Position Description

College/Division: National Computational Infrastructure (NCI)
Faculty/School/Centre: National Computational Infrastructure (NCI)
Department/Unit: Cloud and Online Services and Development
Position Title: Specialist Cloud Systems Programmer
Classification: ANU Officer Grade 8 (IT)
Position No:
Responsible to: Manager, Cloud Services

PURPOSE STATEMENT:
NCI is Australia's leading national provider of high-end computational and data-intensive services, with a highly respected reputation for its services, expertise and innovation. It forms an integral part of the Australia Government's research infrastructure strategy, and is engaged with, and embedded in research communities, high-impact research centres, and research institutions nationally. NCI is an operating unit of the Australian National University and is built on and sustained by a formal collaboration of national research organisations, ANU, CSIRO, Bureau of Meteorology, Geoscience Australia, other research-intensive universities, and eResearch support organisations nationally.

NCI’s cloud service to provide flexible on-demand infrastructure for cloud and data-intensive activities, supporting High Performance Computer and Data analysis in priority areas of climate science and the environment, earth observation, geophysics, astronomy, the life sciences and the social sciences.

The successful applicant will play a key role in the ongoing design, development and management of software and associated services for NCI’s Cloud.

KEY ACCOUNTABILITY AREAS:

Position Dimension & Relationships:
NCI operations are led by two Associate Directors, who lead the technical capabilities of the organisation, and a Business Manager, who leads business operations, all three of whom report to the Director, NCI.

Technical operations of the NCI National Facility are divided into five teams, four of which report to the Associate Director (Services and Technologies), and two of which report to the Associate Director (Research Engagement and Initiatives). The advertised position is a member of the Cloud Services Team, under the Manager, Cloud Services, within the portfolio of the Associate Director (Services and Technology).

The Specialist Cloud Systems Programmer (a) focuses on the programming of software infrastructure and utilities to manage and use large scale high performance cloud systems, (b) takes a lead role in the software design and associated infrastructure and services which advance NCI HPC and data-intensive capabilities and services, with a particular focus on the Cloud System and (c) contribute significantly to the large scale national cloud system development and provides critical analysis and plans for further improvement of the NCI cloud service.

In undertaking their role, the incumbent will work closely with members of the Cloud Service team and other members of the NCI Operational teams, including the HPC Systems, Data Storage and User Support teams.

Role Statement:
Under the broad direction of the Manager, Cloud Services, the Specialist Cloud Systems Programmer will perform the following duties:
1. Take a leading role in the development/ modification/ implementation and management of core software infrastructure and utilities that support the operation of the large scale high performance OpenStack cloud at NCI.
2. Undertake complex tasks related to the development and modification of resource management and usage account software of OpenStack including image management, CPU, memory and data storage resources, and seamless fast network connectivity.
3. Contribute substantially to analysing and developing the system to address the software requirements posed by the usage for assistance please contact HR Division Ph. 6125 3346
or anticipated as future requirements at the facility.
4. Configure, install and support complex tools and services that utilise the OpenStack cloud, such as dynamic cluster provisioning, high-speed data upload and download, source code repository systems and Platform as a Service offerings.
5. Take a leading role in working with NCI stakeholders to identify requirements and enhance the uptake of the NCI’s IaaS offering including developing interfaces, tools and services that enhance and simplify secure user access to the cloud service.
6. Provide development plans and documentation of the cloud system including user guides and delivering user training on advanced use of the cloud.

Other duties as appropriate to this classification and as directed.

**SELECTION CRITERIA:**

1. Extensive experience in Clouds (preferably OpenStack) and a relevant degree OR an equivalent combination of experience and education/training.

2. Extensive experience in programming the resource management systems of a cloud or HPC environment.

3. Extensive knowledge and proven experience in programming for the Unix/Linux kernel and its APIs for managing resources and network interfaces. Experience in tuning IO for filesystems, interconnects and networks.

4. Demonstrated programming, experience in Python and C and other languages appropriate for Linux system programming. Extensive knowledge and experience in system programming including sockets, threads, shared memory and system APIs for managing resources.

5. Demonstrated high level oral and written communication skills; ability to plan and write good quality user and system documentation, training material, develop written plans and provide reports; and the ability to work with a small team. A demonstrated high level understanding of equal opportunity principles and a commitment to the application of EO policies in a university context.

The ANU conducts background checks on potential employees, and employment in this position is conditional on satisfactory results in accordance with the Background Checking Procedure which sets out the types of checks required by each type of position.

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**References:**

- General Staff Classification Descriptors
- Academic Minimum Standards