Best Practice for Expanding an Array Using NTFS (Windows)

With hard drive offerings only increasing in size, it is important to remember that some large increases in RAID Arrays may not be read correctly by Windows. This is because there are limits to the cluster size that different sizes of volumes can use. If the volume is expanded beyond a cluster size limit, it will become unreadable by the OS. Before expanding (or migrating) an array, please use the following table from microsoft of the limits of each volume size:

https://support.microsoft.com/en-us/kb/140365

Example: You have a 20-drive system from exacq that is half full of 4TB drives, the total capacity is 40TB. After RAID 6 creation, formatting and partitioning the array, we end up with a volume that is more like 30TB. Using NTFS, the OS will assign a cluster size of 8KB. Later down the road, you decide to fill the rest of the system with 4TB drives and migrate the array instead of making a new one. This will increase the capacity to roughly 70TB. The default cluster size for that volume would be 32KB, not 8KB. The array would become unreadable to the OS at this point and a reformat would need to happen. Reformatting a drive will erase all data stored within the volume.

Solution: To avoid losing data on the array, it is suggested to create a new array using the adding drives if it will push your capacity over the limit of the cluster size. Keep in mind that at least three drives are needed for a RAID 5 and that the total capacity of one drive will be used by the array's parity. We suggest at least 9 drives be used before creating a RAID 6 array as the total capacity of two drives will be used by the array's parity.

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