NAME

sg_seek − send SCSI SEEK, PRE-FETCH(10) or PRE-FETCH(16) command

SYNOPSIS

sg_seek [*−−10*] [*−−count=NC*] [*−−grpnum=GN*] [*−−help*] [*−−immed*] [*−−lba=LBA*] [*−−num−blocks=NUM*] [*−−pre−fetch*] [*−−readonly*] [*−−skip=SB*] [*−−time*] [*−−verbose*] [*−−version*] [*−−wrap−offset=WO*] *DEVICE*

DESCRIPTION

Sends a SCSI SEEK(10), PRE−FETCH(10) or PRE−FETCH(16) command to the *DEVICE*. The SEEK command has been obsolete since SBC−2 (2005) but still is supported on some hard disks and even some SSDs (solid state disks). The PRE−FETCH command can be viewed as SEEK's modern replacement. Instead of talking about moving the disk heads to the track containing the sort after LBA, it talks about bringing the sort after LBA (and a given number of blocks) into the disk's cache. Also the PRE−FETCH commands have an IMMED field.

The PRE−FETCH commands can report "real" errors but usually they will report one of two "good" statuses. To do this they return the rarely used CONDITION MET status. If the number of blocks does actually fit in the cache (when IMMED=0) or there is enough room in the cache when the command arrives (when IMMED=1) then a CONDITION MET status is returned. If the requested number of blocks did not fit (IMMED=0) or would not fit (IMMED=1) then status GOOD is returned. So if a disk has a large cache and PRE−FETCH is used sparingly then the command is more likely to return CONDITION MET than GOOD. This presents some SCSI sub−systems with problems as due to its rareness they mishandle CONDITION MET and treat it as an error (see NOTES section below).

OPTIONS

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

−T, **−−10**
: use a 10 byte cdb command, either SEEK(10) or PRE−FETCH(10) command. In the absence of the *−−pre−fetch* option, the SEEK(10) command is used. If the *−−pre−fetch* option is given without this option then a PRE−FETCH(16) command is used.

−c, **−−count**=*NC*
: *NC* is the number of commands (one of SEEK(10), PRE−FETCH(10) or PRE−FETCH(16)) that will be executed. The default value is 1. If an error occurs it is noted and the program continues until *NC* is exhausted. If *NC* is 0 then options are checked and the *DEVICE* is opened but no commands are sent.

−g, **−−grpnum**=*GN*
: *GN* is the group number, a value between 0 and 63 (in hex: 0x3f). The default value is 0. This option is ignored if the selected command is SEEK(10).

−h, **−−help**
: output the usage message then exit.

−i, **−−immed**
: this option only applies to PRE−FETCH(10) and PRE−FETCH(16), setting the IMMED bit. Without this option, the *DEVICE* returns after it has completed transferring all, or part of, the requested blocks into the cache. If this option is given the *DEVICE* returns after it has done sanity checks on the cdb (e.g. making sure the *LBA* is greater than the number of available blocks) and before it does the transfer into the cache.
  Note that even when this option is given, the return status from the PRE−FETCH commands is still either CONDITION MET status (if the cache seems to have enough free space for the transfer) or a GOOD status (if the cache does not seem to have enough free space).

−l, **−−lba**=*LBA*
: *LBA* is the starting logical block address that is placed in the command descriptor block (cdb) of the selected command. Note that the *LBA* field in SEEK(10) and PRE−FETCH(10) is a 32 bit quantity, while with PRE−FETCH(16) it is a 64 bit quantity. The default value is 0 .

−n, **−−num−blocks**=*NUM*
: *NUM* is the number of blocks, starting at and including *LBA*, to place in the *DEVICE*'s cache. The SEEK(10) command does not use the *NUM* value. For PRE−FETCH(10) *NUM* is a 16 bit quantity, while for PRE−FETCH(16) it is a 32 bit quantity. The default value is 1 . If *NUM* is 0 then the *DEVICE* will attempt to transfer all blocks from the given *LBA* to the end of the medium.

−p, **−−pre−fetch**
: this option selects either PRE−FETCH(10) or PRE−FETCH(16) commands. With the *−−10* also given, the PRE−FETCH(10) command is selected; without that option PRE−FETCH(16) is selected. The default (in the absence of this and other 'selecting' options) the SEEK(10) command is selected.

−r, **−−readonly**
: this option sets a 'read−only' flag when the underlying operating system opens the given *DEVICE*. This may not work since operating systems can not easily determine whether a pass−through is a logical read or write operation so they take a risk averse stance and require read−write type *DEVICE* opens irrespective of what is performed by the pass−through.

−s, **−−skip**=*SB*
: *SB* is the number of logical block addresses to skip, between repeated commands when *NC* is greater than 1. The default value of *SB* is 1 . *SB* may be set to 0 so that all *NC* PRE−FETCH commands use the same *LBA*.

−t, **−−time**
: if given the elapsed time to execute *NC* commands is recorded. This is printed out before this utility exits. If *NC* is greater than 1 then the the "per command" time is also printed.

−v, **−−verbose**
: increase the level of verbosity, (i.e. debug output).

−V, **−−version**
: print the version string and then exit.

−w, **−−wrap−offset**=*WO*
: *WO* is the number of blocks, relative to *LBA*, that when exceeded, set the next command's logical block address back to *LBA*. Whether this "reset−to−LBA" action occurs depends on the values *NC* and *SB*.

NOTES

Prior to Linux kernel 4.17 the CONDITION MET status was logged as an error. Recent versions of FreeBSD handle the CONDITION MET status properly.

If either the *−−count=NC* or *−−verbose* option is given then a summary line like the following is output:

```
Command count=5, number of condition_mets=3, number of goods=2
```

before the utility exits.

EXIT STATUS

The exit status of sg_seek is 0 (GOOD) or 25 (CONDITION_MET) when this utility is successful. If multiple commands are executed (e.g. when *NC* is greater than 1) then the result of the last executed SEEK or PRE−FETCH command sets the exit status. Otherwise see the sg3_utils(8) man page.

AUTHORS

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REPORTING BUGS

Report bugs to <dgilbert at interlog dot com>.

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SEE ALSO

sg_vpd(sg3_utils); sdparm(sdparm)