BIOS Update Instructions for Intel® NUC with Intel® Visual BIOS

Notes:

- **The latest BIOS update files for Intel® NUC products are available on [Download Center](#).**
- Downgrading the BIOS to an earlier version is not recommended and may not be supported. An earlier BIOS version may not contain the support for the latest processors, bug fixes, critical security updates, or support the latest board revisions currently being manufactured.
- If a BIOS update process is interrupted, your computer may not function properly. We recommend the process be done in an environment with a steady power supply (preferably with UPS).
- Before updating the BIOS, manually record all BIOS settings that have been changed (from default) so they can be restored after completing the BIOS update.
- All images in this example are for illustration purposes only. You need to select the correct BIOS files for your Intel® NUC.
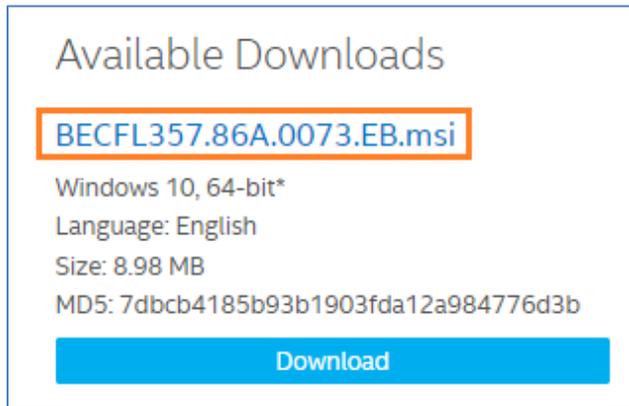
Choose an update method

Express BIOS update	Starts the BIOS update from within Windows*.
F7 update	Starts the BIOS update by pressing the F7 key during the boot process (before the operating system loads).
Power button menu update	Starts the BIOS update from the Power Button Menu (by pressing the Power Button for three seconds).
iFlash update	Starts the BIOS update from the command prompt of a bootable USB device.
UEFI Shell update	Starts the BIOS update from the EFI Shell.
BIOS Recovery	In the unlikely event that a BIOS update is interrupted, it's possible the BIOS may be left in an unusable state. Try the BIOS Recovery method to fix the issue.
Express BIOS remote/silent update	Runs the Express BIOS update from a batch file; this can be used for remote BIOS updates when user interaction is not available.

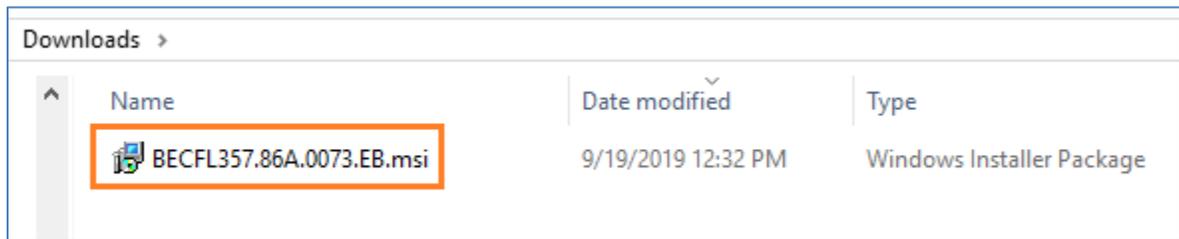After any BIOS update, Intel recommends the following steps:

1. Press **F2** during boot to enter BIOS Setup.
2. Press **F9** to set BIOS default values.
3. Customize any BIOS settings, if desired (optional).
4. Press **F10** to save and exit BIOS Setup.
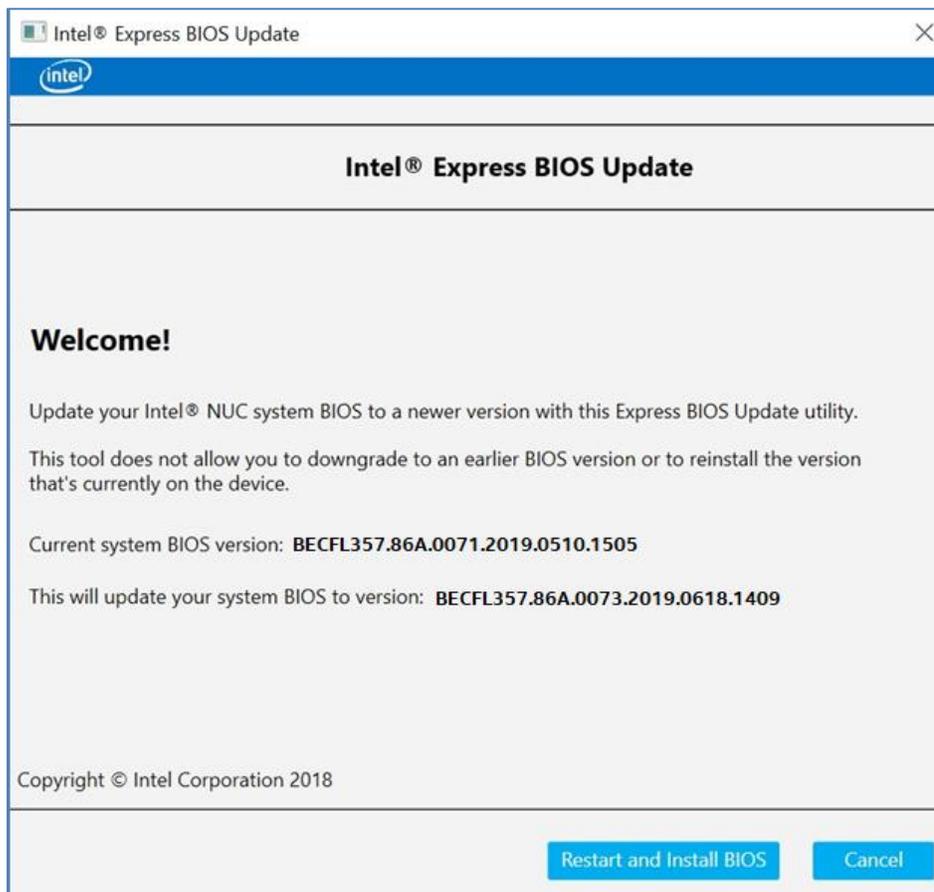
Express BIOS Update Instructions

1. Download and save the Express BIOS update file (.msi) to a temporary directory on the target computer. Example:

   Available Downloads

   BECFL357.86A.0073.EB.msi

   Windows 10, 64-bit*
   Language: English
   Size: 8.98 MB
   MD5: 7dbcb4185b93b1903fda12a984776d3b

   Download

2. Double-click the *.msi file to run the Express BIOS update.

   Downloads >

Name	Date modified	Type
BECFL357.86A.0073.EB.msi	9/19/2019 12:32 PM	Windows Installer Package

3. Click **Restart and Install BIOS** on the Welcome screen.

   Intel® Express BIOS Update   ✕

   (intel)

   ### Intel® Express BIOS Update

   Welcome!

   Update your Intel® NUC system BIOS to a newer version with this Express BIOS Update utility.

   This tool does not allow you to downgrade to an earlier BIOS version or to reinstall the version that's currently on the device.

   Current system BIOS version: **BECFL357.86A.0071.2019.0510.1505**

   This will update your system BIOS to version: **BECFL357.86A.0073.2019.0618.1409**

   Copyright © Intel Corporation 2018

   Restart and Install BIOS   Cancel

4. Upon restart, you will see the BIOS update process status window. **Do NOT at any time power off the computer at this stage.**

5. When the BIOS update is complete, the computer will boot back into Windows.

F7 Update Instructions

The F7 BIOS Flash Update allows you to update the system BIOS during the boot process and before the operating system loads.
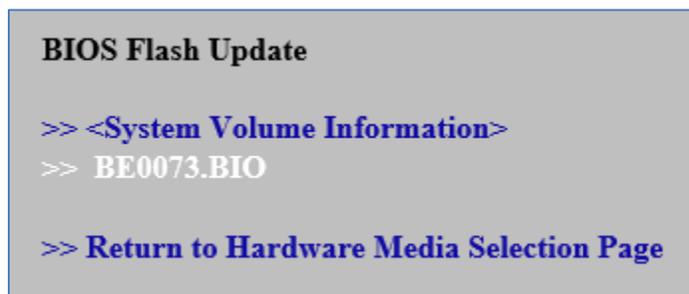
1. Download the Recovery BIOS (.bio) file. Example:
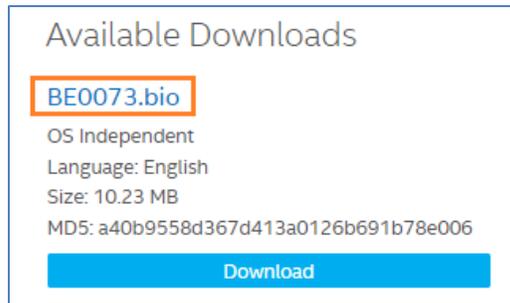
2. Copy the .bio file to a USB device.

3. Plug the USB device into a USB port of the target computer.

4. Shut down the target computer.

5. During boot, when the F7 prompt is displayed, press **F7** to enter the BIOS Flash Update tool.

6. Select the USB device and press Enter.

7. Select the .bio file and press Enter

8. Confirm you want to update the BIOS by pressing Enter.

9. Wait 2-5 minutes for the update to complete.

```
Flashing motherboard firmware:

Current revision:      BECFL357.86A.0071.2019.0510.1505
Updating to revision:  BECFL357.86A.0073.2019.0618.1409

Preparing image for Intel Management Engine firmware ... [done]
Preparing image for BackUp Recovery Block firmware ... [done]
Preparing image for BackUp MicroCode Block firmware ... [done]
Preparing image for Boot Block firmware ... [done]
Preparing image for Recovery Block firmware ... [done]
Preparing image for MicroCode Block firmware ... [done]
Preparing image for Main Block firmware ... [done]
Preparing image for Graphic firmware ... [done]
Flashing image for Intel Management Engine firmware ... [done]
Flashing image for BackUp Recovery Block firmware ... [done]
Flashing image for BackUp MicroCode Block firmware ... [done]
Flashing image for Boot Block firmware ... [done]
Flashing image for Recovery Block firmware ... [done]
Flashing image for MicroCode Block firmware ... [done]
Flashing image for Main Block firmware ... [done]
Flashing image for Graphic firmware ... [done]

Flash update has completed successfully.
```
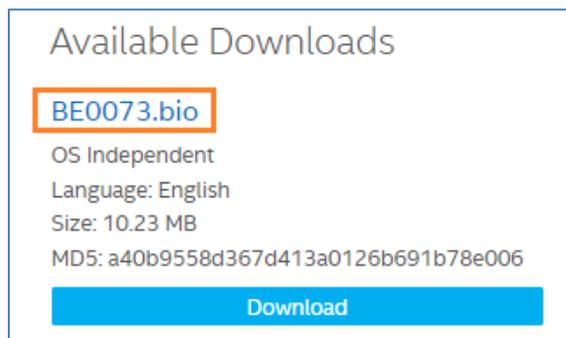
10. Remove the USB device.

11. Restart the computer.

Power Button Menu Update Instructions

The Power Button Menu Update allows you to update the system BIOS during the boot process and before the operating system loads.

1. Download the **Recovery BIOS** (.bio) file. Example:

```
Available Downloads

BE0073.bio
OS Independent
Language: English
Size: 10.23 MB
MD5: a40b9558d367d413a0126b691b78e006
          Download
```

2. Copy the *.bio file to a USB device.

3. Plug the USB device into a USB port of the Intel NUC when it is turned off (not in Hibernate or Sleep mode).

4. Press the power button and hold it down for three seconds, then release it before the 4-second shutdown override. The Power Button Menu appears. (Options on the menu can vary, depending on the Intel NUC model.)

```
BECFL357.86A.0071.2019.0510.1505

[ESC]  Normal Boot
[F2]   Intel® Visual BIOS
[F4]   BIOS Recovery
[F7]   Update BIOS
[F10]  Enter Boot Menu
[F12]  Network Boot
```

5. Press F7 to start the update.

6. Wait 2-5 minutes for the update to complete.

```
Flashing motherboard firmware:

Current revision:      BECFL357.86A.0071.2019.0510.1505
Updating to revision:  BECFL357.86A.0073.2019.0618.1409

Preparing image for Intel Management Engine firmware ... [done]
Preparing image for BackUp Recovery Block firmware ... [done]
Preparing image for BackUp MicroCode Block firmware ... [done]
Preparing image for Boot Block firmware ... [done]
Preparing image for Recovery Block firmware ... [done]
Preparing image for MicroCode Block firmware ... [done]
Preparing image for Main Block firmware ... [done]
Preparing image for Graphic firmware ... [done]
Flashing image for Intel Management Engine firmware ... [done]
Flashing image for BackUp Recovery Block firmware ... [done]
Flashing image for BackUp MicroCode Block firmware ... [done]
Flashing image for Boot Block firmware ... [done]
Flashing image for Recovery Block firmware ... [done]
Flashing image for MicroCode Block firmware ... [done]
Flashing image for Main Block firmware ... [done]
Flashing image for Graphic firmware ... [done]

Flash update has completed successfully.
```

7. The computer will either turn off when the update is complete, or it will prompt you to turn it off.

8. Remove the USB device.

9. Restart the computer.

iFlash Update Instructions

The iFlash BIOS update utility allows you to update the BIOS from the command prompt of a bootable USB device.
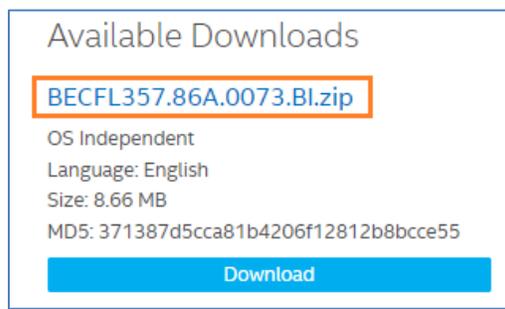

Create a Bootable USB Device

Refer to any of the following websites for tips on creating bootable USB devices. Intel is unable to assist with the creation of bootable devices.
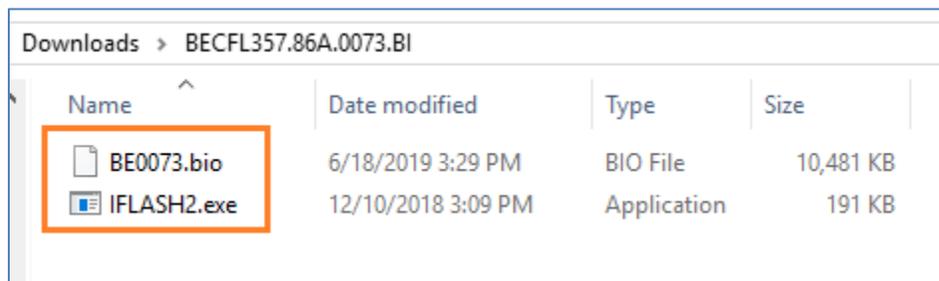
- How to Boot from a USB Flash Drive at http://www.bootdisk.com/pendrive.htm
- Boot from USB Flash Drive at http://www.weethet.nl/english/hardware_bootfromusbstick.php

You can also search for additional resources on the web for creating bootable USB devices. Search on "How to create bootable USB drives".

---

1. Download the iFlash BIOS Update file (*.BI.zip). Example:

   Available Downloads

   BECFL357.86A.0073.BI.zip

   OS Independent
   Language: English
   Size: 8.66 MB
   MD5: 371387d5cca81b4206f12812b8bcce55

   Download

2. Double-click the *BI.zip to extract its files.

   Downloads > BECFL357.86A.0073.BI

 | Name | Date modified | Type | Size |
   |------|---------------|------|------|
   | BE0073.bio | 6/18/2019 3:29 PM | BIO File | 10,481 KB |
   | IFLASH2.exe | 12/10/2018 3:09 PM | Application | 191 KB |

3. Copy IFLASH2.exe and the .bio file to the bootable USB device.

4. Configure the BIOS of the target computer to boot to the USB device:
   a. Press **F2** during boot to enter BIOS Setup.
   b. Go to the Boot menu.
   c. Enable **USB Boot**.
   d. Press **F10** to save and exit the BIOS Setup.

5. Boot the target computer with the USB device connected.

6. At the prompt, type ***IFLASH2 /PF XXX.bio,*** where XXX.bio is the filename of the .bio file and press Enter.
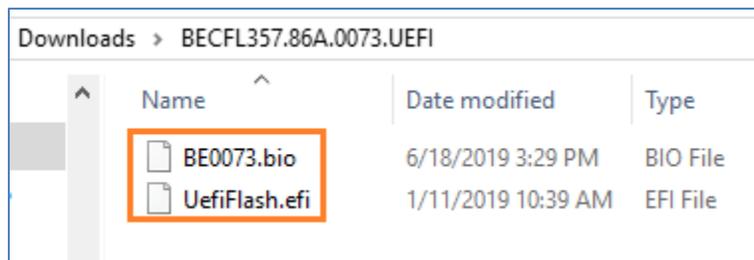
7. Follow all prompts.

UEFI Shell Update Instructions

The UEFI Flash BIOS update utility allows you to update the BIOS from the EFI Shell.

1. Download the UEFI Flash BIOS Update file (*.UEFI.zip). Example:
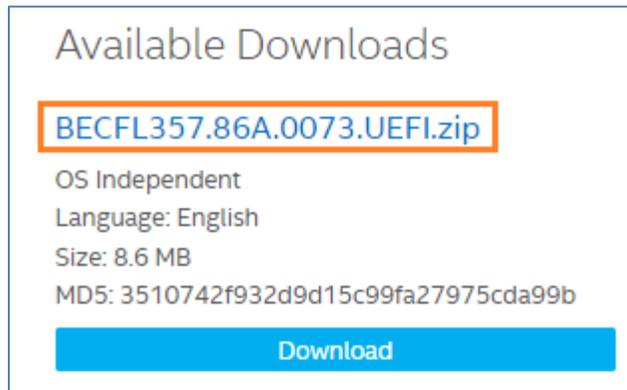
2. Double-click the *.UEFI.zip to extract its files.

3. Copy UefiFlash.efi and the .bio file to the bootable USB device.

4. Connect the USB drive to a port on the Intel NUC.

5. Configure the BIOS of the target computer to boot to the EFI Shell:

   a. Press **F2** during start to enter BIOS setup.
   b. Go to **Advanced** > **Boot** > **Secure Boot.**
   c. Disable Secure Boot, if enabled.
   d. Go to **Advanced** > **Boot** > **Boot Configuration.**
   e. In the Boot Devices pane, enable **Internal UEFI Shell.**
   f. Press **F10** to save changes and exit BIOS Setup.

6. Press **F10** during boot to open the Boot Menu.

7. Select **UEFI: Built-in EFI Shell.**
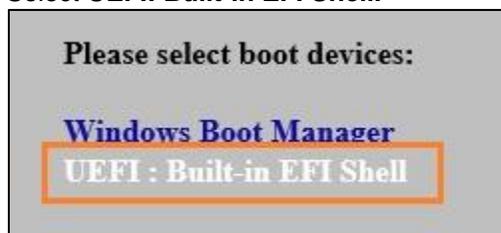
8. Change the current directory to the USB flash drive by entering the command **fsX:** where X is the drive number of the USB flash drive from the device mapping list. Example: if your USB drive is fs3, then type **fs3:** and press enter.

9. At the command prompt, type **UefiFlash.efi XXX.bio,** where XXX.bio is the filename of the .bio file and press Enter.

```
Shell> fs3:

fs3:\> uefiflash.efi BE0073.bio
UEFI BIOS Flash Update Tool v1.0
Copyright © 2018 Intel Corporation. All rights reserved.

Version: BECFL357.86A.0073.2019.0618.1409
Capsule GUID: 539182B9-ABB5-4391-B69A-E3A943F72FCC
Header Size: 32
Image Size: 11706400
Flags: 00010000

Are you sure you want to update to this BIOS version? (y/n)
```

10. Press Y to begin the update.

11. Wait for the BIOS update to complete.

```
Flashing motherboard firmware:

Current revision:      BECFL357.86A.0071.2019.0510.1505
Updating to revision:  BECFL357.86A.0073.2019.0618.1409

Preparing image for Intel Management Engine firmware ... [done]
Preparing image for BackUp Recovery Block firmware ... [done]
Preparing image for BackUp MicroCode Block firmware ... [done]
Preparing image for Boot Block firmware ... [done]
Preparing image for Recovery Block firmware ... [done]
Preparing image for MicroCode Block firmware ... [done]
Preparing image for Main Block firmware ... [done]
Preparing image for Graphic firmware ... [done]
Flashing image for Intel Management Engine firmware ... [done]
Flashing image for BackUp Recovery Block firmware ... [done]
Flashing image for BackUp MicroCode Block firmware ... [done]
Flashing image for Boot Block firmware ... [done]
Flashing image for Recovery Block firmware ... [done]
Flashing image for MicroCode Block firmware ... [done]
Flashing image for Main Block firmware ... [done]
Flashing image for Graphic firmware ... [done]

Flash update has completed successfully.
```

12. The computer will restart when finished.

13. Set the BIOS back to original settings:

       a. Restart the computer.
       b. Press **F2** during start to enter BIOS setup.
       c. Go to Advanced > Boot > Boot Configuration.
       d. In the Boot Devices pane, disable **Internal UEFI Shell.**
       e. Go to **Advanced** > **Boot** > **Secure Boot.**
       f. Enable Secure Boot, if it was originally enabled.
       g. Press **F10** to save changes and exit BIOS Setup.

BIOS Recovery Instructions

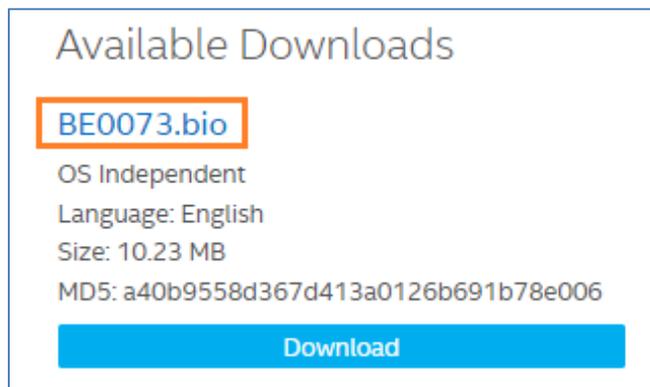In the unlikely event that a BIOS update is interrupted, it is possible the BIOS may be left in an unusable state.

There are two options to perform a BIOS recovery:

- Power Button Menu
- Security Jumper

WARNING: This process is intended to be performed by a trained technician.

BIOS Recovery by the Power Button Menu

1. Download the Recovery BIOS (.bio) file. Example:

2. Copy the recovery file (*.bio) to a USB device.

3. Plug the device into a USB port of the target computer when it is turned OFF.

4. Press and hold the power button down for 3 seconds, then release it. The Power Button menu appears.
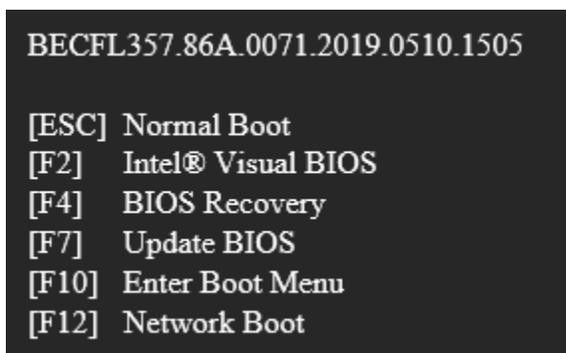
5. Press F4 to start the BIOS recovery.

6. Wait 2-5 minutes for the recovery process to complete.

```
Flashing motherboard firmware:

Current revision:      BECFL357.86A.0071.2019.0510.1505
Updating to revision:  BECFL357.86A.0073.2019.0618.1409

Preparing image for Intel Management Engine firmware ... [done]
Preparing image for BackUp Recovery Block firmware ... [done]
Preparing image for BackUp MicroCode Block firmware ... [done]
Preparing image for Boot Block firmware ... [done]
Preparing image for Recovery Block firmware ... [done]
Preparing image for MicroCode Block firmware ... [done]
Preparing image for Main Block firmware ... [done]
Preparing image for Graphic firmware ... [done]
Flashing image for Intel Management Engine firmware ... [done]
Flashing image for BackUp Recovery Block firmware ... [done]
Flashing image for BackUp MicroCode Block firmware ... [done]
Flashing image for Boot Block firmware ... [done]
Flashing image for Recovery Block firmware ... [done]
Flashing image for MicroCode Block firmware ... [done]
Flashing image for Main Block firmware ... [done]
Flashing image for Graphic firmware ... [done]

Flash update has completed successfully.
```
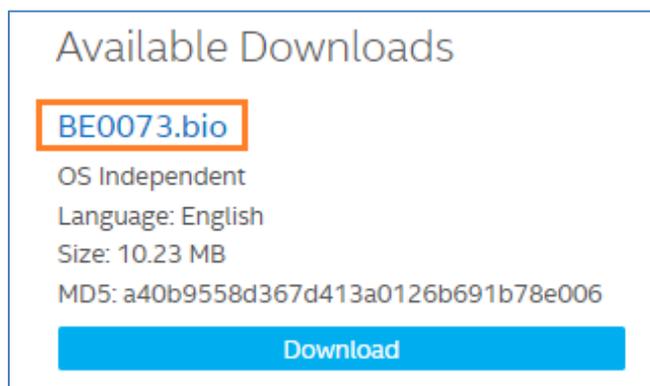
7. The computer will either turn off when the recovery process is complete, or it will prompt you to turn it off.


BIOS Recovery by the Security Jumper

Note: BIOS recovery using the BIOS security jumper will clear Trusted Platform Module (TPM) keys, Intel® Platform Trust Technology (Intel® PTT) keys, and High-bandwidth Digital Content Protection (HDCP) keys. These keys will not be restored after the BIOS recovery.

1. Download the Recovery BIOS (.bio) file. Example:

Available Downloads

BE0073.bio

OS Independent
Language: English
Size: 10.23 MB
MD5: a40b9558d367d413a0126b691b78e006

Download

2. Copy the recovery file (*.bio) to a USB device.

3. Shut down the computer and unplug the AC power adapter.

4. Open the chassis and remove the BIOS security jumper. (See the [Technical Product Specification](#) for details including the location of this jumper.)
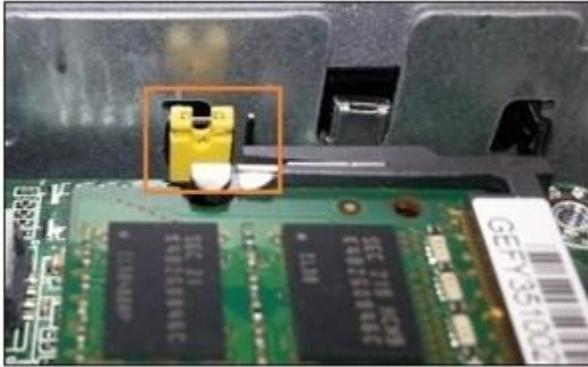
5. Plug the USB device into a USB port of the target computer and turn it on.

6. Wait 2-5 minutes for the recovery process to complete.

7. The computer will either turn off when the recovery process is complete, or it will prompt you to turn it off.

8. Remove the USB device.

9. Replace the BIOS security jumper.

10. Close the chassis.

11. Restart the computer.

Note

When using the Recovery by Security Jumper method, if the Intel NUC boots to the message **Detected BIOS Security Jumper Removed** and lists several menu options, it means the .bio file on the USB flash drive wasn't detected.
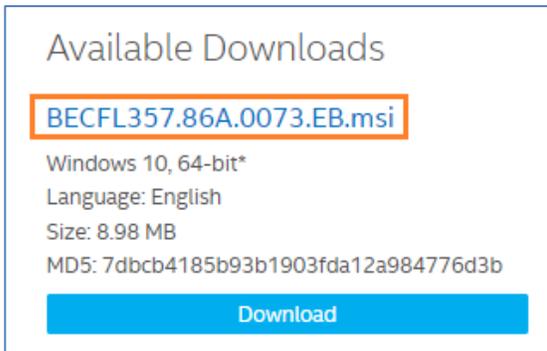
Try the following:

- Check that the file was successfully copied to the USB flash drive.
- Download and use a new copy of the .bio file.
- Try a different USB flash device.
- Try reformatting the USB flash drive without using the Quick Format option. Be sure to backup and save your data from the USB flash drive first.

Express BIOS Remote/Silent Update Instructions

Runs the Express BIOS update from a batch file without the need for user intervention. This is useful for remote BIOS updates when user interaction is not desired.

1. Download the Express BIOS update file (.EB.msi) for your Intel NUC. Example:

2. Download and install any utility (such as 7-Zip) that allows you to extract files from an .msi file.

3. Extract files to a folder.
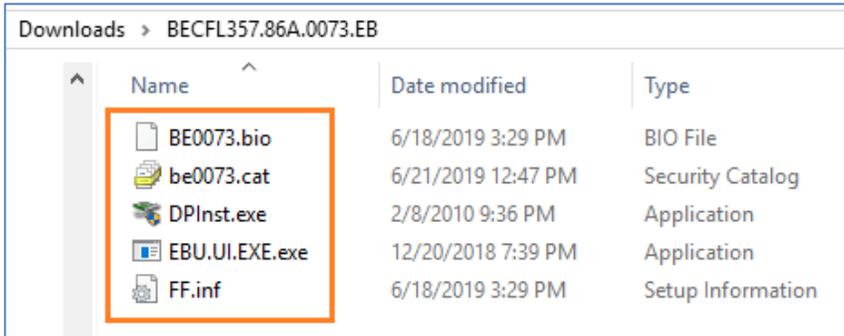
4. Open a text editor such as Notepad to create a batch file that contains only the following two lines:

DPInst.exe /q /f /se
**Shutdown /r /t 10 /c "Upgrading the BIOS. The computer will reboot in 10 seconds" /f /d p:0:0**

Command line switch notes

DPInst.exe	
/q	Sets the **quietInstall** flag to ON, which suppresses the display of wizard pages, user dialog boxes, and other user messages that DPInst and Windows generate.
/f	Sets the **forceIfDriverIsNotBetter** flag to ON, which configures DPInst to install a driver on a device even if the driver that is currently installed on the device is a better match than the new driver.
/se	Sets the **suppressEulaPage** flag to ON, which configures DPInst to suppress the display of a EULA page.
Shutdown	
/r	Restarts the computer after shutdown.
/t xx	Sets the time-out period or delay to *XXX* seconds before a restart or shutdown. This causes a warning to display on the local console. You can specify 0-600 seconds. If you do not use **/t**, the time-out period is 30 seconds by default.
/c "comments"	Enables you to comment in detail about the reason for the shutdown. You must first provide a reason by using the **/d** option. You must enclose comments in quotation marks. You can use a maximum of 511 characters.

	You're about to be signed out Upgrading the BIOS. The computer will reboot in 10 seconds Close
/f	Forces running applications to close without warning users. Caution: Using the **/f** option might result in loss of unsaved data.
/d p:0:0	Lists the reason for the system restart or shutdown. The value **p** indicates that the restart or shutdown is planned.

5.   Save the batch file:

- Save it to the same folder as the extracted files.
- The file extension must be .**bat.**
- Save the file as type **All Files (*.*).**
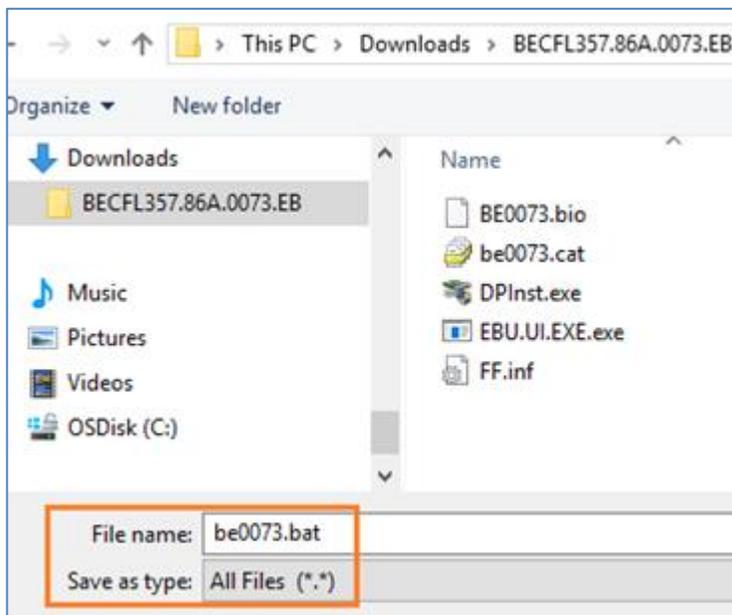
6.   Copy the folder with all files to the target Intel NUC.

7.   Open a Command Prompt in Administrator mode (PowerShell isn't supported):

     a.   Click the Windows button and type **Command Prompt**.
     b.   Right-click on Command Prompt and select **Run as Administrator.**

8.   In the Command window, navigate to the folder containing the BIOS update files and the .bat file.

9.   Type the complete .bat file name and press Enter to launch the update process.

10. Windows restarts and the BIOS update process begins.

11. After the update is complete, the system boots back into Windows.

If you're using BitLocker to enable encryption on a system drive:

- You might run into issues when performing a BIOS update, such as having to enter a recovery key during startup.
- You can modify the .BAT file (sample below) to temporarily suspend BitLocker (and then resume after one reboot).

  manage-bde -protectors -disable C: -RebootCount 1
  DPInst.exe /q /f /se
  Shutdown /r /t 10 /c "Upgrading the BIOS. The computer will reboot in 10 seconds" /f /d p:0:0

- For more information, see How to Suspend BitLocker Using Command Prompt.