> Australia Site Report

Grid Computing
by descendants of convicts

Lucien Boland
Sean Crosby
Goncalo Borges

> columbus day 12 Oct

digital VT220

> australia day 26 Jan

digital VT220

> 789 convicts

digital VT220

>I am in convict uniform

digital VT220

> outline

* australian context
* computing team
* computing resource summary
* major projects

> australian context

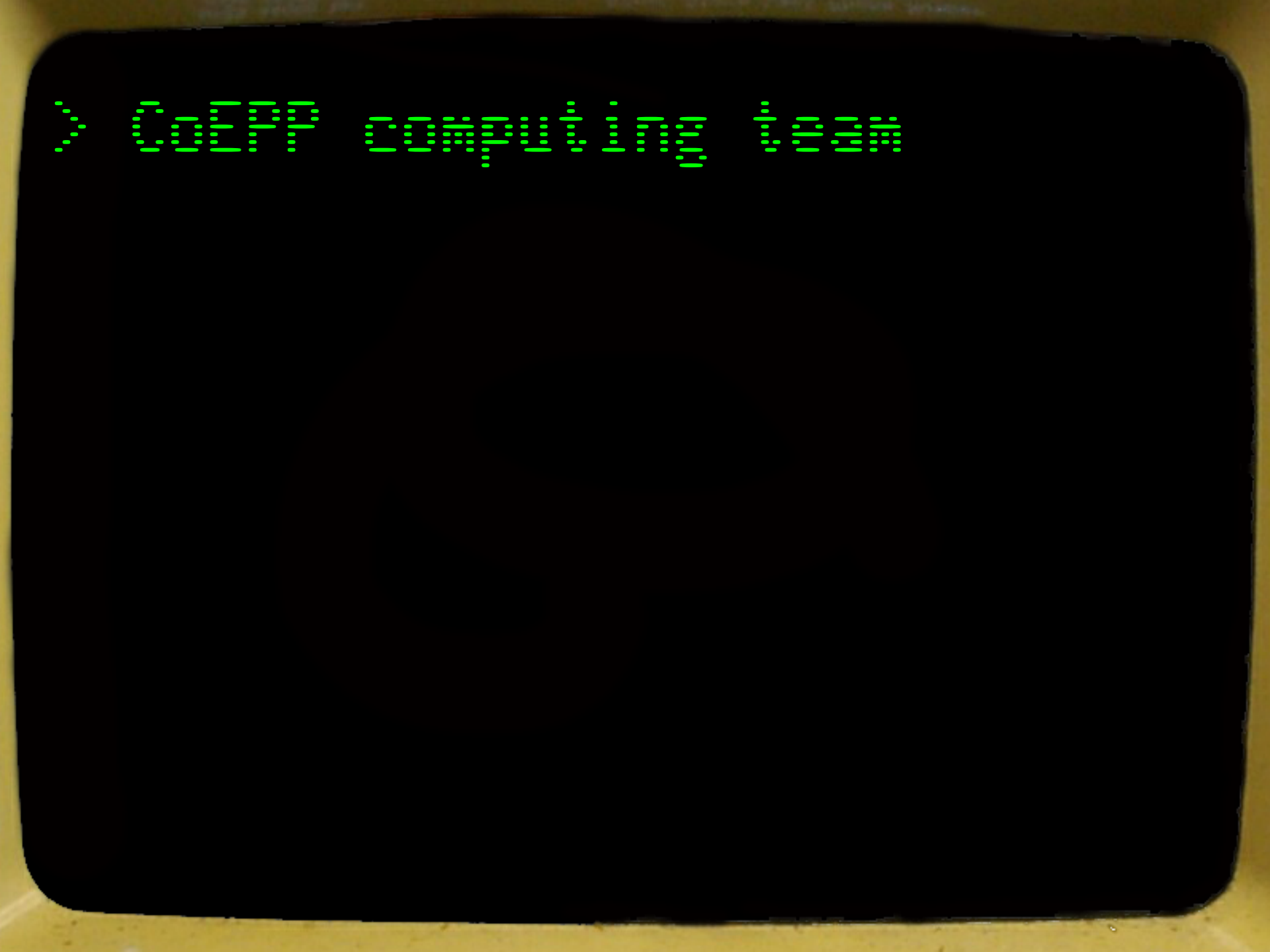
> australian context

CoEPP - Centre of Excellence for Particle Physics at the Terascale

* ~100 researchers, TPP and EPP
* 4 nodes:
  Sydney, Monash, Melbourne and Adelaide
* ATLAS
* Belle/BelleII, Dark Matter detection
* funded until 2017

> CoEPP 2 (Beyond the Higgs)

* new round of centres of excellence
* 2017-2024
* +100 EOI -> 20 Apps -> 10 funded
* must prepare full application by EOY
* must be new and exciting proposal
* help with 7 year computing budget?


> CoEPP computing team

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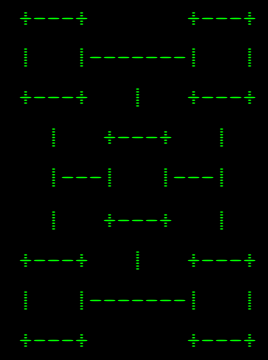

Melbourne

Lucien Boland

Sean Crosby

Sydney

Goncalo Borges (enticed from LIP)

Adelaide

0.2 x Shunde Zhang

> 2015 staff awards

Sean awarded an Endeavour fellowship

* 3 month professional development OS
* CERN kindly hosted
* details in his talk tomorrow

A successful collaboration, looking for future opportunities with others, have possibility of bringing people to AUS

> computing resources summary

> T2 ATLAS grid computing

10700 HEPSPEC compute

* Dell R410, C6145 & HP DL170e G6
* 2015 - 3 x Dell R630

950TB storage (DPM)

* Dell R620 + MD1200
* 2015 - 7 x Dell R730XD (6TB HDD) RDS

MCORE - queue scheduling tweaks

HEPSPEC analysis:

https://rc.coepp.org.au/_media/coepp-cpuanalysis2014.doc

> T3

Melbourne

* 4 x HP DL170e G6
* 60TB NFS

Sydney

* 4 x Dell R410
* 50TB NFS

Adelaide

* 2 x Dell R620
* 200TB NFS

Nectar Cloud

* 700 cores
* 30TB NFS

> infrastructure

XenServer Virtualization Farm

* 4 x Dell R710
* 10TB Dell MD3600f shared storage

PXE, kickstart, puppet, nagios, ganglia, rsyslog, gitolite, dokuwiki

2015: RT, gitlab

> #ajor projects

> VLSCI - recycled cluster

IBM iDataPlex System X dx360m2

* 80 x dx360m2 (8 core intel @ 2.66GHz)
* 3 x BNT Eth switches dual XGE uplink
* Infiniband MPI connections

- 4 years old (no warranty)
- almost doubles CoEPPs compute capacity

> IBM iDataPlex

Longer than expected to setup

* UEFI kickstart! FAIL! (PXE chain?)
* ASU rather than racadm
* IPMI SOL
* BNT switch management
* OpenMPI

> CEPH - recycled storage

Make use of out of warranty DPM disk servers (3-5yo)

4 x Dell R620 + MD1200

4 x Dell R710 + MD1200

300TB raw

> CEPH and CEPHFS

* benchmarking of RADOS

  https://rc.coepp.org.au/_media/radosbenchmarks-analysis.pdf

* benchmarking of CEPHFS

  https://rc.coepp.org.au/_media/cephfs-fio-analysis.pdf

* failure behaviour and recovery

> AWS - dynamic cluster

* $10,000 AWS academic grant
* build prototype elastic cluster with ‘Dynamic Cluster’
* successfully tested with Australian Belle II site

> future

more collaborations:

* BoRG - The Brightest of Reionizing Galaxies HST/WFC3 survey
* Belle II - formal support of local analysis
* Sage Weil - co-contributions to CEPH development work

infrastructure improvements

> discussion points

* small teams:
  - operational tasks
  - end user support
  - project work
  - community contributions
  - IT & AV support!!?