

## Chapter 27

# Dynamic FCFS ACM Model for Risk Assessment on Real Time Unix File System

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### ABSTRACT

*The access control is a mechanism that a system grants, revoke the right to access the object. The subject and object can able to integrate, synchronize, communicate and optimize through read, write and execute over a UFS. The access control mechanism is the process of mediating each and every request to system resources, application and data maintained by a operating system and determining whether the request should be approve, created, granted or denied as per top management policy. The AC mechanism, management and decision is enforced by implementing regulations established by a security policy. The management has to investigate the basic concepts behind access control design and enforcement, point out different security requirements that may need to be taken into consideration. The authors have to formulate and implement several ACM on normalizing and optimizing them step by step, that have been highlighted in proposed model for development and production purpose. This research paper contributes to the development of an optimization model that aims and objective to determine the optimal cost, time and maximize the quality of services to be invested into security model and mechanisms deciding on the measure components of UFS. This model has to apply to ACM utilities over a Web portal server on object oriented and distributed environment. This ACM will be resolve the uncertainty, un-order, un formal and unset up ( $U^4$ ) problems of web portal on right time and right place of any where & any time in around the globe. It will be more measurable and accountable for performance, fault tolerance, throughput, bench marking and risk assessment on any application.*

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## 1. INTRODUCTION

The operating system of a computer (Server) being highly secure depends on a number of technologies (tools & utilities) that working efficient and reliable manner in around the clock. The modern real time operating system provides access to a number of resources and sub-system, which are available to system software running on the system and to external devices like communication networks (LAN/WAN) (Kai, 2008). The operating system is the most important and high available system software (program) that run on the heart of the computer (kernel). The every general-purpose computer must have an operating system to run other multiple application programs at the same time with multi location, function, operation and services without any fault (Reilly, 1995).

The operating system (server system) in large scale (MIMD) has even greater responsibilities and powers for large scale business like web based and mobile computing (Kai, 2008). It is just like a traffic management system, it makes sure that different programs and software packages the users and clients running at the same time do not interfere with each other. The operating system is also responsible for risk and security angle to ensuring that unauthorized users do not access the objects (Sun-Microsystems, 2002).

In the large scale operating system the multi-tasking, multiuser, time sharing operating system where multiple programs can be running at the same time, the operating system determines which applications should run in what order and how much time should be allowed for each application before giving another application a turn. It manages the sharing of internal memory among multiple applications with multiple function and location. It handles input and output to and from attached hardware devices, such as hard disks, printers, and dial-up ports. On computers that can provide parallel processing, an operating system can manage how to divide the program (parallel

program) so that it runs on more than one processor at a time (Kai, 2008; O' Reilly, 1995).

The main components of the operating system are file, shell & kernel. The shell is communicated between the user, application, hardware and software. The file system is store the data, services and information as system software and application software (O' Reilly, 1995). The sets of files system make the directory system. This directory space going to disk for storing and restoring purpose. This is called the hard disk of the computer system. The kernel improves the capabilities of processor, memory (Bernard, 2007). See Figures 1 and 2:

- **Associative Low:**  $(P \cup M) \cup F = P \cup (M \cup F)$ ,  $(P \cap M) \cap F = P \cap (M \cap F)$
- **Distributive Low:**  $P \cup (M \cap F) = (P \cup M) \cap (P \cup F)$ ,  $P \cap (M \cup F) = (P \cap M) \cup (P \cap F)$

### 1.1. Unix Operating System Architecture

The Unix operating system found its beginnings in MULTICS, which stands for Multiplexed Op-

Figure 1. PMF protecting data and services



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