Using the APC Back UPS ES 350 on Linux

Powerpack

No power, no data – it is the bottom line for everyday computing. When you reboot after a power failure, the hard disk checks take an age. An uninterruptible power supply takes your computer down gracefully should you suffer a power failure. **BY DANIEL COOPER**

An uninterruptible power supply (UPS) for SOHO users? Even though power failures are uncommon, short voltage drops that often occur during storms are too much for most computers to cope with and can cause a reset. Emergency power supplies offer more than that, protecting expensive hardware from power surges and even lightning strikes.

The APC Back UPS series even includes lifetime electronics insurance – if a device attached to the Back UPS is damaged or destroyed by a voltage peak, APC agrees to pay damages of up to £50,000 (or 100,000 Euros).

The Back UPS ES 350 is the model that will interest most SOHO users. Instead of the typical rear socket, APC provides a multiple outlet with 5 sockets, allowing you to attach not only your home PC, but also your display, (DSL) modem or telephone system. Only two of the five outlets provide surge protection and are recommended for printers or network switches.

Hardwired

The 350 VA provided by the Back UPS ES 350 should be sufficient to power a Pentium 4 with two hard disks and a DVD drive for about 15 minutes. When attaching peripheral devices to the UPS outlets, you will need to consider what you intend to attach. Each device that needs emergency power will reduce battery performance. A 19" display would reduce the backup time to five minutes.

In most cases you should not need to attach the display to the UPS. The *apcupsd* control program from [1] downs your machine gracefully before the UPS runs out of steam, making manual interaction unnecessary. Printers and other peripherals merely need surge protection, the exception being drives with external power supplies (SCSI, USB, Firewire).

Basically, any devices attached to the computer should be powered by the Back UPS including DSL or analog modems, ISDN base connectors, telephone systems and DSL splitters. Failure to do so might result in damage to peripherals when a power surge hits the computer.

Protecting Phone Systems

If lightning strikes there is always the danger that power surges might hit the computer via any telephone wiring. The Back UPS ES 350 has two (RJ 11) sockets to protect your telephone system. Although ISDN or network adapters fit in the sockets physically, only two strands are protected. This means positioning the Back UPS between the telephone socket and the first peripheral device (DSL splitter, ISDN NTBA, telephone exchange); the Back UPS comes complete with a suitable lead. Figure 1 shows how the wiring setup should be organized to protect a machine with a DSL connector.

When the Back UPS is switched on, it automatically tests its accumulator status (the accumulator is hidden behind a flap near the outlets). The center status LED shows the accumulator status. The overload display (on the right) is more critical, as the UPS will power down

APC Back UPS ES 350

5 outlets, user-replaceable batteries, uninterruptible power supply

Source:	APC *http://www.apc.com*
Capacity:	350 VA (225 Watt)
Battery:	12 Volt, maintenance-free, sealed, lead-acid battery with suspended electrolyte
Interface ports:	USB, phone in/out
Includes:	Battery, USB lead, telephone cable (RJ-11 male/male), manual, Windows control program, electronics insurance
Price:	£ 80

after two seconds of overload. If you need to protect larger displays or laser printers, you should invest in a more powerful model with a higher nominal load.

USB Communication

The Back UPS includes a USB lead that is used for communicating with the computer. The control program allows you to query the status, the time remaining and the battery load via the USB lead.

The APC Power Chute program does not work with the USB power supplies, but *apcupsd* by Kern Sibbald and Riccardo Facchetti is a useful alternative that can be downloaded from [1]. RPM packages for SuSE 8.1, SuSE 8.0, and Mandrake 9.0 are available from [2]. Debian Sid or later includes *apcupsd* in the distribution; the version must be 3.10.4 or later.

You will need to pre-install the *gd* package for the SuSE RPM, and Mandrake requires *libgd1*. If you prefer to compile the source code, you will need the developer and advanced developer packages and *gd-devel* or *libgd1-devel* for both SuSE and Mandrake. The documentation area of [1] provides a guide to the configuration parameters.

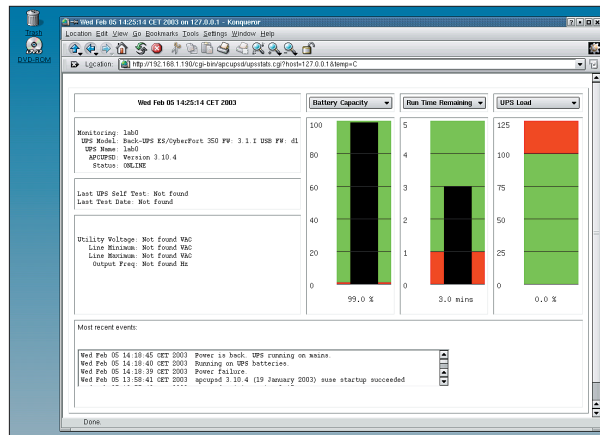The *apcupsd* configuration files are stored in */etc/apcupsd*, and are set up by

Figure 2: The multimon.cgi CGI program provides the best view, but it does mean installing Apache first

default for the APC Back UPS ES and Back UPS CS USB models. Modifications are not normally required.

The UPS Joystick

When you attach the UPS you might be surprised to see that your system recognizes it as a joystick, the required kernel module, *hid*, should load automatically. The *apcupsd* daemon autoloads after rebooting and monitors the power supply. In case of power failure, or communication problems with the UPS, *apcupsd* automatically warns any logged on users, and mails root.

Any additional actions can be scripted in *onbattery*, *mainsback*, and other files

in */etc/apcupsd*. If the battery is close to being exhausted, *apcupsd* automatically launches *shutdown* to down the computer gracefully.

There are three programs that allow you to query the UPS's status; *apcaccess* provides a text display of the status values in the command line, *powerflute* is frame and menu driven. The CGI program, *multimon.cgi*, provides the most exhaustive display; it is stored in the CGI directory below *apcupsd*. However, you will need to install and configure Apache before you use your browser to call the URL *http://127.0.0.1/cgi-bin/apcupsd/multimon.cgi*. Figure 2 shows the GUI status display in the Konqueror browser.

The data displayed for the UPS depend on the model and the connector type used – thus, the Back UPS ES does not display the load display via USB, and does not allow you to query the current mains power.

However, all models do show their capacity and residual runtime. The documentation area under [1] provides a guide to running other APC UPS systems with *apcupsd*.

Conclusion

An uninterruptible power supply makes sense for SOHO users, particularly when bundled with an electronics insurance scheme as is the case for APC.

The multi-outlet design and user-replaceable batteries are particularly practical, providing instant connections for a range of devices from computers to facsimile machines. The smallest model with a capacity of 350 VA is affordable at around £80; for comparisons sake, a combined power and lightning strike protector for phones and sockets would cost about £25. ∎
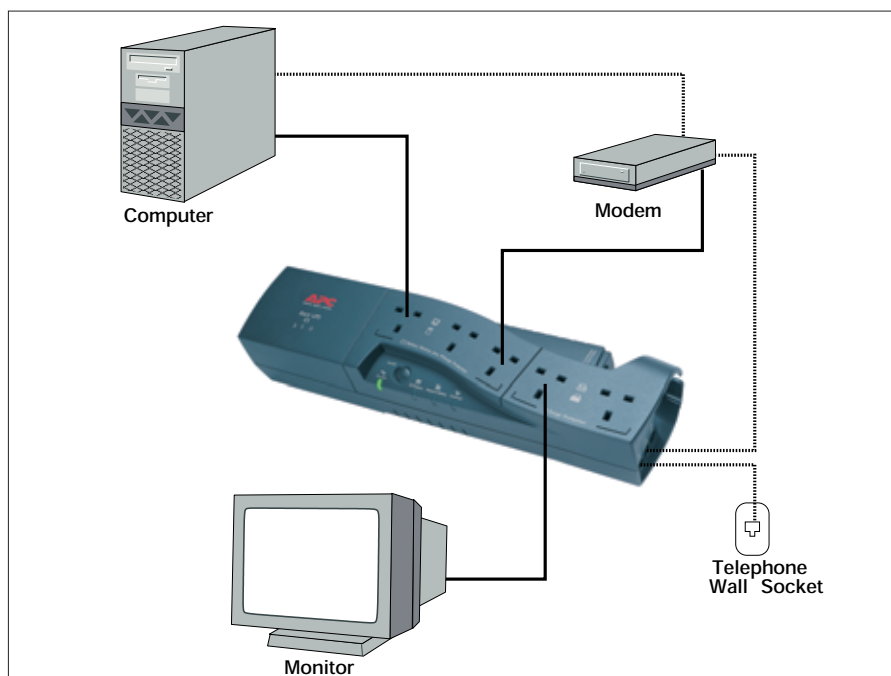

Figure 1: The computer and peripheral devices are attached directly to the Back UPS, telephone wires are looped through the device

INFO

[1] *apcupsd* homepage:
      http://www.apcupsd.com

[2] RPM packages: *http://www.linux-user.de/ ausgabe/2003/03/064-usv/apcupsd*