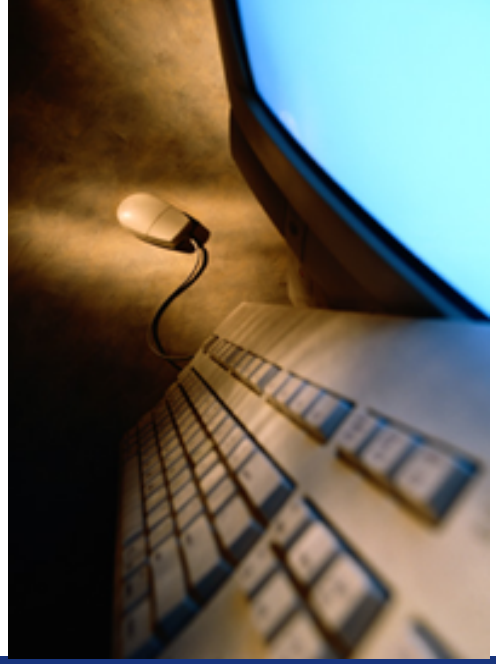
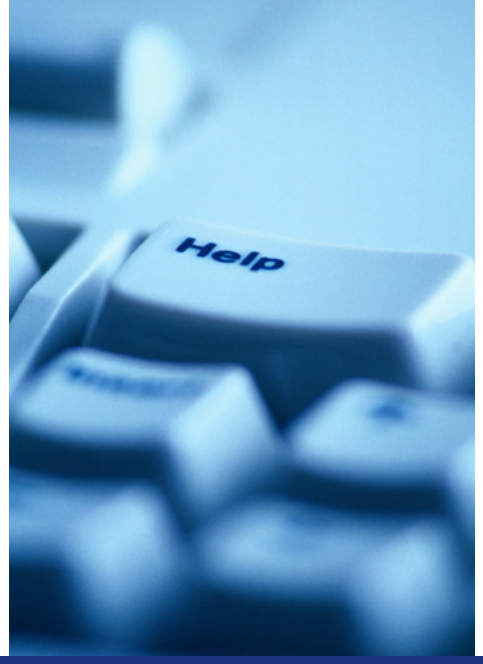

并行与分布式计算

Parallel & Distributed Computing

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数据科学与计算机学院
2020-06-19

Homework-5

1. Consider a sparse matrix stored in the compressed row format (you may find a description of this format on the web or any suitable text on sparse linear algebra). Write an OpenMP program for computing the product of this matrix with a vector. Download sample matrices from the Matrix Market (http://math.nist.gov/MatrixMarket/) and test the performance of your implementation as a function of matrix size and number of threads.

A visual repository of test data for use in comparative studies of algorithms for numerical linear algebra, featuring nearly 500 sparse matrices from a variety of applications, as well as matrix generation tools and services.

Browse
by collection
by matrix name
by generator name

Search
by matrix properties
by application area
by contributor

Background
Welcome
What's New
What's Coming
Credits

1138 BUS: Power systems admittance matrices
Power system networks

from set PSADMIT, from the Harwell-Boeing Collection

[Download] [Visualizations] [Matrix Statistics] [Set Information]

Download as

- Compressed MatrixMarket format file: 1138_bus.mtx.gz (21322 bytes)
- Compressed Harwell-Boeing format file: 1138_bus.rsa.gz (19648 bytes)

Help: My browser can't read the compressed data files. *What now?*

2. Implement a producer-consumer framework in OpenMP using sections to create a single producer task and a single consumer task. Ensure appropriate synchronization using locks. Test your program for a varying number of producers and consumers.

3. 利用MPI通信程序测试本地进程以及远程进程之间的通信时延和带宽。

Thank You !