FuzeDrive™ for AMD Ryzen™

Windows 10

Quick Start Guide

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Quick Start Guide

Two versions of FuzeDrive for AMD Ryzen exist: **Basic** which utilizes up to 128GB of any solid state drive (SSD) as a fast tier for accelerating either a hard disk drive (HDD) or SSD. The **Plus** version supports up to 1TB sized fast tiers.

Pre-Install Checklist

IMPORTANT: Backup the boot drive and important data, and follow the instructions below carefully! When upgrading to a FuzeDrive, the system boot and/or data drives will be converted to a virtual disk to fully accelerate or expand the storage in the system. Backing up protects from potential hardware storage device errors or failures that may occur during the conversion process.

If converting an SSD or NVMe boot drive that is larger than 128GB (Basic version) or 1TB (Plus version), additional steps are required. See the section ***Expand the Capacity of an existing SSD Boot Drive*** for additional information.

Check the following prior to upgrading your system to FuzeDrive:

- Your system meets the minimum configuration: AMD RyZen, 3xx series motherboard with a minimum of 4G RAM (6G RAM to support FuzeRAM™).
- Secure Boot is NOT enabled. Consult your system documentation for further details.
- There are no other SSD caching or AMD software RAID solutions installed.
- The BIOS SATA disk settings are set to AHCI, not RAID and there is no software RAID installed on the system.
- Microsoft's ***chkdisk*** or other third-party disk scan tools run error free on the boot drive
- A new unused SSD or HDD is available
- If wishing to use bootable tiers > 2TB in size, the system must be configured to boot in UEFI mode with a UEFI bootable Windows OS installation as Windows 10 does not support > 2TB boot drives in legacy boot mode.

Software Installation

Step 1: Download the ENMOTUS FuzeDrive installer to a temporary directory and double click the installer application.

Step 2: Follow the installer instructions to accept the license and install the ENMOTUS FuzeDrive software, drivers and JAVA (if not already installed) using the Express option. Ensure the system is connected to the Internet for this step if JAVA is not already installed.

NOTE: Prior to starting the Express install, you may optionally view the current disk configuration using the Enmotus Drive Controller information option to verify the drive setup.

Step 3: Reboot the system to complete the installation.

Entering License Key

Run the FuzeDrive utility and enter the license key you received with the software at purchase. Ensure the system is connected to the Internet when activating the license.

If reinstalling Windows, remember to uninstall the Enmotus software FIRST which will deactivate the current installation and enable the key to be reused on the new system. See User Guide for additional information.

Deactivating the License

Uninstalling the FuzeDrive software in the Windows 10 Apps and Features section of the control panel will offer the option to de-activate the license on the current PC. Ensure your license is deactivated where possible before reinstalling on a new PC or reinstalling Windows. Note, uninstalling will not remove the FuzeDrive or any data on the FuzeDrive during uninstall, but the FuzeDrive will no longer optimize performance and will slowly migrate all data back to the slow tier.

Alternatively, open an Administrator Command Line Window, and type the following:

```
> ecmd --license return
```

Create Bootable FuzeDrive

If starting with a fresh Windows install, it is recommended that the OS be installed on the HDD rather than the SSD. This will avoid any additional steps later if the SSD is larger than the license limit.

Adding SSD to Existing HDD Boot Drives

Step 1: Select "Create Bootable FuzeDrive".

Step 2: Choose the drive to create a FuzeDrive with.

Case A: Only boot drive and a blank SSD in the system. The correct drives will be automatically selected. The example below shows an NVMe drive being added to an existing 1TB boot drive.

Case B: If multiple drive choices exist, a drive selection menu will pop up and prompt to select an available blank SSD for example to pair with the existing pre-selected boot drive.

Note, if a drive is grayed out, it is usually because it is in use as a data drive or has partitions on it. You will need to wipe the drive clean first using Windows Disk Manager or Diskpart command line tool.

Step 3: Transform the Bootdrive and Reboot. Once the appropriate drive has been selected, click **Transform** to start the conversion process.

Reboot the system when prompted.

Step 4: Once Windows boots, open Disk Manager to verify the system has correctly booted from the FuzeDrive and to access the volume expand capability of Windows.

STEP 5: If not automatically completed, manually expand the boot volume to use the new capacity added by the SSD by right clicking on the C: partition in Disk Manager and selecting **Extend Volume ....**

IMPORTANT: FuzeDrive may need to optimize the hibernate file to ensure it is stored on a SATA device attached to the primary SATA controller. Ensure these are complete BEFORE rebooting to ensure hibernate and shutdown operates properly. This process may take up to 30 minutes or more depending on system RAM size and the HDD speed. This typically occurs when converting NVMe SSD boot drives or non-primary SATA controller SSD boot drives e.g. M.2 SATA boot devices. Float the mouse pointer over the "e" icon in the system tray to verify of the process is complete.

Utilizing the Additional Capacity Over the SSD License Limit

The Basic version of the software supports up to 128GB fast tier capacities and the Plus version up to 1TB. In both cases, any devices that exceed this license limit will be carved into two sections. The first section is used for tiering in the FuzeDrive and will be the size of the licensed capacity, and the second piece is presented as an additional virtual SSD device made up of the remaining unused capacity.

This will result in a new device appearing in the Disk Manager that may be formatted and used as temporary storage.

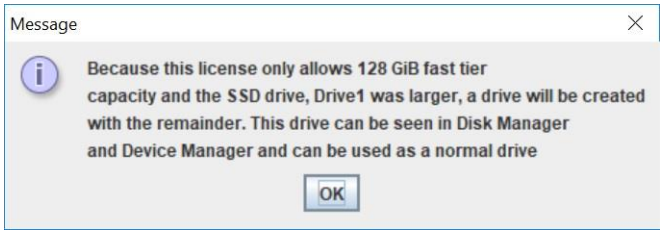
IMPORTANT: A carve out SSD drive created using excess capacity over the license limit will be deleted whenever a Remove FuzeDrive operation is completed and the SSD removed. For this reason, ensure that any important data stored on this temporary drive is backed up before performing the transition.

Expand the Capacity of an existing SSD Boot Drive

If the boot drive is an SSD, the software provides the ability to expand the capacity of the boot drive by adding a large capacity HDD or SSD and increasing the overall size of the boot volume.

Step 1: Select "Create Bootable FuzeDrive". If there is a HDD or SSD available in the system, it will automatically be used to expand the physical disk size, otherwise select an available blank SSD or HDD from the options presented.

IMPORTANT: For the case where you see the following message:



If the SSD size is greater than 128GB (or 1TB for the Plus version), a third-party OS migration tool will be required to first migrate the OS to an SSD that is 128GB (or 1TB for Plus) or smaller BEFORE following the steps below. Alternatively, the operating system may be migrated to a larger HDD, remove the OS from the SSD, then follow the steps outlined earlier for adding an SSD to a HDD boot drive. Any remaining capacity > 128GB (or 1TB for Plus) will be available as a standalone virtual SSD.

Step 2: Choose the drive to create a FuzeDrive with.

Case A: Only boot drive and a blank HDD in the system. The correct drives will be automatically selected. The example below shows a SATA 1TB HDD drive being added to an existing 120GB SSD boot drive.

Case B: If multiple drive choices exist, a drive selection menu will pop up and prompt to select an available blank HDD for example to pair with the existing pre-selected boot drive. Any available HDDs that already have data on them will have “Partition” appended their disk model number.

Note, if a drive is grayed out, it is usually because it is in use as a data drive or has partitions on it. You will need to wipe the drive clean first using Windows Disk Manager or Diskpart command line tool, making sure to back up any important data on the drives beforehand.

Step 3: Transform the Bootdrive and Reboot. Once the appropriate drive has been selected, click **Transform** to start the conversion process.

Reboot the system when prompted.

Step 4: If not automatically completed by the software, you may manually extend the size of your new FuzeDrive with additional capacity added by the SSD or HDD using Windows Disk Manager as described in the earlier section for accelerating a HDD in steps 4 and 5.

Accelerate or Expand a Data Drive

To accelerate a data (non-boot) drive with an existing partition on it, use the “Create Non-Bootable FuzeDrive” option in the FuzeDrive utility.

STEP 1: Select the Create Non-Bootable FuzeDrive option

STEP 2: Choose the drives. Depending on the number of drives and their configuration, you will be presented either with an automatic selection or if multiple choices that require user input, a drive selection menu. In the multi-disk case, select the desired drive (marked with “Partition”).

STEP 3: Once the drives have been correctly selected or verified, click the Create button.

Create a New Data FuzeDrive

To create a new FuzeDrive from two new unused drives, use the “New Non-Bootable FuzeDrive” option in the FuzeDrive utility.

STEP 1: Select the New Non-Bootable FuzeDrive Option.

STEP 2: Select the drives to use for the FuzeDrive.

Pay special attention to which drives have an existing partition on them and which are available as unused/blank drives. If you select a drive marked with **Partition** (shown below underlined), the software will warn that all data will be deleted on the drive, are you sure? Only say YES if you intend to delete the data and you have any important data backed up safely. If you select an option that has no partitions, a new FuzeDrive with no file partition will appear in your Disk Manager.

STEP 3: Use the standard Microsoft Disk Manager to format and use the new FuzeDrive virtual disk that is created.

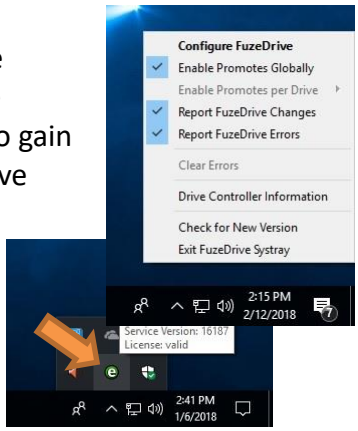
Enable the FuzeRAM™ Feature

The **RAM cache** option may be used to add, remove or change the current RAM cache setting for the FuzeDrive. Use the FuzeDrive configuration utility and use the Change Settings option to add or remove the RAM cache.

Select the available FuzeRAM mode: 2GB for Basic and Plus, or 4GB for Plus version only. Click **Modify Tier** to confirm the change.

Checking FuzeDrive Status

A system tray utility is provided for quick access to the FuzeDrive software status. In the lower right-hand corner of the desktop, either float over the Enmotus icon to see basic information about the FuzeDrive or right click to gain access to several high level control functions to start and stop the FuzeDrive activity.



The systray application may also be used as a shortcut for several other configuration or status functions, as well as turning the promotion/tiering functions off while running backups for example.

Troubleshooting

Software will not install - Not licensed for this hardware message

Check your system meets the minimum requirements outlined in the Pre-Install Checklist. This version of the software will only run on AMD Ryzen 300 series systems.

Unable to activate software using the license key

Check the system is connected to the Internet and reenter the license key. Also check the license numbers carefully to ensure they match those from the email received when the software was purchased, or documentation provided with the system. If you have used the license more than once without first deactivating it, you may also have this issue and will need to contact Enmotus support.

AMD RAID is installed on the system and FuzeDrive will not convert the boot drive

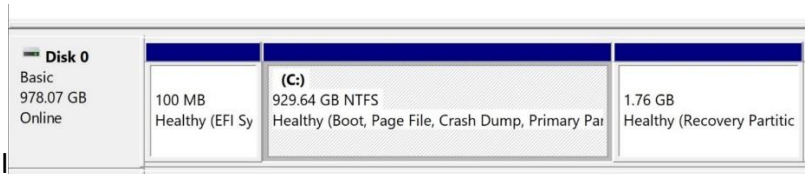
Bootable RAID systems are not supported by the FuzeDrive software.

My system no longer hibernates

If your system supports multiple storage controllers (use Microsoft Device Manager or the Enmotus installer utility to determine how many there are), hibernate may not be possible in all combinations. When using all SATA devices, ensure that all FuzeDrive disk devices are attached to the same SATA controller on the motherboard whenever possible. For Windows 7, attach the devices to ports 0 and 1.

Cannot transform my boot drive or remove due to recovery partition

Open Microsoft Disk Manager and check if there is a reserved partition on the boot drive after the primary C: boot volume.



If a reserved partition exists, then use a third-party tool to reduce the size of the C: partition by 3 or 4GB, and move the Recovery Partition to fill the 3-4GB capacity gap created between the C: and the reserved partition, then repeat the FuzeDrive utility operation. You may also do the opposite when expanding the boot drive.

My issue is not addressed here …

See www.enmotus.com/support for additional information, an online FAQ and knowledge base which may contain more up to date information.