

LINUX

Btrfs – The Next Generation File System for Linux

Features below are available as BETA for Oracle Linux with the Unbreakable Enterprise Kernel only for testing and demonstration purposes.

[Btrfs \(B-tree file system\)](#) is the “next generation file system” for Linux. Pronounced as “Butter FS” or “B-tree FS”, it is a GPL-licensed file system first developed by Oracle’s Chris Mason in 2007. Today its development is coordinated by Oracle in collaboration with many contributors from the Linux community. Btrfs provides a number of features that make it a very attractive file system solution for local disk storage. Oracle is committed to making Btrfs the most reliable and feature-rich file system for Linux.

Btrfs is designed for:

- Large files and file systems from the ground up
- Simplified administration
- Integrated RAID and volume management
- Snapshots
- Checksums for data and meta-data

Features	Benefits
Built-in data integrity: checksums of data and metadata	Detects and fixes data and file system corruption, improving the overall robustness of the file system.
File and subvolume snapshots	Create lightweight copies/clones of files or entire directory structures with minimal additional disk space requirements. This feature is useful especially in combination with virtualization technologies (e.g. for storing VM images) and Linux Containers.
Quickly find recent file changes	Improves backup operations: instead of having to traverse the entire directory structure for files that have been modified, the file system can provide this information directly.
Discard/TRIM support	Optimized support for solid state (Flash) storage devices, allowing them to reclaim sectors from deleted files for future write operations.
Snapshot integration with yum package management	Allows to quickly roll back software or OS upgrades or quickly boot into an older patch level of the operating system.
Online defragmentation	Avoids fragmentation when lots of small files are created and deleted in quick succession and thus improves the overall file system performance by reducing disk seeks.
Scrubbing with error correction	Finds and fixes file system corruptions automatically.
Online data compression	Improves the storage capacity and reduces disk I/O operations.
Integrated support for multiple devices	Allows spanning of a single file system across several disk drives without requiring a separate volume manager and provides RAID functionality for increased redundancy or performance.



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