Section 4: SD Card

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About the SD Card

ImageCue™ uses a Raspberry Pi 2 as its video processing engine. The custom Linux kernel (Operating System), the *ImageCue™* program, and the stock media library are stored on a 16GB microSD card. The SD card has two partitions: "BOOT" and "rootfs". The "BOOT" partition is formatted as FAT32 and will be visible on Windows and Mac. The "rootfs" partition is formatted as Linux EXT4 and is not visible on Windows and Mac without special software. The "BOOT" partition contains the files required for the Raspberry Pi to start up. It also contains the *ImageCue™* program as a binary file. **The *ImageCue™* binary file will not work without the *ImageCue™* custom Linux kernel and specific hardware. Use of the binary file in other systems will MOST LIKELY result in damage to the hardware. *ImageCue™* accepts no liability for the use of the binary file or kernel in non-*ImageCue™* systems.**

To remove the hole plug and gain access to the microSD card, gently pry it up using a fingernail around the edges until it pops out. The microSD card has a push-in, push-to-release mechanism to lock it into place. When replacing the SD card it is a good idea to push it in /out a couple of times just to make sure it is properly seated. When replacing the rubber hole plug you must use care to ensure that you do not release the SD card. Gently work the plug into the hole using pressure along the circumference of the hole plug – not by pressing in the center.

SD Cards for use with *ImageCue™* must be at least 16GB in size. A larger capacity card does not gain you anything as the user does not have any access to the storage on the SD Card. The SD Card must be Class 10 or better (48MB/second). *ImageCue™* has tested and recommends the Samsung EVO series and the SanDisk Ultra or Pixtor series microSD cards.
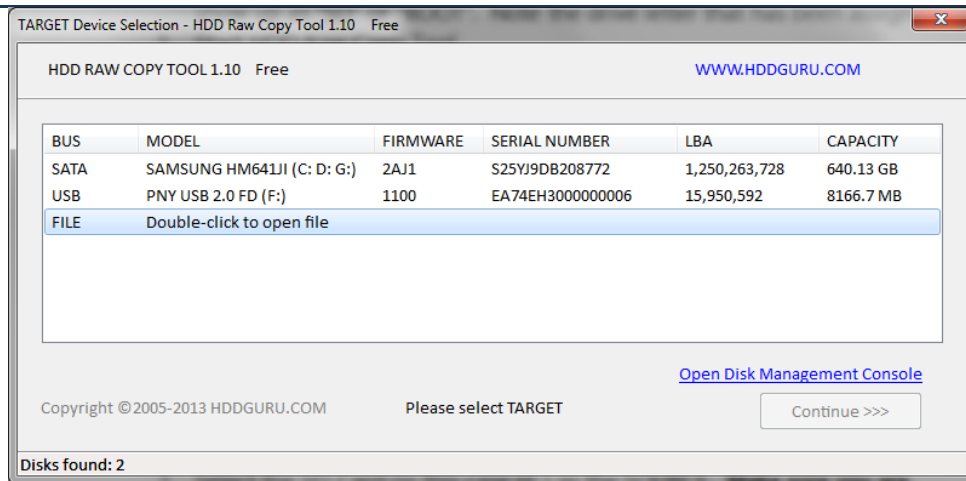
Backing up the SD Card

We strongly suggest that you create a backup of the *ImageCue*™ SD card. You can also purchase *ImageCue*™ SD cards for use as a backup. Contact your dealer for more information.

The SD Card cannot be backed up by doing a file copy process. An "image" of the entire card must be created. The image will contain both partitions and all data needed by *ImageCue*™. There are a few free programs available that can save SD card images. We recommend HDD Raw Copy Tool. A link to download this application can be found on the *ImageCue*™ website. Once you have successfully downloaded HDD Raw Copy Tool here are the steps to make a backup copy of your *ImageCue*™ microSD card:
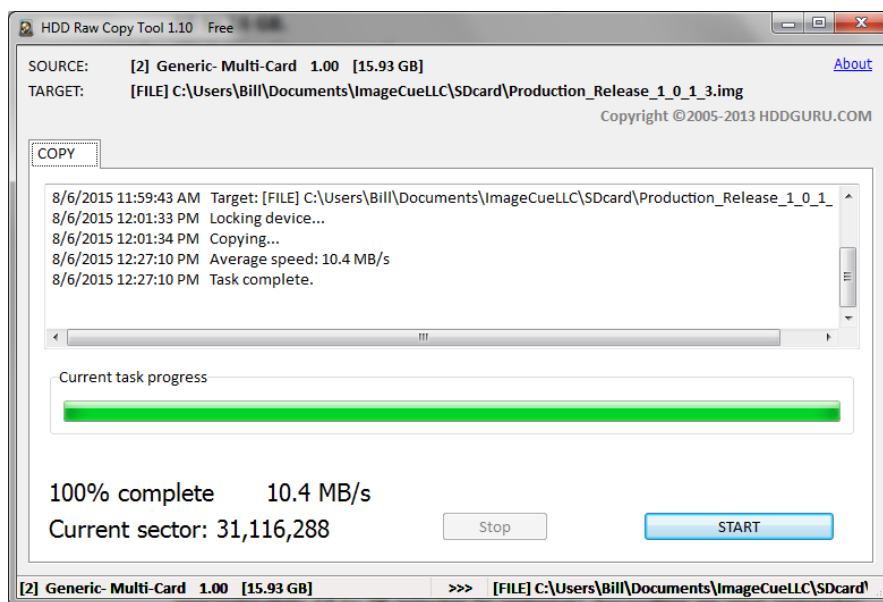
1. Put the *ImageCue*™ microSD card into a full size SD card adapter. SD card adapters are available from most retailers that sell SD cards.
2. Insert the adapter with the microSD card into the SD card slot on your computer or a SD Card to USB adapter.
3. Wait for the SD card to be recognized. If you receive a message to scan the card for errors, choose the "skip" option.
4. Locate the SD Card using Windows Explorer or other file manager. It will show up as "SD" or "BOOT". Note the drive letter that has been assigned.
5. Start HDD Raw Copy Tool.
6. A window similar to this will open:

7. Select the SD Card (in this case H:) as the SOURCE. Make sure you are selecting the SD Card!! The computer's hard drive is also listed, and in this instance, so is a USB flash drive. The *ImageCue*™ SD Card will have a capacity of 15 to 16 GB.
8. Click "Continue >>>>".

TARGET Device Selection - HDD Raw Copy Tool 1.10   Free

HDD RAW COPY TOOL 1.10   Free   WWW.HDDGURU.COM

BUS	MODEL	FIRMWARE	SERIAL NUMBER	LBA	CAPACITY
SATA	SAMSUNG HM641JI (C: D: G:)	2AJ1	S25YJ9DB208772	1,250,263,728	640.13 GB
USB	PNY USB 2.0 FD (F:)	1100	EA74EH3000000006	15,950,592	8166.7 MB
FILE	Double-click to open file				

Open Disk Management Console

Copyright ©2005-2013 HDDGURU.COM   Please select TARGET   Continue >>>

Disks found: 2

9. Double-click on the line "Double-click to open file".
10. Browse to the desired destination directory and name the file (leave the extension set as ".img").
11. Click "Continue >>>>".
12. Verify that the SOURCE is the SD Card and the TARGET is your destination file.
13. Click "START".   A progress bar and data will be shown. The process will take approximately 15 to 30 minutes to complete depending on your computer.
14. When the process is complete the screen will look like:

HDD Raw Copy Tool 1.10   Free

SOURCE: [2] Generic- Multi-Card   1.00   [15.93 GB]   About
TARGET: [FILE] C:\Users\Bill\Documents\ImageCueLLC\SDcard\Production_Release_1_0_1_3.img
Copyright ©2005-2013 HDDGURU.COM

COPY

8/6/2015 11:59:43 AM Target: [FILE] C:\Users\Bill\Documents\ImageCueLLC\SDcard\Production_Release_1_0_1_
8/6/2015 12:01:33 PM Locking device...
8/6/2015 12:01:34 PM Copying...
8/6/2015 12:27:10 PM Average speed: 10.4 MB/s
8/6/2015 12:27:10 PM Task complete.

Current task progress

100% complete   10.4 MB/s
Current sector: 31,116,288   Stop   START

[2] Generic- Multi-Card   1.00   [15.93 GB]   >>>   [FILE] C:\Users\Bill\Documents\ImageCueLLC\SDcard\

15. IMPORTANT: Do NOT click "START" again when the process is 100% complete!
16. Quit HDD Raw Copy Tool by clicking on the red X "Close" square.
17. Verify that the file has been written to the desired location. It will have the suffix ".img". Your operating system may associate this file type with a zip file utility. The file cannot be opened with a zip utility. See the instructions below for restoring the image file back to your SD Card.

Downloading an *ImageCue™* SD Card Image

For security purposes, downloading of the *ImageCue™* SD Card image is limited to owners of *ImageCue™* units. You must supply the serial number and linked Raspberry Pi serial number (See Section 2 – Setup) in order to download the SD Card image. Please contact your distributor's technical support services department for more information.

Restoring a Backup or Downloaded Image to a SD Card

In the unlikely event that your *ImageCue™* SD Card gets corrupted or damaged you can restore your backup image (or an image obtained from *ImageCue™* or your distributor) by using the HDD Raw Copy Tool and following these instructions:

1. Put the *ImageCue™* microSD card into a full size SD card adapter. SD card adapters are available from most retailers that sell SD cards.
2. Insert the adapter with the microSD card into the SD card slot on your computer or a SD Card to USB adapter.
3. Wait for the SD card to be recognized. If you receive a message to scan the card for errors, choose the "skip" option.
4. Locate the SD Card using Windows Explorer or other file manager. It will show up as "SD" or "BOOT". Note the drive letter that has been assigned.
5. Start HDD Raw Copy Tool.
6. A window similar to this will open:
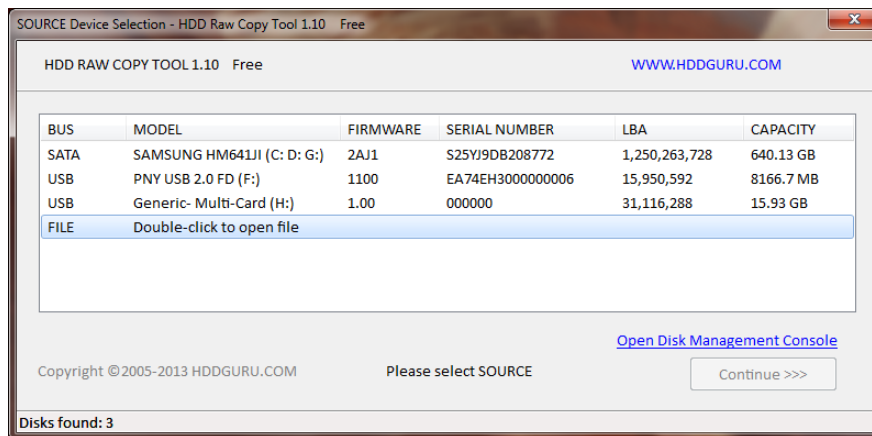
7. Double-click on the line "Double-click to open file".
8. Browse to the location of the image file (.img) and click "Open".
9. The file you selected will be displayed next to "FILE". This is your SOURCE. Click "Continue >>>".
10. A window similar to this will open:
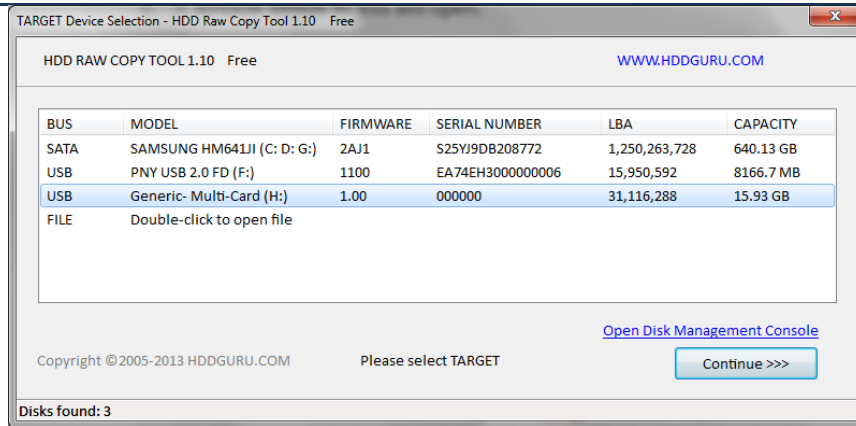
11. Select the SD Card as the TARGET. WARNING!!! The hard disk drive of your computer will be listed here. Selecting it will result in the hard disk being over-written and all of your data including the operating system will be GONE.

12. Making absolutely sure that you have selected the SD Card as the TARGET, click on "Continue >>>".

13. The HDD Raw Copy Tool will give you one more warning that the TARGET device will be IRREVERSIBLY OVERWRITTEN. Once more, verify that the SOURCE and TARGET are correct at the top of the window. Click "START" to begin the copy process. You will get yet another warning to make sure you really want to copy to the TARGET device. If you are sure, click "Yes". The process will take between 15 and 30 minutes depending on your computer.
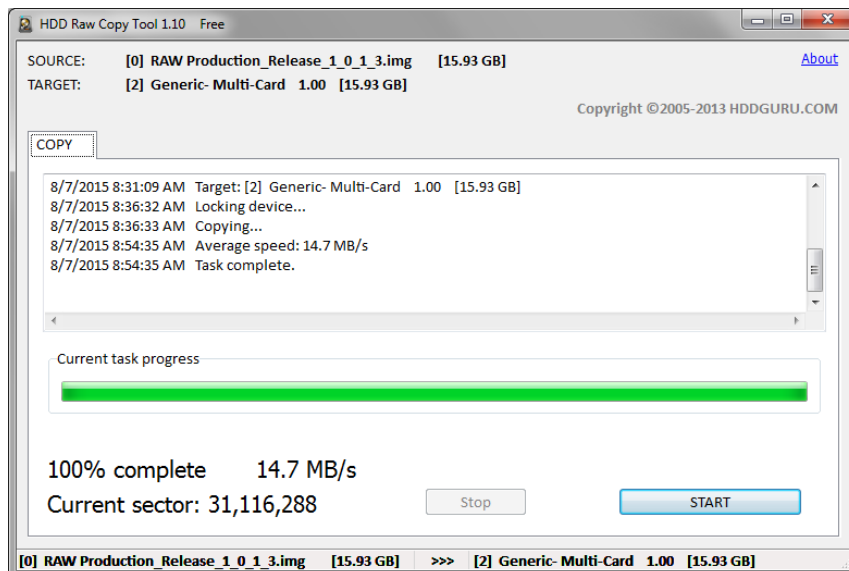
14. When the process is complete the screen will look like:

15. IMPORTANT: Do NOT click "START" again when the process is 100% complete!

16. Quit HDD Raw Copy Tool by clicking on the red X "Close" square.

17. You may now "eject" the SD Card and put it into your *ImageCue™* unit.

Updating *ImageCue™* Software

From time to time *ImageCue™* may release software updates to provide additional features and/or to fix software bugs. The most current software release will always be available on the *ImageCue™* website, or from your distributor. To update the software on your SD Card (this must be a working *ImageCue™* SD Card) please follow these steps:

1. Download the software update zip file to the desktop of your computer.
2. Put the *ImageCue™* microSD card into a full size SD card adapter. SD card adapters are available from most retailers that sell SD cards.
3. Insert the adapter with the microSD card into the SD card slot on your computer or a SD Card to USB adapter.
4. Wait for the SD card to be recognized. If you receive a message to scan the card for errors, choose the "skip" option.
5. Locate the SD Card using Windows Explorer or other file manager. It will show up as "SD" or "BOOT". Note the drive letter that has been assigned.
6. Open the zip file and select the option to "Unzip entire file".
7. Select "Unzip to a selected folder"
8. Choose "BOOT" (the SD Card) as the selected folder (drive).
9. Unzip the file.
10. You will receive a warning about files being overwritten. Click on "Yes to All".
11. Close the zip utility and "eject" the SD Card. Your software is updated.