**Kernel and its functions :**

After executing the functions of boot files the control is passed to Kernel. ntoskrnal.exe is the kernel file in a Windows machine and its path is C:\Windows\system 32\ntoskrnal.exe. Kernel acts as a layer between software and hardware. The library file hal.dll (C;\Windows\system32\hal.dll) helps Kernel to interact with hardware's. HAL stands for Hardware Abstraction Layer and this hal.dll file is machine specific. Now the drivers for hardware's are loaded from the file C:\Windows\system32\config\system and the Kernel is loaded to primary memory.

**Kernel Initialization**[[edit](https://en.wikibooks.org/w/index.php?title=Operating_System_Design/Initialization/Hardware&action=edit&section=4)]

Once the kernel is fully loaded, the next step in initialization is to set the kernel parameters and options, and add any modules that have been selected in the kernel set-up file. Once the kernel is fully initialized it takes over control of the computer and continues initialization with the file-systems and processes.