Performance Analysis of Intel- Cray in IITM XC40

CFS

Resolution	Number of Nodes	Intel compiler options used	Intel Time	Cray compiler options used	Cray time
T126	8	-O3 -convert -fp-model precise	00:05:10	- O2 -G2 -hfp0 -Ompi1 - craympich-mt - hpreferred_vector_width=256	00:06:05
	8			- O3 -G2 -hfp0 -Ompi1 - craympich-mt - hpreferred_vector_width=256	00:05:46
	8			- O3 -G2 -hfp0 -Ompi1 - craympich-mt - hpreferred_vector_width=256 + IOBUF + HUGEPAGES2M	00:05:39
T382	8	-O3 -convert - fp-model precise	00:37:57	- O2 -G2 -hfp0 -Ompi1 - craympich-mt - hpreferred_vector_width=256	00:59:38
	8			- O3 -G2 -hfp0 -Ompi1 - craympich-mt - hpreferred_vector_width=256	00:50:12
	8			- O3 -G2 -hfp0 -Ompi1 - craympich-mt - hpreferred_vector_width=256 + IOBUF + HUGEPAGES2M	00:50:00

WRF

Input Data Duration	Nodes	Intel Compiler options	Intel Time (in minutes)	Cray Compiler options	Cray Intel(in minutes)
3 Days	1	-ip -O3	19.9	-O3	19.3
3 Days	2	-ip -O3	12.2	-O3	13.0
3 Days	5	-ip -O3	10.38	-O3	9.80
3 Days	10	-ip -O3	12.3	-O3	11.2
3 Days	15	-ip -O3	13.7	-O3	12.9

GSM

Size of test sample	Intel Compiler Flags	Intel Timing	Cray Compiler Flags	Cray Timing
12hrs	-traceback -ftz -fast-transcendentals -no-prec-div -no-prec-sqrt -align array64byte -assume buffered_stdout -O3 -convert big_endian -fp-model precise -fpp -mkl -r8 -FR -c	8.53mins	-c -O0 -hbyteswapio -e Z	69mins
			-c -O3 fp3 -hbyteswapio -e Z	12.7mins
			-c -O3 fp3 -hbyteswapio -e Z (hugepages 8M)	8.2mins
7days	-traceback -ftz -fast-transcendentals -no-prec-div -no-prec-sqrt -align array64byte -assume buffered_stdout -O3 -convert big_endian -fp-model precise -fpp -mkl -r8 -FR -c	59.55mins	-c -O3 fp3 -hbyteswapio -e Z (hugepages 8M)	69.01mins
10days	-traceback -ftz -fast-transcendentals -no-prec-div -no-prec-sqrt -align array64byte -assume buffered_stdout -O3 -convert big_endian -fp-model precise -fpp -mkl -r8 -FR -c	84mins	-c -O3 fp3 -hbyteswapio -e Z	146mins
			-c -O3 fp3 -hbyteswapio -e Z (hugepages 8M)	81.8

ROMS

Input	Intel Compiler options	Intel Time	Cray compiler options	Cray Time
Benchmark input 10days	-heap-arrays -fp-model precise -ip -O3	04:49:11	-rm -hnoomp -O3 -g	03:58:47