

Modifying restored partition properties

Hard disks are organized into partitions, similar to a filing cabinet, to optimize the use of space on the device. Each partition contains a small amount of error correction data, in case of a fault. Partitions are aligned to further optimize the amount of error correction data they require, maximizing the available space on the device.

There are two alignment possibilities used by Windows:

1. 1MB alignment. Beginning with Windows Vista/Server 2008 partitions are aligned on 1MB boundaries. For a disk with 512 bytes per sector this equates to 2048 sector alignment.
2. Cylinder, Head, Sector (CHS) alignment. This is the alignment used by all Windows versions, up to and including Windows XP/Server 2003. Disks are described as having sectors, heads and cylinders, typically 512 bytes per sector, 63 sectors per head and 255 heads per cylinder. A head is often referred to as a track. Partitions start on a head (or track) boundary and end on a cylinder boundary <http://en.wikipedia.org/wiki/Cylinder-head-sector>.

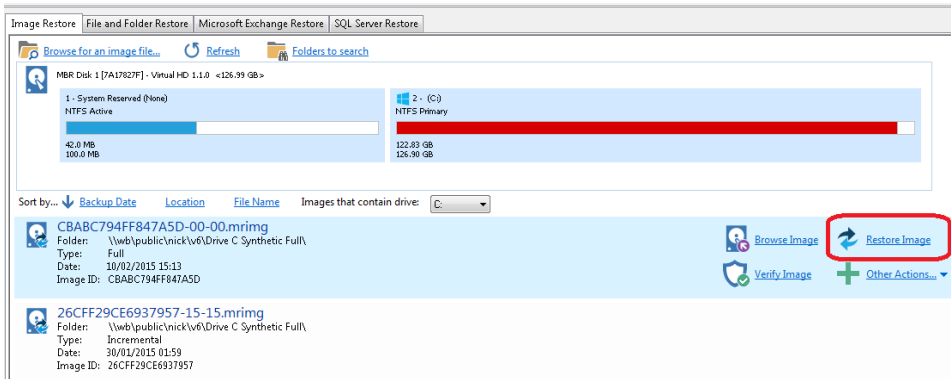
Solid State Disks (SSD) require partition alignment to 4KB boundaries for optimum performance and life. 1MB aligned partitions are aligned on 4KB boundaries so present no problem, however, CHS aligned partition are often aligned on 63 sectors (31.5KB) degrading SSD performance and life time considerably. This can be improved by modifying restore destination partition properties when you restore an image.

When you ask to restore images Macrium Reflect initially sets out to restore the partitions back to their original position on the disk. From here you can modify their destinations.

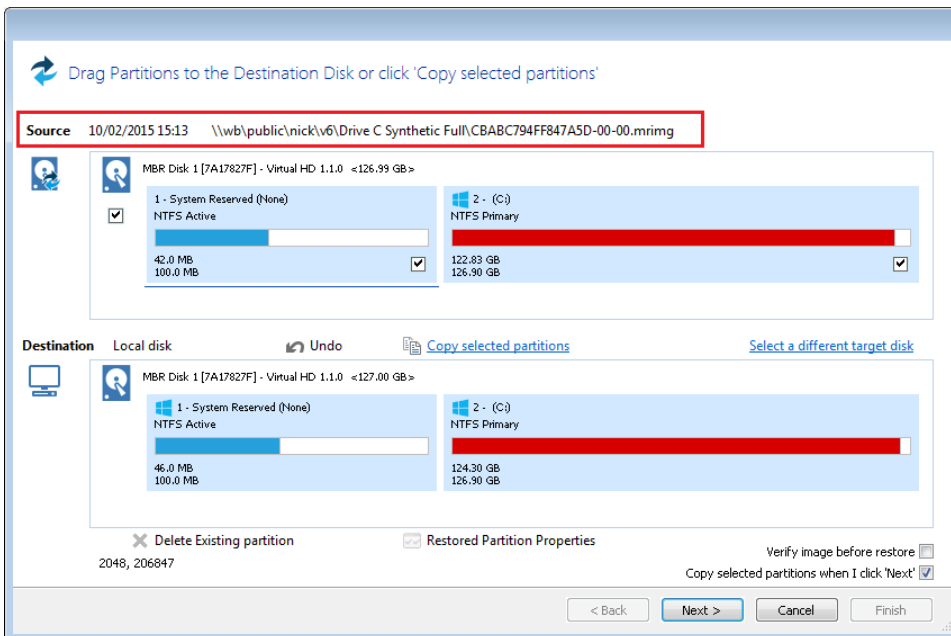
The example below restores a 122GB partition to a 16TB disk.

To modify the restore destination:

1. Click **Restore image**.

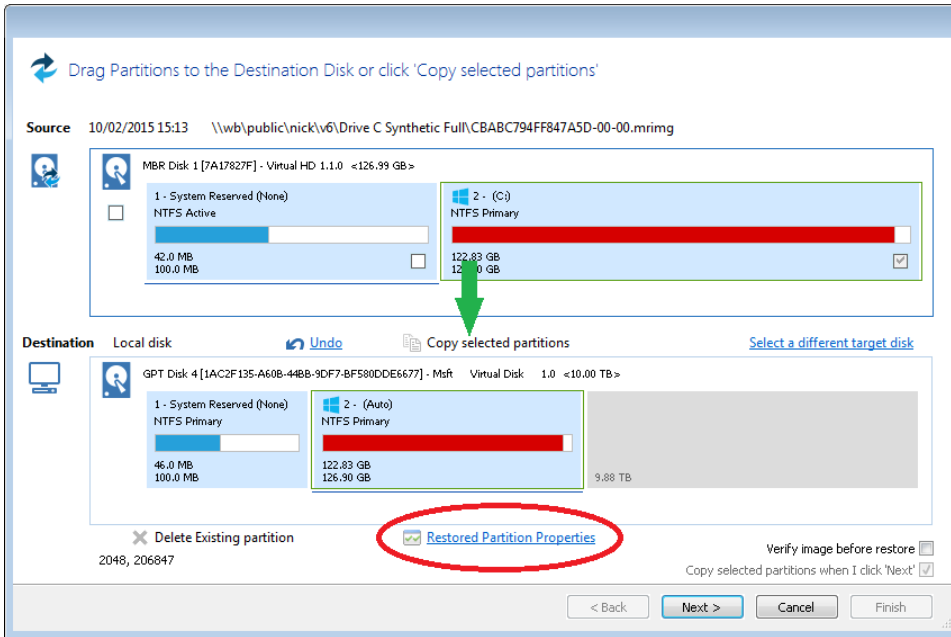


2. The following dialog shows. **Source** shows the location of the image file we are restoring from. The **Target** is the original location.

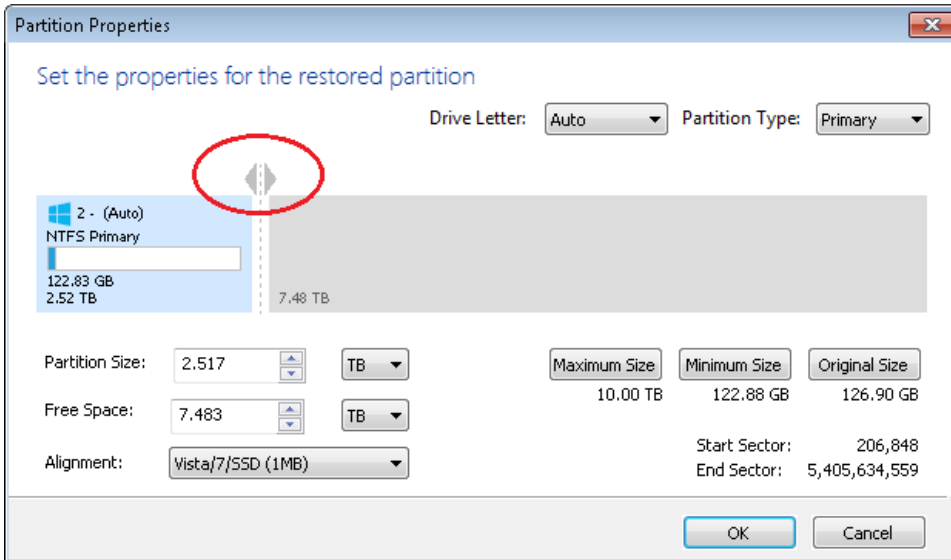


3. Click **Select a different target disk** and select the required target disk.
4. If you have partitions on the target disk which you are sure can be deleted, select each one in turn and click **Delete Existing partition** to create empty space.
5. Drag the source partition onto the destination partition.

The partition locates to the first available free area of the new disk. In this case, partition 2.



6. Click **Restored Partition Properties**.
The Partition Properties dialog appears for you to modify the size of the target partition.



7. There are a number of things you can do here:
 - Modify the drive letter by selecting another from the list.
 - Click between the arrows < > above the disk view and drag the partition to a new size.
 - Fine-tune the **Partition Size**, **Free Space** and **Alignment**.
 - Click **Maximum Size** to configure the partition to the maximum available unallocated space on the disk, in this case about 10 TB (the size of the disk)
 - Click **Minimum Size** to configure the partition to the minimum size, The minimum size is equivalent to the used space on the restored partition plus 50MB.
 - Click **Original Size** sets the partition to the same size as it was when backed up.

Note: If the source disk is an MBR disk and the target is greater than 2TB in size then the restore process will automatically convert the disk to GPT style format.

8. Click **OK**.

See also: [Drive letters assigned to restored or cloned partitions](#)