A drag and drop utility for managing disk images.

Description

ShrinkWrap is a freeware utility made to manage disk images on the Macintosh. It incorporates the functionality of DiskCopy™ and DropDisk into one easy to use application, then improves on these products by adding on the fly compression/decompression with the StuffIt Engine™, implementing extensive drag and drop and AppleScript support, and supporting almost all known image file formats.

ShrinkWrap™ was created for four basic purposes:

1. To create DiskCopy™ disk images quickly and efficiently:

Using ShrinkWrap™, you can create DiskCopy™ disk images by simply dragging and dropping your floppy disk icons onto the ShrinkWrap™ icon. In Batch Floppy Mode, you can continue to feed in floppy disks until your entire archive has been converted into image files without ever needing to touch the mouse or keyboard.

To convert your DiskCopy™ image back to floppies, just select the image files, hold down the Command key and drag the icons onto the ShrinkWrap™ icon. You will be prompted to insert a disk as each image is written back to floppy disk. In Batch Floppy Mode, multiple copies of each image file may be made. Just select Stop when you've made enough copies of each image.

2. To provide a convenient and reliable means of mounting multiple disk images on the desktop:

Like Apple's MountImage™ control panel, ShrinkWrap™ will mount image files on the desktop that to the system will appear identical to the original floppy disks. However, since ShrinkWrap™ is an application, it will never cause INIT conflicts and will never require any memory until it's actually run. To mount image files, simply drag and drop the image file icons onto the ShrinkWrap™ icon. Image files can even be mounted as unlocked disks by holding down the Shift key during launch.

3. To seamlessly handle image files in their archived form:

ShrinkWrap™ will automatically compress and decompress archived image files on the fly with Aladdin's StuffIt Engine™. Now that the StuffIt Engine™ has been released as shareware in the DropStuff™ with Expander Enhancer package, you don't even have to own StuffIt Deluxe™ to take advantage of these convenient compression features.

4. To provide a freely distributable alternative to Apple's DiskCopy™, DART™ and MountImage™:

DART™ and MountImage™ cannot yet legally be licensed for redistribution. Apple Computer, Inc. is working to create a license, but until that time, you may not legally redistribute it once you receive a copy from an authorized Apple source. DiskCopy™ is available for licensing, but at an often prohibitive cost of $5000 per year.

Installation

Install ShrinkWrap™ by decompressing the StuffIt™ archive and dragging the ShrinkWrap™ application to a convenient location on your hard drive. You may need to rebuild your desktop if ShrinkWrap™ will not initially accept drag and drop files. Ideally, you will already have the StuffIt Engine™ installed in your Extensions folder. If not, you should obtain Aladdin's StuffIt Deluxe™ or DropStuff™ with Expander Enhancer and install the software.

System Requirements

ShrinkWrap™ is a System 7-only application. It is AppleEvent aware, 32-bit clean, Power Macintosh, AV, '040 cache and virtual memory compatible. Although a Macintosh SE or better is required for full functionality, the Mac Plus can still use ShrinkWrap™ to mount, verify and convert disk image files.

Supported Image File Formats:

Mount Volume Locked	Unlocked	Create	Write	Convert	Verify	Image File Format
•	•	•	•	•	•	ShrinkWrap™
•	•	•	•	•	•	DiskCopy™ 4.2
•			•	•	•	DiskCopy™ 5.0d1 & 6.0
•			•	•	•	DART™ 1.5.1 - 1.5.3
•			•	•	•	DiskMaker™ 1.3
•	•		•	•	•	PC Exchange™ Drive Containers ('hdrv)
•	•		•	•	•	DropDisk 1.0b5 ('hdrv')
•	•		•	•	•	DiskDup+
•			•	•	•	Norton Floppier™
•			•	•	•	CPS FastCopy™ (uncompressed)
•			•	•	•	Microsoft® Disk Image Utility (.IMG)
•			•	•	•	Winimage (.IMA)

Introduction

Why do we need to deal with disk images?

Although there is some similarity between disks duplicated from disk images and disks copied by dragging icons, the results are not identical. Floppy disks created from image files are exact duplicates, including the exact icon placement, appearance of all windows, and the correct name of the disk. In addition, with disk images you have the added assurance that all the files have been duplicated correctly and completely. More importantly, Apple's Installer will not recognize disks copied by dragging icons, even if they appear identical in every way.

Some convenient uses for disk images:

1. Backing up your original floppy disks to removable media:

A Magneto-Optical, Iomega™, Bernoulli®, SyQuest™ or CD-R drive can serve as an excellent means to back up your software. When disk image files are stored in compressed form, they are space efficient but still easily accessible with ShrinkWrap™. Just drag the compressed image onto the ShrinkWrap™ icon and the file will be uncompressed and immediately mounted on the desktop.

2. Installing Apple's System Updates and System Software Extensions:

Since most of Apple's System Software, System Updates and System Extensions (CD-ROM Setup, Network System Installer, printer drivers, etc.) are distributed online in image file format, it's convenient to be able to mount the images and run the Installer without ever having to copy the images back to floppy disk.

3. Distributing multiple disk images on floppies:

Using ShrinkWrap™ and the StuffIt Engine™, you can achieve adequate compression to store three or more 800K disk images on a 1.44 MB HD floppy.

4. Mounting floppies on Macs without a SuperDrive™:

For Macs not equipped with a SuperDrive™, ShrinkWrap™ provides a cost-effective and convenient means of accessing data stored on floppy disks.

5. Creating “instant” RAM disks:

Just drag a folder onto ShrinkWrap™ and a new RAM disk will be created with the contents of that folder. You don’t even need to reboot. When you’re done, just drag the mounted image to the trash.

6. Distributing software collections and archives on CD-ROM:

Provide a convenient and economical means for your customers to obtain copies of their software on floppy media even if your product is now being distributed exclusively on CD-ROM. With ShrinkWrap™'s extensive AppleScript support, you can even offer users the ability to create floppies directly from your product's installer.

Some Quick Comparisons

Advantages of ShrinkWrap over DiskCopy:

- Mounts disk images on desktop
- Integrated compression with StuffIt
- Supports almost all known image file formats
- Batch floppy mode
- Drag and drop support
- Fully scriptable via AppleScript or UserLand Frontier
- DiskCopy hasn't been officially updated since April 1991.
- Licensing fee is 50% less

Advantages of ShrinkWrap over MountImage & DropDisk:

- Not susceptible to INIT conflicts (MountImage is a Control Panel)
- No limit to the number of mounted image files (MountImage can only mount 8 at a time)
- Can mount image files over networks (MountImage can't)
- Can mount DiskCopy images as unlocked volumes (DropDisk can't)
- Has normal menu driven UI in addition to drag and drop (DropDisk only runs through drag and drop)
- Can mount images as RAM disks to optimize for speed (Neither MountImage nor DropDisk can do this)
- MountImage has known corruption bug that hasn't been fixed for years
- Neither MountImage nor DropDisk is licensable or supported by Apple

ShrinkWrap Limitations:

- System 7 only
- Only partial support for Plus and earlier Macs
- Limited support for 400K disks

Performance Comparison:

Here is a rough comparison of speed and compression algorithm efficiency for DART™ 1.5.3, DiskCopy™ 6.0, DiskDup+ 2.5.1 and ShrinkWrap™. I used a Quadra 610 16/230 running System 7.1 to create normal and compressed disk images of a single 1440K floppy. (My representative floppy was Apple's Software Update 3.0 Disk 1.)

DART™ 1.5.3	Fast	Best
Time	1:14	3:22
Image Size	968K	732K

DiskCopy™ 6.0	Normal	Compressed
Time	0:43	0:55
Image Size	1.4MB	952K

DiskDup+ 2.5.1	Normal	Compressed
Time	0:49	N/A
Image Size	1.4MB	N/A

ShrinkWrap™	Normal	Compressed
Time	0:37	1:03
Image Size	1.4MB	708K

This was certainly not an exhaustive test, but you can see some clearly better performers. If you are using an image utility program to backup original floppies to removable media like a SyQuest or Magneto-Optical drive, the difference of a few minutes or a few hundred kilobytes per disk adds up quickly.

Important Tips

Do you have enough available RAM?

1. ShrinkWrap™ versions 1.2 and later no longer use the MungeImage driver to mount image files. The new driver has two modes, RAM-based and file-based. Basically, when you select the option to "Keep mounted images in RAM" and there is enough

free memory available, the driver mounts an image file by creating a RAM disk the size of the floppy, then copying the contents of the image file to the RAM disk. Consequently, to mount an image file in the RAM-based mode, you must always have as much free RAM as disk capacity you wish to mount. (Sorry! Virtual memory doesn't count.)

2. The system heap will expand when memory blocks are allocated to the ShrinkWrap™ driver to mount disk images in RAM. When you unmount disk images, the corresponding memory is freed. However, the system will not compact and resize the system heap until the free memory is required by another application. So don't be surprised if your system heap doesn't immediately shrink back to its original size.

Do you have enough free space on your startup disk?

1. When the “Keep mounted images in RAM” option is disabled, the driver mounts image files by mapping their blocks directly from the local hard drive or the network server. Unfortunately, there are only three image file types which can be directly mounted in this manner: 'dImg' (ShrinkWrap™ and DiskCopy™ 4.2), 'hdvr' (PC Exchange and DropDisk) and 'DDim' (DiskDup+). All other image file types need to be translated to a temporary scratch file which is stored within the invisible Temporary Items folder on your startup disk and then directly mounted with read-only access. Consequently, to mount these image file formats in the file-based mode, you must have as much free hard drive space as disk capacity you wish to mount.

2. If you should experience a crash when an image file is mounted, any scratch files used for temporary storage of the mounted image will be automatically recovered by the system to the “Rescued items” folder in your Trash. If an image file was mounted unlocked, it may contain checksums that have were never updated to reflect changes you made before the crash. To fix this, disable the “Verify mounted image checksums” option, mount the suspect image file, then drag the mounted volume onto ShrinkWrap™. A new image file will be created from the mounted volume that has the correctly calculated checksums.

RAM Doubler™:

Connectix RAM Doubler™ and ShrinkWrap™ will work fine together provided that there is enough real memory for the images to be mounted in RAM. When real memory gets sparse, most of the smart tricks used by RAM Doubler™ to increase memory won't work (re-allocating memory, compressing memory blocks, etc.) because there simply isn't any free memory to play with. RAM Doubler™ then falls back on standard virtual memory and the system will slow to a crawl.

Anti-Viral Utilities:

Some anti-viral utilities may consider ShrinkWrap™'s activities to be “suspicious” in nature and will stop processing to warn you of some events. If this happens to you, I recommend switching to a less invasive anti-viral utility such as John Norstad's Disinfectant.

Background Compression Utilities:

ShrinkWrap™ usually can't mount image files that have been compressed with background compression utilities such as StuffIt SpaceSaver™, AutoDoubler™ or More Disk Space™ unless they are mounted as unlocked disks and kept in RAM.

MFS Disks:

ShrinkWrap™ is unable to create image files of Mac 400K disks due to restrictions on MFS disks introduced with System 7. All other features, however, are fully supported with disks of this type.

Old Macs:

Some older Macs (Mac 128K, 512K, 512KE & Plus) will be unable to create, verify or copy disk images with ShrinkWrap™ since their floppy disk drivers do not support the necessary control calls.

In Planning for Future Versions

Version 2.0 (Currently in Beta!)
- Support for large volumes
- Self-mounting image files
- Auto-size mounted folders
- New image file formats (read and write)
- Expanded AppleEvent support
- Operation report files
- PowerPC native code

Version 2.1
- Support for image update files
- More advanced checksumming and comparison features
- OpenDoc Part

Windows '95 Version

Awards and Honorable Mentions

• 1995 MacUser Shareware Awards Honorable Mention for Best Utility

• 1995 Usenet Macintosh Programming Awards Finalist

• Fall 1995 BMUG Choice Product

- Zmac's Top Downloads
- Super reviews in MacWeek (2/20/95 and 3/20/95), MacUser (9/95 and 10/95) and TidBITS (1/23/95)

Licensed Commercial Distributors

- Apple Computer - Developer's CD's, Bookmark CD, Tech Support CD's, QuickTime 2.0 SDK
- Symantec - Symantec C++ 8.0 Development System for PowerMac CD
- Richer, Walker & Quinn - Reflection CD Series
- MacWorld - 140,000 copies distributed to newstands on August MacWorld CD
- MacUser Japan - Distributed as regular utility with monthly CD supplements
- and many others

With a commercial distribution license comes:

- Worldwide, non-exclusive license to publish ShrinkWrap on any media
- Free updates for the term of the licensing agreement
- Free site license for up to 2000 installed units
- Unlimited end-user support via written or electronic mail (AOL, eWorld and World Wide Web).
- On-site development support

ShrinkWrap™ is Freeware

Freeware is copyrighted software freely distributed via the Internet, local bulletin board systems (BBS), commercial on-line services, user groups, and between friends. There is no charge for individual, non-commercial use.

For corporate site use or commercial distribution, ShrinkWrap™ must be licensed on an annual or per-unit basis. I also offer customized versions of ShrinkWrap™ for bundling with specific hardware or software products. Please contact me for licensing details and pricing.

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