

Server status

from 2024-09-01 to 2024-11-30

Introduction

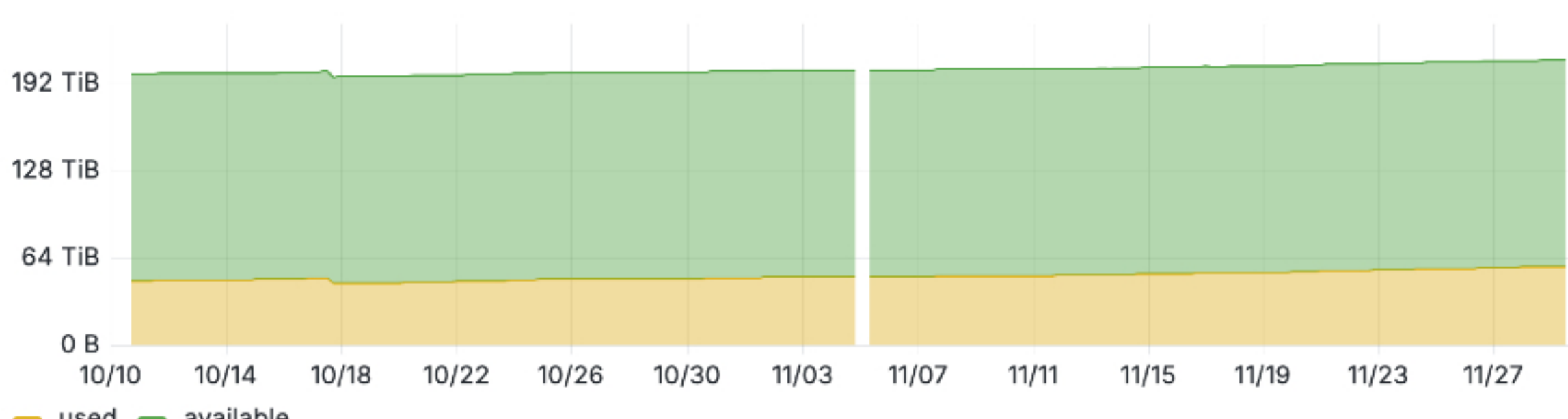
This section reports about the evolution of the server infrastructure and the data volume of official PGN data.

- **Figure 1** shows the total, used and free storage on the server infrastructure.
- **Figure 2** shows the data volume of official PGN data.
- **Figure 3** shows the processing load on the server and cloud infrastructure.

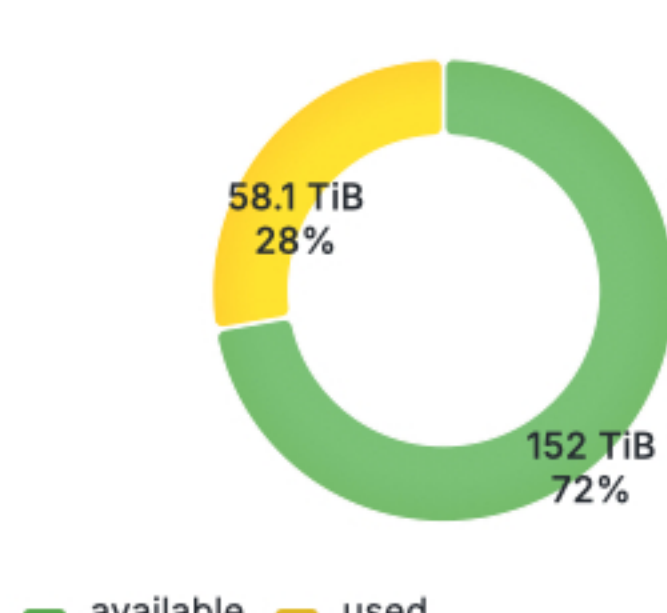
Click [here](#) to view the interactive version.

Data storage

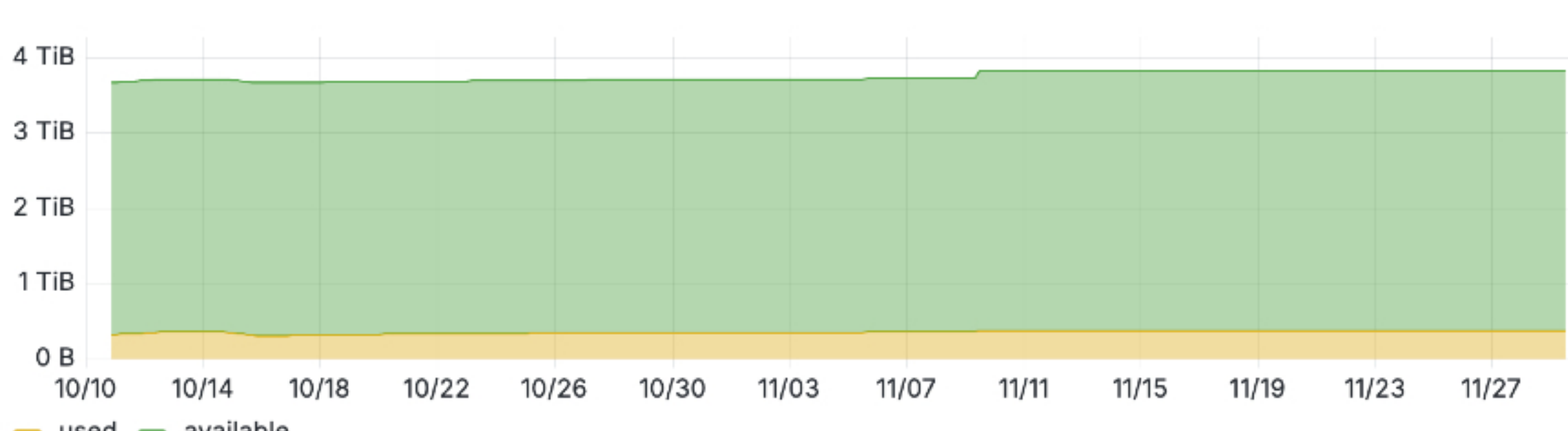
Disk Space OVH



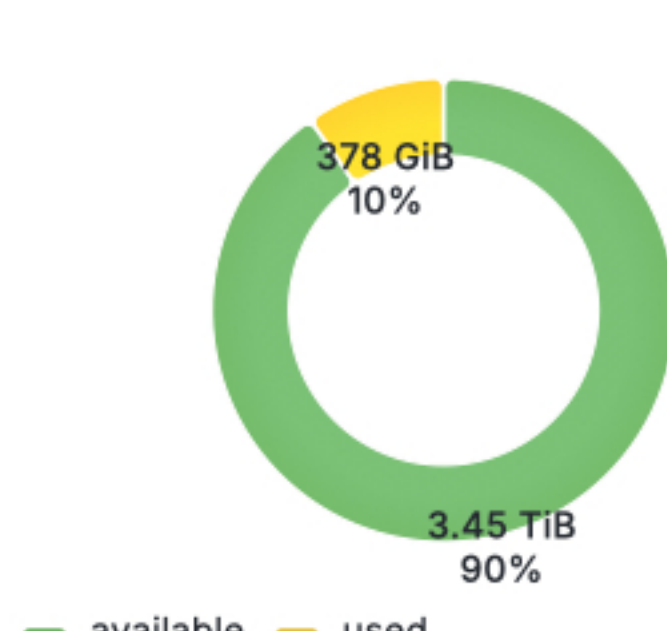
Disk Space OVH



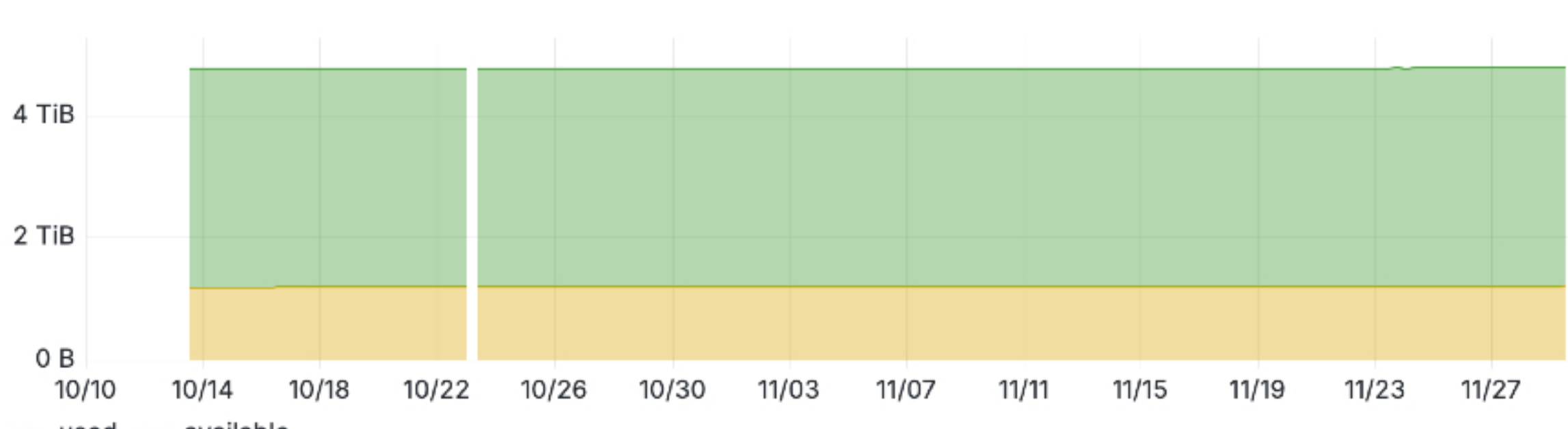
Disk Space Usage LB4



Disk Space LB4



Disk Space Usage LB5



Disk Space LB5

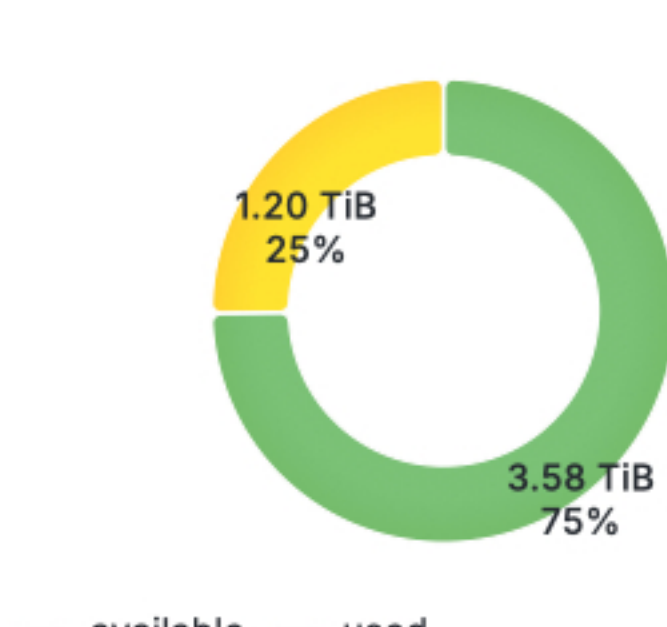


Figure 1

The evolution of the traditional server storage capacity (total, free and used) over the selected time period is shown here. The top plot displays the combined total of all storage entities (lb4, lb5 and ovh), while the subsequent plots provide the same information per storage entity.

Description of storage entities:

Server Name	CPUs	RAM	Size	Location	Usage
ovh	48	198G	200TB	Germany (OVH)	Blick data storage, database, operational processing, BlickV, BlickM, upload directory
lb4	8	32G	4TB	Germany (Strato)	Monitoring, offline processing (formerly operational processing, BlickM)
lb5	12	32G	7TB	Germany (Strato)	Test environment (formerly monitoring, database, upload directory)
nilu.no	-	-	-	Norway (NILU)	L0 Backup

Operational data

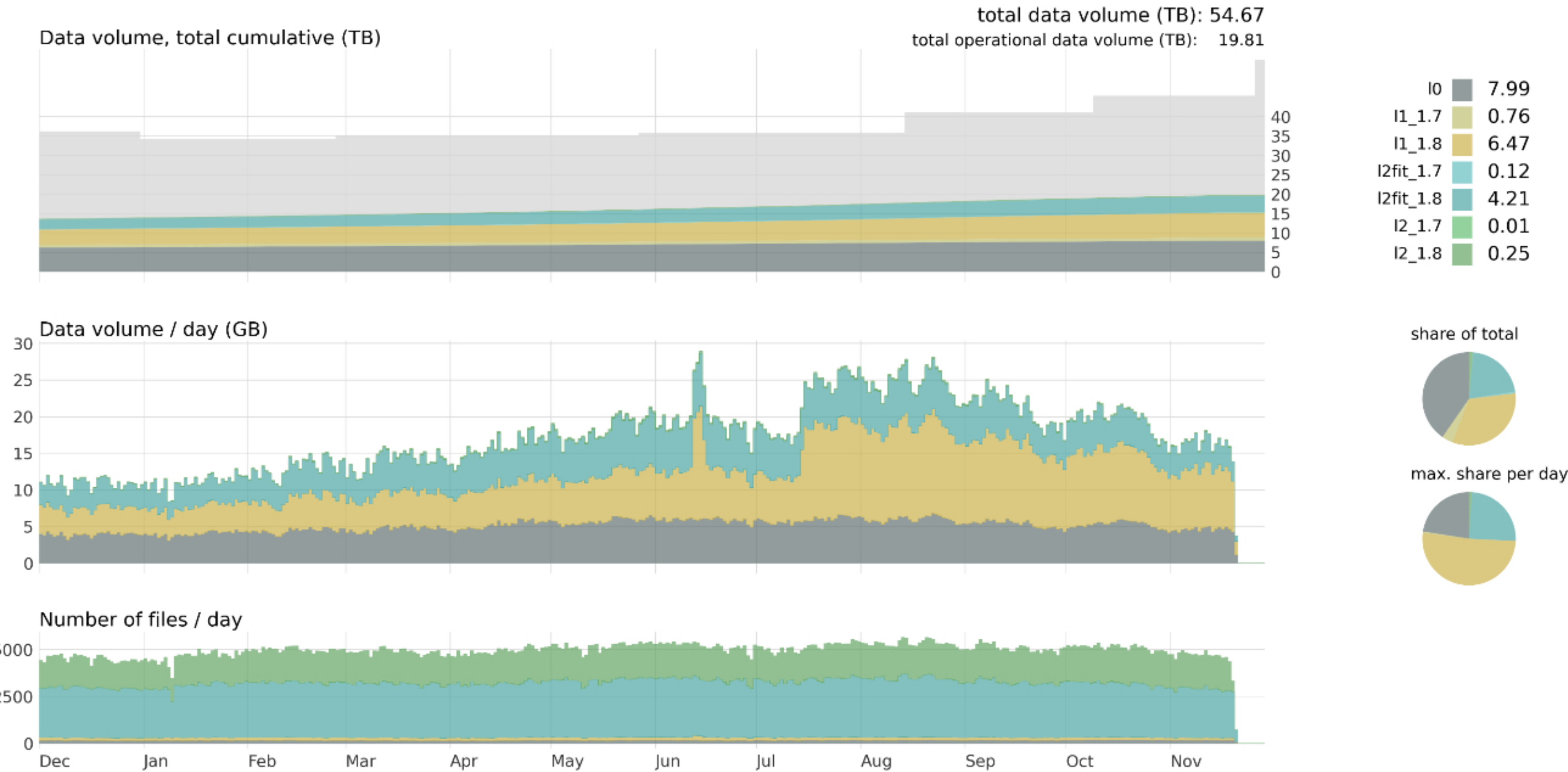


Figure 2

The evolution of the operational PGN data volume over the selected time period is shown here. Information is grouped into raw data (L0) and processed data (L1, L2Fit and L2) per processor version (1.7, 1.8). The upper plot shows the cumulative operational volume, and includes an additional light-grey area which represents the storage overhead on our system. We obtain this information by subtracting the operational data volume from the total used storage capacity of **Figure 1**. This storage overhead includes everything that is *not* part of the PGN operational data, such as databases and data that is produced during calibration or studies. The middle and lower plots show the volume and number of files per day, and the pie plots on the right display the average (top) and maximum (bottom) ratio of data categories.

Processing load

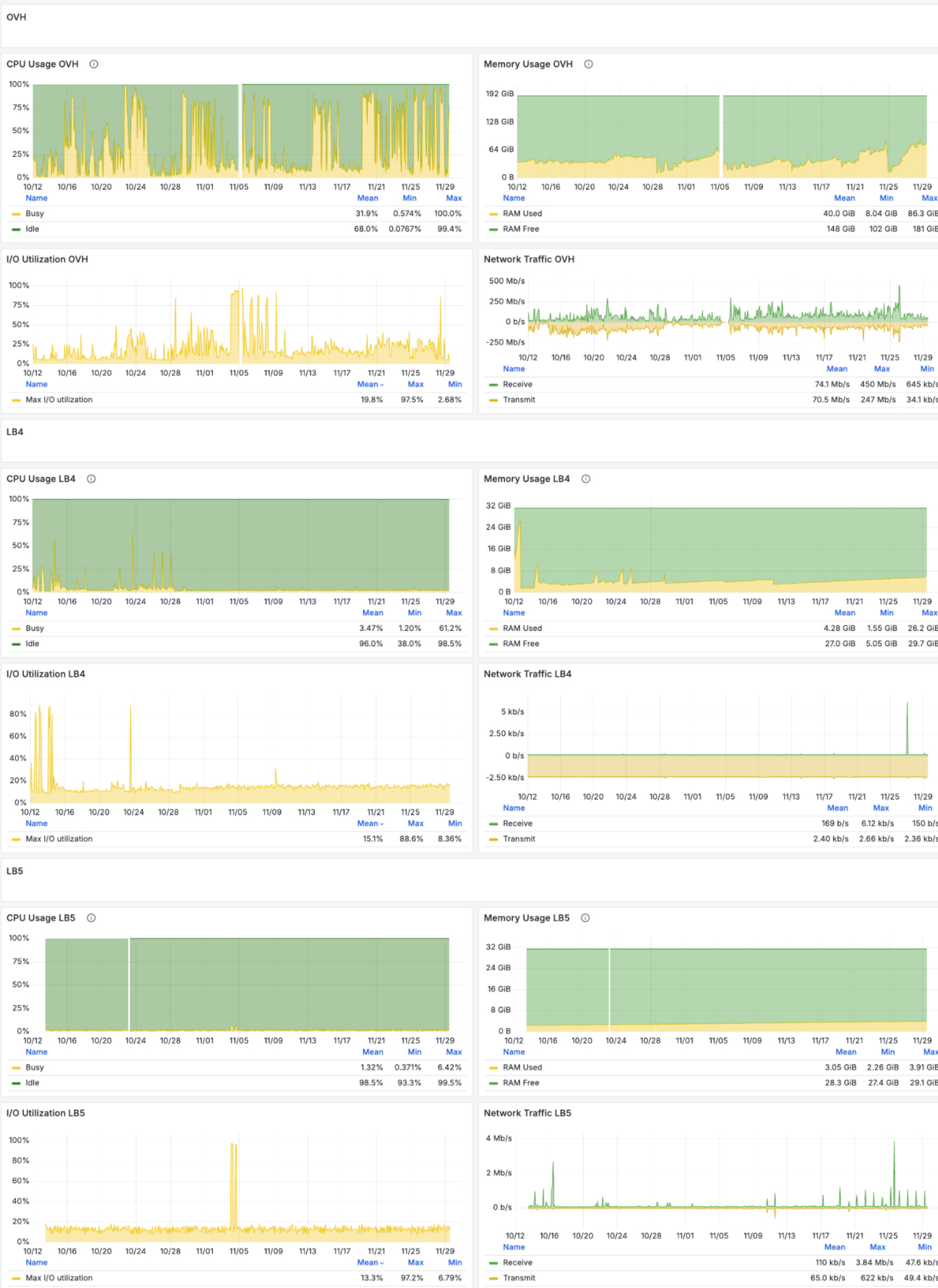


Figure 3

The processing load evolution over the selected time period is presented here. This includes a detailed monitoring of CPU usage, memory utilization, I/O operations, and network activity across our servers.

CPU Usage

This graph shows the server's CPU activity over all CPU cores over time, indicating how much of the CPU's capacity is being used for processing versus remaining idle. Spikes in CPU usage indicate periods of high computational demand.

Memory Usage

This plot tracks the server's memory usage, showing the total memory allocated to running processes compared to the memory that remains available. A increase in memory usage can suggest growing workloads or memory-intensive applications.

I/O Utilization

This graph represents the utilization of the server's input/output operations, focusing on disk activity. Higher values indicate that the server's storage is handling intensive read/write operations.

Network Traffic

This chart displays the rate of data being received and transmitted by the server over its network connection. Peaks in the traffic indicate times of increased data flow, such as high-volume uploads or downloads.

Notable events

2024-10-10 Implementation of Comprehensive Server Monitoring and Metric Collection

Transitioning to a real-time monitoring system for both server and software behavior, with all metrics now being recorded in detail. Data prior to this date is not displayed in the report, as it contained no notable events, and the previous metric collection system operated at a much lower resolution.

2024-11-04 RAID Misconfiguration Caused Server Outage

A misconfiguration in the default RAID setup of the OVH server caused the server to become unresponsive for multiple hours. As a result, no processing was performed, and our web services were inaccessible. The RAID configuration has since been corrected to prevent similar issues in the future.

About this section

This section of the reporting web tool serves as deliverable D11 and D12 of the [ESA](#) project Pandonia Operations 2 (POp-2).

POp-2 is contracted to [LuftBlick](#)

