

ALICE & Grid Services (1)



ALICE Production Environment

- It provides Grid Services
- It is interfaced to EDG/LCG



ALICE user

Access to Grid services

AliEn

LCG

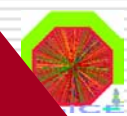
ALIROOT

Event generators

Transport & Det. Sim. packages

Computing framework

ROOT



<http://alien.cern.ch>



- ❑ 35 sites configured, at present ~14 contributing with CPU cycles
- ❑ 4 sites providing mass storage capability
- ❑ Fully distributed production controlled from one point
- ❑ 12 production rounds in past 12 months

[Edit +](#)

<http://alien.cern.ch/Alien/main?task=production>

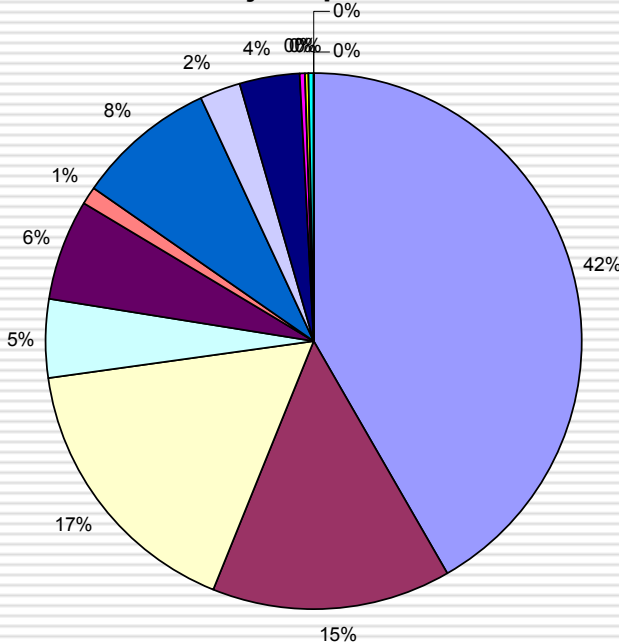
ROUND	TAG	COMMENT	STATUS	COMMAND	Statistics
2001-01	V3.05	Test-Round	TESTING	AliRoot	view Chart
2001-02	V3.06	PPR-Production	DONE	AliRoot	view Chart
2002-01	V3.07.03	EMCAL-Production	DONE	AliRoot	view Chart
2002-02	V3.08.03	Proton-proton minimum bias for charm	DONE	AliRoot	view Chart
2002-03	V3.08.Rev.01	PPR production	STARTED	AliRoot	view Chart
2002-04	V3.08.Rev.01	p-p minimum bias	DONE	AliRoot	view Chart



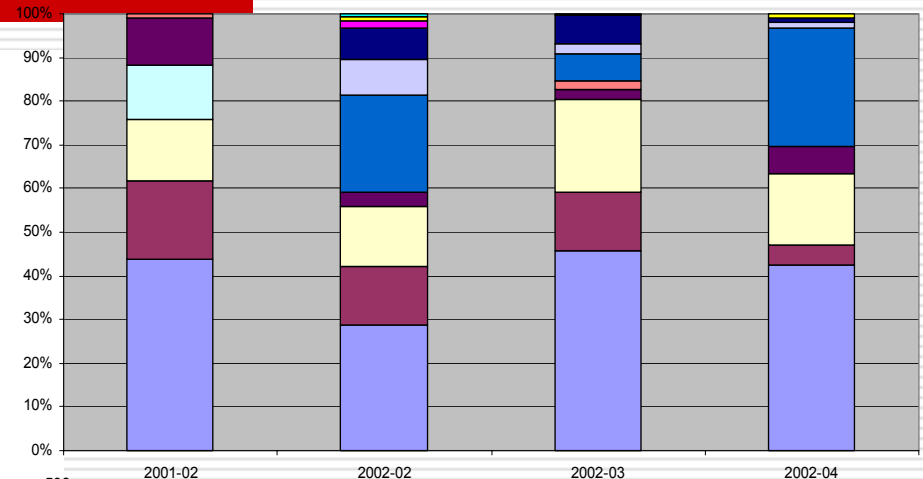
Production Status

ALICE Productions

Total jobs per site



- CERN
- Torino
- LBL
- Lyon
- Catania
- OSC
- FZK
- Padova
- CNAF
- GSI
- Utrecht
- Zagreb
- Budapest
- Prague

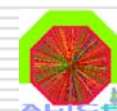


22713 jobs, ~12CPUh/job,
 ~1GB output/job
 up to 450 concurrently running jobs

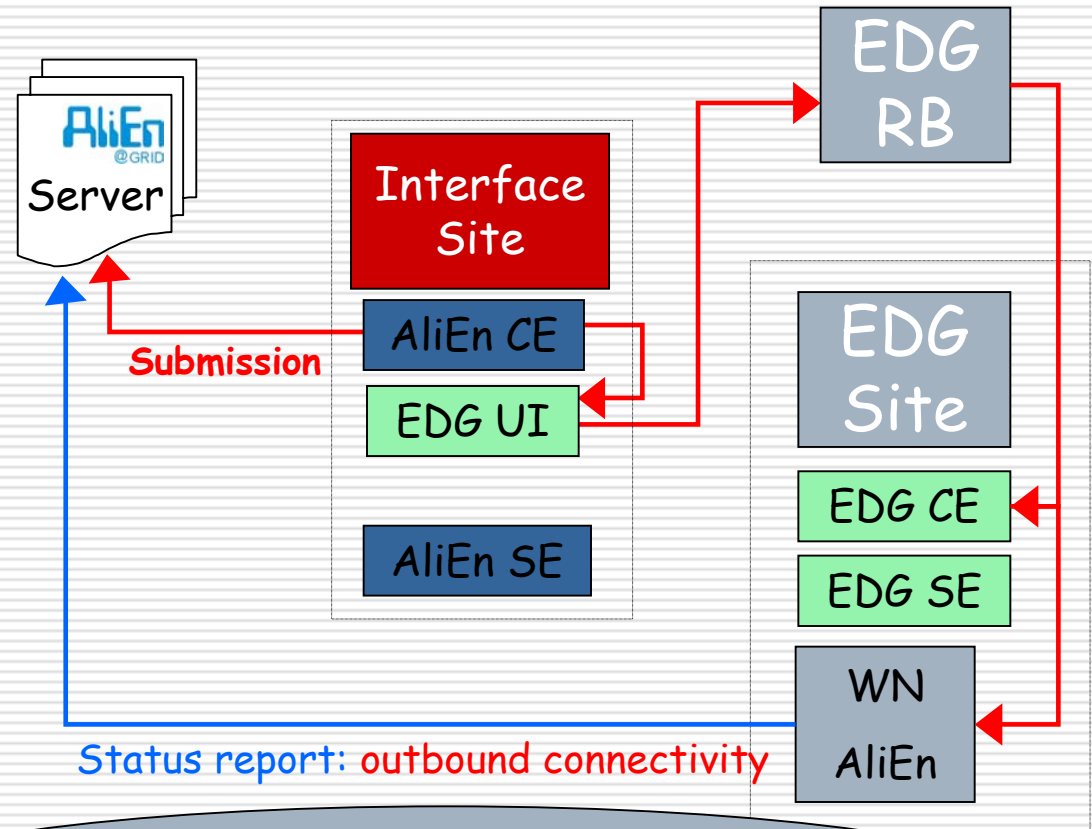


ALICE & Grid Services (2)

- ALICE users will access EDG/LCG Grid services via AliEn.
 - The interface between AliEn and EDG (1.4) has been successfully tested in 2003
 - The interface with LCG-1 is under development now
- ALICE has carried out a test production on EDG 1.4:
 - 5000 Pb-Pb events for HBT studies
 - 1 job/event → 5000 jobs
 - 1.8 GB/job → 9 TB
 - 12-24 hours per job
 - Started on March 15th – Stopped on May 31st



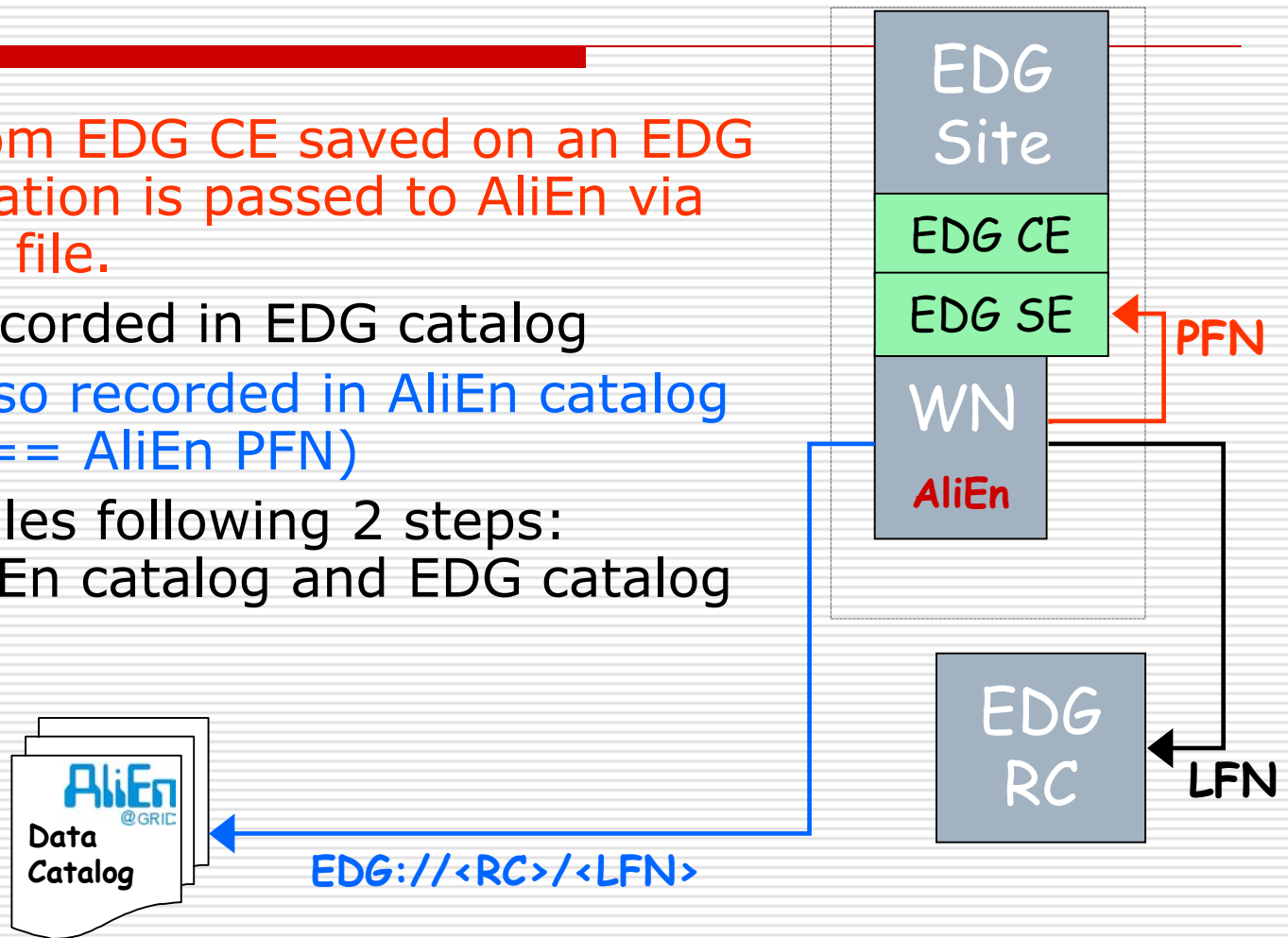
- EDG UI and AliEn suite - ClusterMonitor, CE, SE - active on an interface site
- This interface pulls jobs from the AliEn server, generates JDL requirements and submits jobs to EDG RB.
- The job launches AliEn processes in the WN for communication with the AliEn server.



AliEn is part of the ALICE environment (no daemons in WN)

Communication with EDG

- Outputs from EDG CE saved on an EDG SE. Information is passed to AliEn via .Brokerinfo file.
- Files are recorded in EDG catalog
Files are also recorded in AliEn catalog (EDG LFN == AliEn PFN)
- Access to files following 2 steps:
through AliEn catalog and EDG catalog



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ALICE & Grid Services (3)

EDG test production: RESULTS

- Only 1290 jobs could be submitted and ~450 central Pb-Pb events have been simulated → (6 jobs/day)
- Output registered in the EDG Alice RC
- Output stored on :
 - EDG disk SE's (300)
 - EDG MSS SE's (150)
 - CASTOR at CNAF and CERN
(all, registered in the AliEn Data Catalogue)
- An ALICE note has been published: [ALICE-INT-2003-036](#)

ALICE & Grid Services (5)

- ALICE users will access EDG/LCG Grid services via AliEn.
 - The interface with LCG-1 is completed; first tests have just started.
- Results: monitoring of efficiency and stability versus job duration and load
 - Efficiency (algorithm completion): if the system is stable eff \sim 100%, if any instability eff=0%. Disk space availability on WN.
 - Efficiency(output registration to RC): 100%
 - Geographical job distribution:
 - Few sites accept event until they saturate and then RB looks for other sites
 - By submitting a bunch of jobs and no WN is available, all the jobs enter the Schedule state always on the same CE.
 - Automatic Proxy-renewal: allways OK



ALICE & Grid Services (6)

- ALICE users will access EDG/LCG Grid services via AliEn.
 - The interface between AliEn and EDG (1.4) has been successfully tested in 2003
 - The interface with LCG-1 is completed; first tests have just started.
 - ALICE is carrying out a test production on LCG1:
 - 200 Pb-Pb events
 - 1 job/event -> 200 jobs
 - 1.8 GB/job -> 360 GB
 - 12-24 hours per job
 - Started on November 14/11/2003
 - 17/11 11:00 : 137 done; 31 cancelled; 32 Waiting
- > 82.2%
- (I/O on russian CE, failed data transfer to adc0018.cern.ch)



ALICE & Grid Services (7)

- EDG1.4 versus LCG1
 - Improvement in terms of stability
 - Efficiency 35% -> 82% (preliminary)
 - Not possible to check/retrieve stdout and stderr during execution.
- Load on LCG1 during ALICE DC:
 - 10^4 events
 - Submit 1 job/3' (20 jobs/h; 480 jobs/day)
 - Run 240 jobs in parallel
 - Generate 1 TB output/day
 - Test LCG MS
 - Parallel data analysis (AliEN/PROOF) including LCG
 - Start beginning January 2004

