

Re: A question about acpi suspend.-follow-up

Source: <http://linux.derkeiler.com/Mailing-Lists/Fedora/2006-05/msg00473.html>

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 - *Date:* Wed, 03 May 2006 08:53:51 -0500
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On Tue, 2006-05-02 at 19:58 -0400, Mauriat Miranda wrote:
Ok I appreciate you response but:

On 5/2/06, Aaron Konstam <akonstam@xxxxxxxxxxxxxx> wrote:

Ok, but as I say in a separate message how exactly does one wake the machine up. I used the script that was posted here which dos the supend things you indicate but i can't wake the machine up. How is that done?

Any script that you may have probably does the preparation work before suspending and the post-wakeup work to restore anything that was put into some modified state. However the script does not do the `_physical_` wake up, that would be dependant on a user event or some type of registered hardware event.

Well as I said I can wake up the machine by hitting the power button but it immediately locks up. So what to do?

Actions for ACPI are driven by events. A typical event could be hitting the Power button or wake key (any key sometimes) or some special option on a laptop. Anything that can possibly wake up the system must already be supported in the hardware (BIOS), as once the system is suspended no user loaded software is available (ie. Linux).

Why does fedora not come with a suspend and wake up function that does the right thigs? Noy just because this is built in to Windows but it because it makes sense. For example how does one find out that:

ACPI is (supposed to be) a standard/spec. However implementation requires some work. Since windows is a fixed platform with less variation in software many hardware manufacturers test their ACPI compliance against windows, hence once it works in Windows they don't care about other systems.

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But Windows exists on many architectures. The manufacturer supplies the needed routines. Maybe someone should look into routines for the fixed platform Fedora.

The Linux kernel often has to do a great deal of work arounds or code hacks to support as much hardware as it does (a great accomplishment btw). So often some deviation, or poor hardware support or something else from the `_manufacturer_` can prevent ACPI from working in Linux as well as it does in Windows.

```
echo mem > /sys/power/state  
will cause the processor to suspend. Is there a similar wake up  
sequence.
```

Wake up sequences are dependant on events, however they do not necessarily apply only when the system is powered off. For example most laptop batteries can trigger events, laptop lids, thermal sensors, etc. If your BIOS supports timed wakeup read up on 'nvram'. Additionally certain hardware can be controlled: CPU clock throttling (changing the freq of your processor) or fan speed, etc.

Some of the files in `/proc` and `/sys` are read and write. Ex:

```
[mirandam@charon ~]$ cat /sys/power/state  
standby mem disk
```

Ever since I ran the suspend script that executed:

```
echo mem > /sys/power state  
cat /sys/power/state returns just: mem  
standby has disappeared and I can't get it back.  
What does that mean?
```

```
standby would be S1  
mem would be suspend to ram S3  
disk would be suspend to disk S4 ("hibernate")  
There's also S0, S2 and S5.
```

However most all your ACPI support is pretty much known to Linux once the kernel loads. For a full list of support for your specific hardware, run:

```
# dmesg  
Look for lines that say 'ACPI:', however most information will require  
some google research to understand what it means.
```

There are no boot messages with ACPI in their content but `/proc/acpi` exists and can display relevant information when cat–ing its sub–files. What does that mean?

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You can also look in /proc/acpi

I completely agree that the struggle for perfect ACPI in linux has been a pain! However please know that it has come a long long way and greatly improved since I first tried the acpi patch to kernel 2.4.20 in 2002 just to get the power button to trigger shutdown (I was easily impressed back then). And please know that this is really the hardware manufacturers failure NOT linux.

I would recommend complaining to manufacturers but it would fall on deaf ears. Instead be more picky with your hardware to find confirmation of compliant products.

Some hardware works perfectly out of the box and eventually most will, however until that happens chances are that you will have to modify scripts or configs etc etc.

I hope this helps.

Mauriat

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