BTRFS
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Btrfs is a new copy on write filesystem for Linux aimed at
implementing advanced features while focusing on fault tolerance,
repair and easy administration. Initially developed by Oracle, Btrfs
is licensed under the GPL and open for contribution from anyone.

Linux has a wealth of filesystems to choose from, but we are facing a
number of challenges with scaling to the large storage subsystems that
are becoming common in today's data centers. Filesystems need to scale
in their ability to address and manage large storage, and also in
their ability to detect, repair and tolerate errors in the data stored
on disk. Btrfs is under heavy development, and is not suitable for
any uses other than benchmarking and review. The Btrfs disk format is
not yet finalized.

The main Btrfs features include:

    * Extent based file storage (2^64 max file size)
    * Space efficient packing of small files
    * Space efficient indexed directories
    * Dynamic inode allocation
    * Writable snapshots
    * Subvolumes (separate internal filesystem roots)
    * Object level mirroring and striping
    * Checksums on data and metadata (multiple algorithms available)
    * Compression
    * Integrated multiple device support, with several raid algorithms
    * Online filesystem check (not yet implemented)
    * Very fast offline filesystem check
    * Efficient incremental backup and FS mirroring (not yet implemented)
    * Online filesystem defragmentation

MAILING LIST
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There is a Btrfs mailing list hosted on vger.kernel.org. You can
find details on how to subscribe here:

http://vger.kernel.org/vger-lists.html#linux-btrfs

Mailing list archives are available from gmane:

http://dir.gmane.org/gmane.comp.file-systems.btrfs

IRC
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Discussion of Btrfs also occurs on the #btrfs channel of the Freenode
IRC network.

UTILITIES
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Userspace tools for creating and manipulating Btrfs file systems are
available from the git repository at the following location:

 http://git.kernel.org/?p=linux/kernel/git/mason/btrfs-progs-unstable.git
 git://git.kernel.org/pub/scm/linux/kernel/git/mason/btrfs-progs-unstable.git

These include the following tools:

mkfs.btrfs: create a filesystem

btrfsctl: control program to create snapshots and subvolumes:

        mount /dev/sda2 /mnt
        btrfsctl -s new_subvol_name /mnt
        btrfsctl -s snapshot_of_default /mnt/default
        btrfsctl -s snapshot_of_new_subvol /mnt/new_subvol_name
        btrfsctl -s snapshot_of_a_snapshot /mnt/snapshot_of_new_subvol
        ls /mnt
        default snapshot_of_a_snapshot snapshot_of_new_subvol
        new_subvol_name snapshot_of_default

        Snapshots and subvolumes cannot be deleted right now, but you can
        rm -rf all the files and directories inside them.

btrfsck: do a limited check of the FS extent trees.

btrfs-debug-tree: print all of the FS metadata in text form. Example:

        btrfs-debug-tree /dev/sda2 >& big_output_file