

IASO Backup Manager for Windows V4 User Manual



Table of Contents

1	Product Overview	2
1.1	System Requirements	2
1.2	Security	2
1.3	Connectivity	3
1.3.1	Backup Window.....	3
1.3.1.1	Initial Backup.....	4
1.3.1.2	Daily Backup.....	5
1.4	Application Support & Open Files	5
1.4.1	Microsoft Exchange & SQL Server	5
1.4.2	Open Files	5
2	Installation & Configuration	6
2.1	Setup Wizard.....	6
2.2	Configuration	9
3	User Interface.....	10
4	My Computer – File Backup & REstore	12
4.1	Backup	12
4.1.1	Selections	13
4.1.2	Hot Folders	14
4.1.3	System State.....	15
4.2	Restore	16
4.3	Preferences	18
4.3.1	Filters	18
4.3.2	User Rights.....	19
4.3.3	Hot Folders	19
5	Settings	20
6	Reporting.....	21
6.1	Quality of Service	22
7	About.....	24

1 PRODUCT OVERVIEW

Making regular backups is to some extent a necessary evil. The information stored on your PC workstation (laptop, desktop) or network server, is very valuable and your business operations is more dependent on the availability of your critical applications than it has even been before. Backup as such is however not more than a mean to an end. It is the ability to *recover* data if something goes wrong, that really makes the difference!

IASO Backup Manager, in collaboration with a IASO Backup Server, fully automates the backup process. No manual intervention is required. And when you need it, your data is available online, continuously.

Note: IASO Backup Servers come in different flavours and sizes. You can either purchase your own Backup Appliance, or make use of an outsourced backup service, offered by an IASO Backup Service Provider. The software is the same in every situation. For the purpose of this manual, we use just the term 'backup server'.

1.1 System Requirements

Hardware:

- Disk space: 10 MB
- Connectivity: any public Internet (DSL or better) or private IP connection

Operating Systems:

- Windows XP or 2000 Professional (IASO Backup Manager Workstation)
- Windows 2000/2003 Server/SBS (IASO Backup Manager Server versions)
- Linux: Debian, Fedora Core 5
- Unix: FreeBSD 5.x/6.x

Note: As there are many varieties and versions of both Linux and Unix, we can not guarantee compatibility of IASO Backup Manager with all of them. Nevertheless we have experienced that the software works very well on most recent Linux/Unix releases. A full compatibility list is available on the IASO Backup Support portal.

1.2 Security

When IASO Backup Manager is used over public Internet connections, the issue of security becomes apparent. It is important to notice that all traffic is originated on the client side and hence your firewall only needs to allow outgoing traffic on port 5315.

1.3 Connectivity

With the limited speed of remote IP connections, one might wonder how it is possible to use them to transport large amounts of data to a remote backup server within a reasonable amount of time.

In order to reduce the amount of time required for transporting the backup data *and* reducing the data volume that needs to be stored on the backup server, IASO deploys a proprietary technology, called *delta-blocking*.

The delta-blocking process scans all data files for changes since the previous backup *on block-level* (blocks are fixed size smaller parts of a file) and only sends the blocks that actually have changed to the backup server. While doing that, a *journal* is created, containing a full description of the contents of the backup set. If a data block has not changed, it is by definition already present on the backup server, and hence does not need to be sent again. In that case the journal entry references to the 'old' block, that has been sent to the backup server in an earlier backup session.

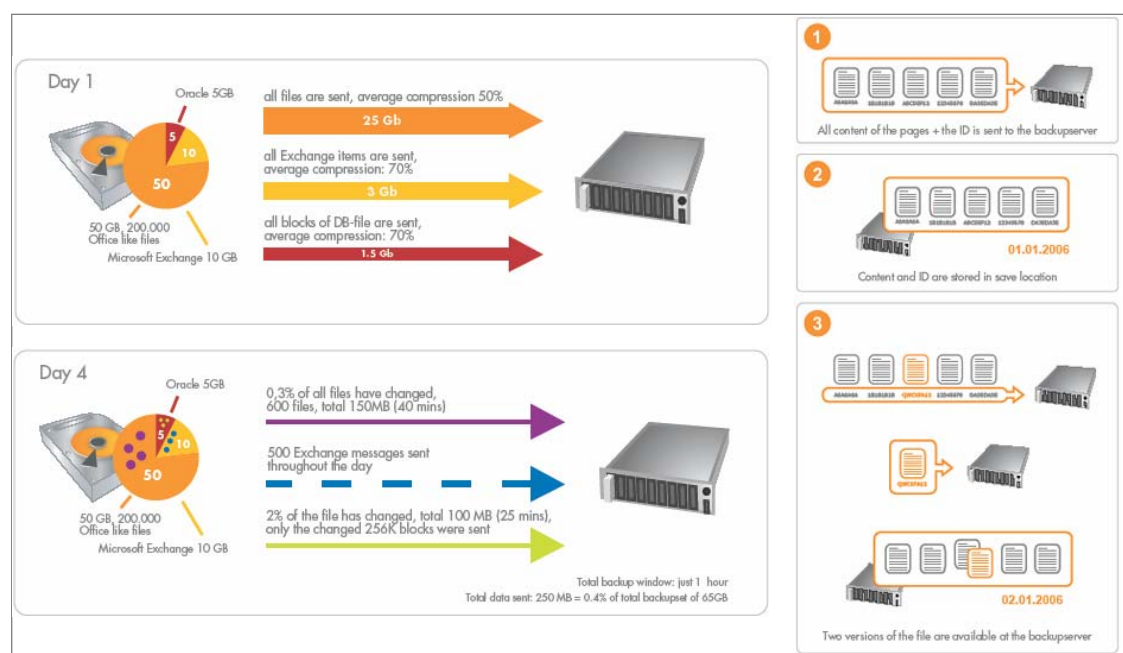


Figure 1 Delta-blocking with journaling reduces data volume dramatically

1.3.1 Backup Window

The Backup Window is defined as the time required to make the backup. Normally you would like to perform the backup outside of work hours, because making backups hampers system performance and may require certain applications to be shut down. Backups are therefore usually scheduled during the night, when normal application usage is at its minimum.

Although the IASO Backup solution does not require all data to be sent to the backup server, the question remains how much time it will take.

To answer this question we have to distinguish between the first or *initial* backup, and every other consecutive backup.

1.3.1.1 Initial Backup

In principle all initial backups require all selected data to be sent to the backup server. This might not be true in corporate environments, where duplicate data from various systems might already be on the backup server, when an initial backup is made. But generally speaking the initial backup does require a relatively large volume of data to be sent to the backup server.

The IASO Backup Manager software does perform *data compression* to reduce the physical size of the data, before it is sent to the backup server. The amount of reduction that is achieved depends on the type of data. Text files, Office documents and database files are in most cases very compressible, but graphic data, or previously compressed files, are not.

Further of course the line speed is an important determining factor for the amount of time required to send the initial backup to the backup server.

The following table provides a practical guideline to predict the required time under various circumstances:

IASO Backup speed estimate															
This example deals with three kinds of companies:															
type A: highly text based, like insurance companies, accountants, banks															
type B: Average configuration, valid for most companies															
type C: webserver, with lots of images and PHP/HTML files															
				10GB dataset			50GB dataset								
	type A	type B	type C	type A	type B	type C	type A	type B	type C						
Office files	90%	50%	10%	1,800 MB	1,000 MB	200 MB	9,000 MB	5,000 MB	1,000 MB						
text files	10%	15%	10%	50 MB	75 MB	50 MB	250 MB	375 MB	250 MB						
Photo's, MP3, video	0%	35%	80%	0 MB	3,430 MB	7,840 MB	0 MB	17,150 MB	39,200 MB						
Total	100%	100%	100%	1,850 MB	4,505 MB	8,090 MB	9,250 MB	22,525 MB	40,450 MB						
				1st upload @ 512KB upstream (in days)			1.67 d			4.07 d			7.32 d		
				1st upload @ 1024KB upstream (in days)			0.84 d			2.04 d			3.66 d		
				1st upload @ 2048KB upstream (in days)			0.42 d			1.02 d			1.83 d		
				estimate: 1% changed daily			0.08 h			0.20 h			0.35 h		
				daily upload @ 512KB (in hours)			0.04 h			0.10 h			0.18 h		
				daily upload @ 1024KB (in hours)			0.02 h			0.05 h			0.09 h		
				estimate: 0.5% changed daily			0.20 h			0.49 h			0.88 h		
				daily upload @ 512KB (in hours)			0.10 h			0.24 h			0.44 h		
				daily upload @ 1024KB (in hours)			0.05 h			0.12 h			0.22 h		
				daily upload @ 2048KB (in hours)											
				200GB dataset			1 TB dataset								
	type A	type B	type C	type A	type B	type C	type A	type B	type C						
Office files	90%	50%	10%	36,000 MB	20,000 MB	4,000 MB	180,000 MB	100,000 MB	20,000 MB						
text files	10%	15%	10%	1,000 MB	1,500 MB	1,000 MB	5,000 MB	7,500 MB	5,000 MB						
Photo's, MP3, video	0%	35%	80%	0 MB	68,600 MB	156,800 MB	0 MB	343,000 MB	784,000 MB						
Total	100%	100%	100%	37,000 MB	90,100 MB	161,800 MB	185,000 MB	450,500 MB	809,000 MB						
				1st upload @ 512KB upstream (in days)			6.69 d			16.29 d			29.26 d		
				1st upload @ 1024KB upstream (in days)			3.35 d			8.15 d			14.63 d		
				1st upload @ 2048KB upstream (in days)			1.67 d			4.07 d			7.32 d		
				estimate: 0.25% changed daily			0.40 h			0.98 h			1.76 h		
				daily upload @ 512KB (in hours)			0.20 h			0.49 h			0.88 h		
				daily upload @ 1024KB (in hours)			0.10 h			0.24 h			0.44 h		
				estimate: 0.1% changed daily			0.80 h			1.96 h			3.51 h		
				daily upload @ 512KB (in hours)			0.40 h			0.98 h			1.76 h		
				daily upload @ 1024KB (in hours)			0.20 h			0.49 h			0.88 h		
				daily upload @ 2048KB (in hours)											
<p>The times shown are times only to send the changed data. Time is also needed to process the directory structure and checking of changed files. Our experience learns the percentage changes daily decreases as the dataset grows. Please add 1 hour per 500.000 files to process, for better estimates</p>															

Figure 2 Backup speed estimate

1.3.1.2 Daily Backup

The daily *delta* backup, which only sends the actual changes since the previous backup session to the backup server, usually is limited to between 0,1% and 1,0% of the volume of the total data set. Hence a daily backup of for instance a 50 GB dataset requires anything between 50 MB and 500 MB to be transported and stored daily.

If your daily backup is significantly larger than 1%, usually there is some problem with your data set, that needs to be fixed. See the chapter on Troubleshooting for more information.

1.4 Application Support & Open Files

The IASO Backup Manager software supports all data file formats that are supported by your Operating System, in their native mode. In networked environments however it is possible that data files from other environments are stored on your system. Normally this should not lead to any problem, but under special circumstances limitations could apply. Check out the IASO Support pages on www.iasobackup.com for more information.

1.4.1 Microsoft Exchange & SQL Server

MS Exchange Server and MS SQL Server are business application platforms that typically run in a 24/7 uninterrupted mode. Although IASO Backup Manager V4 does support backup of open files, this method is not recommended for databases. For this purpose special plug-in modules have been developed, the so-called *Application Support Modules*.

Although it is technically possible to make offline backups by shutting down the Exchange or SQL Server and make a backup of their files, this method is time consuming, inefficient and not desirable from an operations point of view. E-mail messages for instance tend to come in on a continuous basis, and senders might receive "undeliverable" messages when your Exchange server is online for several hours.

1.4.2 Open Files

Running applications keep their files open in an exclusive mode, which means they can not be opened by another application, such as IASO Backup Manager.

In such a situation the Backup Manager software skips the file and generates an error message, which can be found in the daily Reporting.

Microsoft has however created a possibility to access open files, using Volume Shadow-copy Services (VSS) under Windows XP and 2003 Server/SBS.

If your system has VSS configured (see Advanced Features), the most recent shadow-copy of an open file will be included in the backup.

2 INSTALLATION & CONFIGURATION

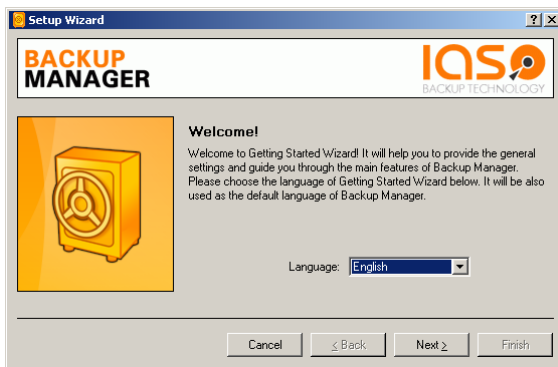
The IASO Backup Manager software is distributed either on a CD or as a download, from the Customer Portal on www.iasobackup.com. The CD or download consists of a so-called *bootstrap* file, basically an executable containing the minimal software code required to download the most recent version of the IASO Backup Manager for your backup server, from one of IASO's *update servers*.

In order to successfully install the IASO Backup Manager software, you need three pieces of information:

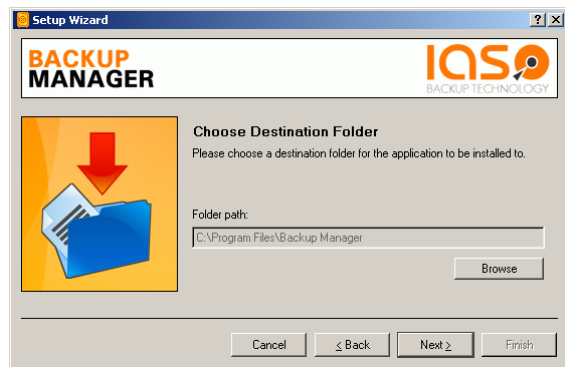
- The BSP code (BSP = *Backup Service Provider* or *Backup Server Product*)
- The User Name for your backup account
- The Password for your backup account

2.1 Setup Wizard

Basic installation is performed using a Setup Wizard that takes you through the installation process in just a few minutes.

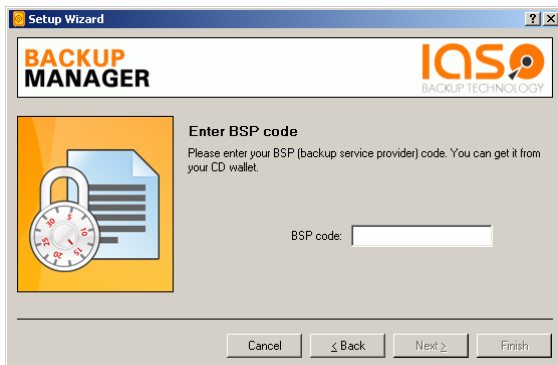


Step 1 Select language

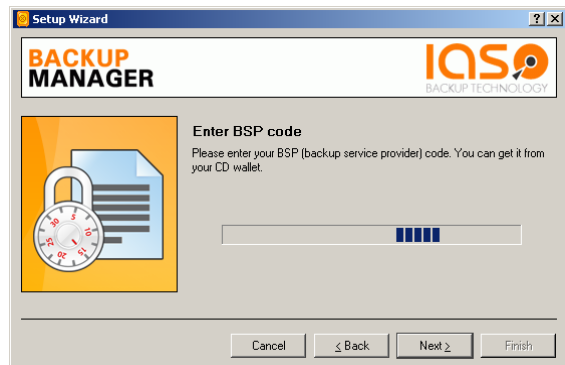


Step 2: Choose Destination Folder

The default language for the application is the language of your Operating System. The software can be installed in any directory on a local drive on your machine.



Step 3 Enter BSP Code



Step 4 Your software settings are retrieved

After entering your BSP Code, the server specific settings and the most recent version of the IASO Backup Manager software are downloaded to your system.



Step 5 Username and Password



Step 6 Enter the encryption key

The Encryption Key requires special attention. The key can be any word of your choosing and is used when the 128-bits AES encryption algorithm encrypts your files to keep your data confidential. Without the key, no one can access your data. So the challenge is to use a key word that you can remember, but that no one else knows or can guess.

Note: Keep your encryption key safe. If you lose your key, your data gets lost. Not even the developers of the software can access your data without that key!



Step 7 E-mail Address for Reporting

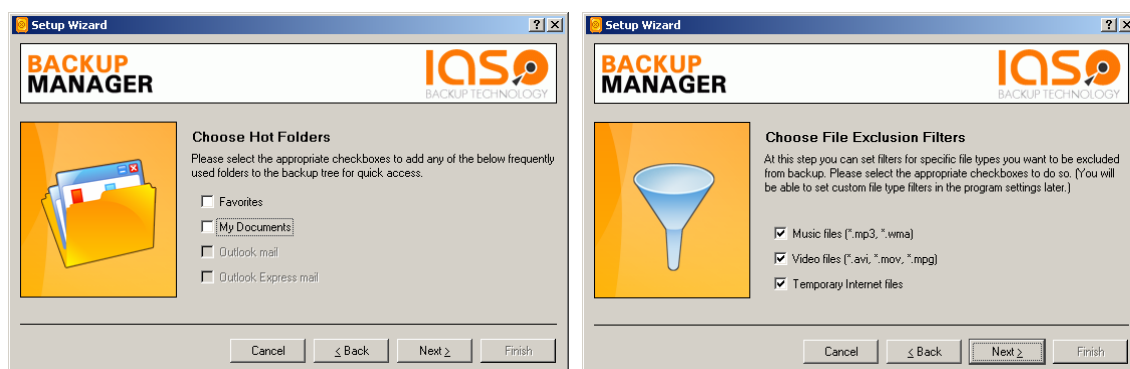
IASO Backup Manager sends a daily report of the backup results for your machine, to an email address of your choice.



Step 8 Backup Schedule



You can schedule the backup on a fixed time of the day, or select the Backup on system shutdown option, or simply do both.



Step 9 File and Folder settings

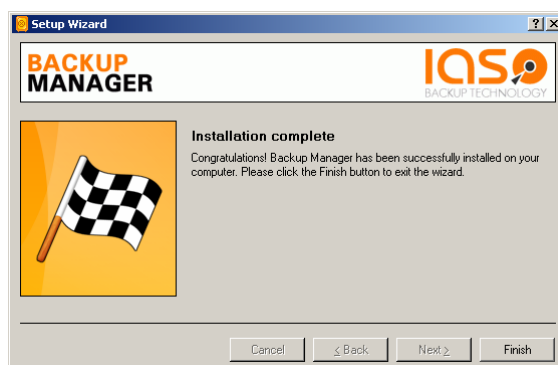
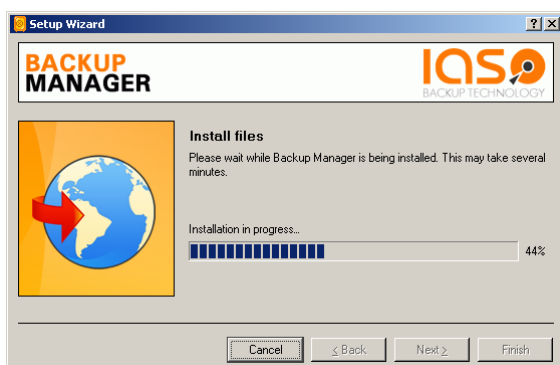
The Hot Folder option enables you to quickly select Favorites and My Documents folders from the Backup file-tree, as well as your Outlook or Outlook Express email boxes, provided that these applications are installed on your machine.

With the File Exclusion Filters you can limit the amount of backup data by automatically filtering certain types of data, such as multi-media files and temporary files.

Note: A File Exclusion Filter is stronger than a Directory or File include. That means all files complying to the exclusion filter will not be included in the backup, even if they were specifically selected.

Finally you can select to automatically install Software Updates, or alternative leave the check box unchecked, and manually update your software if a new version becomes available.

IASO Backup Manager is now being installed and the installation process completed.



2.2 Configuration

The most important step that needs to be executed now, is the selection of the data that needs to be included in the backup.

Chapter 4 describes the mechanics of setting the backup selection. At this place we would like to emphasise the importance of making the right choices. Selecting too much, unnecessary data, wastes space on the backup server and extends the backup window more than necessary. However, not selecting enough data is even more damaging. After all, one can not restore what has not been backed up!

The right backup selection is dependent on your applications. If you are not sure which files to select, we highly recommend you contact your application vendor for advise.

3 USER INTERFACE

The IASO Backup Manager user interface consists of three areas:

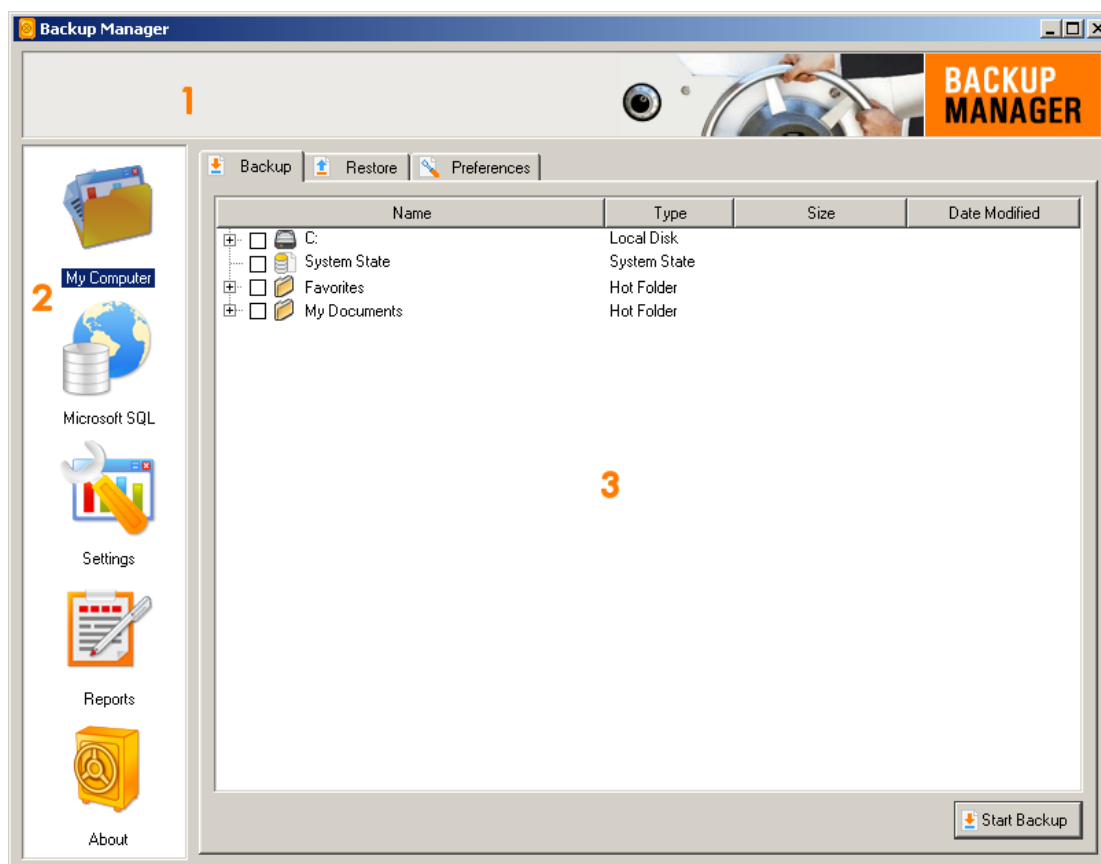


Figure 3 User Interface

1. The logo area; this section is filled depending on the settings of the backup server you connect to.
2. The application icons; these icons enable you to navigate to the different parts of the application. The availability of icons here is depending on the licenses you have purchased.
3. The main workspace; the area where the actual program operations take place.

This specific installation of the IASO Backup Manager has the Application Support Module for the Microsoft SQL Server database server installed, as you can see from the icons area. When the module is not installed, the icon will not appear.

Depending on the icon you select, the main work space changes.

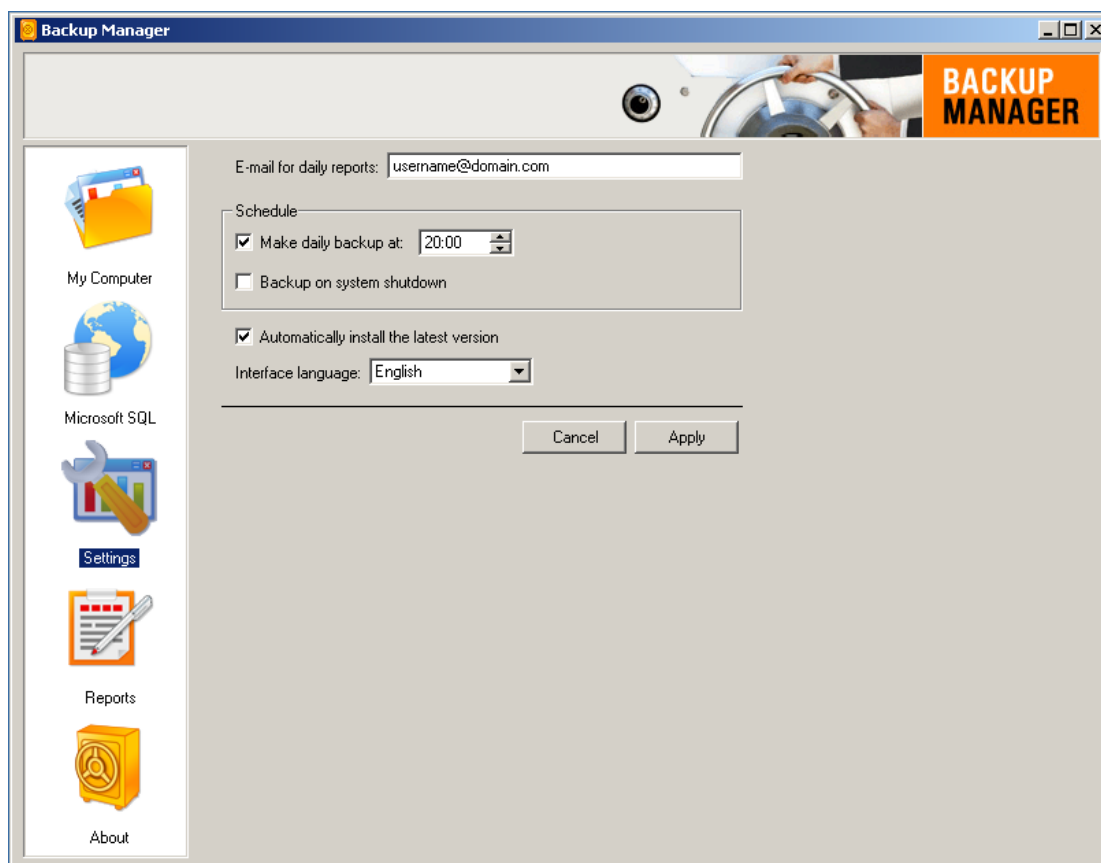


Figure 4 Workspace changes with selected icon

In this screen you will recognise some of the settings you made while running the Setup Wizard.

In the next chapters, each part of the application, represented by its own icon, will be discussed in further detail.

4 MY COMPUTER – FILE BACKUP & RESTORE

The My Computer icon gives you access to the File Backup and Restore functionality of the application.

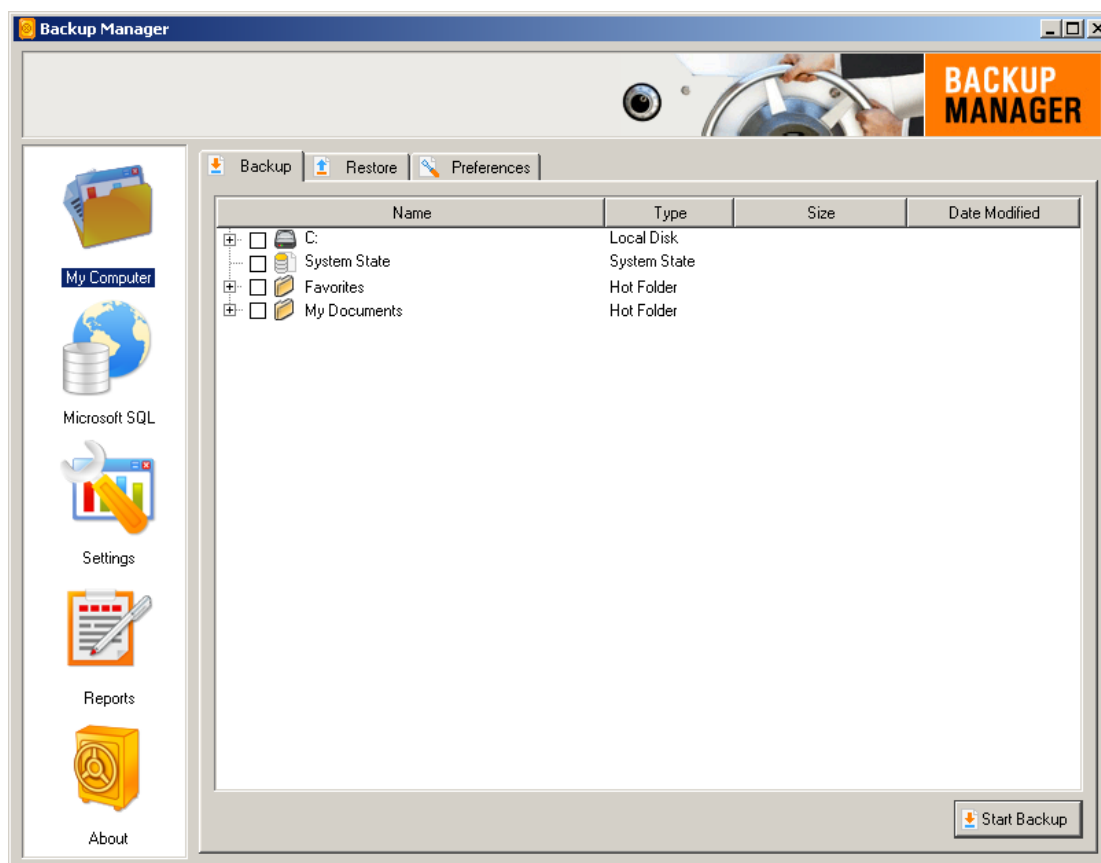


Figure 5 My Computer - File Backup & Restore

The main workspace displays three separate tabs:

- Backup
- Restore
- Preferences

4.1 Backup

In this area the backup selection is set. The backup selection contains all folders and files that need to be included in the backup.

A file tree is displayed, containing all local disk drives and the hot folders you selected during installation or via the Preferences tab.

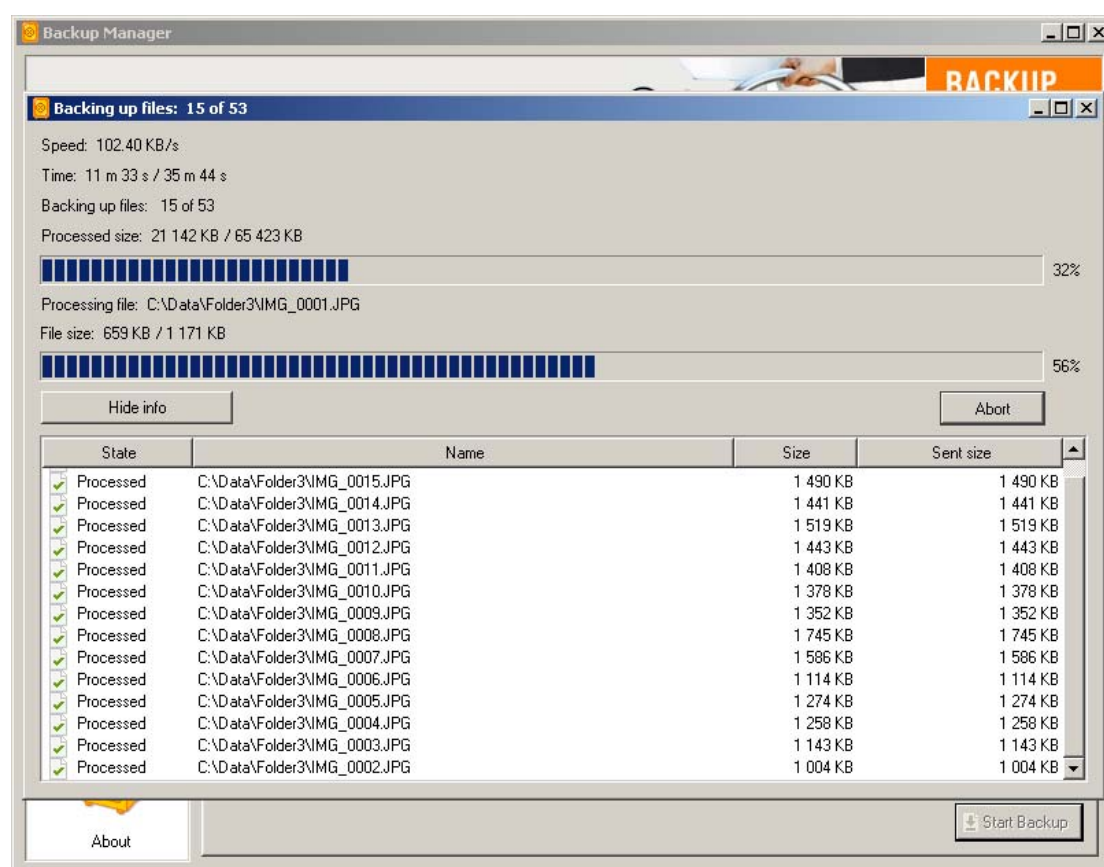
You can easily expand and collapse the branches of the tree, by clicking the plus or minus signs displayed to the left. All items are displayed with their type. For file items the size and last-modified date are specified in the Size and Date Modified columns.

To back up your data:

1. Mark the items for backup by selecting the applicable checkboxes next to the files, folders or whole drives in the tree that you want to back up.
2. Click Start Backup. Backup will start immediately after that.

Of course you do not need to start the backup process manually all the time. During installation you have already configured your backup schedule, and the backup process will normally start automatically, either on a fixed time of the day, or when you shut down your system.

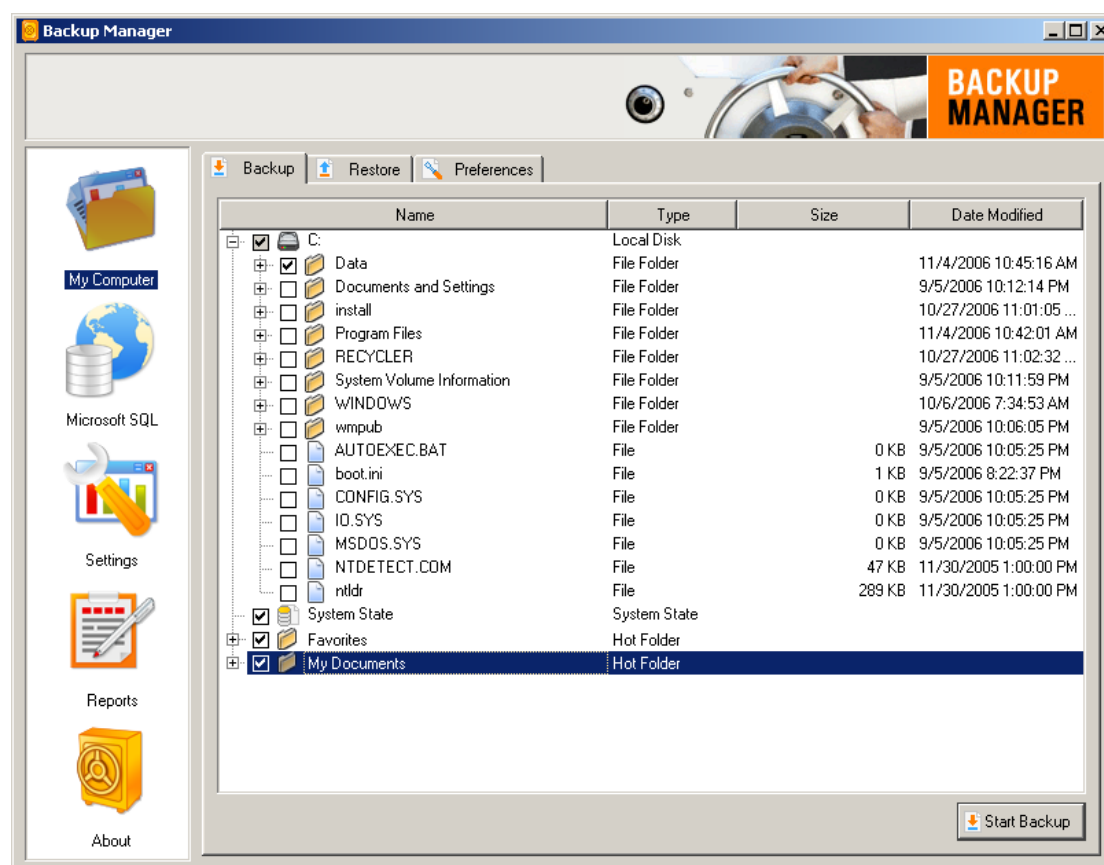
During the backup process, progress can be monitored:



The running backup process can be interrupted by clicking Abort. The Backup Manager application windows can be closed without interrupting the running backup, it will continue to operate in the background.

4.1.1 Selections

Selections are made by clicking in the selection boxes, between the plus/minus signs and the icons of the file and folder items.



It is important to notice that there are two levels of selection:

1. An *exclusive* selection, indicated by a gray colour in the selection box
2. An *inclusive* selection, indicated by a white selection box

In an *exclusive* selection, underlying files and folders are *not* included in the selection, unless explicitly selected. For instance in the above selection, new files and folders under C: (root level) are not automatically included in the selection.

In an *inclusive* selection, all underlying files and folders are also selected for backup, unless they are explicitly *excluded* from the selection by unchecking their checkbox. In the above example, all files and folders under C:\Data are included that way, and new files and folders under this subdirectory will automatically be included in the backup selection as well.

4.1.2 Hot Folders

Hot Folders, either created during setup or on the My Computer - Preferences tab, are not automatically included in the backup selection.

In order to in- or exclude the contents of Hot Folders, check and uncheck the underlying items, in accordance with the description in the previous paragraph.

4.1.3 System State

Note: The function system state is only available in Server licenses.

The System State of a Windows machine contains specific information regarding the Windows implementation and application settings of your machine. If you backup your system state, you will be able to recover your full Windows installation and applications, if for instance a disk crash destroys all this information.

Backing up the system state is particularly useful if the machine is a Microsoft Exchange Server or a domain controller in a network, as recovering these systems can become quite labour intensive if the system state information gets lost.

System state data includes the registry, the COM+ class registration database and the system start-up files. The system state data of servers also includes the Certificate Services database if the server is configured as a certificate server. If the server is a domain controller, the system state data also includes the Active Directory database and the SYSVOL directory.

<p>Note: System state data of Windows creates a relatively large amount of data to be backed up, up to several hundreds of Megabytes!</p>
--

4.2 Restore

The Restore interface is very similar to the Backup screen we have seen in the previous section:

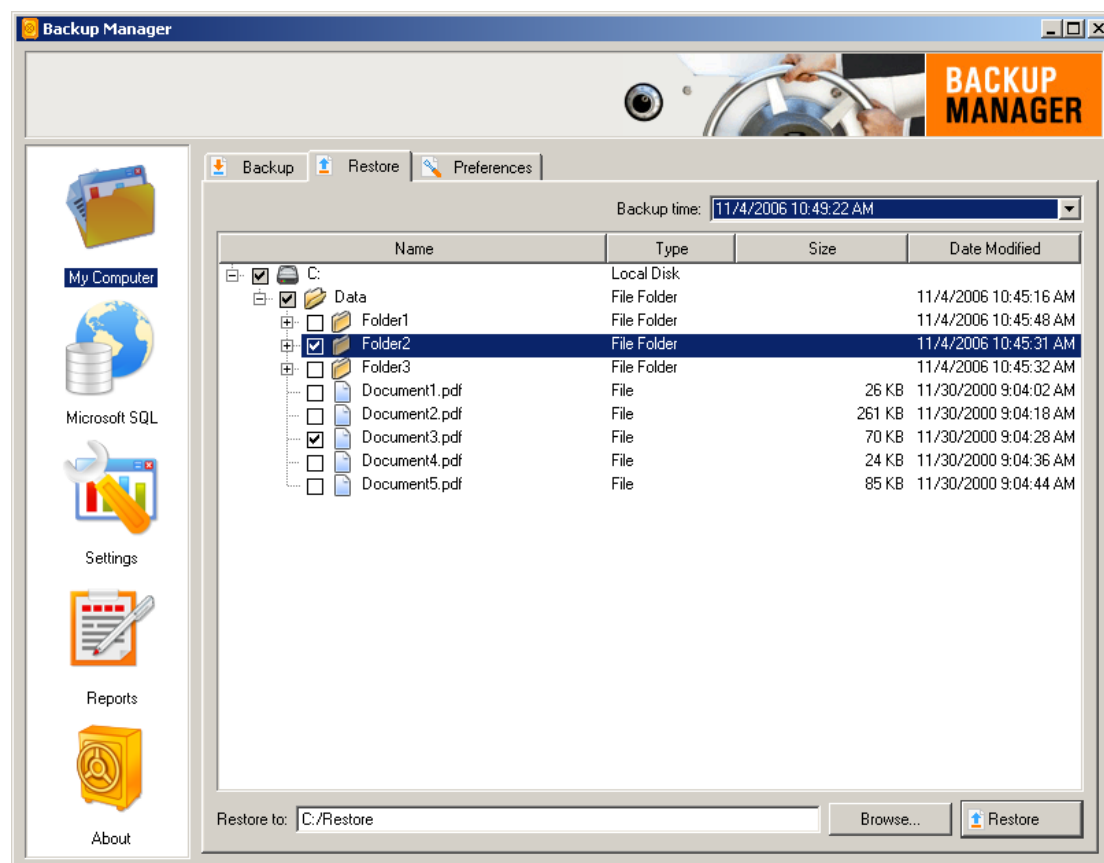
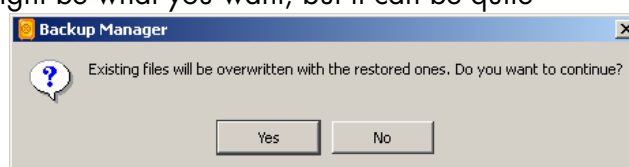


Figure 6 Restore window

After selecting the backup session from which you want to retrieve the data (“Backup time”), a file tree appears, containing all files and folders that were part of that backup session. Only successful backup sessions will be displayed in this list box. From this tree the data you want to recover can be selected, by clicking in the selection boxes.

If you just press Restore, all data will be restored to its original location. You need to be aware that restoring to the original location might result in newer data being overwritten by older versions. This might be what you want, but it can be quite dangerous, if you accidentally make errors with the selection of the files and folders for the restore operation.



It is hence safer to select an alternative location for the restore in the “Restore to” box at the bottom of the Restore work space.

After clicking Restore, a progress window appears, until the operation is finished.

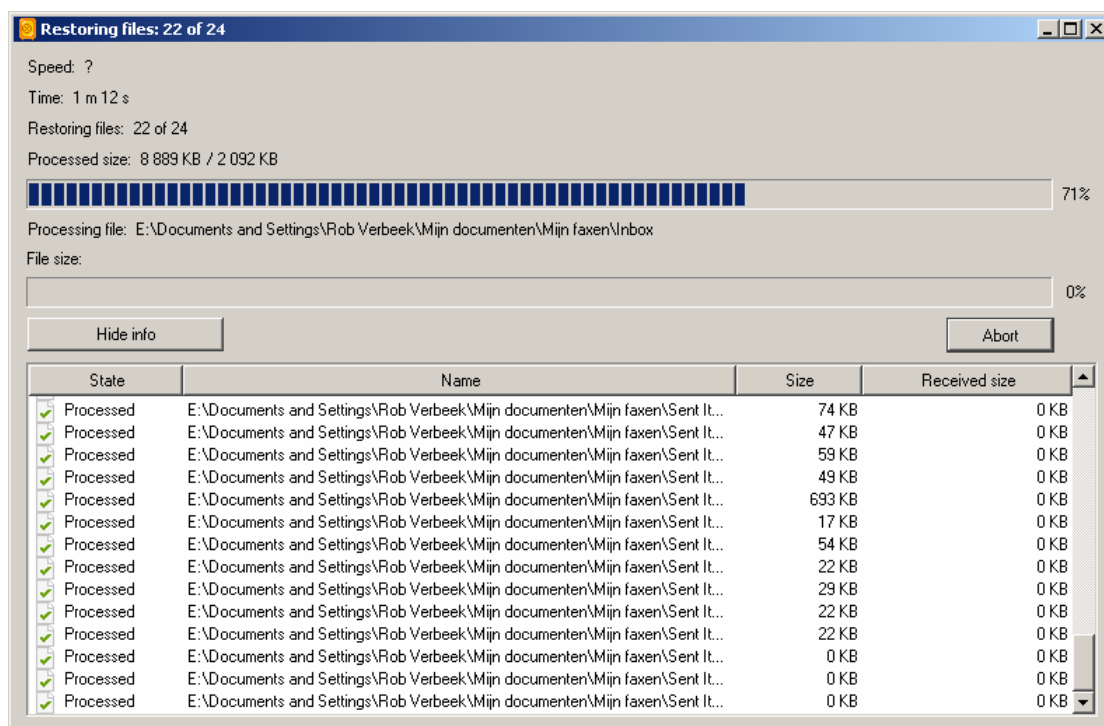


Figure 7 Restore in progress

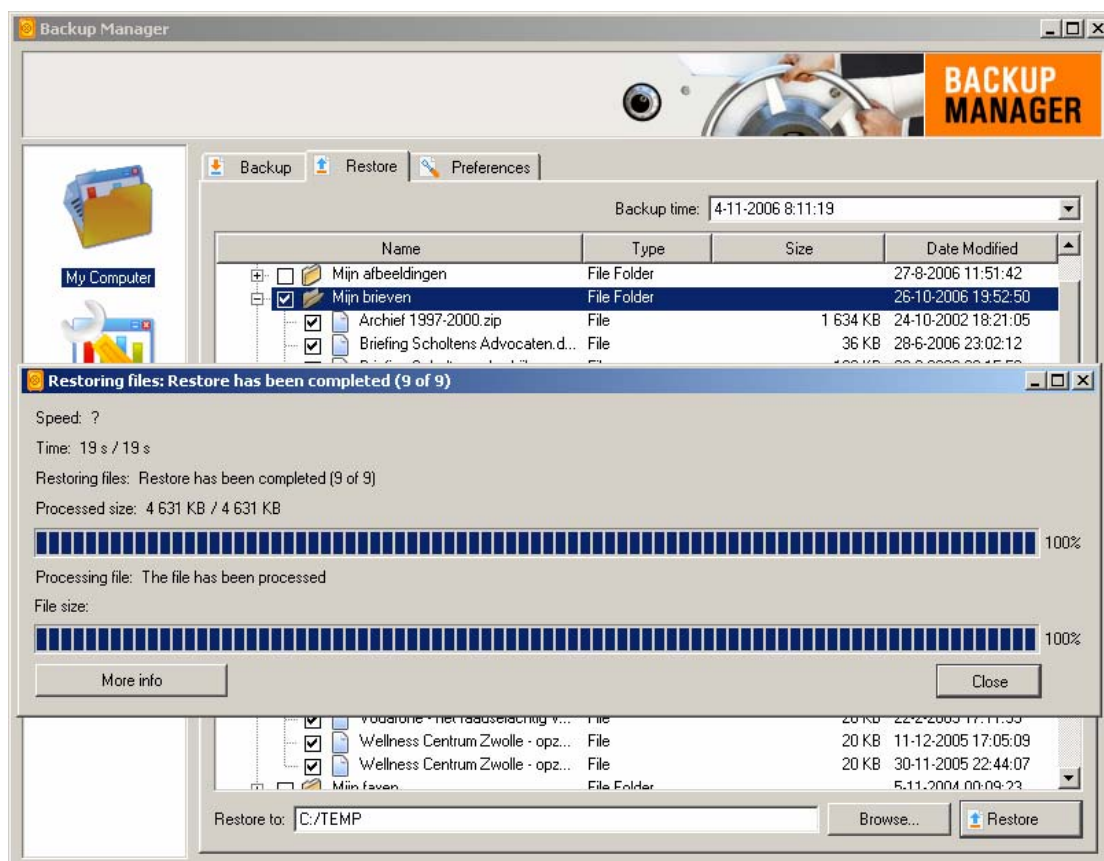


Figure 8 Restore completed

After completion of the restore process you can close the progress window and access your recovered files.

4.3 Preferences

In the My Computer – Preferences screen you can change the application setting with regard to files and folders.

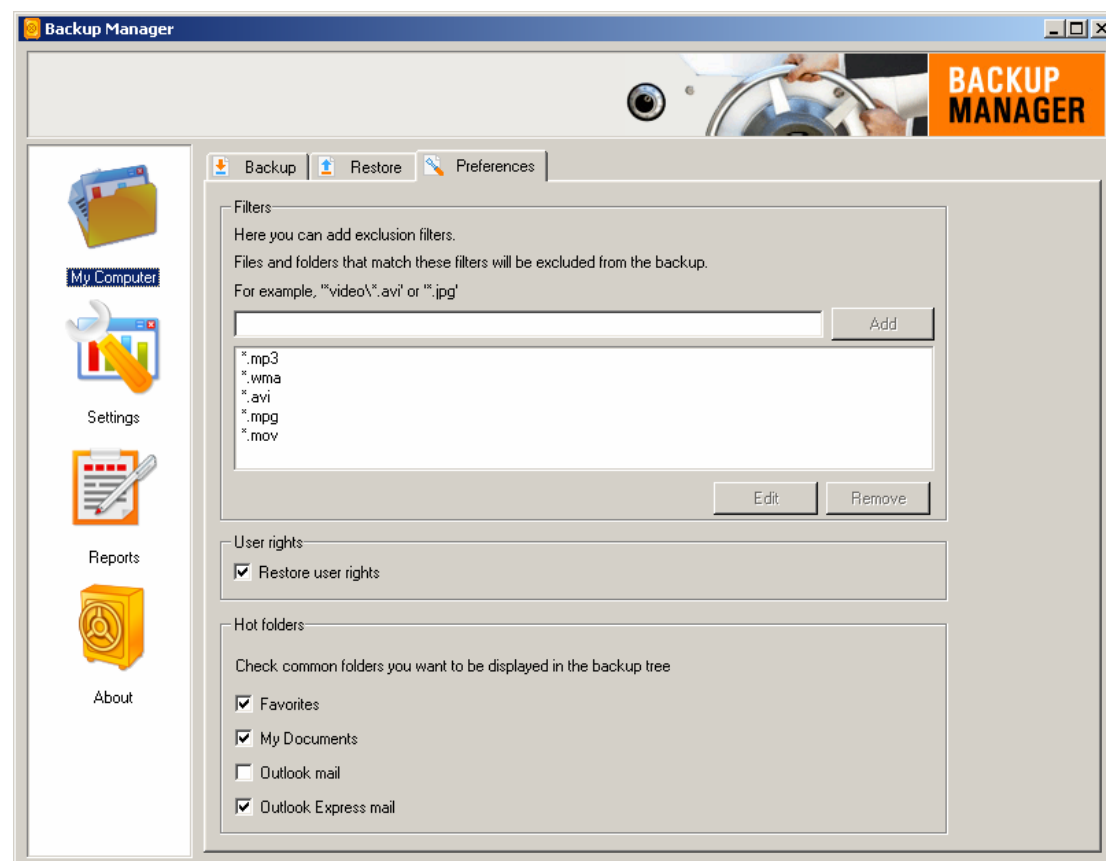


Figure 9 My Computer - Preferences screen

4.3.1 Filters

With the File Exclusion Filters you can limit the amount of backup data by automatically filtering certain types of data, such as multi-media files and temporary files. The Filters option under the My Computer – Preferences function enables you to create far more advanced filters than the ones you can set during installation, using the Setup Wizard.

If you for example want to select the whole drive C: for backup, but you don't want to back up one folder on it, c:\temp, IASO Backup Manager enables you to simply exclude this folder from the backup by setting an exclusion filter.

To set an exclusion filter for a file or a group of files:

1. Enter the filter text into the field under the Filters caption
2. Select Add

The new filter will appear in the list of file exclusion filters and is applied to all future backups. To remove a filter, select it in the list and click Remove. Setting exclusion

filters for files, use wildcards * and ? to match any string of characters or any single character in file names accordingly.

See examples of the most common exclusion filters below on how to use wildcards.

Filter examples:

- **c:\temp***: all files in the c:\temp folder and its subfolders will be excluded from the backup. The same result can be obtained with 'c:\temp\' or 'c:\temp*.*' filters.
- **c:*.exe**: all files of the EXE type (programs) on the c:\ drive will be excluded from the backup
- ***.tmp**: all temporary files on any drive will be excluded from the backup
- **d:\photos*thumb***: all files in any subfolders of the d:\photos folder that are called 'thumbnails', 'thumbs', 'thumbnail', etc. will be excluded from the backup
- **d:\photos\thumb*.jpg**: all files of the JPG type with names that begin with 'thumb' in the d:\photos folder and its subfolders will be excluded from the backup
- **d:\photos\thumb?.jpg**: all files of the JPG type with names that begin with 'thumb' and end with any character in the d:\photos folder and its subfolders will be excluded from the backup

4.3.2 User Rights

In a shared (network) environment, where several people share a disk volume, user rights are used to safeguard confidential information and increase security. Windows stores the user rights in a separate location. If you wish to backup these user rights, in order to be able to restore them at a later stage, you need to check the User rights option in the My Computer – Preferences screen.

If you don't check this option, all files and folders that are restored, will get a default user rights profile.

This option is particularly useful for file servers, where multiple users have their own data directories, which they probably prefer not to share with their co-workers, and common data is stored in other directories, which are accessible for all users.

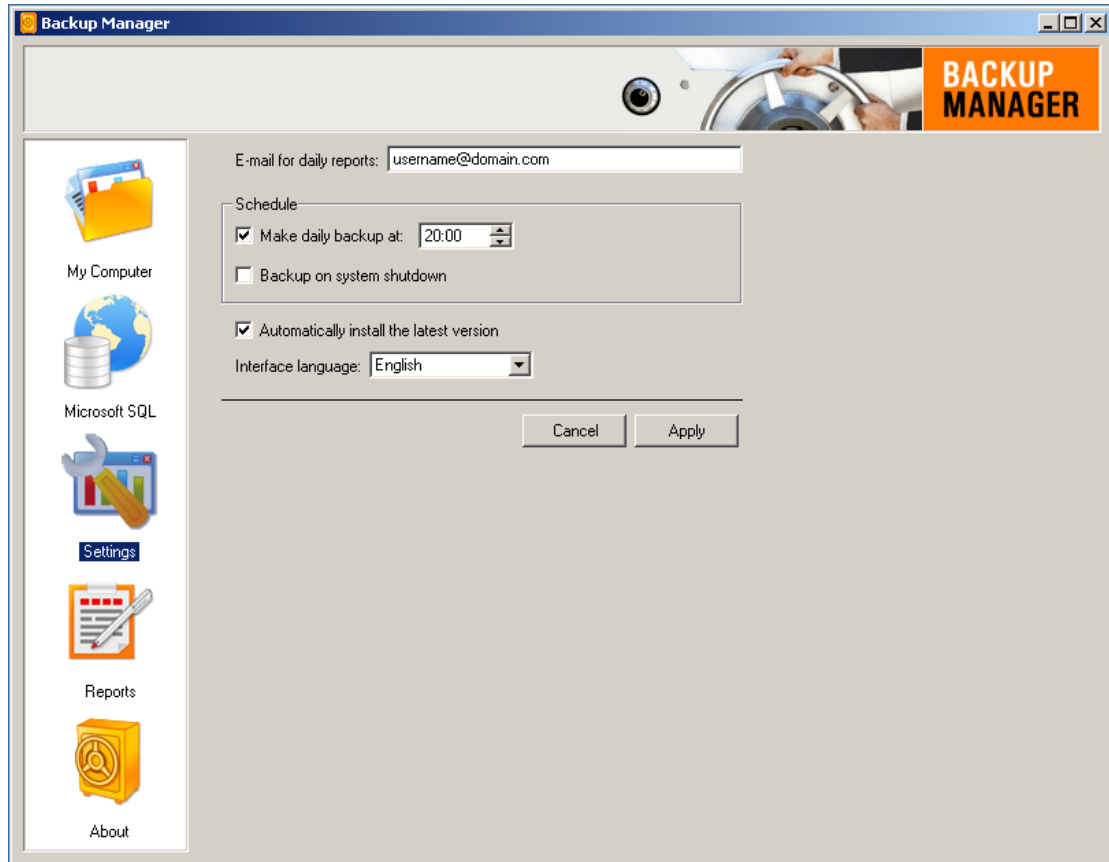
This function is only available for Server editions of Backup Manager

4.3.3 Hot Folders

The Hot folders area contains a list of a number of frequently used folders. Such folders (e.g. My Documents and mail folders) typically need to be included into the backup, and it is very convenient to have them on the top level of the tree presented in the Backup tab, for quick access. To ensure such quick access to the frequently used folders of your choice, select the appropriate checkboxes to add them to the backup tree.

5 SETTINGS

The Settings screen enables you to change the global settings for the application.



Email address for daily reports

You can enter one email address where the daily report for this backup client should be send. Use the well-know format username@domain.com.

Schedule

You can either schedule the backup to start on a fixed time of the day, or start the backup when you shutdown your system. You can also select both options, but this could mean that you would make multiple backups per day.

Automatically install the latest version

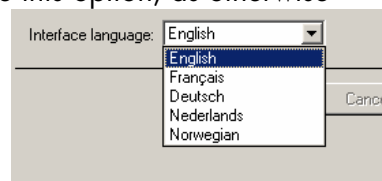
Check this option if you wish to automatically update your IASO Backup Manager, should a new version become available.

Under most circumstances it is highly desirable to choose this option, as otherwise installing an update requires manual intervention.

Interface language

You can change the language of the IASO Backup Manager user interface according to your preferences.

Currently the application is available in English, French, German, Dutch and Norwegian.



6 REPORTING

In order for you to be able to keep track of your backup results, the IASO Backup Server you are connecting to, sends a daily report to your email address, in the form of a dashboard. This dashboard is also accessible via the Reports icon in your Backup Manager application.

Note: It is important that the reporting is generated from the backup server side. If your client software for one reason or the other doesn't operate properly, you still will receive daily messages reporting your backup status.

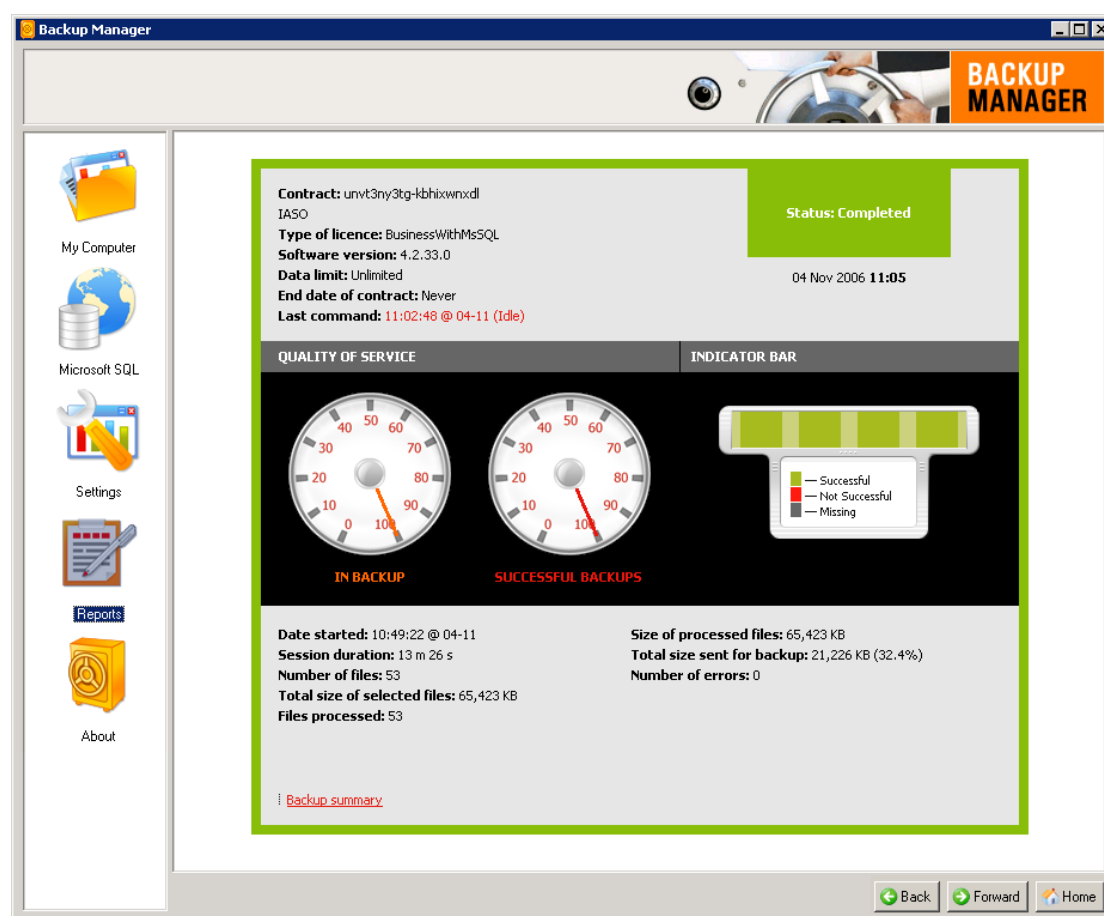


Figure 10 Reports

This report contains a lot of information that will be explained below.

Contract: this is a code with reference information regarding your account on the backup server

Type of licence: description of your licence type

Software version: the software version you currently use

Data limit: the maximum amount of data you can select for backup purposes; this setting is recorded on the backup server side and cannot be changed by an individual user

End date of contract: if you are working with a Backup Service Provider on a subscription basis, this field indicates the end date of your contract

Last command: the last status of your backup software

6.1 Quality of Service

Obviously with something as fundamental as backup, the quality of service you receive, either from a IASO Backup Service Provider, or from your internal IT department operating your own IASO Backup Appliance, is essential.

The first indication of service quality is the colour of your report and the status message in the upper right corner of the dashboard:

If your report is green and the status message reads "Completed", everything is working 'by the book'. Green means your last backup has been made no longer than 24 hours ago.



Status: Completed

Orange means your backup is older than 24 hours but not older than 48 hours. There might be several reasons why your backup is older than 24 hours. For instance because you are backing up a laptop, which is not used during the weekend.



Status: Completed

A red dashboard, and particularly a status message such as "IN PROGRESS" is a clear signal that something is wrong. Contact your system administrator or service provider, to clarify the situation.

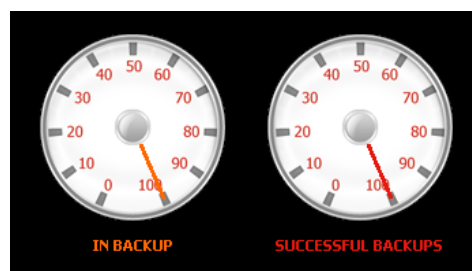


Status: IN PROGRESS

Note: An initial backup session may take longer than 24 hours to complete, up to several days. In that case you will receive orange or red dashboards with an IN PROGRESS message, as long as the backup session is not completed.

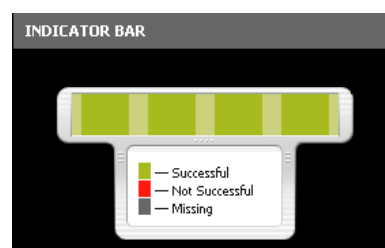
The quality of service is presented in more detail by the two dials: IN BACKUP and SUCCESSFUL BACKUPS

IN BACKUP indicates the percentage of the selected files and folders that are actually included in the most recent backup session. Normally this should be 100%, or else an error has occurred, causing the application to skip certain files and/or folders.



The percentage SUCCESSFUL BACKUPS should of course also be 100% or at least close to that figure. This dial represents the percentage of successful backups in the past 4 weeks. If you do not run the backup on a daily basis, for instance because your laptop or desktop PC is not used during the weekend, this percentage will of course be lower.

A further indication of your backup quality of service is provided by the indicator bar. This tool also



displays the backup results of the past 4 weeks. The lighter portions of the bar are days in the weekend and the darker sections represent working days.

The bottom part of the dashboard contains detailed information on the most recent backup session.

Date started: 10:49:22 @ 04-11	Size of processed files: 65,423 KB
Session duration: 13 m 26 s	Total size sent for backup: 21,226 KB (32.4%)
Number of files: 53	Number of errors: 0
Total size of selected files: 65,423 KB	
Files processed: 53	

In this case we can see that the last backup session started at 10:49:22 on November 4th and the session took 13:26 minutes to complete. A total of 53 files, with a combined size of about 65 MB, were processed and 21 MB or 32,4% of the selected files was sent to the backup server, with no errors. If there are errors to report, the number of errors becomes a hyperlink to a web-page, presented by the backup server, containing a description of the error(s):

Finally the Backup Summary link gives you access to an extensive overview of all your backup sessions. You can zoom in to more detailed information, by clicking the various links in the report. You can navigate through the reporting using the buttons at the right hand bottom of the Reports screen.



7 ABOUT

The about screen contains some more information about your licence and subscription and enables you to manually install software updates, if available.

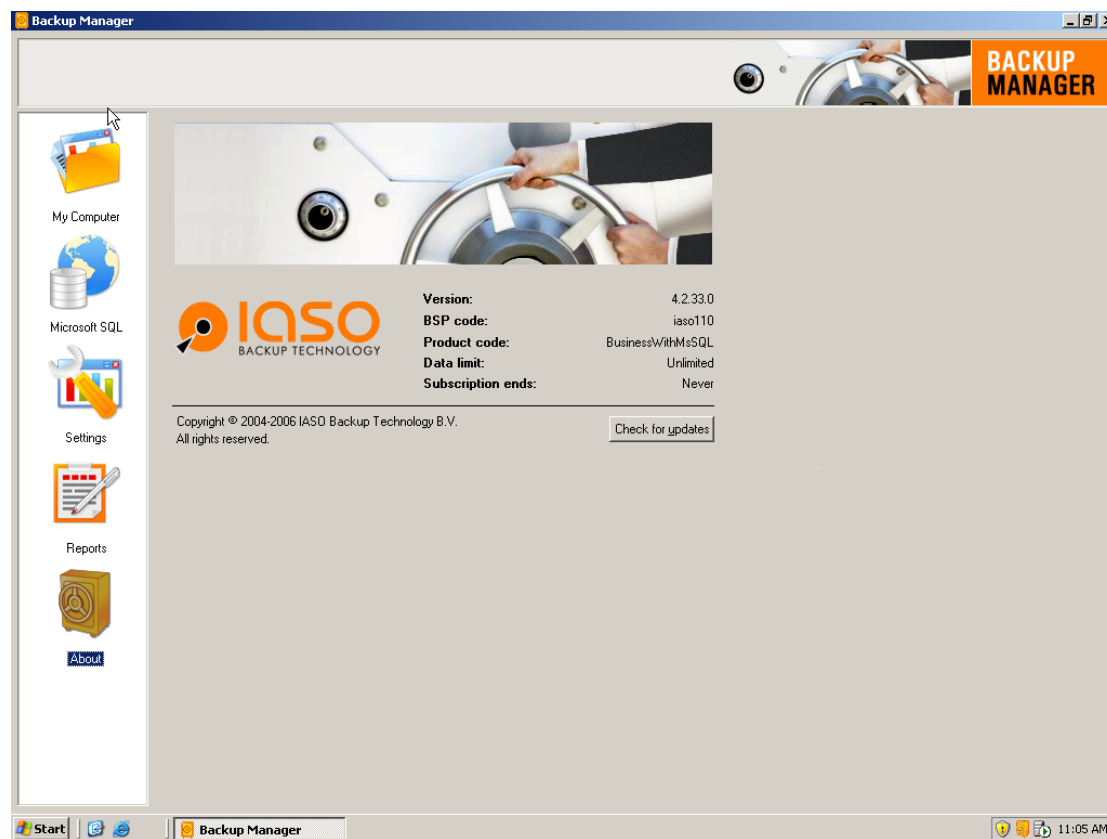


Figure 11 About screen

If you want to install an update, clicking the “Check for updates” button is sufficient. The update process runs completely automatic and upon completion your application will be updated to the most recent version available on your backup server.