

Timing Comparisons

AKA collecting ammunition

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Introduction

- Use the opportunity to perform tests on the art/larsoft course machines while they are available
- Build larsoft and various combinations with experiment code
- Solicited some standard use cases
- You can suggest others (email garren@fnal.gov)
- https://cdcvcs.fnal.gov/redmine/projects/cet-is/wiki/Timing_Comparisons

Building LArSoft

Build the larsoft suite

Machine	j2	j4	j6	j10	j20	j40
woof	-	16m	11.5m	7m49s	4m36s	4m27s
alcourse	-	21m	14m	9m	6m	5m
alcourse6	-	23m	15m	11m	7m	5m21s
uboonegpvm01	69m	36m	35m	-	-	-

Build lardata

Machine	j2	j4	j6	j10	j20	j40
woof	-	2m28s	2m20s	2m7s	1m55s	1m54s
alcourse	-	3m3s	2m57s	2m36s	2m27s	2m25s
alcourse6	-	3m34s	3m18s	2m51s	2m49s	2m49s
uboonegpvm01	10m	6m27s	6m36s	-	-	-

Build larana

Machine	j2	j4	j6	j10	j20	j40
woof	-	2m10s	1m34s	1m7s	52s	47s
alcourse	-	2m41s	1m55s	1m17s	1m3s	54s
alcourse6	-	3m3s	2m9s	1m31s	1m12s	1m3s
uboonegpvm02	9m	5m	4m	-	-	-

Build larreco

Machine	j2	j4	j6	j10	j20	j40
woof	-	7m	5m	3m27s	2m9s	1m58s
alcourse	-	9m	6m	4m3s	2m48s	2m38s
alcourse6	-	10m	7m	4m38s	3m11s	2m43s
uboonegpvm02	30m	19m	17m	-	-	-

Building with uboonecode

Build uboonecode and ubutil

Machine	j2	j4	j6	j10	j20	j40
woof	-	1m46s	1m20s	1m7s	1m3s	1m1s
alcourse	-	2m10s	1m35s	1m18s	1m15s	1m13s
alcourse6	-	2m39s	1m55s	1m34s	1m32s	1m36s
uboonegpvm02	7m	4m10s	4m3s	-	-	-

Build uboonecode, ubutil, and larana

Machine	j2	j4	j6	j10	j20	j40
woof	-	3m50s	2m48s	1m58s	1m18s	1m20s
alcourse	-	4m51s	3m24s	2m17s	1m41s	1m43s
alcourse6	-	5m20s	3m52s	2m38s	1m53s	1m50s
uboonegpvm02	16m	9m	9m	-	-	-

Build uboonecode, ubutil, and larreco

Machine	j2	j4	j6	j10	j20	j40
woof	-	8m29s	6m	4m13s	2m38s	2m27s
alcourse	-	11m	8m	5m	3m23s	3m11s
alcourse6	-	12m	8m38s	5m49s	3m47s	3m10s
uboonegpvm01	36m	19m	18m	-	-	-

More uboonecode

Build uboonecode, larreco, and lardata

Machine	j2	j4	j6	j10	j20	j40
woof	-	11m	8m	5m18s	3m19s	3m2s
alcourse	-	14m	10m	6m	4m13s	4m7s
alcourse6	-	15m	11m	7m	4m39s	4m6s
uboonegpvm02	43m	23m	23m	-	-	-

Build uboonecode, larana, larreco, and lardata

Machine	j2	j4	j6	j10	j20	j40	Nodes
woof	-	13m	9m	6m	3m58s	3m2s	40
alcourse	-	16m	11m	7m	4m59s	4m41s	32
alcourse6	-	18m	13m	8m	5m35s	4m34s	64
uboonegpvm02	51m	27m	28m	-	-	-	40

Building with lbnecode

Build lbnecode

Machine	j2	j4	j6	j10	j20	j40
woof	-	2m29s	1m50s	1m18s	52s	59s
alcourse	-	3m6s	2m12s	1m30s	1m7s	57s
alcourse6	-	3m31s	2m30s	1m45s	1m13s	58s
lbnegpvm01	10m	5m54s	5m37s	-	-	-

Build lbnecode and larana

Machine	j2	j4	j6	j10	j20	j40
woof	-	5m43s	3m15s	2m18s	1m27s	1m14s
alcourse	-	5m40s	3m59s	2m40s	1m53s	1m38s
alcourse6	-	6m21s	4m28s	3m6s	2m6s	1m30s
lbnegpvm01	18m	10m38s	10m11s	-	-	-

Build lbnecode and larreco

Machine	j2	j4	j6	j10	j20	j40
woof	-	9m	6m	4m25s	2m41s	2m28s
alcourse	-	12m	8m	5m16s	3m33s	3m20s
alcourse6	-	13m	9m	6m	4m	3m
lbnegpvm01	38m	21m50s	20m58s	-	-	-

More lbncode

Build lbncode, larreco, and lardata

Machine	j2	j4	j6	j10	j20	j40
woof	-	11m	8m	5m30s	3m22s	3m10s
alcourse	-	15m	10m	6m28s	4m27s	4m9s
alcourse6	-	16m	11m	7m31s	4m55s	4m4s
lbnegpvm01				-	-	-

Build lbncode, larana, larreco, and lardata

Machine	j2	j4	j6	j10	j20	j40	Not
woof	-	13m	10m	6m	3m57s	3m44s	40
alcourse	-	17m	12m	8m	5m13s	4m48s	32
alcourse6	-	19m	13m	9m	5m33s	4m35s	64
lbnegpvm01				-	-	-	4 c

Machines

- woof - 40 cores, Intel Xeon CPU E5-2680 v2 @ 2.80GHz, local disk
 - fastest
- alcourse - 32 cores, Intel Xeon CPU E5-2650 v2 @ 2.60GHz, local disk
 - next fastest
- alcourse6 - 64 cores, AMD Opteron Processor 6376, local disk
 - typical grid worker node
 - slower than both alcourse and woof
- jenkins build slaves
 - somewhere in between - no numbers yet
- gpvm - 4 cores, virtual machine, bluearc
 - slowest

Conclusions

- No attempt was made to run in any quiet time
- The gpvm machines are not optimized for code development (This is not news...)
- Should be safe to use -j4 on the gpvm machines
- On machines optimized for code development, there is not much time gained in going above -j20
- At some point, all builds are limited by disk access