

Addressing the challenges of federation in the Nectar Research Cloud

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The Nectar Research Cloud provides a self-service OpenStack cloud for Australia's academic researchers. Since its inception in early 2012 as a pioneering Openstack research cloud, it has grown to over 35,000 virtual CPUs now being used at any given time, with over 7,000 virtual machines being run by around 2,000 researchers and used by thousands more. It is operated as a federation across several organisations, each of which runs cloud infrastructure in one or more data centres and contributes to the operation of a distributed help desk and user support. A Nectar core services team runs the central cloud services.

The Nectar cloud program has recently been merged with other Australian eResearch programs focussed on research data management and storage to create the Australian Research Data Commons (ARDC), with additional capital funding secured for the next 5 years.

This presentation will give an overview of the experiences, challenges and benefits of running a federated OpenStack cloud across quite disparate organisations, and recent efforts to incorporate other universities into the federation, including universities in New Zealand. In particular we will discuss some of the tradeoffs of delivering a standardised cloud federation while supporting the requirements of some institutions to provide more customised services and service delivery. We will also discuss plans for the future of the Nectar Research Cloud under the ARDC, including exploration of interoperability with international research cloud activities.

Type of abstract

Presentation

Primary author: Dr CODDINGTON, Paul (Australian Research Data Commons)

Presenter: Dr CODDINGTON, Paul (Australian Research Data Commons)

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