

BELLE2 @ DESY Grid Site

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19th B2GM
05 Nov 2014, KEK, Japan

- The Grid infrastructure reflects DESY's manifold scientific programme:
 - DESY is the *home* of 10 VOs (6 global), incl. non-HEP
 - (WLCG-) **Tier-2** for ATLAS, CMS, and LHCb in Germany (Tier-1: GridKa)
 - **Tier-2** for BELLE2 (Tier-1: GridKa)
- One *complete generic* Grid infrastructure for *all* VOs
 - All necessary **Grid services** (VOMS, LFC, WMS, PX, ...)
 - **Federated** resources w/ **opportunistic** usage (“everybody profits”)
 - Roughly 2/3 of the resources for WLCG and 1/3 for BELLE2 and ILC
- Grid is **complemented** by the National Analysis Facility (**NAF**) [size: 1 Tier-2]
- Network: 2*10Gb plus dedicated 20Gb in **LHCone**



DESY Grid Center: Resources

- DESY guarantees pledges w/ hardware in warranty at due day April 1st
- Procurement of new hardware usually happens in the last quarter of a year

- Situation in fall 2014:
 - New procurement has just happened and was added to recent and old hardware!
 - 104 kHS06 (recent and very new hardware)
 - 14 kHS06 (old hardware > 4years; to be switched off)
 - Up to 50% was used by BELLE2 (see next slide); average in 2014: 11%
 - Disk for BELLE2: 300TB (incl. 123TB BELLE1) 90% full!

- Planning for 2015:
 - Pledges for April 1st, 2015: 81 kHS06 ~= 8100 job slots (hardware in warranty)
 - This includes for BELLE2 at DESY 8kHS06 and the 300TB plus additional 200TB disk
 - B2 Comp SG request for Germany: 16 kHS06, 480 TB



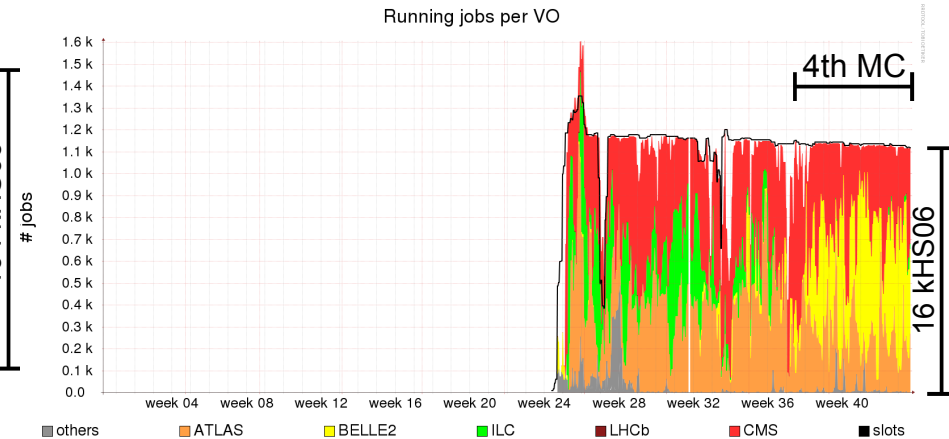
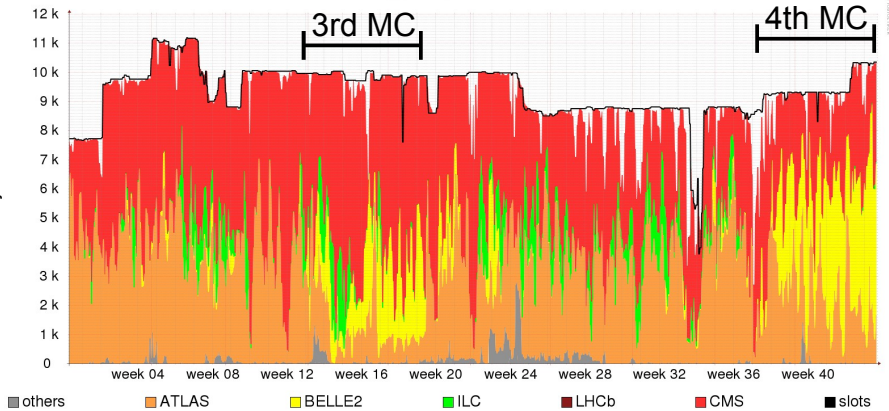
DESY Grid Center: Jobs at DESY-HH (2014)

Main resources

Additional old resources

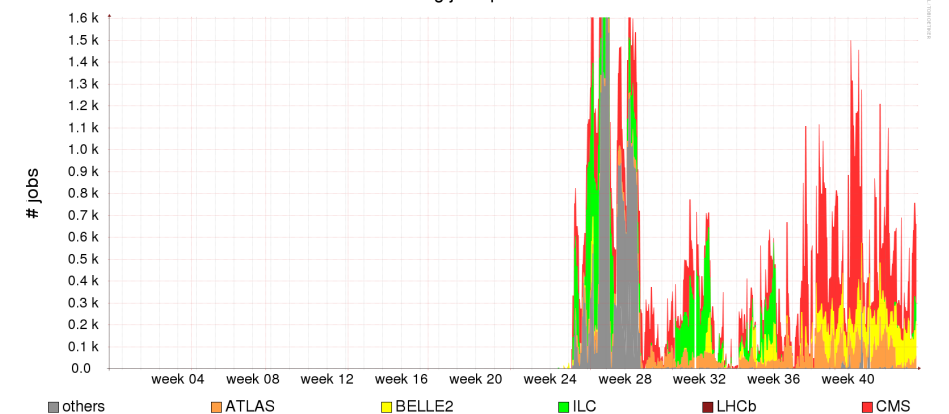
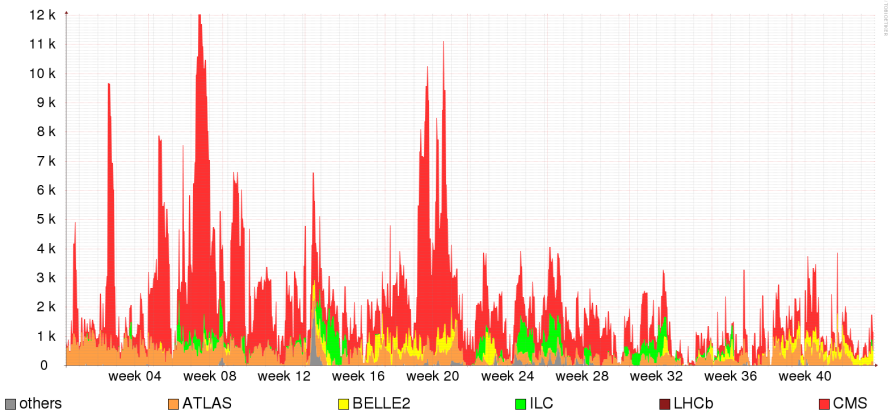
Running jobs per VO 2014

Running jobs per VO



Queuing jobs per VO 2014

Queuing jobs per VO 2014



Conclusions

- *BELLE2* (VO '*belle*') is well supported at DESY commonGrid infrastructure
- At DESY the *federation* of Grid computing resources and its *opportunistic* usage models allows to very efficiently distribute free resources
- BELLE2's 4th MC campaign strongly benefited from new resources which were procured to meet the pledges in 2015 and old resources which were kept running as well as from partially little job submission by ATLAS and CMS
- In 2014 BELLE2 used 11% of the DESY Grid computing resources (ATLAS: 34%, BELLE2: 11%, CMS: 48%, ILC: 6%)
- DESY will guarantee half of the requested resources of Germany in 2015 (8 kHS06, 240TB)
- The *National Analysis Facility* (NAF) complements the Grid for interactive data analysis and supports BELLE2; more users are welcome!

