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The Nectar National Node

A New Foundation for Scalable, Secure, and Collaborative Research

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About the speaker

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About the speaker

- I’m Bryce Torcello

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- I’m Bryce Torcello
- Currently a DevOps engineer in the ARDC Nectar Cloud Services team

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- Previously a HPC sysadmin at the Peter MacCallum Cancer Centre

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About the speaker

- I’m Bryce Torcello
- Currently a DevOps engineer in the ARDC Nectar Cloud Services team
- Previously a HPC sysadmin at the Peter MacCallum Cancer Centre
- Provided me valuable insight into how researchers operate

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- I'm Kaushik Ramesh

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- Currently a Senior DevOps engineer in the ARDC Nectar Cloud Services team

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- Focusing on the developing the Research Computing portal

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- I'm Kaushik Ramesh
- Currently a Senior DevOps engineer in the ARDC Nectar Cloud Services team
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- Focusing on the developing the Research Computing portal
- A service similar to our Virtual Desktop Service

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Session purpose

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- Briefly explain what Nectar is & what OpenStack is

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- Explore some of the challenges Nectar has faced over the years

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- How this further develops a cloud designed for researchers

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What Nectar & OpenStack are

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- Nectar is Australia's national research cloud federated across partner insitutions

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What Nectar & OpenStack are

- Nectar is Australia's national research cloud federated across partner insitutions
- OpenStack is an open source cloud platform controlling compute, storage & networking for self service VMs & services

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Node partners

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Node partners

- Nodes are organisations that run infrastructure (compute & storage)

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Node partners

- Nodes are organisations that run infrastructure (compute & storage)
- Distributed in data centres across the Australia & New Zealand
  - Pawsey Supercomputing Centre
  - University of Adelaide
  - University of Melbourne
  - Swinburne University
  - Monash University

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Node partners

- Distributed in data centres across the Australia & New Zealand
  - QCIF
  - Intersect
  - University of Tasmania
  - The University of Auckland

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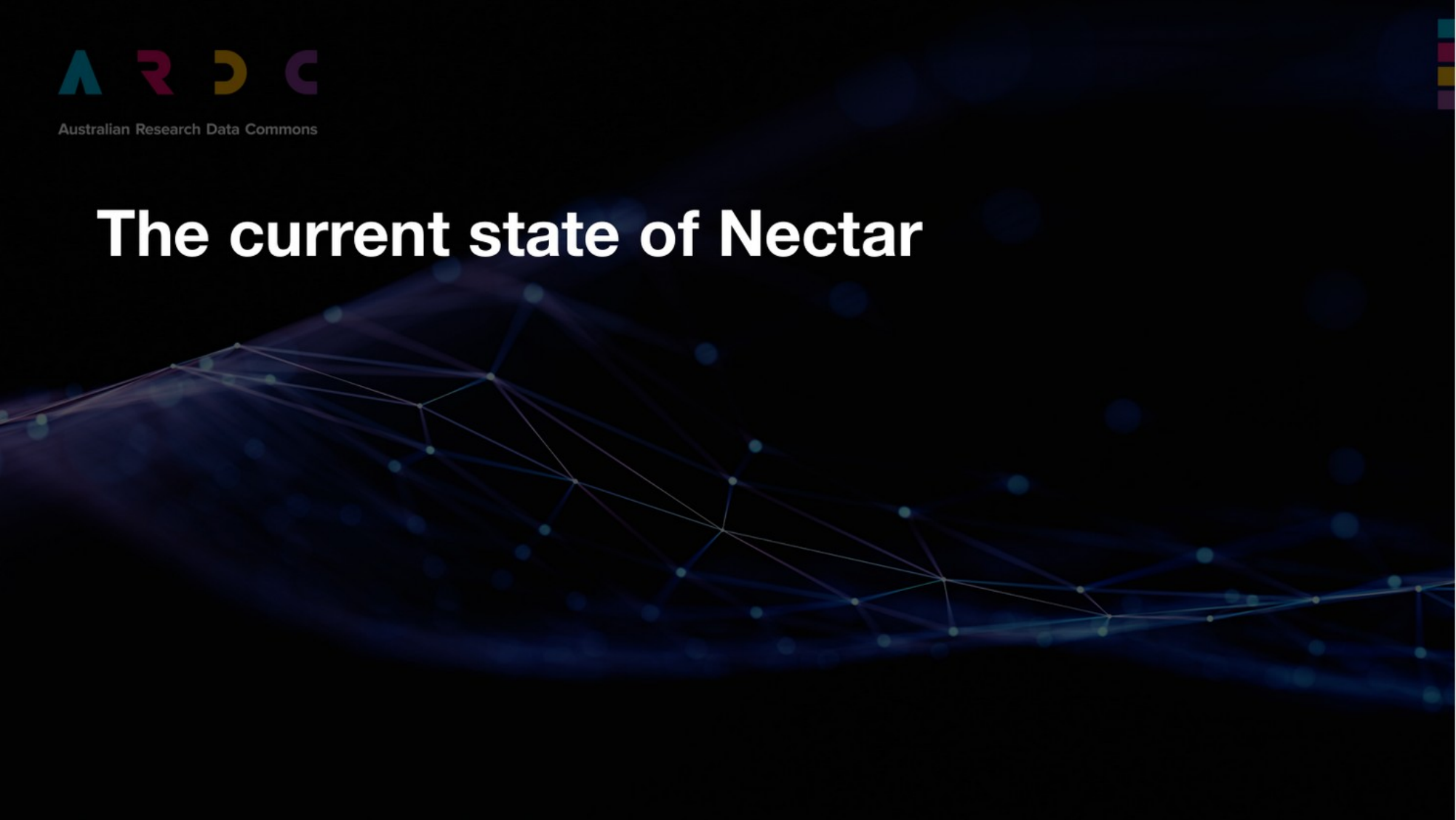
The current state of Nectar



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  - More than 248 vGPUs available

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The present challenges

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- Understanding how we can improve the Nectar Cloud for researchers

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  - Upgrades take time to coordinate & deploy across nodes
  - Lack of standardisation between node deployments

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Improving Nectar for researchers

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- The Nectar National Node as a foundation for the Nectar Cloud

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- Further commitment to researchers outside of a organisation hosting a node

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  - Allow for secure workloads with ISO 27001 certification

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Improving the cloud federation

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  - Provides more thorough testing from experts in the Nectar Cloud Services team
  - A collaboration between AARNet & ARDC

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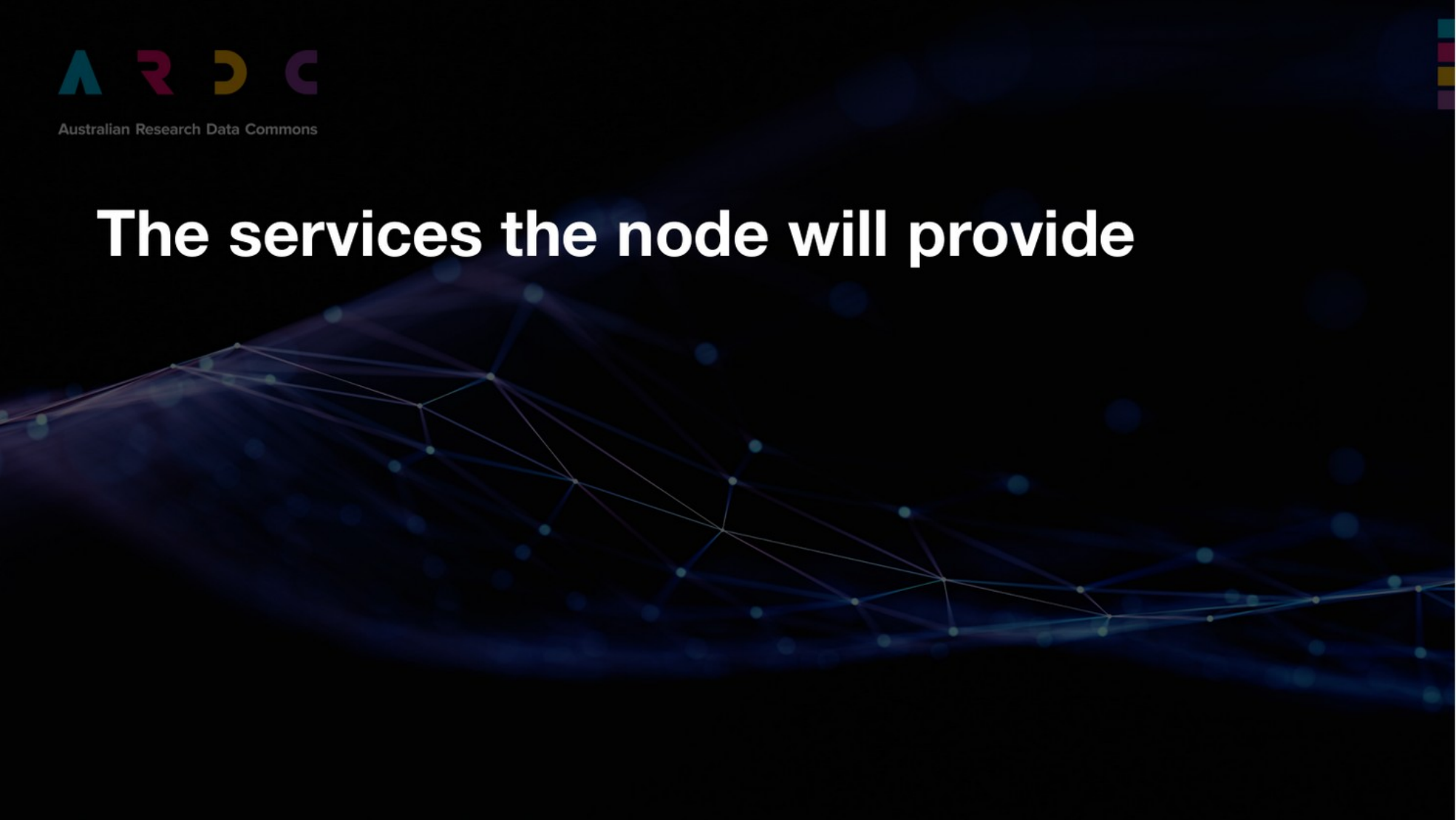
The services the node will provide



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The services the node will provide

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- Services The Nectar National Node provides outside of traditional infrastructure
  - Virtual Desktop Service
  - JupyterHub Service
  - BinderHub Service
- Visit our booth any time during the conference to demo our services

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The Nectar cloud is a collaboration

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- The ARDC Nectar Cloud is a collaboration with all people involved
  - Jake Yip's effort leading ISO certification
  - Sam Morrison's effort leading AARNet deployment
  - Matt Armsby's contributions towards Puppet code standardisation
- Importance of what the Nectar Cloud community can achieve through collaboration