

# Resizing a QEMU raw image with an NTFS filesystem

This is a quick guide to increasing the disk space available to your Windows virtual machine with an NTFS file system. The example is based on increasing a partition from 5GB to 6GB.

Backup your original file first in case something goes wrong.

## Use `qemu-img` to resize the QEMU raw disk image

This command increases the size of the disk image in the file `Windows_XP_Professional_SP_3.img` by 1GB.

```
qemu-img resize Windows_XP_Professional_SP_3.img +1G
```

After this command, if you boot your virtual machine, you will see that there is an additional 1GB of free disk space available.

## Find the offset into the image

Loop mount the image.

```
losetup /dev/loop0 Windows_XP_Professional_SP_3.img
```

Inspect the partition table (here `parted` is used but `fdisk` or `cdisk` can also be used).

```
parted /dev/loop0
```

Within `parted`, set the units to sectors, then print the current partition table.

```
(parted) unit s  
(parted) print
```

The output will look something like this:

```
Model: Loopback device (loopback)  
Disk /dev/loop0: 12582912s  
Sector size (logical/physical): 512B/512B  
Partition Table: msdos  
Disk Flags:
```

Number	Start	End	Size	Type	File system	Flags
1	63s	11718798s	11718736s	primary	ntfs	boot

Note the Sector size and Start sector numbers in the output.

Now quit parted.

```
(parted) quit
```

Delete the loop device.

```
losetup -d /dev/loop0
```

## Use ntfsresize to resize the NTFS partition

Loop mount the NTFS partition to be resized, using an offset calculated from the sector size and start sector.

```
losetup -o$((512*63)) /dev/loop0 Windows_XP_Professional_SP_3.img
```

First do a dry run.

```
ntfsresize -n -s 6G /dev/loop0
```

If all is OK, do it for real.

```
ntfsresize -s 6G /dev/loop0
```

Delete the loop device.

```
losetup -d /dev/loop0
```

## Update the partition table

Loop mount the image.

```
losetup /dev/loop0 Windows_XP_Professional_SP_3.img
```

Update the partition table using parted (both fdisk and cfdisk appear to fail here).

```
parted /dev/loop0
```

This seems like a backward step, but now use parted to remove the existing partition.

```
(parted) rm 1
```

Use the parted rescue command to find the partition again, with the END option set to the size of the partition in MB.

```
(parted) rescue 1 6000
Information: A ntfs primary partition was found at 32.3kB -> 6000MB. Do you
want to add it to the partition table?
Yes/No/Cancel? Yes
```

Set the boot flag on the rescued partition.

```
(parted) set 1 boot on
```

The partition table is written when you quit parted.

```
(parted) quit
```

Delete the loop device.

```
losetup -d /dev/loop0
```

## Finish up

Boot the virtual machine and allow the Windows chkdsk program to run.

## Sources

\* Original source: <http://cauldrondevelopment.com/blog/2009/02/26/resize-qemu-ntfs-image/howtos>, [Resize](#), [QEMU](#), [raw](#), [image](#), [NTFS](#), [filesystem](#), [author allend](#)

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