

# Operational reliability and security of the Heterogeneous platform «HybriLIT»

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# PROJECTS

## **Russia, Dubna, JINR, LIT**

High Performance Computing (Supercomputer Govorun)

Virtual Desktop Infrastructure

ML/DL Ecosystem

Ariadna project

## **Russia, Dubna, Dubna State University**

System administration servers and services

## **Russia, Moscow, Plekhanov Russian University of Economics (REU)**

High Performance Computing

## **Mongolia, Ulaanbaatar, Institute of Mathematical and Digital Technologies (IMDT)**

High Performance Computing

# PROXMOX MONITOR

Online and offline status of  
CPU, RAM, Ceph

pve01 (Uptime: 61 days 03:43:29)

CPU usage	0.04% of 96 CPU(s)	IO delay	0.00%
Load average	0.09,0.14,0.19		
RAM usage	6.14% (44.44 GiB of 723.58 GiB)	KSM sharing	0 B
/ HD space	52.68% (33.74 GiB of 64.04 GiB)	SWAP usage	0.00% (0 B of 8.00 GiB)

CPU(s)

96 x Intel(R) Xeon(R) Gold 6252 CPU @ 2.10GHz (2 Sockets)

Kernel Version

Linux 6.5.13-6-pve (2024-07-26T12:34Z)

Boot Mode

Legacy BIOS

Manager Version

pve-manager/8.4.1/2a5fa54a8503f96d

Repository Status

Proxmox VE updates

Non production-ready repository enabled!



Server View

Node 'pve01'

Search

Summary

Notes

Shell

System

Network

Certificates

DNS

Hosts

Options

Time

System Log

Updates

Repositories

Firewall

Disks

LVM

LVM-Thin

Directory

Health

Status

HEALTH\_OK

Summary

No Warnings/Errors

Ceph Version:

18.2.4

Performance

Status

OSDs

	In	Out
Up	3	0
Down	0	0
Total:	3	

PGs

active+clean:

33

Services

Monitors

pve01: ✓

pve02: ✓

pve03: ✓

Managers

pve01: ✓

Meta Data Servers

# CHRONOGRAF MONITOR

Online and offline status of  
HARDWARE

- ▶ cpu
- ▶ disk
- ▶ diskio
- ▶ ethtool
- ▶ kernel
- ▶ mem
- ▶ net

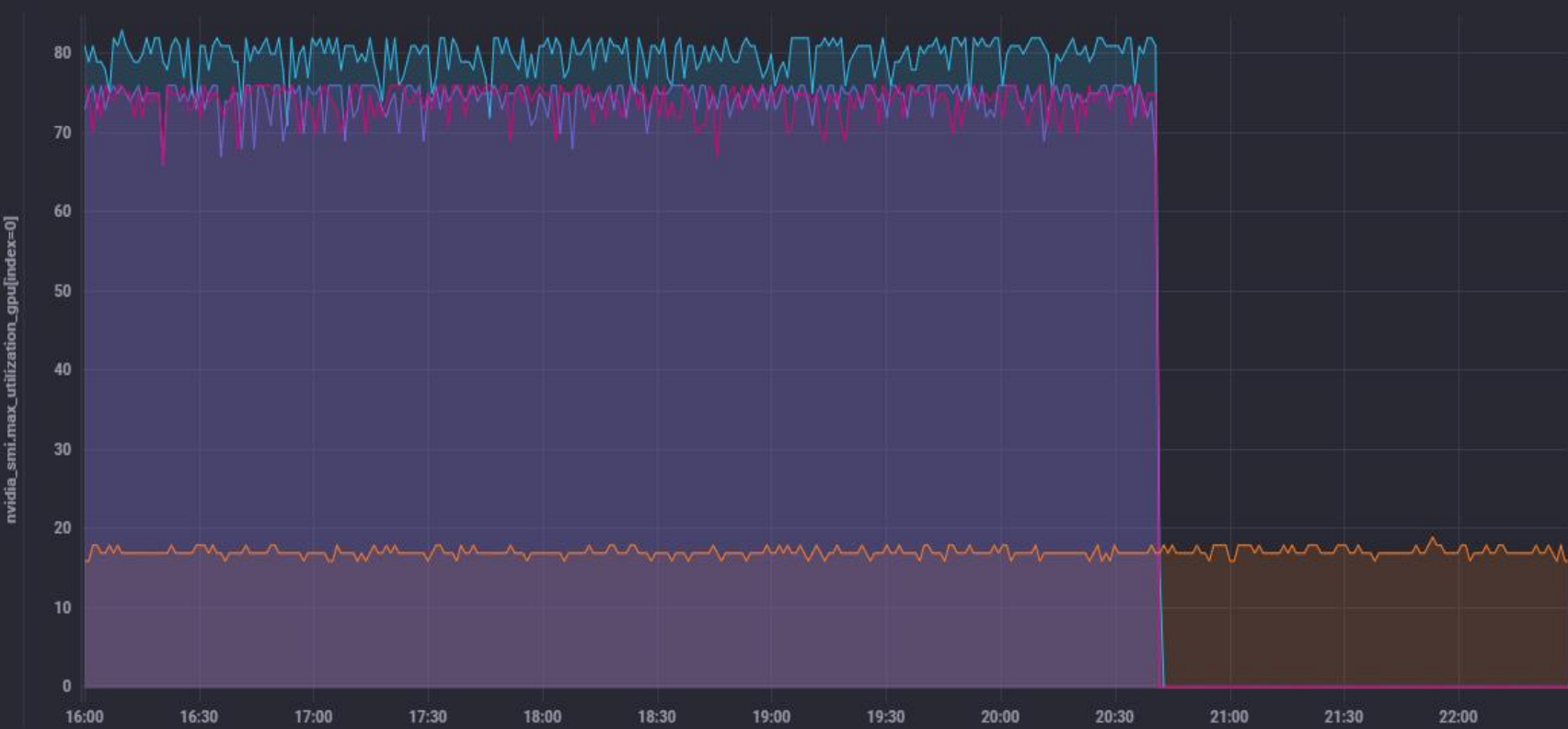
▼ **nvidia\_smi**

- ▶ arch — 3
- ▶ compute\_mode — 1
- ▶ host — 10
- ▶ index — 8

▼ **name — 4**

🔍 *Filter within name*

- **NVIDIA A100-SXM4-80GB**
- **NVIDIA GeForce RTX 4090**
- **Tesla M60**
- **Tesla V100-SXM2-32GB**



Group By host

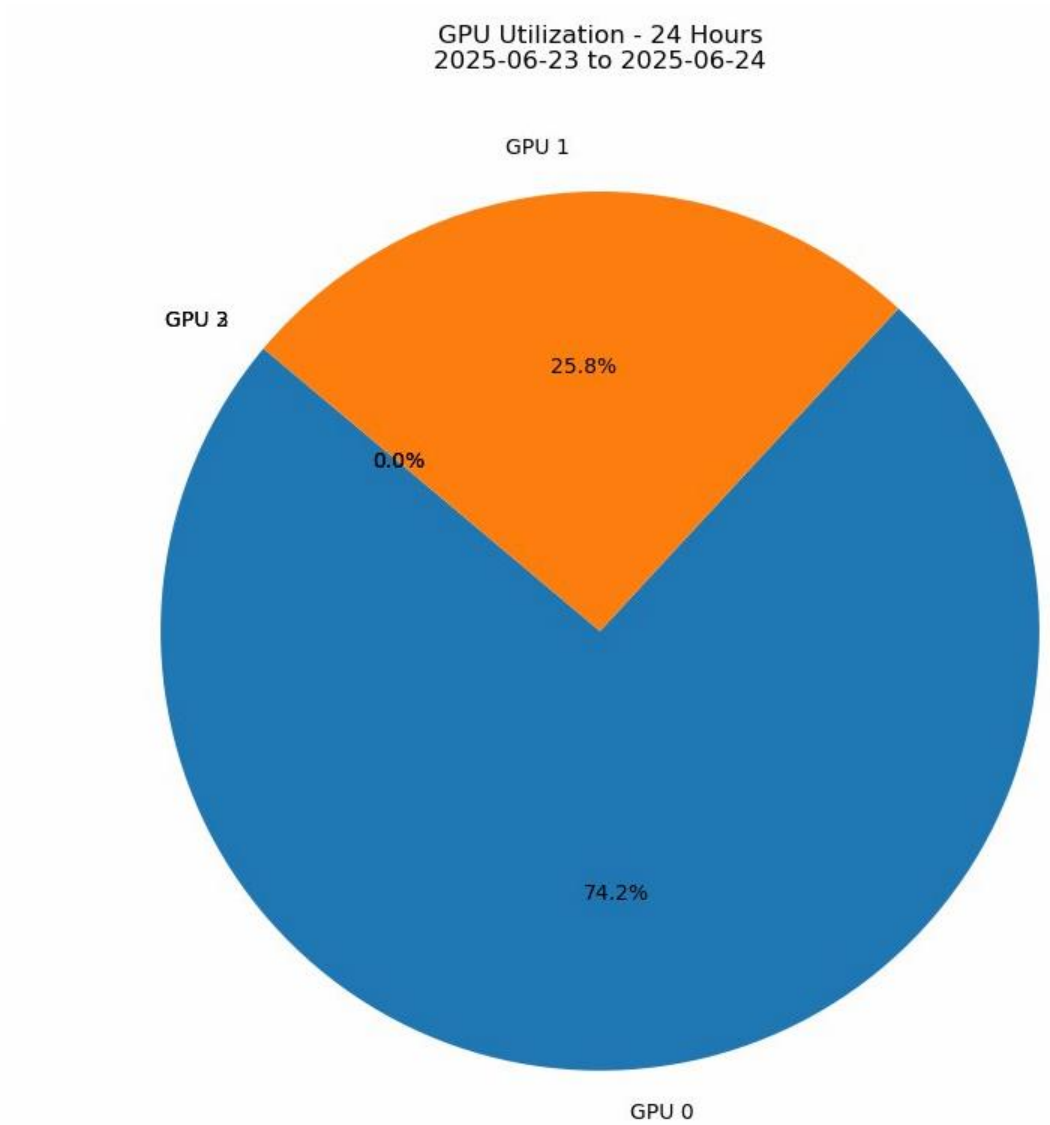
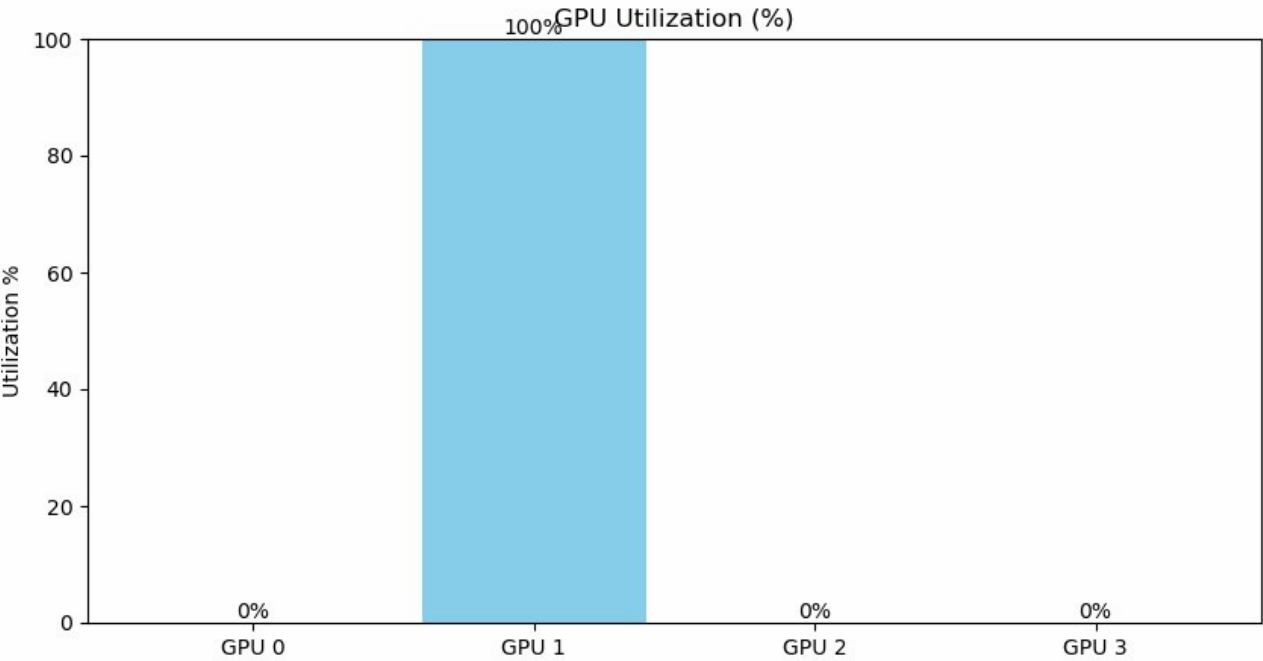
Group By name

=

- ☐ retired\_pages\_multiple\_single\_bit
- ☐ retired\_pages\_pending
- ☐ serial
- ☐ temperature\_gpu
- ☐ utilization\_decoder
- ☐ utilization\_encoder
- ☒ **utilization\_gpu**
- ☐ utilization\_jpeg
- ☐ utilization\_memory
- ☐ utilization\_ofa
- ☐ vbios\_version

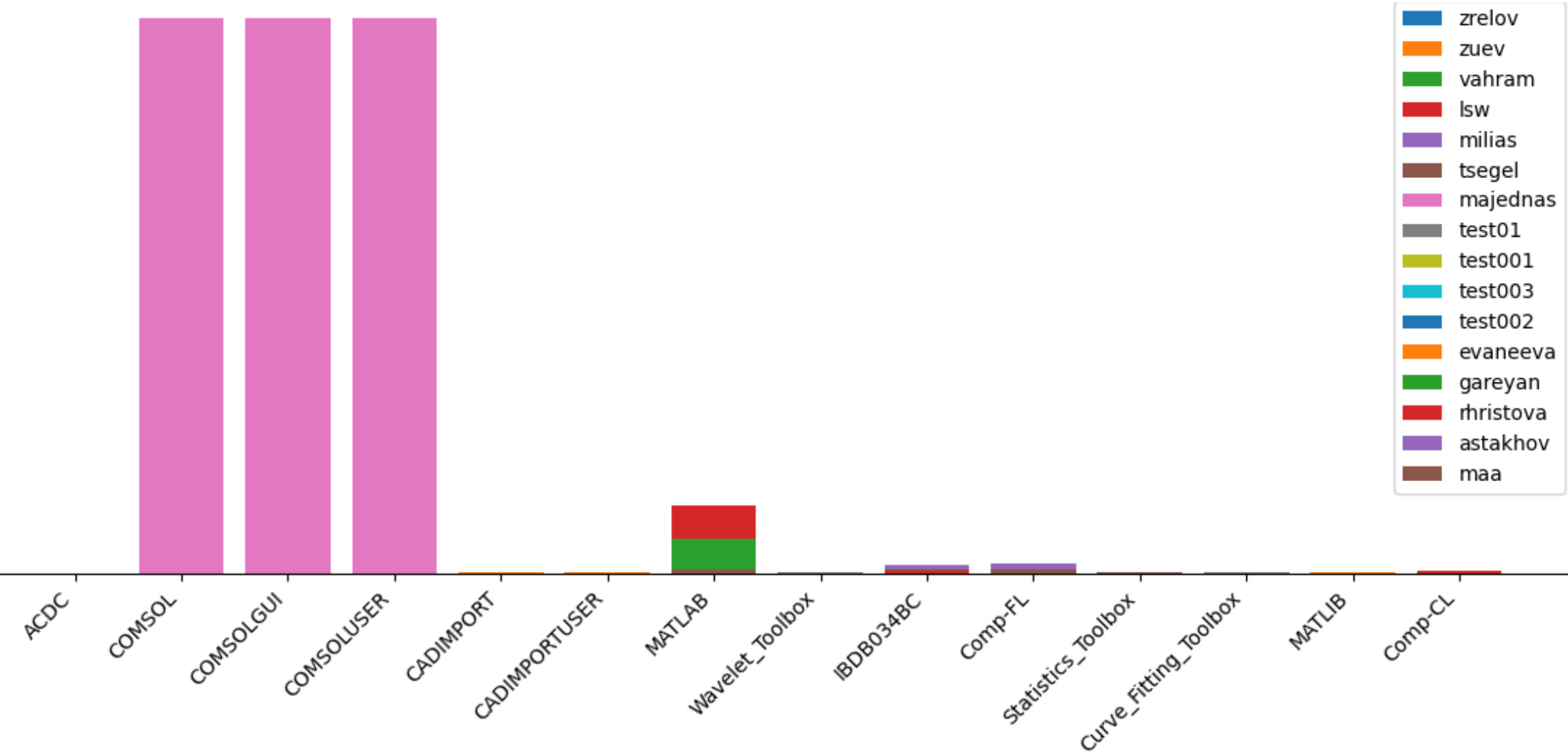
# STATUS BY TELEGRAM

Online and offline status of  
HARDWARE



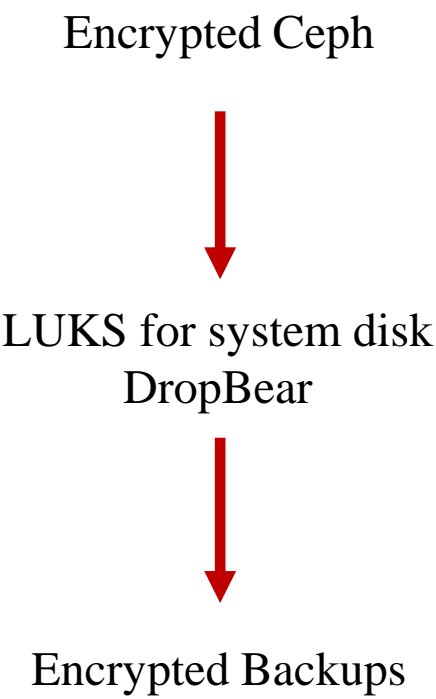
# STATISTICS

## HybriLIT software usage statistics



# SECURITY

Encryption of storage and backups  
to protect information  
from copy



vm/129/2025-06-29T01:02:47Z	2025-06-29 04:02:47	pbs-vm	107.37 GB	🔒 Encrypted
vm/128/2025-06-29T01:02:41Z	2025-06-29 04:02:41	pbs-vm	214.75 GB	🔒 Encrypted
vm/127/2025-06-29T01:02:37Z	2025-06-29 04:02:37	pbs-vm	34.36 GB	🔒 Encrypted
vm/124/2025-06-29T01:02:10Z	2025-06-29 04:02:10	pbs-vm	268.44 GB	🔒 Encrypted
vm/123/2025-06-29T01:02:06Z	2025-06-29 04:02:06	pbs-vm	34.36 GB	🔒 Encrypted
vm/120/2025-06-29T01:02:01Z	2025-06-29 04:02:01	pbs-vm	75.16 GB	🔒 Encrypted
vm/112/2025-06-29T01:00:50Z	2025-06-29 04:00:50	pbs-vm	858.99 GB	🔒 Encrypted
vm/110/2025-06-29T01:00:30Z	2025-06-29 04:00:30	pbs-vm	751.62 GB	🔒 Encrypted
vm/103/2025-06-29T01:00:23Z	2025-06-29 04:00:23	pbs-vm	10.74 GB	🔒 Encrypted
vm/102/2025-06-29T01:00:12Z	2025-06-29 04:00:12	pbs-vm	10.74 GB	🔒 Encrypted
vm/101/2025-06-29T01:00:03Z	2025-06-29 04:00:03	pbs-vm	128.85 GB	🔒 Encrypted
vm/9000/2025-06-29T00:38:37Z	2025-06-29 03:38:37	pbs-vm	2.36 GB	🔒 Encrypted
vm/228/2025-06-29T00:38:20Z	2025-06-29 03:38:20	pbs-vm	53.69 GB	🔒 Encrypted
vm/226/2025-06-29T00:38:11Z	2025-06-29 03:38:11	pbs-vm	16.11 GB	🔒 Encrypted
vm/224/2025-06-29T00:38:02Z	2025-06-29 03:38:02	pbs-vm	16.11 GB	🔒 Encrypted
vm/221/2025-06-29T00:37:36Z	2025-06-29 03:37:36	pbs-vm	472.45 GB	🔒 Encrypted
vm/209/2025-06-29T00:37:20Z	2025-06-29 03:37:20	pbs-vm	53.69 GB	🔒 Encrypted

# BACKUPS

Local and remote backups to protect from loss or corruption data

Dashboard

Notes

Configuration

Access Control

Remotes

Traffic Control

Certificates

Notifications

Subscription

Administration

Shell

Storage / Disks

Datacenter (cluster)

pve01

101 (telegraf)

103 (guacamole)

104 (ldap)

105 (vdi01)

106 (vdi02)

107 (telegraf2)

100 (alma9)

102 (ubuntu24)

localnetwork (pve01)

ceph (pve01)

local (pve01)

local-lvm (pve01)

pve02

localnetwork (pve02)

Search

Summary

Notes

Shell

System

Network

Certificates

DNS

Hosts

Options

Time

System Log

Updates

Repositories

Firewall

Disks

LVM

LVM-Thin

Directory

ZFS

Ceph

Configuration

Monitor

OSD

CephFS

Pools

Log

Replication

Task History

Subscription

Status

No Warnings/Errors

HEALTH\_OK

Ceph Version: 18.2.4

Status

OSDs

	In	Out
Up	3	0
Down	0	0

Total: 3

Services

Monitors

pve01: pve02: pve03:

Managers

pve01:

Performance

Usage

21%

346.97 GiB of 1.60 TiB

Reads:

Writes:

IOPS:

Reads:

Datastore: backup

Summary

Content

Prune & GC Jobs

Sync Jobs

Show Connection Information

backup (/mnt/backup)

Usage

35.66% (3.57 TB of 10.01 TB)

Backup Count

CT

0 Groups, 0 Snapshots

Host

16 Groups, 94 Snapshots

VM

80 Groups, 217 Snapshots

Stats from last Garbage Collection

Deduplication Factor

6.24



THANK YOU!