Linux* Driver Release Notes For Intel(R) Desktop Boards

PRODUCT

Intel Desktop Board Information for Users of SuSE* 8.2

DATE: December 5, 2003

Purpose

This readme provides information on what to do when installing the SuSE* 8.2 Linux* operating system with kernel 2.4.20-64 or higher on an Intel(R) desktop board based system (see "Hardware Requirements").

Text and Command Conventions for this Document

-- Commands are listed either as stand-alone indented lines such as:
   make install
   or surrounded by => ____ <= delimiters in sentences such as:
   Enter the => make install <= command.

-- Special callouts, buttons, and paths are placed within quote marks. For example:
   Go to the "/root/test" directory and click on the "test.bin" file.
   Always press the "Enter" key after each command entry.

-- Bullet items are called out with a double dash "--" prefix at the left side of the page.

Before You Begin

Verify that the following hardware and software requirements are met:

Hardware Requirements

-- Intel(R) Desktop Board with Intel(R) D865 or Intel(R) D875 chipsets, or

-- Intel(R) Desktop Board D845GVA (Note: this board does not support Intel Hyper-Threading technology).

Software Requirements

-- SuSE* 8.2 Linux* with kernel 2.4.20-64 and newer.

-- Check that the BIOS version is the most recent release.

-- Check that you have all Linux kernel source files and any needed compiling tools.

-- If your system uses Intel Hyper-Threading (HT) technology, verify that it is enabled in BIOS.

-- If you plan to installing this operating system on a Serial ATA (SATA) disk drive, please set the device configuration to run in "Legacy Mode" through the BIOS. Note: When in Legacy Mode, you are limited to a combination of 4 storage devices. For example, 2 SATA and/or 2 Parallel ATA (PATA) disk drives, or up to 4 PATA disk drives).

Known Issues

The source package for the SuSE 8.2 Kernel may come out of the box and from their download website with a WRONG kernel version in the version header. So while drivers will appear to compile correctly, in reality, they are compiled for a wrong kernel version. Note that this situation only occurs from the original source, and does not apply if someone has upgraded or recompiled the kernel. Without an upgrade or recompile, the kernel module will be stored in a directory separate from the correct kernel module directory.

The impact is that some drivers will not load, especially the audio drivers.

Workaround:
If you have driver problems using the original SuSE 8.2 source, use the following procedure:
1. Log in as a root user. Then go to the path: /usr/src/linux
2. Enter the command: "make cloneconfig"
   If that doesn't work, try entering the commands: "make oldconfig" and then "make dep"
3. This should fix the version strings and allow the drivers to compile for the correct kernel.

Device Support under SuSE 8.2 Linux*
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The following lists devices that either have integrated support for the listed Intel desktop boards, or require additional drivers with the Linux software/kernel. Note that the SMP kernel upgrade is built into this distribution of Linux. But your hardware, processor, chipset, and BIOS must support Intel Hyper-Threading technology. After installing SuSE 8.2, you may install additional device drivers in any desired order. To obtain the latest drivers for your Intel desktop board, go to:
http://developer.intel.com/design/motherbd

-- Intel's Hyper-Threading Technology requires that the Symmetrical Multiprocessing Support (SMP) kernel be installed. Note that System BIOS settings for HT support must be enabled BEFORE you install SuSE 8.2. Then a SuSE 8.2 installation will automatically include the SMP kernel upgrade. If BIOS is not previously set for HT support, then a later SuSE 8.2 installation will not include the SMP kernel.

-- Currently SuSE 8.2 does not natively support Serial ATA disk drive configurations running in "Enhanced" mode. You must set the Intel(R) desktop board to run in "Legacy" mode to install the operating system on a SATA disk drive. NOTE: When in "Legacy" mode you are limited to a combination of 4 storage devices (for example, 2 SATA and/or 2 PATA disk drives, or 4 PATA disk drives).

-- Intel 865G Graphics is supported by SuSE 8.2.

-- Intel(R) Pro 100 LAN Adapter is supported by SuSE 8.2 for specified desktop boards using the Intel(R) D845 chipset (see Hardware Requirements above).

-- For systems using Intel(R) D865/D875 chipsets, Intel Pro 100/1000 LAN will not function properly after a normal installation of SuSE 8.2. SuSE 8.2 will attempt to install the appropriate LAN drivers and it may appear that the drivers install the LAN device, but the device will not work properly. Download the appropriate driver for the Intel desktop board being used and install it using the instructions provided with the driver.

-- ADI* 1985 AC'97 audio will not function properly after a normal installation of SuSE 8.2. SuSE 8.2 will attempt to install and load AC'97 audio drivers and it will appear that the audio solution is properly configured when it really is not. Download the appropriate driver for the desktop board being used and install them using the instructions provided with the driver. Also note that Support for 2-channels of stereo audio is all that is currently provided by this audio driver. Also After installation of the audio driver, the mixer device for master volume and PCM are zeroed to their lowest setting. Adjust these appropriately or no audio will be heard.

-- SigmaTel* ST9750 AC'97 Audio is supported by SuSE 8.2 for Intel Desktop Board D845GVA.

-- On-Board 1394 Controllers are supported by SuSE 8.2.

-- IDE UDMA settings. Support for DMA up to UDMA-100 is available depending on the specific hard disk being used. See the "Known Issues" section below for Serial-ATA specific information.

-- USB 2.0 Devices are supported by SuSE 8.2.

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Important Notice
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Hyper-Threading requires a computer system with an Intel Pentium(R) 4 processor supporting this technology, a chipset and BIOS that utilizes this technology, and an operating system that includes optimizations for this technology. Performance will vary depending on the specific hardware and software you use. See www.intel.com/info/hyperthreading for information.