TDS: Cray XC (dom)

> Lustre striping Lustre allows the user to have explicit control over how a file is striped over the OSTs: chunks are sent to the different OSTs to improve disk bandwidth.

- export `MPICH_MPIIO_STATS`=1
- srun -n192 ./GNU.DOM

```
lt -h out_1120x720x80.16x12.000*
-rw-r--r-- 1 piccinal csstaff 3.7G Mar 24 14:32 out_1120x720x80.16x12.0000.bin
-rw-r--r-- 1 piccinal csstaff 3.7G Mar 24 14:32 out_1120x720x80.16x12.0001.bin
-rw-r--r-- 1 piccinal csstaff 3.7G Mar 24 14:33 out_1120x720x80.16x12.0002.bin
-rw-r--r-- 1 piccinal csstaff 3.7G Mar 24 14:33 out_1120x720x80.16x12.0003.bin
```

- lfs setstripe `-c 1` and lfs setstripe `-c 2`

```
+-----------------------------------------------------+
| MPIIO write access patterns for out_1120x720x80.16x12.0003.bin
|   independent writes      = 0
|   collective writes       = 1920
|   independent writers     = 0
|   aggregators             = 1
|   stripe count            = 1
|   stripe size             = 1048576
|   system writes           = 3750
|   stripe sized writes     = 3750
|   total bytes for writes  = 3932160000 = 3750 MiB = 3 GiB
|   ave system write size   = 1048576
|   read-modify-write count = 0
|   read-modify-write bytes = 0
|   number of write gaps    = 0
|   ave write gap size      = NA
| See "Optimizing MPI I/O on Cray XE Systems" S-0013-20 for explanations.
+-----------------------------------------------------+
Testing get_procmem... 7516160.000000 45846528.000000 38330368.000000
written grids of 80,80,80
written 4 iterations
MPI Elapsed time: 50.929825 sec
average  0.028762 Gbytes/sec
real 54.23
```

```
+-----------------------------------------------------+
| MPIIO write access patterns for out_1120x720x80.16x12.0003.bin
|   independent writes      = 0
|   collective writes       = 1920
|   independent writers     = 0
|   aggregators             = 2
|   stripe count            = 2
|   stripe size             = 1048576
|   system writes           = 3750
|   stripe sized writes     = 3750
|   total bytes for writes  = 3932160000 = 3750 MiB = 3 GiB
|   ave system write size   = 1048576
|   read-modify-write count = 0
|   read-modify-write bytes = 0
|   number of write gaps    = 0
|   ave write gap size      = NA
| See "Optimizing MPI I/O on Cray XE Systems" S-0013-20 for explanations.
+-----------------------------------------------------+
Testing get_procmem... 7516160.000000 42070016.000000 34553856.000000
written grids of 80,80,80
written 4 iterations
MPI Elapsed time: 25.865780 sec
average  0.056632 Gbytes/sec
real 29.15
```