Acer Laptop WMI Extras Driver
http://code.google.com/p/aceracpi
Version 0.3
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acer-wmi is a driver to allow you to control various parts of your Acer laptop hardware under Linux which are exposed via ACPI-WMI.

This driver completely replaces the old out-of-tree acer_acpi, which I am currently maintaining for bug fixes only on pre-2.6.25 kernels. All development work is now focused solely on acer-wmi.

Disclaimer

Acer and Wistron have provided nothing towards the development acer_acpi or acer-wmi. All information we have has been through the efforts of the developers and the users to discover as much as possible about the hardware.

As such, I do warn that this could break your hardware - this is extremely unlikely of course, but please bear this in mind.

Background

acer-wmi is derived from acer_acpi, originally developed by Mark Smith in 2005, then taken over by Carlos Corbacho in 2007, in order to activate the wireless LAN card under a 64-bit version of Linux, as acerhk[1] (the previous solution to the problem) relied on making 32 bit BIOS calls which are not possible in kernel space from a 64 bit OS.

[1] acerhk: http://www.cakey.de/acerhk/

Supported Hardware

NOTE: The Acer Aspire One is not supported hardware. It cannot work with acer-wmi until Acer fix their ACPI-WMI implementation on them, so has been blacklisted until that happens.

Please see the website for the current list of known working hardware:

http://code.google.com/p/aceracpi/wiki/SupportedHardware

If your laptop is not listed, or listed as unknown, and works with acer-wmi, please contact me with a copy of the DSDT.

If your Acer laptop doesn't work with acer-wmi, I would also like to see the DSDT.

To send me the DSDT, as root/sudo:

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cat /sys/firmware/acpi/tables/DSDT > dsdt
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And send me the resulting 'dsdt' file.

Usage
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On Acer laptops, acer-wmi should already be autoloaded based on DMI matching. For non-Acer laptops, until WMI based autoloading support is added, you will need to manually load acer-wmi.

acer-wmi creates /sys/devices/platform/acer-wmi, and fills it with various files whose usage is detailed below, which enables you to control some of the following (varies between models):

* the wireless LAN card radio
* inbuilt Bluetooth adapter
* inbuilt 3G card
* mail LED of your laptop
* brightness of the LCD panel

Wireless
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With regards to wireless, all acer-wmi does is enable the radio on the card. It is not responsible for the wireless LED - once the radio is enabled, this is down to the wireless driver for your card. So the behaviour of the wireless LED, once you enable the radio, will depend on your hardware and driver combination.

e.g. With the BCM4318 on the Acer Aspire 5020 series:

ndiswrapper: Light blinks on when transmitting
b43: Solid light, blinks off when transmitting

Wireless radio control is unconditionally enabled - all Acer laptops that support
acer-wmi come with built-in wireless. However, should you feel so inclined to ever wish to remove the card, or swap it out at some point, please get in touch with me, as we may well be able to gain some data on wireless card detection.

The wireless radio is exposed through rfkill.

Bluetooth
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For bluetooth, this is an internal USB dongle, so once enabled, you will get a USB device connection event, and a new USB device appears. When you disable bluetooth, you get the reverse - a USB device disconnect event, followed by the device disappearing again.

Bluetooth is autodetected by acer-wmi, so if you do not have a bluetooth module installed in your laptop, this file won't exist (please be aware that it is quite common for Acer not to fit bluetooth to their laptops - so just because you have a bluetooth button on the laptop, doesn't mean that bluetooth is installed).

For the adventurously minded - if you want to buy an internal bluetooth module off the internet that is compatible with your laptop and fit it, then

it will work just fine with acer-wmi.

Bluetooth is exposed through rfkill.

3G
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3G is currently not autodetected, so the 'threeg' file is always created under sysfs. So far, no-one in possession of an Acer laptop with 3G built-in appears to
have tried Linux, or reported back, so we don't have any information on this.

If you have an Acer laptop that does have a 3G card in, please contact me so we can properly detect these, and find out a bit more about them.

To read the status of the 3G card (0=off, 1=on):
cat /sys/devices/platform/acer-wmi/threeg

To enable the 3G card:
echo 1 > /sys/devices/platform/acer-wmi/threeg

To disable the 3G card:
echo 0 > /sys/devices/platform/acer-wmi/threeg

To set the state of the 3G card when loading acer-wmi, pass:
threeg=X (where X is 0 or 1)

Mail LED
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This can be found in most older Acer laptops supported by acer-wmi, and many newer ones - it is built into the 'mail' button, and blinks when active.

On newer (WMID) laptops though, we have no way of detecting the mail LED. If your laptop identifies itself in dmesg as a WMID model, then please try loading acer_acpi with:

force_series=2490

This will use a known alternative method of reading/ writing the mail LED. If it works, please report back to me with the DMI data from your laptop so this can be added to acer-wmi.

The LED is exposed through the LED subsystem, and can be found in:

/sys/devices/platform/acer-wmi/leds/acer-wmi::mail/

The mail LED is autodetected, so if you don't have one, the LED device won't be registered.

Backlight
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The backlight brightness control is available on all acer-wmi supported hardware. The maximum brightness level is usually 15, but on some newer laptops it's 10 (this is again autodetected).

The backlight is exposed through the backlight subsystem, and can be found in:

/sys/devices/platform/acer-wmi/backlight/acer-wmi/

Credits
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Olaf Tauber, who did the real hard work when he developed acerhk
http://www.informatik.hu-berlin.de/~tauber/acerhk
All the authors of laptop ACPI modules in the kernel, whose work
was an inspiration in the early days of acer_acpi
Mathieu Segaud, who solved the problem with having to modprobe the driver
twice in acer_acpi 0.2.
Jim Ramsay, who added support for the WMID interface
Mark Smith, who started the original acer_acpi

And the many people who have used both acer_acpi and acer-wmi.