

DiskBoss

File & Disk Manager



File Synchronization

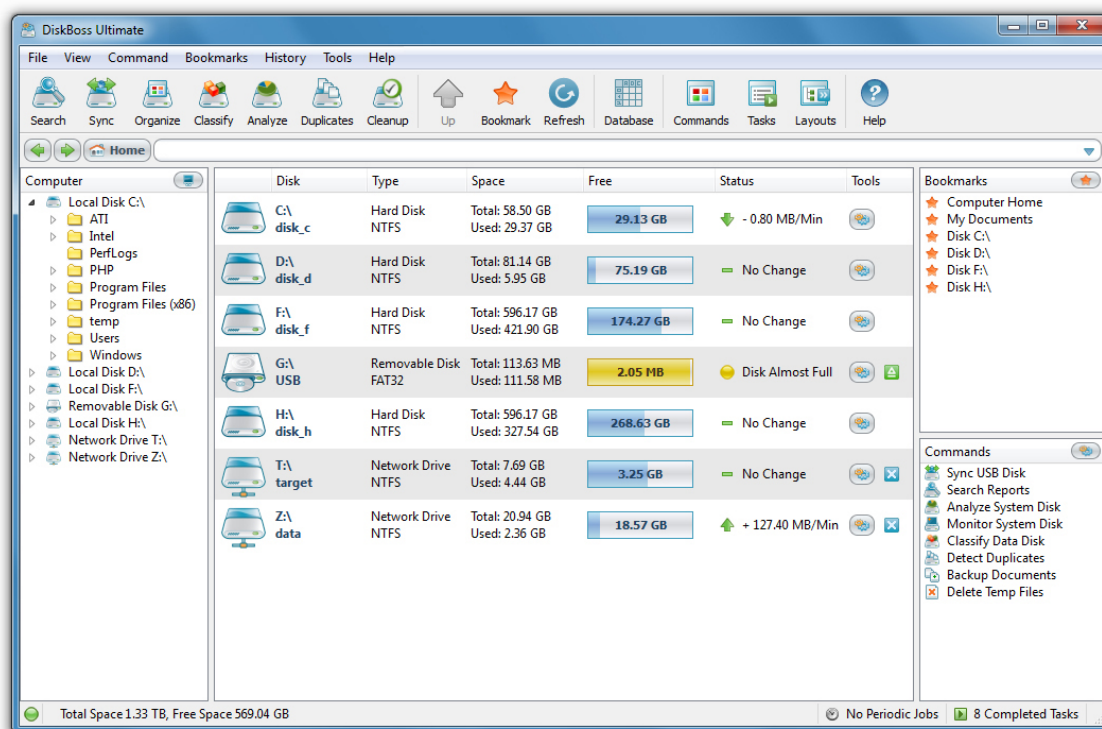
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Product Overview

DiskBoss is an automated, rule-based file and disk manager allowing one to search and classify files, perform disk space utilization analysis, detect and remove duplicate files, organize files according to user-defined rules and policies, copy large amounts of files in a fault-tolerant way, synchronize disks and directories, cleanup wasted disk space, etc.



All file management operations are integrated in a centralized and easy-to-use GUI application with a built-in file navigator allowing one to execute any required operation in a single mouse click. Frequently used file management operations may be pre-configured as user-defined commands and executed using the GUI application or direct desktop shortcuts.

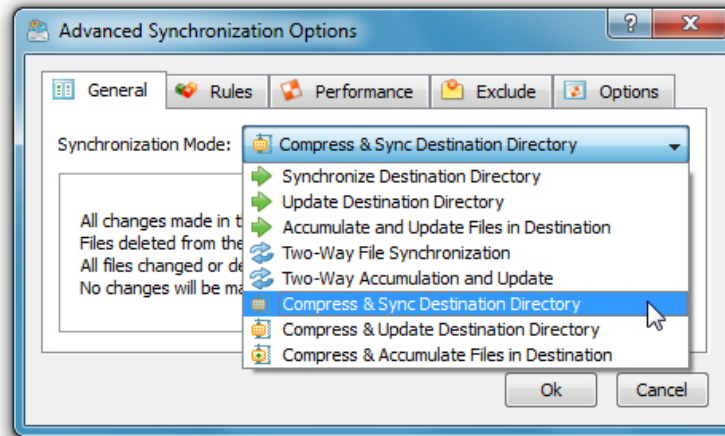
DiskBoss is a highly extendable and customizable data management solution allowing one to design custom file classification plugins and purpose-built file management operations using an open and easy-to-use XML-Based format. Custom disk space analysis and file management operations may be integrated into the product, executed periodically at specific time intervals, performed as conditional actions in other operations or automatically triggered by one or more changes in a disk or directory.

In addition, IT administrators are provided with extensive database integration capabilities allowing one to submit disk space analysis, file classification, duplicate files detection and file search reports into an SQL database. Reports from multiple servers and desktop computers may be submitted to a centralized SQL database allowing one to display charts showing the used disk space, file categories and duplicate files per user or per host and providing an in-depth visibility into how disk space is used, what types of files are stored and how much space is wasted on duplicate files across the entire enterprise.

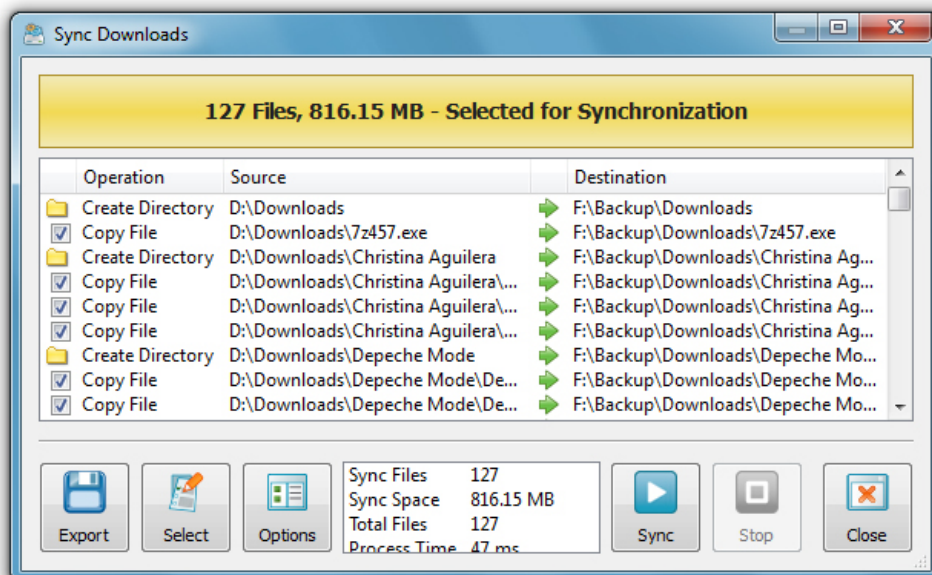
Finally, IT professionals and enterprises are provided with DiskBoss Server – a server-based product version, which runs in the background as a service and is capable of executing all disk space analysis and file management operations in a fully automatic and unattended mode. DiskBoss Server can be managed and configured locally or through the network using a free network client GUI application or the DiskBoss command line utility, which provides the user with the ability to integrate DiskBoss' features and capabilities into other products and solutions.

High-Speed File Synchronization

DiskBoss provides advanced file synchronization capabilities allowing one to synchronize files between directories, local disks and network shares. The DiskBoss' built-in file synchronization engine offers numerous one-way and two-way file synchronization modes, the ability to sync specific file types, file compression capabilities and advanced performance tuning options.



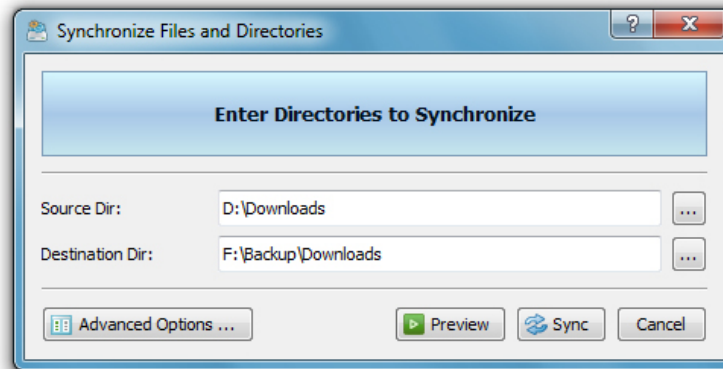
Frequently used file synchronization operations may be pre-configured for custom hardware and storage configurations, saved as user-defined commands and executed in a single mouse click. Moreover, DiskBoss allows one to create direct desktop shortcuts for user-defined file synchronization commands and execute them directly from the Windows desktop without starting the main DiskBoss GUI application. Finally, power computer users and IT professionals are provided with a command line utility, which is capable of executing file synchronization commands from shell scripts and batch files.



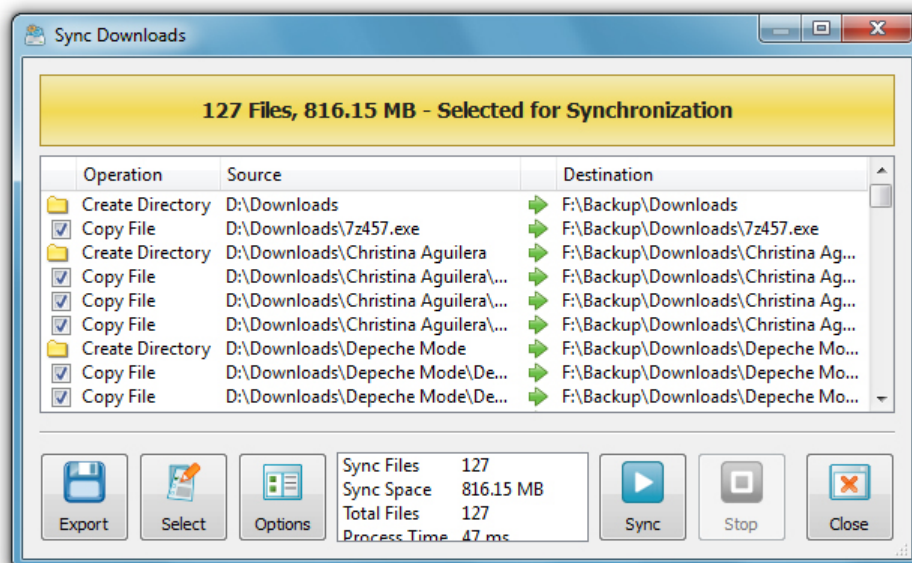
By default, file synchronization commands are executed in the preview mode, which provides the user with the ability to review and manually confirm each specific file synchronization action. Once a sync command is tested and verified, the user can configure the command to run in a fully automatic, unattended stream file synchronization mode. The stream file synchronization mode performs all file synchronization actions on-the-fly, without showing the preview dialog and therefore it is much faster and uses significantly less system memory when executed on large file systems.

Synchronizing a Pair of Directories

DiskBoss provides advanced file synchronization capabilities allowing one to synchronize files between local disks, directories, network shares, NAS storage devices and enterprise storage systems. The DiskBoss' file synchronization engine is capable of synchronizing files using multiple one-way and two-way file synchronization modes, provides performance tuning options, periodic and real-time file synchronization capabilities and allows one to synchronize specific file types and categories.



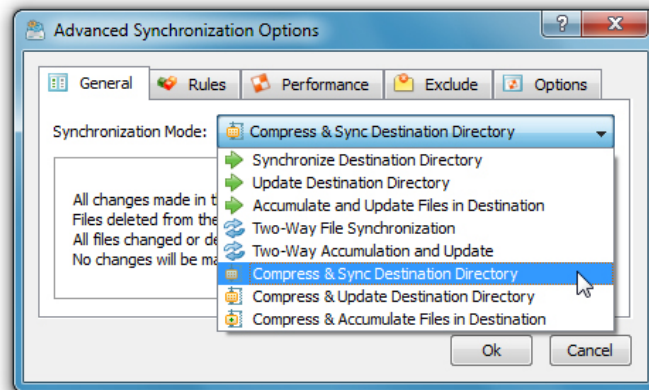
In order to synchronize a pair of directories, press the 'Sync' button located on the main toolbar, enter the source and destination directories and press the 'Preview' button. DiskBoss will scan the specified source and destination directories, compare files between the source and destination directories and show a list of file synchronization actions that should be performed.



On the file synchronization preview dialog, review sync actions, select/unselect actions that should be performed and press the 'Sync' button to execute the selected file synchronization actions. Optionally, press the 'Options' button to control advanced file synchronization options or press the 'Export' button to save file synchronization actions to an HTML, text or Excel CSV report. The DiskBoss' file synchronization engine is especially optimized for modern hardware and storage devices and is capable of effectively utilizing RAID storage devices, multi-core/multi-CPU systems and Gigabit networks delivering maximum possible performance.

Selecting File Synchronization Mode

Depending on specific needs, it may be required to perform different types of file synchronization operations. For example, sometimes users may be interested in keeping all files in the destination directory even when some of them were deleted from the source directory. Another option is to perform two-way accumulation and update keeping both directories completely identical. DiskBoss provides eight different one-way and two-way file synchronization modes allowing one to perform different types of file synchronization operations according to user-specific needs and requirements.



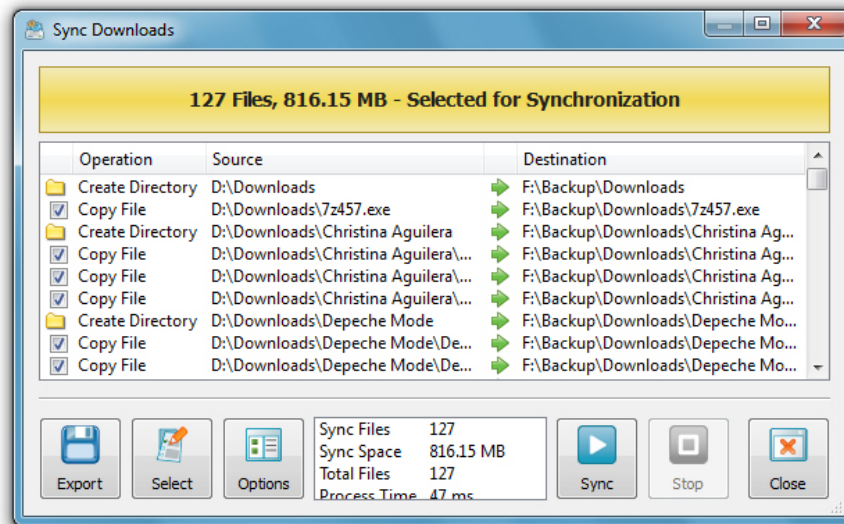
In order to change the file synchronization mode for a file synchronization command, open the file synchronization command dialog, select the 'General' tab and select one of the following file synchronization modes:

- **Synchronize Destination Directory** (one-way) - All changes made in the source directory will be propagated to the destination directory. Files deleted from the source directory will be deleted from the destination directory. All files changed or deleted in the destination directory will be restored using files from the source directory. No changes will be made in the source directory. After the file synchronization process is complete both locations will be identical.
- **Update Destination Directory** (one-way) - Newly created and modified source files will be copied to the destination directory. Files deleted from the source directory will be deleted from the destination directory. Files deleted from the destination directory will be restored using files from the source directory. Newly created and modified destination files will be kept in place. No changes will be made in the source directory.
- **Accumulate and Update Files in Destination** (one-way) - Newly created and modified source files will be copied to the destination directory. Files deleted from the destination directory will be restored using files from the source directory. Newly created and modified destination files will be kept in place. No files will be deleted from the destination directory. No changes will be made in the source directory.
- **Two-Way File Synchronization** - Newly created and modified files will be synchronized in both directions. Files deleted from the source directory will be deleted from the destination directory. Files deleted from the destination directory will be restored from the source directory. Changes may be made in both locations. After the file synchronization process is complete both locations will be identical.
- **Two-Way Accumulation and Update** - Newly created and modified files will be updated in both directions. Files deleted from one location will be restored from the second location. Changes may be made in both locations. After the file synchronization process is complete both locations will be identical.

The last three file synchronization modes are identical to the first three modes, but the last three modes are saving compressed files in the destination directory.

Synchronizing Files with Preview

File synchronization with preview is very useful providing the user with a clear picture about what files will be synchronized. By default, DiskBoss synchronizes directories with preview, but the user is provided with the ability to disable the preview mode and synchronize all the required files on-the-fly without showing the preview dialog.



Synchronizing Files without Preview

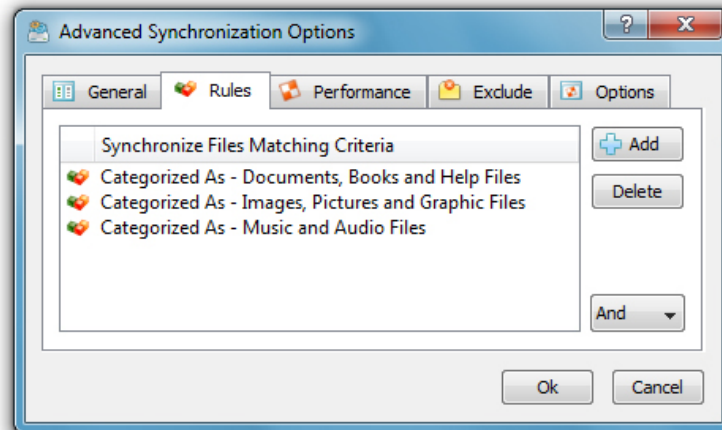
Sometimes, when the user needs to synchronize large directories or disks containing many thousands of files, file synchronization with preview may be ineffective or completely inappropriate especially due to the fact that none will have the time to review lists of file synchronization actions containing huge amounts of items. Moreover, unattended file synchronization operations performed periodically at specific time intervals or triggered by a disk change monitor, should be performed fully automatically without requiring any user intervention.



In order to disable the preview dialog for a file synchronization operation, open the operation dialog and set the process mode combo box to 'Sync Without Preview'. The stream file synchronization mode is especially designed for file systems containing huge amounts of files and is capable of synchronizing large directories, disks and NAS storage devices very fast and effectively. In addition, the stream file synchronization mode is ideal for automated, periodic file synchronization operations performed in the background without any user intervention.

Synchronizing Specific File Types or Categories

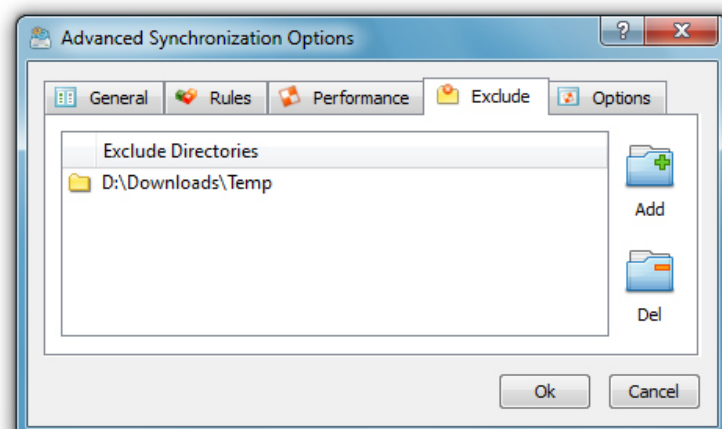
DiskBoss Ultimate and DiskBoss Server provide power computer users and IT administrators with the ability to synchronize specific file types or file categories using one or more flexible file matching rules. For example, the user may specify to synchronize documents and digital images with the file size more than 2 MB.



In order to add one or more file matching rules, open the file synchronization command dialog, select the 'Rules' tab and press the 'Add' button. On the 'Rules' dialog select an appropriate rule type and specify all the required parameters. During file synchronization, DiskBoss will scan the entered source and destination directories and apply the specified file matching rules to all the existing files. Files not matching the specified rules will be just skipped from the file synchronization process.

Excluding One or More Subdirectories

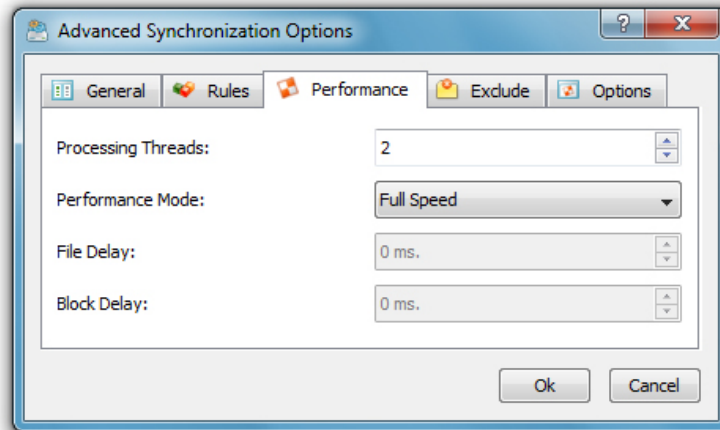
Sometimes, it may be required to exclude one or more subdirectories from the file synchronization process. For example, if you need to synchronize two directories excluding one or two special subdirectories, you may specify the top level directories as the source and destination directories and add the subdirectories that should be skipped to the exclude list.



In order to add one or more directories to the exclude list, open the file synchronization command dialog, select the 'Exclude' tab and press the 'Add' button. Keep in mind that exclude directories are case sensitive and should be specified with the same case as stored on the disk. All files and subdirectories located in the specified exclude directories will be excluded from the file synchronization process. Select an exclude directory and press the 'Delete' button, to remove the selected directory from the exclude list.

File Synchronization Performance Tuning Options

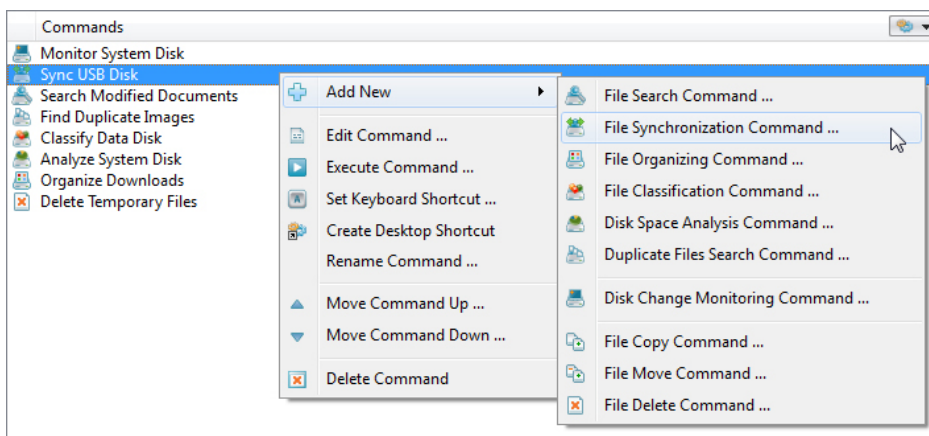
In order to increase file synchronization performance, DiskBoss provides advanced computer users and IT professionals with the ability to synchronize files using multiple synchronization streams. Multi-Stream file synchronization significantly improves file synchronization performance when synchronizing large amounts of files between multiple disks, NAS storage devices or enterprise storage systems.



In order to enable multi-stream file synchronization for a sync command, open the command dialog, select the 'Performance' tab and set an appropriate number of file synchronization streams. Take into account that multi-stream file synchronization is optimized for multi-disk, RAID and networked configurations and it is not recommended to use it when synchronizing directories located on the same physical disk. In addition, users required to synchronize files on running, production systems are provided with the ability to execute file synchronization commands slowly thus minimizing the performance impact on running applications. In order to change the speed of a file synchronization command, select an appropriate performance mode in the 'Performance Mode' combo box.

User-Defined File Synchronization Commands

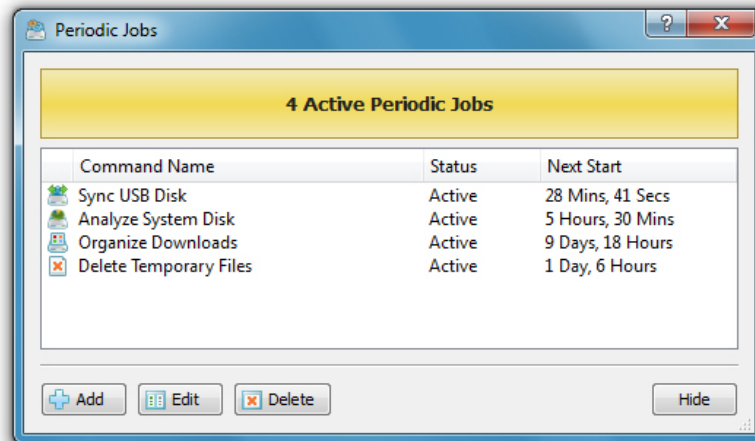
DiskBoss provides the user with the ability to pre-configure custom file synchronization operations as user-defined commands and execute such commands in a single mouse click using the DiskBoss GUI application or direct desktop shortcuts.



User-defined commands may be managed and executed through the commands dialog or the commands tool pane. In order to add a new command through the commands pane, press the right mouse button over the pane and select the 'Add New – File Synchronization Command' menu item. In order to execute a previously saved command, just click on the command item in the commands tool pane or create a direct desktop shortcut on the desktop.

Periodic File Synchronization

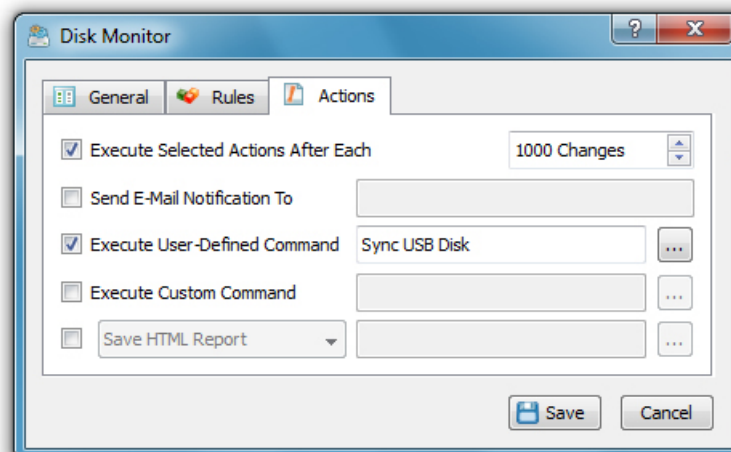
Sometimes, it may be required to execute a file synchronization operation periodically at specific time intervals. The first option to do that is to configure a periodic job in the DiskBoss GUI application and select the required file synchronization command to be executed periodically. Another option is to use DiskBoss Server, which runs as a service in the background and may be used to periodically execute file synchronization operations in a fully automatic, unattended mode.



In order to add a new periodic job, select the 'Tools – Manage Periodic Jobs' menu item and press the 'Add' button. On the periodic job dialog, select the file synchronization command that should be executed and specify the time period.

Real-Time File Synchronization

DiskBoss Ultimate and DiskBoss Server provide the ability to monitor one or more disks or directories and automatically execute a file synchronization operation after a user-specified number of changes is detected.



In order to execute a file synchronization command using the DiskBoss' disk change monitor, create a new disk change monitoring command, specify one or more disks or directories that should be monitored, select the 'Actions' tab, specify the number of disk changes that should trigger the file synchronization command and selected the name of the file synchronization command that should be executed once the disk change monitor reaches the specified number of changes.

Synchronizing Files Using the Command Line Utility

In addition to the GUI application, DiskBoss Ultimate and DiskBoss Server provide a command line utility allowing one to execute file synchronization commands from batch files and shell scripts. The command line utility is located in the '**<ProductDir>/bin**' directory.

Command Line Syntax:

```
diskboss -sync -source <Source Directory> -dest <Dest Directory>
```

This command synchronizes files between directories, local disks or network shares.

```
diskboss -execute <File Synchronization Command>
```

This command executes the specified user-defined file synchronization command pre-configured using the DiskBoss GUI application or imported from an XML file.

Parameters:

-source <Source Directory>

This parameter specifies the source directory for file synchronization. In order to ensure proper parsing of command line arguments, directories and file names containing space characters should be double quoted.

-dest <Destination Directory>

This parameter specifies the destination directory for file synchronization. In order to ensure proper parsing of command line arguments, directories and file names containing space characters should be double quoted.

Options:

-sync_mode <SD | SUD | SAD | STW | STA>

SD - Sets the sync-destination file synchronization mode (Default)

All changes made in the source directory will be propagated to destination. Files deleted from the source directory will be deleted from destination. All files changed or deleted in destination will be restored from source.

SUD - Sets the update-destination file synchronization mode

Newly created and modified source files will be copied to destination. Files deleted from the source directory will be deleted from destination. Files deleted from the destination directory will be restored from source.

SAD - Sets the accumulate-destination file synchronization mode

Newly created and modified source files will be copied to destination. Files deleted from the destination directory will be restored from source. Newly created and modified destination files will be kept in place.

STW - Sets the two-way file synchronization mode

Newly created and modified files will be synchronized in both directions. Files deleted from the source directory will be deleted from destination. Files deleted from the destination directory will be restored from source.

STA - Sets the two-way accumulate file synchronization mode

Newly created and modified files will be updated in both directions. Files deleted in one location will be restored from the second location. After finishing the synchronization process both locations will be identical.

-streams <StreamCount>

This parameter specifies the number of simultaneous file synchronization streams.

-file_delay <delay in milliseconds>

This parameter sets the file delay to the specified value in milliseconds. Use this option when you need to slowly synchronize files to or from a busy production system in order to minimize the potential performance degradation.

-block_delay <delay in milliseconds>

This parameter sets the block delay to the specified value in milliseconds. Use this option when you need to slowly synchronize files to or from a busy production system in order to minimize the potential performance degradation.

-copy_dacl

This parameter instructs to copy files' access control lists (DACL).

-copy_sacl

This parameter instructs to copy files' security control lists (SACL).

-copy_owner

This parameter instructs to copy files' user/group information.

-v

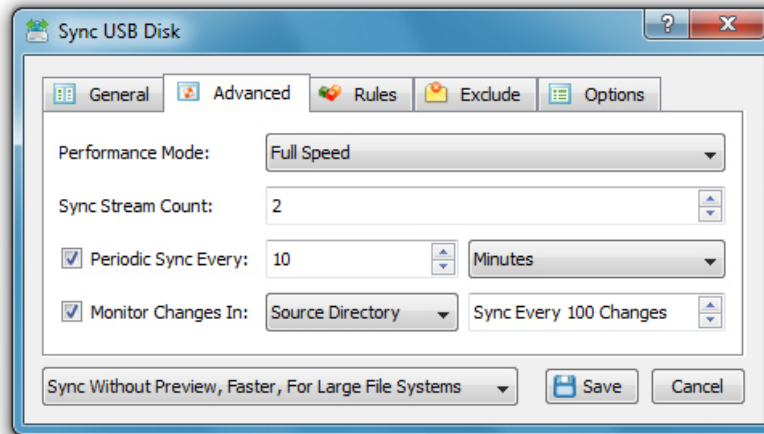
This command shows the product's major version, minor version, revision and build date.

-help

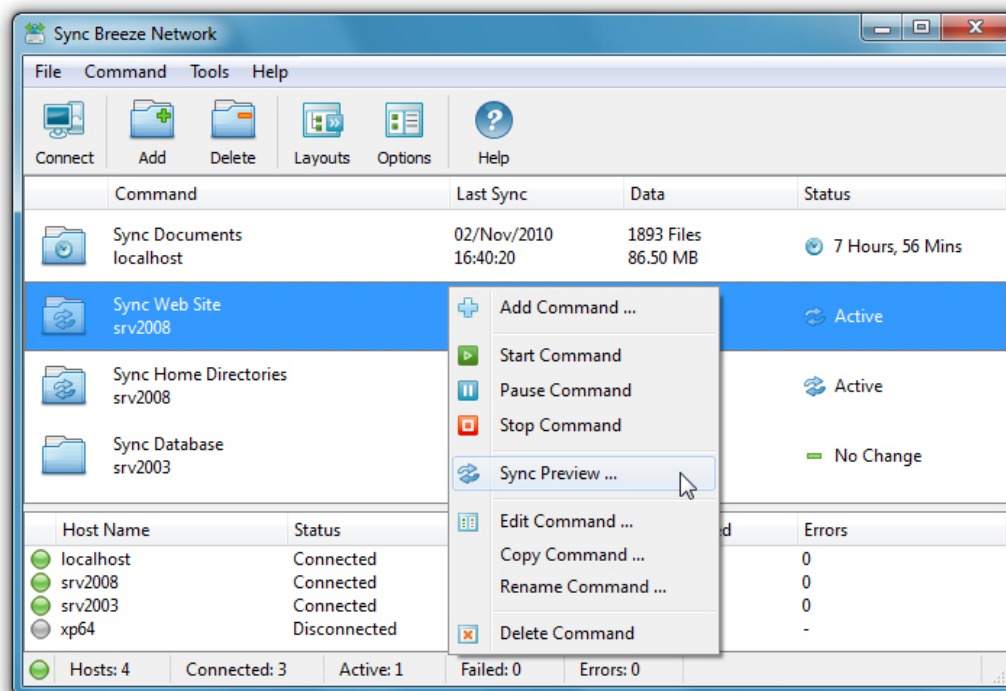
This command shows the command line usage information.

SyncBreeze – Dedicated File Synchronization Solution

In addition to the file synchronization capabilities available in DiskBoss, Flexense develops a dedicated file synchronization solution, named SyncBreeze, which provides multiple, advanced file synchronization features including periodic synchronization, multi-way file synchronization, real-time file synchronization, tertiary destination directories and much more.



Users are provided with multiple product versions ranging from an easy-to-use, free version to an advanced server-based product version, which runs in the background as a service and is capable of synchronizing a number of disks, network shares or NAS storage devices in a fully automatic and unattended mode.



A number of SyncBreeze servers may be managed through the network using a free, network client GUI application capable of configuring and controlling file synchronization operations across the entire network. In addition, IT administrators are provided with a command line utility allowing one to control file synchronization operations from batch files and shell scripts enabling integrations of file synchronization capabilities into other products and solutions. For more information about SyncBreeze refer to: <http://www.syncbreeze.com>