Kernel driver eeprom

Supported chips:

- Any EEPROM chip in the designated address range

  Prefix: 'eeprom'

  Addresses scanned: I2C 0x50 - 0x57

  Datasheets: Publicly available from:

  > Atmel (www.atmel.com), Catalyst (www.catsemi.com), Fairchild (www.fairchildsemi.com), Microchip (www.microchip.com), Philips (www.semiconductor.philips.com), Rohm (www.rohm.com), ST (www.st.com), Xicor (www.xicor.com), and others.

Chip	Size (bits)	Address
24C01	1K	0x50 (shadows at 0x51 - 0x57)
24C01A	1K	0x50 - 0x57 (Typical device on DIMMs)
24C02	2K	0x50 - 0x57
24C04	4K	0x50, 0x52, 0x54, 0x56 (additional data at 0x51, 0x53, 0x55, 0x57)
24C08	8K	0x50, 0x54 (additional data at 0x51, 0x52, 0x53, 0x55, 0x56, 0x57)
24C16	16K	0x50 (additional data at 0x51 - 0x57)
Sony	2K	0x57
Atmel	34C02B 2K	0x50 - 0x57, SW write protect at 0x30-37
Catalyst	34FC02 2K	0x50 - 0x57, SW write protect at 0x30-37
Catalyst	34RC02 2K	0x50 - 0x57, SW write protect at 0x30-37
Fairchild	34W02 2K	0x50 - 0x57, SW write protect at 0x30-37
Microchip	24AA52 2K	0x50 - 0x57, SW write protect at 0x30-37
ST	M34C02 2K	0x50 - 0x57, SW write protect at 0x30-37

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Description

This is a simple EEPROM module meant to enable reading the first 256 bytes of an EEPROM (on a SDRAM DIMM for example). However, it will access serial EEPROMs on any I2C adapter. The supported devices are generically called 24Cxx, and are listed above; however the numbering for these industry-standard devices may vary by manufacturer.

This module was a programming exercise to get used to the new project organization laid out by Frodo, but it should be at least completely effective for decoding the contents of EEPROMs on DIMMs.

DIMMS will typically contain a 24C01A or 24C02, or the 34C02 variants. The other devices will not be found on a DIMM because they respond to more than one address.

DDC Monitors may contain any device. Often a 24C01, which responds to all 8 addresses, is found.

Recent Sony Vaio laptops have an EEPROM at 0x57. We couldn't get the specification, so it is guess work and far from being complete.

The Microchip 24AA52/24LCS52, ST M34C02, and others support an additional software write protect register at 0x30 - 0x37 (0x20 less than the memory location). The chip responds to "write quick" detection at this address but does not respond to byte reads. If this register is present, the lower 128 bytes of the memory array are not write protected. Any byte data write to this address will write protect the memory array permanently, and the device will no longer respond at the 0x30-37 address. The eeprom driver does not support this register.

Lacking functionality

- Full support for larger devices (24C04, 24C08, 24C16). These are not typically found on a PC. These devices will appear as separate devices at multiple addresses.

- Support for really large devices (24C32, 24C64, 24C128, 24C256, 24C512). These devices require two-byte address fields and are not supported.
- Enable Writing. Again, no technical reason why not, but making it easy to change the contents of the EEPROMs (on DIMMs anyway) also makes it easy to disable the DIMMs (potentially preventing the computer from booting) until the values are restored somehow.

Use

After inserting the module (and any other required SMBus/i2c modules), you should have some EEPROM directories in `/sys/bus/i2c/devices/*` of names such as "0-0050". Inside each of these is a series of files, the eeprom file contains the binary data from EEPROM.