About the Master File Table Zone Reservation in Windows Vista and Windows Server 2008

The NTFS File System contains a key file named the Master File Table (MFT) that stores information about the volume. This core file contains an entry for every file on the volume and information about these files including size, time, date, permissions, etc.

As more files are added to the NTFS volume, the MFT will grow to handle the larger files. Very early versions of Windows would grow the MFT in small portions which would cause fragmentation. Later versions of Windows introduced an MFT zone reservation. This zone is a portion of the disk that is reserved for the MFT to grow into so that the MFT can remain continuous. These previous versions of Windows use a percentage based algorithm to determine the zone size (default of 12.5%).

Windows Vista and Windows Server 2008 use a default size of 200MB for the initial MFT zone reservation. As the MFT outgrows the default zone due to more files being added to the volume, the MFT will create another 200MB zone to grow into. This change to fixed amount versus a percentage was done to deal with increasing size of volumes and create better efficiencies.

For example, in previous versions of Windows a 500GB NTFS volume would have a 62GB MFT Zone Reservation (500MB x 12.5%). So if the MFT only grew to the size of 100MB, the first 62GB of the volume would be reserved and data would not start until the end of the 62GB mark.

Starting with Windows Vista and Windows Server 2008, the MFT uses a fixed 200MB zone reservation so as not to reserve space that will never actually be used (note that the zone reservation can be used by data once the remainder of the volume is filled up - this is the same as in previous versions of Windows).

It is possible to adjust the size the MFT zone reservation uses. If not changed, the default is set to 1. The valid range is 1-4 where this is a multiplier of 200MB. For example, if the data is set to 4, any newly create volumes initial MFT Zone Reservation will be 800MB and if it grows beyond this will grow in 800MB segments. If this setting is created after a volume is created, the initial MFT zone reservation will be 200MB but future MFT zone reservations will be based on the multiplier.