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How can I repair the Windows 8 EFI Bootloader?

CAREERS 2.0
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I installed Windows 7 and Windows 8 in EFI mode on a hard disk some days ago. Today, the bootloader got missing/corrupted.

I currently have the Windows 8 installer on a flash drive and tried using the Automatic Repair option to repair the bootloader but it didn't do anything. The Startup Repair option is also missing in the Windows 8 installer.

How I can repair/recreate the EFI bootloader from the Command Prompt?

`BCDEDIT` returns the following message:

```
The requested system device cannot be found.
```

`windows-7` `windows-8` `bootloader` `uefi`

edited Dec 25 '12 at 4:20	asked Aug 12 '12 at 18:06
Jherico **164** 8	Don't Forget to Upvote **4,093** 4 21 62

What is wrong with the current solutions? – soandos Aug 26 '12 at 0:33

@soandos I had the same problem. I executed the commands from you and harrymc, and everything works fine now! Many thanks to you both. – ComFreek Sep 7 '12 at 13:14

Just as an FYI, but we've recently released an automated EFI repair tool for Windows 8: neosmart.net/blog/2013/… – Mahmoud Al-Qudsi Mar 5 '13 at 16:36

add comment

9 Answers

I've spent a lot of time trying to get my Windows 8 PC to boot again after cloning to a new SSD and try to summarise how I finally got it all working -

Firstly, boot from a UEFI Windows 8 recovery disk (CD/DVD/USB) - I found that the automated recovery process didn't find the correct Windows partition, nor when I managed to add it to BCD settings would it make it reliably bootable e.g. using BCDEDIT I got it to find and launch the Windows partition but it refused to cold boot or would not "keep" the settings after a 2nd reboot or power off.

Go into the Advanced options and run the Command Prompt.

Enter `diskpart` to use the DiskPart tool to ensure you have all the right partitions and to identify your EFI partition - the key thing here is that your EFI partition is formatted as FAT32:

```
DISKPART> sel disk 0

Disk 0 is now the selected disk.

DISKPART> list vol

  Volume ###  Ltr  Label        Fs     Type        Size     Status     Info
  ----------  ---  -----------  -----  ----------  -------  ---------  --------
  Volume 0     E                       DVD-ROM         0 B  No Media
  Volume 1     C                NTFS   Partition   195 GB  Healthy    Boot
  Volume 2          WINRE       NTFS   Partition   400 MB  Healthy    Hidden
  Volume 3                      FAT32  Partition   260 MB  Healthy    System
```

Then assign a drive letter to the EFI partition:

```
DISKPART> sel vol 3

Volume 3 is the selected volume.

DISKPART> assign letter=b:
```

```
DiskPart successfully assigned the drive letter or mount point.
```

Exit DiskPart tool by entering `exit` and at the command prompt run the following:

```
cd /d b:\EFI\Microsoft\Boot\

bootrec /fixboot
```

Delete or rename the BCD file:

```
ren BCD BCD.bak
```

Use `bcdboot.exe` to recreate BCD store:

```
bcdboot c:\Windows /l en-gb /s b: /f ALL
```

The `/f ALL` parameter updates the BIOS settings including UEFI firmware/NVRAM, `/l en-gb` is to localise for UK/GB locale. The localisation defaults to US English.

Reboot and cross your fingers.

This gave me headaches. I was going in circles for a long while and there. isn't a lot of reliable info about fixing UEFI/Windows 8 at the time of writing.

[EDIT]

To re-enable Hyper-V, I also had to run the following:

```
bcdedit /set {default} hypervisorlaunchtype Auto
bcdedit /set {default} nx OptIn
```

edited Nov 11 '13 at 16:58	answered Nov 12 '12 at 0:27
faraz **134** 6	Alex **626** 4 5

7 Dude you are a life saver ..... I almost broke up.... because if this.... My girl was dancing on my head.... "You curroptted my laptop"... Thanks a ton !!!! – adcool2007 Dec 26 '12 at 17:24

1 One more quick question.... My WinRE partition is missing....Is there a way to create it again ?? – adcool2007 Dec 26 '12 at 17:33

Afterwards, you'll probably want to restore factory defaults. If you get a 0x80070490, you should try support.microsoft.com/kb/958044/es. – Andras Gyomrey May 30 '13 at 18:02

+1 to adcool2007, Alex is a lifesaver! – Seth P. Sep 27 '13 at 20:55

Forever grateful for this! Many other answers go along similar lines, but this one has a very important detail: where the BCD which we must delete and rebuild is located. Lot's of answers say it's in C:/Boot/ (which I think doesn't even exist on EFI systems) or other incorrect places, and it's not easier that there are files with that name all over the place (C:\windows\boot has like 3-4). Also this worked on a Windows 7 installation as well, in case anybody wonders. – Cray Oct 27 '13 at 0:13

add comment

The other answers are helpful but this is what I had to do to fix mine.

I had a 1.5 TB hard drive with Windows 7 installed on it. I then installed Windows 8 onto a 150 GB SSD I bought. The 1.5 TB hard drive failed and I could hear it making a noise, my computer would no longer start, saying "please insert system disk". I thought that the bootloader was missing as it must have been on the 1.5 TB disk. It turns out it was but the problem then was the guides I followed would not rebuild the bootloader or whatever it is called as i did not have an EFI partition on the smaller 150 GB disk (this may have existed on the failed disk), it only had 1 partition which filled the entire disk.

I did not want to lose all my data so I entered the Command Prompt by booting from my Windows 8 install USB drive (noting that you cannot boot the UEFI version of this if that appears, select to boot from the just the USB drive without the UEFI appearing before it).

Once in Command Prompt (see the other answers for instructions) you need to shrink the partition. To do this, enter the following commands, pressing `Enter` after each one:

```
diskpart

list disk

select disk 0

list partition

select partition 1
```

```
shrink desired=200 minimum=200

create partition efi

list partition

select partition 2

format fs=fat32
```

These commands will create the EFI partition. Double-check everything by typing `list vol` . You should see a 200 MB partition. You now need to assign it a letter. Do this by typing `assign` , then `list vol` again to see what letter has been assigned.

Now this is done you need to copy the boot files to this newly created partition:

```
bcdboot C:\Windows /l en-gb /s B: /f ALL
```

Note: you must replace `C:` with the drive letter of the partition that contains Windows, and `B:` with the letter assigned to the EFI partition you just created.

I also entered the following commands:

```
bootrec /fix

bootrec /fixmbr
```

These both came back successful, no idea if they really did anything but who cares. Windows is now fully recovered.

edited Dec 12 '12 at 10:50	answered Dec 12 '12 at 6:01
Indrek **11.8k** 10 30 47	Paul **51** 1 2

add comment

Windows 8 is still not out in final form, so problems are to be expected. You are in an area new to most of us, where the commands we used to use may not work anymore. To the commands listed by @soandos, I add this one that completely rebuilds the BCD :

```
bootrec /rebuildbcd
```

Try also to use the Advanced boot menu from Windows 8 and let us know what happens.

If nothing works, the article Repairing Windows 7 when they fail to boot has some advice on using bcdedit to correct boot errors. It would in any case be interesting to see what is the output of bcdedit on your computer.

[EDIT]

These links might contain some helpful ideas :

Recovering the Windows Bootloader from the DVD
Windows 7 Boot Manager Recovery Problem
Windows 7 Suddenly Won't Boot – Repairing the Windows 7 Bootloader

edited Aug 27 '12 at 20:08	answered Aug 25 '12 at 20:45
	harrymc **127k** 6 76 222

I have added some links that could be helpful, although pertaining to Windows 7. – harrymc Aug 27 '12 at 20:08

add comment

The easiest way:

- Follow the steps from the post above to locate BCD file and go to its directory.

- If BCD file is hidden, type `attrib bcd -s -h -r` and press Enter . This will allow you to modify and overwrite the file.

- Type `ren bcd bcd.old` and press Enter . This renames the current BCD file.

- Type `Bootrec /RebuildBCD` and press Enter to force Windows 8 to rebuild the boot menu from scratch.

- Exit command prompt and shut down. Remove Windows Recovery Media and reboot. You're done!

edited Nov 29 '12 at 6:25	answered Nov 29 '12 at 1:17
slhck ♦ **71.9k** 14 139 195	Rodolfo Philipp **21** 1

add comment

Use: `bootrec /fixmbr` (updates the MBR, probably won't do anything in this case, but won't hurt either)

`bootrec /fixboot` to re-write the boot sector of the system partition.

`bootrec /scanos` to scan for the OSes that are on the drive and add them to bootloader.

Just run the commands in order.

answered Aug 13 '12 at 0:06
soandos
15.6k 11 51 93

Downvoter care to comment? – soandos Oct 29 '12 at 0:07

add comment

I've managed to fix it by using the following command in the recovery console:

```
bootcfg C:\Windows /l en-us
```

edited Sep 23 '12 at 21:00   answered Aug 25 '12 at 20:41
techie007   Sorin Dumitru
42.8k 6 32 63   **19** 1

This tool is only for boot.ini which is for Windows XP and older oses. – Don't Forget to Upvote Aug 26 '12 at 14:31

add comment

Okay, I've had time to put together a proper outline here. It's long, but it's pretty complete and should help you see what's going on.

First, one way this can happen:

1. Your BIOS loses its settings.
2. No problem, all that stuff's stored in the EFI partition.
3. ...except for the SATA IDE vs AHCI setting, for obvious reasons.
4. Were you using SATA-AHCI? You're probably using SATA-IDE now.
5. Did you try to boot before you figured that out?
6. If you did, it failed. Did you let Windows try to fix it?
7. If you did, BLAM, it may very well have destroyed the Boot Configuration Database.
8. Make sure you're using the correct SATA setting you were using last time.

Here's what you've probably done by now. IF ANY OF THIS DOES NOT MATCH, CAREFULLY EVALUATE WHETHER THIS IS IN FACT YOUR PROBLEM, and READ this for ideas but don't FOLLOW it without thinking first.

1. You have HOPEFULLY ignored all the crap about fixing the Master Boot Record (MBR), partition table, partition flags, and other bullshit that DOES NOT APPLY to an EFI boot scenario. *AT ALL*. At best, you would be able to completely rebuild a new, *unrelated*, NON-EFI boot solution. That might not be trivial, however, because:

2. You have figured out that Windows is certain it does not have a Boot Configuration Database, but it is, unfortunately, either completely clueless or VERY certain about where it goes-- you can't quite tell which.

3. You're aware that the boot store is normally (somewhere)\Boot\BCD and that the file is HIDDEN; view it using "dir /a:hs".

4. You've familiarized yourself a bit with BCDEDIT.EXE and figured out that it will let you "mock up" a Boot Configuration Database in a staging file using "/CREATESTORE" (and please don't name it "BCD"), that you can explicitly use the staging file with the "/STORE" option, that you can add a menu entry for the Windows Boot Manager using "/CREATE {bootmgr}", and that you SHOULD be able to import it using "/IMPORT"...

5. ...but when you try to do this, you can't. You look into the /SYSSTORE option, which sounds right, but you can't get it to use another store because it's "ambiguous". You have a hunch that it knows where the store is-- or should be-- but you can't find it.

6. You've tried to use "MOUNTVOL" to mount the EFI partition, but it doesn't even show in the list, so you can't.

If ALL of that applies fairly closely to you, here is what MAY be going on:

1. Windows can tell you're set up for EFI (you have booted the DVD via a UEFI boot, you have an EFI partition, etc.).

2. It therefore knows WHERE TO LOOK for the BCD file-- however, it either somehow has the location wrong (not this problem, but similar) or the BCD has been deleted.

3. Apparently, because it knows where it SHOULD be, this breaks /SYSSTORE-- and actually, that's probably correct behavior, because otherwise you'd put it in the wrong place.

4. As near as I can tell, MOUNTVOL deliberately hides the EFI partition (or is somehow incapable of noticing it). This prevents mounting the filesystem, which prevents finding the correct subdirectory, verifying that the database exists, etc.

So here, finally, is what you need to do about it. The good news is that it's probably a lot simpler than you're hoping by now.

1. You do indeed have to mount the EFI partition.

Actually, I have a hunch that's not *strictly* correct-- I strongly suspect the EFI partition is *already* mounted by some internal subsystem, which is why BCDEDIT gets cranky-- it doesn't see the database, but it knows where it should go. Whatever it does not have, however, is a drive letter. So-- what to do?

Well...how far back do your DOS roots go? Do you remember the ASSIGN command? Guess what.

1. Start DISKPART.

2. If you are not familiar with DISKPART, the way it basically works is a hierarchy of sets; you must select exactly one element at one level to proceed to the next. So, "LIST DISKS", and then "SELECT DISK n" where n is whatever's appropriate for you.

3. Use "LIST PARTITION" and "LIST VOLUME" (note non-plural) to get some insight and identify your EFI partition.

It is usually a 100MB FAT32 partition marked "SYSTEM". Keep in mind that your disk should be using a GPT partition table by now, so you may see quite a few partitions. Some of these are for emergency recovery-- fat lot of good they do for EFI problems, eh? Oh well.

Notice that the EFI partition, and a few others, do not have drive letters. If you're so inclined, you can also view the GPT partition attributes, which may give you a few tangentially-related "Aha" moments as well.

1. "SELECT PARTITION n" where n is the EFI partition. (I expect you could select the volume instead if you need to.)

2. "ASSIGN". That's it. Don't specify a drive letter; just "ASSIGN".

3. "LIST VOLUME". You should now see a drive letter assigned to the EFI partition.

4. "EXIT" DISKPART.

And now... a big fat warning. You will probably go directly to S: (or whatever you got from ASSIGN) and notice a /Boot partition. "AHA!" You will say. "There is no BCD file here!" First... remember that file is hidden. Second... dig around a bit more, and you will notice that while there is:

S:\EFI\Boot

there is also:

S:\EFI\Microsoft\Boot

You need to check both of these for problems.

S:\EFI\Boot is for the *motherboard*, and contains the Windows Boot **LOADER** (and possibly other things for other operating systems). This has this name because the motherboard has no idea if you're going to have Windows or not, and needs a fixed path that makes sense.

1. Inspect S:\EFI\Boot. For Windows 7 Professional, 64-bit, you should see:

bootx64.efi

If you have installed an EFI shell (always a good idea), you might additionally see "shellx64.efi".

NOTE: Dual-boot Linux users using "chainloader+1" WILL NOT see an extra entry here.

1. Inspect S:\EFI\Microsoft\Boot using *both* "dir" and "dir a:h". For Windows 7 Professional, 64-bit, you should see a bunch of language templates ("en_US", etc.) and the following files:

bootmgr.efi bootmgfw.efi memtest.efi BCD BCD.Backup.001 BCD.Backup.002

...except that you probably don't see BCD, do you? But those backup files sure look tempting.

1. Determine which backup file you want to use. Whatever recent changes it's missing are nowhere near as important as your ability to boot the system, so go for the one that's most intact. Probably you will see one large one and one fairly small one. The small one is already corrupt, and is an artifact of the failed repair process-- don't use it. If they're both large, use the older one. IN ANY CASE, make ADDITIONAL BACKUP COPIES *OF THE BACKUPS* somewhere else.

2. Copy the backup you've decided to use to "BCD".

3. Exit the shell, shutdown cleanly, and reboot.

4. Tell Windows to start NORMALLY. At this point, it should start.

Q: What if you don't HAVE a backup BCD?

A: Well, that *really* shouldn't happen. It likely means you're either in the wrong directory, support EFI but weren't actually using it, or somehow rebuilt your entire EFI partition without all of the required Windows materials (possible, especially when using multiple versions of Windows). In that case, you'll need to copy the EFI materials from the DVD, then either modify or rebuild the Boot Configuration Database using BCDEDIT.

Q: Can you give me an example of a scenario where "BCDEDIT /SYSSTORE" can be used to do anything at all on an EFI system?

A: So far, no.

Anyway, hope this helps solve some problems for people, or at least gets them thinking. As a very important final point, please note that you can mount and inspect your EFI partition *under Windows normally* using the DISKPART ASSIGN technique above. You should do this at least once, to get a complete backup of your EFI partition, *BEFORE* you run into this kind of trouble. I recommend one backup into a subdirectory on your C: drive, and one on a USB flash drive.

Sorry that's so long-winded. I need to turn this into a proper article at some point, but there are so many people who are SO frustrated that I felt the need to document my experience as completely and rapidly as I could.

Cheers, Matt "Breakpoint" Heck

answered Nov 28 '12 at 3:14

Matt Heck
39   1

Actually, MOUNTVOL does let you mount the ESP. You use MOUNTVOL letter: /S. – Yuhong Bao Apr 28 '13 at 2:03

add comment

After 6 hours of struggling, I managed to fix my Windows 8 boot issue.

Today, after a usual restart, I got the message `MBR not found` or similar to that, I dont remember any more. I tried `bootrec` commands, Windows automatic repair (it couldnt find any installed Windows), a million other ways and nothing.

The problem was when I executed `bootrec /rebuildbcd` it went normaly, and then when I had to enter `yes` if I want to save the configuration, I got the message, `the file is not accessible because it is used by a another process`.

After hours of mind cracking, I have finally solved it.

In this order...

• First, I booted the easeup partition master and FORMATED the system reserved volume which I assigned as active later (in which my boot folder was). When I rebooted I got an error `NTLDR missing`.

• Then I booted in Windows recovery, opened a command prompt and entered `bootrec /fixmbr`, `/fixboot`, `/scanos`, `/rebuildbcd` (which now executed fine :])

• I exited `cmd` and clicked on automatic repair.

• Then, I was able to select Windows 8. When I rebooted, I could see the Windows 8 logo.

edited Dec 5 '12 at 15:45   answered Dec 5 '12 at 14:29

JoshP   Roko
1,868   2   8   23   **21**   1

add comment

Under DISKPART I had only vol 0 or D (the DVD) and vol 1 or C (the Windows NTFS partition). Nothing worked for me until I made vol 1 ACTIVE.

After exiting DISKPART I only typed:

```
bootrec /fixboot
bootrec /rebuildbcd
```

then the system was properly repaired. I didn't use

```
bootrec /fixmbr
```

because I was using GAG (gestor de arranque gràfico) on MBR for multiboot.

answered Feb 6 '13 at 11:50

Halberdier
143   1   4

add comment

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protected by Daniel Beck ♦ May 11 '13 at 8:24

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