

Rapporto delle attività del Tier1 CNAF Giugno 2018

Run Coordinator: Marcelo Soares

6 luglio 2018

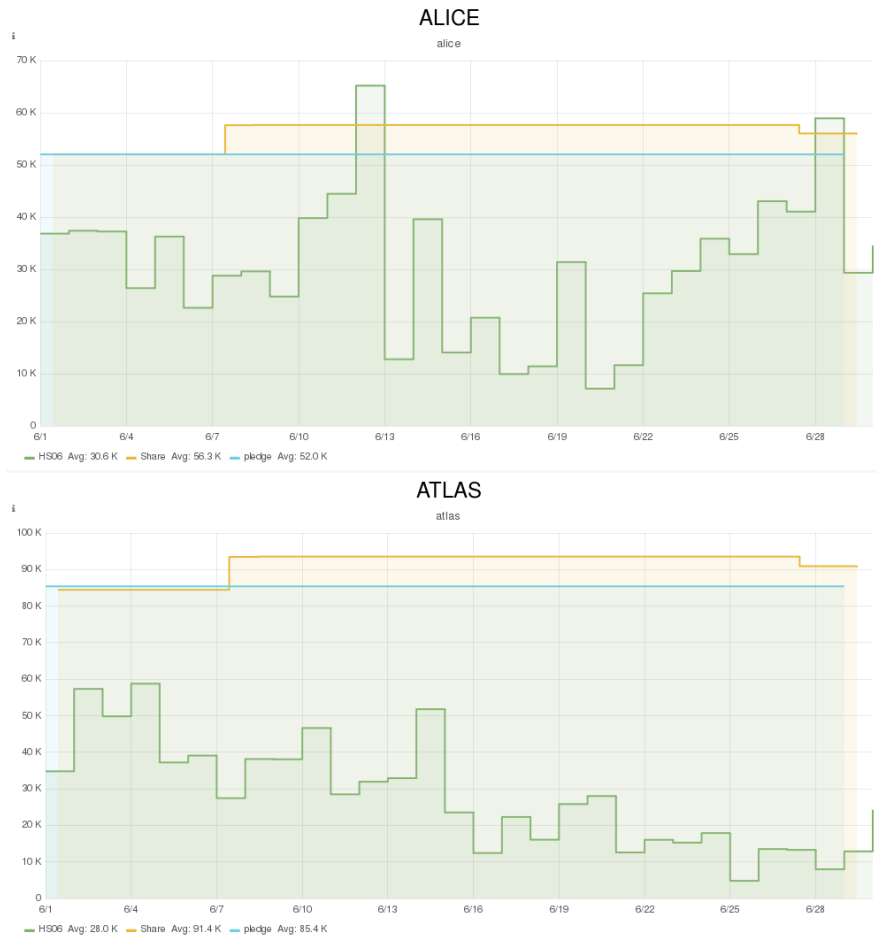
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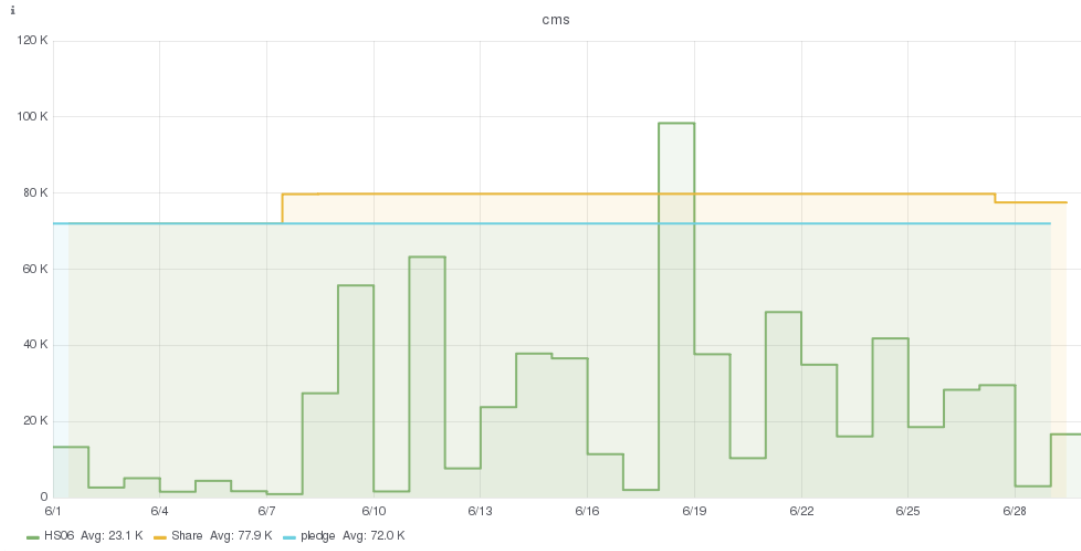
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1 Utilizzo delle risorse - Farming

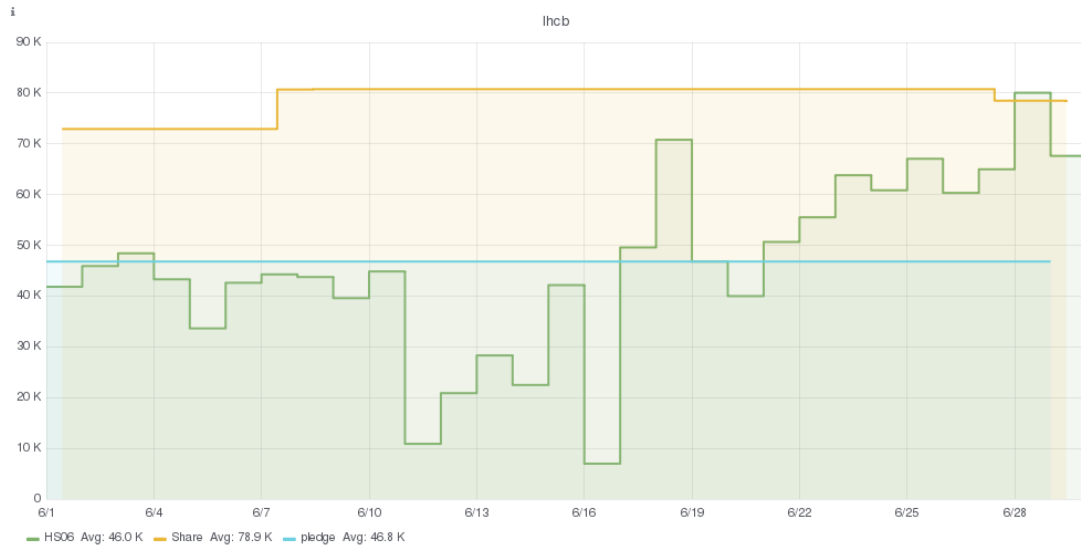
1.1 LHC usage



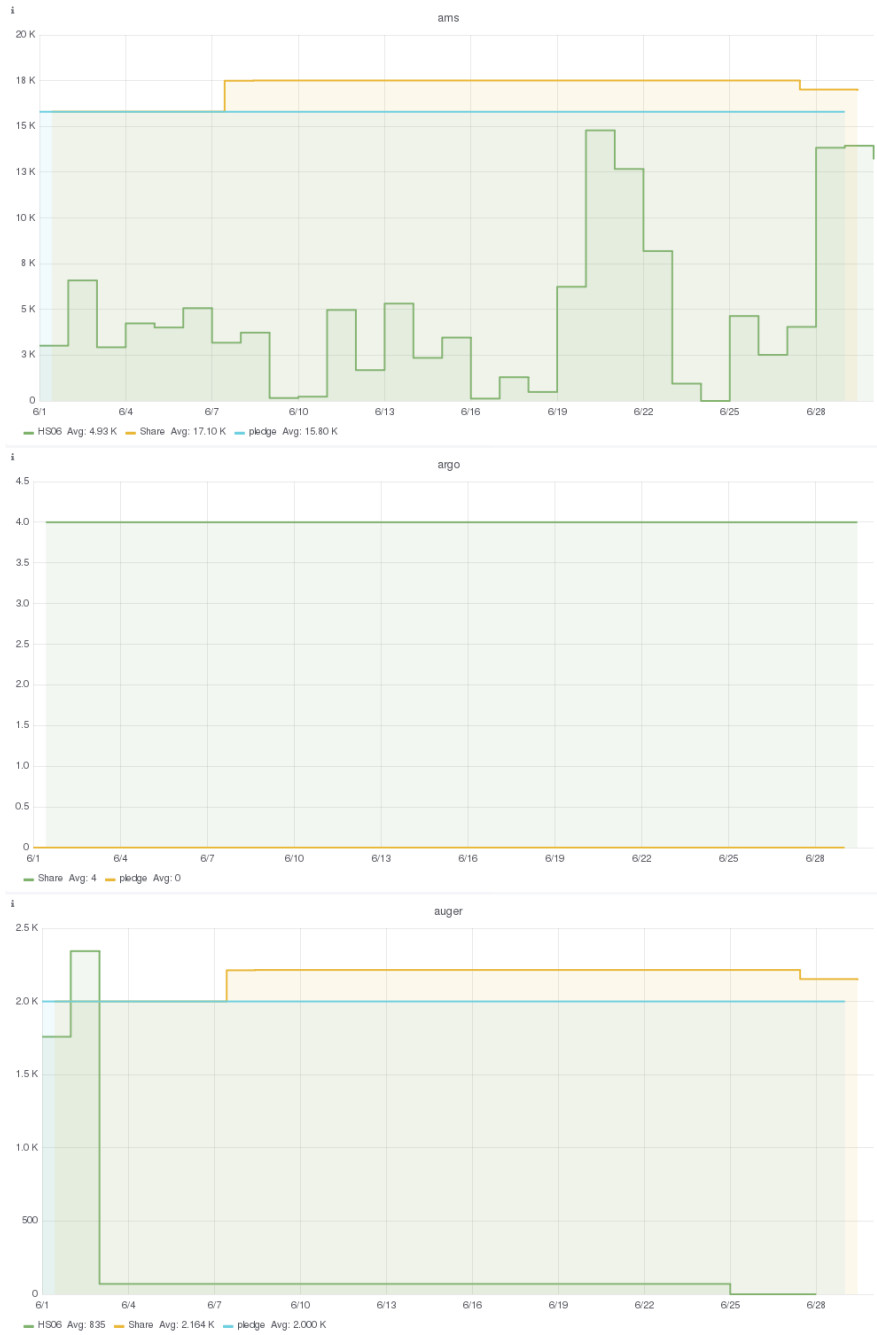
CMS

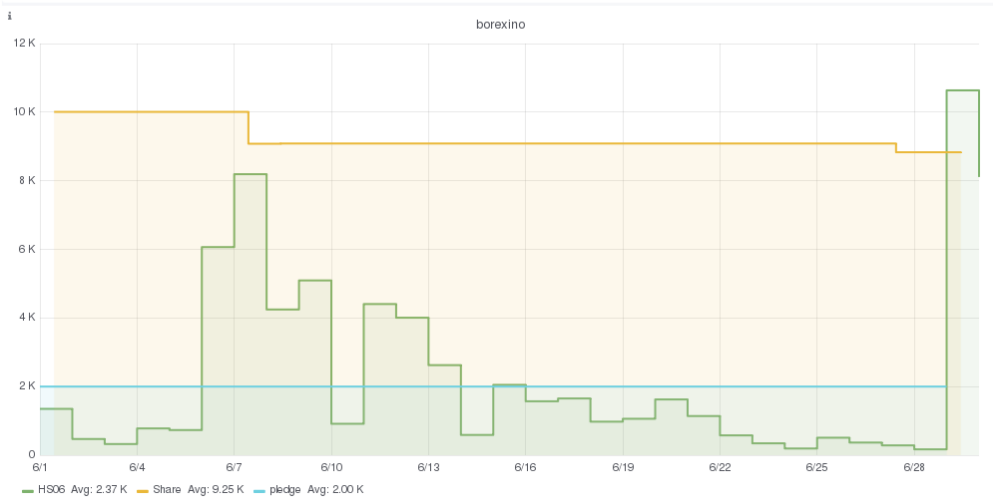
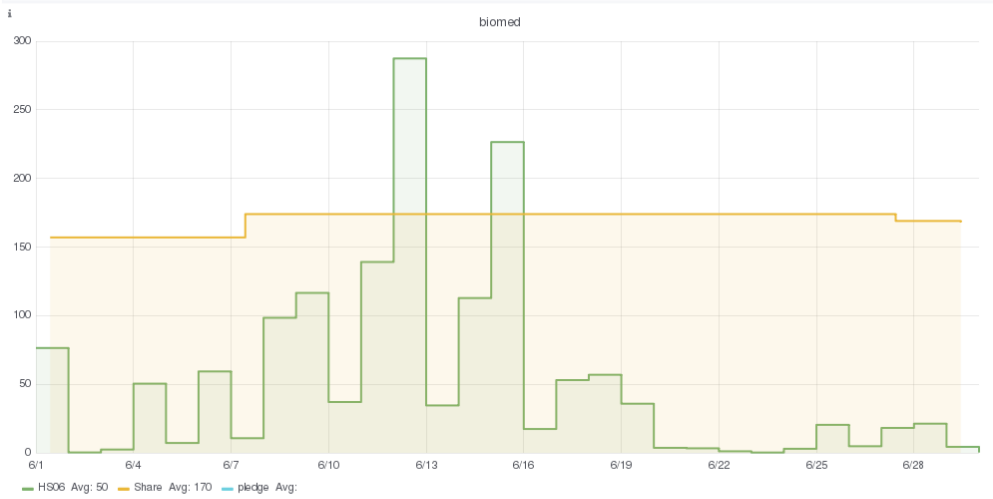
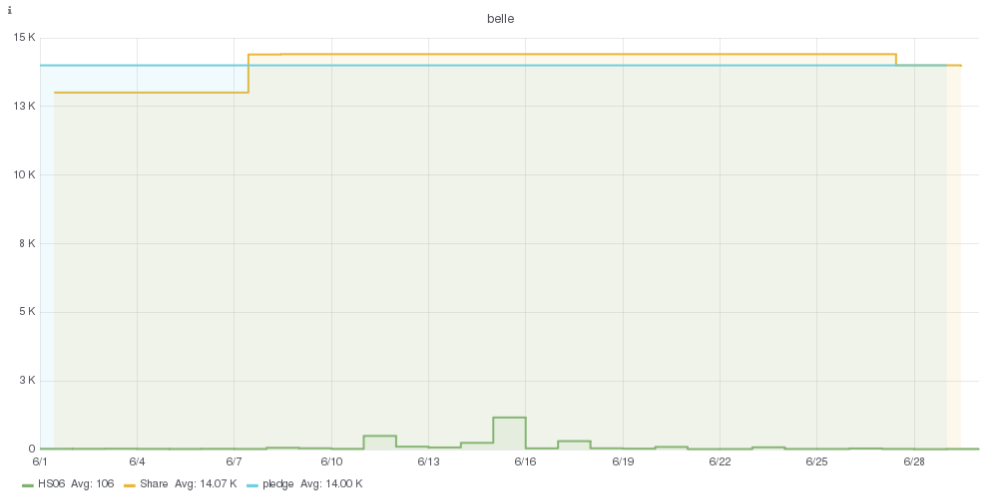


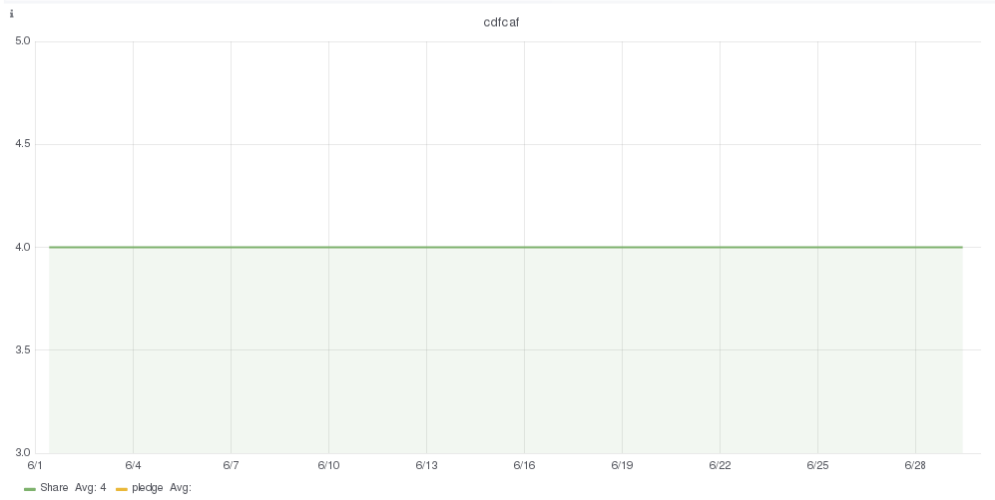
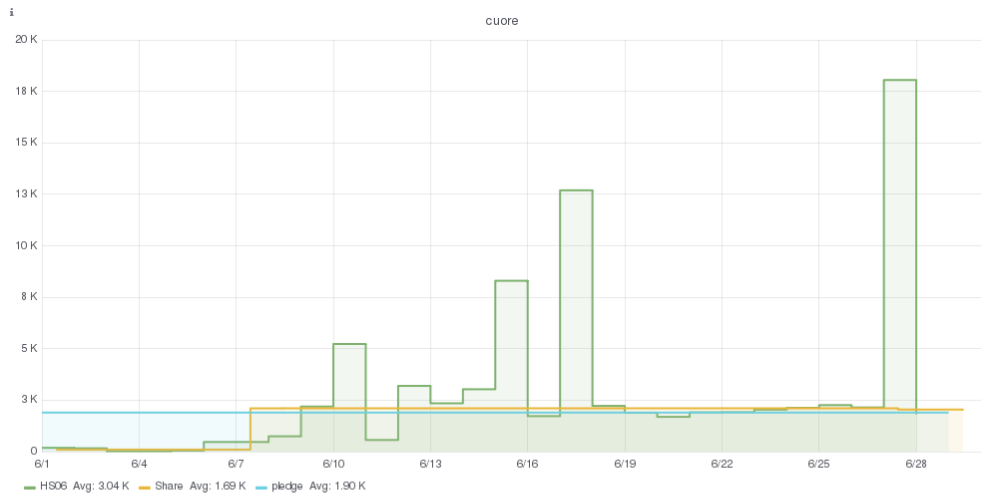
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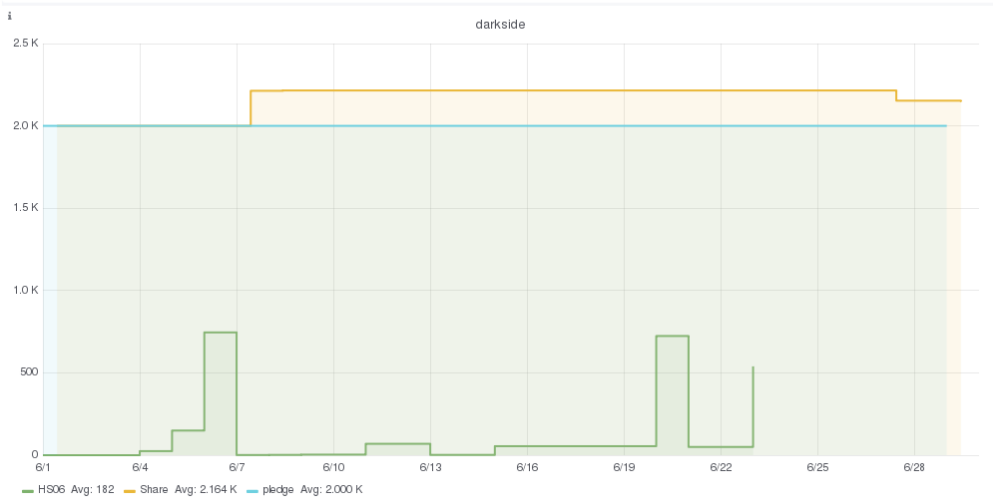
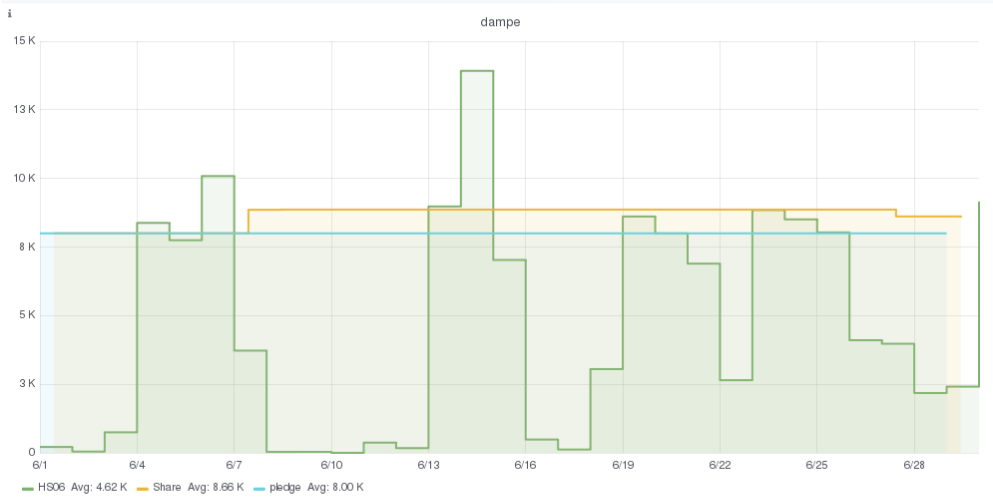
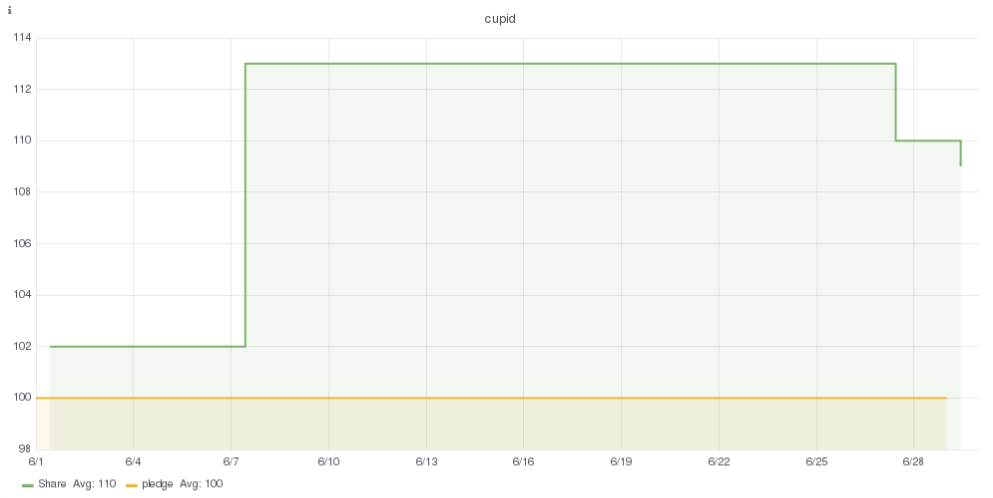


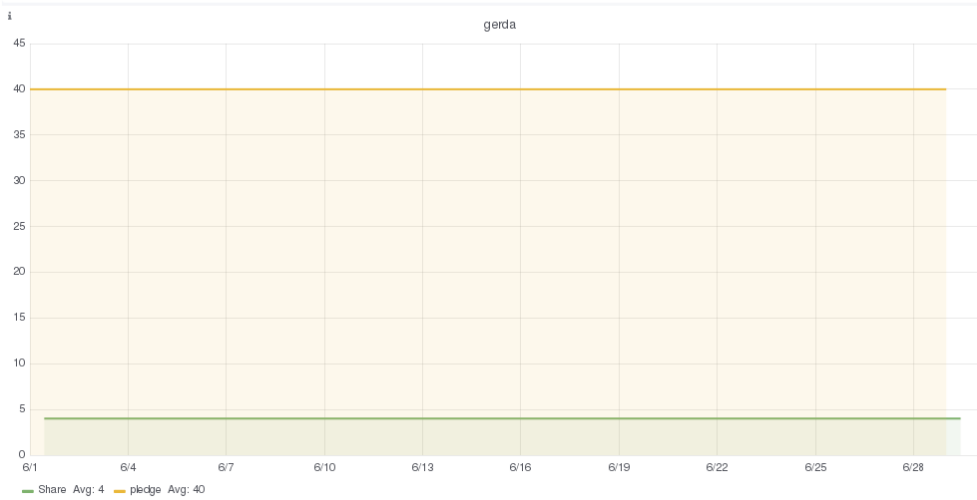
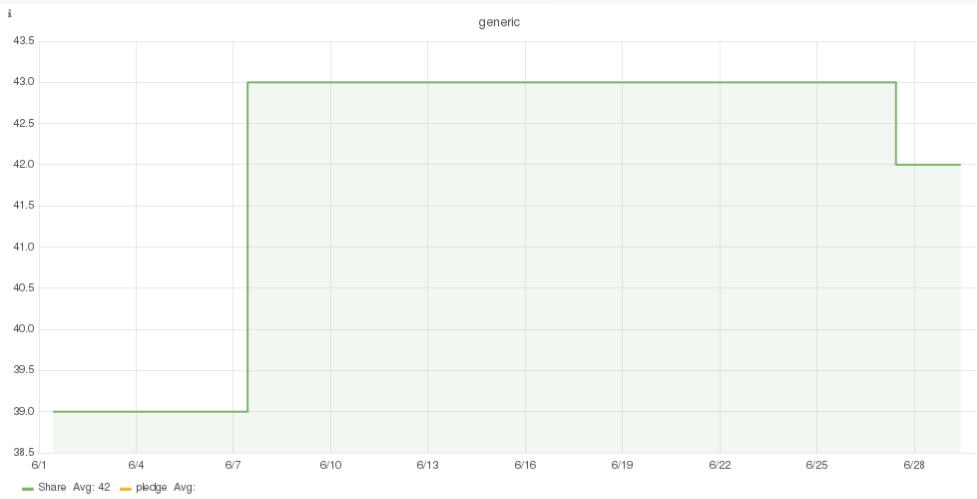
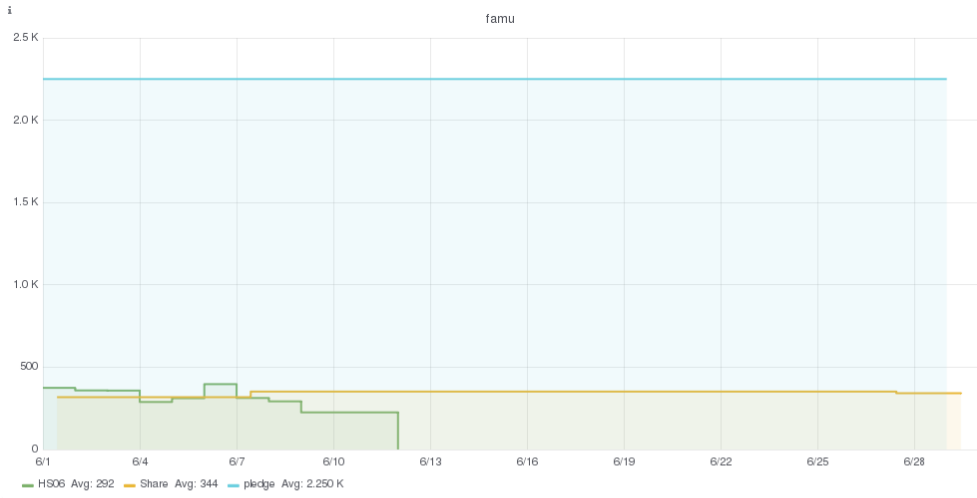
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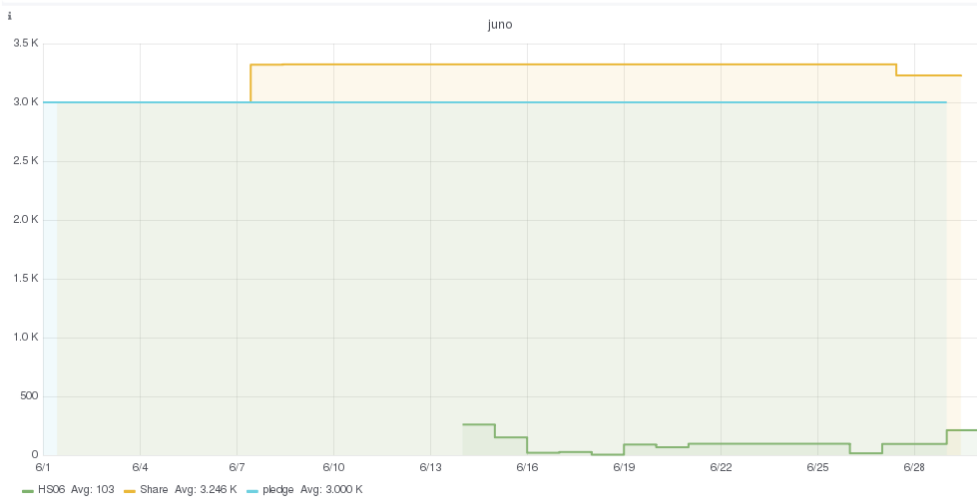
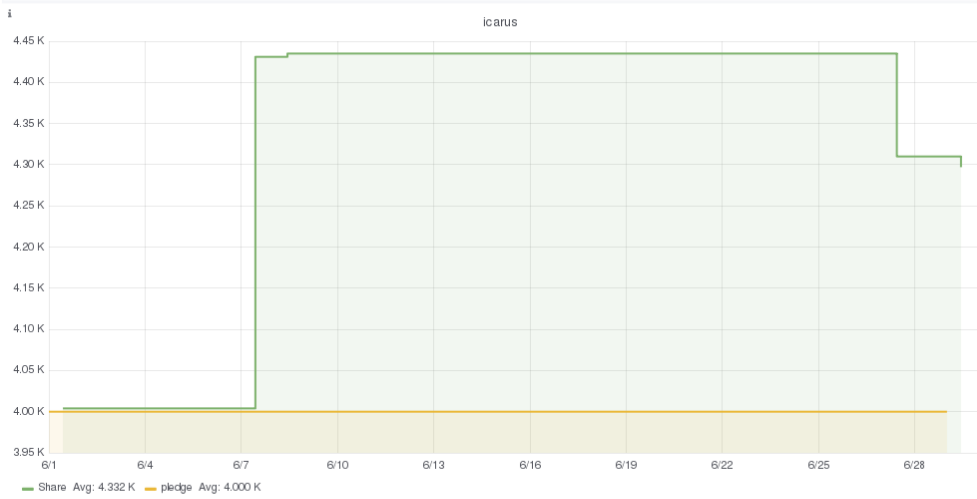
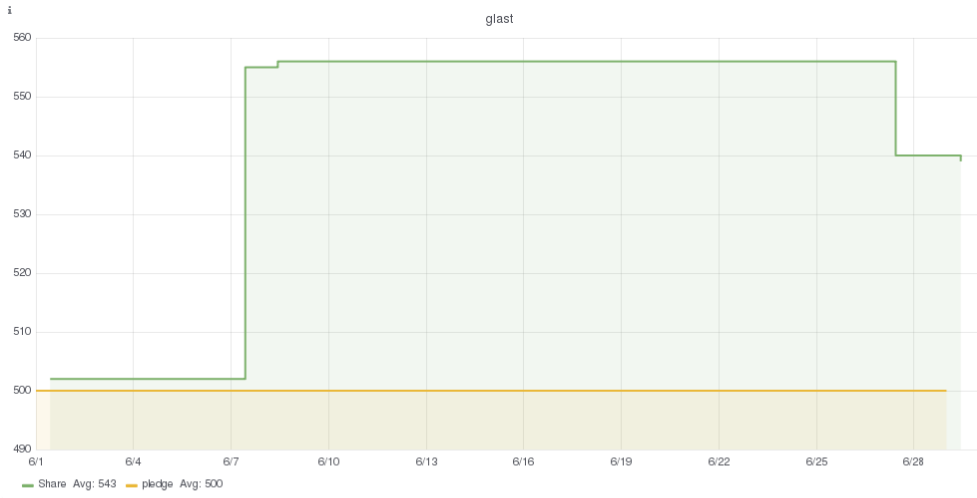


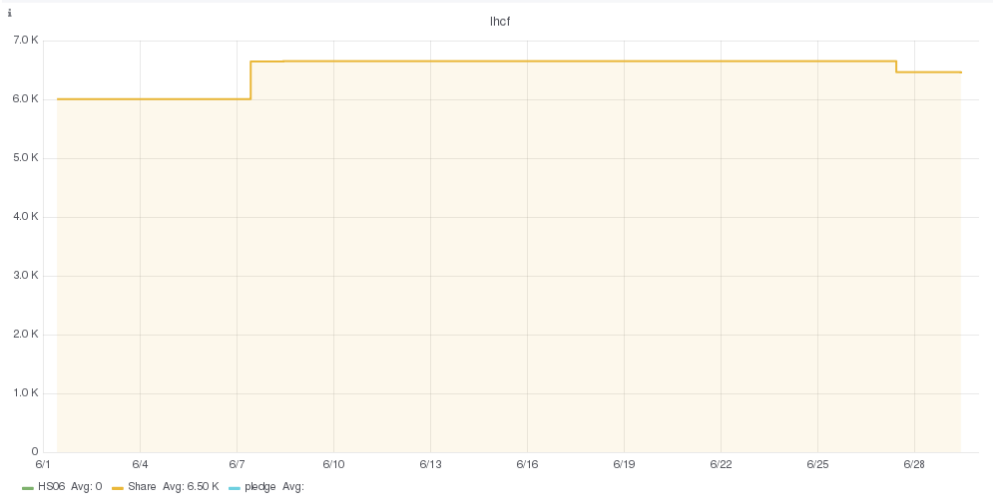
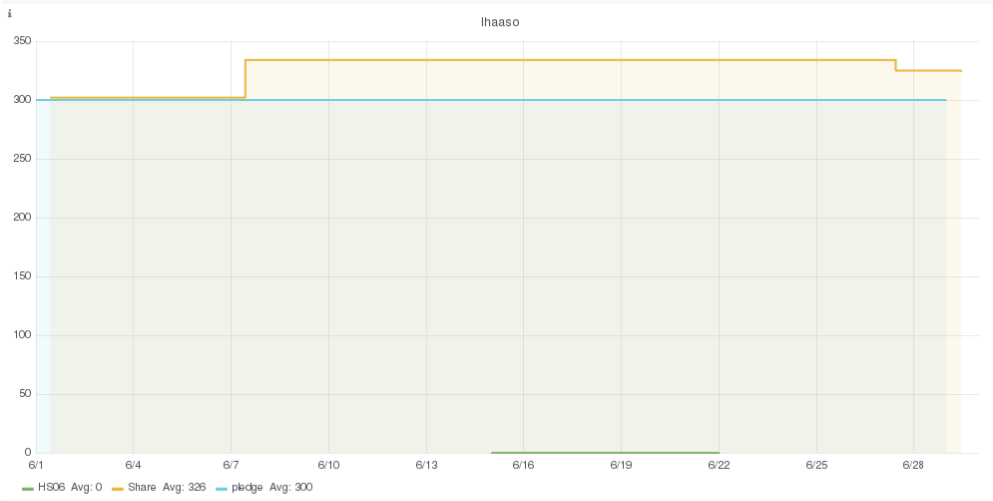
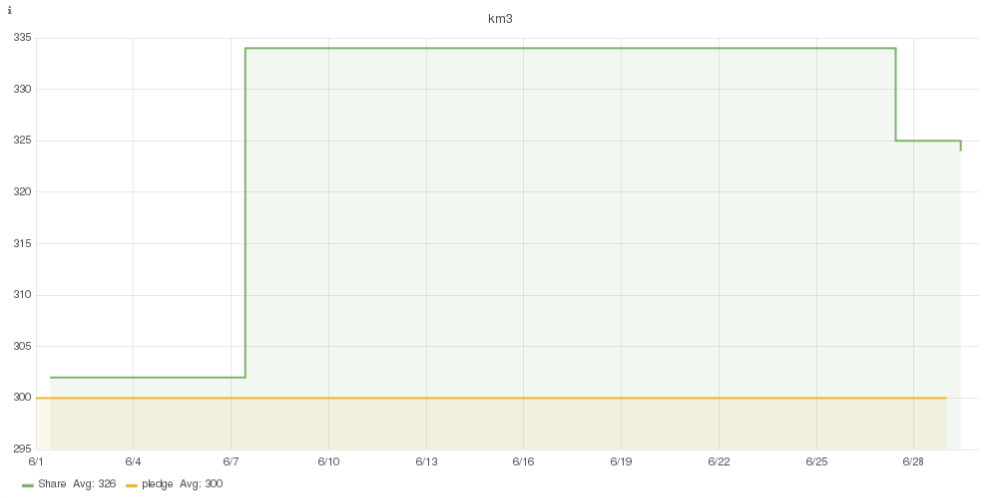


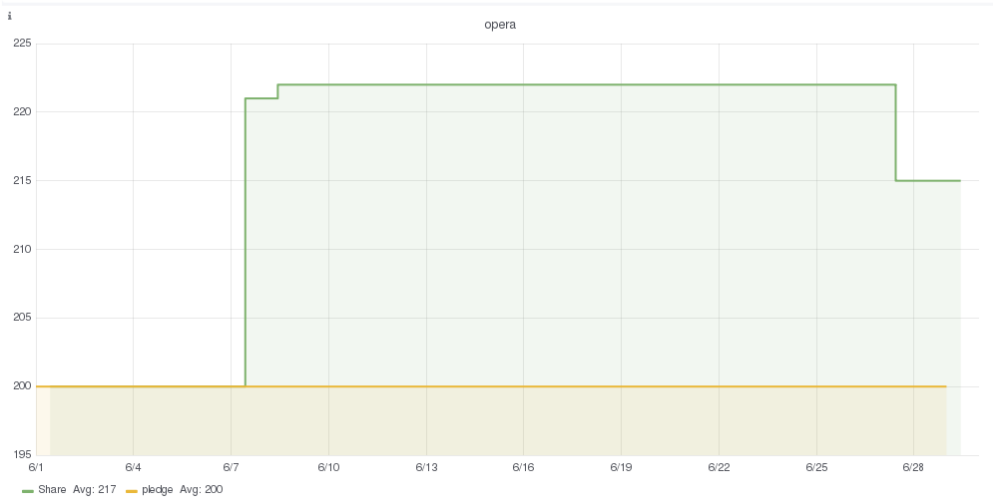
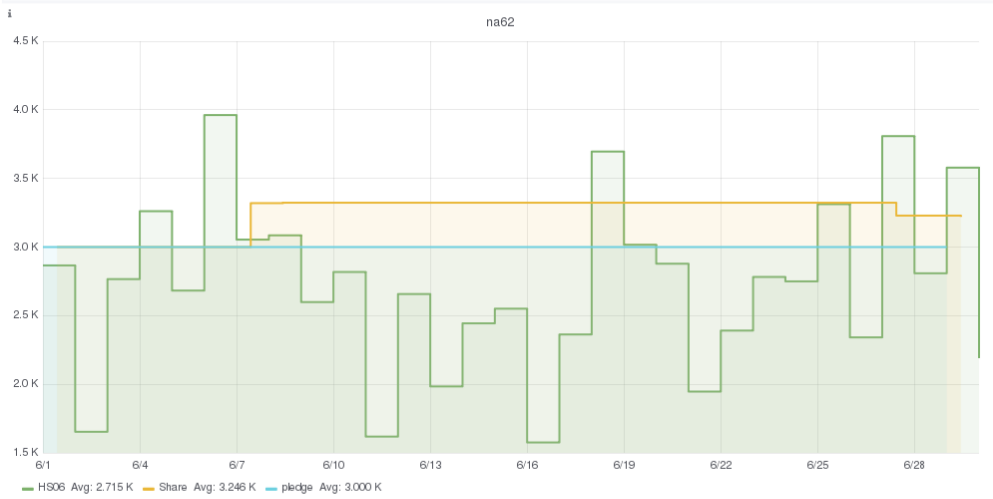
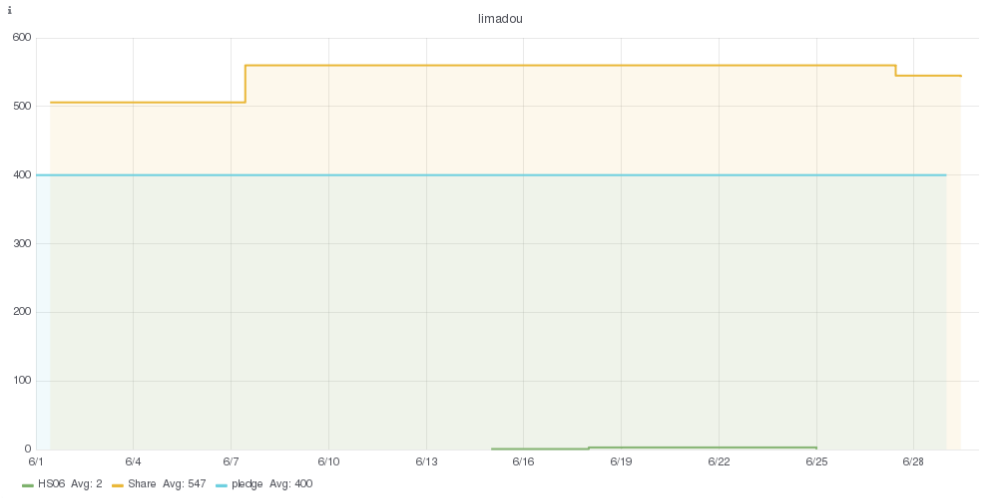


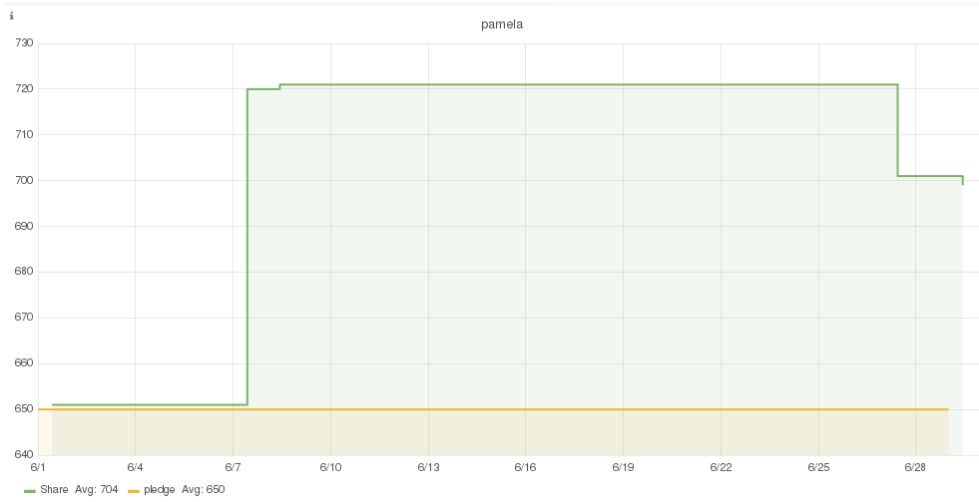
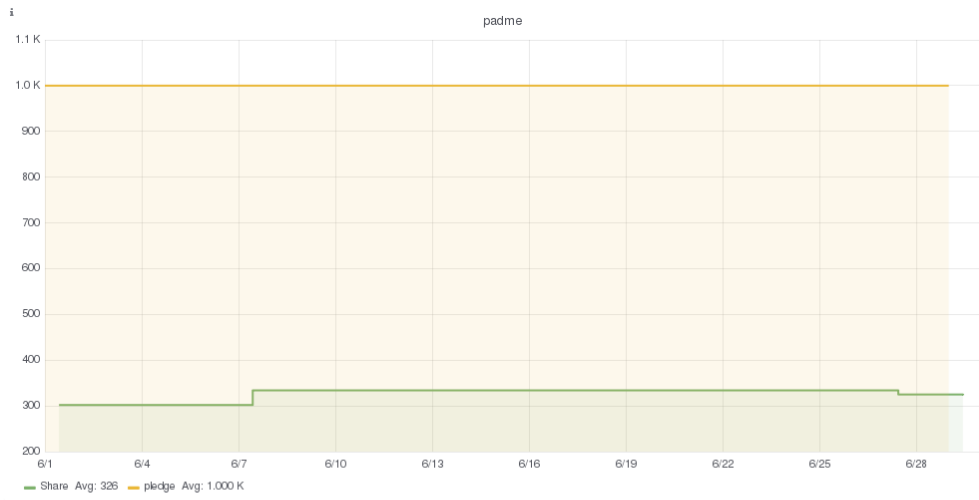


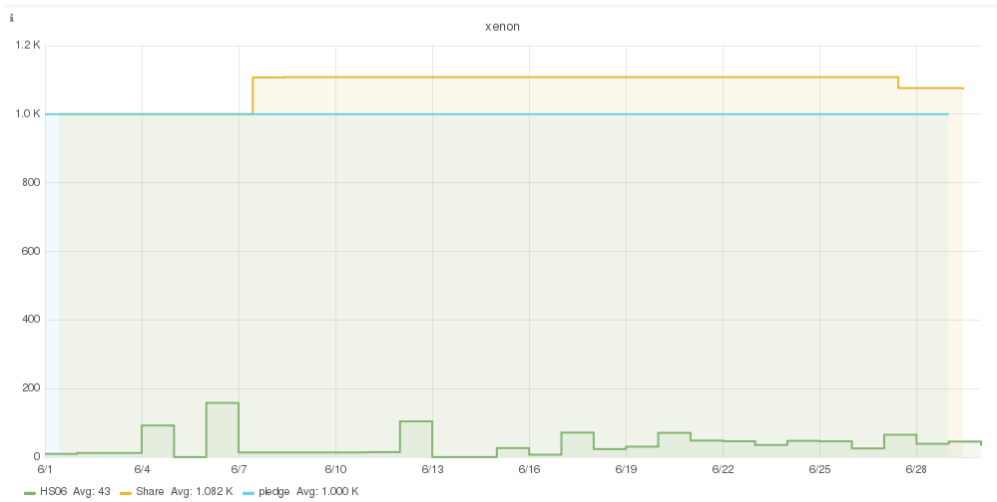
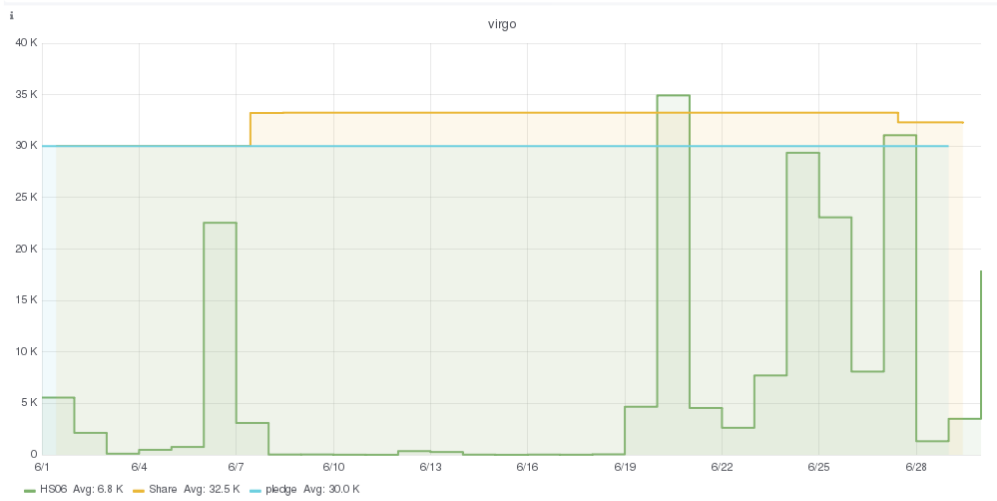
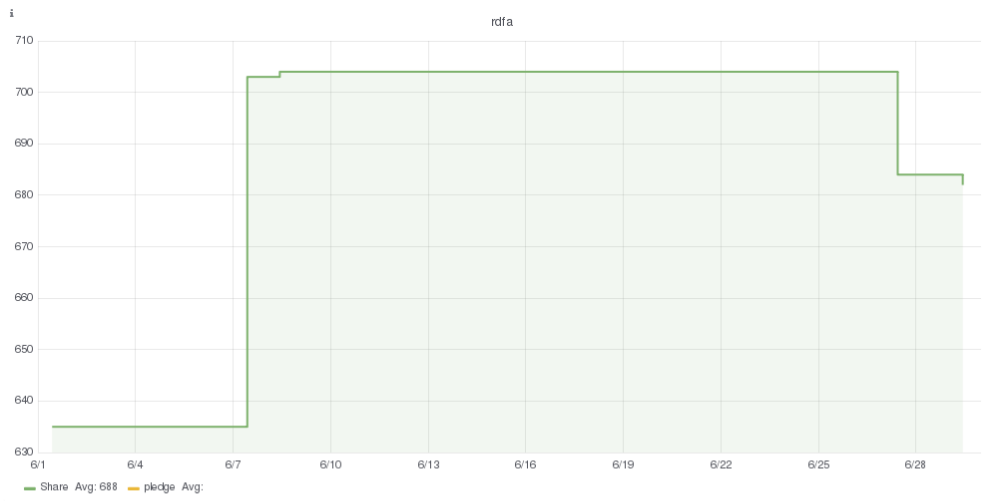












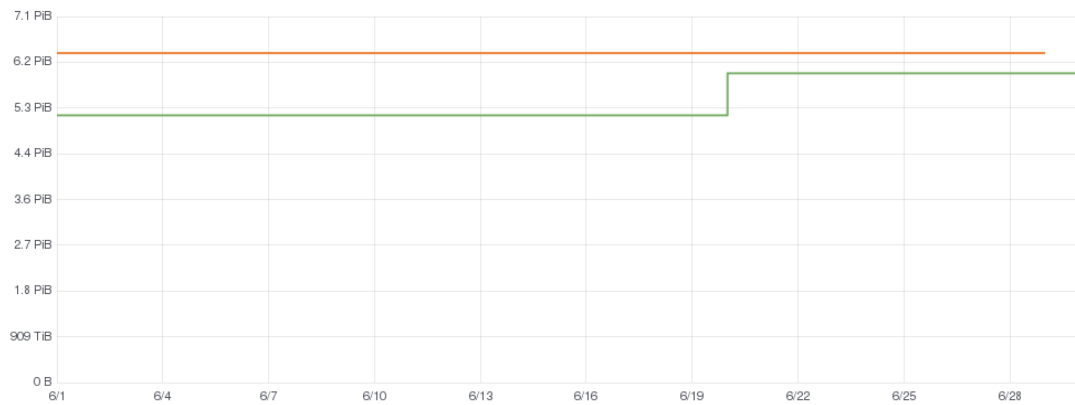
2 Utilizzo delle risorse - Storage

2.1 Disk usage - LHC



CMS

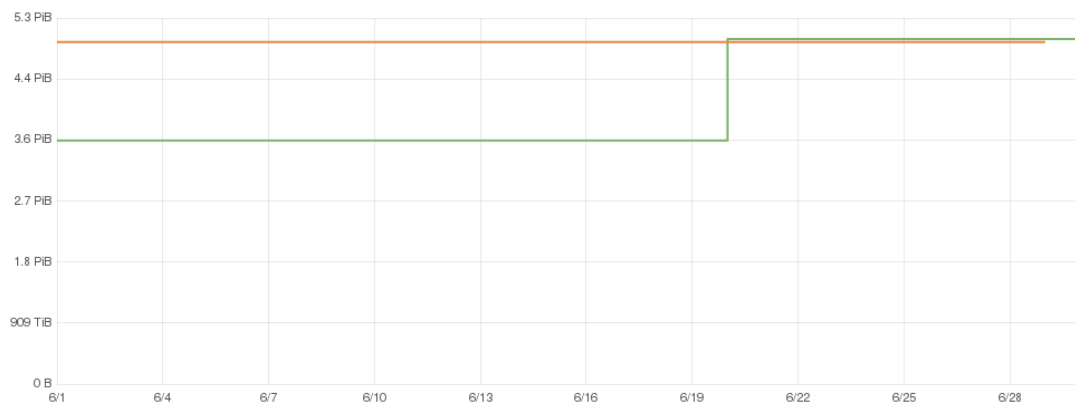
CMS



	min	max	avg	current
quota	5.187 PiB	6.003 PiB	5.486 PiB	6.003 PiB
used	3.278 PiB	3.278 PiB	3.278 PiB	3.278 PiB
used+buffer	4.823 PiB	4.823 PiB	4.823 PiB	4.823 PiB
pledge	6.395 PiB	6.395 PiB	6.395 PiB	6.395 PiB

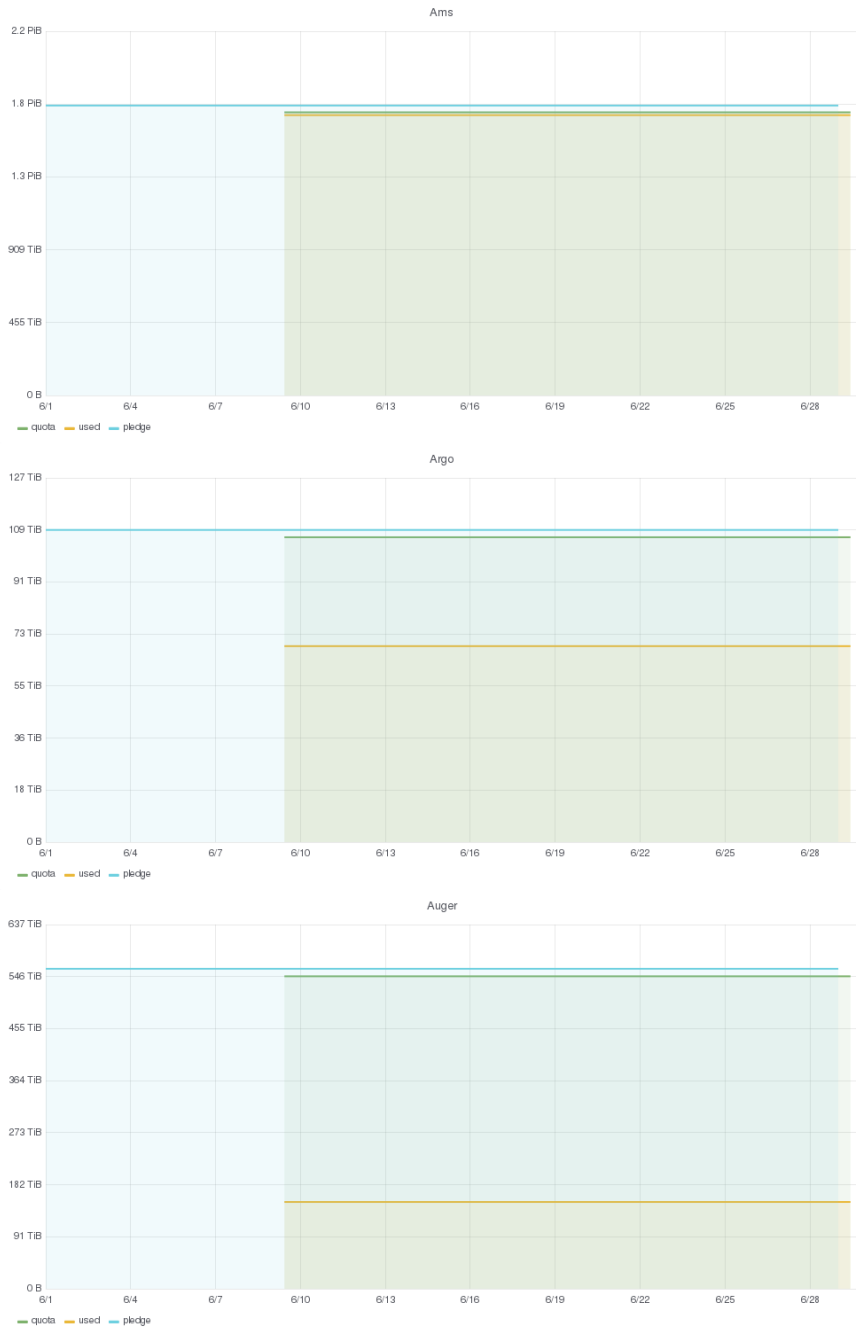
LHCB

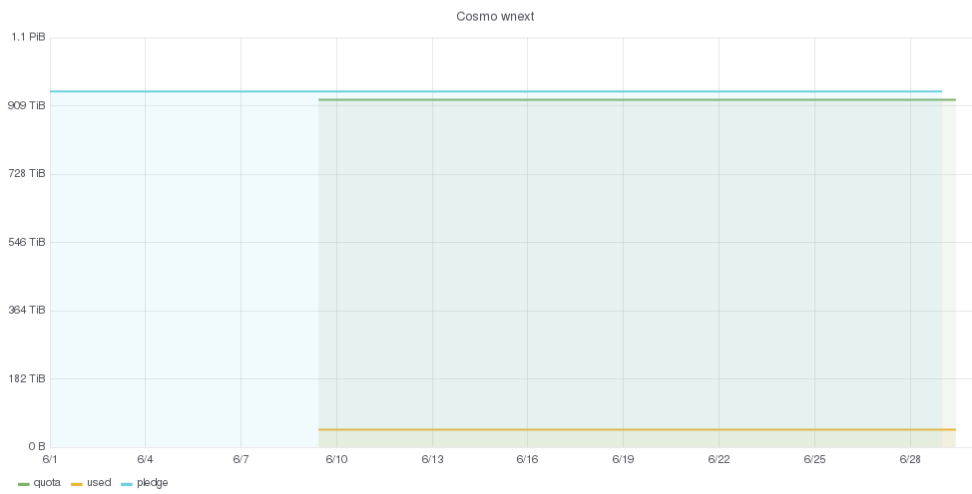
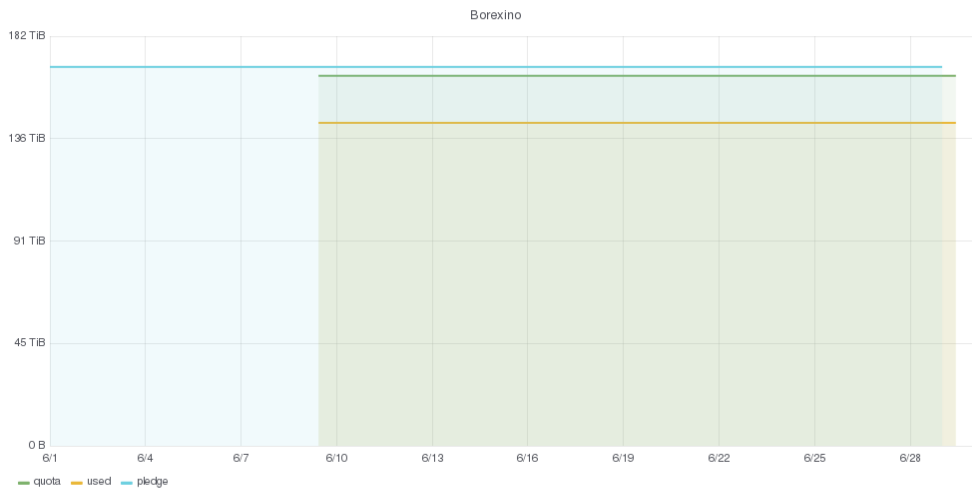
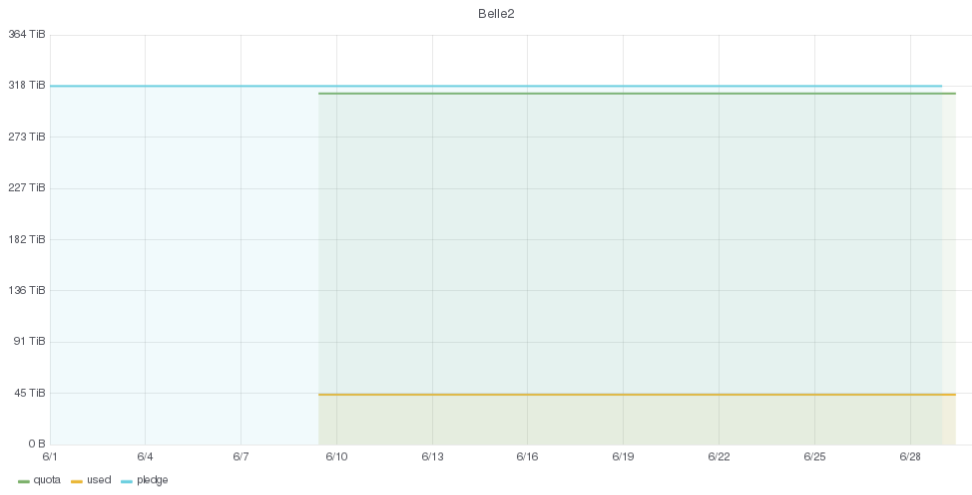
LHCB

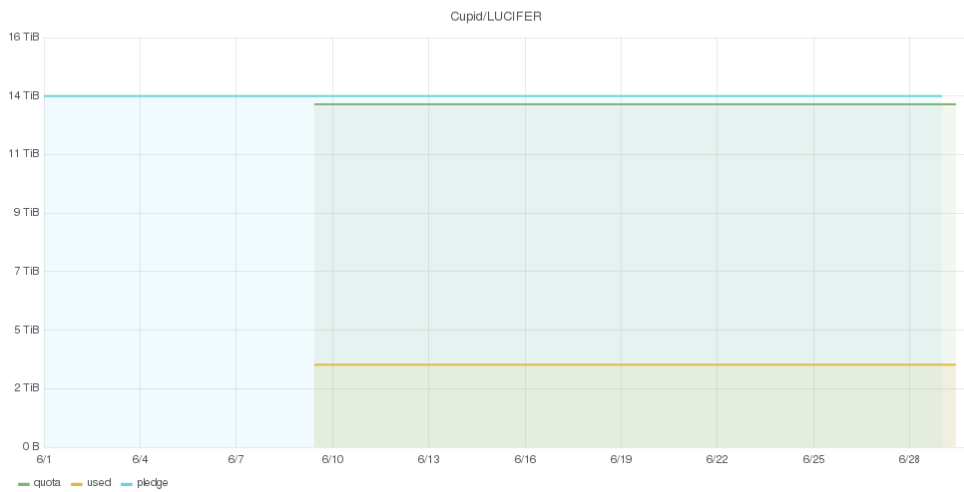
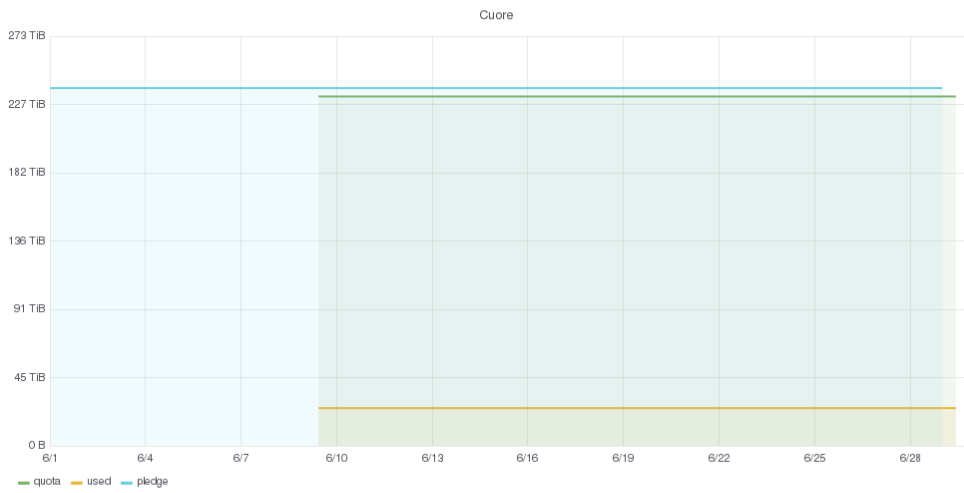
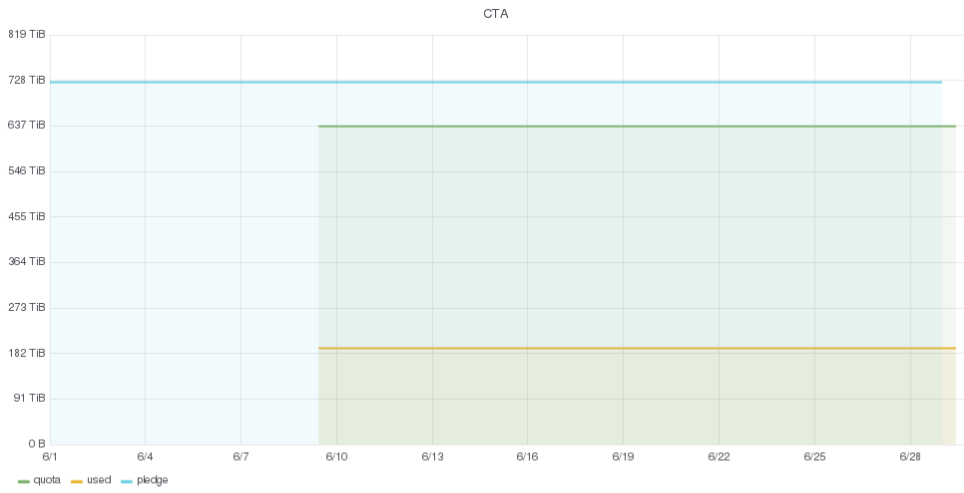


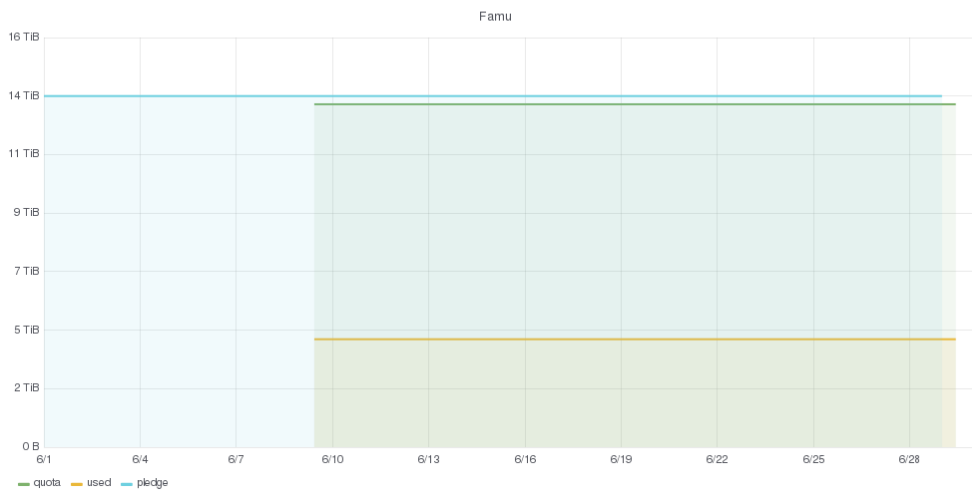
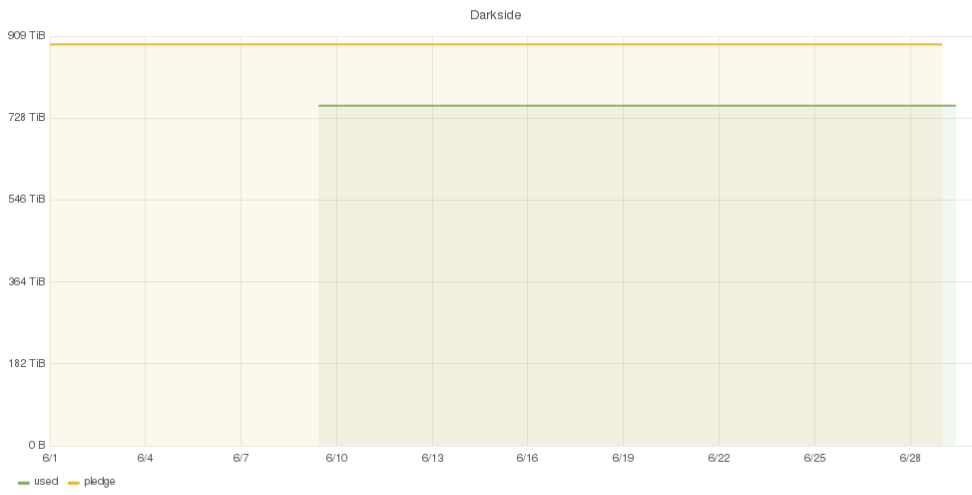
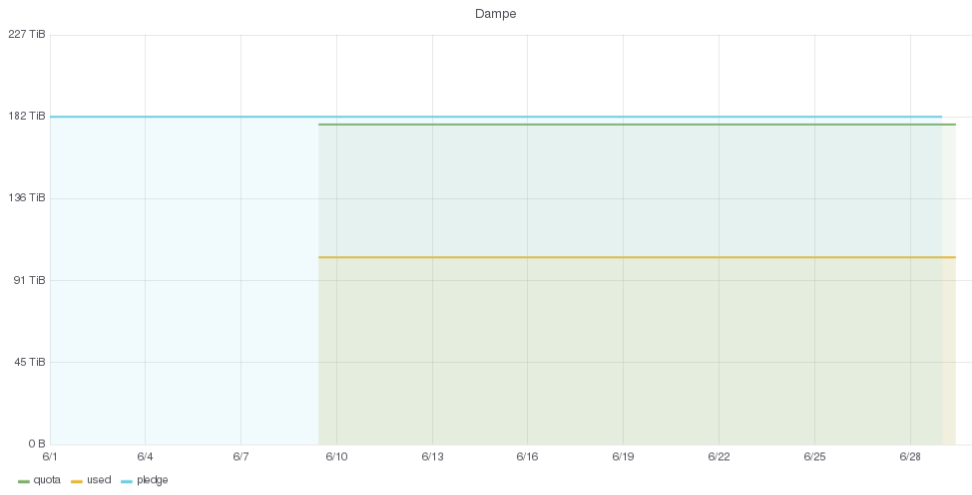
	min	max	avg	current
quota	3.545 PiB	5.023 PiB	4.087 PiB	5.023 PiB
used	2.155 PiB	2.155 PiB	2.155 PiB	2.155 PiB
used+buffer	3.251 PiB	3.251 PiB	3.251 PiB	3.251 PiB
pledge	4.979 PiB	4.979 PiB	4.979 PiB	4.979 PiB

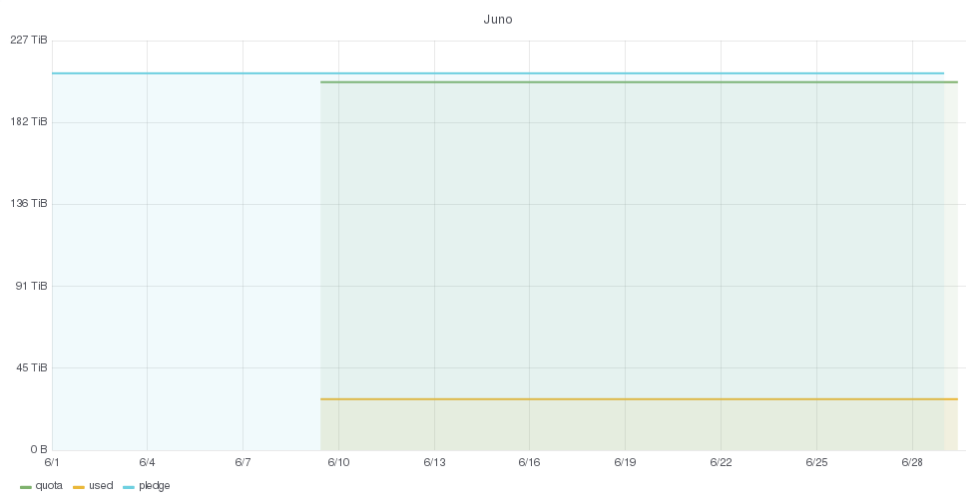
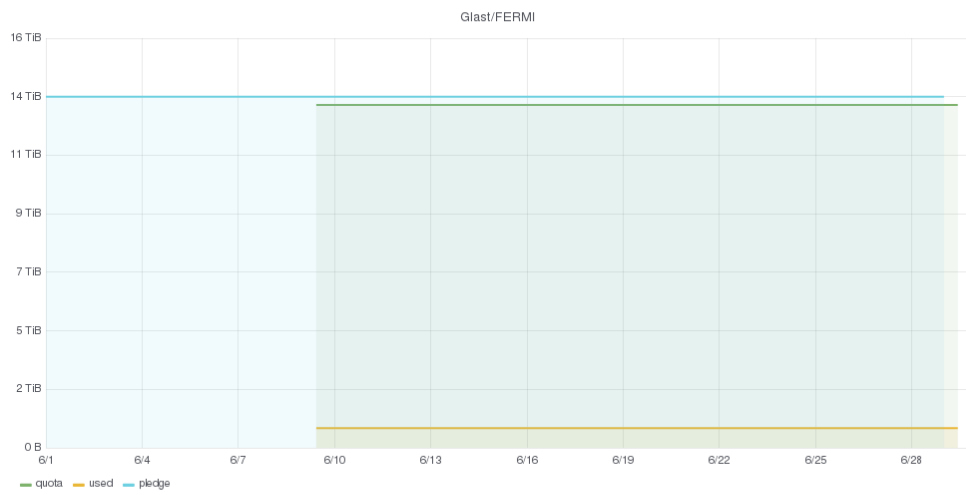
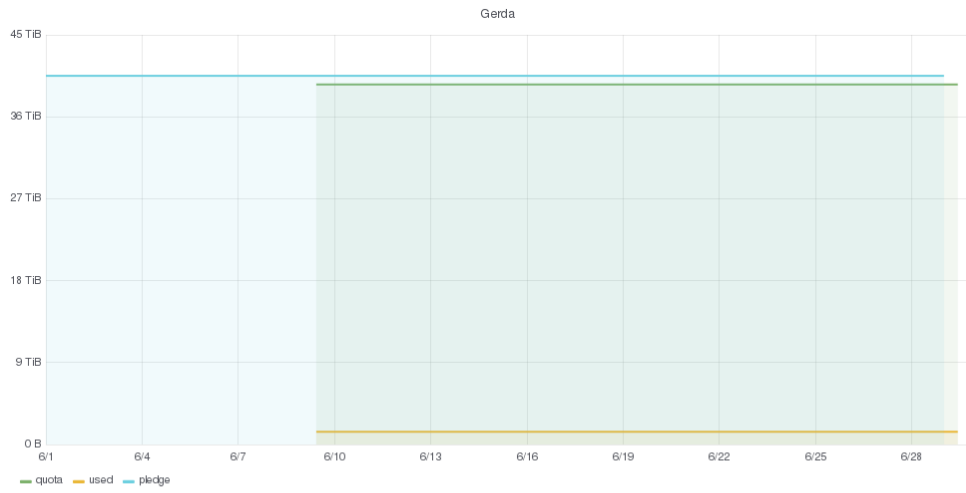
2.2 Disk usage - No LHC

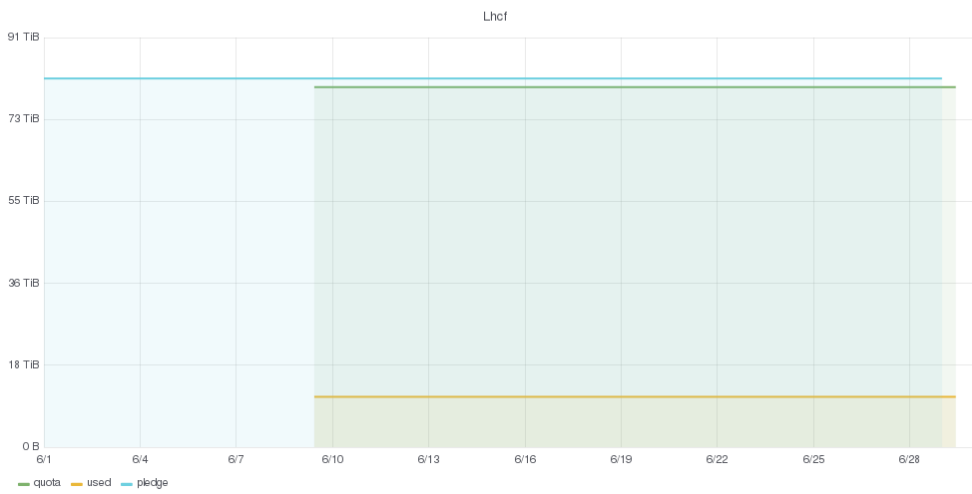
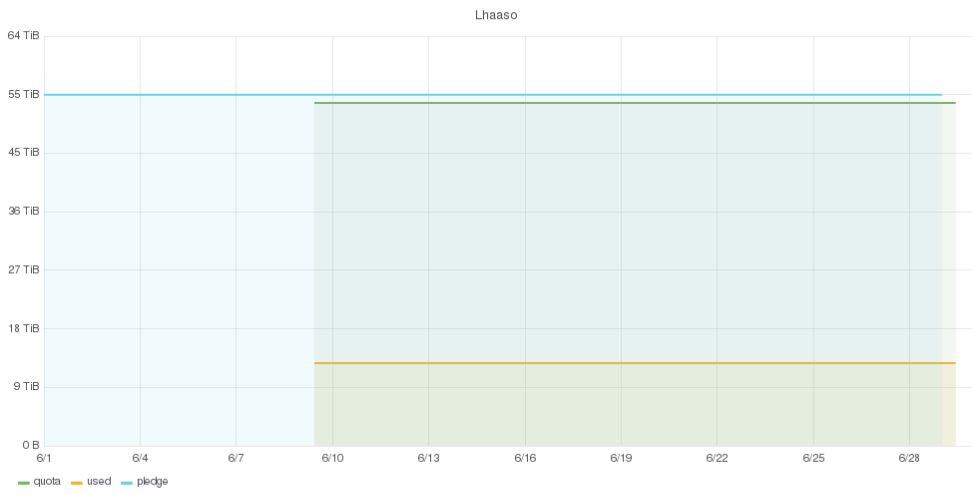
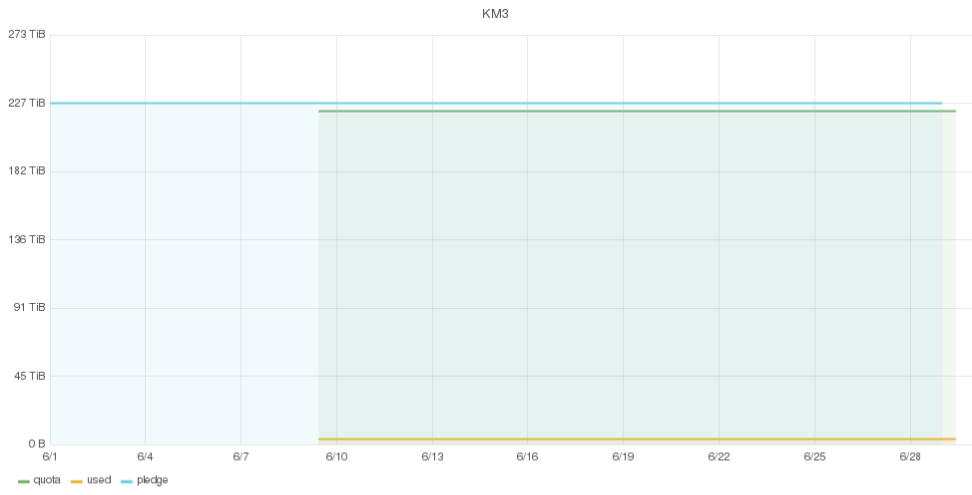


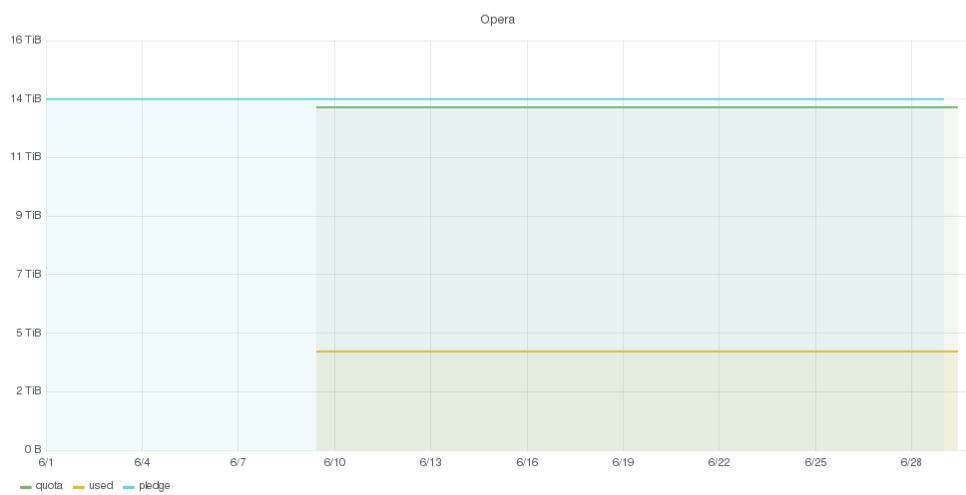
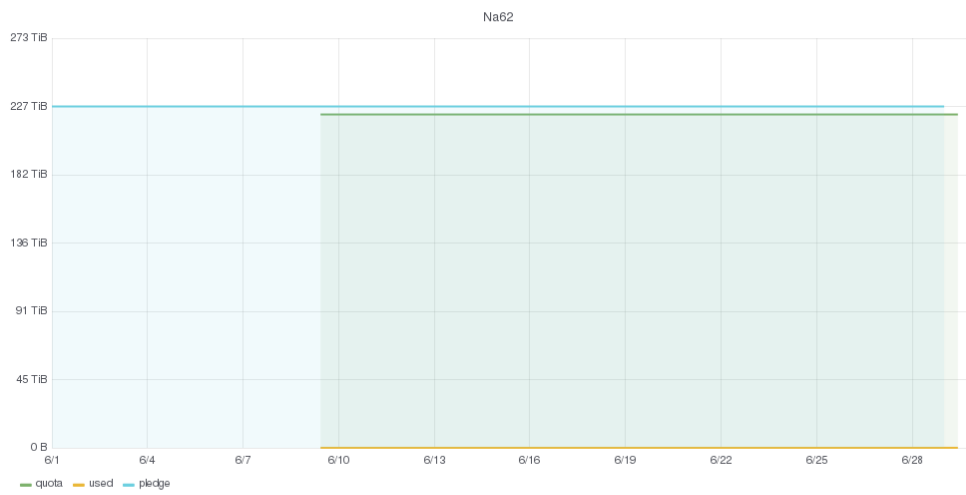
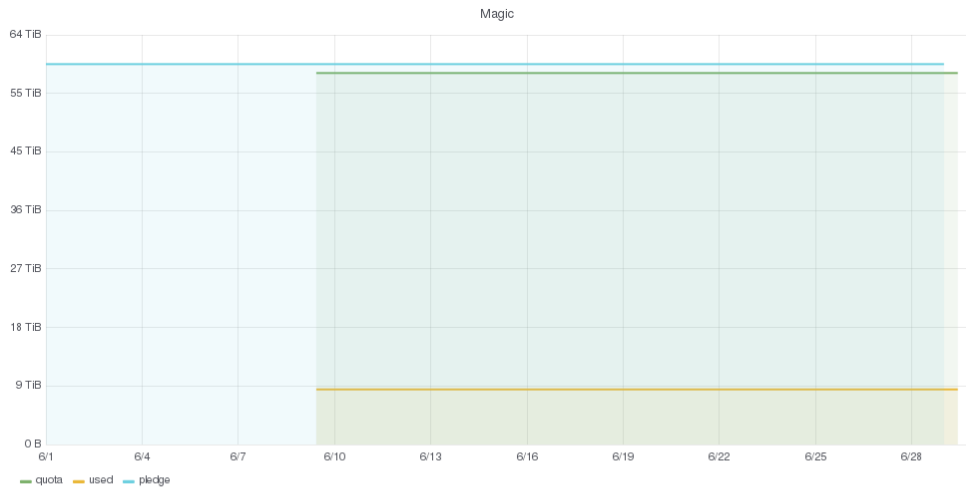


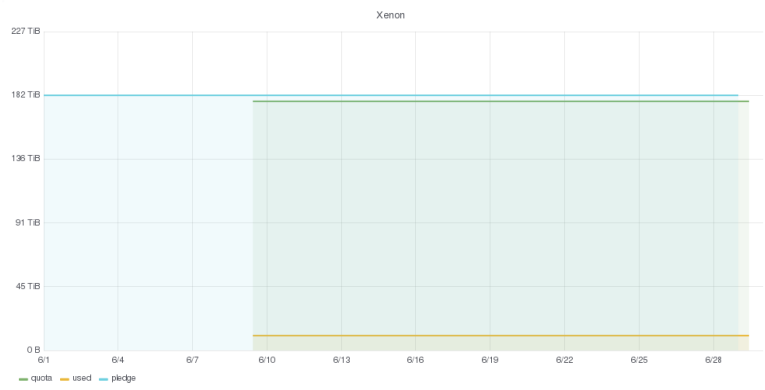
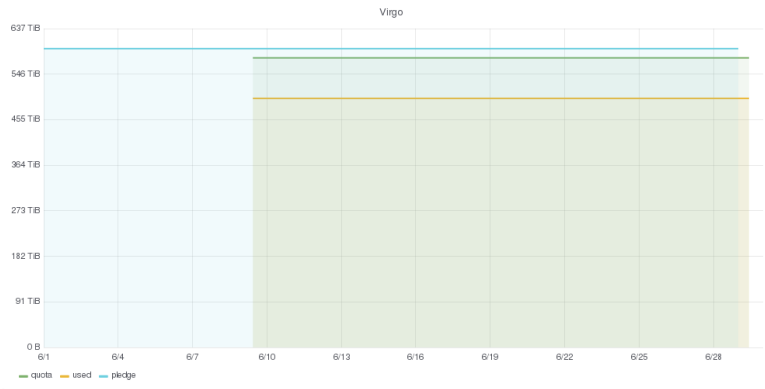
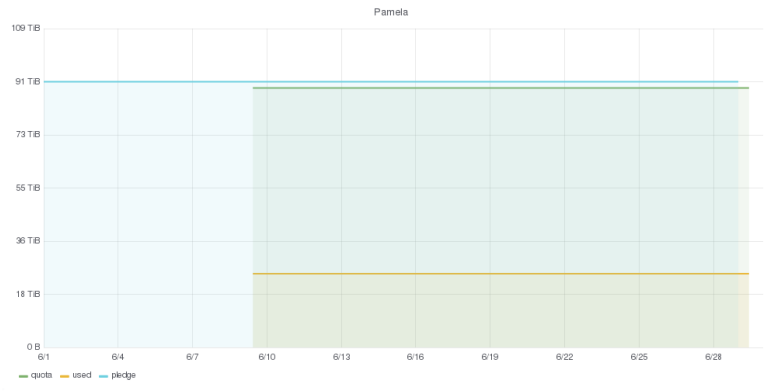












2.3 Consistenza fra accounting CNAF e cataloghi di esperimento nell'uso dello storage

ALICE		
	Catalogo	Accounting CNAF
Disco + Buffer (PB)	4.529	4.53
ATLAS		
	Catalogo	Accounting CNAF
Disco(PB)	-	-
Tape (PB)	-	-
CMS		
	Catalogo	Accounting CNAF
Disco(PB)	3.527	3.724
Nastro (PB)	12.36	11.732
LHCb		
	Catalogo	Accounting CNAF
Disco(TB)	5000	5.002
Nastro + Buffer (TB)	7.588	7.217

3 Tickets

3.1 Aperti

Ticket-ID	VO	Subject
<u>135608</u>	cms	High pilot pressure to CNAF
<u>135951</u>	cms	T1ITCNAF SE-xroo read failure
<u>135949</u>	cms	Transfers failing from CNAF
<u>134325</u>	cms	xroo xonfig at T1ITCNAF
<u>135734</u>	lhcb	Pilots Failed at INFN-T1

3.2 Chiusi nell'ultimo mese

Ticket-ID	VO	Subject
<u>135303</u>	atlas	Atlas file transfers failing with ...
<u>135658</u>	atlas	INFN-T1 transfer errors 'DESTINATION ...
<u>135207</u>	cms	checksums do not match at ...
<u>135249</u>	cms	Errors in transfer quality to T1ITCNAF
<u>135669</u>	cms	PhEDEX agent are down at ...
<u>135733</u>	cms	PHEDEX Debug Components are down in ...
<u>135554</u>	cms	T1ITCNAF bad worker node
<u>135673</u>	cms	T1ITCNAF JobSubmit SAM test failures
<u>135329</u>	cms	T1ITCNAF SAM CONDOR-JobSubmit tests
<u>135145</u>	cms	T1ITCNAF SAM SRM failures
<u>135401</u>	cms	Transfer fails from Florida to CNAF: ...
<u>135417</u>	cms	Transfers failing to CNAFDisk
<u>135702</u>	cms	Transfers failing to CNAFDisk
<u>135657</u>	lhcb	Data transfers problem at INFN-T1
<u>135582</u>	lhcb	Pilots aborted at CNAF

4 Stato migrazione a CentOS7 da parte degli esperimenti non LHC

Tabella 1: Readiness degli esperimenti alla migrazione.

Esperimento	Stato
AMS	OK
Auger	richiesto accesso alla coda per poter fare i test
Borexino	richiesta e ottemperata installazione pacchetti, proposto l'uso di singularity. Test in corso
DAMPE	richiesto accesso alla coda per poter fare i test
FAMU	OK
Juno	Test in corso
Virgo	OK

5 Uso Tape @ CNAF 2019

Tabella 2: Tape: previsioni per il 2019

Esperimento	Utilizzo e throughput previsto
ALICE	
ATLAS	stress test, per misurare il throughput del tape sistem del T1, utiizzando però delle metriche basate sul sistema di trasferimento dati di atlas (rucio). Il test dura una settimana, va bene utilizzare il sistema di produzione. Si pensava settimana del 16 luglio.
CMS	
LHCb	In 2019, re-stripping campaign for the entire RUN 2, recalling all data from 2015 to 2018.
BELLE II	No tape; qualcosa nel 2020 e utilizzo significativo nel 2021
BOREXINO	46TB nel 2019, 51TB nel 2020
CTA	invariato, sempre 120TB
DAMPE	150TB in cui spostare in 3 – 4 volte decine di TB
DARKSIDE	invariato, trasferiranno altri dati nei 300TB di adesso
FAMU	una decina di TB
FERMI	massimo 15TB
JUNO	No tape
LIMADOU	1TB per dati raw
NEWCHIM	Nel 2018 dovrebbero occupare 150TB dei 300 previsti. Nel 2019 stimano una crescita fino a 500TB.
PADME	La presa dati inizia ora, $10MB/s$ a regime. Per il 2019, flusso dati analogo.
PAMELA	Invariato.
VIRGO	Throughput minimo continuo Cascina-CNAF di $100MB/s$ (picchi di $200MB/s$), rate di scrittura $50MB/s$)
XENON	No aggiunte al PB del 2018

6 Prossimi Downtime

- FROM: 09/07 14:00 - TO: 11/07 12:00:
Downtime della infrastruttura SDDS, grid e Cloud@CNAF per permettere il rientro dell'infrastruttura da Ferrara.

Servizi impattati:

- Servizi Core Grid (NGLIT, https://goc.egi.eu/portal/index.php?Page_Type=Site&id=206)
- Infrastruttura Cloud@CNAF
- Tool collaborativi e servizi afferenti ai progetti XDC e DEEP
- Tool collaborativi IGI
- Ambienti di sviluppo e testbed

Esperimenti impattati:

- FAZIA
- VIRGO
- PADME
- Nel tenant di US ci sono 9 istanze di fazia, 1 AMS, 1 XDC (xcache redirector), gfal, e alcune altre

Si prega di spegnere le macchine ospitate nell'infrastruttura entro le 14:00 di lunedì 9 luglio.

7 ALICE

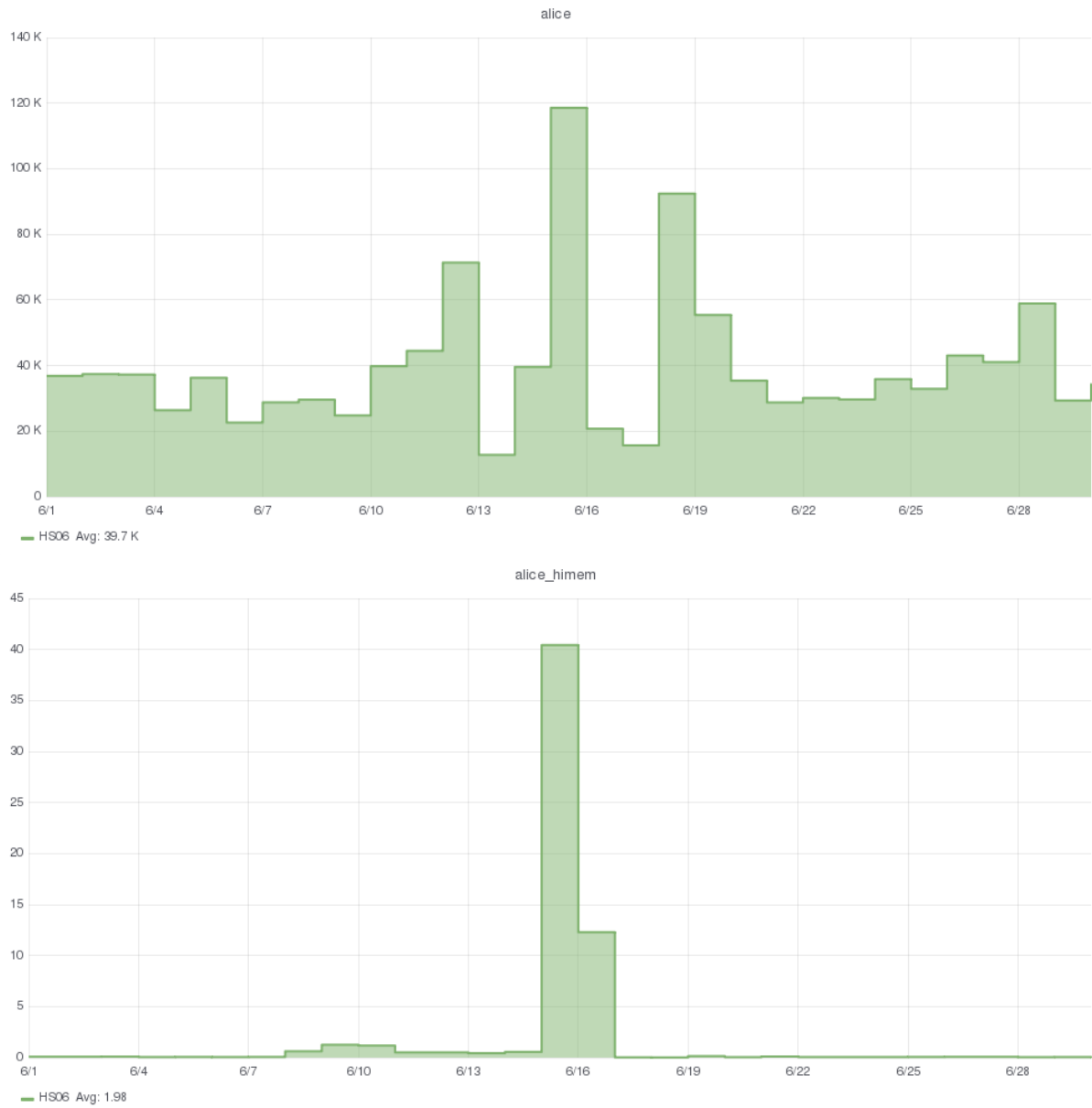


Figure 1: Number of jobs and CPU efficiency - **Alice** (pledge 29045 HS06)

- Site Availability using ALICE_CRITICAL

[Link to data](#)

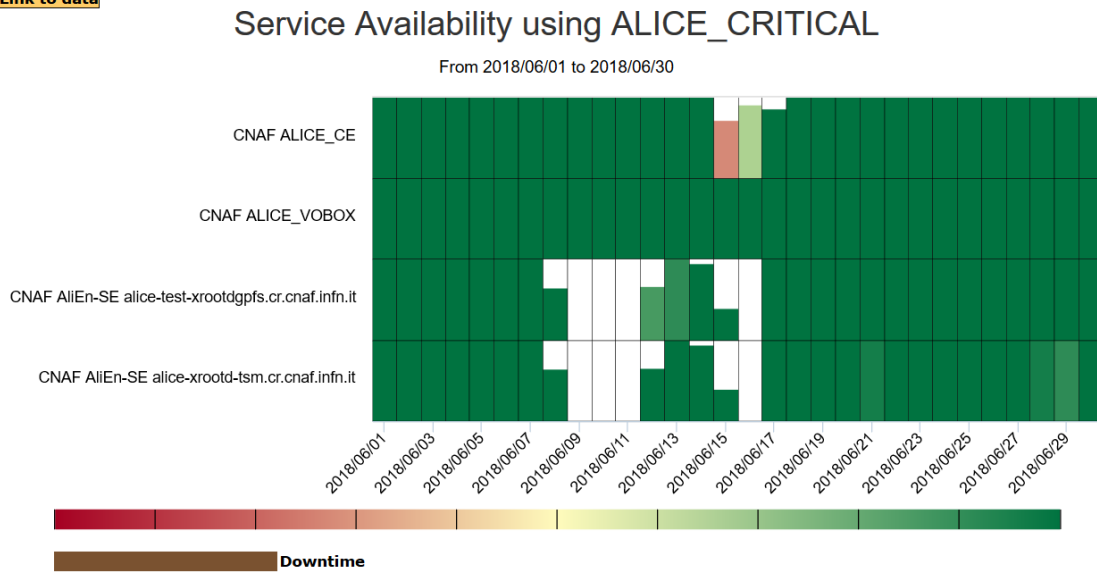


Figura 2: Availability

8 ATLAS

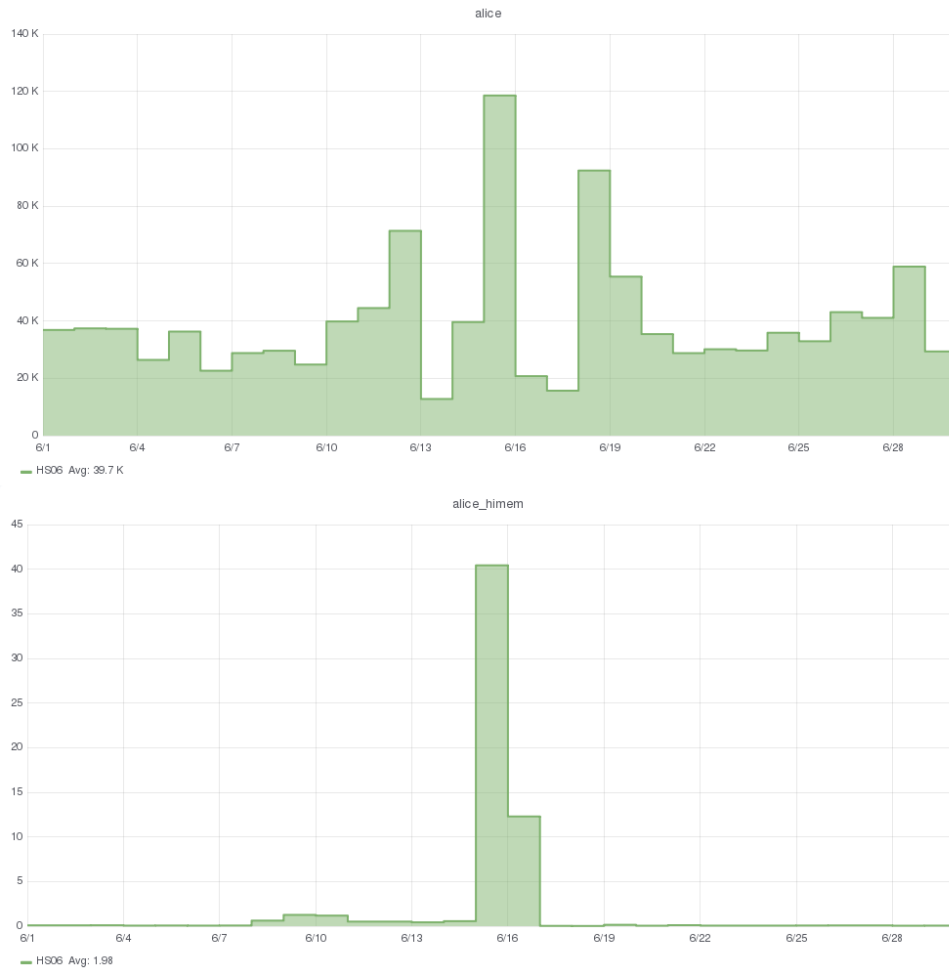


Figura 1: Number of jobs and CPU efficiency - **Atlas** (pledge 46800 HS06)

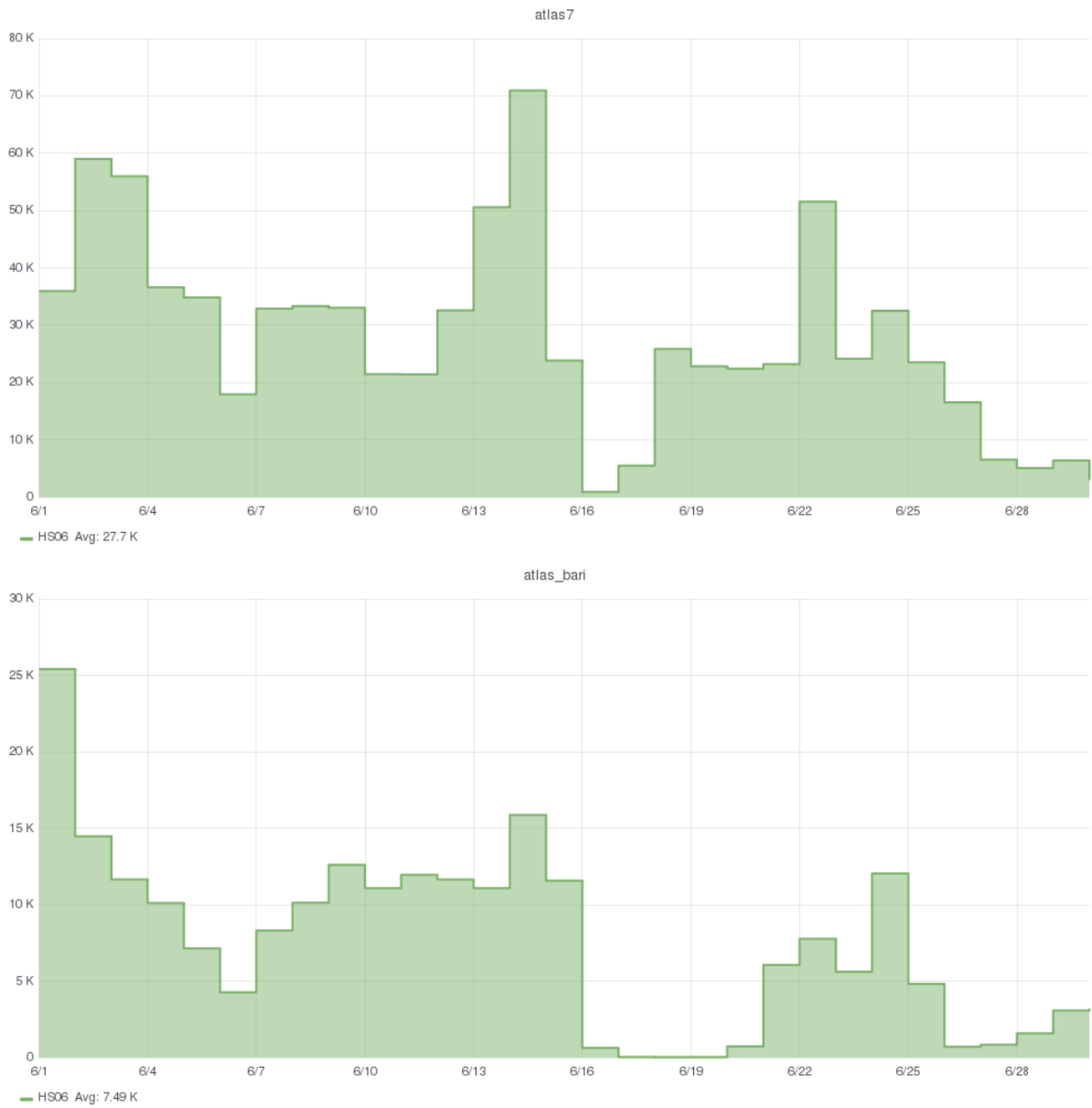


Figura 2: Number of jobs and CPU efficiency - **Atlas_himem** (pledge 46800 HS06)

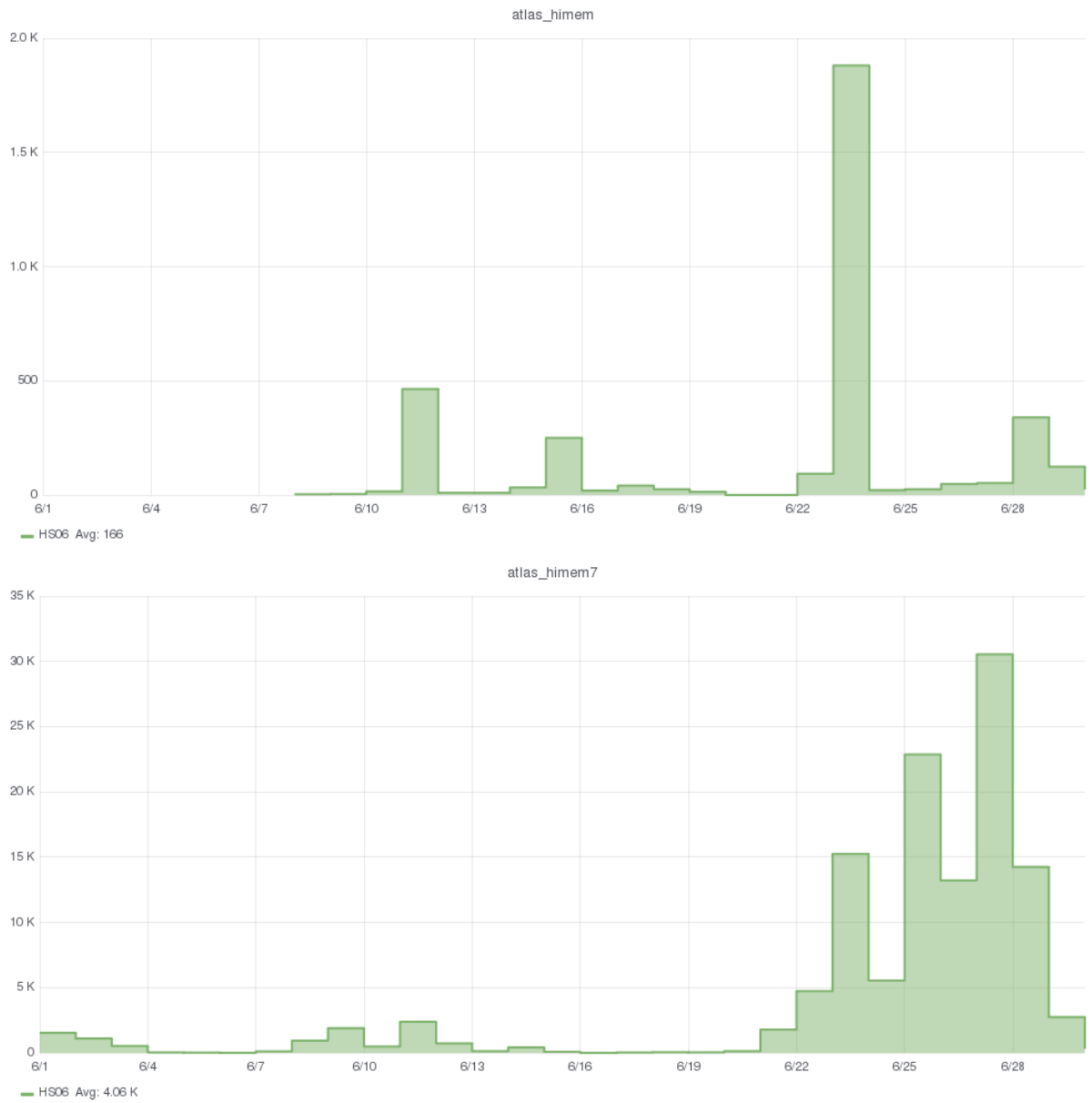


Figura 3: Number of jobs and CPU efficiency - **Mcore** (pledge 46800 HS06)

- Site Availability using ATLAS_CRITICAL

[Link to data](#)

Site Availability using ATLAS_CRITICAL

From 2018/06/01 to 2018/06/30

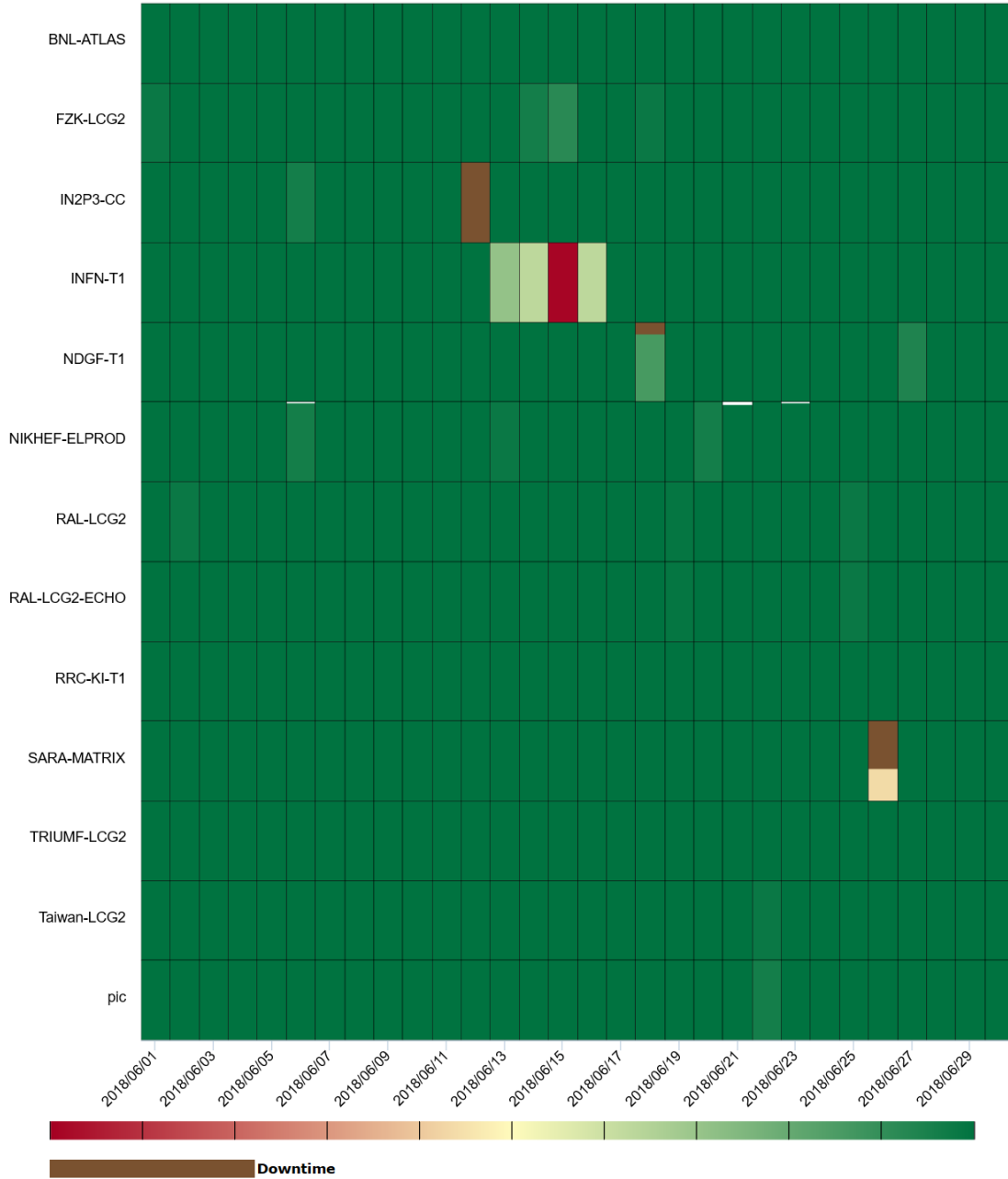
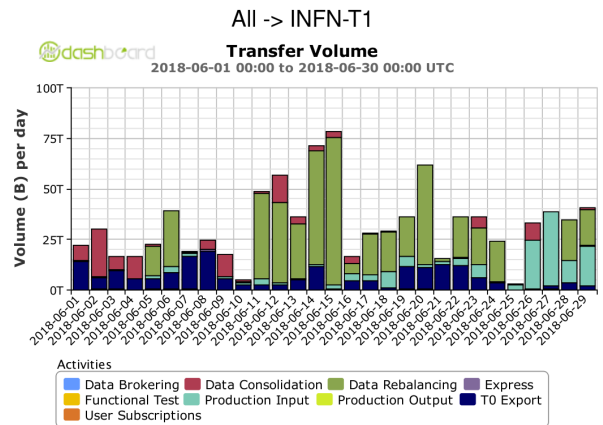
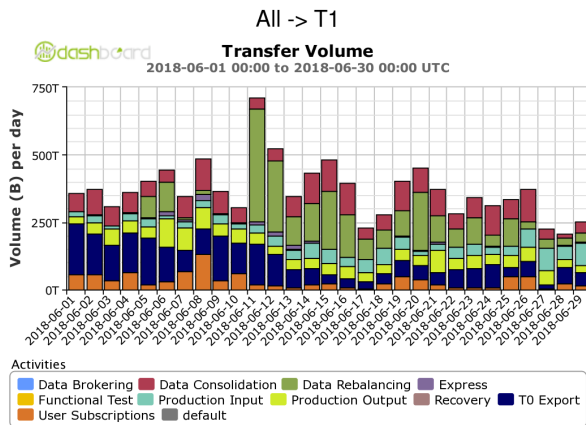
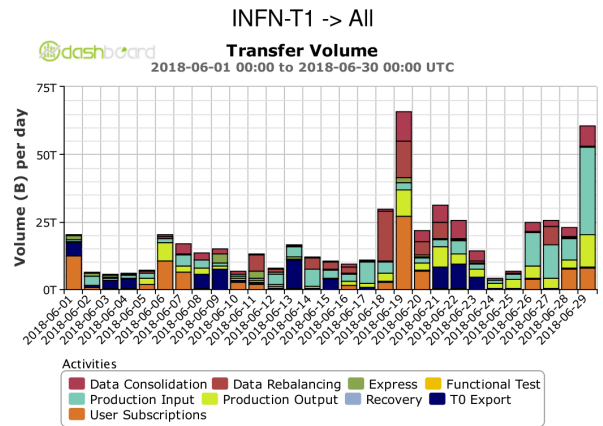
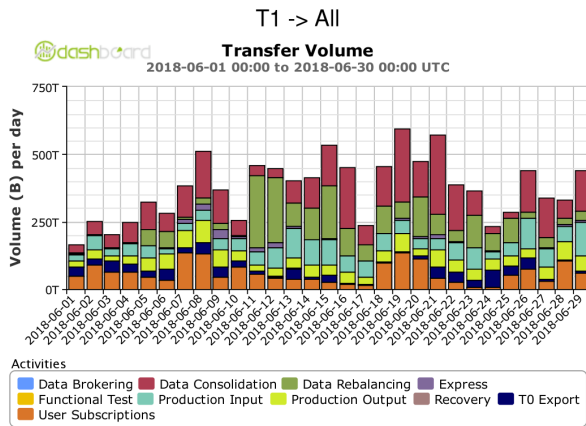
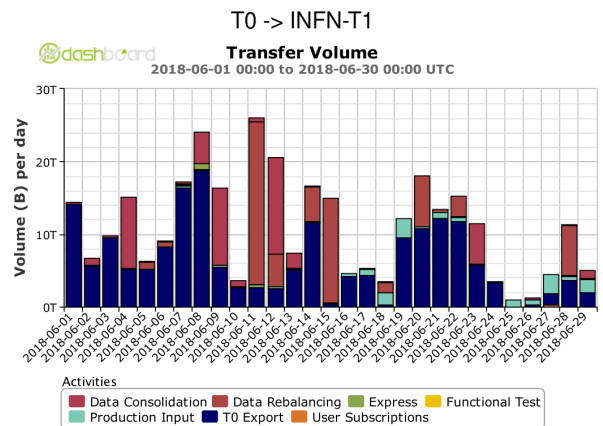
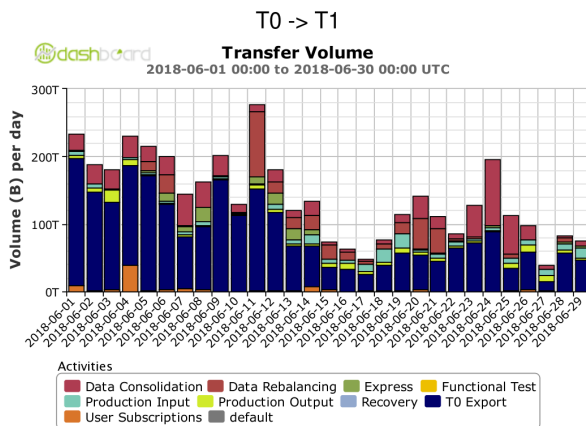


Figura 3: Availability

• ATLAS Throughput



• T0 Export



9 CMS

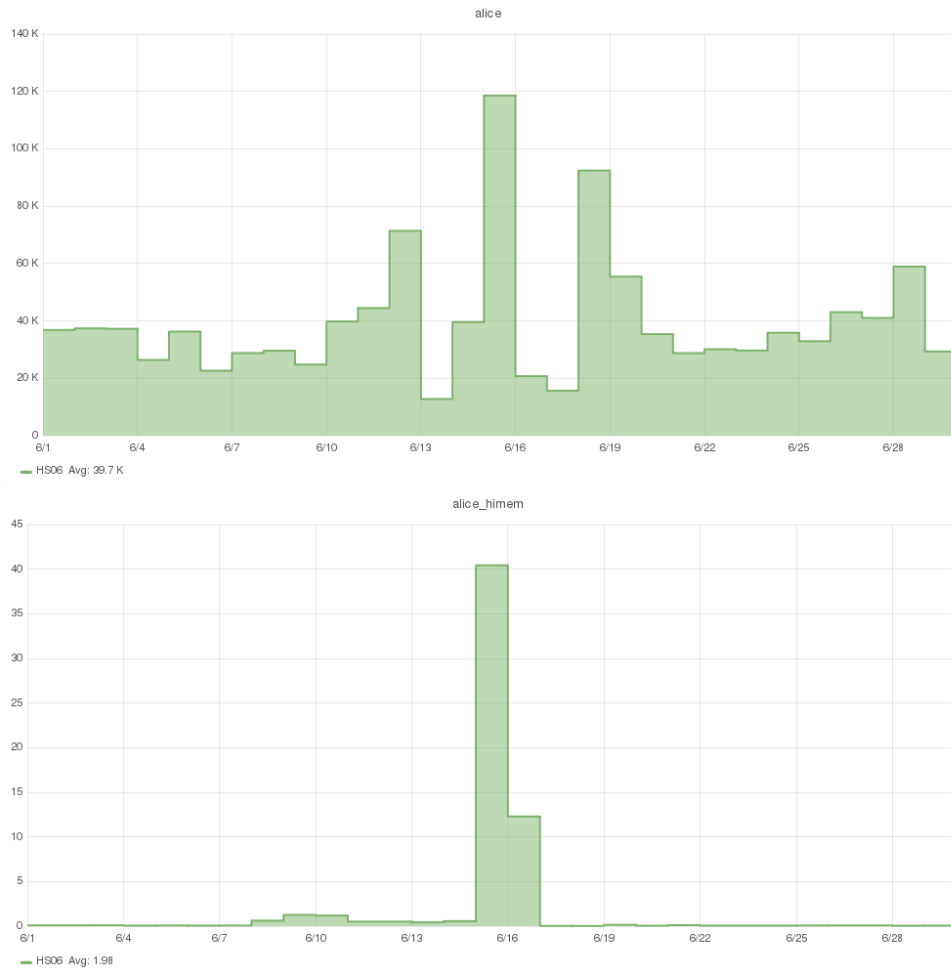


Figura 1: Number of jobs and CPU efficiency - CMS **Single Core** (pledge 48000 HS06)

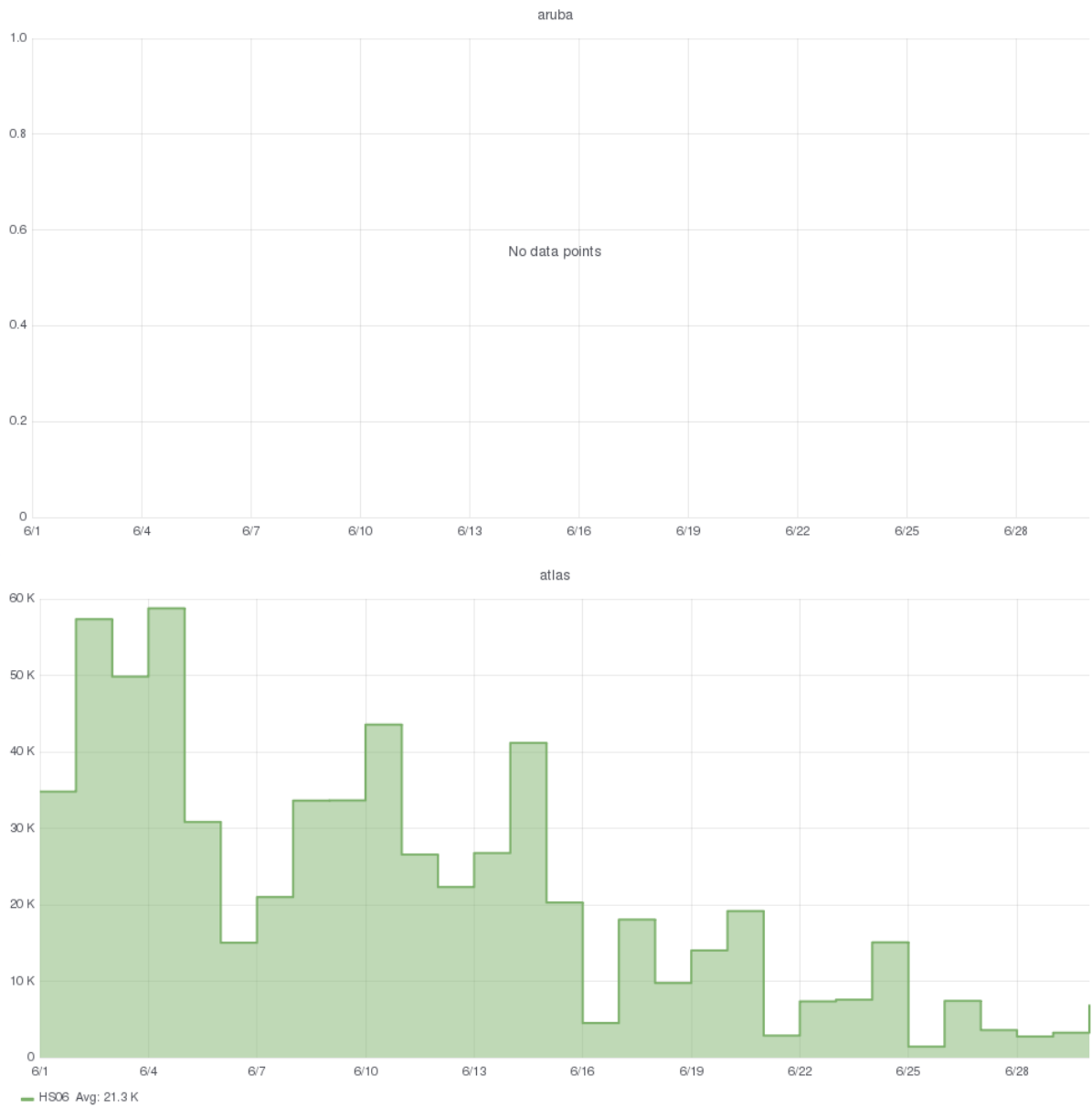


Figura 2: Number of jobs and CPU efficiency - CMS **Multi Core** (pledge 48000 HS06)

- Site Availability using CMS_CRITICAL_FULL

[Link to data](#)

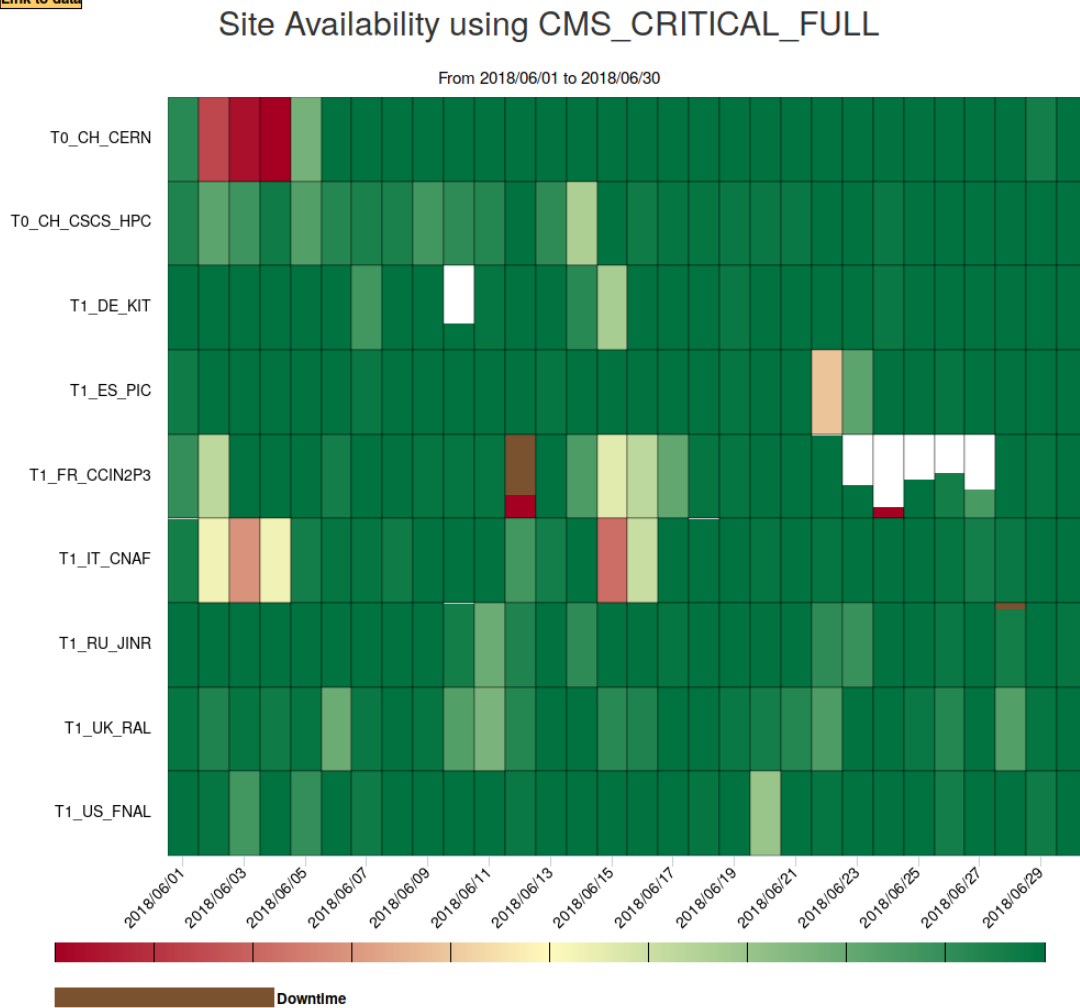
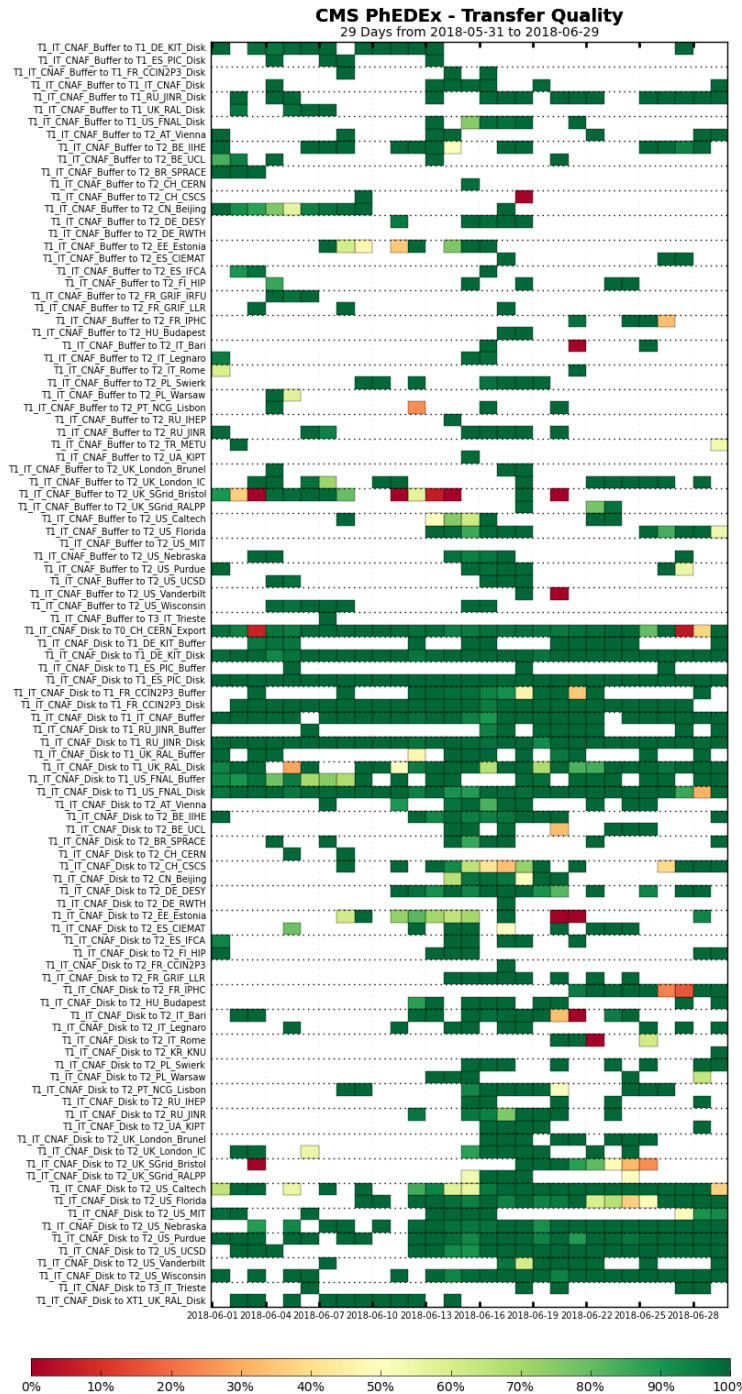


Figura 4: Availability

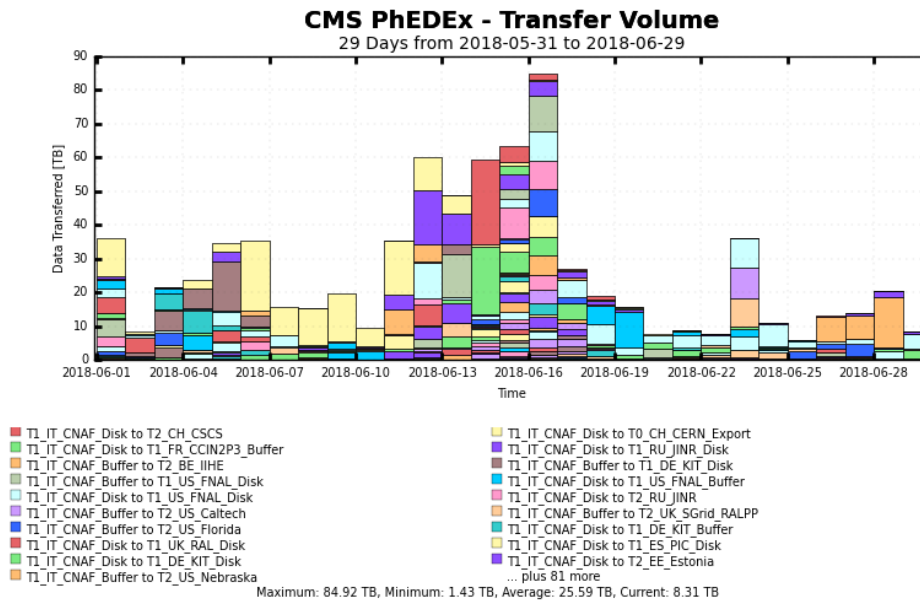
- Phedex Transfers Quality (CNAF → All)



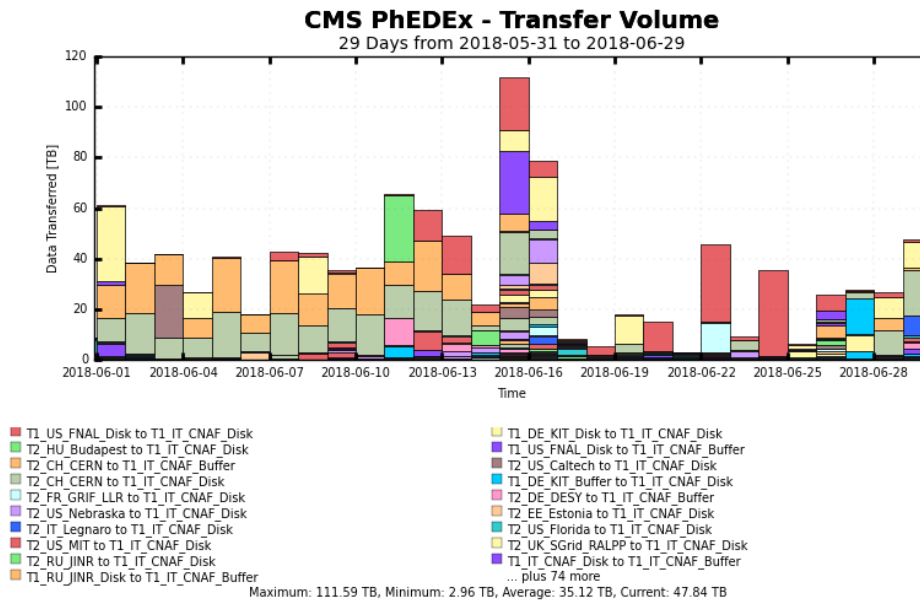
- Phedex Transfers Quality (All → CNAF)



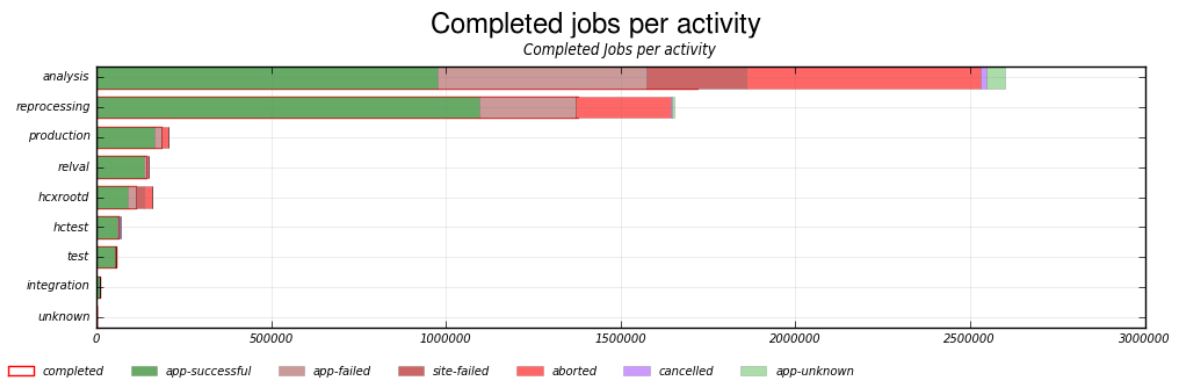
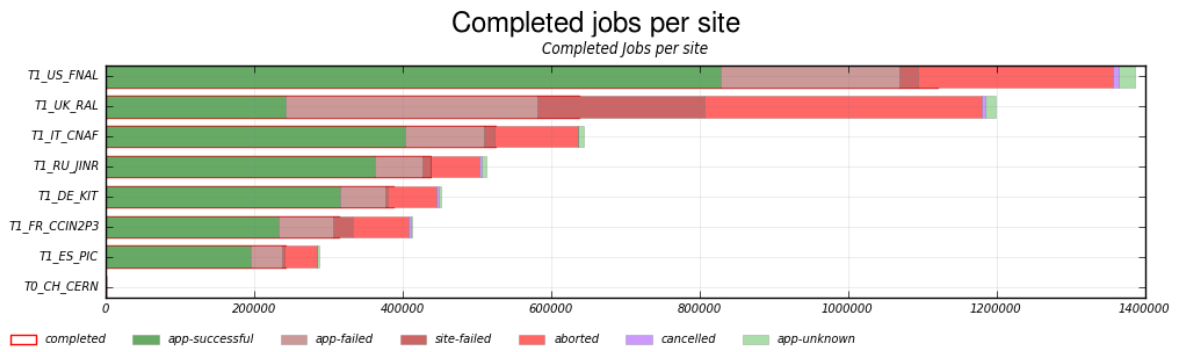
- Phedex Transfers Volume(CNAF → All)



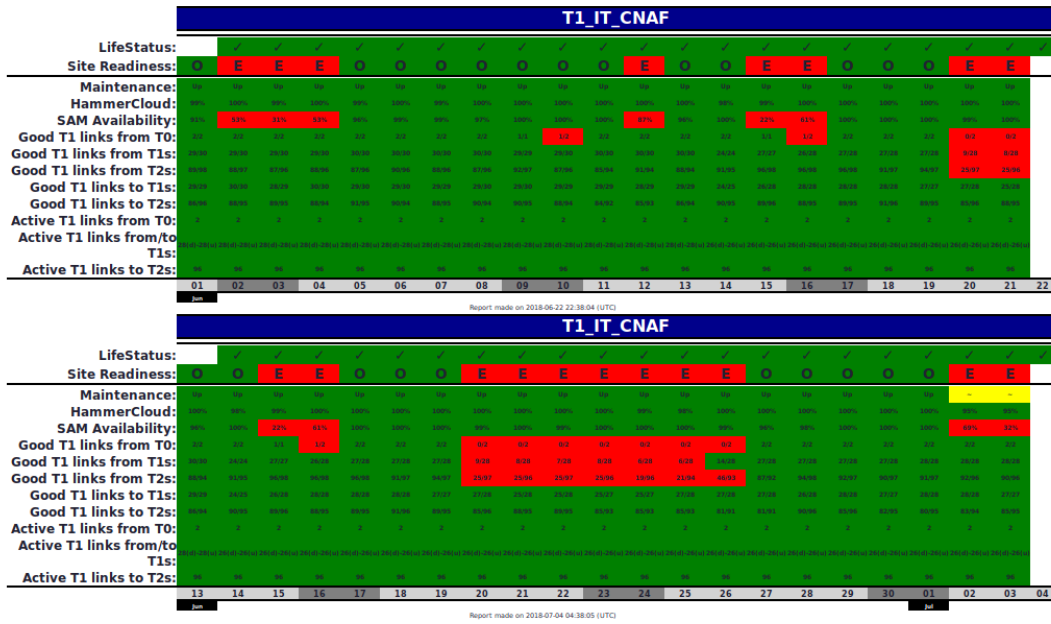
- Phedex Transfers Volume (All → CNAF)



- Completed jobs status @ T1



- Site Readiness



Report:

- 02-04/06: SAM errors due to gpfs errors on some wn in which the kernel was not updated at the last version
- 10/06: Some transfers failed
- 12/06: SAM errors, resolved after restart
- 15-16/06: SAM errors due to all services dead on CEs, resolved after restart
- 16/06: Trasfers failed due to a Phedex agent down, resolved after agent restart
- 20-26/06: Trasfers failed due to Phedex agents down on the Debug instance, resolved after the agents restart

10 LHCb

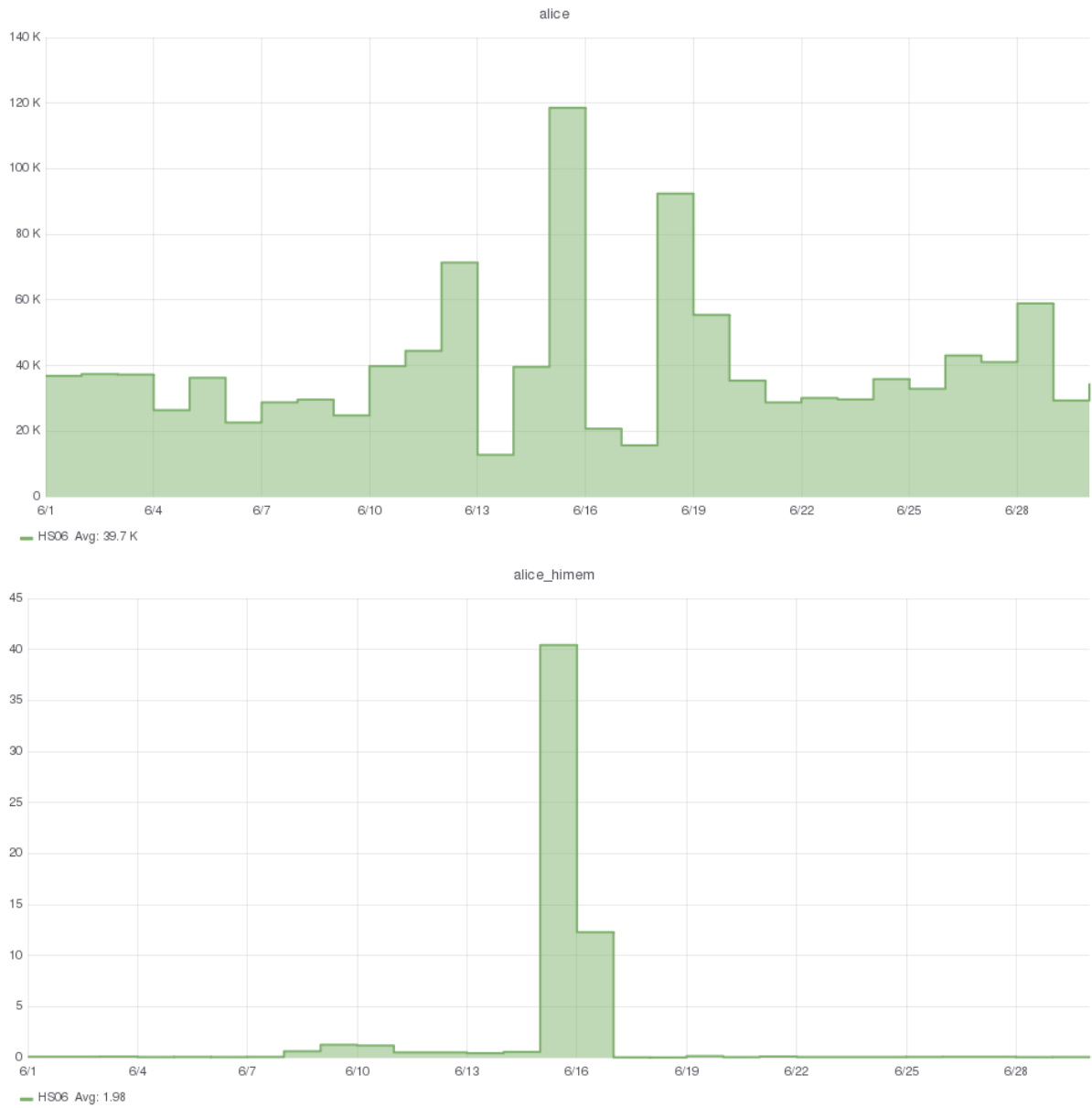
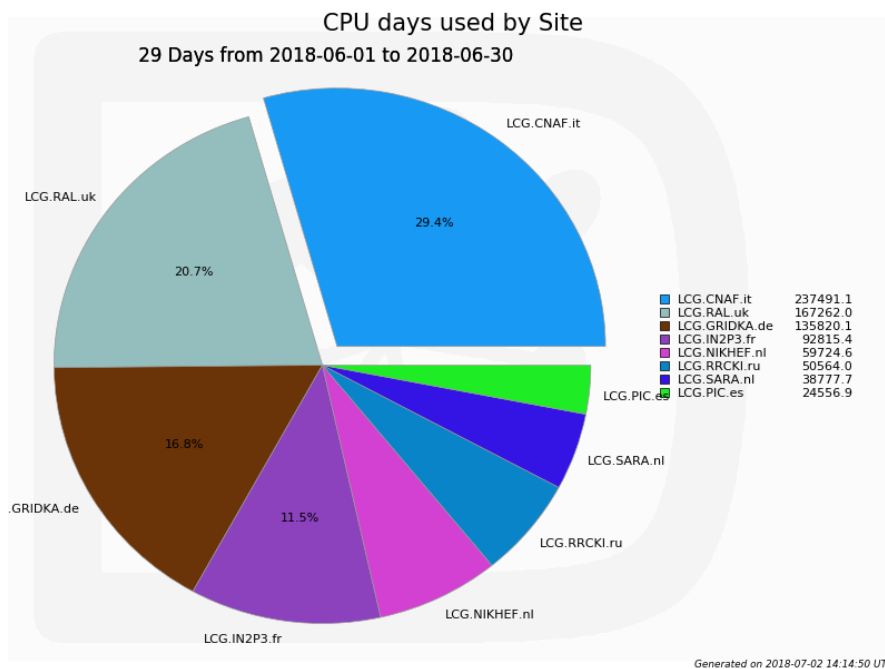
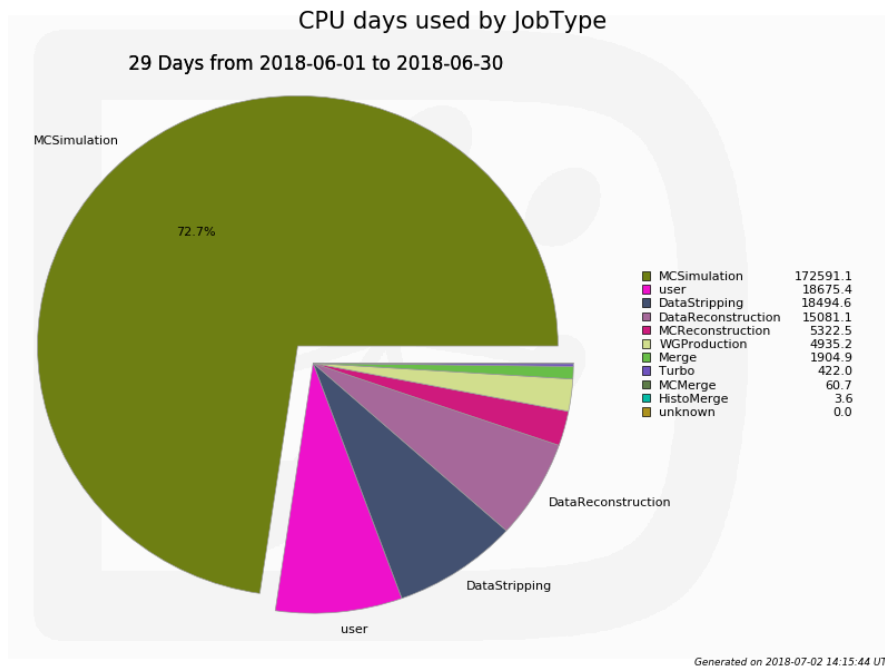
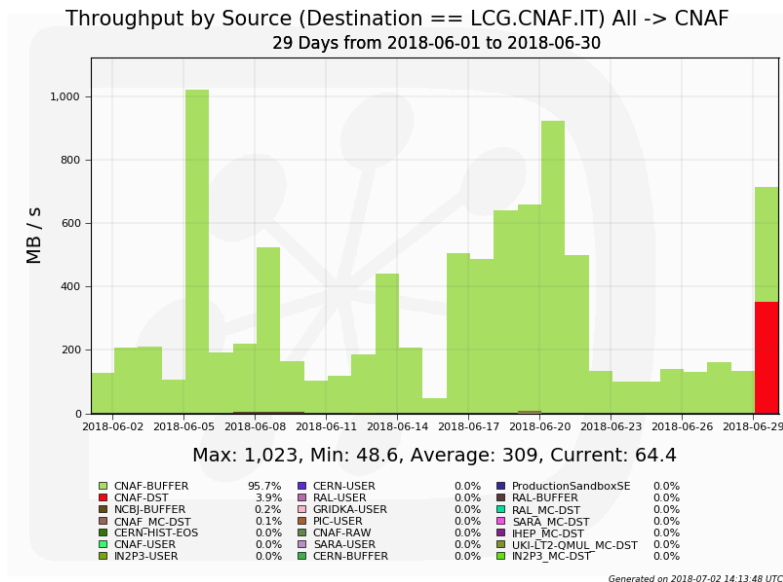
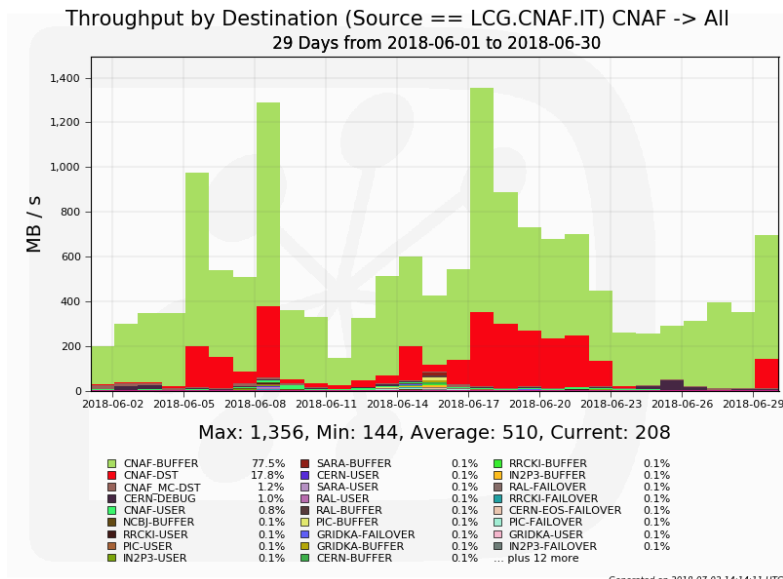


Figura 5: Number of jobs and CPU efficiency - LHCb + LHCb TIER2 (pledge 28080 HS06)



Report:

- 10-14/06: Ticket, Pilots Aborted (GGUS:135582) - Solved, Issue concerning CMS pilot submission.



- 13-20/06: Ticket, Data transfer issues (GGUS:135657). Solved - Storm front-end instability fixed.
- 20-30/06: Ticket, Pilots failing (GGUS:135734). Solved - batch system stuck. LHCb pilots makes too many queries to the batch system, contributing to system overload.
- 30/06: Concerning the tape usage plans for 2019 in sight there is a re-stripping campaign for the entire RUN 2, that will recall all data from 2015

to 2018.

11 Esperimenti di Gruppo 2

- **AMS-O2 - Number of jobs and CPU efficiency (pledge 12800 HS06)**

Open actions:

- richiesta di condor_submit sulle ui; in attesa di feedback farming

- **ARGO-YBJ - Number of jobs and CPU efficiency (pledge 200 HS06)**

Report:

- NTR

- **Auger - Number of jobs and CPU efficiency (pledge 3090 HS06)**

Report:

- NTR

- **Borexino - Number of jobs and CPU efficiency (pledge 1500 HS06)**

Open Actions:

- Richiesta GPUs

- richiesta di tenere overpledge fino a fine giugno

- rsync dalla ui-borexino a LNGS per 12 file da 5GB al giorno

Report:

- In vista dell'upgrade della farm a CO7, abbiamo proposto l'uso di singularity e di assistenza per la preparazione dell'immagine.

- **COSMO_WNEXT - Number of jobs and CPU efficiency (pledge 2500 HS06)**

Report:

- Trasferimento dati (circa 400TB, da 2 utenti) da Cineca a CNAF (disco)

- 48TB sono già stati trasferiti.

- **CTA - Number of jobs and CPU efficiency (pledge 4000 HS06)**

Open Actions:

- Richiesta tool per trasferimento dati da Torino

- **CUORE - Pledge 1400 HS06**

Open Actions:

- Esigenze particolari per trasferimento dati. Soluzione proposta (da discutere): user-interface ad hoc non molto carrozzata ad uso esclusivo di cuore per gli rsync (100 GB/giorno)
- Per i 30 TB iniziali usano globus-url-copy/dataclient
- Controllare slot assegnati a una coda a partire dallo shares perchè ci sono pochi job running contemporaneamente (una decina) a fronte di 1900 HS06 pledged (190 slots)
- problemi nell'uso di dataclient (under investigation)

Report:

- NTR

- **CUPID-0 - Number of jobs and CPU efficiency (pledge 100 HS06)**

Report:

- NTR

- **DarkSide-50 - Pledge 4000 HS06**

Open Actions:

- NTR

Report:

- NTR

- **Fermi-LAT - Number of jobs and CPU efficiency (pledge 900 HS06)**

Report:

- NTR

- **Gerda - Pledge 40 HS06**

Report:

- NTR

- **ICARUS - Pledge 0 HS06**

Open Actions:

- data macchina virtuale per test LARSOFT, in attesa di lista utenti che dovranno accedere

Report:

- ntr

- **Juno - Pledge 1000 HS06**

Open Actions:

- NONE

Report:

- NTR

- **LHAASO - Number of jobs and CPU efficiency (pledge 300 HS06)**

Open Actions:

- Richiesta tool per trasferimento dati da Torino

Report:

- NTR

- **MAGIC - Number of jobs and CPU efficiency (pledge 296 HS06)**

Report:

- NTR

- **OPERA - Number of jobs and CPU efficiency (pledge 200 HS06)**

Report:

- NTR

- **PAMELA - Number of jobs and CPU efficiency (pledge 650 HS06)**

Report:

- NTR

- **Virgo - Number of jobs and CPU efficiency (pledge 30000 HS06)**

Report:

- Installato autoconf su ui di virgo

- **XENON - Number of jobs and CPU efficiency (pledge 700 HS06)**

Report:

- Rate di trasferimento abbassato. Problemi precedenti riportati da Vladimir scomparsi

12 Altri esperimenti

- **AGATA - Pledge 0 HS06**

Report:

Minute skype-call 11/10:

- Macchina con mac address fisso su cui installare la licenza.
- Specifiche macchina:
 - * SO: Linux
 - * accesso interattivo e grafico (x2go, per CAD)
 - * almeno una GPU NVIDIA (aumenterebbe la velocità di calcolo fino a 7 volte)
 - * compilatore CUDA ultima versione dovrebbe andare bene
 - * RAM: 64 GB
 - * Disk: 1-2 TB
 - * mac address fisso per legarci la licenza
- due o più utenti
- previsto un anno di lavoro e poi non dovrebbe più essere necessario
- Licenza non compatibile con cloud, da capire con macchine virtuali.

- **BELLEII - Number of jobs and CPU efficiency (pledge 10000 HS06)**

Report:

- NTR

- **CDF - Number of jobs and CPU efficiency (pledge 1300 HS06)**

Report:

- NTR.

- **COMPASS - Pledge 0 HS06**

Report:

- NTR

- **COSINUS - Number of jobs and CPU efficiency (pledge 0 HS06)**

Report:

- NTR

Open Action:

- NTR

- **CSES-Limadou - Pledge 400 HS06**

Report:

- NTR

Open Action:

- NTR

- **DAMPE - Pledge 3000 HS06**

Report:

- NTR

Open Action:

- NTR

- **FAMU - Pledge 250 HS06**

Report:

- NTR

- **FAZIA - Pledge 0 HS06**

Report:

- La produzione è terminata senza problemi. Manteniamo le macchine attive in quanto l'utente potrebbe averne ancora bisogno a breve.

- **Gruppi Fisica Teorica - Number of jobs and CPU efficiency**

Report:

- NTR

- **KLOE - Pledge 0 HS06**

Report:

- Ricostruito il file system, ricreando le directory e gli stub file a partire dal contenuto delle tape.

- Inserito negli attributi estesi del file il checksum adler32, preso dal DB di Kloe al CNAF.
- Passata al referente la lista dei file presenti sul file system ma non sul DB e viceversa.

Open Action:

- NTR

• **KM3Net - Pledge 0 HS06**

Open Actions:

- Richieste per fornire un servizio web di aiuto alla integrazione dell'esperimento Km3:
 - * high availability
 - * poche risorse di calcolo (CPU/ RAM 4 core/8 GB)
 - * server LAMP (linux, apache, mysql/mariadb, php)
- Le proposte del CNAF:
 - * server virtuale ospitato al CNAF
 - * autenticazione al servizio web tramite IAM, esteso a INFN, CNRS, NIKHEF ed eventualmente altri enti di ricerca europei)
- Esigenza ancora aperta, ma il codice non è ancora pronto da parte dell'esperimento

Report:

- NTR

• **LHCf - Number of jobs and CPU efficiency (pledge 4000 HS06)**

Report:

- NTR

• **NEWS - Pledge 0 HS06**

Report:

- Report phone:
 - * Emulsioni nucleari prodotte in italia e giappone
 - * storage: richiesta 60TB disk + 60TB tape
 - * cpu: 200HS

- * 3.5GB RAM ok per simulazione, forse pochi per analisi
- * SL6/7 OK
- * proposto CVMFS per software
- * FLUKA+Geant simulazione
- * ROOT per analisi, python
- * i job devono accedere ai 60 TB di dati su disco, quindi bisogna montare sui wn questi 60 TB con accesso POSIX
- * configurare area storage e tape per accedere sia via WebDav con certificato sia con gridftp con e senza certificato (una soluzione potrebbe essere dataclient)
- * Mandare istruzioni per accesso al CNAF e creazione account bastion

- **NEWCHIM - Pledge 0 HS06**

Report:

- NTR

- **PADME - Pledge 0 HS06**

Report:

- NTR

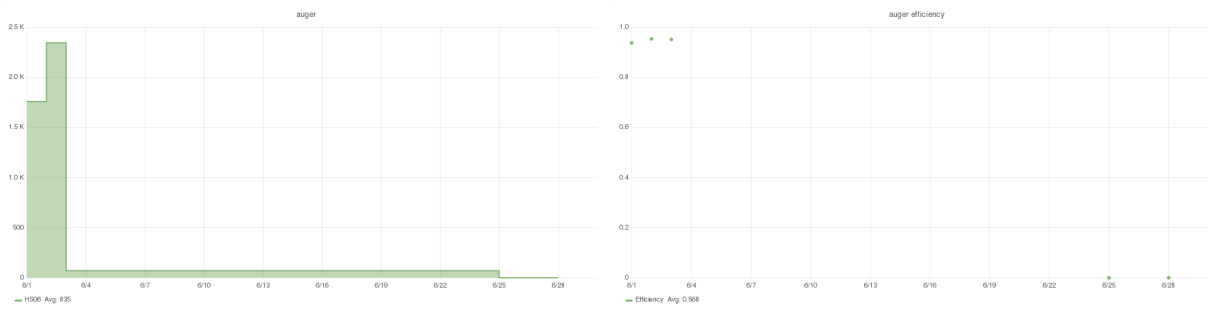
- **NON-LHCf - Pledge 30 CPU**

Report:

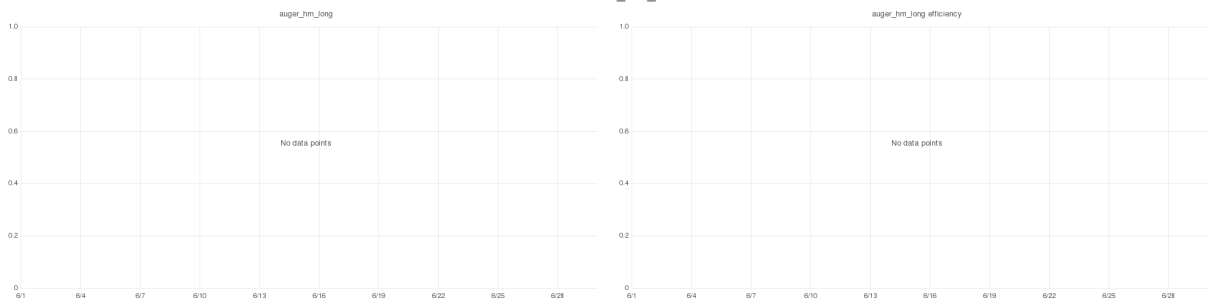
- Creata coda GENERIC su ui-tier1 con share a disposizione 30 CPU
- Lo spazio riservato a LHC-f non si potrebbe utilizzare perchè partiranno a breve delle simulazioni che lo occuperanno la gran parte. Richiesta di avere un proprio spazio disco di 1-2 TB.



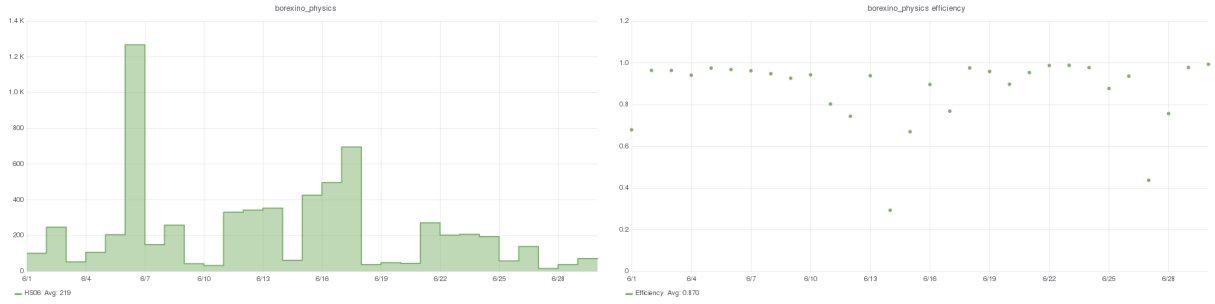
Coda AUGER



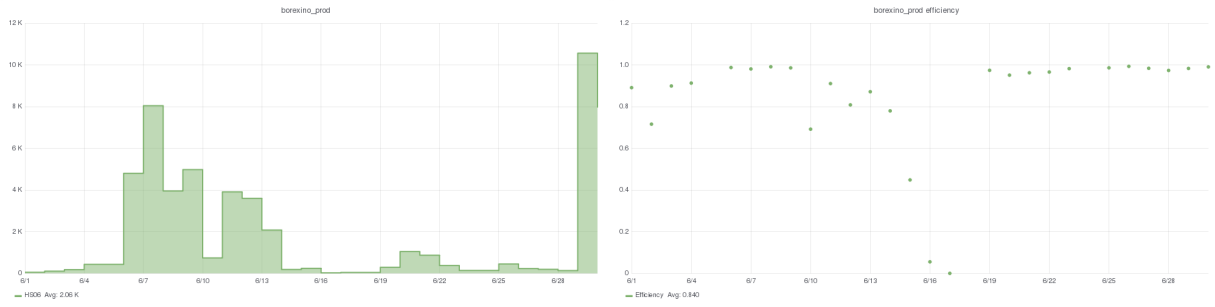
Coda AUGER_HM_LONG



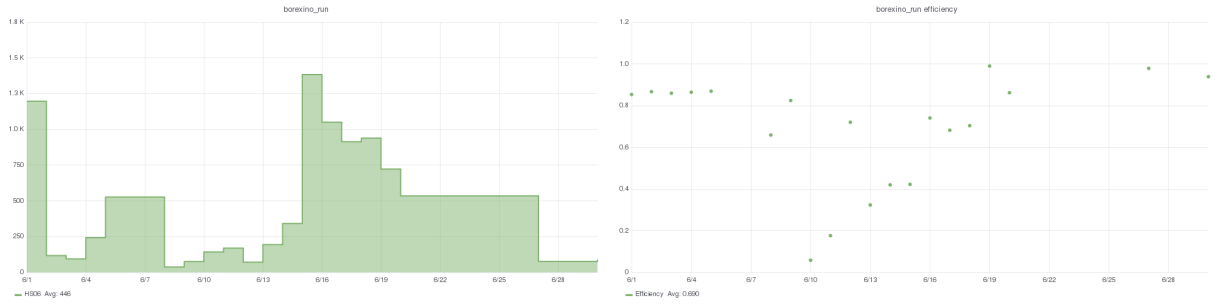
Coda BOREXINO_PHYSICS



Coda BOREXINO_PROD



Coda BOREXINO_RUN



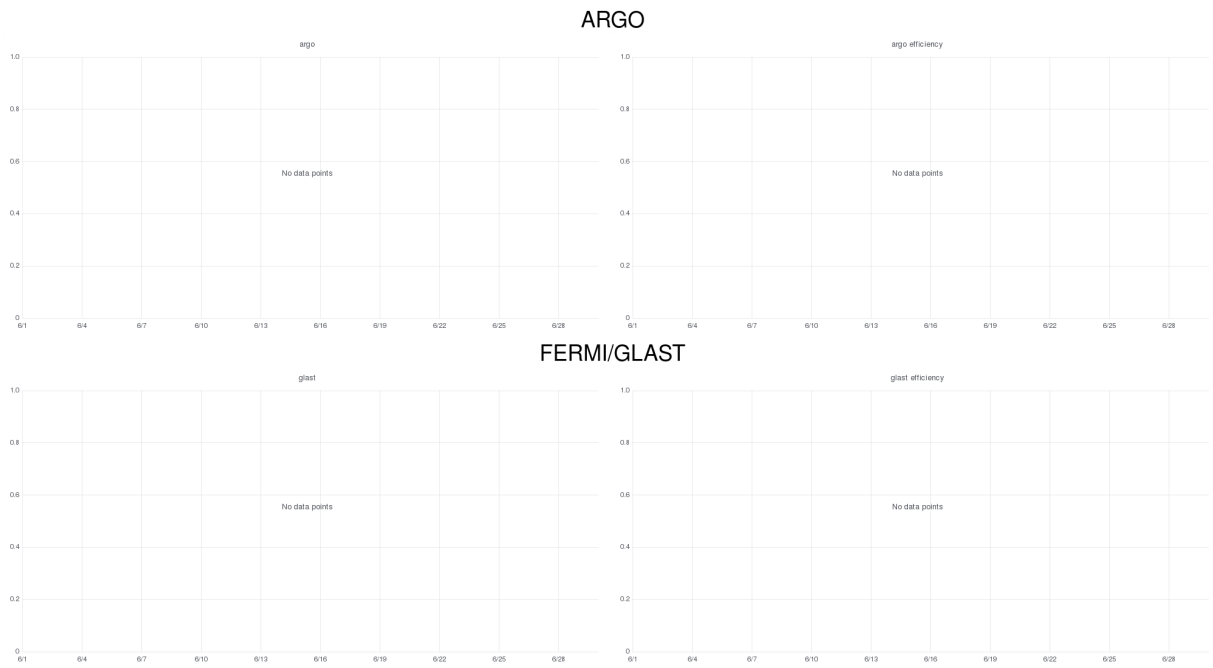


Figura 1



Figura 2

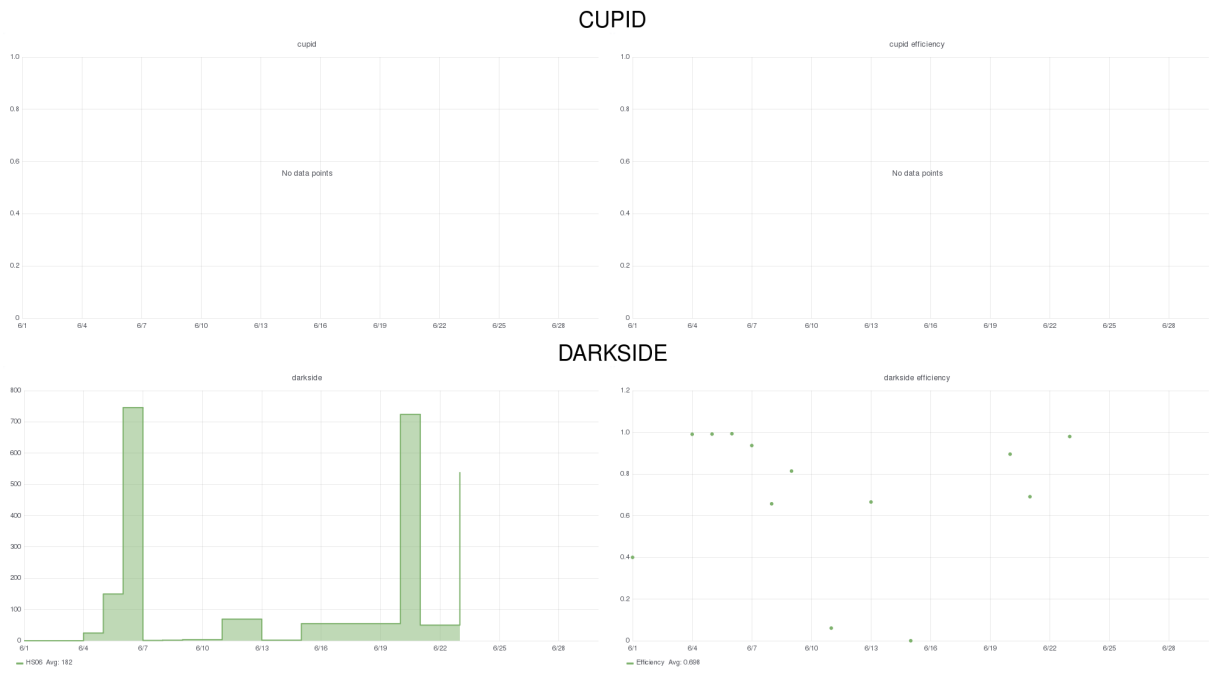


Figura 3

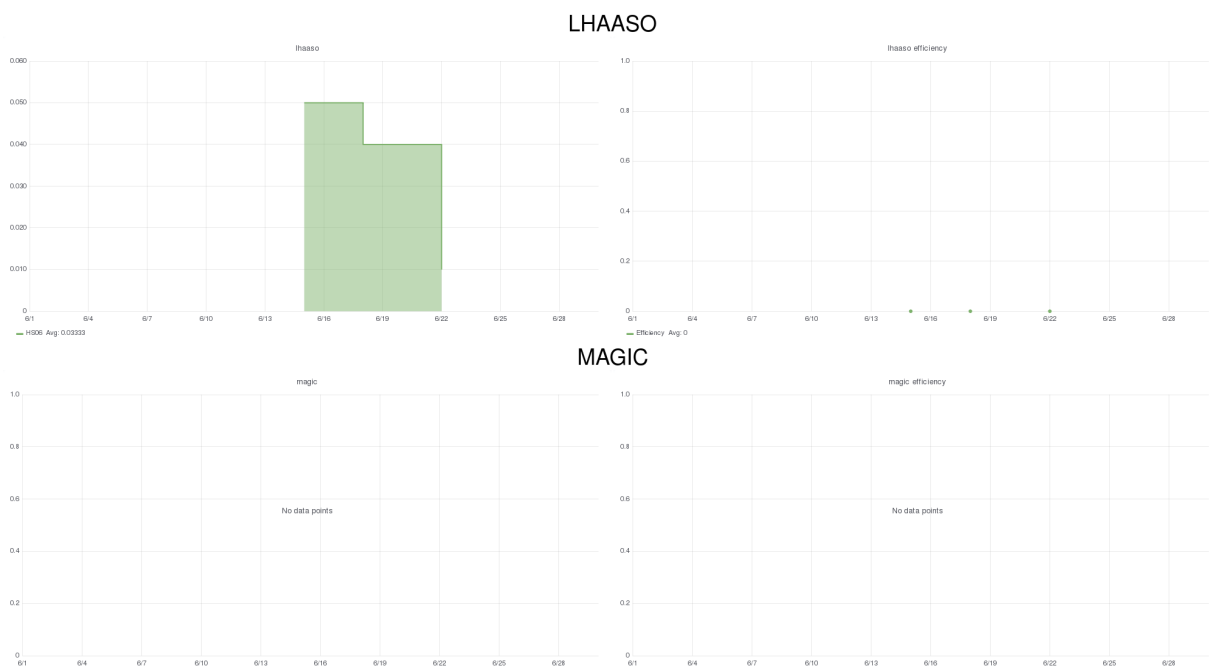
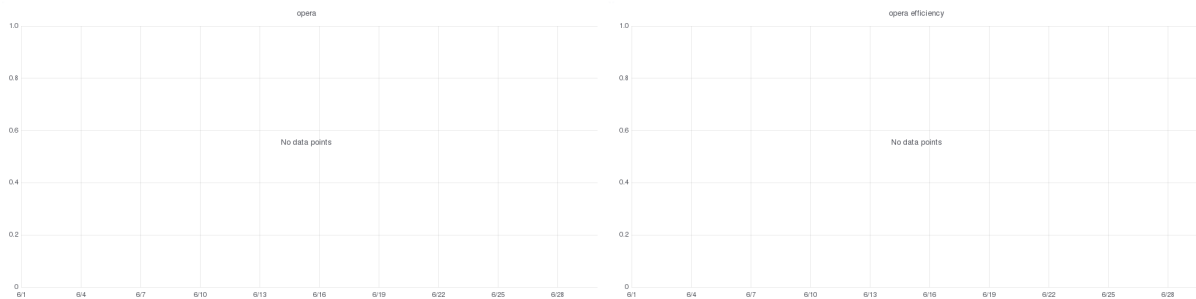
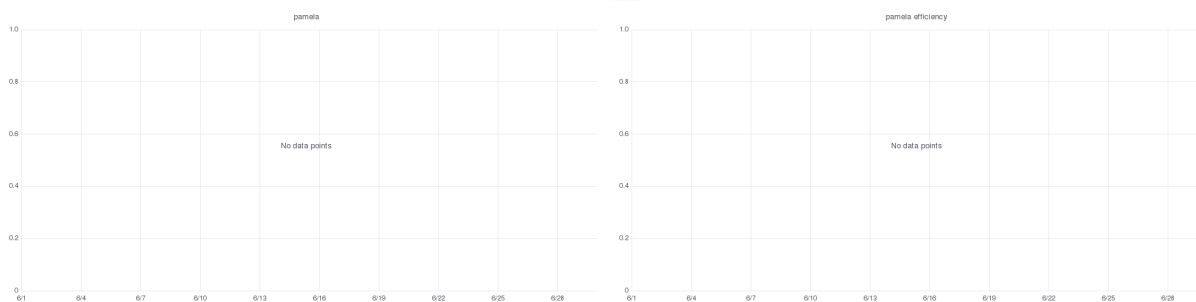


Figura 4

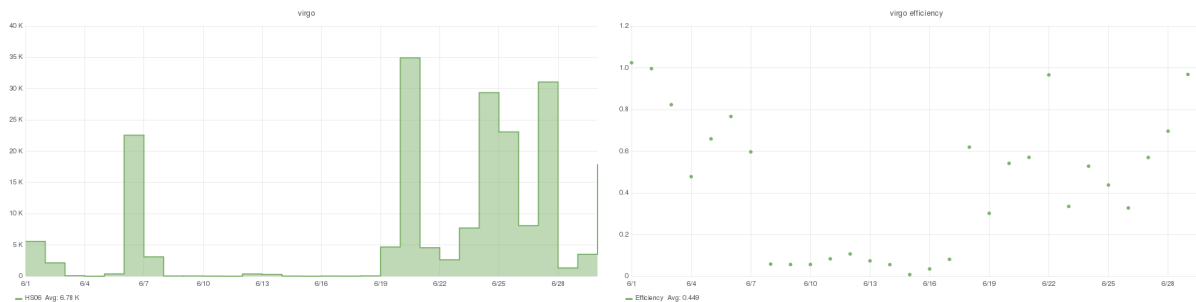
OPERA



PAMELA



VIRGO



XENON

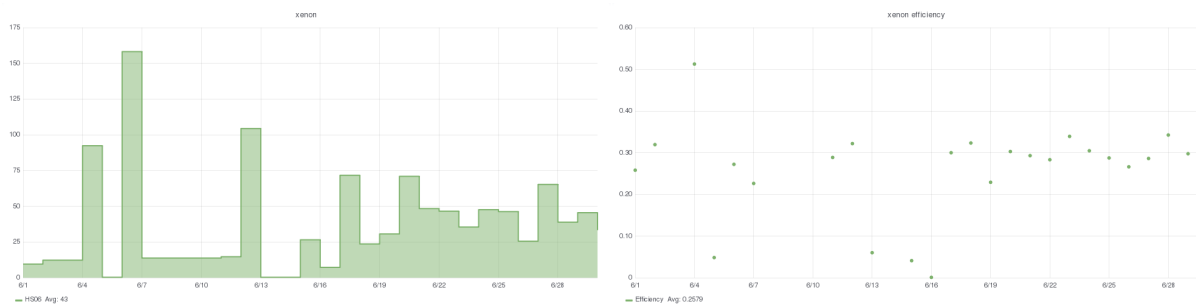


Figura 5

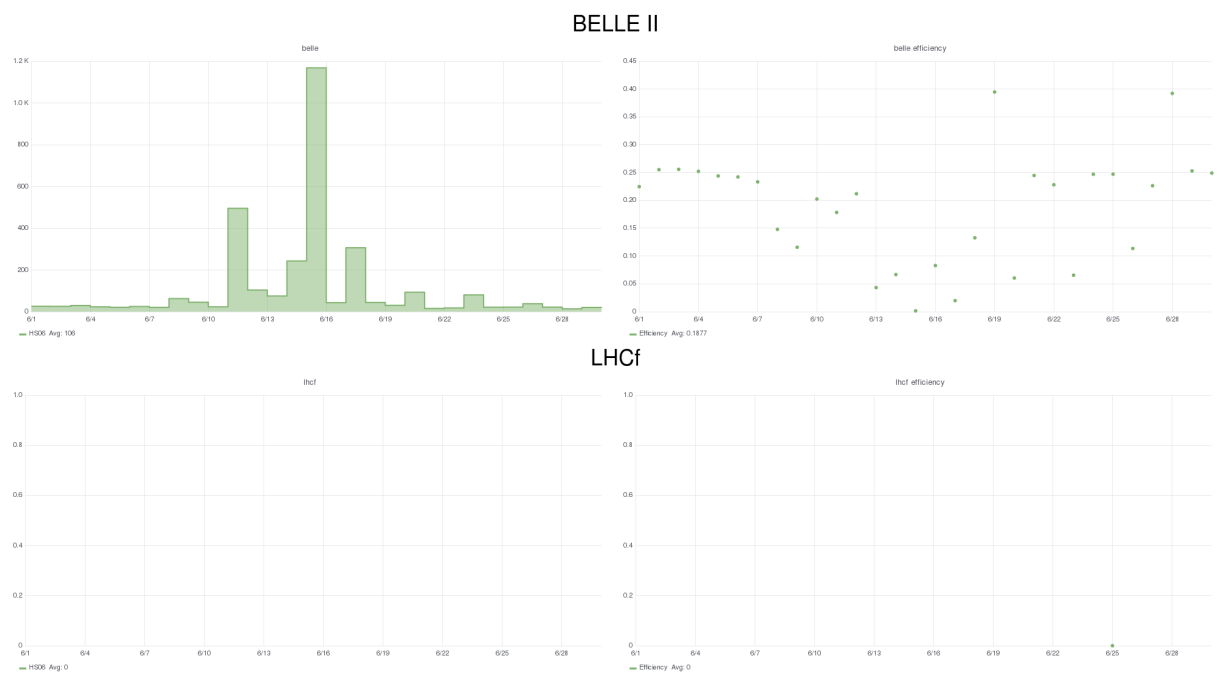


Figura 6