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Centro Svizzero di Calcolo Scientifico
Swiss National Supercomputing Centre

ETH

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

CHIPP – CSCS F2F Meeting

Lugano, January 29th 2015

Miguel Gila

Gianni Ricciardi



Agenda

- **9:45 - Coffee, presentation and agenda**
- **10:15 - Tier-2 status and plans**
 - CSCS (40') - Miguel/Gianni
 - UNIBE-LHEP (20') – Gianfranco
- **11:15 - Tier-3 status and plans:**
 - PSI (10') - Fabio
 - UNIBE-ID (10') -
 - UNIGE (10') - Szymon
 - Running on Cray - status and thoughts (20') – Sigve
- **12:05 - Lunch break**
- **13:25 - Open discussion**
- **13:45 - Next meeting date and place**
- **14:00 - A.O.B. / NGI_CH**
- **15:30 - End of the meeting**



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Tier 2 status and plans

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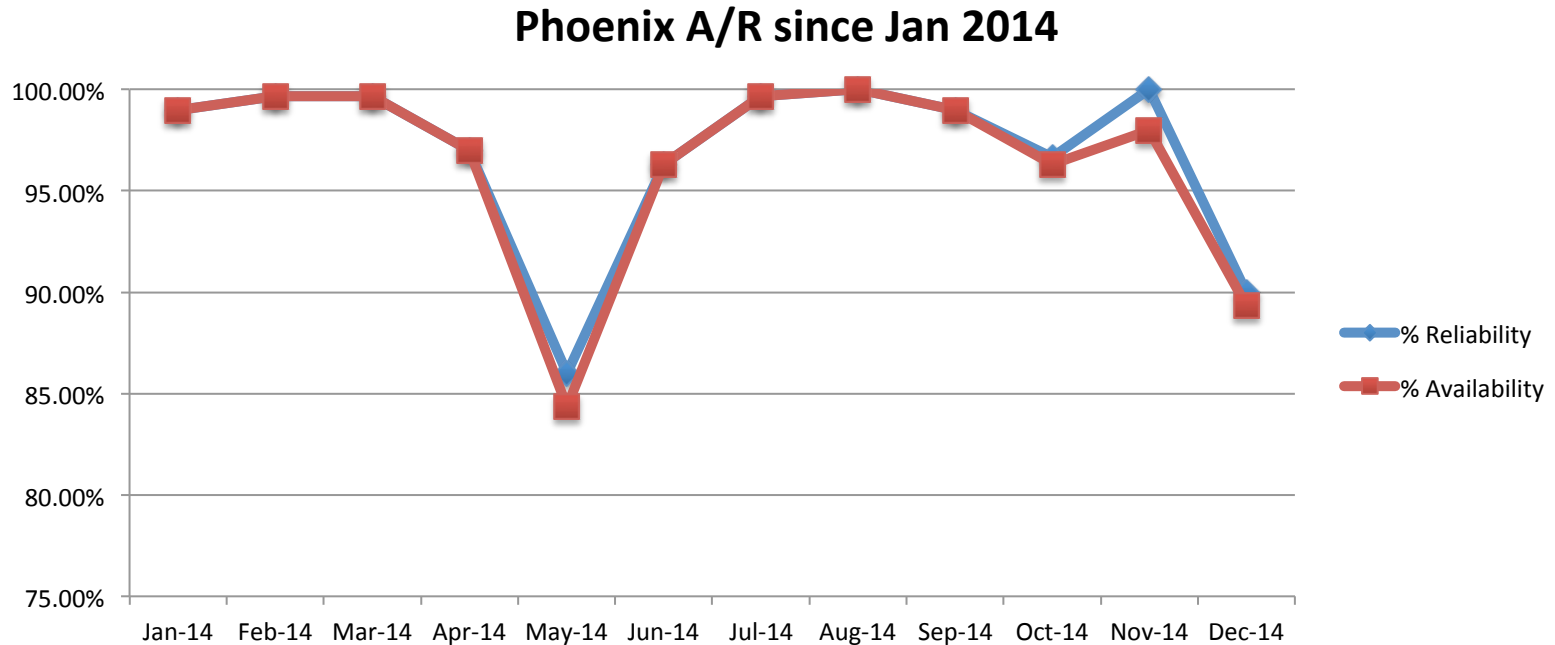
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Status



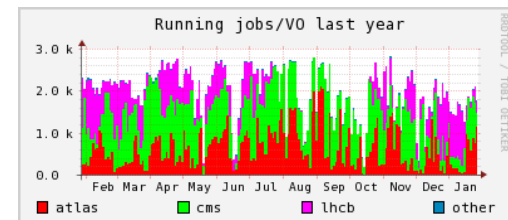
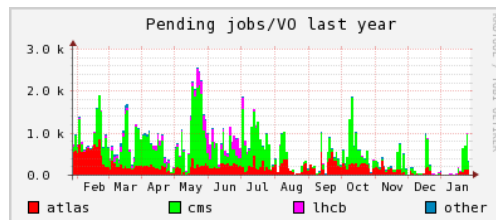
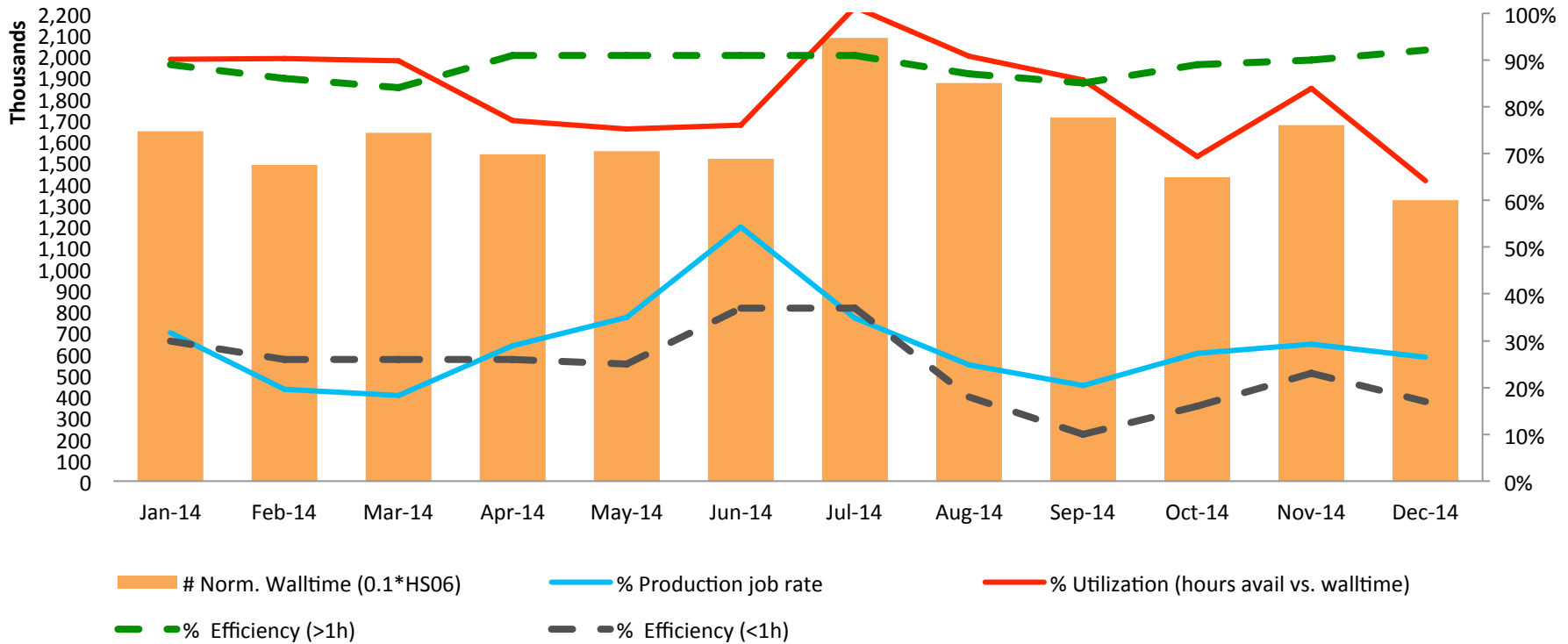
Statistics – Availability & Reliability

- **Relatively stable operation** with some hiccups:
 - May'14: GPFS + Middleware issues
 - Dec'14: dCache + CVMFS + VOBOXES issues



Statistics – CPU Usage from CSCS perspective

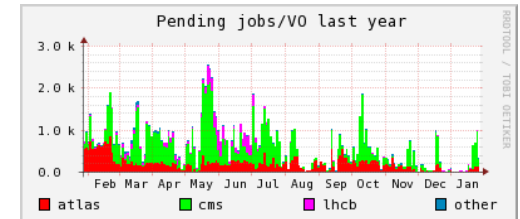
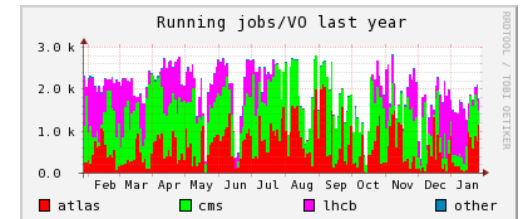
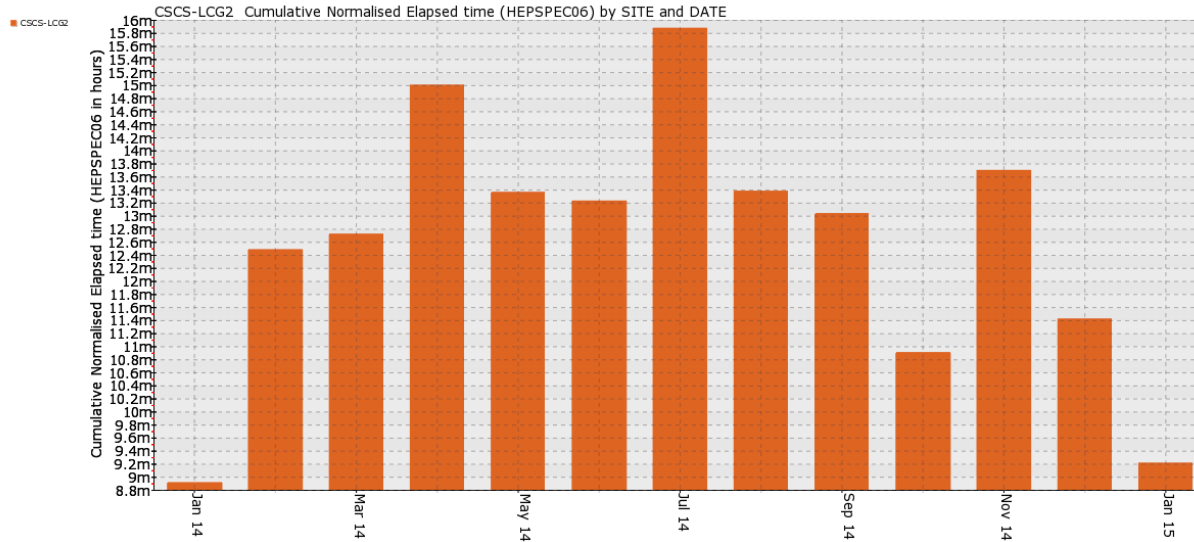
Phoenix usage since Jan 2014



Statistics – CPU Usage from EGI perspective

Developed by CESGA EGI View: / nomelap+HEPSPC06 / 2014-1-2015:1 / SITE-DATE / lhc (x) / GRBAR-LIN / I

2015-01-26 07:26



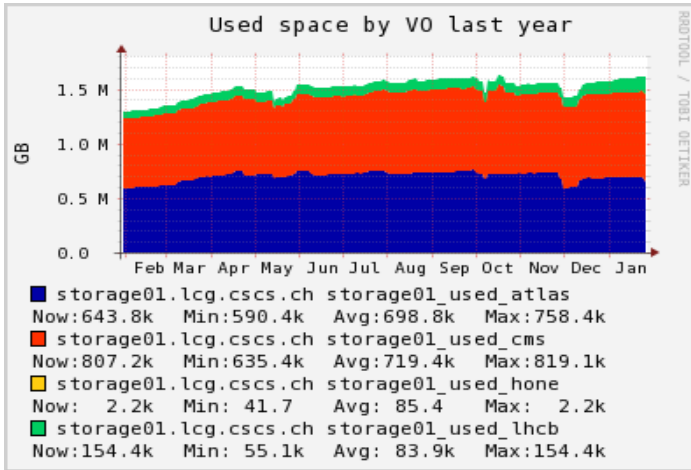
Normalized Elapsed CPU (HS06-hours)

- There is still a clear mismatch between local accounting and EGI reports:

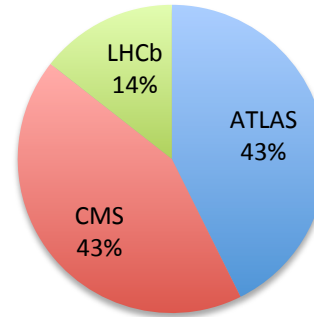
	Jan 14	Feb 14	Mar 14	Apr 14	May 14	Jun 14	Jul 14	Aug 14	Sep 14	Oct 14	Nov 14	Dec 14
CSCS	16'529'550	14'945'640	16'461'540	15'453'370	15'594'660	15'240'410	20'964'960	18'806'330	17'189'730	14'364'180	16'812'170	13'293'740
EGI	8'918'772	12'487'696	12'726'256	15'008'996	13'367'080	13'232'896	15'880'340	13'384'608	13'040'524	10'911'484	13'702'312	11'426'068

Statistics – Storage Usage

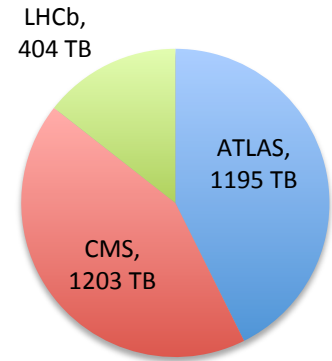
Real values are above the pledges!
 (including CH resources)



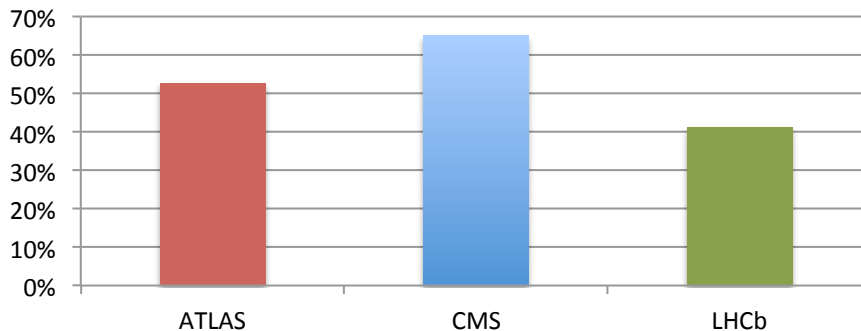
Share of total [%]



Share of total [TB]



Usage per VO [% of VO-share]



Pending tasks:

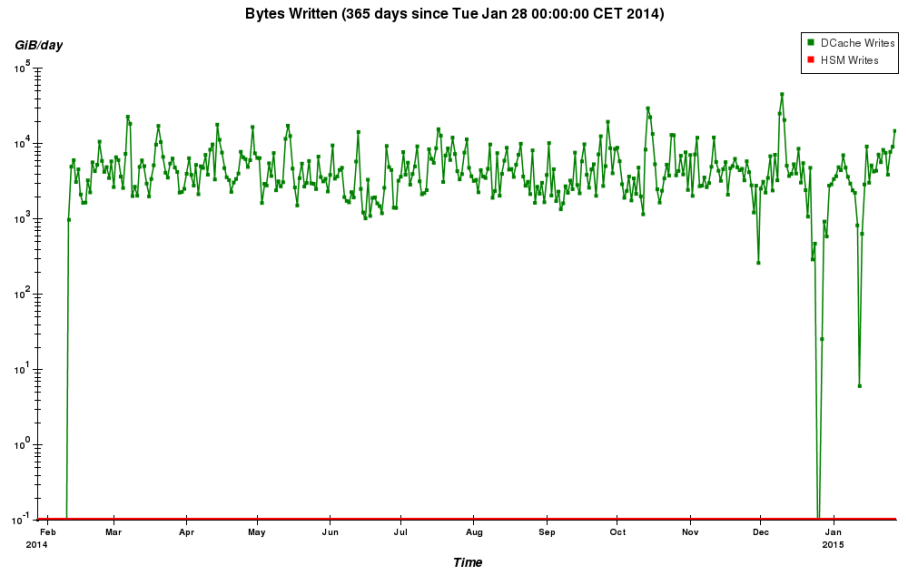
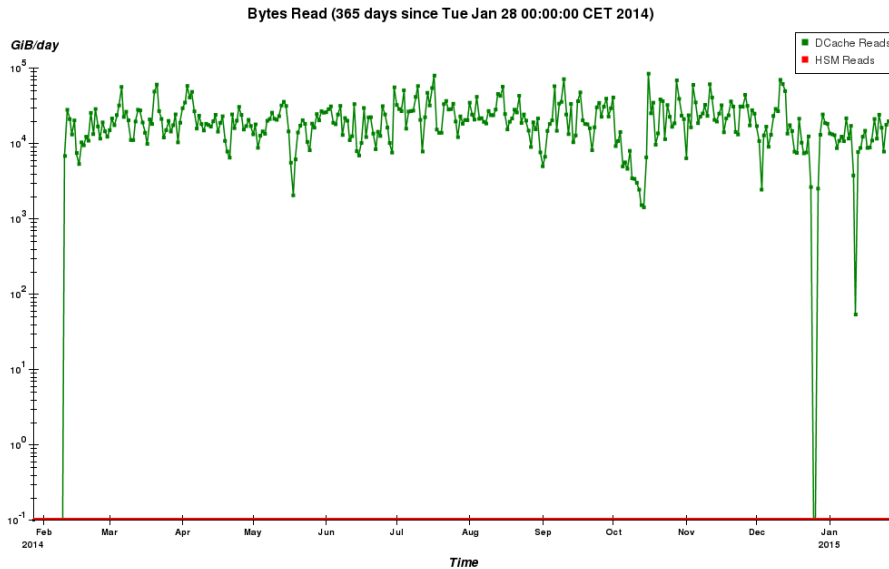
- Remove old pools
- Adjust space tokens



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Statistics – Storage Usage

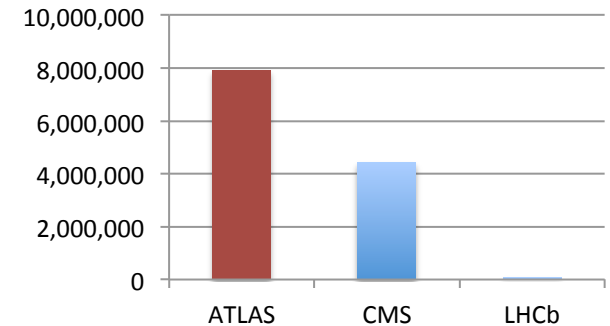


Average data movement to/from CSCS' Storage Element
in range of **1TiB /day**

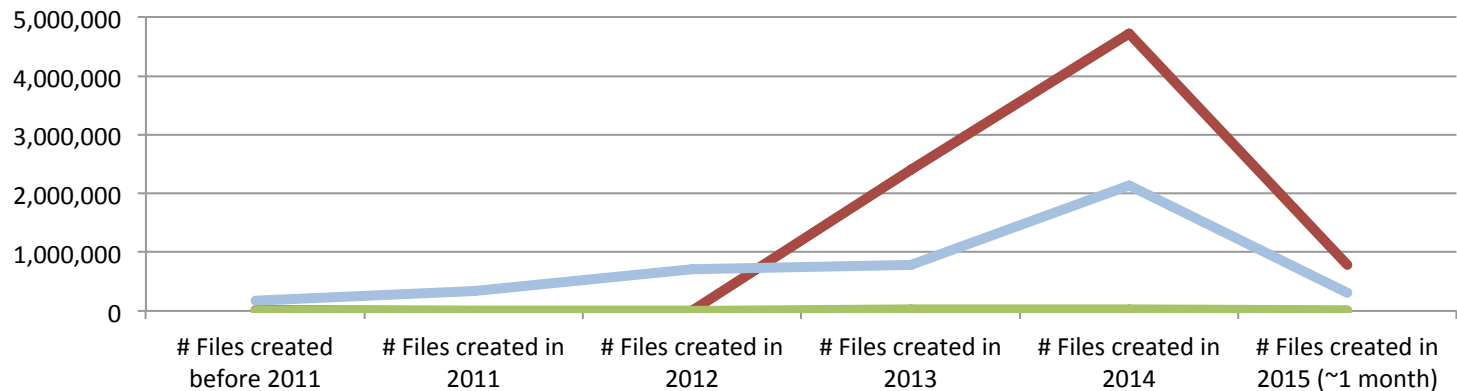
Statistics – Storage Usage

	ATLAS	CMS	LHCb
Total number of files	7'916'882	4'444'564	80'827
# Files not read since creation	1'152'125	1'831'488	26'225
% Files not read since creation	15%	41%	32%
# Files created before 2011	5'422	172'775	0
# Files created in 2011	1'607	343'889	11
# Files created in 2012	3'562	711'777	77
# Files created in 2013	2'406'061	780'140	32'801
# Files created in 2014	4'722'364	2'131'864	30'763
# Files created in 2015 (~1 month)	778'106	304'768	17'177
Average age of files	274 days	531 days	268 days

Total number of files



File creation pattern





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Operations



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Operations

- ✓ • **Deployed Storage for Swiss users**
- ✓ • **Deployed Phase J storage**
- ✓ • **Deployed Phase J compute nodes**
- ✓ • **Deployed Phase H GPFS2**



- **Deployed new configuration management system (Foreman + Puppet)**



- **Migrated Preproduction & Test systems to CSCS-provided vmware infrastructure**
- **Worked heavily on the EXERCISE 2020 proposal**
- **Plus worked a lot on keeping the system up and running 😊**



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Operations - Decommissions

- **Decommissioned & recycled almost all Sun Hardware**
 - HW parts distributed to PSI & UNIBE
- **Decommissioning 3 ½ racks of IBM DC3500 storage**
 - Candidates to distribute hardware?



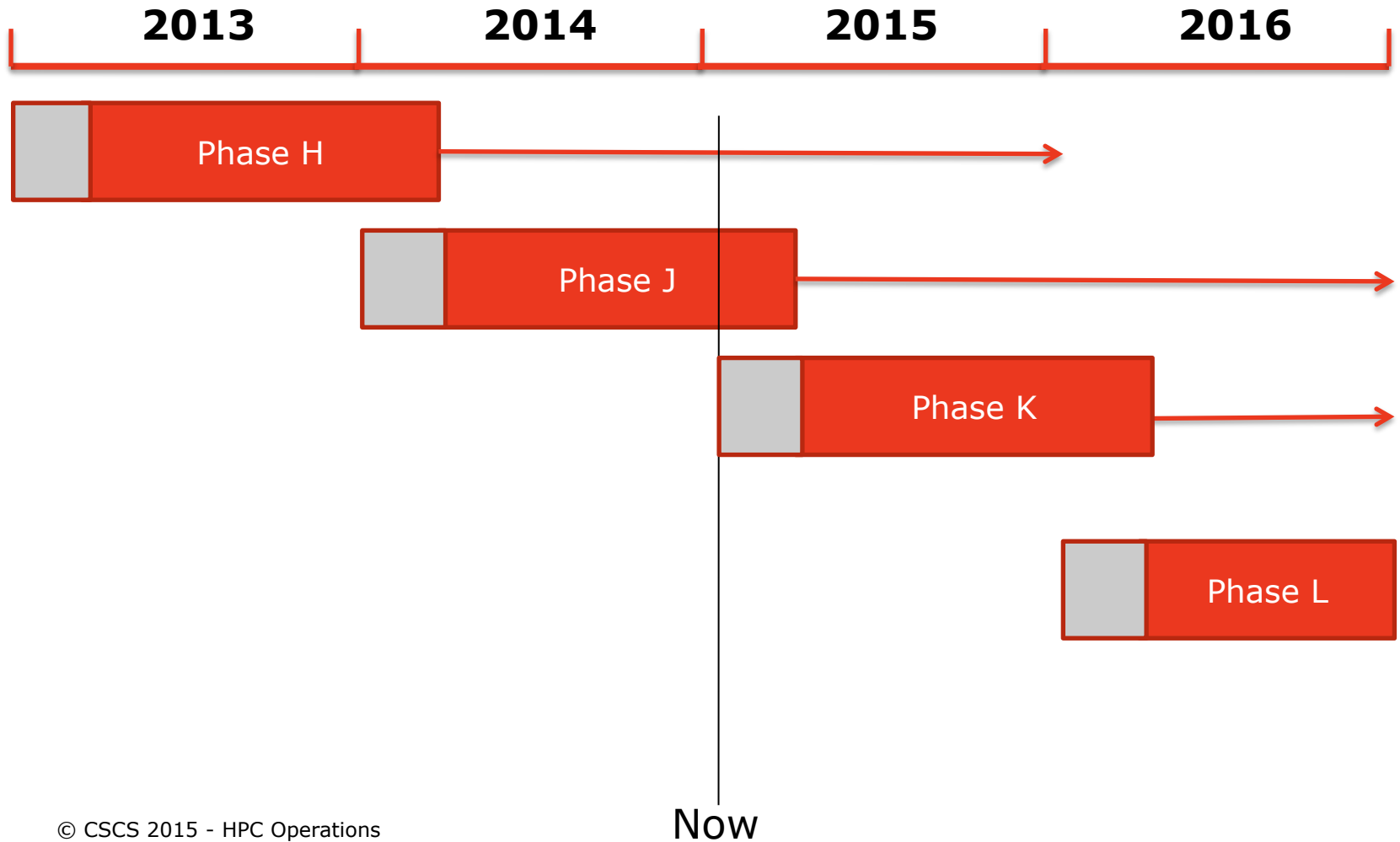


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Plans

Phases of Phoenix





Pledges

Phase	Compute power pledged [HS06]	Storage pledged [TB]	Scratch actual [GB/s]
Phase H - 2013/2014	26000	1800	9
Phase J - 2014/2015	35000	2000	9
Phase K - 2015/2016	39000	2600	9
Phase L - 2016/2017	44000	2900	9



Compute

	Phase H	Phase J	Phase K
	HS	HS	HS
ATLAS	10400	14000	14000
CMS	10400	14000	14000
LHCb	5200	7000	10000

Storage

	Phase H	Phase J	Phase K
	TiB	TiB	TiB
ATLAS	792	875	955
CMS	792	875	955
LHCb	216	250	690

Compute/Storage

	Phase H	Phase J	Phase K
	HS/TB	HS/TB	HS/TB
ATLAS	13.13	16.00	14.66
CMS	13.13	16.00	14.66
LHCb	24.07	28.00	14.49



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Plans Q1/Q2 2015

- **Will finish requirements for Phase K + start procurement**
- **Migrate GPFS2 to new Puppet and Foreman**
- **Upgrade dCache to latest supported Golden Release**
 - And look into ways of making the service more resilient
- **Migrate services running on old HW to Vmware VMs (Cfengine)**
- **Migrate some duplicated production VMs to Vmware**
- **Gradually start migrating all services from Cfengine to Puppet (target, Q2 2016)**



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A.O.B.



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Thank you for your attention.