



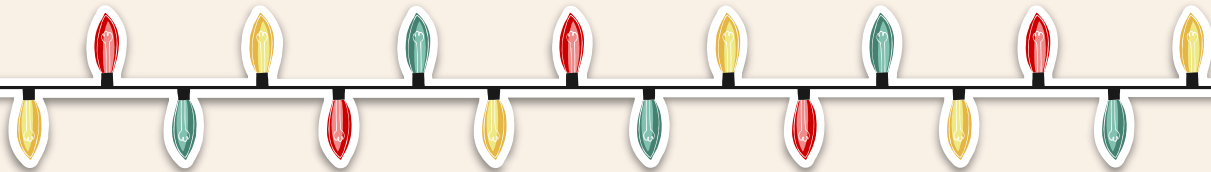
* PPD away day: GridPP *

* * * * *

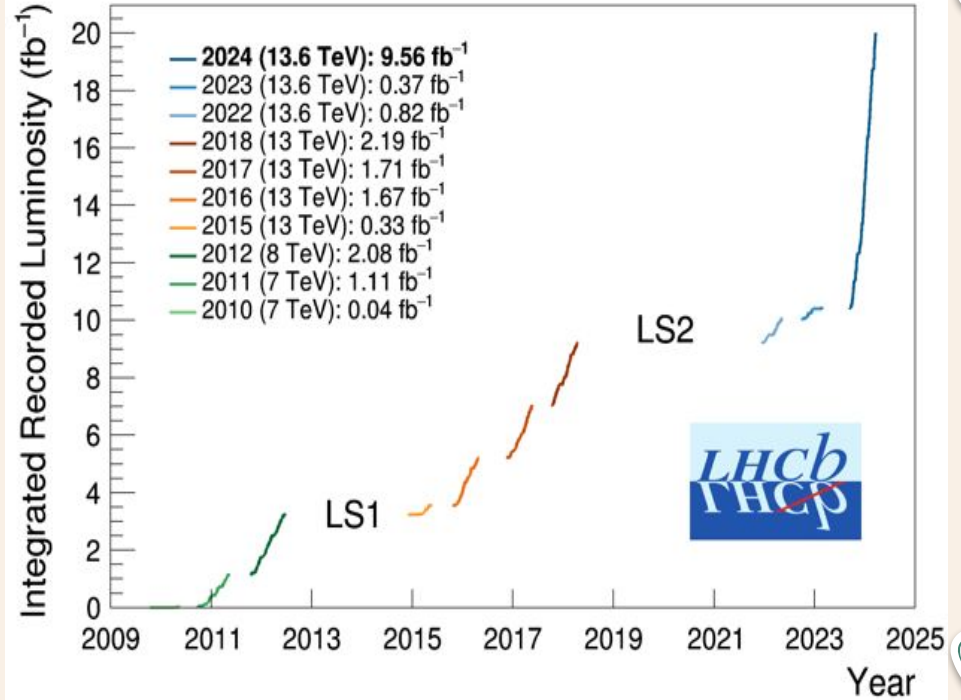
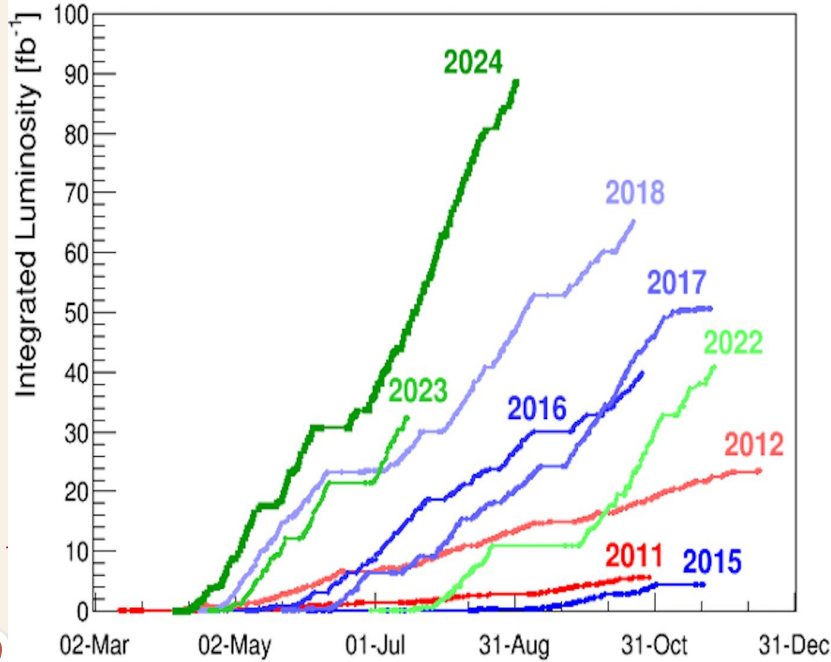
The Cosener's House
02.12.2024

Alex Rogovskiy, Katy Ellis, Jyoti Biswal, Brij Jashal

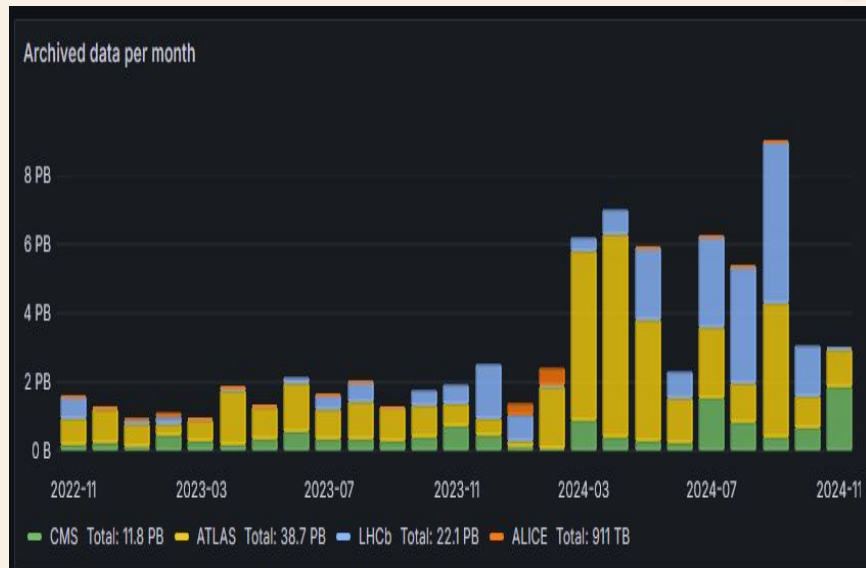
* * * * *



Last year



The Grid



GridPP

Brij + Jyoti (ATLAS)
Katy (CMS)
Alex (LHCb, ALICE)



LHC experiment
Computing team

LHC detector



Rest of the
Grid

GridPP

Glasgow

RALPP

Manchester

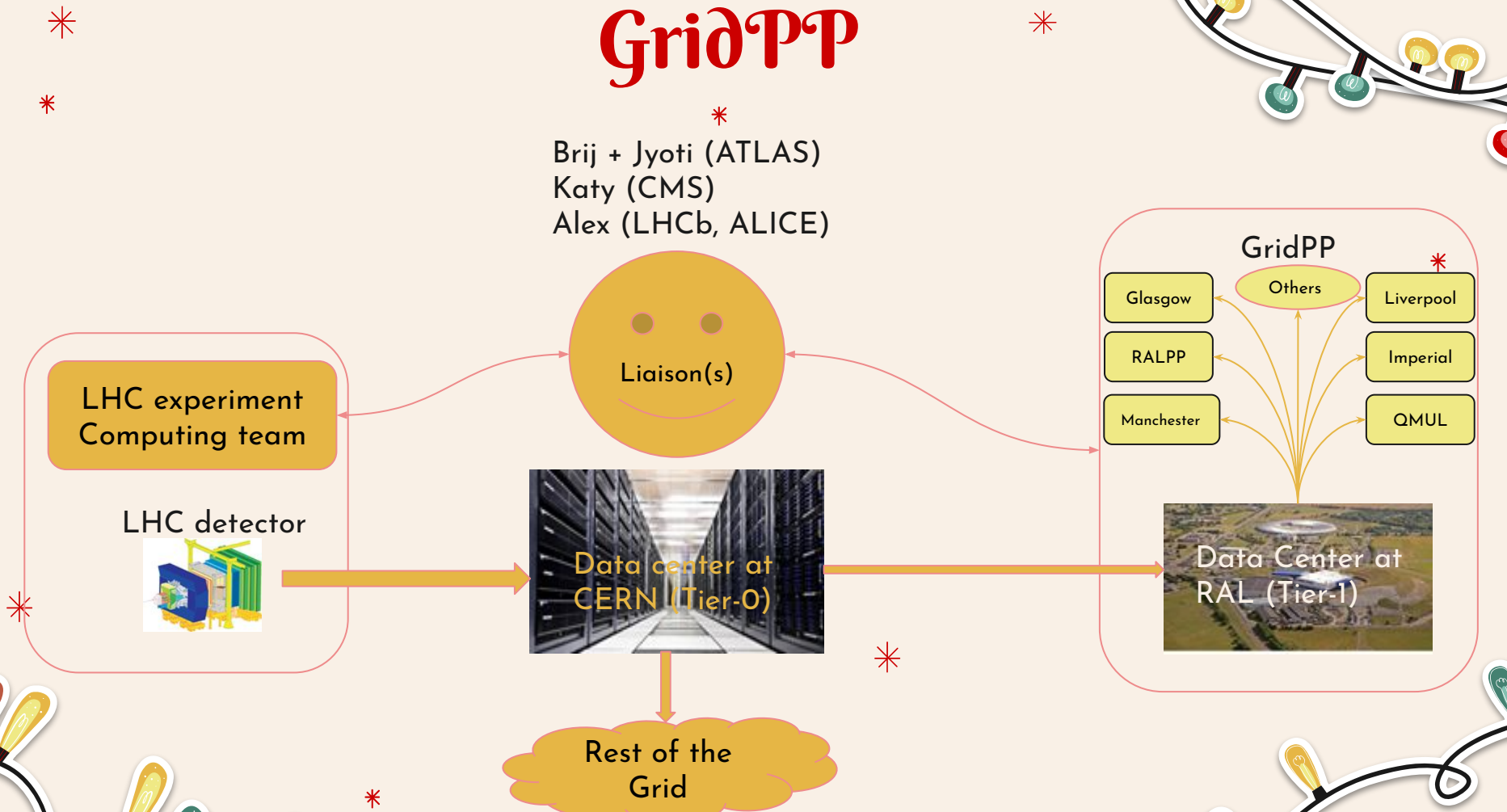
Others

Liverpool

Imperial

QMUL

Data Center at
RAL (Tier-1)





Preparations for Run 4



Optimise software

Improved algorithms on existing CPU



Employ accelerators

Where can GPUs and FPGAs be most usefully deployed?



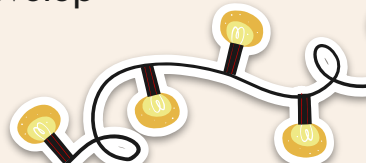
Optimise infrastructure

Improve how we use current infrastructure



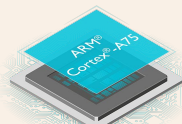
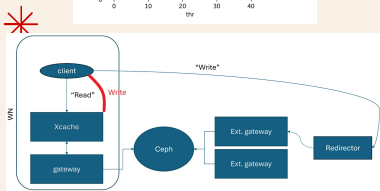
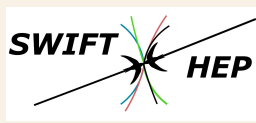
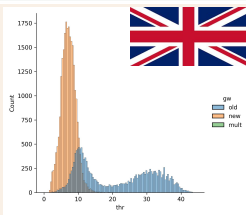
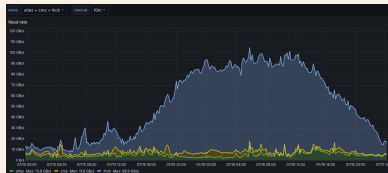
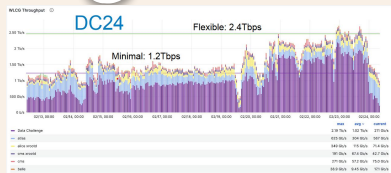
Automate

Reduce human-power in operations to give experts time to develop

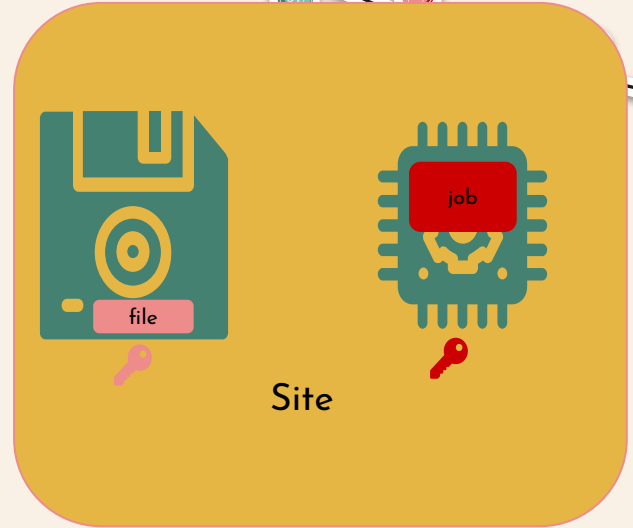
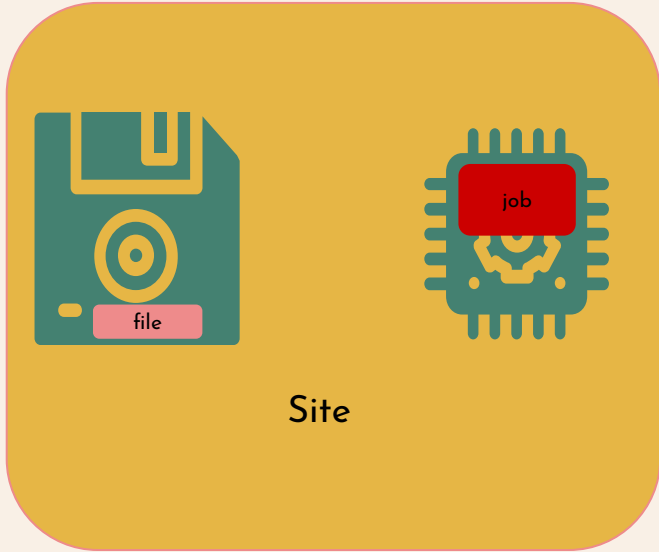


Optimising infrastructure*

This is how AI sees LHC run 4...*



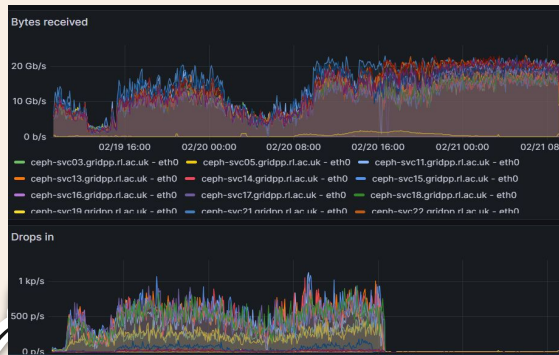
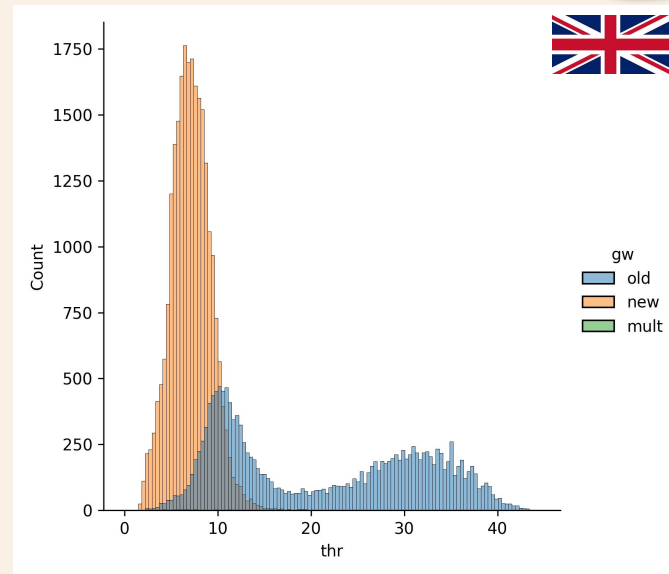
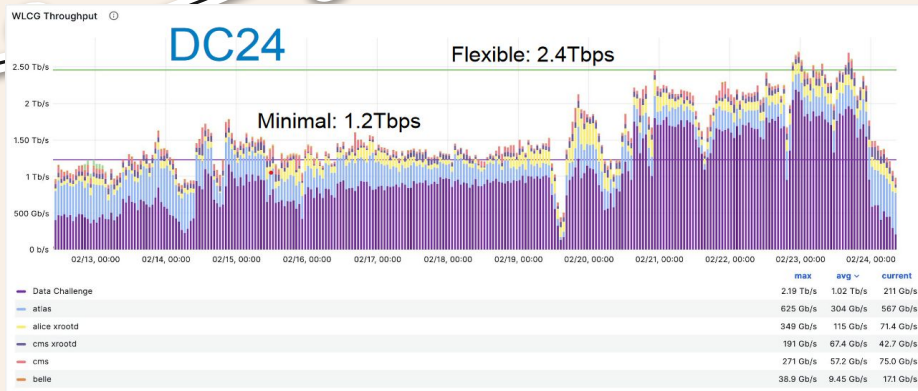
Authentication



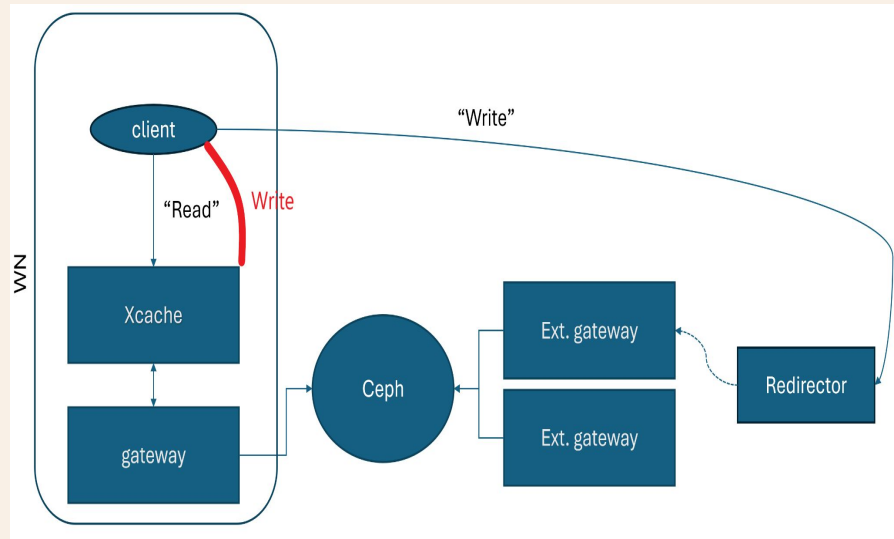
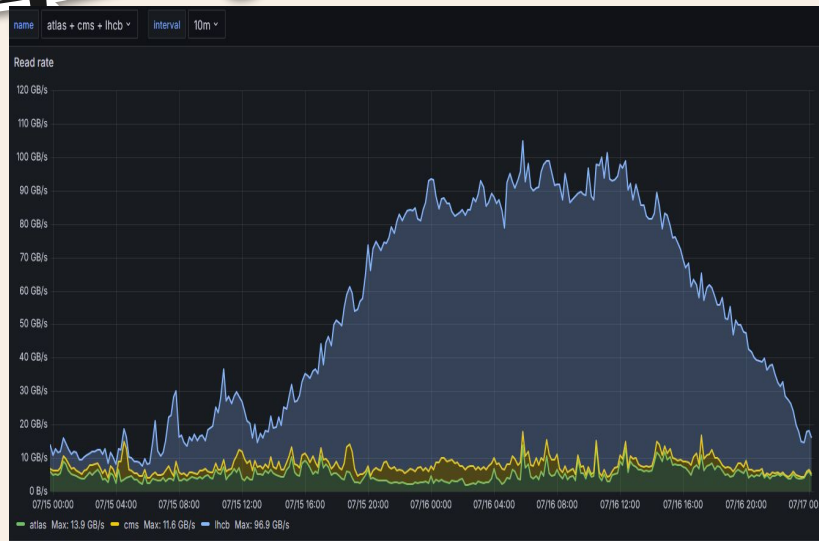
X509 certificate

Token

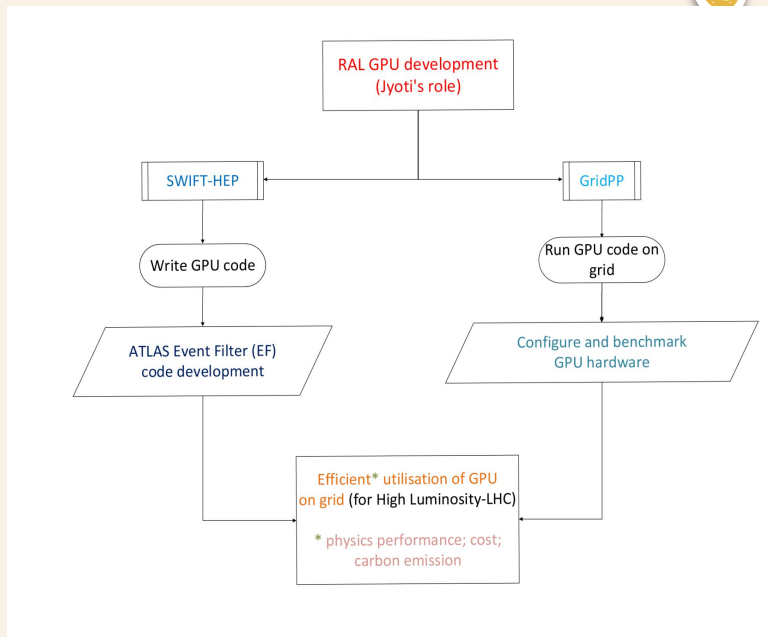
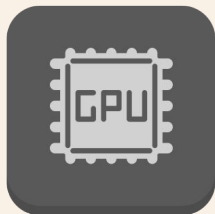
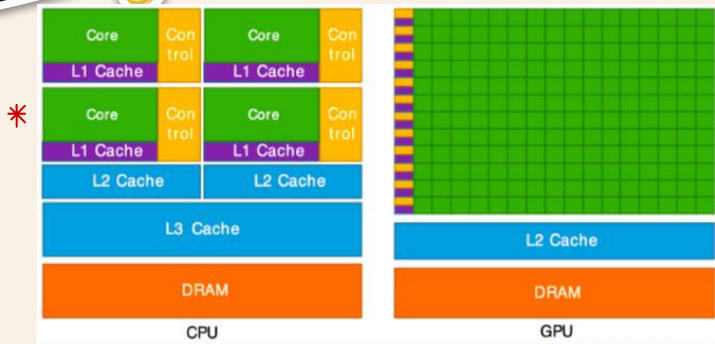
Data Challenges



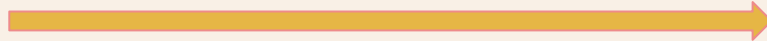
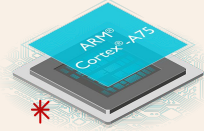
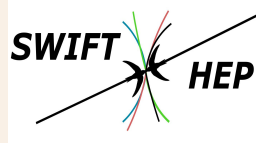
Tier-1 improvements*



SWIFT-JHEP/Other architectures

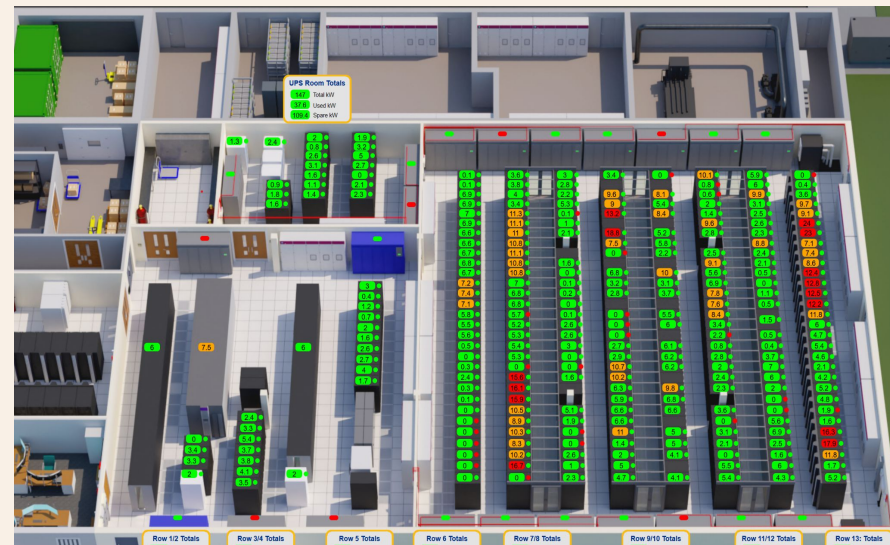
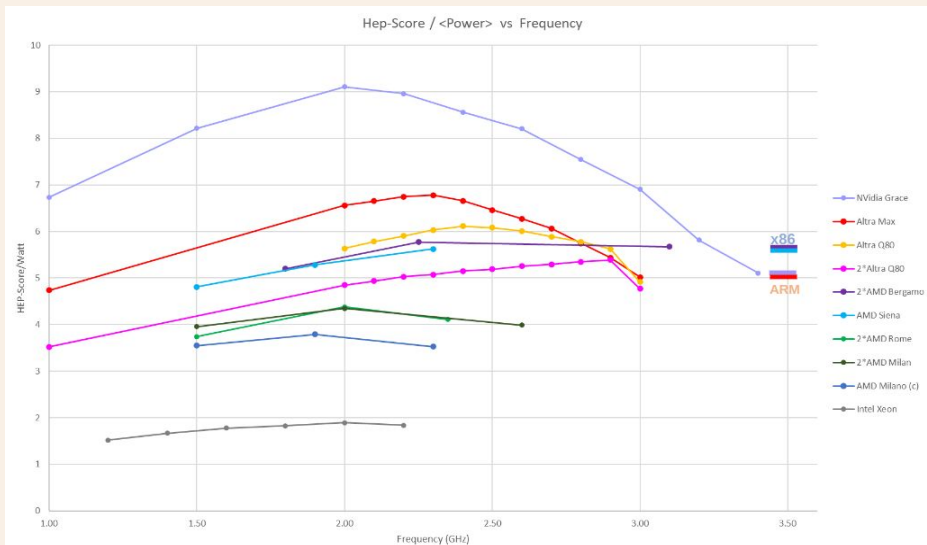


Sustainability



Sustainability (2)

Plot by Glasgow, see e.g., [link-1](#) and [link-2](#)



Challenges





Thanks!

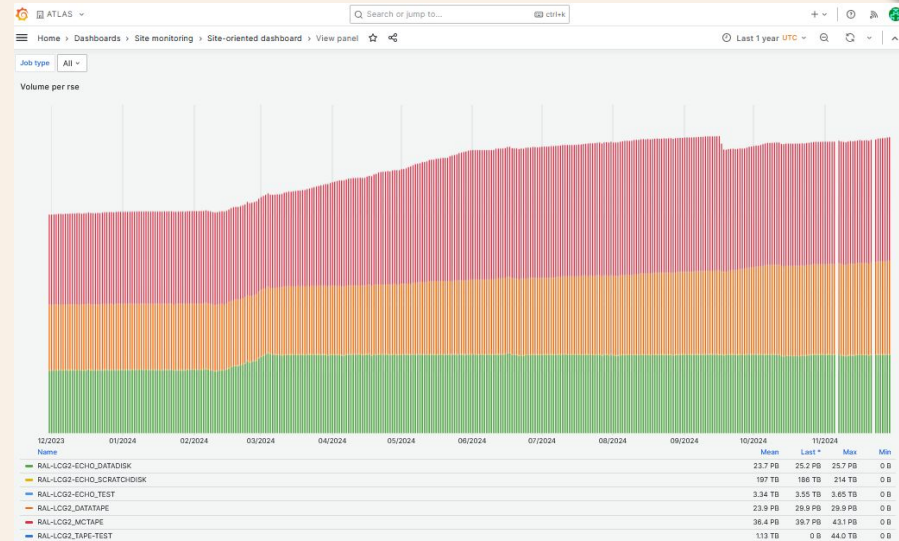
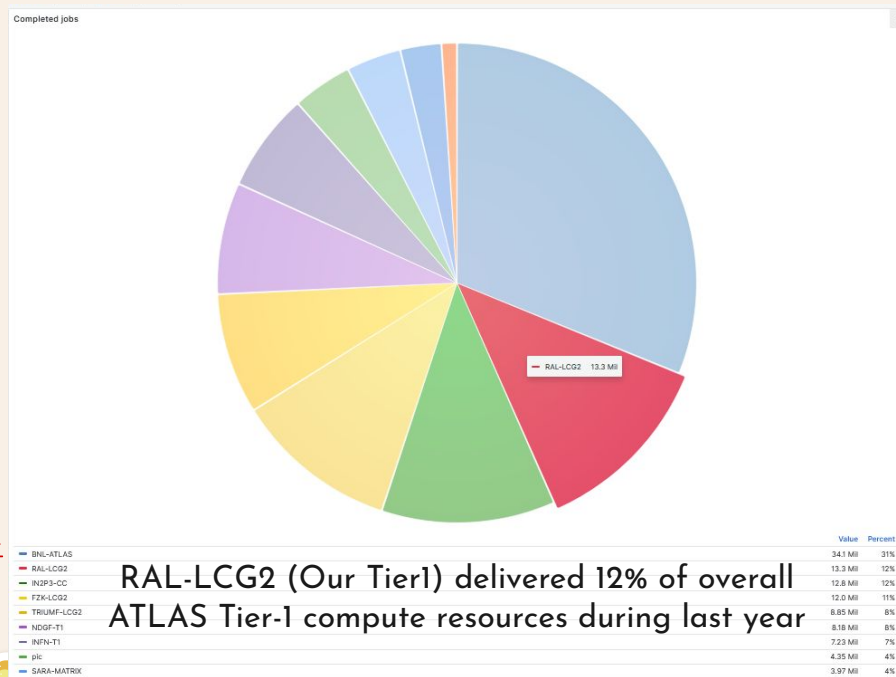
Do you have any questions?

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*ATLAS RAL Tier-1



Total of 95 PetaByte of data (69.6 PB Tape + 25.4 Disk)