

# Four fundamental OS concepts

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- **Thread**
  - Single unique execution context
  - Program Counter, Registers, Execution Flags, Stack
- **Address Space w/ Translation**
  - Programs execute in an address space that is distinct from the memory space of the physical machine
- **Process**
  - An instance of an executing program is a process consisting of an address space and one or more threads of control
- **Dual Mode operation/Protection**
  - Only the "system" has the ability to access certain resources
  - The OS and the hardware are protected from user programs and user programs are isolated from one another by controlling the translation from program virtual addresses to machine physical addresses