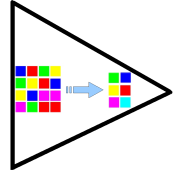


LESSFS QUICKSTART GUIDE



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Introduction:

Lessfs is an in line data deduplicating file system. It supports block sizes ranging from 4k to 128k. Larger than 4K block sizes do require the use of a recent kernel $\geq 2.6.26$ and a recent version of libfuse $\geq 2.8.0$ -pre1

As well as data deduplication lessfs also features LZO or QUICKLZ data compression.

lessfs.cfg:

Lessfs needs a configuration file that defines the location of the databases.

Example:

```
BLOCKDATA_PATH=/data/dta
BLOCKDATA_BS=1048576
#
BLOCKUSAGE_PATH=/data/mta
BLOCKUSAGE_BS=1048576
#
DIRENT_PATH=/data/mta
DIRENT_BS=1048576
#
FILEBLOCK_PATH=/data/mta
FILEBLOCK_BS=1048576
#
META_PATH=/data/mta
META_BS=1048576
#
HARDLINK_PATH=/data/mta
HARDLINK_BS=1048576
#
SYMLINK_PATH=/data/mta
SYMLINK_BS=1048576
#
LISTEN_IP=127.0.0.1
LISTEN_PORT=100
MAX_THREADS=2
```

The xxxx_path lines define the location where the databases are stored. The xxxx_BS lines are used to tune the bucket sizes of the databases. In order to handle a database containing one million of records, a bucket array with half a million of elements is needed. The size of each element is 4 bytes. That is, if 2M bytes of RAM is available, a database containing one million records can be handled.

More information about tuning tokyocabinet databases can be found on:

<http://tokyocabinet.sourceforge.net/spex-en.html>

LISTEN_IP and LISTEN_PORT specifies the ip address and the port number on which the lessfs tcp interface listens.

MAX_THREADS should be set to 1 or 2, depending on the amount of processors available. More than 2 threads will degrade the performance in most cases.

mklessfs:

mklessfs is needed to create a new lessfs filesystem. mklessfs requires the location of the lessfs configuration file as argument.

Example:

```
mklessfs /etc/lessfs.cfg
```

Note: mklessfs will refuse to operate if blockdata.tch already exists.

Lessfs:

The lessfs program is used to mount lessfs on a mountpoint. Since lessfs supports 4..132k block sizes.

Example 1:

mount lessfs with a 4k blocksize (This works with any kernel and any version of libfuse).

```
./lessfs /etc/lessfs.cfg /fuse -o negative_timeout=0,entry_timeout=0,\
attr_timeout=0,use_ino,readdir_ino,default_permissions,allow_other,\
max_read=4096,max_write=4096
```

Example 2:

mount lessfs with a 128k blocksize (Recent kernel and libfuse only).

```
./lessfs /etc/lessfs.cfg /fuse -o negative_timeout=0,entry_timeout=0,\
attr_timeout=0,use_ino,readdir_ino,default_permissions,allow_other,\
big_writes,max_read=131072,max_write=131072
```

Other lessfs features:

Lessfs has a built-in freeze and defragmentation interface:

```
# telnet localhost 100
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.
>help
+OK valid commands: defrag defrost freeze help quit|exit
>
```

Warning:

The defrag operation will make full copies of the databases (one by one) before deleting them. To finish this operation successful it is important that there is enough storage available.

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