



New Version

When developing **HDClone X.6**, the main focus was set the topics of **online connectivity & cloud, security** and **virtualization** – and of course also on **compatibility with current systems and devices**.

What's New?

HDClone X.6 is designed for use in network environments, supporting both Internet and local area network (LAN) connections. The **Miray Cloud natively offers** fully location-independent storage for data and images **up to 1 TB**. Additionally, HDClone X.6 is well-suited for use with **local or own cloud solutions**, now supporting **HTTPS alongside SMB, FTP, and FTPS for direct image deployment**. The release also features extended network capabilities: **Android and iOS devices** can be used for **USB tethering**. Support for LAN- and USB-LAN-adapters has been enhanced, ensuring broader compatibility, including a better support of WLANs in HDClone/L.

In terms of **security**, focus was placed on multiple aspects. The new **Secure SMB Mode** enables secure backups to network drives even on Windows systems, preventing the backup storage's SMB share from being accessed by other software, especially malware, and even by Windows itself. Network drives can now be used in accordance with the **QUIC standard**, which particularly facilitates **secure network shares in the cloud**. Another security aspect are the **audit-proof PDF reports**, which can optionally be generated as **qualified signed PDF/A** files. This feature provides customers with verifiable documentation of your work.

When it comes to **virtualization**, HDClone has been enhanced to include support for the widely-used **virtual disk format QCow2** (e.g. Proxmox) and for **Smart backups and copies of LVM volumes**. This notably allows the **migration and backups of entire Proxmox environments**.

HDClone X.6 now simplifies **communication** by supporting **LAN via Thunderbolt** in the self-booting variants. In particular, this allows **NetDisk to be used directly over a Thunderbolt** connection, enabling a peer-to-peer setup as an alternative to a direct LAN connection.

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 15.1)

Secure SMB – Protected in the Network | 15.0 PE and up

No need to worry about malware when making network backups. Unlike standard server or NAS integration, secure SMBs remain concealed from other programs and even the host operating system, providing complete protection against unauthorized access. Create backups and images directly from Windows to the network with confidence, knowing your data is completely safe on the target server or NAS.

Auto Update – Keep Your Version Current | 15.0 PE and up

The newly integrated Auto Update function makes updating HDClone effortless. Whether you're using a Windows installation, a portable program directory, or a bootstick, Auto Update will fully automatically download and install the latest service update.

Startup Screen Customizable | 15.0 AE and up

Choose which app tab to display upon startup or configure your own Favorites tab with your most frequently used apps.

HTTPS Deployment – Use Images Online | 15.0 PE and up

Whether via LAN or the internet, you can now deploy backups and images directly from a web server or the cloud using an HTTPS link – and without the need of intermediate local storage, saving time and space.

Save Login Credentials | 15.0 PE and up

HDClone can now memorize network resources used (SMB/NAS, FTP, HTTP/HTTPS and WLAN) and, optionally, also the associated credentials. They will then be immediately available again when re-starting HDClone, even when using different program variants (e.g. on Windows and self-booting).

LVM Volumes – SmartImage & SmartCopy | 15.0 PE and up

Disks initialized with the Linux "Logical Volume Manager" (LVM) are now fully supported by Smart apps for backup, copying, migration, and restoring (e.g. deployment). Only the written areas of the disk are processed, resulting in smaller image sizes and faster transfer rates.

QCow2 Images for Virtualization | 15.0 PE and up

This widely-used open-source image format for virtual disks is now fully supported. Qcow2 images can be created and restored (deployment) or converted to other image formats.

Proxmox VE – Backup and Migration | 15.0 PE and up

HDClone now enables seamless backup, copying, and migration of entire Proxmox environments (Proxmox VE) with its Smart apps.

SMB with QUIC – Cloud Network Drives | 15.0 PE and up

The QUIC protocol allows efficient use of SMB network shares over the internet and in the cloud. HDClone automatically establishes QUIC connections with the corresponding servers.

NetDisk via Thunderbolt and P2P-LAN | 15.0 PE and up

The NetDisk technology, which mirrors disks over the network, now supports Thunderbolt and direct LAN connections. In both cases, the configuration will be carried out fully automatic.

USB Tethering for iOS Devices | 15.0 PE and up

HDClone now supports direct wireless network connections in the self-booting variants via USB tethering with iOS/iPadOS devices. In addition to existing Android support, this allows HDClone to connect to WLAN or the internet using virtually any smartphone or tablet.

HDClone/L with Optional Firmware | 15.0 PE and up

To improve device support in the Linux-based, self-booting version of HDClone, optional firmware modules that are not available in the Linux kernel can now be automatically downloaded and installed when the bootmedium is created.

FlashRefresh App – Newly Structured | 15.0 PE and up

The FlashRefresh app now supports "Smart" by only refreshing the occupied areas, significantly reducing the time required. In addition, Trim can now be performed from directly within this app.

Windows ReFS including Version 3.14 | 15.0 PE and up

HDClone's support for the ReFS file system has been extended to the latest official version 3.14.

CLI Assistant for HDClone CLI Users | 15.0 PE and up

In SmartImage, SmartCopy, Backup, BitImage, BitCopy, Restore, DirectRestore, and other applications, you can now have the settings displayed as command line commands, which users of the CLI version of HDClone can directly use in the command line interface.



★ PDF Reports – Audit-proof Signatures | 15.0 PE and up

Present your clients with verifiable proof of your services online in PDF format, with the option to include your company logo or you can generate the document in PDF/A format with a qualified digital signature.

★ Expanding NTFS – Beyond 16 TiB | 15.1 BE and up

NTFS volumes can now be resized beyond 16 TB on-the-fly during copying. This allows you to easily overcome this NTFS-specific border.

★ ExtFS – Improved Resizing | 15.1 AE and up

Ext file systems can now be expanded even further – all the way up to their absolute limit of 256 TiB / 16 EiB.

★ NVMe Passthrough | 15.1 PE and up

NVMe passthrough is now supported for NVMe SSDs, which allows you to access device-specific NVMe data via USB connection, especially genuine serial numbers and disk names.

★ Remote VNC – Faster & More Efficient | 15.1 PE and up

Thanks to the implementation of "Tight Encoding" and "Continuous Updates", VNC connections now perform more efficiently and are noticeably faster, even under limited bandwidth conditions. Especially optional browser connections (WebVNC) perform considerably swifter.

★ Wayland Support for HDClone/X | 15.1 PE and up

The HDClone/X version for Linux now supports distributions using Wayland as a graphic system. X-Server compatibility remains the same.

★ NVMe Details – in the DiskInfo App | 15.1 PE and up

The DiskInfo app now features a dedicated tab for NVMe disk information. Thanks to passthrough integration, this also works with USB-connected NVMe devices.

★ Virtual Disks – Base & Overlay | 15.1 AE? and up

Mounting images directly in HDClone in read-only mode (R/O) as virtual disks, now offers to choose between mounting the unmodified original image or – if available – the overlay.

★ Applets with Sub-panels | 15.1 FE/AE and up

List-based applets (e.g., Network Storage and Mounted Disks) now organize entries into expandable submenus, improving readability and managing larger content volumes more effectively.

Online Features (optional) —————

Online Slots – Flexible Activation | 15.0 PEP and up

The concept of online slots is similar to a token: per slot, HDClone can be used consecutively on different systems. When using an online slot, this is even completely location-independent. An optional waiting queue function is also available, which allows HDClone to automatically wait for the next available slot.

Remote Access via Browser | 15.0 PE and up

As an optional feature, HDClone can be equipped with a remote access function via web browser, available across all variants – in Windows, self-booting, and in Linux. It supports multiple licenses within a single account and requires a fee-based online service extension.

Cloud Storage – Maximum Ease | 15.0 PE and up

The optional, fully integrated cloud storage offers seamless functionality similar to a local storage medium. Images (and other files) can be saved directly to the cloud without the need for local intermediate storage. This not only saves valuable storage space but also reduces time spent on file management, enabling more effective collaboration with HDClone. Use is possible for multiple licenses in one account and requires a corresponding paid extension of the online services. Use is possible for multiple licenses in one account and requires a corresponding paid extension of the online services.

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.6	FE	BE	SE	AE	PE	EE
15.0 Secure SMB – Protected in the Network					■	■
15.0 Auto Update – Keep Your Version Current	■	■	■	■	■	■
15.0 Startup Screen Customizable				■	■	■
15.0 HTTPS Deployment – Use Images Online					■	■



Ver. New Features in HDClone X.6	FE	BE	SE	AE	PE	EE
15.0 Save Login Credentials					■	■
15.0 LVM Volumes – SmartImage & SmartCopy					■	■
15.0 QCow2 Images for Virtualization					■	■
15.0 Proxmox VE – Backup and Migration					■	■
15.0 SMB with QUIC – Cloud Network Drives					■	■
15.0 NetDisk via Thunderbolt and P2P-LAN				■	■	■
15.0 USB Tethering for iOS Devices				■	■	■
15.0 HDClone/L with Optional Firmware					■	■
15.0 FlashRefresh App – Newly Structured					■	■
15.0 Windows ReFS including Version 3.14	□	□	□		■	■
15.0 CLI Assistant for HDClone CLI Users					■	■
15.0 PDF Reports – Audit-proof Signatures					■	■
15.1 ★ Expanding NTFS – Beyond 16 TiB		■	■	■	■	■
15.1 ★ ExtFS – Improved Resizing				■	■	■
15.1 ★ NVMe Passthrough					■	■
15.1 ★ Remote VNC – Faster & More Efficient					■	■
15.1 ★ Wayland Support for HDClone/X					■	■
15.1 ★ NVMe Details – in the DiskInfo App					■	■
15.1 ★ Virtual Disks – Base & Overlay				■	■	■
15.1 ★ Applets with Sub-panels	□	□	□	■	■	■
15.0 <small>[optional]</small> Online Slots – Flexible Activations					□	■
15.0 <small>[optional]</small> Remote Access via Browser					■	■
15.0 <small>[optional]</small> Cloud Storage – Maximum Ease					■	■

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 toward users of HDClone X.5 or older versions.

New Tab “All Apps” / “Favorites”

The added “All Apps” tab primarily offers an overview of all available apps. You can mark one or more apps as favorites (see below), at which point the tab will change its name to “Favorites”.

Define Your Own Start Tab

HDClone automatically displays the “QuickSelect” tab upon startup. Once any of the apps have been selected

as favorites (see below), the “Favorites” tab will be shown upon startup. In addition, you can use any tab as the start tab by opening the respective tab and then click on the star in the system bar at the bottom of the screen.

Mark Your Favorite Apps

The “All Apps” / “Favorites” tab holds a list of all apps. Select your favorites by clicking on the star next to the app icon. The app will then also be displayed at the top of the tab in the Favorites collection. To remove the app



from the Favorites, simply click on the star once more. If you wish to select or deselect an app as a Favorite while it is open, you can do so by clicking on the star in the system bar in the bottom left hand corner of the screen.

Arrange Your Favorite Apps

In order to rearrange the Favorites within the tab, navigate to the icon you wish to move with the arrow keys on the keyboard. Then, while holding down the Alt key, use the arrow keys to move the app icon to the desired position. A free positioning is currently not available due to the automatic positioning of the apps according to the screen size.

Auto Update

As soon as a new update is ready for automatic installation, the Notification applet in the System Bar will show it in addition to the usual update notice. To start the automatic update, click on this new tile. The update will always apply to the currently running instance of the program, which means that if an installed version is running, the installation will be updated and if the program was started from a USB stick, the latter will be updated. Both variants, self-booting and the EXE for Windows, are updated on the USB stick, regardless of which variant you start the update from.

Use Files Via HTTP/HTTPS

HTTP/HTTPS resources must first be made available with the Network Storage applet in the System Bar in the bottom right hand corner of the screen. They are then shown as individual volumes in the file selection of the file selection dialogues or in the Spot File Manager.

Save Network Access

HDClone can now save network resource names and, optionally, their credentials. This applies to SMB/NAS, NFS, FTP, and HTTPS storage servers as well as WLAN SSIDs. You can choose whether or not to save a resource and

which information is to be saved for each case. You can make this decision individually for each resource and its credentials – you can find the corresponding option in the respective dialogue.

New Location For The Spot File Manager

The Spot File Manager is now located in the Toolbox applet as the very last entry at the bottom, allowing it to be easily accessed in any situation.

Firmware For /L Boot Variant

Download and install additional firmware for HDClone/L in the Boot Setup. If the option “Download Device Firmware” is selected, the firmware will be downloaded automatically when the bootable medium is updated.

FlashRefresh App Includes Trim

The FlashRefresh app has been expanded by the addition of the Trim functionality (incl. SCSI UNMAP, eMMC ERASE, NVMe Deallocate). Now all options to refresh SSD storage are contained in one app. Eventually, this will replace the dedicated TRIM app.

CLI Assistant Feature

Several apps now contain an additional button to the right of the progress bar which converts all settings that have been made for the source, target and options into commands for the CLI version of HDClone. The visual display shows the commands stacked line-by-line for better visibility. You can directly copy and paste the commands in order to use them, at which time the line-by-line options are automatically arranged into a single-line command. This feature is available in the Professional Edition and up in the apps “SmartCopy”, “DirectCopy”, “BitCopy”, “Backup”, “SmartImage”, “VM Image”, “BitImage”, “RescueImage”, “RescueImage Resume”, “Restore”, “DirectRestore” and “Differential Image” / “Delta Image”.