Clonezilla, the opensource clone system

[Copyright] [Authors] [How to]

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3. What's Clonezilla and how to do ?

To clone a system, you might be familiar with the commercial package Norton Ghost®, or the opensource solution Partition Image. However, it takes time to massively clone system to many computers. You may be familiar with the commercial package Symantec Ghost Corporate Edition® with multicasting. Now, Clonezilla is the opensource clone system (OCS) with unicasting and multicasting. With DRBL and network boot enabled client computers, the only thing you have to prepare is a Clonezilla server, and you do not have to prepare a bootable CD or floppy with Partition Image for every client computer.

Clonezilla, based on DRBL and Partition Image, let you can massively clone many (~40 and can be more) computers at same time. The real case, for example, by using Clonezilla in the classroom C in NCHC, it takes 50 minutes to clone a 5.6 GBytes system image to 37 computers in unicasting, and only 8 minutes in multicasting.

To use Clonezilla, you need to setup a DRBL server. The DRBL for RedHat/Fedora/Mandrake Linux installation documentation is here, For Debian, refer to this. Once you finish the installation of DRBL, the clonezilla server is ready.

When you setup the DRBL server, you'd better to collect the MAC addresses of client computers and let the DRBL server to offer same IP address for client everytime when it boots. This will be safer, you will not clone the system to wrong

or unknown clients.

The clonezilla commands:

- User interface (less options):
  - use /opt/drbl/sbin/drbl-client-switch to switch the mode for clients. Available modes are:
    - clonezilla-save-disk: CloneZilla Save Disk mode
    - clonezilla-restore-disk: CloneZilla Restore Disk mode
    - clonezilla-save-hda1: CloneZilla Save 1st Partition (hda1) mode
    - clonezilla-restore-hda1: CloneZilla Restore 1st Partition (hda1) mode
    - clonezilla-stop: Stop the CloneZilla mode
    - The graphic mode is shown like this:
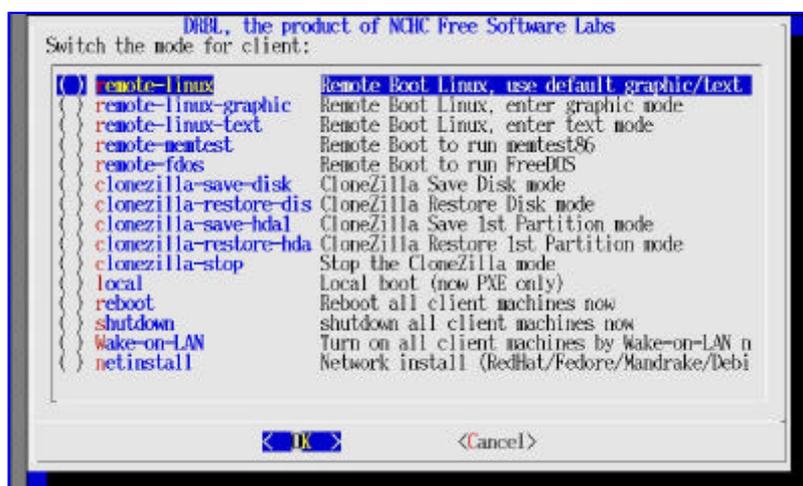
- Command line (more options):

Usage:
Start Clonezilla:
drbl-ocs [OPTION] {start|startdisk} {save|restore|multicast_restore}
To restore an image, the options:
-g, --grub-install GRUB_PARTITION install grub in hda with root grub directory in GRUB_PARTITION when restoration finishs, GRUB_PARTITION can be one of /dev/hda1, /dev/hda2...
-r, --resize-partition resize the partition when restoration finishes, this will try to fix the problem when small partition image is restored to larger partition. Now support partition with filesystem reiserfs, fat, ext2 and ext3. Warning!!! Use this carefully... Backup your data first.

To save an image, the options:
-z0, --no-compress don't compress when saving: very fast but very big image file (NOT compatible with multicast restoring!!!)
-z1, --gzip-compress compress using gzip when saving: fast and small image file (default)

common options;
-c, --confirm wait for confirmation before saving/restoring
-d, --debug enter command mode to debug before saving/restoring
-f, --force-sfdisk force to run sfdisk in any case
-n, --no-nfs-restart do not to restart nfs when start or stop drbl-ocs
-p, --postaction [poweroff|reboot|command] when save/restoration finishs, poweroff, reboot (default) or enter command prompt
-w, --wait-time TIME wait for TIME secs before saving/restoring
-v, --verbose prints verbose information

To stop clonezilla:
drbl-ocs stop

- Examples

  - To make (i.e. save) an image (source image) from some computer to Clonezilla server:
    save only a partition from client, run the following in the clonezilla server:

    ```
    # /opt/drbl/sbin/drbl-ocs start save
    ```

    save the whole disk from some computer, run the following in the clonezilla server:

    ```
    # /opt/drbl/sbin/drbl-ocs startdisk save
    ```

  - To restore (i.e. clone) an image (the image is already stored in Clonezilla server):
    restore a partition image with unicasting, run the following in the clonezilla server:

    ```
    # /opt/drbl/sbin/drbl-ocs start restore
    ```

    restore a whole disk image with unicasting, run the following in the clonezilla server:

    ```
    # /opt/drbl/sbin/drbl-ocs startdisk restore
    ```

    restore a partition image with multicasting, run the following in the clonezilla server:

    ```
    # /opt/drbl/sbin/drbl-ocs start multicast_restore
    ```

    restore a whole disk image with multicasting, run the following in the clonezilla server:

    ```
    # /opt/drbl/sbin/drbl-ocs startdisk multicast_restore
    ```

Notes:
1. To use multicasting, if you use many network switches in DRBL environment, remember to use network cables to connect those network switches to make all client computers can communicate with any network card in the DRBL server.

- To stop the clonezilla:

  ```
  # /opt/drbl/sbin/drbl-ocs stop
  ```

- An example to save an image from one computer (we call it computer M) and restore it to 39 computers in a 40-computer classroom:
  - set the Clonezilla server to be clonezilla-save-disk mode, i.e. in Clonezilla server, run
    - /opt/drbl/sbin/drbl-ocs startdisk save
    - or
    - /opt/drbl/sbin/drbl-client-switch clonezilla-save-disk
  - Turn on the computer M, set it as network boot (PXE or etherboot) in the BIOS or by pressing some hotkey (refer to your motherboard manual) when it boots.
  - When computer M finishes the network boot, a prompt will show in the computer M to ask you the image name, enter it (such as nomorems), then choose the disk you want to save.
  - Once the the image is saved, set the mode to be clonezilla-restore-disk in Clonezilla server, i.e. in Clonezilla server, run
    - /opt/drbl/sbin/drbl-ocs startdisk restore

      or

    - /opt/drbl/sbin/drbl-client-switch clonezilla-restore-disk

      The program will ask you which source image to restore. In this example, we choose the image "nomorems"
      PS. To run it in one command, you can run "/opt/drbl/sbin/drbl-ocs startdisk restore nomorems"

  - Make sure the cliets (Computers to be cloned) will boot from network (PXE or etherboot), then turn on the clients to let it boot from network.
  - Clients start to clone the system image "nomorems" to their harddisk
  - Once all clients finish cloning, set the mode in clonezilla server to be "local" so that clients will boot from local OS next time when it boots, i.e. run
    - /opt/drbl/sbin/drbl-client-switch local

PS: Refer to <u>this</u> to make the restored (cloned) M$ Windows with different hostname