



ALICE

A JOURNEY OF DISCOVERY

Operations and plans - POLAND

Janusz Oleniacz

WUT –

Warsaw University of Technology

Politechnika Warszawska

Outline

- ALICE @ WUT
- Appearance of ALICE new site: „WUT”
- Polish WLCG ALICE sites
- Summary



Warsaw University of Technology

www.pw.edu.pl

- Largest technical university in Poland
- Now celebrating 100 years
- 2 anniversary coins
by Polish National Bank:





Warsaw University of Technology



- **Faculty of Physics** (180 first year students)
www.fizyka.pw.edu.pl
- **Nuclear Physics Division:**
 - **Heavy Ion Reaction Group** (ALICE, STAR, FAIR, NICA, NA61/SHINE) hirk.if.pw.edu.pl
 - Nuclear Theory Group (calculations on GPUs)
- Alice @ WUT → 2 phd theses defences this week (M.Janik, Ł.Graczykowski)

New site „WUT” – 1st attempt

- Started in 2010 on cheapest (from tender) hardware
- Machines were very unstable i finally died one by one when it was impossible to return them (memory errors, motherboards with expanding capacitors)
- Upgrade WLCG-gLite to CREAM started
- Partially successful (almost working CE)

WUT in blue...

The screenshot displays the MonALISA Repository for ALICE interface. At the top left is the ALICE logo, and at the top right is the title "MonALISA Repository for ALICE". Below the title is a navigation bar with links: "My jobs", "My home dir", "Catalogue browser", "Repository Home", "Administration Section", "ALICE Reports", and "Events".

On the left side, there is a sidebar menu titled "ALICE Repository" with the following categories and items:

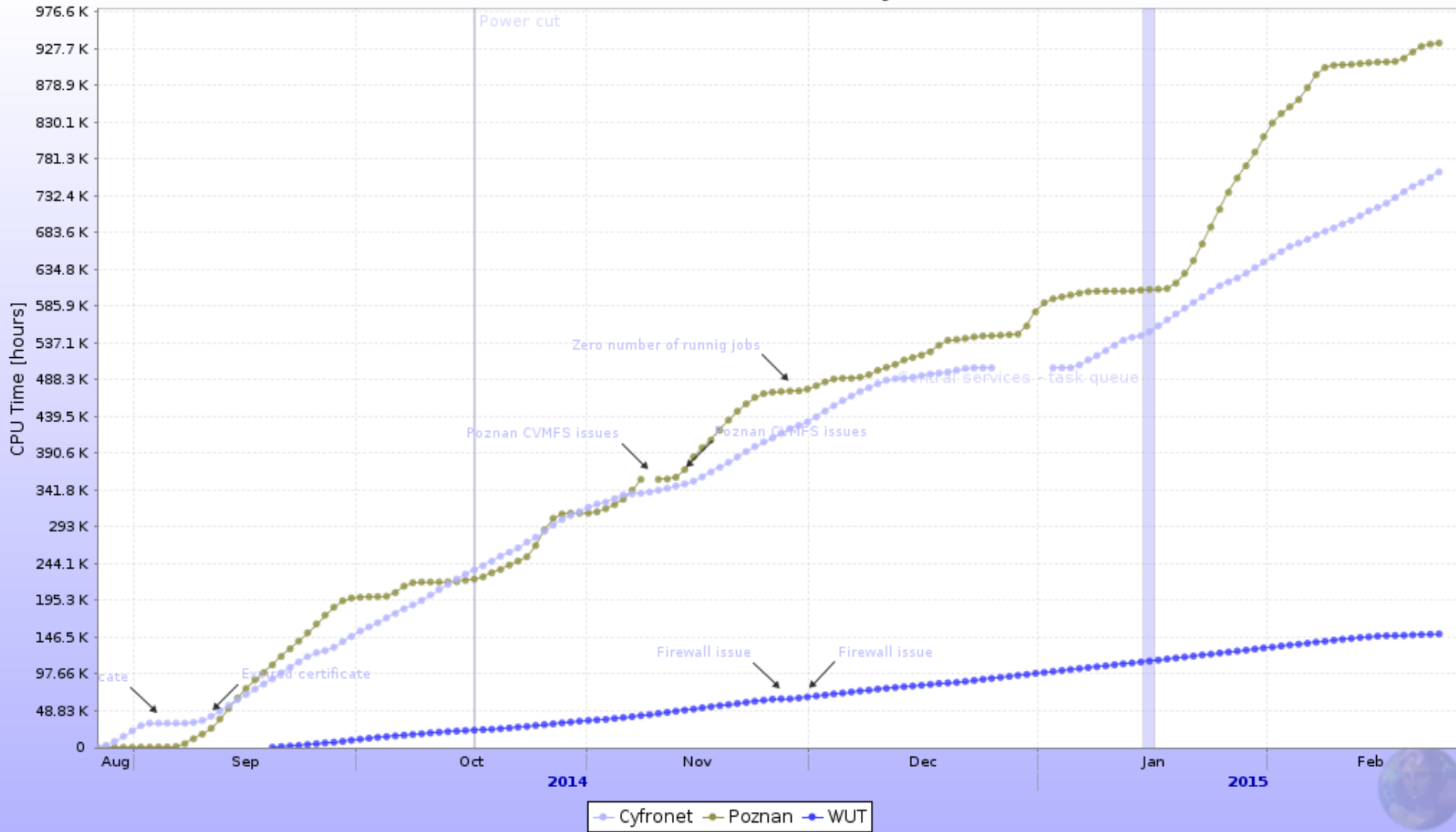
- ALICE Repository
 - Google Map
 - Shifter's dashboard
 - Run Condition Table
- Production info
 - RAW production cycles
 - RAW activities
 - Analysis train
 - MC production cycles
 - MC production requests
- Job Information
 - Site views
 - Summary plots
 - Job states
 - Jobs per site
 - Jobs per site table
 - Resource usage
 - User views
 - Summary plots
 - Jobs status
 - Grid packages
 - Quotas
 - Task queue
 - Task queue summary
 - Jobs in TQ table
 - Job timings

The main content area features a satellite map of Europe with various sites marked by colored dots. A legend in the top right corner of the map area shows: "Map" (selected), "Satellite", and "Hybrid". The sites are color-coded: blue for WUT, yellow for KPI, IHEP, and MEPHI, red for ISMA, and green for others. The sites marked in blue include Birmingham, RAL, NIKHEF, SARA, Poznan, WUT, Prague-CREAM, Cyfronet, BITP, KNU, Strasbourg_IRIS, Bratislava, Kosice, KFKI, CERN, Clermont, CCIN2P3, IPNL, Torino, Trieste, Legnaro, ISS, NIHAM, Grenoble, Bologna, Bari, Madrid, Trujillo, Cagliari, CyberSar, Catania, TriGrid, Athens, and Yerevan. Other sites marked in red include ISMA and ECIP. Other sites marked in green include Subatech, GRIF_IRFU, GRIF_IPNO, GSI, GSI-LAB, FZK, and Bari.

New site „WUT” – 2nd attempt

- Finally successful in Sep 2014
- Based on new reliable hardware (HP/Intel)
- Build with virtual machines (even WNs, except SE)
- Enormous support from and many thanks to:
Latchezar, Maarten and T.Szymocha(Cracow),
F.Klajn(Wroclaw)
- Small SE (12TB), computing power recently 50 cores
and 100+ cores after completing recent updates

Total CPU time for ALICE jobs





New site „WUT”

- In 2013 WUT as a university applied for grant for ca \$1,5mln from NCN (under EU „Innovative Economy” (for science <1%) – total \$30 mln)
- Name of the project „WLCG Tier2 site at WUT”
- Importance of participating in WLCG-ALICE is broad across whole University
- In 2014 there were mutual official visits
CERN<->WUT co-operation officially signed
- A.Kisiel initiated WUT-wide „Platform on HEP”



New site „WUT”

- Technical details/problems:
 - WUT has GEANT connection, however bandwidth is not reliable (needs further study)
 - Recent security updates affected Argus (WUT is a client to national NGI-PL server, which failed after java update)
 - Torque/maui failes sometimes (wating for maui upgrade availability)
 - WNs use SSD for VMWare file caching & swap (possible wear-out)
 - Probably current firewall (self-made NAT) is bandwidth limiting (however buying Cisco ASA5520 did not help, because same serial No device appeared in US)



WUT - operation

79. Strasbourg_IRES	IN2P3	T2	-	2068	2170	-	-	95.31%	110468	93778	84.89%
80. Subatech	IN2P3	T2	-	150.2	171.5	-	-	87.54%	90219	77232	85.61%
81. SUT	Thailand	T2	-	268	283.8	-	-	94.41%	6048	5358	88.59%
82. TACC	US	T2	-	-	-	-	-	-	-	-	-
83. Talca		T2	-	-	-	-	-	-	-	-	-
84. Torino	INFN	T2	-	490.4	574.7	-	-	85.35%	151429	128619	84.94%
85. Trieste	INFN	T2	-	56.54	64.14	-	-	88.15%	11081	8166	73.69%
86. TriGrid_Catania	INFN	T2	-	86.84	94.28	-	-	92.11%	3181	2552	80.23%
87. Troitsk	RDIG	T2	-	84.37	103.9	-	-	81.16%	13626	11753	86.25%
88. Trujillo		T2	-	161.3	183.1	-	-	88.07%	11424	9874	86.43%
89. UiB	Nordic Countries	T2	-	1373	1970	-	-	69.69%	118281	92247	77.99%
90. UNAM	Mexico	T2	-	4.516	4.956	-	-	91.12%	757	614	81.11%
91. UNAM_T1	Mexico	T2	-	-	-	-	-	-	93759	80023	85.35%
92. Wuhan	China	T2	-	-	-	-	-	-	-	-	-
93. WUT	Poland	T2	-	-	-	-	-	-	3741	3323	88.83%
94. Yerevan		T2	-	11.68	12.83	-	-	91.03%	984	521	52.95%
95. ZA_CHPC	South Africa	T2	-	-	-	-	-	-	95103	68501	72.03%
Total			0	94480	110491				9782403	7803427	

Group	Pledged	Delivered		Occupancy	Missing KSI2K	Efficiency	Job statistics		
	KSI2K	CPU	Wall	Wall/Pledged	Pledged - Wall	CPU/Wall	Assigned	Completed	Efficiency
1. Armenia	0	12.35	13.54	-	-	91.24%	998	520	52.1%
2. Brasil	0	368.8	390.4	-	-	94.47%	96941	70178	72.39%
3. CERN	0	3707	4528	-	-	81.86%	1450797	1177409	81.16%
4. China	0	-	-	-	-	-	-	-	-
5. Czech Republic	0	3027	3675	-	-	82.39%	331199	260759	78.73%
6. Germany	0	13146	18695	-	-	70.32%	984610	806251	81.89%
7. Greece	0	191.4	199	-	-	96.19%	15525	10278	66.2%
8. HLT	0	-	-	-	-	-	-	-	-
9. Hungary	0	518.9	569.6	-	-	91.1%	65329	57916	88.65%
10. IN2P3	0	22663	24850	-	-	91.2%	1680982	1309039	77.87%
11. India	0	1370	1640	-	-	83.55%	81945	66599	81.27%
12. Indonesia	0	-	-	-	-	-	-	-	-
13. INFN	0	13320	14706	-	-	90.58%	1568954	1268812	80.87%
14. Japan	0	1572	1761	-	-	89.29%	148723	131294	88.28%
15. Mexico	0	4.485	4.922	-	-	91.13%	95475	80246	84.05%
16. Nordic Countries	0	4194	5141	-	-	81.58%	414698	320568	77.3%
17. Other	0	-	-	-	-	-	-	-	-
18. Pakistan	0	142.9	156.8	-	-	91.09%	7426	6717	90.45%
19. Poland	0	946.7	1100	-	-	86.03%	81454	70102	86.06%
20. RDIG	0	7829	9328	-	-	83.93%	585467	458914	78.38%
21. Republic of Korea	0	3065	3416	-	-	89.75%	371328	312723	84.22%



WUT



- Planning to acquire external funds for more hardware – to improve computing power and reliability as well as efficiency (like gov. CIS-LHCb got 20k cores, 300TB in 2014)
- WLCG Tier2 ALICE site if most advanced IT & physics initiative at University level
- Started to work on base of limited resources



Summary



- WUT site has encreased Polish ALICE capabilities and power
- WUT is more stable than 2 others
- Poznan and Cyfronet sites are OK
- Altogether POLAND has ca 1% of total ALICE CPU delivered time in Jan 2015
- WUT planning strongly to expand