### **Clonezilla Basics for Windows Embedded**

By Sean D. Liming and John R. Malin Annabooks – <u>www.annabooks.com</u>

August 22, 2014

Cloning a master image for mass production is an important step for Windows Embedded Standard and Windows Embedded Industry. First, the image must be rolled back to create the master, which is accomplished using sysprep. Here is an example command:

#### Sysprep /generalize /oobe /shutdown /unattend:c:\myunattend.xml

The unattended XML file is a small answer file that handles several of the Out-of-Box Experience (OOBE) screens as well as accounts, run-time key, computer names, etc. There are those that say you don't need sysprep, but failure to run sysprep and just copy the image can run into technical consequences. In short, one must run sysprep to duplicate the image.

Once the image has been rolled back, the next step is to capture the master image for deployment to other systems. The books: <u>Starter Guide for Windows® System Image Manager</u>, <u>Professional's Guide To Windows® Embedded 8 Standard</u>, and <u>Professional's Guide To Windows® Embedded Standard 7 - 2nd Edition</u> cover creating the unattended file and running sysprep, but what is not covered is an actual full disk capture utility. There are several hardware disk duplication solutions for hard drive and compact flash cards. <u>International Microsystems Inc.</u> and <u>Logicube</u> are two companies that offer hardware duplication products. . There are also software solutions, but some of the most popular like Norton Ghost are going end-of-life in favor of licensed server-based solutions. Microsoft has solutions to capture partitions into WIM files, but when multiple partitions need to be captured, the WIM file solution is very cumbersome. Simple and inexpensive software image capture solutions are becoming hard to find. Luckily, the Linux community has developed a solution called Clonezilla that captures full disk images; and best of all, it is a free solution that can be used to capture a Windows Embedded master image.

This paper walks through the steps to create a Clonezilla disk to capture and deploy a Windows Embedded master disk image. You will need two USB flash disks. One will hold the Clonezilla boot disk image (USB disk size 8 GB), and the other will hold the captured image (USB flash disk size 32 GB or greater recommended).

**Note**: This paper is based on Clonezilla 2.2.3-25 live image. The steps and pictures will be different for later versions.

#### Generate Clonezilla boot disk

We start on the development machine, and download a utility to help create the Clonezilla boot disk.

- 1. Download Tuxboot from tuxboot.org. The actual download comes from SourceForge.
- 2. Format the smaller USB flash disk as FAT 32. Format the larger flash disk as exFAT.
- 3. Plug the smaller USB flash disk into the development machine and run Tuxboot.
- 4. The Tuxboot application will start. Make sure that **clonezilla\_live\_stable** is selected for the On-Line Distribution. Also, point to the correct USB flash drive.

# Annabooks

1 Tuxboot 0.6	- • ×
On-Line Distribution donezilla_live_stable	▼ Update
Clonezilla	
Homepage: <u>http://clonezilla.org/</u> Description: CloneZilla live is a distribution used for disk backup and imaging. The stable brand are based on Debian	h of Clonezilla live
<b>Download Path:</b> <u>Clonezilla Live Stable at SourceForge</u>	
⊘ Pre Downloaded ISO ▼	
Show All Drives (Use with Care) Save ISO file MD5 Check	
<u>I</u> ype: USB Drive ▼ Dri <u>v</u> e: J:\ ▼ OK	Cancel

5. Click **OK** to start the process. The Clonezilla ISO will be downloaded, mounted locally, and then copied over to the flash disk.

Nuxboot 0.6
1. Downloading Files (Current)
2. Extracting and Copying Files
3. Installing Bootloader
4. Installation Complete, Reboot
Downloading files, please wait
Source: http://superb-dca3.dl.sourceforge.net/project/clonezilla/clonezilla_live_stable/2.2.3-25/clonezilla-live-2.
Destination: C:\Users\SEANLI~1\AppData\Local\Temp\un31478.iso
Downloaded: 1924 KB of 138 MB
1%

- 6. <u>Do not reboot</u> when asked. Just Exit Tuxboot.
- 7. Safely eject the USB flash drive.

Copyright © 2014 Annabooks, LLC. All rights reserved

#### **Capture Disk Image**

Now, we move to the target system that holds the master image.

- 1. Plug the Clonezilla boot disk that we just created into the target system.
- 2. Boot the target and make sure the BIOS is set up to boot from the USB flash disk.
- 3. The Clonezilla boot screen appears. Select Clonezilla Live (Default settings, VGA XXXxYYY) and hit Enter.



4. The OS will load. Select **English** as the language to use and hit **Enter**.

ca_ES.UTF-8 de_DE.UTF-8	3 Catalan   3 German	Catalã Deutsch		
en_US.UTF-0 es_ES.UTF-0 it_IT.UTF-0 ja_JP.UTF-0 pt_BR.UTF-0 ru_RU.UTF-0 sk_SK.UTF-0 zh_CN.UTF-0 zh_TW.UTF-0	3 English 3 Spanish   3 French   3 Italian   3 Japanese 3 Brazilian 3 Russian   3 Slovak   3 Chinese ( 3 Chinese (	Español Français Italiano   日本語 Portuguese   Русский Slovenský Simplified)   Traditional)	Português 简体中文   正體中文	do Brasil - 臺灣
		<0k>		

5. Keep the default **Don't touch keymap** and hit **Enter**.

<ul> <li>'Select keyma specific for</li> <li>'Don't touch which is main</li> <li>'Keep kernel the system bo</li> <li>'Select keyma Recommended w</li> </ul>	p from arch list your architecturg keymap': don't ov tained manually ( keymap': prevent ots; p from full list hen using cross-a ing keymans:	': select one of the predefined keymaps e (recommended for non-USB keyboards); verwrite the keymap in /etc/console, with install-keymap(8); any keymap from being loaded next time ': list all the predefined keymaps. architecture (often USB) keyboards.
	Select keyr D <mark>on't touc</mark> Keep kerne Select keyr	map from arch list <mark>h keymap</mark> l keymap map from full list
	<0k>	<cancel></cancel>

6. The default Start\_Clonezilla Start Clonezilla should be selected, hit Enter.

# Annabooks



7. In the next menu, select **device-image work with disks or partitions using images** as the operation mode and hit **Enter**.



8. The next menu is for the image directory. Keep the default, **local\_dev**, and hit Enter.

Before cloning, you have to assign where remote resources as /home/partimag. The C Select mode:	Hount Clonezilla image directory to or read from. We will mount that device or clonezilla image will be saved to or read from /home/partimag.
<mark>local_dev</mark> ssh_server samba_server nfs_server enter_shell skip	Use local device (E.g.: hand drive, USB drive) Use SSH server Use SAMBA server (Network Neighborhood server) Use NFS server Enter command line prompt. Do it manually Use existing /home/partimag (Memory! *NOT RECOMMENDED*)
<0k>	<cancel></cancel>

9. Insert the larger USB flash disk when prompted, wait about 5 seconds, and then hit **Enter**.

# Annabooks"

ocsroot device is local\_dev Preparing the mount point /home/partimag... If you want to use USB device as a Clonezilla image repository, please \* Insert USB device into this machine \*now\* \* Wait for about 5 secs \* Press Enter key so that the OS can detect the USB device and later we can mount it as /home/partimag. Press "Enter" to continue..... Informing the OS of partition table changes... Mounting local dev as /home/partimag... Excluding busy partition or disk...

 The system will mount and prepare the UBS flash disk for the image. You will be asked for the home directory to store the image. Select the USB flash disk image (sdx1) and hit Enter.



11. The top directory is the default, hit Enter.

Clonezilla – Openso	urce Clone System (OCS)
Which directory is for the Clonezilla image (only the first	level of directories are shown, and the Clonezilla image (i.e.
directory) itself will be excluded. If there is a space in t	he directory name, it will _NOT_ be shown)?:
/ Top_directory	<u>in_the_local_device</u>
<0k>	<cancel></cancel>

12. A summary will appear, hit Enter.

Version	1.2	
• 0101011		

The file system	disk	space	usage		
****	****	жжжжж	****	кжжжж	
Filesystem	Size	Used	Avail	Use%	Mounted on
rootfs	748M	7.2M	741M	1%	
sysfs	0	0	0		/sys
proc	0	0	0		/proc
udev	10M	0	10M	0%	/dev
devpts	0	0	0		/dev/pts
tmpfs	150M	400K	150M	1%	/run
/dev/sr0	139M	139M	0	100%	/lib/live/mount/medium
/dev/loop0	111M	111M	0	100%	/lib/live/mount/rootfs/filesystem.squashfs
tmpfs	748M	0	748M	0%	/lib/live/mount/overlay
tmpfs	748M	0	748M	0%	/lib/live/mount/overlay
aufs	748M	7.2M	741M	1%	
tmpfs	5.0M	0	5.OM	0%	/run/lock
pstore	0	0	0		/sys/fs/pstore
tmpfs	299M	0	299M	0%	/run/shm
fusectl	0	0	0		/sys/fs/fuse/connections
rpc_pipefs	0	0	0		/run/rpc_pipefs
/dev/sdb1	7.3G	2.2M	7.3G	1%	/tmp/local-dev
/dev/sdb1	7.3G	2.2M	7.3G	1%	/home/partimag
****	***	жжжжя	****	кжжжж	
₽ <mark>ress "Enter" to</mark>	) cont	inue			

13. The clone wizard starts. Select **Beginner** and hit **Enter**.

Clonezilla – Opensour Choose the mode to run the following	rce Clone System (OCS) wizard about advanced parameters:			
Beginner Beginner mode: Accept the default options Expert Expert mode: Choose your own options				
<ok> <cancel></cancel></ok>				

14. The Select Mode screen appears. Select save disk, and hit Enter.



15. An image name with date has been started. Rename the image as you like. For example "Annabooks-2014-08-18-19-img", hit **Enter**.



16. The hard disk will be selected as the default source. Hit **Enter**.

Clonezilla – Opensource Clone System (OCS)   Mode: savedisk Choose local disk as source. The disk name is the device name in GNU/Linux. The first disk in the system is "hda" or "sda" the 2nd disk is "hdb" or "sdb" Press space key to mark your selection. An asterisk (*) will be shown when the selection is done	, .1
[*] sda 26.8GB_VBOX_HARDDISKVBOX_HARDDISK_VB5df6c02a-8cbb63e7	
<ok> <cancel></cancel></ok>	

17. Select Skip checking/repairing source file system, hit Enter.



18. Check save disk image option appears, the default is **Yes, check the saved image**. Hit **Enter**.

After the image is saved, do you action will only check the image	dvanced extra parameters   Mode: savedisk   want to check if the image is restorable? ///NOTE/// This is restorable, and it will not write any data to the harddrive.
-sc	Yes, check the saved image No, skip checking the saved image
<0k>	<cancel></cancel>

19. Hit Enter to continue.

### Annabooks

20. Click **y** at the prompt and hit **Enter** to begin the backup process.

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
PS. Next time you can run this command directly:
/usr/sbin/ocs-sr –q2 –c –j2 –z1 –i 2000 –p true savedisk Annabooks–2014–08–18–19–img sda
This command is also saved as this file name for later use if necessary: /tmp/ocs-Annabooks-2014–08–
18-19-img-2014-08-18-19-33
*****
Press "Enter" to continue
Activating the partition info in /proc done!
Selected device [sda] found!
The selected devices: sda
Searching for data partition(s)
Excluding busy partition or disk
Unmounted partitions (including extended or swap): sda1
Collecting info done!
Searching for swap partition(s)
Excluding busy partition or disk
Unmounted partitions (including extended or swap): sdal
Collecting info done!
The data partition to be saved: sda1
The swap partition to be saved:
Activating the partition into in /proc done!
Selected device [sdal] found!
Ine selected devices: sdal
Getting /dev/sdal info
The following step is to save the hard disk/partition(s) on this machine as an image:
Machine: Virtualoux ede (or populary uppoter uppoter uppoter vectore)
Sud (20.000_VDUA_HHKUUISAVDUA_HHKUUISA_VDUTUCU24-0CUDD327)
**************************************
Are non-sure non-wart to continue? (u/o)
The god safe god want to continue: (g/n)

21. The capture and check process takes several minutes depending on image size. Hit **Enter** when completed

Starting to clone device (/dev/sda1) to image (-) Reading Super Block Calculating bitmap Please wait done! File system: NTFS Device size: 12.7 GB = 3097599 Blocks Space in use: 2.1 GB = 504311 Blocks Free Space: 10.6 GB = 2593288 Blocks Block size: 4096 Byte Elapsed: 00:00:02 Remaining: 00:06:25 Rate: 320.10MB/min Current Block: 152109 Total Block: 3097599 Data Block Process: 0.52	
Reading Super Block Calculating bitmap Please wait done! File system: NTFS Device size: 12.7 GB = 3097599 Blocks Space in use: 2.1 GB = 504311 Blocks Free Space: 10.6 GB = 2593288 Blocks Block size: 4096 Byte Elapsed: 00:00:02 Remaining: 00:06:25 Rate: 320.10MB/min Current Block: 152109 Total Block: 3097599 Data Block Process: 0.52	
<pre>Calculating bitmap Please walt done: File system: NTFS Device size: 12.7 GB = 3097599 Blocks Space in use: 2.1 GB = 504311 Blocks Free Space: 10.6 GB = 2593288 Blocks Block size: 4096 Byte Elapsed: 00:00:02 Remaining: 00:06:25 Rate: 320.10MB/min Current Block: 152109 Total Block: 3097599 Data Block Process: 0.52 Tetal Block Process:</pre>	
Device size: 12.7 GB = 3097599 Blocks Space in use: 2.1 GB = 504311 Blocks Free Space: 10.6 GB = 2593288 Blocks Block size: 4096 Byte Elapsed: 00:00:02 Remaining: 00:06:25 Rate: 320.10MB/min Current Block: 152109 Total Block: 3097599 Data Block Process: 0.52	
Space in use: 2.1 GB = 504311 Blocks Free Space: 10.6 GB = 2593288 Blocks Block size: 4096 Byte Elapsed: 00:00:02 Remaining: 00:06:25 Rate: 320.10MB/min Current Block: 152109 Total Block: 3097599 Data Block Process: 0.52 Total Block Process:	
Free Space: 10.6 GB = 2593288 Blocks Block size: 4096 Byte Elapsed: 00:00:02 Remaining: 00:06:25 Rate: 320.10MB/min Current Block: 152109 Total Block: 3097599 Data Block Process: 0.52	
Block Size: 4096 Byte Elapsed: 00:00:02 Remaining: 00:06:25 Rate: 320.10MB/min Current Block: 152109 Total Block: 3097599 Data Block Process: 0.52	
Elapsed: 00:00:02 Remaining: 00:06:25 Rate: 320.10MB/min Current Block: 152109 Total Block: 3097599 Data Block Process: 0.52	
Elapsed: 00:00:02 Remaining: 00:06:25 Rate: 320.10MB/min Current Block: 152109 Total Block: 3097599 Data Block Process: 0.52	
Elapsed: 00:00:02 Remaining: 00:06:25 Rate: 320.10MB/min Current Block: 152109 Total Block: 3097599 Data Block Process: 0.52	
Data Block Process: 0.52	iin
Data Block Process: 0.52	
0.52	
Tatal Black Brasses	52%
LIULAL DIUCK FEUCESS:	
4.91	
	91%

22. Select **Poweroff** to Power down the system, and hit **Enter**.

Now you can choose to:	Choose mode
<pre>poweroff Poweroff reboot Reboot cmd Enter command line prompt rerun1 Start over (image reposito rerun2 Start_over_(keep_image_rep</pre>	ory /home/partimag, if mounted, will be umounted) pository_/home/partimag_mounted)
	<ok></ok>

23. Remove both flash disks after the target powers down.

### Deploy the Captured Disk Image

The two USB disks to capture the image can now be used to deploy the image to other systems.

- 1. Plug the Clonezilla boot disk into the target system.
- 2. Boot the target and make sure the BIOS is setup to boot from the USB flash disk.
- 3. The Clonezilla boot screen appears. Select Clonezilla Live (Default settings, VGA XXXxYYY) and hit Enter.



4. The OS will load. Select **English** as the language to use and hit **Enter**.

ca_ES.UTF-8	Catalan   Català
de_DE.UTF-8 en_US.UTF-8	German   Deutsch English
es_ES.UTF-8	Spanish   Español Erench   Erancais
it_IT.UTF-8	Italian   Italiano
pt_BR.UTF-8	Japanese   ⊡≄क≣ Brazilian Portuguese   Português do Brasil
ru_RU.UTF-8 sk_SK.UTF-8	Russian   Русский Slovak   Slovenský
zh_CN.UTF-8 zh_TW.UTF-8	Chinese (Simplified)   简体中文 Chinese (Traditional)   正體中文 - 臺灣
	<0k>

Copyright © 2014 Annabooks, LLC. All rights reserved

5. Keep the default **Don't touch keymap** and hit **Enter**.



6. The default Start\_Clonezilla Start Clonezilla should be selected, hit Enter.

Select mo	ode:		
	Start_Clonezi. Enter_shell	la Start Clonezil Enter command	la line prompt
	<ok></ok>	<car< td=""><td>ncel&gt;</td></car<>	ncel>

7. In the next menu, select **device-image work with disks or partitions using images** as the operation mode and hit **Enter** 



Clonezilla - Opensource *Clonezilla is free (GPL) software, and comes with ABSOLUTELY N ///Hint! From now on, if multiple choices are available, you ha will be shown when the selection is done/// Two modes are available, you can (1) clone/restore a disk or partition using an image (2) disk to disk or partition to partition clone/restore. Select mode: device-image work with disks or partidevice work directly from a disk	te Clone System (OCS) O WARRANTY* ave to press space key to mark your selection. An asterisk (*) itions using images sk or partition to a disk or partition
<0k>	<cancel></cancel>

8. The next menu is for the image directory. The default is for local\_dev, hit Enter.

Before cloning, you have to assign where	Nount Clonezilla image directory
remote resources as /home/partimag. The	the Clonezilla image will be saved to or read from. We will mount that device or
Select mode:	Clonezilla image will be saved to or read from /home/partimag.
<mark>local_dev</mark>	Use local device (E.g.: hard drive, USB drive)
ssh_server	Use SSH server
samba_server	Use SAMBA server (Network Neighborhood server)
nfs_server	Use NFS server
enter_shell	Enter command line prompt. Do it manually
skip	Use existing /home/partimag (Memory! *NOT RECOMMENDED*)
<0k>	<cancel></cancel>

9. Insert the larger USB flash disk when prompted, wait about 5 seconds, and then hit **Enter**.



10. The system will mount and prepare the UBS flash disk for the image. You will be asked for the home directory to store the image. Select the USB flash disk image (sdx1) and hit Enter.

Clonezilla - Opensource Clone System (OCS Now we need to mount a device as /home/partimag (Clonezilla ima read or save the image in /home/partimag. ///NOTE/// You should NOT mount the partition you want to backu The partition name is the device name in GNU/Linux. The first p "hda1" or "sda1", the 2nd partition in the first disk is "hda2" in the second disk is "hdb1" or "sdb1" If the system you wan C: is hda1 (for PATA) or sda1 (for PATA, SATA or SCSI), and D: sda5)	) Mode: ge(s) repository) so that we can p as /home/partimag artition in the first disk is or "sda2", the first partition t to save is MS windows, normally could be hda2 (or sda2), hda5 (or				
sda1 11.8G_ntfs(In_VBOX_HARDDISK_)_VBOX_HARDDISK_VB5df6c02a-8cbb63e7 sdb1 7.2G_exfat(In_Patriot_Memory_)Patriot_Memory_070B42B3965D7182-0:0					
<0k> <c< td=""><td>ancel&gt;</td></c<>	ancel>				

Annabooks-

11. The top directory is the default, hit **Enter**.

Hhich directory is for the Clonezilla image directory) itself will be excluded. If there	nezilla – Opensource Clone System (OCS) (only the first level of directories are shown, and the Clonezilla image (i.e. is a space in the directory name, it will _NOT_ be shown)?: / Top_directory_in_the_local_device
<0k>	<cancel></cancel>

12. A summary will appear, hit Enter.

The file system	disk	space	usage		
***	*****	жжжж	кжжжю	кжжжж	юкжжжжже с
Filesystem	Size	Used	Avail	Use%	Mounted on
rootfs	748M	7.2M	741M	1%	
sysfs	0	0	0		/sys
proc	0	0	0		/proc
udev	10M	0	10M	0%	/dev
devpts	0	0	0		/dev/pts
tmpfs	150M	400K	150M	1%	/run
/dev/sr0	139M	139M	0	100%	/lib/live/mount/medium
/dev/loop0	111M	111M	0	100%	/lib/live/mount/rootfs/filesystem.squashfs
tmpfs	748M	0	748M	0%	/lib/live/mount/overlay
tmpfs	748M	0	748M	0%	/lib/live/mount/overlay
aufs	748M	7.2M	741M	1%	
tmpfs	5.0M	0	5.OM	0%	/run/lock
pstore	0	0	0		/sys/fs/pstore
tmpfs	299M	0	299M	0%	/run/shm
fusectl	0	0	0		/sys/fs/fuse/connections
rpc_pipefs	0	0	0		/run/rpc_pipefs
/dev/sdb1	7.3G	745M	6.5G	11%	/tmp/local-dev
/dev/sdb1	7.3G	745M	6.5G	11%	/home/partimag
****	****	жжжжж	кжжжж	кжжж	юкжжжжжжжжжж
₽ress "Enter" to	o cont	inue	· · · · _		

13. The clone wizard starts. Select Beginner and hit Enter.

Beginner Beginner mode: Accept the def Expert Expert mode: Choose your own	ault options options
<ok> <ca< td=""><td>ncel&gt;</td></ca<></ok>	ncel>

14. The Select Mode screen appears. Select **restoredisk** and hit **Enter**.

Annabooks	
-----------	--

Clonezilla - Clonezilla - Clonezilla - Clonezilla is free (GPL) software This software will overwrite the backup important files before res ///Hint! From now on, if multiple your selection. An asterisk (*) w	Opensource Clone System (OCS): Select mode e, and comes with ABSOLUTELY NO WARRANTY* data on your hard drive when restoring! It is recommended to toring!*** choices are available, you have to press space key to mark ill be shown when the selection is done///
savedisk	Save local disk as an image
saveparts	Save_local_partitions_as_an_image
restoredisk	Restore_an_image_to_local_disk
restoreparts	Restore_an_image_to_local_partitions
1-2-mdisks	Restore_an_image_to_multiple_local_disks
recovery-iso-zip	Create_recovery_Clonezilla_live
CNK-1Mg-restorable	Uneck_tne_image_restorable_or_not
evit	Evit_Enter_command_line_prompt
6710	Exit. Enter communa inc prompt
<0k>	<cancel></cancel>

15. The system will search the disk for an image. Since there is only one image on the disk, it is already select, so hit **Enter**.

Clonezilla – Opensource Clone Choose the image file to restor	e System (OCS)   Mode: restoredisk 🗖
Annabooks-2014-08-18-19-	img 2014-0818-1943_sda_26.8GB
<0k>	<cancel></cancel>

16. Select the hard drive and hit Enter.

Clonezilla – Opensource Clone System (OCS) Choose the target disk(s) to be overwritten (ALL DATA ON THE REPLACED!!) The disk name is the device name in GNU/Linux. The first disk the 2nd disk is "hdb" or "sdb" Press space key to mark you be shown when the selection is done	Mode: restoredisk ENTIRE DISK WILL BE LOST AND in the system is "hda" or "sda", in selection. An asterisk (*) will	
sda_26.8GB_VBOX_HARDDISKVBOX_HARDDISK_VB5df6c02a-8cbb63e7		
<0k>	<cancel></cancel>	

17. Hit Enter again.

ӿӽҙҙҙҙҙҙѧѧѧѧѧѧѧѧѧѧѧѧѧѧѧѧѧѧѧѧѧѧѧѧѧѧѧѧѧѧѧ
PS. Next time you can run this command directly:
/usr/sbin/ocs-sr –g auto –e1 auto –e2 –c –r –j2 –p true restoredisk Annabooks–2014–08–18–19–img sda
This command is also saved as this file name for later use if necessary: /tmp/ocs-Annabooks-2014–08-
18-19-img-2014-08-18-20-00
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
Press "Enter" to continue

18. Enter **y** at the prompt and hit **Enter**. Copyright © 2014 Annabooks, LLC. All rights reserved

Annabooks

19. One more time, enter y at the prompt and hit Enter.



20. The process can take several minutes. Hit Enter when completed.

— Partclone Partclone v0.2.70 http://partclone.org Starting to restore image (-) to device (/dev/sda1) Calculating bitmap... Please wait... done! File system: NTFS Device size: 12.7 GB = 3097599 Blocks Space in use: 2.1 GB = 504311 Blocks Free Space: 10.6 GB = 2593288 Blocks Block size: 4096 Byte Elapsed: 00:00:10 Remaining: 00:03:06 Rate: 629.15MB/min Current Block: 175396 Total Block: 3097599 Data Block Process: 5.08% Total Block Process: 5.66%

Copyright © 2014 Annabooks, LLC. All rights reserved

21. Select to **Poweroff** to power down the system, and hit **Enter**.

Now you can choose to:
<pre>poweroff Poweroff reboot Reboot cmd Enter command line prompt rerun1 Start over (image repository /home/partimag, if mounted, will be umounted) rerun2 Start_over_(keep_image_repository_/home/partimag_mounted)</pre>
<0k>

- 22. Remove both flash disks after the target powers down.
- 23. Boot the system again and let the Windows cloning process run on the system.

Once the master Clonezilla image has been created, it can be deployed any number of times to identical target hardware systems. This could easily be incorporated as part of the manufacturing process for an embedded system product.