

# HDDClone X

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# HDClone X.5

Manual

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# 1 Introduction

Thank you for choosing HDClone. It is our expressed goal to develop products that meet your standards. Therefore, should you have any suggestions for improvement, or should you for any reason be dissatisfied with the software, we would greatly appreciate your ▶ **7.3 Feedback**.

## 1.1 Brief Description

HDClone is a universal tool for copying storage media. Many applications of use can be completed easily and quickly with HDClone, including system migration (migration), data backup, disk images, exact 1⇔1 copies and data rescue.

## 1.2 Character Conventions

In this manual, keys on the keyboard are printed with an inverted background, for example **Esc** for the escape key or **Return** for the return key. Some keys are represented by their corresponding symbol, for example **↑** for the 'up'-key. Visual controls on the screen, particularly buttons are represented over-and-underlined with italic font, for example *next*, *back*.

## 1.3 Editions

There are various editions of HDClone. They differ from one another by the number of features they offer, their supported device types, performance, file systems, operating systems and special options. For more information on the features of each edition visit [www.miray-software.com/HDClone](http://www.miray-software.com/HDClone).

## 1.4 Inline Help

All descriptions for the program operation are to be found in the ▶ **5 Inline Help**, making it more intuitive and faster to access (clickable links, search function, etc.) and also easier to be updated.

In this manual, references to the respective chapters of the Inline Help are indicated with ▶ **?**.

## 2 Variants

HDClone comes in four variants – HDClone/W, HDClone/S and HDClone/L. In all four variants, programmation operation, user interface and functionality are basically identical. Since they run on different operating systems, they cover different use cases. The system requirements for each variant are described below.



**Note:** The following information represents the entire spectrum of the systems supported by HDClone. The actual availabilities of each edition are listed in the ▶ **1.3 Editions**.

### 2.1 HDClone/W

This variant runs as a normal Windows application (.exe) and can therefore simply be run concurrently to other applications on an installed Windows host system, or it can be run on Windows PE even without having Windows firmly installed.

#### 2.1.1 Supported Systems

HDClone/W runs on PCs with 32/64 bit CPU (x86/x64) and optionally also on 64 bit ARM powered devices with the following versions of Windows:

##### Workstation

- Windows XP (32+64 bit) \*
- Windows Vista (32+64 bit)
- Windows 7 (32+64 bit)
- Windows 8 (32+64 bit)
- Windows 8.1 (32+64 bit)
- Windows 10 (32+64 bit)
- Windows 11 (64 bit)

##### Server

- Windows Server 2003 (32+64 bit) \*
- Windows Server 2008 (32+64 bit)
- Windows Server 2008 R2 (64 bit)
- Windows Server 2012 (64 bit)
- Windows Server 2012 R2 (64 bit)
- Windows Server 2016 (64 bit)
- Windows Server 2019 (64 bit)
- Windows Server 2022 (64 bit)

\*) On Windows XP and Server 2003, technical innovations of HDClone, that are not implementable on these versions, will not be available. We reserve the right to completely suspend support at any time.

## 2.1.2 Supported Devices and Storage Media

All devices or mass storage media that are supported on Windows, or on which a suitable Windows driver has been installed.

## 2.2 HDClone/S

The original variant of HDClone runs self-booting on PC's and Macs (x86 and x64), based on our Symbi OS. It is employed especially when the highest possible copying speed is required or if Windows is not executable. The systems, controllers and devices that are supported are listed below.

### 2.2.1 Supported Systems

- PC with 32/64 bit CPU (x86/x64) P4 or higher, 512 MB RAM
- Optional: PC with 64 bit ARM Snapdragon® CPU, 1 GB RAM, UEFI
- Keyboard & mouse: PS/2, USB or Bluetooth
- Bootable CD drive or USB bootability (Legacy-BIOS, UEFI, SecureBoot)

### 2.2.2 Supported Hardware Standards

HDClone/S supports the hardware standards listed below and thereby principally all devices that utilize these standards.

- PCI-IDE controller and Bus Master IDE controller
- Adaptec PCI-SCSI host adapter (SCSI and SAS ▶ ?)
- SATA / SATA-II / SATA-6G controller (IDE & AHCI interface)
- USB 1.1 / 2.0 / 3.0 / 3.1 / 3.2 (UHCI, OHCI, EHCI, XHCI controller)
- Bluetooth (USB-HCI controller, HID class)
- Firewire / IEEE1394 (OHCI controller)
- Intel Onboard RAID (SATA-RAID controller)
- M.2 (SATA- & NVMe controller)
- PCIe (NVMe controller)
- eMMC (SD/MMC-Controller)
- UFS (UFS-Controller)
- USB 4 & Thunderbolt 3/4 (Alpine/Titan/Maple Ridge with auto configuration)

## 2.2.3 Supported Storage Devices and Media

- IDE/ATA SSDs & hard disks, CompactFlash via IDE <sup>1)</sup>
- SATA SSDs & hard disks (internal & external)
- PCIe, M.2, eMMC, UFS solid state disks (SSDs)
- Thunderbolt SSDs & hard disks
- Intel Software RAID (0, 1, 10, 5)
- SCSI hard disks (internal & external)
- USB sticks <sup>2)</sup>
- USB hard disks and SSDs (internal & external) <sup>2)</sup>
- Firewire hard disks (internal & external)
- SD <sup>3)</sup>, microSD <sup>3)</sup>, SDHC <sup>3)</sup> and MMC <sup>3)</sup>
- CompactFlash I <sup>3)</sup>, CompactFlash II <sup>3)</sup>
- MicroDrive <sup>3)</sup>, xD-Picture Card <sup>3)</sup>
- Memory Stick <sup>3)</sup>, Memory Stick PRO <sup>3)</sup>, Memory Stick DUO <sup>3)</sup>

<sup>1)</sup> CompactFlash media with TrueIDE support

<sup>2)</sup> must support the USB-Mass-Storage-Class or UAS (USB Attached SCSI) protocol

<sup>3)</sup> connected over a USB card reader or an equivalent adaptor

## 2.3 HDClone/L

### Professional Edition and up

Just as with HDClone/S, this variant also runs self-booting on our Symbi OS, yet on the basis of Linux. Many WLAN adapters and RAIDs can thereby be used without a running Windows and without using Windows PE.

### 2.3.1 Supported Systems

- PC with 64 bit CPU (x64), 500 MHz, 1 GB RAM
- Keyboard & mouse: PS/2, USB or Bluetooth
- Bootable CD drive or USB bootability

### 2.3.2 Supported Storage Devices and Media

All devices and mass storage media that are supported directly by the Linux Kernel HDClone/L is based on.

## 2.4 HDClone/X

Professional Edition and up

This variant runs as a Linux application without any additional installation of services and libraries required. It comes as an Appliance and can therefore simply be run concurrently to other applications on an installed Linux distribution, or it can be run on a live Linux distribution even without having Linux firmly installed

### 2.4.1 Supported Systems

HDClone/X runs on PCs with 32/64 bit CPU (x86/x64) and optionally also on 64 bit ARM powered devices with the following Linux distributions:

#### Installed

- Debian
- Ubuntu
- openSUSE
- Fedora

#### Live

- Debian Live
- Linux Mint



Note: HDClone/X has been tested to run on the above Linux distributions at the time of its release. HDClone/X may run on other Linux distributions as well.

### 2.4.2 Supported Storage Devices and Media

All devices or mass storage media that are supported by the Linux distribution used, or in combination with the suitable Linux driver installed.



# 3 Quickstart

You can use HDClone in three ways: as a Windows application (HDClone/W), as a self-booting program (HDClone/S and HDClone/L) or – optionally – as a native Linux application.



**Note:** Further information on launching the program can be found under **Installation** ▶ **?** and ▶ **4 Program Startup**. Information on how to use HDClone can be found under ▶ **5 Inline Help**.

## 3.1 Windows

Please take the following steps to start HDClone in Windows:

1. Start the setup for Windows (**setup.exe**) and follow the instructions. Accept the default settings.
2. When setup is finished, HDClone will start automatically. Alternately, you can start HDClone from the Desktop or the Windows Start Menu.
3. After starting HDClone, select the desired function and follow the course of the program. For further information, please refer to ▶ **5 Inline Help**.

## 3.2 Self-booting

To start (=boot) HDClone without Windows, the following steps are required:

1. If you already have a bootable media (CD/DVD or USB stick) with HDClone, please proceed with step 4.
2. Plug a USB stick into your PC or insert an empty CD/DVD into your CD/DVD writing drive. Start the Boot-Setup under:  
*Programs* ▶ *HDClone X.5...* ▶ *Create bootable media*
3. Select the desired CD/DVD drive or the desired USB stick and create a bootable media.
4. Boot from this media on your desired PC and select **S** for HDClone/S or **L** for HDClone/L from the home screen.
5. When the main program screen opens, select the desired function and follow the course of the program. For further information, please refer to the ▶ **5 Inline Help**.


### 3.3 Linux

Please take the following steps to start HDClone in a native Linux environment – host installation or live system:

1. Copy the HDClone.ApplImage file to the Linux file system, for example to the Desktop.
2. Then right-click the copied file, select "properties" and set the executable attribute in order to allow the file to be invoked as a program.
3. Open a Linux shell and start HDClone with the following command:  
`sudo -E ./Desktop/HDClone.ApplImage`
4. After starting HDClone, select the desired function and follow the course of the program. For further information, please refer to **▶ 5 Inline Help**.

## 4 Program Startup


### 4.1 Windows

Following the installation (Setup for Windows ▶ ) , you may start HDClone from the Windows Start Menu under Program ▶ HDClone X.5... ▶ Start HDClone. Alternately HDClone can be started by invoking the file `hdclone.exe` either from the genuine HDClone media or directly from the software package (ZIP archive).



**Note:** HDClone/W comes as 32 and 64 bit application. The appropriate application for the Windows version used will be linked upon installation in the start menu. When invoking the program file directly for the 32 bit application, please use the file `hdclone32.exe`.

### 4.2 Self-booting



Connect the bootable USB stick or insert the bootable CD/DVD (Boot-Setup ▶ ). Start the PC and ensure that BIOS will boot from the desired media. HDClone/S will then be launched from the bootable media. While on the startup screen, press **L** on your keyboard to start HDClone/L.




**Note:** Should your PC not boot from the HDClone boot media, press **F8**, **F11** or **F12** (BIOS dependent) as soon as you power on the PC to access the boot menu and select the boot media.

HDClone will also boot on UEFI systems, provided SecureBoot mode is disabled.

### 4.3 Quit Program

In the lower right of the system bar you find a symbol to close the application ( under Windows) or to power off the PC ( self-booting). Click on the symbol to quit HDClone.


If a program function remains open, you can return to the main screen by clicking on the menu symbol  in the lower left hand corner of the system bar or by pressing the **Esc** key. An actively running process will have to be finished or cancelled first.



**Note:** (Self-booting only) If you do not want to start HDClone when starting the computer next time, remember to first remove the HDClone boot media from the boot drive.


# 5 Inline Help


## 5.1 General


Detailed descriptions of all program functions and operating elements, as well as their modes of operation, can be found in the Inline Help, which can be invoked directly within the program. Open the Inline Help by selecting the question mark icon  on the left side of the system bar to the bottom or by pressing the **F1** key. In many cases, Help will already show a page with the current program context upon opening. Should there be no context available, Help's starting page will be displayed, allowing you to use either the table of contents or the search function to open the desired topic.

Help has the same contents for HDClone/W, HDClone/S, HDClone/L, and HDClone/X. Some minor differences in the Help display, are described below.

## 5.2 Windows

If HDClone was installed by using **Setup for Windows**  HDClone/W will use the Windows help system. This means Help will open in a separate window.

In this case, you may also open Help independently from the program under the HDClone entry in the Windows Start Menu (  fig. 1).

If HDClone/W is started without previous installation using the Setup, the integrated help system will be used, as described in  5.3 Self-booting & Linux. The Help window will then appear within the HDClone program window.

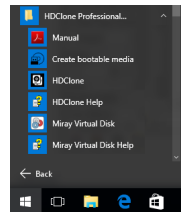


fig. 1: Windows Start Menu

## 5.3 Self-booting & Linux

The bootable variants of HDClone and the Linux host variant also contains the Help in full. Here it will display in an integrated help system. This integrated help system is also used, if HDClone is used in Windows without installing it before.

## 5.4 Online Help

There is also an Online Help for web browsers, suitable to be used on PCs, tablets and smart phones at: <https://help.miray.de/HDClone>.


## 6 Miray Virtual Disk

HDClone contains the **Miray Virtual Disk** software, which allows mounting file images created with HDClone – even VMDK, VHD/VHDX, VDI images – as virtual Windows drives. You can then access files and folders stored within a file image directly. **Miray Virtual Disk** can be started either on demand or automatically at the system start-up. File images may be mounted either only on demand or persistently.



**Note:** You can also open and mount file images as virtual drives directly from the network, using network drives or network shares.

### 6.1 Installation

**Miray Virtual Disk** is included in the Windows installation of HDClone. You can choose to install **Miray Virtual Disk** during installation (**Setup for Windows** ▶ ). It will be installed to a separate location within the **Program Files** directory.

### 6.2 Program Startup

You will find **Miray Virtual Disk** in the Windows Start Menu within the HDClone folder. The program window will appear at the start-up. Since **Miray Virtual Disk** works in the background, the program icon will appear in the System Tray. **Miray Virtual Disk** will remain active in the background, even if the program window is closed. You can reopen the program window using the **System Tray** icon.

### 6.3 Inline Help

**Miray Virtual Disk** contains an Inline Help which can be opened from within the program by the context menu in SystemTray, or by pressing the **F1** key. Help for **Miray Virtual Disk** can also be opened apart from the program via the HDClone entry in the Windows Start Menu (▶ **5.2 Windows**).

# 7 Miscellaneous

## 7.1 Legal Information

### 7.1.1 GPL

Parts of this product are based on products which are licensed under the GNU General Public License (GPL). The applicable license can be found by visiting <http://www.gnu.org/copyleft/gpl.html>. To be sent a copy of the source code, submit your request to [support@miray.de](mailto:support@miray.de).

### 7.1.2 Disclaimer

While HDClone was programmed and tested with the greatest possible care, please understand that we cannot assume any liability for the proper functionality of the program, and that we cannot be held liable for any damages that may result from its usage, which may be subject to gross negligence or intent.

## 7.2 Licensing

Various types of licenses are offered with HDClone in order to accommodate diverse usage scenarios. The standard types of licenses encompass the most common, yet not all, application scenarios. Therefore, standard licenses can be extended if needed, or individual licenses can be converted. For inquiries, please contact us by phone +49 89/72013-643 or [mail@miray.de](mailto:mail@miray.de).

### 7.2.1 Standard License Types

- **Workplace License:** Permanent installation on up to two PCs belonging to the licensee, typically PC and laptop.
- **Technician License:** Usable on random PCs with the associated USB token. Additional permanent installation on up to two PCs owned by the licensee.
- **Volume License:** Permanent use on a determined number of PCs, according to the selected licensing volume. May also be used to extend existing Workplace, Technician and Volume Licenses.
- **Maintenance License:** Usable on random PCs with the associated USB token. Extends existing Technician Licenses.

- **One-time License:** Contingent on individual start-ups of the software. May be used with random PCs. Also suitable for simultaneous usage and for remotely operated systems. Extends existing Technician Licenses.

We offer further licensing options per request, for example within local networks or as a Corporate or Site License ( ▶ 7.2.4 Customer-specific Licensing).

## 7.2.2 Activation

Some license types require mandatory activation (Workplace License, Volume License, One-time License), while some activations are optional (Technician License). Activations are divided into Single Activation (SA) and Permanent Activation (PA). These are performed automatically upon installation or when starting the program. In the event that both activation types are available, the software will prompt you on which one to use ( ▶ fig. 2).

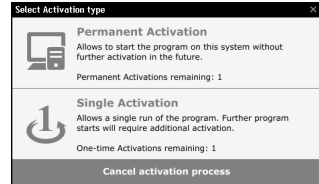




fig. 2: Activation

 **Important:** Workplace or Technician Licenses include a small contingent for SAs, yet this is intended for urgent situations only. Therefore, always use PAs or your USB token (Technician License) in normal cases.

A PA has only to be completed once per system. Afterwards, the program can be started without any further activation. When switching systems (for example migration), you can release an existing PA by uninstalling the software. Your activation may then be (re-)used on the new system.

 **Note:** When working with a Technician License, please ensure that the USB token is connected prior to the installation or the start of the program. The software will automatically recognize it and will not need to request it.

## 7.2.3 License Extension

We offer extensions for the following standard license types:

- **Workplace License:** The addition of further PAs and SAs.
- **Technician License:** The addition of USB-Tokens, PAs and SAs
- **Volume License:** The addition further PAs.

## 7.2.4 Customer-specific Licensing

Should you find that none of the above-listed standard license types and extensions meet your specific application scenario, we can also implement individual licensing models, including for use on license servers for easy license management within local networks.

## 7.3 Feedback


We are very interested in your feedback. We continuously strive to resolve any program errors that you may encounter, as well as to review and integrate, if at all possible, any ideas for improvement that you may have. If you wish to share your opinion of the software with us, we will be happy to hear from you!

Online [miray-software.com/Feedback](https://miray-software.com/Feedback)

Email [feedback@miray.de](mailto:feedback@miray.de)

Postal address Miray Software AG  
Gaissacher Str. 18  
81371 Munich  
Germany

## 7.4 Support

Should you encounter any questions or issues with any of our products, our support team will be glad to assist you. Please send us your inquiry via our homepage at [miray-software.com/support](https://miray-software.com/support) or email us at [support@miray.de](mailto:support@miray.de). If you also encounter technical difficulties, please attach a System Log  regarding the respective process.