

Guide to Optimize BIOS Setting

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Ubuntu 20.04.2 OS Installation

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Optimize the BIOS setting

ASRock Industrial builds a customized **BIOS P1.20Q** with all optimized BIOS settings for NUC BOX 1100 Series AI Development application.

Before doing BIOS update, please boot up system and press <F2> or into BIOS setup Main page, then refer to the following picture to check the current BIOS version of the system.

Aptio Setup – AMI Main Advanced H/W Monitor Security Boot Exit					
System Date System Time	[Thu 08/19/2021] [16:15:02]	Set the Date. Use Tab to switch between Date elements.			
UEFI Version Processor Type 2.40GHz	: NUC-113567 P1.200 : 11th Gen Intel(R) Core(TM) i5-113567 @	Year: 1998–9999 Months: 1–12 Days: Dependent on month			
Processor Speed Microcode Updat Cache Size	: 2400MHz e: 806C1/68 : 8MB	Range of Years may vary.			
Total Memory memory	: 4GB with 512MB Shared Memory and 8MB GTT				
	Single-Channel Memory Mode	++· Select Screen			
DDR4_A1	: None	↑↓: Select Item			
DDR4_B1	: Innodisk 4GB (DDR4-2133)	Enter: Select			

A. <u>If it's BIOS P1.20Q</u>, please skip the process of updating BIOS and go to page 5 directly.

B. If it's not BIOS P1.20Q, please refer to the following steps to flash customized

BIOS P1.20Q, and then all optimized BIOS settings will be set in your system.

Step1. Please download the BIOS P1.20Q from the link.

BIOS P1.20Q download link: <u>https://download.asrock.com/IPC/BIOS/NUCTGL1.zip</u>

Step2. Extract the BIOS ROM file and save into FAT32 format USB stick.

Step3. Boot up system and press <F2> or into BIOS setup page

Step4. Select [Instant Flash] option in Advanced page.

Aptio Setup Utility – Copyright (C) 2018 American Megatrends, Inc. Main <mark>Advanced</mark> H/W Monitor Security Boot Exit				
 CPU Configuration Chipset Configuration Storage Configuration Super IO Configuration ACPI Configuration USB Configuration Trusted Computing UEFI Update Utility Instant Flash 	Save UEFI files in your USB storage device and run Instant Flash to update your UEFI. Please note that your USB storage device must be FAT32/16/12 file system.			

Step5. The system will start searching proper file and list them all.



Step6. Please choose the BIOS file [NUCTGL1.20Q] to begin updating process.



Step7. You will see BIOS is updating as below picture.

Instant Flash V2216
Do not power off during UEFI update



Step8. Please press Enter after the procedure is done and reboot system.

Step9. The BIOS update successfully after system reboot.

After finishing Step1 to Step 9, the system is working at the optimized BIOS setting. CPU is set at [Performance Mode] and CPU fan speed is working at full speed.

How to install the Ubuntu 20.04.2 OS

1. Go to Ubuntu's official website (<u>http://www.releases.ubuntu.com/20.04/</u>) for release of Ubuntu 20.04.2.

ubuntu ^o releases				
Ubuntu 20.04.2.0 LTS (Fe	ocal Fossa)			
Select an image Ubuntu is distributed on four types of images described below.				
Desktop image The desktop image allows you to try Ubuntu without changing your computer at all, and at your option to install it permanently later: This type of image is what most people will want to use. You will need at least 1024MIB of RAM to install from this image.	64-bit PC (AMD64) desktop image Choose this if you have a computer based on the AMD64 or EM64T architecture (e.g. Akthonk, Opteron, EM64T Xeon, Core 2). Choose this if you are at all unsure.			
Server install image The server install image allows you to install Ubuntu permanently on a computer for use as a server. It will not install a graphical user interface.	64-bit PC (AMD64) server install image Choose this if you have a computer based on the AMD64 or EM64T architecture (e.g., Abhlon64, Opteron, EM64T Xeon, Core 2). Choose this if you are at all unsure.			
A full list of available files, including BRTorrent files, can be found below. If you need help burning these images to disk, see the image Burning Guide.				

2. Click on "64-bit PC (AMD64) desktop image" to download **Ubuntu 20.04.2**.

ubuntu [®] releases			
Ubuntu 20.04.2.0 LTS (Focal Fossa)			
Select an image Ubuntu is distributed on four types of images described below.			
Desktop image The desktop image allows you to try Ubuntu without changing your computer at all, and at your option to install it permanently later. This type of image is what most people will want to use. You will need at least 1024MiB of RAM to install from this image.	64-bit PC (AMD64) desktop image Choose this if you have a computer based on the AMD64 or EM64T architecture (e.g., Athlon64, Opteron, EM64T Xeon, Core 2). Choose this if you are at all unsure.		
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A full list of available files, including BitTorrent files, can be found below. If you need help burning these images to disk, see the image Burning Guide.			

3. Create a bootable Ubuntu USB startup disk.

Here is a website showing how to use a tool to create a bootable Ubuntu USB startup disk.

Instructions website:

"https://ubuntu.com/tutorials/create-a-usb-stick-on-windows#1-overview"

4. To install Ubuntu, first plug in the bootable Ubuntu-install-USB-stick to the USB port on your computer. Then turn on the computer and press F11 repeatedly until the "choose boot-up menu" appears. Choose the Ubuntu install USB stick as the device used to boot up.



- 5. Then installation process of Ubuntu 20.04.2 starts. Ubuntu installation will be completed in about 2 to 5 minutes.
- 6. Refer to the video link below to learn how to run Ubuntu on your system.



Reference

Intel[®] Edge Software Hub (Edge Computing Software and Packages) <u>https://www.intel.com/content/www/us/en/edge-computing/edge-software-hub.ht</u> <u>ml</u>