

# PlanetLab Auckland

Nevil Brownlee  
Brian Carpenter  
Ulrich Speidel

Department of Computer Science



**THE UNIVERSITY  
OF AUCKLAND**

**NEW ZEALAND**

Te Whare Wānanga o Tāmaki Makaurau

*December 2008*

# Networking Research Interests at the University of Auckland

- What we can learn from packet traces
  - e.g. how to characterise the behaviour of hosts by the nature of their flows (Dongjin Lee)
  - or how to identify suspicious events from the entropy of packet trace data (Raimund Eimann)
  - IP Flow Information Export standards (IETF)
- Passive monitoring of DNS requests/responses
  - how to identify suspicious domain names (Bojan Zdrnja)
- Wide-area routing issues (IRTF Routing Research Group)
- IPv6 deployment and multihoming issues (IETF)

# PlanetLab plan

- Will host two nodes as part of PlanetLab NZ
- Hope to participate in trials related to our primary research interests

# Are overlay tests valid?

- Many of the research issues in the scaling of routing and in (IPv6) multihoming are engineering issues of scaling and performance. Proof of concept is not enough.
  - Scale means a multiple of the current routing table size (290k entries)
  - Performance means 10Gb line speed
- A key question is whether PlanetLab can assist with these issues.
- More generally, is PlanetLab a good tool for the Clean Slate era?

# Clean slate discussions next week in Madrid

- ACM CoNEXT 2008 ReArch'08 Workshop:  
“Re-Architecting the Internet”
  - “Exploring what is broken with the Internet architecture and how to fix it.... This workshop will discuss what the real underlying problems are ... and how we might fix them, so that the architectural simplicity and clarity of the Internet can be regained and retained...”
  - I have looked at the 13 papers accepted for this workshop.

# Personal conclusion

- If my survey of these 13 "new architecture" documents is at all representative, we can only expect overlay-style experiments to be useful for a fraction of new ideas (perhaps 30%).
- Even then, full-scale engineering performance cannot be assessed.
  - possible partial exception: OpenFlow ([www.openflowswitch.org](http://www.openflowswitch.org))
- PlanetLab is only one tool for assessing ideas.
  - if it works on PlanetLab, that doesn't prove it's a scaleable good idea
  - if it can't be tested on PlanetLab, that doesn't prove it's a bad idea

