

HPC Parallel Programming: OpenMP Assignments

Parallelization and Optimization Group
TATA Consultancy Services, SahyadriPark Pune, India
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Assignment

1. Modify following codes to get correct results. Instructions are given as comments. These files are located at /tmp/Day2_OpenMP_Assignments.
 - (a) setNumThreads.c
 - (b) setNumThreadsPriority.c
 - (c) dataScope.c
 - (d) vec_sum.c
 - (e) pthread_assignment.c (Dot Product), Repeat this problem with OpenMP as well using reduction clause.
2. Write OpenMP program with 100 loop iterations and spawn 10 threads. Schedule it using following methods and observe the behaviour by printing thread ID.
 - (a) schedule(static)
 - (b) schedule(static, 5)
 - (c) schedule(dynamic)
 - (d) schedule(dynamic, 5)
3. Write a program to multiply two square matrices using OpenMP. Measure the performance of your program with following variations:

No. of Threads	Matrix Size	Time
1	8192	
2	8192	
4	8192	
8	8192	
16	8192	
32	8192	
64	8192	

4. Write a program to multiply a Matrix with a Vector using OpenMP. Measure the performance as mentioned in problem 2.