AISBackup

Manual

Part 1

Introduction
And
Getting Started

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1 Introduction

AISBackup is a backup program designed to provide backups of PC data to the following media:

- CD-R and CD-RW.
- DVD+RW, DVD-RW, DVD-R, DVD+R and DVD-RAM.
- Drives that emulate CD writers, e.g. Iomega REV™
- Local Hard Drives.
- USB or FireWire connected external drives.
- Networked Hard Drives.
- Removable Media such as Zip or USB flash drives.
- An FTP Server.
- E-mail addresses, optionally using 128-bit or 256-bit AES encryption.

Backups to CD and DVD are done via a built in Disc Writer, a third party Disc Mastering application or a third party Packet Writing interface. For third party options see the documentation that came with the Disc writer software.

AISBackup is job based, each job contains a list of files and folders to be backed up and the media to which the backup is to be made.

AISBackup supports backing up data from any network shares, including Mac and Linux, subject to file access permissions.

Once a backup job has been created click **Run Backup** to start the Backup process. AISBackup compares the files selected for backup with the files already backed up; any new and changed files since the previous backup are then backed up. Any files deleted from the PC since the previous backup session are marked as deleted.

Each time a backup is run a new session is created. When files are added to the backup any previous version remain on the backup. Each version of a backed up file is held in its own session. AISBackup can be set to remove redundant files from disk based backup media using an Advanced Backup Session Manager. AISBackup may also prune DVD+RW, DVD-RW and DVD-RAM when using a third party packet writing system's.

Backup jobs can easily be based on pre-existing jobs.

There is an option to allow an individual or a selection of AISBackup jobs to be added to the Microsoft Task scheduler. There is also an option to create desktop or start-up shortcuts for backup jobs.

Backups may be password protected to two levels.

Backups may be tested for restore capability during or at any time after the backup session.

The contents of each backup remain online to ease the process of restoring files. Simply select the file, or files that you want to restore, select the destination of the files and then click Restore. If the contents of the file(s) you wish to restore are offline a prompt is displayed to load the appropriate media (CD, DVD or Network Drive) during the restore process.

Individual sessions may be selected during a Restore process; this enables you to restore all files that existed on a particular date, and optionally to remove the files that did not exist on that date (from the restored folders). Other restore options include:

- Right Click File / Open File
- Right Click File / Open With
- Right Click File / Save As.
- Files may be dragged and dropped directly from AISBackup onto Windows Explorer to initiate a restore. Additionally folders may also be selected, dragged and dropped when running under Windows 2000, Windows XP, Windows Server 2000 & 2003 and Windows Vista.

AISBackup can backup and restore the following additional files without the need to purchase extra 'add-ons':

- The Windows Registry.
- Microsoft Server 2000 & 2003 Active Directory.
- NTFS File and Folder Security Settings and additional file streams.

  Note: this optional setting creates AISBackup proprietary zip files that cannot be read with other 'Zip' programs.

Note: The following Services may be backed up online or offline when running under Windows XP, Server 2003 or Windows Vista. Online backups are achieved by using Microsoft's Volume Copy Shadow Service.

- Offline backup of Microsoft Exchange.
- Windows Server: Offline backup of WINS.
- Windows Server: Offline backup of DNS.
- Additional Windows Services may be suspended to enable backup of opened exclusive files.

There is an option to back up local opened exclusive files on FAT and NTFS local drives when running Windows 95, 98, ME, XP, Server 2003 and Windows Vista. Opened Exclusive files are only supported on FAT drives when running under Windows NT4, 2000 Professional or Server 2000.

The actual backup database is a series of standard zip format files, and can therefore be read by any other zip program you may own.

1.1 Definitions.

AISBackup is a technical product and uses terms that some people may describe as techno-babble, to ease the pain here are a few definitions:

1.1.1 Backup Job.

The Backup Job contains the list of files and folders selected for backup, the destination of the backup, and other information about the backup. The Backup job is called <Job Name>.buz

and is stored in the <Database Location> folder and the last media used during the backup. The backup job is named when it is created using the **New Job** or **Quick Job** option.

1.1.2 Backup Contents File.

The *Backup Contents File* contains details of the files that have been backed up. The Backup Contents File is normally named: <Job Name>.bdb and is stored in the <Database Location> folder and on the last media used during the backup.

1.1.3 <Database Location> Folder.

This is the folder where AISBackup stores the online backup jobs and *Backup Contents File*. This location is set in the **Tools** / **Program Settings and Options** option, which is described in section 1.6.

1.1.4 Backup Destination.

This is where the backup is made; this may be a CD, DVD, Removable Media, a Network drive or another local drive. This can also be another folder on the same drive as the source of the backup.

1.1.5 Session (Backup Session).

Each time a backup is made only the files that are new or have changed since the last backup are actually physically written to the backup destination. A backup *Session*, however, contains all files that existed on the PC at the time of the backup. When files are selected for restore an opportunity to select one of these dated *Sessions* as the source of the Restore is given. The default *All Sessions* option displays all versions of each file on the Restore, the version number is also known as a Generation number, the column on the restore form is labelled Gen.

In summary:

- *All Sessions* shows all files on the backup.
- A dated *Session* shows all files that were backed up on the selected date.

AISBackup may be set to prune sessions to free space on the backup media. This may be achieved in one of two ways:

- **Simple sessions:** Where the oldest session is removed from the backup.
- **Advanced Sessions:** Select the number of Today's, Each Day's, Weekly and Monthly backups to be retained.

  Example: A job may be set to retain 1 backup each day, but remove today's backups on the next day a backup is run. 4 Daily Backups, 4 Weekly Backups and All Monthly backups.

1.1.6 Log File.

The log file contains details of each backup and restore session, the amount of information stored in the log is selectable between normal and full. Full logs can be very large and need only be taken for troubleshooting backup or restore problems. The log file is called <Job Name>.log and is stored in the <Database Location> folder; the log is displayed using the **View** / **Backup Log** menu option.

1.1.7 Summary Log File.

The summary log file contains a summary of each backup job used for backup and restore. The summary log is called *aisbackup.log* and is stored in the AISBackup program folder. To view the summary logs use the **View** / **Job Summary Log** menu option.

1.1.8 Emergency System Backup.

This special backup is only available for Windows 95, 98 & ME. The Emergency System Backup is a disaster recovery backup that can be restored directly from a DOS session; this saves quite a lot of time compared to re-installing Windows and then restoring the data.

The option is not available on Windows NT, 2000, XP or Vista and unfortunately the disaster recovery procedure does require that Windows be installed prior to a restore using AISBackup. If disaster recovery restores are likely to be a regular occurrence then consider setting up a dual-boot system to restore the backup, alternatively use a second computer to restore the backup.

1.1.9 Optical Disc Writer Options.

AISBackup uses 3 methods of creating a backup on CD or DVD. A description and the advantages, disadvantages and recommendations of using each option are shown below.

Note: Two of the disc options mention *importing the last disc session*, this is the mechanism where data already written to a read only disc is included with a new batch of data written to the same disc. Previous data is essentially lost if it is not imported to the new disc session. The AISBackup integrated disc writer automatically imports previous backup files to a new CD or DVD session.

1.1.9.1 The AISBackup integrated Disc Writer.

The AISBackup integrated disc writer creates Joliet encoded read only CD-ROM style CD's and DVD's. A Joliet encoded disc is a standard format where Windows and DOS style long and short filenames are preserved. The disc's can be read on most CD and DVD ROM devices from all versions of Windows. Joliet encoded disc's are most flexible if the backup is to be shared amongst different PC's. The AISBackup disc writer can make Joliet encoded discs's on both recordable and re-writable media.

- **Advantages:** The disc's can be read on most CD and DVD ROM devices.

  AISBackup automatically imports the last backup session on a re-used disc.

  The Disc must not be pre-formatted pre-used re-writable discs may be erased from the AISBackup load media form.

- **Disadvantages:** AISBackup must write the backup to disk prior to creating CD's and DVD's using the Integrated disc writer. There must be at least the capacity of a disc's free disk space available, this is either 650MB or 700MB when using standard sized CD's or 4.7GB for DVD.

  The AISBackup integrated Disc writer may not work with all disc Writer devices.

- **Recommendations:** If possible use this interface for creating backups to CD, and if pre-stage disk space of 4.7 GB is available, DVD. See section 1.1.9.4 below for operating system restrictions when writing to DVD using the integrated disc writer.

1.1.9.2 A third party Disc Mastering Program.

Like the integrated AISBackup disc writer a third party disc mastering program creates Joliet encoded disc's, which are most compatible with other CD and DVD ROM devices. The differences are in the advantages and disadvantages.

Using this method of creating Disc's is prone to error so is not really recommended unless you cannot use the integrated Disc writer.

- **Advantages:** The discs's can be read on most CD and DVD ROM devices.

  A working third party disc mastering program was probably included with the disc Writer when it was purchased, whereas AISBackup's integrated disc writer may, in are cases, not work.

  The discs must not be pre-formatted; and pre-used re-writable discs must be completely erased if it has not previously been used with the backup session.

- **Disadvantages:** There must be at least the capacity of a disc free disk space available, this is either 650MB or 700MB when using standard size CD's or 4.7GB for DVD.

  Previous sessions are not automatically imported; if the previous session is not imported all or part of the previous backup session is lost.

- **Recommendations:** Because the *import the last session* option may be forgotten try and use the AISBackup integrated disc writer instead.

  If the AISBackup disc writer cannot be used consider using a blank disc for each new backup session.

1.1.9.3 A third Party Packet Writing System or Windows Vista.

Windows Vista supports writing directly to CD and DVD without the need to purchase a third party packet writing system, AISBackup identifies this as *Vista UDF*..

A third party packet writing system writes disc's in a format called Universal Disc Format or more commonly by its acronym UDF. UDF disc's can only be read on disc devices that support the UDF system. Some CD and DVD ROM devices can read UDF disc's but these need a third party UDF reading software. UDF reading software is often included with the writer's packet writing system to enable the CD's and DVD's to be read on a PC that has no disc writer or does not support the interface. The UDF file system enables files to be written, read and deleted from a disc just like a regular disk. Files cannot be physically removed from recordable media but they can be logically deleted.

- **Advantages:** The CD or DVD looks and behaves like a disk to the operating system; files may be saved, opened, deleted just like using a regular disk.

No additional hard disk space is needed so the 650 – 700 MB stage area is not required, the files are written directly to CD.

- **Disadvantages:** Some packet writing systems only support CD-RW and DVD±RW and not CD-R or DVD±R; check the packet writing system documentation.

  CD's and DVD's have to be pre-formatted; this can take a long time when using re-writable media.

  A UDF reader may have to be installed on some PC's. UDF readers are, however, supplied free by the vendors of Packet Writing systems.

  The disc's cannot be read from DOS. Windows 95, 98 & ME users must not create an Emergency System Backup using this interface.

- **Recommendations:** Try and use the AISBackup integrated disc writer if there is enough disk space available for the disc stage because these backups are compatible with most other PC's.

  If disk space is low this option is recommended for DVD.

  The current version of AISBackup does not support network CD or DVD disc spanning but if the backups will fit on the media this is the best option for backing up to networked CD or DVD writers, just share the CD or DVD writer on the network.

1.1.9.4 Supported DVD options:

- **Windows XP, Windows Server 2003, Windows Vista:**

  Multi-Session fully supported:
  DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM.

- **Windows Visa**

  Windows Vista also supports writing directly to all types of CD and DVD.

- **Windows 95, 98, ME, NT4, 2000:**

  Multi-Session fully supported:
  DVD-RW, DVD+RW, DVD-RAM.

  One-Session Supported:
  DVD-R, DVD+R.

One Session: The disc cannot be re-used for the next backup session.

Multi-Session: The same disc may be re-used for multiple backup sessions for the same backup job until the disc is full.

Backup pruning is not supported with backups made using the integrated disc writer.

1.2 How AISBackup performs a backup.

1.2.1 Introduction.

AISBackup has been written to take advantage of the direct access nature of the supported devices.

This Section describe the difference between traditional tape based backups and AISBackup. For simplicity of explanation assume that the backup was made to one media of each type, e.g. one tape or one CD.

1.2.1.1 Tape based backup.

Traditional tape based backups are either re-created in their entirety, a *Full* backup, or the difference between a *Full* backup and the current disk state is written to a new tape. Here is a definition of the traditional tape based backup types:

- *Full* Backup: All data selected for backup is written to tape.
- *Differential Backup*: All files changed since the last *Full* backup are written to the tape, so on a daily *Differential* backup where the *Full* backup is done on Sunday, Tuesday's backup also include the files backed up on Monday.
- *Incremental* Backup: Only files that have changed since the last backup are written to tape, so using the above example Tuesday's backup would not contain the files backed up on Monday.

The benefit of running an Incremental / Differential over a Full backup is a shorter backup time.

Tape based backups usually use an attribute called an *archive bit* to determine when a file was last backed up. The archive bit is automatically set by the operating system each time a file is modified and is normally re-set during *Full* and *Incremental* backup. Using the archive bit to determine which files require backing up makes it difficult to maintain two or more *Incremental* / *Differential* backups of the same data.

1.2.1.2 Tape based Restore Example.

Using a *Full* tape backup option means that only one tape is required to restore a PC back to a previous state.

Using a *Differential* style backup requires the *full* backup tape plus one interim *Differential* tape to restore a PC back to a previous state

Using an *Incremental* style backup requires the *full* backup tape plus each of the interim *Incremental* tapes between the *Full* backup and the restore point.

1.2.1.3 AISBackup based backup.

AISBackup performs a *Full* backup to the destination media the first time a backup job is used this is the same as a *Full* tape based backup.

All other backup *Sessions* using the same backup job only back up files that are new or have changed since the previous backup this is equivalent to the tape based *Incremental* Backup. AISBackup does not use the archive bit, but instead catalogues the files backed up and uses this list to compare the date last modified of each file.

Each time a backup is run a logical *Session* is created. The first *Full* backup is *Session* 1; the second *Incremental* backup is *Session* 2 and so on. Backup *Session* 2 contains new and changed files since the previous backup session and all the files that did not change since the previous backup session. Let's illustrate this numerically:

- *Session* 1 backs up 500 files; *Session* 1 contains 500 files.
- *Session* 2 backs up 100 changed files and 100 new files; *Session* 2 contains 600 files.

AISBackup also keeps track of files that have been deleted between *Sessions*. Adding this to our numerical illustration:

- *Session* 3 backs up 100 changed files (changes from *Session* 2), 50 new files, and 25 files have been deleted from the disk between *Session* 2 and *Session 3*; *Session* 3 now contains 600 Unchanged and changed + 50 New – 25 Deleted = 625 files, only 150 files were physically backed up.

If this all sounds a little complicated just remember the following:

- A backup *Session* contains all the files that existed on the system at the time of the backup even if not many files are physically backed up. AISBackup performs an *Incremental* backup but the backup looks like a *Full* backup.

1.2.1.4 Alternative to *Session* Backups.

The default *Session* based backup is suitable for most backup jobs, but then different backup scenarios may require a slightly different approach. If a backup job is required to recover from the accidental deletion of a file or, what is probably more common, overwriting a file with an unwanted version by using *Save* instead of *Save As*, then a possible requirement is a backup that contains the last 3 versions of each file. This type of backup is called a *Generation* style backup. The number of Generations retained is selected when the backup job is created or by the **Manage Backup** / **Change Backup Job Settings** option, see section 3.1.

1.3 Cue Card.

The Cue Card is an information window which is designed as a guide through some of the common functions of AISBackup. Select the required function by clicking the corresponding red button, and then follow the instructions. If an unexpected action is performed the cue card responds with the message 'I expected you to do ….'.

The cue card can be temporarily hidden with the **Help** / **Hide Cue Card** menu option or permanently turned off with the **Tools** / **Program Settings and Options** / **Program Settings tab** then de-select **Show Cue Cards at Start-up** option.

The cue card can be temporarily re-displayed with the menu option **Help** / **Show cue card.**

Here is the cue card showing the initial 'What would you like to do?' menu.

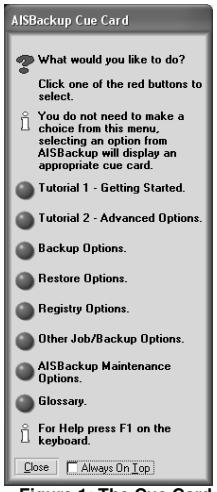


Figure 1: The Cue Card

1.4 The Main Form

All of AISBackup functionality is available from the main form. This form is divided into 5 areas:

- **Menu bar.**
  This is where the less often used functions of AISBackup are selected.
- **Main Screen Buttons.**
  This is where the most used options are accessed, e.g. to run a backup select a backup job from the **All Jobs** menu or drop-down list, then click **Run Backup**.
- **Information windows.**
  Clicking the All Jobs, Job, Log, Sessions or Note tabs accesses these windows.
- **Progress Bars.**
  The Progress bars give a visual indication of how a process is progressing.
- **Status Bar.**
  For status information, approximate time left to process, File *n* of total indicator (or size of backup), currently loaded destination media name.

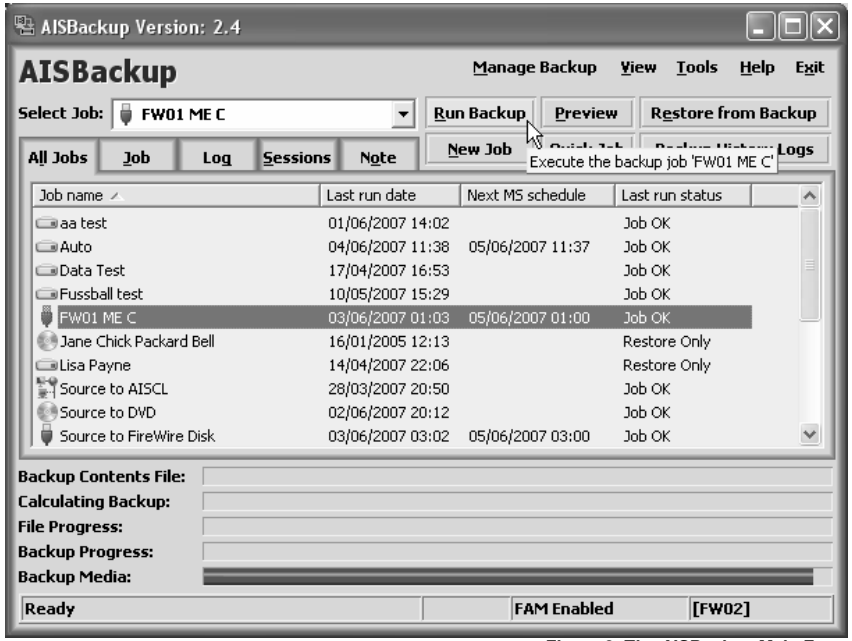


Figure 2: The AISBackup Main Form

1.5 Setting the program options.

The first time AISBackup is used the program settings and options facility is automatically run to record settings appropriate to the PC and how AISBackup should behave. For example, the

program settings option auto-detects Disc Writers, if present, and sets the default destination for local disk based backups.

AISBackup's settings may be changed at any time by selecting the **Tools** / **Program Settings and Options** menu item.

Standard Save dialogue boxes are displayed for file locations by clicking the button.

Each set of options is chosen by selecting one of the tabs

1.5.1 How to get to the Program Settings and Options form.

The Program Settings and Options form is displayed automatically the first time AISBackup is used. To display the Program Settings and Options form at any other time select the menu option **Tools** / **Program Settings and Options**.

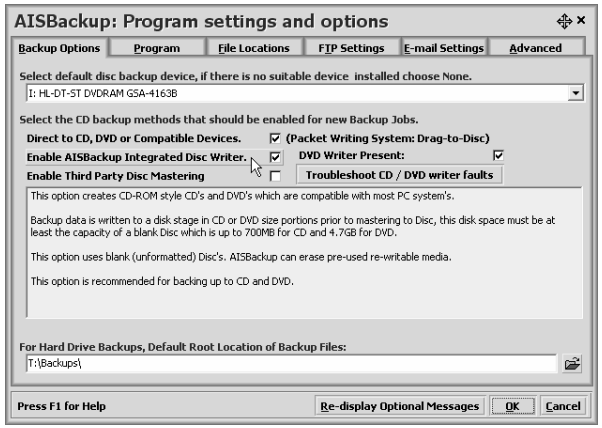


Figure 3: Options

1.5.2 Backup Options.

- **Select Default Disc Backup device:** Specifies the drive letter of the CD or DVD writer drive. If there is no CD or DVD writer installed select **None**.
- **Direct to CD, DVD or Compatible Devices:** This option is used to create backups that are written directly to CD or DVD using a third party Packet Writing system. The CD is created in a format called Universal Disk Format which is more commonly referred to by the acronym UDF.

  Common Packet writing interfaces include Ahead INCD, Roxio DirectCD or Direct-to-Disc, B'sCliP, Drive Letter Access and PacketCD.

  If AISBackup does not automatically detect the installed interface this option should be enabled manually, i.e. AISBackup does not need to detect the interface it just needs to be able to write data directly to the CD or DVD. Refer to the manuals or help text that accompanies the installed software.

The Windows XP CD writing capability is not a suitable interface.

- **Enable the AISBackup Integrated CD Writer:** De-select this option if there is no CD Writer installed or if AISBackup does not recognise the CD Writer. The Packet Writing interface may still be enabled even if the integrated CD writer interface does not work. Click **Check** to check the suitability of the integrated CD writer.

  The AISBackup integrated CD writer is recommended for backup to CD.

  The AISBackup integrated CD writer is not recommended for backup to DVD.

- **Enable Third Party CD Mastering:** This option enables AISBackup to pause after creating each CD's worth of backup data, after which the CD may be created using a third party CD mastering application (including the Windows integrated XP CD writer).

  Recommendation: This option should only be enabled if the integrated AISBackup CD writer does not work correctly.

- **Troubleshoot CD / DVD Writer Faults:** Selecting this option causes AISBackup to search for installed Packet Writing interface and test the integrated CD writer interface.

  The summary screen included a **Find** button. Use this option if the AISBackup integrated CD writer does not detect the installed drives or if one or more drives is not functioning properly with AISBackup.

- **For Hard Drive Backups, Default Root Location of Backup Files:** Specifies the default root location for the backup when the backup is directed to a local disk. When new backup jobs are created, the location of the backup database will default to [Backup Root Folder]\Job Name, these settings can be changed.

1.5.3 Program Settings.

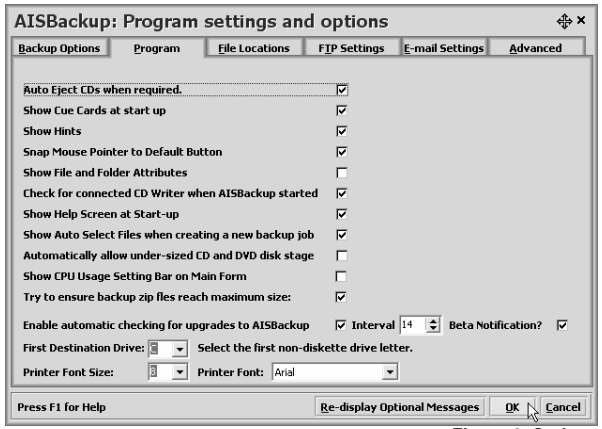


Figure 4: Options

- **Auto Eject CDs when required:** Select this option to enable AISBackup to auto eject CDs during the restore process. AISBackup will not eject a CD during a backup session when the Packet Writing System is used.

  Some packet writing systems do not allow CD's to be ejected using the Eject button on the drive itself, if this is true *right click* the drive in Windows Explorer and choose eject or *right click* the icon in the system tray and choose eject.

- **Show Cue Cards at start-up:** Select this option to display the Cue Card when AISBackup starts.

  The Cue Card gives step-by-step instructions for most of the functions within AISBackup.

- **Snap Mouse Pointer to Default Button:** Select to snap the mouse pointer to the default button on dialogue boxes. This option works independently of the similar *Control Panel / Mouse Pointer* option.

- **Show File and Folder Attributes:** Shows file and folder attributes on the select files form using the following key:

  - Normal.File: Files with no attributes are shown in black.
  - ReadOnly.File: Read Only Files are shown in fuchsia.
  - System.file: System files are shown in blue.
  - Hidden Files Hidden files are shown with faded icons.
  - Green File Is Encrypted.

- **Check for connected CD writer when AISBackup is started:** This option may be used by owners of USB connected CD Writers who do not want to see the Program Settings and Options dialogue each time they start AISBackup when the drive is not connected.

- **Show Help Screen at Start-up:** The initial screen shown at start-up displays options for creating, running and restoring from backup jobs. This option may be used to toggle the help screen on and off.

- **Automatically allow under sized CD and DVD disk stage**.

  Backups made using the integrated Disc Writer must me made to a media sized hard disk stage prior to burning to CD or DVD. This disk stage is up to 4.5GB, which may not be available on the PC. To get around this problem AISBackup can use a smaller disk stage at the expense of extra overhead when writing to disc, especially CD. It is recommended that at least 1GB of disk space is left free which is more than enough space for CD's.

  AISBackup will reserve 100MB free disk space to avoid any possible problems with the disk been used to full capacity, so to reserve 1GB for a DVD disc stage you require 1GB+100MB free hard disk space.

  Check this setting to allow under sized disc stage to be used without a warning message.

  This option is not recommended for backups to DVD-R and DVD+R on Windows 95,

98, ME, NT4, 2000 because AISBackup cannot add new data to these media. Windows XP, Server 2003 and Windows Vista supports additional backup sessions.

- **Show CPU Usage Setting Bar on Main Form. (Windows NT, 2000 & XP)**

  Select this option to display a track bar on the AISBackup interface from where the CPU usage setting may be set. Move the control bar to the right to decrease the amount of CPU AISBackup uses. To set CPU usage for Auto-Run AISBackup jobs use the Advanced tab / Auto Running CPU Usage option, see section 1.5.7

- **Try to ensure backup zip file reach maximum size**

  This option is usually set to ensure that backup zip files reach the zip size value, however, some processes running on the PC that access newly created files may cause AISBackup to malfunction when this value is set. De-select this option if AISBackup is denied access to its own files during a backup owing to a third party process is accessing the AISBackup backup files.

- **Enable automatic checking for upgrades to AISBackup.**

  Check this option to allow AISBackup to check the web-site for upgrades to AISBackup every *Interval* days. To get notification when beta or pre-release versions of AISBackup are ready check Beta Notification?

  We recommend that the interval is reduced to 1 day if you are using a beta or pre-release version of AISBackup.

  No information about you is sent to Aquarius I. S. Consultancy by this option.

  AISBackup must be enabled to access the internet within any internet security products installed on the PC to use this option.

  Upgrades to AISBackup may also be checked manually by using the **Help** / **Visit Website** / **Check for Upgrade** menu option.

- **First Destination Drive.**

  The drive letters A and B are normally reserved for floppy diskette drives but these may used by other devices on some PC system's e.g. Zip drives. If the first backup destination drive is not C: then choose a new first drive letter with this option.

- **Printer Font and Font Size:** The printer font and font size may be changed. These are the fonts used in the reports produced by AISBackup. If there is no printer attached these options are disabled.

1.5.4 File Locations.

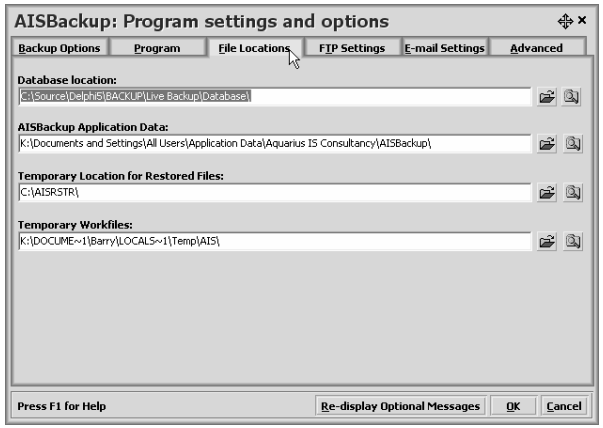


Figure 5: Options

- **Database Location:** This specifies the folder used to store the *Backup Job* and *Backup Contents File*. The default folder is \Database under the AISBackup program folder.

- **AISBackup Application Data:** This folder specifies a folder for the files which are to be shared between all users of AISBackup. On NTFS disk systems' AISBackup automatically creates a folder with full permissions to everybody, if another Application Data folder is created ensure that all users of the computer have full permissions to the folder, this is especially true on a Windows Vista Least Privileged Environment system where AISBackup may be run in both Administrative and non-Administrative modes under the same user account.

- Temporary folders may be created under the Application Data folder to hold transient data, for example, registry backups prior to been copied to the actual backup file.

- **Temporary Workfiles:** This specifies the default folder for any work files created by AISBackup. The default folder is \AIS under the standard Windows Temporary folder. This temporary folder is used when restoring and launching a file by double clicking it from the Restore select files form.

- **Temporary Backup Location for 'Opened Exclusive' Files:** If AISBackup has been set to backup files that are opened exclusively this folder is used to make a temporary copy of the file.

  This setting also specifies the folder used to temporarily backup files that may cause the backup media to overflow. The default folder is \Data under the AISBackup program folder.

1.5.5 FTP Settings

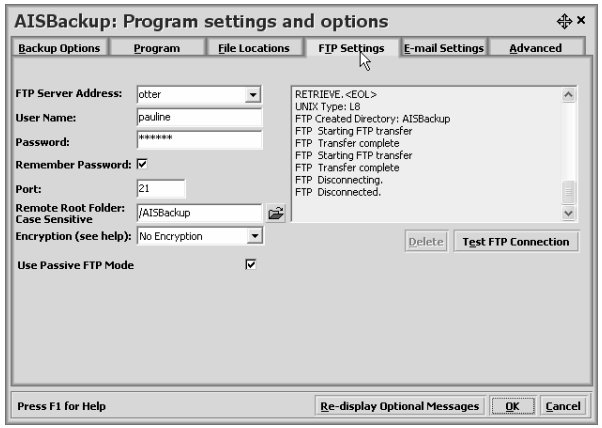


Figure 6: FTP Settings

AISBackup can transfer disk-based backups to an FTP server. The FTP Settings tab is used to set-up and optionally test these FTP settings. The **Tools** / **Program Settings and Options** settings define default values for the FTP settings; during backup job creation these settings may be customised.

Contact the FTP server administrator for the value of each setting. The test results box display may help with problems such as: Invalid FTP Server address, Invalid user name, Invalid password and incorrect folder name.

Some FTP Servers do not allow spaces in file and directory names, the **Test FTP Connection** option checks this and adjusts the backup job settings where necessary.

Instructions for setting up an FTP server backup are in section 2.2.

Parameter Settings:

- **FTP Server Address:** Enter the server address using the format *server.com* or *server.co.uk*. Some server addresses may need the preceding *www.*
- **User Name:** Enter the user name for the FTP server.
- **Password:** Enter a valid password for the user name.
- **Remember Password:** Check Remember Password to instruct AISBackup to store the password. AISBackup encrypts stored passwords. If a password is changed the password may be altered using the **Manage Backup** / **Change Backup Job Settings** / **FTP Settings** option.

  If remember password is not checked an un-attended FTP backup job using the task scheduler cannot be run.
- **Port:** The usual FTP port value is 21; enter a value here if different.
- **Remote Root Folder:** This specifies the root directory for the backup on the FTP server. The directory is created if it does not exist. Multiple embedded directories may be specified in the form /Folder1/Folder2.

  AISBackup creates an additional folder under the FTP root folder based on the job name.

  Ensure that AISBackup has read and write permissions to the folder.
- **Delete:** Choose Delete to delete the selected FTP settings from AISBackup.
- **Test FTP Connection:** Use the Test FTP Connection button to test the settings.
- **Encryption:** AISBackup supports FTP SSL encryption, however, because of export restrictions we do not provide the support DLL's. The dll's libeay32.dll and ssleay32.dll are available from the internet and you may link to our web-page here for more information. The SSL dll's must be saved to the AISBackup program folder or the Windows System32 folder.
  - **No Encryption:** No SSL encryption. This is the only choice unless you install the SSL encryption dll's.
  - **Explicit SSL Encryption:** This is the preferred SSL encryption setting which caused AISBackup to request SSL, usually on the standard port 21.
  - **Implicit SSL Encryption:** This setting uses a named port with which to request SSL, this port is usually 990. This method should only be used if your FTP server does not support Explicit SSL.
  - **Force SSL Encryption:** This option is similar to Explicit SSL but the FTP session will only be started if SSL encryption is available.
- **Use Passive FTP Mode.**

  The default FTP mode is Active, this may cause problems with some Firewalls. A possible solution is to use a Passive FTP connection.

  Discussion about the pros and cons of Passive and Active FTP connections is beyond the scope of this help text, for further information try an internet search engine, for example Google (hint, click Google).

1.5.6 E-Mail Settings

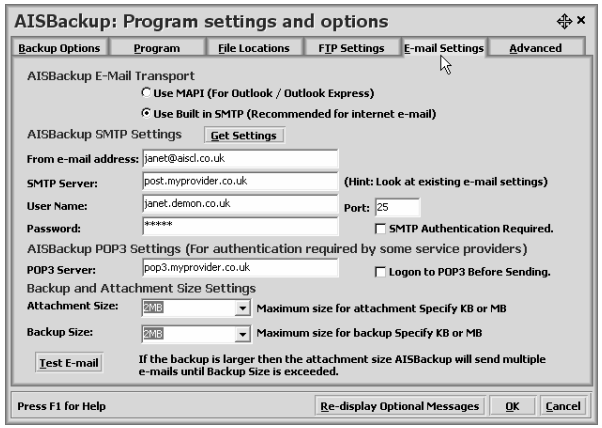


Figure 7: E-mail Settings

The e-mail settings are used to send backups via e-mail or define the e-mail settings for sending AISBackup job log files.

- **AISBackup E-Mail Transport.**

  It is recommended that the

- AISBackup's built in SMTP Sever is used but this may not be possible when internet e-mail is not available, for example Outlook is connected to Microsoft Exchange. In this case choose the MAPI interface.

- **AISBackup SMTP Settings.**

  Get Settings: AISBackup can populate the SMTP settings with the current Outlook or Outlook Express settings (except the password).

  From e-mail address: Specifies a reply e-mail address, some ISP's require that this value is set.

  SMTP Server: The name of your SMTP server, copy this value from your regular e-mail system account settings.

  User Name: E-mail username. Some e-mail systems do not require this.

  Password: E-mail password. Some e-mail systems do not require this.

  Port: Normally 25.

  Authentication Required: Select this value if your e-mail system requires you to log on to send e-mails.

- **AISBackup POP3 Settings:**

  Some e-mail service providers require that the POP3 e-mail server is logged onto before email may be sent sing SMTP. Enter the POP3 server address and check **Log Onto POP3 Before Sending** to enable this option.

- Backup and Attachment Size Setting.

  Attachment Size: Set this value to the lowest of the maximum allowed source and destination e-mail size. AISBackup sends multiple 'attachment size' e-mails unless Backup Size has been exceeded. The attachment size value should be about 60% of the actual maximum allowed size because the e-mail MIME encoding process increases the size of the attachment.

  Backup Size: Set this value to the maximum allowed backup size, this will prevent AISBackup been used to send many megabytes of backup.

To test the e-mail settings click the **Test E-mail** button.

1.5.7 Advanced Options

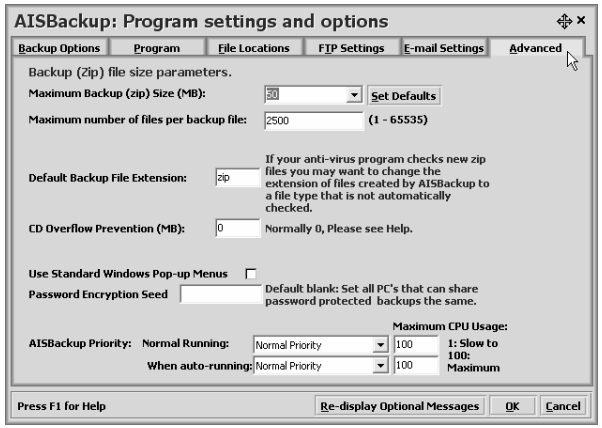


Figure 8: Advanced Options

Advanced Settings Tab

The maximum zip file size and maximum files that are to be written to a zip file have been designed for good performance of AISBackup's many options, including speed of operation of the backup, validation, zip file pruning, minimising data loss if a zip file becomes corrupt.

Some Users of AISBackup prefer to decrease the number of created zip files. This can be achieved by increasing the Maximum pre-compressed batch size (KB) and increasing Maximum number of files per backup zip file. Increasing these settings may cause certain operations within AISBackup appear to pause the program.

- **Maximum pre-compressed batch size (KB):** This value sets the maximum pre-compressed file size. This value is automatically adjusted as free space is decreased on the backup media.

- **Maximum number of files per backup file:** This value sets the maximum number of files that should be written to each zip file. The maximum pre-compressed batch size overrides this value. The zip file limit is 65535 files.

- **Set Defaults:** The set defaults button re-sets the default values for Maximum pre-compressed batch size (KB) and Maximum number of files per backup file.
- **CD Overflow Prevention (MB):** This value is used to reserve extra space on a CD when using the AISBackup CD integrated CD Writer. Enter a value here if AISBackup reports that CD's failed to create because they overflowed. 1 = 1 megabyte.
- **Flush RAM Cache:** This option is only shown when running on Windows 95, 98 & ME.

  AISBackup is perceived to use all available RAM and not give this back to Windows. This is not true; Windows allocates all available RAM for caching files to make file access quicker, Windows only frees this memory when another program requires it. Disable this option to stop AISBackup flushing the cache buffers.
- **Use Standard Windows pop-up Menus:** Form reading software for the partially sighted cannot read the AISBackup menus. Check this option to enable form reading software to read the menu options.
- **Password Encryption Seed:**

  AISBackup has two levels of password:

  - Normal: The user supplied password is assigned to the zip file.
  - AISBackup Encrypted: AISBackup changes the user supplied password to 64^{40} (64 to the power of 40) characters.

  AISBackup bases the encryption on a standard starting point called a seed. If the *Do not prompt for password on restore* option is used all copies of AISBackup with the same seed can restore from backups created on somebody else's copy of AISBackup. You may use the *Password Encryption Seed* option to create an encryption seed unique to your copies of AISBackup. The password seed can be any value, for example, company name, your Father's Mother's maiden name. If you forget the *Password Encryption Seed* you are very unlikely to restore from a password protected backup. Ensure that all copies of AISBackup that are to restore from shared backups from use the same *Password Encryption Seed*.

  The default *Password Encryption Seed* is no value.

  Password protected backups created prior to version 1.8 of AISBackup will not use the Password Encryption Seed; otherwise you would not be able to restore from them.
- **AISBackup Program Priority.**

  The priority given to AISBackup may be altered for normal running or auto-running via Microsoft Task Scheduler or shortcut.

  CPU usage may only be set on PC's running Windows NT, 2000, XP, Server 2003 and Windows Vista.

  The priority is split between the AISBackup application priority and maximum CPU usage, which is sometimes called CPU Throttle. The CPU usage is approximate and if AISBackup is backing up a block of very small files the CPU usage will increase.

The CPU usage should be set between 1 and 100 where 100 is maximum CPU usage and 1 causes AISBackup to run very slow indeed.

The CPU usage may be set in real time, during a backup, by enabling the CPU Usage Track Bar, see section 1.5.3

1.5.8 Re-Display Optional Messages Button

The re-display optional messages button is used to inform AISBackup to display all dialogue boxes, including those which have been explicitly excluded by the user of AISBackup.

Saving the changes

Once the options have been set click **OK** to apply them or **Cancel** to discard them.

1.6 Main Screen Buttons.

Use the Main Screen Buttons to access the major functions of AISBackup.

Figure 9: The AISBackup Button Bar.

The button bar in Figure 9 shows that a backup job called *Auto* has been selected, but not loaded.

Here is the sequence of Main form actions for running a backup.

- Either: use the **Select Job** button to display a list of backup jobs.
- Or: Select the backup job from the **Select job** drop down list.
- Run the backup by clicking **Run Backup**.
- To preview the files prior to backup click **Preview Files**.

Here is the sequence of Main form actions for restoring from a backup:

- Either: use the **Select Job** button to display a list of backup jobs.
- Or: Select the backup job from the **Select job** drop down list.
- Run the restore by clicking **Restore from Backup**.

1.6.1 Run Backup / Preview.

The Run Backup and Preview Files option loads the *Backup Contents File* into memory, if there are any files selected for backup AISBackup will compare the files already backed up with the files selected for backup. If any files have changed, or any new files have been created, they are selected for backup this *Session*. The selection process can take a long time, but it is possible to interrupt the process by clicking **Abort**..

The progress indicators used by the Prepare job option are:

- Backup Contents File: to track the reading of the *Backup Contents File*.
- Calculating Backup: to track the comparison of files backed up and the files on disk.

1.6.2 New Job.

The **New Job** option is used to create a custom backup job and is explained in detail in Section 1.9 and Section 2: Creating a backup job.

1.6.3 Quick Job.

The **Quick Job** option is used to create a backup job based on pre-defined file selections; this is described in section 1.9.1.

1.7 The Information Window.

The central portion of the screen is the information Window. There are 4 windows each one is selectable by clicking the appropriate tab. AISBackup automatically switches to the Log window when a backup or restore is started.

1.7.1 The All Jobs Window

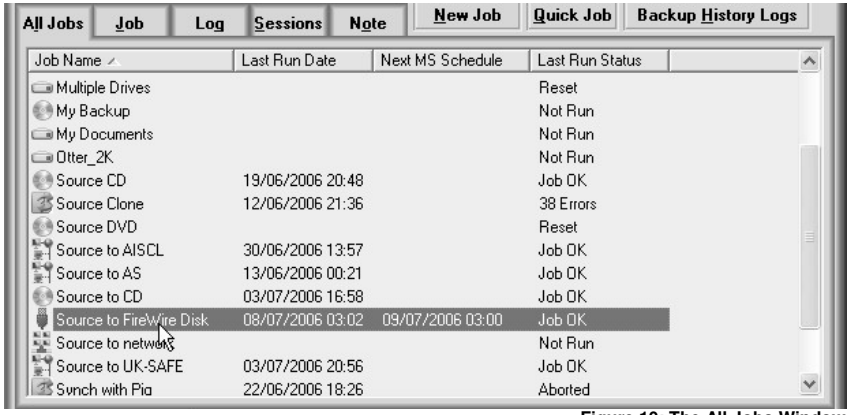


Figure 10: The All Jobs Window

The All Jobs Window displays all the jobs known to AISBackup, along with the date last run, the date next scheduled and the last backup result. To select a job, simply select it using the mouse, and then choose an appropriate option, for example **Run Backup**. Clicking the right mouse button deiplays a context sensitive menu.

1.7.2 The Job Window.

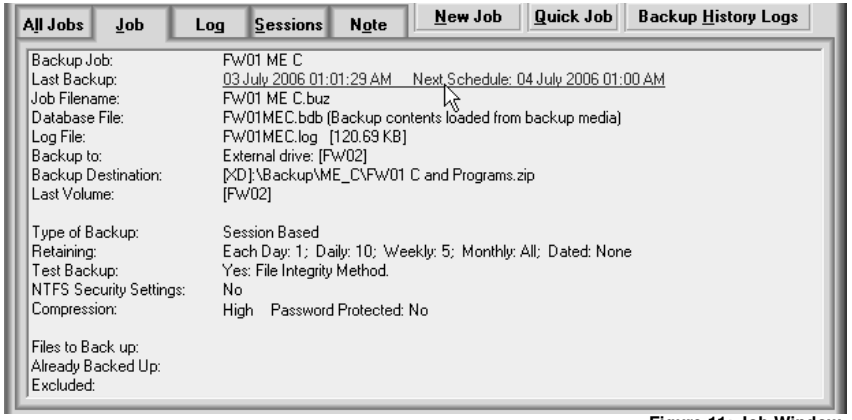


Figure 11: Job Window.

The Job window gives general information about the backup job. Context sensitive Manage Backup menu options are also available from this screen.

1.7.3 The Log Window.

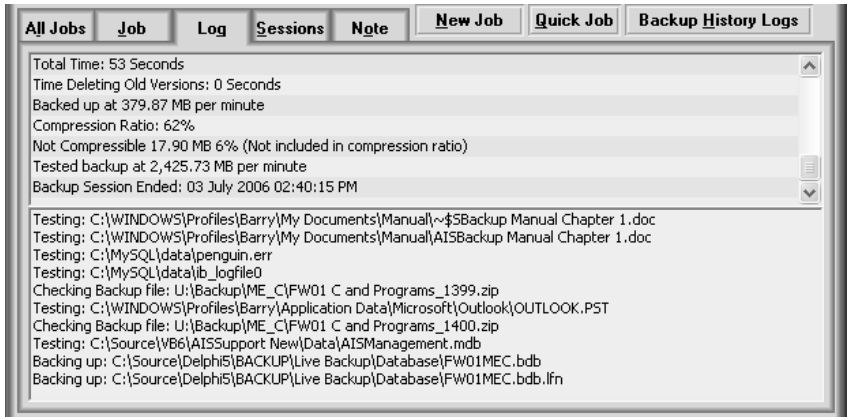


Figure 12: Log Window.

The Log Window displays progress information during a backup and restore.

1.7.4 The Sessions Window.

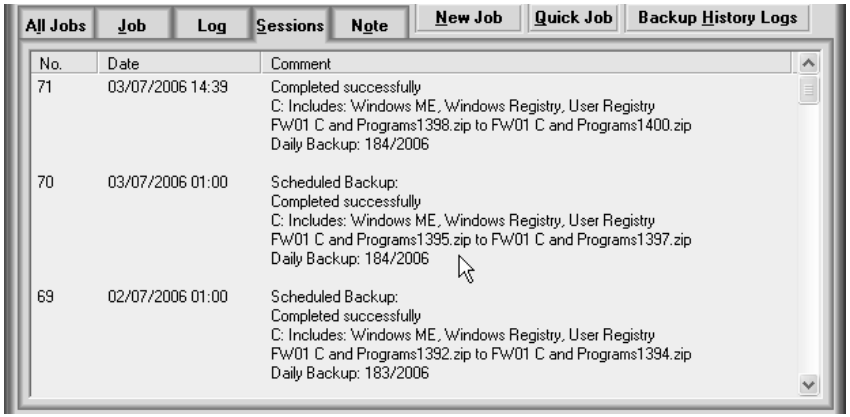


Figure 13: Session Window.

The session window displays each backup *Session* run for the selected backup job. *Sessions* that did not complete successfully are coloured red. The comment attached to a *Session* may be edited, double click a *Session* to invoke the editor. If the backup contains the Windows Operating system and the Registry those details are also displayed. To restore from a session use the **Right Click** / **Restore From Session** menu option.

1.7.5 The Note Window.

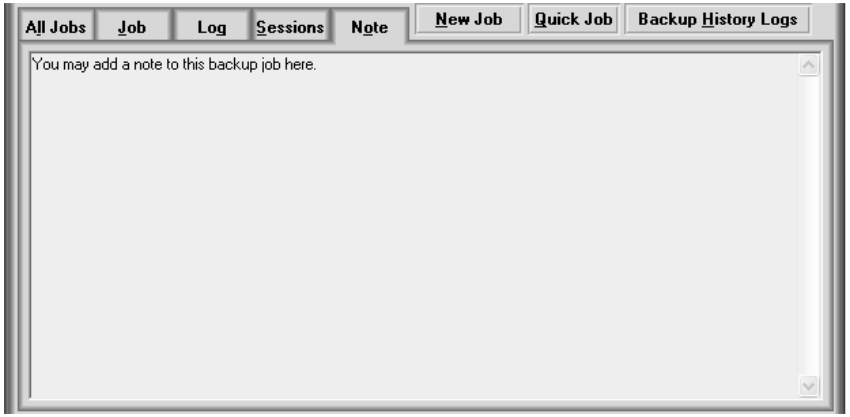


Figure 14: Note Window.

The note window is used to attach a note to a backup job. This note may be used to identify the backup or give special restore instructions. The note is stored in a file called <Job Name>.txt in the <Database Location> folder.

1.8 Getting Started: Backing up.

This section runs through a couple of working examples of setting up a simple job and running a backup. Both the **Quick Job** and **New Job** method are shown.

A full explanation of setting up backup jobs can be found in Section 2.1.

Two examples are discussed:

1. Backup the folder 'my documents'
2. Backup the C drive.

If you are following this example the cue card may be turned off by the **Help** / **Hide Cue Card** menu option.

1.8.1 Creating a backup job using Quick Job.

The Quick Job option may be used to set-up an AISBackup backup job without the need to fill in forms and make complicated file selections. A backup job can be created and run in 5 clicks of the mouse. The following job styles are enabled:

- Complete disk drives except files excluded by the *Default Excluded Files and Folders* option.
- The basic Windows Operating System, with only the registry files from each registered User, no documents and other settings are included.
- Documents and settings for all users of the computer. AISBackup will only select the Microsoft Documents and Settings folders, some Applications store files in different folders, these must selected manually.
- On Windows 95, 98 & ME the Emergency System Backup.

The list of files selected for backup by the Quick Job option may be modified prior to backup. The Quick Job option cannot be used for creating an FTP Server backup.

1.8.1.1 Quick Job Notes.

Duplicate job names cannot be used; the Job Name field turns red until the name is made unique.

The backup destination may be changed by clicking the button. If the backup destination is not the C drive a prompt asking whether the drive is a USB or FireWire drive is displayed. If the destination is a network drive the backup is automatically changed to a network style backup.

For CD or DVD backups which use the AISBackup integrated disc writer the disc Volume name prefix may be changed. If only the disk Packet Writing interface is active the disc Volume name prefix option is not available.

After clicking **Create Job** the selected files list may be modified by choosing **Yes** to *the Would you like to modify the list of files selected for backup?* prompt.

1.8.1.2 Option 1: The quickest way to create a backup job (C: drive example).

After 6 clicks of the mouse a backup of the C: drive, Windows or Documents and settings backup is ready to run. The first example shows backing up the C: drive to disk.

1. From the main form click **Quick Job**.

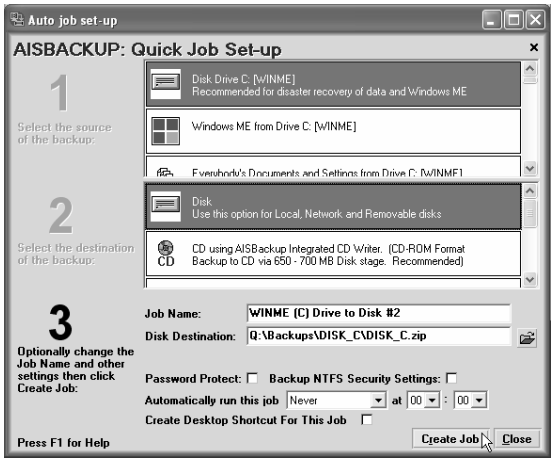


Figure 15: Quick Job.

2. Select the source of the backup: Disk Drive C: and the destination of the backup. Optionally change the name of the job or the destination of the backup.

   Optionally select whether to backup NTFS Security Settings. This option has no affect when selected on FAT drives and is not displayed when running under Windows 95, 98 or ME.

3. Click **Create Job**.

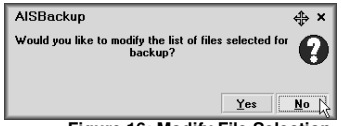


Figure 16: Modify File Selection.

4. On the *Would you like to modify the list of files selected for backup?* form choose **No**.
5. Click **Run**.

1.8.1.3 Option 2: The slightly longer way (My Documents).

One way to select My Documents for a drive is to select *Documents and Settings* and then to refine the actual file selection prior to backup. This example shows the creation of a backup job where the destination is the integrated AISBackup CD writer. This is not the best way to select *My Documents* but it demonstrates some of AISBackup's features.

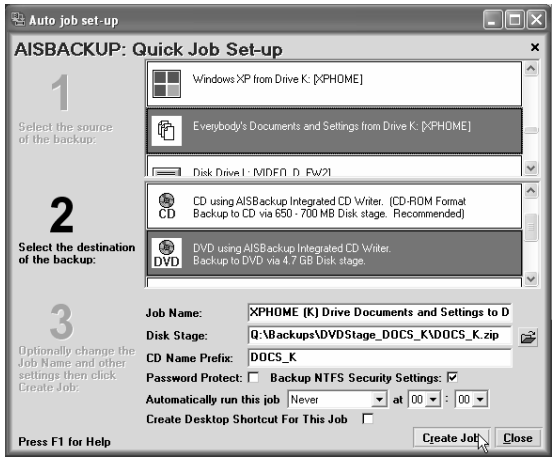


Figure 17: My Documents Example.

1. Select C: drive Everybody's Documents and Settings, alter the Job Name, Disk stage backup destination and CD name prefix as required.

   Note: If a third party CD writer or the integrated AISBackup CD writer is used AISBackup must write each CD's worth of data to disk prior to mastering to CD, this is called the *Disk Stage*.

2. Click **Password Protect** if the backup should be password protected.

3. The NTFS Security Settings option is automatically selected if an NTFS drive has been selected as the source of the backup. This option creates non-standard zip files which cannot be restored from using a third party zip program. However, this option is recommended when backing up NTFS drives.

4. A schedule may be set-up for the job to run automatically, alternatively a desk-top shortcut may be created to run the job immediately via a double-click.

   To schedule a job select the days on which the job should run followed by the time. To 'fine tune' the backup job settings choose the Ask schedule. Schedules may be fine tuned by using the **Manage Backup** / **Auto Run This Job** option or by working directly with MS Task Scheduler.

5. Click **Create Job**.

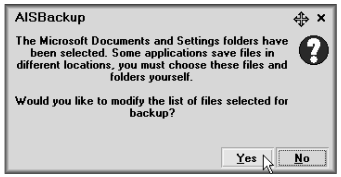


Figure 18: Modify files list prompt.

6. Select **Yes** to the modify files prompt.

7. AISBackup selects all the documents and settings from the C: drive, however we are only interested in backing up *My Documents* so we must de-select all the other folders. Figure 19 shows the Select Files for Backup form.

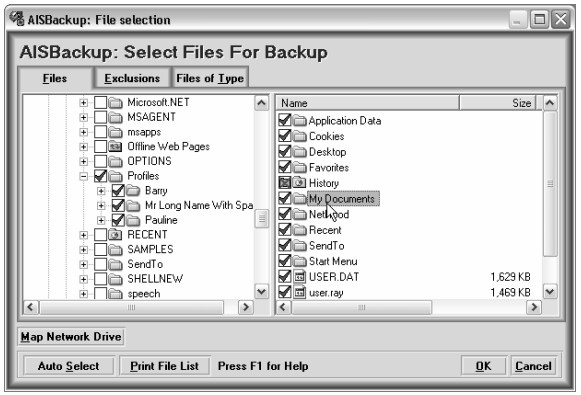


Figure 19: Select files for backup.

8. Locate the folder *My Documents* for the Username you want to backup. On Windows 95, 98 & ME the folder is either in the root of the C: drive or if the Operating system is Windows NT or the Family Login option is enabled the folder *My Documents* is contained in a folder called C:\Windows\Profiles*Username*. On Windows 2000 & XP *My Documents* is contained in the folder C:\Documents and Settings*Username* On Windows Vista the documents folder is held in C:\Users*Username*. As AISBackup has pre-selected far too many files and folders the best solution is to de-select everything and then manually select the appropriate *My Documents* folders. To do this locate the selected drive letter in the folders pane:

Figure 20: Locate C:

9. Notice the greyed green check mark ☑ this indicates that some files and folders have been selected under this folder. To de-select all files and folders from the C: drive click the ⊟ symbol next to the C: drive so the folders list collapses as shown in Figure 21.

Figure 21: Collapsed C: drive

10. Then click ☑ so that it becomes ☐. Next locate *My Documents* and select ☐ so that it becomes ☑ (a green check mark).

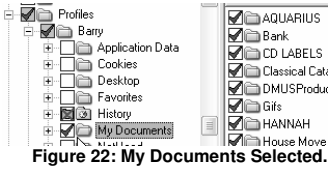


Figure 22: My Documents Selected.

11. When the file selection is completed click **OK.**

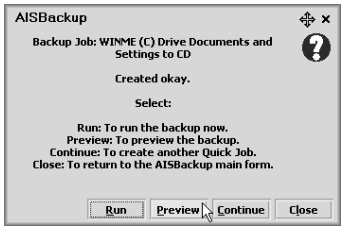


Figure 23: Run Quick Job.

12. To run the backup immediately click **Run** to preview the files selected for backup click **Preview**, to create more quick jobs click **Continue** to return to AISBackup click **Close**.

1.8.2 Creating a backup job using New Job.

The creation of the C: drive and My Documents backup jobs starts the same:

1. To create the backup job click **New Job,** to display on-screen help move the mouse pointer over each option, see Figure 24.

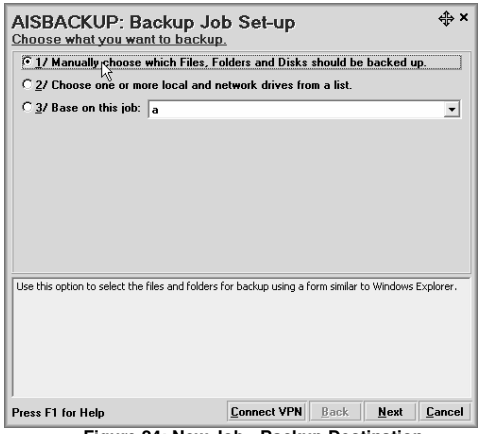


Figure 24: New Job - Backup Destination

2. For the *My Documents* job select option **1/ Manually choose which Files, Folders and Disks should be backed up.** For the C drive backup choose option **2/ Backup all Files From Disk Drive** – drive C is the default, another disk may be chosen.

3. Click **Next**. This will display the Job Set-up form 2, see Figure 25.

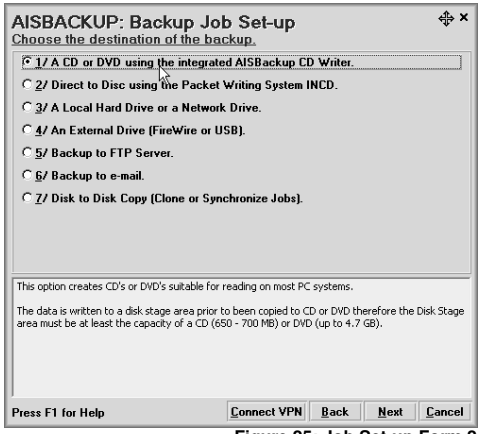


Figure 25: Job Set-up Form 2

4. The next form shows all the available destinations for the backup. If some CD options are missing it may be because the CD Writer options have not been enabled in **Tools** / **Program Settings and Options** see section 1.5.

5. In these examples we have chosen option **4/ A Hard drive on the PC or a Network drive**.

6. Click **Next**. This will display the Job Set-up form 3, see Figure 26.

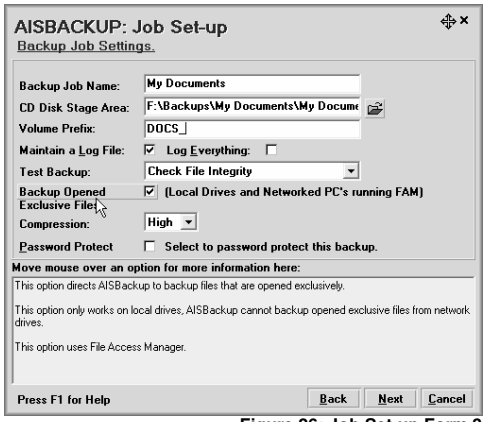


Figure 26: Job Set-up Form 3

7. If you are following the *My Documents* example type *My Documents* in the **Name** field. If you are following the C drive backup example type *C Drive* instead.

8. **Test Backup** always defaults to checked and may be un-checked. It is recommended that the Test Backup option is left enabled when the backup destination is CD or DVD.

9. If opened exclusive files are to be backed up check **Backup Opened Exclusive Files**. *Backup opened exclusive files* works on all local FAT disks and additionally local NTFS drives when running under Windows X, Windows Server 2003 and Windows Vista.

   Backup opened exclusive files is not supported on Local NTFS drives when running Windows NT4, Windows 2000 or Windows Server 2000, however, there are third party tools available at an additional charge to enable this.

   Additionally *Backup opened exclusive files* is not supported on network drives, the work around is to run AISBackup on the network drive rather then backing up from the network drive.

10. Leave all of the other settings set to their default values.

11. Click **Next** to proceed, to alter any previous input parameter click **Back**.

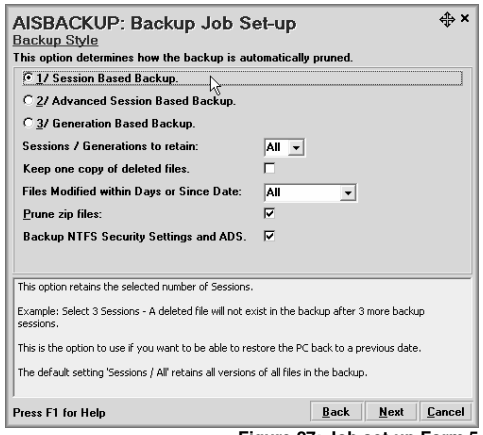


Figure 27: Job set-up Form 5

12. Leave **Keep one copy of deleted files** unchecked: This option is used with auto-pruning, which may eventually remove files completely from the backup, this option is checked if at least one copy f all files ever backed up should remain on the backup media. This setting has no meaning if session pruning is not used.

13. Leave the Backup Style set to **Sessions** / **All**.

14. The *Prune Zip Files* option instructs AISBackup to remove files from individual zip files if they no longer exist in any Session or Generation. The trade off is between less disk usage and time to run the backup.

15. Backup NTFS Security settings may be selected to backup access rights from NTFS drives. This option is not shown when running Windows 95, 98 or ME.

Go to section 1.8.3 below if you are following the *My Documents* example, section 0 above1.8.4 below if you are following the *C Drive* example.

1.8.3 Selecting the files: My Documents.

Go to section 1.9.4 if you are following the C Drive example.

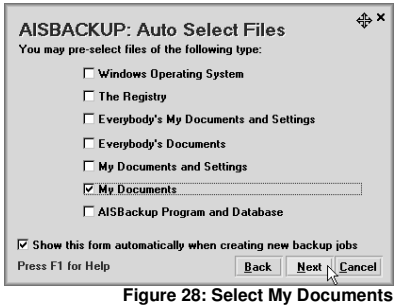


Figure 28: Select My Documents

16. Select the check box *My Documents* by, see Figure 29, and then click OK.

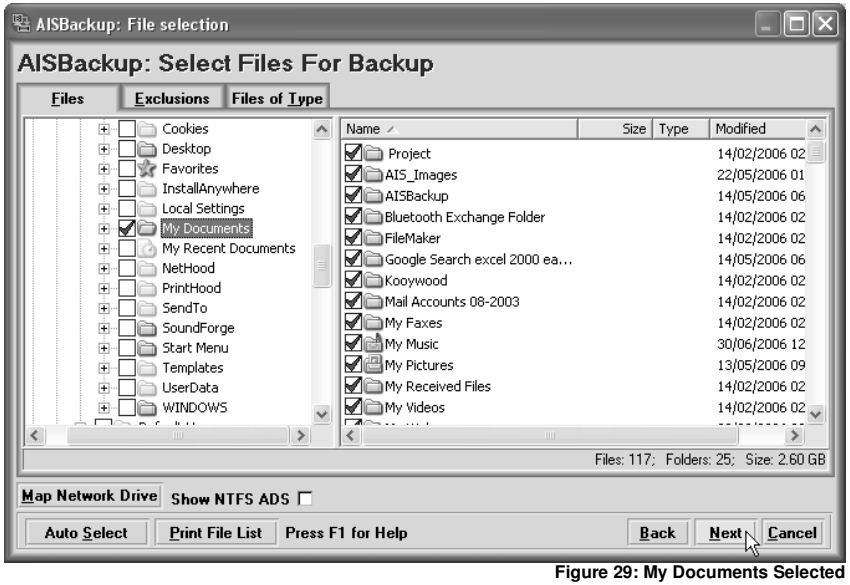


Figure 29: My Documents Selected

17. The folder *My Documents* contains folders that we do not want to backup, but we do want to backup any new files and folders created under *My Documents*. To do this right click the folder that is to be excluded, in this example start with *My Videos* and then select **Exclude Files and Sub-Folders**. See Figure **30**.

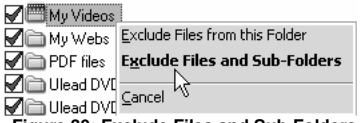


Figure 30: Exclude Files and Sub-Folders

18. Using the same technique exclude files and folders from *My Music* and *My Pictures*. See Figure 31.

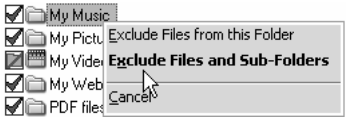


Figure 31: Exclude Folders Selected

19. Note these alternative locations for the *My Documents* (simply called *Documents* on Windows Vista) folder.
    - **Windows 95, 98 & ME:** C:\My Documents.
    - **Windows 95, 98 & ME with Family Login:** C:\Windows\Profiles*Username*\My Documents
    - **Windows 2000 & XP:** C:\Documents and Settings*Username*\My Documents.

      Check the contents of each folder to ensure they have been selected correctly.
    - **Windows Vista:** C:\Users*Username*\Documents
20. Once the files and folders have been selected click **Next**.
21. Go to section 1.9.5 to continue the example of backing up *My Documents*.

1.8.4 Selecting the files: C Drive.

If a complete drive has been chosen for the backup job the *Select Files Form* is not shown automatically, instead the following prompt is displayed.

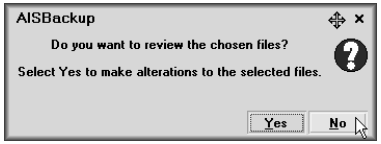


Figure 32: Show Select Files Form?

If the backup source drive is the same as the destination drive it is advisable to check the selected files list to ensure that the backup destination has not been included in the backup, otherwise AISBackup will be backing up a backup.

Many files that are not required on a backup are excluded by default. The default list is maintained by the menu option **Tools** / **Default Exclude Files & Folder List**. These exclusions include:

- Windows Swap file, which is known as the Page file on Windows NT, 2000, XP, Server 2003 and Vista.

- Windows hibernation file (if present).
- Temporary Internet Files, these files will surely be out of date if restored.
- Files from the Windows Temporary File folder. (C:\Windows\Temp).
- The default backup destination folder.
- System Volume Information

14. If the destination of the backup is the C drive or if more files should be excluded from the backup choose **Yes** to the *Do you want to review the chosen files* form.

    Figure 33. shows the folder named Backup about to be *excluded.*

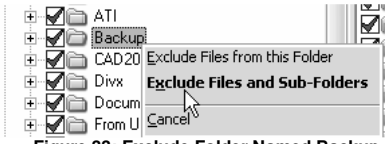


Figure 33: Exclude Folder Named Backup.

15. Once the file selection has finished click **Next**.

1.8.5 Finishing off the backup job.

Figure 34 shows the form that is displayed once the job has been created.

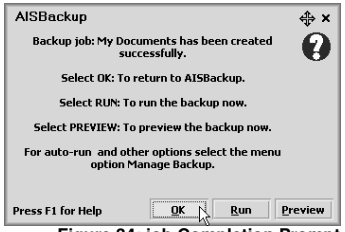


Figure 34: job Completion Prompt

Choose **OK** to return to the main AISBackup form or choose **Run** to run the backup now.

1.8.6 Running the backup.

Select the job from the drop down list, to view a list of all jobs use the **Select Job** option instead.

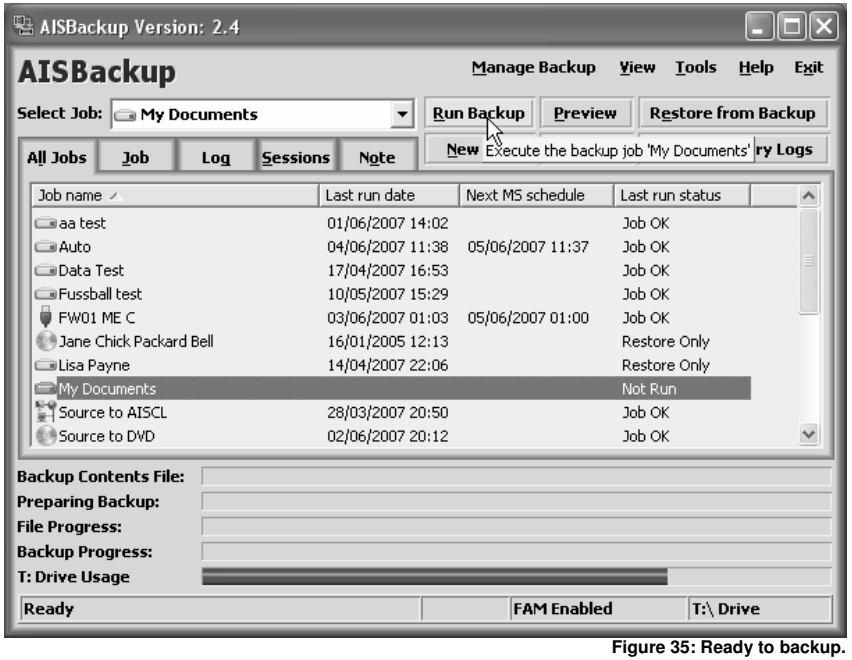


Figure 35: Ready to backup.

1. To start the backup click **Run Backup**.
2. To Preview a list of files selected for backup click **Preview Job**. After the preview for has been discarded select **Start** to run the backup.

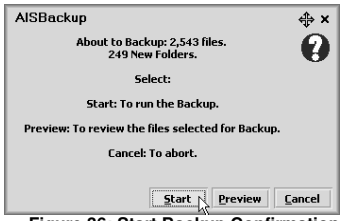


Figure 36: Start Backup Confirmation

3. Prior to starting the backup AISBackup asks for an optional reason for backup, this may be useful when determining which backup session to use for a restore.

4. If the backup is to CD or removable media and this is the first time that a backup job has been used or the last used media is not in the drive a request to load the appropriate media is displayed. If the backup is to CD using the integrated AISBackup CD Writer the load media form is always shown, this is to enable the write speed of the CD writer to be changed.

5. AISBackup automatically names media when using the integrated CD Writer, when using a third party CD mastering program AISBackup displays which name to use, for all other media please ensure that a unique name is used for each media.

   If media is loaded without a volume name a name is requested, see Figure 37. If the backup is likely to span more than one media (CD, Zip™ cartridge or DVD) use a name that will identify it as part of a set, e.g. BACK01, BACK02 etc.

6. Figure 37 shows the Load Media form that is displayed when AISBackup is waiting for a blank CD, the CD has been loaded, the write speed has been set, click **OK** to start the backup.

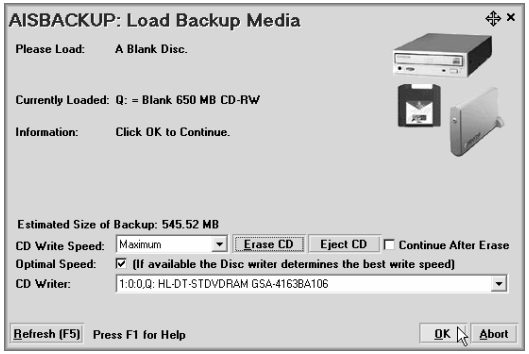


Figure 37: Load Media.

If the backup is to a CD using a packet writing interface or a Zip™ cartridge and the media has not been named the prompt shown in Figure 38 is displayed. Enter the media name then click OK.

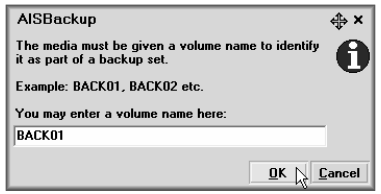


Figure 38: Name Media

6. If this is not the first time the backup job has been used the Load media form will ask for the last media used by name. Another media that has been labelled in sequence may be used instead, click the **Use Loaded Media** button.

   If the backup is using the AISBackup integrated CD Writer a blank CD may be loaded instead of the requested CD.

7. While the backup is progressing the central part of the main form switches to the Log Window, see Figure 39.

   If a log file as been activated the top portion of this display is written to the backup log file. If all messages have been activated the messages in the lower portion of the log display are also written to the backup log.

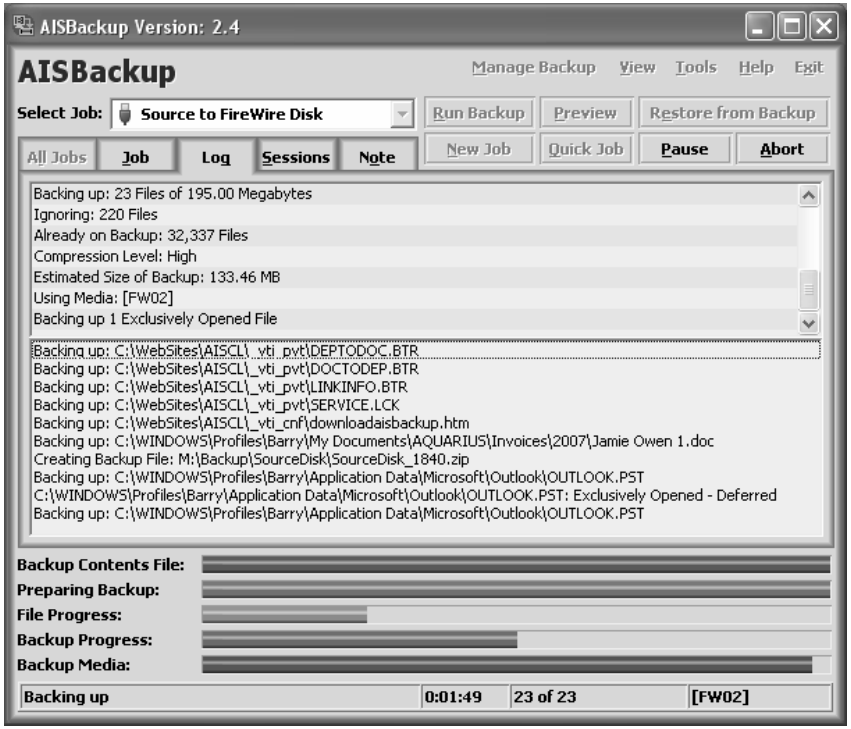


Figure 39: Main Form during a backup

9. At any time the backup may be terminated by clicking the **Abort** button. A confirmation prompt is displayed, click **Yes** to abort or **No** to continue the backup. AISBackup will need to complete the current file if you choose to abort, this may take a long time for a large file.

   An aborted backup may be resumed at any time by selecting **Prepare Job** / **Run Backup**.

   A Backup may be temporarily paused by clicking the **Pause** button.

10. If selected, the test phase runs immediately before a change of media is requested and at the end of a backup.

11. If one or more files cannot be backed up the messages are written to the top portion of the log window (and therefore the log file), see Figure 40.

12. If one or more files fail to back up the prompt shown in Figure 40 is displayed.

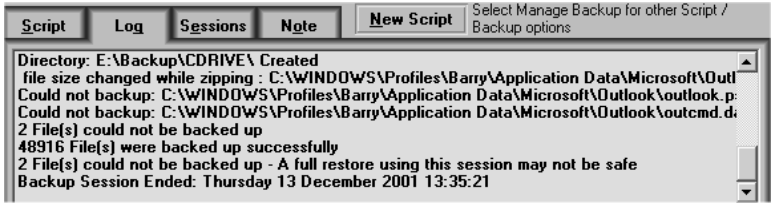


Figure 40: Files that failed to back up

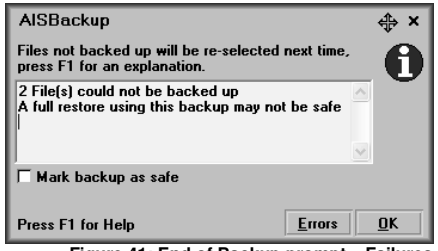


Figure 41: End of Backup prompt – Failures

13. To display the files that did not backup click **Errors** from here they may permanently exclude files from future backups. If the files that failed to back up are not essential to the backup you may **Mark the backup as safe**. A Safe backup is one where all files have been backed up successfully, the backups that are designated unsafe are coloured red in the **Sessions** display. A custom message may be added to the backup session prior to clicking **OK**.

    Files that may fail to backup include: Index service files, the folder *System Volume Information*, the folder *RESTORE_*, Modem log files, QMGR0.DAT, QMGR1.DAT. These files can be safely excluded from a backup as they will be recreated by Windows.

14. If a file that was selected for backup is subsequently deleted before AISBackup attempts to back it up it is designated *deleted before backup***,** this does not cause the backup to be marked unsafe.

1.8.6.1 Backing up using the integrated or a third party CD Writer.

When the backup destination is CD there are three options:

- CD or DVD Using the AISBackup CD Writer.
- CD or DVD Using a third party CD Mastering program.
- Direct to disc using a third party packet writing system such as Roxio direct to disc or Nero INCD. This option is also available with Windows Vista.

This section describes the process for using the integrated AISBackup disc writer or a third party disc mastering program.

Here is the sequence of events when backing up to the AISBackup Disc Writer or a third party disc mastering software:

- AISBackup asks for a blank CD or DVD or the last disc used so that it can determine the available space on the disc. If the AISBackup disc writer cannot be used the free space must be entered manually, ensure that the free space figure is rounded down so that the disc does not overflow, e.g. if the remaining space is 259.87 Mega Bytes enter the value 259.
- AISBackup initially backs up the files to a disk area called the *disk stage area*.
- AISBackup either asks you to master the disc using a third party disc mastering program or proceeds to create the disc using the integrated AISBackup disc writer, see Figure 42.

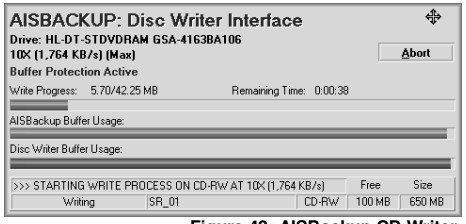


Figure 42: AISBackup CD Writer.

- If the **Test Backup** option has been set AISBackup tests that the disc copy of the backup can be read., see Figure 26. On some PC's AISBackup cannot immediately see the files just written to the CD, if this happens please manually un-load and re-load the CD then click **Re-Try**.
- The disk stage / disc write / disc test sequence is repeated until the backup is complete.

AISBackup is able to append a backup to the last disc used. If a third party disc mastering program is used ensure that the last session is imported on the disc, failure to do this will render the previous backup un-usable. When asked choose *overwrite existing files* when creating the new disc session. Please refer to your CD/DVD Mastering Software documentation about Importing Previous Disc Sessions. The AISBackup integrated disc writer automatically imports the last disc Session so in this respect is very much easier to use.

1.8.7 When a backup goes wrong.

1.8.7.1 Introduction.

This section describes the action to take if a backup goes wrong because of a media failure. Suggestions are also made for reducing the number of failures.

This example assumes that the backup is to CD.

1.8.7.2 Scenario.

CD number 3 has just been created of what may be a 5 CD backup using the packet writing system, the CD writer's front light is flashing furiously and AISBackup has stopped responding, or worse, has been zapped from memory.

1.8.7.3 Solution.

1. Restart the PC as there may be a severe problem with the 'in memory' Packet Writing interface.
2. Load AISBackup, select and load the backup job.
3. Load the last good CD used.
4. Select the menu option **Manage Backup** / **Import Backup Contents File**.
5. Confirm that the existing *Backup Contents File* is to be replaced by clicking **Yes**.
6. When asked if the existing backup should be archived select **No**.
7. AISBackup will now calculate the backup based on the restored *Backup Contents File*.
8. Re-start the backup by clicking **Run Backup**.

1.8.7.4 Reducing the possibility of problems.

1. Check the AISBackup web-site FAQ for more information.

1.9 Restoring from a Backup.

1.9.1 Introduction.

The restore option is used to copy files from the backup media back to the PC. There is a comprehensive list of options for the replacement of files that already exist in the destination folders.

1.9.2 The Restore Procedure.

1.9.2.1 Selecting the files to Restore.

1. If the backup type is a *Session* variety the Select Session form is displayed first, this form enables a dated *Session* to be selected from which to restore the backup. Remember that each *Session* contains all files that were on the PC on that date even though only a few files were physically backed up. Leave the default on *All Sessions* if individual files are to be restored regardless of which *Session* they belong to. Once a *Session* date has been selected click **Next**.

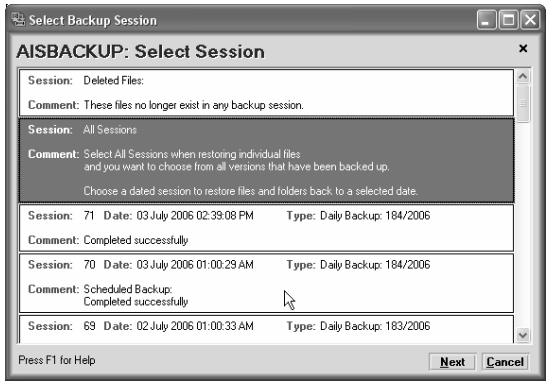


Figure 43: Select Session

2. If the *Backup Job* is of a *Generation* variety the Select Session form is not displayed.
3. The Select Files to Restore form is now displayed. The Restore Files Select form is used to select the files and folders that are to be restored, the destination and duplicate file action is dealt with on the following forms. If a dated *Session* was selected then only files and folders that existed at the time of the backup are listed on the form. If *All Sessions* was selected, or if this is a *Generation* style backup, then all folders and all files from every backup *Session* are displayed.

   When all files are displayed and more than one version of a file is on the backup each version of the file is given a Generation Number, this is displayed in the *Gen* column. If a selected folder contains more than one version of a file the last backed up version of the file is selected, this is not necessarily the latest version (in date modified terms) of the file. If another version of a file is selected the previously selected version is automatically de-selected.

Figure 44 shows a select files form where there is more than one version of a file on the backup, notice that *All Sessions* has been selected.

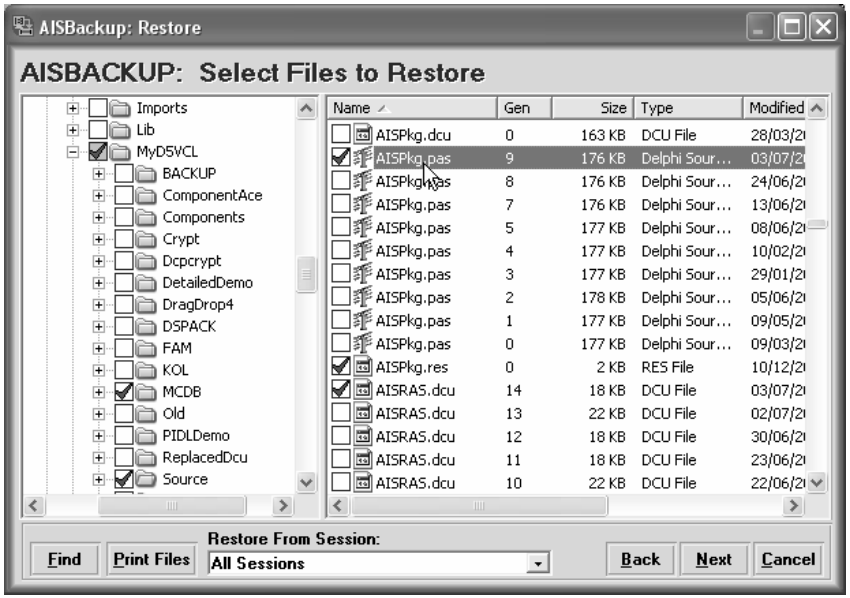


Figure 44: Restore Files Form - All Sessions.

4. Figure 44 shows that there are 9 versions of AISPkg.pas on the backup. Folder Source has been selected so the latest backed up version of each file has been selected. Generation 6 is not in the list because it has been removed by the user selected session pruning settings.

5. Figure 45 shows the same form with *Session* 12 selected, note that Generation 4 of AISPkg.pas has been selected because Generation 9 did not exist when backup session 12 was created.

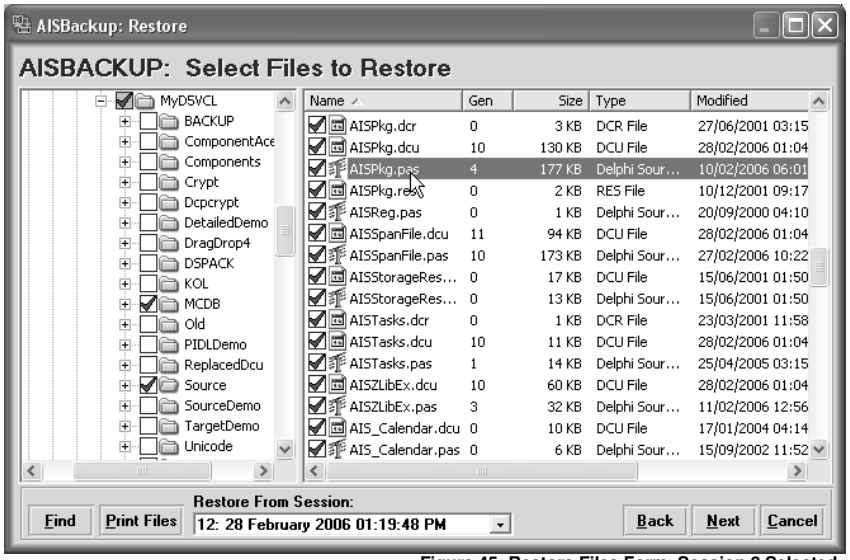


Figure 45: Restore Files Form: Session 8 Selected.

6. A backup session may also be selected from the Restore Select Files form using the **Restore From Session** drop down list..

7. Figure 46 shows each of the columns of the files section of the Restore Select Files form.

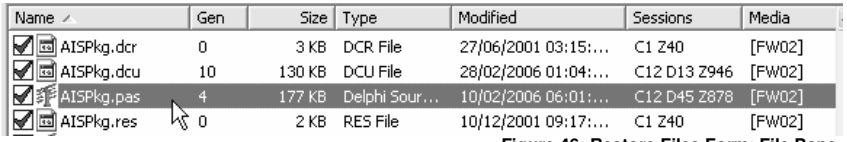


Figure 46: Restore Files Form: File Pane.

- Name: The name of the file.
- Gen: The Generation Number (Version Number) of the file numbered from 0.
- Size: The size of the file in kilobytes.
- Type: The type of file.
- Modified: The date and time the file was last modified.
- *Sessions*: Cnn is the *Session* the file was backed up in, Dnn is the *Session* the file was removed from the backup, Znnn is the number of the suffix the actual zip file that the file resides in.
- *Media*: The name of the media this file has been written to.

8. Once all files have been selected click **Next**. To go back to the *Sessions* form click **Back**.
9. The **Find** option is used to look for a file where the name or partial name is known but the folder name is not known. Common files that are usually quite well hidden include:
    - Microsoft Outlook Personal Folders Files: Enter **.pst** in the Search Field.
    - Microsoft Outlook Express Folders: Enter **.dbx** in the Search Field.
10. The **Print** option prints the contents of the right hand Files Window.
11. Once the files have been selected click **Next**.
12. if a file name is double clicked it is restored and opened in its registered program.

    The following Right Click options are also available for files:

    - **Open:** To restore and open the file using its registered program, same as the double click option.
    - **Open with**: To restore and open the file using the standard *open with* dialogue.
    - **Restore as**: Restore the file to a filename and folder of your choice.

13. AISBackup also supports **Drag and Drop File Restore**:

    Select the file or files to restore and then drag and drop them directly onto Windows Explorer. Additionally AISBackup supports Dragging and Dropping of selected folders when running Windows 2000, Server 2003, XP and Windows Vista.

1.9.2.2 Duplicate File Action and Restore Destination.

13. Either choose to restore to the path that the files were originally backed up from or enter a new destination for the restored files.
14. If a dated session was selected the following Delete file options are displayed:

    Delete files that did not exist when session *N* was backup up.
    Where *N* is the session number.
    Select this option to instruct AISBackup to remove files from the destination folders that did not exist when the backup was taken. This option does not remove folders that did not exist when the backup was taken.

    Delete folders that are not on backup session *N*.
    Where *N* is the session number.
    Select this option to instruct AISBackup to remove folders from the destination folders that did not exist when the backup was taken.

    The files and folders selected for deletion can be reviewed so that the actual files chosen for deletion may be selected. A *Review* option has been included in case files and folders selected for deletion should be retained.

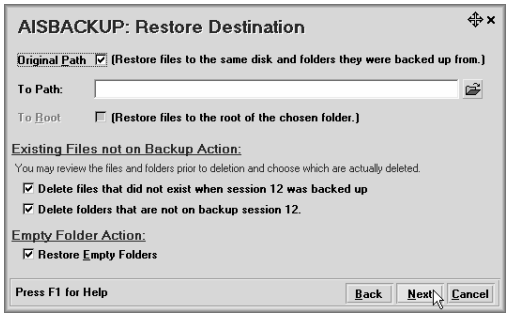


Figure 47: Destination Options

15. Empty folders may be restored by selecting **Restore Empty Folders**.

Duplicate File Action and NTFS Security.

16. The duplicate file actions are only enabled if the backup destination contains files and folders.

    The NTFS Security setting is only shown if the NTFS security settings were backed up, the destination drive is an NTFS drive and the current user account has permission to restore them.

    The duplicate file action taken depends on the type of restore selected. If delete, or files that do not exist are been restored the default value *Do Not Replace Duplicates* is appropriate. If files are been restored back to a selected date then the following options are appropriate:

    - Restore files that do not exist on the PC.

- Replace files that are not the same as those already existing on the PC.

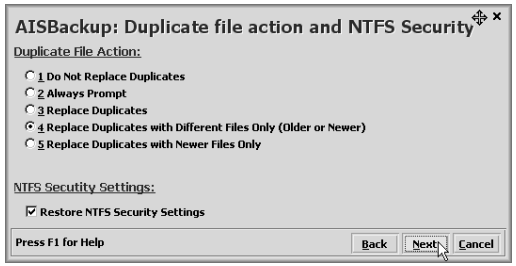


Figure 48: Duplicate File Action

The definition of each of **Duplicate File Actions is:**

- **Do Not Replace Duplicates.**

  This option will not replace any pre-existing file from the destination folders.

- **Always Prompt.**

  This option displays a list of duplicate files in another Select File Window from where the files that should be replaced are selected.

- **Replace Duplicates.**

  This option always replaces duplicate files, even if they are the same.

- **Replace Duplicates with Different Files Only (Older or Newer).**

  This option replaces duplicate files, which are older or newer than the files being restored (based on date modified). This is the best option to use if the PC is been 'Moved in time', i.e. restoring from a *Session* date.

- **Replace Duplicates with Newer Files Only.**

  This option replaces files on the PC that are older than the files being restored.

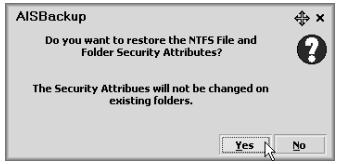
17. **Restore NTFS Security Settings**

    Select this option to restore the security account settings. The recommended option is selected, however, if you are restoring secured data from another computer you may wish to uncheck this option so that you have access to the data using Windows. Only administrator accounts can restore the NTFS security settings

18. Click **NEXT** to proceed.

1.9.2.3 The Restore Phase.

19. AISBackup prepares the restore based on the file selection, duplicate file action and destination criteria.



20. If the NTFS security settings were backed up you are asked if you want to restore these settings. These security settings are used to restrict some files to selected users, e.g. Private Files and Folders. If you do not restore these settings some files may be incorrectly be made Accessible to all users of the PC.

21. For Windows Vista see below:

    Windows 2000, Windows XP or Windows Server 2003:

    If the Windows 2000, Windows XP or Windows Server 2003 operating system is been restored over-the-top of the running Operating system the following message is displayed.

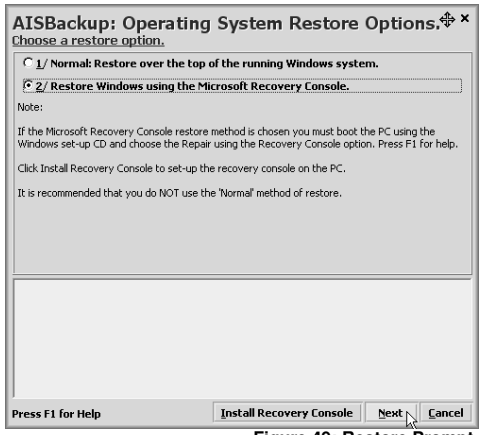


Figure 49: Restore Prompt.

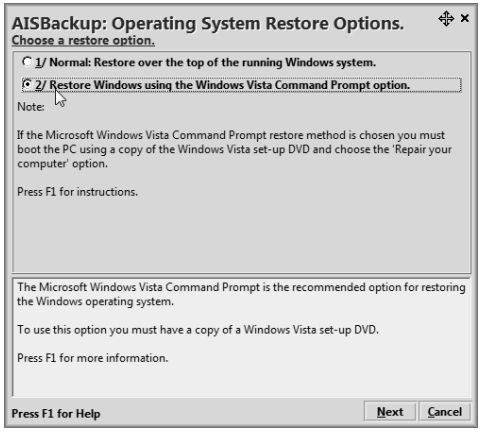
Microsoft Recovery Console Notes:

The safest way to restore Windows over the top of the current operating system is using the Microsoft Recovery Console. If the Recovery Console has not been installed on the PC the system must be booted from the Windows 2000 or XP installation (set-up) CD. Some OEM PC's are not shipped with a Windows installation CD but usually contain all the set-up files on the main disk.

AISBackup will help search for and install the Recovery Console from either the installation CD or disk based set-up files via the **Install Recovery Console** button.

The Microsoft Windows Vista Command Prompt method:

If the Windows Vista operating system is been restored over-the-top of the running Operating system the following message is displayed.



The Microsoft Windows Vista Command Prompt requires that you have access to the Windows Vista installation DVD so that the PC may be booted to the Windows Vista Recovery option *Command Prompt*. Using this method AISBackup restores Windows to a temporary folder, which is the swapped with the current Windows folder. This operation can only be done using the Windows Vista's command prompt repair option.

All versions of Windows:

If the PC has not had any major Operating System changes since the selected backup session then the Normal option may be selected for restore. The Normal option restores the PC following a system re-boot instead of requiring the Microsoft Recovery Console.

AISBackup pre-selects the Normal or Recovery Console / Command Prompt methods as appropriate.

22. A restore confirmation prompt is displayed, see Figure 50.

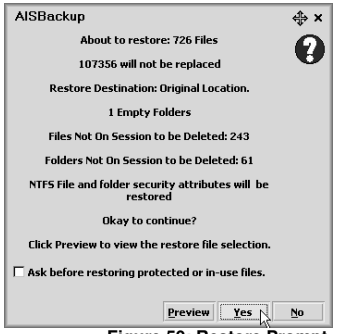


Figure 50: Restore Prompt.

23. To continue with the restore click **Yes**, to abort click **No**. To look at a list of files that are to be physically restored choose the **Preview** option.

    Ask before restoring protected or in-use files: Select this option to avoid re-booting the PC which would be required if any file selected for restore is currently open, it may be preferable to close the application holding the file open rather than re-boot.

24. If a file cannot be restored because the destination file is in use the file is temporarily copied to the <temporary location for restored files> folder, these files are then automatically restored following a system re-boot.

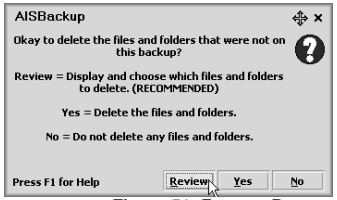


Figure 51: Restore Prompt

25. After the restore phase has finished files and folders selected for deletion may be checked by using the **Review** option. The review option enables the actual files and folders deleted to be selected. If all files and folders are to be deleted without checking choose **Yes**. To proceed without deleting anything choose **Abort**.

1.9.2.4 Finishing the Restore: No special requirements.

26. The restore phase finishes with the prompt shown in Figure 52. Acknowledge the prompt by clicking **OK**.

Figure 52: Restore Completed Okay.

1.9.2.5 Finishing the Restore: Restoring In-Use Files and / or Registry.

24. The restore phase finishes with the prompt shown in Figure 53. To re-boot now click **Yes**, to proceed without re-booting click **No**.

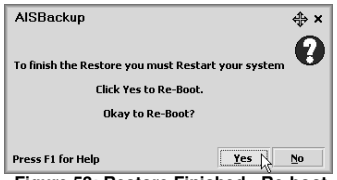


Figure 53: Restore Finished - Re-boot.

25. After re-booting and logging on the program AISRSTR.EXE will finish the restore process.

1.9.2.6 Finishing the Restore: Restoring – Windows 2000, XP and Windows Server 2003. Using the Microsoft Recovery Console.

For Windows Vista see section 1.9.2.7

This option is only required if the Windows 2000, Windows XP or Windows Server 2003 is restored 'over the top' of the currently running Windows System.

Microsoft introduced the File Protection System with Windows 2000, this essentially automatically restores replaced files on-the-fly. This is normally a good thing, but does make restoring the Windows Operating system a little awkward.

AISBackup achieves the restore by restoring the Operating System files to a temporary folder, this folder is then swapped with the Live Windows and Documents and Settings folder following a system re-boot. Using this method also ensures that a basic Windows system can be loaded in the event of a failure.

This method of restoring Windows does require extra disk space as much of the Windows folder is duplicated on disk during the restore process. If there is not much disk space some files may need to temporarily removed and restored after the Windows operating system has been restored.

The Microsoft Recovery Console is used to swap the old Windows folders with the restored Windows folders. Here is the procedure:

24. The following re-boot prompt is displayed:

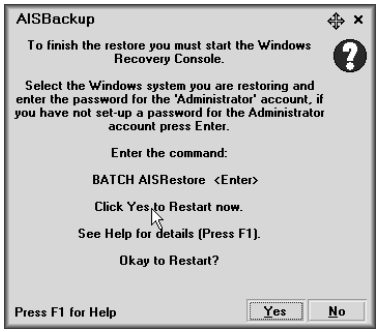


Figure 54: Restore Finished – Re-boot to Microsoft Recovery Console.

25. After booting into the Recovery Console select the operating system that is been restored from, this can be easily identified because the restored version this Operating System is indicated by C:\WINDOWS_AIS, log onto Windows (or WinNT) from the same drive. In the example below the restored copy of Windows is **2: E:\WINDOWS_AIS**, the version that must be logged onto is **1: E:\WINDOWS** as this has been prepared to restore the Windows Operating system.

```
Microsoft Windows XP™ Recovery Console.

The Recovery Console provides system repair and recovery functionality.

Type EXIT to quit the Recovery Console and restart this computer.


1: E:\WINDOWS
2: E:\WINDOWS_AIS
3: D:\WINNT
4: H:\WINDOWS

Which Windows installation would you like to log onto
(to cancel, press ENTER)? 1
Enter Administrator password:
E:\WINDOWS> C:

C:> batch AISRESTORE
```

26. Using the above example enter the number **1** then press <ENTER>.

27. Enter the Administrators password, for Widows XP home users this is most likely not set, so just press <Enter>.

28. Enter the command:

    BATCH AISRESTORE then press <ENTER>.

29. Enter the command **EXIT** then press <ENTER>.

30. After restarting Windows AISBackup will perform post backup housekeeping, including removing the previous version of Windows.

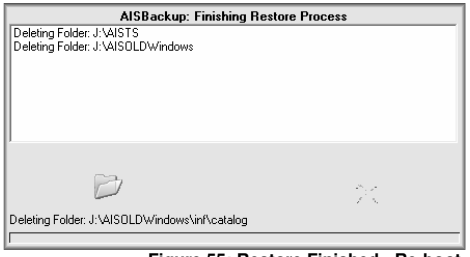


Figure 55: Restore Finished - Re-boot.

31. If a version of Windows has been restored over-the-top of a version of Windows that is different, for example a backup over a fresh install of Windows 2000 or XP a further re-boot may be required so that AISBackup can restore the User Settings portion of the Registry.

1.9.2.7 Finishing the Restore: Restoring – Windows Vista using the command prompt recovery option.

This option is only required if the Windows Vista is restored 'over the top' of the currently running Windows System.

Microsoft introduced the File Protection System with Windows 2000; this essentially automatically restores replaced files on-the-fly. This is normally a good thing, but does make restoring the Windows Operating system a little awkward.

AISBackup achieves the restore by restoring the Operating System files to a temporary folder, this folder is then swapped with the Live Windows and Documents and Settings folder following a system re-boot. Using this method also ensures that a basic Windows system can be loaded in the event of a failure.

This method of restoring Windows does require extra disk space as much of the Windows folder is duplicated on disk during the restore process. If there is not much disk space some files may need to temporarily removed and restored after the Windows operating system has been restored.

The Windows Vista recovery option *Command Prompt* is used to swap the old Windows folders with the restored Windows folders. Here is the procedure:

32. The following re-boot prompt is displayed:

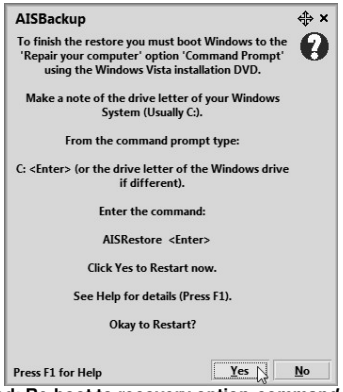
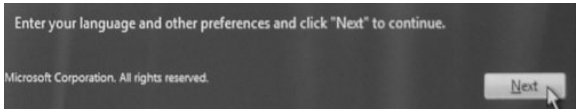


Figure 56 Restore Finished: Re-boot to recovery option *command prompt.*

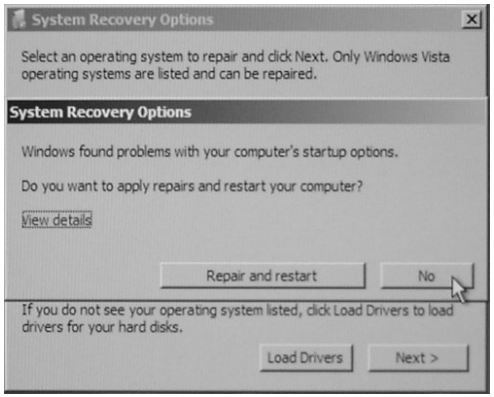
Insert the Windows Vista boot DVD then click **Yes** to re-boot.

33. After booting into Windows set-up there is no need to select a language, so click **Next**.

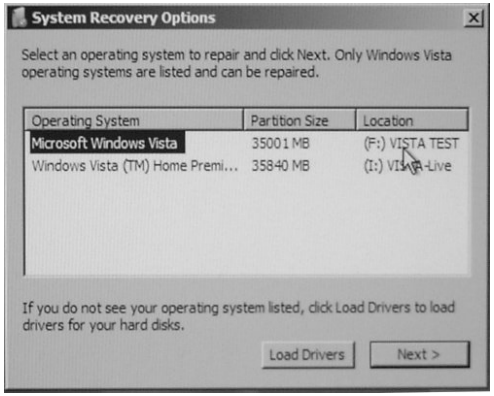


34. From the Windows Vista installation screen choose **Repair your computer**.

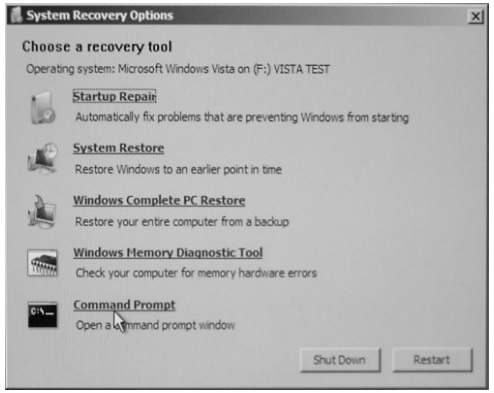
35. Windows will examine the current installed operating systems and then display the following option which is response to a start-up error condition. This error condition is a consequence of the way in which AISBackup restores the operating system and must be ignored by clicking **No**.



36. Make a note of the drive letter of the restored version of Windows, not in most cases this will be C:, however, in tte example below the drive letter is F:, then click **Next**.

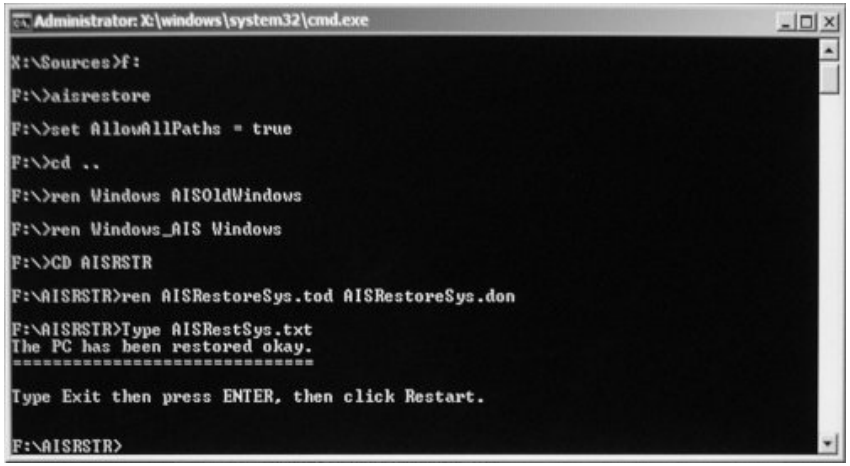


37. Select the option **Command Prompt**



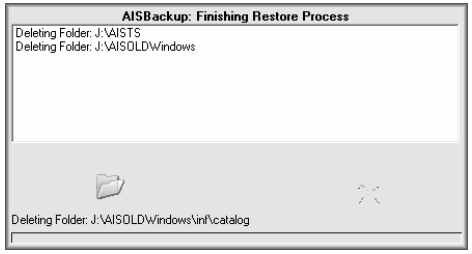
38. Type the drive letter noted above, in this example **F:** then press <ENTER>

    Type the command **aisrestore** then press <ENTER> then type **exit** then press <ENTER> to close the command prompt box.



39. To complete the restore click **Restart**.

40. After restarting Windows AISBackup will perform post backup housekeeping, including removing the previous version of Windows.



1.10 More Restore Options.

There are right click restore options that enable files to be opened directly from the backup or restored to a different filename or folder. The right click options are available from the restore files select form and the restore files *Find File* form.

1.10.1 Open / Open With.

The **Open** and **Open with** options restore the file to the AISBackup Temporary Workfiles folder and then opens the file within its registered program, the **Open With** option opens the file with the program chosen from the standard Windows *Open with* dialogue.

Figure 57: Open a file directly from the backup.

If the file is to be saved use the **Save As…** menu option from the program that opened the file.

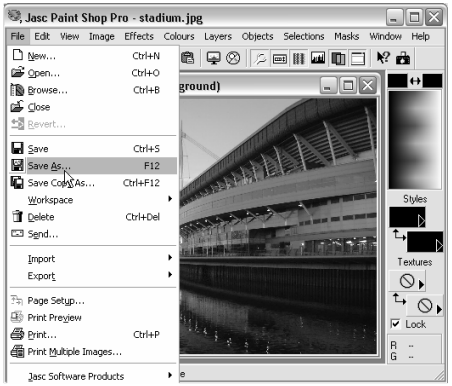


Figure 58: The file is restored and saved with Save As.

1.10.2 Restore as.

The restore as option displays the standard Microsoft Save As dialogue from which to select and enter the destination of the file.

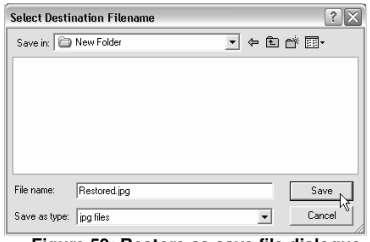


Figure 59: Restore as save file dialogue.

1.11 Creating the AIS Enhanced Windows Start-up diskette.

1.11.1 How to get to this option:

This option is only available on Windows 95, 98 and ME.

From the AISBackup Screen, select the menu option **Tools** / **Restore Diskette**.

1.11.2 Introduction

This option updates the standard Windows 98 or Windows Me diskette to include the Emergency System Restore menu option:

1.11.3 The Menu Options.

- **AIS Emergency Restore.**

  Used to Restore an Emergency System Backup.

Windows 95 Users should acquire a Widows Me Start-up diskette as this is suitable for use with AISBackup and should also correctly configure most CD drives.

Please see **www.aiscl.co.uk** for the location of suitable boot diskettes.

To create a Windows Start-up Diskette click **Start** / **Settings** / **Control Panel** and then select **Add/Remove programs**, select the **Start-up Disk** tab and follow the on-screen instructions.

1.11.4 Smartdrv.

AISBackup requests that the Windows 98 or ME installation CD is loaded so that Smartdrv.exe may be copied to the restore diskette.

Here are the locations of smartdrv.exe if it is to be manually copied to the diskette:

- Windows 98: [CD]:/win98/smartdrv.exe
- Windows ME: [CD]:/win9x/smartdrv.exe

1.11.5 Bootable CD.

If an Emergency Restore CD's is created using the AISBackup integrated CD Writer the CD is automatically made bootable using the updated Windows start-up diskette.

1.12 Setting up the Microsoft Windows 2000 or XP Recovery Console.

Here are the instructions for setting up the Microsoft Recovery Console.

The Recovery Console is a command line interface that provides functions that may be used to repair problems with Windows NT, 2000 or XP.

The Microsoft Recovery Console is required to restore the Windows 2000 or XP 'over the top' of the currently running Operating System.

The Recovery Console may be booted from the Windows distribution CD by choosing the *Repair* option.

Installing the Recovery Console directly to the C: drive automatically adds the Recovery Console to the boot menu options, this makes loading the Recovery Console a much quicker option.

1.12.1 Manual Installation of the Recovery Console.

From the task bar select **Start** / **All Programs** / **Accessories** / **Command Prompt**.

Enter the command:

[CD]:\I386\WINNT32.EXE ∇ **/CMDCONS** where:

[CD] = The CD drive letter.

∇ = type a space here.

Acknowledge the install by selecting **Yes**.

Optionally allow Microsoft to update the install files. AISBackup works with the standard Recovery Console so the update is not required.

The Recovery Console option is automatically added to the boot menu.

1.13 How to Register AISBackup.

1.13.1 Introduction.

When AISBackup is installed a 30 trial period starts. This trial period is for 30 different days and not 30 elapsed days. AISBackup may be used as many times on each day as you like.

When AISBackup is purchased you are sent a Key file called *AISBackup.aik* this file is simply double clicked and *open* chosen to enable self-registration. This key file should be kept safe as it will needed if you remove and re-install AISBackup for any reason.

1.13.2 How to Register AISBackup.

To register AISBackup select the menu option **Tools** / **Program Activation Options**. This option is only available during the 30 day trial, see Figure 60.

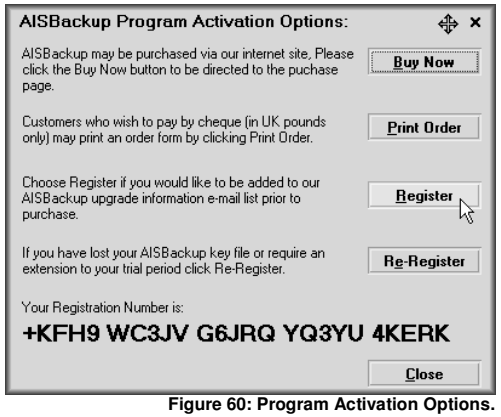


Figure 60: Program Activation Options.

To display the registration form click **Register** or **Re-Register**. The Re-Register option is used to cause us to re-send the full registration key file if AISBackup has reverted to the 30 day trial.

Users who have purchased AISBackup and upgraded to a newer version are also requested to inform us of the upgrade. The **Help** / **Register** option may be used to send the updated registration details at a later date.

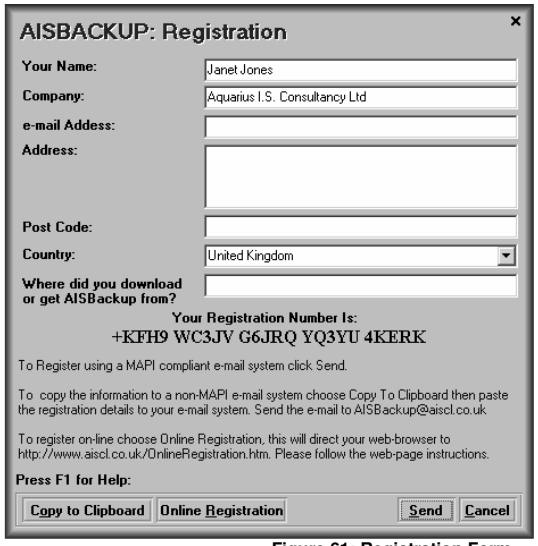


Figure 61: Registration Form.

The only mandatory field is the **e-mail Address**, the **Address** field is also required if the **Print Order** option was used.

If MAPI compliant e-mail system is used, such as Microsoft Outlook or Microsoft Outlook Express, then click **Send** to send the e-mail. Please note that some new security features added to Microsoft Outlook will warn that a program is attempting to send an e-mail, take the appropriate action to continue.

If a non-MAPI compliant e-mail system is in use start a new e-mail and address it to **aisbackup@aiscl.co.uk**, On the registration form, above, click **Copy to Clipboard** then click somewhere in the body of the e-mail then while holding down the **Ctrl** key on the keyboard press **V**. Alternatively choose the menu option **Edit** / **Paste** from the e-mail system.

The third option is to register AISBackup online. Selecting the option **Online Registration** will direct your web-browser to the **http://www.aiscl.co.uk/OnlineRegistration.htm** web page. Instructions for submitting the registration information are on the web-page.

1.13.3 Saving the Program Activation Key.

When AISBackup is purchased a file attachment called *AISBackup.aik* is sent to your e-mail address. This file contains registration information which uniquely identifies you as the registered user of AISBackup. To register AISBackup simply double click the key file and choose open. Please note: Under Windows Vista AISBackup must be run as an Administrator at least once for the double click / open method to work, if not then drag and drop the key file onto the AISBackup main form.

1. Double click the attachment shown in the lower portion of the above e-mail.

1.13.4 Entering the Re-Trial Key.

On receipt of the e-mail containing the re-trial key you may enter the key into AISBackup by using the menu option **Register AISBackup**.

The menu option **Register AISBackup** is only shown during the 30 day trial period.

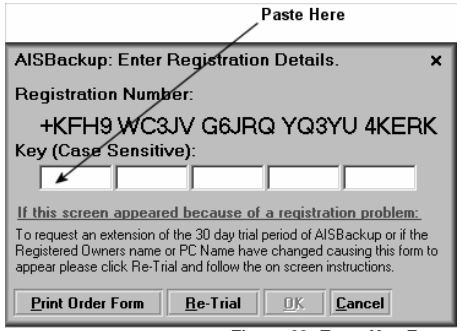


Figure 62: Enter Key Form.

The easiest way to enter the key is to copy and paste it into the first box of the **Key** field as shown in Figure 62.

The Enter Key form is automatically shown after the trial period has expired, if you have not completed your evaluation of AISBackup you may apply for a re-trial by using the **Re-Trial** option. This option will display the Registration form shown in Figure 60.