NAME

ncrs – low-level module for NCR 53C710, 53C810, 53C815, 53C820, and 53C825 host bus adapters

SYNOPSIS

ncrs@*ioaddr***,0**

AVAILABILITY

x86

DESCRIPTION

The **ncrs** module provides low-level interface routines between the common disk/tape I/O subsystem and the NCR 53C710, 53C810, 53C815, 53C820, and 53C825 SCSI (Small Computer System Interface) controllers.

The **ncrs** module can be configured for disk and streaming tape support for one or more host bus adapter boards. Each host bus adapter board 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.

The Wide SCSI Bus option (16 bit) on adapters using the 53C820 and 53C825 is not supported. These adapters are operated in their 53C810 compatible mode.

CONFIGURATION

The driver attempts to initialize itself in accordance with the information found in the configuration file, **ncrs.conf**. The relevant user configurable items in this file are as follows:

reg
This represents the slot id. The slot id corresponds to the PCI (Peripheral Component Interconnect) hardware slot assigned to the 53C8xx adapter or the EISA base address assigned to the 53C710 adapter.

reg consists of a 3-tuple of integers. The first integer is a unique identifier for this device. The second and third integer are normally 0. See **sysbus**(4).

scsi-initiator-id
The initiator target id is used by the adapter to communicate with devices on the SCSI bus. It must not conflict with any target id value assigned to any disk, tape, or other SCSI devices connected to the adapter. The valid values are 0 to 7. If this property is omitted or if the value isn't valid, the adapter will use target id **7** by default.

clock
The synchronous I/O clock frequency. The clock frequency property should match the frequency of the oscillator used to drive the adapter. All the existing implementations use a **40** Mhz clock. However, values between 16 and 75 can be specified. If this property is omitted or if the value specified is less than 16 or greater than 75, the SCSI bus will operate in Asynchronous I/O mode.

max-sync-rate
The maximum synchronous I/O transfer rate property can be used to limit the maximum I/O rate for each target device on the SCSI bus. This property consists of a comma separated list of values. The list specifies in order the maximum synchronous I/O rates for

each of the targets starting with target 0. The following values are accepted: **10.0**, **10**, **6.67**, **6.66**, **5.0**, **5**, **4.0**, **4**, **3.33**, **3.3**, and **0**. If any other value is specified or if 0 is specified for a target, the adapter will operate in Asynchronous I/O mode for that particular target.

For example, the entry **max-sync-rate="10,10,10,10,10,10,10"** specifies a maximum synchronous I/O rate of 10 for all targets. This is the default.

no-disconnect The disable disconnections property controls the disconnection option for each target on the SCSI bus. By default the adapter allows a target to disconnect at any time. If the **no-disconnect** property is specified, the adapter will not allow the target devices listed to disconnect. Each of the comma separated values specifies a target device for which the option will be disabled. The valid target ids are **0** through **7**.

For example, the entry **no-disconnect=4,6** disables the disconnect option for target devices **4** and **6**.

EXAMPLES

Here are some examples of entries that could be included in the configuration file, **ncrs.conf**.

```
#
# 53C810 primary controller
#
name="ncrs" class="sysbus" reg=11,0,0 ;

#
# 53C710 secondary controller, all targets limited to
# 5 MB/sec sync I/O
#
name="ncrs" class="eisa" reg=0xc000,0,0
max-sync-rate="5,5,5,5,5,5,5" ;
```

FILES

/kernel/drv/ncrs.conf configuration file for the **ncrs** driver

SEE ALSO

driver.conf(4), **sysbus**(4)