oneccl scaling analysis of all reduce SYCL - CPU/Host

Experiment run date : March 30, 2024 post sunspot upgrade

job script

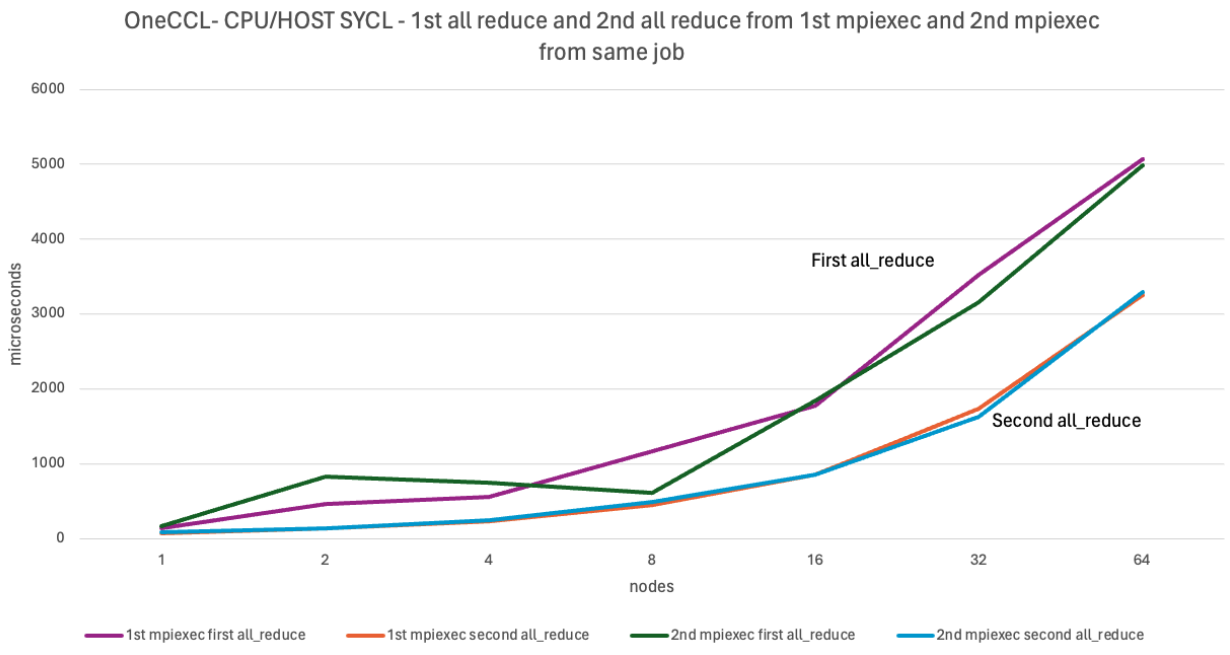
```
+ mpiexec --env FI_CXI_DEFAULT_CQ_SIZE=1048576 --env FI_CXI_RX_MATCH_MODE=software --env MPIR_
CVAR_CH4_MT_MODEL=lockless --env FI_CXI_OVFLOW_BUF_SIZE=8388608 --env FI_CXI_CQ_FILL_PERCENT=2
0
                    --np 12 -ppn 12 --cpu-bind list:1-2:9-10:17-18:25-26:33-34:41-42:52-53:60-
61:68-69:76-77:84-85:92-93
                    /lus/gila/projects/CSC250STDM10_CNDA/kaushik/oneCCL/build/_install/example
s/benchmark/benchmark
                        --max_elem_count 512 --coll allreduce -j off -i 1 -w 0 --backend host
--sycl_dev_type host
```

Summary

1. There is no significant difference in the first mpiexec and the second mpiexec
2. The second all reduce is 0.5x faster than the first all reduce

Results

iter5/host/pbs-script	o8987512	NUM_OF_NODES	1	TOTAL_NUM_RANKS	12	RANKS_PER_NODE	12
iter5/host/pbs-script	o8987513	NUM_OF_NODES	2	TOTAL_NUM_RANKS	24	RANKS_PER_NODE	12
iter5/host/pbs-script	o8987514	NUM_OF_NODES	4	TOTAL_NUM_RANKS	48	RANKS_PER_NODE	12
iter5/host/pbs-script	o8987515	NUM_OF_NODES	8	TOTAL_NUM_RANKS	96	RANKS_PER_NODE	12
iter5/host/pbs-script	o8987516	NUM_OF_NODES	16	TOTAL_NUM_RANKS	192	RANKS_PER_NODE	12
iter5/host/pbs-script	o8987517	NUM_OF_NODES	32	TOTAL_NUM_RANKS	384	RANKS_PER_NODE	12
iter5/host/pbs-script	o8987518	NUM_OF_NODES	64	TOTAL_NUM_RANKS	768	RANKS_PER_NODE	12


OneCCL- CPU/HOST SYCL - 1st all reduce and 2nd all reduce from 1st mpiexec and 2nd mpiexec from same job
6000
5000
4000
3000
2000
1000
0
microseconds
First all_reduce
Second all_reduce
1
2
4
8
16
32
64
nodes
1st mpiexec first all_reduce
1st mpiexec second all_reduce
2nd mpiexec first all_reduce
2nd mpiexec second all_reduce