Assignment 1 : Describe a Parallel Application

This is a warm-up exercise to summarize the state of current parallel applications.
Due Date: 21st November, 2012 9:59:59 pm

Problem

Examine an application problem for which parallel computing has been used. You may pick a problem from any research area of your choice, somewhere on the web, or elsewhere (so long as it is verifiable). Build a public document briefly describing the application, the use of parallelism, and a critical assessment of its success, weaknesses, and challenges.
Some specific details to consider include the following:

- What is the scientific or engineering problem being solved?
- How well did the application achieve its scientific / engineering objective? Are simulation results compared to physical results?
- What parallel platform has the application targeted? (distributed vs. shared memory, vector, etc.) What tools were used to build the application? (languages, libraries, etc.)
- If the application is run on a major supercomputer, where does that computer rank on the Top 500 list?
- How well did the application perform? How does this compare to the platform's best possible performance?
- Does the application "scale" to large problems on many processors? If you believe it has not, what bottlenecks may have limited its performance?

Not all of these details will be available for all applications. You ought to explain what you find noteworthy about the application or its implementation.

Submission

Email the URL at which I can retrieve your work. The submissions will be copied and posted under the class's main page. The pdf should be named as follows: “yourname_hw1.pdf”. The submission report should not exceed more than a page.
Ex: http://www.ocf.berkeley.edu/~freund/cs267/hw0/
http://chinchunming.wordpress.com/2012/02/02/cs-c267-applications-of-parallel-computing-hw0/

Resources

Besides Google, you may want to start looking from

- our websites of supercomputing centers and
- the yearly Supercomputing Conference.