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XFS

XFS is a high-performance 64-bit journaling file system created by Silicon Graphics, Inc (SGI) in 1993.[8] It was the default file system in SGI's IRIX operating system starting with its version 5.3. XFS was ported to the Linux kernel in 2001; as of June 2014, XFS is supported by most Linux distributions; Red Hat Enterprise Linux uses it as default filesystem.

XFS excels in the execution of parallel input/output (I/O) operations due to its design, which is based on allocation groups (a type of subdivision of the physical volumes in which XFS is used- also shortened to *AGs*). Because of this, XFS enables extreme scalability of I/O threads, file system bandwidth, and size of files and of the file system itself when spanning multiple physical storage devices. XFS ensures the consistency of data by employing metadata journaling and supporting write barriers. Space allocation is performed via extents with data structures stored in B+ trees, improving the overall performance of the file system, especially when handling large files. Delayed allocation assists in the prevention of file system fragmentation; online defragmentation is also supported. A feature unique to XFS is the pre-allocation of I/O bandwidth at a pre-determined rate; this is suitable for many real-time applications. However, this feature was supported only on IRIX, and only with specialized hardware.

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XFS	
Developer(s)	Silicon Graphics Red Hat
Full name	XFS
Introduced	1994 with IRIX 5.3
Partition identifier	0x83: Linux filesystem (Master Boot Record) 0FC63DAF-8483-4772-8E79-3D69D8477DE4: Linux filesystem (GUID Partition Table)[1]
Structures	
Directory contents	B+ trees
File allocation	B+ trees
Limits	
Max. volume size	8 exbibytes − 1 byte
Max. file size	8 exbibytes − 1 byte
Max. number of files	2^{64}[2]
Max. filename length	255 bytes
Allowed characters in filenames	All except NULL and "/"
Features	
Dates recorded	atime, mtime, ctime,[3] version 5: crtime[4]
Date range	December 13, 1901