the digital plumber

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The Complete Location Survival Guide, Part One
by Paul Ellis

How do you avoid losing a location shoot to computer equipment failure? Well, the simple answer is to have at least two of everything, which is all very well if you can afford or even carry it, but what if you can't? This month I'll list what I consider to be the bare minimum required to keep your Macintosh and communications on the road. Click on the name of any product mentioned to go straight to a supplier or download page. Some of the links earn me a few bob if you buy by clicking on them. If you don't want to do this, simply Google the application's name, find the vendor's site and buy it that way.

WITH YOUR MACINTOSH

To avoid being stranded if your Mac plays up on you, you'll need

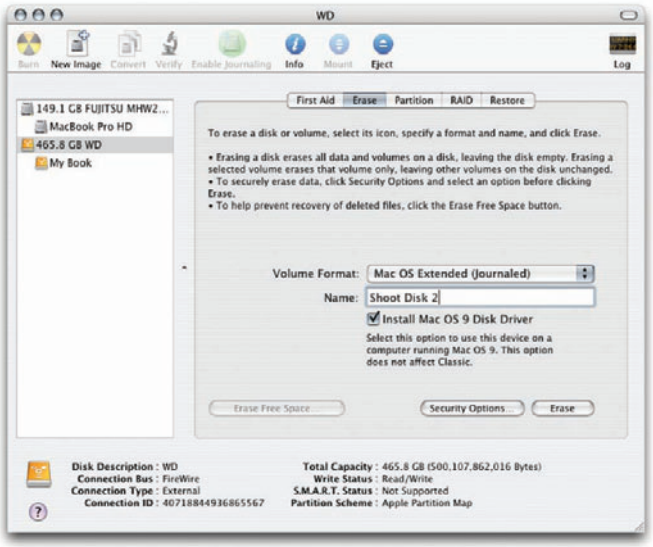
- a second Mac. Yeah, right. Actually, there is often more than one Mac at a location, which is where your bootable backup comes in. Be warned, however, that currently you can't boot an Intel Mac from a bootable backup of a PowerPC Mac, and vice versa. This situation might change with OS X 10.5 Leopard, due for release this Autumn. Intel Macs consist of MacBooks, MacBook Pros and Mac Pros. iMacs and Mac minis can be either Intel or PowerPC. All other Macs made this century have PowerPC processors.
- a FireWire cable. Better still, two FireWire cables: a 400 – 400 and 800 – 800. Use the 800 – 800 if you can for double the transfer speed.
- an Ethernet cable.
- the Apple CDs or DVDs that came with your Mac. Use Toast or similar to make safety copies and have them with you.
- your DiskWarrior CD, or a copy of it.
- an up-to-date clone of your Mac's internal hard disk on a mobile disk that you can boot from. Make the clone with SuperDuper! or Carbon Copy Cloner. Not all mobile disks can boot a Mac; it depends on the type of FireWire bridge chip installed in the disk enclosure. Mobile disks that I know to be bootable include the LaCie Rugged range with FireWire and the Wiebetech ToughTech range.

There are many others; sadly the popular SmartDisk FireLite range often cannot be used to boot from. Whichever you choose, make a bootable backup and try booting from it before relying on it. Booting instructions below.

- a USB memory stick; these are surprisingly useful. Think of them as 21st Century floppy disks.
- several cheap, lightweight mobile hard disks to keep your shoot data and its backups on. Always reformat a new disk to Mac OS Extended Journaled in Disk Utility before using it. Most disks you buy will be in DOS format and, whereas the Mac will happily mount and use them, the format will cause problems if you later attempt to use them for bootable backups.

SOFTWARE YOU SHOULD INSTALL

- Applejack. It goes without saying. Instructions for installation and use were published in Image August 2007. Download it now and keep it in your Documents folder. Use Spotlight to find it when you need it.
- SMARTReporter, which periodically checks your hard disks for their state of health and warns you if a hardware failure is imminent. Usually. If you do get such a warning, take heed because it's not messing around, and back up your important data (i.e. the day's shoot and email) immediately.
- DiskWarrior. Never leave home without it. It can fix disk directory damage that almost nothing else will and is your second port of call (Applejack being the first) if your system seems to be behaving strangely.
- SuperDuper! or Carbon Copy Cloner, to keep your bootable backup up-to-date.
- Chronosync or similar, to help in backing up your shoot data.
- If you shoot to cards and don't use Photo Mechanic, ImageIngester to back up your pictures as you copy them from the card.
- PhotoRescue to recover erased, deleted or corrupted camera data cards



• something in which to store your user names, passwords, software serial numbers and helpdesk phone numbers, and your studio's static IP address. I like and use Web Confidential but there are many others.

MAINTAINING COMMUNICATIONS

• If you simply must have email at all times, get a BlackBerry. It works.

• Alternatively, get a 3G data modem and a roaming data account with a mobile phone provider, and use that to establish communications. A great trick is to use your Mac's Internet Sharing function (System Preferences/Sharing/Internet) to share your 3G connection via Airport. This turns your Mac into an instant location wireless hotspot for others to use. Very cool, and very useful, too. Make sure that the modem you choose is Mac compatible: not all are. Your mobile phone company should know. Yeah, right again.

• Even better than that, take a hardware router along that can use the 3G data modem itself and have a proper firewall-protected location hotspot. The Draytek 2910 and 2800 can both do this. Draytek keep a list of compatible modems on their information page. Some of these are also Mac-compatible.

• Make sure you know how to log on to any wireless hotspots in your vicinity. iStumbler will show you what's available (logon procedures described in Image May, June & September 2006). For a searchable database of known hotspots, go to www.hotspot-locations.co.uk.

• Use your Ethernet cable to plug into the wall or someone's router or switch whenever possible. It's faster, more secure and infinitely easier than messing around with wireless hotspots in hotels. Consider getting a BT OpenZone account, or similar, to be able to use the paid public hotspots in Starbucks and the rest.

• There is more, and more detail, to be found on this subject in Image September 2007.

SENDING EMAIL

• Make sure that you have an authenticated email SMTP server to send outgoing email through. A .Mac account is very useful for this, as is a Gmail account. An authenticated email server usually requires your username and password before it will allow you to send email through it. Your email application's Preferences or Accounts window will tell you if you're using an authenticated SMTP server.

• If you find that despite having a working Internet connection you cannot send email from your Mac no matter what you do, go to www.mail2web.com. Enter your email username, email password (NOT your Mac account password) and mail server address, and have basic but functional browser-based email that always works, so long as your email account is functional. C.C. to yourself any mail you send so that you maintain a record of it.

• Email always goes down occasionally, and when it does you need a backup email account or two. .Mac works well, as does Hotmail, Yahoo Mail and GMail. Any 'orrible PC in an Internet café will do for this. How do you send pictures to clients in this way? Copy them to your USB memory stick, whack it into the PC and add them as attachments. You can even copy them to your BlackBerry for this purpose. Any port in a storm. Of course, all of this will change for us UK types (it already has in the USA) with the release of the iPhone, which will make roaming connectivity for Mac users so much easier.

Next month, Part Two will concern itself with uploading your shoot to your studio Mac, location data storage, the My Mac Is Playing Up checklist and a bunch of How To's. Remember what Akela said, and Be Prepared.

Those of you still hungry for information can keep up by periodically checking my blog at www.thedigitalplumber.co.uk, where you'll also find pdfs of previous articles and my contact details.

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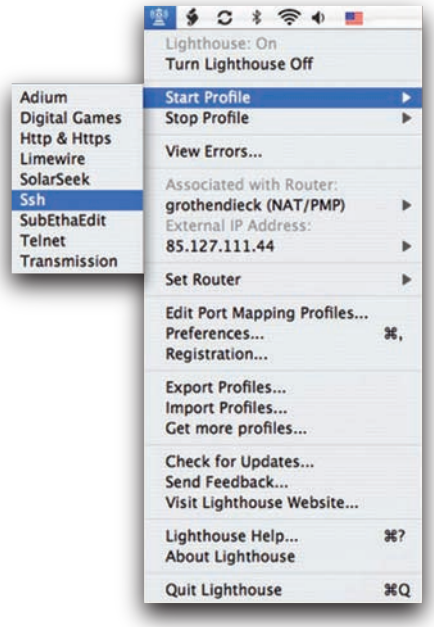
The Complete Location Survival Guide, Part Two
by Paul Ellis

Continued from last month: how to get at studio-based data when on location; how to store the data you make on location; and how to give your Mac a whack around the head if it goes all sulky on you. Click on the name of any product mentioned to go straight to a supplier or download page. Some of the links earn me a few bob if you buy by clicking on them. If you don't want to do this, simply Google the application's name, find the vendor's site and buy it that way.

BUT THE FILE I NEED IS ON MY STUDIO MAC

Make sure you have a fixed IP address at your studio. All sensible ISPs provide them. If yours doesn't, change to a sensible ISP. I regard www.zen.co.uk and www.bethere.co.uk as being among the sensible ISP's. Open System Preferences/Energy Saver on your studio Mac and set it never to sleep. Then install Lighthouse on it to make it accessible to you, and iGet on your location Mac to do the data transfers. Lighthouse must be set to launch at login and run the SSH profile when it starts up. Lighthouse's help will tell you how to do this. Your router must have uPnP enabled: most do by default. Alternatively, read your router's documentation and set it up to forward Port 22 to your studio Mac's local IP address. http://www.portforward.com/ can also be of help here. Make sure you have secure passwords on your user accounts: a password that includes a car registration number, of all things, is easy to remember and secure.

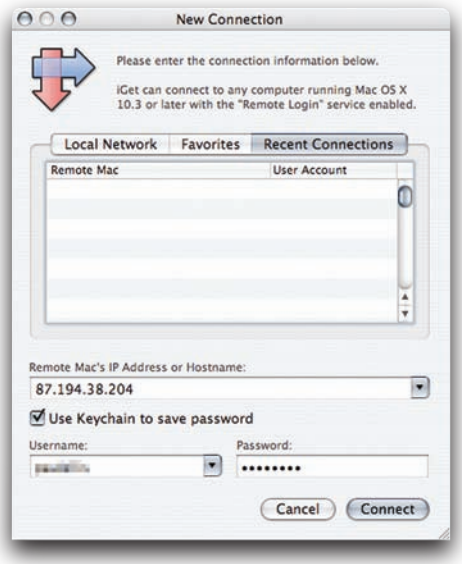


At your location, launch iGet and fill in your studio's IP address and the username and password that exists on your studio Mac. Voila, you're in and can move data around speedily and securely. This setup can even be used to send pictures home overnight, or during downtime.

Mac OS X 10.5 Leopard is set to simplify this, however, as among its new features are "Back to My Mac" (connect to any of your Mac computers at home from any Mac on the Internet. Your home computers appear in the shared section of the sidebar. Just click and you're in), and "Instant Screen Sharing from the Finder" (start an interactive screen sharing session with other Macs on your network. Just select the Mac from your sidebar and (if authorized) you can see and control the Mac as if you were right in front of it), it says here (http://www.apple.com/macosx/features/300.html).

DATA STORAGE ON LOCATION

ALWAYS have more hard disks with you than you think you'll ever possibly need. NEVER take the risk of having a tired assistant edit a shoot overnight because you're running out of disk space. NEVER fill up your laptop's hard disk to within an inch of its life. If you're running out of disk space, buy more disks. If there is nothing available locally, get someone back home to buy something on your behalf and post it to you. Disks are like film. Never run out.



LaCie and SmartDisk FireLite are good choices for cheap, lightweight mobile disks on which to store your shoot data. Make duplicates. Post one home periodically in a Jiffy bag. At the end of the job, deliver the shoot to your client on one and bill them for it.

IF YOUR MAC STARTS TO MISBEHAVE

1) Listen to it. Is it, or any disk attached to it, making a repetitive clicking, clonking and/or whirring sound? That's called the Click of Death, and rightly so. TURN IT OFF IMMEDIATELY before the disk thrashes itself to pieces and call for help. You know whom. If it's not,

2) shut it down, disconnect any FireWire and USB devices, then start it up again. Check your cabling, and then reconnect the devices. It's surprising how many problems vanish in this way. If the problem persists, disconnect the devices again, restart, and then add them one-by-one. If you can isolate the problem to a specific device, stop using it. If you still have the problem, disconnect everything again and…

3) run Applejack.

4) If that doesn't fix it, find the Apple disks that came with your Mac and follow the instructions printed on them to boot into Apple Hardware Test. Run Quick Test to check for hardware problems. If it finds no problems, proceed to step 6).

5) If Apple Hardware Test finds faulty memory, you're going to have to find out which chip has gone bad, for that is what has happened. Laptops and iMacs only have two chips: remove one and see if the problem goes away. If it does, the chip you have removed is faulty; if not, the one still in the Mac is the culprit. G4s, G5s and Mac Pros are more problematic because they have more memory, which often has to be fitted in pairs in specific locations. Nevertheless the troubleshooting procedure is the same: remove all but the minimum memory, and then replace chips until the problem recurs.

6) If your memory and hard disk are OK but your Mac still plays up, connect your bootable backup, restart and boot from it (instructions next month). Launch DiskWarrior and repair your Mac's internal disk. Restart. If DiskWarrior fails, start up your Mac from the DiskWarrior CD (Insert the CD, restart and hold down the C key at the startup chime) and repair it that way.

7) If things are still wacky, try resetting the PRAM (instructions next month), or, on a PowerPC Mac, resetting Open Firmware (instructions next month).

8) Reset the CUDA, Power Management Unit or System Management Controller. All Macs have different procedures for doing this: links to instructions are at http://tinyurl.com/2jpk43.

9) If your internal disk hardware is faulty, or if DiskWarrior can't repair your disk, if you can, BACK UP YOUR VITAL DATA STRAIGHT AWAY from it to one of your many mobile disks, then continue your shoot, running from the backup. Dismount your internal drive from the desktop if you can to avoid thrashing it. If your Mac locks up, boot another Mac from your backup and continue to run from that. Forget about running any Adobe CS2 or CS3 applications as they won't run from the backup, thanks to Adobe's ludicrous software activation scheme. Well done, Adobe: you really have your finger on the pulse of your users' needs with this one.

10) If any other part of your Mac's hardware is faulty, boot another Mac from your backup and continue to run from that.

Next month, Part Three will include a list of procedures that are helpful in troubleshooting. If there's space left over after that I'll take a first look at Mac OS X Leopard and how it relates to us, paying particular attention to Time Machine and how to configure your system to make the best use of it.

Those of you still hungry for information can keep up by periodically checking my blog at http://www.thedigitalplumber.co.uk, where you'll also find my contact details.v

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The Complete Location Survival Guide, Part 3

The Digital Plumber
By Paul Ellis

Continued from last month: survival procedures for dealing with a sulky Mac on location, or indeed, anywhere else. Click on the name of any product mentioned to go straight to a supplier or download page. Some of the links earn me a few bob if you buy by clicking on them. If you don't want to do this, simply Google the application's name, find the vendor's site and buy it that way.

PROCEDURES

- Target Disk Mode

Shut down your Mac. Restart it: at the chime, press and hold down the T key. Release it when you see a blue (PowerPC Mac) or grey (Intel Mac) screen with a FireWire symbol jumping around it. In this mode your Mac is not a computer but a FireWire external hard disk and can be treated as such. Press and hold the power button to turn it off.

- Applejack

Make sure Applejack is properly installed. Restart your Mac in Single User Mode by holding down the Apple and S keys immediately after you hear the start-up chime, keeping them held down until the screen turns grey, and then black. Then release them. The screen will fill with gibberish in white text, which will eventually stop at the line localhost:/ root#, at which you type "applejack AUTO restart" (that's lowercase "applejack", a space; then uppercase "AUTO", then another space; then lowercase "restart", but without the quotes), then press the Return key twice.

- Apple Hardware Test

This usually lives on a hidden partition on the Install 1 CD or DVD that came with your Mac. The procedure for running it varies but is always printed on the CD or DVD. You must use the specific version that came with your Mac.

- Bootable backups with SuperDuper! and Carbon Copy Cloner

Have a blank FireWire disk, or a blank partition on a FireWire disk of the same size as your internal boot volume. Both SuperDuper! and Carbon Copy Cloner are set up by default to create a fresh bootable backup. Select your boot volume as the Source and your FireWire disk or partition as the Target. The rest is straightforward. To keep the bootable backup up-to-date, buy SuperDuper! or read Carbon Copy Cloner's manual. I currently prefer SuperDuper! for this task. OS X 10.5 Leopard's Time Machine is very easy and straightforward to set up to maintain incremental backups but doesn't directly create bootable backups, although in conjunction with the Leopard Installer DVD it can create a bootable volume from backups. Yet another reason to have copies of OS X Installer CD's or DVD's with you.

- Reset PRAM

Restart your Mac, pressing and holding down the Apple, Alt, P and R keys at the chime. Keep them held down until the Mac has chimed three times, and then release them. This will take up to a minute to complete.

- Reset Open Firmware (PowerPC Macs only)

Restart your Mac, pressing and holding down the Apple, Alt, O and F keys at the chime to start up into Open Firmware. At the prompt, type "reset-nvram" (no quotes), then press Return. Type "reset-all" (no quotes) then press Return. The Mac will restart. It may need some things like Startup Disk, Time Zone and mouse tracking speed resetting from default.

- Reset the CUDA, Power Management Unit or System Management Controller

The procedure varies by Mac model: links to instructions are in The Sites/ Resetting your Mac hardware section of my website at www.thedigitalplumber.co.uk/pages/thesites.html.

- Select boot volume on start-up (for starting from a bootable backup)

Restart your Mac, pressing and holding down the Alt key at the chime. Wait until your bootable backup volume appears as an icon on the screen, select it and press the right-arrow (PowerPC Macs) or the arrow under your bootable backup icon (Intel Macs) to start up from it.

- Boot from CD

If a bootable CD or DVD is already in the drive, hold down the C key until the grey apple and spinning wheel appears on the screen. Otherwise, follow the procedure above, insert the CD or DVD, select it when its icon appears and click the appropriate button.

- Run Apple Disk Utility from an Apple Installer CD or DVD

Using the method described above,

boot your Mac from the Installer CD or DVD that came with it, or a retail copy of Mac OS X. The Installer launches. Select "Choose English as the main language (if that's what you want) and click on the blue right-arrow button. The main Installer screen appears, and with it, the Menu Bar. From the Utilities Menu select Disk Utility. The Installer disappears and Apple's Disk Utility appears in its place. Use this to repair the boot disk, fix it's permissions, or

whatever else might take your fancy.

MAC OS X 10.5 LEOPARD: IMPORTANT

At the time of writing, all 3rd party disk utilities including Applejack and SuperDuper! are incompatible with OS X 10.5 Leopard. Given the delay between my copy deadline and publication, the situation might well have changed by the time you read this. Applejack is likely to take a while before it becomes compatible with Leopard, though. MacInTouch are maintaining a compatibility report at http://tinyurl.com/2j6ph4 and a Leopard FAQ at http://tinyurl.com/2cyd85. Read them before upgrading to Leopard, or be prepared to suffer the consequences.

SO, THEN? WHAT ABOUT IT?

Mmm. The Lord giveth, and the Lord taketh away. He giveth much eye-candy, translucency of debateable value, a fully-mature underlying operating system with stable API's, Spotlight the way it always should have been, and noticeably increased speed and slickness of operation, especially where anything involving networking is concerned. He giveth Time Machine, the killer app; Back To My Mac, which if not exactly killer is definitely GBH and finally makes a .Mac account something you really should have; a Universal Install which can boot both Intel and PowerPC Macs (so long as the disk is formatted in PowerPC APM format rather than Intel GPT); Data Detectors in Mail (which recognises things such as postal addresses within emails and offers to import them into your Address Book as contacts, a feature of OS 9 which has finally made it into the OS X world).

Also bestowed upon us are Quick Look and Cover Flow, ways of quickly seeing part of a document, image or whatever without having to actually open it; Spaces, a way of configuring up to four "virtual desktops"; and a much more polished and better-functioning Finder than OS X has ever had before. And he reckons he giveth more than 300 other goodies, details of which are at http://tinyurl.com/2rudpg.

On the other hand, he also giveth useless crap like Stacks in the Dock and simultaneously taketh away the Dock's previous ability to pop out a hierarchical menu of the contents of any folder placed there, replacing it with a virtually-useless Fan display of the first 20 objects it contains. Surprisingly, he also taketh away Tiger's ability to play an instant slideshow of any Finder selection of images, replacing it with Quick Look, which can be made to do the same thing but after two mouse clicks rather than one. He taketh away Classic: sayonara OS 9 software. Finally, of course, as a result of some last-minute code changes that caught developers great and small on the back foot, he taketh away a great deal of compatibility with some rather crucial applications. This situation is improving daily and by publication, certainly by the end of 2007, Leopard will be the OS to have running on any Macintosh that can take it. It will also be required to get the most out of the iPhone, which I've been bullied into writing about next month. Aw, all right, then. Get those letters to Santa written now.

Those of you still hungry for information can keep up by periodically checking my blog at www.thedigitalplumber.co.uk, where you'll also find my contact details.