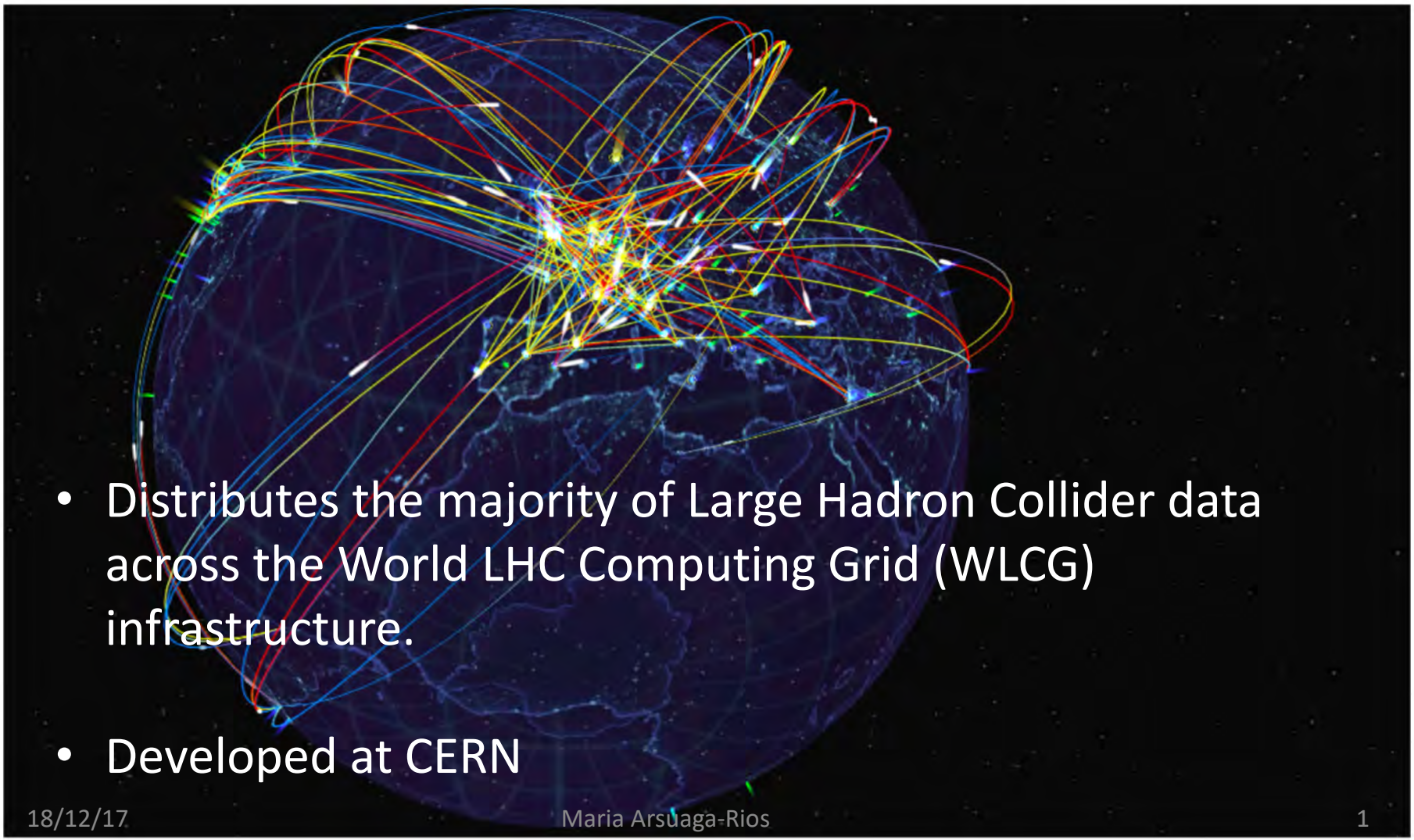
FTS

File Transfer Service



- Distributes the majority of Large Hadron Collider data across the World LHC Computing Grid (WLCG) infrastructure.
- Developed at CERN

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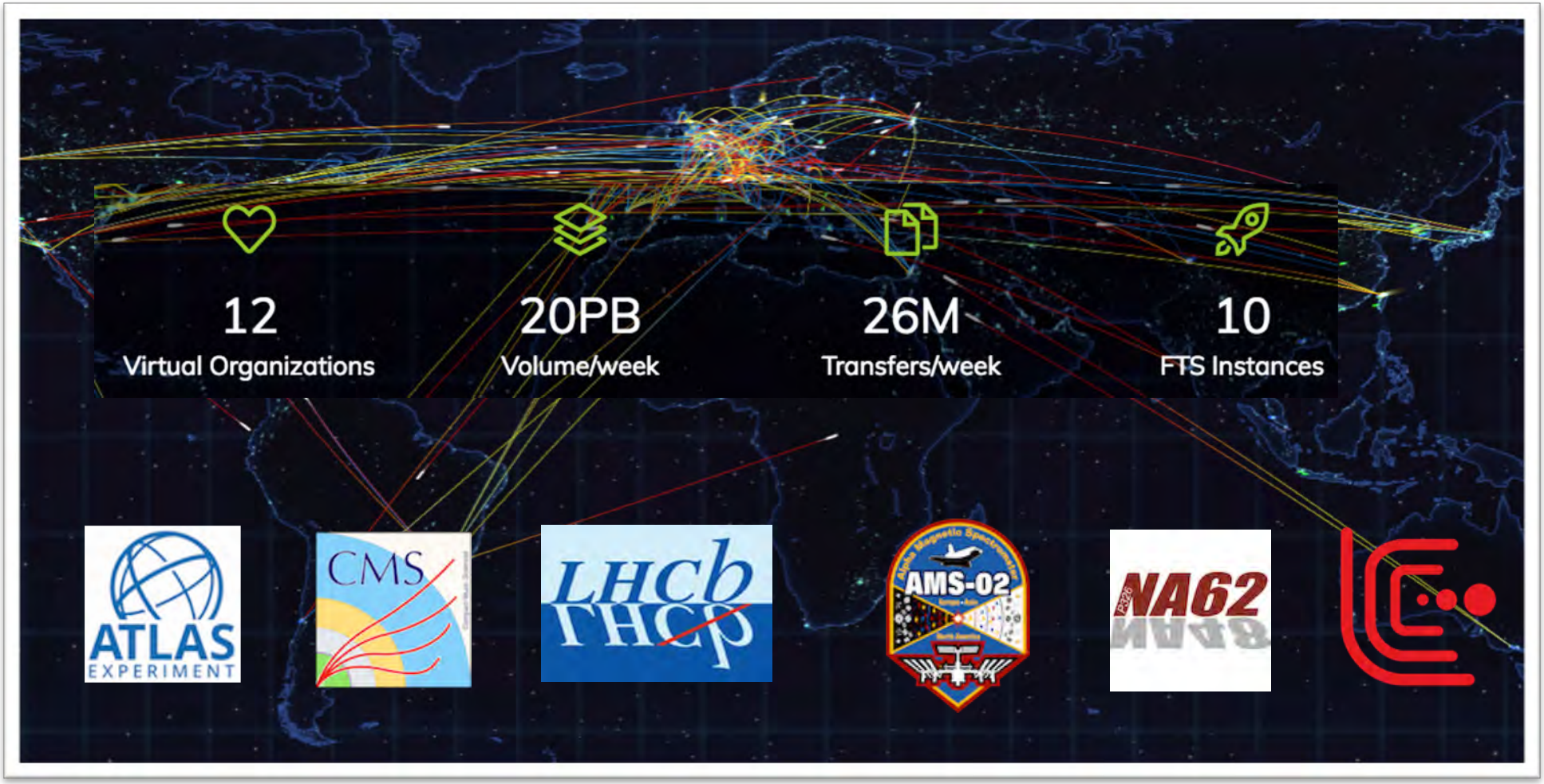

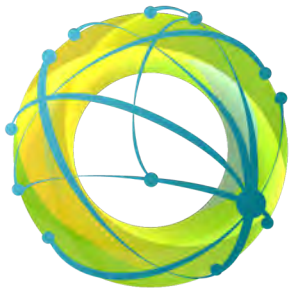

FTS

File Transfer Service

- Main Components

WebFTS - Simplifying power

WebFTS is a file transfer and management solution which allows users to invoke reliable, managed data transfers on distributed infrastructures.

FTS-REST - Python bindings

FTS-REST provides pythond bindings for easy integration with frameworks and a command-line interface for copying transfers from one site to another.

Real-Time Monitoring

FTS provides monitorization for several profiles: General monitoring (Grafana) for general users, Discovery Data (Kibana) for researches and Service Specific (ftsmon/Kibana) for service managers.

Optimizer - Taking the most from our infrastructure

The optimizer makes possible to run transfers between any two random endpoints with good reliability and performance with zero configuration by default.

GFAL - Multiprotocol support

GFAL-2 is a group of command line tools for file manipulations with multiple protocols (Webdav/https, GridFTP, xroot, SRM).

Support

FTS is full-supported thanks to the FTS team at CERN.

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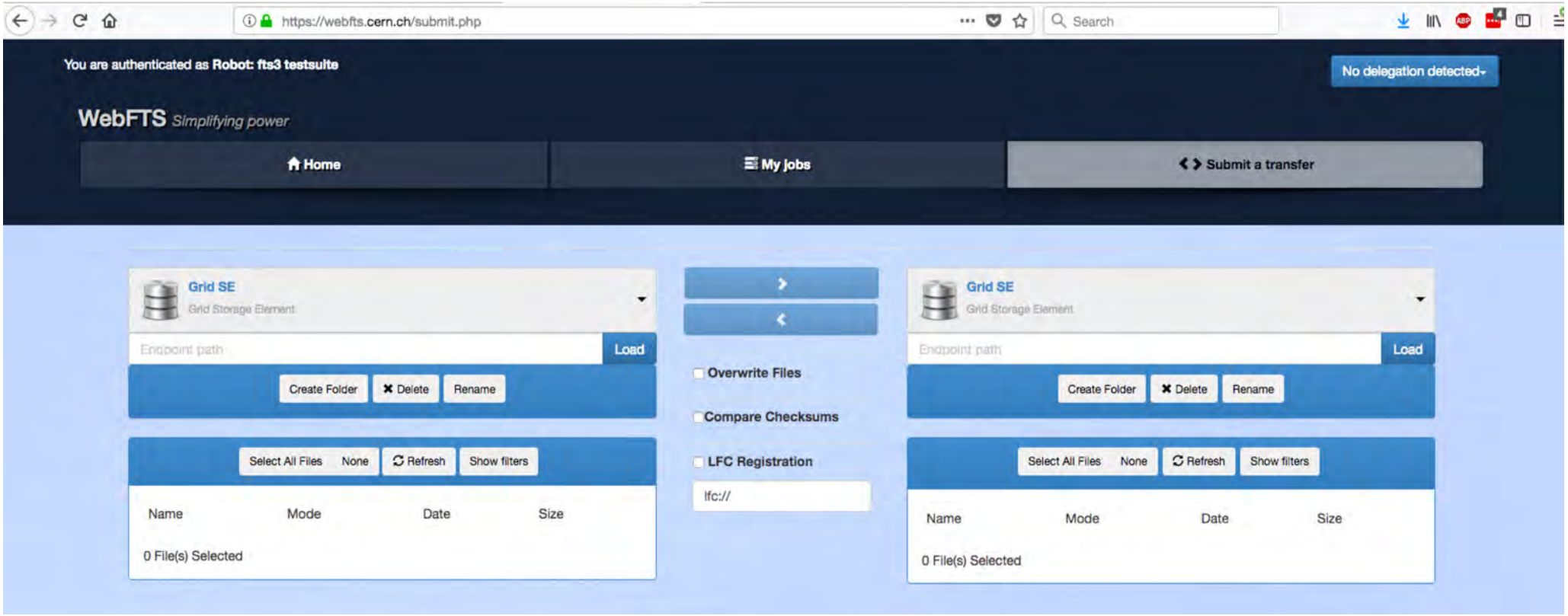
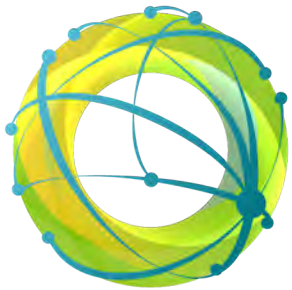
- WebFTS – Transferring files from your browser





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- FTS REST bindings: Command line example

```
[marsuaga@lxplus053 public]$ fts-transfer-submit -s https://fts3-devel.cern.ch:8446  srm://dpmhead-rc.cern.ch:8446/srm/manag
erv2?SFN=/dpm/cern.ch/home/dteam/install.log root://castorpps.cern.ch//castor/cern.ch/c3/maria/install.log
f2298a00-e19d-11e7-affd-02163e00a077
[marsuaga@lxplus053 public]$ fts-transfer-status -s https://fts3-devel.cern.ch:8446 f2298a00-e19d-11e7-affd-02163e00a077
FINISHED
```

- http://fts3-docs.web.cern.ch/fts3-docs/fts-rest/docs/cli/index.html

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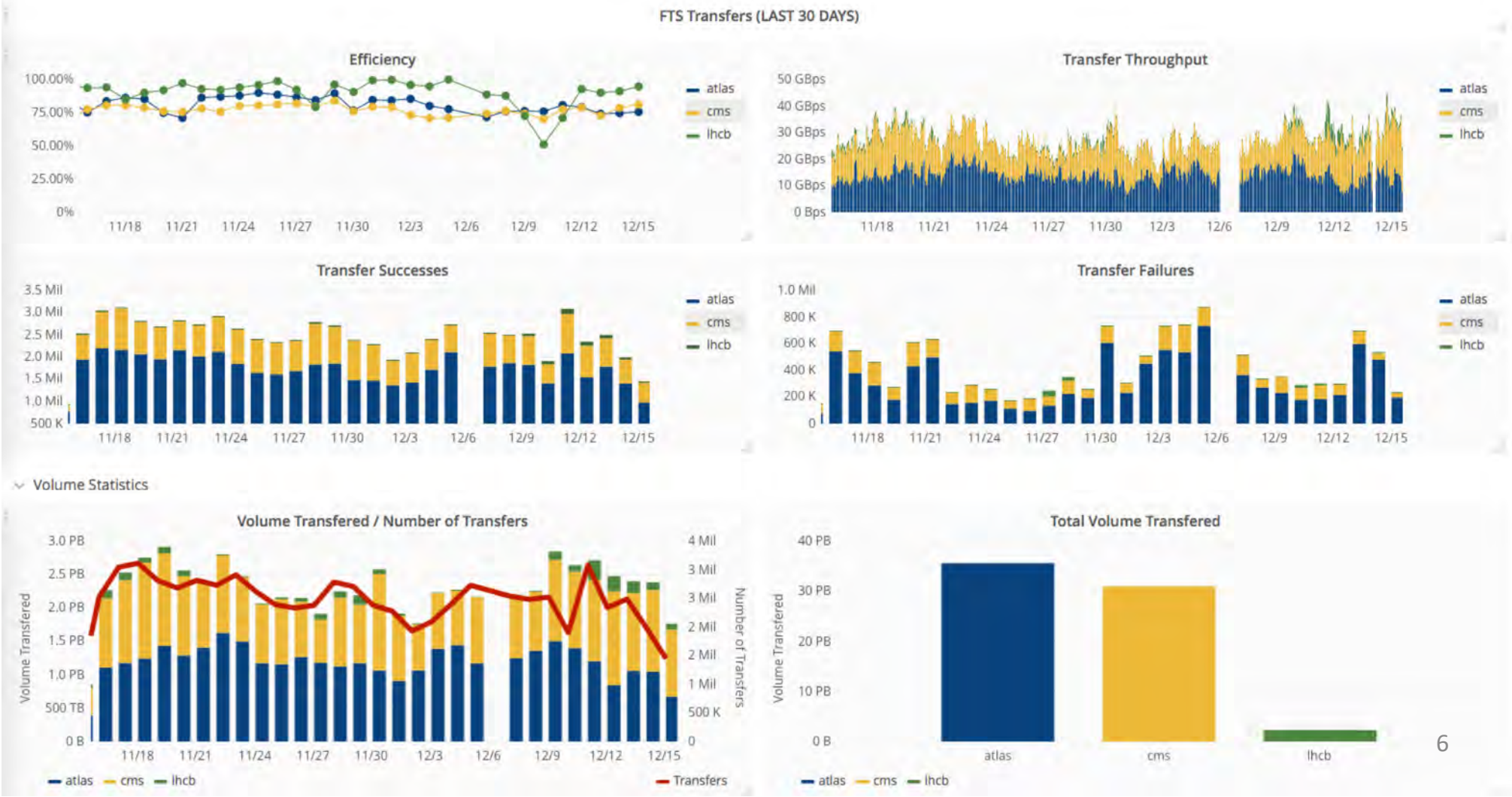
- Real Time Monitoring: [Grafana]



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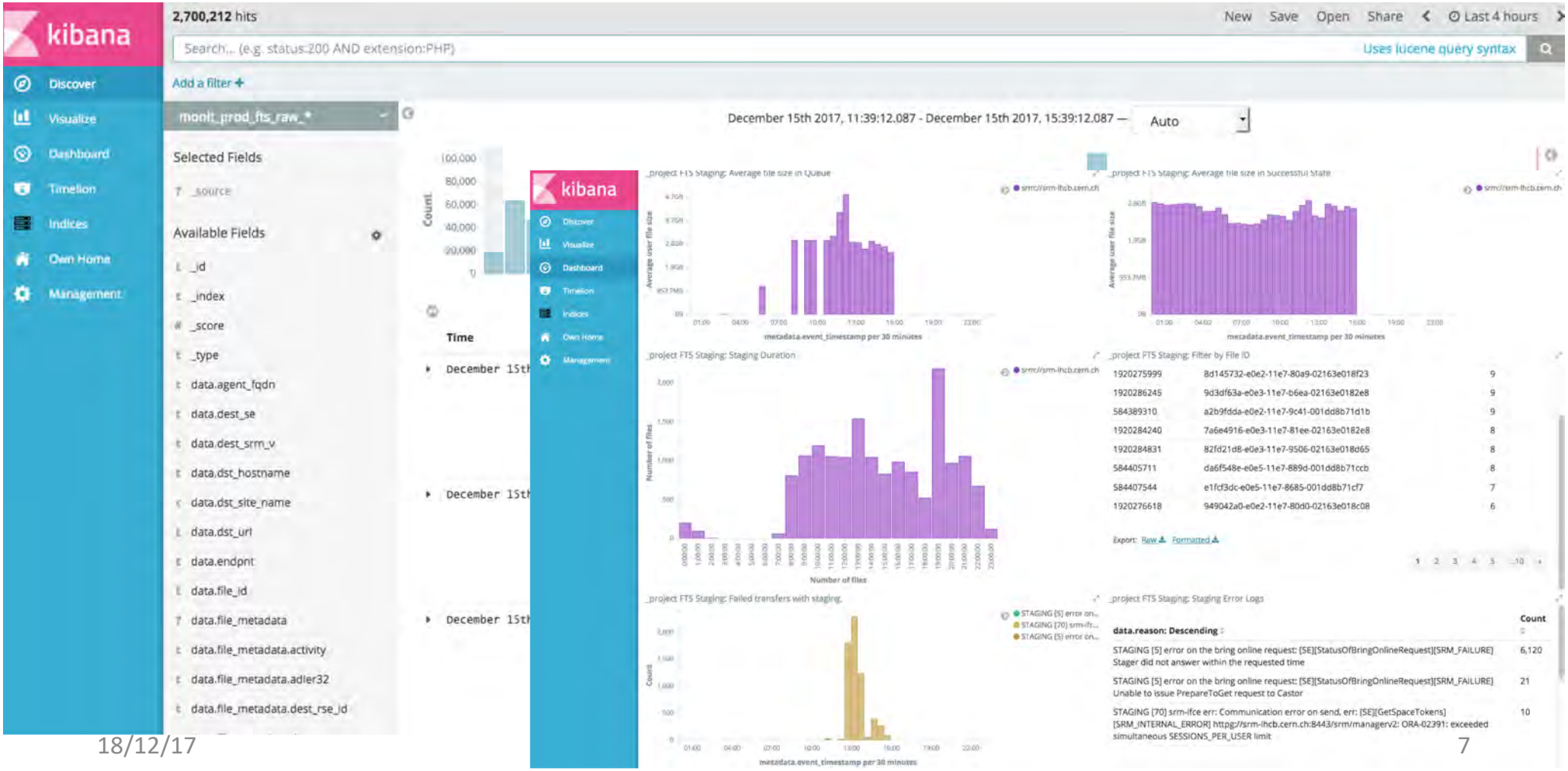
- Real Time Discovering: [Kibana]



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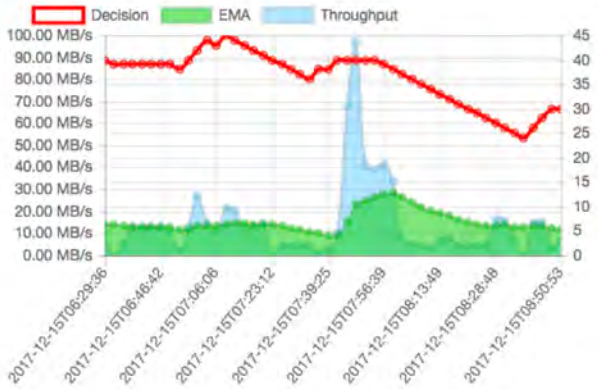
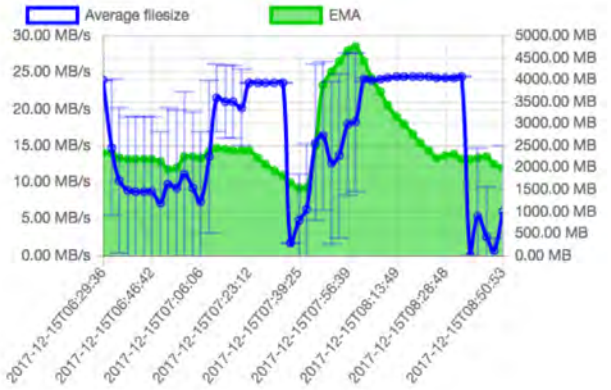
- Optimizer

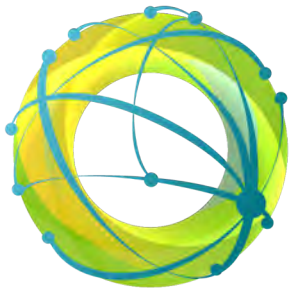
Details for srm://srm-cms.cern.ch → gsiftp://eoscmsftp.cern.ch





First | Previous | 1 | 2 | 3 | 4 | 5 | Next | Last

Timestamp	Decision	Running	Queue	Success rate (last 1min)	Throughput	EMA	Diff	Explanation
2017-12-15T08:50:53	30	1	33	100.00%	6.42 MiB/s	11.81 MiB/s	0	Good link efficiency, small throughput deterioration
2017-12-15T08:47:31	30	0	37	100.00%	3.30 MiB/s	12.41 MiB/s	2	Good link efficiency, throughput deterioration, avg. filesize decreasing
2017-12-15T08:44:53	28	0	40	100.00%	14.90 MiB/s	13.42 MiB/s	2	Good link efficiency, current average throughput is larger than the preceding average
2017-12-15T08:42:16	26	0	46	100.00%	14.58 MiB/s	13.26 MiB/s	2	Good link efficiency, current average throughput is larger than the preceding average
2017-12-15T08:39:35	24	0	33	1.00%	0 bytes/s	13.11 MiB/s	-1	Bad link efficiency, no changes



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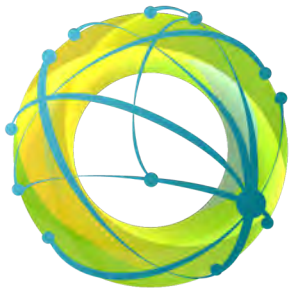
- Gfal: Multiprotocol support

```
[marsuaga@lxplus053 public]$ gfal
gfal-cat                  gfal-legacy-register    gfal-mkdir      gfal-stat       gfalFS
gfal-chmod                gfal-legacy-replicas    gfal-rename     gfal-sum        gfalFS_umount
gfal-copy                 gfal-legacy-unregister  gfal-rm         gfal-xattr      gfal_srm_ifce_version
gfal-legacy-bringonline   gfal-ls                 gfal-save       gfal2_version   gfal_version
[marsuaga@lxplus053 public]$
```

- https://dmc.web.cern.ch/projects/gfal2-utils



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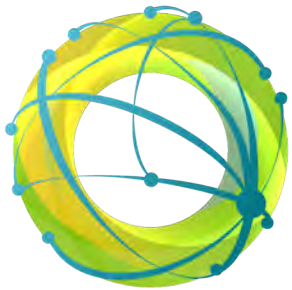
- Ready to go:
  - You only need a user certificate
  - Use one of our FTS instances
  - Install one of our docker containers to ensure 3rd party copy for all types of storages https://gitlab.cern.ch/fts/ready-to-go
    - FTP server
    - GridFTP server with host certificates auto-generated
    - GridFTP server with your host certificates
  - Install FTS-Rest python bindings



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- FTS Support
  - fts-support@cern.ch

fts-support

  - Full-documented:
    - http://fts3-docs.web.cern.ch/fts3-docs/

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