



SuperDuper!

Heroic System Recovery For Mere Mortals.

Welcome to the SuperDuper! User's Guide!

This guide is designed to get you up and running as fast as possible. We've taken the most common tasks people perform with SuperDuper!, each placed in its own chapter, and have provided step-by-step guidance (including lots of pictures).

In here you'll find out how to:

- [Back up your Macintosh for the first time](#)
- [Update an existing backup](#)
- [Schedule one or multiple backups](#)
- [Store a backup alongside other files on a destination drive](#)
- [Back up your Macintosh over a network](#)
- [Exclude a folder from a backup](#)
- [Restore files from a backup](#)
- [Restore an entire drive in an emergency situation](#)
- [Troubleshooting](#)

We've also included a complete program reference, and some more advanced topics, such as:

- [Creating a Sandbox](#)
- [Maintaining a Sandbox](#)
- [Applying \(and recovering from\) System Updates while running from a Sandbox](#)

Note that SuperDuper operates in two different "modes" – registered and unregistered. The unregistered version allows easy, complete and user-specific backup clones to partitions, FireWire drives, and image files.

Once registered, SuperDuper allows you to schedule backups, *quickly* update backups with **Smart Update** (saving a *lot* of time), select "copy modes" other than **Erase, then copy**, create Sandboxes, fully customize the copying process using its unique Copy Scripts, save and restore settings, and avoid authenticating every time you copy.

And, on top of that, it allows us to eat.

Disclaimer

Although SuperDuper! has been carefully tested, and should perform its functions without data loss, you use this software **at your own risk and without any warranty. Always work with care when dealing with important data.**

IN NO EVENT SHALL SHIRT POCKET OR BRUCE LACEY BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) ARISING IN ANY WAY OUT OF THE USE, REPRODUCTION, MODIFICATION AND/OR DISTRIBUTION OF THIS SOFTWARE, HOWEVER CAUSED AND WHETHER UNDER THEORY OF CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE, EVEN IF SHIRT POCKET OR BRUCE LACEY HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright Notice

This User's Guide was written by David Nanian, and is Copyright © 2003-2006 by Shirt Pocket. All rights reserved.

SuperDuper! is Copyright © 2003-2006 by Bruce B. Lacey. All rights reserved.

Introduction

First, a little of the background and philosophy behind SuperDuper!

Backing up is one of those things that never seems important until something goes horribly wrong, and things never go horribly wrong until the worst possible moment. Many backup programs do too much for the “normal” user: rather than making it easy and faster to get their data backed up, they overcomplicate the process to the point of frustration.

That complexity can alienate and confuse users, and a proprietary, single-vendor format leaves them without an alternative should a problem arise. We think it’s important that any solution be **easy to understand, usable**, and not have any **“lock in”**.

Staying Balanced

So, to determine whether that complexity is worth adding, it’s important to ask: when do most people need to restore? In general, we’ve found that “regular users” (and by that, I mean real “end users” like yourself) need to use their backups when:

- They’ve made a “bad mistake”, like accidentally deleting an important file, or overwriting one (this kind of mistake is almost always recognized immediately)
- Their drive (or computer) fails catastrophically, requiring a full restore
- They sent their computer in for service, and it came back wiped clean
- An application they installed, or a system update, caused their system to become unusable/unstable

None of these situations require much other than a high-quality, up-to-date, full copy backup. (The last has a better solution than a backup – a [“Sandbox”](#) – which we offer in SuperDuper! as well.)

Covering the 99% Case

Given that, it’s pretty easy to see that most end users don’t need to retrieve a two-year-old (or even six-month old) version of a file from a backup. (An **archive** is a different thing: I’m talking about backups.) It’s just not that common a case. Developers, on the other hand, *do* need older versions of files, but they should be using a **version control system**: something a backup should absolutely *not* be.

But, it *is* possible that a user won’t notice a problem in a “bad file” until they’ve already overwritten their backup, thus losing any chance of recovery with a “full copy”. While this is a problem for some, we have a good solution: **rotate more than one full backup**.

Any need for this kind of “temporal rollback” can be significantly reduced with a single rotation – say, on a weekly basis – and nearly eliminated with two, a weekly and a monthly. It’s incredibly rare that, on a non-archival basis, you’d need to go back more than four weeks.

Simple to Understand

The advantages to this kind of approach are many, not the least of which is that a non-technical user can *easily* understand what’s going on. It’s incredible how many people are confused by conventional backup terminology – “incremental”, “differential”, backups “sets” and the like. And, complicated storage mechanisms require a significant amount of expertise to perform a full recovery in the event of that all-too-common disaster: the total drive failure.

Simple to Restore

With SuperDuper!, recovery in that situation is literally a matter of booting from your most recent backup. And restoration – which, should you be on deadline, you *need not do immediately* – is just a matter of replacing the drive and copying back.

Individual files are also easy to restore: just drag and drop from the backup. (Yes, applications without drag-and-drop install, or system-level files, are harder, but can typically be reinstalled/archive-and-installed should that be necessary... or, see the [Sandbox](#) for another rather unique idea...)

Use It or Lose It

SuperDuper!’s approach is the kind of thing that **regular end users like yourself** can do, and feel *confident* about.

We know your time is valuable, and that a backup isn’t useful unless it’s recent and includes the files you expect. We’ve made the process of backing up *extremely* simple, and – with Smart Update – we’ve also made it fast and efficient.

So, with all that in mind, let’s get started!

Backing Up Your Macintosh for the First Time

Step 1: Prepare for your backup

First, you need to make sure you've got a place to store your backup. The best thing to use with SuperDuper! is an external FireWire drive, but due to various subtle incompatibilities, not all FireWire drives can act as a Macintosh startup drive, and this is **never** indicated on the package.

Our general advice is to get a FireWire drive from Other World Computing, WiebeTech, LaCie or a Maxtor OneTouch. We have tested these drives for compatibility, and all work well with the Mac.

Note

Don't use SuperDuper to copy a full boot image from a PowerPC Macintosh to an Intel Macintosh. The OS isn't universal, and thus won't work properly on the new Mac.

Instead, use the Migration Assistant that appears during the first boot of your new Macintosh to copy your files, settings and applications from your old Macintosh (or from your copy) to the new one.

USB drives **cannot** be used as a startup drive for **PowerPC** based Macintoshes, regardless of the program used. On top of that, USB drives have a large number of limitations regarding speed and – even if USB 2.0 Hi-Speed rated – can **slow down to USB 1.x speeds when used in conjunction with slower devices**.

So, if at all possible, please get a FireWire drive!

Note

You can also "push" a backup to a network drive. Please see [Backing up over a network on page 18](#) for details.

Once you've got your hardware situation resolved, it's time to configure your software environment.

Although it's not strictly necessary, it's usually a good practice to quit all running applications before performing a backup. Since there are some that aren't visible, like the Microsoft Office Database Daemon, it's easiest to log out of your account, and then log back in with the Shift key held down. This will prevent your startup items from running, and helps to ensure that your personal data doesn't change during the backup.

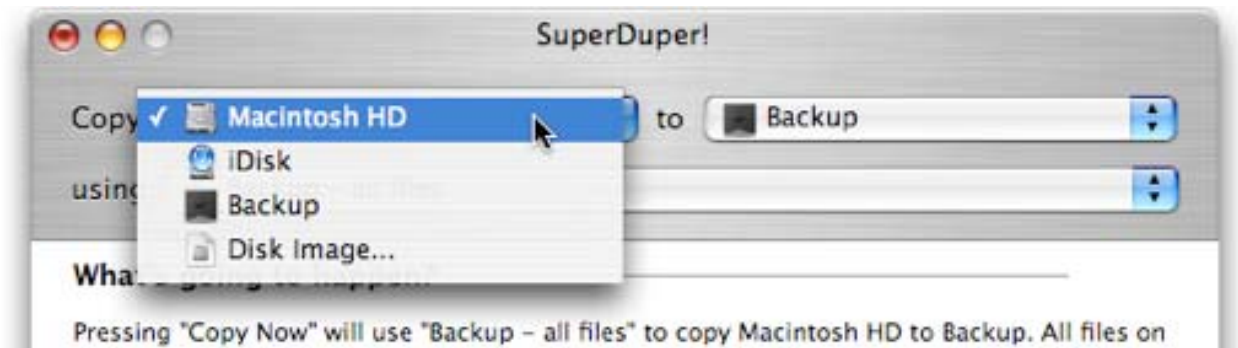
Note

If you're using FileVault, your home folder and all its data is stored in a single, large file that's open and active when you're logged in. Because

of this, you should create a non-FileVault account for use with SuperDuper!. Then, log out of your FileVaulted account, into this new account, and run SuperDuper! from there. This ensures that the special FileVault volume is put away and backed up cleanly.

Step 2: Start SuperDuper! and choose your source and destination volumes

After launching SuperDuper!, you'll need to choose the volume you want to back up, and the place to store the backup. You can back up to an internal drive, an external drive, or an image file (which can be stored locally or on a network volume). You can even copy to another computer: just put it in FireWire Target Disk Mode by powering on while holding down the **T** key, and connect it to the computer – it'll act just like an external FireWire drive.



But, my backup drive is grayed out!

If your FireWire or USB drive is grayed out in the destination pop-up, the problem is that it's either your startup drive (which you can't copy to), or that it's formatted for Windows instead of for the Macintosh.

SuperDuper! can't guarantee full-fidelity backups on a FAT32 (Windows) volume for a number of reasons, including the fact that FAT32 doesn't support files greater than 4GB in size. So, even though you could store a backup on the drive using a disk image, that backup will fail once the image reaches 4GB.

To fix this problem, use Disk Utility to erase the drive (of course, make sure you don't have any data on it you want to keep first), and use **Mac OS Extended (Journaled)** as the format. While you're there, you should usually zero the drive (both the data and free space under Tiger): this tests the drive surface, remaps any bad or weak spots, and helps to ensure your first backup will be a successful one.

Once that's done, you'll be able to select the drive in the destination pop-up.

Caution!

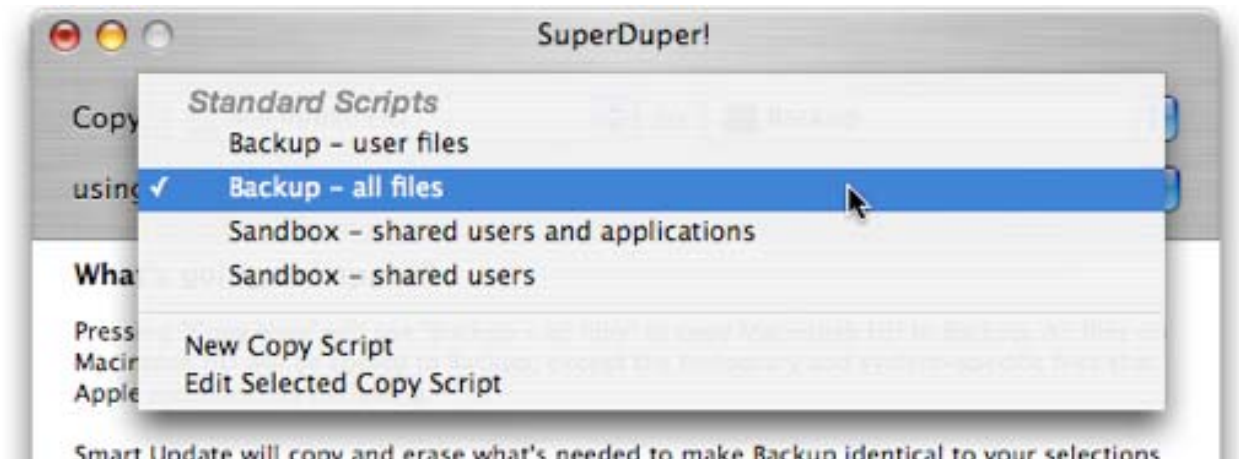
If you choose a destination volume that already has files on it, those files may be overwritten by the backup operation. The exact behavior of SuperDuper! is defined by the **During copy** section of **Options...**, discussed below.

So, this might be a good opportunity to partition the drive with Disk Utility: it's **always** best to isolate your backup from your regular "storage"!

See [Storing a backup alongside other files on a destination drive on page 16](#) for another option.

Step 3: Choose your backup script

There are two different built-in Backup scripts included with SuperDuper!: **Backup – all files** and **Backup – user files**.



Backup – all files (*highly recommended*) does what it says: it creates a complete backup of the selected volume. If the source is a boot volume, this is often called a "bootable clone", and can be used to start your system in the event of a catastrophic hard drive failure. Clones make great backups for users who are backing up for safety, and where the need to recover many previous versions of a document is not necessary.

Backup – user files is similar, but it does not create a bootable backup. Instead, it only backs up user specific files in the Home directories of the various accounts on your system (as well as the special iSync files that are stored elsewhere in Panther). This type of backup is not bootable, since it doesn't contain operating system files, but is useful for storing copies of your

personal data. It's much harder to recover from a disaster if you've only got your personal files backed up.

Although **Backup – user files** takes less space, please remember: **disk space is cheap, your time is not! In the event of a disaster, recovery will take much longer if you don't have a full backup.**

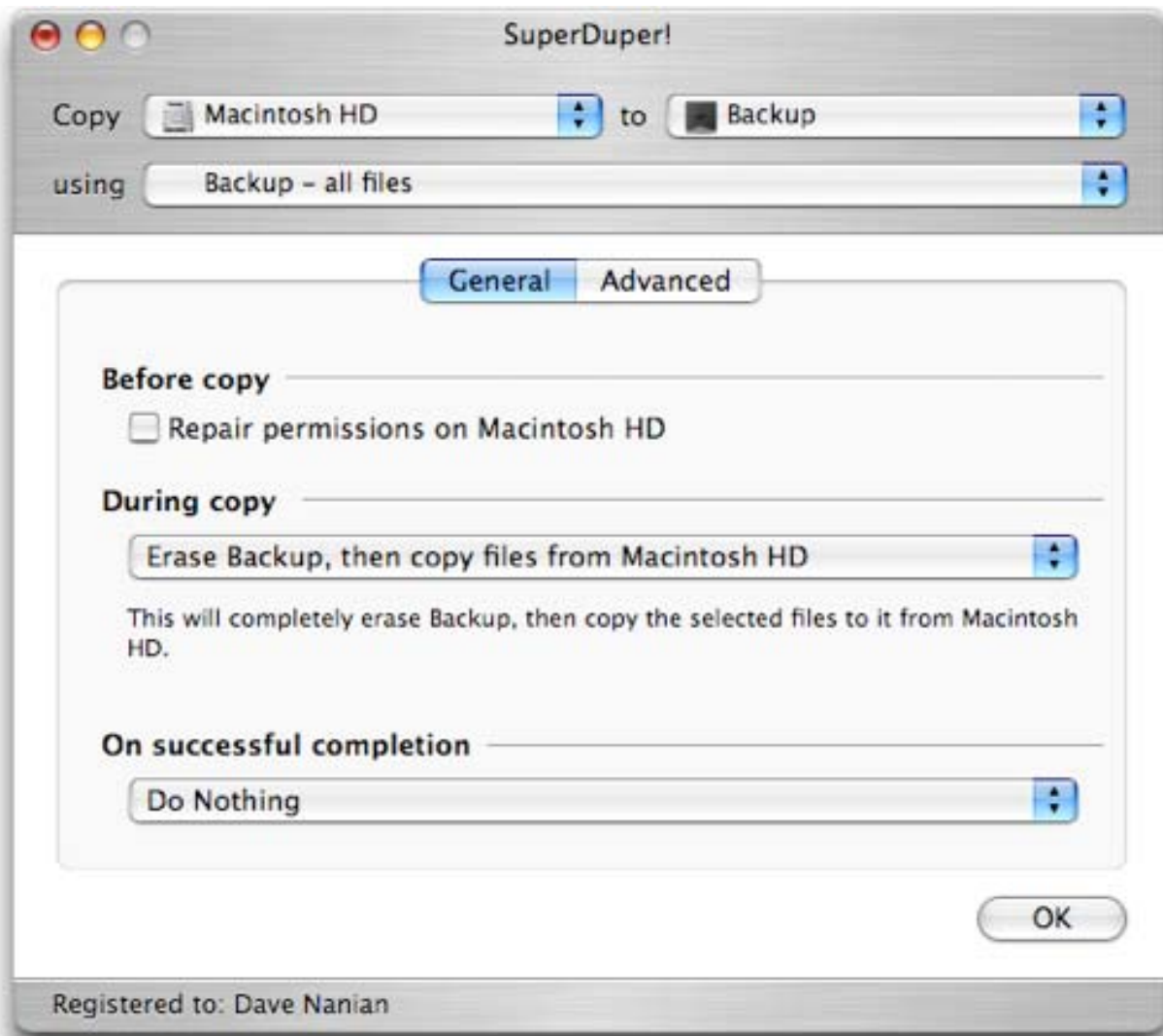
Note

The other two default scripts, **Sandbox – shared users and applications** and **Sandbox – shared users** should *not* be used to create conventional backups. Rather, these create a **Sandbox**, a "system checkpoint" which is discussed fully in [Creating a Sandbox on page 34](#)

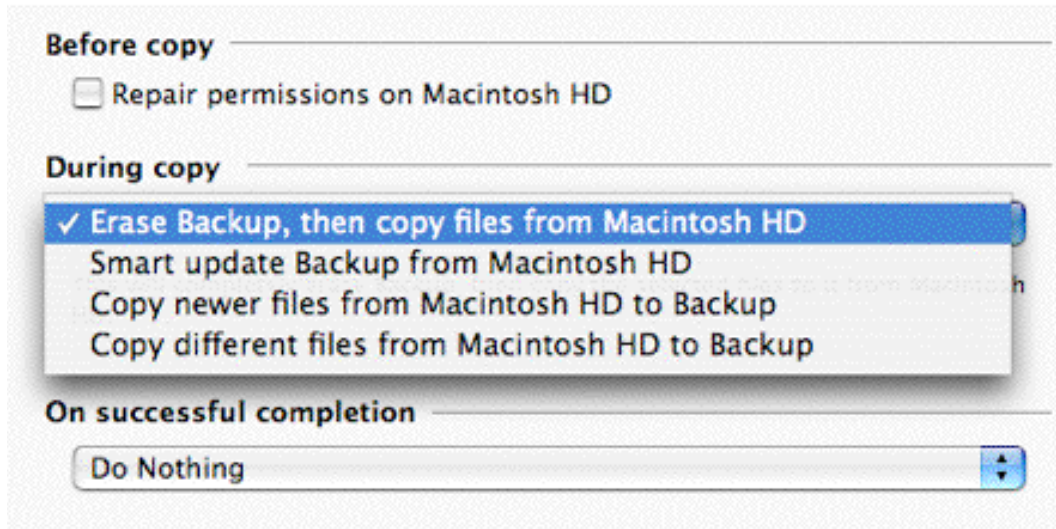
Step 4: Set your options

At this point, you've selected what you want to back up, and where you want to back it up to. The next step is to tell SuperDuper! *how* to perform the backup.

Click the **Options...** button, and you'll be presented with the following:



The various options are discussed more fully in [SuperDuper! Options in detail on page 41](#). For now, ensure that **Repair permissions...** is unchecked, and concentrate on the selections in the **During copy** pop-up.



If you're running an unregistered copy of SuperDuper!, you can only choose **Erase, then copy**.... This option erases the destination volume before writing to it. While this ensures that the result is an exact copy, if you're performing a second or third backup, it also copies all your data over again, taking extra time.

Smart Update... is similar, in that the result is an exact copy of the source. The difference is that it only copies (or **deletes**) files and folders as necessary. This takes **much** less time after the first backup, doing in minutes what could otherwise take hours.

Both of the previous options will remove files from the destination volume that aren't present on the source volume, or selected by the copy script. This means that if you choose **Backup – user files**, SuperDuper! will remove any files from the destination volume that are outside the /Users folder.

Similarly, if you have stored a file on the destination volume that you want to keep, but isn't present on the source, it will be removed. Remember: by definition, Smart Update does exactly what **Erase, then copy** would do. It just does it faster!

Copy newer and **Copy different**, the other two **During Copy** options, control what SuperDuper! does when it copies a file from a folder on the source volume to the destination, and finds there's already a file in that location with the same name.

When **Copy newer** is selected, the file on the destination is replaced with the one from the source **if** the file on the source has a newer (more recent) modification date.

Copy different replaces the file on the destination if the source file is different (not necessarily newer) in date, size, HFS+ metadata, attributes,

etc. So, the file on the destination is replaced if it's not **exactly** the same as the source file.

In both cases, files on the destination that are **not** on the source are left as-is.

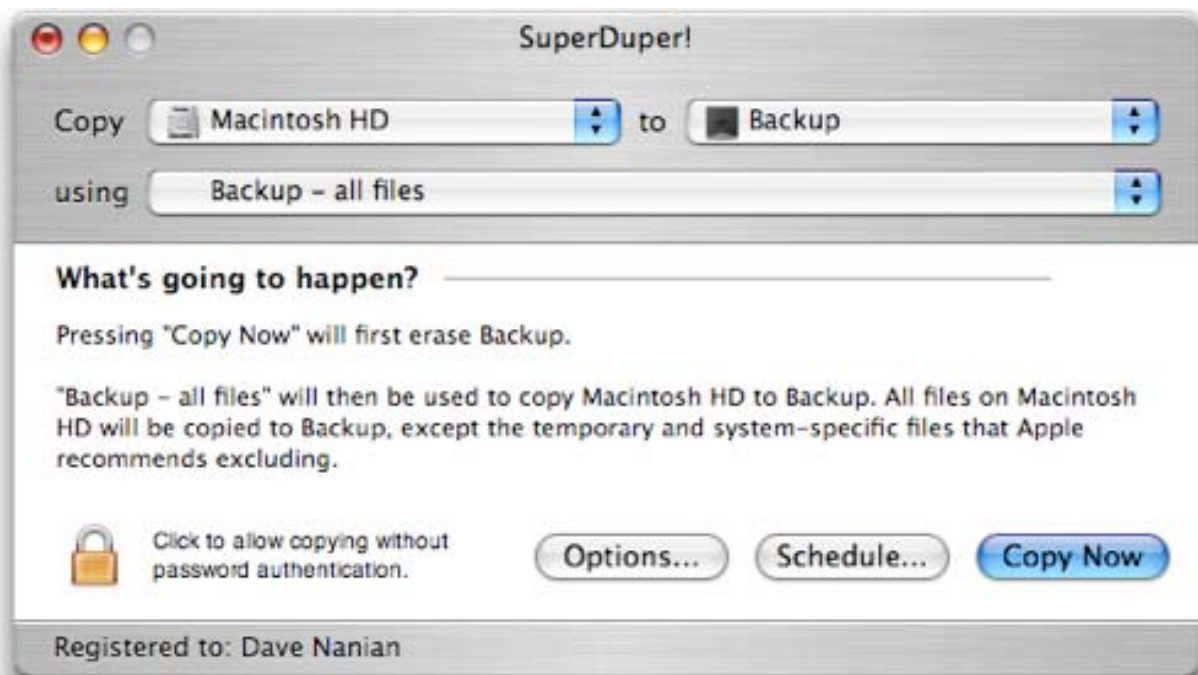
Note

A bootable copy can only be ensured if you use **Erase, then copy** or **Smart Update** as the **During copy** option.

Also, remember that options other than **Erase, then copy...** are only available in the registered version of SuperDuper!

Step 5: Verify your choices

It's always a good idea to verify the selections you've made, to ensure you haven't accidentally chosen the wrong volume or option. SuperDuper!'s unique **What's going to happen?** section allows you to quickly ensure that you're going to get what you asked for. Take a moment to review: it'll save you time in the end.



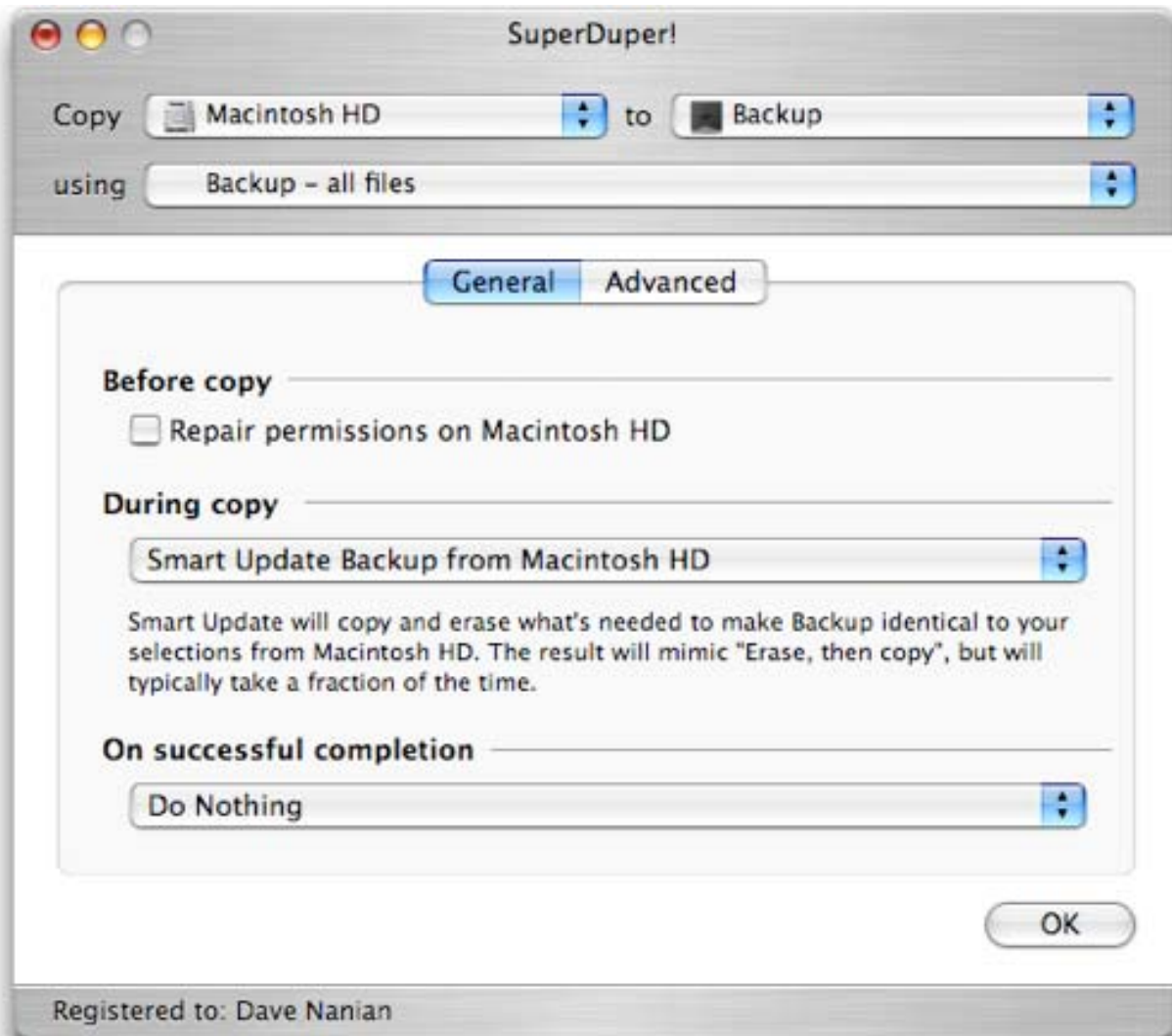
Step 6: Click "Copy Now"

Simple enough: one click (and a final confirmation) and SuperDuper! handles the rest!

Updating an existing backup

Each time you launch SuperDuper!, all of your settings from the previous session will be restored, including the source and destination volumes, if available.

If you want to update an existing backup, and you've registered your copy of SuperDuper!, click **Options...** and then change the **During copy** setting to **Smart Update...** When you click **Copy Now**, SuperDuper! will only make the changes necessary – replacing, adding and removing files and folders – to ensure the backup exactly matches the source; this will typically only take a few minutes.

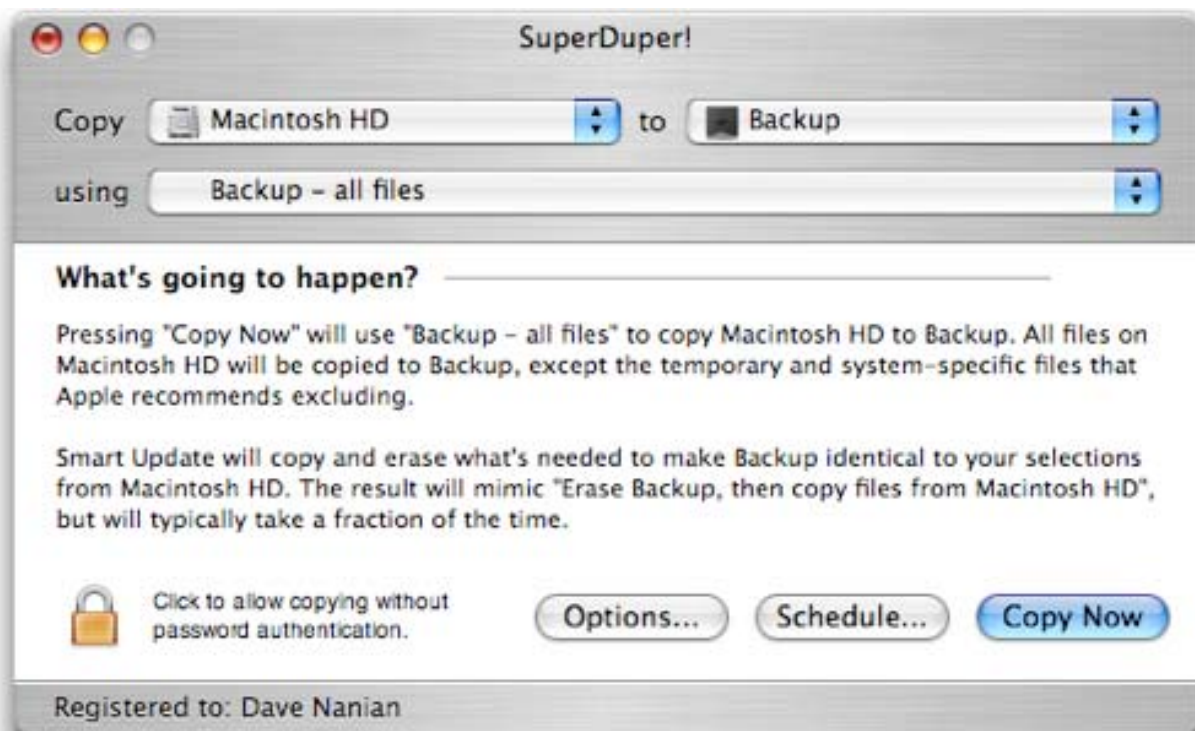


Scheduling one or more backups

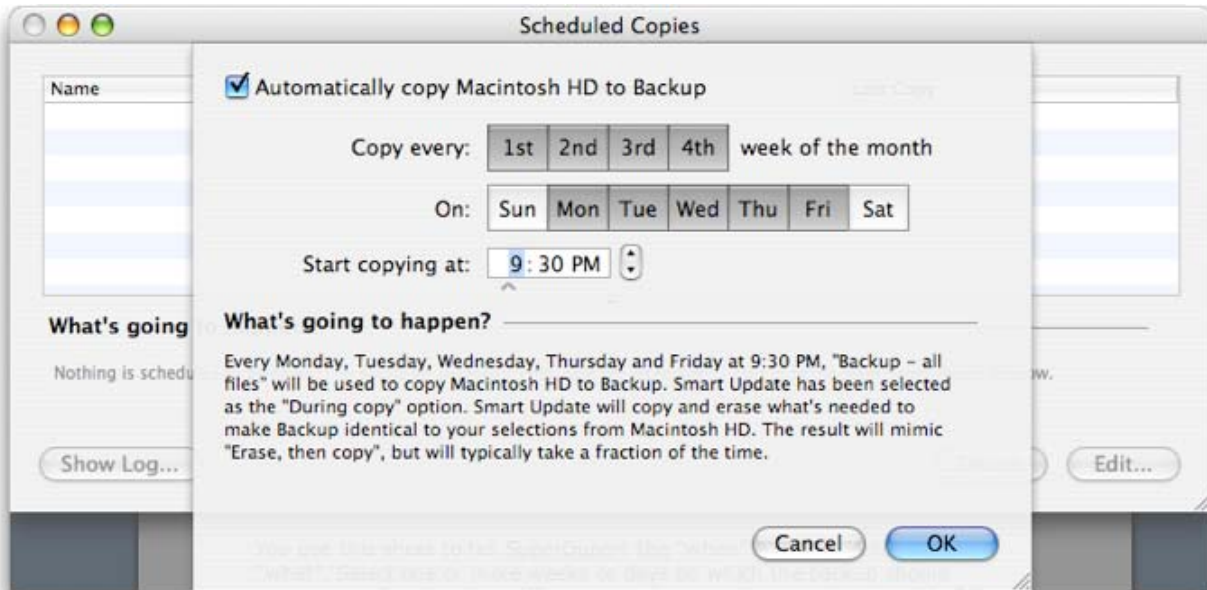
The thing about backups is that you can't do them reactively: **you must back up proactively**, or there's little point. So, you need to run SuperDuper! regularly – and remembering to do so can be a pain.

Fortunately, you don't have to remember! Instead, you can *schedule* one or many backups, and – in classic SuperDuper! style – it's **really** easy to do. Here's how.

First, set up your backup the way you normally would, using the main SuperDuper! window. Select your source and destination volumes, your script, and get the options just the way you want them.



Then, instead of clicking **Copy Now**, click **Schedule...**



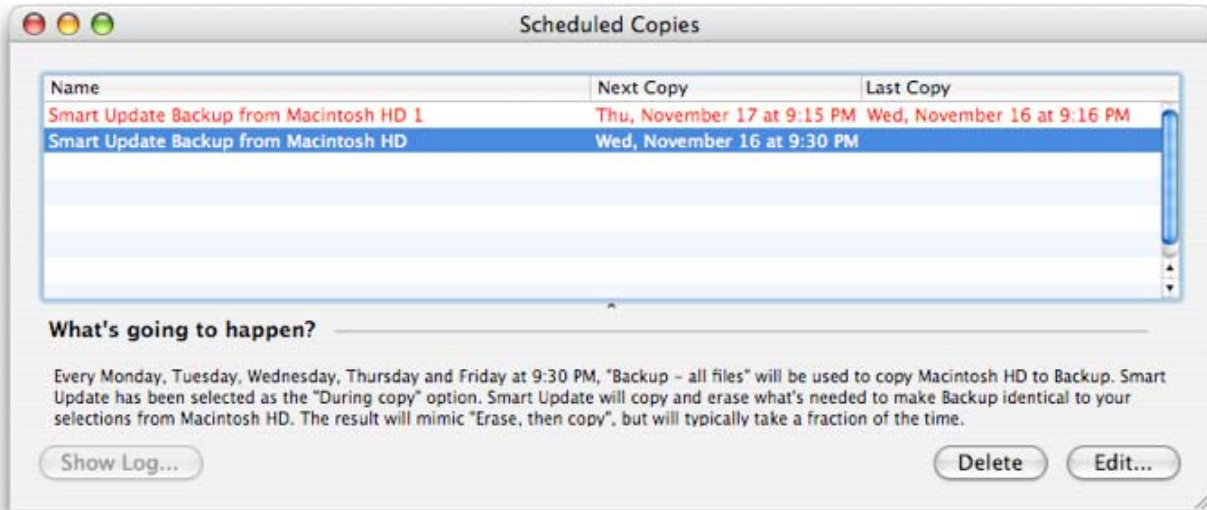
You use this sheet to tell SuperDuper! the “when” that goes with your “what”. Select one or more weeks or days on which the backup should occur, as well as the time. When you’re happy with your choices, click **OK**, and a new entry will be added to the list of scheduled copies.

Note

You can schedule as many backups as you’d like, even at the same time of day: you don’t have to guess how long one will take, and schedule another backup after the completion of the first.

If more than one backup is scheduled for the same time, SuperDuper will automatically start them one after another until all have completed.

The **Next copy** column shows when the next scheduled copy will occur, and – if one has already happened – the **Last copy** column shows when it ran last time. If the last copy failed, the entire line will be red: this is an easy way to see if things are working as expected.



If you want to see the log for a given run, select it in the table and click **Show Log...**

Usage tip

SuperDuper! does **not** have to be running for a schedule backup to take place, but the user who scheduled it does have to be logged in, with their account in front (if Fast User Switching is active), and the screen must be unlocked.

If your Macintosh is asleep when the time comes to run the backup, SuperDuper!'s scheduling won't wake it up, so the backup won't run. The way to handle this is to use the Energy Saver Preference Pane in System Preferences to schedule a wake (or "start up") event for a minute before the backup is scheduled to run.

You can change the schedule for an existing backup by clicking **Edit...** (or double-clicking the item in the table).

Note

Other than the date/time, or temporarily disabling an individual item, your backups cannot (currently) be changed once scheduled. If you want to change the volumes or options, you'll have to delete and recreate the entry.

Storing a backup alongside other files on a destination drive

In general, we **strongly** recommend that you store a backup on its own volume or partition, on a FireWire or internal drive that supports booting the Macintosh. Doing so makes it really easy to recover, saving you time – a **lot** of time – should a disaster occur.

And not to toss a wet blanket on the optimist but, eventually, a disaster **will** occur.

But, sometimes, dedicating a volume to backing up is impractical, and partitioning is either inconvenient or impossible. In those cases, you should use a Read/Write “Sparse” Image.

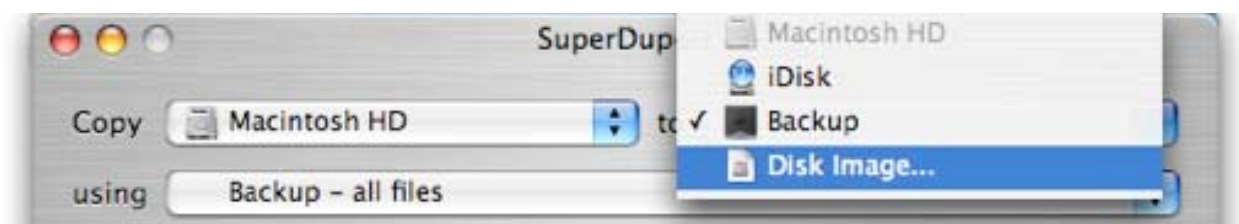
With a Sparse Image, your files are kept in a “virtual” disk, which is actually stored in a single file. This file can be placed anywhere, including on a network volume. When mounted (which you do by simply opening the Sparse Image file), the “virtual” drive looks just like a local disk, and can be backed up to like any other. You can even Smart Update it!

There are some disadvantages, though:

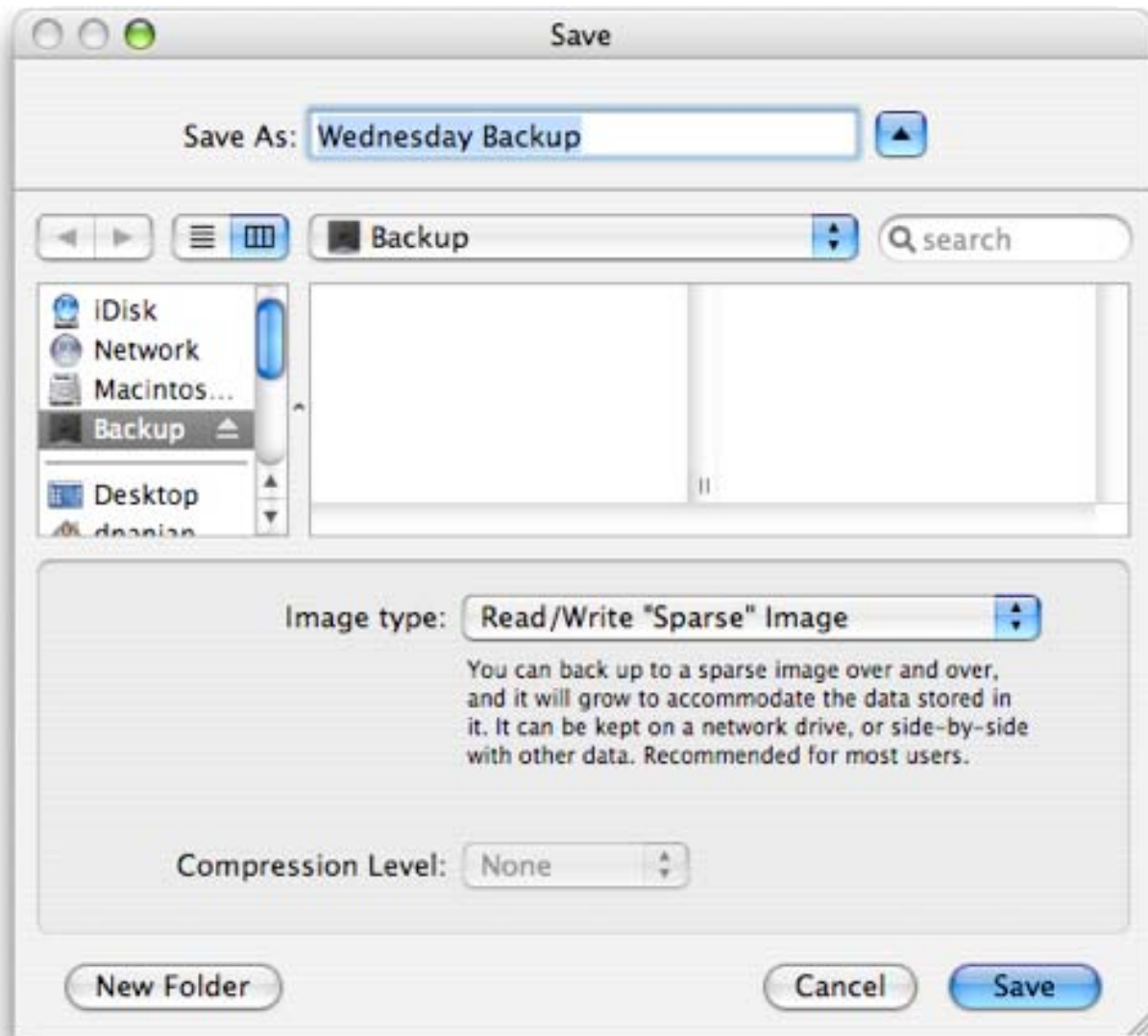
- Since Sparse Images are not “real” drives, but rather simulated drives stored in a file, they’re potentially less reliable than real drives. (Note, though, that Apple uses sparse images for FileVault, so this shouldn’t be a big concern.)
- Similarly, since Sparse Images are not real drives, they’re inherently a bit slower.
- Finally, since they’re not physical drives, images of any type cannot be used to start up your Macintosh. However, the contents retain their bootable properties and – once restored to a real drive – can act as a startup drive.

So, with that in mind, using sparse images is quite simple.

Choose your source drive normally. In the destination pop-up, choose **Disk Image...**



You'll be presented with the following panel:



Choose the location for your sparse image, and enter the name you want it to have. Make sure the pop-up at the bottom is set to **Read/Write "Sparse" Image**.

Note

Do not store a sparse image on a FAT32 volume. FAT32 volumes have a 4GB single file size limit, and fail pretty spectacularly when this limit is reached. As with direct-to-disk backups, please erase any FAT32 volumes with Disk Utility, and use Mac OS Extended (Journaled) as the format.

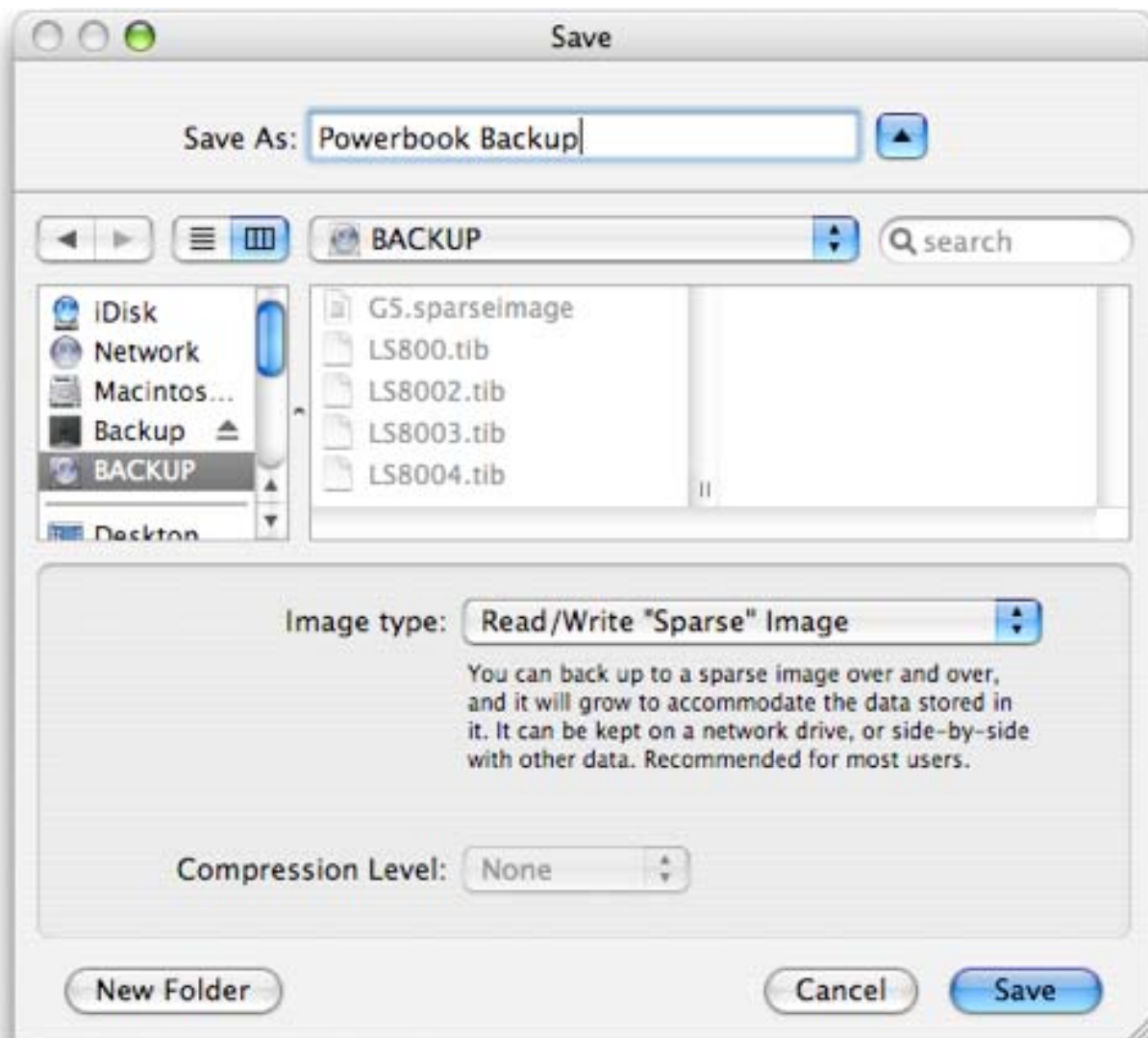
That's all there is to it! SuperDuper! will automatically create the sparse image, if necessary, mount it, back up to it, and unmount it when it's done.

Backing up over a network

Backing up to a network volume with SuperDuper! is as easy as backing up to a local volume, with a few special considerations.

First, SuperDuper! cannot write directly to the network volume itself. Instead, you must store your backup in an image – preferably a Read/Write “Sparse” Image.

To do this, mount the network volume, and then choose **Disk Image...** from the destination pop-up. Then, select the network volume and folder where you want to store the image, and name it appropriately.



Make sure the pop-up at the bottom is set to **Read/Write “Sparse” Image**, then click **Save**. In **Options...**, set things as desired (I recommend using **Smart Update**) and click **Copy Now**.

The next time through, SuperDuper! will automatically mount the network volume, mount the image, back up to it and unmount it when done. Again, make sure you use **Smart Update** to ensure the fastest operation!

Note

It's **very** important that the network drive support files larger than 4GB. FAT32-based servers or NAS devices will **not** work, and fail pretty spectacularly when this limit is reached.

Please ensure the network volume is HFS+, NTFS or ext3, all of which support large files.

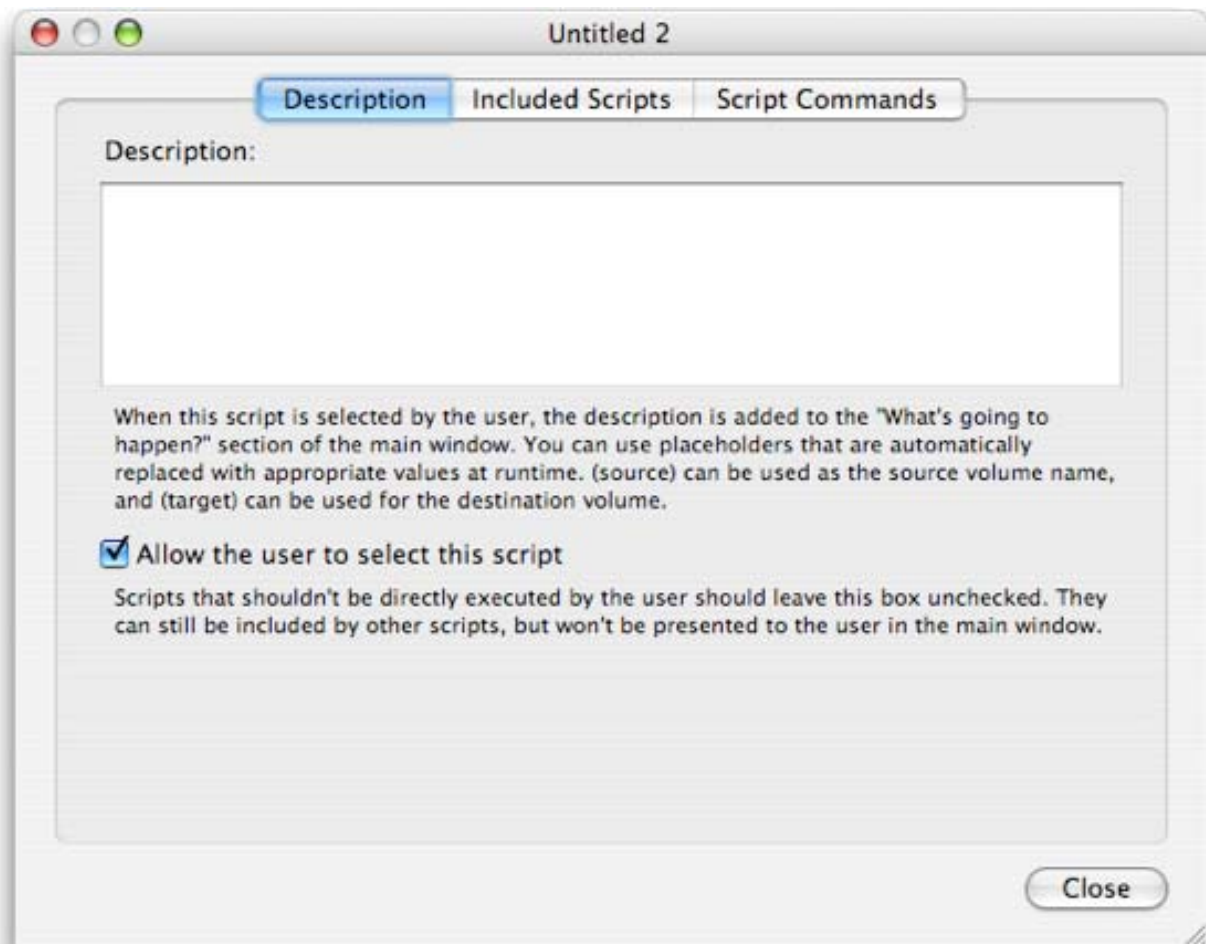
Excluding files or folders from a backup

Although we recommend that a backup include all of the files from the source drive, it's sometimes necessary – or desirable – to be more selective.

SuperDuper!'s **Copy Scripts** allow a user to **easily** customize the files and folders that are copied, by simply building on the scripts we've provided. Don't worry, this isn't programming: scripts are just a way of selecting files and folders, and letting SuperDuper! know what to do with them.

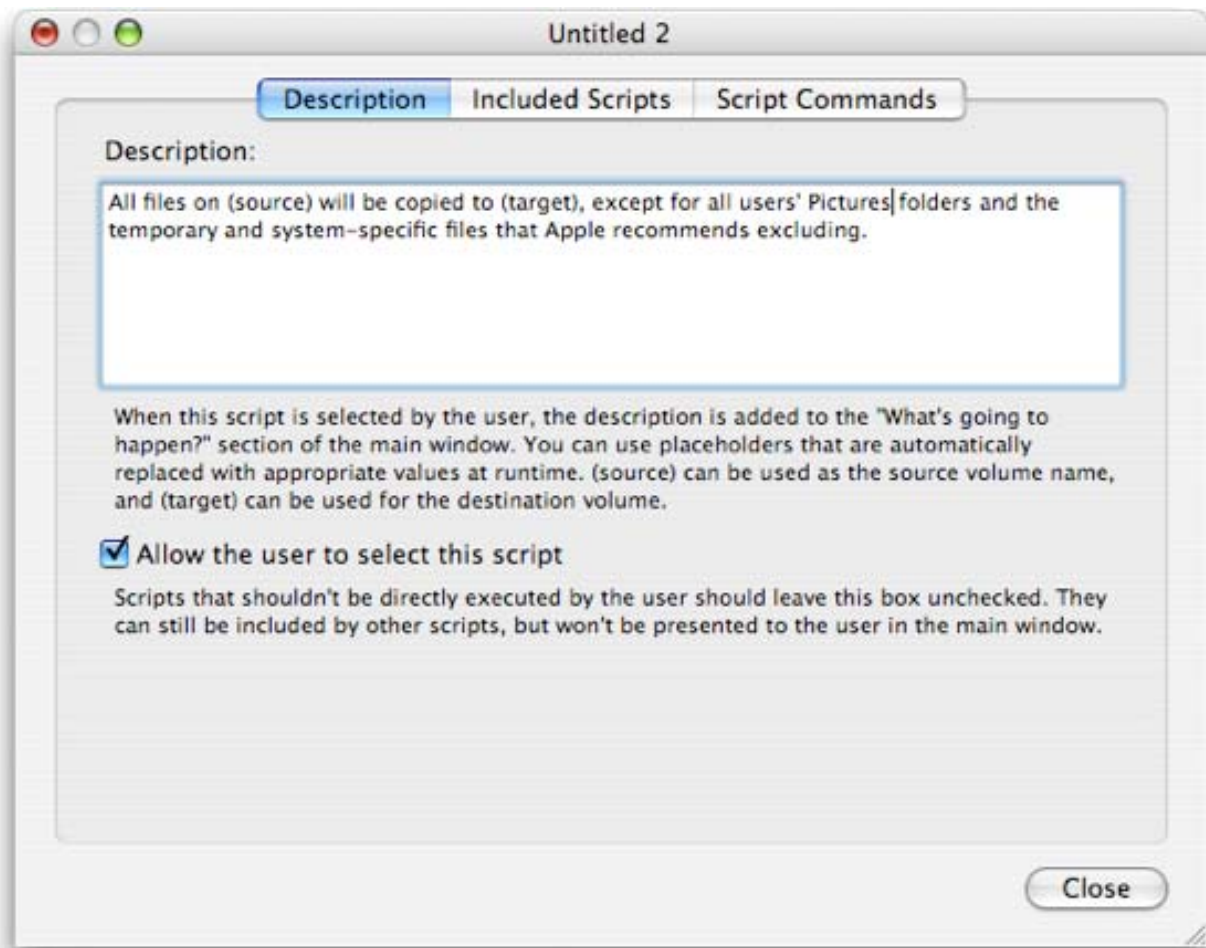
With that in mind, let's create a simple script that builds on the **Backup – all files** script by doing everything it does, but – in addition – ignores the Pictures folder for all users.

The first step is to choose **File > New Copy Script**:

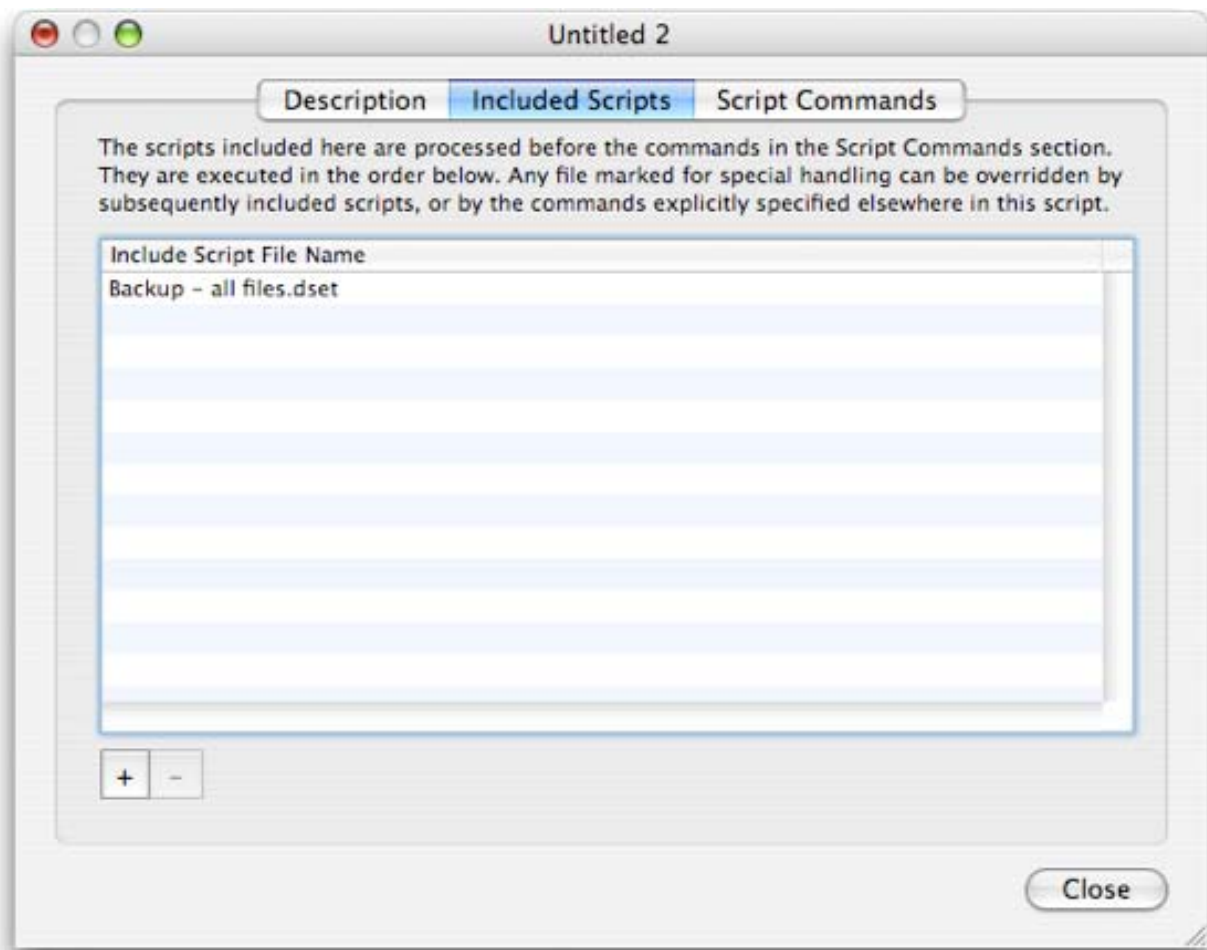


In the **Description** tab, enter a description that tells the user what this script does. This description will appear in the **What's going to happen?** section of the main window.

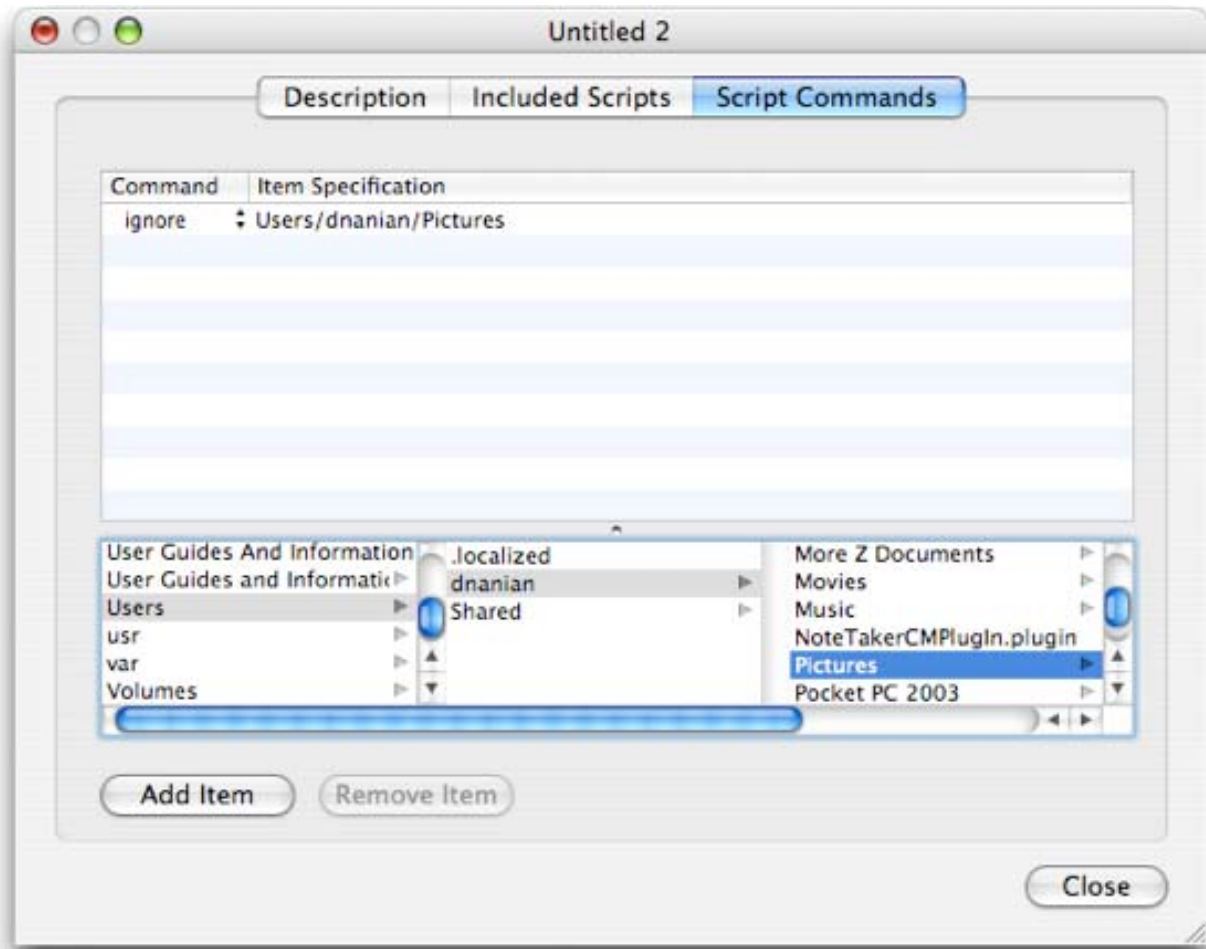
You can use the placeholders (*source*) and (*target*) (with the parentheses included) to refer to the two volumes selected in the main interface. This gives the user more context for the script's actions, and is preferred to using generic terms like "source" or "destination".



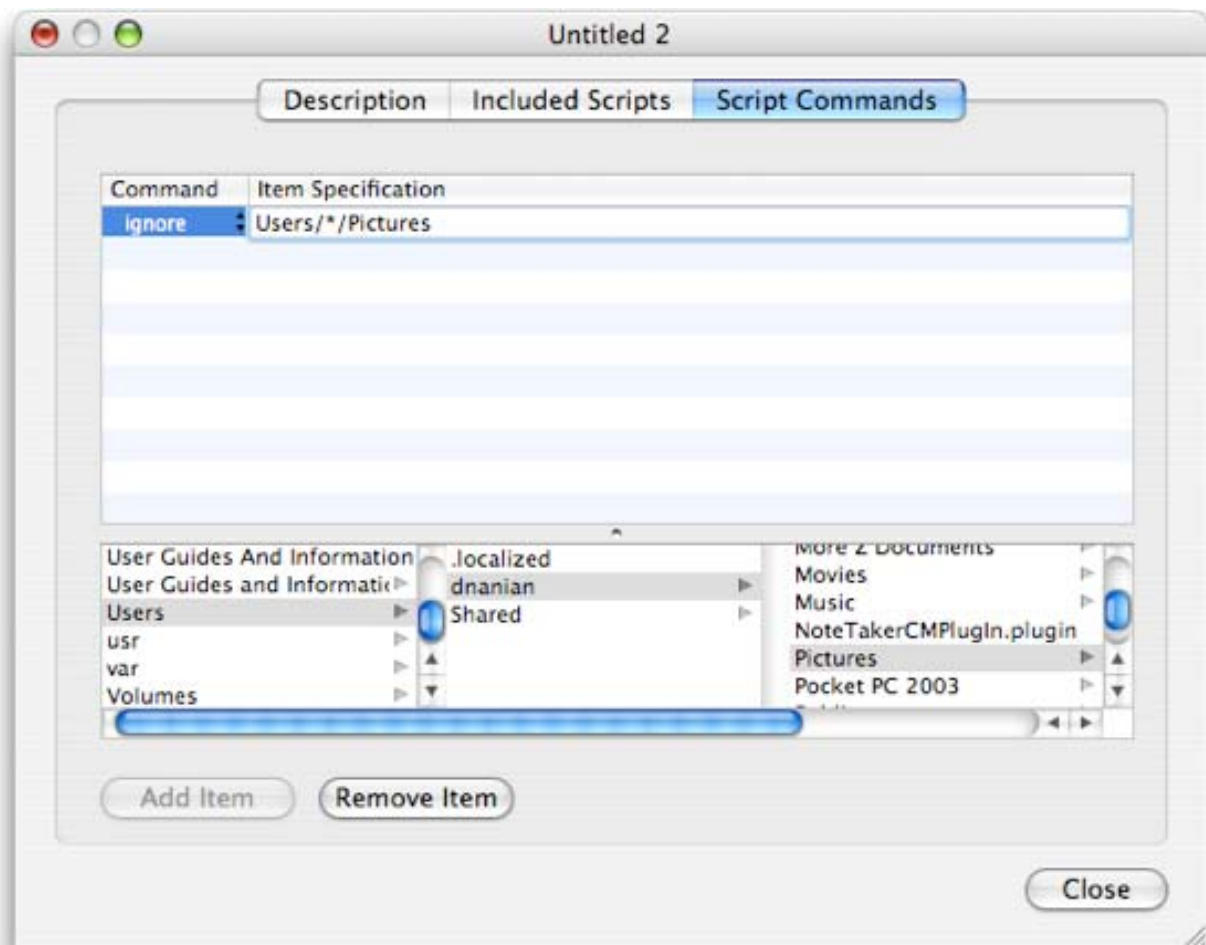
In the **Included Scripts** tab, include the script(s) whose base functionality you wish to modify. In this case, we're going to add to **Backup – all files**:



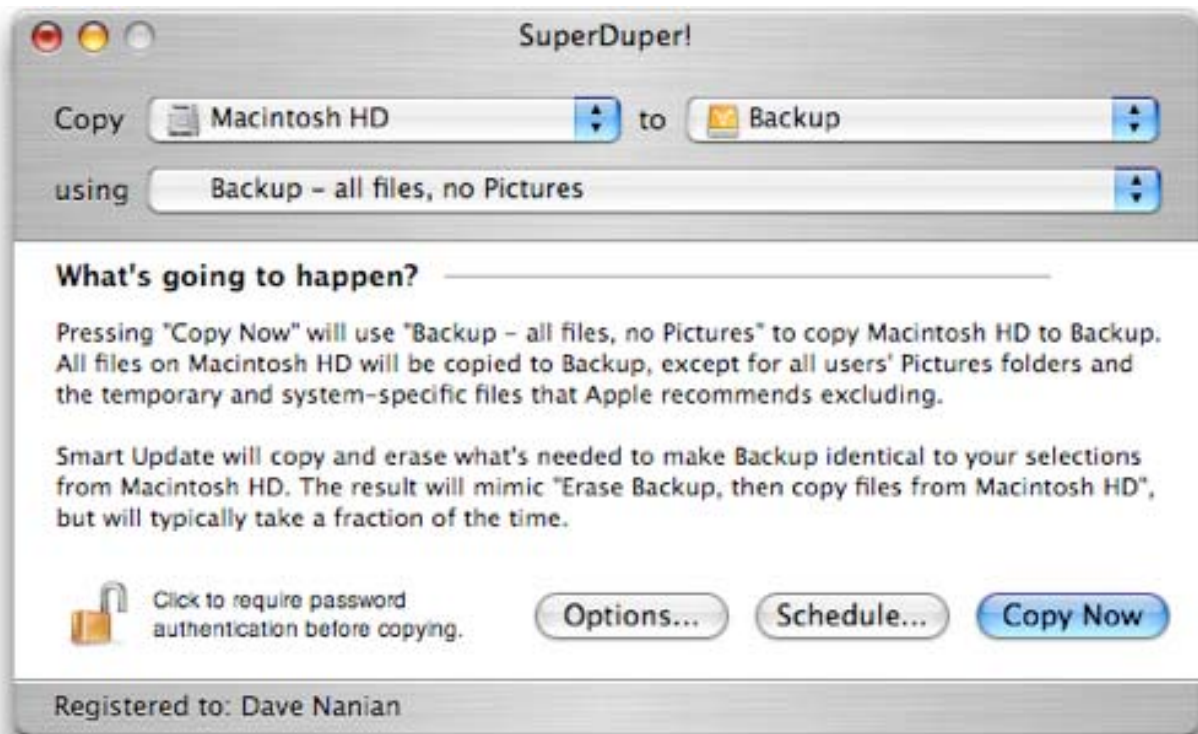
Finally, switch to the **Script Commands** tab. Here, we actually modify the behavior of the included scripts by adding additional commands. In this case, we want to ignore the Pictures folder for all users. So, the first step is to navigate to the Pictures folder in the small file browser, and click Add:



The command automatically defaults to **ignore**. While this will work for the user we've selected, if you have other users, their Pictures folders will be copied. Rather than find all the users and add separate **ignore** statements for each, we can use a **wildcard** (discussed in detail in [Copy Scripts on page 46](#)). The * wildcard will match any visible files in the folder specified – in this case, /Users. So, we double-click the table entry to edit it, and modify the user name to use the wildcard:



Then, save the script with an appropriate name in the default location, and select it, instead of **Backup – all files**, in the main window.



Click **Copy Now**, and all files that would normally get copied with **Backup – all files** will be copied except for the Pictures folder.

(Another, more in-depth example can be found in [Copy Scripts on page 46.](#))

Restoring files from a backup

Recovering a single file – or a few files – is quite easy. Just attach the external drive or mount the backup image, and drag the file back to the proper location using the Finder.

That's all there is to it!

Recovering from a disaster

When things go horribly wrong, the first thing to remember is:

Don't panic.

It's a cliché, I know, but don't head for a full restore before trying other options, such as using Disk Warrior, doing an Archive and Install, or other similar approaches. If you're running from a Sandbox (see [Creating a Sandbox on page 34](#)), start up from the original!

If the disaster remains it's time to restore from your backup.

There are many different approaches to the restore, depending on where you've stored your backup, and the capability of your particular Macintosh.

Restoring from a bootable backup

First, if you've backed up to an internal partition, you can start up from it (hold down the Option key when you start your Macintosh and select the backup partition), and then use SuperDuper! to restore the data to the original location. (This works just like backing up, above.)

Similarly, if you've stored a bootable backup on an external FireWire drive, and your Macintosh is capable of starting up from FireWire, hold down the Option key when you start, select the FireWire drive, and use SuperDuper! to perform the restore.

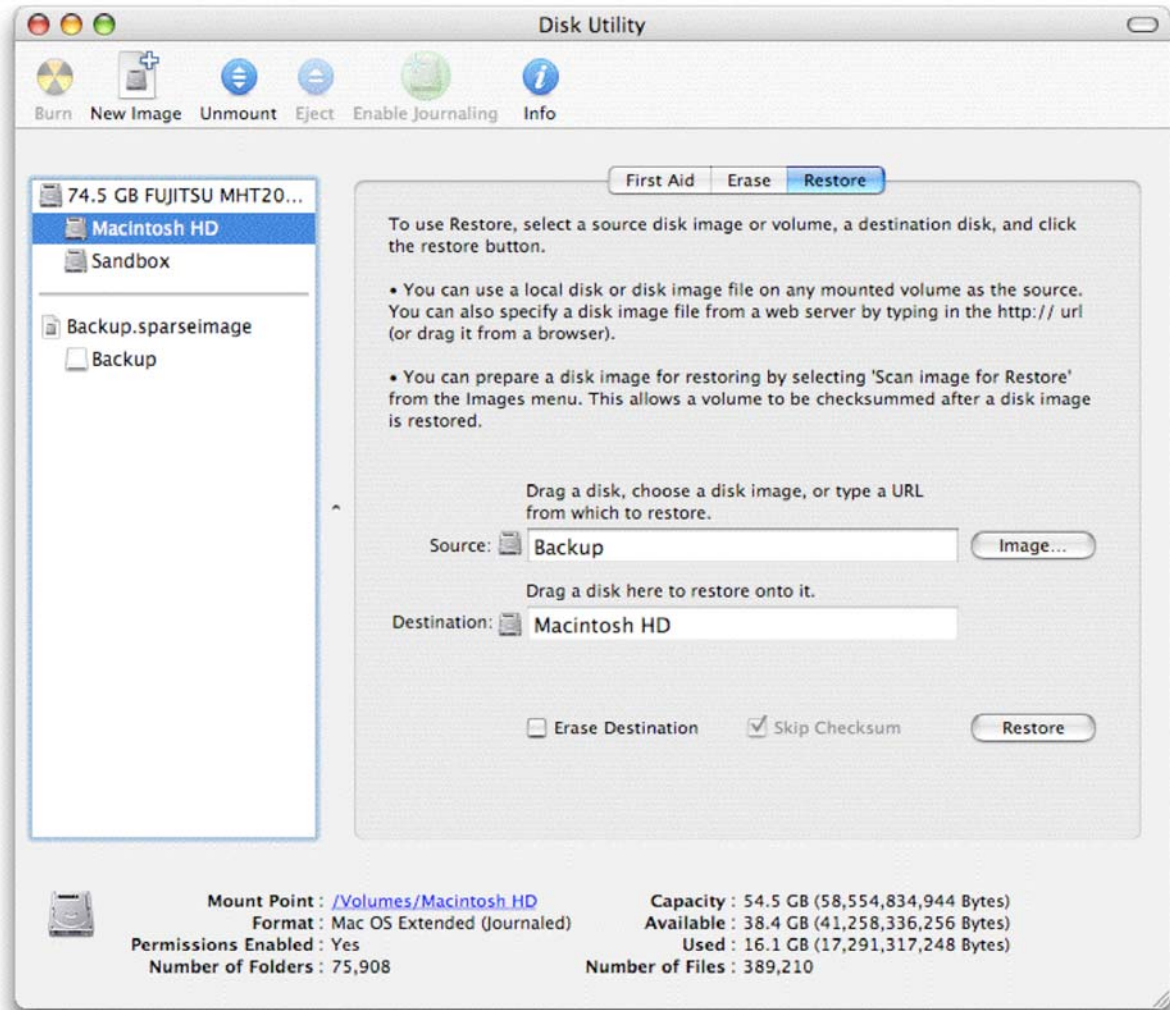
Restoring when you can't start up from your backup

If you have a backup image or volume, but can't start up from it, you can still restore using your OS X install disc. To do so:

- Start up from the OS X Install disc.
- When the Installer starts, choose "Disk Utility" from its Application menu.
- Once the Disk Utility starts, select the drive you want to restore to, and switch to the Restore tab.

Note

If you're restoring from a sparse image, as in the following screen shot, first open the image by choosing **File > Open Image...** in Disk Utility. Then, use the volume that appears (e.g. "Backup", below) as the source.



- Follow the instructions on the Restore tab: the backup created by SuperDuper is **fully compatible** with Disk Utility's Restore function.
- Once the backup has been restored, restart your computer with Option held down, and select it as your startup volume.

Recovery accomplished!

Troubleshooting

When things go wrong, don't walk away...

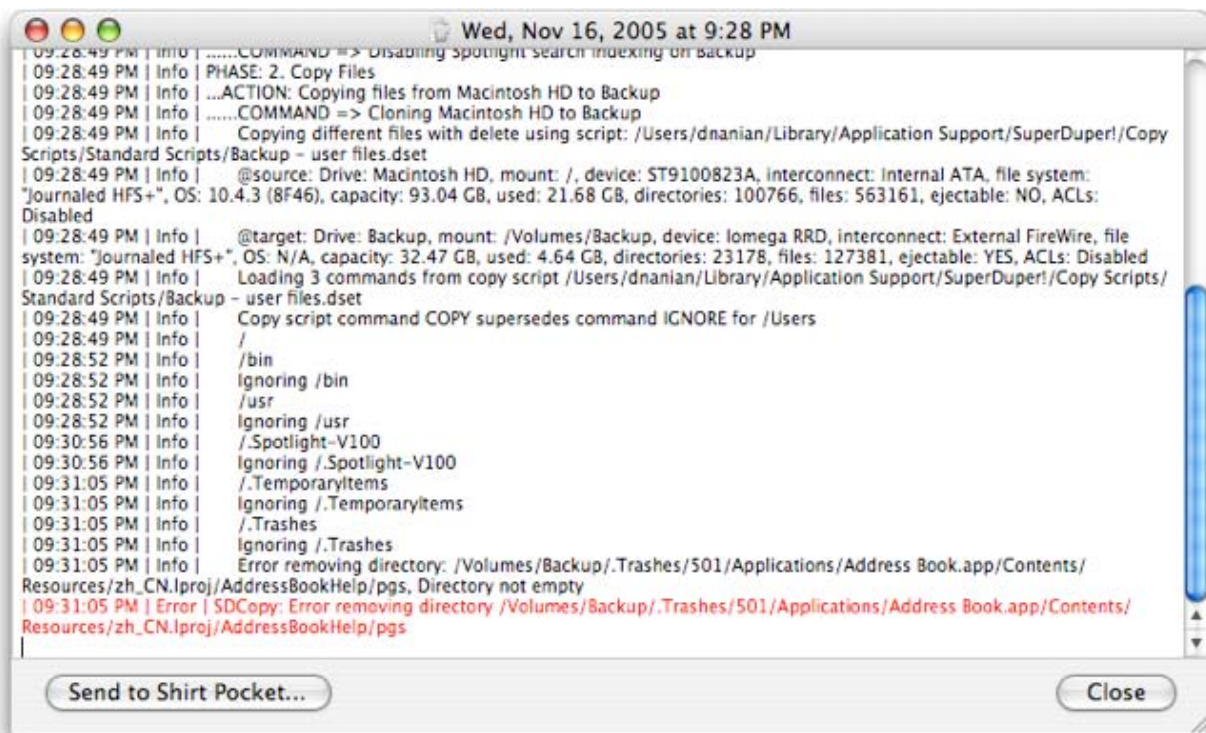
Sometimes, your copies aren't going to work as expected. It's important to recognize that SuperDuper! is very conservative in operation, and will not allow a copy to complete if **any** errors occur.

This is a different approach than you might be used to, but SuperDuper! doesn't **know** how important a file is to back up and – very often – the user doesn't either. If the failure is on a "boot-critical" file, for example, not backing it up could mean you've got a rather ineffective backup!

So, we stop the backup. If you know what the file is, you can take appropriate steps, and Smart Update will automatically continue from the proper location (it won't copy files that are already there, and will do any rearranging that the "fix" requires). If you don't, support is here to help you make an informed decision on how to continue.

Physician, (attempt to) heal thyself

If you encounter an error, click the **Show log...** button. The log viewer window will open, and show you what happened during the last copy.



At the bottom of the log in red, usually preceded with ERROR or WARNING, is the reason for the failure.

Typically, one of two things has occurred. There's not enough space to copy the file, or an I/O (or other) error has prevented the file from being read or written.

Out of space

Out of space errors are signaled by a message in the log similar to "No space left on device". This could mean the disk is really full, or that damage to the file is making OS X *think* the disk is full.

If the destination volume is actually full, and the source volume should definitely fit on the destination, this could be because **Smart Update** needs more "working space". This is because Smart Update works its way through a volume in a single pass, and copies or deletes files and folders as it encounters them. If you rename a large folder or file, or add one folder and delete another, **Smart Update** may encounter the new file or folder before it deletes the old. In that case, it temporarily needs enough disk space to hold both the old and new versions.

To work around this problem, simply perform a single **Erase, then copy...**, and then switch back to **Smart Update**.

A file that's being aggressively written to at the moment it's being backed up can also cause a volume to become full. When this happens, the file can look bigger to OS X than it really is, which fills the destination volume.

In this situation, you should also use **Erase, then copy**, and make sure that no programs are running during the copy by logging out and back in with Shift held down.

If the file listed in the log isn't large, and isn't being actively written to, it's possible that the file itself is damaged. To repair, use Disk Utility or DiskWarrior to check the structure of the source **and** destination volumes, then try the backup again. (Note that you might need to restart from your OSX Install Disc to repair the source volume. To do so, boot from the disc, then choose **Disk Utility** from the **Installer** menu. Use that to repair the disc's structure (**not** permissions – use the buttons on the right hand side). Then, boot back and give the backup another try.

I/O Errors

I/O errors are the second main kind of trouble you could run into. An I/O error happens because:

- The source or destination drive has a low-level surface error that's preventing a successful copy

- Low-level software is interfering with the copy itself, such as AntiVirus software (which tries to scan every file copied, a time consuming and ultimately pointless operation)
- Some hardware is causing communication problems on the FireWire bus

You might ask yourself: **why?** The drive was working fine. Disk Utility didn't indicate any problems. Why does SuperDuper fail when everything else seems to be working OK?

I know it's frustrating. But it's important to recognize that Disk Utility does not actually test the entire drive. Instead, it checks to see if your folders are, generally, structured properly. It doesn't try to actually **read** all your files: something we **must** do to copy them.

Similarly, your system might be working fine because the file that's having trouble is not one that's typically used. If the file had never been accessed, you'd never know there was an issue... until you ran SuperDuper.

Other devices attached to the system could also be doing weird things, and that can cause problems with large copies that wouldn't necessarily show up when doing "smaller scale" things. iSights are particularly troublesome, and will sometimes cause FireWire drives to malfunction. Powering everything off will often resolve the issue, although disconnecting the iSight is sometimes necessary.

So, let's fix the problem. The very first thing to try is to simply **restart your Macintosh**, and give the backup another shot. Often, that's all that's necessary. But if it doesn't work, you should run Disk Utility to repair the source and destination volumes. If one is your boot volume, that's not always easy, because you can't repair the volume you started your Macintosh from.

Fortunately, you can get around this: just start your Macintosh from your OS X install DVD/CD, and run Disk Utility from the Installer menu (the bold one, at the top of the screen, next to the Apple menu). Repair the volume (don't repair permissions – use the buttons on the right side of the Disk First Aid tab), and then boot back. Then, try the copy again.

If the error reproduces again with the same file, then the problem is likely an error in that file.

If the file is one of yours, try to duplicate it with Finder. If that succeeds without error, delete the original, empty the Trash, and rename the copy to the original name, then perform the copy again. If the duplicate fails, the file is likely damaged beyond repair, and you should delete it and empty your trash.

On the other hand, if you get a failure on a different file, the cause could be low-level software. If you've got an anti-virus program (or something similar) installed, turn off its "Auto Protect" functionality and try again.

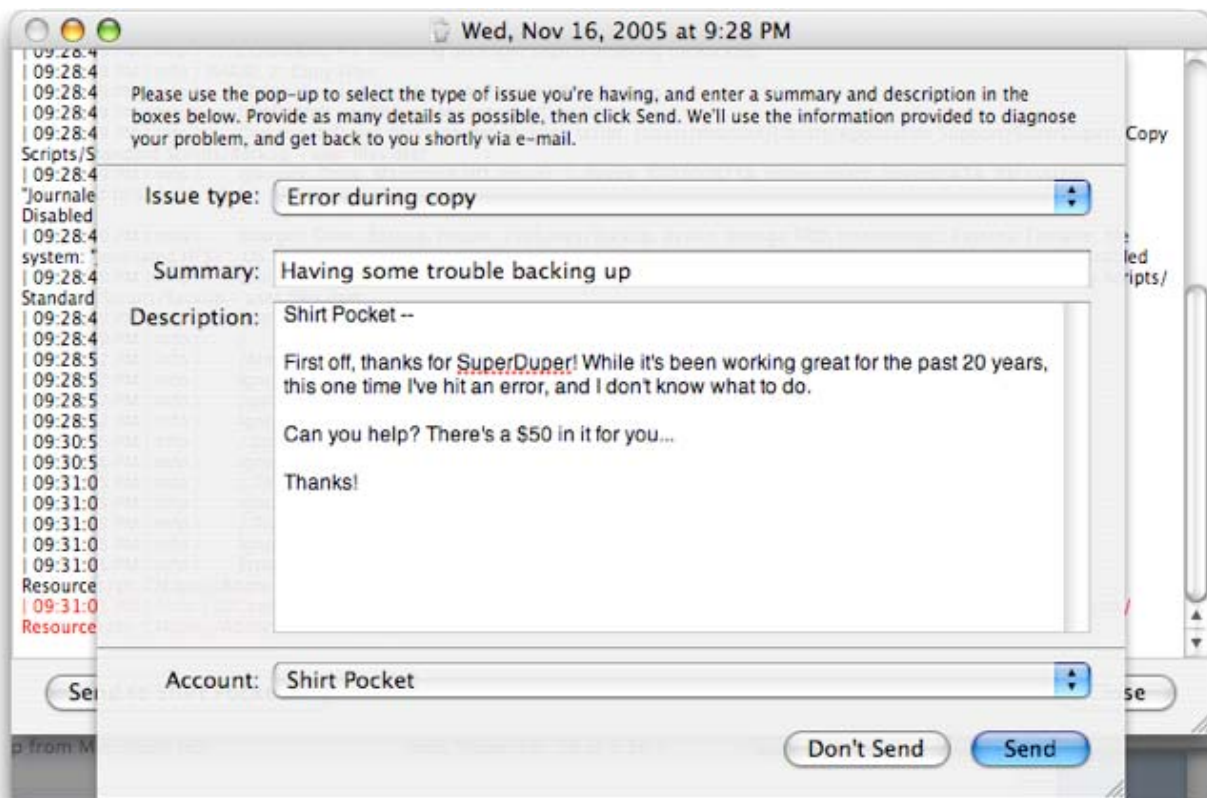
If that doesn't help, it might be a hardware problem. Try simplifying your FireWire bus by disconnecting all devices except for the external drive (especially iSight cameras) and give the copy another try. If that doesn't work, try switching ports or cables.

Finally, if the damaged file is part of the system, it's more difficult to repair directly due to the fact that the system – not you – owns it. If you're using Panther or Tiger, I'd suggest an archive-and-install of the system. Make sure everything is OK, then delete the Previous Systems folder at the top of that drive and empty your trash. That should resolve the issue.

Remember, we're here to help

At Shirt Pocket, we know that you can't have a great product without providing great support. When you get stuck, we're here for you.

Right in the Log window there's a button you can use to contact support. If you're stuck, click that button, and you'll see this sheet:



Choose the problem type, enter a summary and description, and click **Send to Shirt Pocket**. This will send the description you entered, plus the log information, to us, and we'll help you figure out what's going on.

You can also get in touch with us in other ways.

First off, you can join us on the Shirt Pocket web site, at <http://www.shirt-pocket.com>. Our [discussion forums](#) are always open, and are a great place to talk about SuperDuper with other experts, including representatives of Shirt Pocket. The forums are an especially good way to ensure that other users can benefit from your comments and questions.

You can also contact us for one-on-one support by choosing one of the support options in the Help menu, or contacting us at support@shirt-pocket.com. We're here to help, and strive to answer all questions within 24 hours.

Creating a Sandbox

Sandbox — system recovery without downtime!

Back in the days before OS X, it was relatively easy to back up the “System Folder”. It wasn’t that large, really, and could be copied to another drive or even burned to a CD. If anything went wrong – a bad extension, corrupted preferences – you could restore the System Folder and get back to work relatively easily and painlessly.

With the advent of OS X, the system itself became more complex. While it’s much more stable, it’s also much more difficult to preserve a working version as a “checkpoint” – and when things go wrong, it’s not nearly as easy to restore a working environment.

A SuperDuper Sandbox is the solution to this problem.

A **Sandbox** is a bootable copy of your system, stored on another hard drive or partition, that **shares** your personal documents and data with the original. In the past, you might have stored this copy away in a drawer as a backup. With SuperDuper, you actually **use the Sandbox as your startup volume**.

You can safely install any system updates, drivers or programs in the Sandbox, without worrying about what might happen to your system. If anything goes wrong, you can simply start up from the original system. SuperDuper has preserved it in its original, pre-disaster state – but all your new and changed personal documents are totally up to date. **Within minutes**, you’re up and running again – **without having to go through a difficult and time-consuming restore process**.

Of course, the original volume doesn’t have any of the programs or system updates that you might have installed since you made the copy. That’s a good thing, since they’re probably what caused the problem in the first place!

A Sandbox is different than (**and doesn’t substitute for**) a rigorous regular backup program. While backup programs excel at recovering specific files, they’re less useful when you don’t know what’s wrong, and therefore don’t know what to restore! Restoring an entire system can take a long time, and it’s difficult to restore a running system without going through the “disaster recovery” process... and that can take hours.

With a Sandbox, you only need to start up from the original volume!

Creating a Sandbox is a simple process, but it requires that you have a place to store it. Usually, this involves creating a partition somewhere so you’ll have two startup drives: the original, and the location of the Sandbox.

Note

Partitioning is discussed in full in [Appendix – Partitioning Your Laptop for a Sandbox on page 55](#). From this point forward, it's assumed that you have both an original drive volume (which we're calling *Macintosh HD*) and a blank (or erasable) volume for the sandbox (which, for clarity, we're calling *Sandbox*).

Once you've got your partitioning set up, start SuperDuper. Choose your startup disk (e.g. "*Macintosh HD*") in the first pop-up, and the location of the sandbox (e.g. "*Sandbox*") in the second.



There are two Sandbox scripts to choose from. One, **Sandbox – shared users and applications**, is usually a better choice. It **doesn't copy** your user data or applications. Instead, it leaves it on (in this case) *Macintosh HD*, and **shares**¹ them with *Sandbox*. The data remains on *Macintosh HD*, but can still be accessed normally from the Sandbox.

Apple-provided applications, such as iDVD, iTunes and iSync, are copied in full. This ensures that any system updates that affect those applications are isolated to the *Sandbox* volume.

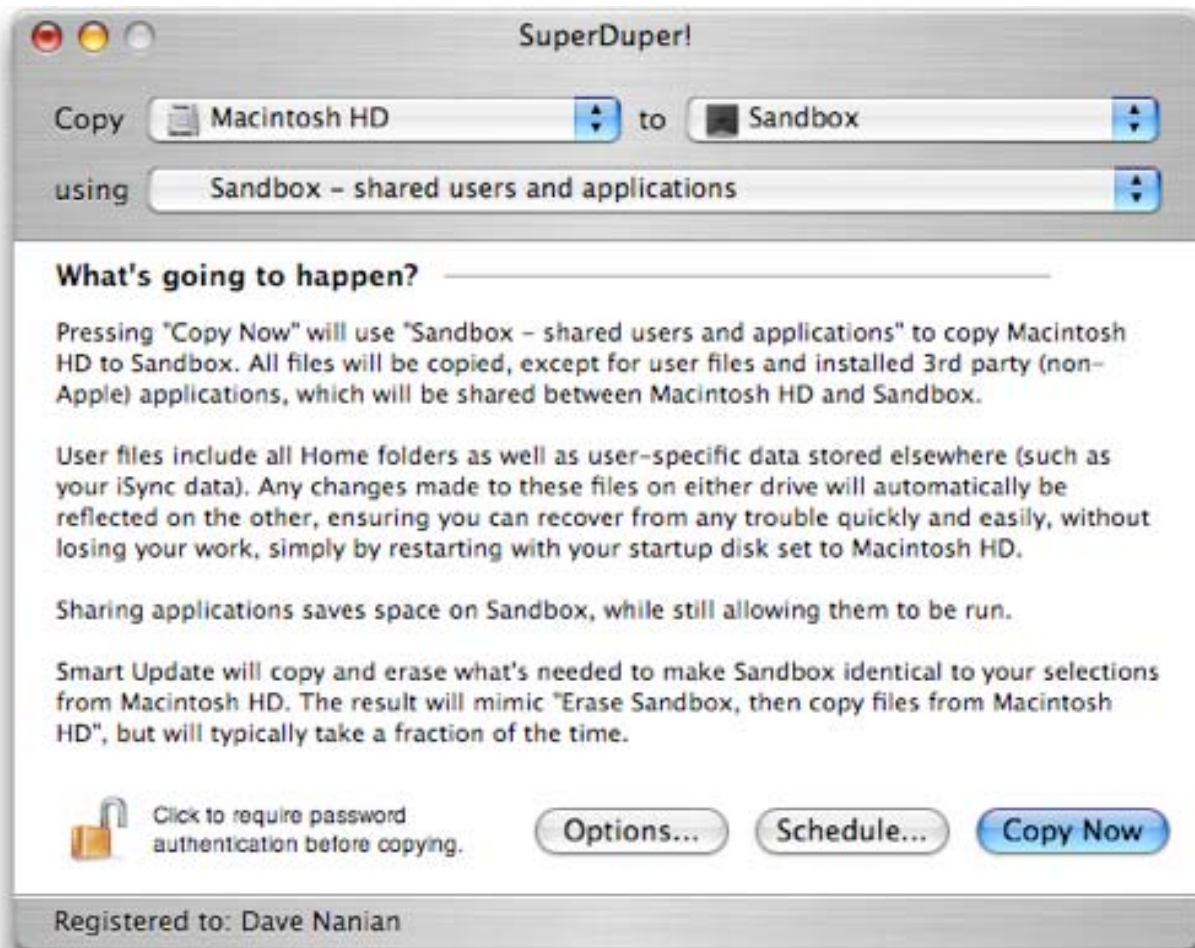
The other, **Sandbox – shared users**, also shares your user data between the two volumes, but makes a full copy of everything else, including your applications.

Note

While **Sandbox – shared users** isolates virtually every aspect of your system, it's typically unnecessary: it's quite rare that applications themselves become damaged in a way that prevents a system from operating, or can't be fixed by simply reinstalling the application itself. This script also requires far more disk space, since complete copies of all your applications are stored on *Sandbox*.

¹ When data or applications are shared, they remain on the original drive (*Macintosh HD*), and are **referenced** by the clone (*Sandbox*) using symlinks/aliases.

Once you've decided which of these two scripts to use, select it in the pop-up.



Now, click Options. Select **Erase Sandbox, then copy files from Macintosh HD** to ensure that any existing data on *Sandbox* is deleted before the copy is started, and select **Start up from Sandbox** to automatically restart from the *Sandbox* volume when the copy has been successfully completed. Everything else should be left unchecked. When complete, click **OK**.

Whether you do it automatically or manually, starting up from *Sandbox* is a **critical** part of the operation. If you create the sandbox, but then never use it as your startup volume, your original system remains at risk! The whole **point** of the sandbox is to isolate the original system from anything that might happen to it: simply making the clone is not enough! So, **make sure you use the *Sandbox* as your startup volume.**

The **What's going to happen?** section describes exactly what SuperDuper will do. Always take a moment to verify that the proper options are selected,

and click **Copy Now**. The clone will take some time to complete. In this case, when done, SuperDuper will automatically set your startup disk to *Sandbox* and restart your Macintosh. (This behavior is optional, of course, and controlled by the **Options...** button, discussed below.)

That's all there is to it! When you run from the *Sandbox* volume, any changes you make to your own documents are available to both *Macintosh HD* and *Sandbox*, since those files are shared between the two volumes. Changes made to the system on *Sandbox*, however, are isolated to that volume alone, and cannot affect the system on *Macintosh HD*.

Need to update an existing Sandbox? No problem! SuperDuper's amazing Smart Update feature will update it in minutes. Simply boot back to the original and follow the steps above, substituting **Smart Update from Macintosh HD to Sandbox** for **Erase Sandbox, then copy files from Macintosh HD**. SuperDuper will automatically check each and every file and directory on Macintosh HD and Sandbox, copying any files added or changed on Macintosh HD to Sandbox. Any files that are on Sandbox that aren't on Macintosh HD will be automatically deleted.

When the Smart Update is complete, you'll have **exactly** the same result as you would with **Erase Sandbox...**, but it will take a **tiny fraction** of the time. And, of course, Smart Update is **perfect** for updating a full backup clone from the original, too!

Important Note

Unless you're certain you know what you're doing, never, ever copy your Sandbox back over your original system. Doing so could delete your personal files and applications (which are stored on the original volume, and **referenced** by the Sandbox).

Starting in v1.5 of SuperDuper!, we've made changes that allow advanced users to copy a Sandbox back to the original volume, using the "Backup – all files" copy script. However, this will only work if the Sandbox and all the shared files were created by SuperDuper!

Please don't attempt this if you're not absolutely **certain** you know what you're doing, and be **sure** you have a recent backup.

Maintaining a Sandbox

It's important to remember that applications installed into the "System" folder – /Applications – are specific to the volume you're running on. If you install an application while running from the *Sandbox* clone, that application will not be available when running from *Macintosh HD*.

Simple applications (typically those with "drag and drop" installs) can simply be copied to the original volume once you're sure they're safe. More complex applications (typically those with installers) might put files in many locations on your system. When you want to add those to your original volume, you select it as your startup drive, restart your Macintosh, and install it using its installer. You need not re-clone unless you want to save the space on *Sandbox*.

Usage Tip

Here at Shirt Pocket, we keep any new application images and packages installed since making the Sandbox in a folder on the desktop.

Since the desktop is part of the shared user files, it's available to both the original volume and the sandbox. When it's time to "synchronize" the original, it's only necessary to restart from the original volume, install the applications in this folder, and then update the Sandbox with Smart Update.

Advanced Users

If the Sandbox is working the way you want, you can also update the original volume by "copying back". To do this, while booted from the Sandbox:

- First, **please** back up the original drive in case you make a mistake.
- Select the Sandbox as the source volume, and the original drive as the destination.
- Choose "Backup - all files" as the script
- Choose **Smart Update** as the **During copy** method. You **must** choose **Smart Update** for this to work properly. And, whatever you do, **do not choose Erase, then copy**.
- Click **Copy Now** to perform the copy.

This will update the OS and applications, but will not overwrite anything that was shared by SuperDuper!

Applying (and recovering from) System Updates while running from a Sandbox

One of the best features of a Sandbox is that it isolates your real system from changes to the OS. Should you find any kind of incompatibility, you can easily restart your system from the original volume, which was not modified when the update was applied.

Because of this, you can safely accept system updates when they appear. If you encounter any sort of problem, restart from the original volume – which wasn't touched.

When you have a moment, you can re-clone and restart from your *Sandbox* volume. Use **Smart Update** rather than **Erase Sandbox, then copy...** and it'll only take minutes. When it's done, everything should work exactly as it did before. You're ready for the next – hopefully fixed – update!

If, on the other hand, the System Update worked wonders, you can easily apply it to your original *Macintosh HD* volume at your leisure.

Important Note

Unless you're certain you know what you're doing, never, ever copy your Sandbox back over your original system. Doing so could delete your personal files and applications (which are stored on the original volume, and **referenced** by the Sandbox).

Starting in v1.5 of SuperDuper!, we've made changes that allow advanced users to copy a Sandbox back to the original volume, using the "Backup – all files" copy script along with Smart Update. However, this will only work if the sandbox, and the shared files are created by SuperDuper!

Please don't attempt this if you're not absolutely **certain** you know what you're doing, and be **sure** you have a recent backup.

Saving and restoring settings

If you have a number of different copy or backup tasks that you want to accomplish on a regular basis, it can be a pain to reset the various options each time you load SuperDuper! Fortunately, SuperDuper! has an answer for those who have registered the program: the ability to save and restore your choices in a “settings file”.

A settings file includes the source and destination volumes, selected Copy Script, and all of the options selected in the **Options...** page. Once you've set these the way you want, simply choose **Save** from the **File** menu (or press **Cmd-s**). Give your settings a name, and you're done.

The next time you want to perform the same operation, open SuperDuper! and choose **Load settings...** from the **File** menu (or use the **Open Recent** menu). SuperDuper! will load your saved settings: after verifying your selections in the **What's going to happen?** section, simply click **Copy Now!**

You can also start SuperDuper! with a given set of settings by double-clicking the appropriate settings file in the Finder. By default, the settings files are stored off your Home folder in **Library/Application Support/SuperDuper!/Saved Settings**.

Note

When SuperDuper! loads your settings, it attempts to restore your source and destination volumes. If the volume isn't currently mounted (for example, if you had backed up to a sparse image or a removable drive), SuperDuper! will try to automatically mount it.

If that's not possible, SuperDuper! will present a sheet and prompt you to mount the volume. Once it detects the volume has been mounted, the sheet will automatically be dismissed. If the volume isn't available, click **Cancel**.

SuperDuper! Options in detail

The *Options...* view allows you to customize many aspects of SuperDuper's operation without delving into the world of *Copy Scripts* (see the next section). Let's go through each option, one by one – first, in the Basic tab, and then in Advanced.

Basic Options

Before copy

Repair permissions on Macintosh HD

The **Before copy** options occur before the main copy operation takes place. **Repair permissions on Macintosh HD** (or whatever your source volume is called) verifies and corrects any permission problems before copying files.

If you don't know what this is, don't worry about it!

Typically, you don't need to repair permissions manually – the operating system attempts to ensure that permissions are maintained correctly at all times. If, however, you wish to make sure that your on-disk permissions are as OS X expects them to be before making your clone, check this box.

Note that this is mostly a time saver, since you can use OS X's built-in Disk Utility to repair permissions outside the context of SuperDuper. In general, no harm can come from repairing permissions, but it does take a significant amount of time to complete.

During copy

- ✓ Erase Sandbox, then copy files from Macintosh HD
- Smart Update Sandbox from Macintosh HD
- Copy newer files from Macintosh HD to Sandbox
- Copy different files from Macintosh HD to Sandbox

The **During copy** options control how SuperDuper processes the files that the Copy Script selects for copying.

Erase Sandbox, then copy files from Macintosh HD first erases the destination (in this case, *Sandbox*), and then copies all of the selected files from the source. (*Sandbox* and *Macintosh HD* will be replaced with the names of the source and destination volumes you selected in the main window.) This is usually what you want, since it ensures that the files you've selected on the source are the only ones present on the destination when the operation is complete.

Smart Update Sandbox from Macintosh HD is the best way to update an existing Sandbox (or backup stored on *Sandbox*) from the original on *Macintosh HD*. SuperDuper quickly evaluates the files on the original and the clone, and automatically makes any changes on the clone necessary to make it an exact copy again. Smart Update will copy any files that differ *Macintosh HD* to *Sandbox*, whether newer or older, and will remove any files on *Sandbox* that don't exist on *Macintosh HD*, the original. The result is **exactly** what you'd get if you chose **Erase Sandbox, then copy files from Macintosh HD**, but SuperDuper only makes the changes necessary to achieve this result – typically copying far fewer gigabytes!

Important Note

As we said above, the result of a Smart Update will be **exactly** what you'd get if you chose **Erase Sandbox, then copy files from Macintosh HD**. That means that any files “outside” the set of files selected by the copy script will be **erased**.

For example, let's say you did an initial copy using **Backup – all files**. Then, later, you decided to try to only “update” your user files the **Backup – user files** script.

Remember that the result of a Smart Update will be exactly what you'd get if you chose **Erase Sandbox, then copy files from Macintosh HD** with the same script. That means that all files on *Sandbox* other than the ones selected by **Backup – user files** will be **deleted!**

Instead, you should choose the same script you used previously: **Backup – all files**. SuperDuper will *automatically* skip any files that didn't change, so you'll end up copying the smallest amount of data possible to make *Sandbox* match *Macintosh HD* again.

If you want to merge the contents of the source with the destination, you should choose **Copy newer files...** or **Copy different files...**. In this case, SuperDuper will overwrite any pre-existing files with the same name on *Sandbox* with *newer* or *different* files from *Macintosh HD*, skipping files that have the same date on *Macintosh HD*, and adding any from *Macintosh HD* that are not present on *Sandbox*. Any files on *Sandbox* that do not exist on *Macintosh HD* are left alone.

Note that for a bootable copy, you should always use either **Erase, then copy...** (for the first copy) or **Smart Update** (to update an existing copy): it's **extremely important** to ensure that any “old” files on the clone are removed.



On successful completion options run at the very end of a successful copy. Here you can have SuperDuper!

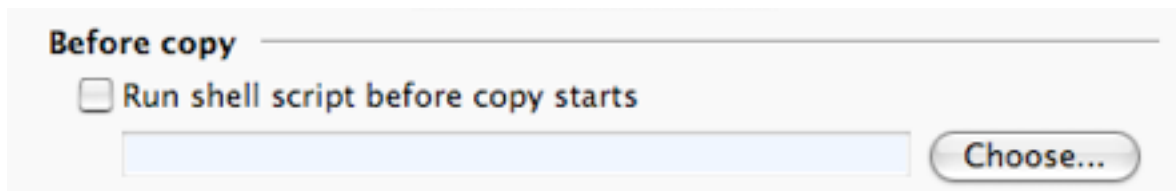
Do nothing, which is just like it sounds.

Restart from Sandbox, which sets the destination volume as the startup volume and restarts your Macintosh.

Set Sandbox as startup disk sets the destination as the startup volume but does not restart the computer.

Shut Down computer, **Sleep computer** and **Quit SuperDuper!** are pretty self-explanatory.

Advanced Options



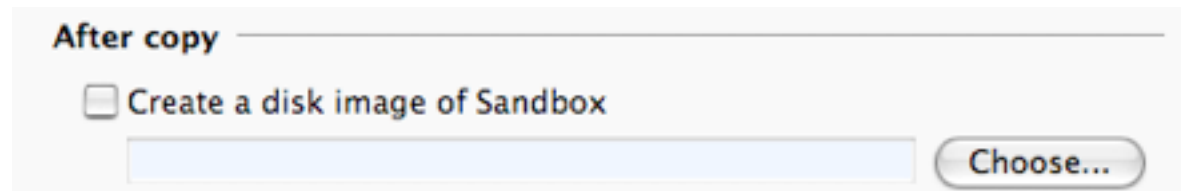
There's a single **Before copy** option under Advanced that allows you to run a shell script or other Unix executable just before the copy begins. This script can perform any operation you can think of. Like, for example, something we didn't! (Or, more seriously, exporting a MySQL database or similar activity.)

When SuperDuper executes the script, it passes it six parameters:

- 1 The name of the source volume (e.g. *Macintosh HD*)
- 2 The mount path of the source volume (e.g. */*)
- 3 The name of the destination volume (e.g. *Sandbox*)
- 4 The path of the destination (e.g. */Volumes/Sandbox*)
- 5 The name of the script the user selected (e.g. *Copy – all files*)

- 6 The name of the image file being processed, if any. This could be either a source image (if copying from an image to a volume) or a destination image (if copying from a volume to an image), or a post-copy image (selected in the **After copy** options, below)

After copy options are run immediately after the *Copy Script* has finished, and are typically used to perform operations on the fresh destination volume.



Create a disk image of *Sandbox* will create a quickly restorable disk image (DMG file) of your destination volume immediately after the copy has finished. This is typically used in a lab situation where you've got a real reference image, and need a DMG file to image a series of other computers.

This DMG file is fully ASR ("Apple Software Restore") compliant, and can be used to restore the destination volume to this fresh state within minutes (restoring one of these images is much, much faster than doing a "file-by-file" copy).

However, you will pay for this time savings later with additional time up-front. In the case of a *Sandbox*, you'd typically use a **Smart Update** instead: it'll take less time up front **and** during the restore.

When you check this box, SuperDuper will prompt you for the name and location it should use to store the disk image file. This location cannot be on the destination volume.

Usage Tip

If you're a developer, testing the same clone in a number of different situations, you could use the **Sandbox – shared users and applications** script, and store a restorable image in your Documents folder for easy future access. Remember, though, that this image is only used to save time if you want to re-clone the **exact** same image later on – and in most situations that start from an existing "base", Smart Update will be faster.

Software testers can also use this option to save an image of a "standard configuration" they've just created. With a few clicks, this image can be restored to exactly duplicate a volume's state before a test was executed.

Install package on Sandbox

Choose...

Install package on *Sandbox* is very useful if you want to create a copy (or *Sandbox*) and then install a Software Update or other package to the destination volume. As with **Repair permissions...** above, this option is intended as a timesaver more than anything else, as you can perform this operation yourself after SuperDuper has finished.

Important Note

During beta or “seed” testing, some packages will *not* install properly to a partition other than the one you’ve booted from. If you see, in any release notes, a comment along the lines of “relocated applications will not update properly...”, do *not* use the **Install package...** option.

To be *absolutely* safe, unless you’re sure – or have confirmed that it works with the package author – always reboot from the target partition before installing a package.

When you select **Install package...**, SuperDuper prompts you for the location of the package file you want to install. This can be located on a mounted disk image, or any location other than the source.

Note

Package installation occurs *after* any disk image is created. This allows the disk image described above to be used to quickly restore to pre-package status.

Run shell script after copy completes

Choose...

As with the **Before copy options**, **Run shell script after copy completes** allows you to select any shell script or other executable, and run it after the copy, image and install actions have completed. The parameters passed in are identical to the ones above.

Copy Scripts

While SuperDuper works great as shipped, with scripts that satisfy the typical user, there are those of you out there – and you know who you are – who have needs that are more unique. Fortunately, we have a solution: *Copy Scripts*.

SuperDuper's *Copy Scripts* allow file-level control of copying, and can be built up in stages. You don't have to completely rewrite an existing script (or set of scripts) to handle a new situation: SuperDuper comes with a rich set of standard script building blocks that you can use as a basis for your own. Simply "include" some of these scripts to collect a group of files, and then fine-tune the result for a new situation. Or, start from scratch: it's up to you.

Note

You shouldn't modify the built-in scripts. If you want to modify the behavior of a built-in script, *include* the script and override its actions in the Commands section instead.

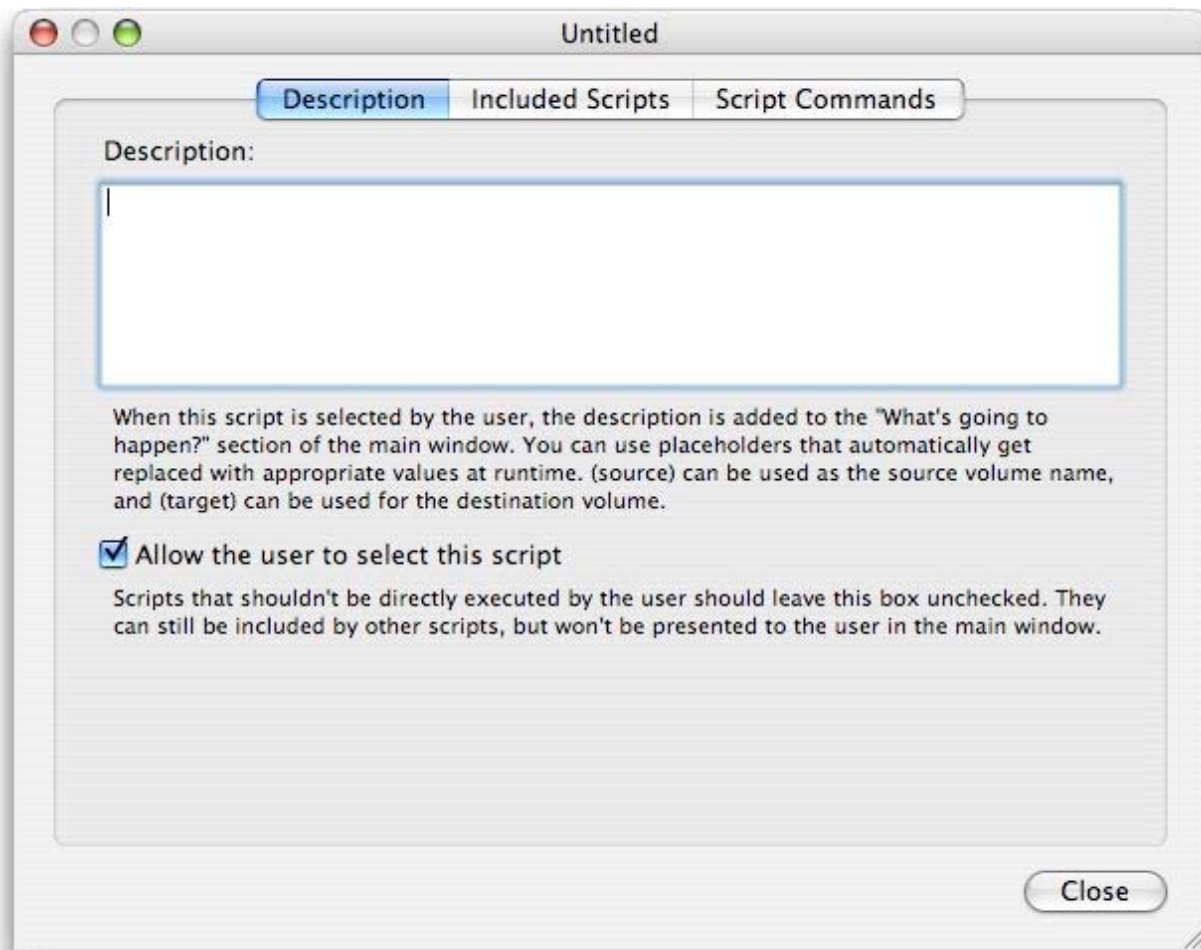
Doing so will ensure that you'll benefit from any modifications we made to the built-in scripts in subsequent releases of SuperDuper!

If you must modify a built-in script, do not overwrite the existing copy: save it to the user "Copy Scripts" folder instead (the save dialog will automatically default to the correct location — ~/Library/Application Support/SuperDuper!/Copy Scripts).

Copy Scripts aren't scripts in the way shell scripts are. Rather, they provide you with a flexible way to select a set of files, and the actions to perform on the files in that set. Once those files are selected, SuperDuper "executes" the result.

Let's see how this works by creating a script that shares some large files from Final Cut Pro 4 to save space on a Sandbox.

First, we'll create a new Copy Script using the File Menu (or use the shortcut **Cmd-n**). There are three sections to the editor: *Description*, *Included Scripts* and *Script Commands*.

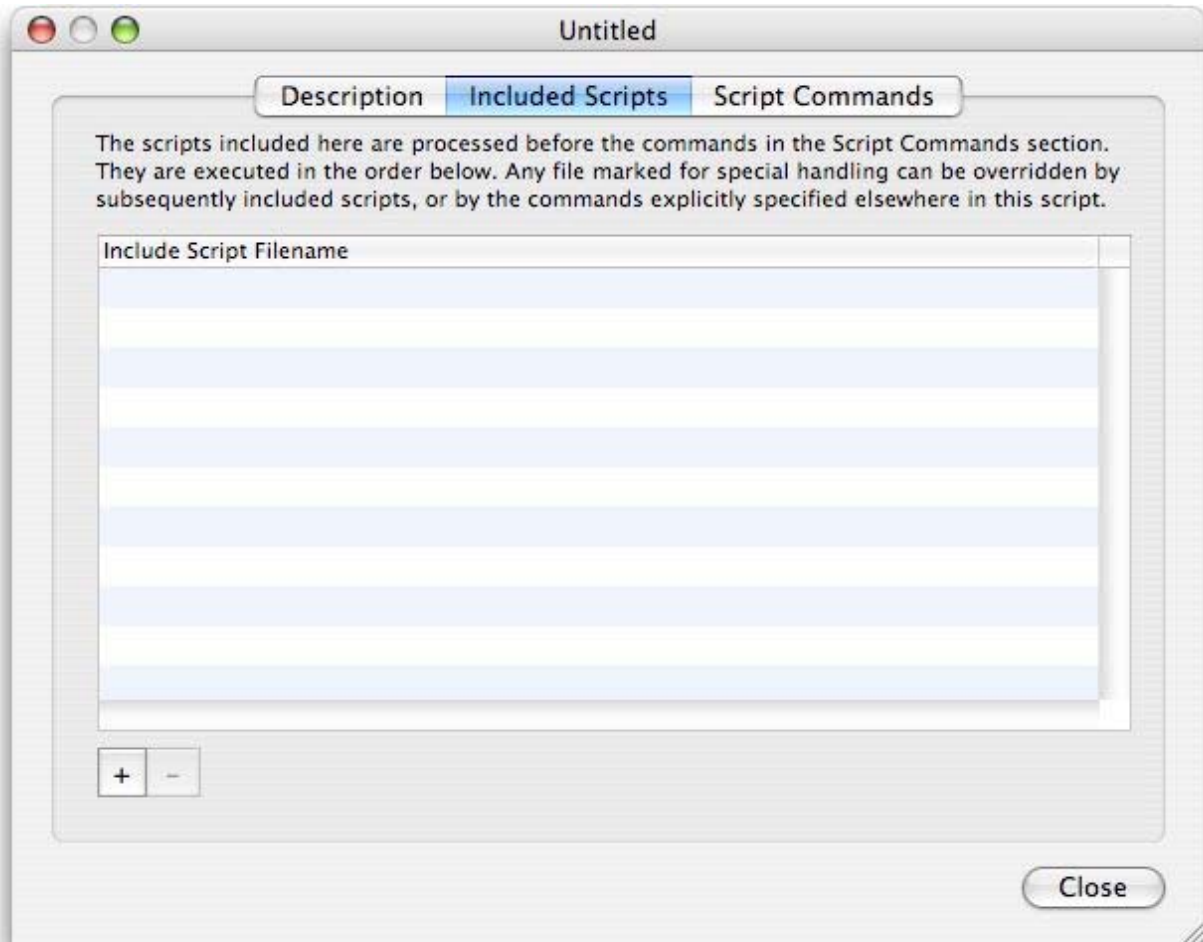


The **Description** tab allows you to provide text to the user when they select the script in the main window. It's best to give a clear description of the intent of the script to ensure that the user isn't surprised by the end result.

You can use the placeholders (*source*) and (*target*) (with the parentheses included) to refer to the two volumes selected in the main interface. This gives the user more context for the script's actions, and is preferred to using generic terms like "source" or "destination".

Scripts that aren't intended to run on their own can be hidden from the user by unchecking **Allow the user to select this script**. Once done, the script will not be shown to the user in the Scripts pop-up.

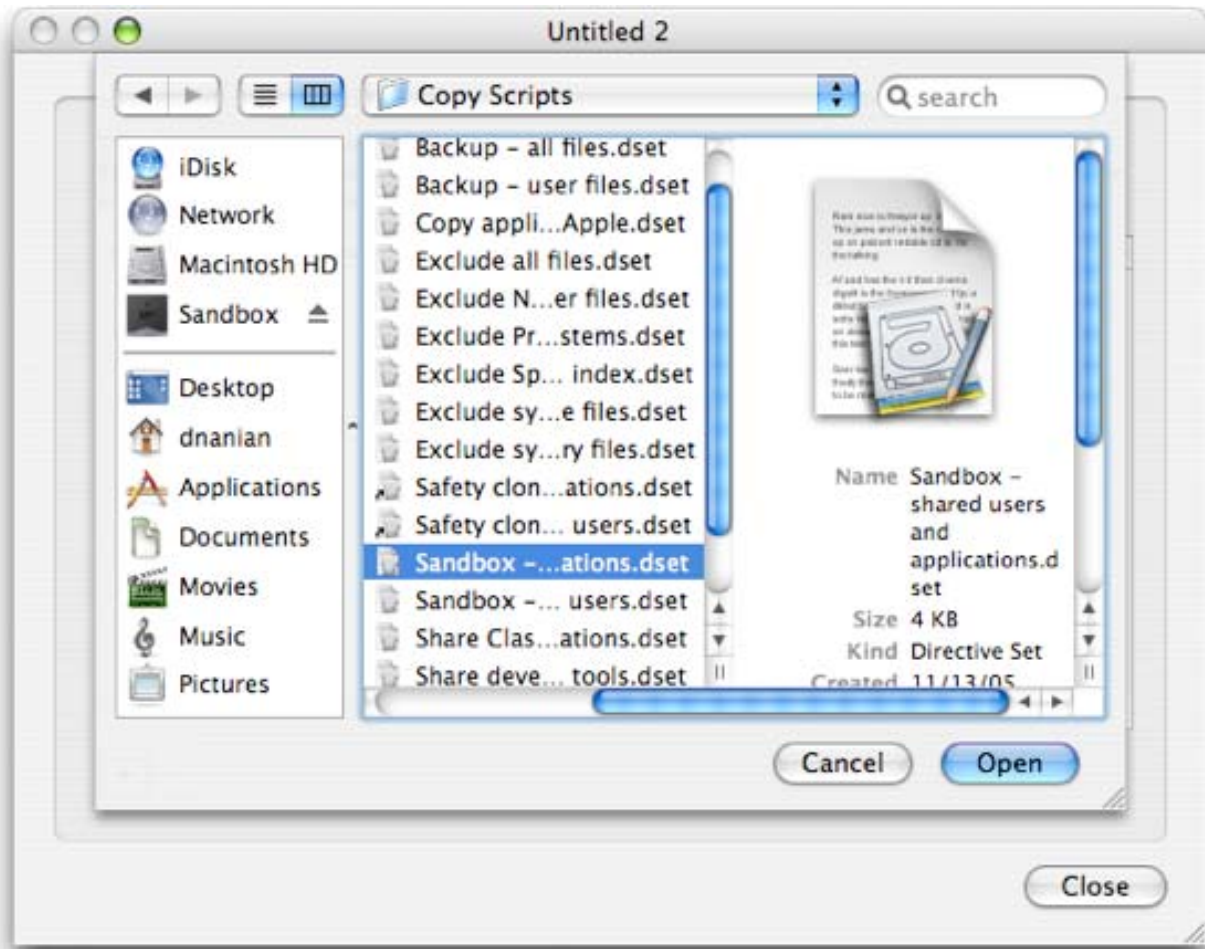
The **Included Scripts** tab allows you to select one or more “building block” scripts that should collect a group of files that you want to refine in your new script. All scripts get a list of every file on the source drive, and are allowed to modify the commands assigned to each file (which, by default, is to **copy** the file – see the discussion of Script Commands, below). After one script has made changes, the resulting set of files and commands is passed to the next script in the list, from top to bottom, so subsequent scripts can modify or override the actions taken by the ones above.



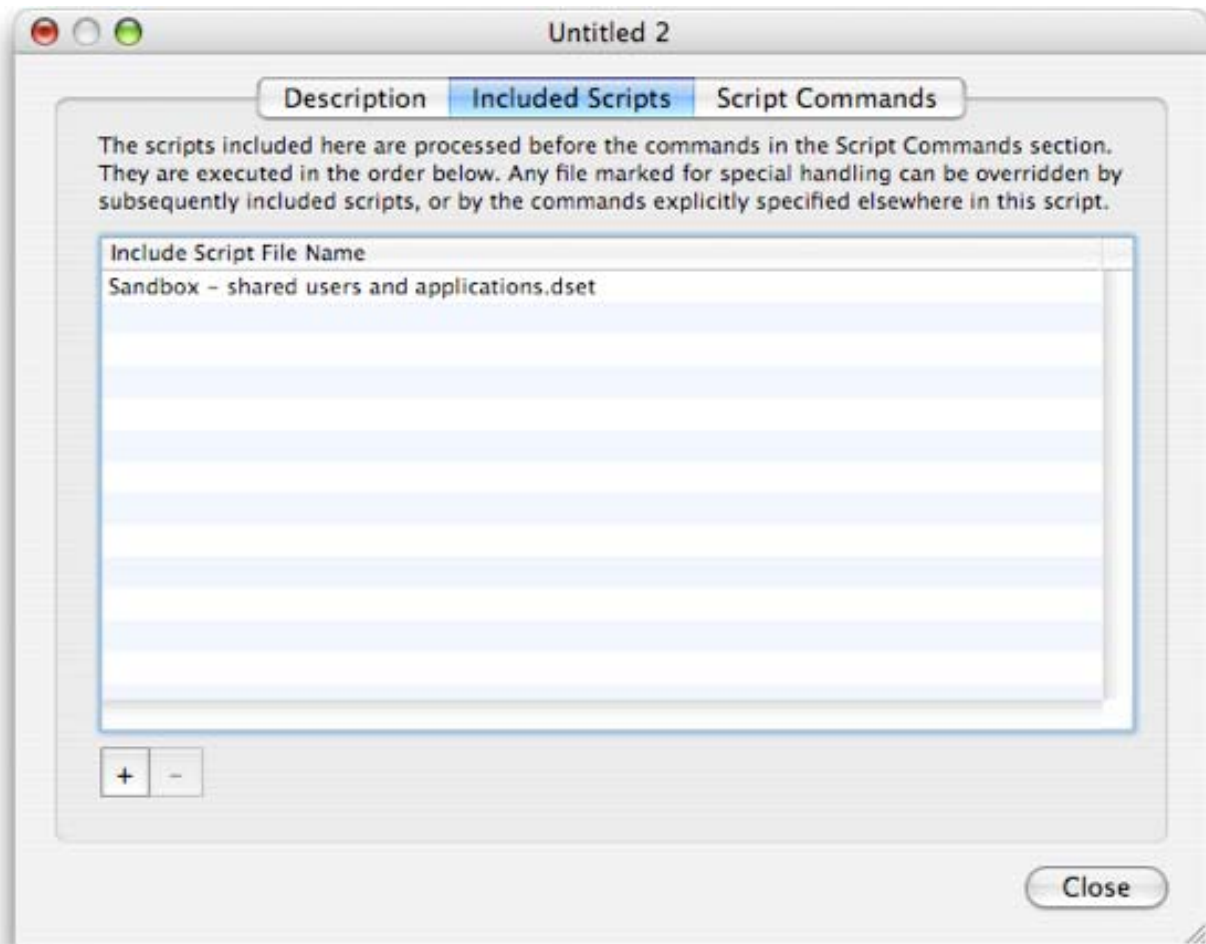
Note

It's important to remember that **every** file on the drive is always included in the set of files passed from one script to another. Scripts only modify the **actions** SuperDuper takes when it encounters the file. These actions are explained in the *Script Commands* discussion, below.

In our case, we're going to base our script on the standard "Sandbox – shared users and applications" script. To include it, click the + button, and choose "Standard Scripts". Then, choose "Sandbox – shared users and applications" from the list of scripts.



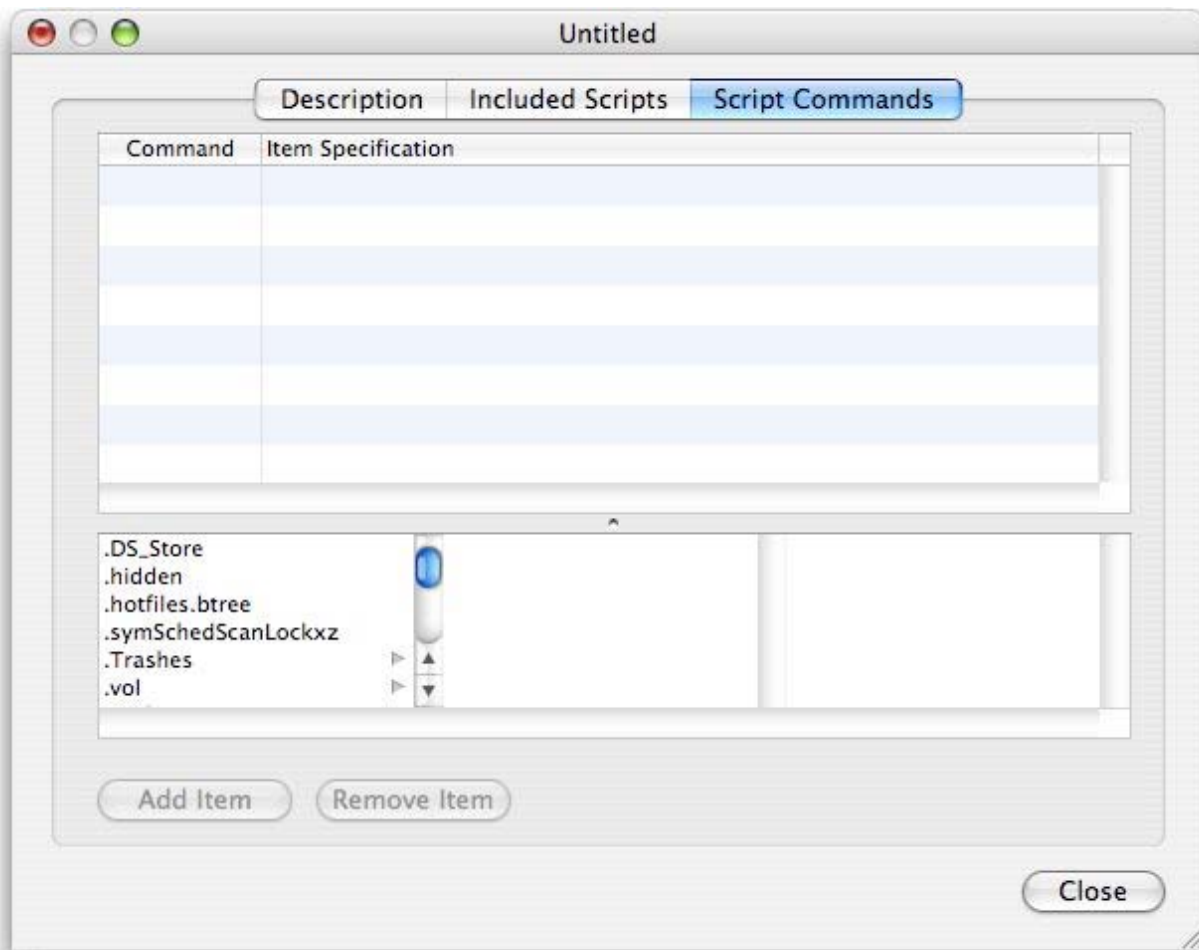
The script will appear in the list of included scripts.



Tip

If there are multiple scripts in the list, you can rearrange them by dragging and dropping.

At this point, the script will work exactly like the *Sandbox – shared users and applications* script, which isn't quite what we want. To customize it further, let's move on to the **Script Commands** tab.



The upper table is a list of the commands that are specific to this particular script. Each row has a column that contains the command to apply to the file specification, which follows. This command can be:

- **Copy** – makes a copy of the matching files on the target (the default action)
- **Ignore** – doesn't copy the matching files to the target
- **Share** – shares the files on the source with the target

Technical Note

Sharing, for those technically inclined, causes the file or directory on the destination to be symbolically linked (a type of alias) to the same file or directory on the source.

The Item Specification column allows you to select the exact files this particular script command operates on. This entry supports wildcards, so you can easily create complex specifications to handle almost any situation you can come up with.

There are four general types of wildcards that can be used in an item specification:

- * -- Matches zero or more characters
- ? – Matches any single character
- [...] – Matches any character in the brackets
- [!...] – Matches any character except the ones in the brackets

Within brackets, ranges of characters can be separated with -, e.g. [0-9], [!a-zA-Z], etc.

Technical Note

For those of you who are into this kind of thing, SuperDuper's wildcards conform to standard Unix file 'globbing' specifications. For those of you who don't know what 'globbing' means, don't worry about it!

The one thing you should keep in mind is that '*' won't match files that start with '.' – this means that to treat all files specially, you'd need to include both '*' and '*.*

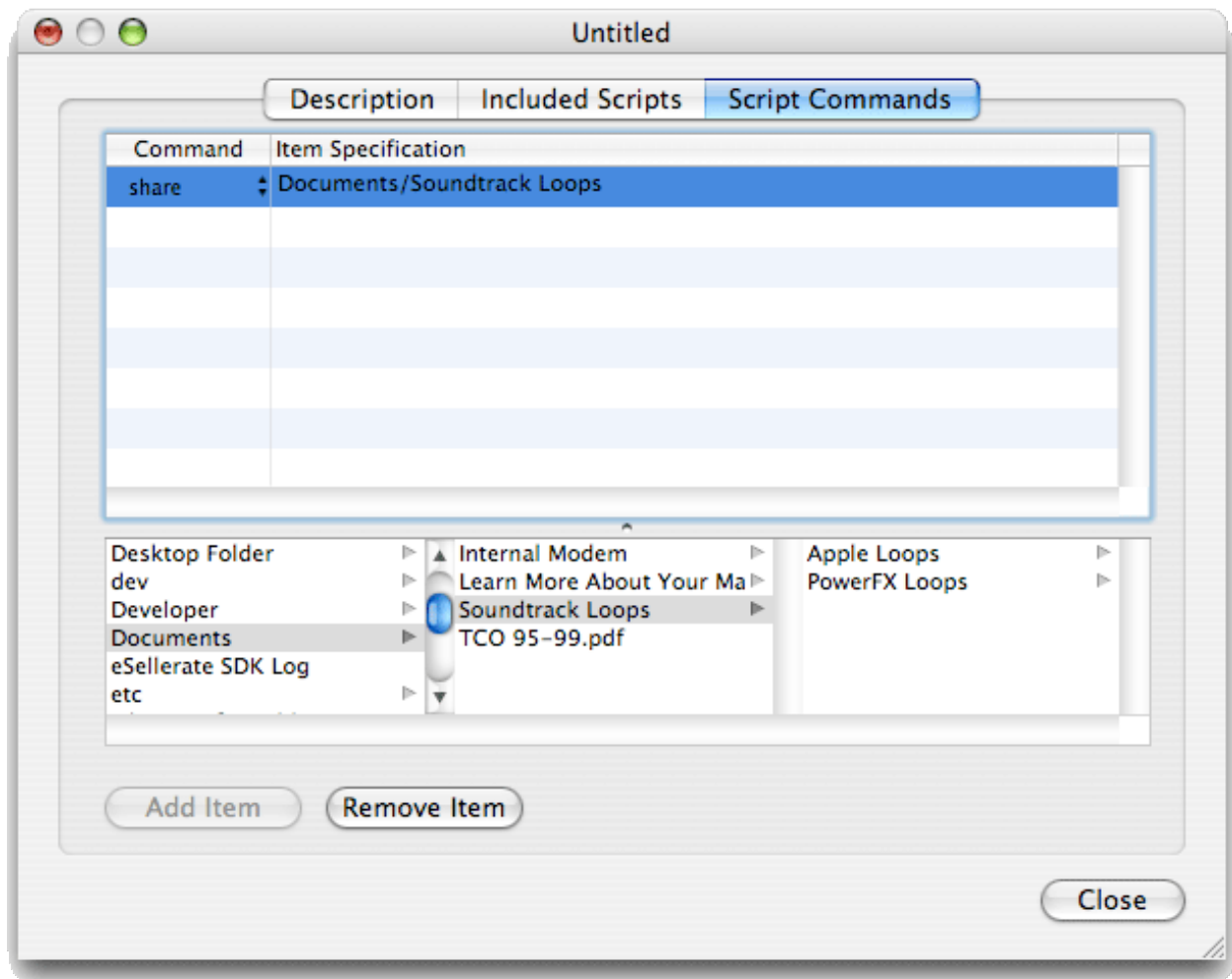
Let's look at a few examples that will hopefully make this clearer:

- matches all files in the root directory, except those that begin with '.'.
- **Applications/Retrospect *** would match everything in the Applications directory that starts with "Retrospect " (note the space) – e.g. "Retrospect Express", "Retrospect Client" and "Retrospect 5.1", but not "Retrospect".
- **Applications/Retrospect [1-9].[0-9]** would match "Retrospect 5.1", "Retrospect 5.0" and "Retrospect 6.3", but not "Retrospect 0.1" or "Retrospect 5.33".

Below the table is a helpful file browser that makes it easier to add a command to the table. To add a given item to the table, you locate it in the browser and then click **Add Item**. Do not add the drive name or the Volumes directory to the table, since the appropriate drive is always added in front of your file specification. Note that you can edit an Item Specification by double-clicking it in the table.

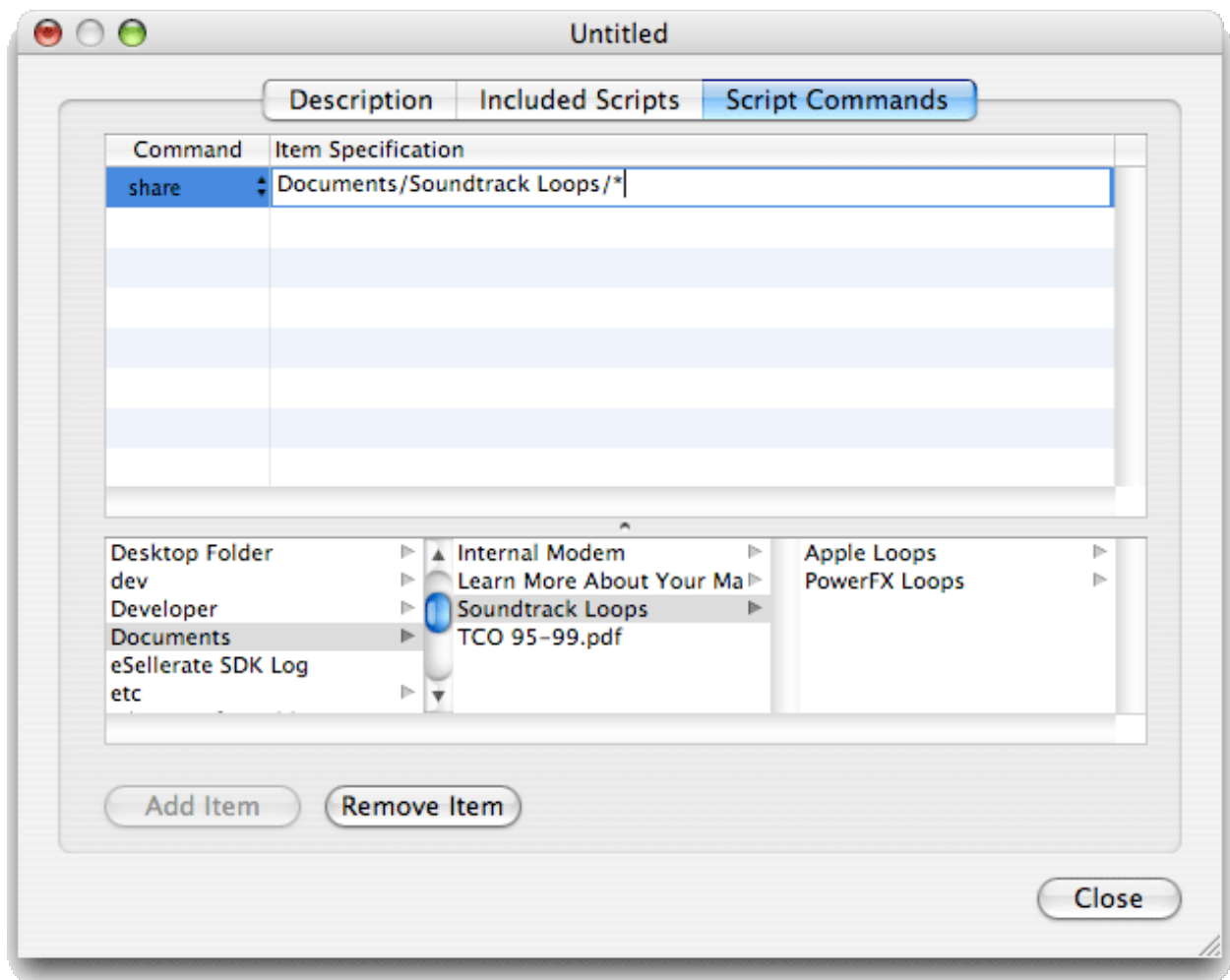
To continue with the example, I'd like to share the rather large Soundtrack Loops directory installed by both Final Cut 4 and Soundtrack between my original volume and my Sandbox. So, I select the directory in the browser and click **Add Item**.

The default command is **ignore**, which is not what we want. Instead, click on it and change it to **share**.



This will end up sharing the "Soundtrack Loops" directory, and everything in it, from the source to the target volume.

If, instead, I wanted to share everything within Soundtrack Loops, but not the directory itself, I could use wildcards. Just double-click the item specification, and you can edit it at will.



Changing it as above will continue to copy the directory "Soundtrack Loops", but will share the contents of it. In this case, the directories "Apple Loops" and "PowerFX Loops" will be shared with the source.

That's all there is to it! Simply save the script with Cmd-s, giving it a descriptive name. Make sure to store it above the "Standard Scripts" directory.

When this script is chosen, it'll do everything that *Sandbox – shared users and applications* does, but **in addition** it will share those two directories in /Documents/Soundtrack Loops – and, should other directories appear in there in the future, it'll share those as well, due to our use of a wildcard.

Appendix – Partitioning Your Laptop for a Sandbox

SuperDuper can make regular backups without any special setup: you just need something to copy from, and a drive – preferably external – to copy to. This works for desktop and laptop systems, because the drive need only be connected during the backup operation.

But to create and use a Sandbox as easily as possible, you need to run from it. If you're running on a laptop, and you want it to be portable, you'll likely need to partition your internal drive.

To do this, you need to have one of the following:

- An erasable **external FireWire drive** large enough to hold a copy of your drive
- A FireWire based **Apple iPod** you don't mind erasing with enough space to hold a copy of your drive (since your music is being synced from a copy of iTunes, erasing your iPod won't permanently erase your music – it can always be re-synced when you're done)
- Some other **reliable** way of backing up your data

Partitioning your internal drive is not difficult, but it is a bit scary, because it can't be done with your data "in place": you need to move your data off the drive you want to partition, run Disk Utility to partition it (destroying the data that's there), and then copy the data back.

Note

There are third-party products, such as Coriolis Software's iPartition, that can actually partition the drive with the data in place. OS X, however, cannot do it itself.

SuperDuper! is ideal for making the copy, since it can make a fully bootable backup of the original. You can then check to make sure the copy works properly before you destroy the original data by partitioning. That said, better safe than sorry – please be exceptionally careful when following these instructions. **Although all data should be copied during this process, please take appropriate steps to backup any critical data on the drive. We take no responsibility for any data loss.**

Let's get started! These steps will assume that you've got an external FireWire drive of some type, either a standalone drive or an Apple iPod.

Step 1: Determine the space needed, and select a device

First, check to see how much space you're using on the drive you're going to partition. To do so, select the drive in the Finder and press Cmd-i. You should see something like this:

Format: Mac OS Extended (Journaled)
Capacity: 54.52 GB
Available: 43.87 GB
Used: 10.65 GB on disk (11,436,621,824 bytes)

As you can see, this drive is using about 11GB of drive space. You'll need another drive with **at least** 11GB of space on which to clone it (such as a 15 or 20GB iPod). The drive you select must be able to act as a startup disk.

Step 2: Connect the device to your Macintosh

Once you've located a device with sufficient space, attach it to your Macintosh. If it's an internal drive, nothing else need be done. If it's a FireWire device, plug it into your FireWire port. If your FireWire device is an iPod, you'll need to check **Enable FireWire disk use** in iTunes' iPod settings (with the iPod attached, click the button with the picture of the iPod in the lower right of the main iTunes window) to get it to show up as a mountable drive.

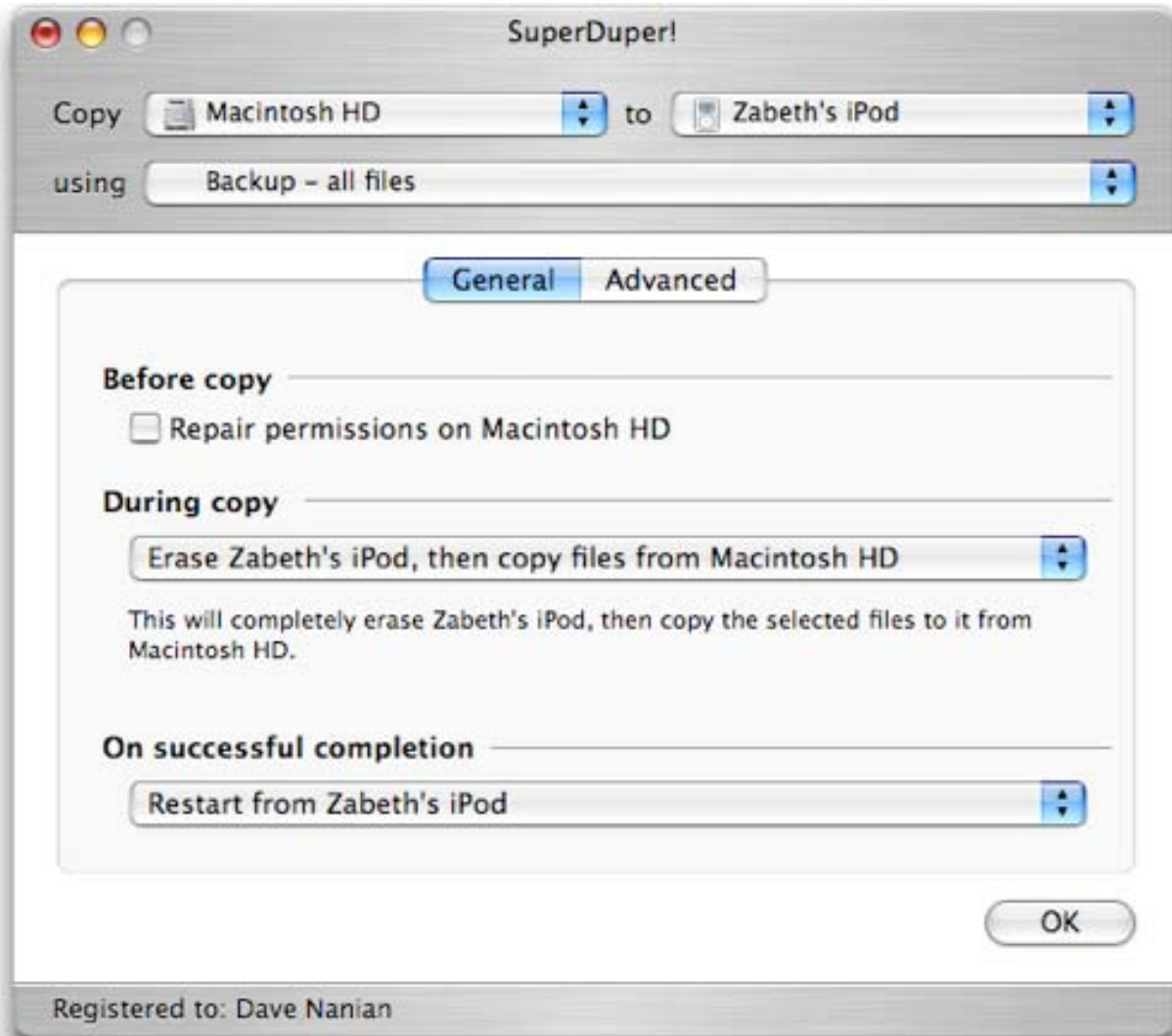
Step 3: Use SuperDuper! to clone your drive

Next, start SuperDuper! Choose your boot drive source in the first ("from") drop-down, and the FireWire destination ("to") in the second. The script you should use is **Backup – all files**.

At this point, you should see something like this:



Now, click **Options...**. Ensure that the **During copy** pop-up is set to **Erase...**, which will erase the destination volume before copying to it. Everything else should be unchecked, and **Restart from...** should be selected in the **On successful completion** section:



Click **Done**. SuperDuper will confirm your choices in the **What's going to happen?** section of the window:



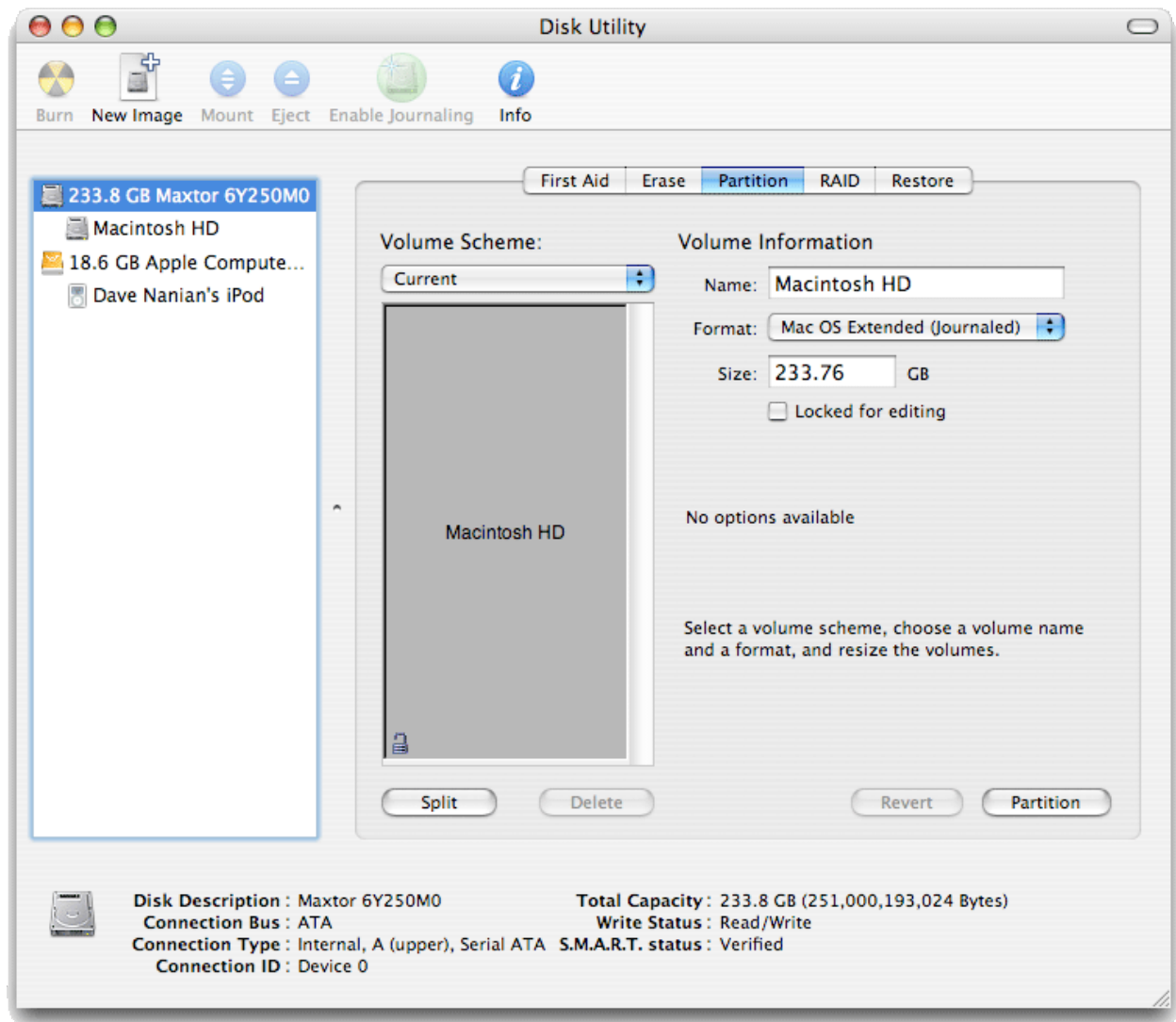
When you're certain that you've chosen the right options, press **Copy Now**. SuperDuper will copy all of the files from the source to the destination, and will reboot from the destination when it's done. Since this will take some time, depending on the amount of data you've got, you may want to relax with a tasty beverage.

Step 4: Verify the clone

When SuperDuper is done, and your system has restarted from your FireWire device, take a moment to look around. Try a few applications to make sure they work properly, and verify that your data is, indeed, where it should be. It's important to make sure you're satisfied with the copy, because in the next step you're going to repartition the original drive.

Step 5: Partition the original drive

Once you're satisfied that things on the copy are working the way they should be, it's time to actually partition the original drive. To do this, launch Disk Utility (it's located in /Applications/Utilities). Select the original disk, and switch to the Partition tab. You should see something like this:



Choose **2 partitions** from the **Volume Scheme** drop-down, and size the partitions so that about 75% of the space is allocated to the top partition, and about 25% to the bottom. The bottom partition should be about 10-15GB, and the top should be at **least** large enough to contain your original data. Name the larger clone the same as your original drive (Apple names the startup disc *Macintosh HD* from the factory), and name the second drive something descriptive, like *Sandbox*.

When you're satisfied with your choices, click **Partition**, and Disk Utility will complete the partitioning operation.

Step 6: Restore your data to the original drive

When the partitioning has completed, it's time to use SuperDuper again to restore your data.

Launch SuperDuper. Choose the startup disk in the source drop-down ("From") and the larger of the two partitions in the second ("To"). The **Backup – all files** script and the options to erase and start up from the destination should already be selected; verify this by reviewing the **What's going to happen?** text.

When you're satisfied with your choices, click **Copy Now** again... and, get yourself another tasty beverage.

Step 7: Final verification.

Once again, check to make sure your copy is functioning the way you expect it to by running some applications and checking your data. Things should work exactly as they did before you started the whole process.