Backup Magic SDC

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By

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Backup Magic was originally developed in 2006. Its purpose was to give software owners the capability to back up their copy-protected program disks. Disks age. Software companies no longer support their older software packages. Some software companies have ceased to exist.

The original Backup Magic software was designed to make backups from one physical floppy disk to another physical floppy disk. (There was also limited support for moving the floppy image to virtual disks.)

Technology marches forward. Floppy drives are becoming scarce. But we don’t want to lose our old software forever. So I have developed a newer version of Backup Magic that works with the CoCo SDC.

The actual heart of the new version, the machine language routines have not been modified from the original version (with the exception of adding a new copyright date.) The BASIC routine had to be modified to allow the disk image to be written directly to virtual disks.

While the original BASIC program only reported the progress as each track was being copied, this version gives detailed information about the tracks giving you an insight into how the disk was copy-protected.

Running the Program

Prerequisites:

Color Computer 3

Multipak Interface

CoCo SDC in Slot 4

Disk BASIC 1.1 (2.1) Cartridge in Slot 3

Floppy Drive 0

Preparing for Operation:

Cover the write protect slot on your floppy disk. You haven’t held onto that important software for 40 years to lose it now. While every attempt has been made to ensure that Backup Magic will not destroy the data on your disk, it is possible that there might be certain instances when the software behaves in an unpredictable manner. (Also, Backup Magic tests the disk and will not continue unless the disk is write-protected.)

Either create an SDF virtual disk with a minimum of 40 tracks or use the included disk: BLANK41.DSK (You can use your PC to copy BLANK41 and create as many blank images as you will need to copy your files)

If using the provided disk image, you may rename it before or after the copy-protected floppy has been transferred. If there are multiple disks in the software package, they should be named using the format: DISK1.DSK, DISK2.DSK, DISK3.DSK, etc. (See documentation for the CoCo SDC.)

Copying a disk:

RUN “MAGICSDC

Insert the physical disk to be copied in Drive 0.

When prompted, enter the name of the destination virtual disk (There is no need to enter the extension as the default is .DSK.)

Each track will be read and analyzed. Backup Magic will attempt to recreate a virtual disk that is an exact image of the physical disk making no modifications to the input data.

Some exceptions are necessary to create a working virtual image.

 Data that is read as A1 A1 A1 or 14 A1 A1 will be interpreted as FC FC FC.

 If a sector F7 (decimal 247) is encountered, the sector number and size will be

 advanced one byte in the address table.

Sequence of operation:

Backup Magic will read and analyze each track

Information about the track will be displayed. Normally, the information will include:

 Track number, Disk side, Sector number, and Sector size

Standard track numbers are 0 thru 39 (The minimum number of tracks is 34)

Standard side is 0

Standard sector numbers are 1 thru 18 (Normally includes all 18 sectors)

Standard sector size is 1. (0=128 bytes, 1=256 bytes, 2=512 bytes, 3=1024 bytes)

Any track that does not conform to the “standard” has been copy-protected and cannot be copied using normal BASIC commands. (Some track information will display RAW DATA. These tracks have no sectors. They may contain data or just be unformatted. These will be written to the destination without being processed.

Backup Magic formats a track using the information gleaned from the physical floppy.

If the track contained RAW DATA, then Backup Magic proceeds to the next track.

Backup Magic reads all sectors on the current track and checks for CRC errors.

If CRC errors are encountered, then the sectors will not be written to the destination ensuring that the destination track will also contain errors. (The sector data obtained from the Track Read is included in the formatted image and will have CRC errors.)

\*\*\*NOTE\*\*\* CRC errors could also be caused by a dirty head or a damaged disk. If all sectors on a track contain errors, that is most likely the result of intentional copy-protection. If some sectors on the track have errors and others do not, then it is probable that the head needs to be cleaned or the disk is damaged.

Backup Magic writes all sectors to the current track on the destination disk.

Backup Magic loops until all 40 tracks have been copied.

\*\*\*Note\*\*\* Use the latest revision of the CoCo SDC firmware. Revision 121 and earlier does not support disks that contain sector number 247 ($F7). Also, while Revision 121 will copy disks that contain CRC errors, it does not recognize the error and the copy-protected software may not function.

\*\*\*Note\*\*\* If there are multiple disks in a series and some of the disks are not copy-protected, they may either be copied to SDF images or “normal” DSK images. The .DSK files use less storage space, but either format is acceptable for disks that are not copy-protected. Copy-protected disks *must* be copied to SDF images.

The original Backup Magic along with the original documentation can be found on the Color Computer Archive. The email address is incorrect and questions about Backup Magic and Backup Magic SDC can be addressed to Gilbert.Nash@Gmail.com.