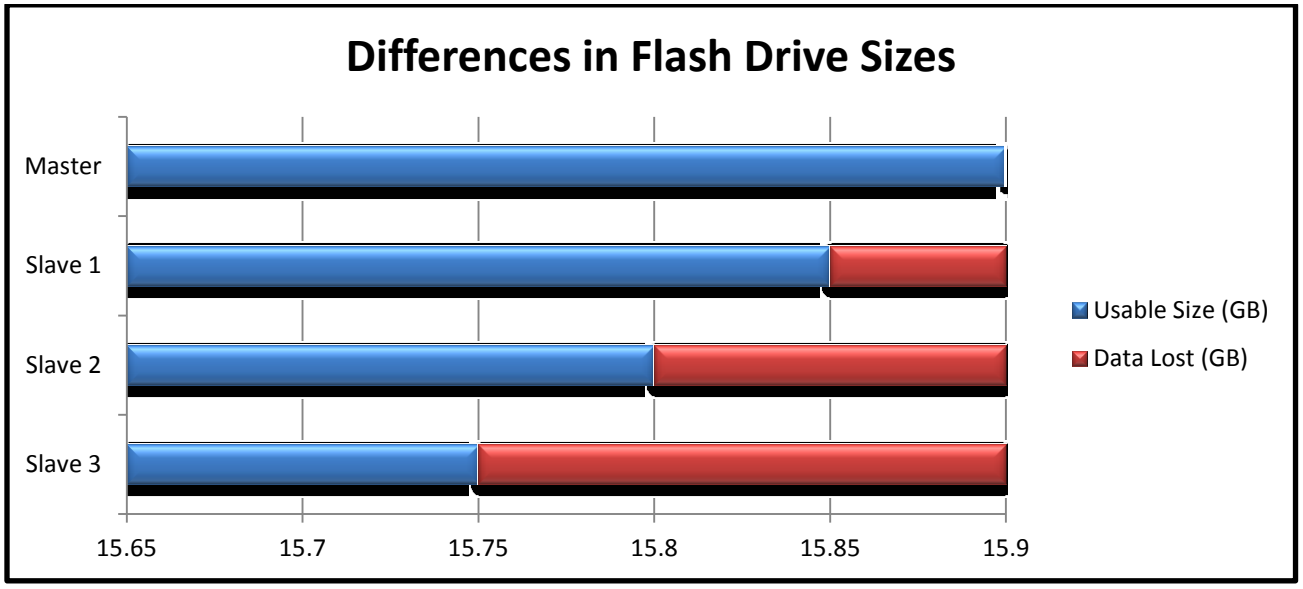
USB and Flash Drive Duplication - When Size Matters

Memory size marked on the USB or SD cards by the manufacturer is not always precise. After a closer inspection, a card marked as 16 GB for example may offer only 15.9 GB of storage space. There are also cases when the card will offer more memory than it is stated by the manufacturer. The difference between the actual and labeled memory size varies from manufacturer to manufacturer. Such variations between the actual and marked storage is due to manufacturing quality. Interestingly, for most end users, this variance is not an issue. In fact, it has very little impact on using the USB or other flash drives for storage of the information. Problems arise when users attempt to duplicate USB or Flash drives.



Imagine a scenario where a user needs to replicate a 16 GB USB flash drive onto 60 16 GB flash drives. If the actual storage capacity of the master drive (the original storage drive with data) is at 15.9 GB, and the 60 destination drives are only at 15.8 GB each; the last 0.1 MB of data would be lost. Moreover, the replication process will be "successfully" completed and any verification will fail to detect the error.

Here is a closer look why. Despite low-level sector-wise searches by duplicator, copying process doesn't consider file locations. In other words, only if both the master and destination drive have identical addresses will the data be copied. The verification process only checks files that were transferred fully. If file is not copied completely onto the destination card due to the lack of space, verification process will not check or compare data fragments, thus failing to detect the error.

Virtual Console flash drive duplicators utilize the "smallest size" rule, dictating that any copying will be done based on the size of the smallest destination flash drive capacity. In the example above, only 15.8GB of data would be copied, despite the master's 15.9 GB size.

To minimize the data loss and possible errors when replicating USB or flash drives we recommend:

- Ensuring that your destination drives have larger storage capacity than that of the master drive.
- Defragmenting your master memory drives on a regular basis prior to replication.
- Enabling “Size Check” when prompted by FCD Manager to ensure data loss does not occur. In case of discrepancies, the flash drive duplication process will self-terminate.

This article is provided by Virtual Console, the leading manufacturer of flash media duplicators for USB, SD and CF cards. For more information visit us at http://www.vconsole.com.