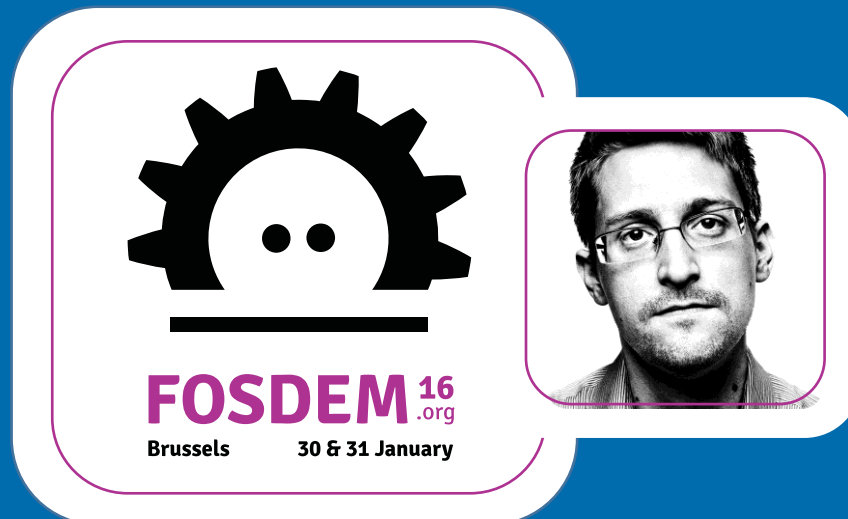




Keeping your files safe in the post-Snowden era with SXFS



Never trust anyone...

- Client side encryption
- Secure transfer
- Fault tolerance

But keep it all easy!



All-in-one solution



Encrypted filesystem backed
by SX object storage

Licence: GPLv2

```
$ git clone http://git.skylable.com/sx
```



SXFS

Under the hood



User interaction

- FUSE API implementation
- Files are mapped to remote objects
- Task queuing
- Transfer resumes



Data transfer

- Files are divided into same sized blocks
- Parallel block transfers
- Consistent hashing

Only encrypted data is sent!



Client-side encryption

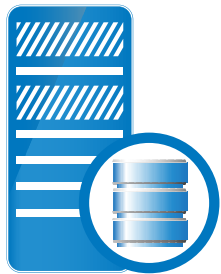
- AES 256 CBC + HMAC
- Deduplication on a file level
- Filename and file size encryption

FULLY DENIABLE!



Architecture

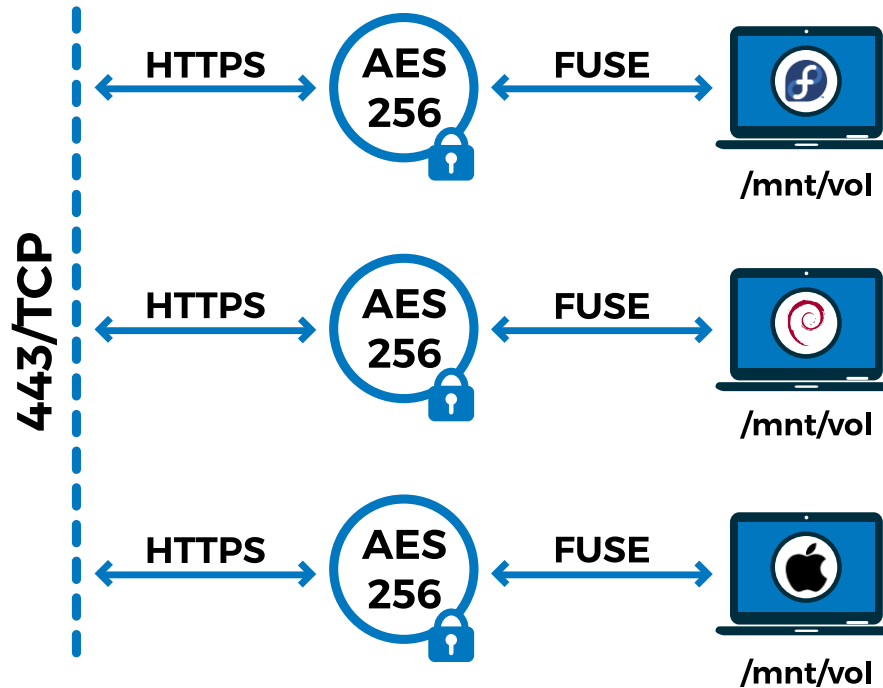
Object Storage
Server



SX

`sx://server/vol`

SXFS Clients



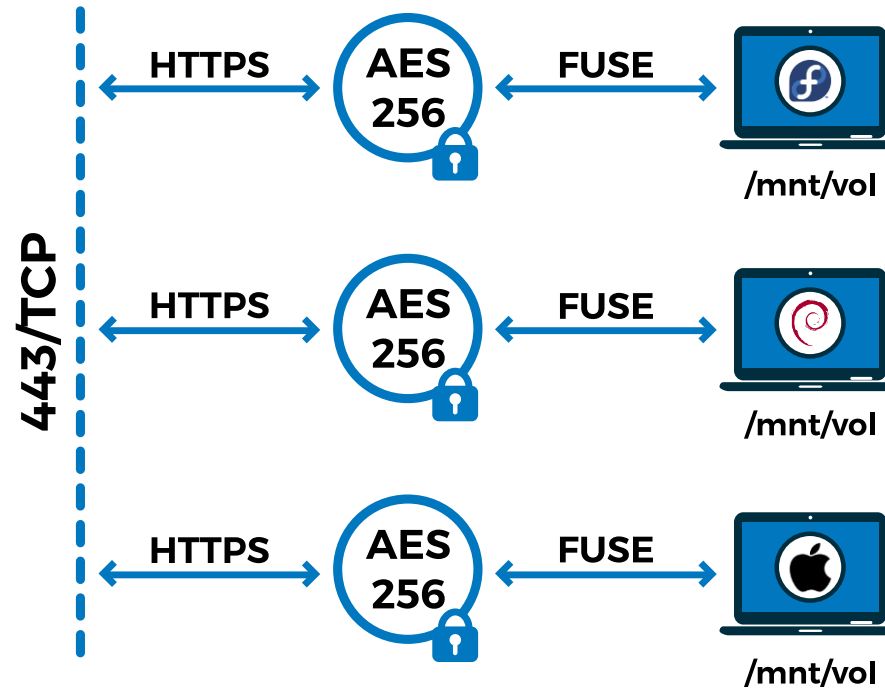
Time to scale out!

Object Storage Cluster



- Fault tolerance
- Replication

SXFS Clients



SXFS

Getting started



Supported platforms

Officially part of :

- Fedora
- Debian / Ubuntu
- Gentoo

Coming soon:

- CentOS SIG
- MacOSX Mac Ports



Installation

Fedora: `yum install skylable-sx`

Debian / Ubuntu: `apt-get install sx`

Gentoo: `emerge net-misc/sx`



From source

rpm-based: `yum install libcurl-devel zlib-devel nss-devel openssl-devel fuse-devel`

deb-based: `apt-get install libssl-dev libcurl4-openssl-dev libz-dev libfuse-dev`

```
$ wget http://cdn.skylable.com/source/sx-2.0.tar.gz
```

```
$ tar xvzf sx-2.0.tar.gz
```

```
$ cd sx-2.0
```

```
$ ./configure && make && sudo make install
```



SXFS

Server setup



sxsetup

```
sx@node1 # sxsetup
```

```
Enter the cluster name (use the same across  
all nodes: sx.foo.com
```

```
Path to SX storage[default=/var/lib/sxserver]:  
<ENTER>
```

```
Maximum size: 1T
```

```
Enter the IP address of this node:  
192.168.10.1
```

```
Is this the first node of a new cluster? (Y/n)  
<ENTER>
```

```
Is this correct? (Y/n) <ENTER>
```

```
sx@node1 #
```



Create a user and a volume

```
$ sxacl useradd john@foo.com sx://admin@sx.foo.com
Enter password for user 'john@sx.foo.com'
Enter password:
Re-enter password:
User successfully created!
```

```
$ sxvol create -o john@foo.com -s 100G -r 1 -f aes256 \
sx://admin@sx.foo.com/vol-john
Volume 'vol-john' (replica: 1, size: 100G, max-
revisions: 1) created.
```



SXFS

Client setup



Linux and MacOSX

```
$ sxinit sx://sx.foo.com
$ mount -t fuse.sxfs -o use_queues \
sx://sx.foo.com/your-vol /mountpoint
```

fstab example:

```
sx://sx.foo.com/your-vol /mountpoint fuse.sxfs
_netdev,fsname=sxfs,use_queues,allow_other 0 0
```

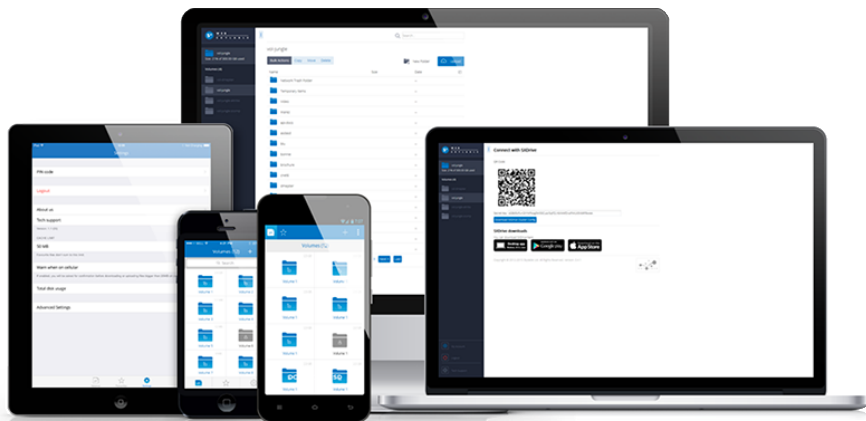


If you liked SXFS
you might also like...





Like OwnCloud but with client-side encryption.



Available for:



Windows



Mac



Linux



Android



iOS
(coming soon)

www.sxdrive.io





THOSE WITH
NOTHING
TO HIDE HAVE
NOTHING
TO SAY



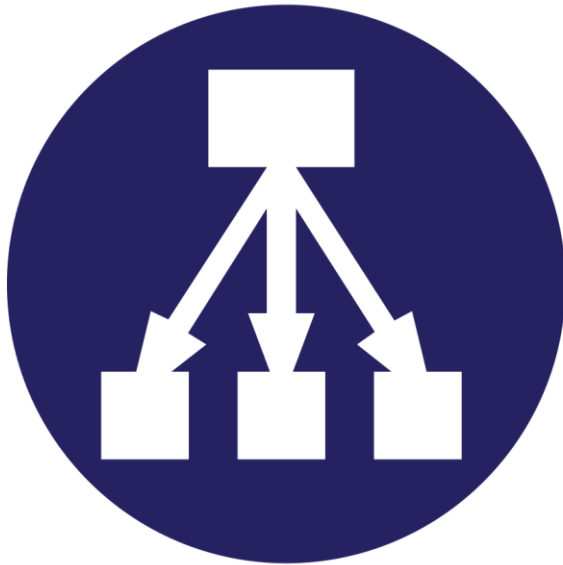
www.sxfs.io/faq

**Robert Wojciechowski
& Jakub Chyłkowski**



follow @skylable

Fully distributed

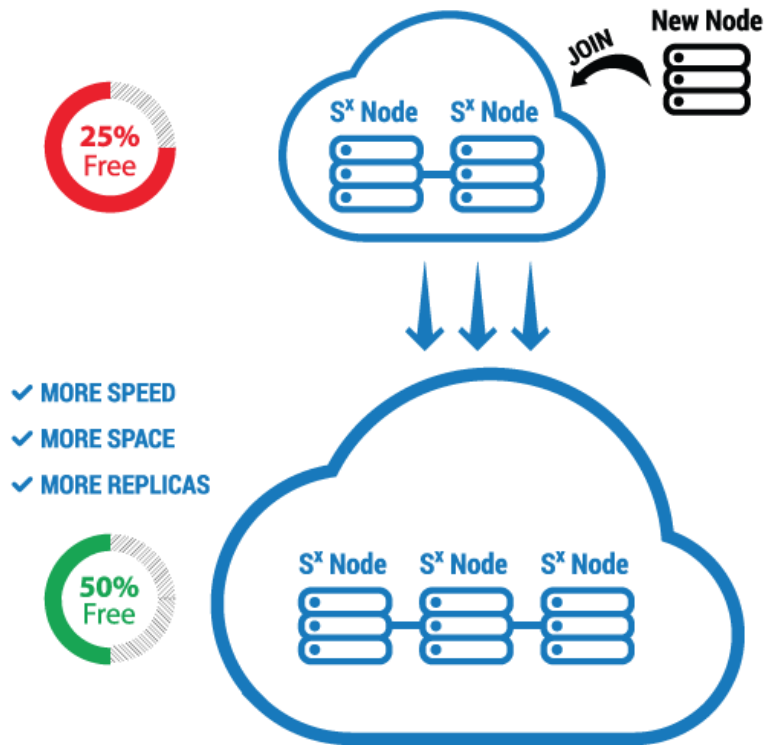


No single point of failure

Choose your replica level



Join more nodes



Need more speed?
Add more nodes.

Need more space? Add
more nodes.



How to join more nodes

```
sx@node2 # sxsetup
```

```
Enter the cluster name: sx.foo.com
```

```
Path to SX storage [default=/var/lib/sxserver]: <ENTER>
```

```
Maximum size: 1T
```

```
Enter the IP address of this node [default=192.168.10.2]: <ENTER>
```

```
Is this the first node of a new cluster? (Y/n) n
```

```
Please provide the IP address of a working node in 'sx.foo.com'.
```

```
IP address: 192.168.10.1
```

```
Admin key or path to key-file [default=]:
```

```
ODPiKuNIrrVmD8IUCuwlhQxNqZcVPDD82Gkq7PMFYpk3qA8ddxxxxxxx
```

```
Is this correct? (Y/n) <ENTER>
```

```
Server certificate:
```

```
SHA1 fingerprint: 198b0ce5161757ea9bc83fc77627eb8c0958d591
```

```
Do you trust this SSL certificate? [y/N] y
```

```
sx@node2 #
```

