

1.1. Project 5: N-body simulation

1.1.1. Motivation

N-body simulations are common in physics and chemistry. To learn the basic model we use the $O(N^2)$ complexity model here where each body is updated by the applying the forces of all other bodies.

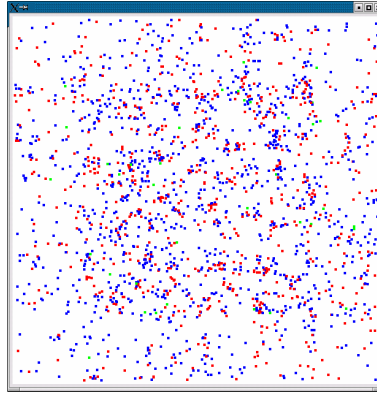


Figure 1 N Body simulation

1.1.2. Considerations on the parallel version

1.1.3. Programming Task

The solution should be implemented using TSpaces, and based on the sequential version below. The code should be run on from one through eight nodes.

The report should identify the various choices that has been made as well as individual techniques that has been applied to improve performance. And the impact of each should be documented. In addition the scalability of your implementation should be discussed and the achieved performance curve should be discussed.