

What is Process Control Block (PCB) and its attributes/fields?

A process control block (PCB) is a data structure used by an operating system (OS) to manage and control the execution of processes. It contains information about the process, such as its state, priority, and registers. The PCB is stored in memory and is accessed by the OS whenever it needs to perform an operation on the process, such as scheduling it for execution or terminating it.

Fields of PCB

1. Process Identifier (PID):

A unique identifier assigned to each process, allowing the operating system to identify and distinguish between processes.

2. Program Counter (PC):

The address of the next instruction to be executed within the process's code.

3. Process State:

The current state of the process, such as running, waiting, ready, or terminated.

4. Process priority:

The priority of the process, which determines how it is scheduled for execution.

5. CPU Registers:

Values of CPU registers that store the current state of the process's execution.

6. Memory Management Information:

Details about memory allocation, including the base address and size of memory segments.

7. Open Files:

A list of files or I/O devices opened by the process, along with associated descriptors.

8. Accounting information:

Information about the amount of CPU time and memory used by the process.