ONCS Status Report

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- **Overview of the past weeks**
  - **ONCS Release 1 status**
  - **processors and computers**
  - **HV**
- **Recap: Pdaq and friends**
- **The GUI and Java Story**

Release 1 and other Status

- **Almost 100% of the code is there (and already in use)**
- **Existing setups (currently active: 2x EmCal) run almost on autopilot**
- **We are still experimenting with the best CVS structure (ONCS-specific problems: shared CORBA IDL and generated header files for both Unix and VxWorks targets, cross-platform compilers, ...)**
- **We want to setup the "final" Makefile structure and use it ever after (again some ONCS-specific problems here)**
- **Release 1 will then be declared frozen, any day now.**

- **We finally got our Sun Enterprise machine -- the DAQ computer is there!**
- **We successfully operate the PowerPC VxWorks processors**
- **For a short time, we held a DCM board in our hands...**
- **HV effort is ramping up at BNL and NMSU (Steve)**

Recap:

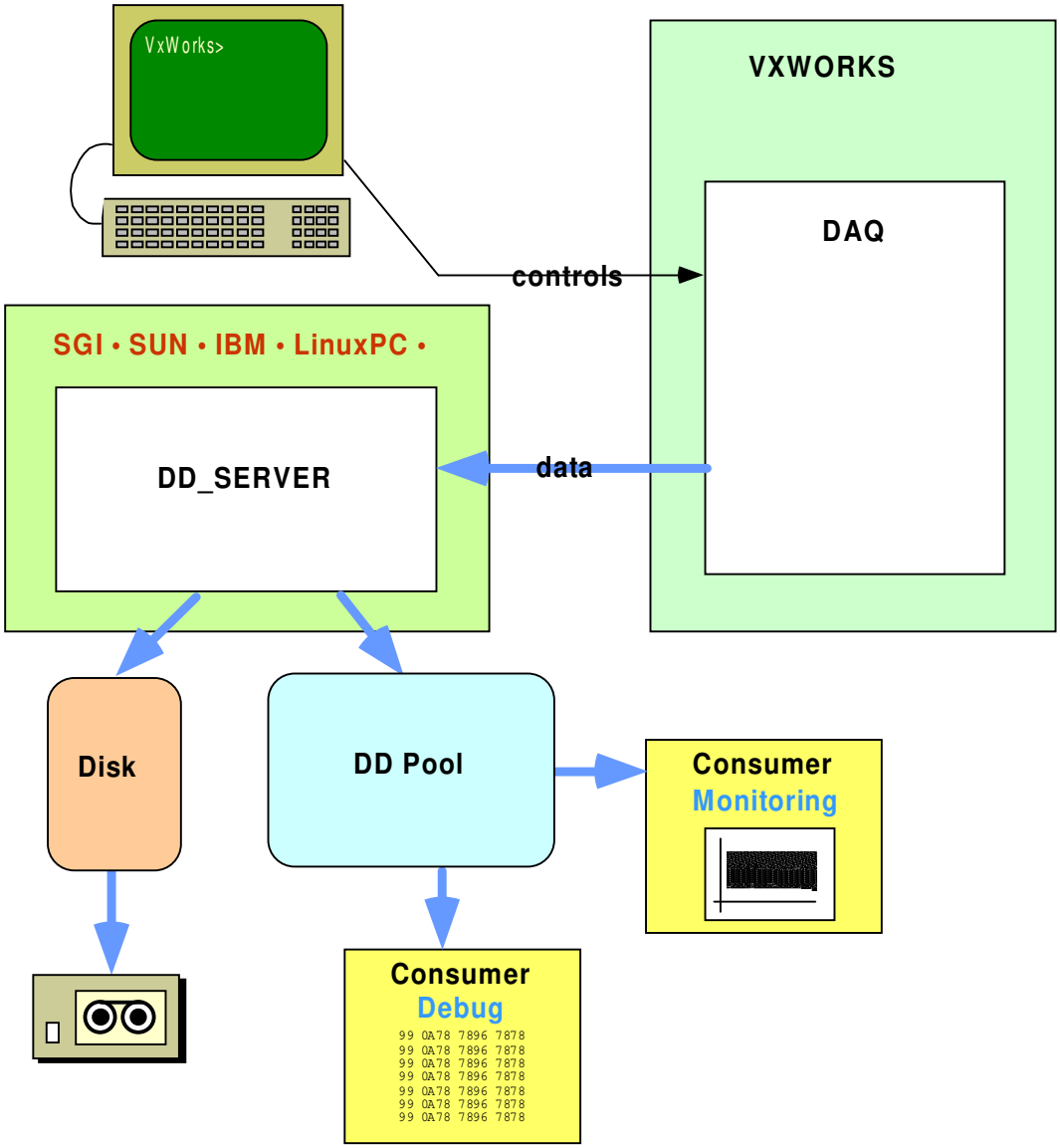
Pdaq and friends

- **PDAQ is the data acquisition system developed by ONCS**
- **PDAQ has been used so far**
  - **in the TEC test beam and all the testing in Instrumentation**
  - **for the Lead Glass tests & calibrations**
  - **for the magnet mapping tests**
  - **as the development environment for ONCS**
- **comes with a lot of support tools, most notably an online monitoring package (Pstuff), and even some manuals (TN 297)**

- **PDAQ supports basically 3 modes of operation:**
  - **"VxWorks Mode": executes commands directly from the VxWorks shell**
  - **"Unix shell mode": execution of VxWorks commands through RPC**
  - **"PHLOPS mode": using communication through CORBA, Shlaer-Mellor code -- is the highest form of running this DAQ.**

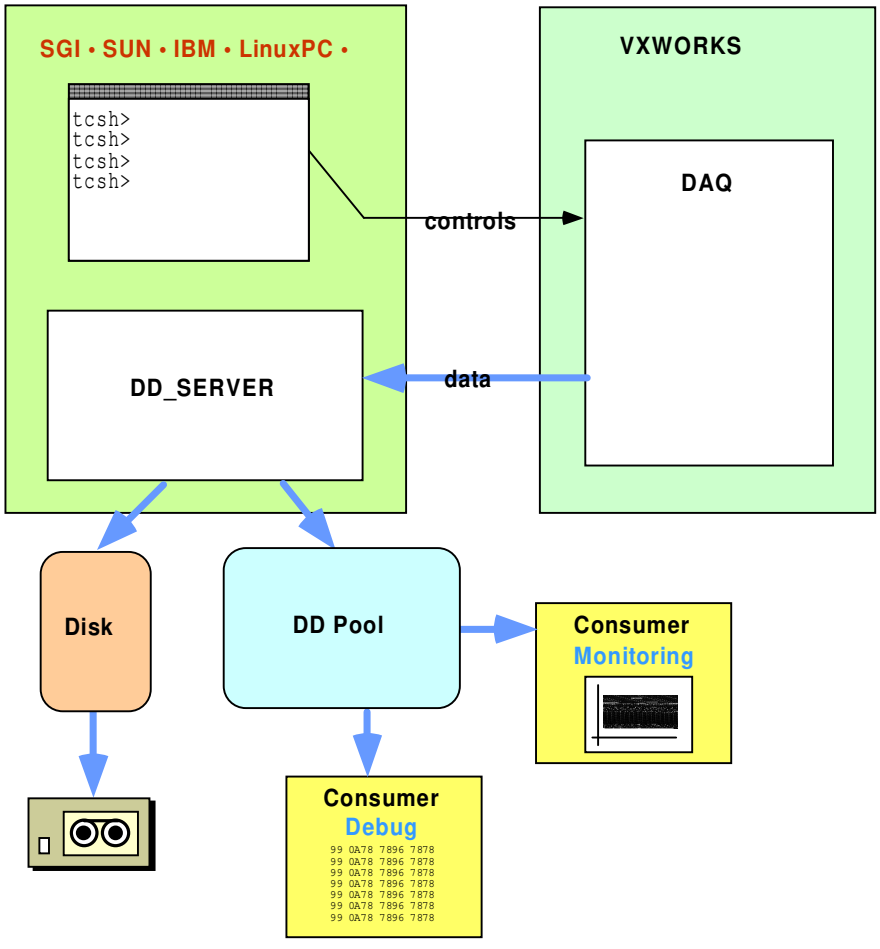
"VxWorks Mode" operation

- easy, low-level direct interaction with Pdaq
- already powerful due to VxWorks-shell scripting
- many "expert-only" commands available
- supported on "all" Unix platforms



"Unix Shell Mode" operation

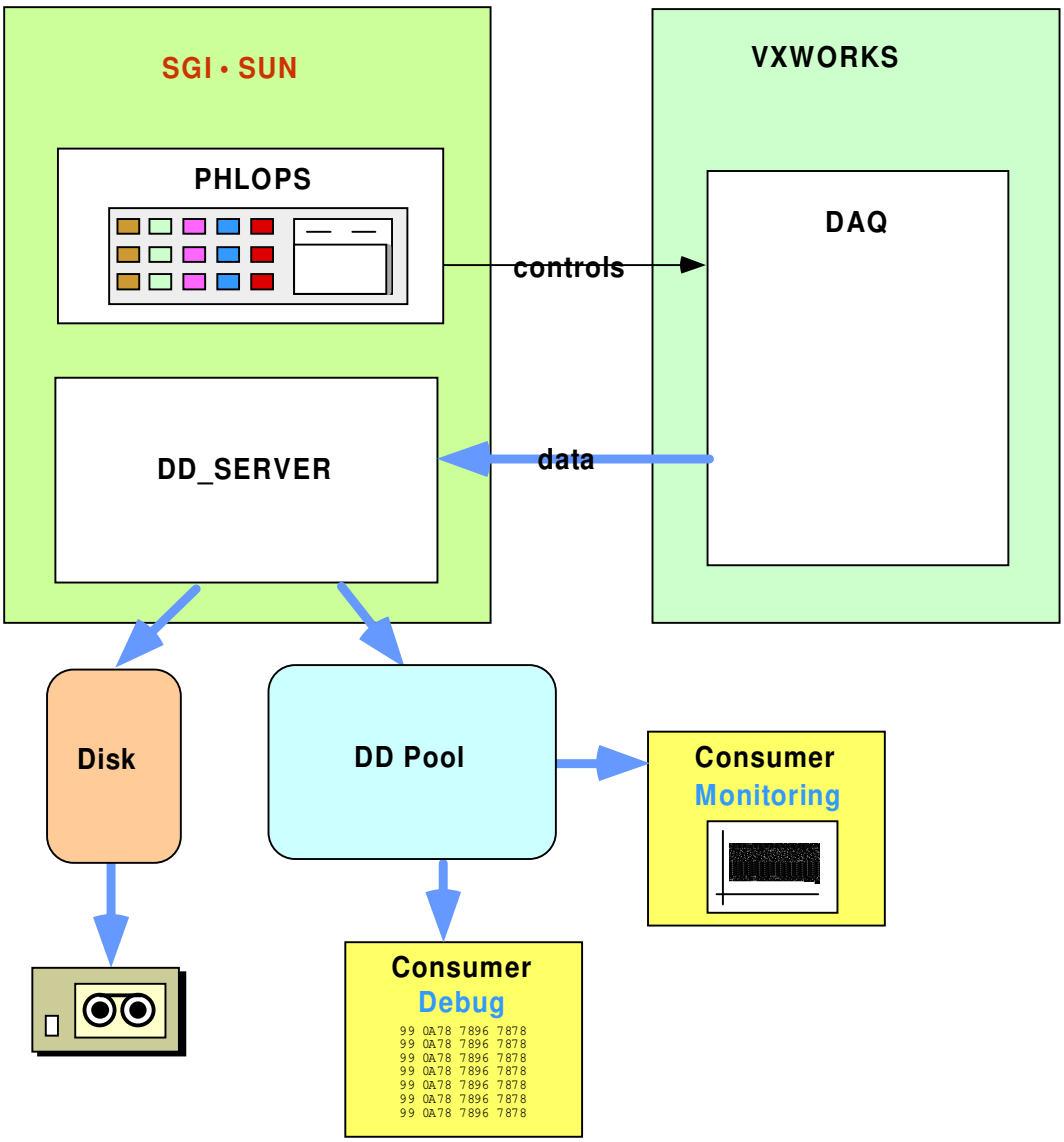
- give all (well, most) Pdaq commands from the UNIX shell
- brings all information/control together on one machine
- Shell script can control Pdaq based on online monitoring results
- specifically designed for automated procedures (e.g. Lead glass, Magnet)
- supported on "all" Unix platforms



The TEC test was run this way in April

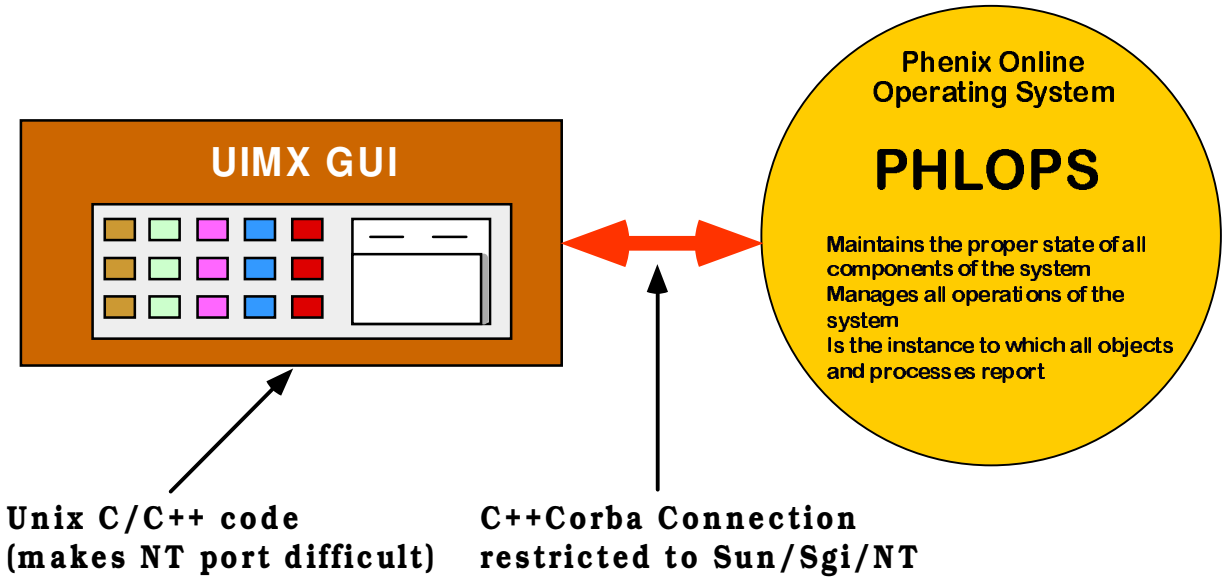
"Unix PHLOPS Mode" operation

- most sophisticated control
- PHLOPS adds lots of functionality on top of Pdaq basics
- supports scripting, GUI, all-in-one operation
- supported on Sun and SGI (CORBA availability)



The GUI story

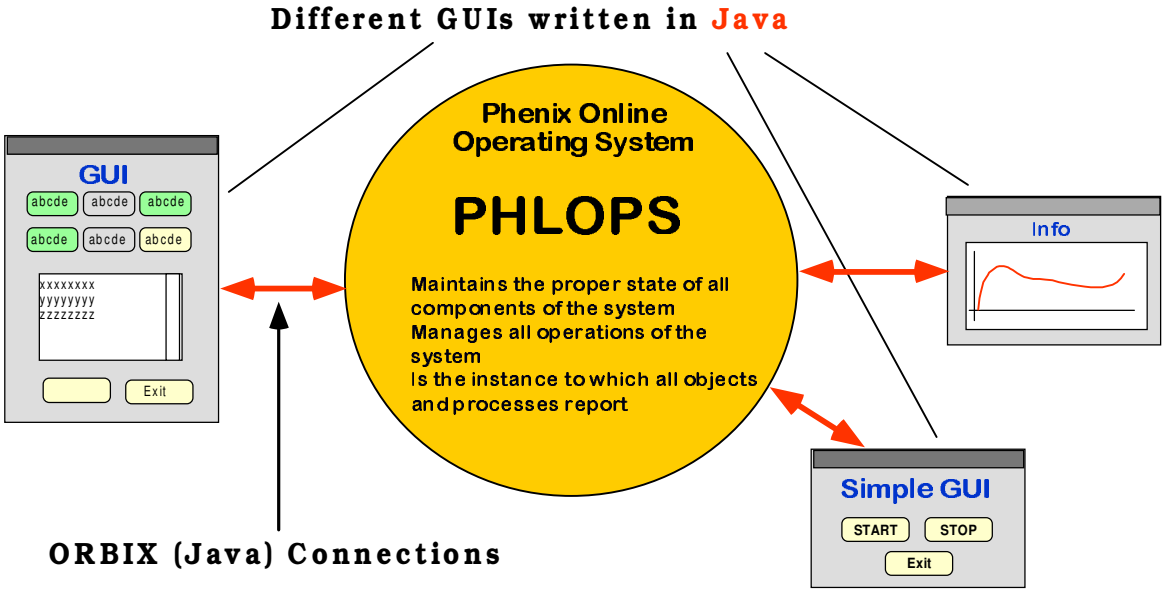
- Up to now, ONCS used UIMX as the GUI builder
  - UIMX is a graphical tool which generates X/MOTIF code
- Decouple GUI from application (good)
- Use a transparent communication layer such as CORBA
- Allow more than one (and different) GUIs to connect to the application (good)
- the generated code has to be ported to the various platforms (bad)
- we already had problems with native vs. GNU compiler support (bad)
- the (non-)availability of CORBA (ORBIX) restricts the GUIs to certain platforms (bad)



This leaves basically Sun and SGI and still the porting effort

Phase out UIMX - bring in Java

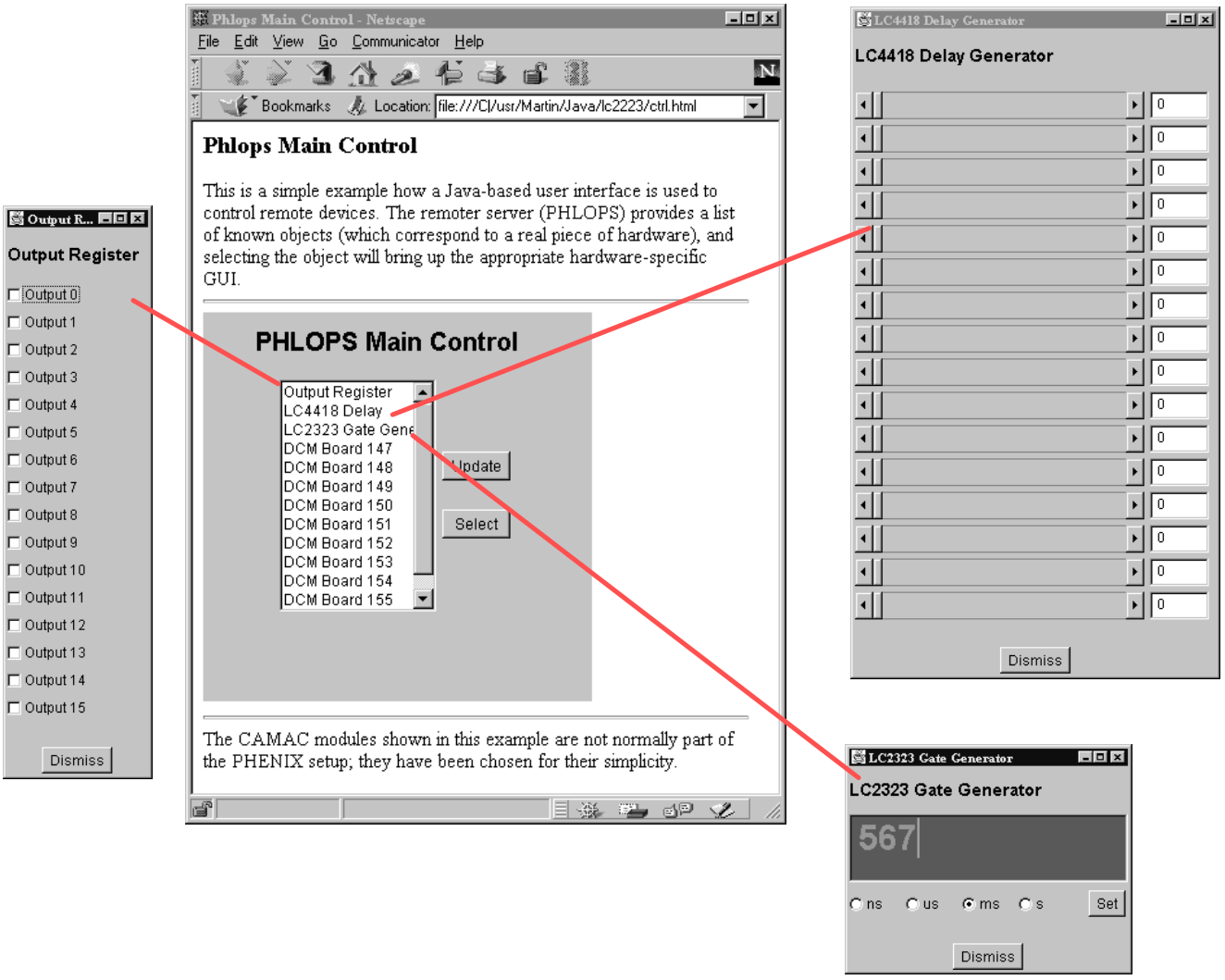
- We use a Java -ORBIX binding, works great
- Java code does not need to be ported
- the GUI code will run on any platform with a Java Virtual Machine
- GUIs can even be run as applets from a Web browser
- Java is much simpler than UIMX
- Java has support for more powerful graphics
- it's cool...



From now on the same GUI code will run on all Unixes, Linux, NT, JavaStation, ...

We can make informational GUI applets available on the Web ("how many events per second do we write?")

A Web-based GUI Applet...



This demo GUI asks an Event Notifier for available objects (which represent and control hardware at the front-end), and provides a list of available components. Each selected component brings up an object-specific GUI to adjust its settings.

I have a version on the Laptop to look at...

Summary

- **We are about to release Release 1**
- **Our DAQ computer arrived**
- **We are making some progress with front-end electronics and HV**
- **We decided to switch to Java for the user interfaces**