

# Applying for a NeSI Project

Mark Cheeseman, NIWA  
[m.cheeseman@niwa.co.nz](mailto:m.cheeseman@niwa.co.nz)

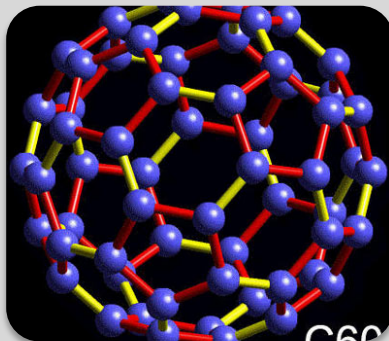


# Types of NeSI Projects



## Proposal Development

- quick access
- short term testing
- tight limits



## Research

- Long term projects
- more resources
- tighter regulations



## Education

- Contact NeSI sites
- For NZ academic institutions



## Industry

- Contact NeSI sites
- Access and funding requirements



# Who can apply?



Members of the NZ research community conducting nationally accredited research

- Marsden, MBIE, HRC grants
- CRI core funding
- Nationally funded research consortia

New Zealand researchers who

- Have international funding
- Assist researchers with public research funding

NZ companies with a demonstrable HPC need for research & development purposes

Publicly funded post-secondary NZ education institutions



# What can I do with a Proposal Development project?



**Quickly access multiple NeSI platforms**



**Port/benchmark applications and software**



**Determine which NeSI platform(s) best fit my workload**



**Get a short-term allocation for an upcoming deliverable  
(eg: an upcoming conference paper)**



**Quick supplement for an existing project**

**The goal of a development project is to lead a PI/research group into a research project proposal!**



# What is a Research Project for?



**Your research that requires significant computational resources**



**Software and workloads that are known to work on the HPC platforms requested**



**Work that is part of an externally peer-reviewed grant or award**



**Development of new algorithms designed for HPC**



**Testing/benchmarking a new version or configuration of an existing software package**



**Determine suitability of a particular NeSI platform for a specified workload**



# Proposal Development Vs Research Projects

|  | Development                     | Research                                       |
|--|---------------------------------|--|
| Duration (mths)                            | 3                               | 12   |
| CPU time limits<br>(CPU hr)                | 200,000 (BG/p)<br>20,000 (rest) | 1,000,000 (all)                                |
| Scientific review?                         | No                              | Yes*   |
| Technical review?                          | Yes                             | Yes  |
| Price for HPC resource<br>(NZD per CPU hr) | 0.00                            | 0.01 (BG/p)**<br>0.04 (all others)**           |
| Can request multiple<br>NeSI platforms?    | yes                             | yes  |
| NeSI expert assistance                     | Advisor only                    | Advisor only/<br>Advisor + experts (if funded) |
| Call frequency                             | unlimited                       | bimonthly                                      |



# Information needed for a Proposal Development project



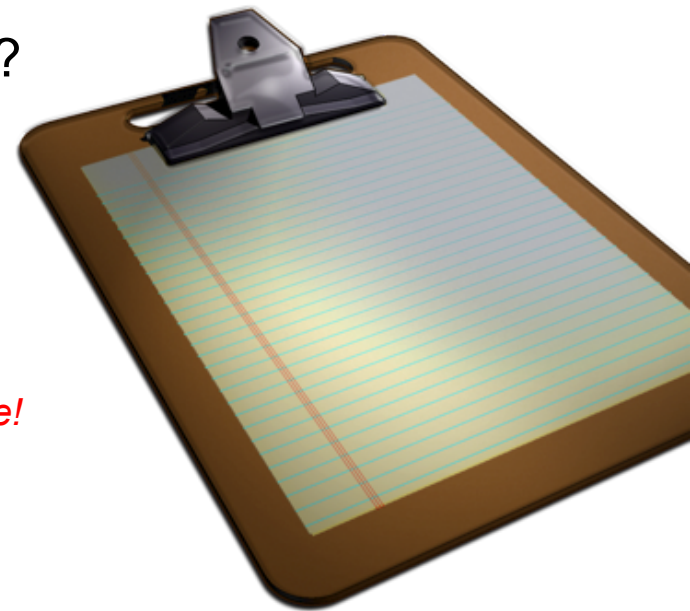
- Workflow description
  - How you plan to solve your problem with HPC resources
- Relevant computing experience
  - Experience with the software and workflow to be used
  - HPC systems used previously
- Complete list of your requirements
  - Preferred NeSI sites/platforms
  - All required software (applications, tools, compilers, etc)
    - *Software licensing is PI's responsibility!*
  - Machine specifics (memory, storage, network, etc)
    - Significant run characteristics (month-long run times)
  - Human resources (programming assistance)



# Information needed for a Research Project

One should include all the info needed for a Proposal Development application PLUS:

- Evidence that work is part of an externally peer-reviewed grant/award
  - *Give details of grant (title, ID, funding agency, etc)*
- Will you pay for the requested CPU time?
- Complete list of your resource requests
  - Which NeSI platforms?
  - CPU time
  - Storage requirements (hard disk)
    - *NeSI doesn't provide long-term archival storage!*
  - Human resources (FTEs)
  - Data transfer requirements





# Information needed for a Research Project

- Justification of your resource requests
  - Why do you want to run on the requested NeSI platform(s)?
    - Benchmarking
    - Profiling (scaling curve or table of execution times)
  - How did you arrive in your estimate of CPU time?
    - Rough estimate is  $(\# \text{ of runs}) * (\text{CPU per run})$
  - What are the requested human resources for?
  - How did you arrive in your estimate of storage?
    - Rough estimate is  $(\# \text{ of runs}) * (\text{storage per run})$



# Money – how much do I pay?

- Development project – *nothing!*
- Research project – *you have 2 options:*

## 1. Funded

You pay a subsidized rate for CPU time on NeSI platforms. This gives you:

- Access to high-priority queues on NeSI platforms
- Access to additional HPC expertise

## 2. Unfunded

You pay nothing however your proposal will not have access to above features.

- Exists for those whose research funds may already be decided for the next couple of years
- Unknown how long this option will be available. (review within the next 6 months)



# Money Calculator

Amount to pay = (# of CPU hours) x (charge rate)

|                     | Charge Rate (NZD/CPU hr) |
|---------------------|--------------------------|
| Blue Gene/P         | 0.01                     |
| All other platforms | 0.04                     |

## NOTE

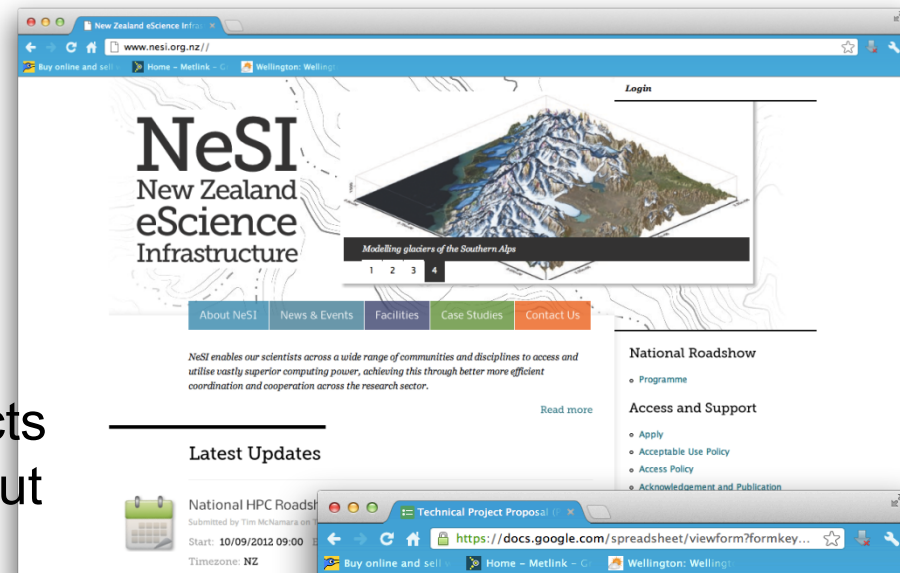
NeSI platforms can only be used in certain fixed numbers of CPUs. I.E. One cannot always effectively use an arbitrary number of CPUs.

| NeSI Platform                | Fixed block of CPUs |
|------------------------------|---------------------|
| Foster (BG/p – UofC)         | 256                 |
| Beatrice (P7 cluster – UofC) | 32                  |
| FitzRoy (P6 cluster – NIWA)  | 32                  |
| Pan (x86 cluster – CeR)      | 10                  |



# How do I apply?

- Go to the [NeSI website](http://www.nesi.org.nz)!
  - Click 'apply' on far right
- Select appropriate form link
  - Clicking on allocation name directs you to additional information about that allocation type
- Fully complete the form
  - Add as much detail as you can
  - Red asterisk indicates required info
  - Ask if you are unsure about a question!



**Technical Project Proposal (Proposal Development Class)**

If you have any questions about completing this form or the application process, please refer to the Access Policy (<http://www.nesi.org.nz/access-policy>) in the first instance. Please also use the contact form on the NeSI website (<http://nesi.org.nz/contact>) for any specific problems not addressed there.

**\* Required**

**Project title \***

**Estimated project start date \***

Please indicate the approximate date from which the HPC resource will be required.

**Project description \***

Please provide a description of the project such as the scientific goals.

**Principal Investigator's name \***

**Principal Investigator's email \***

# What happens to my proposal?

## Collection (1-3 days)

- Administrative check
- Passed to TQP



## Decision (10-21 days)

- PI informed of decision
- If successful, allocation details given
- If unsuccessful, decision details given

## Technical Review (7-14 days)

- 1-2 reviewers assigned
- PI may be contacted
- TQP ruling and suggestions

**NOTE: timings are guidelines not absolute limits!**





# Decision details

- When given an allocation you will be given the following details by email and/or letter
  - CPU time awarded
  - List of NeSI platforms that access has been granted
  - Any conditions placed on the awarded allocation
  - Any specialized human resource allocations
- An advisor is designated for every NeSI project.
  - personal contact for all NeSI matters
    - assists in getting user accounts
    - address serious technical issues (him/herself or by finding the person who can address the issue)
    - administrative matters (helping prepare next NeSI application)



# How should I proceed?

- Apply for a development project!
  - It's free!
  - Quick way to try out 3 sites and 4 types of platforms
  - You can apply at any time
- When ready...
  - Apply for a research project
  - Look for next call (NOW)
  - Talk to NeSI site if you have questions!



# For your reference

## NeSI website

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[www.nesi.org.nz](http://www.nesi.org.nz)

## NeSI access policy

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[www.nesi.org.nz/access-policy](http://www.nesi.org.nz/access-policy)

## NeSI sites (CeR, NIWA, BlueFern)

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[www.eresearch.auckland.ac.nz](http://www.eresearch.auckland.ac.nz)

<https://teamwork.niwa.co.nz/display/HPCF>

[www.bluefern.canterbury.ac.nz](http://www.bluefern.canterbury.ac.nz)

## TQP contacts

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*Mark Cheeseman*

*Ben Roberts*

*Francois Bissey*

*Kieron Mottley*

[m.cheeseman@niwa.co.nz](mailto:m.cheeseman@niwa.co.nz)

[b.roberts@auckland.ac.nz](mailto:b.roberts@auckland.ac.nz)

[francois.bissey@canterbury.ac.nz](mailto:francois.bissey@canterbury.ac.nz)

[k.mottley@auckland.ac.nz](mailto:k.mottley@auckland.ac.nz)

