Pleasant encounters of the VM Kind – Leveraging on NeCTAR VMs to Achieve Research Outcomes

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USQ Research

- ## Research Institutes
  - ADFI, IAE, IRR
- ## Research Centres
  - CRN, ICACS, <u>NCEA</u>, CESRC, <u>ACSBD</u>
- ## Research Schools
  - SACES, SAC, SLASE, SCES, SMEE, SC, SME, SPCC

USQ Research Support

Research & Innovation Division
- Research Development
- Research Operations
- Research Training & HDR

Academic Services Division
- ICT Services
- Library

QCIF Research Support

- Not-for-profit company formed by the 6 QLD public university in 2000
- High performance research infrastructure & services

Members:

Associate:

Supported by:

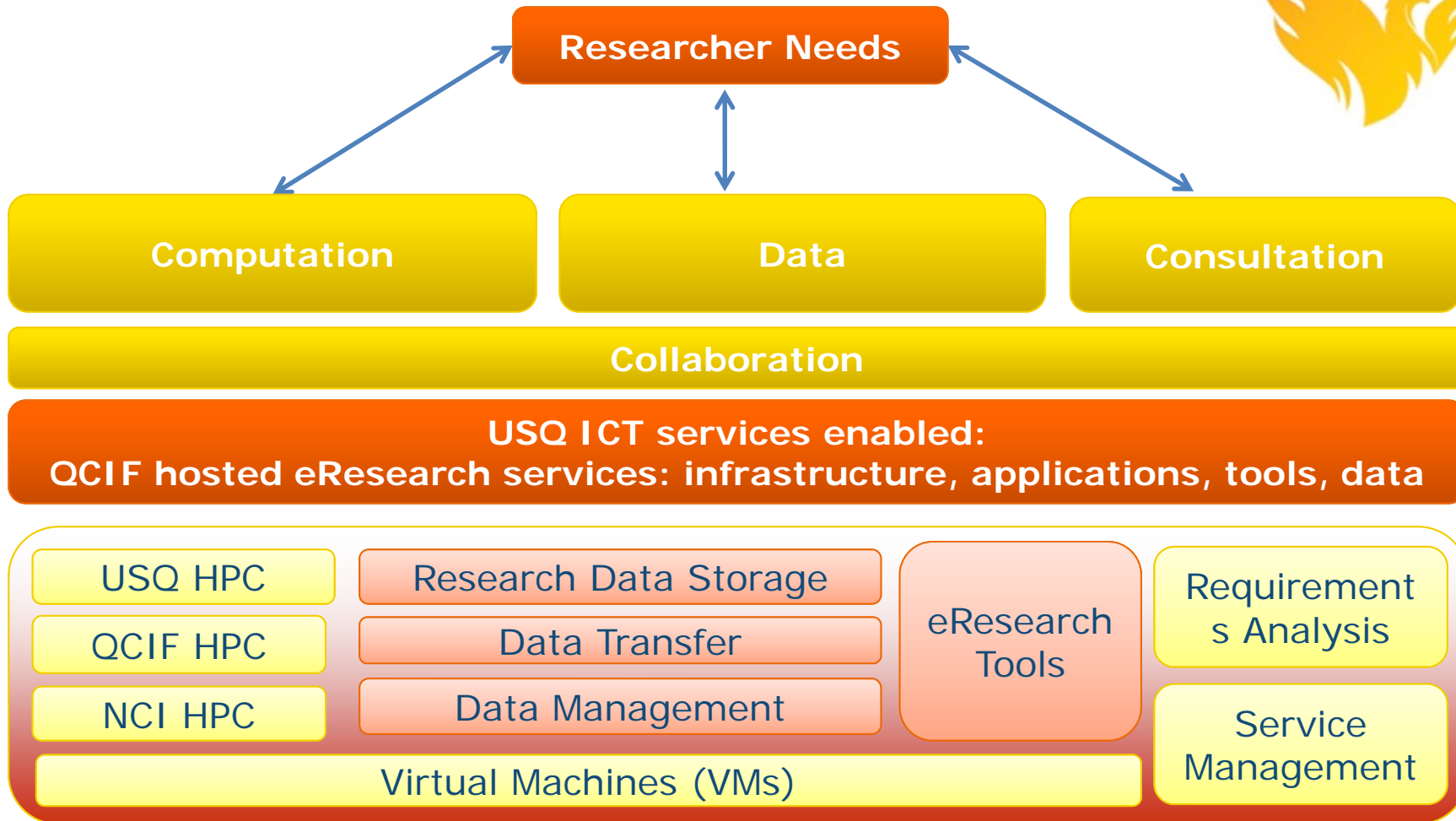**National Partners:**

AeRO Partners:

USQ eResearch Services

Researcher Needs

Computation   **Data**   **Consultation**

Collaboration

USQ ICT services enabled:
QCIF hosted eResearch services: infrastructure, applications, tools, data

USQ HPC	Research Data Storage	eResearch Tools	Requirements Analysis
QCIF HPC	Data Transfer		
NCI HPC	Data Management		Service Management

Virtual Machines (VMs)

The Research Projects

Connected Learning

An ongoing research project led by USQ and in collaboration with 5 other Australian universities: concerned with supporting Australian teachers in the transition from higher education into teaching service .

Remote Laboratories

Aims to research innovative ways to build and use Remote Access Laboratory systems in Science, Technology, Engineering and Maths (STEM) education.

Summary of the two projects

UNIVERSITY OF SOUTHERN QUEENSLAND

Connected Learning

Research Laboratories

AFDI CRN projects – using online for social outcomes

Web server to run the research to connect teachers in wide geographical area

A peer-to-peer networking approach to both technical and pedagogical aspects.

Seeking
built-in virtualization support in the cloud as an alternative way to support flexibility, customization, security, migration and resource control

Sensitivity of the data not suited to commercial VMs
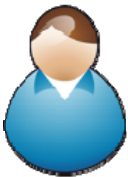
Project aims to grow over time to national scale.

VMs to the rescue

UNIVERSITY
OF SOUTHERN
QUEENSLAND

I need web server to run the research to connect teachers in wide geographical area!

Specifically a peer-to-peer networking approach to both technical and pedagogical aspects of their use will be researched

Internal server hosting service challenges: of cost of physical servers, software, web administration and time delays due to a drawn out contractual agreement process.

I need to create an altruistic community of support based on recently developed open source technology

How can I rapidly prototype a design solution?
Need prototype before funding!

I need technical expertise for the project!

Research from desktop to VMs

- Streamlined application process to access web server capabilities,

- remove the cost,

- increase the scalability, access

- potential for collaboration and research outcomes.

Pleasant Outcomes

- NeCTAR VM was available within 48 hours of submitting an application

- fully operating and partly-branded platform to a group of important parties within 4 weeks

- up and working within two weeks of making the request.

- the site was on track for a 500-user pilot of the website

Lessons Learnt

- NeCTAR platform meets the needs of being: (i) rapid; (ii) affordable; (iii) secure; and (iv) scalable.

- QCIF provided a collaboration, standardisation and speed.

- Connecting researchers, stakeholders and end users enables them to translate their research back into practice, where it increases in value and impact.

Q and A

Thank You.

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