

AMD-Opteron Dual CPU/Dual Core 2.8Ghz (IBM 3455), 8Go RAM DDR2 667MHz
 Ifort 10.1.11 + libgotopteron64p-r1.23.so

Serial Test: 1 job

1thread
 SUM OF WALL CLOCK TIMES: 167.4 (INIT = 1.1 + K-POINTS = 166.3)
2threads
 SUM OF WALL CLOCK TIMES: 120.1 (INIT = 1.1 + K-POINTS = 119.0)
4threads
 SUM OF WALL CLOCK TIMES: 100.8 (INIT = 1.1 + K-POINTS = 99.7)

Serial Test: 2 jobs

1thread
 SUM OF WALL CLOCK TIMES: 167.6 (INIT = 1.1 + K-POINTS = 166.5)
2threads
 SUM OF WALL CLOCK TIMES: 122.1 (INIT = 1.1 + K-POINTS = 121.0)

Serial Test: 4 jobs

1thread
 SUM OF WALL CLOCK TIMES: 174.5 (INIT = 1.1 + K-POINTS = 173.4)

Job	1 Thread	2 Threads	4 Threads
1	167.4	120.1 (70%)	100.8 (42%)
2	167.7 (100%)	122.1 (69%)	
4	174.5 (96%)		

MPI Test :

Interconnect: Voltaire Single port 4X DDR (20 Gbps) InfiniBand PCI-Express
Software:

Ifort 10.1.11 + MPI Voltaire based on MPI-CH 1.2
 SCALAPACK and BLACS from Intel Cluster MKL (10.0.1)
 BLAS from GOTO 1.23

First part: 1 process per node

1core on 1 node (2252 Mo per process)

TIME HAMILT (CPU) = 314.8, HNS = 341.4, HORB = 0.0, DIAG = 1990.4
 TOTAL CPU TIME: 2648.7 (INIT = 2.1 + K-POINTS = 2646.7)

2core on 2 nodes (1228 Mo per process / speedup = 2.0)

TIME HAMILT (CPU) = 155.1, HNS = 174.1, HORB = 0.0, DIAG = 976.7
 TOTAL CPU TIME: 1308.1 (INIT = 2.1 + K-POINTS = 1306.0)

4core on 4 nodes (690 Mo per process / speedup = 4.0)

TIME HAMILT (CPU) = 79.6, HNS = 91.9, HORB = 0.0, DIAG = 483.8
 TOTAL CPU TIME: 657.5 (INIT = 2.1 + K-POINTS = 655.4)

8core on 8 nodes (503 Mo per process / speedup = 7.4)

TIME HAMILT (CPU) = 40.0, HNS = 48.6, HORB = 0.0, DIAG = 268.4
 TOTAL CPU TIME: 359.3 (INIT = 2.1 + K-POINTS = 357.2)

12core on 12 nodes (373 Mo per process / speedup = 9.8)

TIME HAMILT (CPU) = 27.2, HNS = 34.5, HORB = 0.0, DIAG = 197.2
 TOTAL CPU TIME: 261.1 (INIT = 2.1 + K-POINTS = 259.1)

16core on 16 nodes (312 Mo per process / speedup = 12.6)

TIME HAMILT (CPU) = 22.0, HNS = 26.7, HORB = 0.0, DIAG = 159.9
 TOTAL CPU TIME: 210.8 (INIT = 2.1 + K-POINTS = 208.7)

20core on 20 nodes (275 Mo per process / speedup = 14.8)

TIME HAMILT (CPU) = 17.9, HNS = 21.7, HORB = 0.0, DIAG = 137.5

TOTAL CPU TIME: 179.3 (INIT = 2.0 + K-POINTS = 177.3)

Second part: 2 processes per node

2core on 1 node (speedup = 2.0)

TIME HAMILT (CPU) = 154.7, HNS = 173.1, HORB = 0.0, DIAG = 972.1
TOTAL CPU TIME: 1302.0 (INIT = 2.1 + K-POINTS = 1300.0)

4core on 2 nodes (speedup = 4.0)

TIME HAMILT (CPU) = 79.4, HNS = 91.7, HORB = 0.0, DIAG = 487.3
TOTAL CPU TIME: 660.6 (INIT = 2.1 + K-POINTS = 658.5)

8core on 4 nodes (speedup = 7.3)

TIME HAMILT (CPU) = 40.1, HNS = 48.7, HORB = 0.0, DIAG = 270.8
TOTAL CPU TIME: 361.9 (INIT = 2.1 + K-POINTS = 359.8)

12core on 6 nodes (speedup = 9.9)

TIME HAMILT (CPU) = 27.2, HNS = 34.4, HORB = 0.0, DIAG = 203.8
TOTAL CPU TIME: 267.6 (INIT = 2.0 + K-POINTS = 265.5)

16core on 8 nodes (speedup = 12.4)

TIME HAMILT (CPU) = 22.0, HNS = 26.8, HORB = 0.0, DIAG = 162.5
TOTAL CPU TIME: 213.5 (INIT = 2.1 + K-POINTS = 211.4)

20core on 10 nodes (speedup = 14.6)

TIME HAMILT (CPU) = 17.8, HNS = 21.8, HORB = 0.0, DIAG = 138.9
TOTAL CPU TIME: 180.8 (INIT = 2.1 + K-POINTS = 178.7)

Third part: 4 processes per node

4core on 1 nodes (speedup = 3.1)

TIME HAMILT (CPU) = 85.7, HNS = 96.0, HORB = 0.0, DIAG = 668.0
TOTAL CPU TIME: 851.8 (INIT = 2.1 + K-POINTS = 849.7)

8core on 2 nodes (speedup = 6.0)

TIME HAMILT (CPU) = 40.5, HNS = 50.8, HORB = 0.0, DIAG = 344.8
TOTAL CPU TIME: 438.3 (INIT = 2.1 + K-POINTS = 436.3)

12core on 3 nodes (speedup = 8.5)

TIME HAMILT (CPU) = 27.6, HNS = 35.8, HORB = 0.0, DIAG = 247.1
TOTAL CPU TIME: 312.6 (INIT = 2.1 + K-POINTS = 310.5)

16core on 4 nodes (speedup = 10.7)

TIME HAMILT (CPU) = 22.1, HNS = 27.9, HORB = 0.0, DIAG = 194.3
TOTAL CPU TIME: 246.6 (INIT = 2.1 + K-POINTS = 244.5)

20core on 5 nodes (speedup = 12.7)

TIME HAMILT (CPU) = 18.1, HNS = 22.6, HORB = 0.0, DIAG = 165.3
TOTAL CPU TIME: 208.3 (INIT = 2.1 + K-POINTS = 206.3)