Caracteristicas de sistemas operativos

Index1. Introduction3. Features of operating systems.4. Operating systems classification.5. Parallel operating systems6. Operating Systems History.7. Novell.8 NetWare Operating System. NetWare, Version 4.0.9. NetWare.10 file server. Security system.11. NetWare bridges, routers and gateways to other networks.12 Novell.13 open data binding interface. NetWare installation, configuration and score. The introduction of the operating system is an important part of any computer system. The computer system can be divided into four components: hardware, operating system, application programs and users. Hardware (Central Computing Unit (UCP), Memory and I/O Devices (I/O) provides basic computing resources. Application programs (compilers, database systems, video games, and business programs) determine how these resources are used to solve users' computational problems. The concept and definition of operating systems. Figure. Some resources managed by the operating system there are different definitions of what the operating system is, but there is no exact definition, i.e. one that is standard; Here are some: 1.- You can imagine an operating system as software installed in software or firmware that make the hardware usable. The equipment provides gross processing power; operating systems make this computing capacity accessible to users and carefully manage the hardware for good performance. 2.- Operating systems are the first and pramos with /resource managers; The main resource they manage is computer equipment. in addition to processors, storage, input/oed devices, communication devices, and data. 3.- The operating system is a program that acts as an intermediary between the user and the computer hardware, and its purpose is to provide an environment in which the user can run the program. Therefore, the main purpose of the operating system is to make the computer system used comfortably, and the secondary goal is to have computer equipment to be used effectively. 4. - The operating system is a set of programs that monitors the execution of application programs and acts as an interface between the user and the computer hardware, i.e. the operating system operates and controls computer equipment to provide a set of services to users of the system. In short, we can say that operating systems are a set of programs that create a hardware interface with the user, and that it has two main functions that: Hardware management.- Relates to the fact of managing the machine's resources more efficiently. Make it easier for the user to work.-Allows you to communicate with machine devices. The operating system is stored in recycled memory. First, it downloads and runs a piece of code that is on the processor that downloads BIOS, and it in turn downloads an operating system that downloads all application programs and a variety of software. 3. Features of the operating system. In general, we can say that the operating system has the following functions: Convenience. The operating system makes it easier to use your computer. Efficiency. The operating system allows you to use computer resources as efficiently as possible. The ability to develop. The operating system should be built to ensure that new system functions are developed, tested, or effectively implemented without interfering with the service. Responsible for the management of the equipment. The operating system is responsible for better management of the computer's resources in terms of hardware, i.e. assigning each process to a part of the processor in order to share resources. Relate devices (manage through the core). The operating system must communicate with peripherals when the user requires it. Organize data for quick and secure access. Network communications management. The operating system allows the user to handle everything related to the installation and use of computer networks with high ease. Processing flow time through a bead of data. Ease input and results. The operating system should make it easy for the user to access and control the computer's VIOs devices. How to repair bugs. Prevents other users from interfering. The operating system prevents users from crashing by informing them if the app is occupied by another user. A generation of statistics. Allows you to share hardware and data between users. Application software is software that is used for design, such as word processor, programming languages, spreadsheets, etc. Basic software serves to interact with the machine, is a set of programs that facilitate the platform environment, and allows the design of the same. Basic software consists of: Chargers. Compilers. Installers. Macros. 4. Classification of operating systems. With passage Operating systems were classified differently, depending on their use or application. Below are a few types of operating systems that currently exist, with some of their features: Batch operating systems. Package operating systems process a large number of tasks with little or no interaction between users and running programs. All common jobs are collected to perform at the same time, avoiding waiting for two or more jobs, as is the case in serial processing. These systems are among the most traditional and old, and were introduced around 1956 to increase the computing power of programs. When these systems are well planned, they can have very high work times because the processor is better to use and operating systems can be simple, due to the sequence of the job. Examples of successful batch operating systems are the DC6600 SCOPE, which is focused on heavy scientific processing, and EXEC II for the training-oriented UNIVAC 1107. Some other features that pack operating systems: It requires that the program, data and orders in the system should be sent together in batch form. They allow little or no user running/program interaction. More resource use potential than simple serial processing on multiplayer systems. Not suitable for low-time and offline debugging. Suitable for long-term programs (e.g. statistical analysis, staff salaries, etc.) It is found on many personal computers in conjunction with serial processing. Simple processor planning, usually processed in order of the first visitor. Simple memory planning is usually divided into two parts: the O.S. resident part and the transition programs. They don't require critical device management over time. They usually provide easy file management: access does not require sufficient protection and control over equivalence. Figure. More common jobs performed by the Batch operating system. Real-time operating systems. Real-time operating systems are those in which the user doesn't matter, but processes. In general, their resources are not being used to pay attention to processes when they need them. used in environments where a large number of events or events are handled. Many real-time operating systems are built for very specific applications such as air traffic control, stock exchanges, refinery management, and laminator management. In addition, in the automotive and consumer electronics sectors, real-time applications are growing very Other areas of real-time operating system application include train management. Telecommunications. Integrated production systems. Production and distribution of electrical energy. Construction control. Multimedia systems. Real-time operating systems are examples of operating systems, VxWorks, Solaris, Lyns OS, and Spectra. Real-time operating systems have the following characteristics: they occur in environments where a large number of events need to be accepted and processed, most of which are external to the computational sister, within a short time or at certain times. They are used in industrial control, switching phones, flight control, real-time simulations, military applications, etc. The process of queuing thousands of breaks per second without losing a single event. The process is triggered after the event occurs, interrupting. expropriaia resources with a higher priority. Therefore, expropriated priority planning is usually used. Memory management is less demanding than a timeshare, usually processes are permanent residents in memory. Largely a static process of the population. A small movement of the program between secondary storage and memory. File management is more about speed of access than on how to use the resource efficiently. Multiprogrammatic operating systems (or multitasking operating systems). They have the ability to support two or more active tasks (which work) at the same time. This leads to the fact that the Central Processing Unit (UCP) always has some kind of task to perform, which makes the most of its use. It targets multiple tasks in the main memory, so that everyone uses a processor, or another processor, that is, includes machines with more than one UCP. Operating systems such as UNIX, Windows 95, Windows 98, Windows NT, MAC-OS, OS/2 support multitasking. Features of multiprogramming or multitasking of the operating system are: improve system performance and use resources. Multiplex resources between different programs. They usually support multiple users (multiplayer). They provide opportunities to maintain the environment of inseparable users. They require security and security checks. They keep users' use of resources accountable. Multitasking without the support of multiple users is on some personal computers or in real-time systems. Multiprocessor systems are multi-order systems by definition because they support the simultaneous performance of multiple tasks on different processors. In general, multiprogrammed systems are characterized by several active programs competing for system processor, memory, device devices Timeshare operating systems. They allow simulations that the system and its resources are all for each user. The user makes a request to the computer, the computer processes it as soon as possible, and the answer will appear on the user's terminal. The basic resources of the system, processor, memory, I/O devices, are constantly used among different users, giving each user the illusion that he has a system dedicated to himself. This puts a heavy workload on the operating system, mainly in primary and secondary memory management. Examples of Timeshare operating systems are Multics, OS/360 and DEC-10. Features of Timeshare operating systems: Popular representatives of multiplayer multiprogramme systems, such as computer systems design, word processing, etc. They give the illusion that each user has a machine for themselves. Most use a circular distribution algorithm. Programs are run with a revolving priority that increases with expectation and decreases after the service is provided. Avoid monopolizing the system by allocating time slot time. Memory management protects resident programs. File management should provide protection and access control, as multiple users may exist, access to the same file. Distributed operating systems. They allow you to distribute tasks, tasks, or processes between a set of processors. It is possible that this set of processors is located on a computer or on different computers, in this case it is transparent to the user. There are two main schemes of them. A closely related system is one that shares memory and global clocks whose access times are similar to all processors. On a poorly connected system, processors have neither memory nor watches, as each has its own local memory. Distributed systems should be very reliable, because if one component of the system is made up of another component, it should be able to replace it. Among the various distributed operating systems that exist we have are: Sprite, Solaris-MC, Mach, Choir, Spring, Amoeba, Taos, etc. Features of distributed operating systems: A collection of autonomous systems capable of communication and collaboration through hardware and software connections. It regulates the operation of S.C. and provides virtual abstraction of the machine for users. The key goal is transparency. They generally provide the means for a global exchange of resources. Services have been added: global name, distributed file systems, means for distribution of calculations (through internal processes, calls to remote procedures, etc.). Network operating systems. These are the systems that hold two or more using some means of communication (physical or not), with the main purpose of being able to share different resources and information of the system. The first network operating system was focused on computers with a Motorola 68000 processor, and subsequently switched to Intel processors such as Novell Netware. The most widely used network operating systems are: Novell Netware, Personal Netware, LAN Manager, Windows NT Server, UNIX, LANtastic. Figure. The network operating system is displayed. Parallel operating systems. These types of operating systems mean that in two or more processes competing for a resource, they can run or run simultaneously. UNIX also has the ability to run programs without having to visit them online, without concurrency (i.e. simultaneously visiting multiple processes of the same user). So instead of waiting for the process to complete (as usual) it returns to serve the user immediately after the process is created. Examples of these types of operating systems are: Alpha, PVM, AIX series, which is used on IBM RS/6000 systems. 6. History of operating systems. To try to understand the requirements of the operating system and the importance of the basic features of a modern operating system, it is useful to consider how they have evolved over time. There are different approaches or versions of how operating systems evolved the first of these versions could be this: In the 40s, bitwise programs were introduced, using mechanical switches, and then the lang was introduced. machine that worked for perforated cards. From the first computers, from the late 1940s to the mid-1950s, the programmer interacted directly with computer hardware, in fact there was no operating system; early computers used lamps, data input and programs were made through machine language (bits) or through switches. In the 1950s and 1960s.- In the early 1950s, General's Motors introduced the first operating system for the IBM 170. Perforated maps are beginning to appear, allowing users (who at that time were programmers, designers, capturists, etc.) to change their programs. They install or delay time, introduce or implement their programs, fix and debug their programs in due course. It was called serial work. All this led to time and excessive program time. In the 1960s and 1970s, an integrated scheme was generated, jobs were organized and packaged processes were generated, which consisted of identifying common tasks and executing them all together at the same time. Currently, the units and a software loader that is considered to be the first type of operating system. In the 1980s, the Internet boom began in the United States. In the late 1980s, there was a big boom and evolution of operating systems. The multiprogramming concept is found with multiple tasks loaded into memory at the same time, the main theme of current operating systems. The 90s and the future, we entered the era of distributed computing and multi-processing in several computer networks, taking advantage of the processor cycle. You will have a dynamic configuration with immediate device recognition and software that is added or removed from networks through registration processes and locators. Open system standards and protocols of organizations such as the Organization contribute to the connection. Intern. the open source of the software will increasingly be controlled by OSI communication protocols and the ISDN digital services network. Another version was developed, which was made on the basis of stages or generations: 1a. Stage (1945-1955) : Bulbs and Connections. After Babbage's failed efforts, there was little progress in the creation of digital computers, before World War II. In the mid-1940s, Howard Aiken (Harvard), John von Newman (Institute for Advanced Studies, Princeton), J. Prespe R. Eckert and Williams Moykley (University of Pennsylvania), and Konrad Suze (Germany), among others, were able to build payment machines using light bulbs. These machines were huge and filled entire rooms with tens of thousands of bulbs, but they were much slower than the cheapest home computer these days. All programming was done in absolute machine language, and connections were often used to control the machine's core functions. Programming languages are unknown (including the austyr language). Operating systems could not see the usual mode of operation was that the programmer reserved a certain period on the reservation sheet attached to the wall, went to the engine room, inserted his connection to the computer and spent several hours waiting for none of the 20,000 or more bulbs to burn during the execution. The vast majority of problems were direct numerical calculations, such as the calculation of values for chest and sewing tables. In the early 1950s the routine improved a little with the introduction of perforated maps. Then you could write programs and read them instead of inserting connections, otherwise the process was the same. 2a. Stage. (1955-1965) : Transistors and package processing systems. The introduction of the transistor in the mid-1950s radically changed the landscape. Computers have become reliable, so manufactured and sold to customers, hoping that they will continue to function well enough to do the work in uniform. Given the high cost of the equipment, it is not surprising that people were looking for otherwise quick ways to reduce the time spent. The solution that is usually made is the packing system. Stage 3 (1965-1980) : Integrated schemes and multiprogramming. The IBM 360 was the first large line of computers to use integrated circuits, providing a huge price and performance advantage over second-generation machines built from separate transistors. We work with a huge and extremely complex operating system. Despite the huge size and challenges, the IBM 360 operating system and similar operating systems of this generation, manufactured by other computer manufacturers, were able to reasonably satisfy most of their customers. They also popularized several fundamental methods missing from second-generation operating systems, of which multiprogramming was most important. Another feature was the ability to read tasks from maps to drive as soon as it reached the computer room. Thus, whenever the job has been completed, the operating system can download a new disk job into a section that was unemployed and run it. Stage 4 (1980-Current) : Personal computers. An interesting event, which began in the mid-1980s, was the growth of networks of personal computers with network operating systems and distributed operating systems. In network operating systems, users are aware of multiple computers and can connect to remote machines and copy files from one machine to another. Each machine works with its own local operating system and has its own user. In contrast, a distributed operating system is presented to users as a traditional single-processing system, even if it consists of multiple processors. In a truly distributed system, users don't need to know where their program works or where their files are located; that must be handled automatically and efficiently by the operating system. 7. NetWare's new operating system. Introduction to the NetWare network. The most popular PC network system in the world is Novell NetWare. This system was designed to be used by large companies that wanted to replace their huge mainframe of well-known machines with a network of PCs that would be cheaper and easier to operate. NetWare is a proprietary stack of protocols that is illustrated and based on the old Xerox network system, XNS, but with several Novell NetWare is up to OSI and is not based on it if it is more like TCP/IP than OSI. Physical and binding layers can be selected from a variety of industry standards, including Ethernet, IBM Token Ring, and ARCnet. The network layer uses an unreliable protocol if the n connection is called IPX. This protocol transparently transfers the original packages to your destination, even if the source and destination are in different networks. Functionally, IPX is similar to IP, except that it uses a 10-point address instead of 4 addresses, (9) and (10). Above the IPX is a connectivity-oriented transport protocol called network main protocol (NCP). NCP provides services other than transporting data from suary and actually the heart of NetWare. The second protocol, the SPX, is also available, which provides only transportation. Another option is TCP. Apps can choose from any of them. For example, the file system is used by NCP and Lotus Notes by SPX. Sessions and presentation levels do not exist. There are several application protocols at the application level. The key to the entire architecture is the built-in datagram package on which everything else is built. Figure 1.3 shows the format of the IPX package. The Checksum field is rarely used and used because the basic binding level also provides verification. The package length field indicates how big the package is, that is, the title plus the data summarizes, and the result is saved in 2 bytes. The transport control field calculates the number of networks passed by the package; When the maximum is exceeded, the package is discarded. The package-type field is used to mark up multiple control packages. Each of the two addresses contains a 32-bit network number, a 48-bit machine number (802 LAN address) and a 16-bit local address (Socket) on that machine. Finally, you have data that takes up the rest of the package, the maximum size of which is determined by the basic netware layer, version 2.2. NetWare 2.2's adaptability to today's market needs doesn't match as it begins to list the connectivity challenges facing today's companies, managing and supporting multiple protocols, broad connections, flexibility, and ease of use for a NOS administrator in ever-changing connectivity scenarios. NetWare 2.2 could not keep up with others in the execution tests, which were larger network tasks. This is understandable given that NetWare 2.2 16-bit can still be launched on an AT-class machine. Understandably, yes, but not acceptable as a solution for the whole company. NetWare 386 was originally only available as a of 250 users, and even by the time NetWare 2.2 was released, the basic version of NetWare 3.x had a $20.3,495 user license. It's very different these days. The 5-user version of NetWare 3.11 has a us$1,095 list price compared to NetWare 2.2, which costs US$895. Even the level of 100 users shows only a thousand dollars difference between NetWare 2.2 at $5,995 and NetWare 3.11 at $6,995. Although the Installation and Configuration of NetWare 2.2 is better than its predecessors, you're already too slow compared to 3.11 and 4.0. NetWare 2.2 documentation is very well written, organized and packed with useful screen photos. Online help is available while installed for each screen, such as other NetWare services. NetWare 2.2 is the ninth generation of the NetWare 286 line, an obvious maturity in user and file management services. Setting up users, setting up account rights, and managing the structure of a directory are tasks that are done with a number of well-designed or command-and-line menu services. However, until NetWare 4.0 came out, Novell did not offer a global catalog service as an integral part of NetWare. NetWare 2.2 receives help from Banyan, in the form of its corporate network services for NetWare (ENS), which essentially offers part of Banyan's StreetTalk global network name NetWare. NetWare 2.2 also lacks the remote console option, which already has versions 3.11 and 4.0. In its architecture NetWare 2.2 is a sign, but ancient, as shown in figure 1.4. You can't handle multiple NetWare 3.11 and 4.0 streams, although you can run server applications for value-added process calls (VAPs). But VAPs are considered difficult to write and few are available. On the other hand, NetWare 3.11 has thousands of applications based on the MCOA cute call server; Download NetWare (NLMs). They range from network management applications to S'L servers. Figure 1.4 NetWare Architecture 2.2. Requirements: PC based on 286 or above. 500K RAM (2.5MB recommended.) NetWare, Version 3.11. NetWare 3.11 remains a strong and flexible leader in the NOS arena for small or large companies. The only downside for those who need a enterprise-level solution is the lack of a global directory. But this can be fixed in part with NetWare naming service (NNS) or Banyan ENS, which offers some of StreetTalk distributed services to NetWare LANs. It offers the ability to share files and printers, speed, security, support for most operating systems, and a lot of equipment, NetWare It's a really powerful product. Although it has some difficulty with memory management, it is still worth it, as it has some other features that make it important. The main attraction of the 32-bit NOS, like the one that introduced Novell was its modular design, as shown in Figure 1.5. NLMs can be upgraded without the need to restore the entire NOS, and can be on the fly. In addition, only the necessary modules are loaded into NOS, reusing memory for other functions such as disk caching. One of the drawbacks of this design is the use of memory. NLMs are loaded into ani llo 0 and can block the server if the NLM is not written correctly or if they contradict the NLM of another manufacturer. On the other hand, some modules don't free up memory when you download (These memory management problems have already been solved in NetWare 4.x). Figure 1.5 NetWare Architecture 3.11. NetWare 3.11 is mainly designed for networks from small to moderately large, consisting of individual servers, mainly because their directory services are not fully integrated into the network. Each of the servers maintains a centralized individual verification database called Bindery. The link on the server supports information such as connection names, passwords, access rights, and printed information. If users need to connect to more than one server to share resources, they must do so manually with each server. Requirements: PC based on 386 or higher. 4MB of RAM. 50MB of hard drive space. 8. NetWare, Version 4.0. NetWare 4.0 offers a simplified multi-server connection, network sharing capabilities, and centralized management in a consistent, multifunctional product. The netware 4.0 architecture is similar to the 3.11 architecture shown in Figure 1.5, but its capabilities have been fixed and enhanced. NetWare 4.0 is not for everyone. Determining whether such a powerful NOS is actually needed depends on the size, configuration and complexity of the LAN you want to form and, with prices from $1,395 (5 users) to $47,995 (1,000 users), out of budget. NetWare 4.0 increases the capabilities of NetWare 3.11, adding many new features. The most attractive are NetWare (NDS) directory services, rchivos compression, insufficient block distribution, file distribution, and Microsoft-based Windows management. NDS is at the heart of NetWare 4.0. Based on the X.500 standard, NDS is a hierarchically developed database that replaces Bindery in earlier versions of NetWare. All network information is stored on the NDS. NDS treats all objects on the network as objects, each of which is a pointer for the user, a group of users, printers or volumes on the server. With this change Novell does not abandon Bindery users, NDS can emulate Bindery, which simplifies the upgrade to companies that have a mixed environment of 2.x, 3.x and 4.x servers. The good thing about NDS is the error of tolerance it provides. If a server containing information is corrupted, NDS searches its database on other servers to gather information to connect and allow it to connect to the network. This is possible because the NDS database is duplicated on all servers in the divided network that support all network information. In contrast, Banyan StreetTalk stores user information on one server: if that server suffers some kind of failure, the user will not be able to connect to the network. Locking in distribution, compressing files and migrating files are some of the attractive features in version 4.0. Subalation lock intervenes when, for example, a 2Kb file is stored on a server that has 4Kb blocks. Using a 2:1 ratio, file compression can also make a big difference in the hard drive. File distribution is a feature that has been proposed in some tape backup packages. Novell has included high-capacity storage (HCSS), netWare 4.0 HCSS allows you to install indicators on files that show how often they are used, and allows you to move them to other media that don't even need to be on the server drive. The phantom bookmark stays in the vol'uacute;menes so that if the user tries to open the file, the system extracts it from its alternative storage location and the copy is made transparently. With NetWare 4.0, Novell also adds a Microsoft-based Windows control program, combining new and old configuration features into familiar programs such as SYSCON, PCONS OLE and PRINTDEF. The GUI attributes make it easy to add, move, delete, and modify objects on your network. The process of installing a server in the new version is entirely menu-based procedure. A CD-ROM that contains all the installation files means you don't have to change flexible drives. Once the first server is installed, you can copy CD-ROM content to server volume to quickly install other servers on the network. Novell completely changed the environment by replacing 2 IPX files and NET with modules. Virtual downloadable modules (VLMs) that offer a more flexible workstation solution in memory of the VLM manager. The VLM manager automatically uses the high memory available, while retaining the usual memory. VLMs take less conventional memory than their predecessors, and with the built-in ability to blast the package, take less memory than even BNETX (The environment explosion mode used on the station). Because they are modules, VLMs can be added or removed quickly. In addition to new environments, Microsoft Windows' best support adds a graphical interface to ease connectivity, disconnection, disk analysis, and print queue connectivity. There are three ways to upgrade from NetWare 3.11: Over connecting to server 4.0 is the safest procedure, but it can be the most expensive. You have to install a separate server with NetWare 4.0 and place it on the network. If you have an additional server, you can install it from one server to another by updating each server at every turn. Connecting to the same server requires a data integrity risk. You need to have a client with a hard drive or backup tape large enough to keep all the sharp information from the server temporarily while setting up the server for NetWare 4.0. On-site updates also require some risk, mainly due to possible failures during the upgrade. You just need to make sure that you have full network security before you start the process. This procedure is not available on 3.0 servers; you must first upgrade to NetWare 3.1 or higher. Requirements: PC based on 386 or higher. 6Mb RAM 12Mb-60Mb hard drive space. Hard. caracteristicas de sistemas operativos windows. caracteristicas de sistemas operativos moviles. caracteristicas de sistemas operativos graficos. caracteristicas de sistemas operativos de red. caracteristicas de sistemas operativos distribuidos. caracteristicas de sistemas operativos mac os. caracteristicas de sistemas operativos en tiempo real. caracteristicas de sistemas operativos linux