

Re: suspend/hibernation regression between 2.6.19 and 2.6.20 w/ Thinkpad T41

Source: <http://linux.derkeiler.com/Mailing-Lists/Kernel/2007-08/msg02318.html>

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 - *Date:* Mon, 6 Aug 2007 21:13:41 +0200
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Am Montag, 6. August 2007 16:36 schrieb Henrique de Moraes Holschuh:

On Mon, 06 Aug 2007, Toralf Förster wrote:

Am Montag, 6. August 2007 00:29 schrieb Pavel Machek:

Yes, I seen similar reports. Does it happen in all shutdown mode and 2.6.22? Does it happen in platform mode in 2.6.19?

I can reproduce this behaviour by doing the following with kernel 2.6.20 :

1. <Fn>+<F4> – the systems sleeps within RAM
2. <Fn> – the systems wakes up
3. <Fn>+<F12> – the systems hibernates to disk
4. <power> – systems wakes up
5. <Fn>+<F4> – the systems sleeps within RAM

Now pressing <Fn> doesn't wake up the system, I have to press the power button for that instead.

The resume path for suspend to disk is very different (for the firmware, at least) than the resume path from sleep-to-RAM. One of them goes through a system shutdown and cold boot (S5) or whatever-boot (S4 – who knows if it is the same as a cold boot in a given thinkpad model? It doesn't have to be!).

The firmware **knows** when you press Fn+F4/FN+F12, and recalls that. That's why you can't get multiple hot key presses from pressing Fn+F4 or FN+F12 until you actually do an ACPI wake-up.

While you are just doing S3, all that state is preserved without fuss. But S5 does not preserve anything, and S4 is anyone's guess. Numerous thinkpad BIOS fixes in the past were related to such problems, so if you are not using the latest BIOS for your model, your first duty is to upgrade it and try again.

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IMHO, probably some ACPI state is being lost by the BIOS because of the sleep-to-disk. I don't know how sleep-to-disk plays with the ACPI NV areas, and ACPI data areas from the BIOS, so I can't help much there.

And, mind you, I am **not** sure one is supposed to be able to wake up thinkpads using Fn. It might be in fact a bug that we can do it. One has to at the very least verify whether it happens in Windows as well.

However, the following events **are** to wake a thinkpad up from S3:

1. ACPI wake devices
2. Dock or bay eject buttons/lever being actuated
3. Brief press on power button

You can check if (2) is still working. If both Fn and (2) stop working, we can be sure we have a bug in Linux. (2) is useful because it is reported inside the ACPI firmware mostly through the same codepaths.

BTW I tried to test the latest git-sources -rc2 but the <Fn> keys do not work anymore with the thinkpad-acpi feature (neither as module nor if compiled into).

Don't enable the input layer by default in thinkpad-acpi Kconfig. A patch to change that to default to N has already been sent to Len Brown, but it has not been merged yet.

Because I

- (1) use the latest BIOS and
- (2) I'm able to wake up a suspended system via <Fn> under Windows XP (yes, dual boot system I need it at work) regardless whether I previously hibernated the system (under Windows XP) or not

I bisected this regression (rather of a feature than a bug, or ?) between the 2 tags v2.6.19 and v2.6.20 (~2400 commits, I read a good book in the meanwhile) and found :

last good commit : 7e244322cd4ea361ef9ee623b3fcb4d9f4ff841c
first bad commit: cfee47f99bc14a6d7c6b0be2284db2cef310a815

I double checked these 2 commits – here's the first commit after which <Fn> doesn't wake up my system from suspend state after it was (at least one time before) hibernated:

commit cfee47f99bc14a6d7c6b0be2284db2cef310a815
Merge: 7e24432... 9185cfa...
Author: Len Brown <len.brown@xxxxxxxxxx>
Date: Sat Dec 16 01:01:18 2006 -0500

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Pull bugfix into test branch

Conflicts:

kernel/power/disk.c

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MfG/Sincerely

Toralf Förster

Attachment: [pgp8Y2IMkwbMC.pgp](#)

Description: PGP signature