7.1.4 Managed mode and image mode volumes

Volumes are configured within IBM Spectrum Virtualize by allocating a set of extents off one or more managed mode MDisks in the storage pool. Extents are the smallest allocation unit at the time of volume creation, so each MDisk extent maps to exactly one volume extent.

Note: An MDisk extent maps to exactly one volume extent. For volumes with two copies, one volume extent maps to two MDisk extents (one for each volume copy).

Figure 7-3 shows this mapping. It also shows a volume that consists of several extents that are shown as V0 - V7. Each of these extents is mapped to an extent on one of the MDisks: A, B, or C. The mapping table stores the details of this indirection.

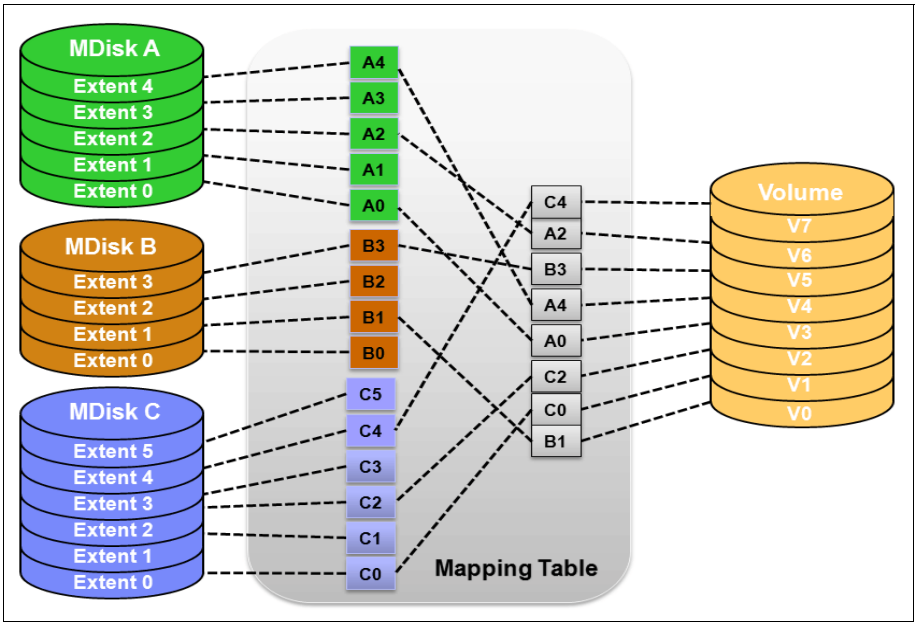

Figure 7-3 Simple view of block virtualization

Several of the MDisk extents are unused; that is, no volume extent maps to them. These unused extents are available for use in creating volumes, migration, expansion, and so on.

The default and most common type of volumes in IBM Spectrum Virtualize are managed mode volumes. Managed mode volumes are allocated from a set of MDisk (by default, all MDisks belonging to a storage pool) and can be subject of the full set of virtualization functions.

In particular, they offer full flexibility in mapping between logical volume representation (logical blocks) and physical storage used to store these blocks. This requires that physical storage (MDisks) are fully managed by IBM Spectrum Virtualize, which means that the LUs that are presented to the IBM Spectrum Virtualize by the back-end storage systems does not contain any data when it is added to the storage pool.

Image mode volumes enable IBM Spectrum Virtualize to work with LUs that were previously directly mapped to hosts. This is often required when IBM Spectrum Virtualize is introduced into a storage environment and image mode volumes are used a method enabling seamless migration of data and smooth transition to virtualized storage.