

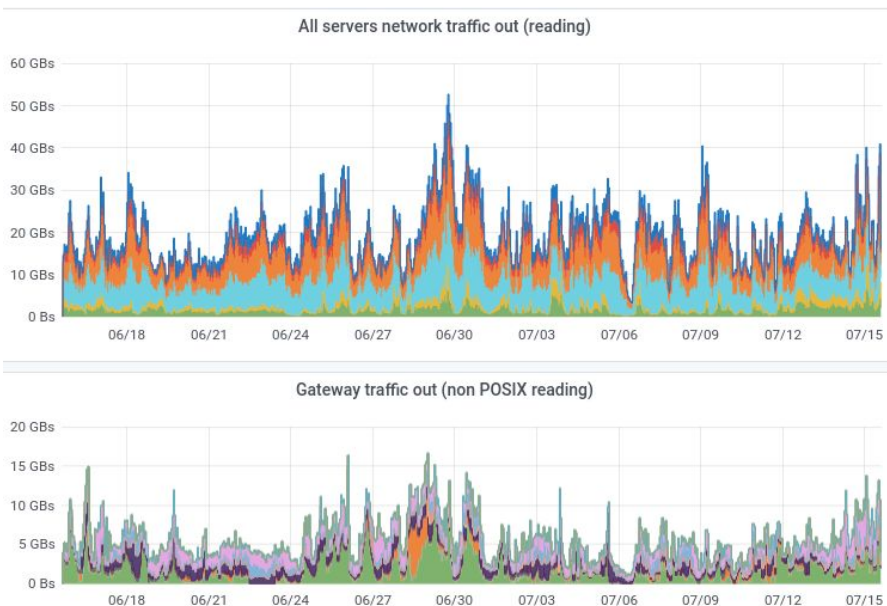
State of Storage

CdG 15 Ottobre, 2021

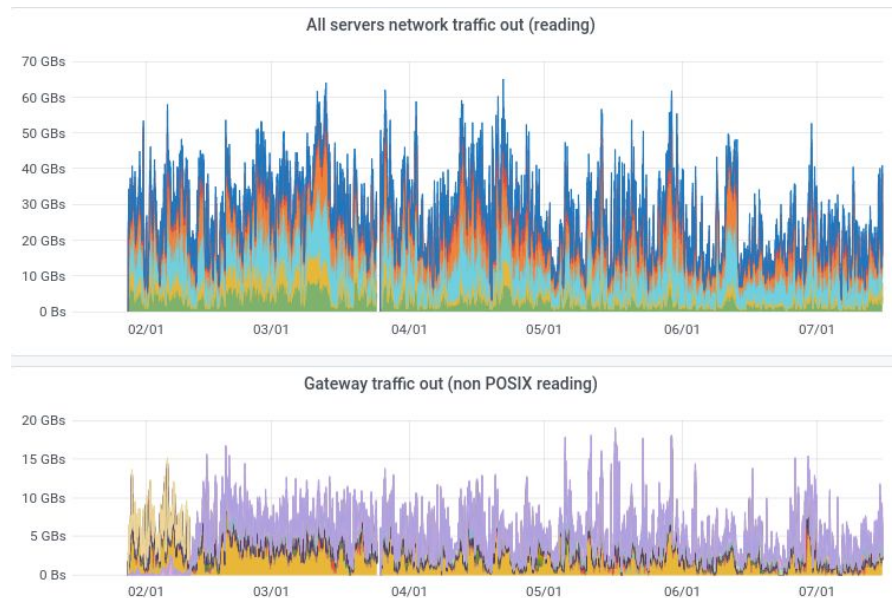


Business as usual

Last month



Last 6 months



Disk storage in produzione

Installed: 41.07 PB Pledge 2020: 45 PB Used: **36.1 PB**

Sistema	modello	Capacita', TB	esperimenti	scadenza
ddn-10, ddn-11	DDN SFA12k	10752	Atlas, Alice, AMS	03/2021→ 06/2023
os6k8	Huawei OS6800v3	3400	ALICE, GR2	2022
md-1,md-2,md-3,md-4	Dell MD3860f	2308	DS, Virgo, Archive	11/2021
md-7	Dell MD3820f	20	metadati, home, SW	2022
md-5, md-6	Dell MD3820f	8	metadati	06/2021
os18k1, os18k2	Huawei OS18000v5	7800	LHCb, ALICE	2023
os18k3, os18k5, os18k5	Huawei OS18000v5	11700	ATLAS, CMS	2024
ddn-12, ddn-13	DDN SFA 7990	5060	GR2,GR3	2025
ddn-14, ddn-15	DDN SFA 2000NV	24	metadati	2025

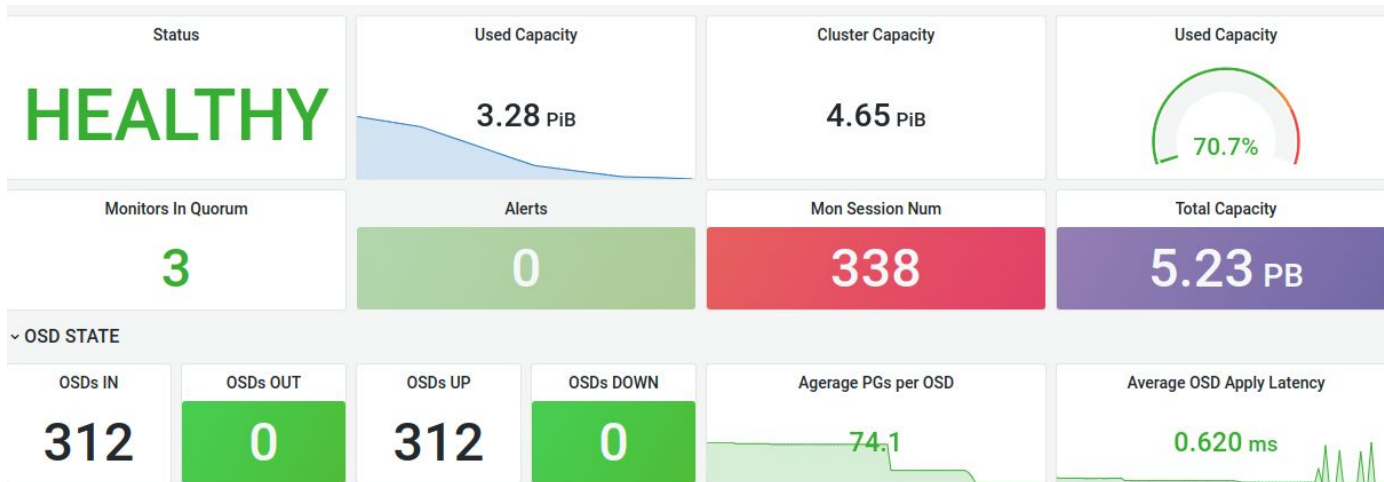
Stato installazioni storage - lotto CEPH

- Lotto CEPH (5 PB raw) consegnato e installato in rack
- Collaudo eseguito con successo
- Installato RHEL 8.4 e Ceph Pacific



Stato installazioni storage - lotto CEPH

- Eseguiti benchmark estensivi e prove di failover
- Pronto per essere utilizzato con servizi di trasferimento



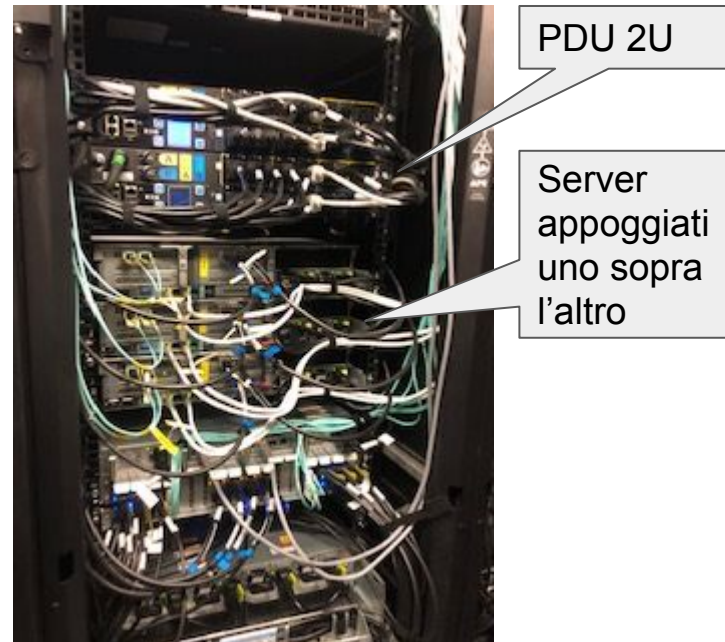
Stato installazione storage - lotto GPFS

Lotto GPFS (8.7 PB netti):

Installate PDU e tutto il resto della fornitura

In attesa di finalizzare tutto il cablaggio server (anche transceiver CISCO 100Gb/s)

Da montare slitte per i server



Current SW in PROD

- GPFS 5.0.5-2 → being updated to 5.0.5-9 (to fix security vulnerability)
 - Done on farm nodes and UI
- StoRM BackEnd 1.11.21 (latest)
- StoRM FrontEnd 1.8.15 (latest)
- StoRM WebDAV 1.4.0 (latest)
- StoRM globus gridftp 1.2.4
- XrootD 4.11.2

Recent problems

- ALICE
 - Discrepancy between xrootd service status (in failure) and running processes: fixed
 - Recall of missing files (1 file per hour) related to the add-get-remove test suite: it's not a problem
- CMS
 - Configured new VOMS server (GGUS ticket [153699](#))
 - Support for testing tape access with srm+https (GGUS ticket [153570](#))
 - The port number of xrootd-cms-01.cr.cnaf.infn.it shows 0 instead of 1094 when reporting to the France redir; unsolved, closed (GGUS ticket [153495](#))
 - SAM tests timing out; hw problem, fixed (GGUS ticket [153344](#))
 - Destination overwrite error caused by a problematic interaction between FTS and RUCIO (<https://github.com/rucio/rucio/issues/4447#issuecomment-858780310>), patch to be released in October (GGUS ticket [153110](#))
 - Not clear whether the patch will only permit central removal or whether it will also fix the mismatch with checksums
 - Tests for tape data challenge ([154249](#))

Recent problems (continued)

- ATLAS

- Configured new VOMS server (GGUS ticket [153699](#))
- New storage area for SRM+https tape tests, with new RSE in CRIC. ~106TB recalled, very happy with such tests, ready for production after data challenge, when FTS servers will be upgraded
- Transfers timeouts with destination INFN-T1 and dCache sources; STORM_WEBDAV_TPC_TIMEOUT_IN_SECS increased (GGUS ticket [153084](#))
- Staging errors, http protocol is not configured for tape storage areas ([154419](#))

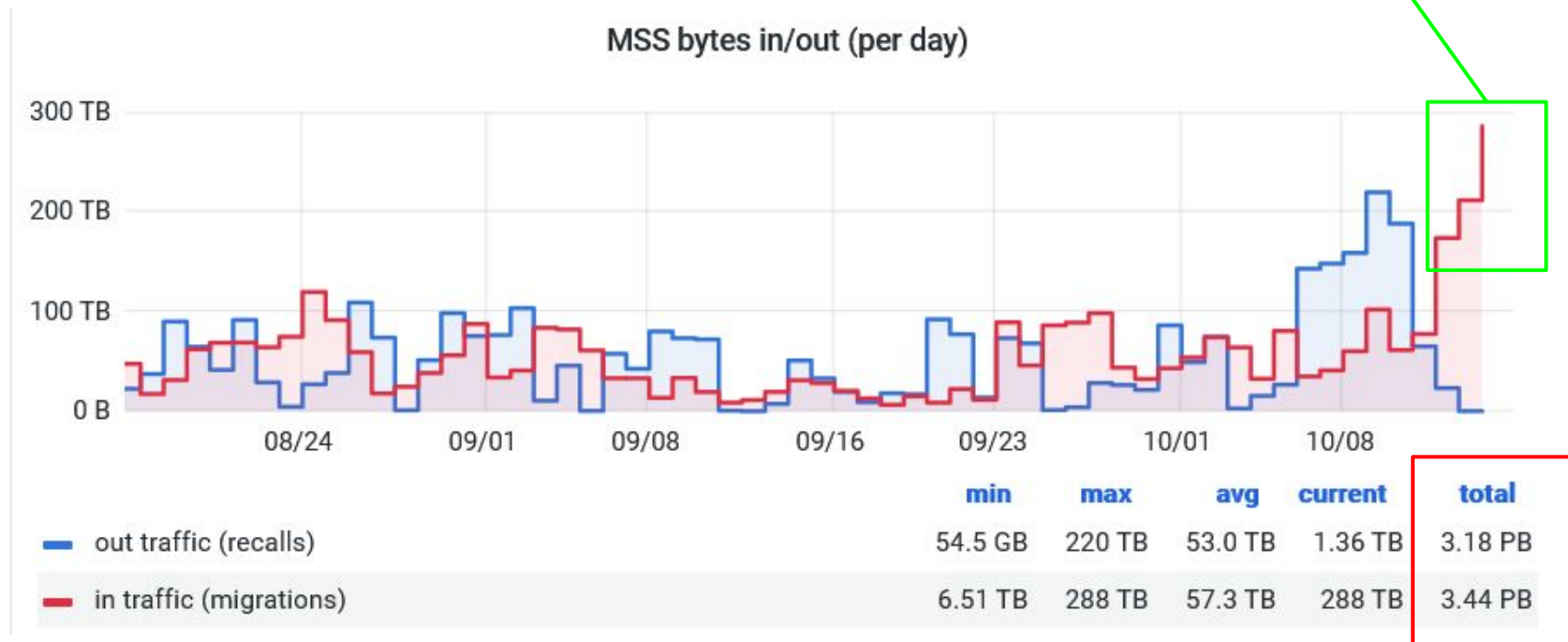
- LHCb

- Configured new VOMS server (GGUS ticket [153699](#))
- Errors for jobs reading with file protocol from the WNs; Dirac configuration fixed (GGUS ticket [153570](#))
- Files missing after successful write; temporary problem caused by fs slowdown (GGUS ticket [153416](#))
- Tape data challenge; errors with used space in StoRM db, fixed ([154092](#))
- Files not written; indeed they were removed by the job after being written ([154332](#))

Stato tape

15 Aug - 14 Oct 2021

Tape challenge



Stato tape

- 7 PB liberi (complessivamente sulle 2 librerie). Usati 88.5 PB.
 - Gran parte delle scritture su nuova libreria
 - Tutti LHC
 - Xenon, CTA, Virgo, ARGO, Juno, Icarus
 - Pledge 101.1 PB. Da assegnare gara di acquisto di 5 PB per arrivare a pledge
 - Test di trasferimenti via tape via SRM+https
 - ATLAS: test completati con successo
 - CMS: configurazione CNAF completata (GGUS ticket [153570](#))

Library	Tape drives	Max data rate/drive, MB/s	Max slots	Max tape capacity, TB	Installed cartridges	Used capacity, PB
SL8500 (Oracle)	16*T10KD	250	10000	8.4	~10000	74.3
TS4500 (IBM)	19*TS1160	400	6198	20	750	14.2

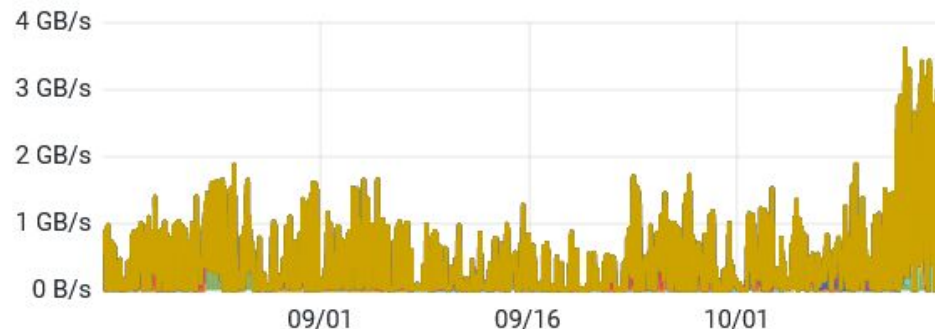
Nuovi GEMSS e orchestratore drive

- Modificato GEMSS per lavorare con code di recall di 2 diverse librerie
- Modificato di conseguenza orchestratore drive per ottimizzare ulteriormente le recall
 - Doppio orchestratore, uno per tipo di coda (cioè per libreria)
 - Il numero massimo di drive assegnabili ad un esperimento è calcolato sulla base della banda dell'HSM server e sul numero di drive usati in entrambe le librerie
- In produzione dalla scorsa settimana

Tape challenge

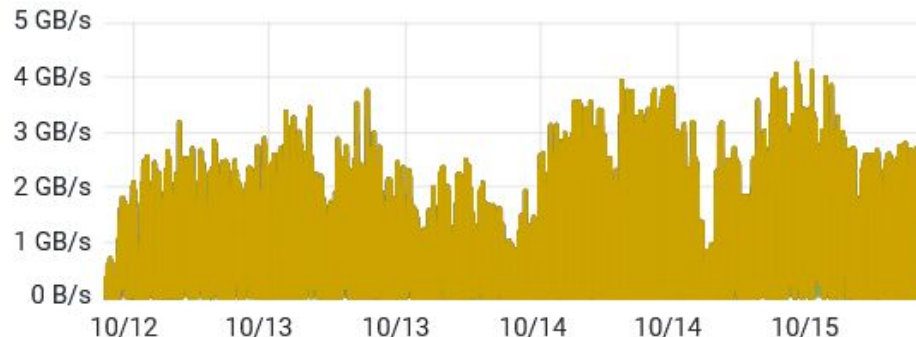
- In corso questa settimana
- Soprattutto scritture, fino a oltre 4 GB/s complessivi
- Problema con cassette IBM indisponibili, risolto entro qualche ora
- Terminerà oggi come previsto?

All HSM tape write (stacked)



Ultimi 2 mesi

All HSM tape write (stacked)



Tape challenge

Intervento del 19/10 su DDN-10 e DDN-11

- Aggiornamento FW dei sistemi SFA12K
- “This upgrade plan requires an outage”
- Esperimenti interessati:
 - ATLAS (gpfs_atlas)
 - ALICE (gpfs_alice)
 - AMS (gpfs_ams)
- Fermo programmato dei servizi dalle 8:00 alle 20:00 del 19/10
- downtime inserito:
https://goc.egi.eu/portal/index.php?Page_Type=Downtime&id=31260