



EOS Resource Monitor

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EOS

Introduction:

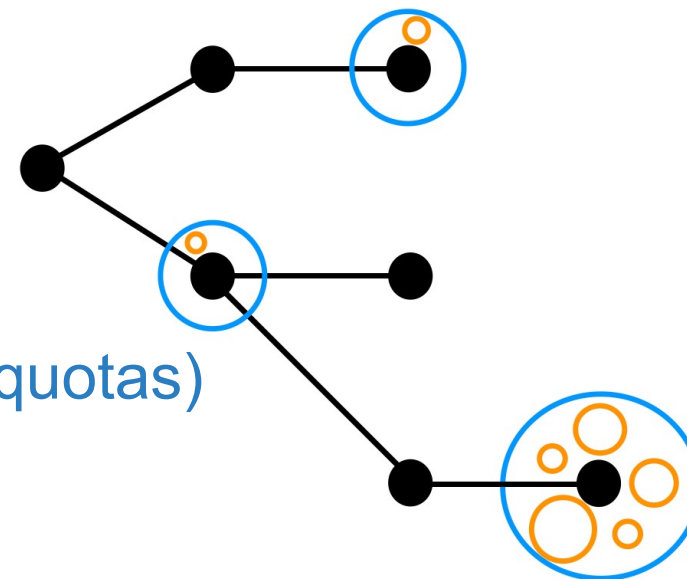
- CERN distributed filesystem
- Service for thousands of users
- Currently **1/2 exabyte** of space

Management:

- sets limits on resource consumption (quotas)

My project objective:

- Create monitor of quotas and their usage



- directory tree
- path
- quota node (usage accounting)
- quota (independent limit set)

My project

Motivation:

- Facilitate quota management
- Spot potential issues faster (quota usage, EOS SW, ...)

Requirements:

- Customisable monitor
- Applicable to all EOS storage instances
- Mid- to long-term lifetime
- CERN IT support
- Require minimal maintenance

Documentation can be found [here](#).

Framework

Considerations:

- Frontend: Flask, Django, Kibana, Grafana
- Backend: MySQL, EOS storage, ElasticSearch, MetricTank

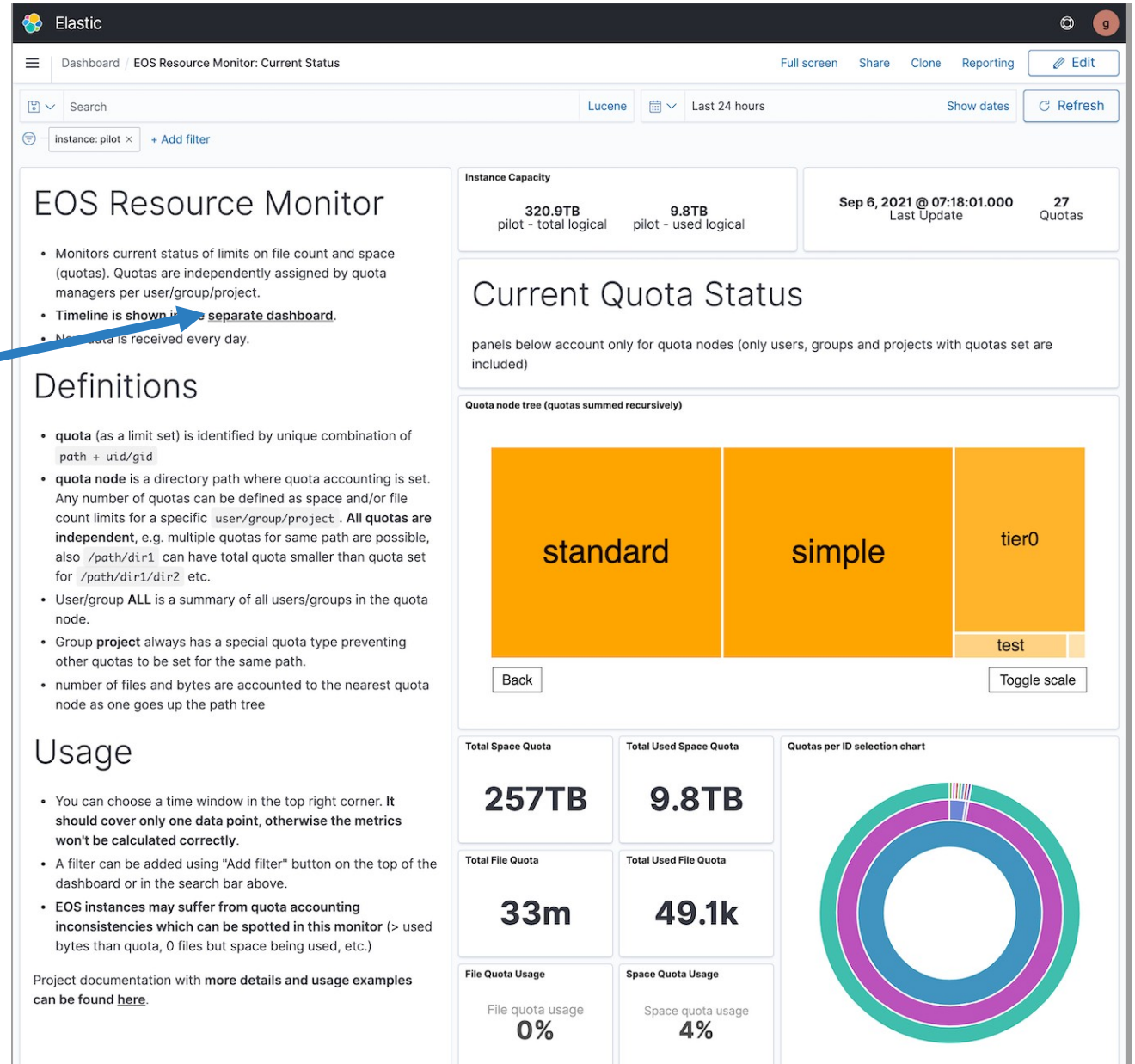
Selection:

- Best fit to all requirements (CERN IT mid- to long-term support etc.)
- Kibana + ElasticSearch
(rich settings and features, advanced access control)
- Grafana + MetricTank
(simpler, easier to maintain)

Dashboard

Two dashboards:

- Current status (last data collection) →
- Timelines (any time range) →



Dashboard filter

Many possibilities:

- Filter by interactive visualisations
- Custom filter entry

+ Add filter

EDIT FILTER [Edit as Query DSL](#)

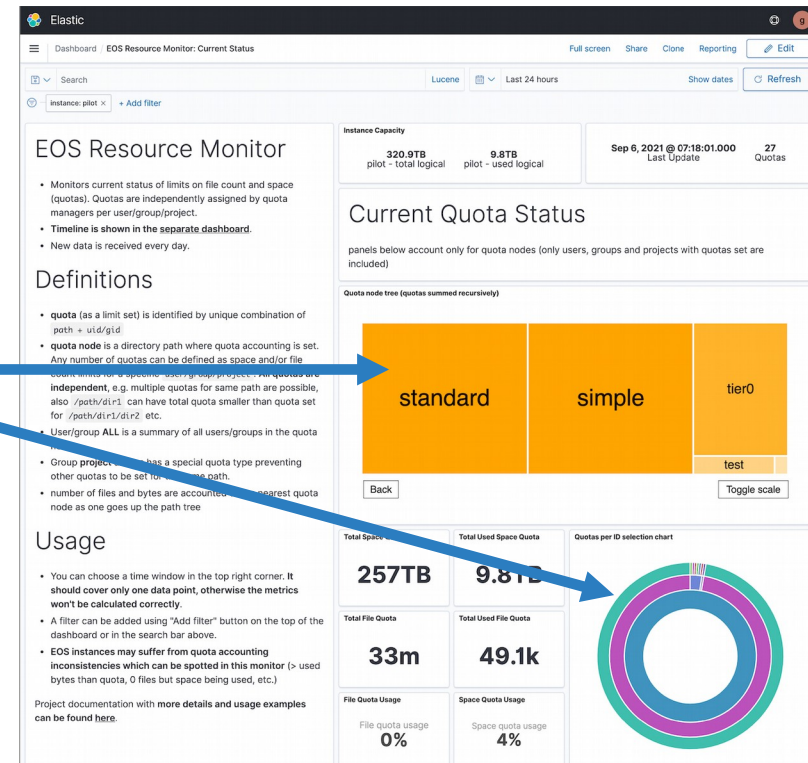
Index Pattern
eosmon_resmon_quota-*

Field	Operator
statusbytes	is

Value
exceeded

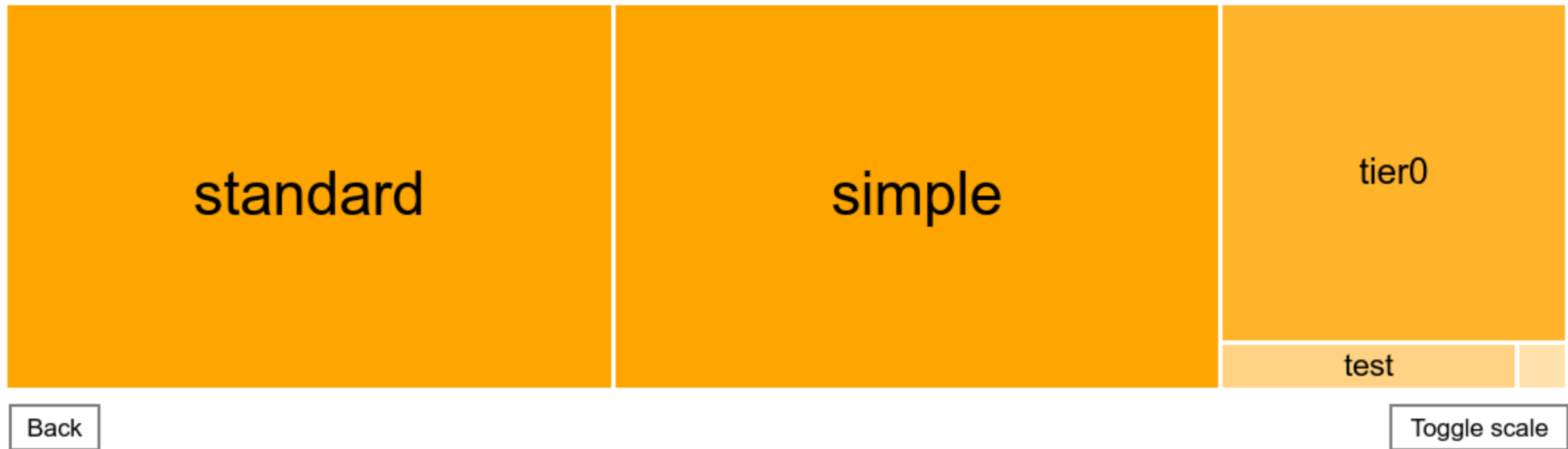
Create custom label?

Cancel Save

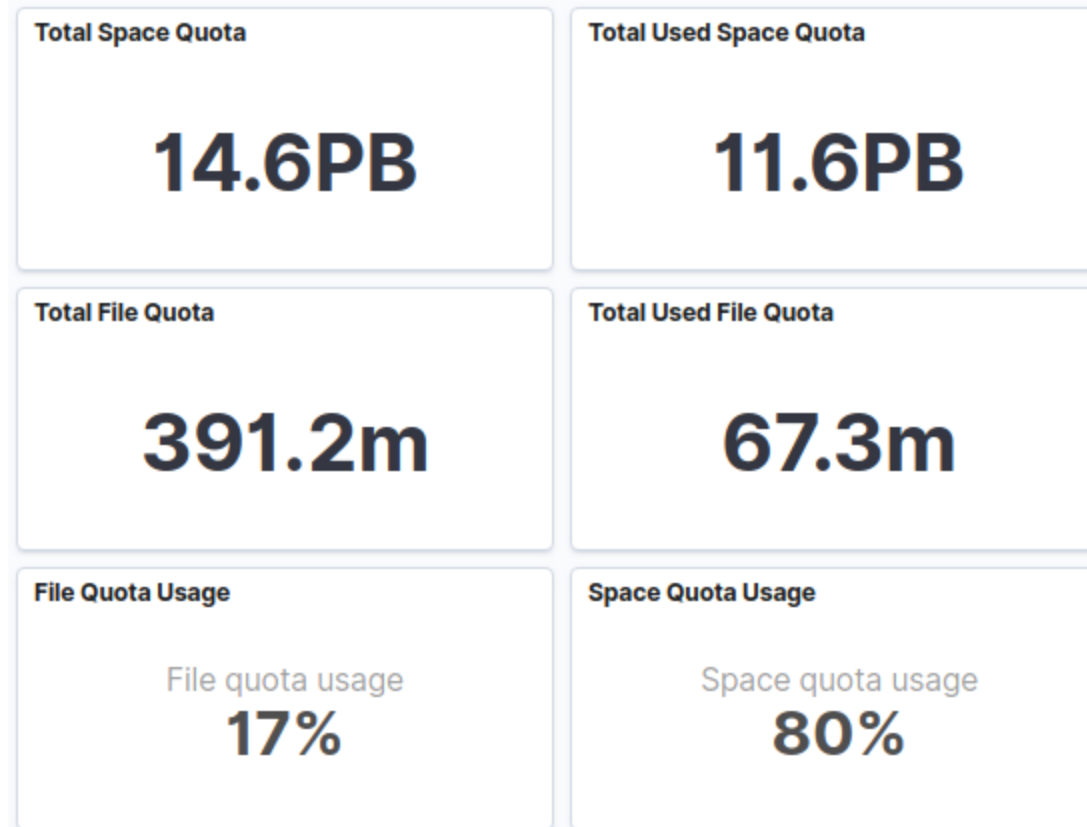


Treemap visualisation

Quota node tree (quotas summed recursively)

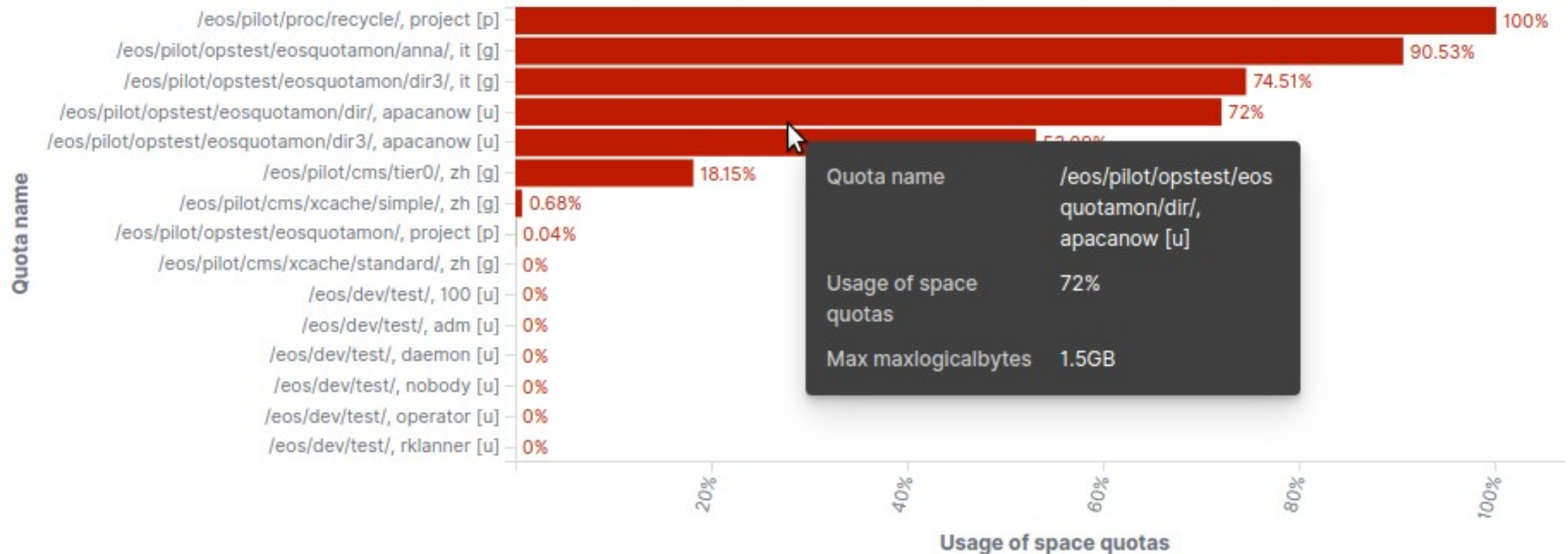


Overview of the quota

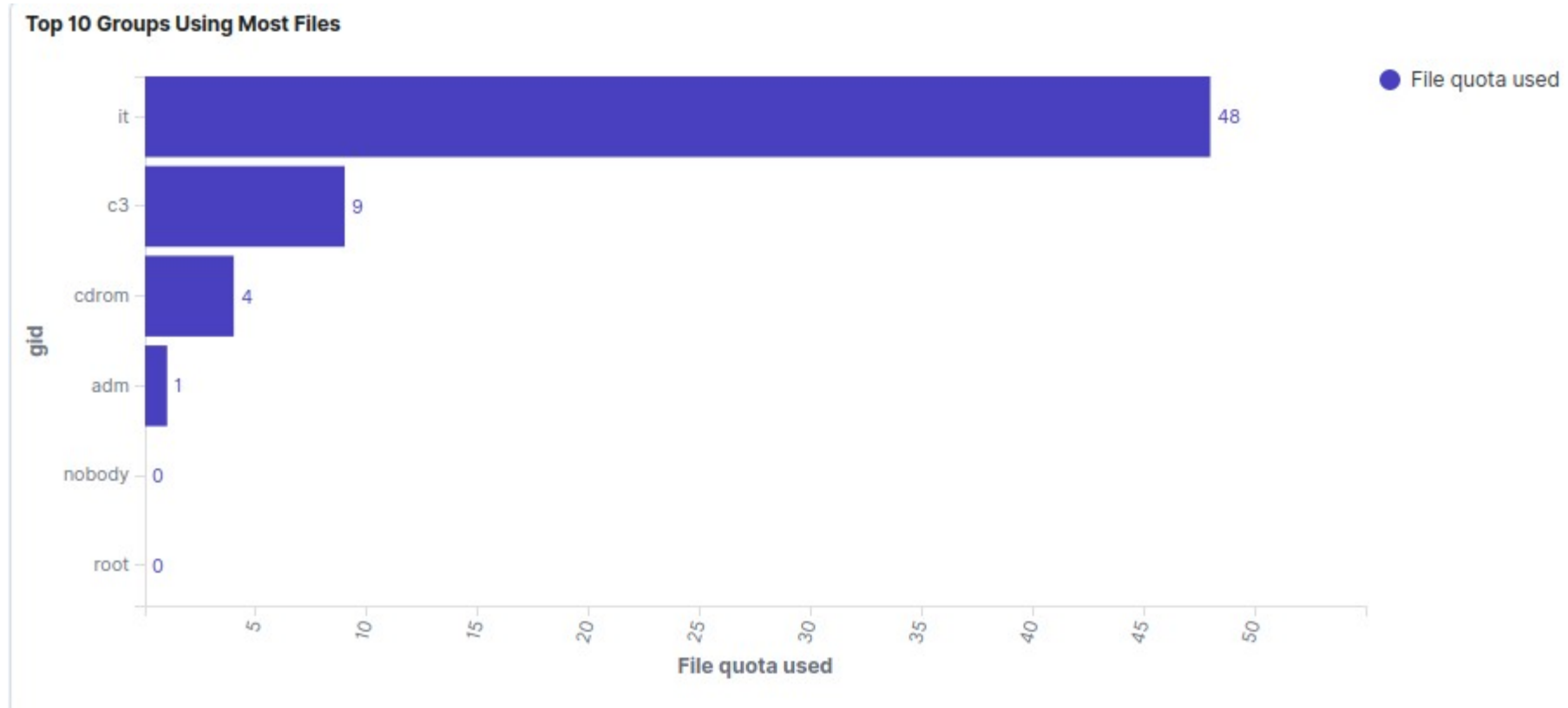


Quotas visualisation (example)

Usage of Space Quotas [%] (ordered by quota size)



Top groups visualisation



RAW data table

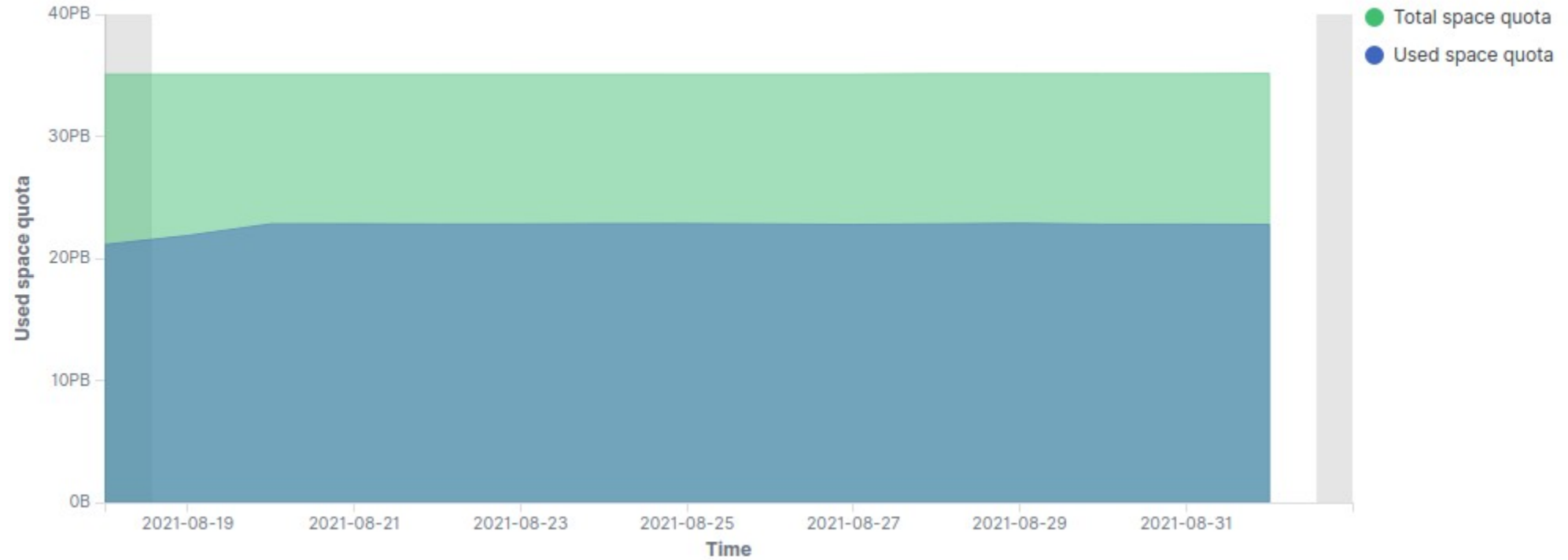
All Quotas and Usage Accounting Info

Path ↕	ID type ↕	ID ↕	Space quota ↕	Used space quota ↕	File quota ↕	Used file quota ↕
/eos/pilot/opstest/eosquotamon/anna/	group	adm	0B	1.5kB	0	1
/eos/dev/test/	group	adm	0B	2kB	0	0
/eos/pilot/cms/tier0/	group	ALL	50TB	9.1TB	10m	46.1k
/eos/pilot/cms/xcache/simple/	group	ALL	100TB	683.7GB	1m	615
/eos/pilot/opstest/eosquotamon/dir/	group	ALL	0B	1.3GB	0	20
/eos/pilot/opstest/eosquotamon/anna/	group	ALL	1.2GB	1.1GB	5m	27
/eos/pilot/cms/xcache/standard/	group	ALL	100TB	1.1GB	1m	1
/eos/pilot/opstest/eosquotamon/dir3/	group	ALL	1GB	745.1MB	2m	11
/eos/dev/test/	group	ALL	0B	11.6kB	0	4
/eos/pilot/opstest/eosquotamon/anna/	group	c3	0B	1.6MB	0	9
			500TB	19.5TB	38m	93.6k

Export: [Raw](#) [Formatted](#)

Total quota timeline

Total Used Space Quota





QUESTIONS?

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