

## Case Study - National Computational Infrastructure

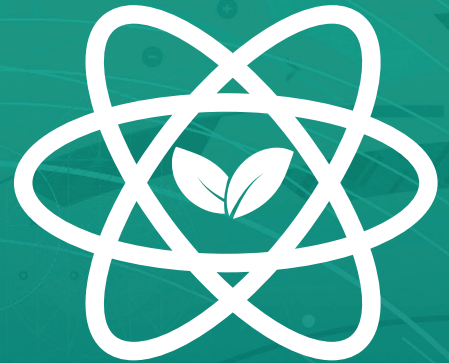
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*National Computational Infrastructure (NCI) is Australia's national research computing service.*

It provides high performance computing services to researchers, predominantly focussing on the environment and earth sciences.



## The Challenge

*NCI needed to expand its OpenStack installation while maintaining efficient operational practice.*

Because of a need to convert out-of-date super computers into cloud platform, manage existing cloud environments and provide differentiated service levels, NCI had growing infrastructure, fixed staffing levels and all the ingredients of a classic resource crunch.



# The Aptira Solution

*Aptira's delivery team is very familiar with the demands of running large OpenStack based cloud platforms. We have used this experience to create our own distribution of OpenStack called Stacktira, which is focussed on providing a reliable, powerful and easy to operate platform.*

Stacktira uses industry standard Puppet tools to deploy and manage OpenStack. This gives the operator:

- A control node cluster that provides high availability for all services, maximising the reliability of the entire platform.
- A standard toolset built on regular Puppet and Hiera. As the NCI has an existing investment in Puppet, this makes modification of the platform and integration with the existing environment simple.
- A devops workflow. Puppet manages everything about the environment allowing engineers to manage large deployments with ease.
- Multi-region deployment. This allows engineers to segment their cloud infrastructure whilst maintaining a single administrative signon and centralised configuration.



# The Result

*Aptira deployed Stacktira in a couple of weeks and integrated additional networking capability in 2 more.*

NCI now manages heterogeneous cloud environments as a single OpenStack installation without any additional staffing requirements. These environments have completely different underlying technologies, different services levels and different configurations.

Stacktira is used to operate small, critical workload cloud, a large utility cloud both based on Mellanox networks and Dell servers with plans to integrate a repurposed 1400 node Sun supercomputer using Infiniband networking. It does this within a single installation, providing operators with simple, powerful capabilities delivered using devops best practices and toolsets.



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