

New Version

HDClone X takes HDClone to a whole new level. In this version, several apps and components, some of which date back to when HDClone 3.0 was created in 2006, were discontinued and replaced with updated versions. This also encompasses the CLI variant, which was redeveloped from the ground up and outsourced as a separate product. This was an important step to take due to the evolution that HDClone has seen since 2006. Since that time, over 100 independent products and over 1,000 intermediate versions (service updates) of HDClone have been released to date. In addition, our program languages have been expanded from 2 languages initially, to 9 languages today. This is our response to HDClone's increasing popularity around the world, proven by our valued customers in more than 165 countries.



What's New?

Five completely new apps were added to HDClone X in order to facilitate targeted use for specific application scenarios – ImageConvert, DirectRestore, BitRestore, PartitionRestore and OS-Adjust. **Five more apps were comprehensively updated** for HDClone X, all which are equipped with a newly designed user interface for convenient and efficient use – MultiRestore, DifferentialImage and PartitionCopy, as well as the Migration apps for RAIDs and Dynamic Disks.

Regarding **direct support of file systems**, there are numerous ongoing improvements, two of which especially stand out: to the ability to **defragment Ext file systems** for even better downsizing and the option to **downsize XFS file systems**. In addition, **read access to files is now also available in XFS file systems** directly from a disk or via a mounted image. As a result, individual files in XFS file systems can now also be extracted from an image or transferred to another file system.

When **creating VM Images** (VMDK, VHD, VHDX, VDI and DMG), in addition to the dynamic variant, HDClone X now also offers a **static variant** with a fixed size. The optional **AES encryption of images is now achieved by using hardware acceleration** at only a fraction of the time normally required, so that HDClone X can create AES-encrypted images almost as quickly as unencrypted images.

Upon request, HDClone X offers **companies and service providers** the option of **integrating their own logo** into the user interface and PDF reports. If you are interested, please contact Miray Software.

On top of that, HDClone X offers full **support for network boot (PXE boot)**. In conjunction with the new product Miray BootCast, we hereby provide an easy-to-use solution that can be set up in a few minutes and that supports all variants – HDClone/S and HDClone/L as well as HDClone/W together with Windows PE.

Details about HDClone's ongoing improvements can be found online in the HDClone changelog at: <https://www.miray-software.com/Changelog/HDClone>



New Features (★ Incl. Version 10.1)

MBR2GPT – Conversion Option | 10.0 PE and up

This conversion turns an MBR partitioning scheme into the modern GPT partitioning scheme, which keeps older disks compatible with modern systems. This function is offered as an option in various apps and it can also be applied directly without making a copy via the OS-Adjust app.

OS-Adjust App – Adjusts w/o Copying | 10.0 PE and up

The adjustments of various IDs, settings for boot behavior or even the new MBR2GPT conversion can be implemented directly with this new app without needing to create a copy.

ImageConvert App – Converting Images | 10.0 PE and up

With this app, you can convert an existing image into different image format. For example, you can convert a SmartImage to a VM Image. During the conversion, a new image is created so that the original image remains, including all of its snapshots and overlays.

DirectRestore App – 1:1 Image Restoration | 10.0 AE and up

With the DirectRestore app you can restore SmartImages 1:1. Adjustments are limited to the essential minimum and must be explicitly activated by the user. Without these adjustments, a copy is restored that is essentially identical to the original disk, except for any unused areas, as these are not included in the SmartImage.

BitRestore App – Restoration of BitImages | 10.0 PE and up

A bit-precise restoration with the standard Restore app could not always be guaranteed, because certain adjustments are applied automatically. The BitRestore app, however, is specifically designed for bit-precise restorations of BitImages to a disk. If any adjustments are required, they must be explicitly selected by the user.

DifferentialImage App – Extensively Renewed | 10.0 AE and up

This app has also been given a newly designed interface for easy, user-friendly operation.

MultiRestore App – Extensively Renewed | 10.0 EE and up

The MultiRestore app, which restores images to multiple disks at the same time (deployment), has also been given a completely redesigned, more convenient and efficient user interface.

Migration Apps – Extensively Renewed | 10.0 SE/PE and up

The user interfaces of the two Migration apps, Dynamic Disk and Software RAID, have been given a new look, which enhances the convenience and efficiency of their handling.

PartitionCopy App – Extensively Renewed | 10.0 BE and up

This app, which is used to copy single partitions, has also been equipped with a new interface for more intuitive and efficient copying.

PartitionRestore App – Restoring Partitions | 10.0 SE and up

This newly added app, analog to the PartitionCopy app, restores single partitions directly from an image. This app's ease of use is also facilitated by a modern user interface.

Hex Auxiliary – Hex Editor for Files | 10.0 FE and up

The Auxiliary Hex is a simple, straightforward hex editor for files, which allows you to open and modify any file in hex view.

Spot – Opening Files in Hex and Pad | 10.0 FE and up

In addition to using Spot to copy, move and delete files, you can now also open files in Spot via the context menu – in the Pad auxiliary for text files or in the Hex auxiliary for arbitrary files.

AES Encryption – Hardware Accelerated | 10.0 PE and up

Processor-specific acceleration functions allow image encryptions to be expedited by a factor of 25-30. Even an AES-256 encryption would then account for significantly less than 1% of the total time that is required for image creation.

Ext2-4 Defragmenting and Downsizing | 10.0 AE and up

Defragmentation is now also available for Ext2-4 file systems in order to achieve a smaller minimum size when downsizing Ext file systems.

Hybrid ISO Download Package Option | 10.0 PE and up

You can now receive the program package as Hybrid ISO, which can be written directly to CD/DVD or a USB stick. It lets you create HDClone boot media without using Boot Setup, e.g. when working on Linux.

★ **Target Disk Mode via Firewire on Mac** | 10.1 AE and up

HDClone can now use Apple's Mac series PCs in Target Disk Mode if a connection is established via Firewire. The disks installed in the Mac can then be addressed directly in the Mac without having to remove them.

★ **Static VM Image Creation** | 10.1 PE and up

For all supported VM Image formats (VMDK, VHD, VHDX, VDI and DMG), in addition to the space-saving, dynamically allocated type, you can now create fixed-sized virtual disks for optimal access performance.

★ **Network Boot for PXE and UEFI** | 10.1 PE and up

HDClone X supports PXE and UEFI network boot in all of its variants (HDClone/W, HDClone/S and HDClone/L). For this specific purpose, we developed an additional, optional component – Miray BootCast. It cuts any time and effort usually needed for the set up of a network boot environment to almost zero. It integrates seamlessly into large and small networks and can be started as an application or as a service.



★ XFS Files – Reading and Extracting | 10.1 PE and up

With read access to XFS file systems, in Windows and self-booting, individual files can be read or copied directly from disks and, if needed, can be extracted from images mounted with MVD and MVD/S.

★ XFS File Systems – Downsizing | 10.1 PE and up

XFS file systems can now also be downsized when copying or restoring from an image.



Feature Matrix

The table below provides an overview of the main features that have been added to HDClone, along with their availability in the respective editions. Unfilled dots (◻) indicate that, while the feature is available, it cannot be used to its full extent when working with the edition in question.

Ver. New Features in HDClone X	FE	BE	SE	AE	PE	EE
10.0 MBR2GPT – Conversion Option					▪	▪
10.0 OS-Adjust App – Adjusts w/o Copying					▪	▪
10.0 ImageConvert App – Converting Images					▪	▪
10.0 DirectRestore App – 1:1 Image Restoration				▪	▪	▪
10.0 BitRestore App – Restoration of BitImages					▪	▪
10.0 DifferentialImage App – Extensively Renewed				▪	▪	▪
10.0 MultiRestore App – Extensively Renewed						▪
10.0 Migration Apps – Extensively Renewed			◻	◻	▪	▪
10.0 PartitionCopy App – Extensively Renewed		▪	▪	▪	▪	▪
10.0 PartitionRestore App – Restoring Partitions			▪	▪	▪	▪
10.0 Hex Auxiliary – Hex Editor for Files	▪	▪	▪	▪	▪	▪
10.0 Spot – Opening Files in Hex and Pad	◻	◻	◻	◻	▪	▪
10.0 AES Encryption – Hardware Accelerated					▪	▪
10.0 Ext2-4 Defragmenting and Downsizing				▪	▪	▪
10.0 Hybrid ISO Download Package Option	▪	▪	▪	▪	▪	▪
10.1 ★ Target Disk Mode via Firewire on Mac				▪	▪	▪
10.1 ★ Static VM Image Creation					▪	▪
10.1 ★ Network Boot for PXE and UEFI					▪	▪
10.1 ★ XFS Files – Reading and Extracting					▪	▪
10.1 ★ XFS File Systems – Downsizing					▪	▪

Information on Modifications

The following information pertains to modifications which do not represent features in the actual sense, yet which bring about a different or new program behavior in comparison to the previous version. Therefore, this information is specifically aimed at users of HDClone 9 or older versions.

CLI as Its Own Product

The command line version (CLI) has been fundamentally revised and unlinked from the development of the graphic variant and has been outsourced as a separate product – HDClone CLI. As a result, it is even easier to meet the specific requirements of a CLI application, such as integration into scripts and use in the Windows Command Shell and PowerShell. We will happily provide support and advice to our customers who currently use the CLI interface of HDClone 9 or older and who wish to switch to HDClone CLI. Please contact us!

Discontinuation of the “Classic” Tab

In HDClone X, the remaining apps in the classic style have been replaced with modern apps which feature fully updated user interfaces for even more efficient and intuitive operation. The “Classic” tab, which contained the classic apps, is therefore not part of HDClone X.

Download Options

With the introduction of a hybrid ISO as a download option, the other options have also been changed and adapted to accommodate specific types of use.

- The **self-extracting setup file (.EXE)** is intended for users who need an installation on Windows. Apart from the installation program, it also contains the Boot Setup and Miray Virtual Disk (MVD). An ISO file is not included, yet it can be created with the Boot Setup.
- The **ZIP archive** is intended for users who do not need an installation on Windows. The Boot Setup can be accessed via the HDClone program interface. Miray Virtual Disk is only available in the integrated version MVD/S. An ISO file is not included, as it can be created with the Boot Setup.

- The **Hybrid ISO** is intended for non-Windows users who wish to create a bootable CD or USB stick with Linux or MacOS on-board resources and without using Boot Setup. Just like the ZIP package, it does not include a Windows installation and contains just the integrated variant of Miray Virtual Disk (MVD/S).

Self-Booting With 32/64 Bit Automatic

For the self-booting variant HDClone/S, the start options <S> for 32 bit and <X> for 64 bit have been merged into the automatic option <S> – HDClone/S will be started automatically in the appropriate variant (32 bit/64 bit). Via “Additional Options” <W>, HDClone/S32 can also be started on 64 bit systems.

Direct Clearing of Service Updates

Service updates that are included in the license are indicated at the bottom right corner in the system bar when there is an online connection. By clicking on the “Service Update” tile, the download of the new version is now cleared automatically – without needing to locate your license key.

“Restore” Tab

HDClone X comes with three new apps – DirectRestore, BitRestore and PartitionRestore – which are used to restore images. These apps can be found in the new “Restore” tab alongside the already existing Restore app.

Spot With New “Volumes”/“Disks” Views

The Spot file manager now provides two views in the drive bar on the left side:

- **Volumes** – lists available drives according to their respective function, e.g. “Local Disk”.
- **Disks** assigns drives to their respective disks and arranges them according their type, e.g. “SATA”.