CIM Utility

User Guide

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CIM Utility User Guide

Revision History

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Contents

CIM Utility User Guide

This is a temporary document for getting started with CIM Utility by Cross Products Limited. Detailed documentation with the release version of the application.

The main functions of CIM Utility

- CIM --> HCD
  Load a CIM file created by CD Craft and create an HCD from it, then emulate or burn a GD from the HCD using a SET 5.
- HCD --> CIM
  Load an HCD file created by GD Workshop and emulate it or create a CIM from it, then burn a GD from the CIM using CD Craft.
- Verify CIM files
  Compare CIM files created by CD Craft with CIM files created by CIM Utility.
- HCD viewer
  Display an annotated view of the contents of an HCD.
- Sector viewer
  Display the contents of a single sector read from a CIM.

Important notes before you start

- CIM Utility only converts CIMs created by CD Craft versions 2.27 and 2.32.
- CIM Utility only handles Full Disc Image CIMs.
- A CIM requires 1.2GB of disk space. To process a single CIM requires a minimum of 2.4GB of disk space.
- All of the tasks in CIM Utility which require the processing of a CIM (1 to 4 above) take approximately one hour. You can abort a job before completion but you will lose the processed data, except for number 4, compiling an SCR, where abort is not available.
- The laser control switch in CIM Utility defaults to *Laser Off*, it must show *Laser On* before you can burn a GD.

Configuring the hardware

CIM Utility does not need GD Workshop to emulate and burn a GD, it controls the GD-M directly. If there is only one Set 5 connected to your development system's SCSI bus CIM Utility will find it and use that device. No other configuration is required.

If you have multiple Set 5s, you can select the Set 5 you want to use by selecting its SCSI ID from the *Destination* drop down list. Select the one you want to use before emulating or burning a GD. SCSI IDs are displayed in the list in the format *0,4* where the first number is the card ID and the second number is the device ID.

If you have multiple GD-Writers connected to a Set 5, there is no mechanism for selecting GD-Writers from within CIM Utility, you must first configure the Set 5 to use a particular GD-Writer using the *Configuration...* menu in GD Workshop.

Target Disk in CIM Utility lists all the available removable hard drives connected to your development system. When you write out CIMs from CIM Utility, select the disk you want to write the CIM to from this list. The box to the right of *Target Disk* displays the file system and the available space on each disk.

The Configure button in CIM Utility configures the fonts and colors used in CIM Utility and the command line to execute the script building tool.

CIM --> HCD

Load a CIM file created by CD Craft and create an HCD from it, then emulate or burn a GD from the HCD using a SET 5 GD-M or GD-X.

Burning on a GD-M

1. In the Destination drop down list select GDM.
   You must have a correctly configured Set 5 connected to your development PC and a GD-Writer connected to the Set 5.
2. Insert a blank GD in the GD-Writer.
3. Click the laser control switch in CIM Utility so that it shows *Laser On*.
4. In the Target drop down list select the device you want to use to burn the HCD.
   The list includes removable hard drives on your system, make sure the device selected is the GD-M you want to use if you have more than one GD-M on your system.

Burning on a GD-X

1. In the Destination drop down list select GDX.
   You must have a correctly configured GD-X system connected to your development PC.
2. Insert a blank GD into each GD-Writer in the GD-X system. You can burn up to four GDs simultaneously.
3. Click the laser control switch in CIM Utility so that it shows *Laser On*.
4. In the Target drop down list select the device you want to use to burn the HCD.
   The list includes all the GD-Xs on your system.

Procedure

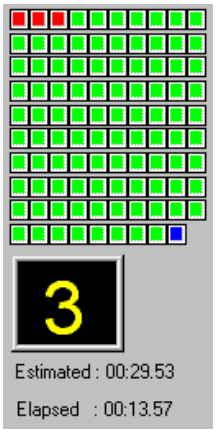
1. In the Source File field in CIM Utility, browse to the CIM file you want emulate or burn a GD from.
2. Do one of the following:

   Click  to emulate the CIM.

   OR

   Click  to burn a GD from the CIM.

CIM Utility reads each track in the CIM and displays the tracks in a grid as shown here.



Each square in the grid represents one track as follows:

Blue - Data

Green - Audio

Grey - empty

CIM Utility then decodes the CIM and saves each track as a file to the Set 5 GD-M. As each track is completed its square in the display turns to red.

The current track being decoded, the estimated total time to process the full CIM, and the elapsed time are also displayed.

HCD Structure on a GD-M

Assuming the CIM file is called *Example1*, the tracks are saved as files on the GD-M with the following structure, the last file in the project being the HCD file:

```
\EXAMPLE1_CPL\TRACK01.ROM
         ....\TRACK02.ROM
         ....\TRACK03.ROM
 to
         ....\TRACK99.ROM
         ....\EXAMPLE1.HCD
```

HCD Structure on a GD-X

The tracks in the CIM are saved as files in root on the GD-X with the following structure, the last file in the project being the HCD file:

```
FILE0001.DUP
FILE0003.DUP
FILE0004.DUP

 to

FILE0099.DUP
IMAGE.HCD
```

Using Force Over Write (does not apply to GDX)

As a time saving feature only the HCD is rewritten each time you press  or  .

If you have made changes to the SCR and regenerated the CIM, when you subsequently re-emulate the CIM, CIM Utility checks that the ROM files are present on the GD-M/GD-X and that they are the size it expects them to be. It then rewrites only those ROM files from the point at which it detects a change.

If you have made changes to a CIM and you want to make sure that all the ROM files are rewritten, click Force Over Write.

Emulating

When the last track has been decoded the right-hand status bar at the bottom of CIM Utility displays the messages:

Closing door
Flushing cache and preparing to emulate
Emulating

The project is now emulating and you can access the emulated GD via the Set 5.

If the project fails to emulate, a message box is displayed giving the reason. If the original CIM is valid the only possible reasons are:

- The Set 5 is not connected or configured correctly.
- There was a problem flushing the GD-M's cache.

Burning

If you clicked  , CIM Utility goes through the same stages as for emulating as described above, but when it has prepared to emulate, the right-hand status bar finally displays *Burning.*

At this point the CIM Utility clears its track display and burning commences, this time each track in the display turns red when it is successfully burned.

Burning is done at the maximum speed of the GD-Writer.

When burning is complete a message box is displayed.

HCD --> CIM

Load an HCD file created by GD Workshop and emulate it or create a CIM from it, then burn a GD from the CIM using CD Craft.

This procedure assumes you have a Set 5 connected to your development PC, a GD-Writer connected to your development PC and CD Craft installed. To burn a GD you must have a blank GD in the GD-Writer and the laser control switch in CIM Utility must show *Laser On*.

NOTE: *The HCD file and the data files that make up the project must be located on the GD-M and the project must have been created and emulated using GD Workshop. If any data files are missing or the HCD fails to emulate you cannot create a CIM from it.*

Emulating

1. In the Source File field in CIM Utility, browse to the HCD file you want to burn a GD from.
2. In the Destination drop down list select GDM
3. Press  .
   The right-hand status bar at the bottom of CIM Utility displays the messages:
   Closing door
   Flushing cache and preparing to emulate
   Emulating

The project is now emulating and you can access the emulated GD via the Set 5.

If the project fails to emulate, a message box is displayed giving the reason. If the original HCD is valid the only possible reasons are:

- The Set 5 is not connected or configured correctly.
- There was a problem flushing the GD-M's cache.

Creating a CIM and burning it

1. In the Source File field in CIM Utility, browse to the HCD file you want to burn a GD from.
2. In the Destination drop down list select CIM.
3. Press  .

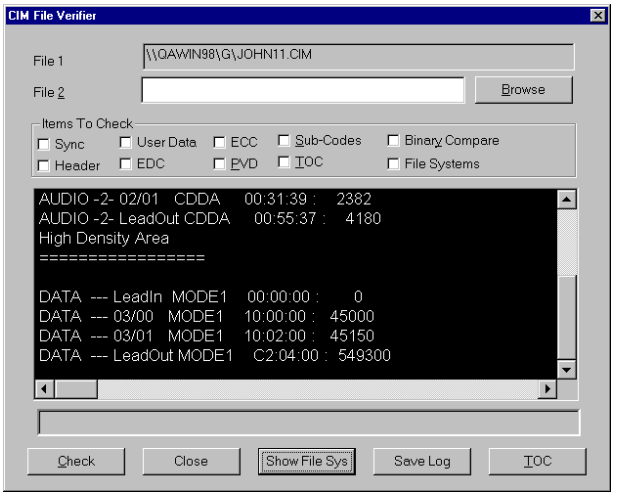
A Save As dialog box appears.

4. Name the CIM and browse for the location where you want to save it and click OK.
   CIM Utility reads the HCD and displays the tracks in a grid as shown on page 3. The data files that make up the tracks are then written into a single CIM file. As each track is completed its square turns to red in the display.
   When the CIM is complete a message box is displayed.
5. Burn a GD from the CIM using CD Craft.
   Refer to the CD Craft documentation for details of how to do this.

Verify CIM files

Compare CIM files created by CD Craft with CIM files created by CIM Utility.

1. In the Source File field in CIM Utility, browse to one of the CIM files you want to compare.
2. Click Verify.
   The following dialog box is displayed:



NOTE: *At this stage you can display more information about the CIM in File 1. See the section below "Display the TOC or File System"*

3. In *File 2*, browse to the second CIM file you want to compare.
4. Using the *Items To Check* tick boxes, select the data you want to compare between the two CIMs.
   PVD, TOC and File Systems give a reliable and quick comparison of the CIMs without checking the contents of each file. The other checks take up to an hour. Binary Compare is the only complete sector by sector comparison.
5. Click *Check*.
   CIM Utility compares the data you specified for the two CIMs and displays a message on completion. Any differences detected during the comparison are listed in the log window. To save the report as a text file click Save Log.

Display the TOC or File System

In the CIM File Verifier box you can display more information about the CIM in *File 1*:

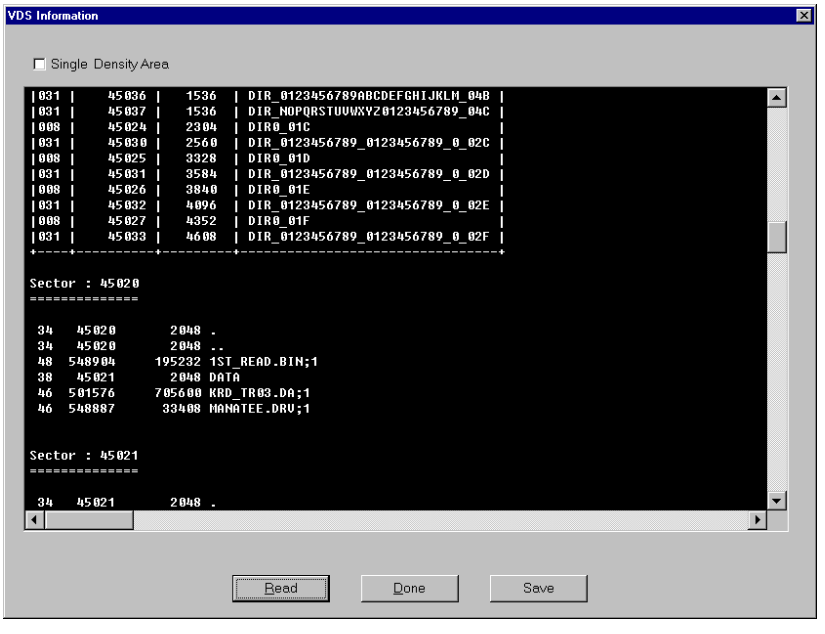
Display the TOC

Click TOC to show the decoded TOC for the CIM. A decoded TOC is shown in the example above.

Display the File System

Click on Show File Sys and then click Read to show the file and directory structure of the CIM. The default is to show details for the High Density area of the GD but you can select Single Density.

The example below shows the end of the MPath Table and the root level entry at Sector 45020 which contains three files and one directrory.



The display format is as follows:

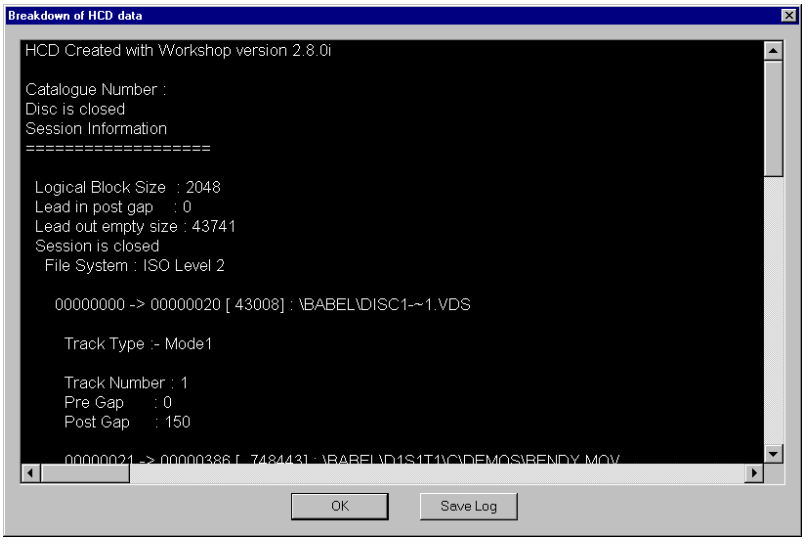
```
34    45020      2048       ..
48    548904     195232     1ST_READ.BIN
```

Size of directory record (bytes) — Start sector of file or directory — Size of directory or file (bytes) — Name of directory or file

HCD viewer

Display an annotated view of the contents of an HCD.

1. In the Source File field in CIM Utility, browse to the HCD file you want to view.
2. Click Verify.
   The HCD is displayed in the log as shown below:

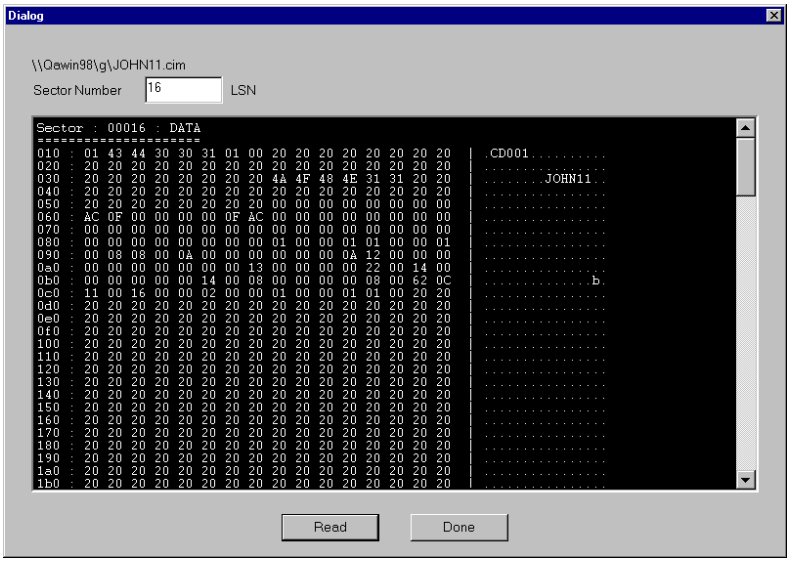


3. Click Save Log to save the log as a text file.

Sector viewer

Display the contents of a single sector read from a CIM.

1. In the Source File field in CIM Utility, browse to the CIM file you want to view a sector from.
   The sector viewer dialog box appears as shown below:



2. Enter the logical sector number (LSN) that you want to view.
3. Click Read to see the contents of the sector.
   The example shows sector 16 which is the sector where the PVD is recorded.

Command line execution

You can run CIM Utility from a command line. Below is a list of supported keywords:

`-IN=filename`
Name of source either a HCD file or a CIM file, e.g.**`-IN=Z:\SONIC.CIM`**

`-OUT=drive`
Destination drive letter, e.g. **`-OUT=E:`**

`-TARGET=GDM,CIM,GDX`
Specify target output, e.g. **`-TARGET=HCD`**

`-LASER=ON,OFF`
Enable / Disable laser (test mode), e.g. **`-LASER=ON`**

`-ACTION=EMULATE,BURN`
Specify what action is to be done with the given file, e.g. **`-ACTION=EMULATE`**

Here are two sample command lines :

```
-in=z:\sonic.cim -out=g: -target=hcd -laser=on -action=burn
```

this will decode the file sonic.cim and burn a disc from it, providing the decode was successful.

```
-in=g:\sonic.hcd -out=z: -targe=cim -action=emulate
```

this will decode sonic.hcd and encode it as sonic.cim.

Summary of features

Play

Depends on the contents of *Source File* and *Destination*.

Play options		Destination		
		GDM	GDX	CIM
Source	HCD	Emulates the HCD on the GDM.	Not available.	Creates a CIM from the HCD.
	CIM	Creates an HCD from the CIM and emulates it on the GDM.	Creates an HCD from the CIM and emulates it on the GDX.	Not available.

Burn

Same as above but also burns a GD after emulating.

Burn options		Destination		
		GDM	GDX	CIM
Source	HCD	Emulates the HCD on the GDM and then burns a GD from it.	Not available.	Creates a CIM from the HCD.
	CIM	Creates an HCD from the CIM, emulates the HCD on the GDM and then burns a GD from it.	Creates an HCD from the CIM, emulates the HCD on the GDX and then burns multiple GDs from it.	Not available.

Stop

Aborts the processing of a CIM or HCD at any point. Any data already processed is lost.

Does not work when compiling a CIM from an SCR. There is no abort mechanism for this.

Exit

Exits CIM Utility

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