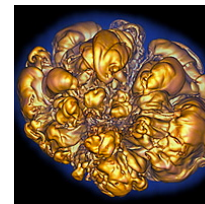
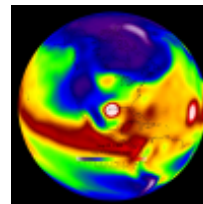
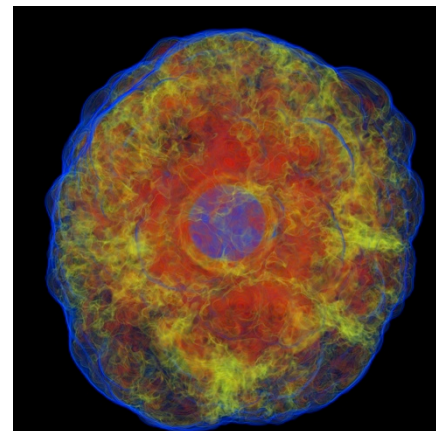
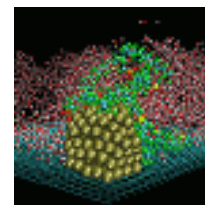
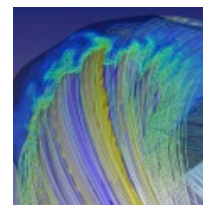
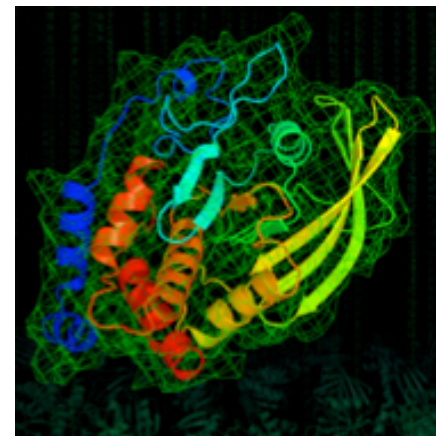
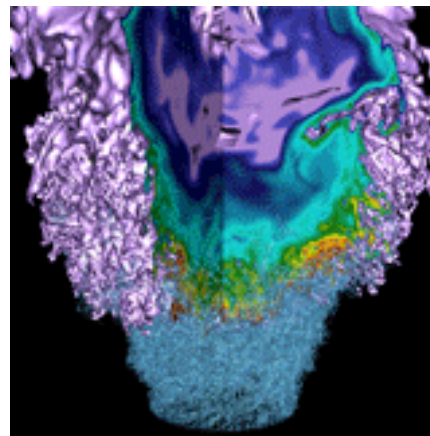


NUG Monthly Meeting



Richard Gerber, Helen He, Zhengji Zhao,
David Turner

NUG Monthly Meeting
November 13, 2014

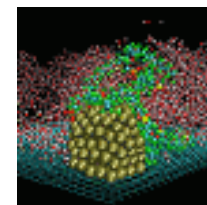
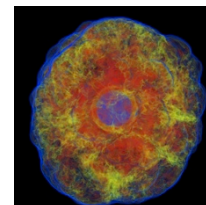
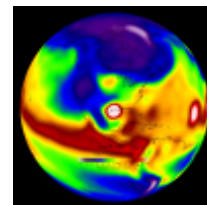
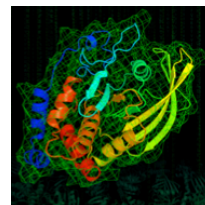
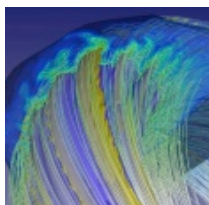
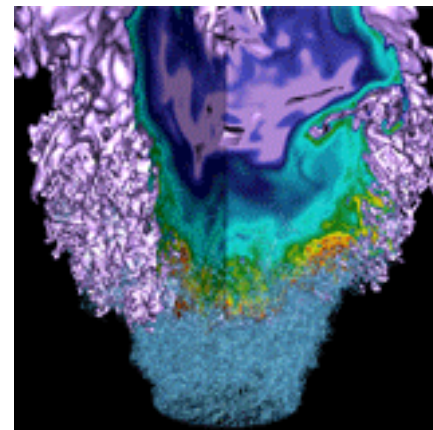
Agenda



- **Tuesday's Quarterly Maintenance**
- **Hopper and Edison Status Updates**
- **NUGEX Elections**
- **NUG 2015 Meeting Planning**
- **Training Update**
- **User Survey**
- **Queue Committee Topics**

Quarterly Maintenance Summary

David Turner, NERSC User Services



Maintenance: November 11, 2014



- **Quarterly maintenance**
 - Originally to accommodate JGI sequencer operations
 - Opportunistic maintenance on non-JGI resources
- **Infrastructure**
 - Power
 - Network
 - Internal router upgrades
 - Preparation for 100Gb/s
 - NGF unavailable due to network down
 - Systems unavailable due to NGF down

Maintenance: November 11, 2014



- **Edison**
 - Cray Developer Toolkit (CDT) 1.20
 - HDF5
 - MPI
 - Trilinos
 - Etc
 - Cray Linux Environment (CLE) 5.2
- **Hopper**
 - Enable “cpusets”
 - Some issues; rolled back 09:50 Thu Nov 13

Maintenance: November 11, 2014



- **Carver**

- Torque 5.0.1
- Moab 8.0
- Issues

- Jobs submitted between 02:00 and 19:00 Wed Nov 12 that used “-V” (propagate interactive environment into batch job) likely to fail
 - Now fixed, but -V discouraged
- Intermittent “Host key verification” errors
 - Jobs run, but sometimes output file cannot be renamed
10636008.cvrsvc09-ib.OU
instead of
myjob.o10636008
 - Working on solution

Maintenance: November 11, 2014



- **PDSF**
 - GPFS upgrade
 - CHOS upgrade
- **Genepool**
 - Upgrades on gpweb cluster
 - GPFS upgrade

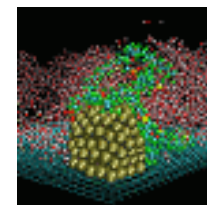
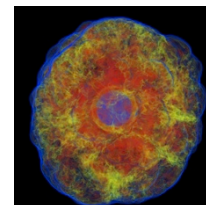
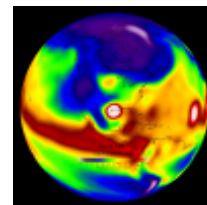
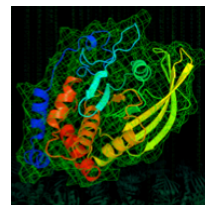
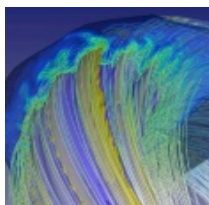
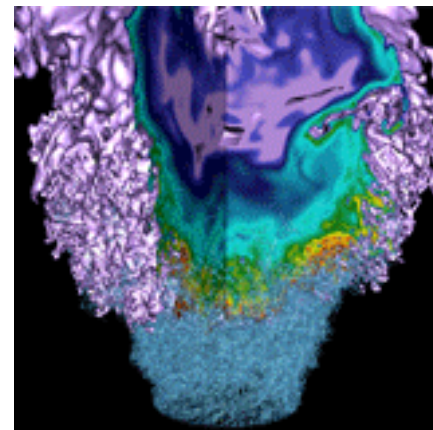
Maintenance: November 11, 2014



- **Data transfer nodes**
 - dtn01 and dtn02 hardware upgraded
 - dtn03 and dtn04 will be upgraded later
- **License servers**
 - Networking change
 - Some licensed software products unavailable overnight
- **Web servers**
 - NFS server upgrade

Edison Update

Zhengji Zhao, User Services



Edison CDT 1.20 upgrade on 11/11

cray-hdf5/1.8.13
cray-hdf5-parallel/1.8.13
cray-mpich/7.0.4
cray-mpich-abi/7.0.4
cray-shmem/7.0.4
cray-tpsl/1.4.2
cray-trilinos/11.10.1.0
craype/2.2.1
craypkg-gen/1.2.1

cce/8.3.4

The bug with cray-hdf5-parallel/1.8.13
intel build is fixed now.

Queue changes and killable queues

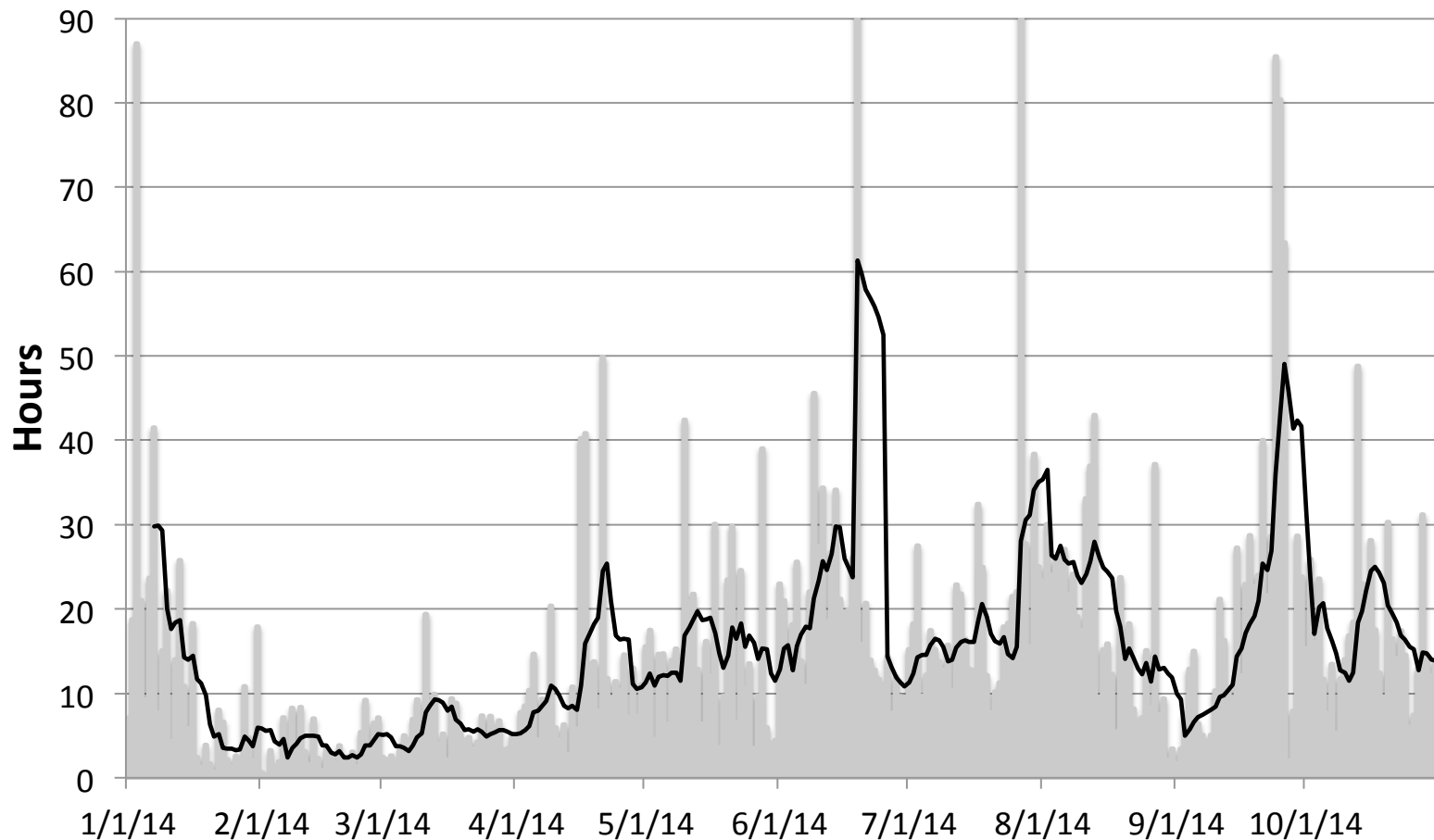
Submit Queue	Execution Queue	Nodes	Max Wallclock (hours)	Relative Priority	Run Limit	Queued Limit	Queue Charge Factor
debug	debug	1-512	30 mins	2	2	2	1
premium	premium	1-48	36	1	1	1	2
killable ²	killable	1-682	48 hrs	3	8	8	1

2 - Jobs in the killable queue are subject to being killed by system reservations or other special higher priority jobs. On the other hand, jobs can start even if requested walltime extends past a scheduled maintenance.

The killable queue is available for you to run jobs right up to the last minute before a scheduled outage or need to run a high-priority job. Your job should be able to deal with being killed without notice.

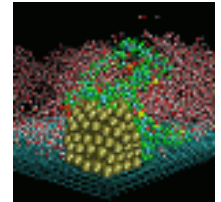
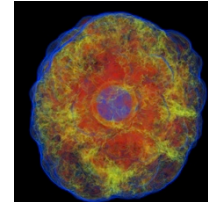
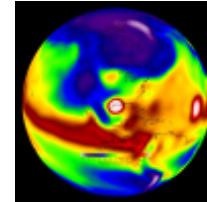
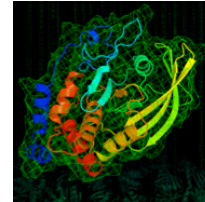
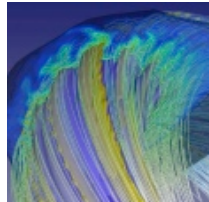
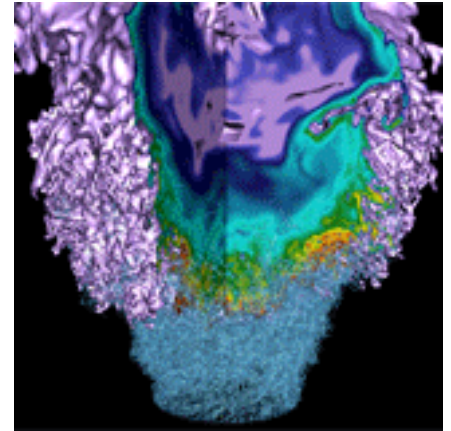
Edison Waits

Edison Regular Class Average Wait Times 2014



Hopper Update

Helen He, User Services



Update from last month

- **The inactive OST (Object Storage Target, one “unit” of Lustre file system) has been recovered and returned to service.**
- **Under certain conditions, some jobs still may run slowly.**
 - Occurs much less frequently than it used to
 - It may affect:
 - Jobs that use shared libraries
 - Jobs jobs use /project, \$HOME, or /gscratch
 - Jobs CCM that run the CCM queue
 - Jobs that run in the serial queue
 - The cause is related to Cray’s DVS software layer, but the root cause has not been identified yet
- **Serial queue available and announced**
 - Available on Hopper and Edison

Future plans

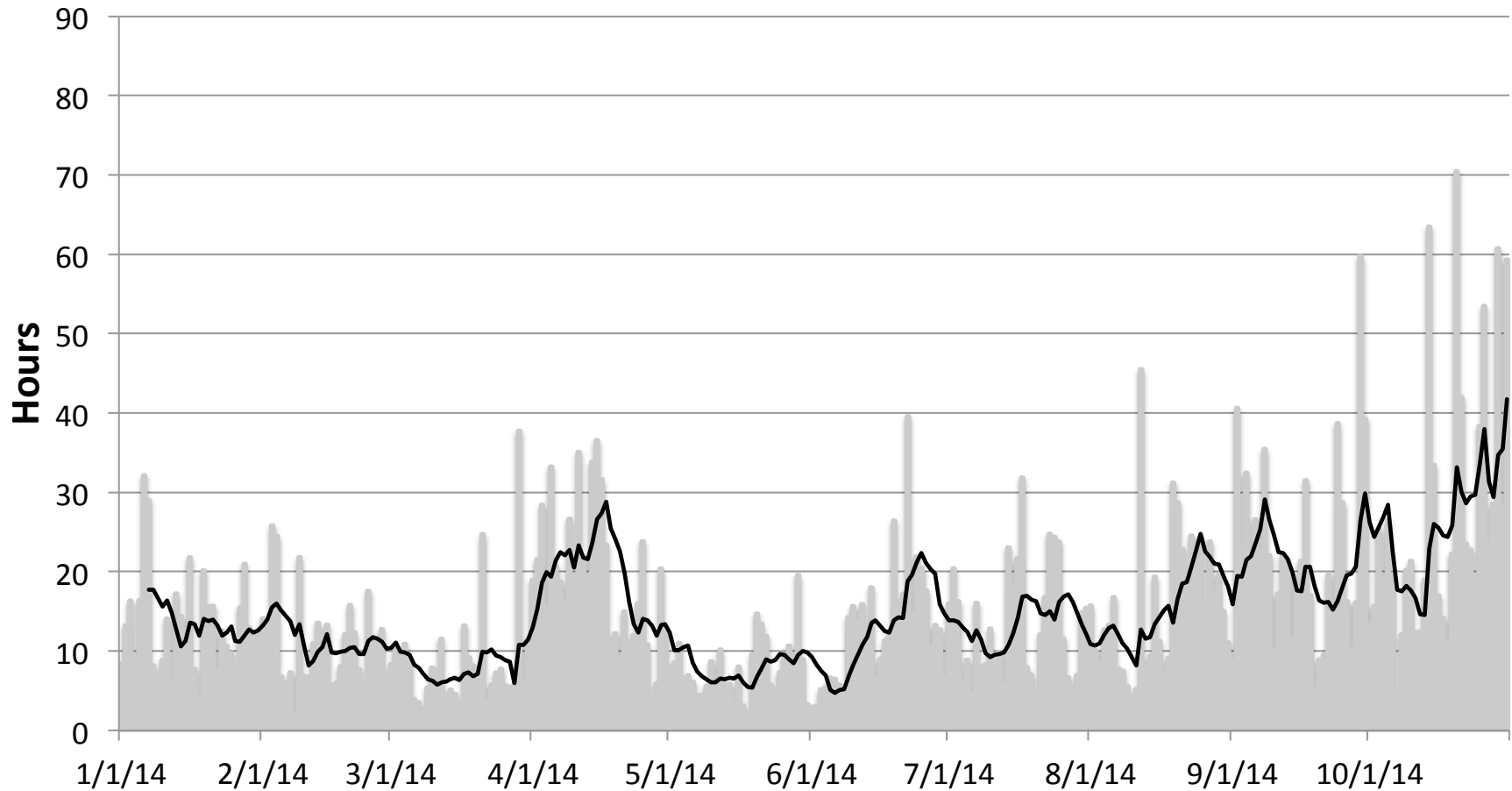
- **Scratch file systems (Lustre) upgrade was cancelled / delayed due to critical issues discovered at another site.**
- **Early next year, we will plan the Lustre upgrade again, followed by an OS upgrade.**
 - Always back up your important files on scratch file systems!
 - There will no changes in the default Cray Programming Environment until then
- **Hopper retirement: ~Nov 2015**

Hopper average wait time in hours, 10/13-11/13/14

	Hours Requested																																																	
Nodes	<1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	48+
1	1.8	4.1	8.2	17.5	38.7	28	13	59	31	35	9.8	30	2.0	40	56	43		22		24	56	35	68	54	83					24		33	23	61	75	46				68		74				58	62	84		
2	2.3	1.4	48	107	49.0	7.4	57	18		37	28	148	108		57	104		44	76	36			39	161	78		29		62		14							77						73	57	99				
3	1.7	0.7	5.6	6.5	4.5	6.2	14	31	34	0.1	22		50		35	72	78			70			27	65	15	14				95				21	94				78					27		79	86			
4	1.3	1.5	6.2	43	139	5.5	87	0.6	24	31	40	58	54	11	63	66	99		77	72	80		47	74	131	105		19	51		35			80			98	21					69	69	75					
5	3.9	1.9	3.6	6.2	7.6	9.7	20		21		13		47	57	44	79	78	91	78	47	85		89	67	78	109	95	65		65			21		37		21							84	72					
6	0.5	0.8	4.1	17	148	16	36	1.1	31	18	21		36		89	44	99	11			23		73	77	55				62					154			72							70	83					
7		0.6	2.6	1.7	40		1.4		81				114				39								90												121								105	95				
8	7.6	2.8	3.4	4.5	7.5	26	27		40		63	96	69	103	96	91	81		30		61		88	67	56				24					52	82							90	87	140						
9	1.9	1.8	21	7.8			18	18		34		30			53			26																											65	87				
10	4.7	1.6	17	8.5	27	12	38	56	70		59		88						103				69	79									23	75							70	57	86							
11	8.3	90	5.1	9.6	18	18	76		5.0		86		55				11			66				56						86					65									71						
12	3.0	4.8	8.6	15	14	36	33	29	36	51	69		33		96									67				83	130						60	84								76	99					
13						16																																								86				
14	1.0	11	11			6.2																			25																				87	65				
15	9.5	15	28	16		25	56				17		9.7	25	13	66			85				51	64										25	277									94	0.0					
16	17	53	21	26	13	10	15		60		42		28		90	108		109		93		27		62		109								79				29			105	80		81	73					
17-19	16					3.2	40					90										95			82																				103	84				
20-23	19	5.0		36	29	21	30	44	18	56	84	80	61	67	19		22		74				83	64								81			109							78	85	91						
24-31	3.9	7.5	10.0	21	26		66	24		63			46			20			0.9					63											65							97		70	100					
32-47	7.4	12	9.7	22	27	49	23	59	28	51	24		59	14	72	63		89	62	99	83		81	31		26			95					74					96		85	92	118							
48-63	8.6	4.3	20	39	45	36	17		38		58		60		33				68		55			51				89		30				65									92	73	97					
64-																																																		
127	6.2	8.3	15	30	46	39	121	54	71	14	73		36				67		95		9.2			91										96				1.0					94	78	75					
128-																																																		
255	8.4	68	23	35	71	34	108	49					105								103	64		65										102											102					
256-																																																		
511	9.3	54	36	35	83	66		33	78				142	139																														88		105	114			
512-																																																		
1023	6.0	42	84	44	30	55	66	189	21			50	43	31	23	88	37					36			2.0										47										101					
1024-																																																		
1535	13		95	51		58	91	37	72			69			51										36																									
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Hopper Wait Times

Hopper Regular Class Average Wait Times 2014



Queue Committee Items

- **Suggestion to increase premium queue limits on number of nodes and wall time**
 - Better turn around for debugging codes and workflows
 - Currently 1024 nodes and 12 hours
 - We increased limits to 36 hours on Edison
- **Call for additional topics**

NUGEX Elections



- **Eight seats on NUGEX are up for election in December 2014**
 - Fusion – 2: Ethier, Vay
 - High Energy Physics – 3: Borrill, Gottlieb, Tsung
 - Nuclear Physics – 2: Kasen, Savage
 - At large – 1: Newman
- **We'll open the elections on Nov. 30 for two weeks**
- **All NERSC users can vote**
- **We need all candidate statements (Frank Tsung)**

- **Time to start planning for NUG 2015**
- **Site: Berkeley/Oakland**
- **Call for volunteers for planning committee**
 - Committee leader
 - Pick a theme, line up speakers, topics, set agenda
 - Training topics
- **Proposed dates**
 - Feb 17-19, 2015

Training Update



- **Two training events in last month**
- **Application Readiness for Cori**
 - OpenMP & Vectorization
 - 62 attendees
- **New User Training**
 - 38 Users
- **Both highly rated in feedback surveys**
 - Audio quality needs to be improved
- **We plan to do each of these 4 times/year**
- **Let us know what topics you want**
- **Edison focused training from Cray on Dec. 16-18**

2014 User Survey



- **Opens early December 2014**
- **Important to NERSC, DOE, and you – so please take the survey.**
- **If you have questions you think we should ask, or special topics you think we should cover, please send email to ragerber@nersc.gov.**



Thank you.