DriveWire 3 User Manual

The CoCo Storage Solution

Manual Revision 1.2

Introduction

Thank you for choosing DriveWire 3, another one of the fine products offered by Cloud-9. This product is designed for use with the Radio Shack TRS-80 Color Computer 1, 2, and the Tandy Color Computer 3.

DriveWire 3 is a software package that brings a unique and powerful option to your Color Computer: the ability for your CoCo to use the storage on your personal computer as a virtual hard disk. And the connection is made to the CoCo's internal *bitbanger* serial port via an inexpensive serial cable! Despite the bitbanger port having a less than stellar reputation for speed, DriveWire pushes it to 38,400 bits per second on a CoCo 1, a faster 57,600 bits per second on a CoCo 2, and a superfast 115,200 bits per second on a CoCo 3.

Features
- Brings cheap, reliable storage to your CoCo.
- Connects via a simple RS-232 cable.
- Supports both NitrOS-9 and Disk BASIC.

System Requirements
- Any Color Computer with at least 16K of RAM.
- Television or Monitor.

Installation

DriveWire 3 is actually quite simple to install and use. The primary components are:

- HDB-DOS DriveWire 3 ROM image for CoCo 1, CoCo 2 or CoCo 3
- The DriveWire Server that runs on your Mac, PC or Linux system
- Serial cable to interface Server to the CoCo (optional purchase)
- Disk images containing NitrOS-9 or BASIC software

Installation of the DriveWire Server software and the cable connection is outlined in the following steps:

Step 1. Getting the ROM Image

ROM images for the HDB-DOS version of DriveWire 3 are available for download at http://www.cloud9tech.com/. Click on the Software tab, then the DriveWire 3 product image. You will be taken to the DriveWire 3 product page that contains a link to a ZIP file containing the ROM images for all CoCos. You will need an EPROM burner to create a ROM for your disk controller or ROM pak. Cloud-9 sells EPROMs and ROM Paks if you do not have the ability to burn your own ROM.

Once you have obtained a ROM and installed it in either a disk controller or ROM pak, then simply insert the cartridge into the side of your CoCo.

Step 2. Getting the Server Software

To obtain the latest version of DriveWire Server for your Mac or Windows system, visit http://www.cloud9tech.com/ and click on the Software tab, then the DriveWire 3 product image. You will be taken to the DriveWire 3 product page that contains links to the DriveWire MacServer or DriveWire WinServer. Once your respective server is downloaded, unzip the server package file and copy the executable to any location on your system.

Step 3. Obtaining Disk Images

Disk images for NitrOS-9 are available in a single ZIP file on the DriveWire 3 product page, and there are many DSK images for Disk BASIC available on the Internet.

Step 4. Making the Cable Connection

Looking at the DriveWire cable sold by Cloud-9, you will see that one end contains a DB-9 female connector. Plug this end into the desired serial port on your server. The other end of the cable contains a 4-pin DIN connector that you should plug into the Serial I/O jack on the back of your CoCo.

Using the Server

Now that you have downloaded the server and client software and have connected your CoCo to the server via the serial cable, you are ready to use the DriveWire Server.

Windows and Mac OS X users will have a similar experience when using DriveWire Server. After launching the server, you will notice that it has the following features:

- There are four virtual disk drives on the left side of the window. They are labeled "0", "1", "2", and "3", corresponding to drives 0-3 under Disk BASIC or /X0-/X3 under NitrOS-9. Click anywhere on the cartridge door area of the disk drive and a file browser window will appear, where you can select a disk image to associate with that virtual disk.

- You may select the appropriate serial device through a pull-down menu.

- Ensure that the CoCo button reflects what's attached (CoCo 1, CoCo 2 or CoCo 3).

- Clicking on the Statistics checkbox will display the statistics area of the window; this shows information about data transfer between the server and the CoCo. You can watch the values change as the CoCo interacts with DriveWire Server.

- Clicking on the Log checkbox will display the log area of the window; all transactions are logged for debugging and informational purposes.

- When the Log area is visible, you may click on one of the buttons to clear the log window, or on the other button to copy the contents to the clipboard.

DriveWire MacServer supports any number of additional CoCos. Just go to File->New to create a new instance of a server. DriveWire WinServer currently only works with one serial port at a time.

Using DriveWire 3 from NitrOS-9

DriveWire 3 supports NitrOS-9 through the *rbdw3.dr* driver, *dw3.sb* subroutine module and the *x0.dd, x1.dd, x2.dd* and *x3.dd* device descriptors. These modules can be found on the available NitrOS-9 disk images, within the respective module directories.

There is one disk image for each of the supported distributions of NitrOS-9:

- nos96809l1coco1_dw3.dsk – NitrOS-9/6809 Level 1 for CoCo 1
- nos96809l1coco2_dw3.dsk – NitrOS-9/6809 Level 1 for CoCo 2
- nos96809l2_dw3.dsk – NitrOS-9/6809 Level 2
- nos96309l2_dw3.dsk – NitrOS-9/6309 Level 2

If you have a Color Computer 1, the first disk image should be used; for a Color Computer 2, the second disk image should be used. If you have a Color Computer 3 with a 6809, use the third image. Those Color Computer 3 users with a 6309 should use the fourth image.

Once you have identified the image to use, follow these steps to boot into NitrOS-9:

1. From the DriveWire Server, click on the drive faceplate on drive 0.

2. Boot up your HDB-DOS for DriveWire enabled CoCo and type DOS

And that's it! NitrOS-9 should boot up from the DriveWire server.

All DriveWire 3 driver and descriptor modules are located on the disk image.

Real-Time Clock

Real time clock support through DriveWire 3 is available via the *clock2_dw3* module. This module updates the clock once per minute by requesting the time from the DriveWire Server, and is already part of the bootfile that is loaded from the DriveWire Server.

Printer Support

DriveWire 3 supports printing in NitrOS-9 through the /p device. When writing to this device, data flows to the DriveWire Server, and after the path is closed, the server flushes the buffer to a virtual printer window. From this window you can print the contents or clear it.

Using HDB-DOS for DriveWire 3

Disk BASIC support is accomplished through a special version of HDB-DOS made especially for DriveWire 3. HDB-DOS is a separate product from Cloud-9 that provides hard drive support for Disk BASIC. If you own HDB-DOS, you can refer to the manual that came with it for additional information, or you can download the manual from the support page at http://www.cloud9tech.com.

How HDB-DOS for DriveWire Works

HDB-DOS for DriveWire supports up to 256 virtual disks per DriveWire "drive." You can select any of four different banks of 256 virtual disks by typing:

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DRIVE#n
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Where *n* is a number between 0-3.

All common Disk BASIC commands including DSKINI, DIR, BACKUP, etc. work as expected.

CoCo 3 Users: HDB-DOS for DriveWire 3 for the Color Computer 3 requires the microprocessor to be at the 1.78 MHz clock rate (double speed mode). If a program puts the Color Computer into slow speed mode, any subsequent access to DriveWire 3 will cause the CoCo 3 to be put back into double speed mode.

Technical Support

Cloud-9 is committed to creating quality hardware and software products to the Color Computer market. If you have access to the Internet, you can usually find answers to common questions by checking the support section of our website. If you encounter issues with your product, please send an email to us and we will answer it as quickly as possible.

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