The Reiserfs file system

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File System Features

- Fastest file system
- All operations are atomic
- Uses Dancing trees instead of the conventional Balanced trees
- Based on plug-ins, easy up-gradation without reformatting disk

File Storage in Reiserfs

- Uses specially optimized B* balanced trees to organize filesystem data
- Stores files inside B* tree leaf nodes rather than storing data somewhere else on disk
  1. Increases small file performance
  2. Able to pack the tails together, saving lot of space
- Dancing trees merge insufficiently full nodes, not with every modification to the tree, but instead:
  1. in response to memory pressure triggering a flush to disk,
  2. as a result of a transaction closure flushing nodes to disk.

Crash Handling in Reiserfs

- Filesystem checkers too slow
- Uses Data Journaling to maintain consistency
  1. Fixed Location Journaling
  2. Meta-data Journaling
- 'Roll back' and 'Roll forward' operations used for data recovery

References

- http://www.linuxplanet.com/linuxplanet/tutorials/2926/1/
- http://www.namesys.com/