

Re: initialization of computer motherboard in hardware level...

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- *From:* ZZactly@xxxxxxx
 - *Date:* 8 Mar 2006 18:47:41 -0800
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You're talking ATX form factor, but from the AT days:

Power is applied, all hard resets are accomplished. A program stored in ROM runs, establishing communication of the motherboard's chipset. In AT machines this BASIC boot program only ran in a few K of memory (RAM). Newer machines now might automatically do what HIMEM.SYS used to do, access all those MB of RAM through the first megabyte. That program, which as I said used to be written in BASIC it writes to actual EPROM in some cases, but usually stores the settings in RAM. If the battery dies it reverts to the defaults in ROM or EPROM.

Usually all hardware devices are polled as soon as the boot ROM runs. That's how it can setup the sectors and stuff on a new harddrive. This is actually after the memory test, whether it indicates that on the screen, or not.

It then checks all of the listed boot devices, in the order you set and the OS on the disk takes over.

You can usually see the boot process when you get the BIOS splash screen saying, like Dell or something, by hitting the Esc key. You may see it counting the RAM.

The EXACT process for any given motherboard differs, but it almost always checks the RAM first, then polls all the hardware, unless it is not a PnP machine or Pnp is shut off. Modern machines seem to always check the HDs, before PnP you could not just stick a HD in a machine and have it work. You needed to set the heads, tracks, cylinders, crap like that.

From the Pentium days hence, there are also some very basic CDrom

drivers in the boot to make it possible to boot from CDrom.

In the AT machine when it was off it was off. In an ATX when you ground the green wire you trigger a change of states in the ATX power supply, which supplies a few standby sources all the time. When it goes into

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the "ON" mode the regulation is tighter and all the run supplies are switched on. The standby is only there to allow wake on LAN or ring, and like some PCs you can turn them on by hitting the spacebar.

That's about as technical as I can get. Sorry no URLs. (except this one you're in I guess)

JURB

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