

ATLAS Midwest Tier2Fest @ University of Chicago

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December 12, 2011

<https://indico.cern.ch/conferenceDisplay.py?confId=166388>

Outline today

- High level goals and readiness for 2012 physics
- Illinois first deployment and MWVT2 integration
- Regional networking
- Final CA procurements
- Closeout w/ action items and next steps

Schedule Summary

- LHC now shutdown for 2011
- Technical stop until week of March 8
- pp physics starts April 2 - till ~ end of year (148 days of physics, goal 16 fb⁻¹ depending on chosen machine parameters)
- MWT2 2012 upgrades (goal: define w/ schedule today):
 - Winter upgrade for Spring physics
 - Summer(?) or Fall (FY12 closeout) upgrade

LHC Page1 Fill: 2354 E: 0 Z GeV 12-12-2011 17:41:19

SHUTDOWN: NO BEAM

Comments 07-12-2011 18:00:39 :

*** END OF 2011 RUN ***

Thank you all for this brilliant and exciting year. We look forward to another unforgettable year 2012.

*** Start of Xmas Technical Stop ***

BIS status and SMP flags	B1	B2
Link Status of Beam Permits	false	false
Global Beam Permit	false	false
Setup Beam	true	true
Beam Presence	false	false
Moveable Devices Allowed In	false	false
Stable Beams	false	false

AFS: Pilot_2011_IONS PM Status B1 ENABLED PM Status B2 ENABLED

Capacity Requirements

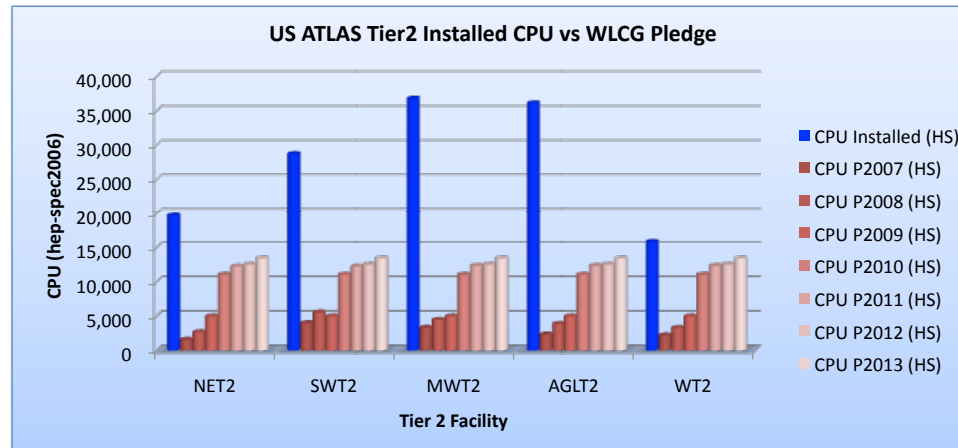
- USATLAS is responsible for 23% of ATLAS.
- The WLCG pledges for MWT2 have not been modified here
- Per US Tier2 (5) = 12.2kHS06 (2012)
- We have to use these as minimum guidelines

CRSG recommendations - C-RRB 18/10/11 (updated 26/11/11)

CMS	2012	2013	ATLAS	2012	2013
CERN CPU (kHS06)	120	120	CERN CPU (kHS06)	111	111
CERN disk (PB)	7	7	CERN disk (PB)	9	10
CERN tape (PB)	23	23	CERN tape (PB)	18	18
T1 CPU (kHS06)	145	145	T1 CPU (kHS06)	259	273
T1 disk (PB)	22	27	T1 disk (PB)	27	30
T1 tape (PB)	45	45	T1 tape (PB)	29	33
T2 CPU (kHS06)	315	306	T2 CPU (kHS06)	266	281
T2 disk (PB)	26	26	T2 disk (PB)	47	53
ALICE	2012	2013	LHCb	2012	2013
CERN CPU (kHS06)	116	116	CERN CPU (kHS06)	34	33
CERN disk (PB)	14.3	14.1	CERN disk (PB)	3.5	4
CERN tape (PB)	20	25	CERN tape (PB)	6.4	7.7
T1 CPU (kHS06)	160	157	T1 CPU (kHS06)	113	110
T1 disk (PB)	10.8	8.7	T1 disk (PB)	9.5	11.1
T1 tape (PB)	21	28	T1 tape (PB)	6.2	8
T2 CPU (kHS06)	145	138	T2 CPU (kHS06)	43	43
T2 disk (PB)	8.3	8.3	T2 disk (PB)	0	0

Notes.

US T2 CPU Capacities



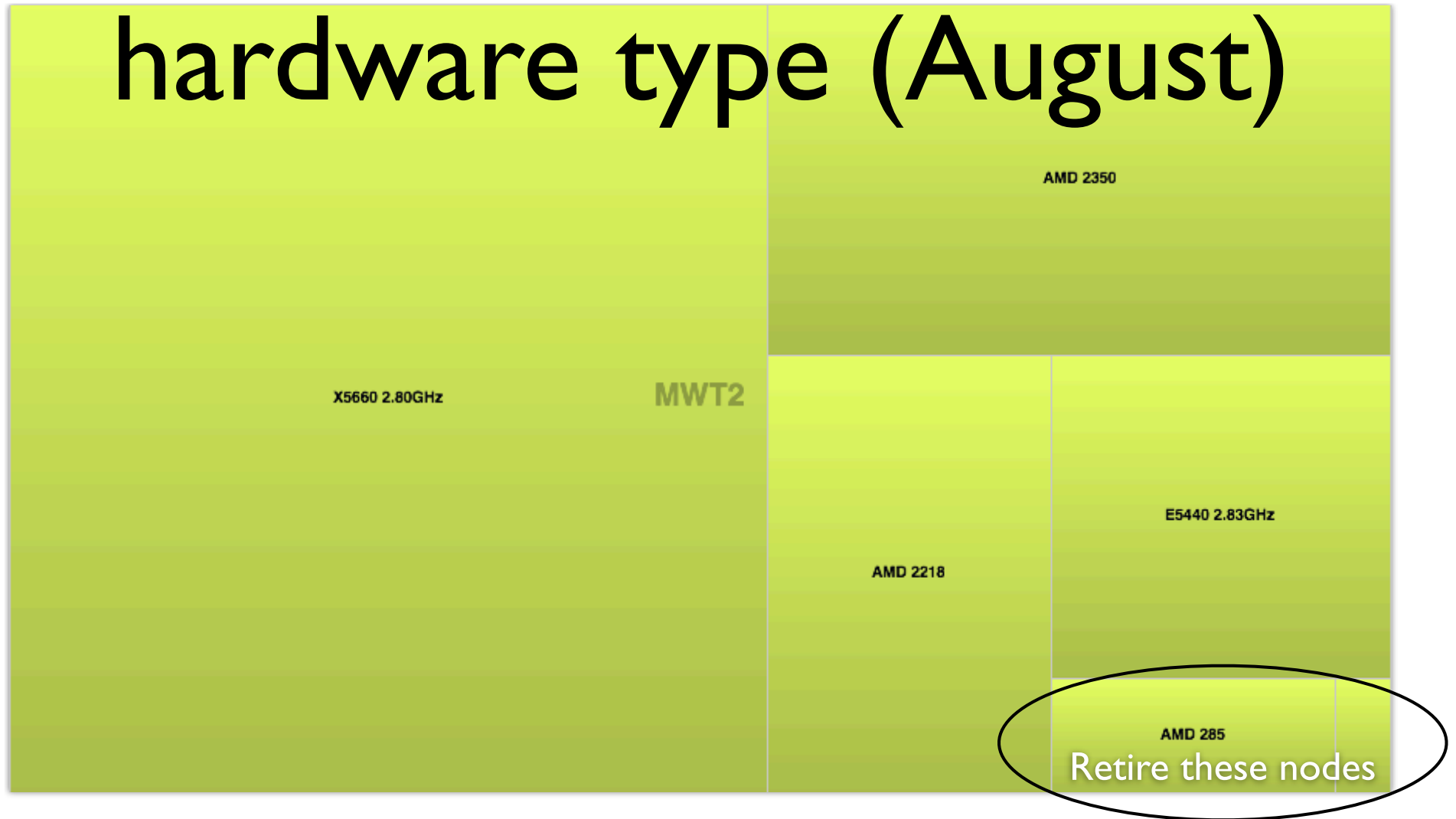
- Capacity over pledge goes to US collaboration
- MWT2 pledge may modified to 1.5 nominal T2 for 2013
- Internal US ATLAS assessment for MWT2 will be different

MWT2 CPU

Site	Model	Subcluster Name	Version	GHz	Job Slots	HEP-SPEC06		BIOS	Slots/node
						Value	Total		
MWT2_IU									
	Dual Core AMD Opteron(tm) Processor 285			2.6	128	7.51	961		24.0
	Dual Core AMD Opteron(tm) Processor 2218			2.6	160	7.92	1,267		
	Quad-Core AMD Opteron(tm) Processor 2350			2	320	7.01	2,242		
	Quad Core Xeon E5440 Processor			2.83	160	8.55	1,368		
	Intel(R) Xeon(R) CPU X5660			2.8	768	9.75	7,488	HT	
	Summary			Totals	1,536		13,326		
						Site HEP-SPEC average	8.68		
MWT2_UC									
	Dual Core AMD Opteron(tm) Processor 285			2.6	136	7.51	1,021		24.0
	Dual-Core AMD Opteron(tm) Processor 2218			2.6	340	7.84	2,666		
	Quad-Core AMD Opteron(tm) Processor 2350			2	520	7.01	3,644		
	Quad Core Xeon E5440 Processor			2.83	360	8.55	3,078		
	Intel(R) Xeon(R) CPU X5660			2.8	1,344	9.75	13,104	HT	
	Summary			Totals	2,700		23,514		
						Site HEP-SPEC average	8.71		
MWT2 TOTAL					4,236		36,840		

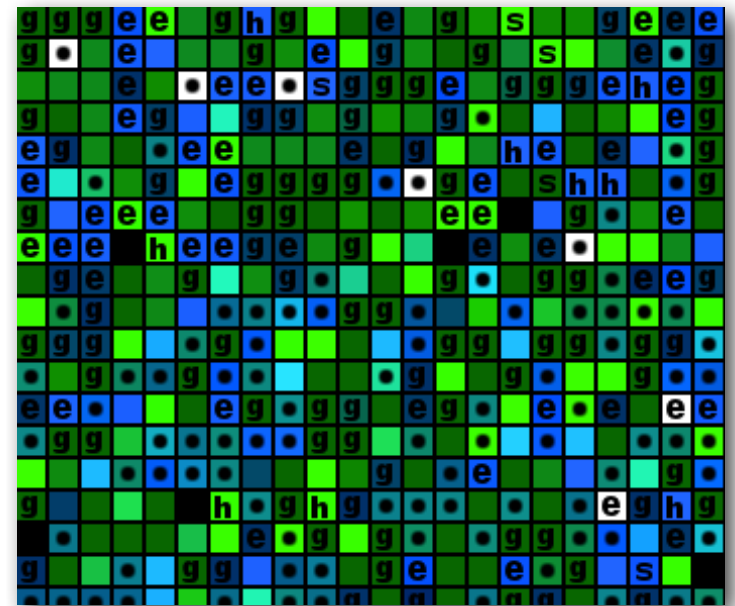
- Curent capacity - does not reflect nodes that have been retired piecemeal
- We'll need a retirement plan for 2012

HS06-hours delivered by hardware type (August)

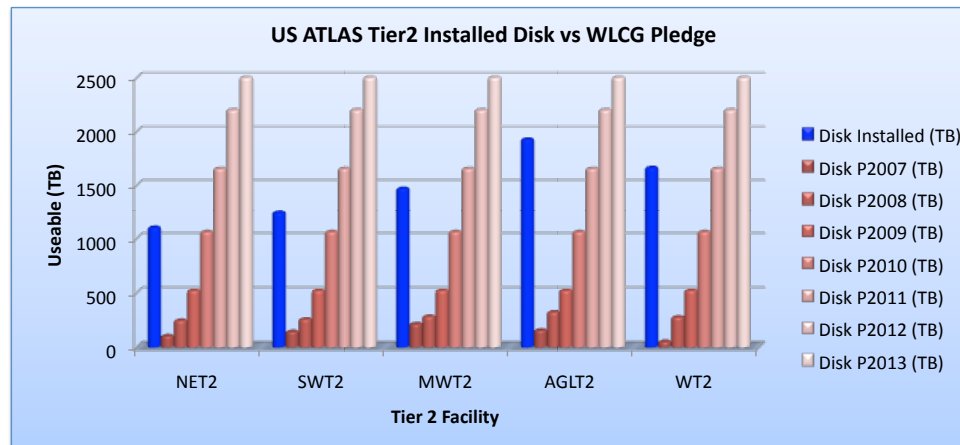


Opportunistic Access to open job slots at MWVT2

- [g]low, [e]ngage, [h]cc running alongside ATLAS production (solid) and analysis (dots)
- Continue in 2012 with sensible policy



US T2 Disk Capacities

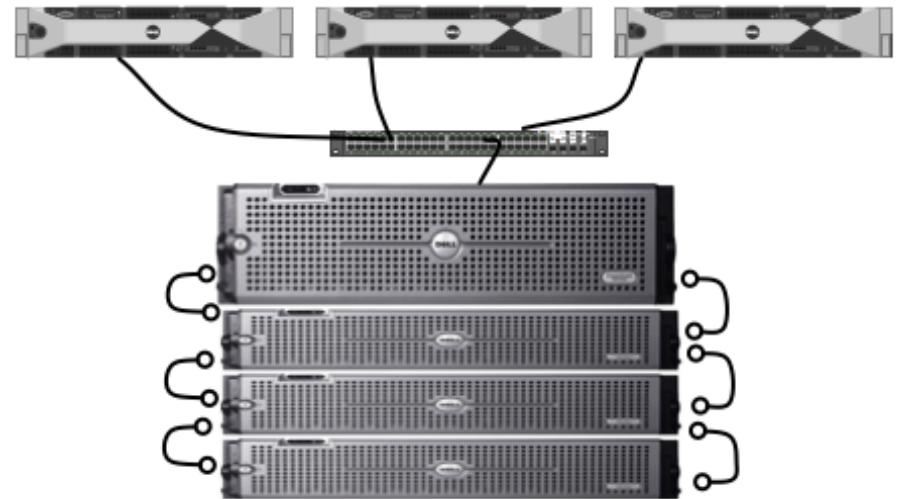


- 1470 TB presently (2.2 PB needed 2012, 2.5 PB 2013)
- December 2011 expansion:
 - 720 TB @ UC, 540 TB @ IU
 - Total: 2.73 PB useable
 - New distribution: ~2PB (UC), ~0.7PB (IU) or (75%:25%)
- That we will have reached our 2013 pledge in early 2012 gives us flexibility for integrating Illinois resources
- Use 2012 to demonstrate storage integration at Illinois at reasonable scale (we need to define this)
- Capacity over pledge goes to US collaboration (eg. LOCALGROUPDISK)

VM infrastructure

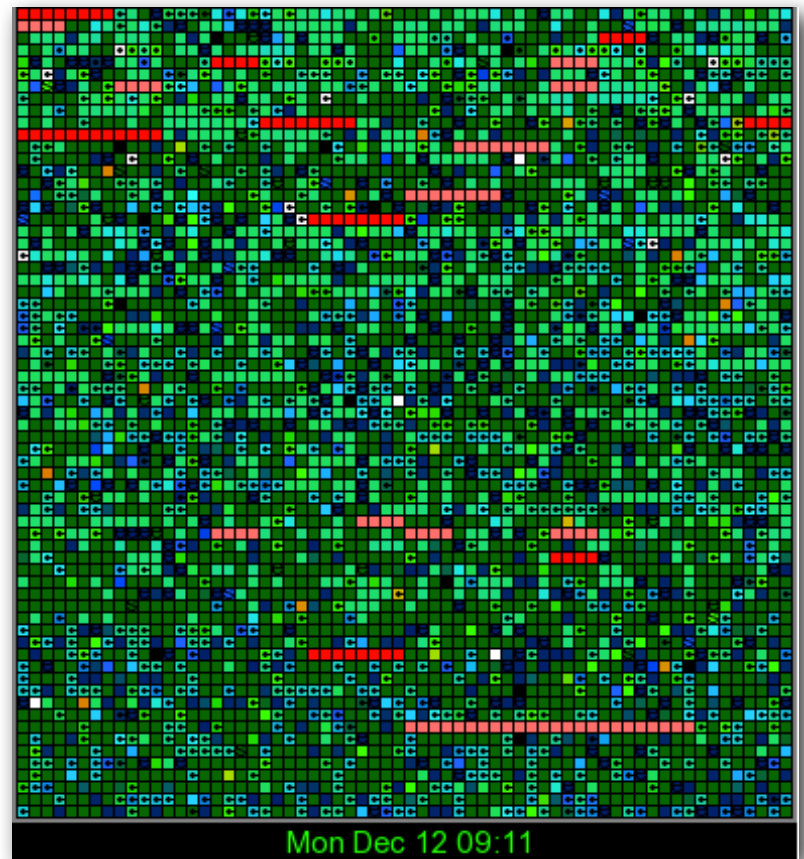
Head, Virtualization					
Site	MD3200i + 3xMD1200	Head Qty	Head total	Total	
UC	\$ 26,788	3	17793	\$ 44,581	
IU	\$ -	2	11862	\$ 11,862	
Total				\$ 56,443	

- 3 VM hypervisor machines and iSCSI storage
- virtualizable head services
- RHEV or equiv



Integration

- Full 3-site integration:
 - MWT2 production queue
 - ANALY_MWT2 analysis queue
 - Single DDM endpoint set



3-site integration points

- Single job queue (condor)
- Single storage manager (dcache)
- Single set of monitoring (ATLAS dashboards, MWT2 dashboards)
- Data access (internal MWT2)
 - Direct access over WAN
 - dCache site locality caching and local read
 - dcap & xrootd protocols
- Data access (external MWT2)
 - DDM endpoints
 - FAX - US ATLAS, then ATLAS
 - Regional federation w/ AGLT2 (increased capacity, failover for common datasets)

Goals for today

- Lets define them here!
- Settle on WN options and procurements for each site
- Finalize integration plan for Illinois
- Regional network plan as best as we can know it
- New MWT2 operational plan needed
- 2011 NSF annual report; OSG newsletter feature
- Meetings:
 - MWT2 Weekly (new day?)
 - OSG AH (March 19-22), USATLAS Facilities (tbd), next MWT2Fest (tbd)