

Universiti Teknologi MARA

**System Monitoring Tools Version 2.0
(SMTv2) Green Computing (Power
Management)**

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Abstract

For over a decade, our world has been facing one of the greatest environmental challenges, which are global warming crisis. Global warming is caused by the emissions of carbon dioxide in the atmosphere. Currently, a large number of servers in our environment waste a lot amount of energy and emit a considerable amount of carbon dioxide. Therefore, green computing has been introduced in order to reduce global warming crisis. To support green computing practices, the System Monitoring Tools version one has been developed which is used to monitor the heat releases from the server. To upgrade the System Monitoring Tools version one, we came out with System Monitoring Tools version two which can calculate the power consumption on the server. In this paper, we propose part of green algorithm which calculates the power consumption use by the CPU. The results show that using green algorithm the power consumption of the server will be calculated and when it reach the benchmark, the system will give alert to the administrator and the server itself will automatically do power management.

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CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In this chapter we will be discussing about the technology that being used in this project that is green computing and green algorithm. We also will be discussing some of the previous work that is related to this project.

2.2 Green Computing

Green computing or green IT refers to environmentally sustainable computing or IT which goals are to reduce the use of hazardous materials, maximize energy efficiency during the product's lifetime, and promote the recyclability or biodegradability of defunct products and factory waste. (Rana P, 2010)

In 1992, the Energy Star program has been launched in U.S. Energy star served as a kind of voluntary labeling program which is designed to promote and recognize energy efficiency while minimizing the use of energy, in monitors and other technologies. (S.V.S.S. Lakshmi, 2012)

This resulted to the sleep mode function of computer monitors which places a consumer's electronic devices on standby mode when a pre-set period of time passes when user activity is not detected. (Kocchar N, 2011)