

A brief history of PlymGRID

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'A CPU cycle idle is a
research opportunity
missed'



Overview

- Building up PlymGRID
- Drawing in new users
- Issues for further expansion



Building up PlymGRID



First steps 2004

- PR visit to Cambridge
- Alex Nimmo-Smith Condor request



PlymGRID Linux 2005

- 25 nodes in Fitzroy 307
- Remote 'diskless' PXE boot
(Rob Douglass)
- Slimmed down Linux core
(John Horne)
- First Condor service
(John Horne)



PlymGRID Windows XP 2006

- Demand for Windows GRID became clear
- Leased fleet: opportunity for large scale operation
- XP Condor client packaged and deployed
(Pin Hu, Gregory Regan)

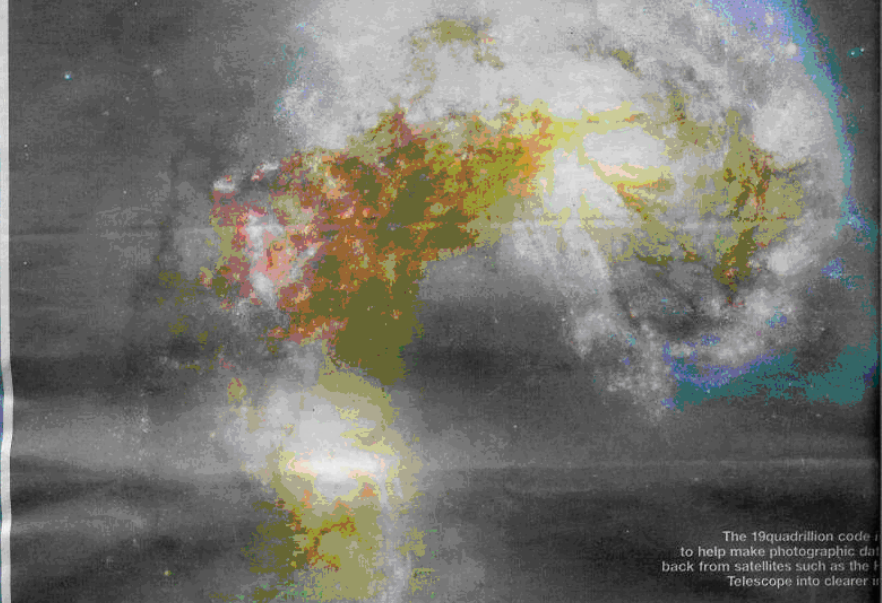


Michael Hess project

- 6 month placement, summer 2006
- New Condor server deployed
- Trials up to 1800 nodes
- Submission Portal created
- MatLab runtime rolled out
- Largest Condor pool in UK HE



19,342,813,113,834
066,795,298,816*



The 19quadrillion code is used to help make photographic data back from satellites such as the Hubble Telescope into clearer images.

* That's the number of digits in a code which baffled Nasa for 40 years, but was cracked by a student from Devon

IF YOU find the maths on Countdown quite tricky, then prepare to be very, very impressed.

A British student has cracked a space code containing a head-spinning 19,342,813,113,834,066,795,298,816 numbers which has beaten Nasa experts for 40 years.

But Cen Jung Tjhai did have a little help – not from Carol Vorderman, admittedly, but from 1,500 university computers that he hooked

BY STEPHEN DEAL

up together to help unravel the 19quadrillion number conundrum.

The code is used to evaluate photographic data beamed from satellites in outer space.

Because the images travel so far they become distorted and need to be made clearer.

Since the 1960s, scientists have used two codes to translate the

information into pixels, but Mr Tjhai has now definitively proved the Quadratic Double Circulum Code is the one to use.

The 27-year-old University of Plymouth PhD student said: 'The university's computer system acted like a super artificial brain – and helped me find the solution.'

He has now been invited by Nasa to present his research at a scientific conference in China.



Code-breaker: Cen Jung Tjhai

A good news research story

Metro

18 October 2006

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[Westcountry TV coverage](#)

International coverage on CNN



'Drawing in new users'



An academic-led PlymGRID community

- PlymGRID Steering Group
- Staff Portal community
- Central Training
 - Introduction to PlymGRID
 - Using the Submission Portal
- Regular events



Room for experts to grow

- Ability to set up own submission nodes
 - Bespoke middleware
 - Access to remote data sets
- Expertise shared with others worldwide working in same area

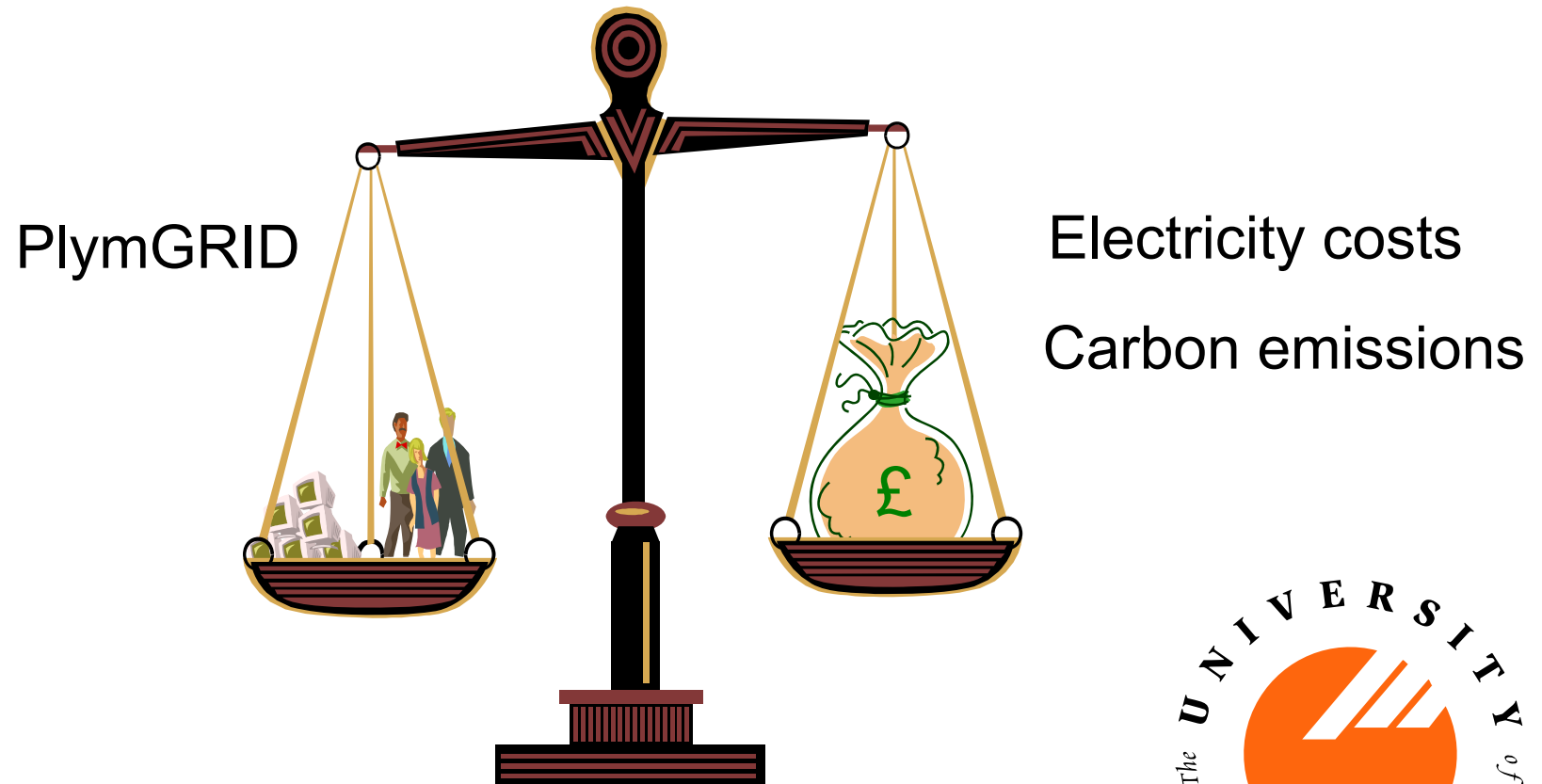


Issues for further expansion



Research vs. Sustainability

Balancing competing imperatives



Technical opportunities and constraints

- PC fleet: 5000 nodes, Intel Core Duo 1.8GHz, 2GB RAM, 10TB central GRID storage
- Condor pool size: 1400 nodes
3 pools? Enterprise Condor?



Summary

- Largest Condor pool in UK HE
- New research areas possible
- Need to move forward in drawing in new users
- Political as well as technical barriers to be overcome

