

Collum-Loring-Abruna-Widom "CLAW" Cluster

Cluster built on Widom's headnode. 1 headnode and xx compute nodes.

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See also

- [1\) CCB High Performance Computers \(HPC\)](#)

Difference from other cluster

Duo has been installed but not enabled now.

- Chemistry IT staff only: (/etc/ssh/sshd_config keeps original, we need modify this to make duo work, see [duo documents](#))

Password lockout is enabled (Users can be locked out of their account if 20 of incorrect passwords are entered, The account will be unlocked after 600 seconds)

Iptables is enabled.

Node information

One can look up the ages of the processors, along with more technical information at at Wikipedia, which itself links to Intel's information for each processor:

- https://en.wikipedia.org/wiki/List_of_Intel_Xeon_microprocessors

Node	Motherboard version	Processor	Cores	Hyperthreading on	Memory	Hard Drive	Comments
headnode	Supermicro X8DTT 2.1 c	Dual E5645	12	N	24GB	SW Raid 1 - (2) 2TB, no backintimelsh	
bw001	Supermicro X8DTT 2.1 c	Dual E5645	12	N	48GB	SW Raid 0 - 2*6TB	
bw002	Supermicro X9DRT-F 3.2	Dual E5-2620v2	12	N	64GB	SW Raid 0 - 2*6TB	
bw003	Supermicro X9DRT-F 3.2	Dual E5-2620v2	12	N	64GB	SW Raid 0 - 2*6TB	
bw004	Supermicro X9DRT-F 3.2	Dual E5-2620v2	12	N	64GB	SW Raid 0 - 2*6TB	
bw005	Supermicro X9DRT-F 3.2	Dual E5-2620v2	12	N	64GB	SW Raid 0 - 2*6TB	
bw006	Supermicro X9DRT-F 3.2	Dual E5-2620v2	12	N	64GB	SW Raid 0 - 2*6TB	
bw007	Supermicro X9DRT-F 3.2	Dual E5-2620v2	12	N	64GB	SW Raid 0 - 2*6TB	
rl001	Asus DSBF-DE v1006	Dual E5420	8	N	16GB	1TB	
rl002	Asus DSBF-DE v1006	Dual E5420	8	N	16GB	320GB	
rl003	Asus DSBF-DE v1006	Dual E5420	8	N	16GB	320GB	
rl004	Asus DSBF-DE v1006	Dual E5420	8	N	16GB	320GB	
rl005	?	?	?	?	?	?	former loring headnode - currently off
dbc001	Asus DSBF-DE v1006	Dual E5420	8	N	16GB	(1) 64GB Patriot SSD	
dbc002	Asus DSBF-DE v1006	Dual E5420	8	N	8GB?	1TB	
dbc003	Asus DSBF-DE v1006	Dual E5420	8	N	16GB	1TB	
dbc004	Asus Z8PE-D12 v1401	Dual E5520	8	N	24GB	(3) 4TB	
dbc005	Asus Z8PE-D12 v1401	Dual E5520	8	N	24GB	(3) 2TB	

dbc006	Asus Z8PE-D12 v1401	Dual E5520	8	N	24GB	(2) 2TB	
dbc007	Supermicro X9DRT-F v3.2	Dual E5-2630	12	N	32GB	(1) 3TB	
dbc008	Supermicro X9DRT-F v3.2	Dual E5-2630	12	N	32GB	(1) 3TB	
dbc009	Asus DSBF-DE v1006	Dual E5420	8	N	16GB	? former SWRAID1 (2) 1TB, (1) 160GB backintime	former collum headnode - currently off
hda001	Asus DSBF-DE v1006	Dual Xeon E5420	8	N	12GB	64GB SSD	Moved to CAC 1/31/2017
hda002	Asus DSBF-DE v1006	Dual Xeon E5420	8	N	16GB	64GB SSD	Moved to CAC 1/31/2017
hda003	Asus DSBF-DE v1006	Dual Xeon E5420	8	N	16GB	64GB SSD	Moved to CAC 1/31/2017
hda004	Asus Z8PE-D12 v1003	Dual Xeon E5520	8	Y	24GB	64GB SSD	Moved to CAC 1/31/2017
hda005	Asus Z8PE-D12 v1401	Dual Xeon E5520	8	Y	24GB	250GB HD	
hda006	Asus Z8PE-D12 v1401	Dual Xeon E5520	8	Y	24GB	250GB HD	
hda007	Asus Z8PE-D12 v1003	Dual Xeon E5645	12	Y	24GB	1TB HD	
hda008	Asus Z8PE-D12 v1401	Dual Xeon E5645	12	Y	24GB	320GB HD	
hda009	Asus Z8PE-D12 v1401	Dual Xeon E5645	12	Y	24GB	320GB HD	
"hda010"	Asus DSBF-DE v1006	Dual Xeon E5420	8	N	8GB	dual 1TB soft raid + 1TB backup drive	former abruna headnode - Moved to CAC 1/31/2017

Software on this cluster

Applications	Version	Notes, for CAC
quantum espresso	6.0 (serial and mpi version)	"easy"
gaussian	g09-A.02 & g09-D.01	Lulu to install, please. She compiled using PGI (PGI's use is via ChemIT's license server)
gromacs	gromacs-5.0.5 (with/without enable-mpi & GMX_DOUBLE=on/off)	"easy"
intel compiler	2014 (used for compiling gromacs, openmpi and mpich2)	ChemIT license server: Needs IP of cluser
mathematica	10.3.0	ChemIT license server: Needs IP of cluser
mopac	2009	"easy"
mpich	1.2.7.p1	"easy"
mpich2	1.4.1p1	"easy"
openmpi	1.6.5	"easy"
webmo	17.0.010e	Difficult/ complex: Contact Lulu first

Maintenance records

[Collum cluster previous maintenance records](#)

[Abruna cluster previous maintenance records](#)

3/4/16 - noting that the DSBF-DE motherboard has a v1007 update, but not worth the trouble for the age of the machines. X9DRT-F has a 3.2 upgrade from 3.0, can do when nodes free. - meh26

3/10/16-3/11/16 - updated X9DRT-F motherboards from 3.0 to 3.2 during downtime due to headnode drive replacement resyncing. - meh26

3/16/16 - updated IPMI card firmware from 2.0 to 3.0 - meh26

8/2/2016: Lulu: No firmware update from Michael. There are no security updates available via YUM. One hard drive (sda) is failing (smartctl found 30 errors). Forced fsck, no errors found. Modified /etc/ssh/sshd_config to keep idle ssh connection alive.

11/1/2016: Lulu: No firmware update from Michael. There are no security updates available via YUM. One hard drive (sda) is failing. Backup the root partition by ddimage .

2/5/2017: Lulu: Collum and Abruna cluster have been merged into "CLAW" cluster in Nov 2016. There was power outage on 2/4 Saturday. No firmware update. Delete all running or queued jobs. No errors on hard drives. Forced fsck.

5/2/2017: Lulu: No firmware update. Forced fsck.

8/1/2017: Lulu: No firmware update from Michael. No errors on hard drives. Forced fsck.

2/6/2018: Lulu: No firmware update from Michael. No errors on hard drives. Forced fsck. No yum security updates.

5/1/2018: Lulu: No firmware update from Michael. No errors on hard drives.

8/7/2018: Michael: The firmware on the Z8PE-D12 motherboard in hda004-hda009 and dbc004-dbc006 was strangely updated by Asus in the last few weeks to cover the Meltdown/Spectre vulnerabilities. He has done hda005, hda006, hda008, hda009, dbc004, dbc005, and dbc006. hda007 was not posting and I didn't feel like fighting it – a problem for another day. hda004 was sent to CAC, so how that update gets done should be discussed.

8/7/2018: Lulu: No errors on hard drives. Forced fsck. No yum security updates.

11/6/2018: Lulu: No firmware update from Michael. No errors on hard drives. No yum security updates.

2/5/2019: Lulu: No firmware update from Michael. No errors on hard drives. No yum security updates. Forced fsck. hda005 didn't passed memory test. Then it cannot power on.

5/7/2019: Lulu: No firmware update from Michael. No errors on hard drives. No yum security updates. rl003 cannot be powered on (by power button). hda005 didn't passed memory test. Then it cannot power on.

8/6/2019: Lulu: Force fsck. No firmware update from Michael. No errors on hard drives. No yum security updates. hda005 didn't passed memory test. bw001 and headnode power button affect each other. if shutdown (even by command line) / power on bw001, it will shutdown /power on head node. Michael changed power strip but does not help.

11/5/2019: Lulu: No firmware update from Michael. No errors on hard drives. No yum security updates. hda005 didn't passed memory test. bw001 and headnode power issue still existed.

2/4/2020: Lulu: Forced fsck. No errors on hard drives. No yum security updates. hda005 didn't passed memory test. bw001 and headnode power issue still existed.