

# High Performance Computing: An overview of resource availability and usage.

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## ARCHER

- Cray XC30** - 3 008 nodes
- 72 192 processors ( Intel Ivy Bridge)
  - standard nodes (64GB)
  - high-memory nodes (128GB)
  - fast parallel file system
  - 2 post-processors (2x40 processors), 1TB each
  - 330 accounts
  - 3 BAU NERC allocation
  - 58 NERC projects

- RDF – GPFS file system**
- 13PB (total)
  - data mover nodes
  - light path to JASMIN

## New MONSooN – coming very soon

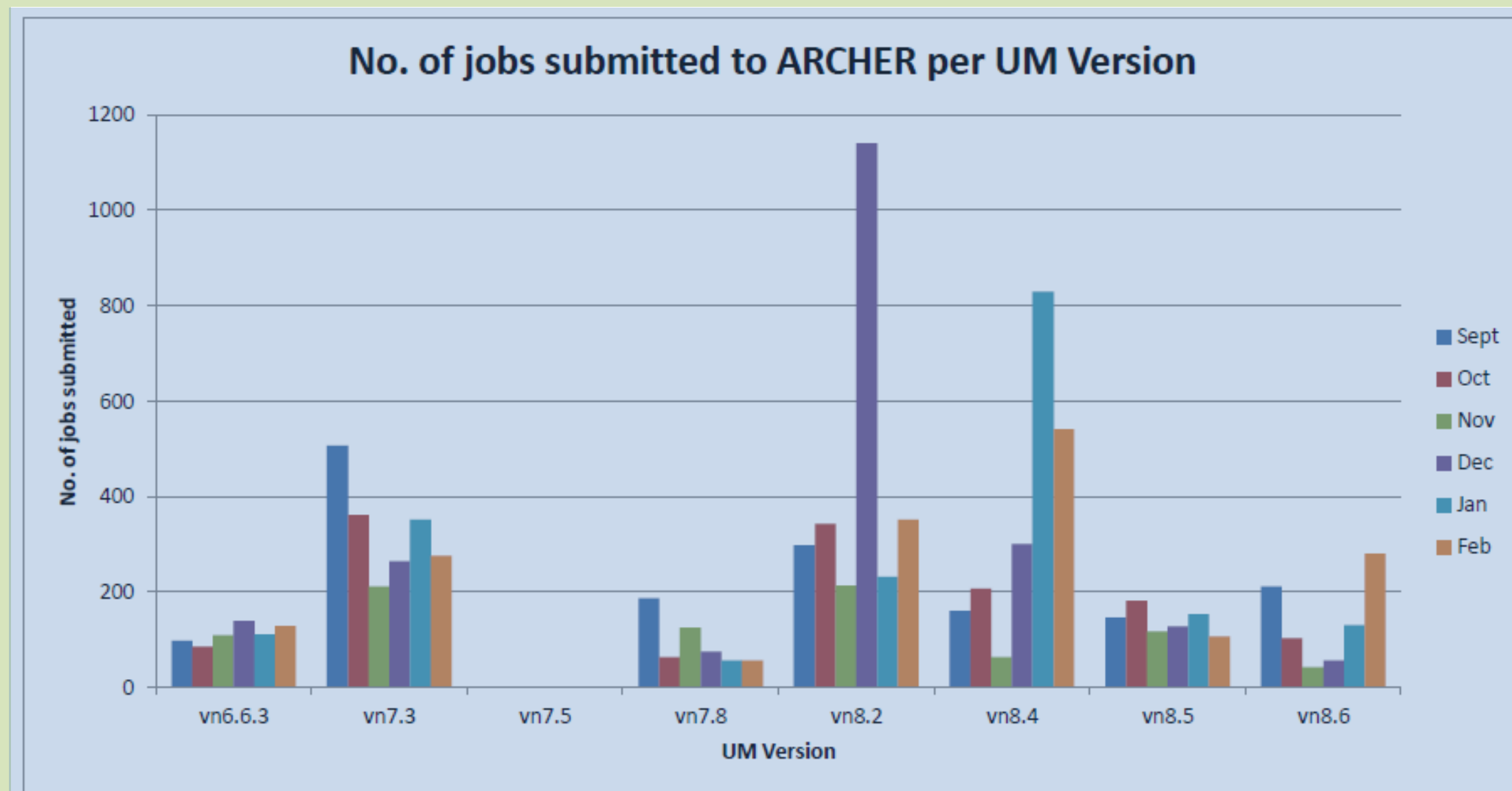
- Cray XC40** – 120 nodes
- 3840 cores (Intel Haswell)
  - 128GB/node
  - Lustre parallel file system

Parallel running with the IBM for ~6 weeks  
Users responsible for their own data transfers

CMS will install UMs (not individual configurations)

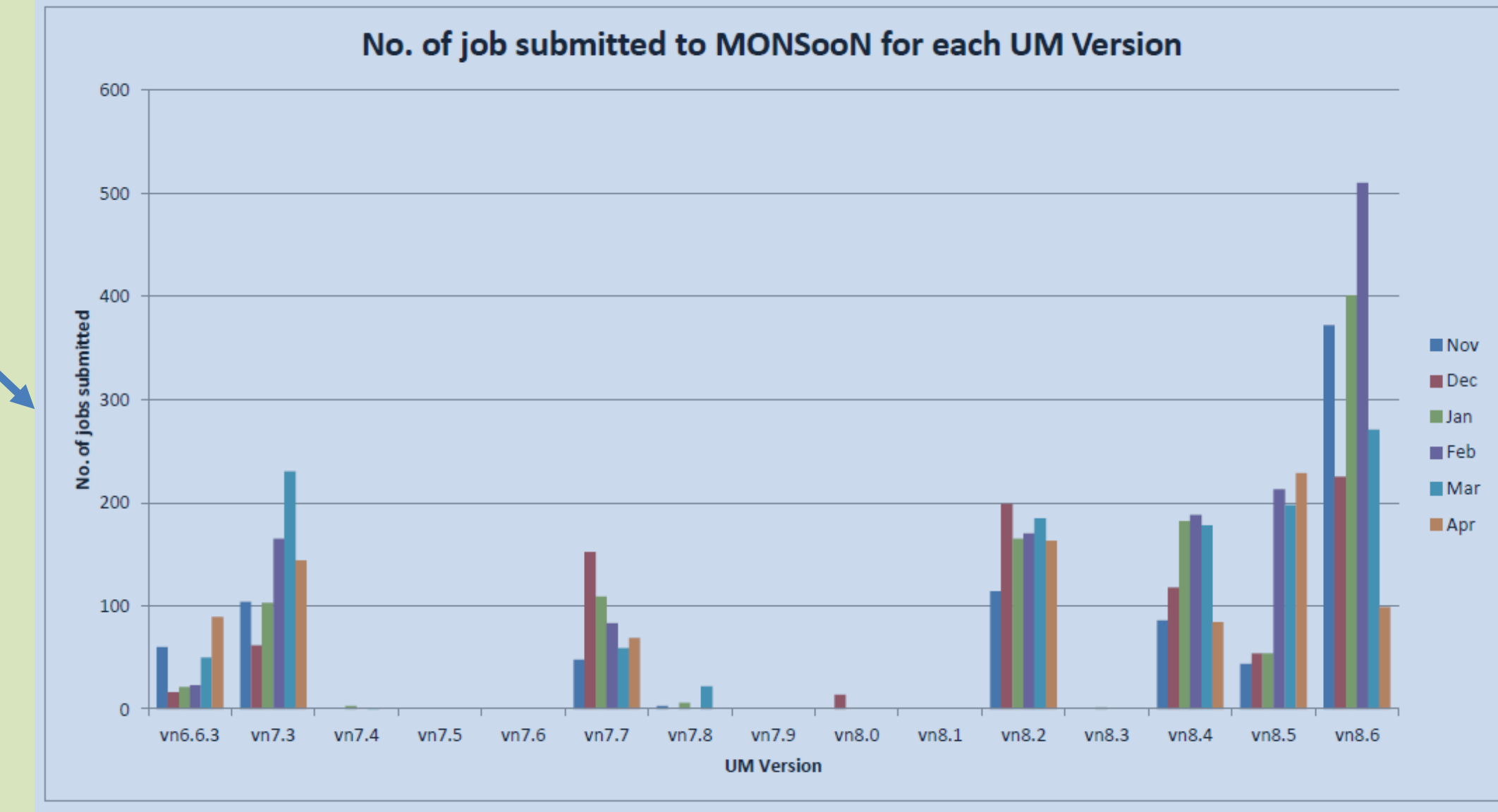


- JASMIN Super data cluster**
- 7PB disc
  - 6PB tape
  - 3000+ compute cores
  - Managed, unmanaged VMs
  - JASMIN Analysis Platform
  - Fast data connections to MONSooN, RDF



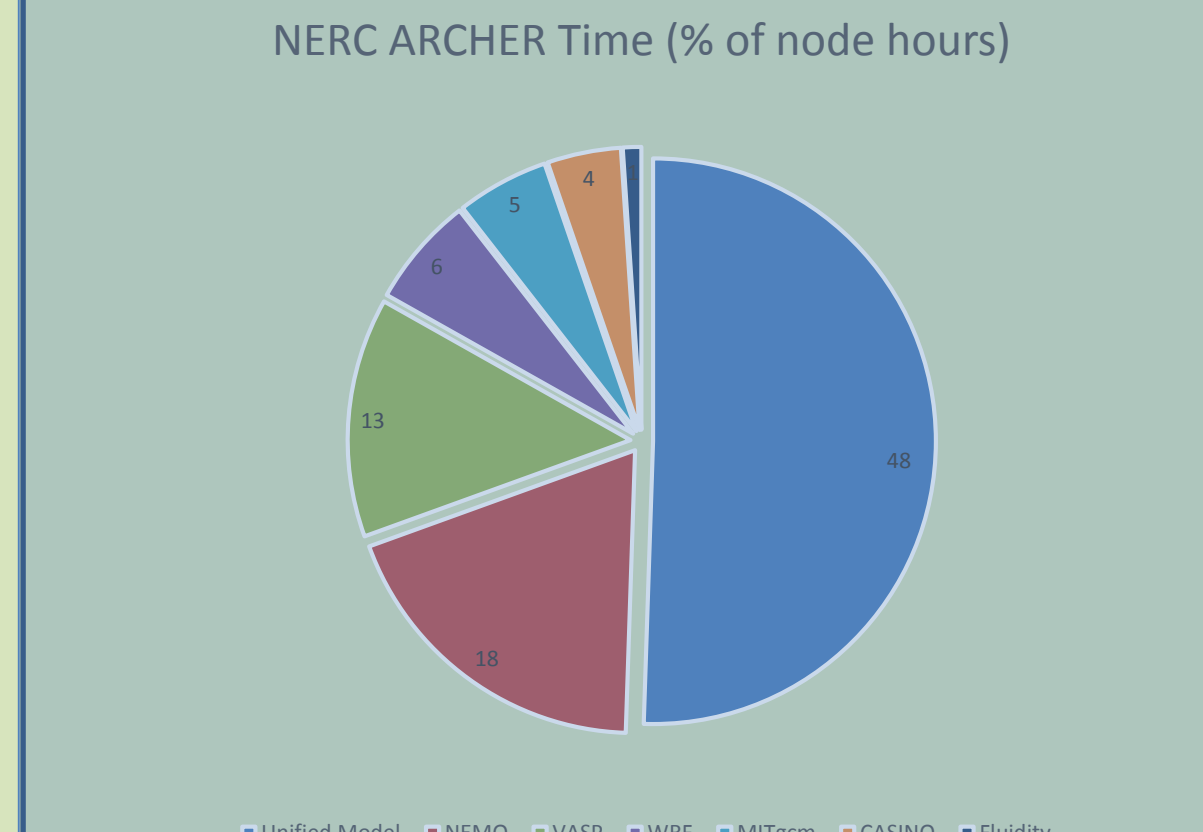
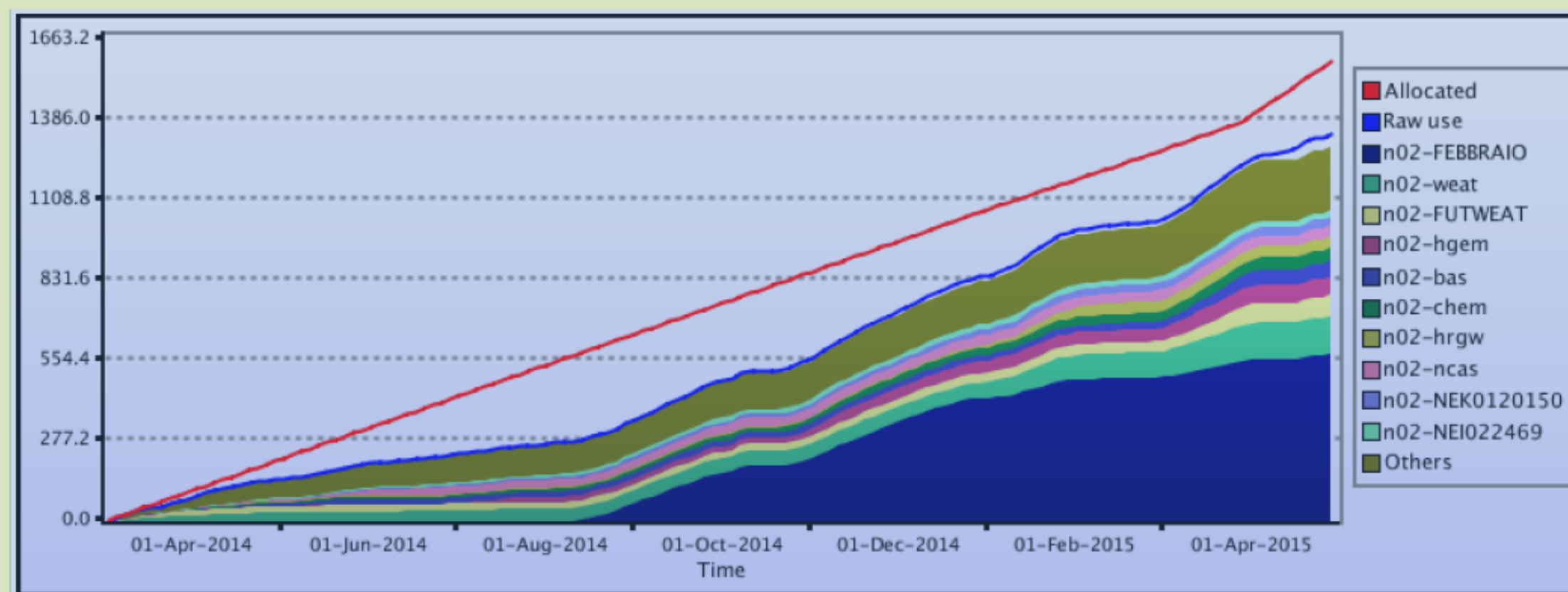
Number of ARCHER UM jobs submitted from Sept 2014 – Feb 2015 by UM version. UM 6.6.3 is HadGEM2; 7.3 and 8.4 correspond to UKCA. The spikes in versions 8.2 and 8.4 correspond to UM Training events.

Number of MONSooN UM jobs submitted from Nov 2014 – April 2015 by UM version. The increased usage of later versions on the model reflects the development nature of MONSooN compared to ARCHER's production role.



n02 users are very good at using their ARCHER allocation as evidenced here. Our allocation of ~1.5BAU was ~95% used which is exceptional given machine downtime towards the end of the allocation period.

n02 usage of the RDF facility and the post-processing machines significantly outstrips use by other ARCHER groups.



ARCHER usage by NERC and the n02 (Atmospheric and Polar) consortium. The UM and NEMO are the major consumers of ARCHER processing power overall. 2015-2016 will see a continuation of heavy UM usage and an increase in WRF usage.

