The area of the hard disk that stores the RAM image is called a **page file**. It holds **pages** of RAM on the hard disk, and the operating system moves data back and forth between the page file and RAM. On a Windows machine, page files have a .SWP extension.

Set of read-only or read/write device registers

I

Status registers

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Read to determine what device is doing, error codes, etc

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Data registers

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Write: transfer data to a device

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Read: read data from a device

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Command registers

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Writing causes device to do something

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Example: AT Keyboard Device

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8-bit Status: parity error, input buf empty, output buf empty

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8-bit Command: 0xAA=”self test”, 0xAe=”enable kbd”, 0xED=”set LEDs”

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8-bit Data: scancode when reading, LED state when writin

How the switch occurs.

The switch from user mode to kernel mode is not done automatically by CPU. CPU is interrupted by interrupts (timers, keyboard, I/O). When interrupt occurs, CPU stops executing the current running program, switch to kernel mode, executes interrupt handler. This handler saves the state of CPU, performs its operations, restore the state and returns to user mode.