

DATA STORAGE DRIVES IN AN AUTOMATED DATA STORAGE LIBRARY

ABSTRACT

Data storage drives of an automated data storage library are allocated to received requests. A drive resource provider, upon receiving a request for a drive when all of the drives of the pool are allocated, holds any mount of a portable data storage cartridge relative to the request, releasing the hold when a drive is allocated. Spare drives are provided, outside of the pool. A spare drive may be allocated in response to the request, and a message is posted indicating use of the spare data storage drive. The posted message may comprise a notification that action may be taken to permanently transfer a spare data storage drive to the pool. Furthermore drive image providers of a virtualization system for an automated data storage library provide an image of a fixed plurality of virtual data storage drives with fixed identifications to a host application. A drive resource provider, at any one time, assigns any number "m" of a pool of "n" drives to the drive image providers, and "n" - "m" of the pool are freed and available for assignment. The drive resource provider responds to a triggering event requesting a drive, and dedicates one of the "n" - "m" drives of the pool to the virtual drive. The drive image provider characterizes and directs communication between the host and the dedicated drive as a fixed virtual drive; and prior to the dedication of a drive, characterizes the virtual drive to the requesting host application as "not ready".

Fig. 3



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