hf

IBM Hardfile SCSI host adapter driver

Description

hf is the device driver for IBM Hardfile SCSI host adapter cards, including the IBM SCSI-2 Fast/Wide Adapter/A, and the adapters in the IBM PS/2 Model 85 and IBM PS/2 Model 95.

The PS/2 Model 85 has the adapter integrated on the planar/motherboard; the PS/2 Model 95 uses the adapter installed in a microchannel expansion slot.

Under the SCO OpenServer system, this adapter does not support SCB Move Mode. This means that it is restricted to supporting seven target IDs and that it cannot use the tagged-command queuing features of the host adapter.

Refer to the *SCO Hardware Compatibility Handbook* to determine the support status of your host adapter, or contact your system supplier.

Configuring the hf driver

You can configure the **hf** driver using entries in */etc/conf/cf.d/mdevice* and */etc/conf/sdevice.d/hf*. See *mdevice*(F) and *sdevice*(F). Changes to these files take effect once you relink the kernel using **link_unix**(ADM) and reboot the system.

Configure **hf** driver-specific characteristics by editing the */etc/conf/pack.d/hf/space.c* file, which controls the NODISCONNECT parameter and displays driver-specific warning messages.

Boot time configuration of SCSI

Use the **bootstring**(HW) parameters to override the default hardware configuration information. Of special interest are the **adapter=** parameter that specifies information for the host adapter card that plugs into or is part of the motherboard, and the ***periph*=** parameter that specifies information about the host adapter being used by one of the generic peripheral interfaces (**Sdsk**, **Srom**, or **Stp**).

ioctl commands

The **hf** driver supports all standard SCSI ioctls that are defined in the <*sys/scsicmd.h*> header file and documented on the **scsi**(HW) manual page.

Diagnostics

These error messages associated with **hf** may display on the console. See **messages**(M) for general information about kernel error messages, including a list of generic device driver errors.

`WARNING: hf: Adapter` ***m*** `unexpected intr state 0x`***n***
An unexpected interrupt was received.

`WARNING: hf: Adapter BUSY bit not reset`
The adapter could not be reset.

`WARNING: hf: hfintr - Too many soft error retries` (***n***)
Three soft error retries are allowed before continuing.

`WARNING: hf: hfintr - Too many sense request retries` (***n***)
Three sense request retries are allowed before continuing.

`WARNING: hf: hfpresent - Timeout on SCSI bus` ***m*** `RESET cmd=0x`***n***

The SCSI bus took too long to reset while testing the adapter.

`WARNING: hf:`***hf_msg***

hf_msg can be one of the following sense error messages:

16 bit Card Slot Address Range Exceeded
8032 Internal Peripheral fail
8032 ROM Test failed
Adapter Buffer Check Retry
Adapter Busy
Adapter Hardware Error
Adapter Hardware Failure
Adapter Micro Detected Error
Adapter Retry Invoked
Additional Status Available
Assign Rejected Command in Progress on Device
Assign Rejected SCSI Device Already Assigned
Attachment Buffer Defective
Check Condition (Error)
Command Aborted (by system)
Command Aborted by Adapter
Command Completed with Failure
Command Interface Reg. empty
Command Interface Reg. full
Command Not Supported
Command Rejected Adapter Diagnostic Failure
Command Rejected Buffer Test with Buffer Enabled
Command Rejected SCSI Device Not Assigned
Condition Met/Good (No error)
Data Flow Ctlr chip failed
Device Busy (Error)
Device Dependent Status avail.
Device Not Initialized
DMA error
Format Rejected Sequence Error
Global Command Time-out
Good Status (No error)
Hardware failure on soft reset
Immediate Command Complete
Intermediate/Cond Met/Good
Intermediate/Good (No error)
Interrupt Request active
Invalid Command / Parameter
Invalid Command rejected
Invalid Device for Command
Invalid Parameter in SCB
Invalid SCSI Phase Sequence
Local RAM test failed
Long Record Exception
Major Exception Occurred
Mandatory SCSI Message Rejected
Maximum LBA Exceeded
Missing or defective fuse
No Error
No error - cold reset complete
No error - warm reset complete
Reservation Conflict (Error)

SCB cmd complete with success
SCB cmd complete, OK + retries
SCB Command Completed OK
SCB Command Completed with retry
SCB Ended (No error)
SCB Halted (Error / End Chain)
SCB Interrupt Queued
SCB rejected
SCB specification check
SCSI Bus Reset Occurred
SCSI Interface Fault
SCSI interface test failed
SCSI Selection Time-out
Short Length Record
Short Record Exception
Soft reset successful
Software Sequencing Error
System Interface Check Retry
System Interface ctrl chip fail
Unexpected SCSI Bus Free

`WARNING: hf: readpos - Unknown board address 0x`***n*** `in POS slot` ***n***
The board address ***n*** of a host adapter was invalid for its slot position ***n***.

`WARNING: hf: Sense failed`
Sense request has totally failed.

`PANIC: hf: hf_immediate_cmd - Unknown cmd=0x`***n***
The driver encountered an unknown immediate command to the host adapter of a specified logical unit.

`PANIC: hf: No response from adapter ha=`***m*** `after vector` ***n*** `interrupt`

`hf: on scsi ctlr` ***o***, `id` ***p***
After receiving an interrupt, the driver timed out waiting for the host adapter.

Files

/usr/include/sys/scsicmd.h
SCSI interface header files

See also

boot(HW), **link_unix**(ADM), **mdevice**(F), **mkdev**(ADM), **sconf**(ADM), **scsi**(HW), **sdevice**(F)

Chapter 16, "Adding SCSI host adapters and peripherals" in the *SCO OpenServer Handbook*
SCO OpenServer *System Administration Guide*