



**UNIVERSITÉ  
DE GENÈVE**

**FACULTÉ DE MÉDECINE**  
Département de microbiologie  
et médecine moléculaire



Swiss National Supercomputing Centre

OME European User's Meeting 2009

The OME Consortium will hold a User's Meeting hosted by the Plateforme d'Imagerie Dynamique, Institut Pasteur.

<http://www.openmicroscopy.org.uk/site/events/ome-european-users-meeting-2009>

## **NOTES FROM A CONVERSATION WITH MARIO VALLE AT CSCS ON 5/5/2009**

### **WHAT ARE OUR NEEDS AS FAR AS THE FUTURE DEVELOPMENT OF THE OMERO SET OF TOOLS?**

After the release of OMERO beta 4, the OMERO development team has released a “Future Developments” section that can be accessed at:

<http://www.openmicroscopy.org/site/documents/data-management/omero4/future-development>

Our suggestion of the direction OMERO should take is very much in line of the objectives highlighted in this page.

In particular we would like to stress the following points:

### **GENERAL DIRECTIONS**

#### **1. DEVELOPER COMMENTS**

- a. **DOCUMENTATION/SUPPORT:** beta 4 represented a very clear step forwards that has made our lives incredibly easier. Building is much easier now. Classes are much simpler and rationally designed. What is hampering progress is the lack of documentation and the usability of the web support pages.
  - i. OMERO.cpp and all other interfaces documentation is absolutely needed
  - ii. MAJOR CLEAN UP and RATIONALIZATION of the developers support web site
  - iii. CLEAN UP of out of date information
  - iv. A FACILITY TO INTEGRATE USERS CONTRIBUTIONS IN THE GENERAL DEVELOPMENT WORKFLOW – is there a place for storing and making available users developed code (wiki?)
  - v. SEARCHABLE USER AND DEVELOPER LIST SERVICE
  - vi. TUTORIALS FOR GETTING STARTED
- b. **DATABASE ARCHITECTURE CONSOLIDATION:** the database has undergone a major overhaul the results of which are tangible and patent. The feeling is that there are still some inconsistencies in the architecture that have to be eliminated in order to obtain a tool that is delivering everything it promises to deliver.

i. THE NEW API CLASSES ARE USEFUL BUT MAYBE SOME FINE TUNING NEEDED

2. END USER COMMENTS (get from email to OME-user's listserv)
  - a. Rendering engine has to be made faster for full usability
  - b. Metadata has to be made more editable for full usability
  - c. Rendering settings have to be applicable in batch and possibly imposed upon import
  - d. ROI tools have to be brought up to industry standard
3. DB ADMIN COMMENTS
  - a. Image repository vs off line back up and storage
  - b. Data integrity and recovery

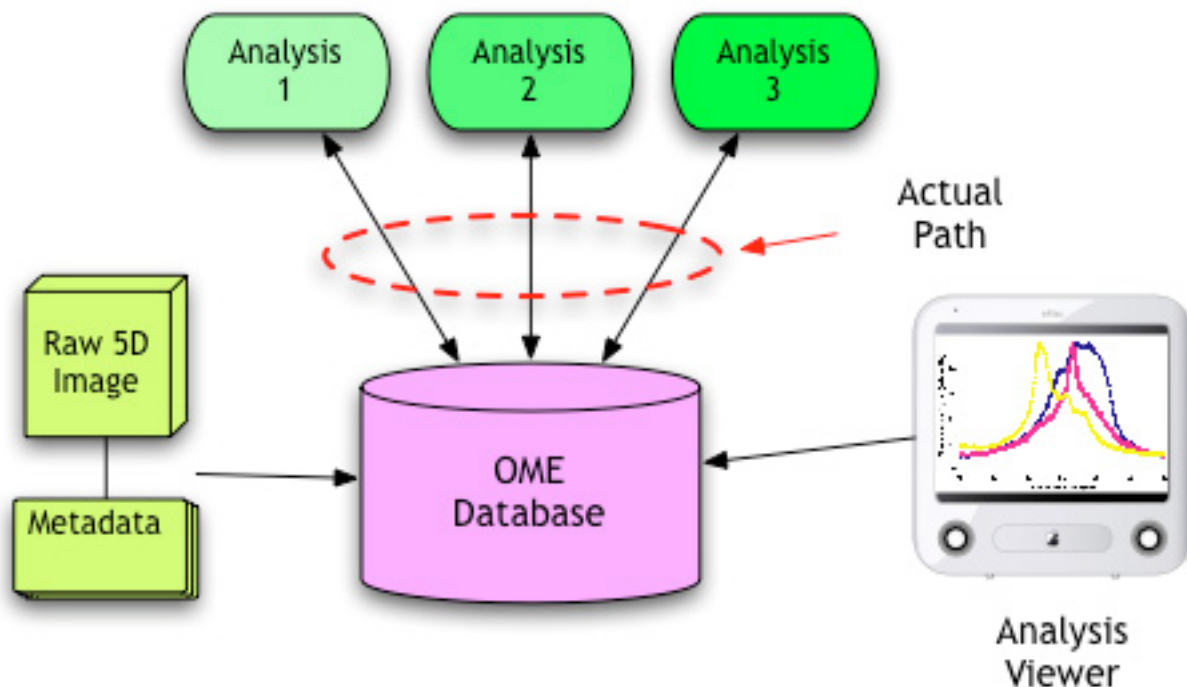
## SUPPORT FOR DEVELOPMENT OF WORKFLOWS FOR BIO-IMAGE INFORMATICS

“With the major effort to extend our metadata support (Beta4) behind us, it's time to review the support that OMERO has for analysis, what's needed, and what would be most advantageous for the community.”

Using this statement from the OMERO developers as a guide for us the central issue is the following: What part of OME-server is still alive and well in OMERO?

What part if any of the initial OME-server automatic image analysis workflow support is OMERO going to support?

In substance what part of the following diagram is going to be supported by OMERO vs OME?



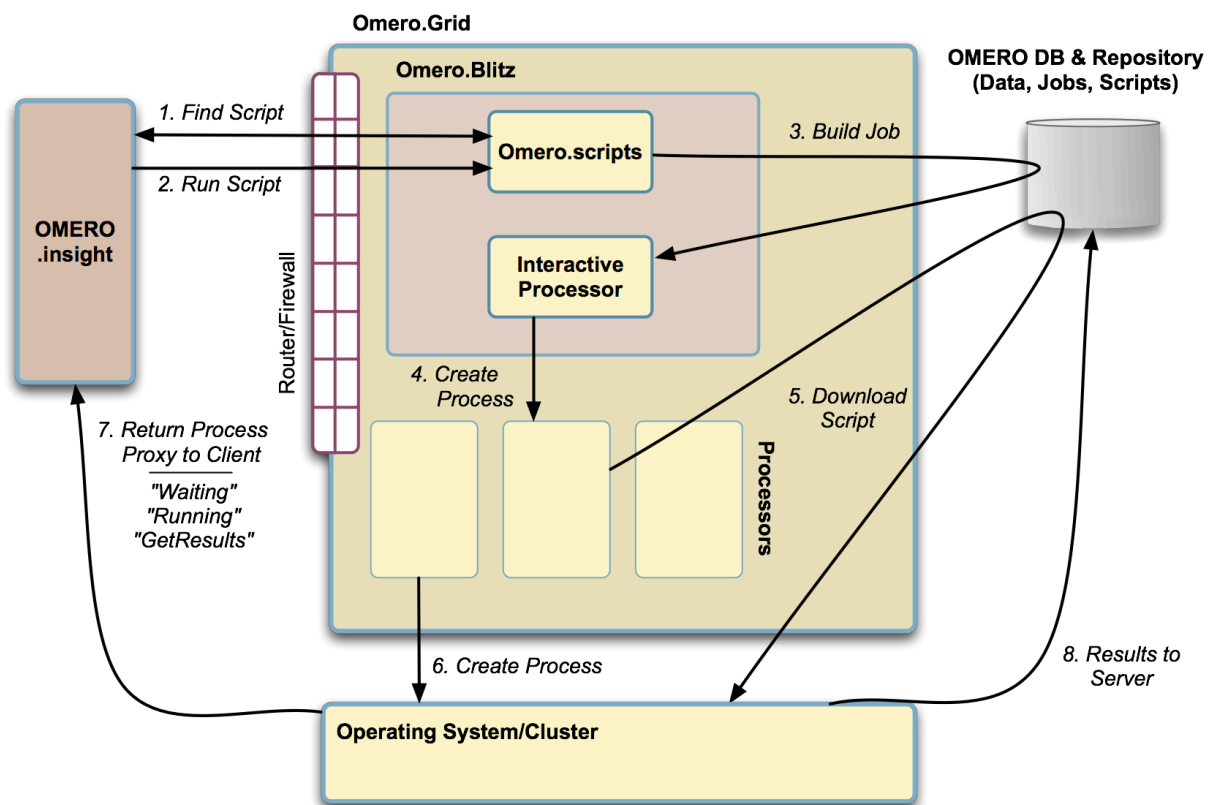
This is a provocative question but it is central to the direction our project will take and to the centrality of OMERO in our future plans:

Is OMERO still the way to go for us? What does it deliver with respect to other software tools being developed such as the BISQUE database (<http://bioimage.ucsb.edu/bisque/description>) or the original OME-server? This issue can be essentially divided in the following questions:

- i. What analysis client paradigm is going to be supported if any:
  1. MODEL 1: ANALYSIS ENGINE similar to the RENDERING ENGINE internal to OMERO.insight; this paradigm would offer the advantage of being able to “work” on the images on the OMERO.insight virtual workplace and then launch analysis workflows (scripts or exe files) from a GUI similar to the RENDERING ENGINE GUI.
  2. MODEL 2: OMERO.analysis client parallel to the other OMERO clients: this could be more useful for launching more production size analysis workflows on large sets of images

Both models have advantages and disadvantages and could be useful for different phases of the overall bio-image informatics workflow.

- ii. What support can OMERO give for the storage of the IMAGE analysis numerical output?
  1. MODEL 1: images stored back into the OMERO db and searchable using image metadata
  2. MODEL 2: parallel OMERO\_analysis db with PK-FK relation with the OMERO db
- iii. What support is going to be provided for distributed/shared data analysis and in particular what is going to be the future for OMERO.script? In other words is the following paradigm going to be still supported in the future?



- iv. What support for development of complex scientific workflows for bio-imaging informatics?