

Scipion on-demand service in the cloud

Scipion is an image processing framework used to obtain 3D maps of macromolecular complexes on Cryo Electron Microscopy. It has emerged as the solution offered by the Instruct Image Processing Center (I2PC), hosted by CNB-CSIC, to European scientists accessing the European Research Infrastructure for Structural Biology (Instruct).

Cryo-EM processing is very demanding in terms of computing resources requiring powerful servers and since recently the use of GPUs. Common desktop machines are clearly insufficient in computing capability and storage which could be a problem for many scientists that might not have access to big servers or GPUs.

Cloud IaaS (Infrastructure as a Service) is a new form of accessing computing and storage resources on demand. To effectively use cloud infrastructures ScipionCloud was developed, resulting in a full installation of Scipion both in public and private clouds, accessible as public “images”, that include all needed cryoEM software and just requires a Web browser to work as if it was a local desktop. These images are available in the EGI Applications Database and in AWS public AMIs catalogue.

We present here a new service for Instruct users that would allow them to process the data acquired at any of the high end Instruct Facilities -focusing this initial work in own cryo EM Facility at the I2PC- on a virtual machine in one of the IberGRID sites. In this first scenario we are now presenting, the machine itself is setup by I2PC staff, but as we advance in our development we envision the opening of a web portal accessible to I2PC users to do that.

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