Testing suspend and resume support in device drivers

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1. Preparing the test system

Unfortunately, to effectively test the support for the system-wide suspend and resume transitions in a driver, it is necessary to suspend and resume a fully functional system with this driver loaded. Moreover, that should be done several times, preferably several times in a row, and separately for hibernation (aka suspend to disk or STD) and suspend to RAM (STR), because each of these cases involves slightly different operations and different interactions with the machine's BIOS.

Of course, for this purpose the test system has to be known to suspend and resume without the driver being tested. Thus, if possible, you should first resolve all suspend/resume-related problems in the test system before you start testing the new driver. Please see Documentation/power/basic-pm-debugging.txt for more information about the debugging of suspend/resume functionality.

2. Testing the driver

Once you have resolved the suspend/resume-related problems with your test system without the new driver, you are ready to test it:

a) Build the driver as a module, load it and try the test modes of hibernation (see: Documents/power/basic-pm-debugging.txt, 1).

b) Load the driver and attempt to hibernate in the "reboot", "shutdown" and "platform" modes (see: Documents/power/basic-pm-debugging.txt, 1).

c) Compile the driver directly into the kernel and try the test modes of hibernation.

d) Attempt to hibernate with the driver compiled directly into the kernel in the "reboot", "shutdown" and "platform" modes.

e) Try the test modes of suspend (see: Documents/power/basic-pm-debugging.txt, 2). [As far as the STR tests are concerned, it should not matter whether or not the driver is built as a module.]

f) Attempt to suspend to RAM using the s2ram tool with the driver loaded (see: Documents/power/basic-pm-debugging.txt, 2).

Each of the above tests should be repeated several times and the STD tests should be mixed with the STR tests. If any of them fails, the driver cannot be regarded as suspend/resume-safe.