CLAS12 Offline Software Hands-on Workshop

Oct. 11, 2011
8:30 AM – 3:30 PM
CEBAF F-113

8:30 AM

**"Introduction"**

15 min. talk (Dennis Weygand)

8:50 AM

**"The CLARA Platform"**

10 min. talk, 15 min. hands-on (Vardan Gyurjyan)

9:20 AM

**"EVIO Primer"**

20 min. talk (Elliot Wolin)

9:45 AM

**"The CLARA Service"**

10 min. talk, 30 min. hands-on (Johann Goetz)

10:30 AM

Break 15 min.

10:45 AM

**"Currently Deployed CLARA Services"**

45 min., several talks each ~5-10 min. (Lead by Vardan Gyurjyan)
Services to be covered:

- **Event Feeder** (an EVIO event server)
- **Event Display** (a graphical display of event data)
- **CCDB** (Calibration Constants Server)
- **Socrat as a Service** (Sebastien Procureur's reconstruction algorithm implemented as a collection of CLARA services)

11:30 AM

Lunch 1.5 hrs

1:00 PM

**"Creating Your Own Service"**

30 min. talk, ~2 hr. hands-on (Johann Goetz & Vardan Gyurjyan)
Both **Java** and **C++** services will be covered including design considerations

3:30 PM

End of Workshop

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## Abstract

The "CLAS12 Offline Software Hands-on Workshop" will focus on practical issues regarding installation, setup, building and running programs in the service-oriented paradigm using the CLARA framework. It is aimed at the "B" level programmers, that is, the people responsible for implementing the algorithms of calibration, reconstruction, simulation or analysis. There are several independent projects which must come together to make any successful reconstruction, simulation or analysis program for CLAS and we will attempt to address most of them in this workshop.

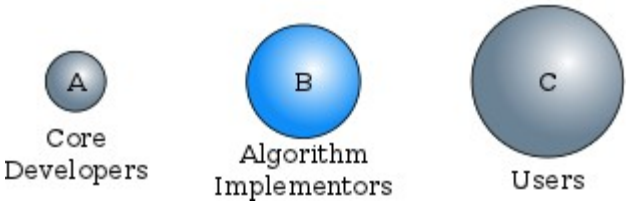


Figure 1: There are three main groups of programmers in the CLAS12 software effort. The smallest is the "Core Developers," or A-level programmers, which are responsible for the basic tools used such as the cMsg/CLARA framework, EVIO transient data format, and the CCDB calibrations database design. The B-level programmers are the people who use the core software to implement specific algorithms for doing reconstruction, simulation and similar procedures. The final and potentially largest group is the C-level programmers who are the end users who would implement such things as analysis routines. This workshop is aimed at the "B-level" programmers.

## What to Expect

The "hands-on" aspect of this workshop will consist of three main stages:

1. Installing and running the **CLARA platform**.
2. Building and running **pre-written services**.
3. Writing **a new service** and incorporating it into the platform.

We encourage everyone to bring a laptop on which we will guide you through installing and running a local CLARA platform. Mac OSX and most modern Linux distributions are currently supported. You should have administrative/root access on this computer to facilitate installing the required third-party libraries and packages. That said, it is highly suggested everyone have these software packages already installed prior to the workshop:

- Programs:
  - **gcc** and **g++** (version >= 4.3)
  - **SCons** (version >= 1.0)
  - **Java** (version >= 1.6)
  - **MySQL Server** (version >= 5.1)
  - CERN's **ROOT**
- Development Libraries:
  - **eXpat** (XML parser C library)
  - **libz** (compression C library)
  - **MySQL** (client libraries and header files)
  - **Boost** (C++ libraries and header files, version >= 1.36 required, >1.42 preferred)

For more information on this workshop and system requirements please go to
http://clasweb.jlab.org/wiki/index.php/CLAS12_Software_Workshop_2011.10.12