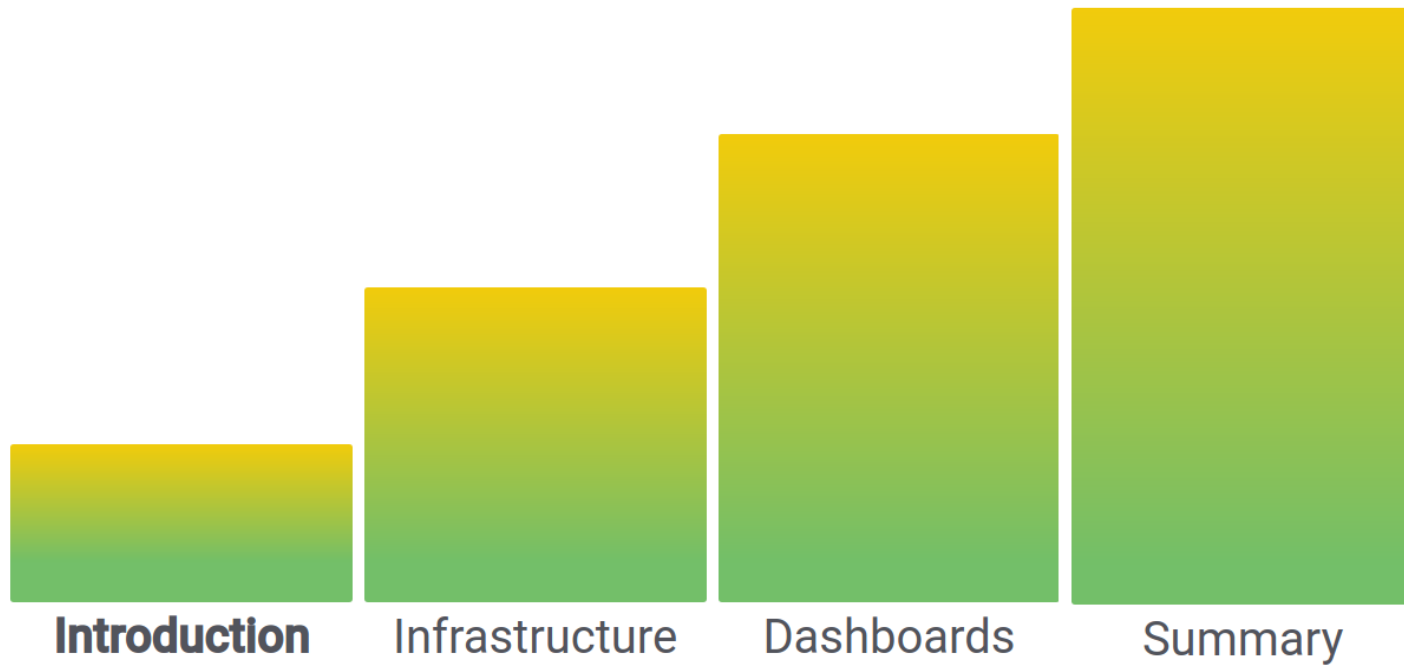




# WLCG Dashboards with MONIT

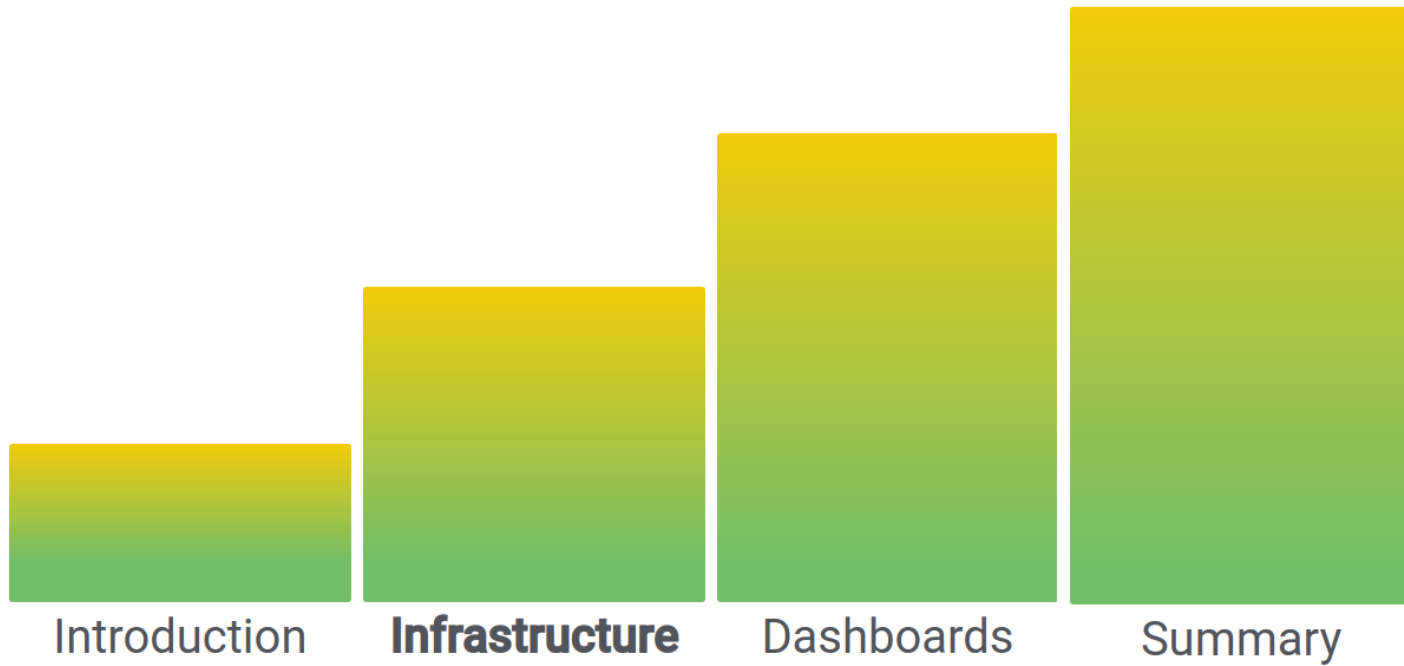
Pedro Andrade – Computing Engineer – CERN/IT





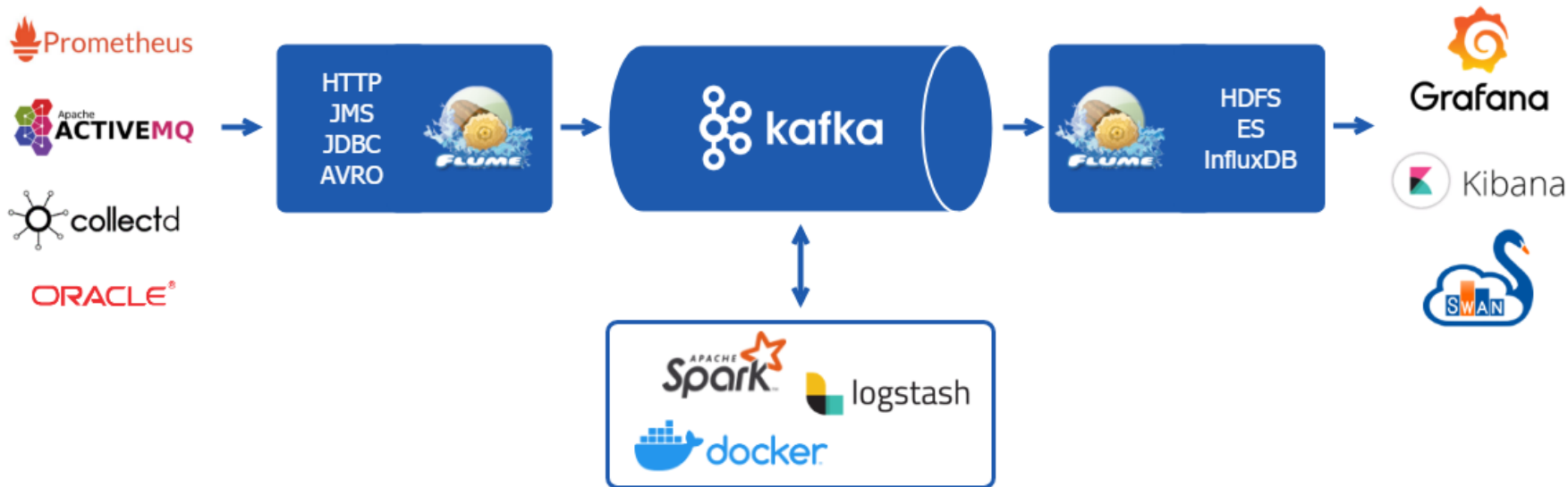
The **MONIT project** role is to provide a **common**  
Monitoring as a Service **solution** for the CERN  
Data Centre and the WLCG Collaboration

*and replace the legacy custom monitoring solutions used  
by CERN/IT and WLCG in the last ~10 years*



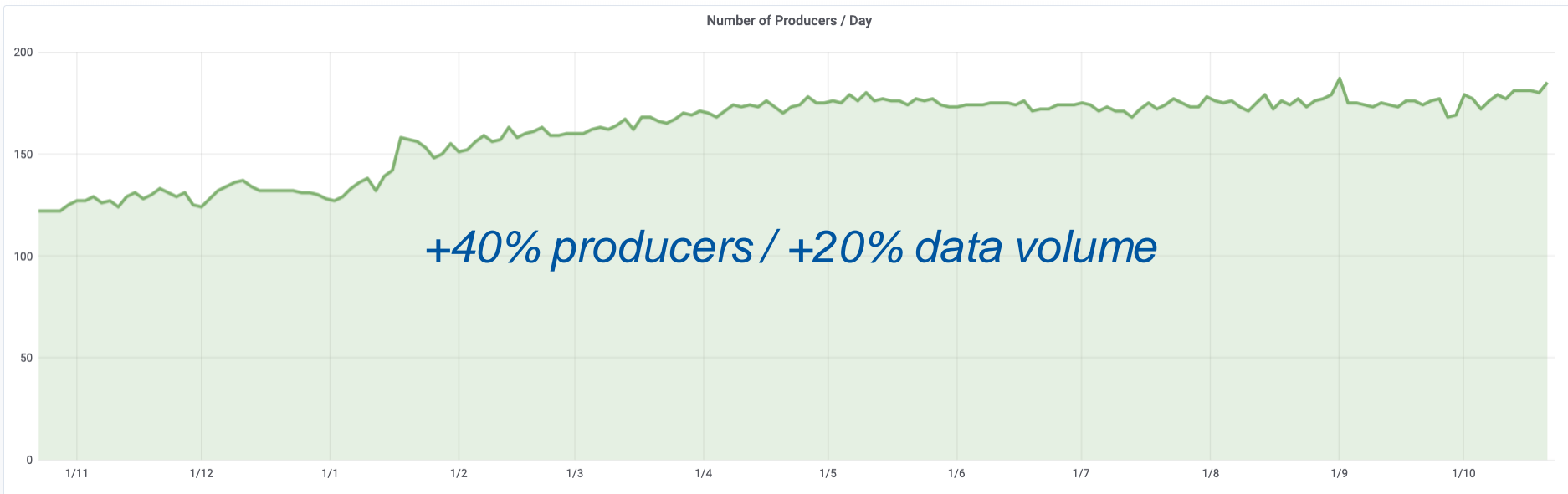
# Key Concepts

**modular** architecture / built on **open source** tools  
easy data integration / multiple ingestion endpoints  
**decoupled** producers & consumers  
built-in **stream processing** support  
**multiple backends** with different SLAs



# Infrastructure usage

*1k users / 1M queries per day*





# Infrastructure data volume/rate

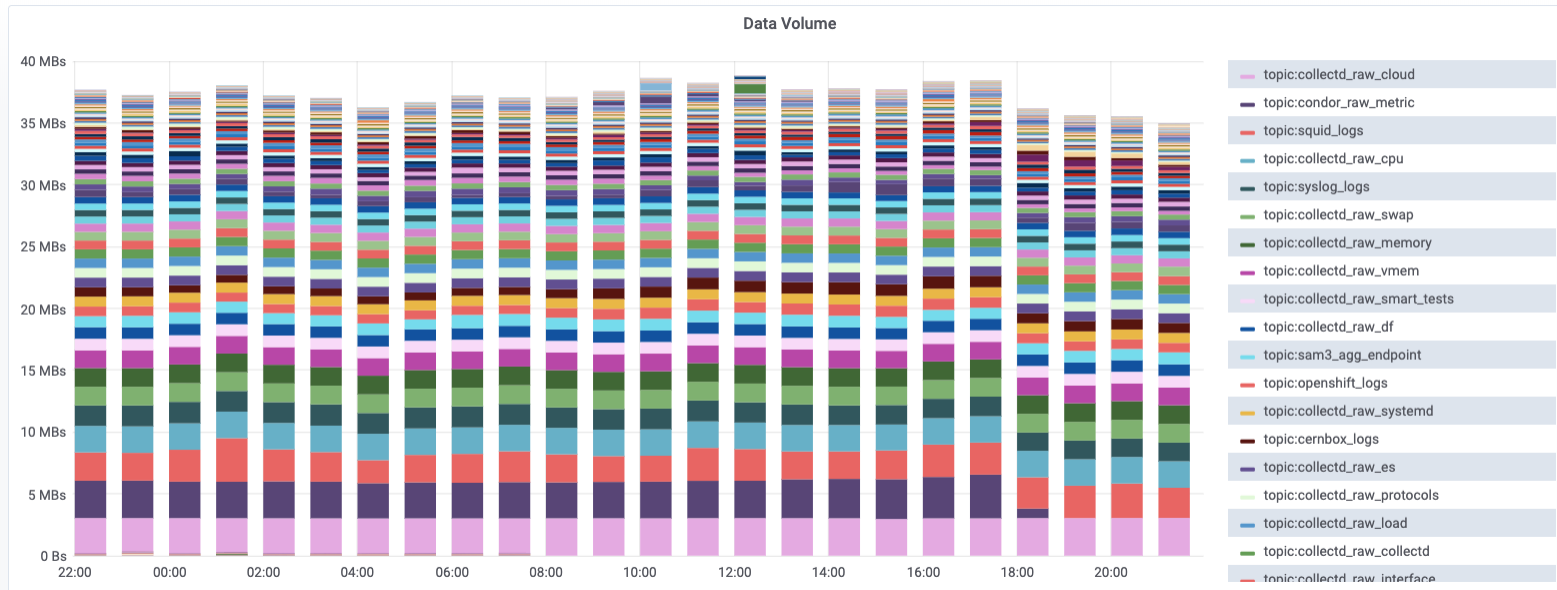
*3.2 TB per day / 8.5 M docs per day*

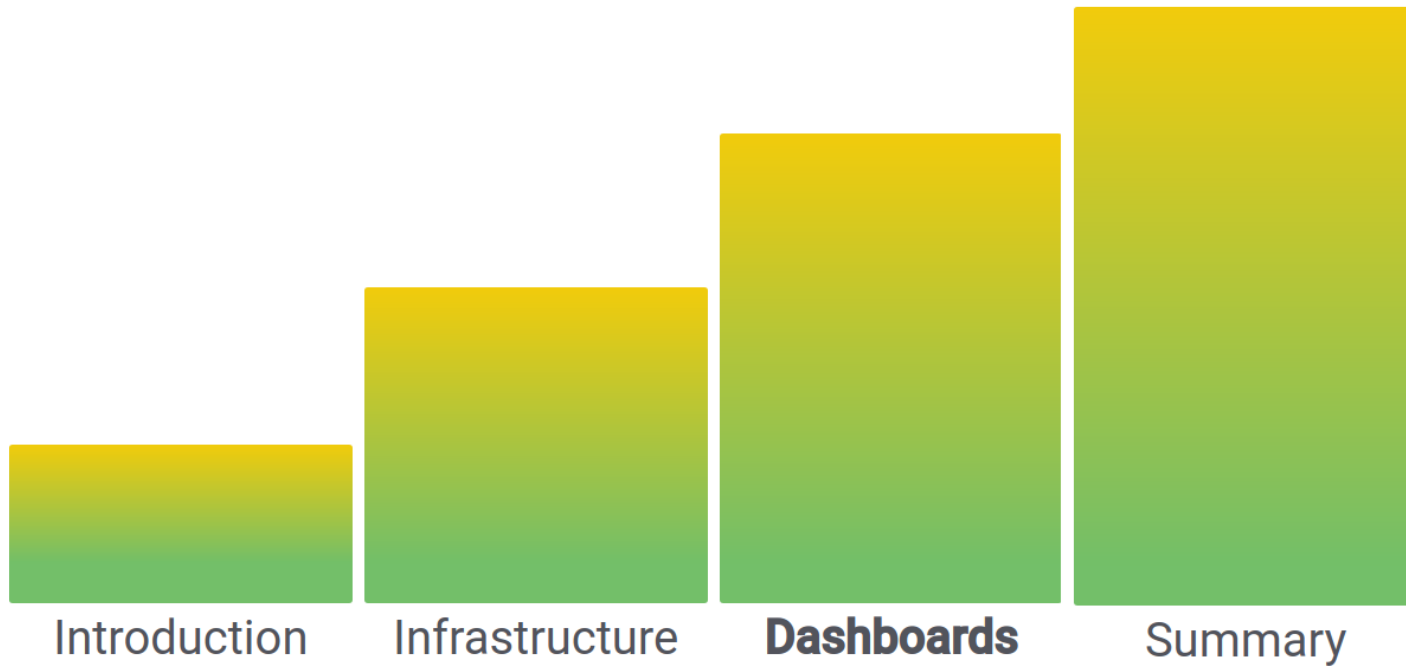
Data Volume ▾

37.3 MBs

Data Rate

97.7 kpps

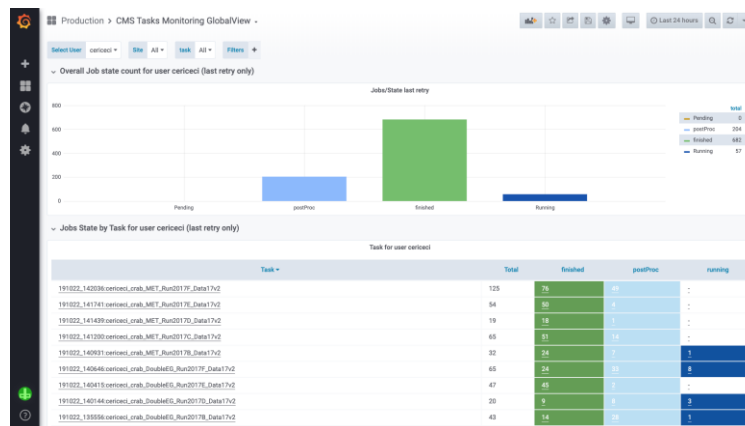
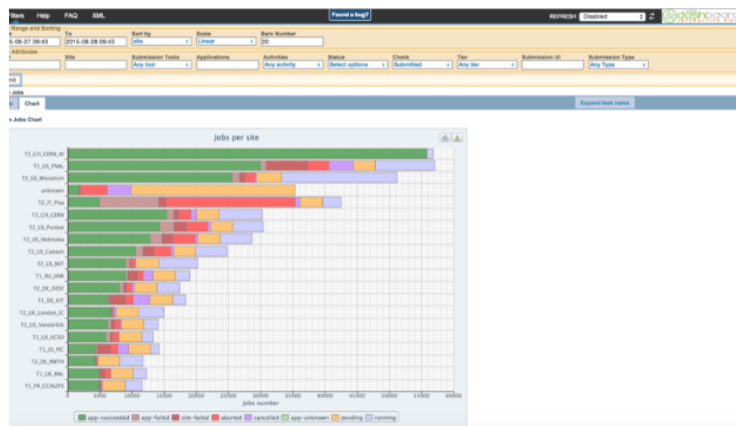




# Migrate the old WLCG dashboards to MONIT

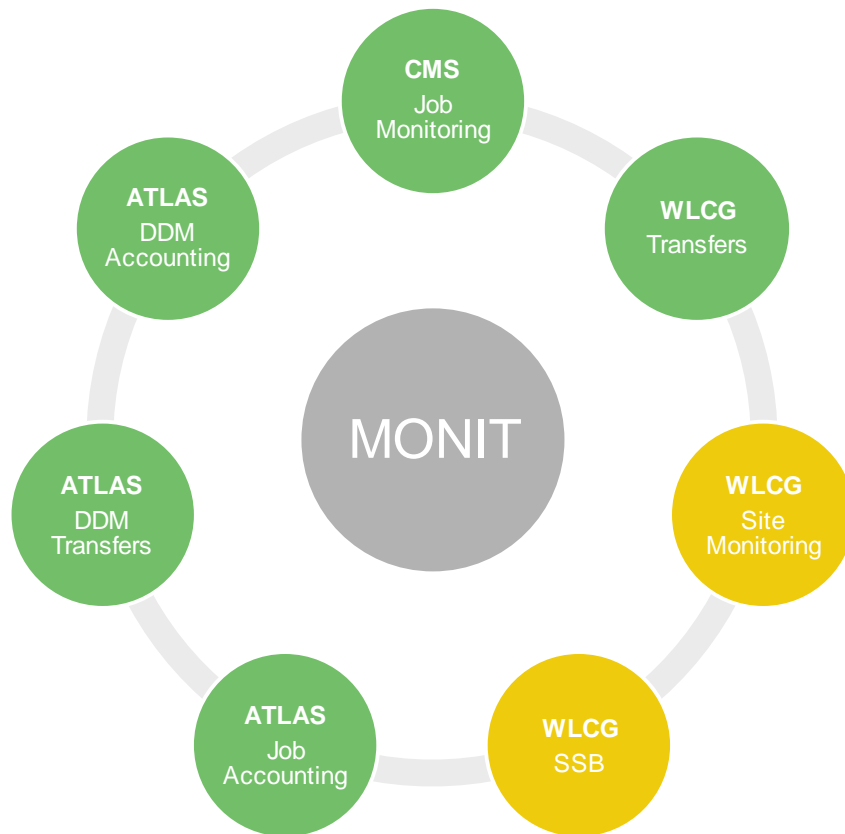
*preserve old functionality / import all historical data*

*build an internal community / contribute upstream*

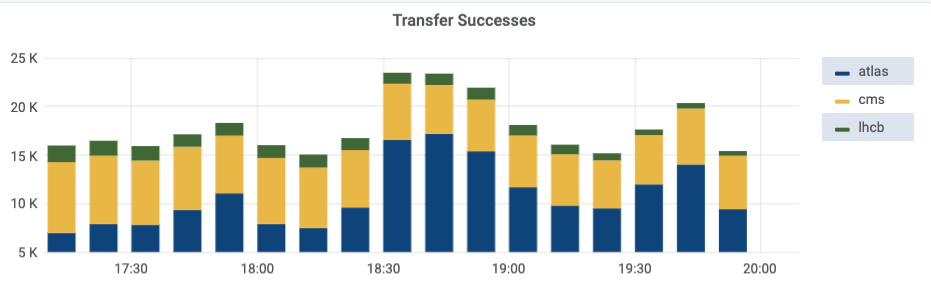
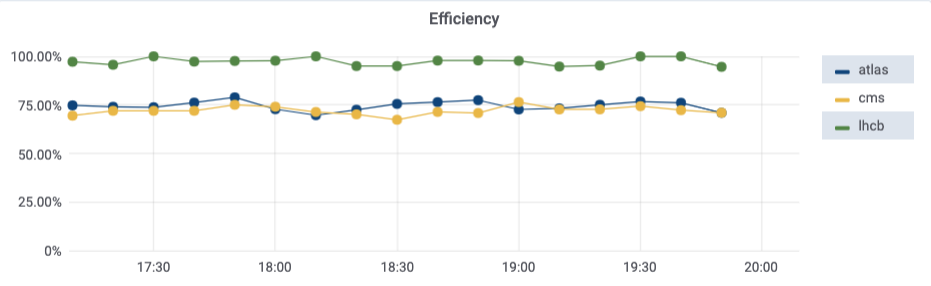


**Successfully migrated all  
job and data dashboards**  
*(presented in the next slides)*

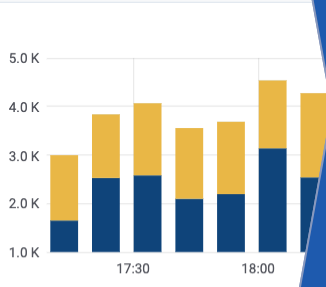
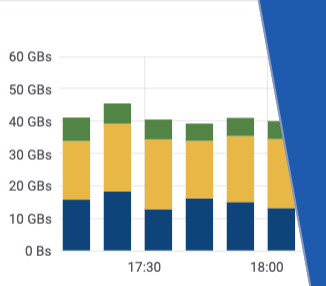
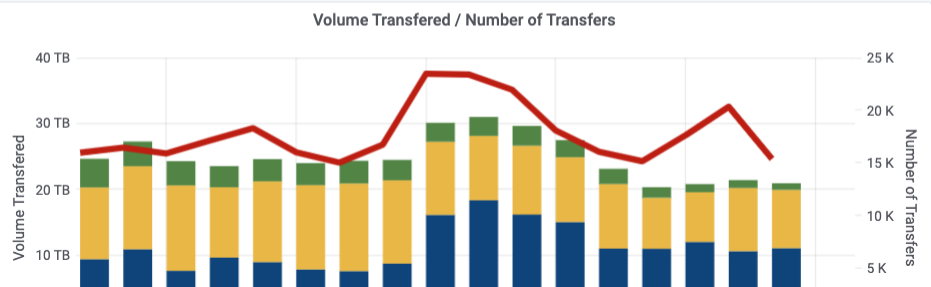
**Site dashboards migration  
to be completed in Q1 2020**



Transfer plots



Volume Statistics



# WLCG

## Site Transfers

*since Sep 2017*

Data from FTS/XRootD (via AMQ)  
Enriched with VOFeed topology

Overall transfers dashboard  
Dedicated views for FTS/XRootD  
Efficiency computation

> Overview & Help (1 panel)

✓ Matrix (Efficiency)

Efficiency								
	CA	CERN	DE	ES	FR	IT	ND	
CA	92%	98%	79%	83%	96%	94%	100%	98%
CERN	100%	96%	96%	93%	100%	100%	100%	100%
DE	65%	93%	92%	86%	89%	93%	98%	97%
ES	100%	98%	99%	93%	99%	98%	97%	98%
FR	99%	99%	99%	96%	99%	98%	100%	100%
IT	94%	98%	88%	96%	92%	96%	99%	97%
ND	100%	99%	97%	99%	97%	99%	100%	100%
NL	95%	99%	99%	73%	88%	94%	99%	100%
RU	99%	99%	92%	98%	96%	95%	100%	100%
TW	98%	99%	93%	98%	97%	95%	88%	98%
UK	97%	97%	91%	74%	97%	96%	97%	93%
US	99%	98%	95%	76%	98%	93%	99%	100%

> Matrix (Failures) (1 panel)

> Matrix (Successes) (1 panel)

> Transfer Table (1 panel)

> Transfer Plots (5 panels)

# ATLAS

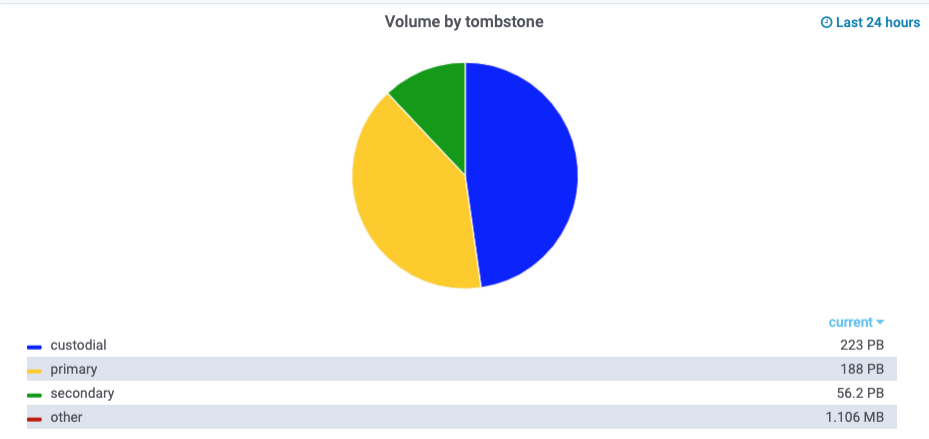
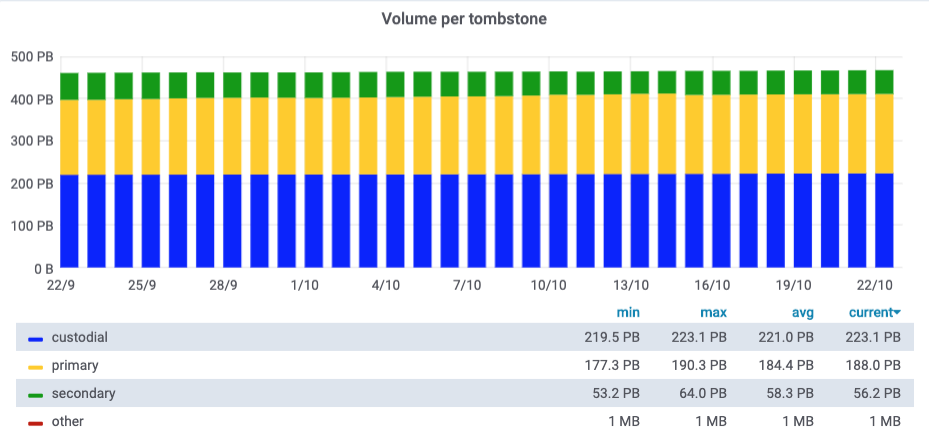
## DDM Transfers

*since May 2019*

Data from Rucio (via AMQ)  
Enriched with AGIS topology

Matrix with overall status  
Drill down to transfer details  
Error messages classification

Overview



> Combined Grouped by Scope/Datatype (2 panels)



# ATLAS

## DDM Accounting

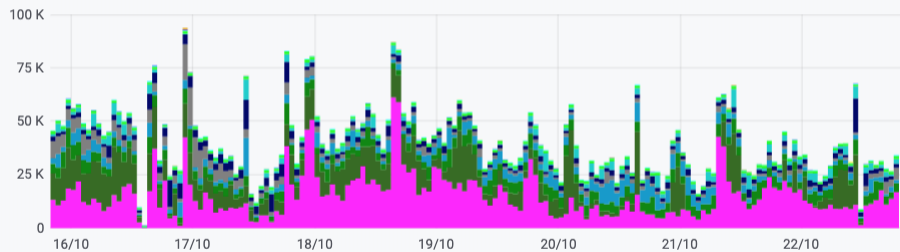
since May 2019

Data from Rucio/HDFS (via AMQ)  
Enriched with AGIS topology  
Enriched with storage accounting

Improved workflow: push vs pull  
Global view and site view

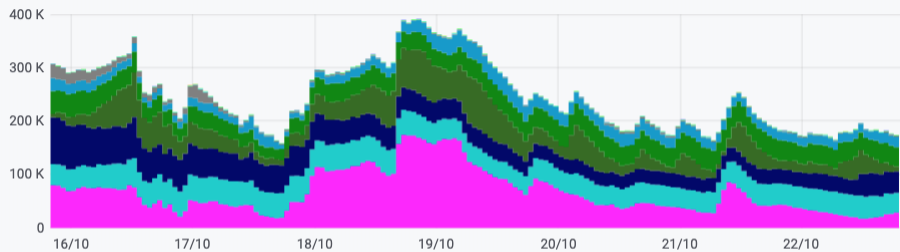
Overall Status

Submitted jobs



	min	max	avg	total
User Analysis	6	61.2 K	15.1 K	2.5305 Mil
MC Event Generation	0	31.6 K	8.5 K	1.4206 Mil
Group Production	144	11.1 K	4.5 K	749.5 K
MC Simulation Fast	35	17.8 K	3.5 K	596.0 K

Pending jobs



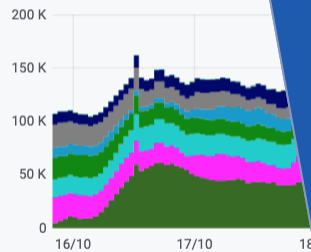
	min	max	avg	total
User Analysis	17.0 K	174.0 K	66.7 K	11.1977 Mil
MC Simulation Full	32.0 K	55.2 K	41.8 K	7.0280 Mil
MC Reconstruction	24.7 K	88.0 K	41.3 K	6.9434 Mil
MC Event Generation	6.6 K	90.3 K	37.1 K	6.2361 Mil

Completed jobs

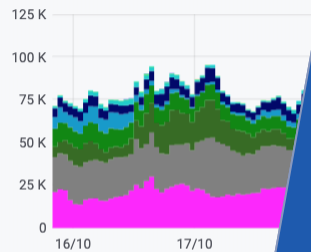
# ATLAS

## Job Accounting

since Jul 2019



MC Event Generation	
User Analysis	
MC Simulation Full	
Group Production	



User Analysis	
MC Simulation Full	
MC Event Generation	
Group Production	

Data from Panda (via JDBC)  
Enriched with AGIS topology

New finalised and closed states  
Classification of BOINC sites  
Job slots, wall clock, HS06



Please read

Instructions on how to use the dashboard at the bottom of this page.

Plots with 1-hour binning are available from Nov. 10th, 2018.

Plots with 1-day (and more) binning are available starting from Dec. 4th, 2017.

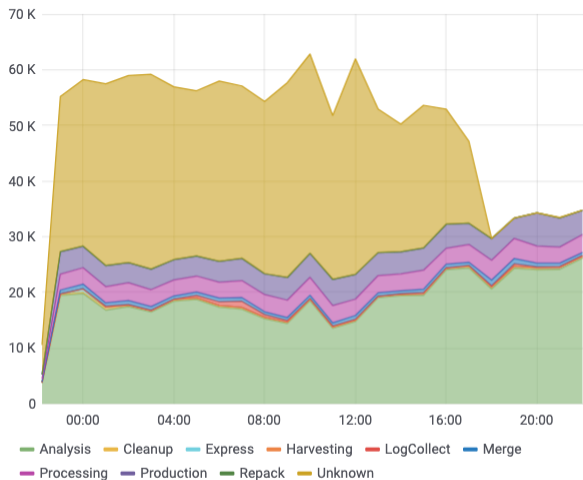
Please be patient when you request data from a time period longer than 6 months (queries will go faster if you pick 7 or 30-day binning).

▼

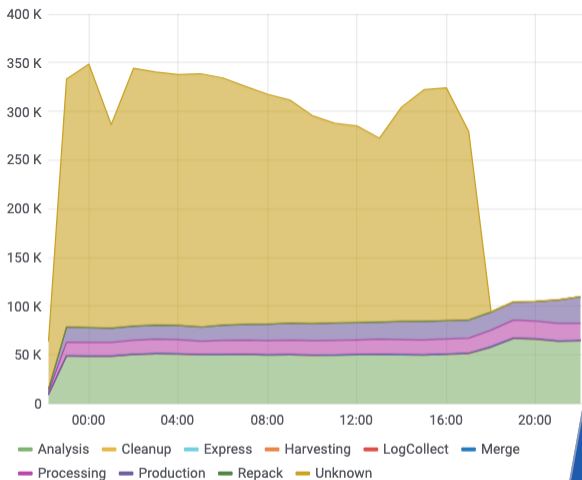
1227696 completed

106654 running jobs

Completed jobs



Running jobs



Total completed jobs



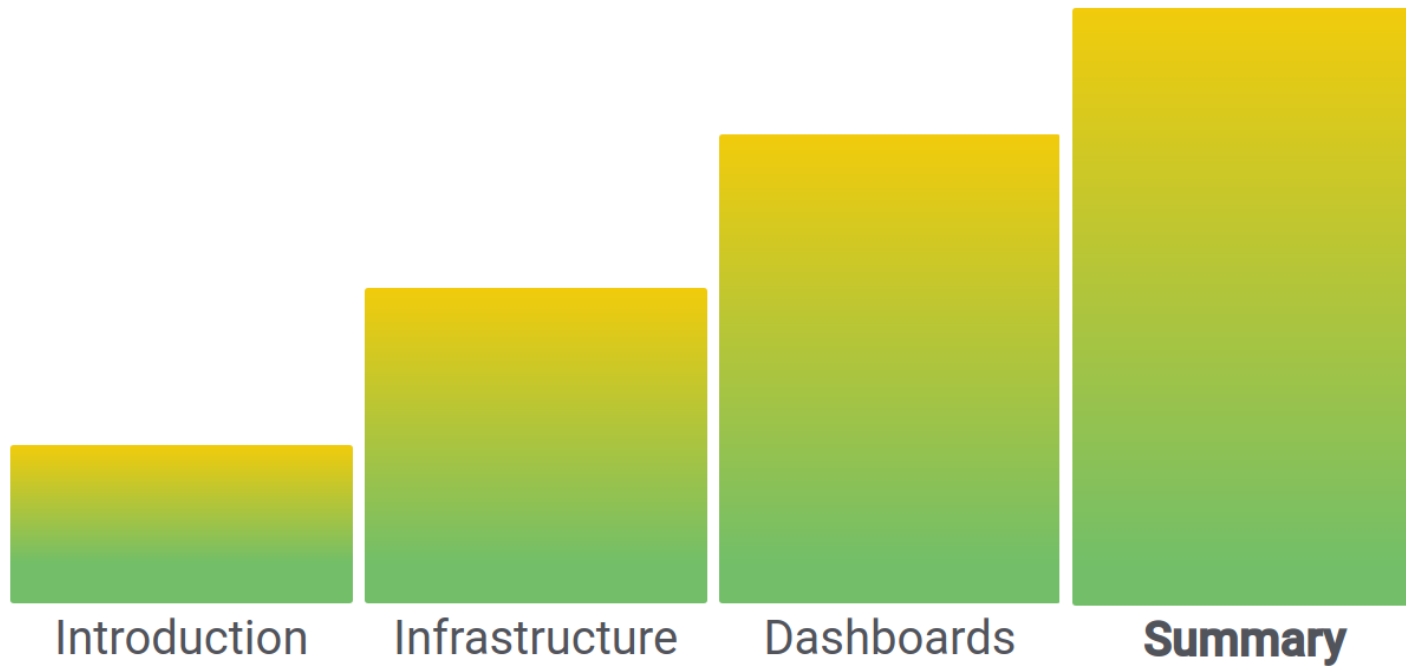
Currently running jobs



# CMS Job Monitoring *since Jul 2019*

Data from Condor (via AMQ)  
Pre-enriched with topology

New workflow: push vs pull  
Dedicated views for jobs/tasks  
Several new user tags



# Stable production infrastructure

*integrated many different monitoring use cases  
can scale to its continuous growth*

## **Migrated** most WLCG/Experiments **dashboards**

*stopped old services and retired the old infrastructure  
many thanks to all the people involved !*

