## NAME

aha – low-level module for Adaptec 154x ISA host bus adapters

## AVAILABILITY

x86

## DESCRIPTION

The **aha** module provides low-level interface routines between the common disk/tape I/O subsystem and the Adaptec ISA bus master 154x SCSI (Small Computer System Interface) controllers. The **aha** module can be configured for disk and streaming tape support for one or more host adapter boards, each of which must be the sole initiator on a SCSI bus. Auto configuration code determines if the adapter is present at the configured address and what types of devices are attached to it.

### Board Configuration and Auto Configuration

The driver attempts to initialize itself in accordance with the information found in the configuration file, **/kernel/drv/aha.conf**. The relevant user configurable items in this file are:

> **io port reg=0x330,0,0 ioaddr=0x330 ,**
> **dma channel dmachan=6 ,**
> **dma speed dmaspeed=0 ,**
> **bus on time buson=5 , and**
> **bus off time busoff=9 .**

The I/O port is the ISA bus I/O address used for communication with the adapter. The direct memory access (DMA) channel should be set to the manufacturer's default of 5 for the primary adapter. The DMA speed, bus on time, and bus off times may be set for optimum performance with each ISA motherboard. Refer to the *Adaptec AHA-1540/1542 User's Manual* for instructions. All jumpers on the board should be set (or verified) to conform the the configuration file.

The 154xC and the 154xCF should be set to default values. Specifically, disable BIOS support for drives with more than 1024 cylinders and more than two BIOS drives. Make sure that the DMA transfer speed does not exceed the capabilities of the motherboard: most can not be run faster than the default 5.7.

The default configurations described in the *Adaptec AHA-1540/1542 User's Manual* should be used for standard configurations of the system. If more than one board is to be used in a single system, each must at least occupy a different set of address ranges and use a different DMA channel. Use of a different interrupt level for each board is required.

The default listing of the configuration file is as follows:

```
#
# primary controller [Settings for CD-ROM
#
name="aha" class="sysbus" reg=0x330,0,0
        ioaddr=0x330 dmachan=6 dmaspeed=0 buson=5 busoff=9;
```

```
#
# another controller example
#
name="aha" class="sysbus" reg=0x234,0,0
        ioaddr=0x234 dmachan=6 dmaspeed=0 buson=5 busoff=9;
```

After installation, 154x controllers may be jumpered for any of the I/O address, IRQ, and DMA channel combinations supported by the hardware, provided that this is reflected in the configuration file and that the parameters do not conflict with other devices on the system.