

## MacRest : Recovery For Hard Disks

### Purpose and Use:

I wrote MacRest basically to perform whole-disk (or at least major partition) recovery. The dump I use is MacDump, a shareware program written by Charlie Burns. Mr. Burns did not write a recovery program as MacDump save disks can be read by the Finder and a recovery can then be done by simply dragging from floppy to hard disk. The kicker is that you have to be very careful how you respond to the "Replace Like Named Items" message, especially in regards to folders. He concludes that since hard disks don't need to be totally recovered very often (we all pray), this is Okay. The problem is that when a recovery is needed, it may be needed yesterday.

In a nutshell, MacRest copies files and folders from floppy to hard disk without ever replacing an existing file. It does not delete folders before copying the contents as the Finder does. I wrote it with MacDump in mind but it should work with any Finder-readable set of backup floppies.

To recover a hard disk, first make sure you have good backup disks (silly precaution, huh?). Then rename the volume to be recovered "\$\$HD" (MacRest will check for this name), after formatting the disk if needed. If the hard disk is to be used as a startup disk with System and Finder files, use the finder to move a system folder to the hard disk because MacRest will recover the system and finder but will not build boot blocks. Mac techies know just what this means, the rest of you--trust me, the system folder should be recovered via the Finder and you should probably have a separate copy of the system folder on an easily found floppy. The only files that need to be recovered this way are the System and Finder. Clipboard, Imagewriter, etc. will be restored correctly by MacRest. MacRest cannot be run from the internal drive as this is the drive MacRest uses to process recovery disks, but it can be run from the disk being recovered so drag the MacRest ICON to the hard disk if you want to run that way.

Preparations out of the way, double click on the MacRest ICON. When the message "Insert next recovery disk. Click mouse to exit" comes up, do just what it says. You should process your incremental backups from the most recent to the oldest, and then the previous non-incremental backup. It doesn't matter in what order within an increment you load the disks. The entire recovery disk except for files that already exist will be copied to the hard disk (that's why recovering the System and Finder should be done prior to running MacRest). as each file/folder is copied or skipped, a message is displayed. When the entire disk has been processed, it will be ejected and the prompt will be repeated. When the last floppy has been processed, clicking the mouse will exit MacDump. I considered making MacDump able to accept floppies from either drive, alternating between them and reducing disk handling overhead but since I don't have an external drive I couldn't test it. I am including my source code so if any of you ambitious folk want to try and have a Pascal compiler, go for it.

At this point, if you don't like hard disks named \$\$HD, you can rename it. At first opportunity you should probably run a non-incremental backup. MacRest sets the modification date on each file equal to the date of the restore so an incremental backup will find that all files have been changed since the last incremental and they will all get dumped anyhow. Another thing you should do at earliest convenience is open all the folders on the desktop. This will allow the Finder to rebuild the entire desktop. It is a tedious task but absolutely necessary. Versions of the Finder prior to 5.3 have facilities for rebuilding the desktop file, but they are rife with bugs and not to be trusted. (MacRest will restore the desktop if it should happen to find a desktop file on the backup disks and not on the hard disk. This combination is pretty unlikely as the Finder will usually create a desktop on the hard disk after it is formatted).

### **Restrictions:**

As previously mentioned, the hard disk to be recovered must be called \$\$HD.

Since MacRest implies all volume names, path lengths can be a few characters longer than 255 bytes, but only about four. MacDump can only handle 255 byte path names so it's no problem to me.

MacRest searches through the first 25 drives for the volume called \$\$HD. If you are using HyperDrive or other partitioned drive and you have lots of drawers mounted, MacRest may not find the one called \$\$HD. Dismount as many drawers as you can spare **including** \$HD, then remount \$\$HD and try again.

MacRest requires HFS and 512K. It will recover an MFS formatted hard disk but it will do bizarre things to the folder structure (Unnamed Folder#1...999).

I don't have any applications whose copy protection scheme involves an "Installer" program. Restoring these applications may not work (they will have to be re-installed and each package has its own rules on number of installations).

MacRest was written as a simple and hopefully useful exercise in programming. I don't intend to pretty it up any but if you find a bug, please please please report it pronto to:

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Backup and recovery is too important tolerate bugs.

MacRest has only been tested on the Apple HD20 but I make only standard calls to the file system and I see no reason why they won't work with any hard disk. Yes, the program has been used to restore my own HD20--thats how I tested it (Really!! I made a backup, said a prayer and took a deep breath and re-formatted a perfectly good HD20. Then I followed the instructions above and have been running fine ever since).