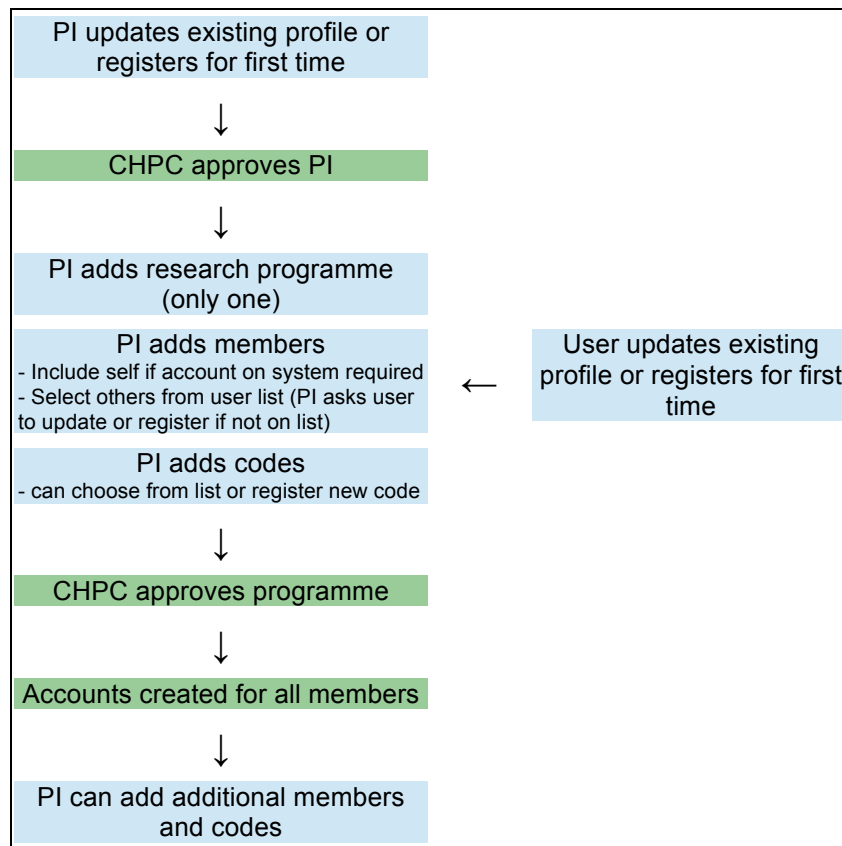


# CHPC User Database and Procedure for making use of CHPC Compute Resources (Flowchart summary)



# CHPC User Database and procedure for making use of CHPC Compute Resources (Detailed Outline)

As part of the commissioning of the new compute cluster at the CHPC the CHPC has initiated a complete refresh of its internal user database (from February 2016).

Successful **access** to and creation of user accounts for the **new compute cluster** will **only be possible** via registering and/or refreshing required information on the **CHPC user database**. No previous cluster user accounts will automatically be transferred to the new cluster.

Significant **changes** compared to past usage and access to CHPC resources are introduced and will be detailed in the document below. Careful attention to these introduced changes and actions are required in order to streamline the set-up of access to the new compute cluster.

The **database registration** and **application for resources** process is applicable to all user categories at the CHPC, i.e. academic, non-academic public and private sector users. *(Note to prospective **private sector** users: Please engage in discussion with the CHPC prior to registration by logging a request via either the link <http://www.chpc.ac.za/index.php/support-resources/log-a-support-query> or by sending an email to [helpdesk@chpc.ac.za](mailto:helpdesk@chpc.ac.za))*

To **update** your database information or to register for the first time please proceed to the CHPC user database home page: <https://users.chpc.ac.za>

**Note to Existing Database Members:** Log in to the database by entering your registered email address and password *or* perform a password reset (at the bottom) if you've forgotten your password. After successful login, select either '**Register as a PI**' or '**Register as User**' on the left hand menu options.

**Note to New Registrations on the Database:** Register on the CHPC user database by selecting one of the **three registration options** on the top left of the screen, i.e.

- (1) Register as a Principal Investigator (PI)
- (2) Register as User
- (3) Register for an Event Attendee

***The appropriate choice of registration option to be followed will be clarified in more detail below:***

## (1) Register as a Principal Investigator (PI)

- A **Principal Investigator (PI)** is defined as the **leader of a research group** and will typically include supervisors of post-graduate students and post-docs at academic institutions, Research Group Leaders at commercial/private institutions, the South African collaborator of researchers based abroad, etc.
- A Principal Investigator (PI) must be a **staff member** (faculty member, employee, etc.) at a **South African based institution/company** for PI status to be approved on the CHPC database. (Exceptions are made to potential PI's wishing to register that are affiliated with institutions in the eight **SKA partner countries**, i.e. Botswana, Namibia, Kenya, Madagascar, Mauritius, Mozambique, Zambia, Kenya and Ghana – in consultation with the CHPC).
- **No students** and post-doctoral students will be allowed to register as PI's on the database (see 'Register as User' in the next section).
- **No foreign** based and foreign affiliated users of the CHPC will be allowed to register as Principal Investigators (PI's) (see 'Register as User' in the next section).
- For approval of Principal Investigator (PI) status to be successful it will be required that **sufficient research background** be provided, either by providing a link to an appropriate institution profile or a by providing a description of research background. Providing a link to a **publication record** will also be helpful for the verification process.
- After successful approval of a Principal Investigator (PI), the registration of a **Research Programme** on the CHPC database will be required from the PI.
- The Research Programme provides a **description of** all the **research** that the PI wishes to pursue in making use of the CHPC, including the **details of**, and the contribution by, the **members (users)** that will contribute to the Research Programme and the associated codes that will be used.
- It is expected of a PI to **only** register **one Research Programme** representing all research work to be performed by the PI and his/her research group at the CHPC – Only in exceptional circumstances will an approved PI be allowed to register more than one Research Programme in consultation with the CHPC.
- As part of the CHPC internal Research Programme approval process a **CHPC** research **staff member** (of appropriate science domain background) will be assigned to the Research Programme (and effectively to the PI) to facilitate and enhance direct future support.
- Each approved Research Programme will be assigned with a unique **shortname** descriptor to be used in job submission scripts.
- Approval of CHPC resources, i.e. access to CPU hours, will be in the form of a total CPU hour **allocation** associated with an approved Research Programme. To all approved Research Programmes an initial allocation of 100 000 CPU hours will be made.
- Allocation of CHPC compute resources will only be made to an approved Research Programme (and effectively the associated PI), and not to individual normal users of the CHPC (see 'Register as User' in the next section) .

- The **Principal Investigator (PI)** associated with the approved Research Programme will be **responsible** for how, by whom and for what purpose the total CPU hour **allocation** assigned to the Research Programme is utilised.
- The Principal Investigator (PI) will be responsible for **adding** (and removing) registered CHPC **users** (see next section) as members of the **Research Programme** – Only these PI-added members will be able to draw from the CPU hour allocation of the Research Programme (effectively the allocation of the PI). This will typically be members of the PI's research group at his/her institution or other PI confirmed collaborators (see next section).
- The Principal Investigator (PI) will have the option of identifying a **Technical Lead** representative from his research group that can act on technical support queries on behalf of members of the research group and which can act as contact person with the CHPC on behalf of the CHPC, e.g. systems administrator for the group. The Technical Lead will need to register as a user on the database, but does not need to have an account on the CHPC cluster. The PI can also be assigned as the Technical Lead.
- If a Principal Investigator (PI) wishes to add, to a Research Programme, a **member** who is affiliated with a **foreign institution** (i.e. international collaborator), a formal letter confirming this collaboration will have to be provided to the CHPC by the PI.
- **Cluster** user **accounts** will automatically be created for any member successfully added by a Principal Investigator (PI) to an **approved** Research Program (see 'Register as User' in the next section).
- It is not a prerequisite for a Principal Investigator (PI) to have an account on the cluster, but if the PI requires an account the PI needs to add himself/herself as a member to his/her Research Programme by login to his/her profile on the CHPC database.
- The **authority** over all **data** (input and output files) generated by members of a Research Programme resides with the associated **Principal Investigator (PI)** and not the individual members of the Research Programme.
- The **Principal Investigator (PI)** of a Research Programme takes full **responsibility** for the utilisation of the **allocation** associated with the Research Programme. Once the allocated CPU hours nears completion (i.e. 70% of use), communication will be initiated with the PI from the CHPC. The process for instating a new allocation of CPU hours to the Research Programme will be subject to an **assessment of outputs** (i.e. progress on research targets, publications, graduation of students, etc.) achieved from using the original allocation.

## (2) Register as a User

- In order to obtain a cluster **user account** at the CHPC the following **two-step process** is required:
  - (1) Either via **update of existing profile** on the CHPC database, or via first time **registration**, by following the 'Register as a User' option and,
  - (2) Addition as a **member** to an approved **Research Programme** by the Principal Investigator (PI) of the programme – See also the 'Register as Principal Investigator (PI)' section above.
- A **user** of the CHPC is typically defined as a **member of a research group**, e.g. post-graduate students and post docs under the leadership of a supervisor (Principal Investigator), members of a research group at a commercial/private institution, international collaborators of a Principal Investigator (PI) and Principal Investigators themselves.
- It is the **responsibility** of the user to ensure that his/her Principal Investigator (PI) (and associated Research Programme) is registered for approval on the CHPC user database, as no access to CHPC compute resources will be possible for users without his/her PI adding them as members to the Research Programme [see also the 'Register as Principal Investigator (PI)' section above]
- **Cluster accounts** are automatically generated for users after being added to an **approved** Research Programme by the associated Principal Investigator (PI).
- For **job submissions**, users will only be able to draw from the CPU hour allocation of the Research Programme that they are members of, i.e. user accounts are linked to the **shortname** description of the Research Programme – these shortnames will be required in the job submission scripts upon launching of calculations.
- No allocation of CPU hours will be made to individual users. CPU hour **allocation** is only made to a **Research Programme** and the responsibility and management of this allocation resides with the associated Principal Investigator (PI).
- As each Research Programme (and effectively each PI) will be assigned to an internal **CHPC** research **staff member**, all members of the Research Programme will also automatically be assigned to the same CHPC staff member who will provide direct support.

## (3) Register as Event Attendee

- The registration of any individual for any **CHPC hosted event** will first require registration at the CHPC database.
- This registration option is followed by individuals typically not wishing to make formal use of CHPC compute resources and is intended for pre-registration of any CHPC hosted events, such as the CHPC National Meeting, CHPC Winter School, CHPC Introductory Programming School, etc.

## **Glossary**

**Allocation** – The total number of CPU hours made available to a Research Programme from which members of the program draw upon when submitting calculations on the CHPC cluster.

**Cluster** – Compute hardware used for running simulations and applications.

**Principal Investigator (PI)** – The leader of a research group and staff member at an academic, public or private institution in South Africa or in one of the 8 SKA African partner countries (Botswana, Namibia, Mozambique, Madagascar, Mauritius, Zambia, Kenya, Ghana). E.g. for students and post-docs at a university this is the associated supervisor and for researchers based abroad this would be the South African collaborator.

**Research Programme** – The Research Programme of a Principal Investigator (PI) provides a description of all research that the PI wishes to conduct by making use of CHPC compute resources, including the details and contributions to be made by members of the programme and the codes to be utilised. The allocation of CPU hours is associated with an approved Research Programme.

**Shortname** – Unique descriptor text to be assigned to an approved Research Programme and to be used as part of the job submission script by users to ensure appropriate drawing of CPU hour allocation time from the Research Programme.

**Technical Lead** – Representative from the research group of a Principal Investigator that can act on technical support queries on behalf of members of the research group and which can act as contact person for the CHPC on behalf of the PI, e.g. systems administrator for the group.