



Chapter 1 Important Points

1. What is an **Operating System**?
 - What an operating system is and what it does
 - Some reasonable definitions that have been given
2. Computer system structure:
 - The components of an OS
3. Layered view of a computer system
4. What happens on system startup
5. Computer system operation
6. Common functions of interrupts
7. Interrupt handling
 - How source of interrupts is determined
 - How they are serviced
8. I/O structure:
 - How I/O happens in a system with interrupts
9. **Direct Memory Access** structure
10. Storage structure and the storage hierarchy
 - Speed
 - Cost
 - Volatility
 - Capacity
11. Caching:
 - How it works at various levels of the hierarchy
12. Computer system architectures
 - single CPU
 - multiple CPUs - cores versus separate off-chip processors
 - asymmetric versus symmetric multiprocessors
13. Operating system structures
 - Multiprogramming
 - Timesharing
 - Swapping
 - CPU Scheduling
 - Virtual memory



14. Operating system operations

- Exceptions and traps
- Dual mode operation: kernel mode and user mode
- System calls
- Process timers and time-outs

15. Process management and representation

- Definition of a process
- Resources needed
- Process termination
- Single-threaded processes
- Multi-threaded process has one program counter per thread
- Concurrency

16. Process Management Activities

- What the various process management tasks are