Abstract

Bioinformatics is one of the field where high performance computation widely used. Pattern matching is essential task in Bio-informatics. A powerful technique for searching sequence patterns in the biological sequence databases is the pattern recognition. Significant increase in the number of protein sequences and DNA expanded the need for the enhancement of performance of pattern matching. Hence fast and high performance algorithms are highly demanded in many applications of computational molecular biology and bio-informatics. In this paper we present a parallel processing approach for pattern matching algorithm using distributed parallel programming paradigm Message Passing Interface (MPI). The focus of the research is the implementation of basic algorithm naïve for pattern matching by utilizing compute nodes of high performance computing server optimally. The parallel algorithm finds correct matches and experimental results show very high performance gain over sequential approach.

References

Index Terms
Keywords

Pattern recognition, DNA, Parallel Processing, MPI