



ATTIX⁵
BACKUP PROFESSIONAL

FEATURE LIST v5.1

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THE SECURE, AUTOMATED AND SCALABLE SOLUTION

While most companies continue to rely on fragmented and distributed tape backup procedures, Attix5 offers an alternative that replaces these tape procedures and eliminates the hassle and costs associated with tape technology.

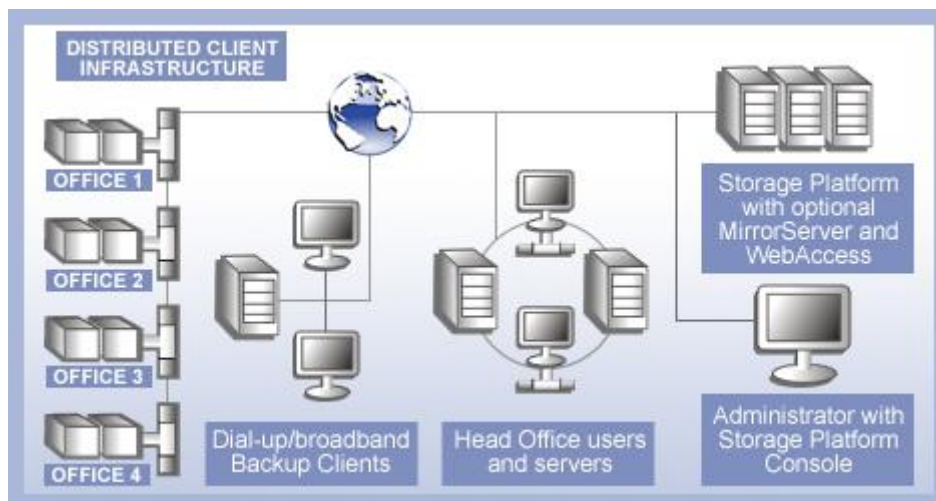
Attix5 Backup Professional is a secure, automated disk-to-disk data backup and recovery solution, which is uniquely designed for network efficiency, centralised management, policy-based control and simplicity of use. This solution is targeted at computer users and systems that operate both inside and outside the confines of corporate IT networks.

It provides an effective and efficient platform for a totally automated and secure backup and recovery of critical information, stored on various platforms (servers, database, desktop or laptop devices) on a wide range of operating systems. Backup Professional therefore leaves the often under resourced corporate IT departments to focus more time on supporting and developing other mission critical systems. It eliminates the risk of human error in the backup process, a factor which is generally underestimated, but which has historically been responsible for the majority of data loss.

The solution utilises client/server architecture to securely replicate data from the client device to a central data server. File filtering, compression and a proprietary binary change extraction process minimises bandwidth utilization and facilitates secure version control.

Backup Professional minimises risk, maximises productivity and allows businesses to regain control of their most valuable asset – their data!

THE ATTIX5 BACKUP PROFESSIONAL COMPONENTS



- **Storage Platform**
 - NameServer – User authentication and Group Management
 - FileServer – File storage system
 - MirrorServer – Off site file storage system for DR purposes
 - ReportServer – Optional component to collect data for the Enterprise Reporting suite
 - WebAccess – Optional component to support secure browser access for remote users
- **Storage Platform Console**
 - Management: Controls servers, licences and manages user groups and users
 - Deployment Module: Pre-deployment customisation tool to create MSI installers
- **Client Software**
 - Desktop and Laptop Edition and Server Edition backup clients, and Database Plug-ins

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USABILITY

- Intelligent file selection and exclusion filter facilitates rapid, transparent backups over low-speed and dial-up connections.
- Backup Notification built into system tray icon to flag important messages and warnings.
- Status display shows progress bar for monitoring and estimate of backup completion time.
- Backup Resume option available if the previous request failed for any reason.
- Version Control: data can be recovered from up to 60 previously backed up states, allowing file and system rollbacks.
- Advanced scheduling allows multiple backups per day (per minute backup configurable).
- Remote WebAccess for anywhere, anytime recovery.
- Backup Client Remote Management in the Storage Platform Console enables backup administrators to remotely initiate backups, restore files, change the backup schedule or the file selection, view log files and customise advanced options.
- Backup information, including the total selection size and amount of files, amount of new, removed, patched and skipped files, duration of the backup and more, is displayed in an easy to read Backup Summary.

EFFICIENCY

- Byte-level patch incremental backups, (called Binary Patching), minimise data transfer by identifying only the changed bytes in modified files. An alternative method, Delta Blocking, is also available in Server Edition. This process is significantly faster than Binary Patching but the patches are considerably bigger.
- All data is compressed in transit and storage, further minimising transfer times, network loads and storage requirements.
- Disconnections are resumed from the last byte sent – no need to transfer from the start.
- Adjustable thread priority for minimal performance impact and hard drive access during the backup process.

CENTRAL ADMINISTRATION

Total cost of ownership is largely influenced by the administration and management overheads. The Attix5 Backup Professional Storage Platform Console allows a single resource to configure, deploy, monitor and administer a large, geographically dispersed installation. Remote deployment and configuration, coupled to centralised monitoring and troubleshooting, removes the necessity for on-site support. This includes remote desktop and mobile laptop users.

- Administrator can customise user settings before creating the MSI installer, and end users can be prevented from altering administrator settings. MSI can be deployed with tools like Active Directory and MS SMS.
- Network detection initiates policy-based backups, ensuring full user compliance.
- Backup Clients can automatically be upgraded to the latest software versions during the backup process, without the need to manually install new software.
- Dynamic Profiling enables the backup administrator to propagate client settings from the Storage Platform to the Backup Clients. These settings take priority over any settings specified in the Backup Client and include the backup selection and advanced options.
- The Backup Clients can be configured to connect to the Storage Platform during each backup to update its backup time, even if there were no changes made to the backup set to differentiate between failed backups and backups where no data has changed.
- Automated reports include the Licence, Overview, FileServer Disk Space, Group and Storage Platform Expiry and Mirror Reports. Reports are automatically emailed.
- The Enterprise ReportServer can populate SP data into a database from where it can be queried from within the SP Console, with a wide range of customisable reports available.
- Remote Management provides access to all your backup accounts.
- Progress Monitoring enables a global view of all active processes on the Storage Platform.

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SECURITY

The transfer and storage of critical information poses several problems for organisations and data privacy is high on the list. Attix5 Backup Professional makes use of the SSL (Secure Socket Layer) protocol standard for secure communication between the Backup Clients and the Storage Platform, including data transmission (1024 bit RSA key exchange, 128 bit RC4 stream cipher and SHA-1 integrity checking). Data is stored using 448-bit Blowfish encryption in CBC mode on the Storage Platform. Backup account encryption keys are not stored with the data and globally recognised techniques are applied to ensure the integrity and security of all data protected with Backup Professional.

User Access Management in the Storage Platform Console enables the Backup Administrator to create Storage Platform Access Users and Roles. Roles are assigned to Backup Groups and when Access Users connect to the Storage Platform Console, only the authorised panes and options will be displayed. This enables you to provide the same application to e.g. your support staff, helpdesk and financial department. An audit trail is also available to log all changes.

BACKUP PROFESSIONAL STORAGE PLATFORM

The Attix5 Backup Professional Storage Platform consists of the **NameServer** and one or more **FileServers** which may run on the same or separate physical servers. The NameServer handles user authentication and group management, and the FileServer is the file storage system.

The Storage Platform Console is used to manage these servers as well as the User Groups and Users and is usually installed on the computer of the Backup Administrator(s). User Access Management provides multiple tier access rights.

In order to run, the NameServer and FileServers need signed certificates and a valid product key, obtainable from the Attix5 LicenceServer, which is an online service administering all Storage Platform installations. The Storage Platform will only receive incoming connections once it has been validated on the LicenceServer, and the certificates are present. The Backup Client uses these certificates to authenticate the servers and initiate SSL communications.

The hardware required to support the minimum Storage Platform, with NameServer and a single FileServer, depends upon the number of users, the size of their backup selection, and the frequency and transmission rates of their backups. A recommended system to handle 400 backup accounts would be:

The 400 accounts consist of 100 Server Edition clients with 5 GB accounts, and 300 Desktop and Laptop clients with 200 MB accounts.

- Dual Xeon Processor 3GHz
- 2GB RAM
- 1,5 TB free hard drive space
- Windows 2000 Server
- Fixed IP address or DNS name

Additional hard drive space can be added to support a higher number of users. A faster processor, faster disk and higher-capacity network would support a greater number of simultaneous backup users and/or a larger throughput. Multiple FileServers can be added at any stage to further scale the backup and recovery solution.

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The NameServer can be configured to act as a slave of the master NameServer. If the master NameServer is not available, the Backup Clients will automatically connect to the NameServer slave until the master server is up and running again. This eliminates the NameServer as a single point of failure.

A FileServer can also be configured as a MirrorServer, to receive data from primary FileServer(s) to ensure that your data is mirrored to another office or data centre for additional protection.

The Storage Platform Console enables you to connect to any Backup Client (Server Edition must be at least v4.4, Desktop and Laptop Edition v5.0) in your organisation that has Remote Management enabled. You can:

- View the backup and restore logs.
- Modify the file selection
- Initiate backups and restores, and change the backup schedule.
- Change any of the Advanced Options in the Backup Client.

The Enterprise Reports ReportServer collects information from the NameServer on predefined intervals and populates it into an ODBC enabled database, from where it can be queried using the Enterprise Reports. These report templates can be scheduled and customised. Additional templates may also be added.

BACKUP PROFESSIONAL CLIENTS

A JAVA Backup Client is loaded in order to select data for backup. Single files, folders, or entire directory structures can be selected for backup either manually or by using customisable inclusion and exclusion filters. These can be based on file types (e.g. *.doc) or file modification dates (e.g. no files older than 01/01/1997).

Each backup initiates a new data scan to update the backup set with any additions or deletions. The nature of the backup process does require disk workspace equivalent to roughly 50% of the backup set size.

This workspace requirement, to create the patches, is compulsory in the Desktop and Laptop Edition. Two patching techniques are however available in Server Edition, the default Binary Patching and Delta Blocking, which reduces this requirement.

Backups can be scheduled (once a day, multiple times daily, once a week, etc.) and can also be started manually via the GUI or the system tray icon.

The Backup Process

Initial Backup: All data selected for backup is compressed in a backup folder. A separate index file is also created detailing files and their hashes. The maximum size of this backup file can be limited, in which case the Backup Client will compress until the limit is reached and then flag any further files for backup during the next scheduled time. Thus, during the first backup, only the first gigabyte of data (for example) will be backed up. The next time (which could be an hour or a day later) the first gigabyte will be patched and the next gigabyte will be added, and so on until all files have been backed up and only patches need to be sent. This process can automatically be cycled in Server Edition to speed up the process.

Patching: Subsequent backups use a proprietary patching process to reduce the size of the backup. This works as follows:

1. Backup Client does a scan of the files and folders and filters selected for backup.
2. Any new files are compressed.
3. Any deleted or removed files are added to a deletion list.

4. Any modified files (we use the modification date and do not reset the archive flag) are first checked against the local cache to see if a previous version of that file is in the cache. The files are compared on a binary level (and thus the process is file type independent) and any changes are stored in a file patch and added to the backup folder. The greater the modification date setting of the cache, the greater the chances of a previous version of a file being present to allow for the patching process.

Backup Transfer: An SSL connection is established to the NameServer (NS) which verifies the account and passes the IP address of the FileServer (FS) where that accounts' data is stored. The connection is dropped and a new SSL connection is established to the FS. The files are then sent to the FS where they are stored in a dedicated account directory. File hashes are checked to ensure file integrity. Files are stored using 448-bit Blowfish encryption in CBC mode.

Local SnapShot: Should the initial backup be too large for the available bandwidth, a local backup can be initiated to disk or to a portable FS (or DR Box). The data or DR Box is then physically transported to the remote FS to which the backup is uploaded. Subsequent backups, being incremental and thus smaller in size, will revert to using the available bandwidth. This process is known as a Local SnapShot. The same logical process applies to recovering large amounts of data to the server. Proxy settings can be specified during these processes, if needed.

Local Cache: Once the FS has confirmed successful transfer of the data, the Backup Client drops the connection and updates the local cache. This is a compressed folder containing copies of all files that are backed up that had been modified in the previous 14 (default setting) days. The size of this folder is dependent on the type and size of the files concerned and also the modification date setting. To reduce the size of the cache the date can be reduced to files changed in the last 7 days etc. or turned off altogether. This will impact on the patching process.

The Restore Process

When a user wants to restore files, the Backup Client connects to the Storage Platform and retrieves the list of all the available backup dates. The user then selects a date and requests the index file for that date from the SP. The index file contains a list of all the files that were protected with that backup. Once the index file has been transmitted, it is displayed in the client interface where the user can select the file(s) to be restored. The user can also use the Find option to search for certain filenames or file types. The list of files to be restored is then sent to the SP. The Storage Platform goes through a process a finding the right files in previous backups, applying any applicable patches, and then compressing the files after which the requested files are transmitted. Compression can be disabled in the Backup Client. This speeds up the restore process on a LAN as the Storage Platform will not compress any patched files before transferring them to the Backup Client.

BACKUP PROFESSIONAL CLIENT FEATURES

- **High Level Security** - Guarantees complete confidentiality by ensuring that all data is transmitted and resides in an industry leading encrypted format, safe from prying eyes. It uses 448-bit Blowfish encryption, one of the highest levels of data encryption, on all data so it is safe to store sensitive information. SSL encryption is used when transferring data from the Backup Client to the Storage Platform. Backup Professional can also be enabled to use PKI and SecurID.
- **Complete reliability** – The backup process is completely automatic, so your staff need never remember to backup. It makes use of intelligent file selection, so important files are automatically protected and include a network activity monitor that allows remote users to back up automatically on connection. Using a remote storage facility, backups are kept offsite in case of disaster.

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- **Highly efficient** - Reduces bandwidth utilisation by up to 98%. Has a built-in version control, which allows documents to be restored in the state in which they were created. Ensures instant file recovery and availability of data without having to search through tapes. Incremental patching techniques will backup only the changes that were made.
- **Highly efficient compression** – Reduces the amount of data being sent and increases the speed of the backup process. This also reduces the amount of storage space required on the Storage Platform.
- **Notification and progress monitoring** – The system tray icon can flag important messages and warnings that the user must be aware of. Monitoring is also available to view the progress of the current backup process.
- **Time and Money Saving** - Allows remote searching for lost files months after they were deleted. Users are able to do their own installation, setup, backup and retrieval of lost or corrupted files. This reduces administration and IT-support time.
- **Central Management** - Allows file inclusions and exclusion at administrator level to effectively enforce your corporate backup policies. Control users, groups, licenses and storage servers from a single management console.
- **Easily Scalable** - Scales seamlessly from 1 to 100 000 users.
- **High Availability** - Allows you to securely access files remotely using WebAccess.
- **Multiple platforms** – Backup Professional supports Windows 2000, XP, 2003, Vista, 2008, MAC OS X and Linux platforms.
- **Firewall support** – Supports SOCKS5 and HTTP Proxy.
- **Open File Management** – The Backup Clients support Microsoft Volume Shadow Copy Services (VSS) to manage open and locked files.
- **Protection for Databases and Applications** - Backup Professional Server Edition supports popular databases and applications. SE offers seamless integration with these databases and applications and enables online operations that do not eliminate end user access to data. Agents available for MS Exchange, MS SQL Server, MS SharePoint, Lotus Domino, Sybase, Oracle and GroupWise as well as a VSS Database plug-in for all VSS enabled databases and applications.

BACKUP PROFESSIONAL DESKTOP AND LAPTOP EDITION (D&L)

Desktop and Laptop Edition can be configured to automatically backup critical data from the computer or laptop, across the network, to a remote Storage Platform. D&L is supplied to the user group administrator in the form of a deployment application, which is used to build a custom client application (MSI) configured to backup to a specific group on a Storage Platform, and a monitoring tool to monitor and manage users backing up to that group. A pre-configured client application can also be supplied directly to an end user.

The Backup Professional MSI installer also enables you to remotely deploy the Backup Professional clients using your preferred desktop management solution, e.g. Microsoft SMS.

Mandatory Additional Fields can be specified by the Backup Administrator that must be completed by the user when running the Setup Wizard to create the backup account. These fields can be viewed in the Storage Platform to log account numbers, email addresses etc.

Desktop and Laptop Edition support Microsoft Outlook PST files using MS VSS technology to backup the open files, without having to close it during the backup process. An Outlook plug-in is also available for Windows 2000, and the user can then specify whether Outlook must be closed and restarted during the backup process.

BACKUP PROFESSIONAL SERVER EDITION (SE)

Server Edition extends the range of devices protected by Attix5 Backup Professional to include company servers and databases. Backups are typically scheduled but it can also be initiated manually via an icon in the system tray (Windows version), via the GUI or remotely using a command prompt or via any Internet browser if SE Remote Management is enabled. Server Edition offers two patching techniques, to determine changes in a file since the last backup, Binary Patching and Delta Blocking. Binary Patching is the most effective form of patching. Small patches are created but it is CPU intensive and a complete (compressed) copy of the file must be available in the local cache to determine any changes. The Delta Blocking process is significantly faster than Binary Patching and it does not require a complete copy of a file in the cache to calculate the patch; only a footprint file. The footprint files require very little free disk space (less than 1% of the file size), but the actual patches sent to the Storage Platform are considerably bigger than Binary Patches.

Multiple thread backups ensure that files are transferred to the Storage Platform as soon as they are compressed or patched, to speed up the backup process. Network volumes can be mapped with UNC paths. Compression can be disabled per file type as some files do not compress well. This speeds up the backup process as SE will not try to compress files that cannot be compressed.

Adding to its features and functionality, Attix5 Backup Professional Server Edition supports popular databases and applications. SE uses Application Program Interface (API) based plug-ins to backup data from widely used server applications. Multiple plug-ins can be installed on a single server. Once configured the plug-in makes an API call to the application to do a full data backup to a specific folder on the server. SE then backs up this folder as part of its normal backup procedure. This is done without shutting down the application or interfering with user access. Backup Professional Server Edition offers online backup agents for MS Exchange, MS SQL Server, MS SharePoint, MS VSS Database, Lotus Domino, Sybase ASE 12.5, Oracle, Exchange Single Mailbox Recovery, Open File Manager, the Windows System State and GroupWise. Script and Email Notification plug-ins are also available to initiate scripts during the backup process and to receive email notification (including the log files) after each backup attempt.

BACKUP PROFESSIONAL WEBACCESS

A secure browser-based web interface allows data access and file management from any connected computer anywhere in the world. What good is information if you cannot access it? Attix5 WebAccess allows you access to your files from any connected computer – be it in the office next door or the other side of the world – through a secure tunnel. Now you do not need to take your files with you – never mind a laptop. WebAccess is unique to Attix5 Backup Professional and offers functionality and usability beyond secure backups. All communications are again secured with SSL and information can be uploaded or downloaded without concern as to data privacy.