Cyber Infrastructure panel
Virtual Residency Intermediate/Advanced Workshop 2020

Climate, Freshwater & Ocean Science
Introduction

➢ University of Wisconsin, Stanford – engineering degrees

➢ Followed by work life:

B. Cray Research (and then SGI) 1991-1999
C. IBM 1999-2014
D. Lenovo 2014-2019
E. NIWA / NeSI in New Zealand, 2019 onward
Baring Head climate monitoring station
HPC example: New Zealand’s first national river flow forecasting system for flooding resilience

• **Researcher:**
  Dr. Céline Cattoën-Gilbert
  *NIWA*

  "Without NeSI’s input, we would have been much more limited. We wouldn’t have been able to develop a national-scale system running in real-time."

**NeSI delivered:**
- Computing resources
- HPC expertise to optimise data processing
- Assistance with automating workflows
Panel: Deciding Which Technologies to Adopt, and When

Big Step
- procurement model set up for large steps every few years

Ramp
- technology updates – a steady stream through the year

Simplicity
- ease of installation and administration

Variety
- typical academic community, hundreds of active users, dozens of applications

Early
- put up with discovery of issues. Benefit if you keep systems up and running for 5+ years

Late
- bugs are worked out, smooth installation

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Panel: Deciding Which Technologies to Adopt, and When

- **performance**
  - can realize better performance (or better pricing) by changing technologies with a new system

- **porting**
  - must weigh the benefits against moving codes and processes to new systems

- **standard solutions**
  - easier to set up and maintain

- **customized**
  - make sure you have adequate staffing and vendors when starting down this path

- **large HPC centres**
  - have a responsibility to the community – to act as pioneers. Example: SciNet and dragonfly plus

- **small HPC sites**
  - can take advantage of innovations that have been proven elsewhere
Thank you

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