Firmware Update Utility Manual

User Manual

Revision 3.2

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Product Overview

Introduction

The "Samsung Solid State Drive (SSD) Firmware Update Utility" (hereinafter called Samsung Firmware Utility) will enable users to update firmware on specific Samsung SSD's connected to the computer.

This Samsung Firmware Utility supports All Samsung Brand SSDs. Samsung may provide new firmware, in order to improve its SSD performance, compatibility, or user environment. A firmware update is recommended whenever the latest firmware version is released.

Cautions

1. This Samsung Firmware Utility supports All Samsung Brand SSDs. If you use other models of Samsung SSD, please check www.samsung.com. If you have a computer with a Samsung SSD pre-installed, please contact the manufacturer of your computer.

2. To prevent any potential damage from the SSD initialization and partial or entire data loss during the firmware update, it is highly recommended that users back up (save a copy of) all data stored on the Samsung SSD to other storage devices before executing the Samsung Firmware Utility.

3. The SSD must be connected to the system at all times with stable power being supplied during the firmware update process. If the SSD device cable is disconnected or power is shut down during the firmware update process, the SSD may be permanently damaged or rendered inoperable.

4. Samsung does not take any liability for any kind of data loss and restoration that may occur while the Samsung Firmware Utility is running. It is highly recommended that you familiarize yourself with this Firmware Update Manual before executing the firmware update.

*Note: The firmware update is not mandatory for those who encounter no problem with installing and using the Samsung SSD product. Therefore, it is up to the user whether or not to execute the firmware update.

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Product Overview

System Requirements

The Samsung Firmware Utility is Linux-based firmware update utility software. Be sure to check if the following requirements are satisfied before installing and using this product.

Hardware Requirements

1. Samsung SSD

2. USB Flash Disk (Minimum 30 MB capacity)

Software Requirements

1. UNetbootin (freeware) software is required for creating bootable USB.

Precondition

Before entering recovery process, connect the Samsung SSD device-to-be repaired as a secondary device and backup all data. After backup, proceed to following procedure introduced next step by step.

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Creating a Boot Disk for the Firmware Update

1. Download the freeware UNetbootin.

   https://unetbootin.github.io/

2. Run the UNetbootin.

3. Select the 'Diskimage' in Radio Button.

4. Select the Samsung Firmware Utility ISO file in Diskimage ISO.
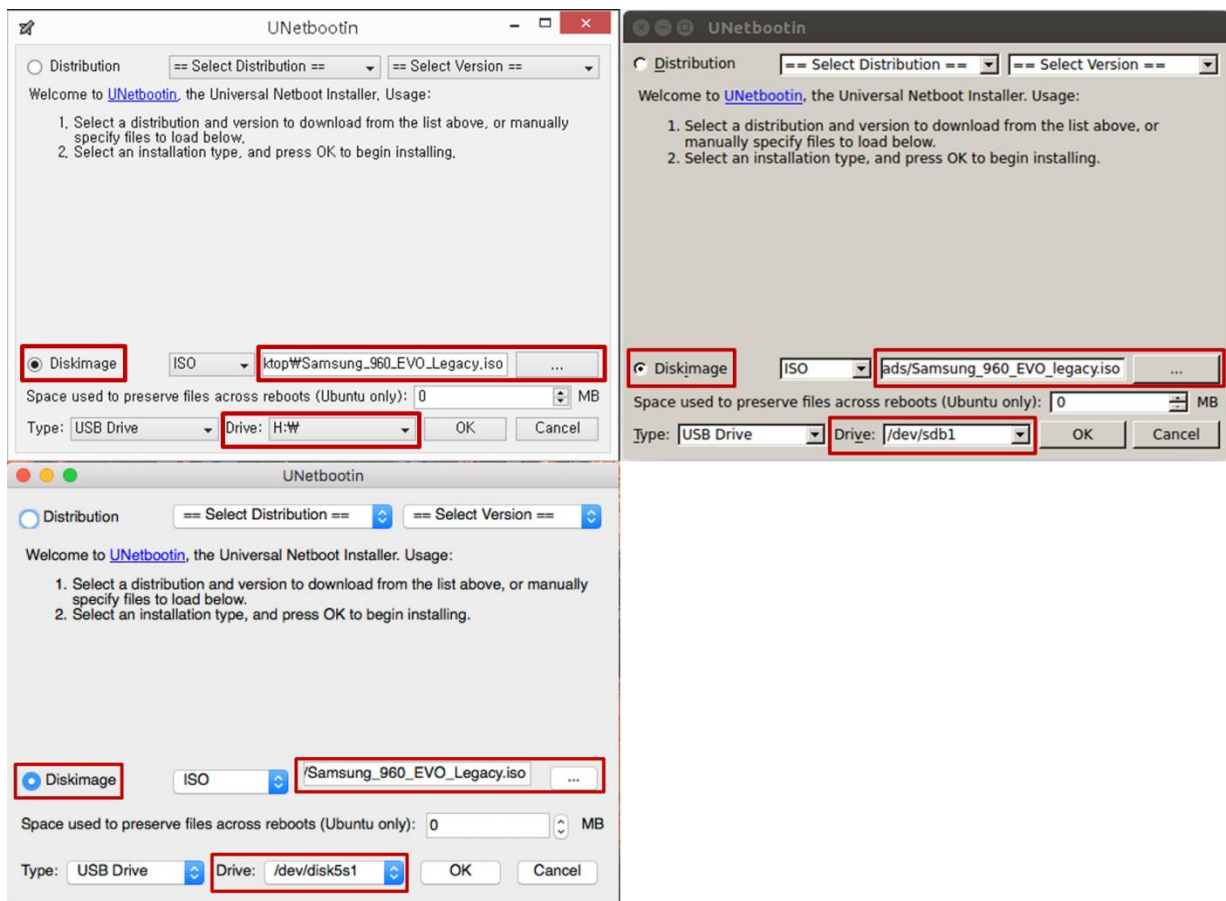
5. Select USB Bootable Disk in Drive.

Figure 1. UNetbootin(Windows, Linux, Max)

6. Click OK

7. Restart the computer and boot from USB for Firmware Update.

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Using the Linux Firmware Update Utility

Introduction

CAUTION: The following instructions are based on the assumption that a startup disk for Linux, the Samsung SSD Firmware Update Utility software, and the firmware data file are correctly installed on the USB Flash Disk.

1. Configure the USB Flash Disk as a primary booting device in the BIOS.

   * Note: If you are not sure how to set up your computer BIOS, please check the user manual of your computer system or motherboard.

2. Restart the computer in Linux mode with the USB Boot Disk.

3. Samsung Firmware Update Utility will be launched automatically.

```
###############################################################################
#                                                                             #
#                                                                             #
#                              Welcome!                                       #
#                                                                             #
#                                                                             #
#              Samsung SSD Firmware Update Utility Ver. 3.1                    #
#                                                                             #
#                                                                             #
#                                                                             #
#                                                                             #
#                    Samsung Electronics Co., Ltd. (c) 2017                   #
#                                                                             #
#                                                                             #
###############################################################################

  WARNING

  DEVICE MUST BE PLUGGED IN AT ALL TIMES DURING THE FIRMWARE UPDATE PROCESS
  OR ELSE DRIVE MAY BE PERMANENTLY DAMAGED AND RENDERED INOPERABLE.

Press any key to continue...█
```

Figure 2. Welcome banner

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Using the Linux Firmware Update Utility

4. This utility will automatically scan for connected SSDs, and the detected disk list will be displayed.

```
#################################################################################
#                          Samsung Electronics                                 #
#               Samsung SSD Firmware Update Utility Ver. 3.1                    #
#                   Samsung Electronics Co., Ltd. (c) 2017                      #
#################################################################################

SCANNING -> -> -> -> -> -> -> -> -> ->


#################################################################################
_____DISK(s) DETECTED_____
|#|              Drive Model              |    Serial Number    | Firmware |
|-|---------------------------------------|---------------------|----------|
|1| Samsung SSD 960 EVO 250GB             | 0123456789ABCDEF0000| 1B7QCXE7 |
|2| Samsung SSD 960 EVO 512GB             | 0123456789ABCDEF0000| 1B7QCXE7 |
|_|_____|_____|_____|

Press any key to continue...█
```

Figure 3. Disk List

5. Press [Y] to confirm the firmware update process.

```
#################################################################################
#                          Samsung Electronics                                 #
#               Samsung SSD Firmware Update Utility Ver. 3.1                    #
#                   Samsung Electronics Co., Ltd. (c) 2017                      #
#################################################################################

----------------------------------------------------------
 Drive: 1
----------------------------------------------------------
 Serial Number   : 0123456789ABCDEF0000
 Model           : Samsung SSD 960 EVO 250GB
 Firmware Version: 1B7QCXE7
----------------------------------------------------------

Do you want to continue the firmware update? [Y/N]: y█
```

Figure 4. Confirming the Firmware Update

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Using the Linux Firmware Update Utility

6. Warning message will be displayed. Press [Y] if you read and accept the disclaimer and warning.

Figure 5. Warning message before starting the Firmware Update

7. A Completion message will be displayed.

8. If there are other SSDs can be updated, confirm message will be displayed. Press[Y] to confirm the firmware update on other SSD, and return to process 5. If not, Press[N] to proceed next step.

Figure 6. Select continue the update on next device or exit

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Using the Linux Firmware Update Utility

9. Press any key to exit the software.

Figure 7. Exiting Samsung SSD Firmware Utility

General Limitations

This chapter provides general information on the restrictions on the Samsung SSD Firmware Update Utility.

1. If SSDs are configured in RAID mode, this Firmware Update Utility cannot detect the SSDs, please disable RAID mode in the BIOS, and then update the firmware individually. After updating the firmware, you can reconfigure RAID mode in the BIOS.

2. If the capacity of the USB Disk is larger than 32GB, additional setup may be required due to the OS's file format policy.

Glossary

AHCI

AHCI stands for Advanced Host Controller Interface. This specification enables communication with the ATA device. The AHCI mode must be enabled to use the Native Command Queuing (NCQ) function of the storage that supports the SATA interface or Hot Plugging (or Hot Swapping) function.

BIOS

BIOS is an abbreviation of Basic Input/output System. It is a semiconductor chip that is installed on the motherboard of all kinds of computer in order to store information about the system booting and setup. The BIOS can also be called the CMOS.

Boot Disk

The boot disk is a USB Flash Disk solution that allows the computer to restart in DOS mode, and includes the files related to Samsung SSD Firmware Update Utility.

CMOS

CMOS stands for Complementary Metal Oxide Semiconductor. The CMOS is a semiconductor chip that is installed on the motherboard of all kinds of computer, in order to store information about system booting and setup. The CMOS can also be called the BIOS.

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Glossary

Firmware

The firmware is software stored in a specific hardware device, which includes an embedded OS and commands for operating the relevant devices. In general, a separate semiconductor chip is installed in the relevant device, and software is stored in the firmware chip. Manufacturers may provide updated firmware in order to improve performance and quality. When this is the case, either experts or users can update the firmware.

RAID

RAID stands for Redundant Array of Independent Disks. RAID technology provides increased storage functions, capability, and reliability. In general, data stored in a RAID system is distributed across the multiple drives in the computer system. There are several ways to configure the drives (disks), in a system called "RAID levels".

SATA

SATA, an abbreviation of Serial Advanced Technology Attachment, sometimes called serial ATA. SATA is one of the computer interface types primarily designed for data transfer between computer storage types (HDD, ODD, SSD etc.). It supports fast data transfer with a disk drive directly incorporated into a drive controller. The SATA interface provides functions such as Hot Plugging and NCQ.

NVMe

The abbreviated form of the Non-Volatile Memory Express. Being changed in the Non-Volatile Memory Host Controller Interface(NVMHCI). NVMe means SSD equipped through PCI Express Bus.

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Glossary

SSD

Solid State Drive, or SSD, is an innovative data storage device which delivers high performance, reliability, and quality by using NAND Flash memory.

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End of Document

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