ilifu Cloud Computing Facility Call for DIRISA-supported Data Intensive Research Projects Deadline : 1st October 2019

http://www.ilifu.ac.za/il/calls-projects

The ilifu consortium invites proposals for data intensive research projects that make use of DIRISA-supported resources on the ilifu Cloud Computing Facility.

Background

The ilifu consortium has established a cloud computing facility to support data intensive astronomy and bioinformatics research projects. The facility is housed in a UCT ICTS data centre and is connected to the South African National Research Network (SANReN) for high speed data transfers between partner institutions.

The ilifu Cloud Computing Facility consists of:

- 119 compute nodes with
  - 2.6 GHz Xeon processors
  - 32 cores
  - 256 GB RAM (2 with 512 GB)
  - 4 nodes with 2x NVidia P100 GPUs
- a combination of POSIX, Block and Object storage (POSIX and Block are the main types of storage exposed to users)
- ~2.5 PB storage (raw)
- 10Gb/s network access to SANReN

The facility is jointly funded by IDIA (~30%), CBIO (~30%) and DIRISA (~40%). Resources on the system are allocated on a fair share basis. This call seeks applications for the DIRISA portion of ilifu resources.

OpenStack is used on the system to provide for a research cloud environment with the primary user access to authorized project team members provided through a SLURM job scheduler and via a Jupyter Notebook interface. Access is also possible in some cases for customised computing environments through the OpenStack dashboard. https://docs.ilifu.ac.za provides user documentation on the methods of access to the system.

DIRISA-supported data intensive research projects may request

1. Computing and associated storage resources on the facility
2. Support from the ilifu support team

NB : Access to project data is limited to project members through normal unix security mechanisms for the duration of the project.

NB : The ilifu system has a limited about of backup storage capacity available to projects. The backing up of critical project data would need to be arranged with the support team. Project quotas may apply to this.

NB : We will *NOT* support commercial software purchases or long-term archiving.

NB : Resources will be allocated for 12 months (starting in November 2019). Further resource allocations to submitted projects will be based on progress reports.

Conditions and Eligibility

The principal investigator / project lead must be a researcher at an ilifu partner institution (UCT, UWC, CPUT, SUN, SPU and SARAO). Participation in projects and access to facilities is open to all collaborators regardless of affiliation. Proposals in any area of data intensive astronomy and bioinformatics research are welcome. Collaborative proposals involving multi-disciplinary teams from multiple partners are allowed and encouraged.

Proposal Format

The proposal should be no more than 4 pages total and address the following:

1. Identification of project lead, project team members and their role. (0.5 page max)
2. Description of the science objectives, data intensive research challenges and expected outcomes (2 page max)
3. Project Plan (1 page max)
4. Technical Resources Required (1 page max)
    a. Computing resources required. This should include an estimate of the number of nodes / cpus / gpus, the amount of time they will be required and how the allocation will be used. For example, whether it will be needed on a continuous basis or used at particular times during the allocation period. You should provide details of how the requirements have been calculated.
    b. Storage requirements and what the storage will be used for. This should include timeline for storage needs in the first year and a projection beyond the first year along with the rate at which storage needs will increase from the start of the allocation.
    c. Indicate the impact that a 50% smaller allocation in computing and/or storage than has been requested would have on your research.
    d. Your software requirements and whether code will execute in parallel (and if so which model of parallelism will be employed).
    e. PIs of existing ilifu/IDIA/CBIO projects should indicate as such and the names of such projects.

If you have not used the ilifu system previously we require that you discuss your requirements with our user support team (see contact info below) before submitting your application. We will also host a user engagement workshop on 28th Aug 2019 at UWC where prospective applicants will be able to discuss their plans with the ilifu support team. More information about the workshop is available at

http://www.ilifu.ac.za/il/upcoming-workshops

Please submit your project proposal in pdf format to admin@ilifu.ac.za by 1st October 2019. Queries about ilifu can be addressed to support@ilifu.ac.za. General information about ilifu can be found at http://www.ilifu.ac.za/ while user information can be found at https://docs.ilifu.ac.za.