# Removing free space from an image (Shrink volume size)

SERVOSITY™

Problem:

You may receive the following error message when attempting to select a volume on which to perform a restore of an image:

"The selected free space is not large enough for the backup image. Select other free space or create more free space to restore the backup image."

The selected free space is not large enough for the backup image. Select other free space or create more free space to restore the backup image

OK
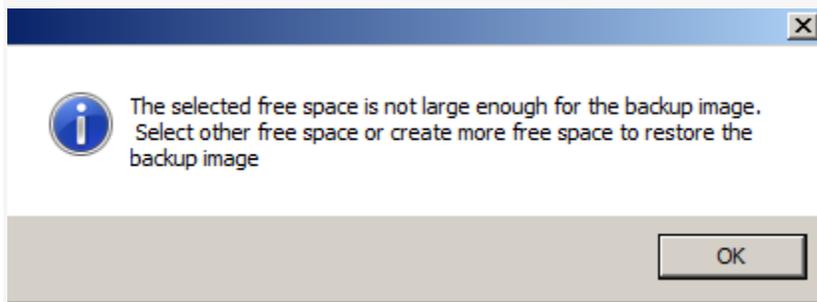
Cause:

Please note that this can happen even if you are restoring to a disk that you consider (based on the disk size stated on the packaging or sales information) to be the same size as the disk from which the image was taken. This can occur because of slight differences in disk layout between different manufacturing brands. Another reason this may occur is that even if you have only 10GB of data on your 100GB volume, the image still needs to be restored to a partition that is as large, or larger than 100GB.

Resolution:

To use the disk shrink feature, you will need to boot into the 2008R2-based recovery environment from the ShadowProtect recovery CD.**The shrink feature is NOT available in the 2003 Legacy (XP) recovery environment.** To find out how to achieve the best shrinkage results and view guidelines on effectiveness of shrinking, see the notes section below.

Part 1: Mounting the image file in WRITE mode

1. After booting into the Vista recovery environment, head to the "Browse or Restore Files Wizard" or on the left hand side in the**Tools Menu**, select the task "Explore Backup Image."
2. Browse to the location of your backup image that you wish to shrink. Click Next.
3. When you get to the screen called **Explore Options** (shown below), un-check the option at the bottom to "Mount Backup as Read-Only", so that the image is writable.
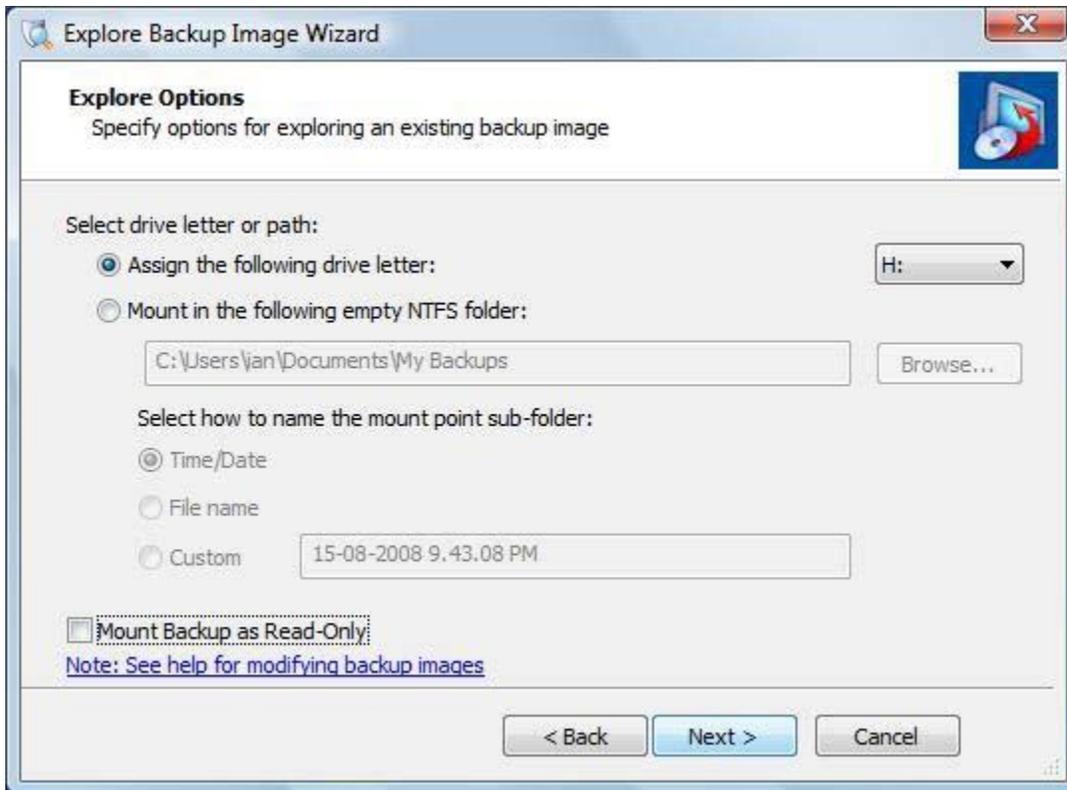
1. Continue clicking [Next] and [Finish] to mount the image.

   Part 2: Dismounting the image.
1. On the left hand side in the **Tools Menu**, select the option "Dismount Backup Image." Click [Next] to get past the welcome screen.
2. Select the checkbox next to the folder or drive letter that is your mounted image and click [Next].
3. You should now be on the **Backup Image Dismount Options** screen. Ensure that the box to "Save changes to incremental file" is checked, and make sure to check the option just underneath called "Shrink Volume." (see image below)
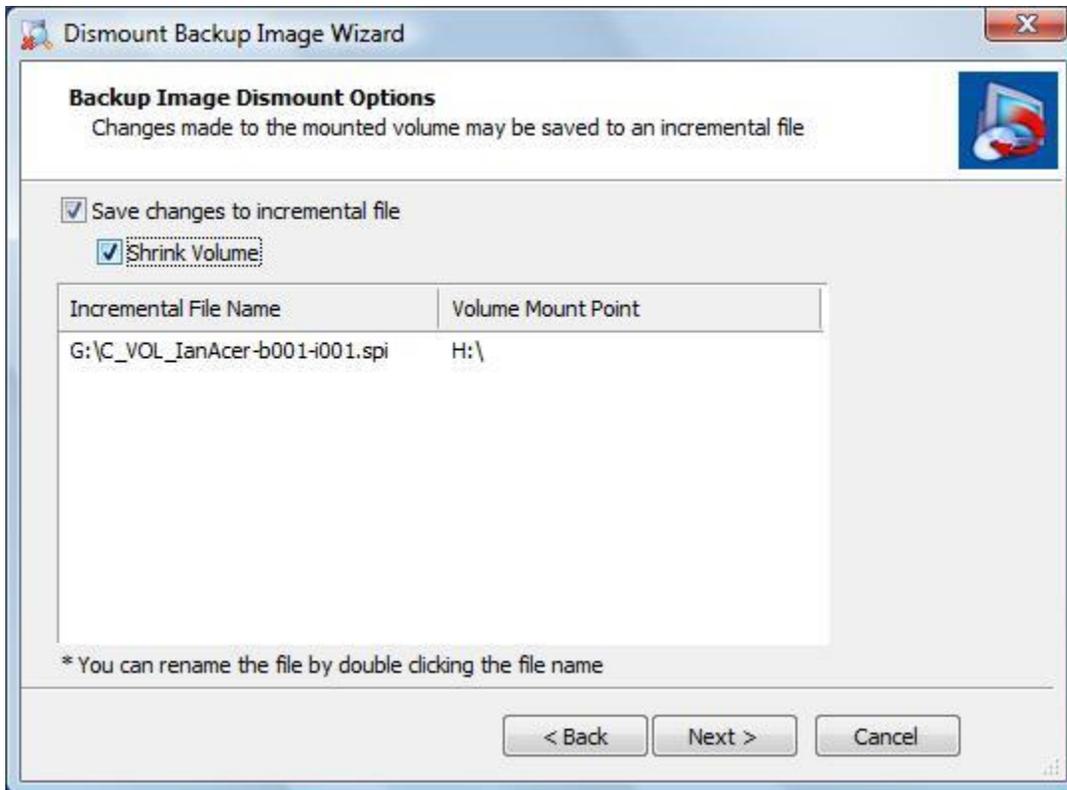
1. Click [Next] and then [Finish] to dismount the image and save changes.

   Part 3: Perform a restore using the new incremental image

   After the image has been dismounted, there should be an incremental file dependent upon the image that you selected. You can now choose to virtually mount and explore or restore this incremental file, and the incremental image's properties should now show a volume size less than that of the original base. Actual amount of shrinkage will vary - see notes for more details.

NOTE:

A common misconception on this message is the amount of space that is needed to restore. The space that is looked at is not the "Used space" in the backup but the actual "Volume size" that was backed up. This is a screen shot of the image being restored before the shrink it would need a 2 TB volume to restore even though only 14 GB is used. Once the Volume is shrunk with the above steps the Volume Size should change to reflect the volume size now needed to restore.

Limitations:

This section discusses limitations that can affect the amount of space that you will be able to clear out using the shrink volume process.

Limitations: The Shrink Process itself.

This shrink option we supply is performed using the Microsoft shrink utility, and thus has the same performance characteristics. See Microsoft website for further details: TechNet - Shrink A Basic Volume

Microsoft advises that:

```
"When you shrink a partition, unmovable files (for example, the paging file or the shadow
copy storage area) are not automatically relocated and you cannot decrease the allocated
space beyond the point where the unmovable files are located. If you need to shrink the
partition further, move the paging file to another disk, delete the stored shadow copies,
shrink the volume, and then move the paging file back to the disk."
```

Limitations: Disk Fragmentation.

The volume can only be shrunk to the last track where data exists on the volume (See directly above). If your disk is highly fragmented, the ability to shrink your free space will be restricted. If at all possible, it is highly recommended that you perform an extensive defragmentation of the volume to be shrunk **BEFORE** you take the ShadowProtect backup. Please note that in order for a defrag to be successful, it requires 15% free space on the disk.

Limitations: Mirror Master File Table.

A backup copy of the Master File Table (MFT) is normally located at about the mid-point of the volume. This will therefore limit the amount of the shrink to half of the disk size (if you have less than 50% data on your volume). For example, a freshly de-fragmented 300GB volume that contained 7GB of data, when shrunk by this process achieved a new volume size of 146GB (approximately 50%).

Offical StorageCraft article:

https://www.storagecraft.com/support/kb/article/152