

## National Computational Infrastructure

Under the Climate High Performance Computing (HPC) Centre project, the National Computational Infrastructure (NCI) has built an internationally significant HPC system at the Australian National University (ANU) for use by Australian researchers. It prioritises Australian research in climate change, earth systems science, and national water management, and also supports scientific research across a wide range of data-intensive disciplines that require advanced computational capabilities.

The Fujitsu Primergy system, known as 'Raijin', is capable of performing at 1.2 Petaflops, or 1.2 quadrillion operations, every second.

The HPC system and associated high performance data storage and cloud computing services provided in a new purpose-built data centre build on the infrastructure and expertise developed through Australian Government investment in the preceding NCI project, also at the ANU, which concluded in 2011.

### Key facts

- State: ACT
- Lead institute: The Australian National University
- Project status: Operational
- Australian Government contribution:
  - \$26 million from the National Collaborative Research Infrastructure Strategy program
  - \$50 million under the Super Science Initiative
  - \$4.307 million from the National Collaborative Research Infrastructure Strategy 2013 program

### Project deliverables

HPC has become increasingly important for Australian research. It provides researchers with a platform for doing ever cheaper, faster and more accurate digital experiments and modelling, and for undertaking digital experiments and modelling which could not be done in any other way.

The NCI Climate HPC Centre project included:

- scoping, procuring and installing an internationally significant petascale HPC system and associated petabyte-capable high performance persistent data storage and cloud computing systems to support a full range of NCI services to its users;
- constructing an advanced data centre with associated power and cooling systems on the ANU campus to house and support the computational and data storage facilities;
- planning for the operation and use of the infrastructure by Australian researchers.

Under the National Collaborative Research Infrastructure Strategy in 2013-14 and 2014-15, the NCI Project continues the operation of the Climate HPC Centre, provides continued researcher access to the computing and data storage infrastructure established in that project, and delivers improvements in the quality of services and innovation to maximise the robustness, impact and value of the infrastructure to its users.

## Access

The Climate HPC Centre's computational resources are allocated to Australian researchers through the following paths:

- 'Partner Access' to researchers from research organisations that contribute to the costs of operating Centre;
- Competitive allocations based on merit and computational suitability, through the National Computational Merit Allocation Scheme, open to researchers at publicly funded research agencies and institutions eligible to receive funding from the Australian Research Council, with recurrent costs borne through the co-investments of the NCI partner organisations ;
- The NCI Flagship Scheme for high-impact projects that are strategically aligned with NCI's mission and which have been granted access to support under this scheme; and
- The Commercial and Industry Access scheme, either through commercial/industry partnership contracts, or fee-for-service arrangements.

## Participating organisations

The Australian National University is the lead agency. It operates the Climate HPC Centre on behalf of a financial partnership of collaborating organisations.

The following organisations contribute to the costs of Centre's operation in exchange for a share of the resources (known as collaboration partners):

- Australian National University
- CSIRO
- Bureau of Meteorology
- Geoscience Australia
- Intersect Australia Ltd
- Queensland Cyber Infrastructure Foundation

The following organisations are members of a consortium of six research-intensive universities, supported by an Australian Research Council (ARC) Linkage, Infrastructure, Equipment and Facilities (LIEF) grant, contributing to the costs of the operation of the Centre in exchange for a share of the resources:

- Australian National University
- Sydney University
- Monash University
- University of NSW
- University of Queensland
- Adelaide University

## More information

For more information, visit the [National Computational Infrastructure website](#).