

Computation:

192 cores

Storage:

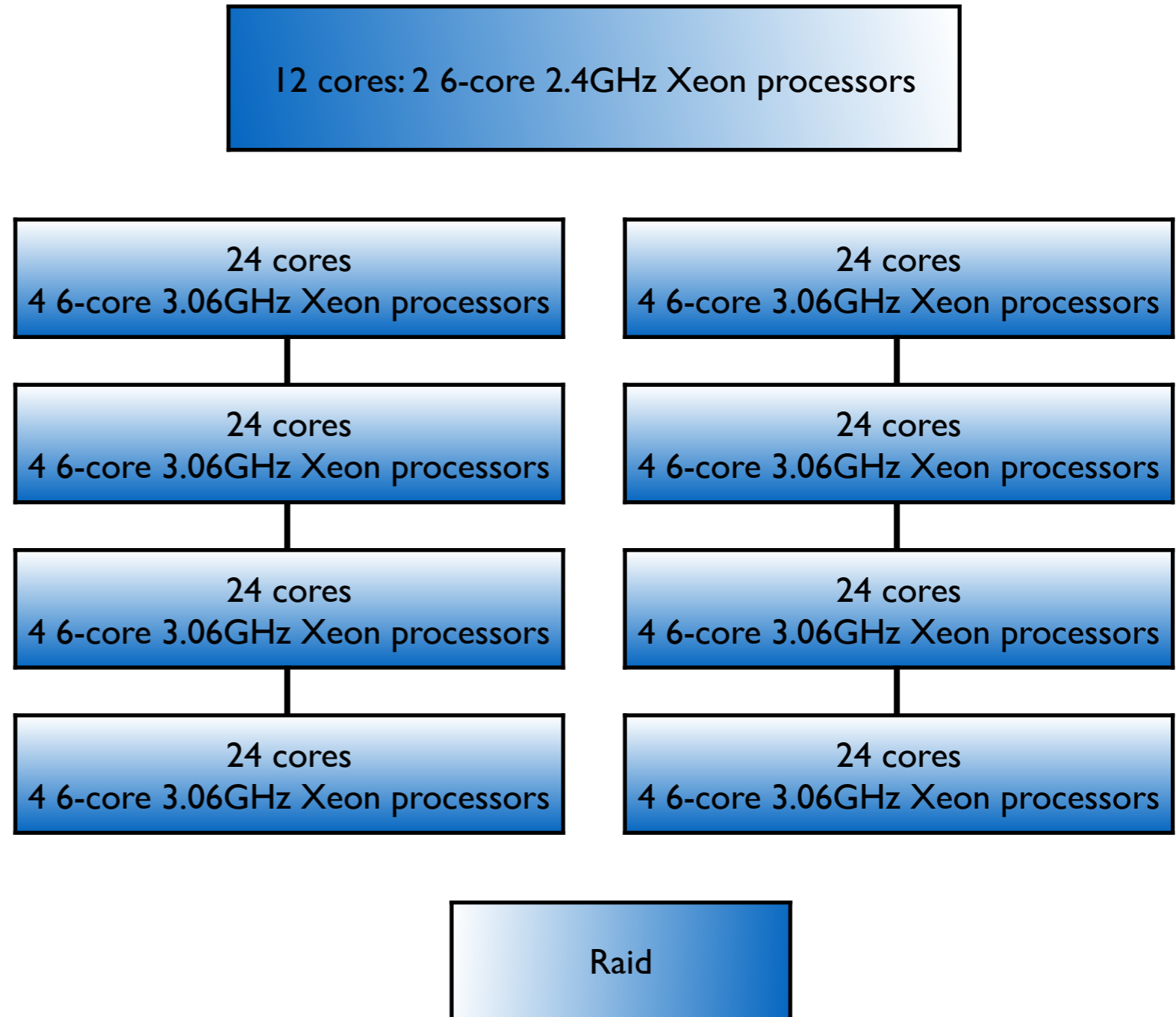
/Users: 2 TB

/disk2: 3 TB

/disk3: 3 TB

/pond: 80 TB

Additional 1 TB in each node



**Head Node**

saddleback



**8 Nodes**

sb1, sb2



sb3, sb4



sb5, sb6



sb7, sb8



**Raid**

/pond



a hill with a ridge along the top that dips in the middle.



a pig of a black breed with a white stripe across the back.



a New Zealand wattlebird with mainly black plumage, a reddish-brown back, and two small red wattles under the bill.



# PBS

- **Portable Management System**
- **Perform job scheduling**
- **PSB scripts**
- **Management and monitoring commands**

# PBS Script Example

```
% vi test1.pbs
```

```
#!/bin/sh  
#  
#PBS -N Test1  
#PBS -q batch  
#PBS -d /Users/mostafa/mpi/test1  
#PBS -M mostafa@kiwi.atmos.colostate.edu  
#PBS -m abe  
#PBS -l nodes=8:ppn=2  
#PBS -l walltime=1:00:00  
  
mpirun -np 16 a.out 576
```

# PBS Script Example

```
% vi test1.pbs
```

```
#!/bin/sh
```

```
#
```

```
#PBS -N
```

Give a name to the job

```
#PBS -q
```

Use queue "batch" - This is the only queue saddleback has

```
#PBS -d
```

Give the working directory for the job

```
#PBS -M
```

Give email address to receive notifications about the job

It must be someone@kiwi.atmos.colostate.edu

```
#PBS -m
```

Specify type of email notifications about job (a)bort, (b)egin, or (e)nd

```
#PBS -l nodes
```

Give number of needed, e.g., nodes=8

Optionally, add :ppn= to specify number of cores per node (default is 1)

E.g., nodes=8:ppn=2

```
#PBS -l walltime
```

Give max time the job will take in HH:MM:SS

Finally, write the command that you want to run:

```
mpirun -np 16 a.out 576
```

# PBS

**% qsub test1.pbs**

492.saddleback.atmos.colostate.edu

**% qstat -a**

Job ID	Username	Queue	Jobname	SessID	NDS	TSK	Req'd Memory	Req'd Time	S	Elap Time
491.saddleback.a	ross	batch	ZGrd_z_jbln	6373	8	160	--	1199:	R	06:06
492.saddleback.a	mostafa	batch	Test1	7808	8	16	--	01:00	R	00:00

**% qsub test2.pbs**

493.saddleback.atmos.colostate.edu

**% qstat -a**

Job ID	Username	Queue	Jobname	SessID	NDS	TSK	Req'd Memory	Req'd Time	S	Elap Time
491.saddleback.a	ross	batch	ZGrd_z_jbln	6373	8	160	--	1199:	R	06:08
492.saddleback.a	mostafa	batch	Test1	7808	8	16	--	01:00	R	00:02
493.saddleback.a	mostafa	batch	Test2	--	8	32	--	01:00	Q	--

**% qdel 492**

**% qstat -a**

Job ID	Username	Queue	Jobname	SessID	NDS	TSK	Req'd Memory	Req'd Time	S	Elap Time
491.saddleback.a	ross	batch	ZGrd_z_jbln	6373	8	160	--	1199:	R	06:08
492.saddleback.a	mostafa	batch	Test1	8190	8	16	--	01:00	C	00:02
493.saddleback.a	mostafa	batch	Test2	8332	8	32	--	01:00	R	00:00

# PBS

% qstat -n

Job ID	Username	Queue	Jobname	SessID	NDS	TSK	Req'd Memory	Req'd Time	Elap S	Elap Time
502.saddleback.a	ross	batch	ZGrd_z_jbln	10900	8	160	--	1199:	R	11:41
sb8/19+sb8/18+sb8/17+sb8/16+sb8/15+sb8/14+sb8/13+sb8/12+sb8/11+sb8/10+sb8/9 +sb8/8+sb8/7+sb8/6+sb8/5+sb8/4+sb8/3+sb8/2+sb8/1+sb8/0+sb7/19+sb7/18+sb7/17 +sb7/16+sb7/15+sb7/14+sb7/13+sb7/12+sb7/11+sb7/10+sb7/9+sb7/8+sb7/7+sb7/6 +sb7/5+sb7/4+sb7/3+sb7/2+sb7/1+sb7/0+sb6/19+sb6/18+sb6/17+sb6/16+sb6/15 +sb6/14+sb6/13+sb6/12+sb6/11+sb6/10+sb6/9+sb6/8+sb6/7+sb6/6+sb6/5+sb6/4 +sb6/3+sb6/2+sb6/1+sb6/0+sb5/19+sb5/18+sb5/17+sb5/16+sb5/15+sb5/14+sb5/13 +sb5/12+sb5/11+sb5/10+sb5/9+sb5/8+sb5/7+sb5/6+sb5/5+sb5/4+sb5/3+sb5/2+sb5/1 +sb5/0+sb4/19+sb4/18+sb4/17+sb4/16+sb4/15+sb4/14+sb4/13+sb4/12+sb4/11+sb4/10 +sb4/9+sb4/8+sb4/7+sb4/6+sb4/5+sb4/4+sb4/3+sb4/2+sb4/1+sb4/0+sb3/19+sb3/18 +sb3/17+sb3/16+sb3/15+sb3/14+sb3/13+sb3/12+sb3/11+sb3/10+sb3/9+sb3/8+sb3/7 +sb3/6+sb3/5+sb3/4+sb3/3+sb3/2+sb3/1+sb3/0+sb2/19+sb2/18+sb2/17+sb2/16 +sb2/15+sb2/14+sb2/13+sb2/12+sb2/11+sb2/10+sb2/9+sb2/8+sb2/7+sb2/6+sb2/5 +sb2/4+sb2/3+sb2/2+sb2/1+sb2/0+sb1/19+sb1/18+sb1/17+sb1/16+sb1/15+sb1/14 +sb1/13+sb1/12+sb1/11+sb1/10+sb1/9+sb1/8+sb1/7+sb1/6+sb1/5+sb1/4+sb1/3+sb1/2 +sb1/1+sb1/0										



# PBS

% qstat -n

Job ID	Username	Queue	Jobname	SessID	NDS	TSK	Req'd Memory	Req'd Time	Elap S	Time
502.saddleback.a	ross	batch	ZGrd_z_jbln	10900	8	160	--	1199:	R	11:41
sb8/19+sb8/18+sb8/17+sb8/16+sb8/15+sb8/14+sb8/13+sb8/12+sb8/11+sb8/10+sb8/9 +sb8/8+sb8/7+sb8/6+sb8/5+sb8/4+sb8/3+sb8/2+sb8/1+sb8/0+sb7/19+sb7/18+sb7/17 +sb7/16+sb7/15+sb7/14+sb7/13+sb7/12+sb7/11+sb7/10+sb7/9+sb7/8+sb7/7+sb7/6 +sb7/5+sb7/4+sb7/3+sb7/2+sb7/1+sb7/0+sb6/19+sb6/18+sb6/17+sb6/16+sb6/15 +sb6/14+sb6/13+sb6/12+sb6/11+sb6/10+sb6/9+sb6/8+sb6/7+sb6/6+sb6/5+sb6/4 +sb6/3+sb6/2+sb6/1+sb6/0+sb5/19+sb5/18+sb5/17+sb5/16+sb5/15+sb5/14+sb5/13 +sb5/12+sb5/11+sb5/10+sb5/9+sb5/8+sb5/7+sb5/6+sb5/5+sb5/4+sb5/3+sb5/2+sb5/1 +sb5/0+sb4/19+sb4/18+sb4/17+sb4/16+sb4/15+sb4/14+sb4/13+sb4/12+sb4/11+sb4/10 +sb4/9+sb4/8+sb4/7+sb4/6+sb4/5+sb4/4+sb4/3+sb4/2+sb4/1+sb4/0+sb3/19+sb3/18 +sb3/17+sb3/16+sb3/15+sb3/14+sb3/13+sb3/12+sb3/11+sb3/10+sb3/9+sb3/8+sb3/7 +sb3/6+sb3/5+sb3/4+sb3/3+sb3/2+sb3/1+sb3/0+sb2/19+sb2/18+sb2/17+sb2/16 +sb2/15+sb2/14+sb2/13+sb2/12+sb2/11+sb2/10+sb2/9+sb2/8+sb2/7+sb2/6+sb2/5 +sb2/4+sb2/3+sb2/2+sb2/1+sb2/0+sb1/19+sb1/18+sb1/17+sb1/16+sb1/15+sb1/14 +sb1/13+sb1/12+sb1/11+sb1/10+sb1/9+sb1/8+sb1/7+sb1/6+sb1/5+sb1/4+sb1/3+sb1/2 +sb1/1+sb1/0										

% ls -l

```
-rwxr-xr-x 1 mostafa users 875148 Apr 3 13:50 a.out*
-rw-r--r-- 1 mostafa users 689 Apr 7 09:31 results
-rw----- 1 mostafa users 0 Apr 7 09:08 Test1.e492
-rw----- 1 mostafa users 32 Apr 7 09:20 Test1.e493
-rw----- 1 mostafa users 113 Apr 7 09:08 Test1.o492
-rw----- 1 mostafa users 124 Apr 7 09:20 Test1.o493
-rw-r--r-- 1 mostafa users 187 Apr 7 11:55 test1.pbs
-rw-r--r-- 1 mostafa users 202 Apr 7 09:17 test2.pbs
```

# Notifications

## Email on start, end, or abort

**PBS@saddleback.atmos.colostate.edu**

To: mostafa@kiwi.atmos.colostate.edu

PBS JOB 497. [saddleback.atmos.colostate.edu](mailto:saddleback.atmos.colostate.edu)

April 7, 2014 9:31 AM

[Hide Details](#)

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PBS Job Id: 497. [saddleback.atmos.colostate.edu](mailto:saddleback.atmos.colostate.edu)

Job Name: Test2

Exec host:

sb8/23+sb8/22+sb8/21+sb8/20+sb7/23+sb7/22+sb7/21+sb7/20+sb6/23+sb6/22+sb6/21+sb6/20+sb5/23+sb5/22+sb5/21+sb5/20+sb4/23+sb4/22+sb4/21+sb4/20+sb3/23+sb3/22+sb3/21+sb3/20+sb2/23+sb2/22+sb2/21+sb2/20+sb1/23+sb1/22+sb1/21+sb1/20

Execution terminated

Exit\_status=0

resources\_used.cput=00:00:00

resources\_used.mem=18440kb

resources\_used.vmem=454764kb

resources\_used.walltime=00:05:18