

How To Make Backtrack 4 Persistent Installation On USB Disk

In this article we will describe how we can create a bootable Backtrack 4 USB Drive that will save all the changes we make on the USB itself. In this scenario we will use 2 USB Drives. One USB drive of 1GB and the 2GB USB drive which will hold our changes.

Firstly we need to create a bootable USB Drive on the 1GB USB Drive and boot our machine (A DVD Drive can be used also)

Secondly we will need to to prepare our 2GB USB Drive with 2 partitions, one for the USB Boot with (bt4 and boot folder) FAT32 and the other one EXT2 to keep our changes.

```
root@bt:~# fdisk -l

Disk /dev/sdb: 1000 MB, 100041885440 bytes
255 heads, 63 sectors/track, 19437 cylinders
Units = cylinders of 16065 * 512 = 8220260 bytes
Disk identifier: 0ad55209e1

   Device Boot      Start         End      Blocks   Id  System
/dev/sdb1            *              1         16812     86847328+  7  HPFS/NTFS
/dev/sdb2            16813         16813         64266632+  7  HPFS/NTFS
/dev/sdb3            16814         16431         5124785    1c  Hidden W95 FAT32 (LBA)
/dev/sdb4            16432         16432          46136    ef  EFI (FAT-12/16/32)

Disk /dev/sdb: 1000 MB, 100041885440 bytes
16 heads, 32 sectors/track, 3534 cylinders
Units = cylinders of 512 * 512 = 262144 bytes
Disk identifier: 0e00000000

   Device Boot      Start         End      Blocks   Id  System
/dev/sdb1            *              1         3934     1997088    b  W95 FAT32

Disk /dev/sdc: 2000 MB, 2000837120 bytes
141 heads, 19 sectors/track, 2810 cylinders
Units = cylinders of 1400 * 512 = 721920 bytes
Disk identifier: 0e2000d11b

   Device Boot      Start         End      Blocks   Id  System
/dev/sdc1            *              1         1400     1048576    b  W95 FAT32
root@bt:~#
```

As you can see in the above screenshot the two USB devices are listed as /dev/sdb1 for the 1GB bootable USB Drive and /dev/sdc1 for the 2GB drive.

We now need to delete the /dev/sdc1 partition and create 2 new partitions for the /dev/sdc USB Drive:

```
root@bt:~# fdisk /dev/sdc
Command (m for help): d
Selected partition 1
Command (m for help): n
Command action
e extended
p primary partition (1-4)
p
Partition number (1-4): 1
First cylinder (1-2813, default 1):
Using default value 1
Last cylinder, +cylinders or +size{K,M,G} (1-2813, default 2813): +1024M
Command (m for help): t
Selected partition 1
Hex code (type L to list codes): b
```

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```
Changed system type of partition 1 to b (W95 FAT32)
Command (m for help): a
Partition number (1-4): 1
Command (m for help): n
Command action
e extended
p primary partition (1-4)
P
Partition number (1-4): 2
First cylinder (1489-2813, default 1489):
Using default value 1489
Last cylinder, +cylinders or +size{K,M,G} (1489-2813, default 2813):
Using default value 2813
Command (m for help): w
The partition table has been altered
```

We now format the linux partition with mkfs.ext2, mount it and create “changes” folder:

```
root@bt:/# mkfs.ext2 /dev/sdc2
root@bt:/# mkdir -p /mnt/sdc2
root@bt:/# mount -t ext2 /dev/sdc2 /mnt/sdc2
root@bt:/# mkdir /mnt/sdc2/changes
```

On the first partition we need to copy BT4 and boot folders from the 1GB USB Drive to our 2GB USB Drive first partition /dev/sdc1:

```
Format the partition to FAT32
root@bt:/# mkdosfs -F 32 /dev/sdc1
root@bt:/# mkdir -p /mnt/sdc1
root@bt:/# mount -t vfat /dev/sdc1 /mnt/sdc1
root@bt:/# cp -Rf /mnt/sdb1/boot/ /mnt/sdc1/
root@bt:/# cp -Rf /mnt/sdb1/BT4/ /mnt/sdc1/
```

Now we have to make our 2GB USB Drive bootable and keeping the changes on our second partition:

```
chmod +Xx /mnt/sdc1/boot/syslinux/lilo
chmod +Xx /mnt/sdc1/boot/syslinux/syslinux
nano /mnt/sdc1/boot/syslinux/syslinux.cfg
```

Append the changes to reflect the Linux EXT2 partition we created before:

```
LABEL BT4
MENU LABEL BT4 Beta - Console
KERNEL /boot/vmlinuz
APPEND vga=0x317 initrd=/boot/initrd.gz ramdisk_size=6666 root=/dev/ram0 rw
quiet changes=/dev/sdb2
```

As you can see we had put /dev/sdb2 partition because on the next boot we will remove the 1GB USB drive that it currently has the /dev/sdb partition and our new bootable USB Drive will use /dev/sdb.

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The last step is to write our MBR Boot record to make our USB Drive bootable:

As we notice running `bootinst.sh` on backtrack 4 we get an error as follow

```
root@bt:/# sh /mnt/sdc1/boot/bootinst.sh
/mnt/sdc1/boot/bootinst.sh: 27: Bad substitution
```

To fix this we need to force symbolic link the `/bin/bash` with `/bin/sh` and reboot the system:

```
root@bt:/# ln -sf /bin/bash /bin/sh
root@bt:/# sh /mnt/sdc1/boot/bootinst.sh
root@bt:/# reboot
```

Now you have a full Backtrack 4 installation on your USB Drive that will keep all the changes we make.