

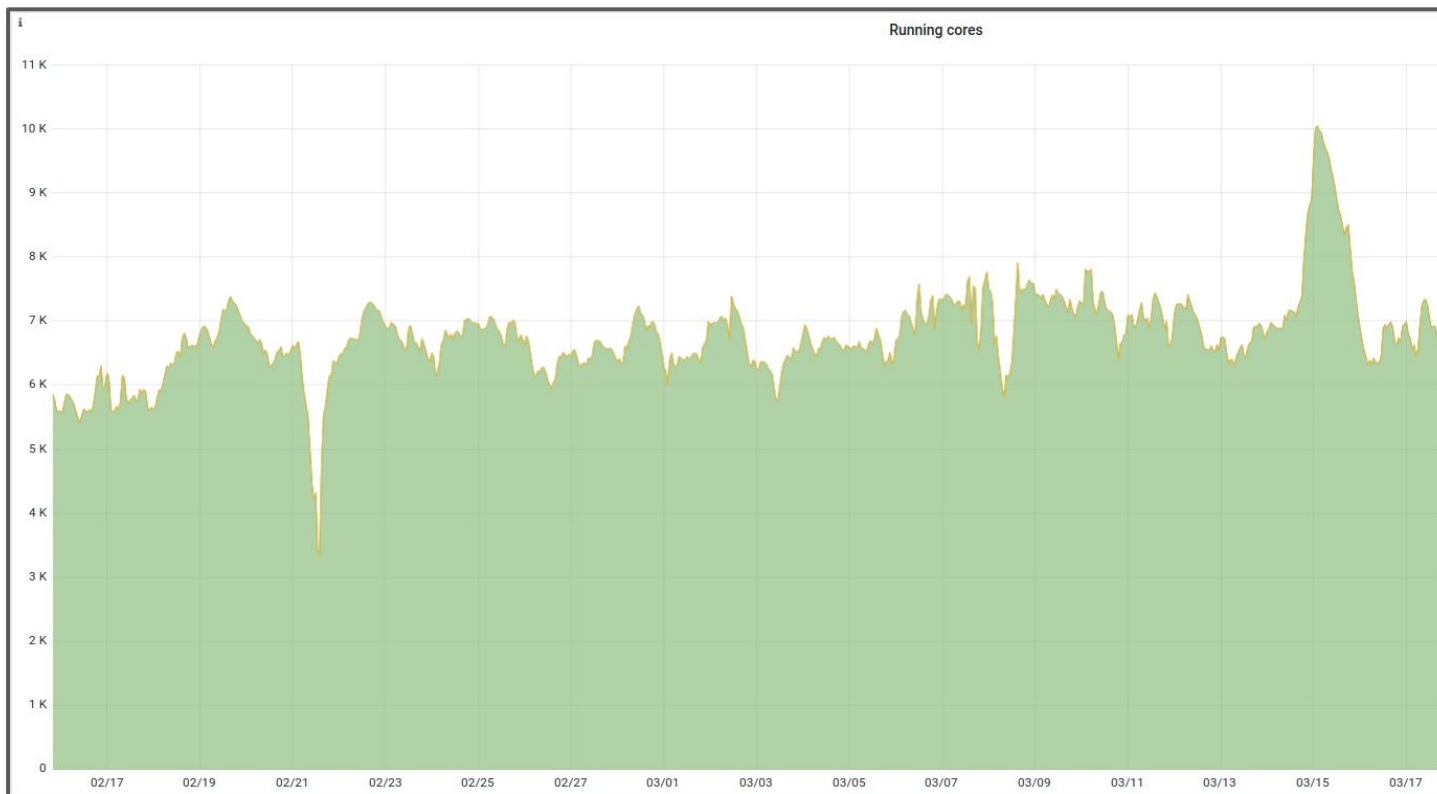
CMS - CdG T1

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INFN-PG

18.03.2022



Utilizzo Risorse Tier1

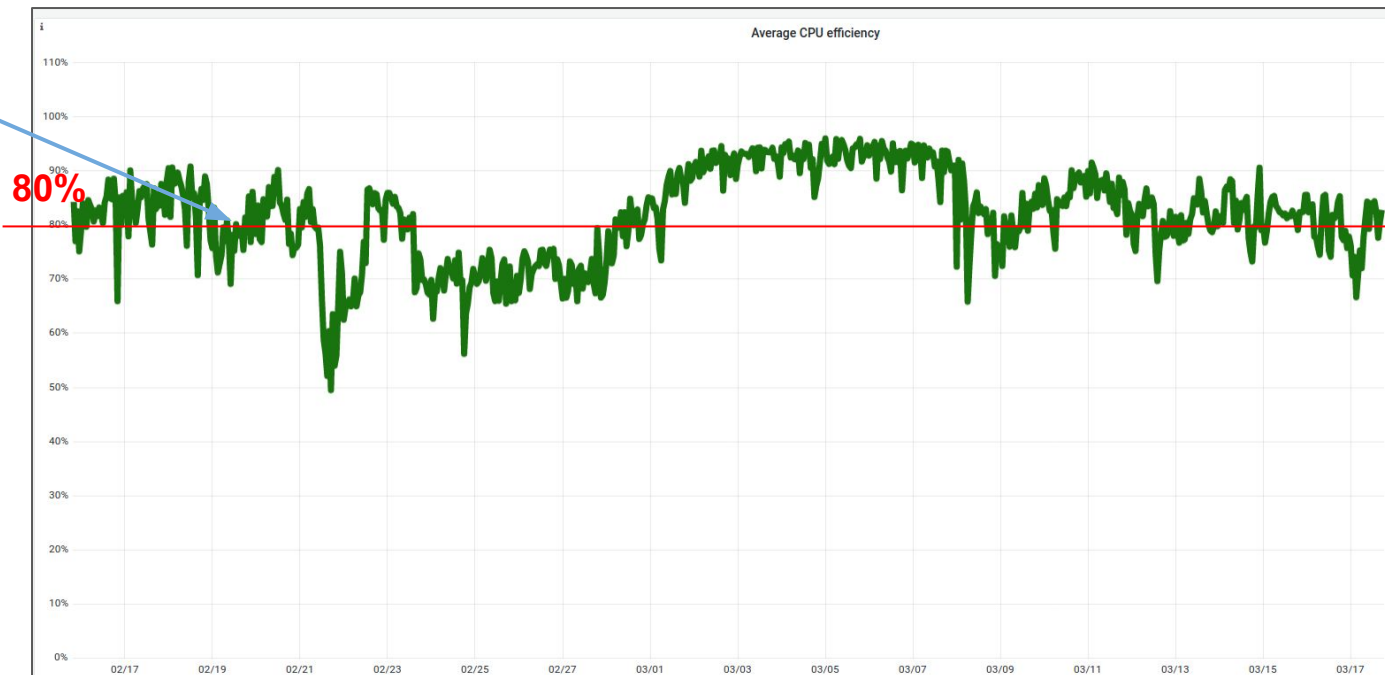


Il dubbio che avevo sollevato il mese scorso è stato risolto. Non c'è nessun mismatch e avevo sbagliato io. **Grazie Stefano.D.P. per il supporto!**



Efficienza di CPU @CNAF

Efficienza
@CNAF





Monitoring dello Storage @ CMS

ON DISK



Rucio datasets on Disk which were never read

Rucio datasets on Disk which haven't been read since 12 months

Rucio datasets on Disk which haven't been read since 6 months

Rucio datasets on Disk which haven't been read since 3 months

ON TAPE



Rucio datasets on Tape which were never read

Rucio datasets on Tape which haven't been read since 12 months

Rucio datasets on Tape which haven't been read since 6 months

Rucio datasets on Tape which haven't been read since 3 months



CMS Rucio quotas and usage monitoring

Last Update: 2022-03-17T20:07:34Z

How to interpret this table ↓

Copy

Excel

PDF

Column visibility

Copy search link to clipboard

--- Search RSE name ---

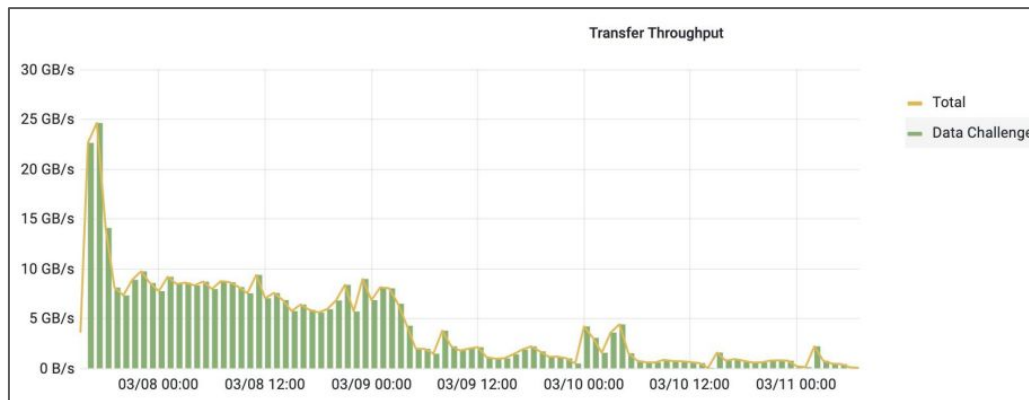
RSE	Used space	Total space	Fraction used (%)	Free space	
T1_DE_KIT_Disk		6041.3	6750.0	89.5	708.7
T1_ES_PIC_Disk		2400.5	3100.0	77.4	699.5
T1_FR_CCIN2P3_Disk		6022.9	8000.0	75.3	1977.1
T1_IT_CNAF_Disk		7860.7	9400.0	83.6	1539.3
T1_RU_JINR_Disk		9538.8	10600.0	90.0	1061.2
T1_UK_RAL_Disk		4661.6	5250.0	88.8	588.4
T1_US_FNAL_Disk		26871.0	28750.0	93.5	1879.0
T2_AT_Vienna		443.0	510.0	86.9	67.0
T2_BE_IHHE		3532.2	3925.0	90.0	392.8
T2_BE_UCL		1587.6	1757.0	90.4	169.4
T2_BR_SPRACE		1810.0	2000.0	90.5	190.0

Rucio Quotas

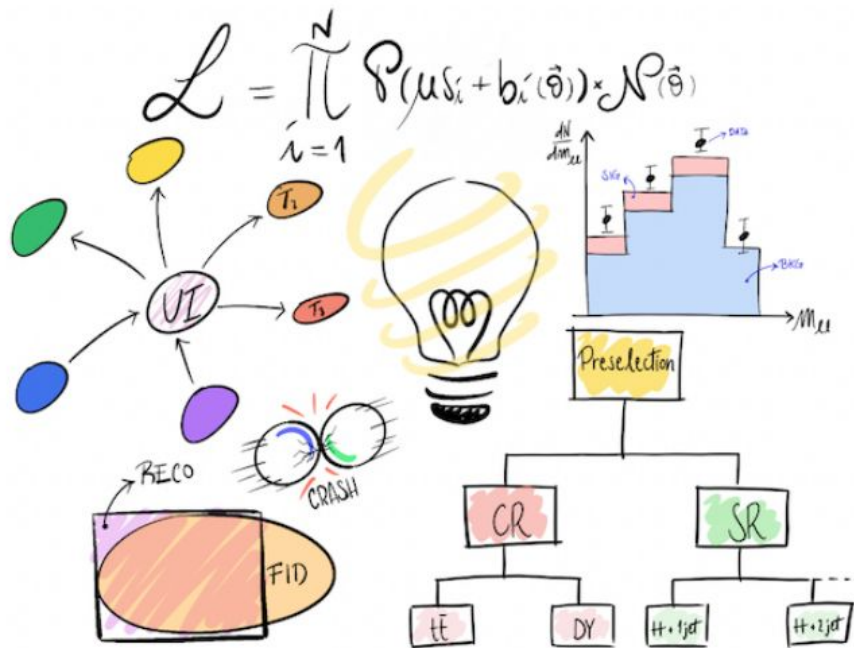
Data Transfer Challenge

Le ultime due settimane hanno visto sfide di trasferimento dei dati al P5 e al Tier-0

- La scorsa settimana: trasferimenti da T1_Tape a T1_Disk (vedi grafico sotto)
- Questa settimana pianificata in contemporanea con ATLAS e LHCb
- 1 giorno e mezzo di stress test da P5 DAQ a nastro Tier-0
- Riproduce utilizzando i dati già su T2_CH_CERN esportati su nastro Tier-0 e Tier-1 per tutta la settimana
- Obiettivo: raggiungere obiettivi specifici per Run 3. **Test ancora in corso!**



La settimana scorsa



analisi dati @CMS Italia

RESCHEDULED
NEW DATE ANNOUNCED

~~24-25 Febbraio 2022~~

10-11 Marzo 2022

Firenze



workshop analisi dati @CMS Italia



Cosa abbiamo fatto

In concrete

We've prepared a "national-level" system that grants access to computing resources and enables a hybrid model: **batch** and **interactive patterns**

- Not a one size fits all solution

Interactive - "Read this as: I can get a Jupyter big as a Tier2"

- Transparently parallelize over a huge amount of cores allows implementing the interactivity
 - I'm writing Jupyter, you can read it as distributed python
- And more in general mitigate/avoid user waiting idle for grid jobs

Batch like processing - "Read this as: I have a place where I can submit (i.e. condor_submit) my analysis jobs"

- Yes, "yet another batch"... completely dedicated to the analysts



Setup e risorse



Current Status

A testbed system is ready. [See here](#)

A cluster hosted at CNAF (INFN-Cloud)

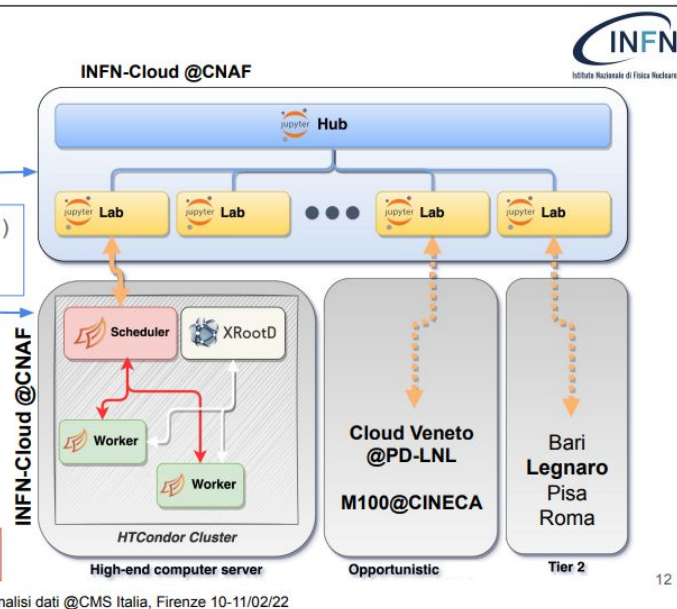
- Central services
- Fraction of local resources

Tier2-Legnaro is providing O(100) cores a seed that can be extended

Already Implementing also a **opportunistic scenario**

- CloudVeneto (@PD-LNL) providing O(100) cores
- early tests on M100@CINECA

Almost all italian Tier2 have been functionally tested



Cosa...

Next steps


Faremo un post mortem analizzando le informazioni condivise dai colleghi fisici

- Obiettivo identificare use case già pronti
- Avviare una fase di test e di avvio di sperimentazione

Il follow-up sarà organizzato con CMS-Italia e discusso in una delle riunioni settimanali

The Plan: a path forward

The mantra should be “Starting little and expand step by step, co-design and iterate”



1. **Starting little: Use the current proof of concept**
 - Explore new ideas...
 - Identify problems, bottlenecks
 - Define user requirements
2. **Co-design: facilitate discussions between users and computing people**
 - Provide feedback and discuss how to solve problems
 - New features requests and needs
3. **Extend the proof of concept by meaning**
 - Identify specific development
 - Implement technical solutions and deploy new features
 - Add computing resources, eventually configure the underlying setup to adapt to ...

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Workshop analisi dati @CMS Italia, Firenze 10-11/02/22
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