



Using Clonezilla In Expert Mode

Applies to Clonezilla v.1.2.12-10

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This quick reference card shows the basic uses of Clonezilla Live (a three-pane folding version (A4) also exists).
Beginner or Expert? Beginner mode presents the most usual options and skips some steps, Expert mode offers all options and steps.
This RefCard shows the Expert mode options.

Incorrect use of the software is easy and can be harmful to the data. Always save your data first!

A Interface Usage

The Clonezilla Live wizard mode interface is menu-driven. Use the following keys:

Space (De)select options in lists (an asterisk witnesses the selection)

Tab Move from an item to another
arrow keys

Enter Validate the dialog and skip to next

Whenever you're not sure about the correct choice in a dialog, just keep the default. This will generally fit the bill.

Some questions are waiting for a Y/N answer. The uppercase character depicts the default answer, entered using **Enter** (eg: in y/N, "no" is the default).

B Initialization

The initialization options are common to all wizard mode uses.

1 Startup options

Select the screen definition most suited to your hardware.

The **To RAM** option (**Other modes** submenu) is useful for machines with only one optical drive which must be used for both loading the Clonezilla program and other purposes, such as inserting a DVD to restore an image or to burn a CD/DVD.

To edit the startup options, just press **Tab**.

2 Choose Language

Sets the user interface language. Default is English (en_US).

3 Configuring Console Data

Sets the keyboard mapping.

If your keyboard is US-English, keep the **Don't Touch Keymap** default, otherwise

Select keymap from full list

(eg. French, select pc/azerty/French/Same as X11 (latin 9)/Standard).

4 Start Clonezilla

Select **Start Clonezilla** for any menu-driven mode use (as described in this quick-ref). The **Enter_Shell** option gives full access to the command-line (CLI).

C Local Disk To Disk Cloning (Direct Cloning)

Direct cloning means copying the data from a device or a partition to another device or another partition, installed within the same machine.

For imaging to a file, see D and E; for imaging on a network, see F.

1 Clone mode

device-device

2 Image type

disk_to_local_disk

Select **part_to_local_part** if you want to manage images on a partition-to-partition scheme. Be aware that both modes are **not** equivalent!

3 Choose Local Disk As Source

Select the **source** device.

4 Choose Local Disk As Target

Same thing for the **target** device.

Do not mess up with source and target devices!
Any such error would result in an unrecoverable source disk.

5 Clonezilla On-The-Fly Advanced Parameters

Option	Use
-g-auto	(default) Reinstall grub on the target disk boot sector (if appropriate).
-e1 auto	(default) Adjust file system geometry.
-e2	(default) sfdisk uses CHS of hard drive.
-j2	(default) Clone hidden data between MBR and first partition.
-r	(default) Resize the filesystem of the target to fit the partition size.
-q1	Sector by sector copy.
-nogui	Text mode only.
-m	Do not clone the bootloader.
-rescue	Continue reading past block read errors.
-irhr	Do not remove Linux udev hardware record after restore.
-ius	Do not update syslinux-related files after restore.
-icds	Skip checking destination disk size.
-fsck-src-part	Check and repair source filesystem before cloning.
-o	Force to load the source disk CHS values.
-batch	Run imaging in batch mode. This is hinted as dangerous.
-v	Show verbose information when cloning.

Table 1

6 Advanced Extra Parameters

A few more options about the partitioning scheme and the MBR.

Option	Use
(nothing)	(default) The MBR is restored from the one in the image.
-k	The partition table is not restored (the existing target disk MBR is kept).
-k1	The partition table is restored from the image. The partition(s) size(s) will be adjusted proportionally if the target disk is larger than the original one. Only use this option with MBR, not with GPT.
-k2	A command line will allow to enter whatever command in order to set the partition table.
Exit	Exit to system.

Table 2

The **-k1** option is recommended in order to deal with restoration on larger disks than the original.

7 Summary And Warning

A summary and a warning are displayed just before the actual cloning execution.

8 Cloning

As cloning is a destructive operation here's the last warning!

The execution is monitored with a processing gauge.

9 Final Summary

Clonezilla has completed its work. A short message hints for the next option: shutdown, reboot, start over or enter the command-line prompt (default option).

D Local Disk Imaging (Backup)

This option stores the image in a directory. Thus, you need a local means of storage for the image files (eg: external HD or USB thumb drive). Though a USB device can be connected later on, it's easier to connect it right now.

1 Cloning Type

device-image

2 Mount Clonezilla Image Directory

The image mounting point: **local_dev**

A warning gives the opportunity to insert a USB drive, if needed. If such is the case, insert that device now and give the system an extra 5 seconds to identify the device (some messages will appear on screen), then hit **Enter**. Otherwise, just press **Enter** immediately.

3 Choosing The « Home » Device

The place where the image is to be stored, associated with Clonezilla's **/home/partimag** directory.

4 Home Directory On The Device

Default is root (/). Clonezilla lists subdirectories if (a) they are first level dirs and (b) their names don't contain any space char.

Bypassing any of these constraints implies to handle this manually (CLI).

5 Home Confirmation And Free Space Summary

A summary of all known partitions and devices is displayed.

It's time to check that **/home/partimag** has got enough room for the intended image storage.

6 User Mode Selection

Here, we select Expert.

7 Choose The Mode

Select **savedisk**.

If an individual partition restoration might be later needed, prefer **saveparts**.

8 Choose The Image Name

Enter any name you'd like for the image. Clonezilla images are made of several files, recorded in a directory whose name is the one entered here.

9 Choose Local Disk As Source

Select the disk you want to image/backup (or partition if such was your choice at step D7 above).

10 Advanced Extra Parameters (1/2)

Set the priority order for the partition imaging tool to use.

Option	Use
-q2	(default) partclone > partimage > dd
-q1	dd only
-q	ntfsclone > partimage > dd
(none)	partimage > dd

Table 3

If the filesystem to be imaged is HFS+ (Mac OS) or reiser4, you might want to choose **-q2** since partclone clones HFS+ and reiser4 partitions very efficiently.

11 Advanced Extra Parameters (2/2)

Option	Use
-c	(default) Waits for confirmation before imaging.
-j2	(default) Clone hidden data between MBR and first partition.
-nogui	Text output only
-a	HD DMA is not forced on
-rm-win-swap-hib	Exclude MS-Windows swap and hibernation areas.
-ntfs-ok	Skip NTFS integrity check
-rescue	Continue reading past block read errors.
-gm	Generate image MD5 checksum
-gs	Generate image SHA1 checksum

Table 4

- ☞ If the partition you want to backup contains the Windows XP swap or hibernation files, set the **-rm-win-swap-hib** option which excludes these areas from being imaged. The image will then be more compact and created quicker. There's no problem with such an exclusion since Windows re-creates these files when they are missing.

12 Compression Mode Selection

The default option (-z1 = gzip) is usually giving a good efficiency/duration balance.

13 Image Splitting Threshold

In case no splitting is desired, set the value to 0 (zero).

- ⓘ Beware to the storage device filesystem limitations: some won't allow for files larger than 2 GB (eg: VFAT). This is why the default is set to that value.

14 Source Check

Specify whether you want the source to be checked before cloning or not (default).

15 Image Check

Specify whether you want the image to be checked against the original data (default) or not.

16 Action Taken When The Process Finishes

Finally, decide whether to take some action in the end of the imaging process: do nothing (default), reboot, poweroff.

17 Options Summary Before Backup

Selections are now set. Clonezilla sums them all on screen under the form of the corresponding **ocs-sr** command and its parameters.

Press **Enter** to validate and run the operation. (default)

18 Backup Is Running

The backup progress is displayed.

19 Summary After The Backup

After the backup is finished, Clonezilla displays a summary. Hit **Enter** to quit.

20 Session End

Final choice : 0.Poweroff, 1.Reboot, 2.Enter command line prompt (default) or 3.Start over. Just pick your own.

- ☞ Option 3 may be useful to generate ISO/ZIP file from the generated image (see G).

E Local Disk Restoration

You need the storage device holding the image (eg: external HD or USB thumb drive). It's easier to connect any external device before booting the PC.

1 Image Type

Device-image.

- ☞ If you want to deal with individual partitions, select **partition-partition**. Of course, the image must have been set accordingly (see D7).

2 Mount Clonezilla Image Directory

The image mounting point: **local_dev**

A warning then gives the opportunity to insert a USB drive if needed. If such is the case, insert that device now. Give an extra 5 seconds for Clonezilla to identify the device (some messages will appear on screen), then hit **Enter**.

Otherwise, just press **Enter**.

3 Choosing The Image « Home »

Select the device where the image is stored associated with the Clonezilla **/home/partimag** directory.

4 Home Directory On The Device

Default is the root directory (/). Clonezilla lists subdirectories only if (a) they are first level dirs and (b) their names don't contain any space char.

- ☞ Bypassing any of these constraints implies to handle this manually (Expert Mode).

5 Home Confirmation and Free Space Summary

A summary is displayed. For each filesystem, you get its size, used space, free space, use percentage and mounting name. Press **Enter**.

6 User Mode Selection

Here, we select Expert.

7 Choose The Mode

Select **restoredisk** (or **restoreparts** if the image was created with the **createparts** option). Clonezilla can restore an image to an unallocated disk or to a disk larger than the original one.

- ☞ When creating the image, it's a good idea to set the parameter to **-k1** (Table 2).

- ⓘ You can NOT restore a disk (using **restoredisk**) from a set of partition images!

8 Image Selection

Select the image name in the list.

9 Target Partition

Select the target disk (or partition).

- ☞ **restoredisk** can deal with unpartitioned target disks.

10 Restoration Parameters Selection

Just accept the defaults will generally fit most basic situations.

11 Advanced Extra Parameters

Specify the target MBR and partition processing. To Table 2 options, add:

Option	Use
(nothing)	(default) Use the partition table from the image.
-j0	Forces the use of dd to restore the partition table. Do not use whenever logical drives exist!

Table 5

12 Action Taken When The Process Finishes

Finally, decide whether to take some action in the end of the imaging process: true (=do nothing) (default), reboot, poweroff.

13 Summary

Selections are now set. Clonezilla summarizes them all on screen under the form of the corresponding **ocs-sr** command and its parameters. Press **Enter** to run.

14 Confirmation

Restoration confirmation. Given the risks, Clonezilla asks for double confirmation.

15 Restoration Execution

The process is then started. As usual, its progress is displayed.

F Imaging To A Samba Share

Clonezilla can image through a network to, among other types of shares, a Samba share (aka CIFS) or restore from there.

To use that feature, first set a Samba share on any machine in the network.

Clonezilla needs the following information in order to access the share:

Server name Server IP address or its fully qualified domain name (FQDN)
Domain name (When in a MS-Windows WorkGroup, leave empty)
Share name The share name
Share user The user name for accessing the share (must be granted write access rights for the backup feature)

Share password The user password for accessing the share

The remainder is similar to local imaging or restoration (see D and E).

- ☞ Other supported servers are SSH and NFS.

G ISO Image Or ZIP File Generation

This option helps creating a self-restoring device from any Clonezilla image on disk. It prepares either an ISO or ZIP file which is the first step before generating a self-booting DVD (ISO file) or USB thumb drive (ZIP file).

- ☞ To access the ISO/ZIP file generation option, follow the D1 to D6 steps, then read on... Burning the DVD: see H.

- ⓘ As these files are created within **/home/partimag**, make sure you've got room enough (ca. the image size) to store them on the corresponding device!

Both processes are symmetrical. Here's for ISO files:

1 Source Image Selection

Select the source image in the list.

2 Target Device For The Restoration

Specify the target device for the restoration process (by default, the same device as the one used as a source during the image creation).

3 Advanced Parameters

These parameters are the ones for the restoration process, as shown at E10.

- ☞ If you want to get an auto-restore image, with no user input at all, deselect the **-c** option and select the **-batch** one.

4 MBR And Partition Parameters

Specify the target MBR and partition processing (see E11).

5 Extra Parameters

Set the restoration process behaviour at the end of the automatic operation.

The options are self-explanatory: **-p reboot**, **-p poweroff**, **-p true** (default)(=do nothing).

6 Language Selection

Set the interface language for the restoration process.

- ☞ Useful only when user interaction is planned.

7 Keymap Selection

Defaults to **NONE**. Keymaps are stored in **/usr/share/keymaps/i386**.

8 File Type Selection

The type of file you want: ISO, ZIP, or both.

9 Summary Before Processing

Clonezilla displays the summary for the operation. Press **Enter**.

10 ISO File Creation

A confirmation is asked whenever the ISO file size exceeds a CDROM space.

11 Checking Things

If you peep at the **/home/partimag** directory, you can check that the ISO file was created. Its name is following the **clonezilla-live-<name-of-image>.iso** pattern.

H Burning The ISO File

(though using the command-line is out of this RefCard scope, it seems interesting to describe this feature here)

When the ISO file is ready (see G), it can be burned to a CD or DVD.

Simply select the **Command shell option** Clonezilla offers in many dialogs and select **[2] Enter shell**. Then insert a blank CD or DVD in the drive (any type except DVD-RW! Rewritable disks are erased if necessary) before running the following commands:

(here, we suppose **/home/partimag** was previously set)

```
sudo su -
cd /home/partimag
growisofs -Z /dev/sr0=<name of ISO file>
```

Where:

/dev/sr0 is usually the system name for a DVD-writer. You may also find **/dev/hdx** for IDE burning devices where x is a letter for the device, **<name of ISO file>** should be replaced with the actual ISO file name, starting with **clonezilla-live-**, eg: **clonezilla-live-testimage.iso**.

I Hints

1 An MS-Windows Cloned System Fails To Boot

This might be because GNU/Linux and MS-Windows interpret the hardrive CHS value (cylinder, head, sector) differently. Possible solutions are:

1. Try to change the IDE HD setting in BIOS: use LBA instead of auto mode.
2. When restoring the image, at step E10, check `-t1` option, and at step E11, check `-j0` option.

3. Boot under MS-Windows 9x bootable floppy and run `fdisk /mbr`.
4. Enter MS-Windows XP recovery mode (boot on install CD). In the console, run `fixmbr` to fix it. You may also try the `fixboot` command.
5. Use `ntfsreloc` to adjust filesystem geometry on NTFS partitions. EG: (boot Clonezilla live into command line mode)
`sudo su -`
`partclone.ntfsreloc /dev/sda1` (replace `/dev/sda1` with the actual NTFS boot partition ID).

Credits

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Translation:

Modification History

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0.9.2	2008-12-16	First draft for proofreading
0.9.3	2009-01-11	Proofreading by Jean Peyratout - jean.peyratout@abul.org
0.9.4	2009-02-08	Updated for Clonezilla v.1.2.1-39
0.9.5	2012-02-18	Updated for Clonezilla v.1.2.12-10 Added flat version

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