Operating System - Difference Between Distributed System and Parallel System

Distributed system	Parallel System
Components are located in different Networked computers and communicate with messages with each other	Multiple processes occurs simultaneously on one computer
Has multiple computers performing multiple tasks	Has multiple processors performing Multitasking
Multiple computer system	Single Computer systems
Each Computer has its own memory	Relies on shared memory
Scalability, reliability in communication	Performance-oriented

System Protection in Operating System

System protection is a mechanism which controls unauthorized access of the modules and data and other resources of the computer system.
There are policies in OS which prevent these security threats. Some are created at the time of system design. Some policies are added later in by management, and some policies are generated by the user itself to further protect the system.
As we know iOS and Android has different Fs access policies before. iOS does not allow access to the full file system to any user-level software. While Android does, which makes it a bit vulnerable to Malware. There are many changes in these policies which now control better how content on a device should be managed, which includes all privacy and security majors.

User View Vs Hardware View Vs System View of Operating System

Os is not a program it is the medium by which the user and the hardware interact with each other.
From the User's view, It relates to how a user interacts with OS using different application software. On the other hand, System View depends on how hardware interacts with the operating system.

System Programs in Operating System

System programs are programs that are communication between Hardware and Application programs. It traditionally lies between the user interface and system calls.
They can be divided into

1. File Management: these help in manipulating files, creating, deleting, moving and sharing, and organizing files in filesystem
2. Status Information: All status information about Time, CPU, network, and Memory are carried out by these programs.
3. File Modification: For modifying the contents of files.
4. Programming language support: includes compilers, assemblers, and interpreters.
5. Program loading and execution: A loader is part of an operating system that is responsible for loading programs and libraries.
6. Communications: Virtual connections among processes, users, and computer systems are provided by programs.

File System Implementation in Operating System

Traps and System Calls in Operating System (OS)

Os are secured and do not give direct admin access to users. To do administrative or Privileges tasks Traps Guidance comes into action. It changes the CPU mode to kernel mode. When the program needs admin access it makes the TRAP guidance comes into action and it changes the mode to privileged mode. It then sends a request to OS regarding the request and OS then validates the request and does the required action. Once the action is done, It again changes the mode to client. This component of acquiring admin access is called System calls.

Difference between System Software and Operating System

System Softwares	**Operating System**
They’re software that manages the system resources and allows the user to interact with the system.	It is the interface between the user and the system
It loads on memory whenever required	It stays on the memory all the time,

	whenever system is booted
It manages the system	Manages the system and the system softwares