Enterprise storage solutions Software-defined storage

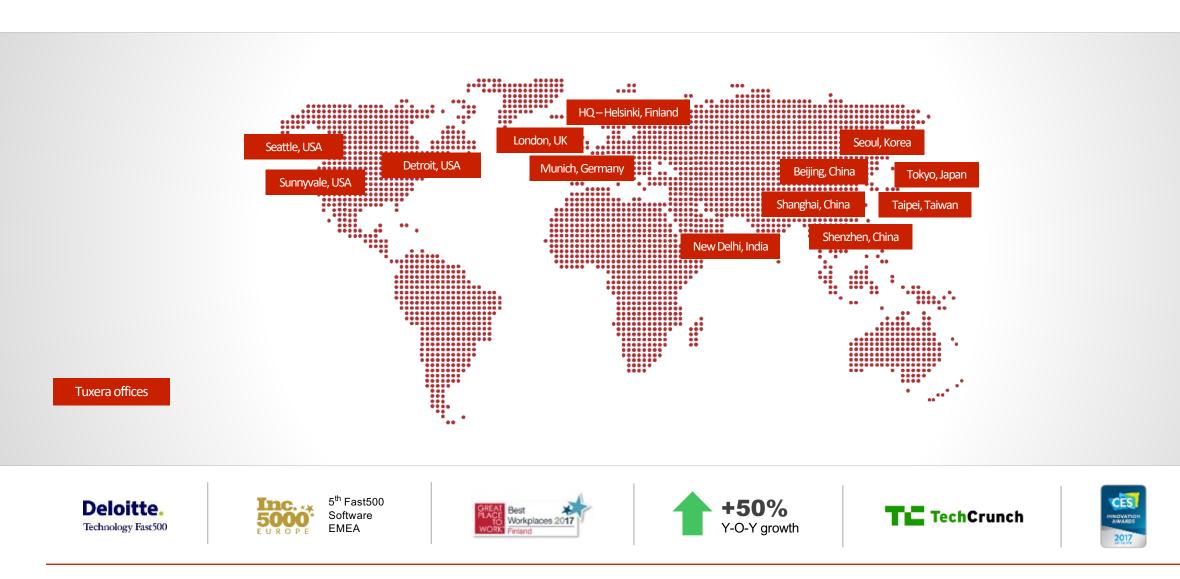




Every second **3 new devices with Tuxera's software inside** are released on the market.



We're a global company with global recognition





What we make



Interoperability for home and business

• Tuxera NTFS for Mac

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Enterprise Storage

- MooseFS by Tuxera
- Tuxera SMB
- Tuxera IOT Gateway



High-performance internal storage

• Tuxera Flash File System



Storage connectivity suite

- Microsoft exFAT by Tuxera
- Microsoft FAT by Tuxera
- Microsoft NTFS by Tuxera
- Tuxera FAT+
- Tuxera APFS
- Tuxera HFS+



Software-defined storage

An agile way of building the storage infrastructure

- Addresses the fragmentation concerns
- Eliminates vendor locking
- Tailored for the use case
- Reduces the cost of storage infrastructure





What is MooseFS by Tuxera?

Fault-tolerant, distributed parallel file system for mission-critical data.

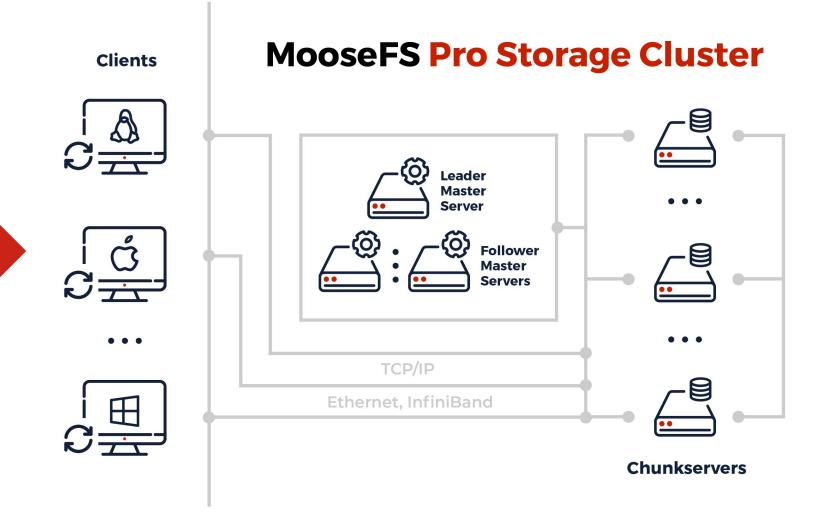
- Big data support
- Virtually limitless storage for demanding distributed workloads





How MooseFS by Tuxera works

Allocates data over virtually unlimited servers, which act as one large disk.







- No single point of failure (**SPOF-less configuration**)
- Metadata redundancy with two or more copies on physically redundant servers
- Distributed user data redundantly spread across storage servers





High performance

- High-speed I/O operations across the entire storage cluster
- **Parallelism**—read/write in parallel threads of execution on many storage nodes at once
 - no single central server
 - no single network connection bottlenecks





Hardware independence

- Supports all major disks and interfaces: SATA/SAS, SSD/HDD, NVMe
- **Turnkey solution** for any hardware platform running a POSIX-compliant OS (Linux, MacOS, FreeBSD, etc.)
- Build storage clusters with commodity x86-64 components
- **Mix and match** older and newer hardware, or different manufacturers





- Scales up to 16 exabytes (~16,000 petabytes) with more than 2 billion files
- Nearly linear cost of hardware with storage size growth





Flexible deployments

- All-Flash and hybrid storage setup supported
- Deploy on-premises, in the cloud, hybrid, or geographically distributed



Technical features

- Redundancy
- Metadata dumps
- Compute on data nodes
- Fast upgrades and disk recovery
- Atomic snapshots

- No RAID arrays
- POSIX compliance
- Erasure coding
- Global trash
- Quota limits



Use cases

- Clustering
- Hosting
- Big data analytics
- Supercomputing

- Video streaming
- Post production
- Broadcasting
- Backup and archiving

Legacy storage use case

Get remarkably low total cost of ownership

- Deploy on legacy storage hardware, for example out-of-support Isilon
- Experience significant performance gains
- Make the hardware relevant again

- Expand the legacy cluster with new machines, creating a tiered storage solution
- We deliver software + hardware support, so you can take the cluster into production





MooseFS by Tuxera storage cluster dashboard

Healthy system state 🔗 MooseFS - Features Showcase | Developed by Tuxera Inc. Monitoring for potential risks **All Chunks Statistics Cluster Status** Balancing Info Master Sv #1 Master Sv #2 Master Sv #3 192.168.1.103 FOLLOWER FOLLOWER LEADER Stable 32 Chunks availability 1/32 All Files/Chunks 0.4% 32.5% 0.6% 32.5% 2.8% 33.1% Overgoal 1 2 3 4 5 6 7 8 Free Space 9 10 11 12 13 14 15 16 Endangered Target number of 116 GB 2 17 18 19 20 21 22 23 24 backup for each chunk Undergoal 25 26 27 28 29 30 31 32 Missing Pending Deletion 2/2 (100%) RAM RAM RAM CPU CPU CPU Total / Free Space Read / Write Speed Read / Write IOPS 120 / 116 св 2269 / 996 мв/з 4096 / 5478 To be removed Chunk Server #1 Chunk Server #2 Chunk Server #3 Chunk Server #4 Uptime: 124h 8m 8s Uptime: 47h 22m 16s Uptime: 121h 22m 0s Uptime: 124h 7m 8s chunkserver01.mfs.lar chunkserver03.mfs.lan chunkserver04.mfs.lar 8/8 8/8 8/8 8/8 Chunks count Chunks count Chunks count Chunks count Free Space Free Space Free Space Free Space 1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 8 14.5 GB 14.5 GB 14.5 GB 14.5 GB 9 10 11 12 13 14 15 16 9 10 11 12 13 14 15 16 9 10 11 12 13 14 15 16 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 17 18 19 20 21 22 23 24 17 18 19 20 21 22 23 24 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 25 26 27 28 29 30 31 32 25 26 27 28 29 30 31 32 25 26 27 28 29 30 31 32 Read / Write Speed Read / Write IOPS 0.0 / 0.0 мв/з 0 / 0 720.9 / 0.0 мв/з 1024 / 0 0.0 / 0.0 MB/S 0/0 0.0 / 305.7 мв/з 0 / 1024 Chunk Server #5 Chunk Server #6 Chunk Server #7 Chunk Server #8 Uptime: 47h 27m 21s Uptime: 47h 27m 48s Uptime: 47h 24m 11s Uptime: 124h 8m 8s chunksen/er05 mfs lan chunkserver06 mfs lan chunksen/er07 mfs lan chunkserver08 mfs lan 8/8 8/8 8/8 8/8 Chunks count Chunks count Chunks count Chunks count Free Space Free Space Free Space Free Space 1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 8 14.5 GB 14.5 GB 14.5 GB 14.5 CB 9 10 11 12 13 14 15 16 9 10 11 12 13 14 15 16 9 10 11 12 13 14 15 16 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 17 18 19 20 21 22 23 24 17 18 19 20 21 22 23 24 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 25 26 27 28 29 30 31 32 25 26 27 28 29 30 31 32 25 26 27 28 29 30 31 32 Read / Write Speed Read / Write IOPS Read / Write Speed Read / Write IOPS Read / Write IOPS Read / Write Speed Read / Write Speed 0.0 / 233.6 мв/s 0 / 1024 0.0 / 0.0 мв/з 0 / 0 802.1 / 135.6 мв/s 2048 / 1024 746.0 / 320.9 мв/з 1024 / 2406



Thank you!

y@Mrasanen

≥ markku@tuxera.com