

1 Limited Direct Execution

Vocabulary

1. Time Sharing

- Is a mechanism used by an OS to share a resource
- Allows an entity to use the resource for a little while, and then a little while by another, and so forth

Example

CPU

2. Limited Direct Execution

- Is synonymous to **baby proofing**
- **Limited** Means there will be a limit to what a processor can and cannot do
- **Direct Execution** Means that the processor will run directly on the CPU

3. User Mode

- Is a processor mode where code that runs is restricted in what it can do

4. Kernel Mode

- Is a processor mode where code that runs can do what it likes, including privileged operations

Example

Privileged operations include

1. I/O requests
2. Executing all types of restricted instructions

5. System Call

- Is a programmatic way in which a computer program requests a privileged service from the kernel of the operating system

6. Trap

- Is a type of synchronous interrupt caused by an exceptional condition that
- Exceptional condition include:

- Breakpoint
- Division by zero
- Invalid memory access
- System Call
- Usually results in a processor switching to kernel mode

7. Return-from-Trap

- Is an instruction that
 - Restores saved registers from kernel stack
 - Switches the processor back to **user mode**

8. Trap Table

Question What is the exact definition of a trap table? OSTEP glosses over it :(

- Is synonymous to 대응 메뉴얼
- Is a list of trap handlers where each is for specific trap

9. Trap Handlers

- Is the code that will run when the trap is triggered.

10. System-call Number

11. Timer Interrupt