Exascend FAE Tool

User Guide

Version 2.0
August 2022

Table of Contents

1 Revision History

Revision	Date	Description
V1.0	2022-07-08	Initial Version
V2.0	2022-08-10	Support windows command line FAE Tool

2 Introduction

This document describes how to upgrade Firmware and collect disk's information to help locate SSD problems with Exascend_FAE_Tool.

3 System Requirements

Exascend_FAE_Tool supports Windows/Linux/Arm64 platform.
Following OS is supported.
Windows: Windows 10
Linux: Ubuntu20.04, Fedora33, CentOS 8.0
ARM: Kylin v10 Desktop

The software does not support 32bit ARM platform. Glibc version is required.
Linux Glibc:>=2.24
Arm Glibc:>=2.27

For Windows 10 OS, please ensure package - KB2999226 is installed on your system.

4 GUI and Command Line version

Exascend_FAE _Tool supports GUI and Command Line version against different OS.
Please refer to below table to find the version you want.

OS\Version	GUI Version	Command Line Version
Windows	Yes	Yes
Linux	Yes	Yes
ARM64	No	Yes

5 FAE Tool Usage

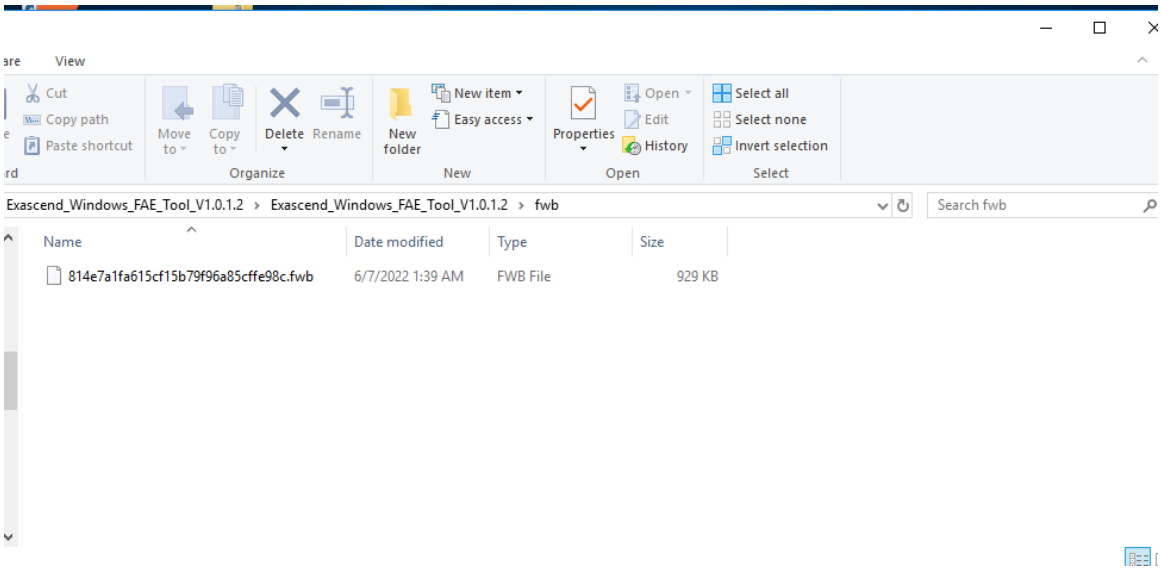
This section describes how to use Exascend_FAE_Tool to do SSD FW upgrade, and how to dump SSD information.

5.1 Windows OS(GUI)

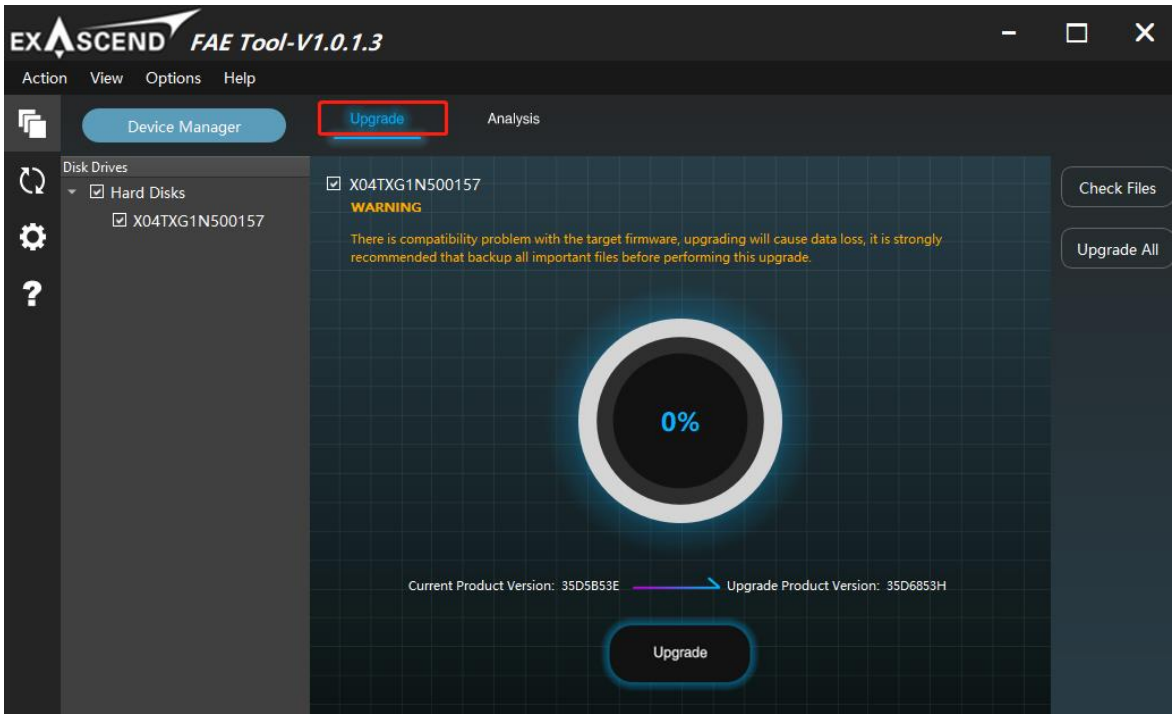
5.1.1 Upgrade Process

1.Please put the upgrade files(*.fwb) under the **'fwb'** folder.

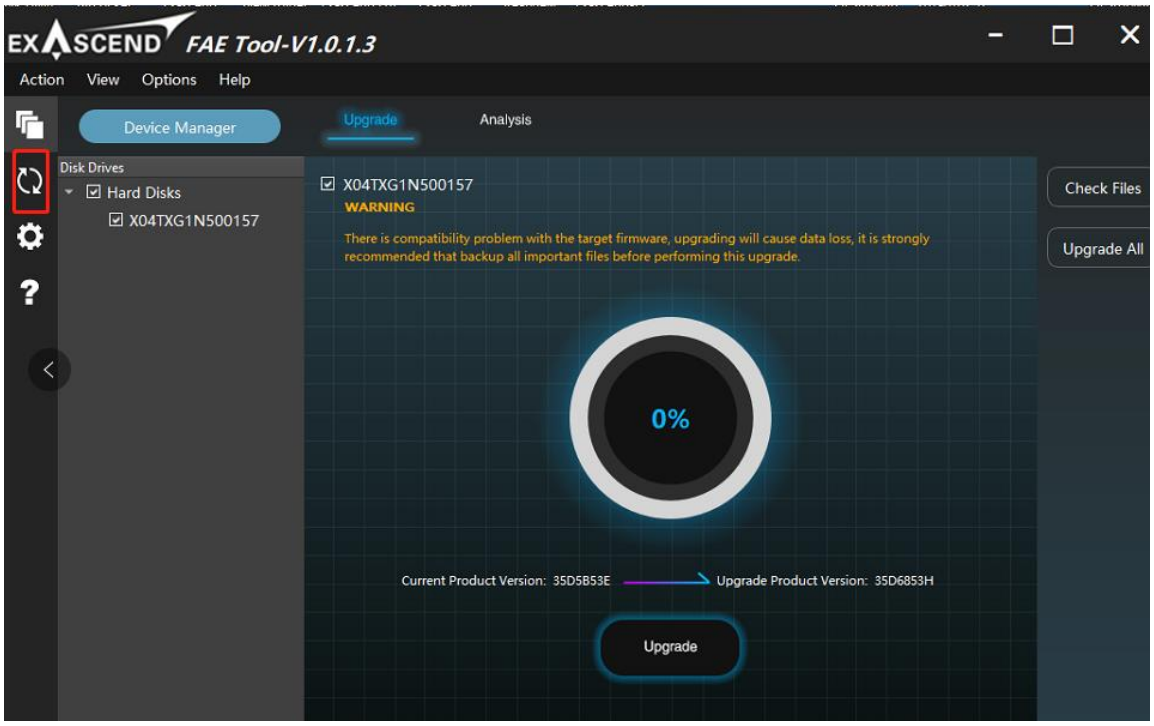
Notes: Please remove any unnecessary upgrade files in ‘fwb’ folder first, then copy the upgrade file(*.fwb) to ‘fwb’ folder.



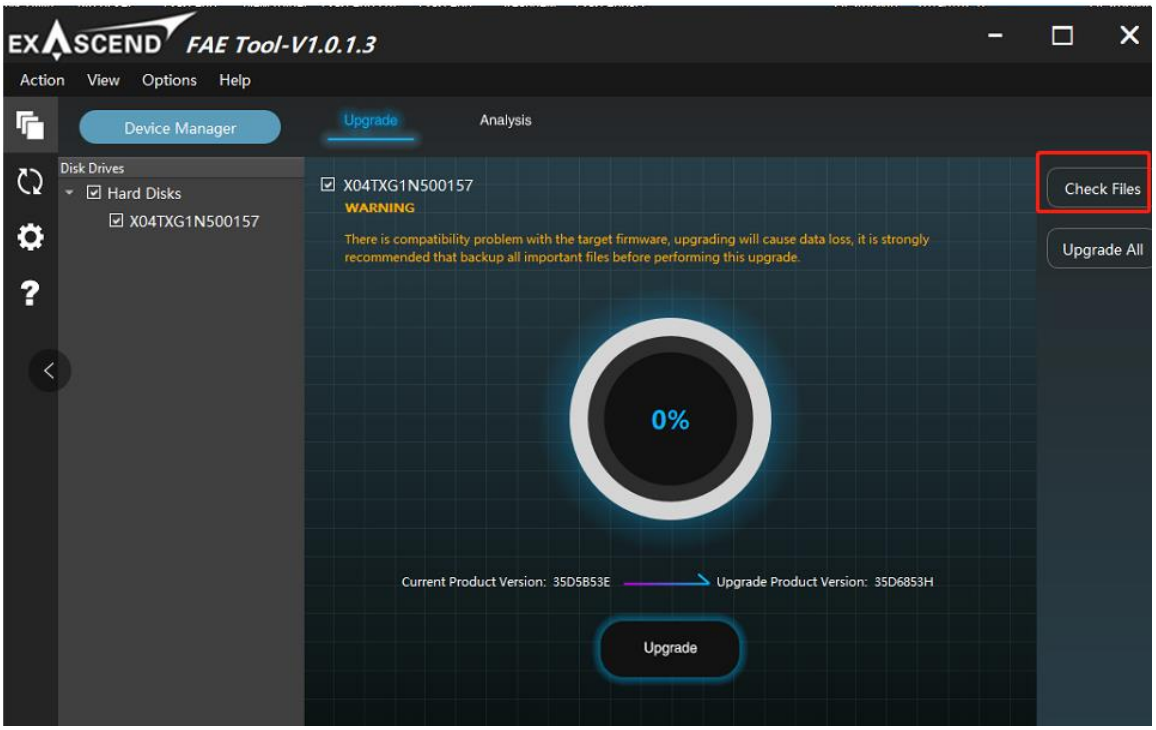
2.Run the tool as **Administrator**, click **'Upgrade'** tab.



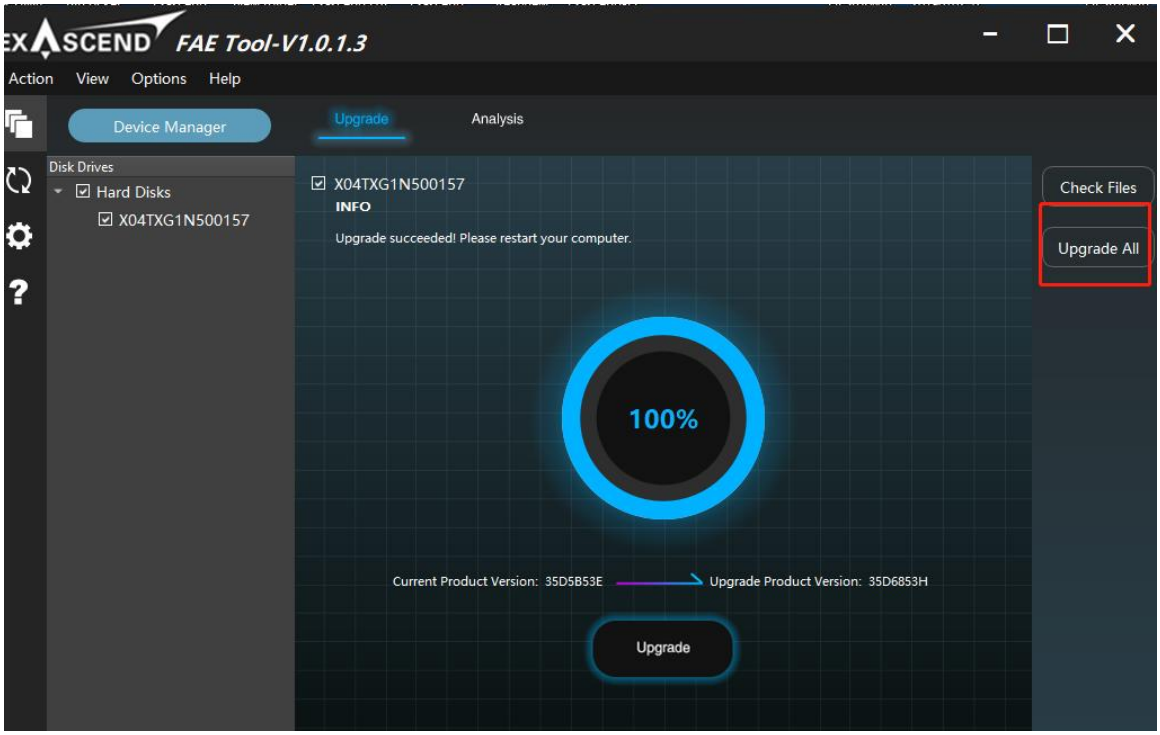
3.Click **'Scan Drives'** button, then select the target drive.



4.Click **'Check Files'** button, tool will display the upgrade information of the selected disk as figure below.



5.Click **'Upgrade All'** button, the progress bar goes to 100% that indicates the success of the upgrade.

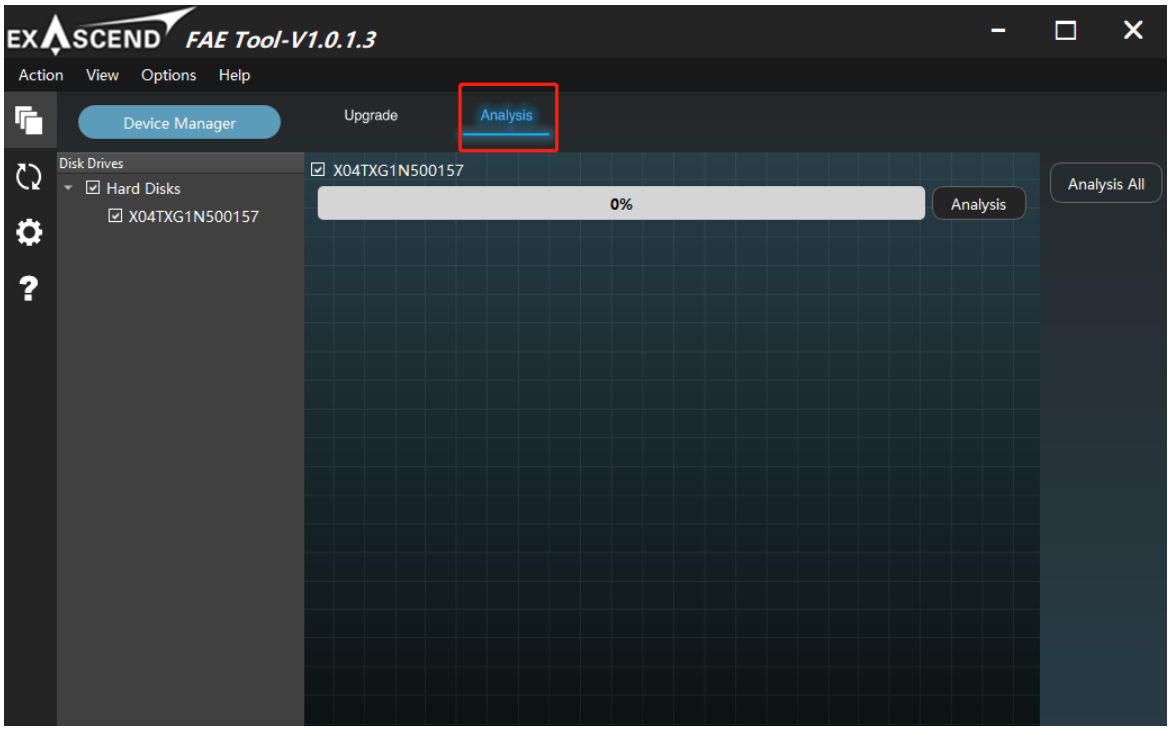


6.After the FW update is complete, please restart your computer according to the prompts.

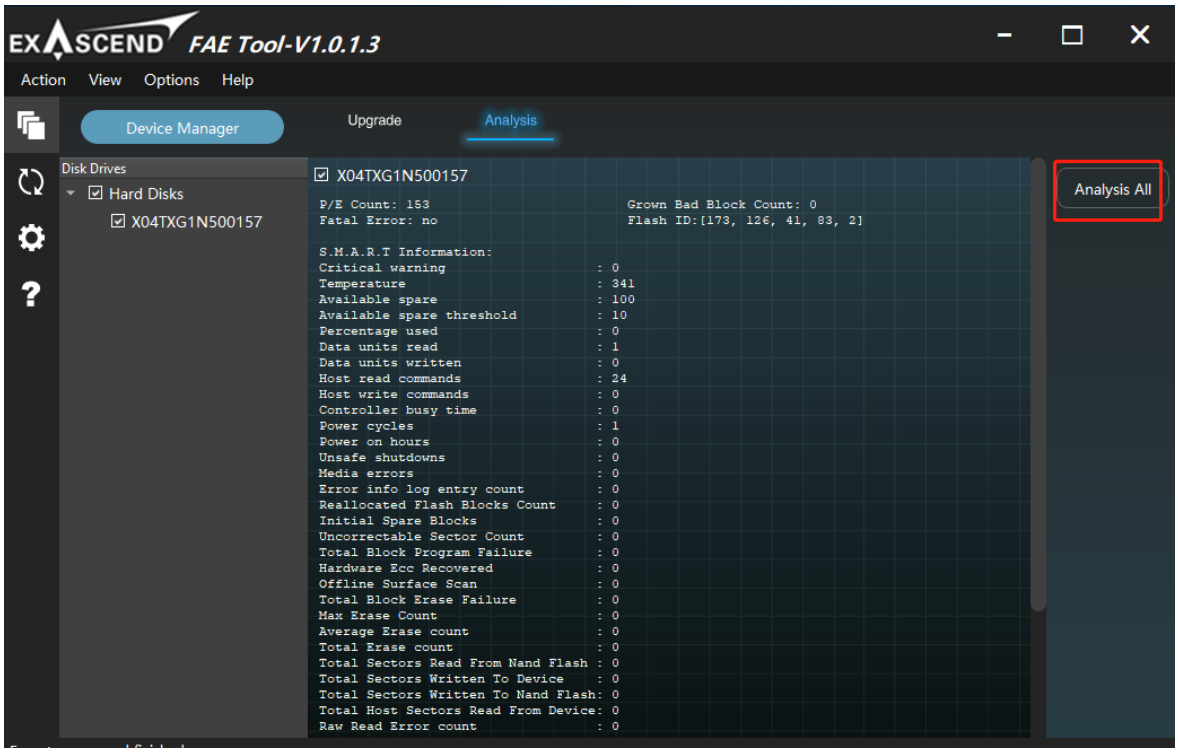
7.You could use tool CrystalDiskInfo to double confirm the disk's current firmware version.

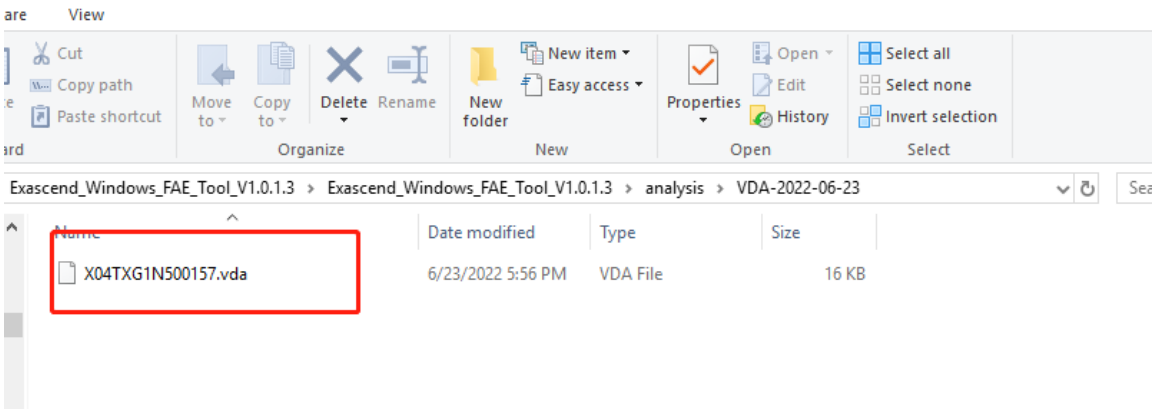
5.1.2 Analysis Process

1.Run the tool as A**dministrator**, click **'Analysis'** tab.



2.Click **'Analysis All'** button to collect drive information and generate *.vda file in **'analysis'** folder. Please send back the ‘vda’ file for further analyzing.



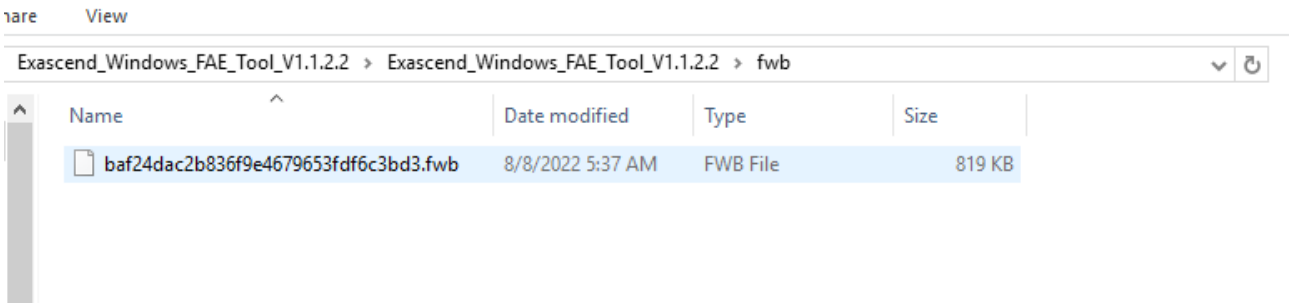


5.2 Windows OS(COMMANDLINE)

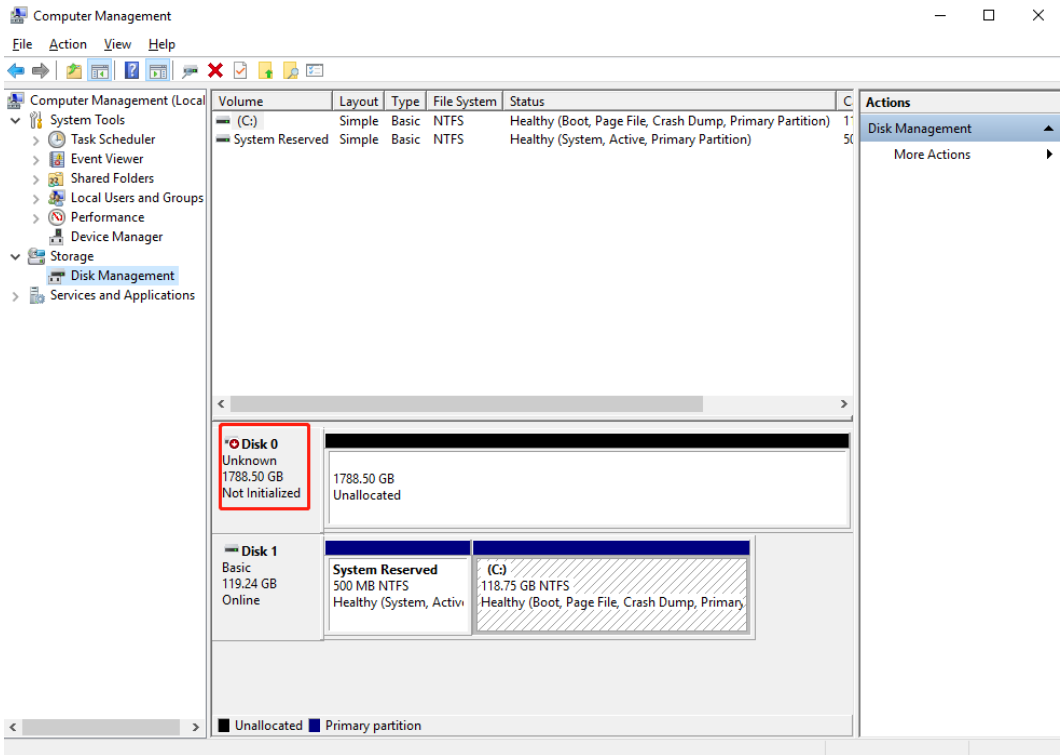
5.2.1 Upgrade Process

1.Please put the upgrade files(*.fwb) under the **'fwb'** folder.

Notes: Please remove any unnecessary upgrade files in ‘fwb’ folder first, then copy the upgrade file(*.fwb) to ‘fwb’ folder.



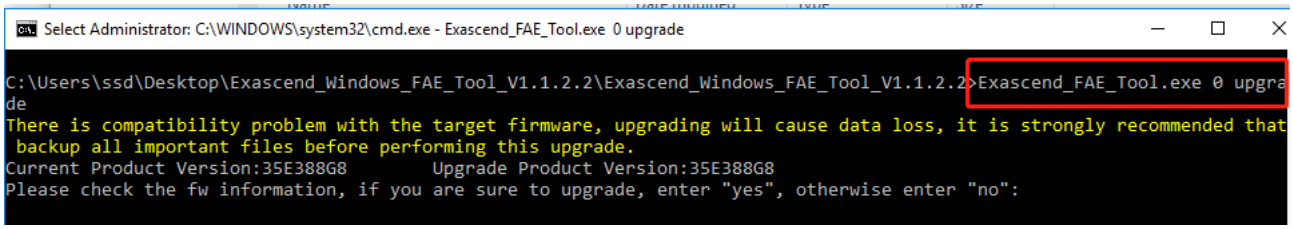
2.Check ' Disk Management ' and make sure that system can recognize the Drive correctly and get DeviceName(such as Disk 1 or Disk 0)



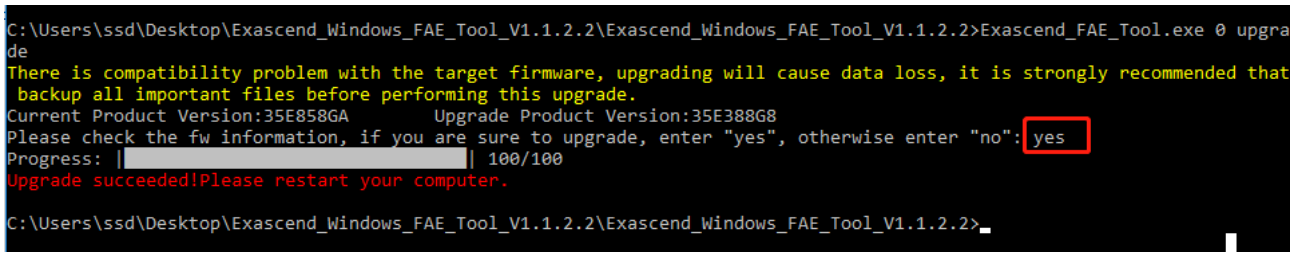
3.Open command line tool with **administrator** privileges. Enter below command to do firmware upgrade.

'Exascend_Windows_FAE_Tool.exe 0(Device Name) upgrade'

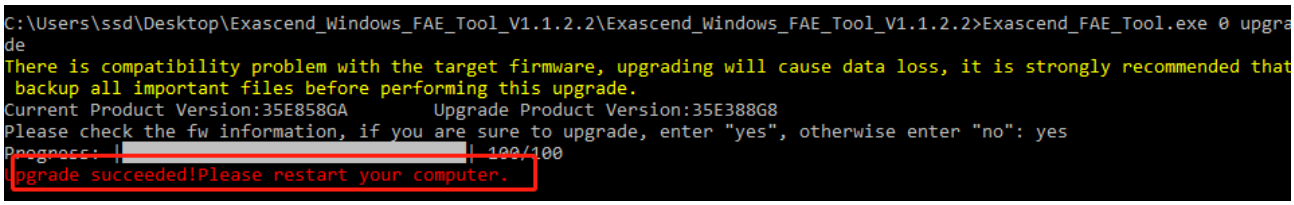
Notes: In above command line, 0 is related to the DUT mentioned in Step2. If your DUT is disk1, please use 1 instead.



4.Double confirm the current fw version and target fw version. Enter **'yes'** to start upgrade progress and wait for the upgrade to complete.



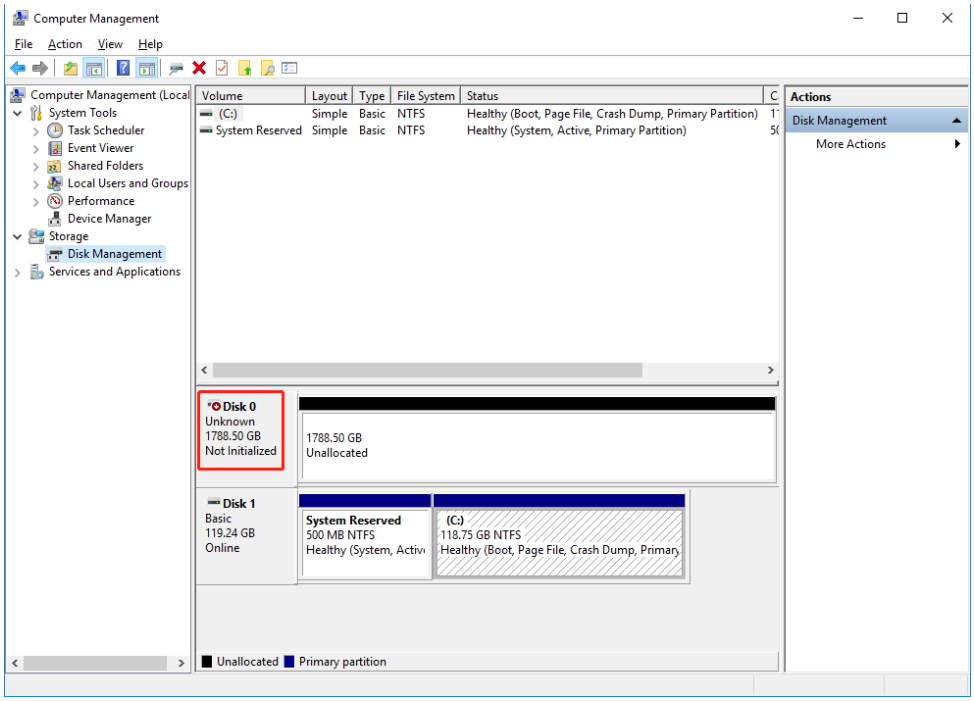
5.After the FW update is successful, please restart your computer according to the prompts.



6.You could use tool CrystalDiskInfo to double confirm the disk's current firmware version.

5.2.2 Analysis Process

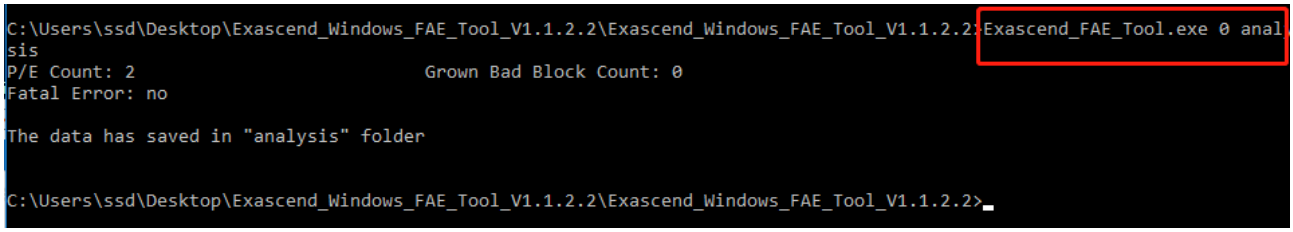
1.Check ' Disk Management ' and make sure that system can recognize DUT SSD Drive correctly and get DeviceName(such as Disk 1 or Disk 0)



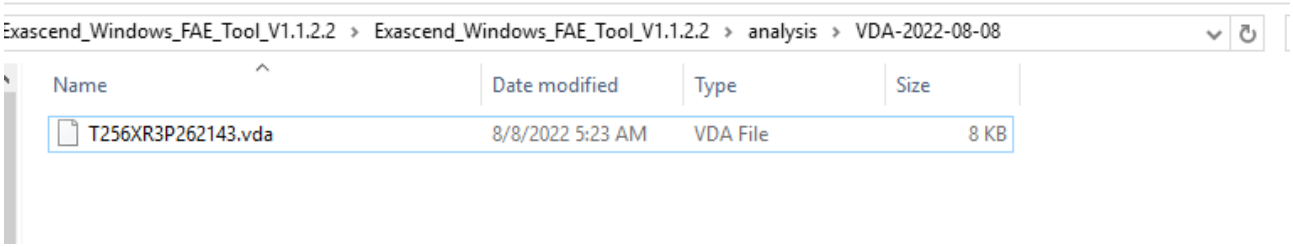
2.Open command line tool with administrator privileges. Enter below command to collect drive information.

'Exascend_Windows_FAE_Tool.exe 0(Device Name) analysis'

Notes: In above command line, 0 is related to the DUT mentioned in Step1. If your DUT is disk1, please use 1 instead



3.It will generate *.vda file in ‘analysis’ folder. Please send back the ‘vda’ file for further analyzing

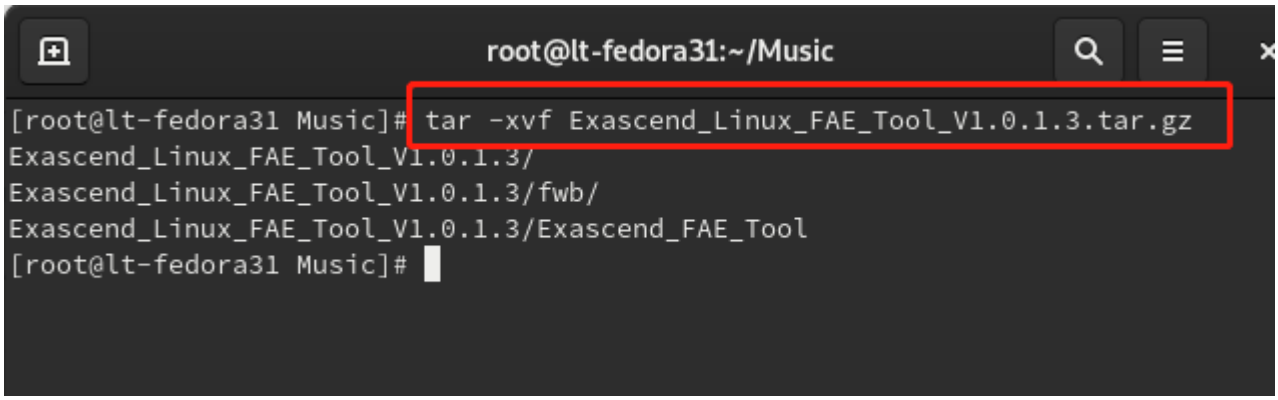


5.3 Linux OS (GUI)

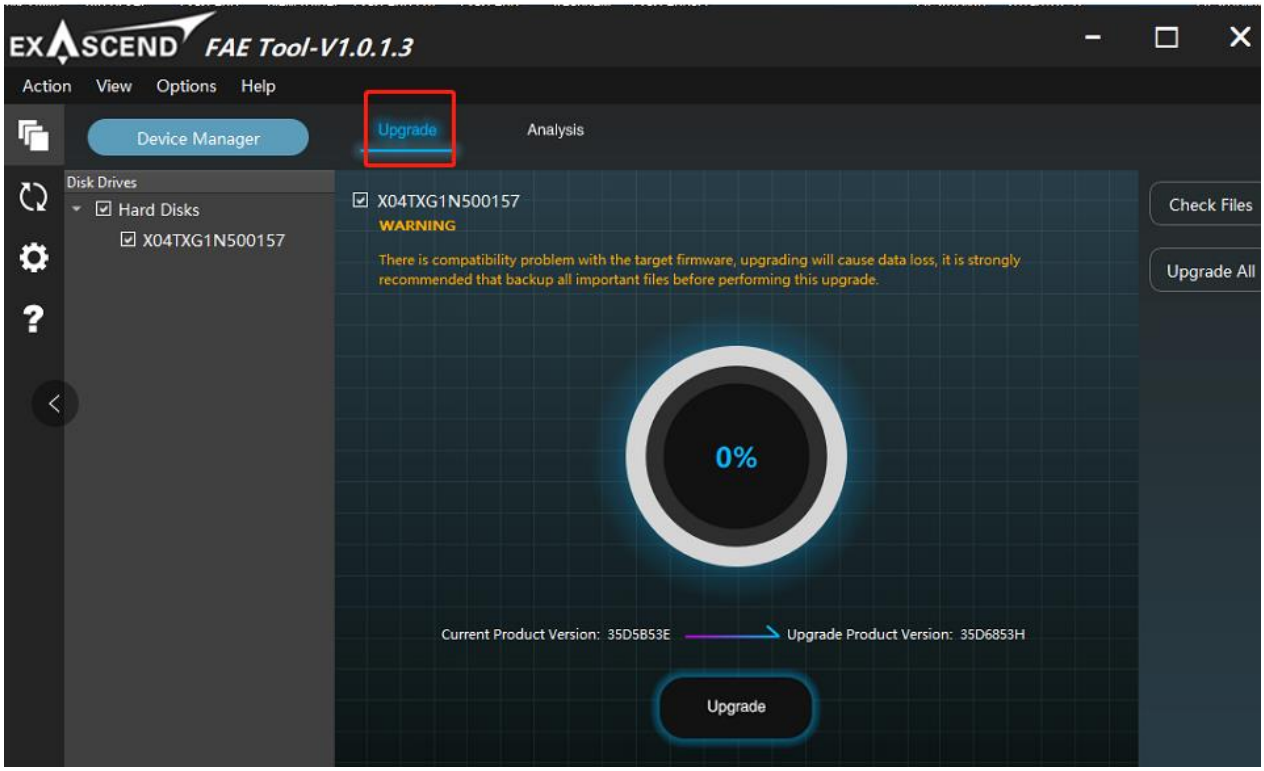
5.3.1 Upgrade Process

1.Unpress our packaged software with **root** privileges, check if the decompression folder contains fwb and Exascend-FAE-Tool files. Put the upgrade files(*.fwb) under **'fwb'** folder.

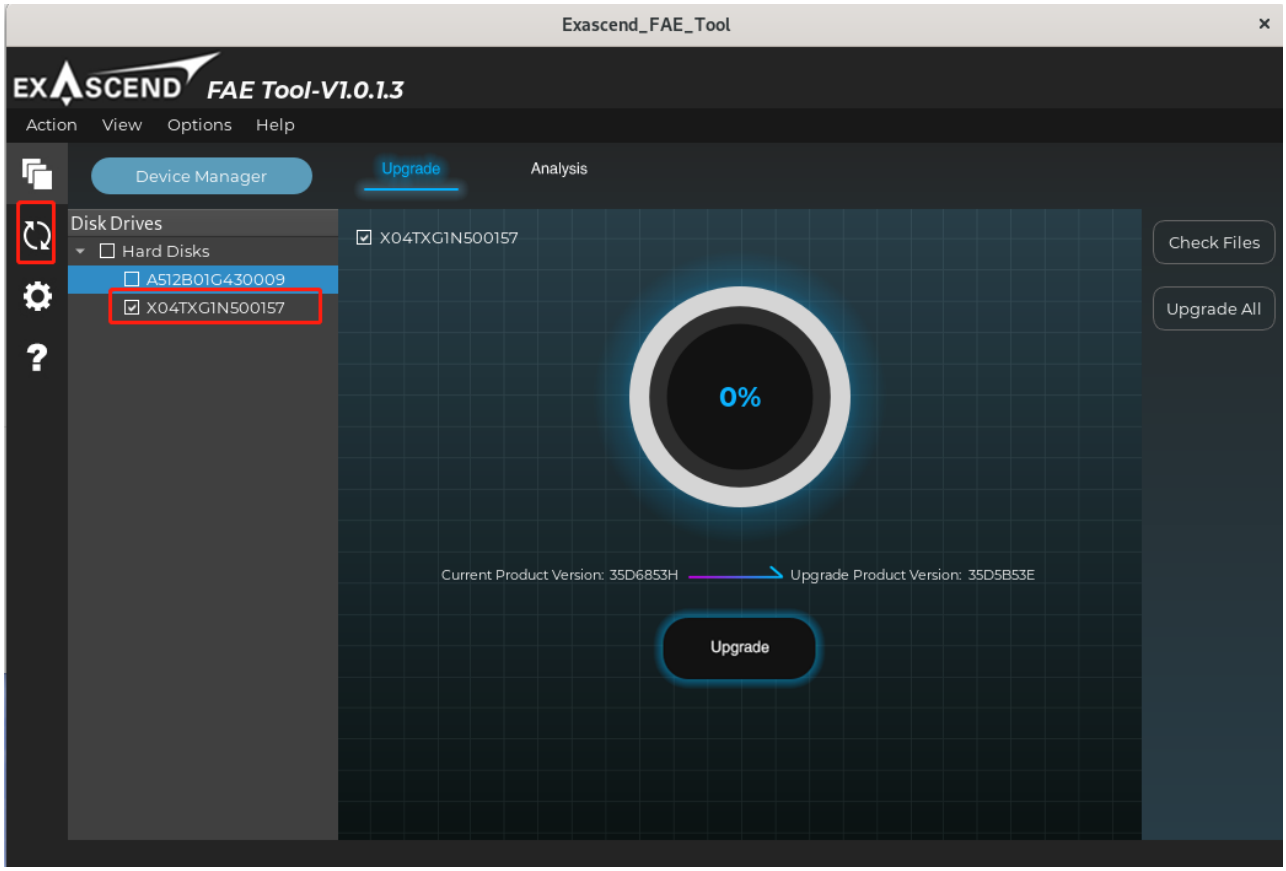
Notes: Please remove any unnecessary upgrade files in 'fwb' folder first, then copy the upgrade file(*.fwb) to 'fwb' folder.



2.Open the software with **root** privileges, click the **' Upgrade'** button to enter the firmware upgrade interface.

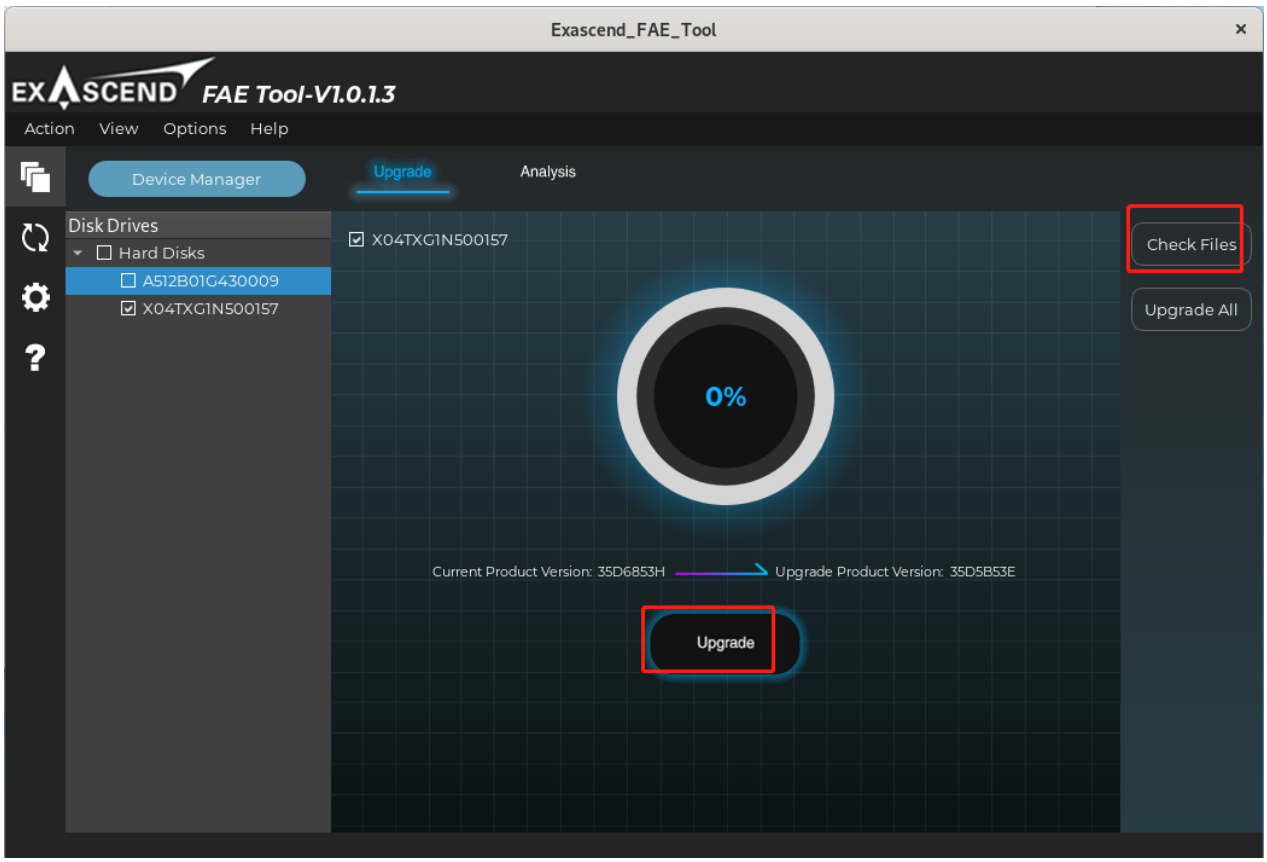


3.Click **'Scan Drives'** button, then select the target drive as figure below.

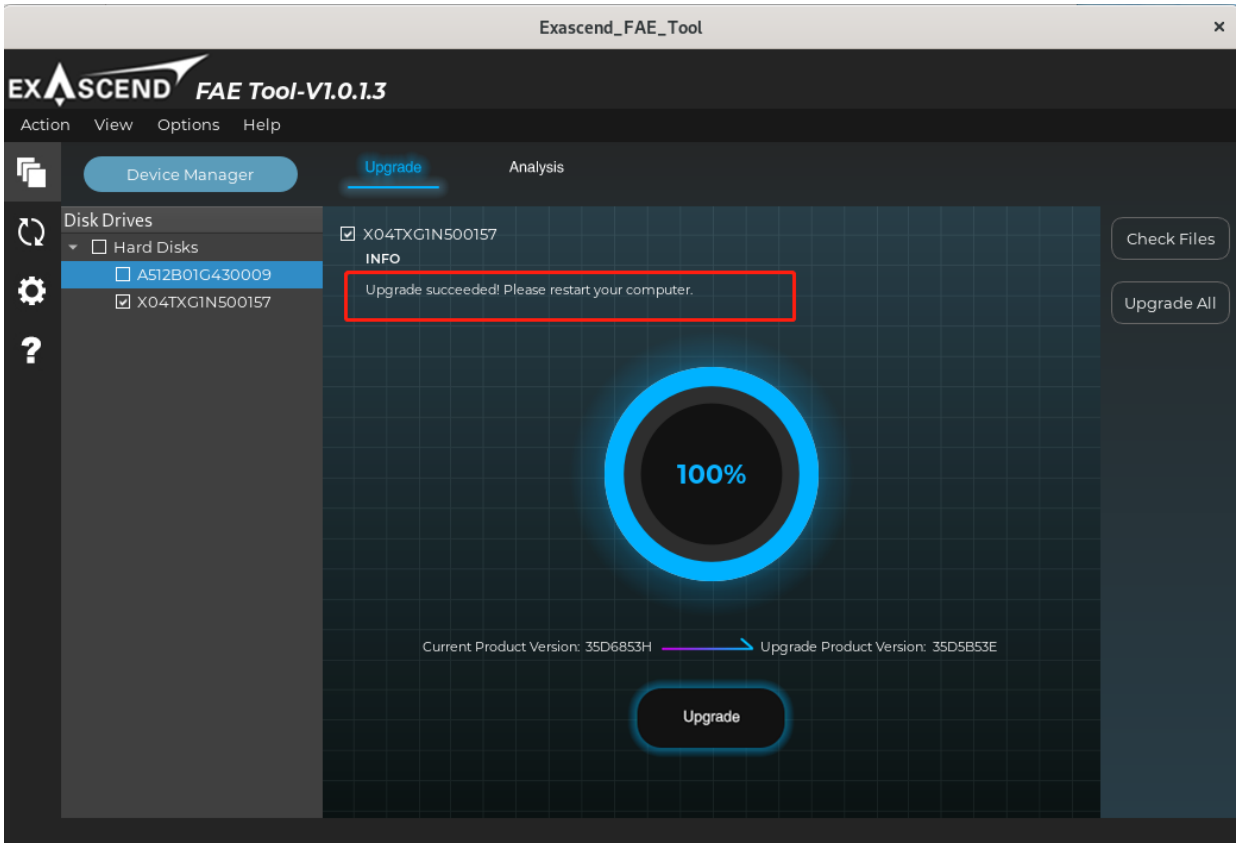


4.Click ' **Check Files'** button. Check the current Drive firmware version and the Drive firmware version to be upgraded.

Click the **'Upgrade'** button to do firmware upgrade.



5.The progress bar goes up to 100% that indicates the success of the upgrade.

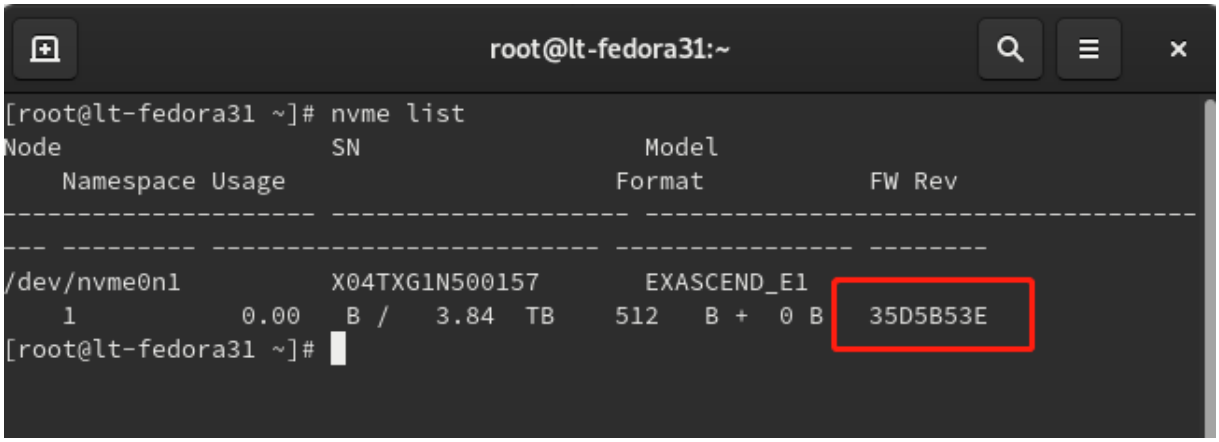


6.After the FW update is successful, please restart your computer according to the prompts.

7 Input **'apt install nvme-cli '** command to install nvme-cli.

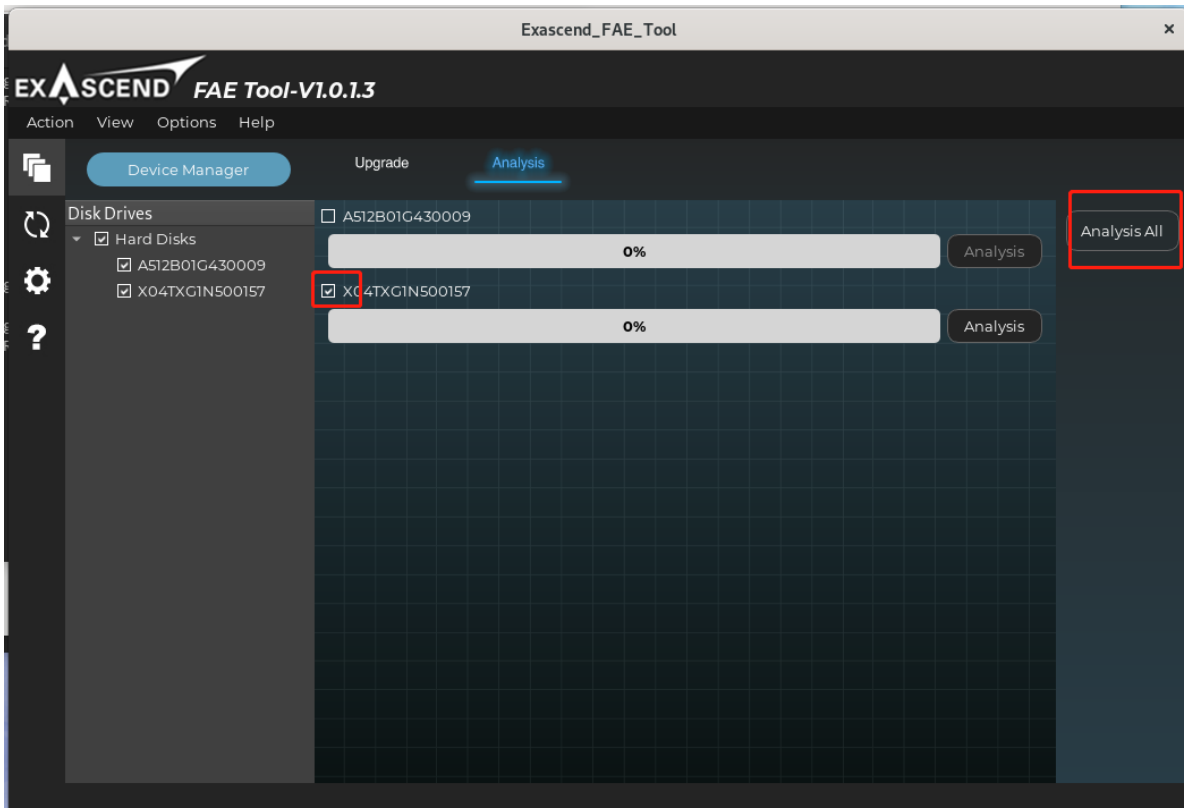
```
root@ssd:/home/ssd# apt install nvme-cli
Reading package lists... Done
Building dependency tree
Reading state information... Done
nvme-cli is already the newest version (1.5-1ubuntu1.2).
0 upgraded, 0 newly installed, 0 to remove and 372 not upgraded.
root@ssd:/home/ssd#
```

8.After the installation is complete, we can see if the firmware update is successful through **'nvme list'**



5.3.2 Analysis Process

1.Run the tool as **Administrator**, then select the target drive as figure below and click **'Analysis'** tab.



2.Click **'Analysis All'** button to collect drive information and generate *.vda file in 'analysis' folder, send the file to us to analyze.

5.4 Linux OS (CommandLine)

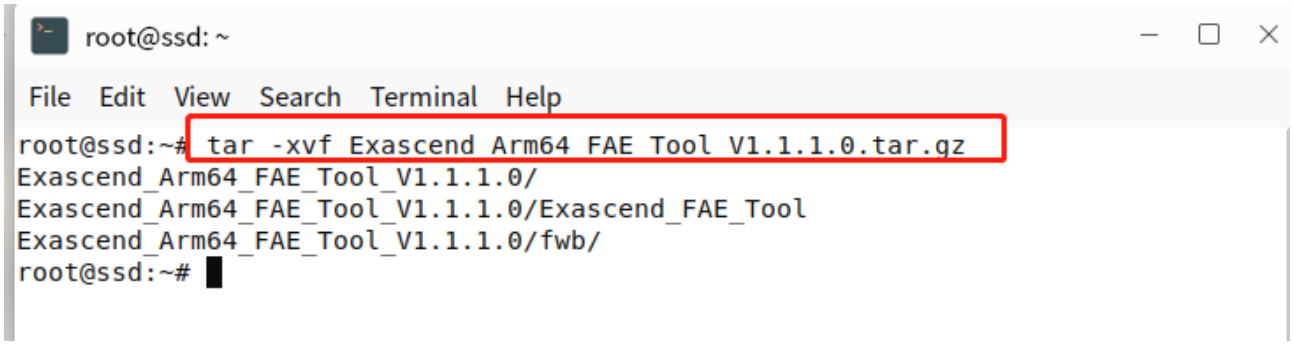
The Linux command-line operation is same with the following ARM platform operation.

5.5 ARM OS(Command Line)

5.5.1 Upgrade Process

1.Unpress our packaged software with **root** privileges, check if the decompression folder contains fwb and Exascend-FAE-Tool files. Put the upgrade files(*.fwb) under **'fwb'** folder.

Notes: Please remove any unnecessary upgrade files in 'fwb' folder first, then copy the upgrade file(*.fwb) to 'fwb' folder.



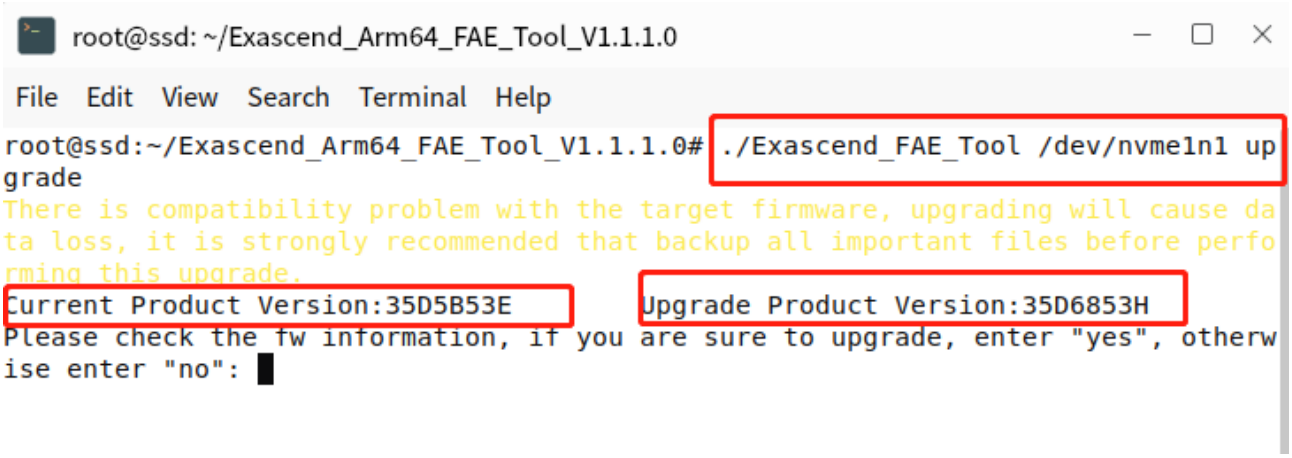
2.Enter **'nvme list'** and check our DeviceName.

```
root@ssd:~# nvme list
Node                  SN                   Model
    Namespace Usage                      Format           FW Rev
--------------------- -------------------- ----------------------------------------
--- --------- -------------------------- ---------------- --------
/dev/nvme0n1          S4ELNX2R566874       SAMSUNG MZVLB256HBHQ-000L7
    1          40.94  GB / 256.06  GB     512   B +  0 B   5M2QEXH7
/dev/nvme1n1          X04TXG1N500157       EXASCEND_E1
    1           0.00   B /   3.84  TB     512   B +  0 B   35D5B53E
root@ssd:~#
```

3.Open the software with **root** privileges, Enter below command:

./Exascend-FAE-Tool /dev/nvme1n1 upgrade

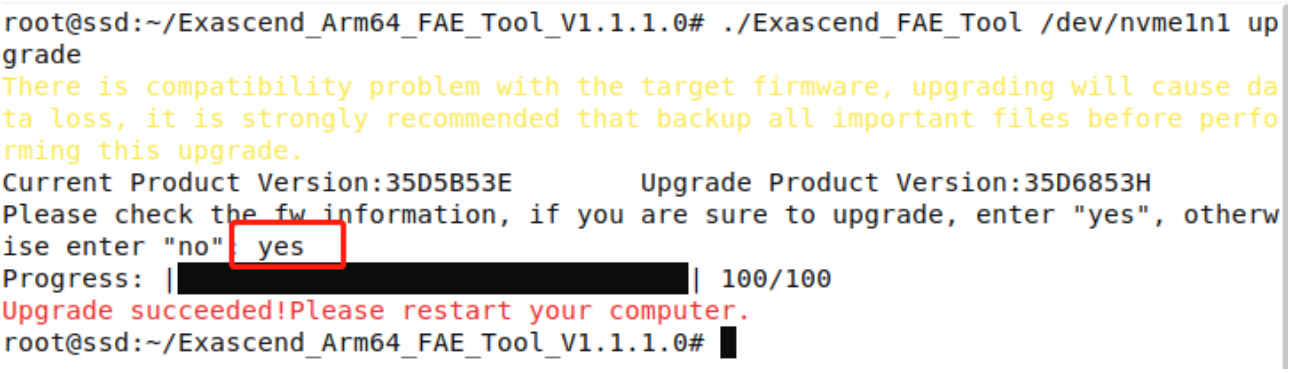
It will display firmware information. Check whether the version of the current firmware is consistent with that of the firmware to be upgraded.



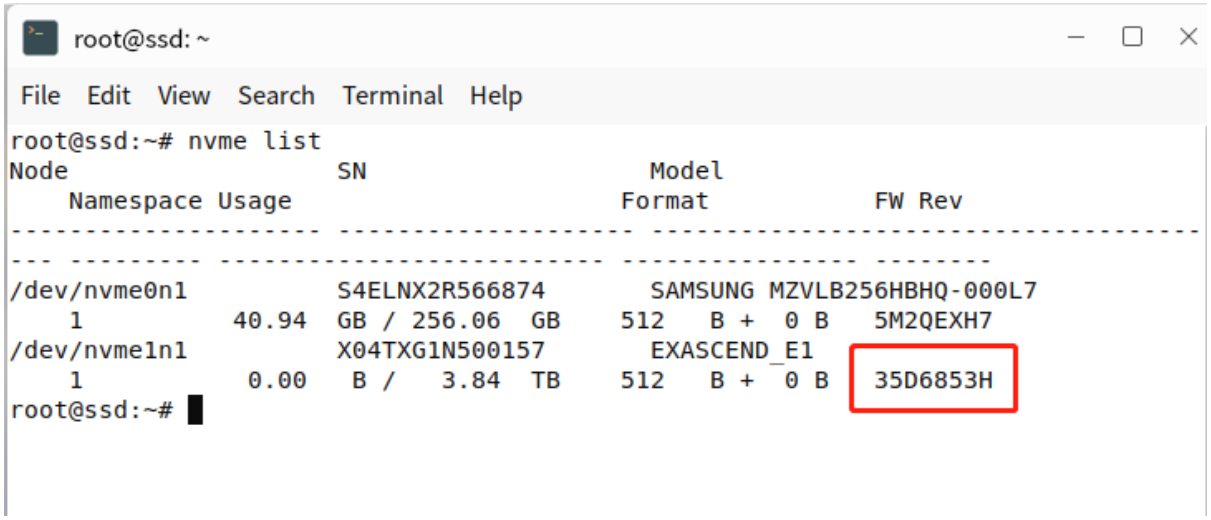
4.Enter **yes**.

The upgrade process starts.

If the progress bar reaches 100%, the upgrade is successful.

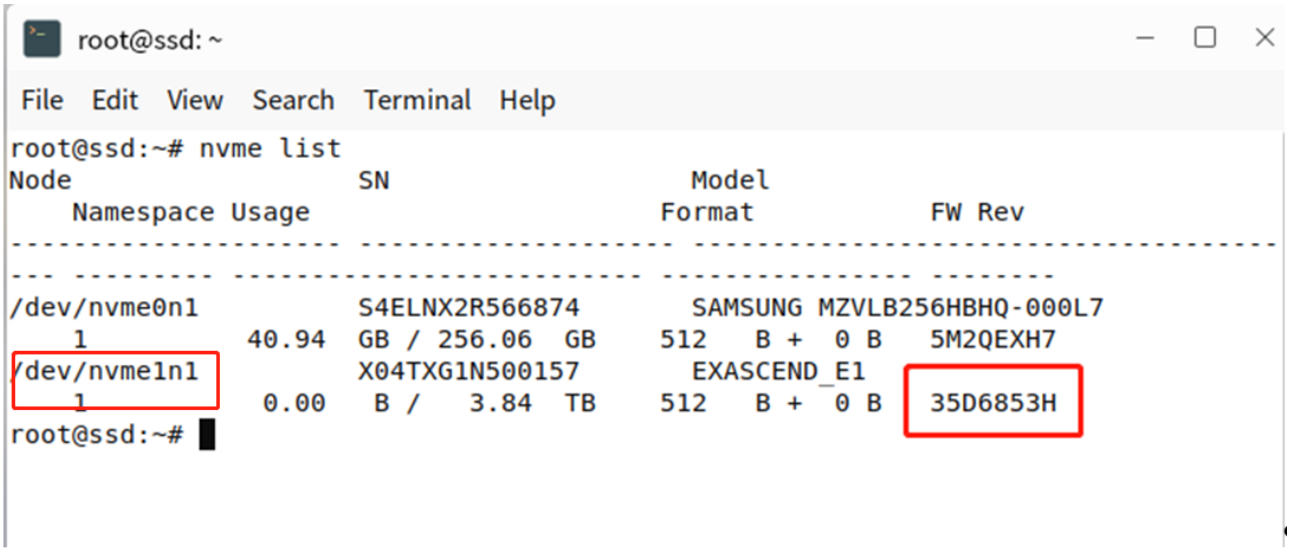


5.After the update is complete, double confirm if the firmware update is successful through **'nvme list'**.



5.5.2 Analysis Process

1.Unpress our packaged software, enter **'nvme list'** and check our DeviceName.



2.Enter below command to collect drive information.

./Exascend-FAE-Tool /dev/nvme1n1 analysis

It will generate *.vda file in **'analysis'** folder, send back the file for further analyzing.

```
root@ssd:~/Exascend_Arm64_FAE_Tool_V1.1.1.0# ./Exascend_FAE_Tool /dev/nvme1n1 an
alysis
P/E Count: 0                              Grown Bad Block Count: 0
Fatal Error: no

The data has saved in "analysis" folder

root@ssd:~/Exascend_Arm64_FAE_Tool_V1.1.1.0#
```