Hard Disk Drive Sheriff

Rationale
School staff and contracted technicians can spend significant amounts of time maintaining computers in optimal working order adding significantly to the total cost of ownership of school computers.
HDD Sheriff is a hardware solution for Intel based computers designed to:

- protect hard disks and files from intentional or unintentional formatting, deletion, copying or moving, and
- automatically restore a hard disk to optimal working order every time the computer is started

The Educational Technologies Unit commissioned a trial of HDD Sheriff in four schools during term 4, 2000 and term 1, 2001. Two versions were used in the trial. The first version consisted of an internal card, while the second version consisted of an external dongle which is suitable for laptops, or where computers cannot be opened due to warranty issues.

How does it work?
On installation, an image of each of the hard drives is made. Any unauthorised changes to a computer, including the creation, editing or deletion of files causes the computer to create a new image on next start up. This re-imaging process takes place with minimal delay in the startup process. Authorised changes can be made by setting the computer into supervisor mode which is password protected.

Benefits for school
Once set up, any changes made by students to a computer are reversed the next time the computer is rebooted. This will reduce the time spent by computer coordinators and others in restoring software, the operating system, screen savers and backgrounds. It will also stop the build up of temporary files and documents saved onto the hard drive instead of to network drives or floppy disks.

A supporting program, Net Sheriff, allows administration of the computers over a network, also reducing administration time.

Format
HDD Sheriff comes as an internal PCI card or as an external dongle, which plugs into the parallel port of a computer during installation and removal. The necessary installation files are provided on a 3.5” floppy disk.

Platform
Windows 95/98/NT/ME, Windows 2000

Minimum System Requirements
Windows 95/98/NT/ME, Windows 2000. 486 or Higher Intel compatible processor
PCI slot (for internal model) , Parallel Port (for External model), 5% Free Disk space

Networking Capabilities
An associated program called Net Sheriff allows administration of computers running HDD Sheriff.

Installation Procedure
Internal Version: The card is inserted into an available PCI slot and then started. Once started, a floppy disk is used to install the software
External Version: The Dongle is attached to the parallel port and the installation program is run. Once the program is installed, the dongle can be removed and stored somewhere safe.

Program Layout
Once installed, the computer normally boots into Protected mode. In protected mode, any changes are lost when the computer restarts. Supervisor mode is accessed by pressing the <F10> key on start up and entering a password. In Supervisor Mode, software can be installed, files changed, added or deleted and these changes will be kept. It is possible to have an unprotected partition for students to save work to if required.

School setup

- James Cook Boys' School High – a combination of 50 external devices and internal cards
- Marrickville High School– 2 internal cards
- Murray High School – 2 internal cards
- Ulan Public School – 2 internal cards

Comments

- All four schools found the HDD Sheriff reduced the time taken to maintain and support the computers, reducing the total cost of ownership of the computers.
- James Cook Boys' Technology High School found that the HDD Sheriff reduced maintenance issues by 75%
- Ulan Public School reported that the time taken to maintain these computers was negligible, and was more efficient than using ghost to maintain an image. "In my opinion the Sheriff is a most suitable solution for many school situations. Apart from initial setup time (which is quite short) the sheriff has minimized my maintenance time to a negligible amount. Also there is no need to train staff how to recover machines by use of reinstallation programs such as Ghost." Glenn Stewart, Principal, Ulan Public School.
- While the external devices provided suitable protection, each dongle had to be associated with a particular computer. This added an administrative overhead when changing a computer's configuration, or replacing a stolen computer. Technical support from the distributors is required to use a dongle on a second computer if HDD Sheriff had not first been removed from the original computer.
- At Marrickville High School, a card was installed in a computer attached to a scanner. Previously, this computer required regular maintenance to delete old scanned image files from the hard drive when users forgot to save to a floppy or network drive. The HDD Sheriff card eliminated the build up of these image files on the computer's hard disk. This provided a time saving by eliminating the need to regularly check the computer's hard drive to delete old files. "The device was very useful in this situation as it eliminated the problems and saved time as an administrator did not need to check through the disk regularly to delete old files." Dan Rytmeister, Head Teacher Industrial Arts and Computer Coordinator, Marrickville High School. Marrickville High School also trialed the card on an NT4 computer located in the Library used for Internet access. In this location, the school did not find any significant difference to maintaining other similar computers which used permissions and NT policies to control student access to the hard drive. They also experienced problems with remote or unattended installations of software such as vet antivirus updates.

Recommendation

HDD Sheriff is suitable for any PC computer in the school, especially those that are unsupervised.

Distributor

BIT Distribution, http://www.bitdistribution.com.au/sheriff.htm

Price

$132 per card (as at May, 2001). Education pricing can be obtained by filling out the form at http://www.bitdistribution.com.au/enquiries.htm

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