

Re: How can Linux damage a motherboard?

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- *From:* "Tom Szabo" <tom@xxxxxxxxxxxxxxxxxx>
 - *Date:* Sat, 21 Apr 2007 13:38:45 +1000
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Hi Floyd,

Thanks for your reply, I am glad to see that I am not alone :-), your thoughts, almost all, make sense.

The only problem I have still, that I have another install of Linux, that was done on these machines and it worked fine. This is the first "image" I used in the 3rd machine.

This worked fine in the machines for hours, until I have put the second image in, and then the problem started. As far as I remember, I have tried to use the first image and booted, but I could be a little mixed up, so I will try again and let you know.

As far as I can see, some code in Image #2 has changed something in the machine. If it was part of a normal adjustment, it should be reversed by a correct image. I hope you are right and I remember wrong, and in fact I never got to boot properly with the first image after the second image run on the same machine....that is my hope...

Otherwise it is a little trouble, as that means that there was some kind of weird code that went a little further than should have and changed something that a normal install doesn't mean to...

Anyway, I will do the test and see,

Thanks for your thoughts,

Regards,

Tom

"Floyd L. Davidson" <floyd@xxxxxxxxxx> wrote in message news:87647qekn7.fld@xxxxxxxxxxxxxxxx

"Tom Szabo" <tom@xxxxxxxxxxxxxxxxxx> wrote:

...

work on either. But when it loaded cpuspeed the power

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driver
is hard coded in the /etc/cpuspeed.conf file on most Linux's
so it was likely trying to load an inappropriate power
module. Also, /etc/modprobe.conf might be suggesting
modules
to the kernel for loading that are really for Intel

What you are saying regarding the powermanagement is in line with my
thoughts, I suspected something on this line.

That is almost certainly the general idea of what is happening.

Try installing linux on the Motherboard from scratch or only
use an

image

on a hard disk from another server that's got exactly the same

hardware.

Another easy test would be to try a Live Linux CD like
Knoppix and see
if it reproduces the weird fan problem, I bet it won't.

On the other hand, in your suggestion you have forgotten the fact that

now

the server doesn't run for more that 5 five minutes in first go after

couple

of hours of resting, and the second and subsequent startups are only a

few

seconds.....

He is correct. Although your attempts at running a system
configured for another motherboard might prevent you from easily
doing that now.

Here is my real dilemma:

The OS loaded some driver, module, etc and changed some behaviour.

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Almost certainly it has to do with controlling the fans, which makes it almost guaranteed to be lm_sensors related. The potential difficulty is that you have now written a configuration to the chip which monitors temperatures, and if so it that has to be cleared in order to prevent the faulty temperature shutdown.

The exact nature of the problem appears to be that you have either selected the wrong type of temperature transducer, or given it a very low temperature as the alarm point, and the monitor chip thinks it is overheating when in fact it is not even at normal temperature. When it cools for a couple hours, it actually gets down to room temp and takes a significant amount of time to heat up. In the process the fans go through each stage of control from barely on to hitting it full blast. Then it shuts down. Of course if it is immediately restarted it takes much less time to hit the alarm temp.

Have you tried to boot to single user? I'm not sure how that is done on your particular machines, but with the LILO boot loader you would give it a boot name, such a "linux", and add the word "single" after it.

If the configuration is not being written to the monitor chip and if it is properly programmed into the boot scripts, it will not be done when booting to single user mode (just because an error in the script would prevent booting).

If you try that and it still does not, try booting from any other kernel, such as a live CD (for any system) and see if that will continue to run.

If you get it to run without shutting down, use whatever system you've boot as a "rescue system" and edit the boot scripts for your improper configuration to remove anything than initializes sensors.

If no matter what kernel you boot it shuts down, you've got yourself a *major* problem! You will have to figure out the right configuration for your server, set it up on another system, and then boot it with a cold box that will run long enough for that part of the boot process to be executed and reconfigure the sensors. It won't be an easy thing to figure out.

That is understandable but that should only affect the server when the OS is loading.
Here on the other hand, once the wrong image is booted up the first time

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the

problem becomes permanent and not dependent on the OS any more, so the changes are written somewhere into/onto the motherboard.....that is

fine, I

can leave with that too.

But where does it get written to so neither the BIOS reset or the bios patch can reverse it?

It does appear to be the configuration of the sensor monitoring chip.

Another trick you might try is a reset, and instead of letting it boot the OS, go to the BIOS setup. In the BIOS setup do whatever is available for monitoring (temperatures, voltages, etc.). As an example, on some older Tyan dual processor boards for AMD processors the sensor monitoring chip would be about half initialized in a normal boot, but would be fully initialized only when the BIOS setup option to show voltages and temperatures was entered. If the reset button was pressed after that, then `lm_sensors` could monitor all of the temps and voltages. But if the box was powered down it would reset the chip completely, and only half of it was initialized when powered up. That meant half the temperatures and voltages could not be read by `lm_sensors`. (I wrote a C program to fully initialize the monitor chip, and ran that as part of the boot process to correct the problem.)

That monitor chip did not retain configuration when powered down, as it seems yours is.

Considering all symptoms, it seems like some sensory process gets

adjusted

to just below the normal operating temperature. For example the CPU operates normally @ 50 degrees and normally the max operating temperature is 80 degrees. Using this example, my stuffed image somehow managed to adjust the max operating temperature to 49.8 degrees. When I turn on the machine the

first

time, it takes a little while to get up to the 50 degrees, so I have say

5

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minutes...but next round only 10 seconds, and after that it is down to 1

or

2 seconds.

Exactly.

Any more clues?

I'm glad I'm not you... ;-)

—
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