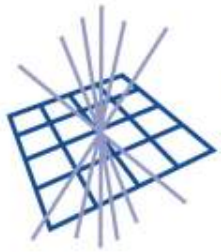
UK Status and Plans
英国の状況と計画

Catalin Condurache – STFC RAL

ALICE Physics Analysis and Tier-1/2 Workshop

University of Tsukuba, 5 March 2014

Science & Technology Facilities Council
Rutherford Appleton Laboratory



GridPP
UK Computing for Particle Physics

Content

- UK GridPP Collaboration
- ...in the last 12 months and immediate future
- Resources for 2015
- IPv6 readiness
- Network connectivity

UK Grid Collaboration

- GridPP is a collaboration of 19 UK universities + RAL + CERN with the primary goal of providing computing resources to LHC particle physics experiments

GridPP resources

Site	CPU kSI2k	Storage TB
RAL	24,107	10,517 (+11,390)
Edinburgh	9,015	355
Glasgow	8,472	1,402
Queen Mary, London	7,946	1,675
Imperial College, London	6,833	2,872
Lancaster	5,210	1,135
Manchester	5,798	951
Sheffield	2,540	363
RALPP	6,200	1,607
Royal Holloway, London	3,704	728
Brunel, London	4,027	634
Oxford	3.107	709
Liverpool	2,840	544
Birmingham	2,130	389
Cambridge	707	278
Sussex	502	77
Bristol	1,467	120
University College, London	502	215
EFDA Jet	332	2
Durham	2,419	53
TOTAL	91,566	23,897 (+11,390)

from GStat

...in the last 12 months

- Birmingham
  - EMI-3 SL6 WLCG VOBOX
  - /cvmfs/alice.cern.ch available
  - 60% overall CPU fairshare (4872 HS06)
    - ATLAS 30%, LHCb 5%, others 5%
  - 60% of UK T2 ALICE CPU allocation
  - 120TB storage available for ALICE
  - by end of March 2014
    - additional 200TB storage
    - additional 2000 HS06 CPU (20% increase)

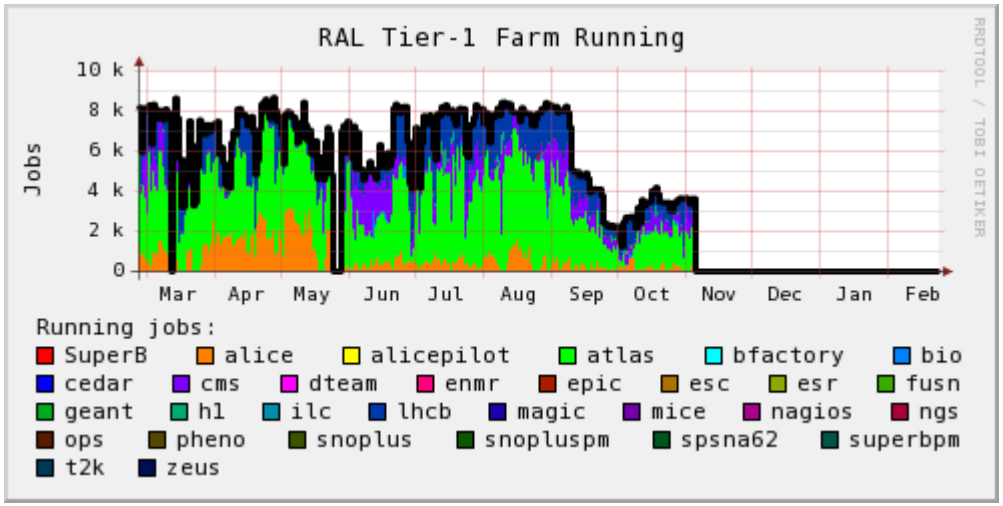
...in the last 12 months

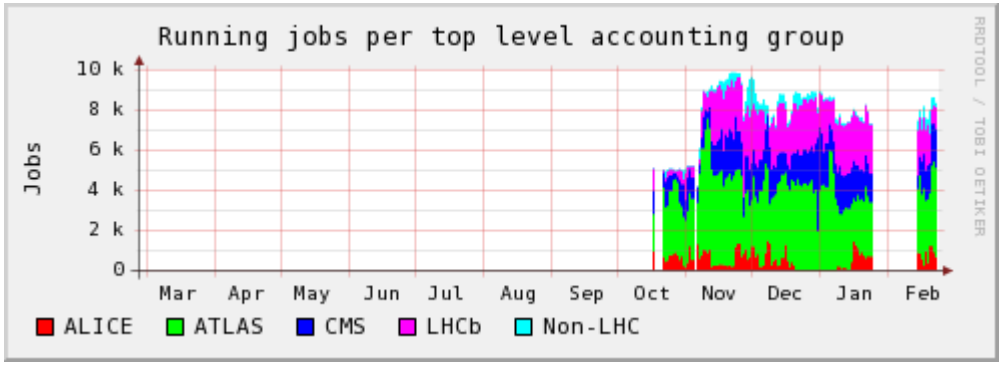
- Oxford
  - EMI-3 SL6 WLCG VOBOX
  - 40% of UK T2 ALICE CPU allocation
  - no storage provided
  - /cvmfs/alice.cern.ch available

...in the last 12 months

- RAL Tier-1
  - migration to new HTCondor batch farm
  - also migration to ARC-CE – Jun 2013
  - CREAM-CE kept for ALICE, small VOs
  - CernVM-FS enabled for ALICE at batch farm level – Aug 2013
    - ALICE VOBOX w/ CernVM-FS – Sep 2013
  - most middleware virtualised (exception top-BDII)
  - no major disruptions (power incidents)

...in the last 12 months - RAL Tier-1





Currently
- 9312 job slots
- 11PB disk, 11PB tape

ALICE
- CPU fairshare – 2.46%
- spare cycles up to 3000 jobs
- CPU efficiencies
  - between last June and January (64% to 93%)
- 284 TB disk

…immediate past and future – RAL Tier-1

- FTS3
  - RAL Tier-1 heavily involved in testing outside CERN
  - extensive tests for ATLAS and CMS
- Testing CASTOR 2.1.14

…immediate past and future – RAL Tier-1

- RAL Firewall replacement – March 2014
  - Tier-1 infrastructure affected
    - Mon 17 March 07:00 UK for ~1-2 hours
  - firewall changes frozen between 4 and 28 March
    - on both old and new firewalls
- Tier-1 network update
  - 'mesh' topology
  - new routing layer for Tier-1
  - changes way Tier-1 connects to the RAL network

Resources for 2015

- Both Birmingham and Oxford will be able to meet their pledges for 2015 without issue
  - CPU (HEP-SPEC06) 3,800
  - Disk (TB) 256
- RAL Tier-1 – pledges for 2015
  - CPU (HEP-SPEC06) 2,200
  - Disk (TB) 200
  - Tape (TB) 120

Resources for 2015

- Current funding in UK until March 2015
- HW for 2015 – provided by money from FY2014 budget
  - RAL Tier-1 will deliver
- Work ongoing for proposal until 2019
  - GridPP 5 – pledges until 2019

IPv6 Readiness

- Overall UK
  - small testbeds, testing aspects of WLCG software and trying to raise awareness amongst the T2s
  - T2 people are contacting local networking staff to start conversation about IPv6
  - xrootd seems to be a critical piece of software for ALICE; compatible IPv6 version (xroot4) released January 2014 (?)
  - https://www.gridpp.ac.uk/wiki/IPv6_site_status

IPv6 Readiness

- Oxford
  - most advanced site with IPv6
  - IPv6-enabled test cluster with one CE, few WNs
- Birmingham
  - University has IPv6 routing available and is going to roll out IPv6 with network upgrade (next 6-12 months)
  - not yet looked into it for T2

IPv6 Readiness

- RAL
  - not a priority yet, other urgent issues
  - by end of Spring 2014 CICT Network re-engineers the entire site
    - firewall
    - core network
    - phone network
  - then IPv6

Network Connectivity - LHCONE

- UK network connectivity excellent for T1 and T2s

  - constantly under review with Janet - UK NREN

  - no T2 has any connectivity issues at present; no limitations by the Janet6 connection
    - exceptions: Durham, RHUL, Birmingham (only ALICE group!)
    - Birmingham will get a better Janet6 connection

  - Birmingham – 10Gb/s

  - Oxford – 10Gb/s

  - so no internal case in UK for LHCONE connection today

Network Connectivity - LHCONE

- However… GridPP

  - if an experiment asks through UK GridPP person and make a case that a T2 needs to be on LHCONE, then it would be formally considered
    - most likely the costs have to be supported from GridPP allocation (reduced CPU, disk, staff)
    - only reason if ex-UK T2 was only LHCONE and needed to transfer data directly to a UK T2 site

  - nevertheless 1-2 sites will work with Janet to setup a test LHCONE VRF across Janet to know that it can be done technically, what are the implications

Any (other) questions?

Thank You!

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