A Large Ion Collider Experiment

ALICE

# 2012 RESOURCES UTILIZATION REPORT AND COMPUTING RESOURCES REQUIREMENTS 2013-2017

September 24, 2012

A quick glimpse of 2012

- Standard data taking year for ALICE
- p-p – emphasis on rare triggers, high Pt (Calorimeter)
- pilot p-A run (2.5 million events)
- long p-A run in February 2013 (still counts as '2012')
  - Does not require additional computing resources
- Stable performance of all Grid sites, exceptional of T0

2012 - RAW

- Standard treatment – 2 copies of RAW data
- One at T0, one replica at T1s, proportional to the fraction of mass storage capacity

~1PB of RAW until September
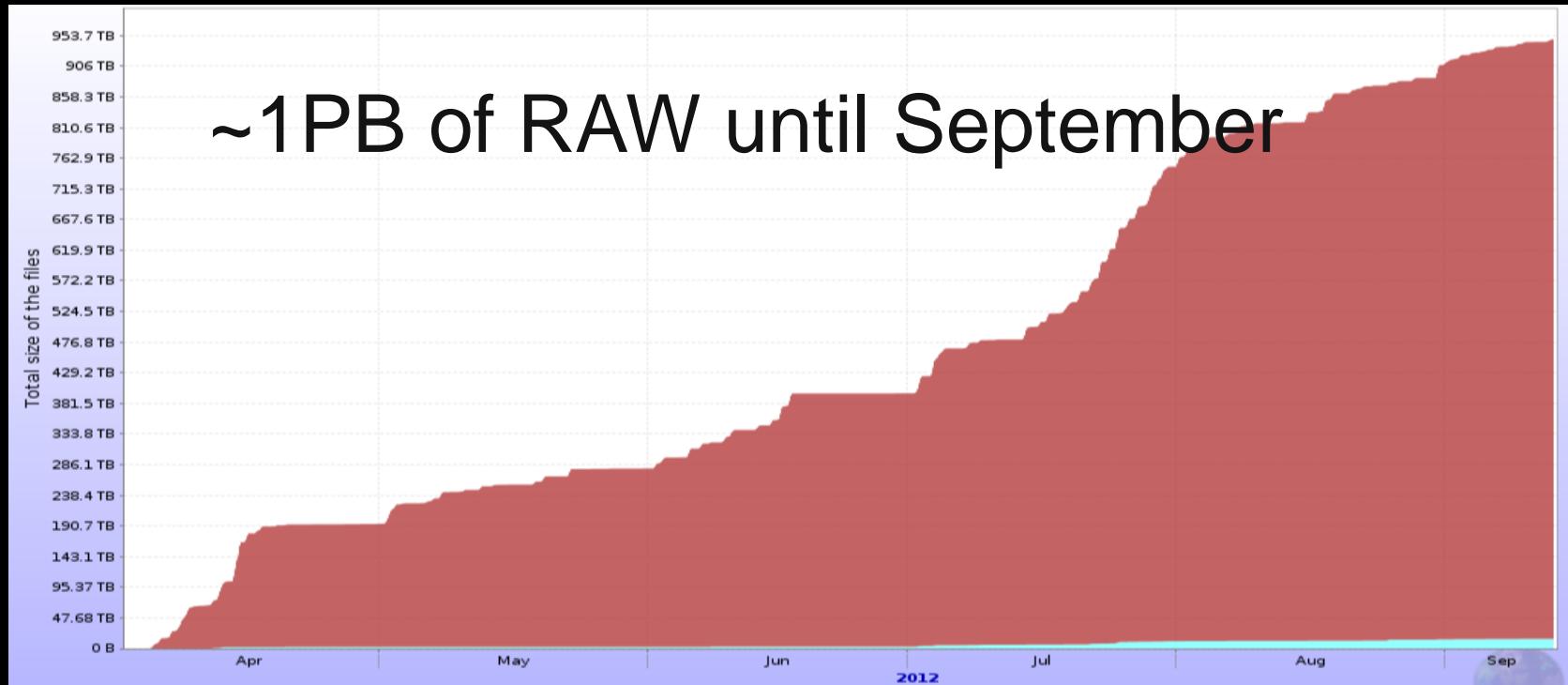
CPU per activity
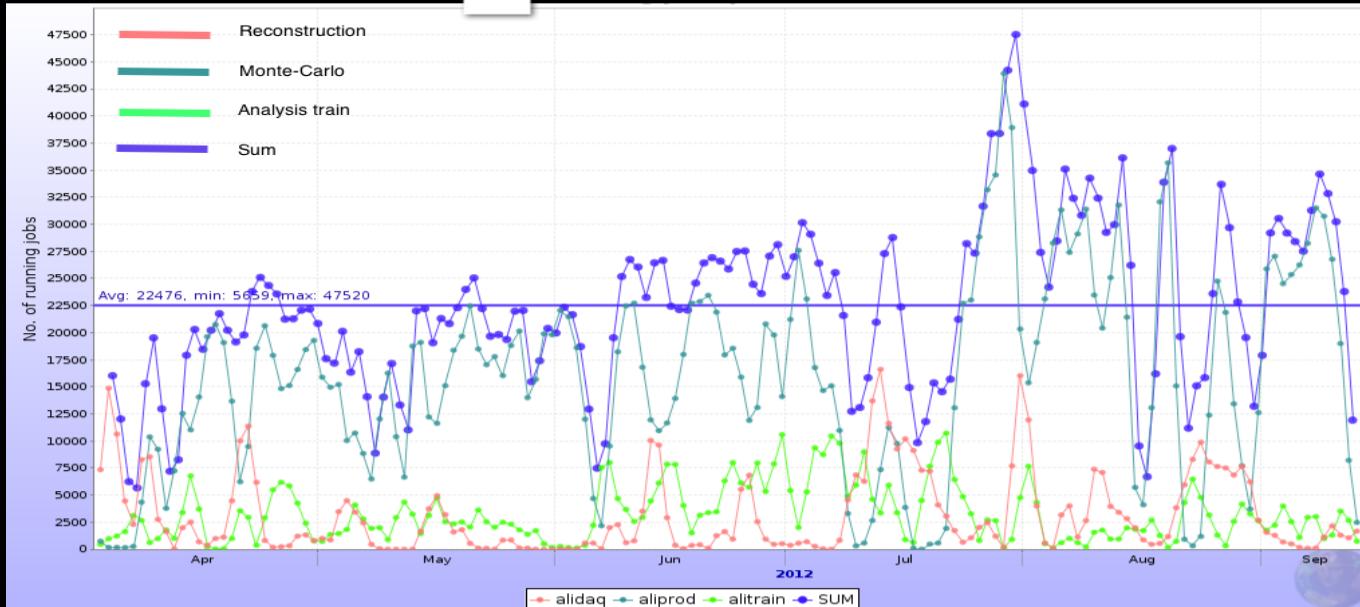
Organized activities ~80% of CPU
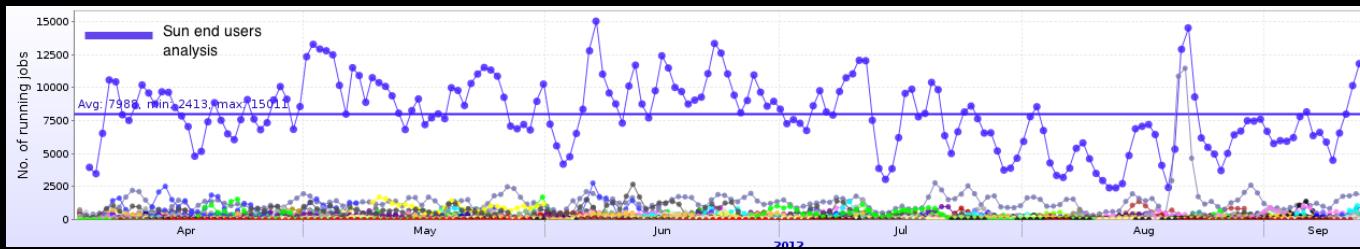
Chaotic user analysis ~20% of CPU

Increase of CPU for analysis trains, proportional decrease of chaotic

4

LHC SCHEDULE

LHC SCHEDULE
… OUR ESTIMATE FOR p-A

- 2012-2013

- p-p – about 80% of the required event sample

	Effective time (s)	Number of events	Effective trigger rate (Hz)
pp (2012)	3.4×10^6	1.2×10^9	314
pA (2013)	5.1×10^5	3.0×10^8	800

LHC SCHEDULE

- 2014: no data

LHC SCHEDULE
… OUR ESTIMATE

- ## 2015-2017: standard data taking years

	Effective time (s)	Number of events	Effective trigger rate (Hz)
pp	3.4×10^6	1.7×10^9	500
AA	4.6×10^5	4.2×10^8	925

A Large Ion Collider Experiment

COMPUTING MODEL PARAMETERS

COMPUTING MODEL PARAMETERS
… FROM 2012 DATA PROCESSING

- CPU power

- Stable for RAW data and MC processing, increasing for analysis trains

kHEP06×s/event	Reconstruction	Analysis Train	End Users Analysis	Monte-Carlo
pp	0.08	0.13	0.01	1.14
AA	2.00	1.99	0.14	90.00

COMPUTING MODEL PARAMETERS
… FROM 2012 DATA PROCESSING

- ## Data size

MBytes/event	Raw	ESD	AOD	Monte-Carlo
pp	0.41	0.23	0.01	0.37
AA	5.59	5.26	1.10	20.00

A Large Ion Collider Experiment

REQUIREMENTS

REQUIREMENTS

CPU

KHEP06

Legend: T0, CAF, T1s, T2s
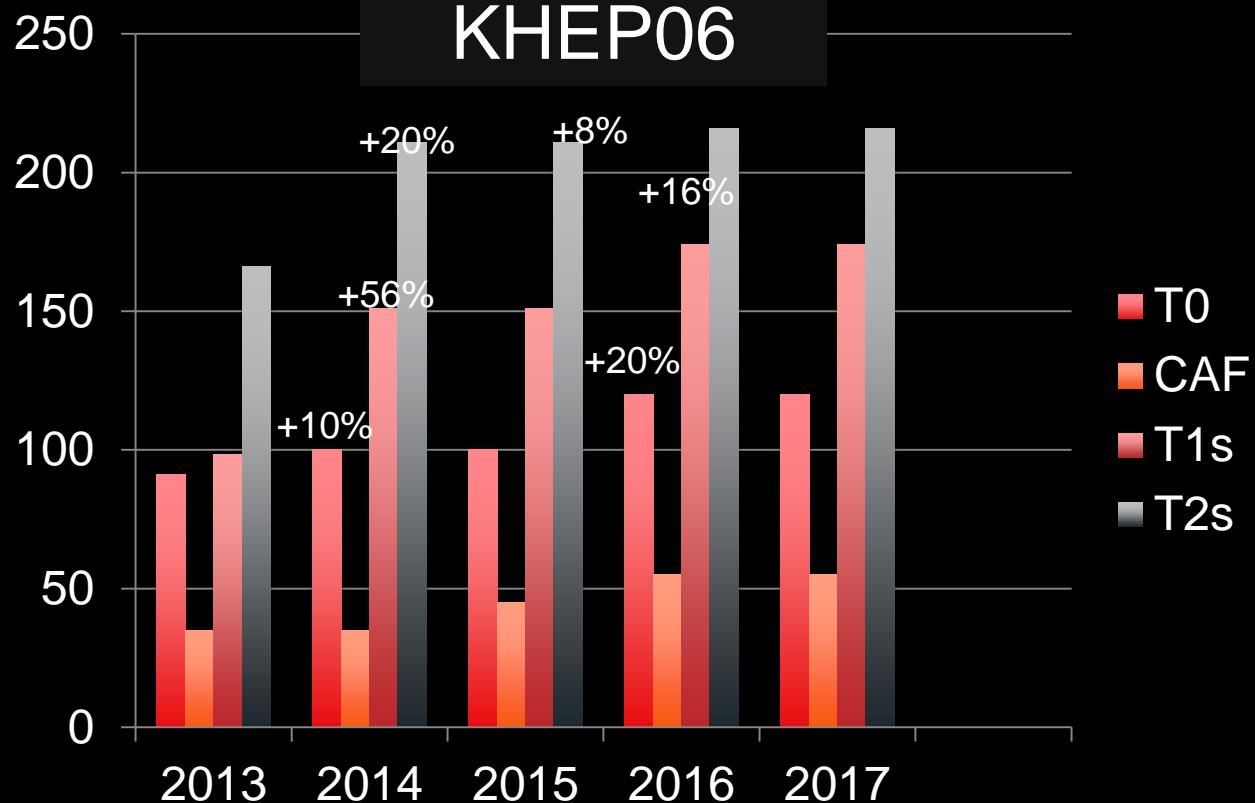
CPU (KHEP06)	T0	CAF	T1s	T2s
2013	91	35	98	166
2014	100	35	151	211
2015	100	45	151	211
2016	120	55	174	216
2017	120	55	174	216

REQUIREMENTS

TAPE
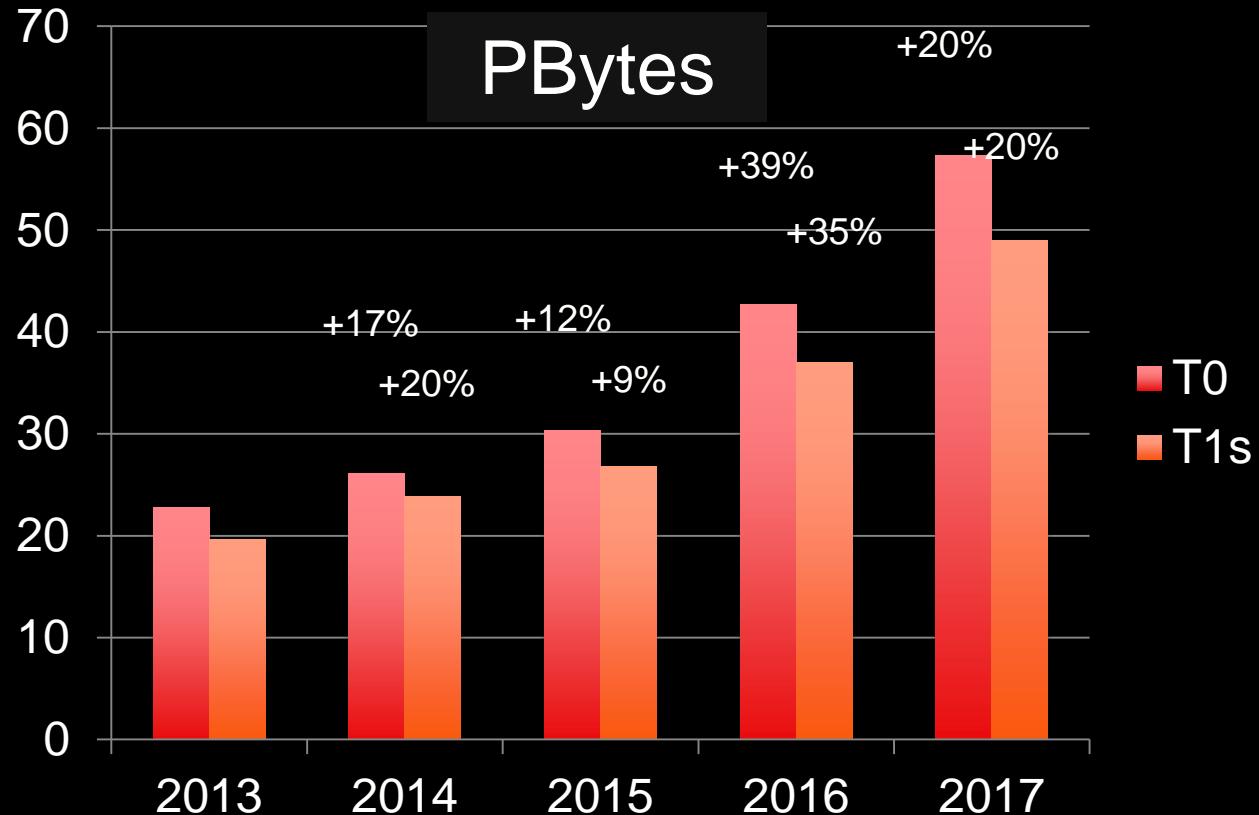
Tape (PB)	T0	T1
2013	22,8	19,6
2014	26,1	23,9
2015	30,3	26,8
2016	42,7	37,0
2017	57,3	49,0

REQUIREMENTS

DISK
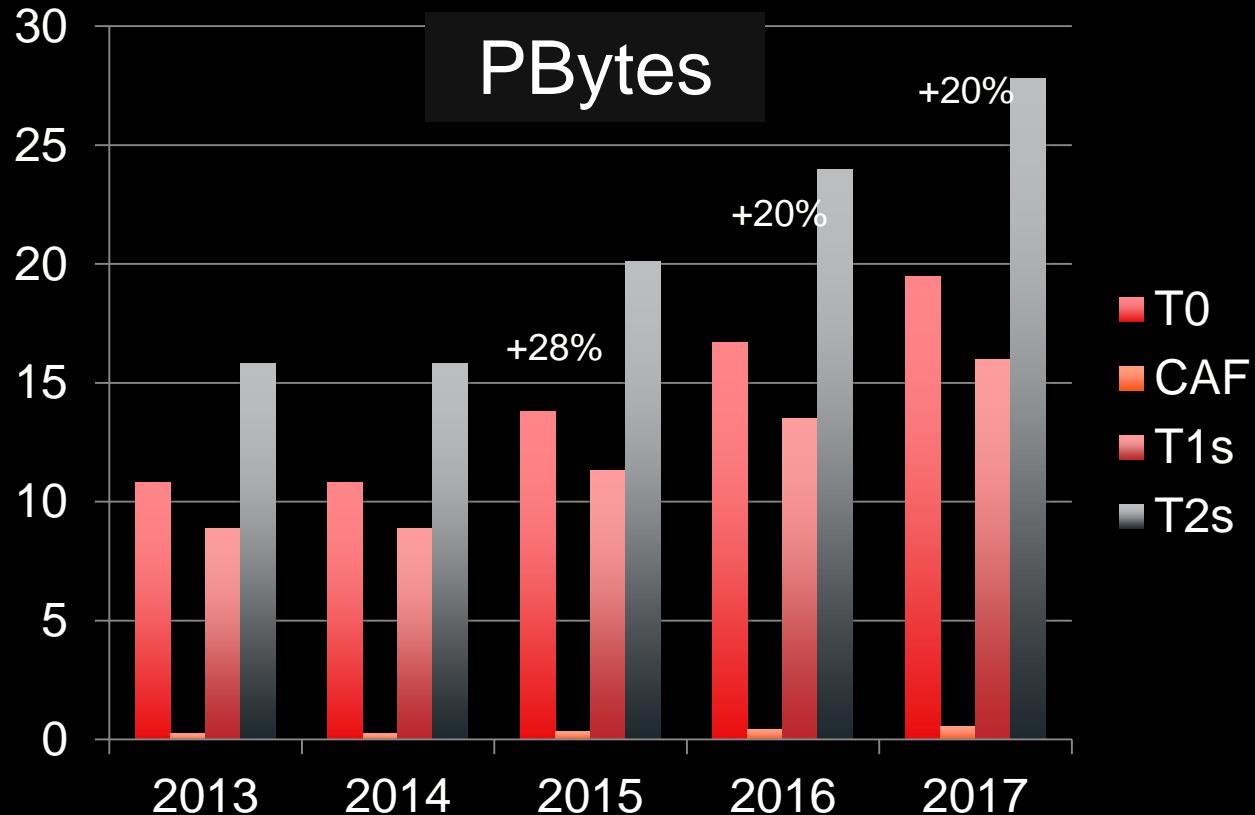
Disk (PB)	T0	CAF	T1s	T2s
2013	10,8	0,24	8,9	15,8
2014	10,8	0,24	8,9	15,8
2015	13,8	0,34	11,3	20,1
2016	16,7	0,44	13,5	24,0
2017	19,5	0,54	16,0	27,8