OVERVIEW
Introduction
Status
Manual pages
btrfs(8)
btrfs(5)
btrfs-balance(8)
btrfs-check(8)
btrfs-convert(8)
btrfs-device(8)
btrfs-filesystem(8)
btrfs-find-root(8)
btrfs-image(8)
btrfs-inspect-internal(8)
btrfs-ioctl(2)
btrfs-map-logical(8)
btrfs-property(8)
btrfs-qgroup(8)
btrfs-quota(8)
btrfs-receive(8)
btrfs-replace(8)
btrfs-rescue(8)
btrfs-restore(8)
btrfs-scrub(8)
btrfs-select-super(8)
btrfs-send(8)
SYNOPSIS
DESCRIPTION
EXIT STATUS
AVAILABILITY
SEE ALSO
btrfs-subvolume(8)
btrfstune(8)
fsck.btrfs(8)
mkfs.btrfs(8)
Administration
Hardware considerations
Changes (feature/version)
Changes (kernel/version)
Changes (btrfs-progs)
Contributors
Glossary
Installation instructions
Source repositories
Interoperability
FEATURES
Common Linux features
Custom ioctls
Auto-repair on read
Balance
Compression
Checksumming
Convert
Deduplication
Defragmentation
Inline files
Quota groups
Reflink
Resize
Scrub
Seeding device
Send/receive
Subpage support
Subvolumes
Swapfile
Tree checker
Trim/discard
Volume management
Zoned mode
DEVELOPER DOCUMENTATION
Development notes
Developer's FAQ
Conventions and style for documentation
Experimental features
Btrfs design
Btrees
On-disk Format
Send stream format
JSON output
Internal APIs
Release checklist
Pull request review workflow
Command line, formatting, UI guidelines
btrfs-ioctl(2)
TODO
Troubleshooting pages

btrfs-send(8)

SYNOPSIS

btrfs send [-ve] [-p <parent>] [-c <clone-src>] [-f <outfile>] <subvol> [<subvol>...]

DESCRIPTION

This command will generate a stream of instructions that describe changes between two subvolume snapshots. The stream can be consumed by the **btrfs receive** command to replicate the sent snapshot on a different filesystem. The command operates in two modes: full and incremental.

All snapshots involved in one send command must be read-only, and this status cannot be changed as long as there's a running send operation that uses the snapshot. Read-only mount of the subvolume is not sufficient, there's no way to guarantee that there won't be any other writable mount of the same subvolume that would potentially write while send would be running.

In the full mode, the entire snapshot data and metadata will end up in the stream.

In the incremental mode (options *-p* and *-c*), previously sent snapshots that are available on both the sending and receiving side can be used to reduce the amount of information that has to be sent to reconstruct the sent snapshot on a different filesystem.

The *-p <parent>* option can be omitted when *-c <clone-src>* options are given, in which case **btrfs send** will determine a suitable parent from among the clone sources.

You must not specify clone sources unless you guarantee that these snapshots are exactly in the same state on both sides--both for the sender and the receiver. For implications of changed read-write status of a received snapshot please see section *SUBVOLUME FLAGS* in btrfs-subvolume(8).

`Options`

-e

if sending multiple subvolumes at once, use the new format and omit the *end cmd* marker in the stream separating the subvolumes

-p *<parent>*

send an incremental stream from *parent* to *subvol*

-c *<clone-src>*

use this snapshot as a clone source for an incremental send (multiple allowed)

-f *<outfile>*

output is normally written to standard output so it can be, for example, piped to btrfs receive. Use this option to write it to a file instead.

--no-data

send in *NO_FILE_DATA* mode

The output stream does not contain any file data and thus cannot be used to transfer changes. This mode is faster and is useful to show the differences in metadata.

--proto *<N>*

use send protocol version N

The default is 1, which was the original protocol version. Version 2 encodes file data slightly more efficiently; it is also required for sending compressed data directly (see *--compressed-data*). Version 2 requires at least btrfs-progs 6.0 on both the sender and receiver and at least Linux 6.0 on the sender. Passing 0 means to use the highest version supported by the running kernel.

--compressed-data

send data that is compressed on the filesystem directly without decompressing it

If the receiver supports the *BTRFS_IOC_ENCODED_WRITE* ioctl (added in Linux 6.0), it can also write it directly without decompressing it. Otherwise, the receiver will fall back to decompressing it and writing it normally.

This requires protocol version 2 or higher. If *--proto* was not used, then *--compressed-data* implies *--proto 2*.

-q|--quiet

(deprecated) alias for global *-q* option

-v|--verbose

(deprecated) alias for global *-v* option

`Global options`

-q|--quiet

suppress all messages except errors

-v|--verbose

increase output verbosity, print generated commands in a readable form

EXIT STATUS

btrfs send returns a zero exit status if it succeeds. Non zero is returned in case of failure.

AVAILABILITY

btrfs is part of btrfs-progs. Please refer to the documentation at https://btrfs.readthedocs.io.

SEE ALSO

btrfs-receive(8), btrfs-subvolume(8), mkfs.btrfs(8)