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UNIX

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Abstract-UNIX is a computer Operating System which is capable of handling activities from multiple users at the same time. UNIX was one of the first operating systems to be written in a high-level programming language, namely C. This meant that it could be installed on virtually any computer for which a C compiler existed. This natural portability combined with its low price made it a popular choice among universities. (It was inexpensive because antitrust regulations prohibited Bell Labs from marketing it as a full-scale product.) UNIX was one of the first operating systems to be written in a high-level programming language, namely C. This meant that it could be installed on virtually any computer for which a C compiler existed. This natural portability combined with its low price made it a popular choice among universities. (It was inexpensive because antitrust regulations prohibited Bell Labs from marketing it as a full-scale product.)
Keywords- marketing, UNIX, probabilty, regulations, popular

I. INTRODUCTION

A. Goals

Our main goal is to survey or present general view of absolutely up-to-date i.e., current stage of UNIX operating system with the help of this paper.

B. Definition

UNIX (often spelled "UNIX," especially as an official trademark) is an operating system that originated at Bell Labs in 1969 as an interactive time-sharing system. Ken Thompson and Dennis Ritchie are considered the inventors of Unix. The name (pronounced YEW-nihks) was a pun based on an earlier system, Multics. In 1974, Unix became the first operating system written in the C language. UNIX has evolved as a kind of large freeware product, with many extensions and new ideas provided in a variety of versions of UNIX by different companies, universities, and individuals.

II. IMPORTANCE OF UNIX

During the past 35 years, the operating system known as UNIX has evolved into a powerful, flexible, and versatile operating system. The different variants of UNIX conform to a variety of standards and are closely related. To understand how to use any or all of them, you need to only understand the basic conceptual model upon which UNIX is built. Once this conceptual model is understood, it is straightforward to learn the peculiarities of a variant of UNIX or to learn how to use a new variant of UNIX if you already know how to use another. UNIX, as it is implemented in its many variants, serves as the operating system for all types of computers, including personal computers and engineering workstations, multiuser microcomputers, minicomputers, mainframes, and supercomputers, as well as special-purpose devices. The number of computers running a variant of UNIX has grown explosively with more than 40 million computers now running a variant of UNIX and more than 300 million people using these systems. This rapid growth, especially for computers running Linux, is expected to continue, according to most computer industry experts. The success of UNIX is due to many factors, including its portability to a wide range of machines, its adaptability and simplicity, the wide range of tasks that it can perform, its multiuser and multitasking nature, and its suitability for networking, which has become increasingly important as the Internet has blossomed. What follows is a description of the features that have made UNIX so popular.

A. Open Source Code

The source code for key variants of UNIX, and not just the executable code, has been made available to users and programmers. Because of this, many people have been able to adapt UNIX in different ways. This openness has led to the introduction of a wide range of new features and versions customized to meet special needs. It has been easy for developers to adapt to UNIX, because the computer code for UNIX is straightforward, modular, and compact. This has fostered the evolution of UNIX. New features are constantly being developed for various versions of UNIX, with most of these features compatible with earlier versions.

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B. Cooperative Tools and Utilities

The UNIX System provides users with many different tools and utilities that can be leveraged to perform an amazing variety of jobs. Some of these tools are simple commands that you can use to carry out specific tasks. Other tools and utilities are really small programming languages that you can use to build scripts to solve your own problems. Most important, the tools are intended to work together, like machine parts or building blocks. Not only are many tools and utilities included with UNIX, but many others are available as add-ons, including many that are available free of charge from archives on the Internet.

C. Multi User And Multi-Tasking Abilities

The UNIX operating system can be used for computers with many users or a single user, because it is a multiuser system. It is also a multitasking operating system, because a single user can carry out more than one task at once. For instance, you can run a program that checks the spelling of words in a text file while you simultaneously read your electronic mail.

D. Excellent Networking Environment

The UNIX operating system provides an excellent environment for networking. It offers programs and utilities that provide the services needed to build networked applications-the basis for distributed, networked computing. With networked computing, information and processing is shared among different computers in a network. The UNIX system has proved to be useful in client/server computing where machines on a network can be both clients and servers at the same time. UNIX also has been the base system for the development of Internet services and for the growth of the Internet. UNIX provides an excellent platform for web servers. Consequently, with the growing importance of distributed computing and the Internet, the popularity of UNIX has grown..

E. Portability

It is far easier to port UNIX to new machines than other operating systems-that is, far less work is needed to adapt it to run on a new hardware platform. The portability of UNIX results from its being written almost entirely in the C programming language. The portability to a wide range of computers makes it possible to move applications from one system to another. The preceding brief description shows some of the important attributes of UNIX that have led to its explosive growth. More and more people are using UNIX variants, especially Linux, as they realize that it provides a computing environment that supports their needs. Also, many people use UNIX without even knowing it, such as people using the desktop environment of Mac OS X without knowing that it is built on UNIX, and people who use devices running a UNIX variant designed to support embedded systems. Moreover, many people now use computers running a variety of operating systems, with clients, servers, and special-purpose computers running different operating systems. UNIX plays an important role in this mix of operating systems. Many people run both a variety of Windows and one of UNIX on the same personal computer; some of these machines even ask the user which operating system to boot when the machine is turned on.

III. WORKING

A UNIX system consists of several parts, or layers as I'd like to call them. To start a system, a program called the boot loader lives at the first sector of a hard disk partition. It is started by the system, and in turn it locates the Operating System kernel, and loads it.

A. Layering

This is the central program which is started by the boot loader. It does the basic hardware interaction for the system (disk, memory, video, sound) and offers a virtual environment in which it can start programs. The kernel also ships all drivers which deal with all the little differences between hardware devices. To the outside world (the higher layers), each class of devices appear to behave exactly in the same consistent way - which in turn, the programs can build upon.Background subsystems. There are just regular programs, which just stay out of your way. They handle things like remote login, provide a cental message bus, and do actions based on hardware/network events. For example, bluetooth discovery, wifi management, etc.. Any network services (file server, print server, web server) also live at this level. In UNIX systems, these are all just normal programs. The command line tools. These are all little programs which can be started to do things like text editing, downloading files, or administrating the system. At this point, a UNIX system is fully usable for system adminstrators. In Windows, this layer doesn't really exist anymore.

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The graphical user interface. These are also just programs, the only difference is they draw windows at the screen instead of writing text. This makes the system easier to use for regular users.

B. Libraries- The Common Platform

Programs do a lot of common things like displaying a window, drawing stuff at the screen or downloading a file. These things are the same for multiple programs, hence that code are put in separate "library" files (.so files - meaning shared object). The library can be shared across all programs. For every imaginable thing, there is a library. There is one for reading/writing PNG files. There is one for JPEG files, for reading XML, for encryption, for video playback, and so on. On Linux, the common libraries for application developers are Qt and Gtk. These libraries use lower-level libraries internally for their specific needs, while exposing their functionality in a nice consistent and concise way for application developers to create applications even faster. Libraries provide the application platform, on which programmers can build end user applications for an Operating System. The more high quality libraries a system provides, the fewer code a programmer has to write to make a beautiful program. Some libraries can be used across different operating systems (for instance, Qt is), some are really specifically tied into one operating system. This will restrict your program to be able to run at that platform only.

C. Inter Process Communication

A third corner piece of an operating system, is the way programs can communicate with each other. These are Inter Process Communication (IPC) machanisms. These exist in several flavors, e.g. a piece of shared memory, or a small channel is set up between two programs to exchange data. There is also a central message bus on which each program can post a message, and receive a response. This is used for global communication, where it's unknown which program can respond.

IV. APPLICATIONS OF UNIX

Large enterprises still count on the Unix OS for critical apps, whether the app is too customized to move, or because the app works well where it is. For all of the talk of the Unix OS's demise, there are still companies actively buying and building new Unix-based environments, especially large enterprises. "We are expanding and unifying our Unix systems," said Tom Higgins, an operations analyst at a large U.S. manufacturing firm. The firm used to have Unix systems from every major manufacturer, most of which it got rid of over the past five years. But Higgins said that they'd decided to keep IBM AIX for use with its Oracle EBS suite. "It is fast, efficient, and fits our needs better than just about any other alternative." Indeed, try as they might, x86 and Linux system vendors have yet to convert most tier-one applications to their camp. For most enterprises, "90% of the tier-three applications that were running on RISC have already been migrated," said Scott Clark, vice president for Cisco Services, as have the tier-two applications. But when it comes to the meatier tier-one applications such as Oracle, DB2, or custom applications -- "those are probably still on RISC environments," he said. The greater the amount of customization, the greater the likelihood that the application is still on RISC, and will continue to stay there, Clark added. "Some of the apps that are the most brittle are the ones that are getting the RISC platform refreshes," he said, often because the people that built the applications are no longer around. "You want to get those applications off, but you can't." Then there's the if-it-ain't-broke-don't-fix-it school of Unix shops -- organizations with a mission-critical application that runs perfectly well on its existing platform. GHY International, a customs brokerage service in Winnipeg, Canada has been running on IBM systems since the 1980s, when it deployed its first AS/400 platform for its core business application. In 2002, it migrated that application to IBM AIX and the Progress database, where it still lives, running as a virtual machine on an IBM Power 750 server, said Nigel Fortlage, GHY vice president of IT and social business.

V. FUTURE SCOPE UNIX

Unix advocates are developing the new specifications that they hope will carry the aging OS into the next era of computing. For the last 40 years, Unix operating systems have helped to power mission-critical IT operations around the globe. Now, as Unix enters middle age, its backers are busily developing the new specifications that they hope will carry the OS forward into the next age of computing.

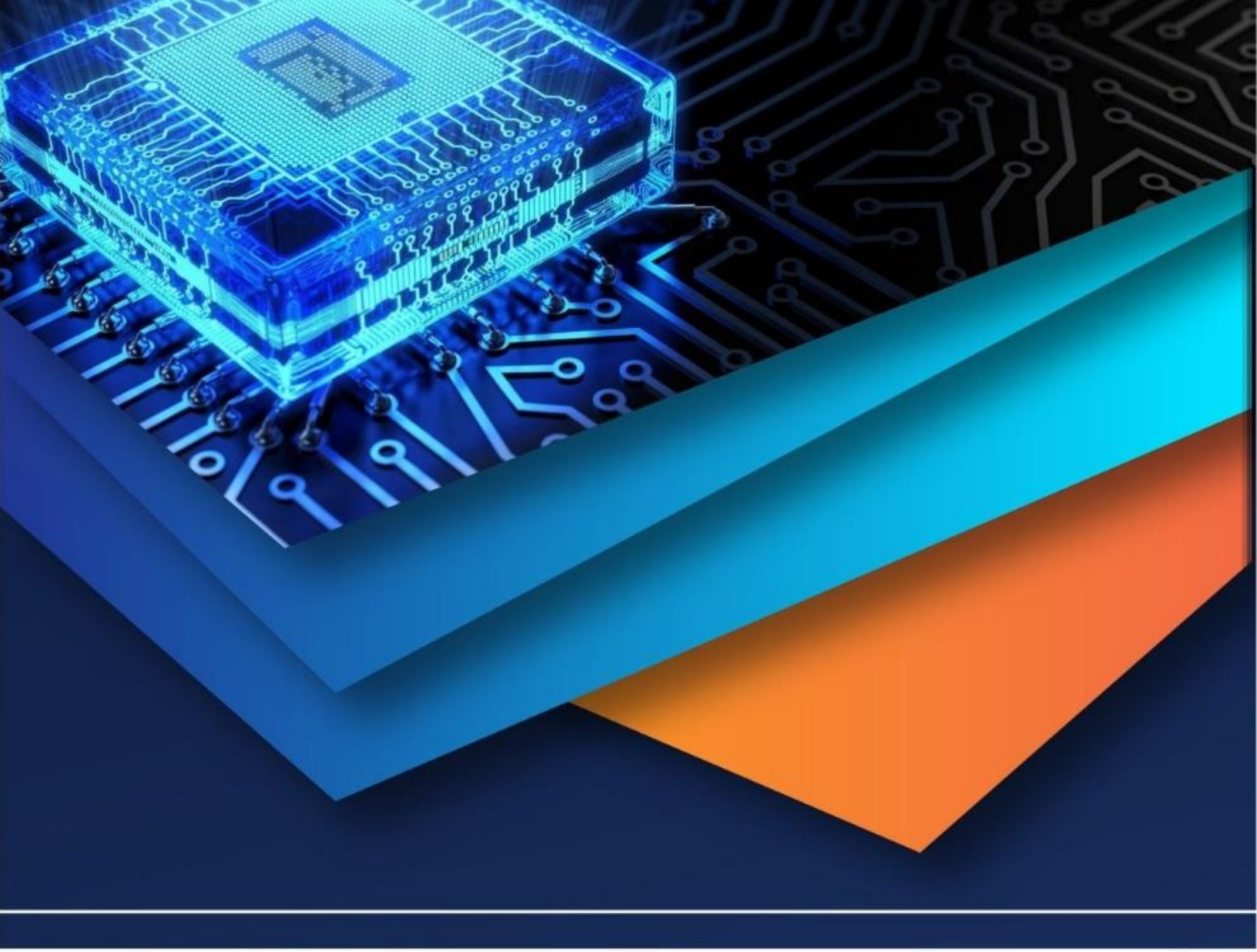
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