CERN LHC Run3 computing infrastructure procurement
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Big Science Business Forum 2022

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Agenda

Overview of CERN's IT data centres

Needs for future tenders

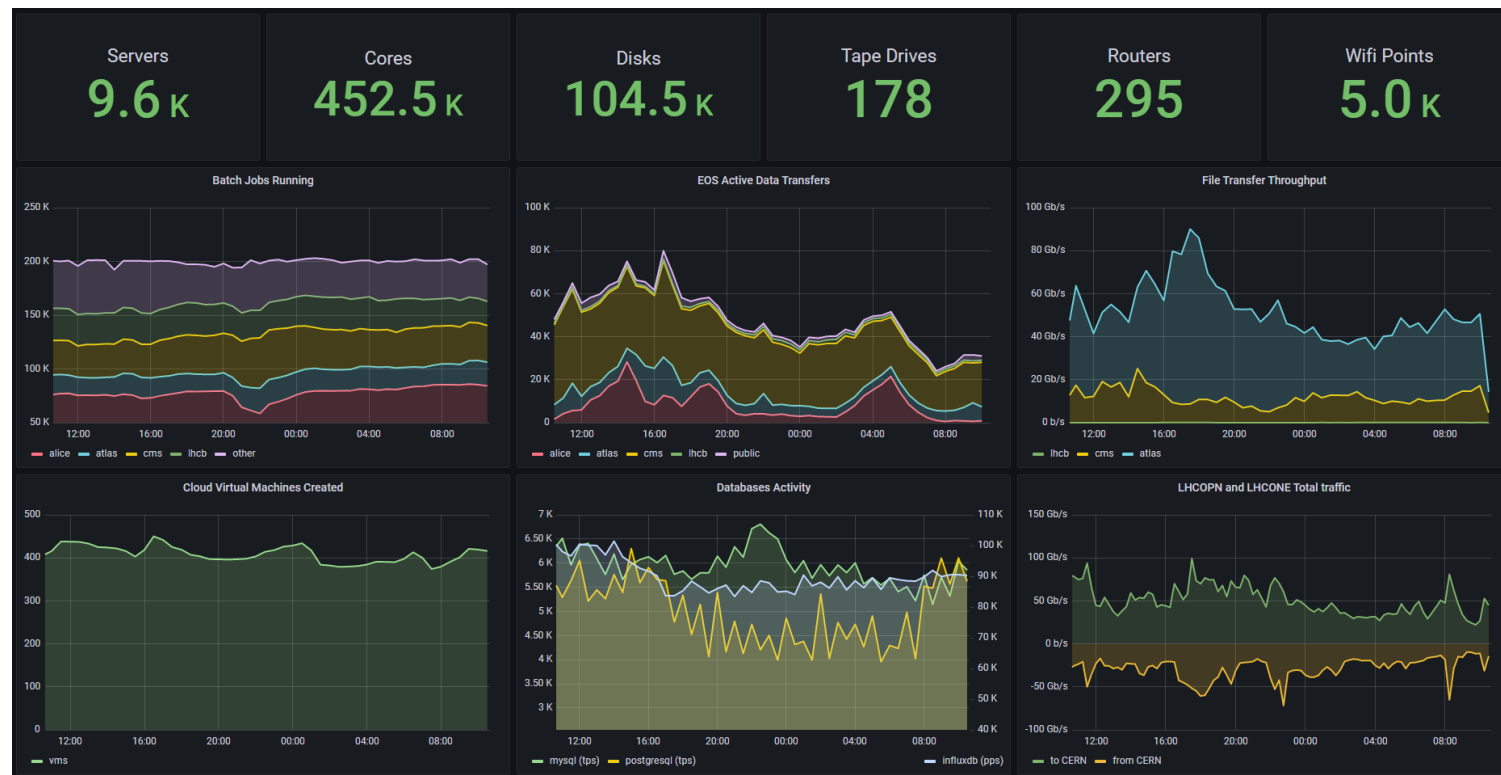Timelines and estimated volumes

How to participate?

Tendering cycle

Conclusion

Overview of CERN's IT data centres

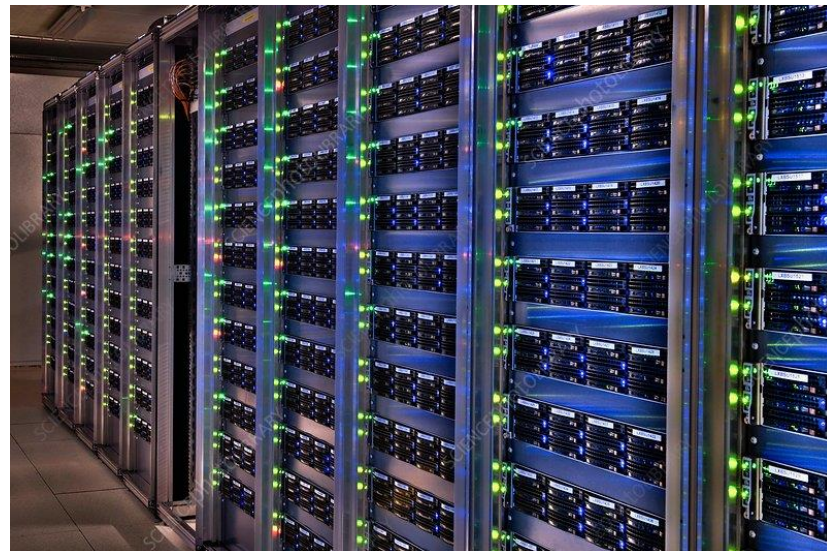# Needs for future tenders (1)

Server procurement achieved in HEPSPEC06

Aim:

    Maximize the HS06/CHF and HS06/Watt ratios

    Minimize the overall cost and power consumption

    Optimize infrastructure utilization

A typical server solution in 2022:

    64 processor cores

    256GB of memory

    4TB of raw flash storage

    10GbE networking and dedicated management

Needs for future tenders (2)

Storage procurement achieved in Petabytes

Aim:

Maximize the PB/CHF and PB/Watt ratios

Minimize the overall cost and power consumption

Optimize infrastructure utilization

A typical storage solution in 2022:

24 enterprise grade hard drives

18TB of raw capacity per hard drive

SAS connection to the server front-end

No hardware RAID

Timelines and estimated volumes*

Last updated: January 2022
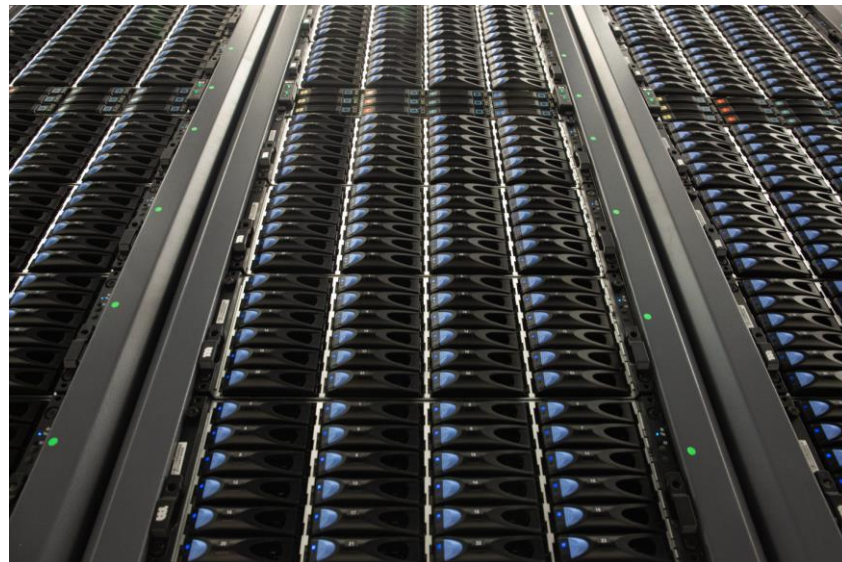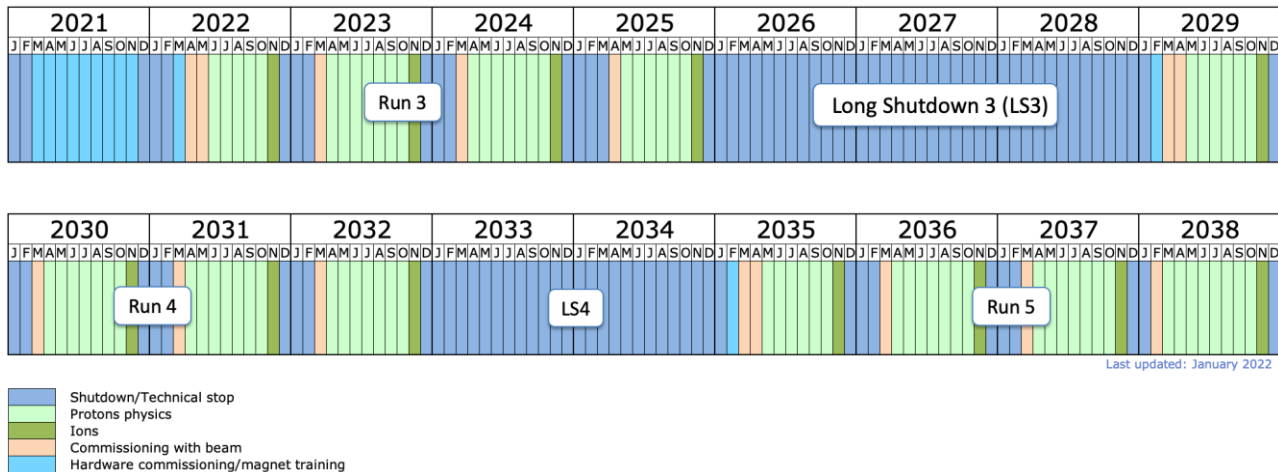
Per year, for servers and storage (combined):

During Run 3 → Between 5MCHF and 10MCHF
Early LS3 (2026, 2027) → Between 750kCHF and 5MCHF per year
Late LS3 (2028) → Above 10MCHF

* Depending on various factors such as, but not limited to, available budget, electricity costs, exchange rates, etc.

How to participate?

As a firm*, be established in a member state

Be registered in the <u>supplier database</u>

Qualify to our market surveys
> Country of origin, size, capacity, etc.
> References and certifications

Bid to our call for tenders
> Cheapest compliant bid for supply

Hopefully be awarded a contract
> Single purchase in one shot
> Several purchases over x months

Well Balanced	Poorly Balanced	Very Poorly Balanced
Austria	Belgium	Bulgaria
Czech Republic	Croatia*	Denmark
France	Cyprus*	Estonia*
Hungary	Finland	India*
Italy	Germany	Israel
Slovak Republic	Greece	Latvia*
Switzerland	Lithuania*	Norway
	Netherlands	Serbia
	Pakistan*	United Kingdom
	Poland	
	Portugal	
	Romania	
	Slovenia*	
	Spain	
	Sweden	
	Turkey*	
	Ukraine*	

* System integrator

Tendring cycle
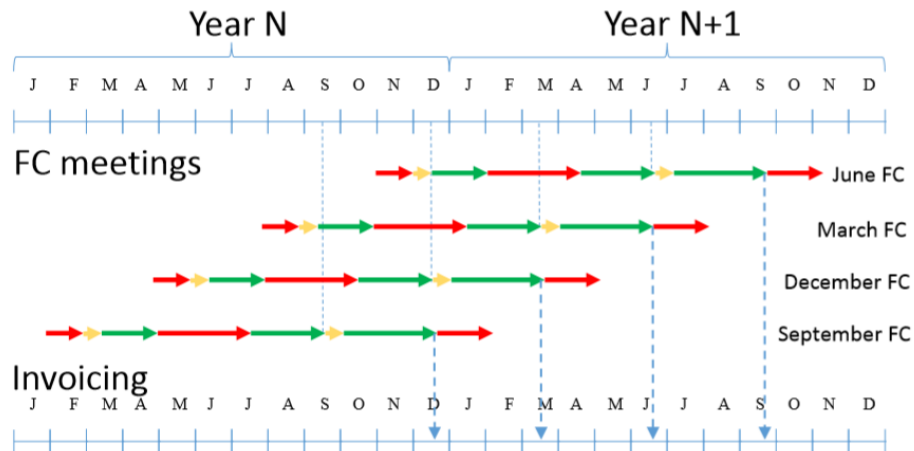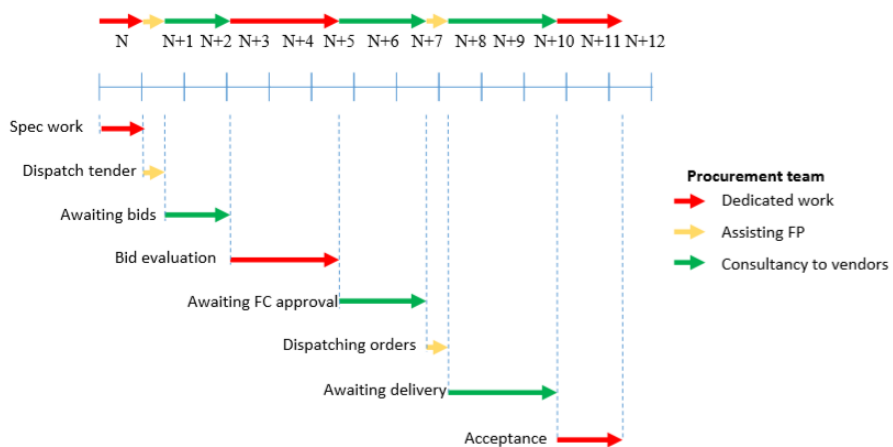
* System integrator

Conclusion

CERN requires significant compute resources to keep up with the LHC schedule

Firms' expertise needed to maximize performance/cost ratio while minimizing power consumption

In-line with procurement rules, Firms are encouraged to participate in calls for tender

Next opportunities for servers and storage procurement will take place in 2023

We are looking forward to working with you!

Thank you