ATLAS / CH performance review

Jan '12 - Jul '16

Gianfranco Sciacca

AEC - Laboratory for High Energy Physics, University of Bern, Switzerland

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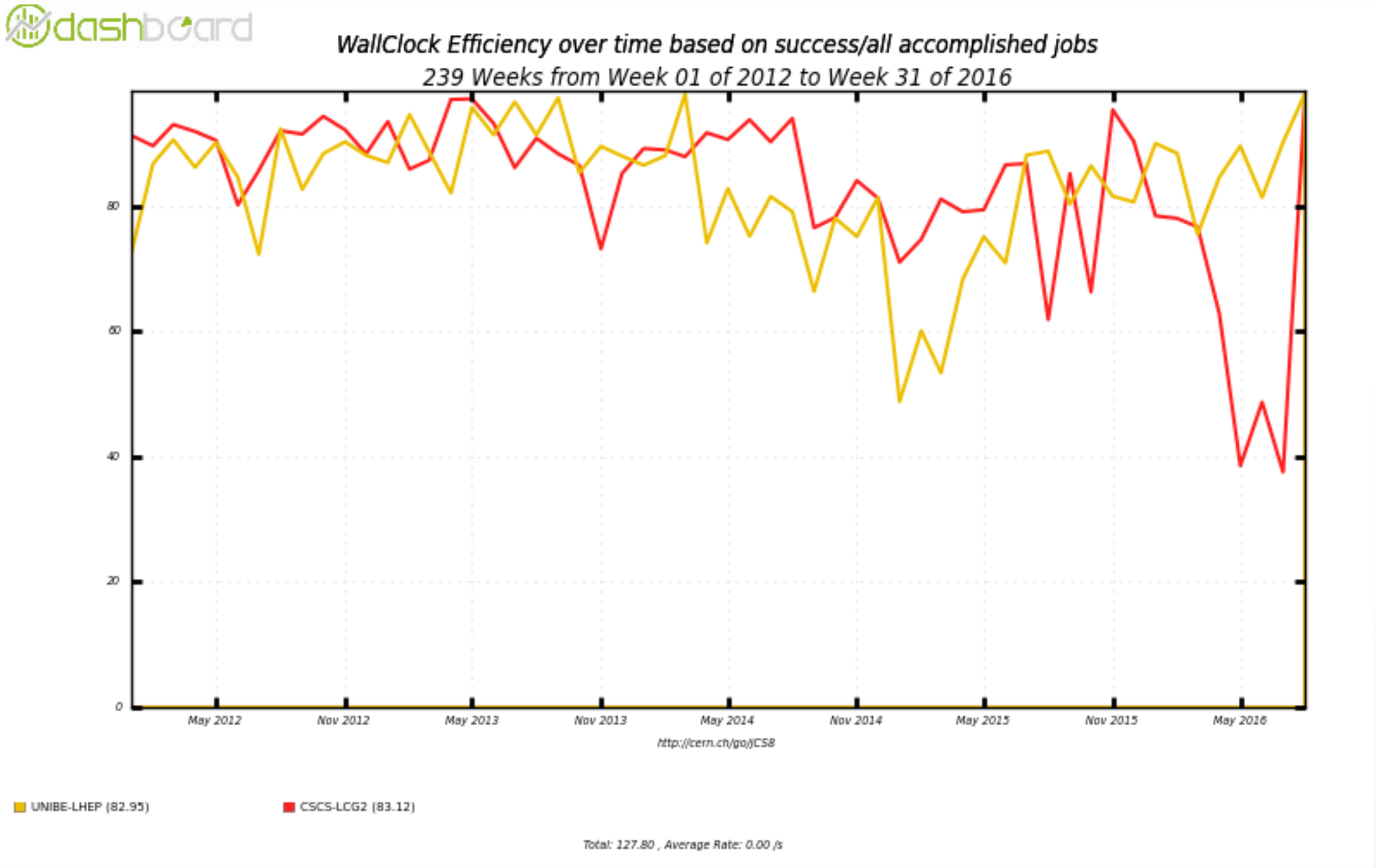

Significant degradation since Aug '14 (comparison with Bern shows that the inefficiencies recorded are largely not due to problems on the side of the VO workload)

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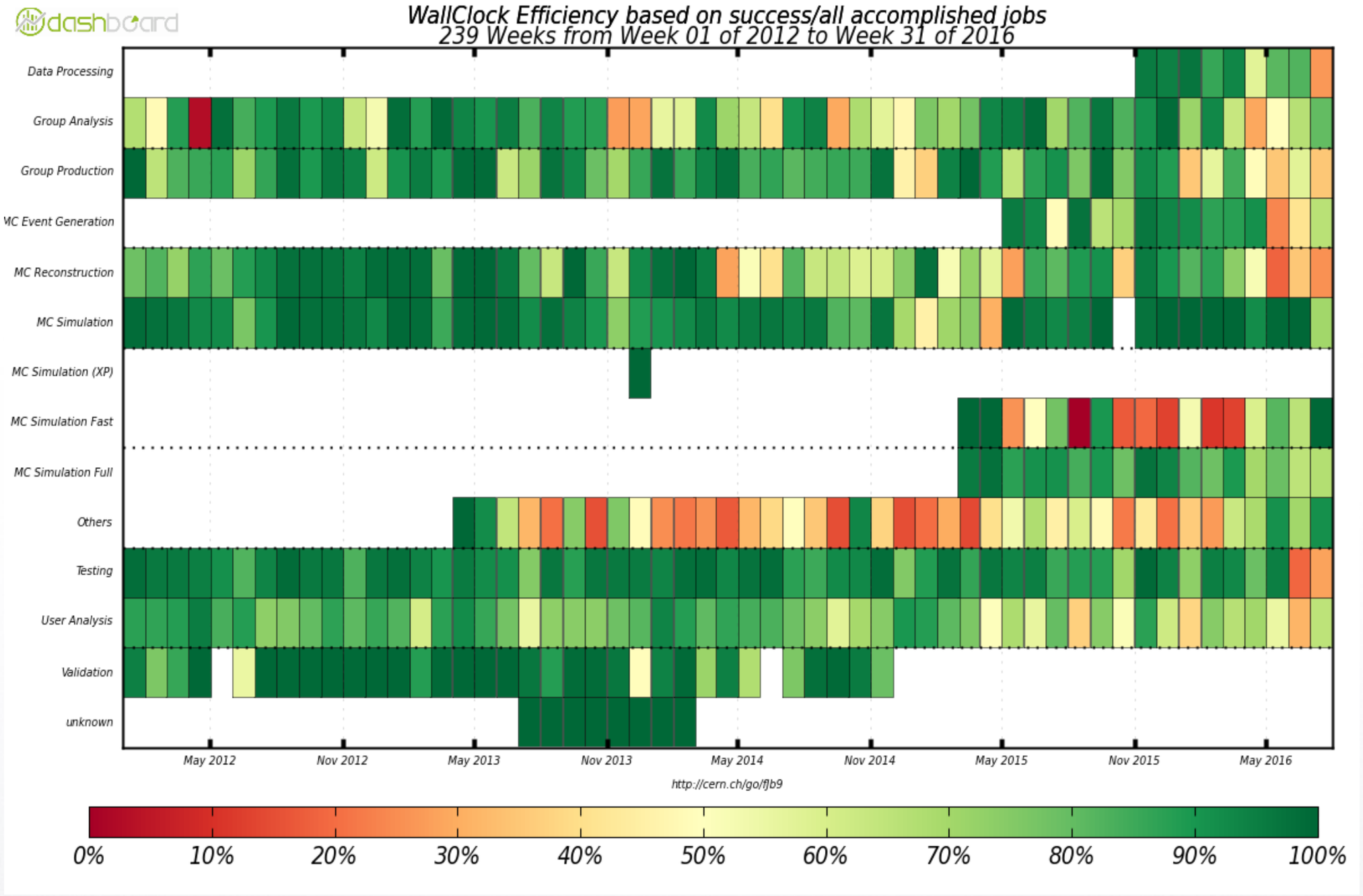

Degradation already visible since Fall '13

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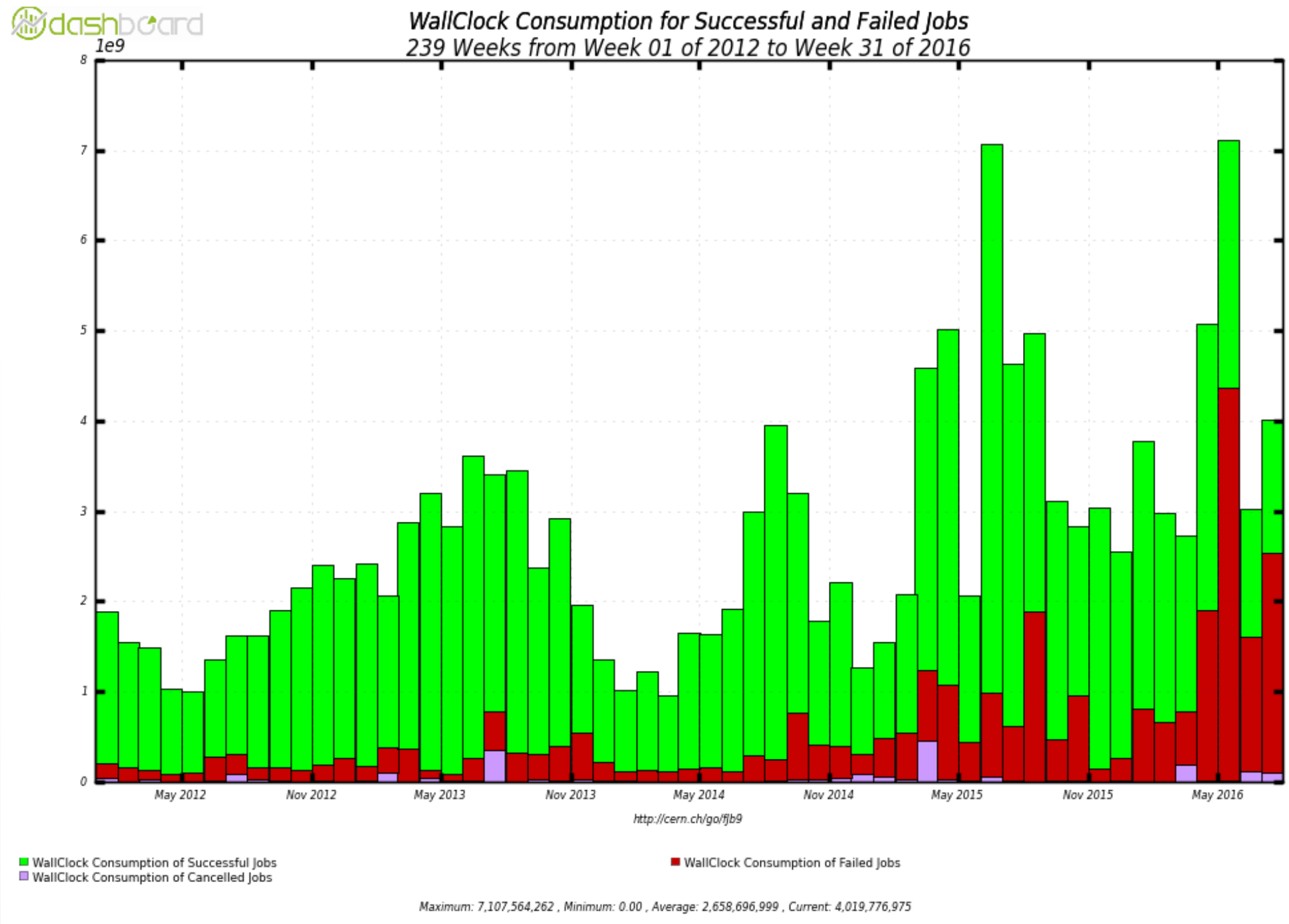

Degradation visible since the Q3 ‘13

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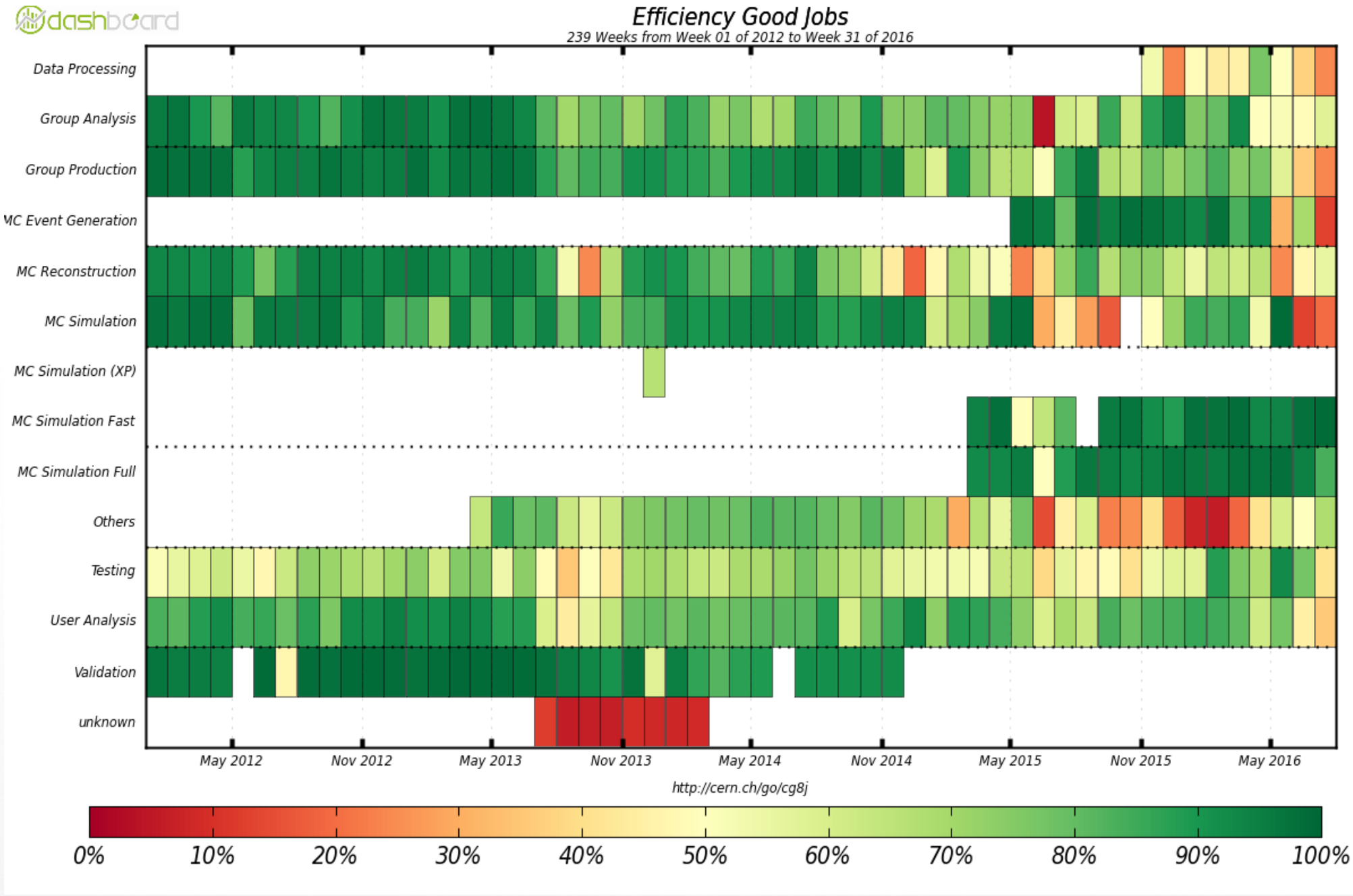

Significant degradation since Q4 ‘14

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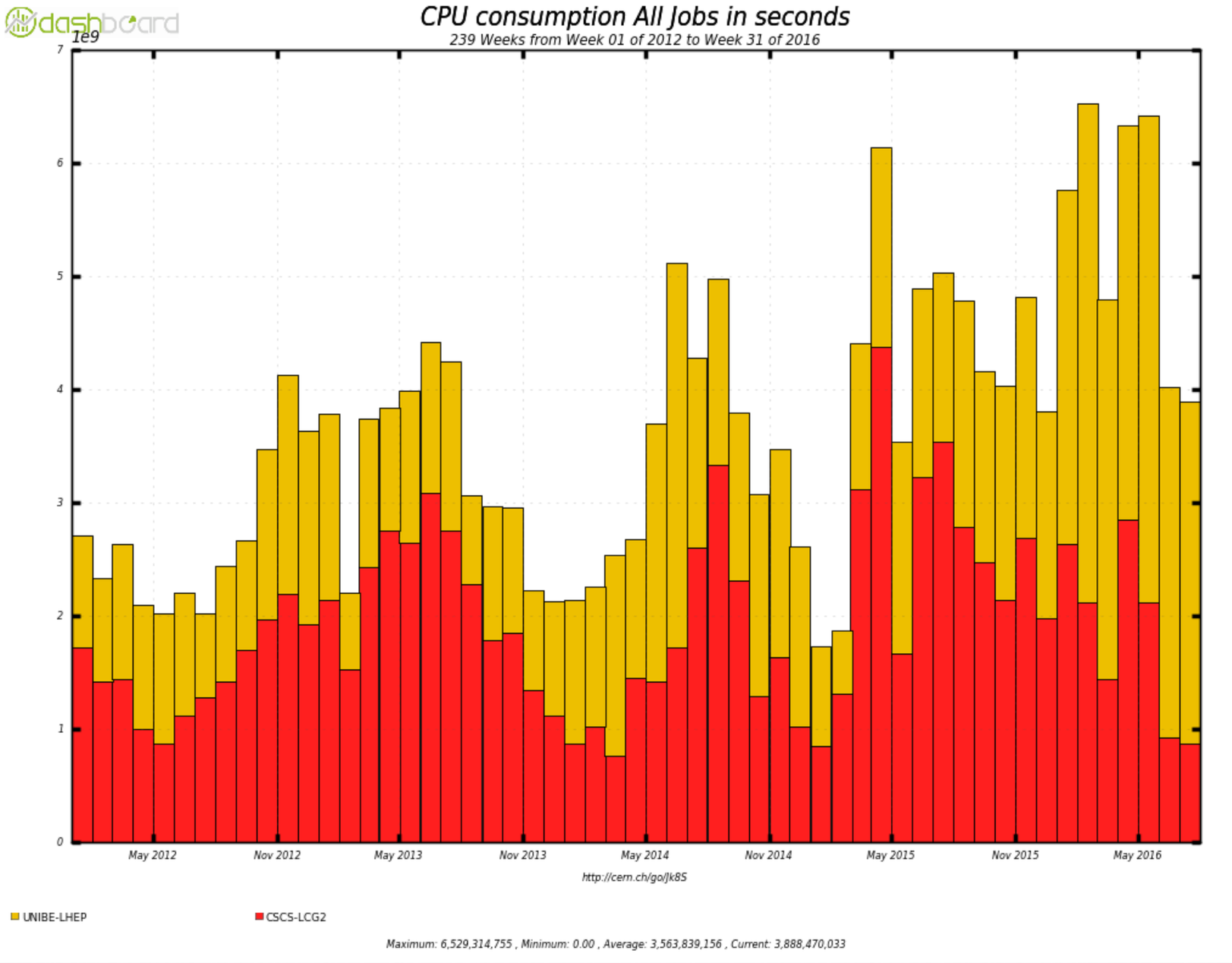

CSCS: No clear increasing trend since Summer 2013, some peaks and dips, and a decreasing CPU trend since May '15

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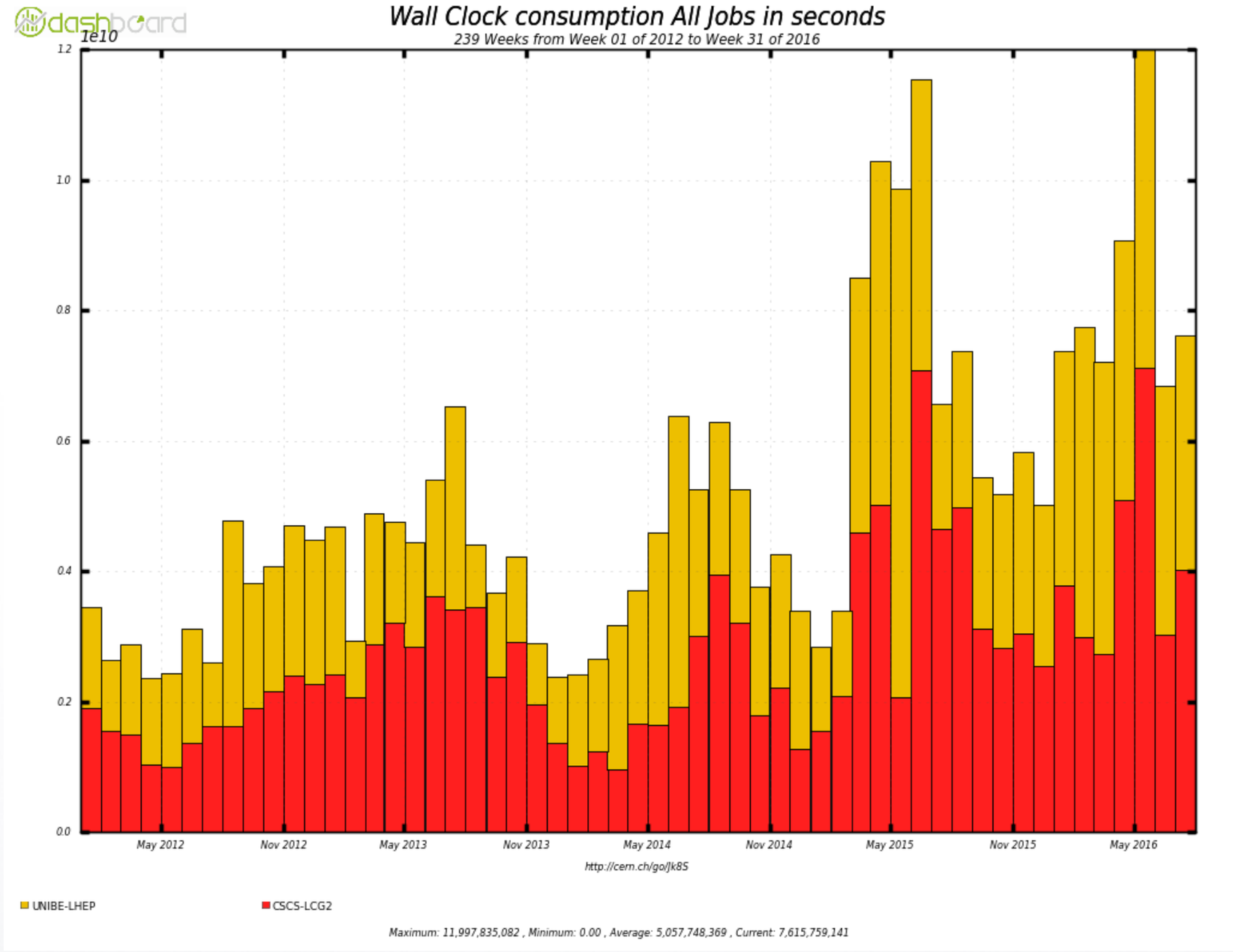

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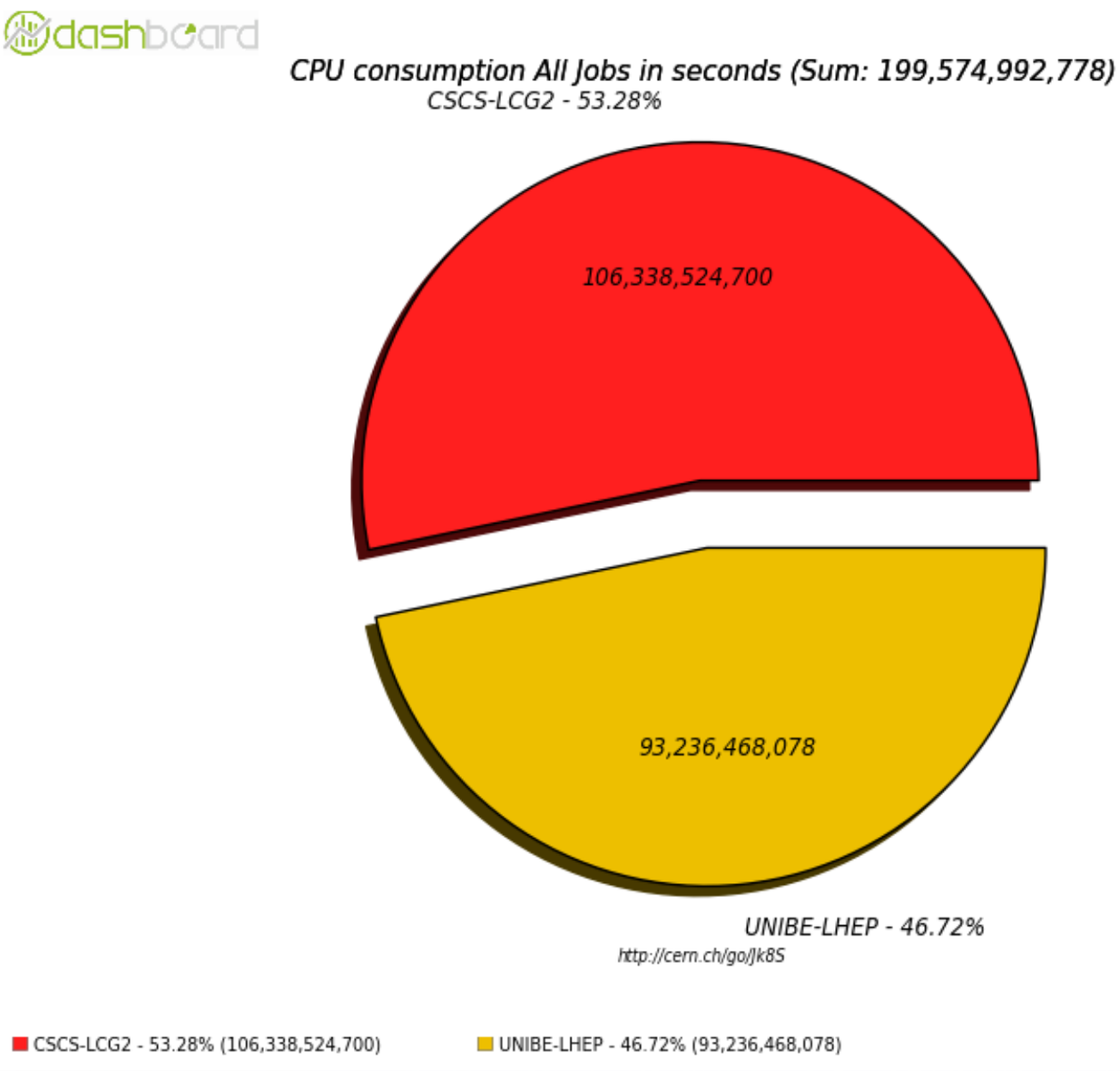

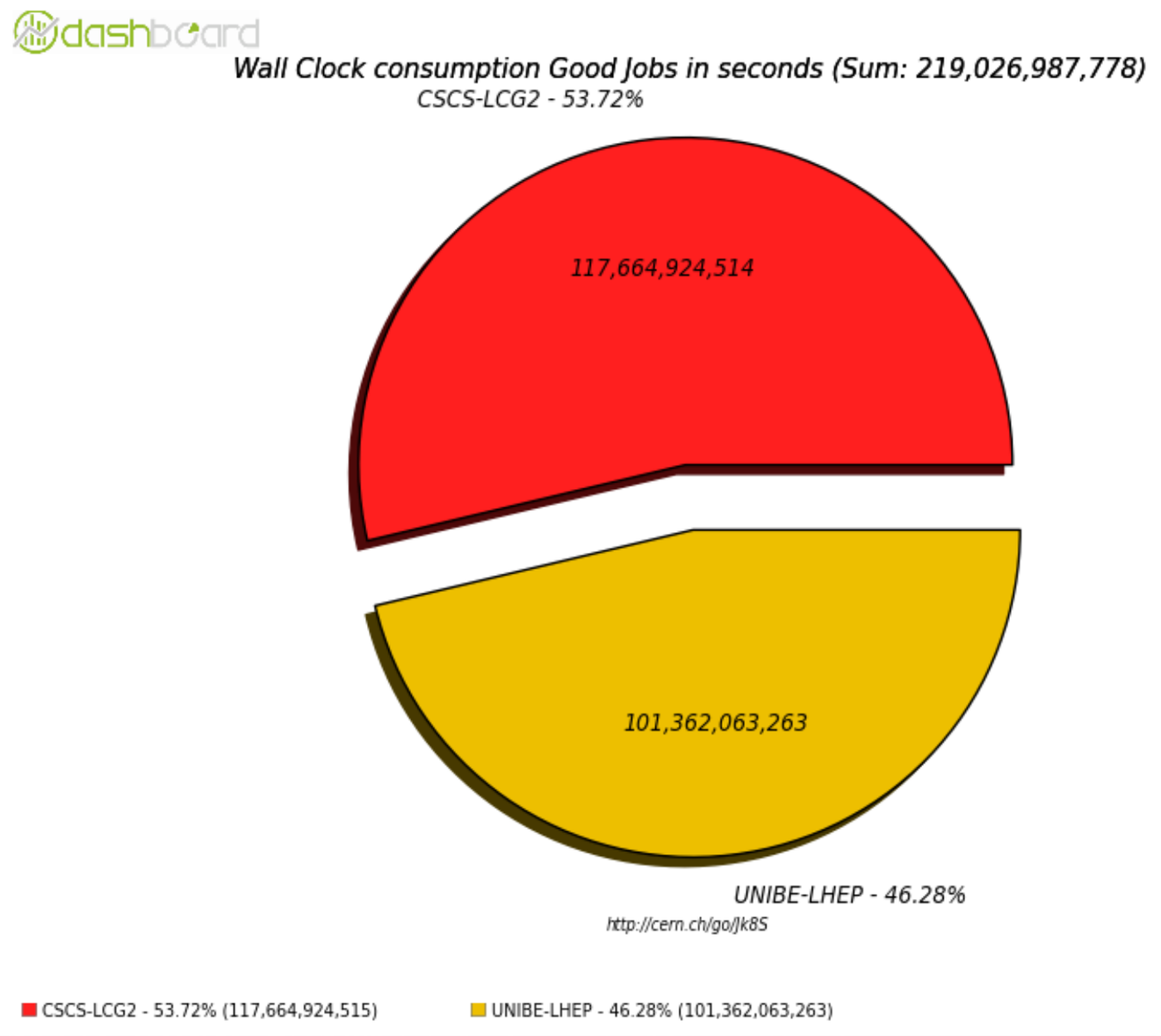

Bern HW purchases and manpower since end 2010: 47kCHF/year (average) and up to ~.4 FTE

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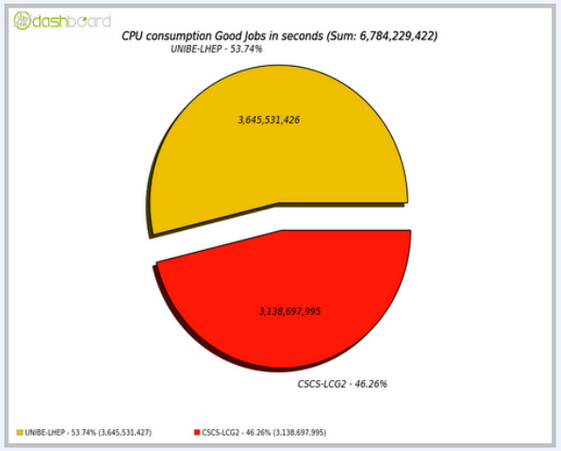
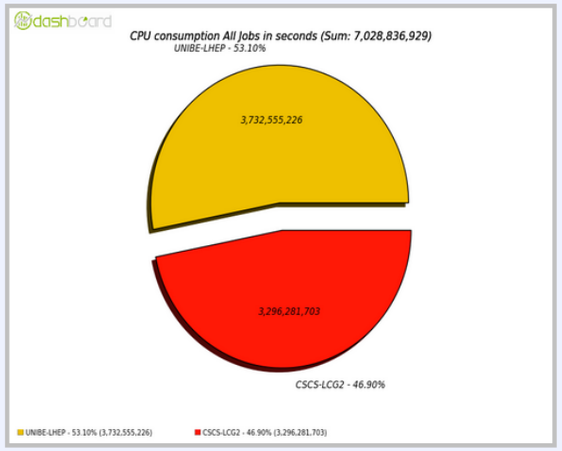
August 2016

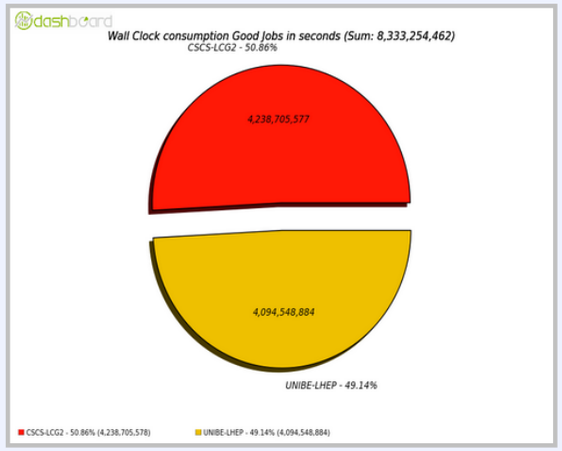
CPU consumption Good Jobs (links to data in different formats)



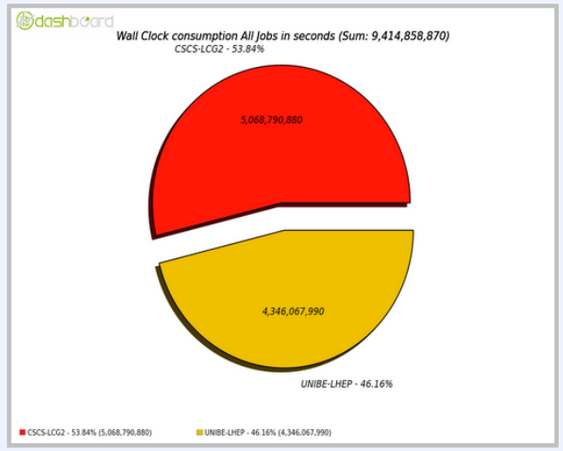
CPU consumption All Jobs (links to data in different formats)



Wall Clock consumption Good Jobs (links to data in different formats)

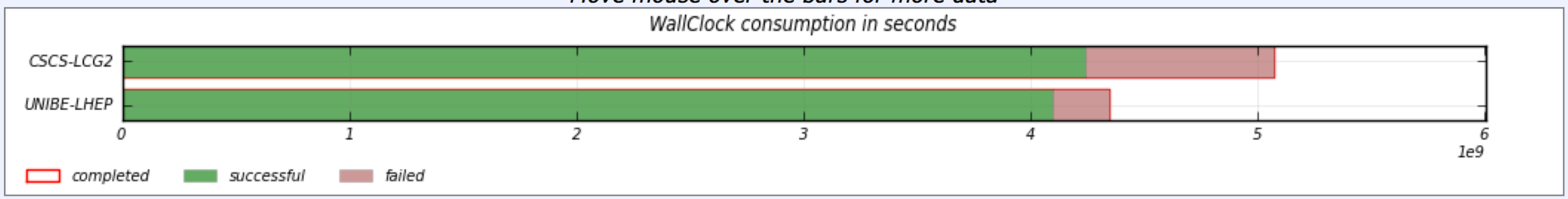


Wall Clock consumption All Jobs (links to data in different formats)



Wall Clock consumption (links to data in different formats)

Move mouse over the bars for more data



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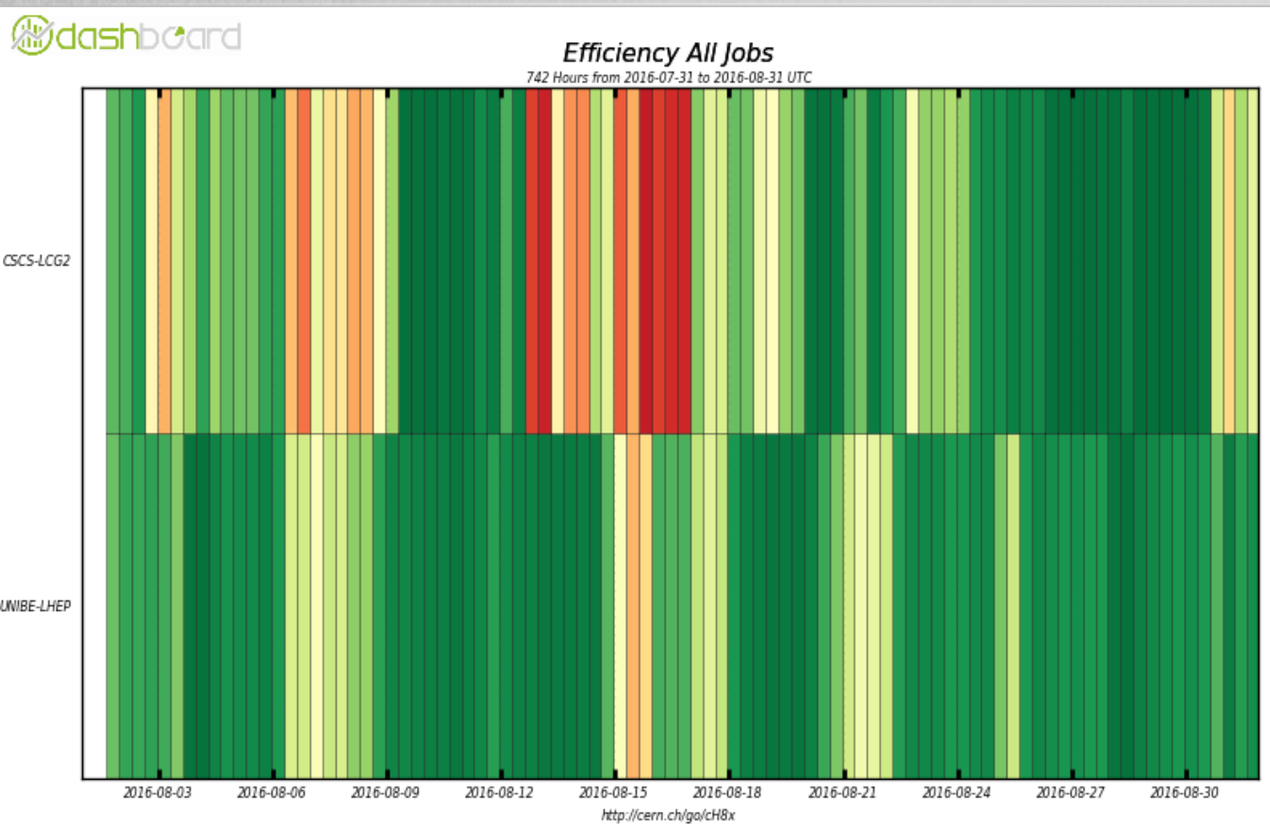

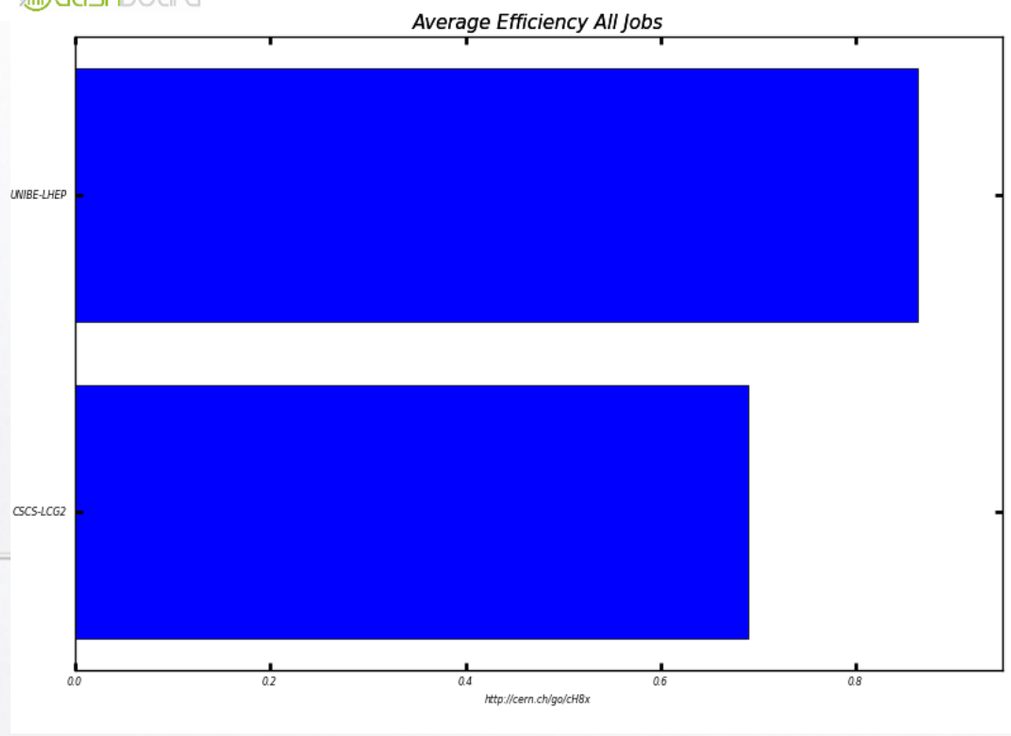

August 2016

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Summary

➡ We have observed a progressive degradation of the CSCS performance for ATLAS since Q3 2013. This has become more significant from Q3 2014 onwards

➡ This has undermined the good reputation the centre held within ATLAS, with consequences for the Swiss ATLAS contribution to the experiment. Following the newest developments (nuclei-satellites model), we have been marginalised now.

➡ There is a combination of multiple reasons for that. But one leading theme is the steep evolution of the experiment computing model and the associated middleware development that is tightly coupled to it. This is ongoing and expected to steep up even more in the short and medium term. This needs very close following up with matching expertise.

➡ The rotation of CSCS personnel has meant that the in-house expertise got dispersed for the basic operations already. The above evolution has created a severe gap in grid skills. Which has in turn generated a steeply increased load on the "VO rep" and a large amount of duplicated and very inefficient effort on both sides.

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Outlook

➡ ATLAS / CH need a centre of competence in order to being properly represented within the ATLAS Distributed Computing. This needs direct ATLAS expertise within the centre.

➡ We have also observed that in Bern we have matured experience in delivering computing power to ATLAS at a very convenient price, by a combination of modest HW investment and exploitation of opportunistic resources. The key to this is the direct ATLAS expertise derived by the day-to-day involvement in the experiment computing operations.

ATLAS competence in the centre is the key for us. We have two models to choose from:

a) ATLAS manpower at CSCS (technical, operations, mw, ATLAS sw stack, GGUS, etc.) - Funded. BE/GE provide the VO rep (higher level liaison, not technical)

b) Move storage, operations, mw, ATLAS sw stack, GGUS, etc. to BE/GE (partly funded) and leverage the CSCS computing power (funded) with a very lightweight operational model (CSCS is responsible from the LRMS down, BE/GE for the ARC mw up to ATLAS central operations.