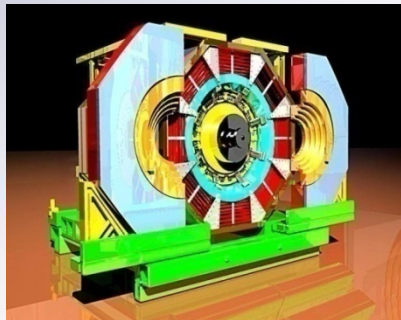


Update on Computing/Cloud

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BESIII

LNF, Italy

May 14, 2014

Compute Nodes

- 7 Dual Twin Olidata (4 hosts)
- Host: 2 x AMD 6320 MHz
64 GB RAM
175 HS06
- +1 DG1 fundings, in test



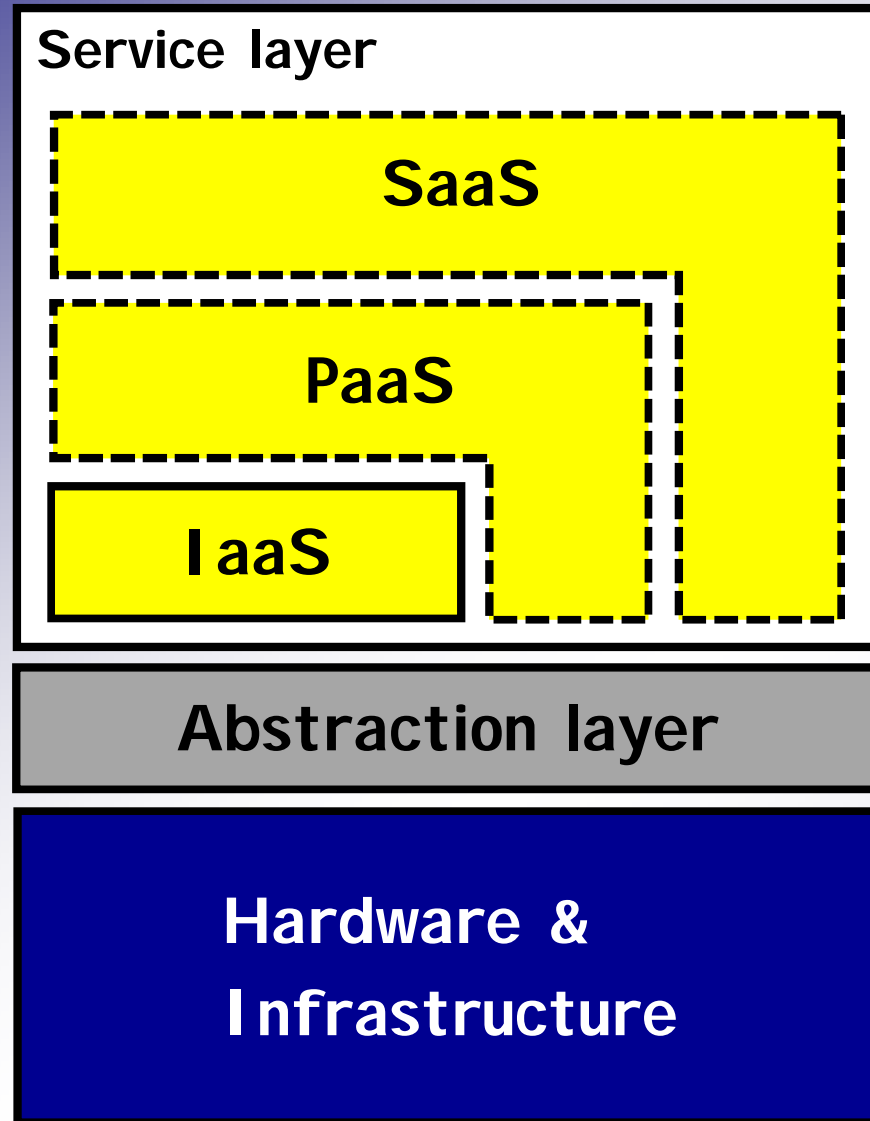
- 3 twins dedicated to BESIII
- 2KHS06 dedicated to BESIII
+ the partial use of 0.7KHS06 from DG1

Storage

- 400 TB gross
DELL MD 3660f + expansion

20 TB net for BESIII

Service Model



- Software-as-a-Service
- Platform-as-a-Service
- Infrastructure-as-a-Service

Cloud Infrastructure

BOSS running

Not all random trigger data

Reconstruction for phase data

Analysis if we have the dst

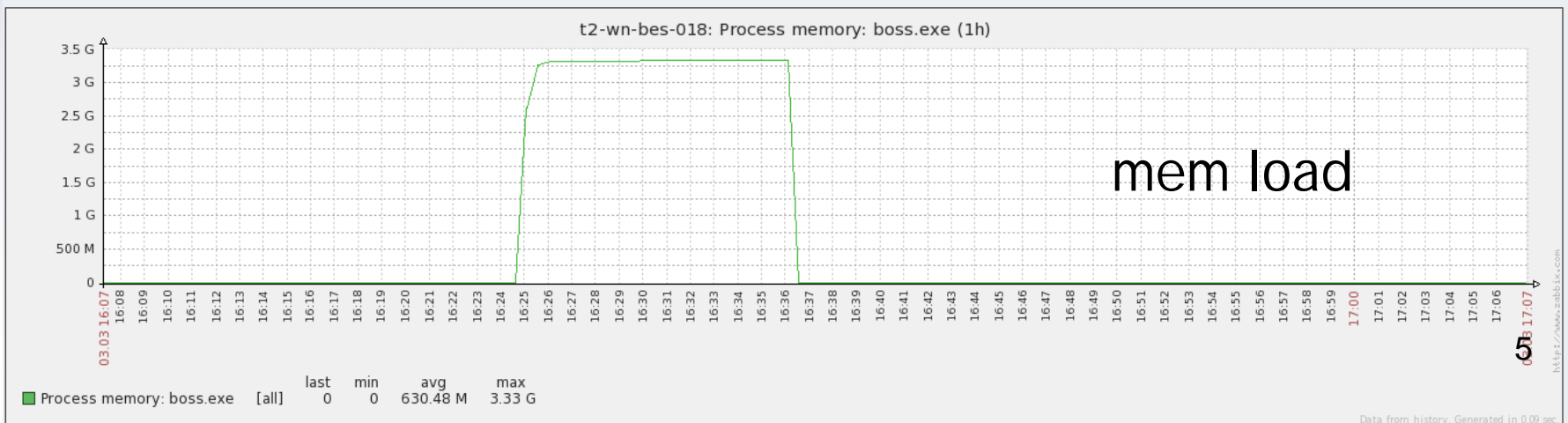
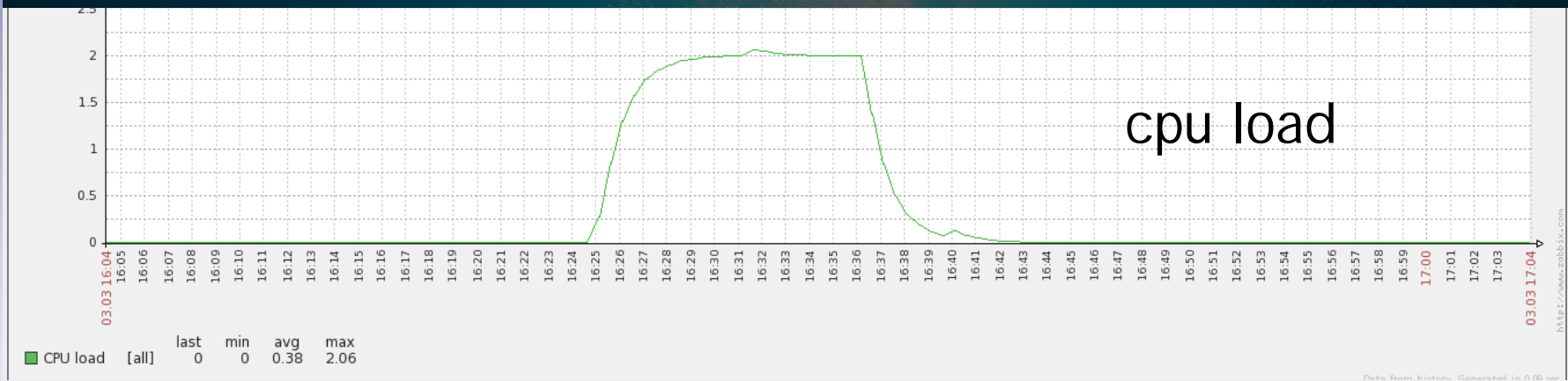
Now:

- 1) All the main services are installed
- 2) Direct submission to CE
- 3) CVMFS tested
- 4) Job submission in Dirac included
- 5) Submission from IHEP tested

Test Cloud - cpu and mem

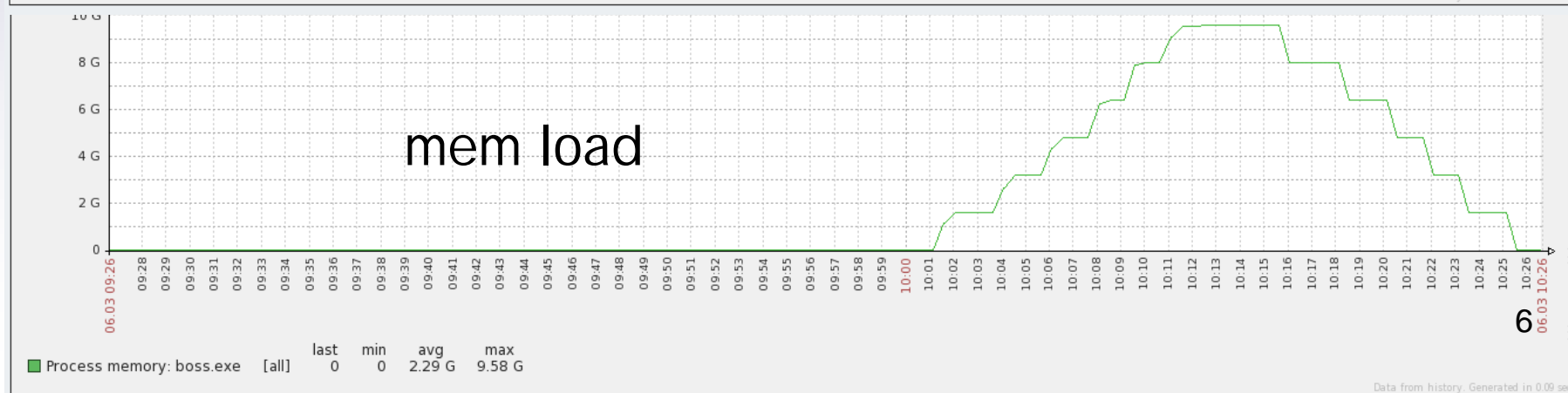
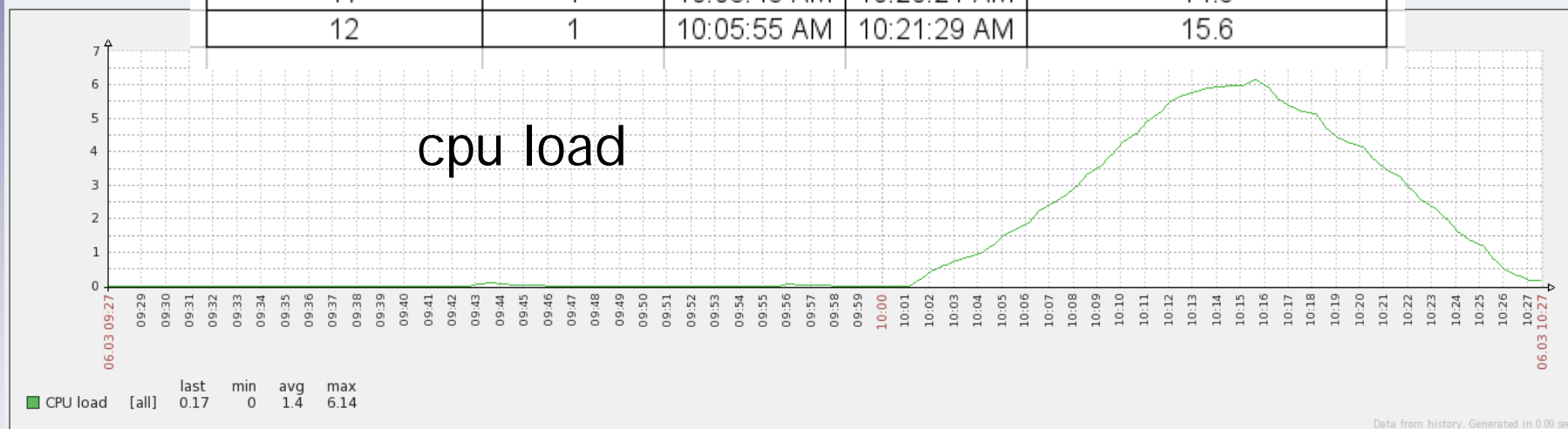
t2-ce-02.to.infn.it:

Job ID	Username	Queue	Jobname	SessID	NDS	TSK	Req'd Memory	Req'd Time	Elap S	Time
80.t2-ce-02.to.i	bes009	bes	cream_237361226	21655	1	1	--	--	R 00:10	t2-wn-bes-018
81.t2-ce-02.to.i	bes009	bes	cream_370848814	22991	1	1	--	--	R 00:07	t2-wn-bes-018
82.t2-ce-02.to.i	bes009	bes	cream_143034840	13509	1	1	--	--	R 00:06	t2-wn-bes-017
83.t2-ce-02.to.i	bes009	bes	cream_266371322	13288	1	1	--	--	R 00:05	t2-wn-bes-012
84.t2-ce-02.to.i	bes009	bes	cream_526367509	23356	1	1	--	--	R 00:05	t2-wn-bes-018
85.t2-ce-02.to.i	bes009	bes	cream_624231607	23721	1	1	--	--	R 00:03	t2-wn-bes-018
86.t2-ce-02.to.i	bes009	bes	cream_051963053	24086	1	1	--	--	R 00:02	t2-wn-bes-018
87.t2-ce-02.to.i	bes009	bes	cream_821966096	24449	1	1	--	--	R 00:00	t2-wn-bes-018



Test Cloud - cpu and mem

WN	JOB	START	STOP	EXECUTION TIME [min]
18	1	10:01:28 AM	10:16:02 AM	14.6
	2	10:04:06 AM	10:18:14 AM	14.3
	3	10:06:01 AM	10:20:16 AM	14.2
	4	10:07:47 AM	10:21:53 AM	14.1
	5	10:09:15 AM	10:23:26 AM	14.2
	6	10:10:59 AM	10:25:17 AM	14.3
17	1	10:05:45 AM	10:20:21 AM	14.6
12	1	10:05:55 AM	10:21:29 AM	15.6



Cloud - Open Nebula interface

Xfce Menu 09:09 96% OpenNebula Sunstone: Cloud Operations Center - Mozilla Firefox

File Edit View History Bookmarks Tools Help

inf.n.it https://one-master.to.infn.it/ Google

Mail Mail Word UniCredit Facebook PANDA Dropbox MvdPublic KEIN PFUSCH PandaRoot YouTube GridEngine SCUBA'S OpenNebula Zabbix blu

OpenNeb... x srm-dom0.to... srm-dom0.to... srm-dom0.to... srm-dom0.to... srm-dom0.to... srm-dom0.to... srm-dom0.to... srm-dom0.to... +

OpenNebula Sunstone Documentation | Support | Community Welcome bes | Sign out

Dashboard Configuration User info Group info Virtual Resources Virtual Machines Templates Images Infrastructure Datastores Virtual Networks Marketplace

User quotas

VM quota:

Virtual Machines	34 / 50
Memory	568000 MB / 600000 MB
CPU	200 / 200

Datastore quotas: None

Image quotas:

Image id 370:	
RVMs	34 / unlimited

Network quotas:

Network id 100:	
Leases	34 / 50

Virtual Machines

Total VMs 34

State ACTIVE - 34 (100%)

Bandwidth - Upload 48.7KB/s

Bandwidth - Download 1.9MB/s

Global transfer rates NET_RX - 47.1G NET_TX - 14.1G

0 9.3G 18.6G 27.9G 37.3G 46.6G

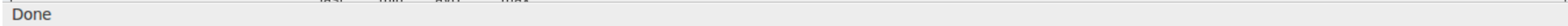
OpenNebula 3.8.4 by C12G Labs.

x Find: -018 Previous Next Highlight all Match case

Done

root@t2-ce-02:~ OpenNebula Sunstone:...

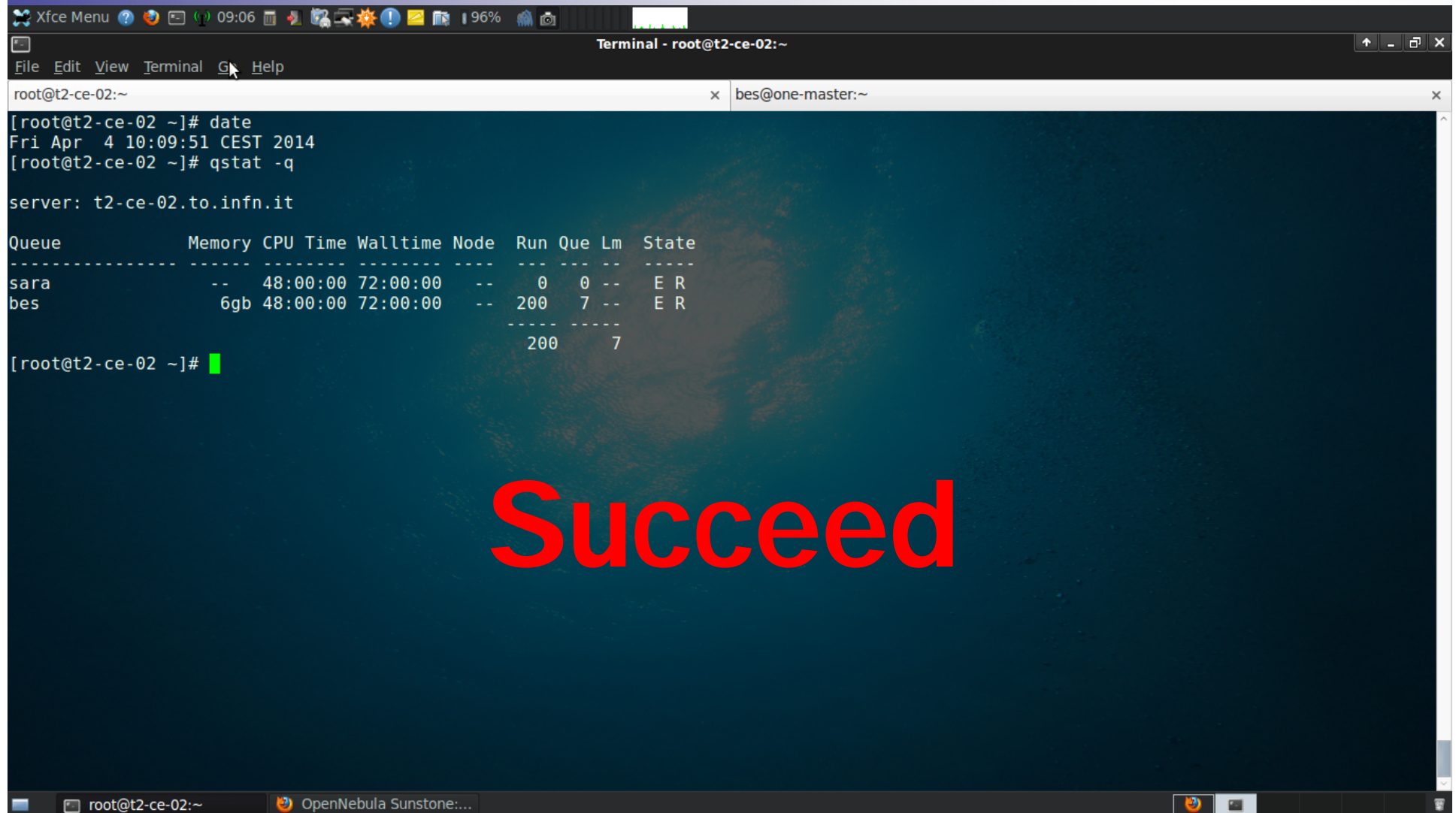
ZABBIX



Cloud – Running Jobs

```
Xfce Menu 09:08 96%  
Terminal - root@t2-ce-02:~  
File Edit View Terminal Go Help  
root@t2-ce-02:~ x bes@one-master:~  
  
Queue      Memory CPU Time Walltime Node  Run Que Lm  State  
-----  
sara      --   48:00:00 72:00:00 --    0  0 --   E R  
bes       6gb 48:00:00 72:00:00 --   200 7 --   E R  
-----  
                200    7  
  
[root@t2-ce-02 ~]# qstat -nl  
t2-ce-02.to.infn.it:  
  
Job ID      Username Queue   Jobname      SessID NDS   TSK Req'd Req'd Elap  
-----  
8066.t2-ce-02.to bes008 bes    cream_096657707 1721 1 1 -- -- R 01:02 t2-wn-bes-039  
8067.t2-ce-02.to bes008 bes    cream_286044637 1840 1 1 -- -- R 01:02 t2-wn-bes-039  
8068.t2-ce-02.to bes008 bes    cream_738793788 17151 1 1 -- -- R 01:02 t2-wn-bes-033  
8069.t2-ce-02.to bes008 bes    cream_980052978 17272 1 1 -- -- R 01:02 t2-wn-bes-033  
8070.t2-ce-02.to bes008 bes    cream_852873368 14522 1 1 -- -- R 01:02 t2-wn-bes-034  
8071.t2-ce-02.to bes008 bes    cream_496049029 14646 1 1 -- -- R 01:02 t2-wn-bes-034  
8072.t2-ce-02.to bes008 bes    cream_438795939 19563 1 1 -- -- R 01:01 t2-wn-bes-032  
8073.t2-ce-02.to bes008 bes    cream_554419929 19727 1 1 -- -- R 01:01 t2-wn-bes-032  
8074.t2-ce-02.to bes008 bes    cream_051588409 14079 1 1 -- -- R 01:01 t2-wn-bes-053  
8075.t2-ce-02.to bes008 bes    cream_835822395 14206 1 1 -- -- R 01:01 t2-wn-bes-053  
8076.t2-ce-02.to bes008 bes    cream_205056944 6019 1 1 -- -- R 01:00 t2-wn-bes-014  
8077.t2-ce-02.to bes008 bes    cream_630103322 6138 1 1 -- -- R 01:00 t2-wn-bes-014  
8078.t2-ce-02.to bes008 bes    cream_672042831 18039 1 1 -- -- R 01:01 t2-wn-bes-024  
8079.t2-ce-02.to bes008 bes    cream_493450897 18160 1 1 -- -- R 01:01 t2-wn-bes-024  
8080.t2-ce-02.to bes008 bes    cream_369700223 20801 1 1 -- -- R 01:00 t2-wn-bes-017  
8081.t2-ce-02.to bes008 bes    cream_309818808 20922 1 1 -- -- R 01:00 t2-wn-bes-017  
8082.t2-ce-02.to bes008 bes    cream_523915706 25369 1 1 -- -- R 01:00 t2-wn-bes-013  
8083.t2-ce-02.to bes008 bes    cream_233402047 25490 1 1 -- -- R 00:59 t2-wn-bes-013  
8084.t2-ce-02.to bes008 bes    cream_220124580 7733 1 1 -- -- R 01:00 t2-wn-bes-012  
8085.t2-ce-02.to bes008 bes    cream_650679898 7854 1 1 -- -- R 00:59 t2-wn-bes-012
```

Cloud - I HEP Job Submission

A terminal window titled 'Terminal - root@t2-ce-02:~' is shown. The window has a menu bar with 'File', 'Edit', 'View', 'Terminal', and 'Help'. The terminal output shows the user running 'date' and 'qstat -q'. The 'qstat -q' output shows a table of job queues. The 'sara' queue has 0 jobs running and 0 in the queue. The 'bes' queue has 200 jobs running and 7 in the queue. The terminal ends with a green cursor.

```
root@t2-ce-02:~  
[root@t2-ce-02 ~]# date  
Fri Apr  4 10:09:51 CEST 2014  
[root@t2-ce-02 ~]# qstat -q  
  
server: t2-ce-02.to.infn.it  
  
Queue          Memory CPU Time Walltime Node  Run Que Lm  State  
-----  
sara           --   48:00:00 72:00:00 --    0  0 --   E R  
bes            6gb  48:00:00 72:00:00 --   200  7 --   E R  
-----  
                200    7  
  
[root@t2-ce-02 ~]#
```

Succeed

CGEM Computing

CGEM BOSS installed and running

Simulations for the ppbar and $\Lambda\bar{\Lambda}$ final states

Digitization almost ready

-> Simulations have to be rerun

Possibility to include other final states

Torino farm up and running

Is CGEM sw in the CVMFS?