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

\$ man sg_start.8

SG_START(8) SG3_UTILS SG_START(8)

NAME

sg_start - send SCSI START STOP UNIT command: start, stop, load or eject medium

SYNOPSIS

```
sg_start [0] [1] [--eject] [--help] [--fl=FL] [--immed] [--load]
[--loej] [--mod=PC_MOD] [--noflush] [--pc=PC] [--readonly] [--start]
[--stop] [--verbose] [--version] DEVICE

sg_start [--eject] [--fl=FL] [-i] [--imm=0|1] [--load] [--loej]
[--mod=PC_MOD] [--noflush] [--pc=PC] [-r] [--start] [--stop] [-v] [-V]
[0|1] DEVICE
```

DESCRIPTION

sg_start sends a SCSI START STOP UNIT command to the DEVICE with the selected options. The most used options are --stop to spin down a disk and --start to spin up a disk. Using --start on a disk that is already spinning is harmless. There is also finer grain control with "power condition": active, idle or standby. This is set with the --pc=PC option. In some contexts the "stop" state can be considered an additional power condition.

Devices that contain removable media such as cd/dvds can use the --loej option to load the medium when used in conjunction with --start (i.e. load medium then spin up). Alternatively --loej may be used to eject the medium when used in conjunction with --stop (i.e. spin down then

eject medium). More simply, the loading or ejecting of a removable medium can be requested with the `--load` or `--eject` option.

If no option or argument is given then a `--start` is assumed; as the utility's name suggests.

This utility supports two command line syntaxes, the preferred one is shown first in the synopsis and explained in this section. A later section on the old command line syntax outlines the second group of options.

Linux note: best not to use a standard block device name (e.g. `/dev/sdc`) with the `--stop` option. Use a `sg` or `bsg` device node instead (see `lsscsi(8)`). The block layer will sometimes notice the disk spinning down and decide: "that's not right" and spin it up again!

OPTIONS

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

`0` same action as `--stop`.

`1` same action as `--start`.

`-e, --eject`

stop the medium and eject it from the drive. Only appropriate for a device with removable medium. Might be ignored (prevented), see below. Note, this is an operation that can be done on a tape drive or CD/DVD/BD player, not on a hard disk or SSD!

`-h, --help`

print out the usage message then exit.

`-f, --fl=FL`

sets the format layer number for the disc to "jump" to (defined in MMC-5). Values of FL can be 0 to 3. When this option is chosen, the FL, LoEj and Start bits are set in the cdb as required by MMC-5; thus the user does not need to set the `--start` and/or `--load` options.

`-i, --immed`

sets the IMM bit on the START STOP UNIT command so this utility will return immediately and not wait for the media to complete the requested action. The default is to wait until the media to

complete the requested action before returning.

-l, --load

load the medium in the drive and start it. Only appropriate for a removable medium.

-L, --loej

sets the LOEJ bit on the START STOP UNIT command. This loads the media when the unit is started or eject it when the unit is stopped (i.e. works in conjunction with START bit in cdb). This option is ignored if 'pc > 0'. Default is off (i.e. don't attempt to load or eject media). If a start/stop indication is not given (i.e. neither --start nor --stop) and this option is given then a load and start action is assumed.

-m, --mod=PC_MOD

where PC_MOD is the 'power condition modifier' value. 0 to 15 (inclusive) are valid and 0 is the default. This 'power condition modifier' field in the cdb was added after sbc3r13.

-n, --noflush

do not perform a flush to media (e.g. like SYNCHRONIZE CACHE does) before a variant of this utility that limits access to the media. Using the --stop option is an example of something that limits access to the media. This 'noflush' field in the cdb was added after sbc3r13.

-O, --old

Switch to older style options. Please use as first option.

-p, --pc=PC

where PC is the 'power conditions' value. 0 to 15 (inclusive) are valid. Default value is 0. When '--pc=0' then --eject, --load, --loej, --start and --stop are active. Some common values are 1 for the "active" power condition (SBC); 2 for the idle power condition; 3 for the standby power condition; 5 for sleep power condition (MMC); 7 for LU_CONTROL (SBC), 0xa (decimal 10) for FORCE_IDLE_0 (SBC) and 0xb (decimal 11) for FORCE_STANDBY_0 (SBC). See recent SBC-3, MMC-5 and SAS drafts at www.t10.org for

more information.

-r, --readonly

open the DEVICE in read-only mode. Maybe required in Linux to stop a nuisance spin-up if the DEVICE is an ATA disk. The nuisance spin-up may occur at the end of this command negating the effect of the --stop option.

-s, --start

start (spin-up) the DEVICE. This sets the START bit in the cdb. Using this option on an already started device is harmless. In the absence of other options, this option defaults (i.e. set the START cdb bit).

-S, --stop

stop (spin-down) the DEVICE. This clears the START bit in the cdb. This operation is typically done on a hard disk or SSD. In the case of a SSD it will be placed in low power mode and may need a start operation later before normal IO can resume.

-v, --verbose

increase the level of verbosity. Can be used multiple times.

-V, --version

print out version string then exit.

NOTES

To avoid confusion, only one of 0, 1 --eject, --load, --start and --stop should be given.

There is an associated "power condition" mode page (0x1a) in which timer values can be set for transitioning to either idle or standby state after a period of inactivity. The sdparm utility can be used to view the power condition mode page and if required change it. If a DEVICE is in either idle or standby power condition state then a REQUEST SENSE command (see the sg_requests utility) should yield a sense key of "no sense" and an additional sense code of "Low power condition on" on recent SCSI devices.

Ejection of removable media (e.g. 'sg_start --eject /dev/hdd' where the DEVICE is an ATAPI cd/dvd drive) may be prevented by a prior SCSI PRE?

VENT ALLOW MEDIUM REMOVAL command (see `sg_prevent`). In this case this utility should fail with an error generated by the device: illegal request / medium removal prevented. This can be overridden using `sg_prevent` or, for example, `'sdparm --command=unlock /dev/hdd'`.

The SCSI TEST UNIT READY command can be used to find out whether a DEVICE is ready to transfer data. If rotating media is stopped or still coming up to speed, then the TEST UNIT READY command will yield a "not ready" sense key and a more informative additional sense code. See the `sg_turs` utility.

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. SCSI disks and DVD drives) can also be specified. For example `"sg_start 0 /dev/sda"` will work in the 2.6 series kernels.

In the Linux 2.6 series, especially with ATA disks, using this utility to stop (spin down) a disk may not be sufficient and other mechanisms will start the disk again some time later. The user might additionally mark the disk as "offline" with `'echo offline > /sys/block/sda/device/state'` where `sda` is the block name of the disk. To restart the disk "offline" can be replaced with "running". Note that once the 'state' is set to offline, no SCSI commands can be sent to the device until it is set back to running. Also stopping a disk via a pass-through interface (e.g. `/dev/sg1` or `/dev/bsg/1:0:0:0`) may reduce unwanted side effects (such as restarting it again when this utility completes).

EXIT STATUS

The exit status of `sg_start` is 0 when it is successful. Otherwise see the `sg3_utils(8)` man page.

OLDER COMMAND LINE OPTIONS

The options in this section were the only ones available prior to `sg3_utils` version 1.23. Since then this utility defaults to the newer command line options which can be overridden by using `--old` (or `-O`) as the first option. See the ENVIRONMENT VARIABLES section for another way to force the use of these older command line options.

Note that the action of --loej is slightly different in the older interface: when neither --start nor --stop (nor proxies for them) are given, --loej performs an eject operation. In the same situation the newer interface will perform a load operation.

Earlier versions of sg_start had a '-s' option to perform a SYNCHRONIZE CACHE command before the START STOP UNIT command was issued. According to recent SBC-2 drafts this is done implicitly if required. Hence the '-s' option has been dropped.

All options, other than '-v' and '-V', can be given with a single "-".

For example: "sg_start -stop /dev/sda" and "sg_start --stop /dev/sda" are equivalent. The single "-" form is for backward compatibility.

0 stop (spin-down) DEVICE.

1 start (spin-up) DEVICE.

--eject

stop the medium and eject it from the drive.

--fl=FL

sets the format layer number for the disc to "jump" to (defined in MMC-5).

-i sets the IMM bit on the START STOP UNIT command so this utility will return immediately and not wait for the media to spin down. Same effect as '--imm=1'. The default action (without this option or a '--imm=1' option) is to wait until the media spins down before returning.

--imm=0|1

when the immediate bit is 1 then this utility returns immediately after the DEVICE has received the command. When this option is 0 (the default) then the utility returns once the command has completed its action (i.e. it waits until the device is started or stopped).

--load load the medium in the drive and start it.

--loej sets the LOEJ bit in the START STOP UNIT cdb. When a "start" operation is indicated, then a load and start is performed. When a "stop" operation is indicated, then a stop and eject is performed.

formed. When neither a "start" or "stop" operation is indicated does a stop and eject. [Note that the last action differs from the new interface in which the option of this name defaults to load and start.]

-N, --new

Switch to the newer style options.

--mod=PC_MOD

where PC_MOD is the 'power condition modifier' value. 0 to 15 (inclusive) are valid and 0 is the default. This field was added after sbc3r13.

--noflush

do not perform a flush to media (e.g. like SYNCHRONIZE CACHE does) before a variant of this utility that limits access to the media. Using the --stop option is an example of something that limits access to the media. This field was added after sbc3r13.

--pc=PC

where PC is the 'power condition' value (in hex). 0 to f (inclusive) are valid. Default value is 0.

-r see the --readonly option above. May be useful for ATA disks.

--start

start (spin-up) DEVICE.

--stop stop (spin-down) DEVICE. Same meaning as "0" argument.

-v verbose: outputs SCSI command in hex to console before executing it. '-vv' and '-vvv' are also accepted yielding greater verbosity.

-V print out version string then exit.

ENVIRONMENT VARIABLES

Since sg3_utils version 1.23 the environment variable SG3_UTILS_OLD_OPTS can be given. When it is present this utility will expect the older command line options. So the presence of this environment variable is equivalent to using --old (or -O) as the first command line option.

Written by K. Garloff and D. Gilbert

REPORTING BUGS

Report bugs to <dgilbert at interlog dot com>.

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SEE ALSO

sg_prevent(sg3_utils), sg_requests(sg3_utils), sg_turs(sg3_utils) sd?

parm(sdparm), lsscsi(lsscsi)

sg3_utils-1.47

April 2021

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