

## Procedure to update Microcode of X99 Bios

In order to do this, you need a Windows 7 or Windows 10 64 bit OS running

1. Download the latest version of "UEFI Bios update"

a. Detailed info on the procedure and download link can be found <https://www.win-raid.com/t154f16-Tool-Guide-News-quot-UEFI-BIOS-Updater-quot-UBU.html>

b. For my update I used version UBU v1.70.rc11

c. The latest link to the latest version can be found in that forum entry, in my case it was <https://cloud.mail.ru/public/HLDj/6cT1gUPke>

d. The downloaded archive contains all you need in terms of tools

2. The downloaded archive contains 2 items in a folder

a. UBU\_v1\_70\_rc12.rar: extract contents, I recommend to a desktop directory called "UBU"

b. Mmt.rar: contains 3 different versions of MMtool.exe, in order to get this to work you need to use the PATCHED version of MMtool.exe version 5.2.0.24. Using non patched version can cause problems when putting the new microcode into bios. Extract "MMTool.exe" into the same "UBU" Directory on your desktop.

c. Now all the tools are ready to be used

3. Download the bios you wish to update the Microcode for

a. For my board, this was X99-A-II-ASUS-1902.CAP

b. Again put the file into the UBU directory

4. Open a cmd window, navigate to the UBU folder on the desktop and start UBU with ".\UBU"

5. After the start, UBU recognizes the Bios you have put into the dir, this is the output you get, then press enter

```
UEFI BIOS Updater v1.70 rc11 - X99-DELUXE-II-ASUS-1902.CAP
Scanning BIOS. Please wait...
Define BIOS platform - AMI Aptio U
Manufacturer - ASUSTeK COMPUTER INC.
Model - X99-DELUXE-II

[EFI Drivers - Find and Extract]
Intel RST GUID 793BA4EB-A6E9-4526-996D-79393F51B443
AMI NUMe GUID 634E8DB5-C432-43BE-A653-9CA2922CC458
Intel 1Gb GUID 54359363-5A11-4310-B957-E0D2D010BB24
Intel 1Gb GUID 86CB2BF0-F3F0-4915-B2B1-DE61C8C06941

[OROM - Find and Extract]
OROM in GUID A0327FE0-1FDA-4E5B-905D-B510C45A61D0
OROM in GUID A0327FE0-1FDA-4E5B-905D-B510C45A61D0
OROM in GUID A0327FE0-1FDA-4E5B-905D-B510C45A61D0
OROM in GUID A0327FE0-1FDA-4E5B-905D-B510C45A61D0
Press any key to continue . . .
```

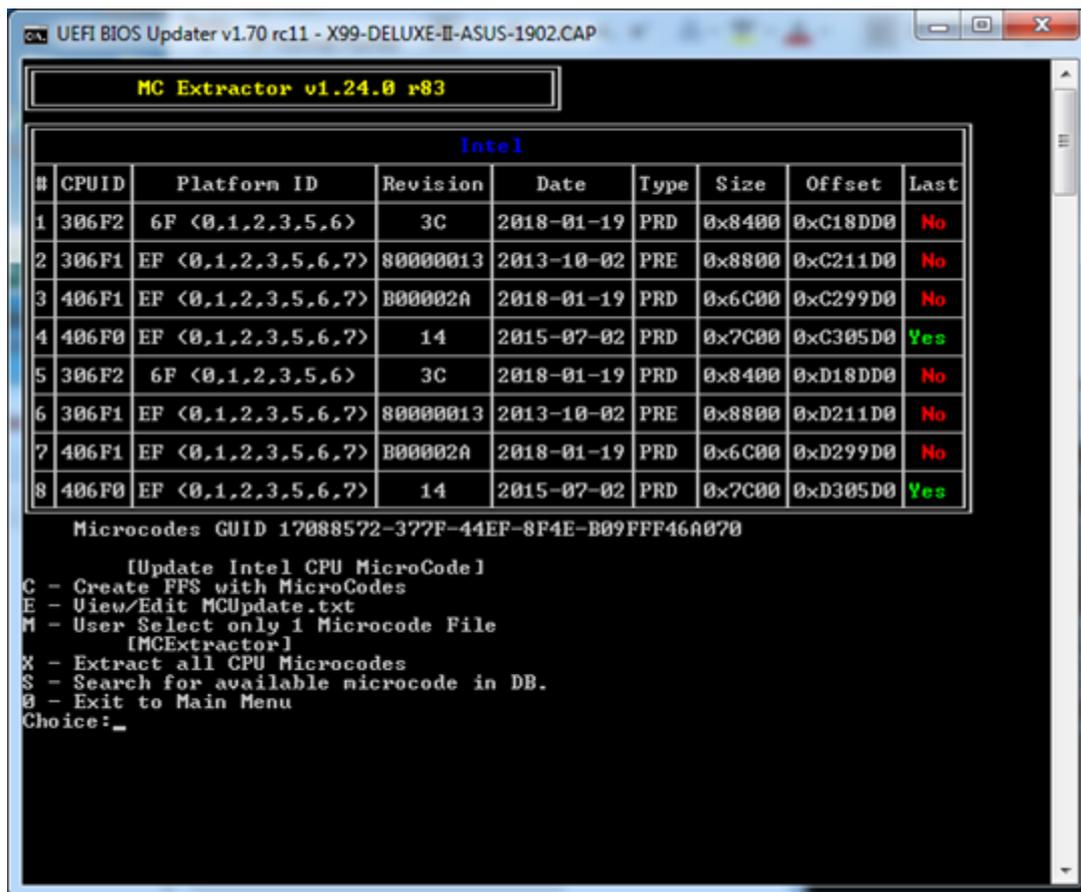
6. After pressing Enter you will see the following

```
UEFI BIOS Updater v1.70 rc11 - X99-DELUXE-II-ASUS-1902.CAP

Main Menu
[Current version in BIOS file]
1 - Disk Controller
    EFI IRST RAID for SATA - 14.8.0.2377
    OROM IRST RAID for SATA - 13.1.0.2126
    OROM IRST RAID for SATA - 14.8.0.2377
    EFI AMI NUMe Driver present
2 - Video OnBoard
3 - Network
    EFI Intel Gigabit UNDI - 0.0.09
    EFI Intel PRO/1000 UNDI - 6.9.07
    OROM Intel Boot Agent CL - 0.1.06
    OROM Intel Boot Agent GE - 1.5.73
4 - Other SATA Controller
5 - CPU MicroCode
    View/Extract/Search/Update
0 - Exit
RS - Re-Scanning
Choice:
```

Since we want to update the microcodes, hit 5 and enter

7. The tool analyses the microcodes in the bios and shows if they are current or not. This is the output



In red are the microcodes where newer versions are available. In order to update those, you need to hit C and enter, to create FFS with MicroCodes.

8. Once you hit c, the tool downloads the latest microcodes and shows the result on the screen

```

c:\UEFI BIOS Updater v1.70 rc11 - X99-DELUXE-II-ASUS-1902.CAP
Files\Intel\mcode\2011v3\cpu406F1_platEF_ver0B00002E_2018-04-19_PRD_1AAFEDCE.bin
Checksum correct.
CPUID 406F0 found.
Files\Intel\mcode\2011v3\cpu406F0_platEF_ver00000014_2015-07-02_PRD_F22A3585.bin
Checksum correct.
CPUID 306F2 found.
Files\Intel\mcode\2011v3\cpu306F2_plat6F_ver0000003D_2018-04-20_PRD_A5D0CFB1.bin
Checksum correct.
CPUID 306F1 found.
Files\Intel\mcode\2011v3\cpu306F1_platEF_ver00000014_2014-01-10_PRD_9F835FBB.bin
Checksum correct.
Generate FFS with Microcode

[Preview update]
MC Extractor v1.24.0 r83

Intel


| # | CPUID | Platform ID        | Revision | Date       | Type | Size   | Offset  | Last |
|---|-------|--------------------|----------|------------|------|--------|---------|------|
| 1 | 406F1 | EF <0,1,2,3,5,6,7> | B00002E  | 2018-04-19 | PRD  | 0x7000 | 0x18    | Yes  |
| 2 | 406F0 | EF <0,1,2,3,5,6,7> | 14       | 2015-07-02 | PRD  | 0x7C00 | 0x7018  | Yes  |
| 3 | 306F2 | 6F <0,1,2,3,5,6>   | 3D       | 2018-04-20 | PRD  | 0x8400 | 0xEC18  | Yes  |
| 4 | 306F1 | EF <0,1,2,3,5,6,7> | 14       | 2014-01-10 | PRD  | 0x8800 | 0x17018 | Yes  |


M - Use MMTool - Recommended
U - Use UEFIReplace

[Only MSI x299 Series]
D - Inserting into a DXE volume - Test
P - Replacemen in PEI volume
0 - Cancel
Choice:

```

9. The next step is very important, you need to hit M now to use the MMTool that was also put in the «UBU» folder. Otherwise the update might fail. So hit M and then enter. MMTool is now doing its magic and puts back the MicroCode into the Bios. This seems to be the procedure for X99 boards that is recommended and working.

```

UEFI BIOS Updater v1.70 rc11 - X99-DELUXE-II-ASUS-1902.CAP

```

1	406F1	EF <0,1,2,3,5,6,7>	B00002E	2018-04-19	PRD	0x7000	0x18	Yes
2	406F0	EF <0,1,2,3,5,6,7>	14	2015-07-02	PRD	0x7C00	0x7018	Yes
3	306F2	6F <0,1,2,3,5,6>	3D	2018-04-20	PRD	0x8400	0xEC18	Yes
4	306F1	EF <0,1,2,3,5,6,7>	14	2014-01-10	PRD	0x8800	0x17018	Yes

```

M - Use MMTool - Recommended
U - Use UEFIReplace

    [Only MSI x299 Series]
D - Inserting into a DXE volume - Test
P - Replacemen in PEI volume
0 - Cancel
Choice:n
    [Preparing for replacement]
BIOS file backup
Empty GUID: File replaced
mCode GUID: File replaced
mCode GUID: File replaced
    [Replacement]
mCode FFS: File replaced
mCode FFS: File replaced
Empty FFS: File replaced
Dump _FIT_ restored

```

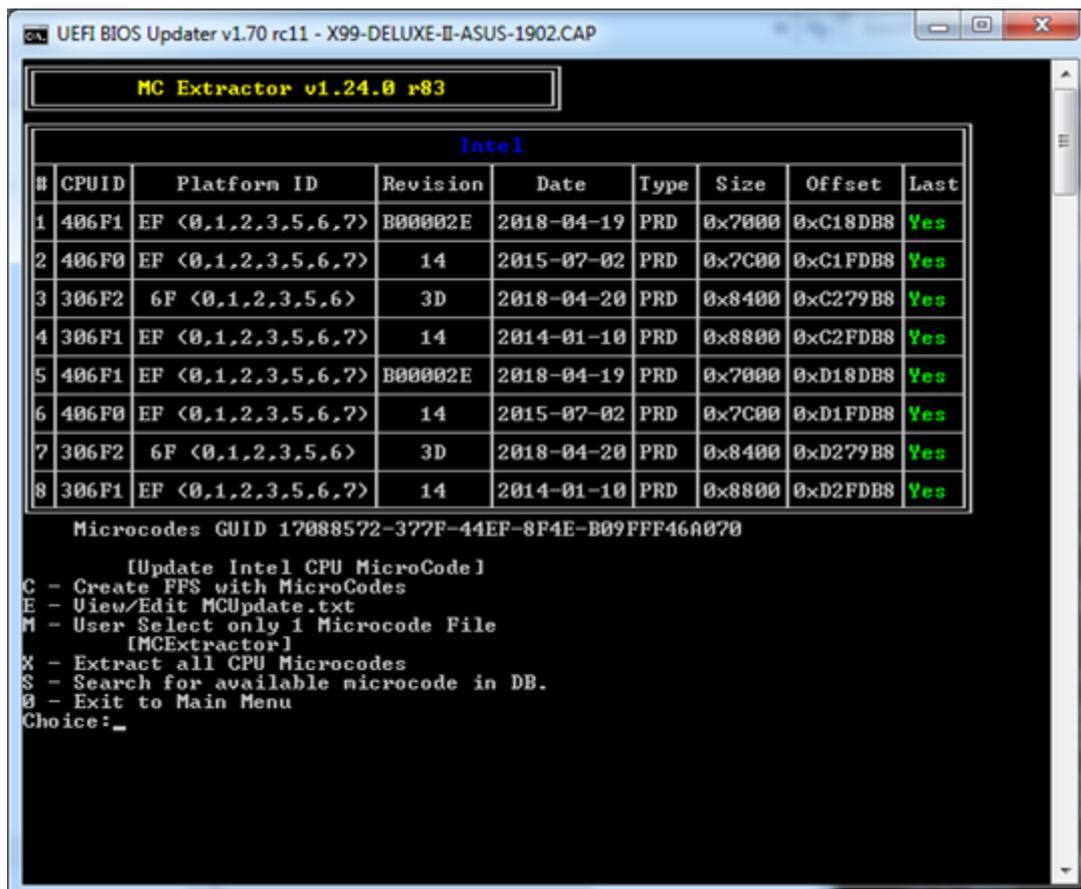
		Real	!=	_FIT_
01	mCode Offset	- FFD18DB8	!	FFD18DD0
	Fixed	-		FFD18DB8
	mCode Size	- 7000		
02	mCode Offset	- FFD1FDB8	!	FFD211D0
	Fixed	-		FFD1FDB8
	mCode Size	- 7C00		
03	mCode Offset	- FFD279B8	!	FFD299D0
	Fixed	-		FFD279B8
	mCode Size	- 8400		
04	mCode Offset	- FFD2FDB8	!	FFD305D0
	Fixed	-		FFD2FDB8
	mCode Size	- 8800		

```

Backup _FIT_ with Offset
Press any key to continue . . .

```

10. Now press enter, this will bring you back to the menu where you get confirmation that the MicroCodes are now on the latest versions.



11. Now you can exit by hitting 0 and enter

12. Hit 0 and enter again

13. Hit 1 to save the bios file to the correct file name for flashing

14. Now you are complete, you can hit enter to exit

15. You will now find the flashed bios file in the UBU-directory on your desktop

Now you can flash back the new bios file by USB port.

Hope this guide is useful.

You will find more detailed and other information here:

<https://www.win-raid.com/t154f16-Tool-Guide-News-quot-UEFI-BIOS-Updater-quot-UBU.html>

I also attached the guide as pdf with screenshots.

Hope it helps people.