**What is Clonezilla ?**

You're probably familiar with the popular proprietary commercial package [Norton Ghost®](http://www.ghost.com). The problem with these kind of software packages is that it takes a lot of time to massively clone systems to many computers. You've probably also heard of Symantec's solution to this problem, [Symantec Ghost Corporate Edition®](http://www.norton.com) with multicasting. Well, now there is an OpenSource clone system (OCS) solution called Clonezilla with unicasting and multicasting!  
  
Clonezilla, based on [DRBL](http://drbl.sf.net), [Partclone](http://partclone.org) and [udpcast](http://udpcast.linux.lu/" \t "_blank), allows you to do bare metal backup and recovery. Two types of Clonezilla are available, [Clonezilla live](http://clonezilla.org/clonezilla-live/) and [Clonezilla SE (server edition)](http://clonezilla.org/clonezilla-server-edition/). Clonezilla live is suitable for single machine backup and restore. While Clonezilla SE is for massive deployment, it can clone many (40 plus!) computers simultaneously. Clonezilla saves and restores only used blocks in the harddisk. This increases the clone efficiency. At the NCHC's Classroom C, Clonezilla SE was used to clone 41 computers simultaneously. It took only about 10 minutes to clone a 5.6 GBytes system image to all 41 computers via multicasting!

**Features of Clonezilla**

* Free (GPL) Software.
* Filesystem supported: (1) ext2, ext3, ext4, reiserfs, reiser4, xfs, jfs of GNU/Linux, (2) FAT, NTFS of MS Windows, (3) HFS+ of Mac OS, (4) UFS of FreeBSD, NetBSD, and OpenBSD, and (5) VMFS of VMWare ESX. Therefore you can clone GNU/Linux, MS windows, Intel-based Mac OS, and FreeBSD, NetBSD, and OpenBSD, no matter it's 32-bit (x86) or 64-bit (x86-64) OS. For these file systems, only used blocks in partition are saved and restored. For unsupported file system, sector-to-sector copy is done by dd in Clonezilla.
* LVM2 (LVM version 1 is not) under GNU/Linux is supported.
* Grub (version 1 and version 2) is supported.
* Multicast is supported in Clonezilla SE, which is suitable for massively clone. You can also remotely use it to save or restore a bunch of computers if PXE and Wake-on-LAN are supported in your clients.
* Based on [Partclone](http://partclone.org) (default), [Partimage](http://www.partimage.org) (optional), [ntfsclone](http://www.linux-ntfs.org/) (optional), or dd to image or clone a partition. However, Clonezilla, containing some other programs, can save and restore not only partitions, but also a whole disk.
* By using another free software [drbl-winroll](http://drbl-winroll.sourceforge.net/), which is also developed by us, the hostname, group, and SID of cloned MS windows machine can be automatically changed.

**Limitations**

* The destination partition must be equal or larger than the source one.
* Differential/incremental backup is not implemented yet.
* Online imaging/cloning is not implemented yet. The partition to be imaged or cloned has to be unmounted.
* Software RAID/fake RAID is not supported by default. It's can be done manually only.
* Due to the image format limitation, the image can not be explored or mounted. You can \_NOT\_ recovery single file from the image. However, you still have workaround to make it, read [this](http://drbl.sourceforge.net/faq/fine-print.php?path=./2_System/43_read_ntfsimg_content.faq" \l "43_read_ntfsimg_content.faq" \t "_blank).
* Recovery Clonezilla live with multiple CDs or DVDs is not implemented yet. Now all the files have to be in one CD or DVD if you choose to create the recovery iso file.

**Which Clonezilla Shall I Use ?**

* [Clonezilla Live](http://clonezilla.org/clonezilla-live/): Clonezilla live allows you to use CD/DVD or USB flash drive to boot and run clonezilla (Unicast only)
* [Clonezilla SE](http://clonezilla.org/clonezilla-server-edition/" \t "_blank): Clonezilla SE is included in DRBL, therefore a DRBL server must first be set up in order to use Clonezilla to do massively clone (unicast, broadcast and multicast are supported)

**Partclone is a project similar to the well-known backup utility "Partition Image" a.k.a partimage.**  
  
**Partclone** provides utilities to back up and restore used-blocks of a partition and it is designed for higher compatibility of the file system by using existing library, e.g. e2fslibs is used to read and write the ext2 partition.

**Supported Filesystem**

|  |  |  |
| --- | --- | --- |
| **FS** | **Library** | **Utility** |
| Ext2 | e2fsprogs | partclone.ext2 or partclone.extfs |
| Ext3 | e2fsprogs | partclone.ext3 or partclone.extfs |
| Ext4 | e2fsprogs | partclone.ext4 or partclone.extfs |
| Reiserfs | libreiserfs | partclone.reiserfs |
| Reiser4 | reiser4progs | partclone.reiser4 |
| XFS | xfslibs | partclone.xfs |
| JFS | jfsutils | partclone.jfs |
| NTFS | ntfsprogs | partclone.ntfs |
| FAT 12 | X | partclone.fat12 or partclone.vfat |
| FAT 16 | X | partclone.fat16 or partclone.vfat |
| FAT 32 | X | partclone.fat32 or partclone.vfat |
| HFS plus | X(ref:HFS Plus Volume Format) | partclone.hfsplus , partclone.hfsp or partclone.hfs+ |
| UFS2 | ufsutilies | partclone.ufs |
| VMFS | vmfstools | partclone.vmfs |