

# Awkward History of Linux and Latest of Reiser5

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- [Linux in 2020](#) [3] [Ed: This is clearly conflating the kernel (Linux) with GNU, which predates it by almost one decade. It also perpetuates the myth that only Ubuntu brought GNU/Linux to the masses.]

Hello. Today I would like to share with you, my perspective of Linux. Please take note that this is all my opinions and the way I see it. If you feel that I missed something very important or have a fact or two wrong, please let me know.

So Linux was announced for the first time, on the 25 of August 1991 by a Finnish student, called Linus Torvalds. Little did he know, and the world knows that 30 years later the world would be using it on a daily basis.

So From 1991, Linux has been maturing several Linux Distros (operating systems) came and went away, with a few of the first ones still around today. But it was mainly/only for those who are computer "geeks" and not for everyday users. But that all changed in October 2004, when the first version of Ubuntu was released.

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Reiser5 Logical Volume Management - Updates

I am happy to inform, that Logical Volumes stuff has become more stable. Also we introduce the following changes, which make logical volumes administration more flexible and simple:

### 1. No balancing by default

Now all volume operations except brick removal don't invoke balancing by default. Instead, they mark volume as "unbalanced". To complete any operation with balancing specify option `-B` (`--with-balance`), or run `volume.reiser4(8)` utility with the option `-b` (`--balance`) later. This allows to speed up more than one operations over logical volume being performed at once. For example, if you want to add more than one brick to your volume at once, first add all the bricks, then run balancing. There is no need to balance a volume between the addition operations.

### 2. Removal completion

Operation of brick removal always includes balancing procedure as its part. This procedure moves out all data block from the brick to be removed to remaining bricks of the volume. Thus, brick removal is usually a long operation, which may be interrupted for various reasons. In such cases the volume is automatically marked with an "incomplete removal" flag.

It is not allowed to perform essential volume operations on a volume marked as "with incomplete removal": first, user should complete removal by running `volume.reiser4` utility with option `-R` (`--finish-removal`). Otherwise, the operation will return error (`-EBUSY`).

There is no other restrictions: you are allowed to add a brick to unbalanced volume, and even remove a brick from an unbalanced volume (assuming it is not incomplete removal).

Comment. "`--finish-removal`" is a temporary option. In the future the file system will detect incomplete removal and automatically perform removal completion by itself.

### 3. Balancing is always defined

Operation of volume balancing (regardless of its balanced status) is always defined, and can be launched at any moment. If the volume is balanced, then the balancing procedure just scans the volume without any useful work.

It is allowed to run more than one balancing threads on the same volume, however currently it will be inefficient: other threads will be always going after the single leader without doing useful work. Efficient volume balancing by many threads (true parallelism) is not a trivial task. We estimate its complexity as  $2/5$ .

### 4. Restore regular distribution on the volume

Custom (defined by user) file migration can break fairness of data distribution among the bricks. To restore regular (fair) distribution on the volume, run `volume.reiser4` utility with the option `-S` (`--restore-regular`). It launches a balancing procedure, which performs mandatory data migration of all files (including the ones marked as "immobile") in accordance with regular distribution policy on the volume. Moreover, when the balancing procedure encounters a file marked as "immobile", its "immobile" flag is cleared up.

### 5. How to test

The new functionality is available starting with the kernel patch

reiser4-for-linux-5.10-rc3 and reiser4progs-2.0.4 (Software Framework Release number of both is 5.1.3).



#### [Reiser5 Stabilizing Its Logical Volume Functionality - Phoronix](#) [5]

This New Year's Eve will mark one year since the announcement of the in-development Reiser5 file-system. While the outlook for getting Reiser5 upstreamed into the mainline kernel remains murky given the out-of-tree status of Reiser4, Edward Shishkin does continue advancing this latest Reiser file-system iteration.

Since last year's initial Reiser5 announcement, more features continue to be ironed out for this evolution of Reiser4. The latest Reiser5 functionality hitting a point of stability is its logical volume management.

[Linux Reiser](#)

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