Dedicated

To

My Family

&

Teachers

**CERTIFICATE**

I am pleased to certify that Md. Emon Shaiikh, Roll no: 1418050 and Registration no:1365, has performed a project work entitled Methods of Resource Scheduling Based on Optimized in Fog Computing under my supervision in the academic year 2014-15 for the fulfillment of partial requirement of B.Sc. degree. So far as I concern that is an original project work that the carried out for B.Sc. degree in the department of information and communication technology, Islamic university, Kushtia-7003, Bangladesh.

I strongly declare that this dissertation has not been copied from any other project or submitted to elsewhere prior submission to this department.

[Dr. Md. Sipon Miah]

Associate professor

Department of information and communication technology.

Islamic university, kushtia-7003, Bangladesh.

**ABSTRACT**

Cloud computing and fog computing are the upcoming Information Technology (IT) computing models. These groundbreaking paradigms are leading IT to a new set of rules that aims to change computing resources delivery and exploitation model, thus creating a novel business market, saving money or time that is exponentially growing and attracting more and more investments from both providers and end users that are looking forward to make profits from these innovative models of computing. In the same context, researchers and investigators are wrestling time in order to develop, test and optimize cloud computing platforms, whereas several studies are ongoing to determine and enhance the essential aspects of these computing models especially compute resources allocation and resource optimization. The processing power scheduling is crucial when it comes to cloud computing and fog computing because of the data growth management data scheduling and delivery design proposed by these new computing models which require faster system and device responses from platforms and applications. Hence originates the importance of developing high efficient scheduling algorithms that are compliant with these computing models platforms and infrastructures requirement.

**Keywords**:Fog computing; optimize base resource scheduling algorithms; Cloud computing and fog computing simulation; Round Robin; First Come First Served and Priority scheduling.

**CONTENTS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **1.** | **Chapter 1 : Introduction**   |  |  | | --- | --- | | 1.1 Introduction........................................................................................... | 1 | | 1.2 Objectives............................................................................................. | 2 | |
|  |  |
| **2.** | **Chapter 2 :**  **Related Work**   |  |  | | --- | --- | | 2.1 Related Work………………………………………………………... | 3 | |
|  |  |
| **3.** | **Chapter 3 : Fog Computing**   |  |  | | --- | --- | | 3.1 Fog Computing ……………………………………………………..  3.2 Fog Computing Architecture……………………………………….. | 6  6 | |
|  |  |
| **4.** | **Chapter 4: Resource Scheduling Problem in Fog Computing**   |  |  | | --- | --- | | 4.1 Description of Resource Scheduling Problem in Fog Computing…...  4.2 CPU Allocation & Scheduling………………………………………  4.3 First Come First Served Scheduling Algorithm…………………….  4.4 Round Robin Scheduling Algorithm…………………………..……  4.5 Priority Scheduling Algorithm……………………………………...  4.6 Round Robin CPU Scheduling Algorithm……………….………… | 9  10  10  11  12  14 | |
|  |  |
| **5.** | **Chapter 5 : Simulation Result And Discussion**   |  |  | | --- | --- | | Simulation Result And Discussion........................................... | 15 | |  |  | |
| **6.** | **Chapter 6 : Conclusion And Future work**   |  |  | | --- | --- | | 6.1 Conclusion......................................................................................... | 20 | | 6.2 Future work......................................................................................... | 21 | |  |  | |

**List of the figure**

|  |  |  |
| --- | --- | --- |
| **Figure 1 :** | Fog Computing Architecture………………………....……… | 7 |
| **Figure 2 :** | FIFO Scheduling Algorithm……………………….………… | 15 |
| **Figure 3 :** | RR Scheduling Algorithm………………………………….... | 16 |
| **Figure 4 :** | Priority Scheduling Algorithm…………………………......... | 17 |
| **Figure 5 :** | Combination of FIFO, RR And PS Algorithm……………… | 18 |