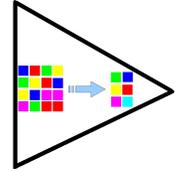


# LESSFS QUICKSTART GUIDE



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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
# Cache size in megabytes.
CACHESIZE=128
# Flush data to disk after X seconds.
COMMIT_INTERVAL=30
#
MINSPACEFREE=10
```

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.

CACHESIZE defines the maximum allowed number of blocks that are kept in memory.

COMMIT\_INTERVAL specifies the time in seconds after which the cache is written to disk.

MINSPACEFREE specifies the percentage of free disk space that must be available before lessfs freezes all I/O. The default value is 10%. Lessfs will continue I/O when extra space becomes available.

## **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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