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**DETERMINATION OF THE PERFORMANCE OF A BEOWULF
CLUSTER BY MODELLING THE HEAT TRANSFER IN PARALLEL
THROUGH A TWO-DIMENSIONAL BODY**

A PROJECT REPORT PRESENTED BY

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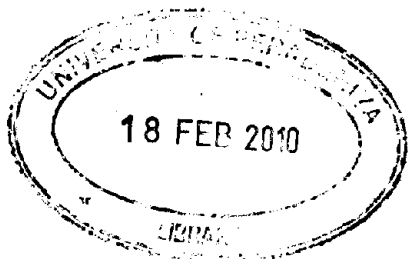
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ABSTRACT**DETERMINATION OF THE PERFORMANCE OF A BEOWULF
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THROUGH A TWO- DIMENSIONAL BODY****C.A.Sugathadasa**

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Cluster computing had become the alternative choice for executing large scale Science, Engineering and Commercial applications. This was due to there low cost, high performance, availability of commodity off-the-shelf hardware components and freely accessible software tools that can be used to develop cluster applications. In this report, I gathered the information about Beowulf cluster applications, Architectures, Network Topologies, history of Beowulf clusters, programming techniques, Hardware considerations, performance indices and followed the guidelines implemented by various institutions.

Then I attempted to construct a diskless Beowulf cluster but my attempt was not succeeded. Finally, I built a Beowulf cluster with disk nodes. I used the parallel programme which demonstrated heat transfer in parallel through a two dimensional body to measure performance (Efficiency) of the proposed cluster. First, parallel programme was run in single PC, again it was run using the cluster as following manner.

- 1) Master Node + single Node
- 2) Master Node + Two Nodes

3) Master Node + Three Nodes

I found that time for completion of task significantly reduced when increasing nodes to the cluster.

In this report I presented method which I used to build the cluster and methods which I used to measure performance of the cluster using parallel program.

