Rocky Enterprise Linux 9.2 Manual Pages on command 'sg_decode_sense.8'

$ man sg_decode_sense.8

SG_DECODE_SENSE(8) SG3_UTILS SG_DECODE_SENSE(8)

NAME

sg_decode_sense - decode SCSI sense and related data

SYNOPSIS

sg_decode_sense [--binary=BFN] [--cdb] [--err=ES] [--file=HFN] [--help]

[--hex] [--inhex=HFN] [--nospace] [--status=SS] [--verbose] [--version]

[--write=WFN] [H1 H2 H3 ...]

DESCRIPTION

This utility takes SCSI sense data in binary or as a sequence of ASCII

hexadecimal bytes and decodes it. The primary reference for the decod?

ing is SPC-4 ANSI INCITS 513-2015 and the most recent draft SPC-5 revi?

sion 19 which can be found at https://www.t10.org and other locations

on the internet.

SCSI sense data is often found in kernel log files as a result of some?

thing going wrong or may be an informative warning. It is often shown

as a sequence of hexadecimal bytes, starting with 70, 71, 72, 73, f0 or

f1. Sense data could be up to 252 bytes long but typically is much

shorter than that, 18 bytes long is often seen and is usually associ?

ated with the older "fixed" format sense data.

The sense data can be provided on the command line or in a file. If given on the command line the sense data should be a sequence of hexa? decimal bytes separated by space. Alternatively a file can be given with the contents in binary or ASCII hexadecimal bytes. The latter form can contain several lines each with none, one or more ASCII hexadecimal bytes separated by space (comma or tab). The hash symbol may appear and it and the rest of the line is ignored making it useful for comments.

If the --cdb option is given then rather than viewing the given hex ar? guments as sense data, it is viewed as a SCSI command descriptor block (CDB). In this case the command name is printed out. That name is based on the first hex byte given (know as the opcode) and optionally on an? other field called the "service action".

Another alternate action is when the --err=ES is given. ES is assumed to be an "exit status" value between 0 and 255 from one of the utili? ties in this package. A descriptive string is printed. Other options are ignored apart from --verbose.

OPTIONS

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

-b, --binary=BFN

the sense data is read in binary from a file called BFN. The op? tion cannot be given with --file=HFN or --inhex=HFN as they con? tradict.

-c, --cdb

treat the given string of hex arguments as bytes in a SCSI CDB and decode the command name.

-e, --err=ES

ES should be an "exit status" value between 0 and 255 that is available from the shell (i.e. the utility's execution context) after the utility is finished. By default an indicative error message is printed to stdout; and if the --verbose option is given once (or an odd number of times) then the message is in? stead printed to stderr. If --verbose is given two or more times

a longer form of the message is output. In all cases the message is less than 128 characters long with one trailing line feed. All other command line options and arguments are ignored.

-f, --file=HFN

the sense data is read in ASCII hexadecimal from a file called HFN. The sense data should appear as a sequence of bytes sepa? rated by space, comma, tab or newline. Everything from and in? cluding a hash symbol to the end of that line is ignored. If --nospace is set then no separator is required between the ASCII hexadecimal digits in HFN with bytes decoded from pairs of ASCII hexadecimal digits.

-h, --help

output the usage message then exit.

-H, --hex

this option is used in conjunction with --write=WFN in order to change the output written to WFN to lines of ASCII hex bytes suitable for a C language compiler. Each line contains up to 16 bytes (e.g. a line starting with "0x3b,0x07,0x00,0xff").

-i, --inhex=HFN

same action as --file=HFN. This option was added for compatibil? ity with other utilities in this package that have a --inhex= option.

-n, --nospace

expect ASCII hexadecimal to be a string of hexadecimal digits with no spaces between them. Bytes are decoded by taking two hexadecimal digits at a time, so an even number of digits is ex? pected. The string of hexadecimal digits may be on the command line (replacing "H1 H2 H3") or spread across multiple lines the HFN given to --file=. On the command line, spaces (or other whitespace characters) between sequences of hexadecimal digits are ignored; the maximum command line hex string is 1023 charac? ters long.

-s, --status=SS

where SS is a SCSI status byte value, given in hexadecimal. The SCSI status byte is related to, but distinct from, sense data.

-v, --verbose

increase the degree of verbosity (debug messages).

-V, --version

output version string then exit.

-w, --write=WFN

writes the sense data out to a file called WFN. If necessary WFN is created. If WFN exists then it is truncated prior to writing the sense data to it. If the --hex option is also given then ASCII hex is written to WFN (see the --hex option description); otherwise binary is written to WFN. This option is a convenience and may be helpful in converting the ASCII hexadecimal represen? tation of sense data (or anything else) into the equivalent bi? nary or a compilable ASCII hex form.

NOTES

Unlike most utilities in this package, this utility does not access a SCSI device (logical unit). This utility accesses a library associated with this package. Amongst other things the library decodes SCSI sense data.

The sg_raw utility takes a ASCII hexadecimal sequence representing a SCSI CDB. When sg_raw is given the '-vvv' option, it will attempt to decode the CDB name.

EXAMPLES

Sense data is often printed out in kernel logs and sometimes on the command line when verbose or debug flags are given. It will be at least 8 bytes long, often 18 bytes long but may be longer. A sense data string might look like this:

f0 00 03 00 00 12 34 0a 00 00 00 00 11 00 00 00

00 00

Cut and paste it after the sg_decode_sense command:

sg_decode_sense f0 00 03 00 00 12 34 0a 00 00 00 00 11 00 00 00 00 00

and for this sense data the output should look like this:

Fixed format, current; Sense key: Medium Error

Additional sense: Unrecovered read error

Info fld=0x1234 [4660]

For a medium error the Info field is the logical block address (LBA) of the lowest numbered block that the associated SCSI command was not able to read (verify or write).

EXIT STATUS

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

AUTHORS

Written by Douglas Gilbert.

REPORTING BUGS

Report bugs to <dgilbert at interlog dot com>.

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SEE ALSO

sg_requests,sg_raw(sg3_utils)