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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'sg_sat_phy_event.8' command

$ man sg_sat_phy_event.8

SG_SAT_PHY_EVENT(8) SG3_UTILS SG_SAT_PHY_EVENT(8)

NAME

sg_sat_phy_event - use ATA READ LOG EXT via a SAT pass-through to fetch SATA phy event counters

SYNOPSIS

sg_sat_phy_event [--ck_cond] [--extend] [--help] [--hex] [--ignore] [--len={16|12}] [--raw] [--reset] [--verbose] [--version] DEVICE

DESCRIPTION

This utility sends an ATA READ LOG EXT with the log page ("address") set to 11h to DEVICE and outputs the response. Log page 11h is defined in the SATA 2.5 standard and contains phy event counters. Rather than send this command directly to the DEVICE, are sent via a SCSI transport which is assumed to contain a SCSI to ATA Translation (SAT) Layer (SATL). The SATL may be in an operating system driver, in host bus adapter firmware or in some external enclosure.

The SAT standard (SAT ANSI INCITS 431-2007, prior draft: sat-r09.pdf at www.t10.org) defines two SCSI "ATA PASS-THROUGH" commands: one using a 16 byte "cdb" and the other with a 12 byte cdb. This utility defaults to using the 16 byte cdb variant. SAT-2 is also a standard: SAT-2 ANSI INCITS 465-2010 and the draft prior to that is sat2r09.pdf . The SAT-3 project has started and the most recent draft is sat3r01.pdf .

OPTIONS

Arguments to long options are mandatory for short options as well.

-c, --ck_cond

sets the CK_COND bit in the ATA PASS-THROUGH SCSI cdb. The de?
fault setting is clear (i.e. 0). When set the SATL should yield
a sense buffer containing a ATA Result descriptor irrespective
of whether the command succeeded or failed. When clear the SATL
should only yield a sense buffer containing a ATA Result de?
scriptor if the command failed.

-e, --extend

sets the EXTEND bit in the ATA PASS-THROUGH SCSI cdb. The de?
fault setting is clear (i.e. 0). When set a 48 bit LBA command
is sent to the device. This option has no effect when --len=12.

-h, --help

outputs the usage message summarizing command line options then
exits. Ignores DEVICE if given.

-H, --hex

outputs the ATA READ LOG EXT response in hex. The default action
(i.e. without any '-H' options) is to output the response in
hex, grouped in 16 bit words (i.e. the ATA standard's prefer?
ence). When given once, the response is output in ASCII hex
bytes (i.e. the SCSI standard's preference). When given twice
(i.e. '-HH') the output is in hex, grouped in 16 bit words, the
same as the default but without a header.

-i, --ignore

usually the phy counter identifier names are decoded. When this
option is given, the numeric value of the identifier is output,
the vendor flag, the data length (in bytes) and the correspond?
ing value.

-l, --len={16|12}

this is the length of the SCSI cdb used for the ATA PASS-THROUGH
commands. The argument can either be 16 or 12. The default is
16. The larger cdb size is needed for 48 bit LBA addressing of
ATA devices. On the other hand some SCSI transports cannot con?
vey SCSI commands longer than 12 bytes.

-r, --raw

output the ATA READ LOG EXT response in binary. The output should be piped to a file or another utility when this option is used. The binary is sent to stdout, and errors are sent to stderr.

-R, --reset

reset the counters after the current values are returned, de? coded and displayed.

-v, --verbose

increases the level or verbosity.

-V, --version

print out version string

NOTES

The SCSI ATA PASS-THROUGH (12) command's opcode is 0xa1 and it clashes with the MMC set's BLANK command used by cd/dvd writers. So a SATL in front of an ATAPI device that uses MMC (i.e. has peripheral device type 5) probably should treat opcode 0xa1 as a BLANK command and send it through to the cd/dvd drive. The ATA PASS-THROUGH (16) command's opcode (0x85) does not clash with anything so it is a better choice.

In the 2.4 series of Linux kernels the DEVICE must be a SCSI generic (sg) device. In the 2.6 series block devices (e.g. disks and ATAPI DVDs) can also be specified. For example "sg_inq /dev/sda" will work in the 2.6 series kernels. From lk 2.6.6 other SCSI "char" device names may be used as well (e.g. "/dev/st0m"). Prior to lk 2.6.29 USB mass storage limited sense data to 18 bytes which made the --ck_cond option yield strange (truncated) results.

EXIT STATUS

The exit status of sg_sat_identify is 0 when it is successful. Other? wise see the sg3_utils(8) man page.

AUTHOR

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REPORTING BUGS

Report bugs to <dgilbert at interlog dot com>.

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SEE ALSO

sg_sat_identify,sg_sat_read_gplog(sg3_utils),

smp_rep_phy_err_log(smp_utils),sdparm(sdparm),hdparm(hdparm)