METHOD AND APPARATUS FOR RAID CONVERSION

ABSTRACT

A general RAID conversion method is described for converting between different RAID configurations. The method includes reading a unit of user data from the source devices according to the source RAID algorithm, writing the user data together with redundant data (if any) to the target devices according to the target RAID algorithm, and from time to time releasing portions of the source devices containing data that has been converted. The conversion may be used to expand or contract the array, to increase or decrease usable capacity, and to increase or decrease the device-loss insurance level. Conversion may be performed on line (dynamically) or off line. The flexibility of the method allows the implementation of manual and/or rule-based RAID reconfiguration that automatically adjusts system parameters based on user request and/or a set of rules and conditions respectively. It may also be used to perform self-healing after one or more devices in the array have failed.

(Fig. 2)