

## 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.  |
| <a href="#">File and subvolume snapshots</a>                     | 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.  |
| <a href="#">Snapshot integration with yum package management</a> | Allows to quickly roll back software or OS upgrades or quickly boot into an older patch level of the operating system.   |
| <a href="#">Online defragmentation</a>                           | 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.  |
| <a href="#">Scrubbing with error correction</a>                  | Finds and fixes file system corruptions automatically.   |
| <a href="#">Online data compression</a>                          | 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.  |



Oracle is committed to developing practices and products that help protect the environment

Copyright © 2011, Oracle and/or its affiliates. All rights reserved.

This document is provided for information purposes only and the contents hereof are subject to change without notice. This document is not warranted to be error-free, nor subject to any other warranties or conditions, whether expressed orally or implied in law, including implied warranties and conditions of merchantability or fitness for a particular purpose. We specifically disclaim any liability with respect to this document and no contractual obligations are formed either directly or indirectly by this document. This document may not be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without our prior written permission.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark licensed through X/Open Company, Ltd. 0911